



**City of Columbia City Council
Regular Meeting Agenda
March 13, 2025 - 5:30 PM**

**City Hall Council Chambers
700 North Garden Street
Columbia, TN 38401
Phone: 931-560-1510**

**Chaz Molder, Mayor
Randy McBroom, Vice Mayor
Council Member DaVena Hardison, Ward 1
Council Member Charlie Huffman, Ward 2
Council Member Cheryl E. Secrest, Ward 3
Council Member Kenny Marshall, Ward 4
Council Member Brian McKelvy, Ward 5**

**Tony Massey, City Manager
Jake Hubbell, City Attorney
Thad H. Jablonski, City Recorder
Liz Bermudez, Recording Secretary**

The City Council of the City of Columbia welcomes your presence and participation at this meeting. If you wish to address Council regarding any item on the Agenda, please sign the sign-up sheet and indicate which agenda item you would like to comment on. You will have the opportunity to comment on an item when it comes up on the Agenda and before Council votes on the item. Once recognized, you may then come to the podium and state your name and address. Anyone requesting accommodations due to disabilities should contact the ADA Coordinator, Wanda McClain, at 931-560-1570 prior to the meeting.

PUBLIC HEARINGS

1. PUBLIC HEARING ON ORDINANCE NO. 4540 – AN ORDINANCE TO AMEND THE FISCAL YEAR 2024-2025 BUDGET ORDINANCE NO. 4503, PROVIDING FOR REVISIONS TO THE GENERAL, CAPITAL PROJECTS, GRANTS AND WASTEWATER FUNDS - FINANCE.

RECOMMENDATION: Conduct the Public Hearing.

INFORMATION: This public hearing is related to Item 10.4 on the agenda. The proposed ordinance is the first amendment of the FY 2025 Appropriation Ordinance and revises the General, Capital Projects, Grants and Wastewater Funds.

Supporting documentation for the amendment is included within the agenda packet and the required Notice of Public Hearing was published in The Daily Herald on February 16, 2025.

This amendment increases the City's total budget for FY 2025 by \$17,481,255 to \$223,934,133.

ATTACHMENTS: Staff Report Ordinance No. 4540 PH, Ordinance No. 4540 as amended, Supporting Documents, Budget Summary.

REGULAR MEETING

1 CALL TO ORDER/ROLL CALL.

2 INVOCATION BY ANDREW PHILLIPS OF GRAYMERE CHURCH OF CHRIST.

3 PLEDGE OF ALLEGIANCE.

4 APPROVAL OF AGENDA.

5 PRESENTATIONS.

5.1. PRESENTATION OF PROCLAMATIONS TO THE COLUMBIA CENTRAL HIGH SCHOOL GAMEDAY CHEER SQUAD

5.2. PRESENTATION OF YOUTH OF THE YEAR CANDIDATES

6 ORGANIZATIONAL BUSINESS.

6.1.APPROVE THE MINUTES OF THE FEBRUARY 13, 2025, CITY COUNCIL MEETING - CITY MANAGER'S OFFICE.

RECOMMENDATION: Approve.

ATTACHMENTS: February 13, 2025 Minutes

6.2.APPROVE THE RETIREMENT BENEFITS FOR DERRICK CATHEY, FOREMAN - SEWER REHABILITATION, WASTEWATER DEPARTMENT - FINANCE.

RECOMMENDATION: Approve.

INFORMATION: Derrick Cathey has been an employee of the City of Columbia for 27 years. His effective retirement date is March 21, 2025 with pension payments to begin on April 1, 2025.

ATTACHMENTS: Staff Report Derrick Cathey.

7 CONSENT AGENDA

7.1.APPROVE DISBURSEMENTS FOR THE MONTH OF JANUARY 2025 IN THE AMOUNT OF \$5,909,594.95 - FINANCE.

RECOMMENDATION: Approve.

ATTACHMENTS: January 2025 Disbursements.

7.2.APPROVE AND AUTHORIZE THE DISPOSAL OF SURPLUS EQUIPMENT - FINANCE.

RECOMMENDATION: Approve and authorize the disposal of surplus equipment as listed on the attachment per policy as defined within the City of Columbia Purchasing Manual.

INFORMATION: Various items have been identified by the department as surplus. An attempt will be made to sell all items at public auction. The value of those not sold will be reassessed and disposed of as prescribed by City policy.

ATTACHMENTS: March 2025 Surplus.

7.3. ACCEPTANCE OF ANNUAL REPORTS OF CITY OF COLUMBIA EMPLOYEE'S RETIREMENT PLAN FUND AND THE CITY OF COLUMBIA, TENNESSEE RETIREMENT HEALTH INSURANCE POST-EMPLOYMENT BENEFIT TRUST FOR THE PERIOD ENDING DECEMBER 31, 2024 - CITY RECORDER'S OFFICE.

RECOMMENDATION: Accept the Reports.

INFORMATION: The Trustees of the City of Columbia Employees' Retirement Plan Fund annually submit reports to the City Council regarding the City Retirement Plan and the Retirement Health Insurance Post-Employment Benefit Trust. A summary of the revenues, expenditures and balance for the City of Columbia Employee's Retirement Plan Fund is being provided from the inception of the plan on July 1, 1974, through December 31, 2024, and a summary of the revenues, expenditures and the balance of the City of Columbia, Tennessee Retirement Health Insurance Post-Employment Benefit Trust, opened August 8, 2008, through December 31, 2024. These reports are required by Ordinance to assist the City Council in the fiduciary responsibility for management of pension funds.

ATTACHMENTS: Staff Report - 2024 Retirement reports, City of Columbia, TN Employees' Retirement Plan Fund 12.31.2024, City of Columbia, TN Employees' Retirement Health Insurance Post-Employment Benefit Trust Fund 12.31.2024.

7.4. APPROVE CHANGE ORDER NO. 1 WITH MORRISON ENGINEERING, LLC FOR ENGINEERING SERVICES RELATED TO THE CITY OF COLUMBIA PARKING GARAGE REHABILITATION PROJECT WHICH INCREASES THE CONTRACT AMOUNT BY \$2,250 - DEVELOPMENT SERVICES DEPARTMENT.

RECOMMENDATION: Approve.

INFORMATION: City Council approved a contract with Morrison Engineering, LLC on March 10, 2022 in the amount of \$54,580 for engineering services related to the City of Columbia Parking Garage

Rehabilitation Project.

This Change Order addressed engineering services related to additional work to the Police Department and South side of City Hall waterproofing. The work included visual inspection of each area, providing scope of work, receiving and processing change orders for each location, as well as providing project management during the work process. Change Order No. 1 will increase the total contract amount by \$2,250, bringing the total contract sum to \$56,830.

CERTIFICATION: The Chief Financial Officer certifies that \$2,250 is budgeted and unencumbered in Capital Projects – General Government – Parking Garage.

ATTACHMENTS: Morrison Engineering Change Order Staff Report, Morrison Engineering Change Order No. 1.

7.5. APPROVE AND AUTHORIZE THE MAYOR TO EXECUTE CHANGE ORDER NO. 1 WITH NICKELL COMPANY, LLC FOR THE CDBG SIDEWALK IMPROVEMENTS WITH A DECREASE IN THE AMOUNT OF \$154,264.98 - WARDS 2 & 3 - DEVELOPMENT SERVICES DEPARTMENT.

RECOMMENDATION: Approve.

INFORMATION: The City of Columbia received "Small Cities" Community Development Block Grant (CDBG) program funding for sidewalk improvements along South High Street from West 8th Street to West 11th Street, and along East 8th Street from South Main Street to (west of) South Glade Street. The original contract was approved by Council on April 11th, 2024 in the amount of \$763,314.70. This Change Order is to authorize a decrease from the original contract amount totaling \$154,264.98 due to items not needed during completion. This change order will not extend the project completion date.

ATTACHMENTS: Staff Report Nickell Company Change Order , Nickell Company CDBG Change Order No. 1.

7.6. APPROVE THE FY 2024-2025 STREET RESURFACING LIST - WARDS 1, 2, 3, 4, AND 5 - DEVELOPMENT SERVICES DEPARTMENT.

RECOMMENDATION: Approve.

INFORMATION: A list of streets proposed to be paved has been developed using field observations and a Street Database Program. Consideration has been given to streets in all wards of the City in an effort to identify the City's paving needs and to effectively use the available paving funds. This list is tentative and will provide guidance in development of a paving contract. Once bids are received, the paving contract will come before City Council for approval. Contract work will presumably commence.

This \$4 million represents the largest street paving budget for the City of Columbia at any one time and encompasses 19.6 road miles.

ATTACHMENTS: Staff Report Paving List approval, List of Proposed Street for Paving with Map.

7.7. APPROVE BID AWARD TO HAWKINS & PRICE, LLC FOR CONSTRUCTION OF THE CARTERS CREEK FORCE MAIN RELOCATION IN THE AMOUNT OF \$489,755 - WASTEWATER DEPARTMENT.

RECOMMENDATION: Approve.

INFORMATION: The City of Columbia's Wastewater Department requests approval of the bid award to Hawkins & Price, LLC for construction of the Carters Creek Force Main Relocation project in the amount of \$489,755. This would replace and update the force main and air relief valves and provide continued quality service to the citizens of the City of Columbia.

CERTIFICATION: The Chief Financial Officer certifies that \$489,755 is budgeted and unencumbered in Wastewater – Pump Stations-Maintenance and Repairs.

ATTACHMENTS: Staff Report Bid Award Hawkins & Price - Carters Creek, Award letter - Carters Creek Force Main Relocation, Bid Tab - Carters Creek Force Main Relocation.

7.8. APPROVE THE PURCHASE OF A 2025 MINI EXCAVATOR FROM RJV KUBOTA IN THE AMOUNT OF \$56,580.35 UTILIZING SOURCEWELL CONTRACT 112624 - WASTEWATER DEPARTMENT.

RECOMMENDATION: Approve.

INFORMATION: The City of Columbia's Wastewater Department wants to purchase a 2025 Mini Excavator in the amount of \$56,580.35 for use by our sewer rehab crew where the larger excavator is unable to easily fit or on narrow streets to avoid blocking the entire road. This will be purchased through Sourcewell Contract 112624.

CERTIFICATION: The Chief Financial Officer certifies that \$56,581 is budgeted and unencumbered in Wastewater – WW Rehab-Equipment and Machinery Auto.

ATTACHMENTS: Staff Report RJV Kubota Mini Excavator, RJV Kubota Mini Excavator quote, Sourcewell Contract 112624

7.9. APPROVE AND AUTHORIZE THE MAYOR TO SIGN THE CONTRACT BETWEEN THE CITY OF COLUMBIA AND CUMBERLAND VALLEY CONSTRUCTORS, INC. FOR THE CONSTRUCTION OF THE BEAR CREEK PIKE SEWAGE PUMP STATION REPLACEMENT IN THE AMOUNT OF \$5,272,800 - WASTEWATER DEPARTMENT.

RECOMMENDATION: Approve.

INFORMATION: The City of Columbia's Wastewater Department requests the mayor to sign the Contract between the City of Columbia and Cumberland Valley Constructors, Inc. for the construction of the Bear Creek Pike Sewage Pump Station Replacement in the amount of \$5,272,800. The bid award was previously approved by City Council on February 13, 2025.

CERTIFICATION: The Chief Financial Officer certifies that \$5,272,800 is budgeted and unencumbered in Wastewater – Pump Station-Bear Creek PS.

ATTACHMENTS: Staff Report Cumberland Valley Constructors Bear Creek Pike Contract, Cumberland Valley Constructors Bear Creek Pike Contract and Specs.

7.10. APPROVE BID AWARD TO INTEGRATION TECHNOLOGY LLC FOR 100-FOOT ROHN RTL100M RADIO TOWER IN THE AMOUNT OF \$115,875 - FIRE & RESCUE.

RECOMMENDATION: Approve.

INFORMATION: The City of Columbia solicited bids for the purchase and installation of a 100-Foot Rohn RTL100M Radio Tower. The new tower will replace the existing tower that sustained damage during the May 2024 tornado events. The tower will be installed at 1539 Nicholson Schoolhouse Road. The cost of this item is \$115,875.

CERTIFICATION: The Chief Financial Officer certifies that \$115,875 is budgeted and unencumbered in Grants – Fire Suppression - Communication Equipment.

ATTACHMENTS: Staff Report Intergration Technology, Bid Tab - Radio Tower January 2025, Intergration Technology LLC - Radio Tower Bid.

7.11. RATIFY THE EMERGENCY REPAIR OF SEWER LINES OF FIRE STATION NO. 4 LOCATED AT 5040 TROTWOOD AVENUE IN THE AMOUNT OF \$55,989 - FIRE & RESCUE.

RECOMMENDATION: Approve.

INFORMATION: Fire Station 4, located on Trotwood Avenue, has been experiencing sewer line problems. It was investigated to find the cause of the problems by Hiller Plumbing, they completed a camera inspection of all the drain lines in the building for proper design and solutions on February 11, 2025. The cost of this phase of the project was \$4,980.

Due to cracked, broken and rotten lines, reline work is necessary on approximately 200 feet of 3" and 4" pipe in the fire station.

The cost of the full sewer line reline project amounts to \$55,989, which includes \$4,980 for camera day.

CERTIFICATION: The Chief Financial Officer certifies that \$55,989 is budgeted and unencumbered in Capital Projects – Fire Admin - Operational.

ATTACHMENTS: Staff Report Hiller Emergency Repairs, Hiller Explanation.

7.12. APPROVE AND AUTHORIZE THE MAYOR TO SIGN THE NON-EXCLUSIVE USE AND OCCUPANCY PERMIT BETWEEN THE CITY OF COLUMBIA AND THE MAURY COUNTY SCHOOL BOARD OF EDUCATION - PARKS & RECREATION DEPARTMENT.

RECOMMENDATION: Approve.

INFORMATION: The Maury County Board of Education is requesting the renewal of their annual Non-Exclusive Use and Occupancy Permit to utilize various City athletic facilities to host some of the local county schools' sporting events such as baseball, soccer, cross-country and tennis. The facilities are Cook Soccer Park, Woodland Park Tennis Courts; Fairview Park and Babe Ruth Baseball Fields; Ridley Park; Eva Gilbert Softball Fields; and Eva Gilbert Football field. Upon approval, each school will be scheduled for usage pending availability in alliance with any of the approved leagues that may also be using the fields/courts. There will be no fee collected for use of the facilities; however, schools are required to provide their own supplies and equipment to drag and mark the ballfields where applicable and any other program supplies to implement the events. All terms of the agreement are exactly the same as last year.

ATTACHMENTS: Staff Report Maury County Board of Education, Signed Maury County Board of Education w-insurance.

7.13. APPROVE BID AWARD TO S&W CONTRACTING COMPANY, LLC FOR MAST ARM REPLACEMENT DOWNTOWN IN THE AMOUNT OF \$1,308,800 - PUBLIC WORKS DEPARTMENT.

RECOMMENDATION: Approve.

INFORMATION: Due to age and wear, signal mast arms are in need of replacement in the downtown Columbia Area. Funds were approved in the FY25 budget for this project. Bids were submitted for downtown signal mast arm replacement at Garden St. & James Campbell Blvd., Garden St. & W 4th St., Garden St. and W 5th St., Garden St. & W 6th St. Garden St & W 7th St., Garden St. & W 8th St., and W 7th St. & High St. S&W Contracting Company was the sole response to the request for a bid with a cost of \$1,308,800. Estimated days to completion will be 90 days from start of project.

CERTIFICATION: The Chief Financial Officer certifies that \$1,308,800 is budgeted and unencumbered in Capital Projects – Streets - Traffic - Roads, Street, And Parking Lots.

ATTACHMENTS: Staff Report S&W Contracting, S&W mast arm ITB 022125.

8 ADMINISTRATION.

8.1. APPROVE THE O'CONNORS VS. CITY OF COLUMBIA SETTLEMENT AGREEMENT

RECOMMENDATION: Approve.

INFORMATION: The settlement agreement calls for the City to accept Chasepoint Place as a public street, replace the culvert and conduct the final paving. The easements necessary for replacement of the culvert and any other maintenance of the road will be provided by the O'Connors.

ATTACHMENTS: Staff Report Settlement Agreement, O'Connors v. City Settlement Agreement.

8.2. RESOLUTION NO. 25-19 - A RESOLUTION TO ACCEPT THE STREETS AND DRAINAGE IMPROVEMENTS IN CHASEPOINTE

PARK SUBDIVISION, SECTION 1, FOR OWNERSHIP AND MAINTENANCE - DEVELOPMENT SERVICES DEPARTMENT.

RECOMMENDATION: Approve Resolution No. 25-19.

INFORMATION: The City of Columbia, as part of a legal settlement agreement, has agreed to accept the streets and drainage improvements in Chasepointe Park Subdivision, Section 1, as well as completion of a culvert replacement and asphalt surface.

ATTACHMENTS: Chasepointe Park Staff Report, Resolution No. 25-19, Chasepointe Park Final Plat.

9 RESOLUTIONS.

9.1. RESOLUTION NO. 25-10 - A RESOLUTION TO AUTHORIZE THE MAYOR TO SIGN AUTOMATIC RESPONSE AID OF FIRE SERVICES WITH MAURY COUNTY TENNESSEE FIRE DEPARTMENT - FIRE & RESCUE.

RECOMMENDATION: Approve Resolution No. 25-10.

INFORMATION: Columbia Fire & Rescue request for the City Council to review the attached Inter-Local agreement for Automatic Response Aid of Fire services between the City of Columbia and Maury County Tennessee Fire Department and authorize the Mayor to execute the attached agreement.

ATTACHMENTS: Staff Report Resolution No. 25-10, Resolution No. 25-10, Interlocal Agreement w/attachments.

9.2. RESOLUTION NO. 25-16 - A RESOLUTION TO ACCEPT THE OWNERSHIP AND MAINTENANCE OF SEWER IMPROVEMENTS SERVING SUMMIT AT CARTERS STATION WEST PHASE 3 - WASTEWATER DEPARTMENT.

RECOMMENDATION: Approve Resolution No. 25-16.

INFORMATION: Summit at Carters Station West Phase 3 consists of 2,660 linear feet of 8" sanitary sewer main. The Developers met all of the qualifications for acceptance. The Wastewater Department has performed the necessary testing and inspections.

ATTACHMENTS: Staff Report Resolution No. 25-16, Resolution No. 25-16, Resolution No. 25-16 Dedication Letter.

9.3. RESOLUTION NO. 25-17 - TAX CORRECTIONS - CITY RECORDER'S OFFICE.

RECOMMENDATION: Approve Resolution No. 25-17.

INFORMATION: The City Recorder is presenting tax corrections through 2/21/2025 for Council consideration as submitted by Mr. Bobby Daniels, Maury County Tax Assessor.

ATTACHMENTS: Staff Report Resolution No. 25-17 , Resolution No. 25-17, Resolution No. 25-17 Exhibit A.

9.4. RESOLUTION NO. 25-18 - A RESOLUTION TO ACCEPT THE OWNERSHIP AND MAINTENANCE OF SEWER IMPROVEMENTS SERVING HONEY FARM CROSSING - WASTEWATER DEPARTMENT.

RECOMMENDATION: Approve Resolution No. 25-18.

INFORMATION: Honey Farm Crossing consists of 515 linear feet of 8" sanitary sewer main. The Developers met all of the qualifications for acceptance. The Wastewater Department has performed the necessary testing and inspections.

ATTACHMENTS: Staff Report Resolution No. 25-18, Resolution No. 25-18, Resolution No. 25-18 Dedication Letter.

9.5. RESOLUTION NO. 25-20 - A RESOLUTION TO AUTHORIZE THE CITY OF COLUMBIA TO APPLY FOR THE STATE OF TENNESSEE "SMALL CITIES" COMMUNITY DEVELOPMENT BLOCK GRANT PROGRAM, ACCEPT THE AWARD AND AUTHORIZE THE MAYOR TO EXECUTE DOCUMENTS RELATED TO ACCEPTING AND ADMINISTERING THE GRANT PROJECT - CITY MANAGER'S OFFICE.

RECOMMENDATION: Approve Resolution No. 25-20.

INFORMATION: The City of Columbia City Manager's Office requests authorization to apply for the Tennessee Department of

Economic and Community Development“Small Cities” Community Development Block Grant (CDBG) Program.

The CDBG grant funds would support improvements to drainage flow in East Columbia at the intersection of East 9th St. and South Main St., reducing extreme flooding of driveways, roads, and culverts and providing residents and businesses access to key public and private services during extreme weather events. The East 9th St. and South Main St. Drainage Project was identified in the City of Columbia Strategic Plan in 2017.

The maximum funded project is not to exceed \$1,265,823, including state and local funds. If the \$1,000,000 maximum amount is awarded by the Tennessee Department of Economic and Comment Development, the agency will require a local match totaling \$265,823 from the City of Columbia.

Applications are due March 28, 2025. The City should receive information on the status of the city’s application by the fall of 2025.

CERTIFICATION: The Chief Financial Officer certifies that \$1,265,823 will be included in a subsequent appropriation amendment with matching funds reserved in General City Admin – Reserves pending the award of funds.

ATTACHMENTS: Staff Report Resolution No. 25-20, Resolution No. 25-20.

9.6. RESOLUTION NO. 25-21– A RESOLUTION TO ACCEPT SPONSORSHIP DONATIONS FOR THE 2025 MIDSTATE CLASSIC SOFTBALL GAMES TO BE HELD AT RIDLEY SPORTS COMPLEX ON MARCH 18, 2025, IN THE AMOUNT OF NINETEEN THOUSAND DOLLARS (\$19,000) – WARD 4 - PARKS & RECREATION DEPARTMENT.

RECOMMENDATION: Approve Resolution No. 25-21.

INFORMATION: The City of Columbia has confirmed donations totaling \$19,000 from Atmos Energy, Line To Line, Columbia Power & Water Systems, Maury Regional, Rotary Breakfast Club, Columbia

Noon Rotary, Redman-Davis Risk Management & Insurance, JR Wauford & Company, Maury County Visitors Bureau, Lose & Design, and Columbia Kubota for the Midstate Classic Softball games to be held on March 18, 2025, at Ridley Sports Complex to help cover the cost of meals and other costs related to the teams/games.

ATTACHMENTS: Staff Report Resolution No. 25-21, Resolution No. 25-21.

10 ORDINANCES.

10.1.2ND CONSIDERATION ON ORDINANCE NO. 4536 - AN ORDINANCE AMENDING ORDINANCE NO. 4400, THE SAME BEING THE ZONING ORDINANCE OF THE CITY OF COLUMBIA, TENNESSEE BY REPEALING ARTICLE 4 AND REPLACING SUCH ARTICLE WITH NEW ARTICLE 4 BUILDING, LOT AND BUILDING SITE STANDARDS - CITYWIDE - DEVELOPMENT SERVICES DEPARTMENT.

RECOMMENDATION: Approve Ordinance 4536 on second consideration.

INFORMATION: The Department of Development Services is requesting to amend the Article 4 of Zoning Ordinance 4400. The proposed amendments include Uses, Limitations and Standards regarding Home Occupations, Vape, Tobacco, & Cannabinoids, and Bars, Taverns & Nightclubs. The Planning Commission recommended approval of this request with a vote of 6-0 at their December 4, 2024 meeting with the conditions from the Planning Commission recommending:

- That within the Columbia Arts District Overlay the applicant shall demonstrate that no pre-existing place of Worship, School, or Public Park be located within 200 ft. (reduced from 500 ft.) of a proposed bar, tavern, or nightclub.
- That the separation requirement for Tobacco, Vape, and Cannabinoid Retailers be increased from 500 feet to 1,000 feet from an already existing establishment from a new proposed Tobacco,

Vape, and Cannabinoid Retailer, and keep the separation of such newly established retailer from schools, parks, and religious facilities remain at 500 feet and not allowed with a CD-5 district as drafted by Staff.

The Planning Commission reviewed this item at the February 12, 2025 meeting as requested by City Council. No new changes were made to the previously reviewed uses. The Planning Commission recommended the removal of the word "Primary" in relation to required Building Materials in the standards for district tables along with the replacement of Table 4.3.7.A, Private Frontage Types. The recommendation passed by a vote of 6-0.

ATTACHMENTS: Staff Report Ordinance No. 4536 , Ordinance No. 4536, Ordinance 4536 Exhibit A, Ordinance No. 4536 Marked Changes "A" Bar, Tarven, Nightclub, Ordinance No. 4536 Marked Changes "B" Home Occupation, Ordinance No. 4536 Marked Changes "D" Vape, Tobacco, Cannabinoid, Ordinance No. 4536 Marked Changes Table "A" Home Occupation, Ordinance No. 4536 Marked Changes Table "C" Vape, Tobacco, Cannabinoid, DS Staff Report removing word Garage, DS Staff Report.

10.2.2ND CONSIDERATION ON ORDINANCE NO. 4537 - AN ORDINANCE AMENDING DEVELOPMENT SERVICES FILING FEE SCHEDULE FOR THE CITY OF COLUMBIA, TENNESSEE - CITYWIDE - DEVELOPMENT SERVICES DEPARTMENT.

RECOMMENDATION: Approve Ordinance 4537 on second consideration.

INFORMATION: The request is to amend the Fee Schedule for Development Services. The proposed amendments necessitate accompanying fees for the permits and processes that staff will be required to review and issue. The fees that were amended and added include a Short-Term Rental Fee of \$300 requiring Board of Zoning Appeals approval; \$150 Short Term Rental Fee requiring Administrative Approval; Small Accessory Permit fee of \$25; Circulation of Approved Final Plat Fee of \$35; and items for Annexation to notice and plan of services and resolutions to consist of an Advertising and Processing Fee of Cost. The Planning

Commission recommended approval of this request with a vote of 6-0 at their December 4, 2024 meeting.

This item was reviewed at the February 12, 2025 Planning Commission meeting with no changes recommended by a vote of six to zero.

ATTACHMENTS: Staff Report Ordinance No. 4537 , Ordinance No. 4537, Ordinance No. 4537 Exhibit A.

10.3.2ND CONSIDERATION ON ORDINANCE NO. 4538 - AN ORDINANCE AMENDING ORDINANCE NO. 4400, THE SAME BEING THE ZONING ORDINANCE OF THE CITY OF COLUMBIA, TENNESSEE REGARDING DEFINITIONS IN ARTICLE 9 BY REPEALING SUCH ARTICLE AND REPLACING IT WITH A NEW ARTICLE 9, DEFINITIONS - DEVELOPMENT SERVICES DEPARTMENT.

RECOMMENDATION: Approve Ordinance No. 4538 on second consideration.

INFORMATION: The Department of Development Services is requesting to amend the Zoning Ordinance of Columbia, Ordinance 4400, with changes concerning Article 9: Definitions, as reviewed and recommended by the Planning Commission at the December 4th, 2024 meeting. The changes and additions to definitions include the following: Minor Home Occupation; Major Home Occupation; Kennel; Tobacco, Vape, and Cannabinoid Retailers.

This item was reviewed at the February 12, 2025 Planning Commission meeting with no changes recommended by a vote of six to zero.

Approval was recommended by a vote of six to zero.

ATTACHMENTS: Staff Report Ordinance No. 4538 , Ordinance No. 4538, Ordinance No. 4538 Exhibit A, Ordinance No. 4538 Marked Changes, DS staff report.

10.4.2ND CONSIDERATION OF ORDINANCE NO. 4540 AS AMENDED – AN ORDINANCE TO AMEND THE FISCAL YEAR 2024-2025 BUDGET ORDINANCE NO. 4503, AS AMENDED, PROVIDING FOR REVISIONS TO THE GENERAL, CAPITAL PROJECTS, GRANTS AND WASTEWATER FUNDS - FINANCE.

RECOMMENDATION: Approve Ordinance No. 4540 as amended on second consideration.

INFORMATION: The proposed ordinance is the third amendment to the FY 2025 Appropriation Ordinance, impacting the Capital Projects, Grants, Wastewater and General Fund Departments.

Within this budget amendment, the following items are included:

- Rebudget/transfer \$4,377,973.21 from General to Capital Projects,
- Budget transfer/expenses for Cap Projects totaling \$4,377,973.21,
- Budget Army Core flood mapping study at \$142,500 and Intersection Study at Country Club/Union totaling \$5,500.
- Budget FY 2024 funds due for JAG grant to closeout totaling \$1,915.22,
- Budget Anonymous Donations totaling \$2,245.95 and \$812.19 and Office of Emergency Management incident funding totaling \$648.43,
- Budget capital projects including \$4.3 million for Muletown Rec acquisition, Public Works Building improvements totaling \$69,723.21 and tourism computer equipment totaling \$8,250,
- Reclassify Tourism Enhancement Grant project funds totaling \$75,000,
- Budget \$865,156.88 for 2024 G.O. Bonds interest related to new debt issued for the new WWTP project.

Included on second consideration, the following items are:

- Budget transfers to capital projects and grants totaling \$830,139 and \$123,175 respectively,
- Budget funds received from sales of seized weapons totaling \$21,152,
- Budget Training Reserves totaling \$400 in Fire,
- Budget Mid-State Classic even budget from ticket sales and

sponsorships totaling \$45,000,

- Budget funds to reline sewer line at Station No. 4 (\$55,989), CO #1 for parking garage renovations (\$2,250), a tanker fire truck (\$468,100) and additional amount needed for mast arm replacements (\$303,800),
- Budget project budget for downtown improvement grant totaling \$300,000,
- Budget \$115,875 for Hazzard Mitigation Grant to replace Radio Tower,
- Budget additional project expenses for Ducker River Pump Station (\$813,000) and Bear Creek Pump Station (\$4,595,300)
- Budget funds for Wastewater portion of ESRI ArcGIS software expense totaling \$19,850.

A detailed schedule of items included within this budget amendment is attached. This amendment increases the City's total budget for FY 2025 by \$17,481,255 to \$223,934,133.

ATTACHMENTS: Staff Report Ordinance No. 4540, Ordinance No. 4540 as amended, Supporting Documents, Budget Summary Grand Totals 2025 AA3.

10.5. 2ND CONSIDERATION ON ORDINANCE 4541 - AN ORDINANCE AMENDING ORDINANCE NO. 4400, THE SAME BEING THE ZONING ORDINANCE OF THE CITY OF COLUMBIA, TENNESSEE BY AMENDING STANDARDS FOR SHORT TERM RENTAL USE WITHIN ARTICLE 4 AND ARTICLE 9 - CITYWIDE, MORE ATTRACTIVE, LIVABLE CITY - DEVELOPMENT SERVICES DEPARTMENT.

RECOMMENDATION: Defer Ordinance 4541 on second consideration.

INFORMATION: The Department of Development Services is requesting to amend the Article 4 of Zoning Ordinance 4400. The proposed amendments include Uses, Limitations and Standards regarding Short Term Rentals. The Planning Commission recommended approval of this request with a vote of 6-0 at their December 4, 2024 meeting with the conditions from the Planning Commission recommending:

City Council took this matter into consideration on January 9, 2025 and referred the item back to Planning Commission for further review and recommendation at the February 12, 2025 meeting.

*Planning Commission reviewed the request on February 12, 2025, and recommended the removal of the limited use standard (PL) of owner occupied in the currently allowed zoning districts for Short Term Rental Use. This allows the use in the CD-4, 4C, 5 and 5C districts. The accessory use table was left as originally recommended to council with the majority of districts allowing the use outright and/or through the conditional use process. This recommendation was approved by a vote of six to zero.

ATTACHMENTS: Staff Report Ordinance No. 4541 , Ordinance No. 4541, DS Staff Report.

11 OTHER BUSINESS.

12 EXECUTIVE SESSION.

13 ADJOURNMENT.

14 UPCOMING EVENTS.

14.1. COLUMBIA FEMALE INSTITUTE HISTORICAL MARKER DEDICATION - 4:30P.M. - THURSDAY, MARCH 13, 2025 - 425 WEST 7TH STREET

14.2. MIDSTATE CLASSIC - 10 A.M. COLUMBIA CENTRAL VS SPRING HILL, 1:30 P.M. CSCC VS CALHOUN COMMUNITY COLLEGE, 5:30 P.M. TN LADY VOLUNTEERS VS EASTERN KENTUCKY UNIVERSITY - TUESDAY, MARCH 18, 2025 - RIDLEY SPORTS COMPLEX



CITY OF COLUMBIA TENNESSEE
CITY COUNCIL
STAFF REPORT

STAFF REPORT CONTACT INFORMATION

Thad H. Jablonski, Assistant City Manager/CFO, tjablonski@columbiatn.gov, (931) 560-1559

AGENDA ITEM TITLE: PUBLIC HEARING ON ORDINANCE NO. 4540 AS AMENDED - AN ORDINANCE TO AMEND THE FISCAL YEAR 2024-2025 BUDGET ORDINANCE NO. 4503, AS AMENDED, PROVIDING FOR REVISIONS TO THE GENERAL, CAPITAL PROJECTS, GRANTS AND WASTEWATER FUNDS

RECOMMENDATION: Conduct the Public Hearing.

INFORMATION: This public hearing is related to Item 10.4 on the agenda. The proposed ordinance is the first amendment of the FY 2025 Appropriation Ordinance and revises the General, Capital Projects, Grants and Wastewater Funds.

Supporting documentation for the amendment is included within the agenda packet and the required Notice of Public Hearing was published in The Daily Herald on February 16, 2025.

This amendment increases the City's total budget for FY 2025 by \$17,481,255 to \$223,934,133.

ATTACHMENTS: Staff Report, Ordinance No. 4540, Supporting Documents, Budget Summary.

ORDINANCE NO. 4540 (AS AMENDED)

AN ORDINANCE TO AMEND THE FISCAL YEAR 2024-2025 BUDGET ORDINANCE
NO. 4503, AS AMENDED, PROVIDING FOR REVISIONS TO THE GENERAL,
CAPITAL PROJECTS, GRANTS AND WASTEWATER FUNDS

BE IT ORDAINED BY THE CITY OF COLUMBIA, TENNESSEE:

Section 1: That Ordinance No. 4503, as amended, the same being the
Appropriation Ordinance for the City of Columbia for the Fiscal Year July 1, 2024 through
June 30, 2025, be amended. That the total budget appropriation for the fiscal year be
increased from \$206,452,877 to \$223,934,133, an increase of \$17,481,255.

Section 2: That the budget appropriations shall be revised as follows:

General Government total of \$19,195,730 be amended to \$24,675,017, an increase of
\$5,479,287.

Police total of \$11,615,750 be amended to \$11,636,902, an increase of \$21,152.

Fire total of \$9,438,913 be amended to \$9,443,019, an increase of \$4,107.

Parks total of \$3,813,358 be amended to \$3,858,358, an increase of \$45,000.

Capital Projects total of \$17,539,827 be amended to \$22,747,940, an increase of
\$5,208,112.

Grants total of \$11,689,053 be amended to \$12,119,343, an increase of \$430,290.

Wastewater total of \$113,831,134 be amended to \$120,124,441, an increase of
\$6,293,307.

ALL OTHER APPROPRIATIONS REMAIN THE SAME.

Section 3: This ordinance is enacted pursuant to and in compliance and conformity
with Article 9, Section 9 of the Charter of the City of Columbia, with Notice of Public Hearing

published on the 16th day of February, 2025, and it shall be executed and construed consistent with said charter and laws of the State of Tennessee.

Section 4: That all ordinances or parts of ordinances in conflict herewith are hereby repealed.

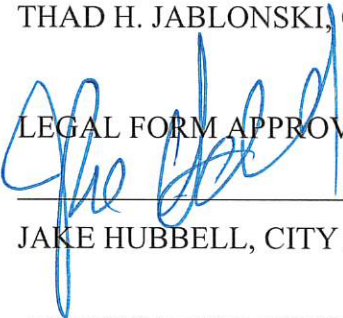
PASSED AND ADOPTED BY THE CITY COUNCIL OF THE CITY OF COLUMBIA, TENNESSEE, THIS THE ____ DAY OF MARCH, 2025.

CHARLES (CHAZ) M. MOLDER, MAYOR

ATTEST:

THAD H. JABLONSKI, CITY RECORDER

LEGAL FORM APPROVED:



JAKE HUBBELL, CITY ATTORNEY

APPROVED FOR FIRST CONSIDERATION:

ANTHONY R. MASSEY, CITY MANAGER

Passed on 1st Consideration: _____

Passed on 2nd Consideration: _____

Summary of Appropriation Amendment #3
2nd Consideration - March 13th (3/13/25)

General Government

Budget Army Core flood mapping study	142,500.00
Intersection Study at Country Club/Union	5,500.00
Budget transfer to Capital Projects	4,377,973.21
Total General Government	\$ 4,525,973.21

Fire

Budget Anonymous Donation	2,245.95
Budget Anonymous Donation	812.19
OEM Incident Number 0202407-3237	648.43
Total Fire	\$ 3,706.57

TOTAL GENERAL FUND \$ 4,529,679.78

Capital Projects

Funds for Muletown Rec acquisition	4,300,000.00
Public Works Building Expansion - Rack Storage	14,223.21
Public Works Building Expansion - Magnetic door lock installation	6,300.00
Public Works Building Expansion - Rental Equipment	12,200.00
Public Works Building Expansion - Automated Gate and fence relocation	7,000.00
Public Works Building Expansion - Spray Foam	30,000.00
Computer for Marketing Dept.	8,250.00
Total Capital Projects	\$ 4,377,973.21

Grants

Reclass \$75,000 to Parks for Blueway design from Tourism	75,000.00
Reclass \$75,000 from Tourism to Parks for Blueway design	(75,000.00)
Budget FY 2024 funds due for JAG grant to closeout	1,915.22
THSO Grant - Training Props Needed for Medical Training	12,500.00
Total Grants	\$ 14,415.22

Wastewater (Sewer) Fund

2024 GO Sewer Bond interest payment	865,156.88
Total Wastewater (Sewer) Fund	\$ 865,156.88

Total Increase - All Funds (First Consideration)	\$ 9,787,225.09
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General Government

Budget transfer to Capital Projects for projects	830,139.00
Budget transfer to Grants for projects	123,175.00
Total General Government	\$ 953,314.00

Police

Budget funds received from sales of seized weapons	21,152.00
Total Police	\$ 21,152.00

Fire

Budget Training Reserves	400.00
Total Fire	400.00

Parks

Establish budget for Mid-State Classic	45,000.00
Total Parks	\$ 45,000.00

TOTAL GENERAL FUND \$ 1,019,866.00

Capital Projects

Reline Sewer Line a Station No. 4	55,989.00
Parking Garage Rehabilitation CO #1	2,250.00
2025 Fire Master Retail Tanker	468,100.00
Budget difference for downtown Mast Arms	303,800.00
Total Capital Projects	\$ 830,139.00

Grants

Hazzard Mitigation Grant - Radio Tower	115,875.00
Budget Downtown Improvement Grant funds	300,000.00
Total Grants	\$ 415,875.00

Wastewater (Sewer) Fund

WW Duck River Pump Station - Contract \$1,713,000	813,000.00
WW Bear Creek Pump Station - Contract \$5,272,800	4,595,300.00
ESRI invoice - WW portion	19,850.00
Total Wastewater (Sewer) Fund	\$ 5,428,150.00

Total Increase - All Funds (Second Consideration)	\$ 7,694,030.00
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Total Increase - All Funds (First and Second Consideration)	\$ 17,481,255.09
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CITY OF COLUMBIA
FY 2025 APPROPRIATION AMENDMENT #3
Second Consideration 3/13/25

1) Budget transfer to capital projects

Increase Revenues

11037110 \$ 4,369,723.21 Prior Year Revenue

Decrease Expenditures

11041950-OC800 \$ 8,250.00 General Govt - Tourism - Reserves

Increase Expenditures

11041900-OC766 \$ 4,377,973.21 General Govt - Transfer to Cap Proj

2) Budget transfer and expenses for Capital Projects

Increase Revenues

31137940 \$ 4,377,973.21 Transfer From General Fund

Increase Expenditures

31144480-OC920 \$ 4,300,000.00 Capital - Columbia Aquatics & Recreation Complex - Buildings
31143110-OC920 \$ 14,223.21 Capital - Public Works - Buildings
31143110-OC920 \$ 6,300.00 Capital - Public Works - Buildings
31143110-OC920 \$ 12,200.00 Capital - Public Works - Buildings
31143110-OC920 \$ 7,000.00 Capital - Public Works - Buildings
31143110-OC920 \$ 30,000.00 Capital - Public Works - Buildings
31141950-OC948 \$ 8,250.00 Capital - Tourism - Computers
 \$ 4,377,973.21 Total

3) Budget funds for General Government

Increase Revenues

11037110 \$ 148,000.00 Prior Year Revenue

Increase Expenditures

11041900-OC290 \$ 142,500.00 General Government - Misc. - Other Services
11041900-OC250 \$ 5,500.00 General Government - Misc. - Professional Services

4) Budget funds for FY 2024 JAG Grant expenses

Increase Revenues

322-33203 \$ 1,915.22 2021 JAG Grant

Increase Expenditures

32242140-OC320	\$	1,915.22	Grant - 2021 JAG Grant - Operating Supplies
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5) Budget fire donations and OEM funds recovered**Increase Revenues**

11036720	\$	3,058.14	Donations
11034225	\$	648.43	Fire & EMA Services Char
	\$	3,706.57	Total

Increase Expenditures

11042220-OC321	\$	2,245.95	Fire - Suppression - Controlled Asset
11042220-OC320	\$	812.19	Fire - Suppression -Operating
11042260-OC800	\$	648.43	Fire - Emergency Management - Reserves
	\$	3,706.57	Total

6) Budget THSO Grant project expenditures**Increase Revenues**

322-33208	\$	12,500.00	Highway Safety Grant
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Increase Expenditures

32242147-OC320	\$	12,500.00	Grant - Police - Highway Safety - Operating Supplies
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7) Reclassify expenditures related to Blueway grant project**Decrease Expenditures**

32241950-OC937	\$	75,000.00	Grants - Tourism - Tourism Enhancement Grant
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Increase Expenditures

32244410-OC920	\$	75,000.00	Grants - Parks - Tourism Enhancement Grant
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8) Budget Wastewater 2024 Bond interest payment**Increase Revenues**

41237110	\$	865,156.88	Prior Year Revenue
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Increase Expenditures

41252227-OC631	\$	865,156.88	Wastewater - 2024 GO Bonds Interest
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9) Establish budget for Mid-State Classic**Increase Revenues**

110-37110	\$	24,000.00	Prior Year Revenue (PY sponsorships)
110-34752		21,000.00	Mid State Classic-Ticket Sales
	\$	45,000.00	Total

Increase Expenditures

110-44490-OC290	\$	18,000.00	Mid State Classic-Other Services & Charges
110-44490-OC320		20,000.00	Mid State Classic-Operating Supplies
110-44490-OC530		7,000.00	Mid State Classic-Rentals
	\$	45,000.00	Total

10) Budget Downtown Improvement Grant**Increase Revenues**

322-33456	\$	200,000.00	Downtown Improvement Grant
322-37640		100,000.00	Transfer from General
	\$	300,000.00	Total

Increase Expenditures

322-41960-OC912	\$	300,000.00	Grants-MainStreet - Site Development
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11) Budget transfer to capital projects**Increase Revenues**

11037110	\$	830,139.00	Prior Year Revenue
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Increase Expenditures

11041900-OC766	\$	830,139.00	General Govt - Transfer to Cap Proj
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12) Budget funds for Seized Weapons**Increase Revenues**

110-36301	\$	21,152.00	Sale of Seized Weapons
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Increase Expenditures

110-42141-OC320	\$	21,152.00	Police - Seized Weapons - Operating Supplies
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13) Budget funds for training reserves**Increase Revenues**

110-34226	\$	400.00	Sale of Seized Weapons
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Increase Expenditures

11042240-OC800	\$	400.00	Fire - Training - Reserves
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14) Budget transfer and expenses for Capital Projects

Increase Revenues

31137940	\$	830,139.00	Transfer From General Fund
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Increase Expenditures

31142210-OC920	\$	55,989.00	Capital -Fire Admin - Building
311-41850-OC936	\$	2,250.00	Capital -Gen Govt - Parking
31142220-OC941	\$	468,100.00	Capital -Fire - Vehicles
311-43160-OC931	\$	303,800.00	Capital - Streets - Traffic - Roads, Street, And Parking Lots
	\$	830,139.00	Total

15) Budget transfer to Grants Fund

Increase Revenues

11037110	\$	123,175.00	Prior Year Revenue
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Increase Expenditures

11041900-OC768	\$	123,175.00	General Govt - Transfer to Grants
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16) Budget ESRI invoice - WW portion

Increase Revenues

41237110	\$	19,850.00	Prior Year Revenue
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Increase Expenditures

41252213-OC255	\$	19,850.00	Wastewater - Treatment Plant - Software
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17) Budget Hazzard Mitigation Grant

Increase Revenues

322-33457	\$	92,700.00	Hazzard Mitigation Grant
322-37640		23,175.00	Transfer from General
	\$	115,875.00	Total

Increase Expenditures

322-42220-OC945	\$	115,875.00	Grants-Fire Suppression- Communications
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18) Budget remaining project expenses for pump station projects

For Duck River and Bear Creek Pump Station construction

Increase Revenues

41237110	\$	1,816,474.00	Prior Year Revenue
41233152	\$	3,591,826.00	State Water Infrastructure Grant ARPA
	\$	5,408,300.00	Total

Increase Expenditures

41252212-OC931	\$	813,000.00	Wastewater - Pump Stations - Duck River
41252212-OC932	\$	4,595,300.00	Wastewater - Pump Stations - Bear Creek
	\$	5,408,300.00	Total

FY 2025 Budget Summary - AA#3

3/13/2025						
		SERVICES &		CAPITAL	DEBT	AA#3
Departments	PERSONNEL	SUPPLIES	TRANSFERS	OUTLAY	SERVICE	FY 2025
City Council	\$99,124	\$376,900	\$0	\$0	\$0	\$476,024
Legal Services	\$63,863	\$217,100	\$0	\$0	\$0	\$280,963
Management Info Systems	\$391,664	\$395,455	\$0	\$0	\$0	\$787,119
City Manager	\$540,785	\$301,888	\$0	\$0	\$0	\$842,673
Finance & City Recorder	\$1,139,889	\$60,398	\$0	\$0	\$0	\$1,200,287
Human Resources	\$302,056	\$33,988	\$0	\$0	\$0	\$336,044
General City Admin	\$1,646,479	\$6,365,785	\$16,662,752	\$0	\$0	\$24,675,017
Police	\$9,875,522	\$1,761,380	\$0	\$0	\$0	\$11,636,902
Fire	\$8,657,295	\$785,725	\$0	\$0	\$0	\$9,443,019
Streets & Maintenance	\$3,464,871	\$755,973	\$0	\$0	\$0	\$4,220,844
Development Services	\$2,239,950	\$427,020	\$0	\$0	\$0	\$2,666,970
Parks & Recreation	\$2,893,120	\$965,238	\$0	\$0	\$0	\$3,858,358
Total General Fund	\$31,314,618	\$12,446,850	\$16,662,752	\$0	\$0	\$60,424,220
State Street Aid Fund	\$0	\$2,107,885	\$0	\$209,271	\$0	\$2,317,156
N&V Chief's Fund	\$0	\$140,000	\$0	\$0	\$0	\$140,000
Street & Transportation Fund	\$0	\$80,000	\$0	\$0	\$0	\$80,000
Drug Fund	\$0	\$81,053	\$40,000	\$58,305	\$0	\$179,358
Solid Waste (Sanitation) Fund	\$1,925,173	\$2,383,346	\$76,063	\$0	\$0	\$4,384,582
Debt Service Fund	\$0	\$0	\$0	\$0	\$1,417,094	\$1,417,094
Capital Projects Fund	\$0	\$500,000	\$895,063	\$21,352,877	\$0	\$22,747,940
Grants Fund	\$533,736	\$1,269,531	\$0	\$10,316,076	\$0	\$12,119,343
Wastewater (Sewer) Fund	\$4,156,208	\$6,012,011	\$0	\$104,930,706	\$5,025,516	\$120,124,441
Grand Total	\$37,929,735	\$25,020,676	\$17,673,878	\$136,867,235	\$6,442,610	\$223,934,133

February 13, 2025 - 5:30 PM

PUBLIC HEARINGS

Item 1. - PUBLIC HEARING ON ORDINANCE 4541 - AN ORDINANCE AMENDING ORDINANCE NO. 4400, THE SAME BEING THE ZONING ORDINANCE OF THE CITY OF COLUMBIA, TENNESSEE BY AMENDING STANDARDS FOR SHORT TERM RENTAL USE WITHIN ARTICLE 4 AND ARTICLE 9 - CITYWIDE, MORE ATTRACTIVE, LIVABLE CITY

Mayor Chaz Molder called the Public Hearing to order, pursuant to proper notice having been given. Present were Council Member Charlie Huffman, Council Member Cheryl Secrest, Council Member Kenny Marshall, Vice Mayor Randy McBroom, Mayor Chaz Molder, City Manager Tony Massey, City Attorney Jake Hubbell, City Recorder Thad Jablonski and Recording Secretary Liz Bermudez. Council Member DaVena Hardison was absent.

Bruce Peden, Bobby Richardson, Chris Roberts, Dylan Kerr, Eric Previti, George Vrailas, John Curtly, David Gebhardt, Suzanne Roberts, Brenda Curtly and Sue Stephenson all share their comments regarding short-term rentals.

There being no one else to speak on the Public Hearing for Ordinance No. 4541, Council Member Marshall moved to close the Public Hearing. Council Member Huffman seconded the motion.

All Council Members present voted aye.

REGULAR MEETING

CALL TO ORDER/ROLL CALL

Mayor Chaz Molder called the meeting to order, pursuant to proper public notice having been given. Present were Council Member Charlie Huffman, Council Member Cheryl Secrest, Council Member Kenny Marshall, Vice Mayor Randy McBroom, Mayor Chaz Molder, City Manager Tony Massey, City Attorney Jake Hubbell, City Recorder Thad Jablonski and Recording Secretary Liz Bermudez. Council Member DaVena Hardison was absent.

INVOCATION BY T. LUSK FROM ROLLING HILLS CHURCH

PLEDGE OF ALLEGIANCE

Council Member Kenny Marshall offered the Invocation.

APPROVAL OF AGENDA

Mayor Molder moved to approve the agenda. Council Member Marshall seconded the motion.

All Council Members present voted aye.

PRESENTATIONS

CITY COUNCIL REGULAR MEETING - COLUMBIA, TENNESSEE

February 13, 2025 - 5:30 PM

Item 5.1. - PRESENTATIONS OF THE CITY OF COLUMBIA CITIZEN'S AWARD

Due to a scheduling conflict this item will be moved to the March agenda.

Item 5.2. - QUARTERLY PRESENTATION BY WIL EVANS, PRESIDENT OF MAURY COUNTY CHAMBER AND ECONOMIC ALLIANCE

Mr. Evans gave a brief update on what is happening in and around the City. Mayor Molder thanked Wil for his presentation and shared his appreciation that their vision aligns with the shareholders and their vision evolves with the times.

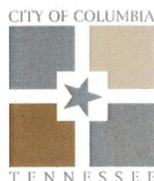
ORGANIZATIONAL BUSINESS

CITY COUNCIL REGULAR MEETING - COLUMBIA, TENNESSEE

February 13, 2025 - 5:30 PM

Item 6.1. - ADMINISTRATION OF OATH OF OFFICE TO BRIAN MCKELVY FOR THE POSITION OF WARD 5 CITY COUNCIL MEMBER

Judge Chris Sockwell administered the following oath to Brian McKelvy:

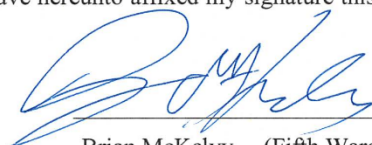


STATE OF TENNESSEE

COUNTY OF MAURY

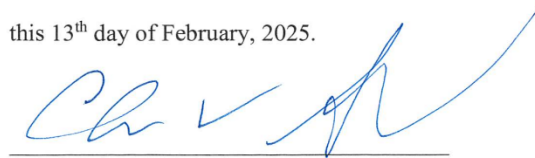
I, Brian McKelvy, duly elected member of the City Council for the Fifth Ward for the City of Columbia, Maury County, Tennessee, for the term commencing February 13, 2025, do solemnly swear that I have all of the qualifications named in the Charter for the office I am about to assume, and that I will support the Constitution of the United States and of the State of Tennessee, and the Charter and Ordinances of the City of Columbia, Maury County, Tennessee, and that I will faithfully discharge the duties of said office and that I shall faithfully demean myself as such officer, so help me God.

In witness whereof, I have hereunto affixed my signature this the 13th day of February, 2025.


Brian McKelvy (Fifth Ward)

Sworn to and subscribed before me

this 13th day of February, 2025.


Judge Chris Sockwell

Council Member McKelvy thanked everyone for attending the meeting. He said it is an honor to serve and looks forward to serving Ward 5 and the City of Columbia.

CITY COUNCIL REGULAR MEETING - COLUMBIA, TENNESSEE

February 13, 2025 - 5:30 PM

Item 6.2. - APPROVE THE MINUTES OF THE JANUARY 7, 2025 SPECIAL CALLED CITY COUNCIL MEETING

Council Member McKelvy joined Council at the dais and would be able to vote on the rest of the items on the agenda.

Council Member Marshall moved to approve the January 7, 2025 Special Called City Council Minutes. Vice Mayor McBroom seconded the motion.

All Council Members present voted aye.

Item 6.3. - APPROVE THE MINUTES OF THE JANUARY 9, 2025, CITY COUNCIL MEETING

Council Member Marshall moved to approve the January 9, 2025 City Council Minutes. Council Member Huffman seconded the motion.

All Council Members present voted aye.

Item 6.4. - APPOINTMENT OF A CITY PROSECUTOR

Mayor Molder moved to approve Wesley Mack Bryant as the City Prosecutor. Vice Mayor McBroom seconded the motion.

All Council Members present voted aye.

Item 6.5. - APPROVE THE MAYOR'S APPOINTMENT OF VICE MAYOR RANDY MCBROOM TO THE CITY OF COLUMBIA MUNICIPAL PLANNING COMMISSION TO FILL AN UNEXPIRED TERM ENDING ON DECEMBER 31, 2026.

Mayor Molder moved to approve the appointment of Vice Mayor McBroom to the Columbia Municipal Planning Commission to fill an unexpired term ending on December 31, 2026. Council Member McKelvy seconded the motion.

All Council Members present voted aye.

Item 6.6. - APPROVE THE APPOINTMENT OF WARREN FELD TO THE CITY OF COLUMBIA ARTS COUNCIL FOR A THREE-YEAR TERM BEGINNING ON FEBRUARY 13, 2025 AND EXPIRING ON FEBRUARY 13, 2028

Council Member Marshall moved to approve the appointment of Warren Feld to the Columbia Arts Council for a three-year term beginning on February 13, 2025 and expiring on February 13, 2028. Council Member McKelvy seconded the motion.

All Council Members present voted aye.

Item 6.7. - RE-ELECTION OF BOB MORGAN TO THE BOARD OF DIRECTORS OF THE INDUSTRIAL DEVELOPMENT BOARD AND THE HEALTH, EDUCATIONAL AND HOUSING FACILITY BOARD FOR A SIX-YEAR TERM THAT BEGAN ON NOVEMBER 14, 2023 AND EXPIRES ON NOVEMBER 14, 2029

Council Member Marshall moved to approve the re-election of Bob Morgan to the Board of Directors of the Industrial Development Board and the Health, Educational and

CITY COUNCIL REGULAR MEETING - COLUMBIA, TENNESSEE

February 13, 2025 - 5:30 PM

Housing Facility Board for a six-year term that began on November 14, 2023 and expires on November 14, 2029. Vice Mayor McBroom seconded the motion.

All Council Members present voted aye.

Item 6.8. - RE-ELECTION OF BILL MARBET TO THE BOARD OF DIRECTORS OF THE INDUSTRIAL DEVELOPMENT BOARD AND THE HEALTH, EDUCATIONAL AND HOUSING FACILITY BOARD FOR A SIX-YEAR TERM THAT BEGAN ON NOVEMBER 14, 2023 AND EXPIRES ON NOVEMBER 14, 2029

Council Member McKelvy moved to approve the re-election of Bill Marbet to the Board of Directors of the Industrial Development Board and the Health, Educational and housing Facility Board for a six-year term that began on November 14, 2023 and expires on November 14, 2029. Council Member Marshall seconded the motion.

All Council Members present voted aye.

CONSENT AGENDA

Council Member Marshall moved to approve the consent agenda. Vice Mayor McBroom seconded the motion. Council Member Huffman advised he has questions about Item 7.3. Mayor advised Item 7.3 would be removed from the Consent Agenda.

All Council Members present voted aye and the following items were approved:

Item 7.1. - APPROVE AND AUTHORIZE THE EXECUTION OF AN INTERGOVERNMENTAL COOPERATIVE PURCHASING AGREEMENT WITH BUY BOARD

Item 7.2. - APPROVE AND AUTHORIZE THE MAYOR TO SIGN A CONTRACT BETWEEN LOCALITY MEDIA, INC. DBA FIRST DUE AND THE CITY OF COLUMBIA TO PROVIDE SOFTWARE SERVICES IN THE AMOUNT OF \$58,371.50 FOR THE FIRST YEAR

Item 7.3. - APPROVE THE PURCHASE OF A 2025 FIRE MASTER RETAIL TANKER FROM SAFE INDUSTRIES IN THE AMOUNT OF \$468,100 UTILIZING BUY BOARD NATIONAL PURCHASING COOPERATIVE INTERLOCAL PARTICIPATION PROGRAM

Council Member Huffman asked about the funding for this item. City Manager Massey advised the purchase is coming out of the General Fund Reserve.

Mayor Molder moved to approve Item 7.3 - Approve the purchase of a 2025 Fire Master Retail Tanker from Safe Industries in the amount of \$468,100 utilizing Buy Board National Purchasing Cooperative Interlocal Participation Program. Council Member McKelvy seconded the motion.

All Council Members present voted aye.

Item 7.4. - APPROVE DISBURSEMENTS FOR THE MONTH OF DECEMBER 2024 IN THE AMOUNT OF \$10,106,304.07

February 13, 2025 - 5:30 PM

Item 7.5. - APPROVE AND AUTHORIZE THE DISPOSAL OF SURPLUS EQUIPMENT

Item 7.6. - APPROVE PAYMENT TO MAURY COUNTY TO PROVIDE FUNDING FOR THE MAURY COUNTY/CITY OF COLUMBIA ANIMAL SERVICES FACILITY FOR THE FIRST QUARTER OF FY 2025 \$55,000

Item 7.7. - APPROVE THE ANNUAL RENEWAL OF LIABILITY AND AUTO INSURANCE WITH PUBLIC ENTITY PARTNERS IN THE AMOUNT OF \$483,758

Item 7.8. - APPROVE AND AUTHORIZE THE MAYOR TO SIGN A CONTRACT BETWEEN THE CITY OF COLUMBIA AND THE WANDER DIARY IN THE AMOUNT OF \$4,000 FOR A SOCIAL MEDIA INFLUENCER SPRING MARKETING CAMPAIGN

Item 7.9. - APPROVE AND AUTHORIZE THE MAYOR TO SIGN AN AGREEMENT WITH SIMPLEVIEW IN THE AMOUNT OF \$1,200 ANNUALLY FOR THE XML DATA FEEDS THAT DISPLAY EVENTS & LISTINGS ON THE NEW, DIGITAL TOUCH SCREEN INFORMATION KIOSK IN THE WELCOME CENTER

Item 7.10. - APPROVE AND AUTHORIZE MAYOR TO SIGN RENEWAL OF A "LICENSE AGREEMENT" WITH THE TENNESSEE DEPARTMENT OF TRANSPORTATION (TDOT) FOR A ROADSCAPES PROJECT LOCATED AT THE MEDIAN OF HIGHWAY 31 NEAR INTERSECTION OF DONALD F. EPHLIN PKWY

Item 7.11. - APPROVE AND AUTHORIZE THE MAYOR TO SIGN THE NON-EXCLUSIVE USE AND OCCUPANCY PERMIT BETWEEN THE CITY OF COLUMBIA AND THE COLUMBIA AMERICAN LITTLE LEAGUE FOR THE 2025 SEASON - WARD 3 AND 4

Item 7.12. - APPROVE AND AUTHORIZE THE MAYOR TO SIGN THE NON-EXCLUSIVE USE AND OCCUPANCY PERMIT BETWEEN THE CITY OF COLUMBIA AND THE MULETOWN BASEBALL LEAGUE FOR THE 2025 SEASON - WARD 3

Item 7.13. - APPROVE AND AUTHORIZE THE MAYOR TO SIGN THE NON-EXCLUSIVE USE AND OCCUPANCY PERMIT BETWEEN THE CITY OF COLUMBIA AND THE COLUMBIA SOCCER ASSOCIATION FOR THE 2025 SEASON - WARDS 1 AND 4

Item 7.14. - APPROVE AND AUTHORIZE THE MAYOR TO SIGN THE NON-EXCLUSIVE USE AND OCCUPANCY PERMIT BETWEEN THE CITY OF COLUMBIA AND THE EXCEL AQUATICS FOR THE 2025 SEASON - WARD 4

CITY COUNCIL REGULAR MEETING - COLUMBIA, TENNESSEE

February 13, 2025 - 5:30 PM

Item 7.15. - APPROVE AND AUTHORIZE THE MAYOR TO SIGN THE NON-EXCLUSIVE USE AND OCCUPANCY PERMIT BETWEEN THE CITY OF COLUMBIA AND THE COLUMBIA GIRLS FASTPITCH ASSOCIATION FOR THE 2025 SEASON - WARD 4

Item 7.16. - APPROVE AND AUTHORIZE THE MAYOR TO SIGN A CONTRACT IN THE AMOUNT OF \$18,616 WITH PREVENTIA SECURITY SOLUTIONS PROVIDER FOR INSTALLATION OF CAMERAS AND OTHER SECURITY MEASURES ALONG WITH MONTHLY MONITORING OF THE MACEDONIA RECREATION CENTER, THE ARMORY RECREATION CENTER, THE DR. CHRISTA S. MARTIN COMMUNITY CENTER AND THE COLUMBIA AQUATICS AND RECREATION CENTER

Item 7.17. - APPROVE THE PURCHASE OF ELECTRONIC SECURITY SYSTEMS INSTALLATION FOR THE COLUMBIA AQUATICS AND RECREATION CENTER IN THE AMOUNT OF \$70,450 UTILIZING STATE OF TN CONTRACT SWC-172

Item 7.18. - APPROVE AND AUTHORIZE THE MAYOR TO SIGN THE CONTRACT BETWEEN THE CITY OF COLUMBIA AND CUMBERLAND VALLEY CONSTRUCTORS, INC. IN THE AMOUNT OF \$1,713,000 FOR THE CONSTRUCTION OF THE DUCK RIVER SEWAGE PUMP STATION REPLACEMENT

Item 7.19. - APPROVE BID AWARD TO CUMBERLAND VALLEY CONSTRUCTORS, INC. IN THE AMOUNT OF \$5,272,800 FOR CONSTRUCTION OF THE BEAR CREEK PIKE SEWAGE PUMP STATION REPLACEMENT

ADMINISTRATION

RESOLUTIONS

Item 9.1. - RESOLUTION NO. 25-09 - A RESOLUTION TO ACCEPT THE OWNERSHIP AND MAINTENANCE OF SEWER IMPROVEMENTS SERVING HONEY FARMS PHASE 3

Council Member Marshall moved to approve Resolution No. 25-09. Council Member McKelvy seconded the motion.

All Council Members present voted aye.

Item 9.2. - RESOLUTION NO. 25-11 - A RESOLUTION TO ACCEPT THE OWNERSHIP AND MAINTENANCE OF SEWER IMPROVEMENTS SERVING MCCLURE FARMS PHASE 1A

Council Member Marshall moved to approve Resolution No. 25-11. Council Member Huffman seconded the motion.

All Council Members present voted aye.

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Item 9.3. - **RESOLUTION NO. 25-12 - TAX CORRECTIONS**

Council Member Marshall moved to approve Resolution No. 25-12. Council Member Huffman seconded the motion.

All Council Members present voted aye.

Item 9.4. - **RESOLUTION NO. 25-13 - A RESOLUTION TO ACCEPT THE OWNERSHIP AND MAINTENANCE OF SEWER IMPROVEMENTS SERVING HAMPSHIRE HILLS**

Council Member Marshall moved to approve Resolution No. 25-13. Council Member Huffman seconded the motion.

All Council Members present voted aye.

Item 9.5. - **RESOLUTION NO. 25-14 - A RESOLUTION AUTHORIZING THE MAYOR TO SIGN A MEMORANDUM OF UNDERSTANDING WITH MAURY COUNTY 911 REGARDING THE RESPONSIBILITY OF ASSIGNING ALL ADDRESSES WITHIN THE CITY LIMITS OF COLUMBIA - CITY WIDE, FINANCIALLY RESPONSIBLE CITY PROVIDING EXCELLENT SERVICES**

Council Member Huffman moved to approve Resolution No. 25-14. Council Member Marshall seconded the motion.

All Council Members present voted aye.

Item 9.6. - **RESOLUTION NO. 25-15 - A RESOLUTION ACCEPTING OWNERSHIP AND MAINTENANCE OF THE TRAFFIC SIGNAL AS WELL AS ROADWAY IMPROVEMENTS AT NASHVILLE HIGHWAY AND GREENS MILL ROAD IN THE CITY OF COLUMBIA.**

Council Member Marshall moved to approve Resolution No. 25-15. Council Member Secrest seconded the motion.

All Council Members present voted aye.

ORDINANCES

Item 10.1. - **2ND CONSIDERATION OF ORDINANCE NO. 4539 AS AMENDED - AN ORDINANCE TO AMEND ORDINANCE NO. 4504 - THE CLASSIFICATION AND COMPENSATION PLAN FOR THE EMPLOYEES OF THE CITY OF COLUMBIA FOR THE 2024-2025 FISCAL YEAR**

Council Member Marshall moved to approve Ordinance No. 4539 as amended on second consideration. Council Member Huffman seconded the motion.

All Council Members present voted aye.

Item 10.2. - **1ST CONSIDERATION ON ORDINANCE NO. 4536 - AN ORDINANCE AMENDING ORDINANCE NO. 4400, THE SAME BEING THE ZONING ORDINANCE OF THE CITY OF COLUMBIA, TENNESSEE BY REPEALING ARTICLE 4 AND**

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REPLACING SUCH ARTICLE WITH NEW ARTICLE 4 BUILDING, LOT AND BUILDING SITE STANDARDS - CITYWIDE

Development Services Director Keltner explained the main parts of this Ordinance.

Council Member Marshall moved to approve Ordinance No. 4536 on first consideration. Council Member Huffman seconded the motion.

All Council Members present voted aye.

Item 10.3. - 1ST CONSIDERATION ON ORDINANCE NO. 4537 - AN ORDINANCE AMENDING DEVELOPMENT SERVICES FILING FEE SCHEDULE FOR THE CITY OF COLUMBIA, TENNESSEE - CITYWIDE

Council Member Marshall moved to approve Ordinance No. 4537 on first consideration. Council Member Huffman seconded the motion.

All Council Members present voted aye.

Item 10.4. - 1ST CONSIDERATION ON ORDINANCE NO. 4538 - AN ORDINANCE AMENDING ORDINANCE NO. 4400, THE SAME BEING THE ZONING ORDINANCE OF THE CITY OF COLUMBIA, TENNESSEE REGARDING DEFINITIONS IN ARTICLE 9 BY REPEALING SUCH ARTICLE AND REPLACING IT WITH A NEW ARTICLE 9, DEFINITIONS

Council Member Marshall moved to approve Ordinance No. 4538 on first consideration. Council Member Huffman seconded the motion.

All Council Members present voted aye.

Item 10.5. - 1ST CONSIDERATION OF ORDINANCE NO. 4540 – AN ORDINANCE TO AMEND THE FISCAL YEAR 2024-2025 BUDGET ORDINANCE NO. 4503, AS AMENDED, PROVIDING FOR REVISIONS TO THE GENERAL, CAPITAL PROJECTS, GRANTS AND WASTEWATER FUNDS AND THE DATE OF MARCH 13, 2025 AS THE DATE OF PUBLIC HEARING

Council Member McKelvy moved to approve Ordinance No. 4540 on first consideration. Council Member Marshall seconded the motion.

All Council Members present voted aye.

Item 10.6. - 1ST CONSIDERATION ON ORDINANCE 4541 -AN ORDINANCE AMENDING ORDINANCE NO. 4400, THE SAME BEING THE ZONING ORDINANCE OF THE CITY OF COLUMBIA, TENNESSEE BY AMENDING STANDARDS FOR SHORT TERM RENTAL USE WITHIN ARTICLE 4 AND ARTICLE 9 - CITYWIDE, MORE ATTRACTIVE, LIVABLE CITY

Sue Stephenson and David Gebhardt again shared their thoughts on short term rentals.

After a lengthy discussion, Mayor Molder moved to approve this item as presented by Planning Commission last night, which would allow short term rentals in the mixed use districts that include CD4, 4C, 5 and 5C. Council Member Huffman seconded the

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motion. More discussion ensued. Council Member Secrest left the meeting at 7:12 p.m. and returned at 7:14 p.m.

All Council Members present voted aye.

OTHER BUSINESS

Vice Mayor McBroom thanked Parks Director Mack Reagan for answering all the questions about the Columbia Aquatics & Recreation Center.

Mayor Molder advised there has been lots of positive comments about the Columbia Aquatics & Recreation Center, including friendly atmosphere and a clean center.

EXECUTIVE SESSION

ADJOURNMENT

There being no further business, Vice Mayor McBroom moved to adjourn the meeting. Council Member Marshall seconded the motion. All members present voted aye. The meeting adjourned at 07:17 PM.

UPCOMING EVENTS



CITY OF COLUMBIA TENNESSEE
CITY COUNCIL
STAFF REPORT

STAFF REPORT CONTACT INFORMATION

Tara Ferry, Benefits Administrator, tferry@columbiatn.gov, (931) 560-1572

AGENDA ITEM TITLE: APPROVE THE RETIREMENT BENEFITS FOR DERRICK CATHEY, FOREMAN - SEWER REHABILITATION, WASTEWATER DEPARTMENT.

RECOMMENDATION: Approve.

INFORMATION: Derrick Cathey has been an employee of the City of Columbia for 27 years. His effective retirement date is March 21, 2025 with pension payments to begin on April 1, 2025.

CERTIFICATION:

ATTACHMENTS: None

CITY OF COLUMBIA
DISBURSEMENTS FOR MONTH ENDING JANUARY 31, 2025

FUND	GROSS	TRANSFERS & CD's	PAYROLL TRANSFERS	NET TOTAL
General Fund	2,684,015.53	198,876.43	1,748,250.89	736,888.21
Sanitation Fund	310,809.58	11,080.65	100,246.33	199,482.60
Wastewater Fund	1,793,967.19	28,706.20	238,659.75	1,526,601.24
Street & Transportation Fund	-	-	-	-
State Street Aid	13,491.35	-	-	13,491.35
Drug Fund	400.70	-	-	400.70
Debt Service Fund	400.00	-	-	400.00
Capital Projects Fund	761,426.47	212,176.09		549,250.38
Sewer Revenue & Tax Bond Issue	-	-	-	-
Sewer Impact Fee #2	-	-	-	-
Insurance Fund	296,185.12	128,591.15	-	167,593.97
2017 GO Public Imp Bonds	-	-	-	-
2010 GO Bond Issue	-	-	-	-
Cleary Construction Escrow	-	-	-	-
Industrial Development Board	48,899.01	-	-	48,899.01
Grant Fund	-	-	-	-
	\$ 5,909,594.95	\$ 579,430.52	\$ 2,087,156.97	\$ 3,243,007.46

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201845	1/9/2025	ALEXANDRA BOOZE	3,730.00
201846	1/9/2025	AT&T	1,193.83
201847	1/9/2025	AT&T	75.25
201848	1/9/2025	AT&T	149.85
201849	1/9/2025	Atmos Energy	1,910.98
201850	1/9/2025	Advance Paving	6,700.00
201851	1/9/2025	NEW BRAND LINEN SERVICES	1,660.83
201852	1/9/2025	Break Time Services	436.50
201853	1/9/2025	Brookmeade Hardware & Supply	263.04
201854	1/9/2025	CASEGUARD STUDIO	3,948.00
201855	1/9/2025	Certified Languages International	320.45
201856	1/9/2025	CHARTER COMMUNICATIONS	1,099.00
201857	1/9/2025	Chrysler Dodge Jeep Ram of Columbia	37,424.00
201858	1/9/2025	Cintas Corporation #241	2,115.29
201859	1/9/2025	Clinton Blankenship	109.74
201860	1/9/2025	CMS Uniforms & Equipment	1,098.07
201861	1/9/2025	Colonial Life	7,230.98
201862	1/9/2025	Columbia Firefighter Assn	485.00
201863	1/9/2025	Columbia Oil Company Inc	23,864.11
201864	1/9/2025	COLUMBIA POWER & WATER SYSTEMS	98,471.38
201865	1/9/2025	COLUMBIA POWER & WATER SYSTEMS	75.63
201866	1/9/2025	CPWS - Broadband	300.00
201867	1/9/2025	Duck River Electric	3,473.40
201868	1/9/2025	Nathan Keeton	92.00
201869	1/9/2025	Environmental Systems Research Institute, Inc	39,700.00
201870	1/9/2025	FAO, USAED, H3	142,500.00
201871	1/9/2025	Firstnet Services Provided By AT&T Mobility	2,201.25
201872	1/9/2025	Freedom Hill Land Management	4,948.15
201873	1/9/2025	Daily Herald (Ads)	2,550.87
201874	1/9/2025	GREENE MILITARY	1,183.20
201875	1/9/2025	Impressions	402.62
201876	1/9/2025	J R Wauford & Co Cons Eng, Inc	38,540.00
201877	1/9/2025	LAMAR COMPANIES	2,250.00
201878	1/9/2025	LanLink Communications, LLC	1,502.15
201879	1/9/2025	Marshall County Solid Waste and Recycling	2,054.00
201880	1/9/2025	Maury Co United Way	662.00
201881	1/9/2025	Maury County 911	21,549.00
201882	1/9/2025	Mary Shaffer	75.00
201883	1/9/2025	Mutual Of Omaha	16,304.58
201884	1/9/2025	NAFECO Inc	5,770.00
201885	1/9/2025	Neel-Schaffer	2,364.50
201886	1/9/2025	North Central Laboratories-NCL of Wisconsin, Inc	475.49
201887	1/9/2025	OnCell Systems, Inc	2,295.00

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201888	1/9/2025	Parman Energy Group LLC	440.00
201889	1/9/2025	Phillips Distributing	1,725.00
201890	1/9/2025	Preventia Security	720.00
201891	1/9/2025	PROCARE PBM	62,105.59
201892	1/9/2025	CAROL BROWN	404.00
201893	1/9/2025	Patrick J Deluca	37.75
201894	1/9/2025	ROBERT J VERSTREET	401.00
201895	1/9/2025	RYAN TURLEY	422.00
201896	1/9/2025	Robert J Young Company LLC	79.54
201897	1/9/2025	Safe Industries	167.00
201898	1/9/2025	SESAC, INC.	1,217.00
201899	1/9/2025	Sherrill Morgan	9,875.00
201900	1/9/2025	Siddons-Martin Emergency Group LLC	853.87
201901	1/9/2025	State Of TN Attn: Lily White	124.45
201902	1/9/2025	State Of TN Dept Of Revenue	9.50
201903	1/9/2025	State Systems, LLC	580.00
201904	1/9/2025	Stoltz Printing Co	39.50
201905	1/9/2025	Ted's Sporting Goods	289.99
201906	1/9/2025	TN Assn Of Rescue Squads	200.00
201907	1/9/2025	TN DEPT OF LABOR & WORKFORCE	55.00
201908	1/9/2025	Tn Dept Of Revenue	440.32
201909	1/9/2025	TN Dept Of Safety	23.75
201910	1/9/2025	TN Fire Svs & Codes Enf Academy	1,130.00
201911	1/9/2025	TriStar Elevator LLC	878.00
201912	1/9/2025	TW Lawncare	336.00
201913	1/9/2025	U S BANK	400.00
201914	1/9/2025	United Waste Haulers Of TN LLC	3,511.98
201915	1/9/2025	Water Management Services LLC	2,200.00
201916	1/9/2025	Waynes Pest Control	350.00
201917	1/9/2025	Waypoint Analytical, LLC	320.00
201918	1/9/2025	Waypoint Business Solutions LLC	6,351.31
201919	1/9/2025	Wells Fargo Financial Leasing, Inc	525.91
201920	1/9/2025	WM CORPORATE SERVICES, INC	23,577.72
201921	1/16/2025	VOID-VOID-VOID	0.00
201922	1/23/2025	JUDY CONSTRUCTION COMPANY	1,070,707.16
201923	1/23/2025	Morrison Engineering LLC	700.00
201924	1/23/2025	Needle And Grain	1,970.00
201925	1/23/2025	CHRISTY DAUS	82.00
201926	1/23/2025	Robyn Barber	35.18
201927	1/23/2025	Tony Massey	119.50
201928	1/23/2025	ACE HARDWARE	893.15
201929	1/23/2025	AMER FAMILY LIFE ASSURANCE	40.30
201930	1/23/2025	Airgas USA, LLC	673.02

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201931	1/23/2025	ALLISON SPEED	75.00
201932	1/23/2025	Annie N Camel	75.00
201933	1/23/2025	AT&T (Fiber Optics)	726.44
201934	1/23/2025	Atmos Energy	6,545.91
201935	1/23/2025	Automation Controls Training & Consulting	2,717.04
201936	1/23/2025	BAILEY EQUIPMENT & INTRALOGISTICS	47,129.49
201937	1/23/2025	NEW BRAND LINEN SERVICES	665.82
201938	1/23/2025	Beverly J Amos	75.00
201939	1/23/2025	Beverly J Baxter	75.00
201940	1/23/2025	Blue Cardinal Chemical, LLC	3,531.55
201941	1/23/2025	BMI	446.00
201942	1/23/2025	Burr E Coleman Jr	75.00
201943	1/23/2025	Cathey A Russell	75.00
201944	1/23/2025	C.E.S. CITY ELECTRIC SUPPLY CO	110.00
201945	1/23/2025	Chrysler Dodge Jeep Ram of Columbia	90.00
201946	1/23/2025	Cintas Corporation #241	2,559.17
201947	1/23/2025	Cintas Corporation #241	622.03
201948	1/23/2025	CIOX HEALTH	33.77
201949	1/23/2025	City of Col Petty Cash	509.00
201950	1/23/2025	CMS Uniforms & Equipment	230.40
201951	1/23/2025	Columbia Firefighter Assn	485.00
201952	1/23/2025	Columbia Neon Co	875.00
201953	1/23/2025	Columbia Oil Company Inc	23,868.45
201954	1/23/2025	Columbia Paint & Wallcover	1,778.92
201955	1/23/2025	COLUMBIA POWER & WATER SYSTEMS	100,060.35
201956	1/23/2025	COMBINED INSURANCE, A CHUBB COMPANY	901.76
201957	1/23/2025	Convergint Technologies	4,108.35
201958	1/23/2025	Corelogic Centralized Refunds	1,748.00
201959	1/23/2025	CPWS - Broadband	600.00
201960	1/23/2025	David's Lock & Key Inc	224.80
201961	1/23/2025	Deborah A Austin	75.00
201962	1/23/2025	Deena K Frith	75.00
201963	1/23/2025	DLT Solutions LLC	1,956.90
201964	1/23/2025	Drees Premier Homes, Inc	762.77
201965	1/23/2025	Duck River Electric	432.56
201966	1/23/2025	Kobe Dowell	150.00
201967	1/23/2025	Federal Express	56.90
201968	1/23/2025	Firstnet Services Provided By AT&T Mobility	412.92
201969	1/23/2025	Frank Depatto	75.00
201970	1/23/2025	Frankie M Austin	75.00
201971	1/23/2025	Freedom Hill Land Management	10,769.75
201972	1/23/2025	Daily Herald (Ads)	305.48
201973	1/23/2025	GEO-TECHNOLOGY ASSOCIATES, INC	346.25

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201974	1/23/2025	Guthrie Sales & Service Inc	1,529.00
201975	1/23/2025	H & E EQUIPMENT SERVICES, INC	48,899.01
201976	1/23/2025	Harry M Bryant	75.00
201977	1/23/2025	HD INK SCREEN PRINTING	264.00
201978	1/23/2025	Henderson, Hutcherson & McCullough	12,000.00
201979	1/23/2025	HURST-ROSCHE, INC	2,670.00
201980	1/23/2025	J R Wauford & Co Cons Eng, Inc	59,000.00
201981	1/23/2025	Jack Bailey	75.00
201982	1/23/2025	Jacola H Gaines	75.00
201983	1/23/2025	Jerry L Angus	75.00
201984	1/23/2025	Jim's Auto Accessories Inc	137.06
201985	1/23/2025	Jo Ann Smithson	75.00
201986	1/23/2025	Johnson Controls	2,665.05
201987	1/23/2025	Jones & Lang Sporting Goods	1,419.00
201988	1/23/2025	JOURNAL COMMUNICATIONS INC	8,210.00
201989	1/23/2025	JUDY JONES	75.00
201990	1/23/2025	JUSTIN RICHARDSON	865.00
201991	1/23/2025	Katie Nieland Art	350.00
201992	1/23/2025	KREBS KUBOTA	554.76
201993	1/23/2025	Lane Burleson	95.00
201994	1/23/2025	Leaf Capital Funding LLC	668.26
201995	1/23/2025	Life Services EAP	2,271.15
201996	1/23/2025	Linda L Albert	75.00
201997	1/23/2025	Linda S Davis	75.00
201998	1/23/2025	Lively Florist	105.00
201999	1/23/2025	Lose Design - Lose & Associates, Inc	1,125.00
202000	1/23/2025	Lura C Dean	75.00
202001	1/23/2025	M-L UTILITIES, LLC	586.55
202002	1/23/2025	Mail Call	2,516.61
202003	1/23/2025	MAIN STREET MEDIA OF TN	84.38
202004	1/23/2025	MAIN STREET MENTOR, LLC	2,997.00
202005	1/23/2025	Marilyn L Braden	75.00
202006	1/23/2025	Marion Browne	75.00
202007	1/23/2025	MATTHEW HOLDEN	150.00
202008	1/23/2025	Maury Co Government	17,200.33
202009	1/23/2025	Maury Co United Way	662.00
202010	1/23/2025	Maury County 911	7,806.96
202011	1/23/2025	MAURY COUNTY CHAMBER &	850.00
202012	1/23/2025	Maury County Solid Waste	108,594.44
202013	1/23/2025	Maury Fence Co Of Tn Inc	7,000.00
202014	1/23/2025	Maury Regional Hospital Marshall Medical Ctr	18,992.00
202015	1/23/2025	Maury Regional Medical Group	3,190.00
202016	1/23/2025	VOID-VOID-VOID	0.00

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202017	1/23/2025	Melvin L Nicholson	75.00
202018	1/23/2025	DAMITA F. JONES	75.00
202019	1/23/2025	JACQUELINE J. KNIPPLE	75.00
202020	1/23/2025	JANET COOK	75.00
202021	1/23/2025	PATRICIA D. GILL	75.00
202022	1/23/2025	SHIRLEY LYNN	75.00
202023	1/23/2025	SYLVIA G. JOHNSON	75.00
202024	1/23/2025	MissionSquare Retirement	250.00
202025	1/23/2025	Morgan Brothers Electric Inc	331.00
202026	1/23/2025	Motorola Solutions Inc	2,131.20
202027	1/23/2025	Muletown Rec	25,000.00
202028	1/23/2025	NAFECO Inc	2,248.26
202029	1/23/2025	Nashville Convention & Visitors Corp	645.00
202030	1/23/2025	NexAir LLC	42.78
202031	1/23/2025	D Nickell Company LLC	97,443.00
202032	1/23/2025	PROCARE PBM	49,944.38
202033	1/23/2025	Public Entity Partners	66.15
202034	1/23/2025	RACK & STORAGE SOLUTIONS, LLC	14,223.21
202035	1/23/2025	Reach Technologies	97.24
202036	1/23/2025	Betty Burns	75.00
202037	1/23/2025	DAVID LANE	36.00
202038	1/23/2025	FIRST AMERICAN TITLE	337.00
202039	1/23/2025	J R N CHICKEN STORES INC	351.00
202040	1/23/2025	JAN BUTLER	75.00
202041	1/23/2025	Laine N Barley	75.00
202042	1/23/2025	Starlight Homes of TN LLC	366.63
202043	1/23/2025	Thomas R. Hammond	28.60
202044	1/23/2025	TREVOR OR HAVERLY PENNINGTON	579.00
202045	1/23/2025	WILDA J MOORE	75.00
202046	1/23/2025	Rodolfo Bela	75.00
202047	1/23/2025	Sandra J McGuire	75.00
202048	1/23/2025	Sansom Equipment Co Inc	2,171.96
202049	1/23/2025	Saulo C Camejo	75.00
202050	1/23/2025	Sewah Studios Inc	3,510.00
202051	1/23/2025	Share Corp	232.40
202052	1/23/2025	Siddons-Martin Emergency Group LLC	427.60
202053	1/23/2025	Simple Com	42.00
202054	1/23/2025	SiteOne Landscape Supply LLC	798.22
202055	1/23/2025	Southern Duplicating of Middle Tennessee	1,869.66
202056	1/23/2025	Sunbelt Rentals Inc	244.65
202057	1/23/2025	Ted's Sporting Goods	984.97
202058	1/23/2025	THE DAILY HERALD	105.91
202059	1/23/2025	Thompson Machinery	10,795.20

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202060	1/23/2025	Thomson Reuters - West	74.00
202061	1/23/2025	TN Comptroller Of The Treasury	4,215.00
202062	1/23/2025	TN DEPT ENV & CONSERVATION	3,460.00
202063	1/23/2025	TN Dept of Labor & Workforce Dev B&E Unit	60.00
202064	1/23/2025	TN HOSPITALITY AND TOURISM ASSOC	300.00
202065	1/23/2025	TN Property Management	11,129.43
202066	1/23/2025	TriStar Elevator LLC	264.00
202067	1/23/2025	Turner & Osborne Tire Co	368.89
202068	1/23/2025	U S BANK	450.00
202069	1/23/2025	Uline	702.72
202070	1/23/2025	UNITED FARM & HOME COOPERATIVE	5,069.13
202071	1/23/2025	United Waste Haulers Of TN LLC	7,749.50
202072	1/23/2025	Verizon Wireless 09	88.88
202073	1/23/2025	Visual Media Co LLC	600.00
202074	1/23/2025	Volunteer Welding Supply, Inc.	40.45
202075	1/23/2025	Vulcan Materials Co	239.05
202076	1/23/2025	Waynes Pest Control	1,460.00
202077	1/23/2025	Waypoint Analytical, LLC	2,156.00
202078	1/23/2025	Weld-Rite LLC	200.00
202079	1/23/2025	WLLX FM	210.00
202080	1/28/2025	N & S WATERPROOFING, LLC	140,600.00
202081	1/30/2025	TRI-TURF SOD FARMS, INC	720.00
202082	1/30/2025	JUDY - ESCROW	53,549.60
202083	1/30/2025	Advance Paving	3,000.00
202084	1/30/2025	Atmos Energy	943.74
202085	1/30/2025	Augusta M Walker	75.00
202086	1/30/2025	B W Dodson	75.00
202087	1/30/2025	Better Business Solutions	247.50
202088	1/30/2025	Break Time Services	212.00
202089	1/30/2025	BRINDLEY CO	460,817.40
202090	1/30/2025	Charles L Bates	75.00
202091	1/30/2025	CHARTER COMMUNICATIONS	1,099.00
202092	1/30/2025	CHOICE SCREENING	85.00
202093	1/30/2025	Cintas Corporation #241	1,896.67
202094	1/30/2025	Colonial Life	10,913.11
202095	1/30/2025	COLUMBIA POWER & WATER SYSTEMS	25,687.41
202096	1/30/2025	Complete Forms Supply Co LLC	1,406.56
202097	1/30/2025	Cook's Pest Control Inc	117.00
202098	1/30/2025	Culleoka Company LLC	1,402.00
202099	1/30/2025	Deborah E Wooten	75.00
202100	1/30/2025	Dell Marketing L P	314.57
202101	1/30/2025	Donna C Walters	75.00
202102	1/30/2025	Donna M Stills	75.00

**CITY OF COLUMBIA
DISBURSEMENT REPORT
FOR THE PERIOD 1/1/2025 - 1/31/2025**

POOLED CASH CHECK LISTING

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202103	1/30/2025	Dorothy L Leach	75.00
202104	1/30/2025	Dorothy M Jones	75.00
202105	1/30/2025	Duck River Electric	384.12
202106	1/30/2025	Jamie Ferrie	389.40
202107	1/30/2025	Ryan Dangler	136.00
202108	1/30/2025	Firstnet Services Provided By AT&T Mobility	1,777.85
202109	1/30/2025	Fleming Sheet Metal Shop	2,400.00
202110	1/30/2025	Floyd L Miles Jr	75.00
202111	1/30/2025	Gresham Smith & Partners	791.32
202112	1/30/2025	Hilda G Polanco	75.00
202113	1/30/2025	Impressions	460.36
202114	1/30/2025	Jacqueline Johnson	75.00
202115	1/30/2025	Janet R Thomason	75.00
202116	1/30/2025	Jose A Torres	75.00
202117	1/30/2025	K & K SAFETY	217.66
202118	1/30/2025	Knighthorst Shredding, LLC	373.75
202119	1/30/2025	Linda S Crigger	75.00
202120	1/30/2025	Lizzie M Duncan	75.00
202121	1/30/2025	Marcia K Kelley	75.00
202122	1/30/2025	MARGUERITE TRACEY	75.00
202123	1/30/2025	Maury County Equipment	2,764.58
202124	1/30/2025	MAURY REGIONAL MEDICAL CENTER	150.00
202125	1/30/2025	Maury Regional Hospital Marshall Medical Ctr	14,177.00
202126	1/30/2025	Maury Regional Medical Group	1,182.00
202127	1/30/2025	McFall Sod & Seeding LLC	250.00
202128	1/30/2025	Michael Huard	75.00
202129	1/30/2025	ELSIE MESAROS	75.00
202130	1/30/2025	GERALD PROWELL	75.00
202131	1/30/2025	LINDA A. BELLAFANT	75.00
202132	1/30/2025	MSD Environmental Services, Inc	2,834.00
202133	1/30/2025	North Central Laboratories-NCL of Wisconsin, Inc	954.85
202134	1/30/2025	Parman Energy Group LLC	1,901.60
202135	1/30/2025	Patricia A Kelley	75.00
202136	1/30/2025	Preventia Security	84.00
202137	1/30/2025	Rains Electric Co., Inc.	6,686.78
202138	1/30/2025	CLARENCE T STUBBLEFIELD	75.00
202139	1/30/2025	Comptroller of the Treasury	21.00
202140	1/30/2025	JEAN C MCCLAY	75.00
202141	1/30/2025	JONATHAN C OR MONA LANE HOLT	5.10
202142	1/30/2025	MEREDITH ROLLINS	6.00
202143	1/30/2025	PATRICIA A BARRENECHEA	75.00
202144	1/30/2025	Robert J Young Company LLC	394.61
202145	1/30/2025	Rogers Group Inc	285.44

**CITY OF COLUMBIA
DISBURSEMENT REPORT
FOR THE PERIOD 1/1/2025 - 1/31/2025**

POOLED CASH CHECK LISTING

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202146	1/30/2025	Safe Industries	322.34
202147	1/30/2025	Sherry Y White	75.00
202148	1/30/2025	Shirley D Vaughn	75.00
202149	1/30/2025	Stoltz Printing Co	178.00
202150	1/30/2025	T-MOBILE	96.54
202151	1/30/2025	Thompson Machinery	5,765.20
202152	1/30/2025	TN Bureau Of Investigation	1,120.00
202153	1/30/2025	TN DEPT OF LABOR & WORKFORCE	120.00
202154	1/30/2025	United Waste Haulers Of TN LLC	1,832.76
202155	1/30/2025	Unum Life Insurance Co Of Amer	3,116.60
202156	1/30/2025	Verizon	177.76
202157	1/30/2025	Verizon Wireless 03	41.94
202158	1/30/2025	Verizon Wireless 04	2,510.38
202159	1/30/2025	Victoria A Overton	75.00
202160	1/30/2025	Virginia Scott	75.00
202161	1/30/2025	Visual Media Co LLC	100.00
202162	1/30/2025	Volunteer Paving LLC	320.32
202163	1/30/2025	Vulcan Materials Co	534.10
202164	1/30/2025	WANDA CATES	75.00
202165	1/30/2025	Wastequip Manufacturing Co LLC	40,108.40
202166	1/30/2025	Waymond D Watkins	75.00
202167	1/30/2025	Waypoint Analytical, LLC	32.00
202168	1/30/2025	WEIMER BEARING & TRANSMISSION, INC	2,712.37
202169	1/30/2025	William C Hargrove	3,300.00
202170	1/30/2025	William E Farris	123.46
202171	1/30/2025	WM CORPORATE SERVICES, INC	16,263.46
202172	1/30/2025	Xylem Dewatering Solutions Inc	7,141.66

GENERAL FUND

Total Purchase Cards:	\$ 88,129.17
Total Payroll Transfers:	\$ 1,748,250.89
Total Misc. Transfers:	\$ 198,876.43
Total Checks:	<u>\$ 648,759.04</u>
Total:	\$ 2,684,015.53

STATE STREET AID

Total Purchase Cards:	\$ 910.02
Total Misc. Transfers:	\$ -
Total Checks:	<u>\$ 12,581.33</u>
Total:	\$ 13,491.35

**CITY OF COLUMBIA
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SANITATION

Total Purchase Cards:	\$	14,653.63
Total Payroll Transfers:	\$	100,246.33
Total Misc. Transfers:	\$	11,080.65
Total Checks:	\$	<u>184,828.97</u>
Total:	\$	310,809.58

WASTEWATER

Total Purchase Cards:	\$	20,040.79
Total Payroll Transfers:	\$	238,659.75
Total Misc. Transfers:	\$	28,706.20
Total Checks:	\$	<u>1,506,560.45</u>
Total:	\$	1,793,967.19

DRUG

Total Purchase Cards:	\$	92.00
Total Checks:	\$	<u>308.70</u>
Total:	\$	400.70

INSURANCE

Total Misc. Transfers:	\$	128,591.15
Total Checks:	\$	<u>167,593.97</u>
Total:	\$	296,185.12

CAPITAL PROJECTS

Total Purchase Cards:	\$	1,630.54
Total Misc. Transfers:	\$	212,176.09
Total Checks:	\$	<u>547,619.84</u>
Total:	\$	761,426.47

Debt Service

Total Misc. Transfers:	\$	-
Total Checks:	\$	<u>400.00</u>
Total:	\$	400.00

**CITY OF COLUMBIA
DISBURSEMENT REPORT
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IDB

Total Misc. Transfers:	\$	-
Total Checks:	\$	<u>48,899.01</u>
Total:	\$	48,899.01

Surplus Listing for Council Agenda 3/13/2025

<u>Inv ID</u>	<u>Description</u>	<u>Serial#</u>	<u>Department</u>
3868	Event Stage		Parks
3869	IDE Generator - M15-B220	71936-33	Parks
3870	2 weed eaters (Echo & Stihl) & 1 Blower (Echo)		Parks
3871	2003 Chevy Impala	2G1WF52E839300001	MIS
3872	Star Max Grill 548TGZ	T5482332	Parks
3873	2023 Craftsman Push Mower Model 12BBP2R3793	1E22PK30828	Parks
3874	Advanced Distrib Products Heater Model SEP-115A-2	5608H23801	Parks
3875	Fertilizer Spreader		Parks
3876	Honda Generator		Parks
3877	Hustler 3700 Lawn Mower Model 928713US	15023772	Parks
3878	John Deere 997 Lawn Mower		Parks
3879	John Deere pressure washer model 020297	1018322511	Parks
3880	Various pool equipment		Parks
3881	Scoreboards		Parks
3882	Sign		Parks
3883	Simpson Pressure Washer Model M561219	12222001325	Parks
3884	2001 Ford F250 Super Duty	1FTNW20LX1EC39103	Parks
3885	2002 Chevy Tahoe	1GNEC13Z12J249862	Parks
3886	2006 GMC Sierra	1GTEC19V76E216487	Parks
3887	2008 Ford Explorer	1FMEV63818UA72288	Parks
3888	Toro Groundmaster 4500		Parks
3889	Tractor wheels & tires Goodyear SFT105		Parks
3890	Tractor wheels & tires Titan Trac loader		Parks
3891	Asphalt Roller		Wastewater
3892	Land Pride Bush Hog		Wastewater
3893	2005 International 1533 4x4 Tractor		Wastewater
3894	2015 Ford F250	1FTBF2AT1FEA88614	Wastewater
3895	2009 International Mx Force Dump Truck	1HTJTSKR48H641137	Wastewater
3896	2013 Ford Power Stroke Diesel Service Truck	1FDBF2AT9DEA99207	Wastewater
3897	2007 International Dura Star Dump Truck	1HTJTSKR28H641136	Wastewater
3898	2011 Ford Power Stroke Diesel	1FTBF2AT9BEA63227	Wastewater
3899	Gigabit VPN Router tp-link Omada ER7206	Y21C010000448	MIS

Surplus Listing for Council Agenda 3/13/2025

<u>Inv ID</u>	<u>Description</u>	<u>Serial#</u>	<u>Department</u>
3900	Samsung cellphone - Galaxy S23+		MIS
3901	HP Printer LaserJet Enterprise M607	CNBCL51085	MIS
3902	## Dell Monitor P22194	FZ291FQ3	MIS
3903	Sonicwall NSA 360	C0EAE4FC0708	MIS
3904	Netgear Switch ProSAFE GS748T	3H32477U80C21	MIS
3905	HP Switch ProCurve 1810G-24	CN0352G73W	MIS
3906	Intellinet Switch 24-Port PoE+Web	INT5605592170500454	MIS
3907	Intellinet Switch 24-port Nway 10/100	94084603500	MIS
3908	Intellinet Switch 24-port Nway 10/100	94081400694	MIS
3909	Box of various electronics		MIS
3910	Lenovo ThinkPad E14 Gen 3	PF-3WE02D	MIS
3911	Cannon Printer MG2922	KKDE70998	MIS
3912	UPS APC BE850M2	4B1834P43173	MIS
3913	Acer LCD Monitor K202HQL	2506130542	MIS
3914	AOC LCD Monitor 195LM00002	FSGEAHA051962	MIS
3915	Acer LCD Monitor G236HL	51104036224	MIS
3916	HP Monitor 1730	CNP430V6D7	MIS
3917	Dell Monitor E177FPb	CN-OUH572-46633-695-6LAL	MIS
3918	I-INC LCD Monitor iF191A	842PP1NA00043	MIS
3919	Lenovo Desktop ThinkCenter 720S	MJDBQPAC	MIS
3920	Dell Desktop OptiPlex 9020	38Q2C62	MIS
3921	Samsung Tablet GalaxyTab E	R52JA0JAY0Z	MIS
3922	Samsung Tablet GalaxTab A	R52H60G4M0Z	MIS
3923	UPS APC Back-UPS 650	R52H60G4M0Z	MIS



CITY OF COLUMBIA TENNESSEE
CITY COUNCIL
STAFF REPORT

STAFF REPORT CONTACT INFORMATION

Kim Dale, Assistant City Recorder, kdale@columbiatn.gov, 931-560-1579

AGENDA ITEM TITLE: ACCEPTANCE OF ANNUAL REPORTS OF CITY OF COLUMBIA, TENNESSEE EMPLOYEE'S RETIREMENT PLAN FUND AND THE CITY OF COLUMBIA, TENNESSEE RETIREMENT HEALTH INSURANCE POST-EMPLOYMENT BENEFIT TRUST FOR THE PERIOD ENDING DECEMBER 31, 2024.

RECOMMENDATION: Accept the Reports.

INFORMATION: The Trustees of the City of Columbia, Tennessee Employees' Retirement Plan Fund annually submit reports to the City Council regarding the City Retirement Plan and the Retirement Health Insurance Post-Employment Benefit Trust. A summary of the revenues, expenditures and balance for the City of Columbia Employee's Retirement Plan Fund is being provided from the inception of the plan on July 1, 1974 through December 31, 2024 and a summary of the revenues, expenditures and the balance of the City of Columbia, Tennessee Retirement Health Insurance Post-Employment Benefit Trust, opened August 8, 2008 through December 31, 2024. These reports are required by Ordinance to assist the City Council in the fiduciary responsibility for management of pension funds.

CERTIFICATION: N/A

ATTACHMENTS: Staff Report; City of Columbia, TN Employees' Retirement Plan Fund 12.31.2024; City of Columbia, TN Employees' Retirement Health Insurance Post-Employment Benefit Trust Fund 12.31.2024

ANNUAL REPORT OF CITY OF COLUMBIA, TN EMPLOYEES' RETIREMENT
PLAN FUND (DEFINED BENEFIT)
JULY 1, 1974 THROUGH DECEMBER 31, 2024

The City of Columbia, TN Employees' Retirement Plan became effective July 1, 1974.

The City is currently contributing 31.63% of the pension gross payroll and the employee is currently contributing 6.74% of their wages, to this fund.

Two hundred forty (240) Retirees or Beneficiaries received monthly retirement benefits in December 2024. Twelve (12) of those recipients retired during 2024.

Sixty-four (64) Retirees received an additional monthly Temporary Supplemental Retirement Benefit in December 2024. This benefit is payable to Retirees, who meet the qualifications. This benefit ceases when the Retiree becomes 62 years of age. Ordinance No. 3779, adopted December 4, 2008, abolished the Temporary Supplemental Retirement Benefit for all employees employed on or after January 1, 2009. The amendment to abolish the Temporary Supplemental Retirement Benefit, will not affect current Retirees or eligible participants employed prior to January 1, 2009.

Seven (7) Retirees, as well as one (1) Beneficiary were deceased in 2024.

One (1) former employee (compared with 7 in 2023) requested and received a refund of their contributions to the City Retirement Plan in 2024. They forfeited their rights to the City of Columbia, TN Employees' Retirement Plan when they received reimbursement of their contributions. The total refunded in 2024 was \$31,300.79.

Attached is a summary report of revenue and disbursements of the "City of Columbia, TN Employees' Retirement Plan Fund" from July 1, 1974 through December 31, 2024. The 2024 totals are listed separately to show the activities during the year. Also shown are the totals from the inception of the fund, July 1, 1974 through December 31, 2024.

The December 31, 2024 Investment Cost Basis balance of the "City of Columbia, TN Employees' Retirement Plan Fund" was \$49,213,446.69 The total market value was \$57,316,202.88. First Farmers Bank Trust Department, agent for the Trustees, have invested some of this fund balance in U. S. Treasury Bonds & Notes, U. S. Government Agencies, Corporate Bonds & Notes, Mutual Funds and Equities. Ordinance No. 4446, adopted by the City Council on January 12, 2023, allows First Farmers Bank, Trust Department, to invest up to sixty-two- and one-half percent (62.5%) of the funds in stock and/or equities.

Ordinance No. 3906 adopted April 15, 2012 amended the City of Columbia Employees' Retirement Plan to close the current City of Columbia Employees' Retirement Defined Benefit Plan to all City Employees hired on or after July 1, 2012. The Defined Contribution Plan became effective July 1, 2012 for all eligible City Employees hired on or after July 1, 2012.

CITY OF COLUMBIA EMPLOYEES RETIREMENT FUND

Calendar Year 2024 by Month

Pension Contributions															
<u>Date</u>	<u>Interest & Dividends</u>	<u>Refunds</u>	<u>Jefferson Standard</u>	<u>City</u>	<u>Employee</u>	<u>Total</u>	<u>Supplies</u>	<u>Other Services</u>	<u>Actuarial Services</u>	<u>First Farmers Fees</u>	<u>Audit</u>	<u>Lump Sum Refunds</u>	<u>Regular Monthly Pension Benefits</u>	<u>Temporary Supplement</u>	<u>Ending Balance</u>
12/31/2023	\$ 52,821,534.74	\$ 41,667.84	\$ 148,835.64	\$ 49,683,436.29	\$ 23,582,529.23	73,265,965.59	\$(5,442.17)	\$(46,931.58)	\$(1,538,984.10)	\$(1,514,586.67)	\$(179,285.26)	\$(4,509,013.65)	\$(58,013,655.89)	\$(12,151,619.37)	\$ 48,318,485.12
1/31/2024	56,005.95	-	-	380,381.59	96,273.81	476,655.40	-	-	-	-	-	-	(400,065.64)	(97,938.03)	48,353,142.80
2/29/2024	64,470.47	-	-	-	-	-	-	-	-	-	-	-	(401,029.19)	(98,777.19)	47,917,806.89
3/31/2024	123,549.09	-	-	386,681.10	97,868.22	484,549.32	-	-	(2,748.00)	-	-	(23,384.92)	(402,162.62)	(98,457.17)	47,999,152.59
4/30/2024	83,189.47	-	-	-	-	-	-	-	-	-	-	-	(403,160.12)	(99,284.01)	47,579,897.93
5/31/2024	63,875.36	-	-	306,768.51	77,642.50	384,411.01	-	-	-	-	-	-	(404,636.79)	(100,668.01)	47,522,879.50
6/30/2024	645,635.82	-	-	-	-	-	-	-	-	-	-	-	(407,182.01)	(100,647.01)	47,660,686.30
7/31/2024	220,376.38	-	-	-	-	-	-	-	-	-	-	(32,616.02)	(418,707.53)	(98,426.01)	47,331,313.12
8/31/2024	556,936.93	-	-	304,752.04	77,132.12	381,884.16	-	-	-	-	-	(31,300.79)	(418,707.53)	(98,426.01)	47,721,699.88
9/30/2024	221,779.39	-	-	228,488.04	57,829.87	286,317.91	-	-	(3,298.00)	(84,916.54)	-	-	(416,454.31)	(97,381.11)	47,627,747.22
10/31/2024	101,484.47	-	-	885,484.63	38,612.46	924,097.09	-	-	-	-	-	-	(416,454.31)	(97,381.11)	48,139,493.36
11/30/2024	68,866.60	-	-	178,374.85	38,009.69	216,384.54	-	-	-	-	-	-	(414,823.04)	(97,381.11)	47,912,540.35
12/31/2024	1,812,696.33	-	-	-	-	-	-	-	-	-	-	-	(414,408.88)	(97,381.11)	49,213,446.69
Total 2024	\$ 4,018,866.26	\$ -	-	\$ 2,670,930.76	\$ 483,368.67	\$ 3,154,299.43	\$ -	\$ -	\$ (6,046.00)	\$ (84,916.54)	\$ -	\$ (87,301.73)	\$ (4,917,791.97)	\$ (1,182,147.88)	-
Total ever	\$ 56,840,401.00	\$ 41,667.84	\$ 148,835.64	\$ 52,354,367.05	\$ 24,065,897.90	\$ 76,420,265.02	\$(5,442.17)	\$(46,931.58)	\$(1,545,030.10)	\$(1,599,503.21)	\$(179,285.26)	\$(4,596,315.38)	\$(62,931,447.86)	\$(13,333,767.25)	\$ 49,213,446.69

* Cumulative amount from plan inception date 7/1/1974 through 12/31/2024

ANNUAL REPORT OF CITY OF COLUMBIA, TENNESSEE RETIREMENT
HEALTH INSURANCE POST-EMPLOYMENT BENEFIT TRUST FUND

AUGUST 8, 2008 THROUGH DECEMBER 31, 2024

On August 7, 2008, the City Council approved an agreement between the Trustees of the City of Columbia Employees' Retirement Plan and First Farmers & Merchants Bank of Columbia, TN for the Bank to become the Investment Agent of the Trust Fund, known as "City of Columbia, Tennessee Retirement Health Insurance Post-Employment Benefit Trust."

On August 8, 2008, the Trustees of the City of Columbia Retirement Plan opened the City of Columbia, TN Retirement Health Insurance Post-Employment Benefit Trust Account, at First Farmers & Merchants Bank, Trust Department, Columbia, TN.

A total of \$6,505,025.60 was transferred from the City of Columbia Employees' Retirement Supplemental Health Insurance Account at Regions Bank to the City of Columbia Retirement Health Insurance Post-Employment Benefit Trust Fund at First Farmers & Merchants Bank.

Prior to July 1, 2008, only the Supplemental Health Insurance premiums, for eligible City Retirees, who were 65 years of age or older, were being paid from the City of Columbia Temporary Supplemental Health Insurance Fund, at Regions Bank.

The City General Fund had been paying the Health Insurance premiums for the eligible Retirees up to age 65, prior to July 1, 2008.

The current funding for the Retirees Health Insurance is 4.37% of the pension gross salaries. The funding is provided by the City General, Sanitation and Wastewater Funds.

In December 2024, Health Insurance premiums were paid for 189 Retirees.

First Farmers Bank Trust Department may invest some of the funds in U. S. Treasury Bonds & Notes, U. S. Government Agencies, Corporate Bonds & Notes, Mutual Funds & Stocks and/or Equities. Ordinance No. 4446, adopted by the City Council on January 12, 2023, allows First Farmers Bank, Trust Department, to invest up to sixty-two- and one-half percent (62.5%) of the funds in stock and/or equities.

The Investment Cost Basis balance for December 31, 2024 was \$17,249,795.96. The total market value was \$20,675,196.83.

Ordinance No. 3752, adopted by City Council, June 19, 2008, provided for "Establishing an Investment Trust for the purpose of Pre-Funding Other Post-Employment Benefits as Provided in Tennessee Code Annotated, Title 8, Chapter 50, Part 12". The Tennessee State Funding Board approved the "Declaration of Trust of the City of Columbia, Tennessee", on June 30, 2008.

CITY OF COLUMBIA HEALTH INSURANCE POST EMPLOYMENT BENEFIT TRUST FUND

Calendar Year 2024 by Month

<u>Date</u>	<u>City Contributions</u>	<u>Interest, etc.</u>	<u>Refunds</u>	<u>Blue Cross/Blue Shield Insurance</u>			<u>Clinic Costs</u>	<u>Aetna Part "D"</u>	<u>Ins reimb</u>	<u>Actuary</u>	<u>First Farmers</u>	<u>Audit Exp.</u>	<u>Supplies</u>	<u>Ending Balance</u>
				<u>Post-65</u>	<u>Pre-65</u>	<u>Total</u>						transferred from Regions		\$
12/31/2023	\$ 9,341,988.72	\$ 11,011,288.40	\$ 2,380.98	\$ (3,005,338.03)	\$ (5,708,202.83)	(8,713,540.86)	\$ (9,620.00)	\$ (894,279.80)	\$ (39,436.46)	\$ (143,701.00)	\$ (258,257.98)	\$ (13,492.50)	\$ (385.67)	\$ 6,505,025.60
1/31/2024	62,420.86	19,411.23	-	(41,818.14)	(45,390.24)	(87,208.38)	-	(8,605.90)	-	-	-	-	-	16,773,987.24
2/29/2024	-	22,840.44		(20,606.04)	(47,011.32)	(67,617.36)	(4,427.00)	(8,605.90)						16,716,177.42
3/31/2024	63,454.62	47,121.21		(20,404.02)	(47,551.68)	(67,955.70)		(8,605.90)						16,750,191.65
4/30/2024		29,641.41		(20,808.06)	(47,551.68)	(68,359.74)		(8,605.90)						16,702,867.42
5/31/2024	50,340.90	24,311.38		(20,808.06)	(47,551.68)	(68,359.74)		(8,785.40)						16,700,374.56
6/30/2024	-	73,351.48	-	-	-	-		(8,721.65)						16,765,004.39
7/31/2024	-	89,568.87	-	(42,424.20)	(96,184.08)	(138,608.28)		(8,696.65)						16,707,268.33
8/31/2024	50,010.00	24,393.12		(21,414.12)	(46,470.96)	(67,885.08)		(9,235.15)						16,704,551.22
9/30/2024	37,495.04	63,177.54	-	(21,414.12)	(45,390.24)	(66,804.36)		(8,965.90)	-	-	(25,318.94)			16,704,134.60
10/31/2023	25,035.08	39,630.59	-	(21,818.16)	(44,849.88)	(66,668.04)		(9,145.40)	-		-	-	-	16,692,986.83
11/30/2024	24,644.26	23,854.78	-	(21,616.14)	(44,309.52)	(65,925.66)		(9,235.15)		-	-			16,666,325.06
12/31/2024	-	660,688.65	-	(23,345.28)	(44,309.52)	(67,654.80)		(9,562.95)	-	-	-			17,249,795.96
Total 2021	\$ 313,400.76	\$ 1,117,990.70	\$ -	\$ (276,476.34)	\$ (556,570.80)	\$ (833,047.14)	\$ (4,427.00)	\$ (106,771.85)	\$ -	\$ -	\$ (25,318.94)	\$ -	\$ -	
Total ever	\$ 9,655,389.48	\$ 12,129,279.10	\$ 2,380.98	\$ (3,281,814.37)	\$ (6,264,773.63)	\$ (9,546,588.00)	\$ (14,047.00)	\$ (1,001,051.65)	\$ (39,436.46)	\$ (143,701.00)	\$ (283,576.92)	\$ (13,492.50)	\$ (385.67)	\$ 10,744,770.36
												amt tsf fm Regions		6,505,025.60
														\$ 17,249,795.96



CITY OF COLUMBIA TENNESSEE
CITY COUNCIL
STAFF REPORT

STAFF REPORT CONTACT INFORMATION

Lauryn Shockey, Administrative Assistant, LShockey@columbiatn.gov, 931-560-1529

AGENDA ITEM TITLE: APPROVE CHANGE ORDER NO. 1 WITH MORRISON ENGINEERING, LLC FOR ENGINEERING SERVICES RELATED TO THE CITY OF COLUMBIA PARKING GARAGE REHABILITATION PROJECT WHICH INCREASES THE CONTRACT AMOUNT BY \$2,250.

RECOMMENDATION: Approve Change Order No. 1 to contract with Morrison Engineering, LLC

INFORMATION: City Council approved a contract with Morrison Engineering, LLC on March 10, 2022 in the amount of \$54,580 for engineering services related to the City of Columbia Parking Garage Rehabilitation Project.

This Change Order addressed engineering services related to additional work to the Police Departemnt and South side of City Hall waterproofing. The work included visual inspection of each area, providing scope of work, receiving and processing change orders for each location, as well as providing project management during the work process. Change Order No. 1 will increase the total contract amount by \$2,250, bringing the total contract sum to \$56,830.

CERTIFICATION: The Chief Financial Officer certifies that \$2,250 is budgeted and unencumbered in Capital Projects – General Government – Parking Garage.

ATTACHMENTS: Change Order No. 1 Staff Report, Morrison Engineering Change Order No. 1



P.O. Box 7
Chapel Hill, TN 37034
(931) 271-9320

January 31, 2025

To: City of Columbia
Attn: Glenn Harper
700 N. Garden Street
Columbia, Tennessee 38401

Project: Morrison Engineering Change Order for:
City of Columbia Police Department Waterproofing
707 N. Main Street
Columbia, Tennessee 38401

City of Columbia – City Hall Waterproofing
700 N. Garden Street
Columbia, Tennessee 38401

At your request, Morrison Engineering, LLC worked in conjunction with N&S Waterproofing while onsite performing work at the City of Columbia's parking garage to have the Police Department and the South side of City Hall waterproofed. This work has been completed at this time.

Scope of Work

1. Visual inspection of each area.
2. Providing scope of work, receiving, and processing change orders for each location.
3. Provide project management during work process.

Compensation

Morrison Engineering will provide the above Scope of Work on the lump sum basis of \$2,250.

Morrison Engineering, LLC appreciates the opportunity to provide this proposal to you. If you agree to the terms and general conditions, please sign and return a copy of this document.

Respectfully Submitted By,

Jonathan Morrison

Jonathan Morrison, P.E.
Principal

Client Acceptance

By: _____

Date: _____

Printed Name: _____

Title: _____

Approved as to Legal Form:



Jake Hubbell, City Attorney



CITY OF COLUMBIA TENNESSEE
CITY COUNCIL
STAFF REPORT

STAFF REPORT CONTACT INFORMATION

Lauryn Shockey, Administrative Assistant, LShockey@Columbiatn.gov, 931-560-1529

AGENDA ITEM TITLE: APPROVE AND AUTHORIZE THE MAYOR TO EXECUTE CHANGE ORDER NO. 1 WITH NICKELL COMPANY, LLC FOR THE CDBG SIDEWALK IMPROVEMENTS WITH A DECREASE IN THE AMOUNT OF \$154,264.98 - WARDS 2 & 3

RECOMMENDATION: Approve.

INFORMATION: The City of Columbia received "Small Cities" Community Development Block Grant (CDBG) program funding for sidewalk improvements along South High Street from West 8th Street to West 11th Street, and along East 8th Street from South Main Street to (west of) South Glade Street. The original contract was approved by Council on April 11th, 2024 in the amount of \$763,314.70. This Change Order is to authorize a decrease from the original contract amount totaling \$154,264.98 due to items not needed during completion. This change order will not extend the project completion date.

CERTIFICATION:

ATTACHMENTS: Nickell Company CDBG Change Order No. 1 Staff Report, Nickell Company CDBG Change Order No. 1

CONTRACT CHANGE ORDER

Order No. 1

Date: 2/20/2025

State: Tennessee

Contract for: Sidewalk Improvements of High Street and 8th Street Project No. E-2023-03-CDBG PO 1540

County: Maury

Owner: The City of Columbia, TN; 700 North Garden Street, Columbia, TN 38401

To: Nickell Company, LLC 785 Armstrong Lane, Columbia, TN 38401

(Contractor)

You are hereby requested to comply with the following changes from the Construction Drawings and Detailed Specifications:

Description of Changes	DECREASE In Contract Price	INCREASE In Contract Price
Contract under run	-\$154,264.98	
TOTALS	-\$154,264.98	
NET CHANGE IN CONTRACT PRICE	-\$154,264.98	

JUSTIFICATION: Contract item(s) underruns and items not used or not needed

The amount of the Contract will decrease by the Sum of one hundred fifty-four thousand two hundred sixty-four and 98/100 Dollars (-\$154,264.98). The Contract Total including this and any previous change orders will be six hundred nine thousand no hundred and forty-nine 72/100 Dollars (\$609,049.72). The Contract period provided for completion will be unchanged.

Requested **Larry A, Duncan**
Nickell Company, LLC

20FEB2025

(Date)

Recommended **Chip Greene**
Neel-Schaffer, Inc. Consulting Engineer (CEI)

2-20-2025

(Date)

Accepted _____
City of Columbia, Tennessee

(Date)

Approved as to Legal Form:

Jake Hubbell, City Attorney



CITY OF COLUMBIA TENNESSEE
CITY COUNCIL
STAFF REPORT

STAFF REPORT CONTACT INFORMATION

Lauryn Shockey, Administrative Assistant, LShockey@Columbiatn.gov, 931-560-1529

AGENDA ITEM TITLE: APPROVE THE FY 2024-2025 STREET RESURFACING LIST - WARDS 1, 2, 3, 4, AND 5 - DEVELOPMENT SERVICES DEPARTMENT.

RECOMMENDATION: Approve

INFORMATION: A list of streets proposed to be paved has been developed using field observations and a Street Database Program. Consideration has been given to streets in all wards of the City in an effort to identify the City's paving needs and to effectively use the available paving funds. This list is tentative and will provide guidance in development of a paving contract. Once bids are received, the paving contract will come before City Council for approval. Contract work will presumably commence.

This \$4 million represents the largest street paving budget for the City of Columbia at any one time and encompasses 19.6 road miles.

CERTIFICATION:

ATTACHMENTS: Paving List Approval Staff Report, List of Proposed Streets for Paving with Map.

Proposed Street Paving List

STREET NAME	WARD	INTERSECTION 1	INTERSECTION 2	LENGTH (ft)
Armstrong Ln	1	Creekview Dr	Oakland Pkwy	5,500
Christina Dr	1	END	Malibu Canyon Rd	850
Creekside Dr	1	END	END	1,690
Forrest Dr	1	Creekside Dr	Westfield Dr	1,190
Forrest Dr	1	Westfield Dr	END	1,410
Heritage Dr	1	Rockland Dr	Sunnyside Lane	1,240
Hollywood Hills Dr	1	END	Malibu Canyon Rd	610
Logan Dr	1	END	Rutherford Lane	2,830
Lyon St	1	Sunnyside Lane	Cowan St	1,670
Malibu Canyon Dr	1	END	END	4,020
McIntire Dr	1	Robinson Dr	Brookside Dr	880
Rodeo Dr	1	Williamsport Pk	END	1,610
Spainwood St	1	Sunnyside Lane	Cowan St	1,430
St Catherine Ct	1	END	Rodeo Dr	300
St Margaret Cir	1	Rodeo Drive	END	880
Winning Dr	1	Bradford Circle	Krissy Ct	1,490

Depot St	2	W 11th St	S Main St	840
E 13th St	2	S Main St	Carmack Blvd	540
Industrial Park Rd	2	Hwy 7	Duck River Bridge	6,670
Industrial Park Rd	2	Bridge over US-412	W James Campbell Blvd	900
Industrial Park Rd	2	650' N of WB Ramps US-412	Bridge over US-412	820
Nelson St	2	Myers Ave	Rainey St	290
Old Williamsport Pk	2	City Limits	W James Campbell Blvd	620
Parker St (North)	2	W 10th St	W 11th St	580
S Main St	2	E 13th St	E 15th St	850
School St	2	W 8th St	W 11th St	1,660
School St	2	W 12th St	W 14th St	930
W 13th St	2	END	Galloway St	430

STREET NAME	WARD	INTERSECTION 1	INTERSECTION 2	LENGTH (ft)
2nd Ave	3	Carter St	Riverside Dr	2,290
Allen Dr	3	END	Iron Bridge Rd	580
Bailey St	3	Carmack Blvd	E 17th St	1,690
Bullock St	3	Clinch Dr	Elaine Dr	360
Bullock St	3	Elaine Dr	Clinch Dr	360
Carter St	3	7th Ave	2nd Ave	2,040
Chapman Ln	3	Grenada	Bullock St	830
Chapman Ln	3	McCollum	Santa Fe Pk	710
Chapman Ln	3	McCollum St	Santa Fe Pk	700
Clinch Dr	3	Grenada Dr	Bullock St	970
Cody Dr	3	Shores Dr	Dead End	690
E 10th St	3	S Main St	S Glade St	890
E 13th St	3	S Main St	Carmack Blvd	540
E 9th St	3	S Main St	75 ft East of Bridge St	1,410
E End St	3	E 7th St	E 8th St	600
Granada Dr	3	Tommy Dr	N James Campbell Blvd	1,110
Granada Dr	3	N James Campbell Blvd	END	900
Hazel St	3	END	Polk St	340
Hill St	3	N James Campbell Blvd	West 5th St	2,760
Kennedy Dr	3	Sidco Dr	END	810
Lee Dr	3	River Heights Dr	River Heights Dr	1,880
Mapleash Ave	3	E 9th	Tom J Hitch Blvd	4,990
Martin Dr	3	City Limits (271 Martin)	Lem St	490
N High St	3	N James Campbell Blvd	W 6th St	2,820
N Jackson St	3	E 9th St	Midway Ave	310
Nowlin Dr	3	Cloverdale Dr	Nowlin Ct	700
Old Bear Creek Pk	3	400' W of Cody Dr	End	910
Pearl St	3	W 4th St	W 5th St	400
Public Sq	3	END	END	830
S Glade St	3	E 7th St	E 9th St	900
S Jackson St	3	Carmack Blvd	Alexander St	480
S Jackson St	3	Alexander St	END	490
Shores Dr	3	Cody Dr	END	160
Sidco Dr	3	Mooreville Pk	150' E of Kennedy Dr	500
Skyline Dr	3	Mooreville Pk	END	1,540
Smith St	3	Bridge St	END	330
Sycamore St	3	W Willow St	E Willow St	440
W 5th St	3	Armstrong St	N Frierson St	1,310
White St	3	END	Mapleash Ave	580
Wilkes St	3	E 7th St	E 8th St	630
Woodland St	3	E 9th	Cemetery St	2,130
Woodland St	3	E 7th St	E 9th St	900
Woodside St	3	E 8th St	E 9th St	580

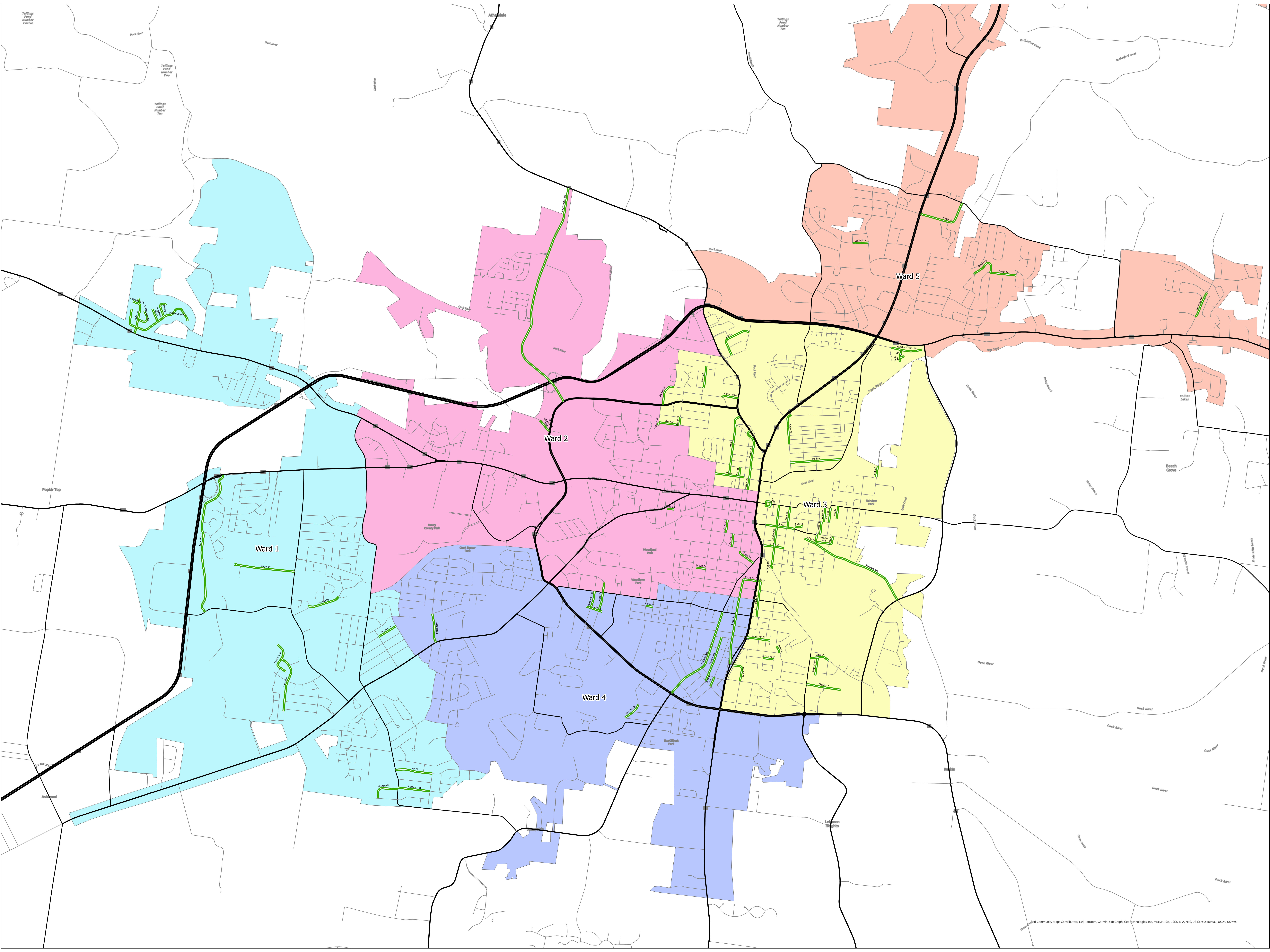
STREET NAME	WARD	INTERSECTION 1	INTERSECTION 2	LENGTH (ft)
Alpine Dr	4	Hatcher Ln	W 19th St	870
Brown St	4	Scribner Ave	Parkway Ave	310
Denham Ave	4	Helm St	Alexander Ln	2,090
Highland Ave	4	E 17th St	S James Campbell Blvd	3,350
McIntosh Dr	4	Ashwood Dr	Birchwood Dr	890
Pleasant Dr	4	Bridge	Trotwood Ave	1,350
S Main St	4	E 15th St	E 18 th St	760
Thomas Ave	4	Eugene Rd	Alexander Ln	430
W 19th St	4	Wedgewood Dr	Alpine Dr	360
Wedgewood Dr	4	Hatcher Ln	W 19th St	760

Cheairs Cir	5	Spring Ln	Tinsley Ln	1,330
E Burt Dr	5	Nashville Hwy	Baker Rd	2,460
Lasea Rd	5	City Limits	Bear Creek Pike	650
Tinsley Ln	5	Cheairs Circle (North)	Austell Dr	1,170
Tom Sharp Rd	5	Shadowbrook Dr	150' S of Timberland Dr	380

Alternate Streets List

STREET NAME	WARD	INTERSECTION 1	INTERSECTION 2	LENGTH (ft)
Galloway St*	2	W 11 th St	W 15th St	2,525
Parker St (South)	2	END	W 12th St	260
Perkins Ln	2	Williamsport Pike	Hampshire Pk	1,650
Rosewood Dr	2	Blythewood Dr	Hatcher Lane	2,310
Eastview Dr	3	Iron Bridge Rd	Goodview Dr	650
Goodview Dr	3	Eastview Dr	Fairview Dr	310
Hannaway Rd	3	E End St	Fairview Dr	1,320
Cord Dr	4	Denham Ave	Pulaski Hwy	2,080
Dimple Ct*	4	Hatcher Ln	Pickens Ln	1,000
Morningside Ave	4	Hatcher Ln	Pickens Ln	1,000
Shady Brook St	4	Hatcher Ln	South James Campbell Blvd	2,110
Sunset Ave*	4	Hatcher Ln	Pickens Ln	1,000
Caldwell Dr	5	Oak Dr	N Hardin Dr	750
Cross Valley Dr	5	450' W of N Hardin Drive	Grandview Dr	1,090
Danrich Dr	5	Theta Pk	Caldwell Dr	630
McBride Cir	5	East Burt Dr	East Burt Dr	2,040
Mulberry Dr	5	END	Bear Creek Pike	730
Navaho Trl	5	Theta Pk	Pawnee Trl	1,150
Osage Trl	5	Cheyenne Trl	Sioux Trl	1,850
Rock Springs Rd	5	Bear Creek Pk	City Limits	840
Ryan Ct	5	McBride Circle	END	200
Ryan Pl	5	McBride Circle	Ryan Ct	600
Sioux Trl	5	Theta Pk	Osage Trl	1,540
Skelley Ln	5	Carol Drive	Nashville Hwy	1,020

*Council Priority





CITY OF COLUMBIA TENNESSEE
CITY COUNCIL
STAFF REPORT

STAFF REPORT CONTACT INFORMATION

Michele Stevens, Senior Administrative Assistant, mstevens@columbiatn.gov, 931-560-1010

AGENDA ITEM TITLE: APPROVE BID AWARD TO HAWKINS & PRICE, LLC FOR CONSTRUCTION OF THE CARTERS CREEK FORCE MAIN RELOCATION IN THE AMOUNT OF \$489,755.00

RECOMMENDATION: Approve.

INFORMATION: The City of Columbia's Wastewater Department requests approval of the bid award to Hawkins & Price, LLC for construction of the Carters Creek Force Main Relocation project in the amount of \$489,755.00. This would replace and update the force main and air relief valves and provide continued quality service to the citizens of the City of Columbia.

CERTIFICATION: The Chief Financial Officer certifies that \$489,755 is budgeted and unencumbered in Wastewater – Pump Stations-Maintenance and Repairs.

ATTACHMENTS: Staff Report, Award Letter, Bid Tab.



SUITE 401
2 INTERNATIONAL PLAZA
NASHVILLE, TENNESSEE 37217

TELEPHONE: 615/366-6088
FAX: 615/366-6203

Water Management Services, LLC

ENGINEERING • PLANNING • OPERATIONS • RATE STUDIES

February 12, 2025

Mr. Donnie Boshers, Wastewater Director
Columbia Wastewater Treatment System
1244 Treatment Plant Road
Columbia, Tennessee 38401

RE: Carters Creek Force Main Relocation
(WMS #24116)

Dear Mr. Boshers,

We have completed our tabulation of the bids received at 2:00 p.m. on February 4, 2025 for the above referenced project. Our review of the bids found that two of the bids contained arithmetic errors, but the errors did not change the ranking of the bids as read aloud. A copy of the bid tabulation is attached for your review, and a ranking of these bids is as follows:

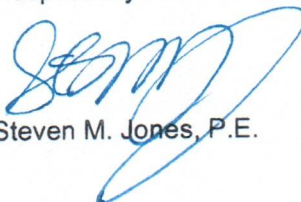
	<u>CONTRACTOR RANKING</u>	<u>TOTAL BID</u>
1	Hawkins & Price, LLC	\$489,755.00
2	Long Branch Construction LLC	\$541,650.00
3	Cleary Construction Inc.	\$616,975.00
4	Contracting Services, Inc.	\$854,110.00

Based on the bids listed above, Hawkins & Price LLC, was found to be the lowest responsive bidder in the amount of \$489,755.00 for the project. Based on our review of the provided references of this firm, we find that Hawkins & Price LLC does have a satisfactory "track record" of completed work on projects with a similar scope.

Accordingly, under the provisions of the Bid Documents, Hawkins & Price LLC. qualifies as the lowest responsive responsible bidder in the amount of \$489,755.00 for the project. Therefore, we recommend award of the project to Hawkins & Price LLC. Subject to the approval of this recommendation of award, a contract can be entered into between the City of Columbia and Hawkins & Price LLC provided they can obtain the required bonds and insurance.

If you should have any questions regarding the above, please contact us.

Respectfully Submitted,



Steven M. Jones, P.E.

Enclosures

CITY OF COLUMBIA, TENNESSEE WASTEWATER SYSTEMS CARTERS CREEK FORCE MAIN RELOCATION BID DATE: FEBRUARY 4, 2025 WMS PROJECT NO. 24116					Hawkins & Price, LLC 5096 Hwy 64E Wartrace, TN 37183 TN License No. 49087		Long Branch Construction LLC 6518 Long Branch Greenbrier, TN 37073 TN License No. 76296		Cleary Construction Inc. 2008 Edmonston Road Tompkinsville, KY 42167 TN License No. 41957		Contracting Services Inc 2287 Baptist Church Rd. Culleoka, TN 38451 TN License No. 45857	
ITEM	DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL	UNIT PRICE	TOTAL	UNIT PRICE	TOTAL	UNIT PRICE	TOTAL	UNIT PRICE	TOTAL
A.	Unit Price Construction Items											
1	24" DR 21 C905 PVC sanitary sewer force main, outside & under roadway, including 3" detection tape and trace wire, complete in place and ready for use	305 LF	\$300.00	\$91,500.00	\$550.00	\$167,750.00	\$540.00	\$164,700.00	\$1,000.00	\$305,000.00		
2	24" DR 21 C905 PVC sanitary sewer force main in 36" casing pipe by tunnel/bore method, including 3" detection tape and trace wire, complete in place and ready for use	100 LF	\$1,460.00	\$146,000.00	\$1,470.00	\$147,000.00 *	\$2,540.00	\$254,000.00	\$2,350.00	\$235,000.00		
3	Combination air release/ vacuum valve assembly including valve vault and odor control assembly, complete in place and ready for use	1 EA	\$66,200.00	\$66,200.00	\$76,016.00	\$76,016.00	\$76,500.00	\$76,500.00	\$18,000.00	\$18,000.00		
4	Tie-in connection of the proposed force main to the existing force main with MJ sleeves including handling of wastewater flows, complete in place and ready for use	2 EA	\$21,700.00	\$43,400.00	\$9,588.00	\$19,176.00	\$12,500.00	\$25,000.00	\$50,000.00	\$100,000.00		
5	Cut and cap of existing force main, complete in place and ready for use	2 EA	\$6,600.00	\$13,200.00	\$10,863.00	\$21,726.00	\$6,000.00	\$12,000.00	\$20,000.00	\$20,000.00		
6	Miscellaneous Ductile Iron Pipe fittings, complete in place	5,000 LBS	\$19.00	\$95,000.00	\$10.00	\$50,000.00	\$10.00	\$50,000.00	\$25.00	\$125,000.00		
7	Topsoil and seeding of trenches, complete in place	205 LF	\$13.00	\$2,665.00	\$20.00	\$4,100.00	\$45.00	\$9,225.00	\$10.00	\$2,050.00		
8	Removal of existing air release valve including granular fill of the existing vault, complete in place and ready for use	1 EA	\$9,600.00	\$9,600.00	\$35,872.00	\$35,872.00	\$2,250.00	\$2,250.00	\$3,000.00	\$3,000.00		
9	Type "A" asphalt replacement, complete in place and ready for use	30 LF	\$485.00	\$14,550.00	\$267.00	\$8,010.00	\$510.00	\$15,300.00	\$1,334.00	\$40,020.00		
10	Unit Price Construction Items Ordered by the Engineer/Owner Class "C" concrete (2,000 psi) for encasement, cradle, thrust blocking, etc., complete in place	20 CY	\$278.00	\$5,560.00	\$200.00	\$4,000.00	\$255.00	\$5,100.00	\$300.00	\$6,000.00		
11	Unclassified excavation for undercuts	20 CY	\$55.50	\$1,100.00	\$300.00	\$6,000.00	\$70.00	\$1,400.00	\$1.00	\$20.00		
12	Crushed stone backfill for undercuts, complete in place	20 CY	\$49.00	\$980.00	\$100.00	\$2,000.00 *	\$75.00	\$1,500.00	\$1.00	\$20.00		
	Total of All Unit Price and Lump Sum Construction Items 1 - 12			\$488,755.00 *		\$541,650.00 *		\$616,975.00		\$854,110.00		

I hereby certify that this is a true and correct bid tab with all arithmetic errors corrected.

* error corrected

Stamp 2-7-25
 Water Management Services, LLC Date



CITY OF COLUMBIA TENNESSEE
CITY COUNCIL
STAFF REPORT

STAFF REPORT CONTACT INFORMATION

Michele Stevens, Administrative Assistant, mstevens@columbiatn.gov, 931-560-1010

AGENDA ITEM TITLE: APPROVE THE PURCHASE OF A 2025 MINI EXCAVATOR FROM RJV KUBOTA IN THE AMOUNT OF \$56,580.35 UTILIZING SOURCEWELL CONTRACT 112624

RECOMMENDATION: Approve.

INFORMATION: The City of Columbia's Wastewater Department wants to purchase a 2025 Mini Excavator in the amount of \$56,580.35 for use by our sewer rehab crew where the larger excavator is unable to easily fit or on narrow streets to avoid blocking the entire road. This will be purchased through Sourcewell Contract 112624.

CERTIFICATION: The Chief Financial Officer certifies that \$56,581 is budgeted and unencumbered in Wastewater – WW Rehab-Equipment and Machinery Auto.

ATTACHMENTS: Staff Report, RJV Kubota 2025 Mini Excavator quote, Sourcewell Contract 112624.

-- Standard Features --

-- Custom Options --



Kubota

U Series

U35-4R3A

*** EQUIPMENT IN STANDARD MACHINE ***

FEATURES

Tight Tail Swing
Auto Idler
Rubber Track Model
ROPS/OPG (Top Guard, Level I)
Air Conditioned Cab
Suspension Seat
Kubota 3 Hydraulic Pump Design
1 Gear, 2 Variable
Displacement Pumps
All Controls Hydraulic Pilot Controls
Accumulator
Two Operating Pattern Selection System
Digital Control Panel
Attachment Flow Presets, Service Alerts
Float Angle Blade w/ Bolt-on Cutting Edge
360 Degree Full Rotation
71 Degree Left, 45 Degree Right Boom Swing
15.8 gpm Adjustable Auxiliary Hydraulics Port
Auxiliary Hydraulics Diverter Valve
Thumb Bracket & Relief Valves
Five Second Quick Preheat System
Key Switch Stop System
Half Pitch Rubber Tracks
Self Bleed Fuel System
Auto-Downshift Two Speed Travel System
Swivel Negative Brake
Travel Negative Brake
Third Line

ENGINE

D1703-M Kubota E-TVCS Tier 4
Diesel Engine
3 Cylinder, 4 Cycle
23.9 Net HP @ 2200 rpm

OPERATIONAL

DIMENSIONS

Max Digging Depth 9' 8.9"
Max Digging Radius @ Ground Level 16' 11.3"
Max Vertical Digging Depth 6' 7.3"
Max Dumping Height 11' 0.7"

DOZER BLADE

DIMENSIONS

Width 67"
Height 13.5"
Lift Above Ground 14.65"
Drop Below Ground 14.53"

PERFORMANCE

Digging Force @ Bucket (K7875) 7924 lbs.
Digging Force @ Dipper Arm 4451 lbs.
Travel Speed (Low) 1.9 mph
Travel Speed (High) 2.9 mph
Climbing Ability 58% / 30°
Lift Capacity 3,230 lbs.
Over Front
Blade Grounded
2.0 Ft. Load Point Height
8.0 Ft. Load Radius

DIMENSIONS AND OPERATING WEIGHT

U35-4R3A Rubber Tracks,
Air Conditioned ROPS/OPG (Top Guard, Level I) Cab,
Angle Dozer Blade
Overall Length 15' 7"
Overall Width 5' 7"
Overall Height 8' 1.2"
Operating Weight 8,800 lbs.*
Ground Clearance 11.34"
* Includes operator's weight, 175 lbs.

U35-4R3A Base Price: \$63,929.00

(1) 12" QA TRENCHING BUCKET \$1,431.00
K7872A-12" QA TRENCHING BUCKET

(1) QUICK COUPLER \$1,400.00
K7870A-QUICK COUPLER

(1) 24" QA TRENCHING BUCKET \$1,937.00
K7875A-24" QA TRENCHING BUCKET

(1) HYD THUMB KIT \$3,963.00
K7910A-HYD THUMB KIT

Configured Price: \$72,660.00

Sourcewell Discount: (\$17,438.40)

SUBTOTAL: \$55,221.60

Dealer Assembly: \$165.00

Freight Cost: \$793.75

PDI: \$400.00

Total Unit Price: \$56,580.35

Quantity Ordered: 1

Final Sales Price: \$56,580.35

Purchase Order Must Reflect Final Sales Price.

To order, place your Purchase Order directly with the quoting dealer

*Some series of products are sold out for 2022. All equipment specifications are as complete as possible as of the date on the quote. Additional attachments, options, or accessories may be added (or deleted) at the discounted price. All specifications and prices are subject to change. Taxes are not included. The PDI fees and freight for attachments and accessories quoted may have additional charges added by the delivering dealer. These charges will be billed separately. Prices for product quoted are good for 60 days from the date shown on the quote. All equipment as quoted is subject to availability.



MASTER AGREEMENT #112624

CATEGORY: Grounds Maintenance Equipment and Related Attachments

SUPPLIER: Kubota Tractor Corporation

This Master Agreement (Agreement) is between Sourcewell, a Minnesota service cooperative located at 202 12th Street Northeast, P.O. Box 219, Staples, MN 56479 (Sourcewell) and Kubota Tractor Corporation, 1000 Kubota Drive, Grapevine, TX 76051 (Supplier).

Sourcewell is a local government and service cooperative created under the laws of the State of Minnesota (Minnesota Statutes Section 123A.21) offering a Cooperative Purchasing Program to eligible participating government entities.

Under this Master Agreement entered with Sourcewell, Supplier will provide Included Solutions to Participating Entities through Sourcewell's Cooperative Purchasing Program.

Article 1: General Terms

The General Terms in this Article 1 control the operation of this Master Agreement between Sourcewell and Supplier and apply to all transactions entered by Supplier and Participating Entities. Subsequent Articles to this Master Agreement control the rights and obligations directly between Sourcewell and Supplier (Article 2), and between Supplier and Participating Entity (Article 3), respectively. These Article 1 General Terms control over any conflicting terms. Where this Master Agreement is silent on any subject, Participating Entity and Supplier retain the ability to negotiate mutually acceptable terms.

- 1) **Purpose.** Pursuant to Minnesota law, the Sourcewell Board of Directors has authorized a Cooperative Purchasing Program designed to provide Participating Entities with access to competitively awarded cooperative purchasing agreements. To facilitate the Program, Sourcewell has awarded Supplier this cooperative purchasing Master Agreement following a competitive procurement process intended to meet compliance standards in accordance with Minnesota law and the requirements contained herein.
- 2) **Intent.** The intent of this Master Agreement is to define the roles of Sourcewell, Supplier, and Participating Entity as it relates to Sourcewell's Cooperative Purchasing Program.
- 3) **Participating Entity Access.** Sourcewell's Cooperative Purchasing Program Master Agreements are available to eligible public agencies (Participating Entities). A Participating Entity's authority to access Sourcewell's Cooperative Purchasing Program is determined through the laws of its respective jurisdiction.
- 4) **Supplier Access.** The Included Solutions offered under this Agreement may be made available to any Participating Entity. Supplier understands that a Participating Entity's use of this Agreement is at the Participating Entity's sole convenience. Supplier will educate its sales and service forces about Sourcewell eligibility requirements and required documentation. Supplier will be responsible for ensuring sales are with Participating Entities.

- 5) **Term.** This Agreement is effective upon the date of the final signature below. The term of this Agreement is four (4) years from the effective date. The Agreement expires at 11:59 P.M. Central Time on January 31, 2029, unless it is cancelled or extended as defined in this Agreement.
- a) **Extensions.** Sourcewell and Supplier may agree to up to three (3) additional one-year extensions beyond the original four-year term. The total possible length of this Agreement will be seven (7) years from the effective date.
- b) **Exceptional Circumstances.** Sourcewell retains the right to consider additional extensions as required under exceptional circumstances.
- 6) **Survival of Terms.** Notwithstanding the termination of this Agreement, the obligations of this Agreement will continue through the performance period of any transaction entered between Supplier and any Participating Entity before the termination date.
- 7) **Scope.** Supplier is awarded a Master Agreement to provide the solutions identified in RFP #112624 to Participating Entities. In Scope solutions include:
- a) Lawn and garden equipment for all types of lawn, field and turf care, golf course, landscape, sidewalk, walking path, and parking lot maintenance, and snow removal;
- b) Irrigation and aeration equipment, systems, parts, and installation; and
- c) Beach and waterfront maintenance equipment and accessories.
- 8) **Included Solutions.** Supplier's Proposal to the above referenced RFP is incorporated into this Master Agreement. Only those Solutions included within Supplier's Proposal and within Scope (Included Solutions) are included within the Agreement and may be offered to Participating Entities.
- 9) **Indefinite Quantity.** This Master Agreement defines an indefinite quantity of sales to eligible Participating Entities.
- 10) **Pricing.** Pricing information (including Pricing and Delivery and Pricing Offered tables) for all Included Solutions within Supplier's Proposal is incorporated into this Master Agreement.
- 11) **Not to Exceed Pricing.** Suppliers may not exceed the prices listed in the current Pricing List on file with Sourcewell when offering Included Solutions to Participating Entities. Participating Entities may request adjustments to pricing directly from Supplier during the negotiation and execution of any transaction.
- 12) **Open Market.** Supplier's open market pricing process is included within its Proposal.
- 13) Supplier Representations:**
- i) **Compliance.** Supplier represents and warrants it will provide all Included Solutions under this Agreement in full compliance with applicable federal, state, and local laws and regulations.

ii) **Licenses.** As applicable, Supplier will maintain a valid status on all required federal, state, and local licenses, bonds, and permits required for the operation of Supplier's business with Participating Entities. Participating Entities may request all relevant documentation directly from Supplier.

iii) **Supplier Warrants.** Supplier warrants that all Included Solutions furnished under this Agreement are free from liens and encumbrances, and are free from defects in design, materials, and workmanship. In addition, Supplier warrants the Solutions are suitable for and will perform in accordance with the ordinary use for which they are intended.

14) **Bankruptcy Notices.** Supplier certifies and warrants it is not currently in a bankruptcy proceeding. Supplier has disclosed all current and completed bankruptcy proceedings within the past seven years within its Proposal. Supplier must provide notice in writing to Sourcewell if it enters a bankruptcy proceeding at any time during the term of this Agreement.

15) **Debarment and Suspension.** Supplier certifies and warrants that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from programs operated by the State of Minnesota, the United States federal government, or any Participating Entity. Supplier certifies and warrants that neither it nor its principals have been convicted of a criminal offense related to the subject matter of this Agreement. Supplier further warrants that it will provide immediate written notice to Sourcewell if this certification changes at any time during the term of this Agreement.

16) **Provisions for non-United States federal entity procurements under United States federal awards or other awards (Appendix II to 2 C.F.R § 200).** Participating Entities that use United States federal grant or other federal funding to purchase solutions from this Agreement may be subject to additional requirements including the procurement standards of the Uniform Administrative Requirements, Cost Principles and Audit Requirements for Federal Awards, 2 C.F.R. § 200. Participating Entities may have additional requirements based on specific funding source terms or conditions. Within this Section, all references to "federal" should be interpreted to mean the United States federal government. The following list applies when a Participating Entity accesses Supplier's Included Solutions with United States federal funds.

i) **EQUAL EMPLOYMENT OPPORTUNITY.** Except as otherwise provided under 41 C.F.R. § 60, all agreements that meet the definition of "federally assisted construction contract" in 41 C.F.R. § 60-1.3 must include the equal opportunity clause provided under 41 C.F.R. § 60-1.4(b), in accordance with Executive Order 11246, "Equal Employment Opportunity" (30 FR 12319, 12935, 3 C.F.R. §, 1964-1965 Comp., p. 339), as amended by Executive Order 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," and implementing regulations at 41 C.F.R. § 60, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor." The equal opportunity clause is incorporated herein by reference.

ii) **DAVIS-BACON ACT, AS AMENDED (40 U.S.C. § 3141-3148).** When required by federal program legislation, all prime construction contracts in excess of \$2,000 awarded by non-federal entities must include a provision for compliance with the Davis-Bacon Act (40 U.S.C. § 3141-3144, and 3146-3148) as supplemented by Department of Labor regulations (29 C.F.R. § 5,

“Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction”). In accordance with the statute, contractors must be required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. In addition, contractors must be required to pay wages not less than once a week. The non-federal entity must place a copy of the current prevailing wage determination issued by the Department of Labor in each solicitation. The decision to award a contract or subcontract must be conditioned upon the acceptance of the wage determination. The non-federal entity must report all suspected or reported violations to the federal awarding agency. The contracts must also include a provision for compliance with the Copeland “Anti-Kickback” Act (40 U.S.C. § 3145), as supplemented by Department of Labor regulations (29 C.F.R. § 3, “Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States”). The Act provides that each contractor or subrecipient must be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled. The non-federal entity must report all suspected or reported violations to the federal awarding agency. Supplier must comply with all applicable Davis-Bacon Act provisions.

iii) **CONTRACT WORK HOURS AND SAFETY STANDARDS ACT (40 U.S.C. § 3701-3708).**

Where applicable, all contracts awarded by the non-federal entity in excess of \$100,000 that involve the employment of mechanics or laborers must include a provision for compliance with 40 U.S.C. §§ 3702 and 3704, as supplemented by Department of Labor regulations (29 C.F.R. § 5). Under 40 U.S.C. § 3702 of the Act, each contractor must be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The requirements of 40 U.S.C. § 3704 are applicable to construction work and provide that no laborer or mechanic must be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies, materials, or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence. This provision is hereby incorporated by reference into this Agreement. Supplier certifies that during the term of an award for all Agreements by Sourcewell resulting from this procurement process, Supplier must comply with applicable requirements as referenced above.

iv) **RIGHTS TO INVENTIONS MADE UNDER A CONTRACT OR AGREEMENT.** If the federal award meets the definition of “funding agreement” under 37 C.F.R. § 401.2(a) and the recipient or subrecipient wishes to enter into a contract with a small business firm or nonprofit organization regarding the substitution of parties, assignment or performance of experimental, developmental, or research work under that “funding agreement,” the recipient or subrecipient must comply with the requirements of 37 C.F.R. § 401, “Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements,” and any implementing regulations issued by the awarding agency. Supplier certifies that during the term of an award for all Agreements by Sourcewell resulting from this procurement process, Supplier must comply with applicable requirements as referenced above.

v) **CLEAN AIR ACT (42 U.S.C. § 7401-7671Q.) AND THE FEDERAL WATER POLLUTION CONTROL ACT (33 U.S.C. § 1251-1387).** Contracts and subgrants of amounts in excess of

\$150,000 require the non-federal award to agree to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. § 7401- 7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. § 1251- 1387). Violations must be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA). Supplier certifies that during the term of this Agreement it will comply with applicable requirements as referenced above.

vi) **DEBARMENT AND SUSPENSION (EXECUTIVE ORDERS 12549 AND 12689).** A contract award (see 2 C.F.R. § 180.220) must not be made to parties listed on the government wide exclusions in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 C.F.R. § 180 that implement Executive Orders 12549 (3 C.F.R. § 1986 Comp., p. 189) and 12689 (3 C.F.R. § 1989 Comp., p. 235), "Debarment and Suspension." SAM Exclusions contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549. Supplier certifies that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation by any federal department or agency.

vii) **BYRD ANTI-LOBBYING AMENDMENT, AS AMENDED (31 U.S.C. § 1352).** Suppliers must file any required certifications. Suppliers must not have used federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any federal contract, grant, or any other award covered by 31 U.S.C. § 1352. Suppliers must disclose any lobbying with non-federal funds that takes place in connection with obtaining any federal award. Such disclosures are forwarded from tier to tier up to the non-federal award. Suppliers must file all certifications and disclosures required by, and otherwise comply with, the Byrd Anti-Lobbying Amendment (31 U.S.C. § 1352).

viii) **RECORD RETENTION REQUIREMENTS.** To the extent applicable, Supplier must comply with the record retention requirements detailed in 2 C.F.R. § 200.333. The Supplier further certifies that it will retain all records as required by 2 C.F.R. § 200.333 for a period of 3 years after grantees or subgrantees submit final expenditure reports or quarterly or annual financial reports, as applicable, and all other pending matters are closed.

ix) **ENERGY POLICY AND CONSERVATION ACT COMPLIANCE.** To the extent applicable, Supplier must comply with the mandatory standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act.

x) **BUY AMERICAN PROVISIONS COMPLIANCE.** To the extent applicable, Supplier must comply with all applicable provisions of the Buy American Act. Purchases made in accordance with the Buy American Act must follow the applicable procurement rules calling for free and open competition.

xi) **ACCESS TO RECORDS (2 C.F.R. § 200.336).** Supplier agrees that duly authorized representatives of a federal agency must have access to any books, documents, papers and records of Supplier that are directly pertinent to Supplier's discharge of its obligations under this Agreement for the purpose of making audits, examinations, excerpts, and transcriptions. The

right also includes timely and reasonable access to Supplier's personnel for the purpose of interview and discussion relating to such documents.

xii) **PROCUREMENT OF RECOVERED MATERIALS (2 C.F.R. § 200.322).** A non-federal entity that is a state agency or agency of a political subdivision of a state and its contractors must comply with Section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act. The requirements of Section 6002 include procuring only items designated in guidelines of the Environmental Protection Agency (EPA) at 40 C.F.R. § 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, where the purchase price of the item exceeds \$10,000 or the value of the quantity acquired during the preceding fiscal year exceeded \$10,000; procuring solid waste management services in a manner that maximizes energy and resource recovery; and establishing an affirmative procurement program for procurement of recovered materials identified in the EPA guidelines.

xiii) **FEDERAL SEAL(S), LOGOS, AND FLAGS.** The Supplier cannot use the seal(s), logos, crests, or reproductions of flags or likenesses of Federal agency officials without specific pre-approval.

xiv) **NO OBLIGATION BY FEDERAL GOVERNMENT.** The U.S. federal government is not a party to this Agreement or any purchase by a Participating Entity and is not subject to any obligations or liabilities to the Participating Entity, Supplier, or any other party pertaining to any matter resulting from the Agreement or any purchase by an authorized user.

xv) **PROGRAM FRAUD AND FALSE OR FRAUDULENT STATEMENTS OR RELATED ACTS.** The Contractor acknowledges that 31 U.S.C. § 38 (Administrative Remedies for False Claims and Statements) applies to the Supplier's actions pertaining to this Agreement or any purchase by a Participating Entity.

xvi) **FEDERAL DEBT.** The Supplier certifies that it is non-delinquent in its repayment of any federal debt. Examples of relevant debt include delinquent payroll and other taxes, audit disallowance, and benefit overpayments.

xvii) **CONFLICTS OF INTEREST.** The Supplier must notify the U.S. Office of General Services, Sourcewell, and Participating Entity as soon as possible if this Agreement or any aspect related to the anticipated work under this Agreement raises an actual or potential conflict of interest (as described in 2 C.F.R. Part 200). The Supplier must explain the actual or potential conflict in writing in sufficient detail so that the U.S. Office of General Services, Sourcewell, and Participating Entity are able to assess the actual or potential conflict; and provide any additional information as necessary or requested.

xviii) **U.S. EXECUTIVE ORDER 13224.** The Supplier, and its subcontractors, must comply with U.S. Executive Order 13224 and U.S. Laws that prohibit transactions with and provision of resources and support to individuals and organizations associated with terrorism.

xix) **PROHIBITION ON CERTAIN TELECOMMUNICATIONS AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT.** To the extent applicable, Supplier certifies that during the term of this Agreement it will comply with applicable requirements of 2 C.F.R. § 200.216.

xx) **DOMESTIC PREFERENCES FOR PROCUREMENTS.** To the extent applicable, Supplier certifies that during the term of this Agreement, Supplier will comply with applicable requirements of 2 C.F.R. § 200.322.

Article 2: Sourcewell and Supplier Obligations

The Terms in this Article 2 relate specifically to Sourcewell and its administration of this Master Agreement with Supplier and Supplier's obligations thereunder.

- 1) **Authorized Sellers.** Supplier must provide Sourcewell a current means to validate or authenticate Supplier's authorized dealers, distributors, or resellers which may complete transactions of Included Solutions offered under this Agreement. Sourcewell may request updated information in its discretion, and Supplier agrees to provide requested information within a reasonable time.
- 2) **Product and Price Changes Requirements.** Supplier may request Included Solutions changes, additions, or deletions at any time. All requests must be made in writing by submitting a Sourcewell Price and Product Change Request Form to Sourcewell. At a minimum, the request must:
 - Identify the applicable Sourcewell Agreement number;
 - Clearly specify the requested change;
 - Provide sufficient detail to justify the requested change;
 - Individually list all Included Solutions affected by the requested change, along with the requested change (e.g., addition, deletion, price change); and
 - Include a complete restatement of Pricing List with the effective date of the modified pricing, or product addition or deletion. The new pricing restatement must include all Included Solutions offered, even for those items where pricing remains unchanged.

A fully executed Sourcewell Price and Product Change Request Form will become an amendment to this Agreement and will be incorporated by reference.

- 3) **Authorized Representative.** Supplier will assign an Authorized Representative to Sourcewell for this Agreement and must provide prompt notice to Sourcewell if that person is changed. The Authorized Representative will be responsible for:
 - Maintenance and management of this Agreement;
 - Timely response to all Sourcewell and Participating Entity inquiries; and
 - Participation in reviews with Sourcewell.

Sourcewell's Authorized Representative is its Chief Procurement Officer.

- 4) **Performance Reviews.** Supplier will perform a minimum of one review with Sourcewell per agreement year. The review will cover transactions to Participating Entities, pricing and terms, administrative fees, sales data reports, performance issues, supply chain issues, customer issues, and any other necessary information.

- 5) **Sales Reporting Required.** Supplier is required as a material element to this Master Agreement to report all completed transactions with Participating Entities utilizing this Agreement. Failure to provide complete and accurate reports as defined herein will be a material breach of the Agreement and Sourcewell reserves the right to pursue all remedies available at law including cancellation of this Agreement.
- 6) **Reporting Requirements.** Supplier must provide Sourcewell an activity report of all transactions completed utilizing this Agreement. Reports are due at least once each calendar quarter (Reporting Period). Reports must be received no later than 45 calendar days after the end of each calendar quarter. Supplier may report on a more frequent basis in its discretion. Reports must be provided regardless of the amount of completed transactions during that quarter (i.e., if there are no sales, Supplier must submit a report indicating no sales were made).

The Report must contain the following fields:

- Participating Entity Name (e.g., City of Staples Highway Department);
- Participating Entity Physical Street Address;
- Participating Entity City;
- Participating Entity State/Province;
- Participating Entity Zip/Postal Code;
- Sourcewell Participating Entity Account Number;
- Transaction Description;
- Transaction Purchased Price;
- Sourcewell Administrative Fee Applied; and
- Date Transaction was invoiced/sale was recognized as revenue by Supplier.

If collected by Supplier, the Report may include the following fields as available:

- Participating Entity Contact Name;
- Participating Entity Contact Email Address;
- Participating Entity Contact Telephone Number;

- 7) **Administrative Fee.** In consideration for the support and services provided by Sourcewell, Supplier will pay an Administrative Fee to Sourcewell on all completed transactions to Participating Entities utilizing this Agreement. Supplier will include its Administrative Fee within its proposed pricing. Supplier may not directly charge Participating Entities to offset the Administrative Fee.
- 8) **Fee Calculation.** Supplier's Administrative Fee payable to Sourcewell will be calculated as a stated percentage (listed in Supplier's Proposal) of all completed transactions utilizing this Master Agreement within the preceding Reporting Period. For certain categories, a flat fee may be proposed. The Administrative Fee will be stated in Supplier's Proposal.
- 9) **Fee Remittance.** Supplier will remit fee to Sourcewell no later than 45 calendar days after the close of the preceding calendar quarter in conjunction with Supplier's Reporting Period obligations defined herein. Payments should note the Supplier's name and Sourcewell-assigned Agreement number in the memo; and must be either mailed to Sourcewell above "Attn: Accounts Receivable" or remitted electronically to Sourcewell's banking institution per Sourcewell's Finance department instructions.

- 10) **Noncompliance.** Sourcewell reserves the right to seek all remedies available at law for unpaid or underpaid Administrative Fees due under this Agreement. Failure to remit payment, delinquent payments, underpayments, or other deviations from the requirements of this Agreement may be deemed a material breach and may result in cancellation of this Agreement and disbarment from future Agreements.
- 11) **Audit Requirements.** Pursuant to Minn. Stat. § 16C.05, subdivision 5, the books, records, documents, and accounting procedures and practices relevant to this Agreement are subject to examination by Sourcewell and the Minnesota State Auditor for a minimum of six years from the end of this Agreement. Supplier agrees to fully cooperate with Sourcewell in auditing transactions under this Agreement to ensure compliance with pricing terms, correct calculation and remittance of Administrative Fees, and verification of transactions as may be requested by a Participating Entity or Sourcewell.
- 12) **Assignment, Transfer, and Administrative Changes.** Supplier may not assign or otherwise transfer its rights or obligations under this Agreement without the prior written consent of Sourcewell. Such consent will not be unreasonably withheld. Sourcewell reserves the right to unilaterally assign all or portions of this Agreement within its sole discretion to address corporate restructurings, mergers, acquisitions, or other changes to the Responsible Party and named in the Agreement. Any prohibited assignment is invalid. Upon request Sourcewell may make administrative changes to agreement documentation such as name changes, address changes, and other non-material updates as determined within its sole discretion.
- 13) **Amendments.** Any material change to this Agreement must be executed in writing through an amendment and will not be effective until it has been duly executed by the parties.
- 14) **Waiver.** Failure by Sourcewell to enforce any right under this Agreement will not be deemed a waiver of such right in the event of the continuation or repetition of the circumstances giving rise to such right.
- 15) **Complete Agreement.** This Agreement represents the complete agreement between the parties for the scope as defined herein. Supplier and Sourcewell may enter into separate written agreements relating specifically to transactions outside of the scope of this Agreement.
- 16) **Relationship of Sourcewell and Supplier.** This Agreement does not create a partnership, joint venture, or any other relationship such as employee, independent contractor, master-servant, or principal-agent.
- 17) **Indemnification.** Supplier must indemnify, defend, save, and hold Sourcewell, including their agents and employees, harmless from any claims or causes of action, including attorneys' fees incurred by Sourcewell, arising out of any act or omission in the performance of this Agreement by the Supplier or its agents or employees; this indemnification includes injury or death to person(s) or property alleged to have been caused by some defect in design, condition, or performance of Included Solutions under this Agreement. Sourcewell's responsibility will be governed by the State of Minnesota's Tort Liability Act (Minnesota Statutes Chapter 466) and other applicable law.
- 18) **Data Practices.** Supplier and Sourcewell acknowledge Sourcewell is subject to the Minnesota Government Data Practices Act, Minnesota Statutes Chapter 13. As it applies to all data created and

maintained in performance of this Agreement, Supplier may be subject to the requirements of this chapter.

19) Grant of License.

a) During the term of this Agreement:

i) **Supplier Promotion.** Sourcewell grants to Supplier a royalty-free, worldwide, non-exclusive right and license to use the trademark(s) provided to Supplier by Sourcewell in advertising, promotional materials, and informational sites for the purpose of marketing Sourcewell's Agreement with Supplier.

ii) **Sourcewell Promotion.** Supplier grants to Sourcewell a royalty-free, worldwide, non-exclusive right and license to use Supplier's trademarks in advertising, promotional materials, and informational sites for the purpose of marketing Supplier's Agreement with Sourcewell.

b) **Limited Right of Sublicense.** The right and license granted herein includes a limited right of each party to grant sublicenses to their respective subsidiaries, distributors, dealers, resellers, marketing representatives, partners, or agents (collectively "Permitted Sublicensees") in advertising, promotional, or informational materials for the purpose of marketing the Parties' relationship. Any sublicense granted will be subject to the terms and conditions of this Article. Each party will be responsible for any breach of this section by any of their respective sublicensees.

c) Use; Quality Control.

i) Neither party may alter the other party's trademarks from the form provided and must comply with removal requests as to specific uses of its trademarks or logos.

ii) Each party agrees to use, and to cause its Permitted Sublicensees to use, the other party's trademarks only in good faith and in a dignified manner consistent with such party's use of the trademarks. Each party may make written notice to the other regarding misuse under this section. The offending party will have 30 days of the date of the written notice to cure the issue or the license/sublicense will be terminated.

d) **Termination.** Upon the termination of this Agreement for any reason, each party, including Permitted Sublicensees, will have 30 days to remove all Trademarks from signage, websites, and the like bearing the other party's name or logo (excepting Sourcewell's pre-printed catalog of suppliers which may be used until the next printing). Supplier must return all marketing and promotional materials, including signage, provided by Sourcewell, or dispose of it according to Sourcewell's written directions.

20) Venue and Governing law between Sourcewell and Supplier Only. The substantive and procedural laws of the State of Minnesota will govern this Agreement between Sourcewell and Supplier. Venue for all legal proceedings arising out of this Agreement between Sourcewell and Supplier will be in court of competent jurisdiction within the State of Minnesota. This section does not apply to any dispute between Supplier and Participating Entity. This Agreement reserves the right for Supplier and Participating Entity to negotiate this term to within any transaction documents.

- 21) **Severability.** If any provision of this Agreement is found by a court of competent jurisdiction to be illegal, unenforceable, or void then both parties will be relieved from all obligations arising from that provision. If the remainder of this Agreement is capable of being performed, it will not be affected by such determination or finding and must be fully performed.
- 22) **Insurance Coverage.** At its own expense, Supplier must maintain valid insurance policy(ies) during the performance of this Agreement with insurance company(ies) licensed or authorized to do business in the State of Minnesota having an "AM BEST" rating of A- or better, with coverage and limits of insurance not less than the following:
- a) **Commercial General Liability Insurance.** Supplier will maintain insurance covering its operations, with coverage on an occurrence basis, and must be subject to terms no less broad than the Insurance Services Office ("ISO") Commercial General Liability Form CG0001 (2001 or newer edition), or equivalent. At a minimum, coverage must include liability arising from premises, operations, bodily injury and property damage, independent contractors, products-completed operations including construction defect, contractual liability, blanket contractual liability, and personal injury and advertising injury. All required limits, terms and conditions of coverage must be maintained during the term of this Agreement.
 - \$1,500,000 each occurrence Bodily Injury and Property Damage
 - \$1,500,000 Personal and Advertising Injury
 - \$2,000,000 aggregate for products liability-completed operations
 - \$2,000,000 general aggregate
 - b) **Certificates of Insurance.** Prior to execution of this Agreement, Supplier must furnish to Sourcewell a certificate of insurance, as evidence of the insurance required under this Agreement. Prior to expiration of the policy(ies), renewal certificates must be mailed to Sourcewell, 202 12th Street Northeast, P.O. Box 219, Staples, MN 56479 or provided to in an alternative manner as directed by Sourcewell. The certificates must be signed by a person authorized by the insurer(s) to bind coverage on their behalf. Failure of Supplier to maintain the required insurance and documentation may constitute a material breach.
 - c) **Additional Insured Endorsement and Primary and Non-contributory Insurance Clause.** Supplier agrees to list Sourcewell, including its officers, agents, and employees, as an additional insured under the Supplier's commercial general liability insurance policy with respect to liability arising out of activities, "operations," or "work" performed by or on behalf of Supplier, and products and completed operations of Supplier. The policy provision(s) or endorsement(s) must further provide that coverage is primary and not excess over or contributory with any other valid, applicable, and collectible insurance or self-insurance in force for the additional insureds.
 - d) **Waiver of Subrogation.** Supplier waives and must require (by endorsement or otherwise) all its insurers to waive subrogation rights against Sourcewell and other additional insureds for losses paid under the insurance policies required by this Agreement or other insurance applicable to the Supplier or its subcontractors. The waiver must apply to all deductibles and/or self-insured retentions applicable to the required or any other insurance maintained by the Supplier or its subcontractors. Where permitted by law, Supplier must require similar written express waivers of subrogation and insurance clauses from each of its subcontractors.

- e) **Umbrella/Excess Liability/SELF-INSURED RETENTION.** The limits required by this Agreement can be met by either providing a primary policy or in combination with umbrella/excess liability policy(ies), or self-insured retention.
- 23) **Termination for Convenience.** Sourcewell or Supplier may terminate this Agreement upon 60 calendar days' written notice to the other Party. Termination pursuant to this section will not relieve the Supplier's obligations under this Agreement for any transactions entered with Participating Entities through the date of termination, including reporting and payment of applicable Administrative Fees.
- 24) **Termination for Cause.** Sourcewell may terminate this Agreement upon providing written notice of material breach to Supplier. Notice must describe the breach in reasonable detail and state the intent to terminate the Agreement. Upon receipt of Notice, the Supplier will have 30 calendar days in which it must cure the breach. Termination pursuant to this section will not relieve the Supplier's obligations under this Agreement for any transactions entered with Participating Entities through the date of termination, including reporting and payment of applicable Administrative Fees.

Article 3: Supplier Obligations to Participating Entities

The Terms in this Article 3 relate specifically to Supplier and a Participating Entity when entering transactions utilizing the General Terms established in this Master Agreement. Article 1 General Terms control over any conflict with this Article 3. Where this Master Agreement is silent on any subject, Participating Entity and Supplier retain the ability to negotiate mutually acceptable terms.

- 1) **Quotes to Participating Entities.** Suppliers are encouraged to provide all pricing information regarding the total cost of acquisition when quoting to a Participating Entity. Suppliers and Participating Entities are encouraged to include all cost specifically associated with or included within the Suppliers proposal and Included Solutions within transaction documents.
- 2) **Shipping, Delivery, Acceptance, Rejection, and Warranty.** Supplier's proposal may include proposed terms relating to shipping, delivery, inspection, and acceptance/rejection and other relevant terms of tendered Solutions. Supplier and Participating Entity may negotiate final terms appropriate for the specific transaction relating to non-appropriation, shipping, delivery, inspection, acceptance/rejection of tendered Solutions, and warranty coverage for Included Solutions. Such terms may include, but are not limited to, costs, risk of loss, proper packaging, inspection rights and timelines, acceptance or rejection procedures, and remedies as mutually agreed include notice requirements, replacement, return or exchange procedures, and associated costs.
- 3) **Applicable Taxes.** Participating Entity is responsible for notifying supplier of its tax-exempt status and for providing Supplier with any valid tax-exemption certification(s) or related documentation.
- 4) **Ordering Process and Payment.** Supplier's ordering process and acceptable forms of payment are included within its Proposal. Participating Entities will be solely responsible for payment to Supplier and Sourcewell will have no liability for any unpaid invoice of any Participating Entity.
- 5) **Transaction Documents.** Participating Entity may require the use of its own forms to complete transactions directly with Supplier utilizing the terms established in this Agreement. Supplier's

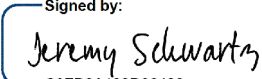
standard form agreements may be offered as part of its Proposal. Supplier and Participating Entity may complete and document transactions utilizing any type of transaction documents as mutually agreed. In any transaction document entered utilizing this Agreement, Supplier and Participating Entity must include specific reference to this Master Agreement by number and to Participating Entity’s unique Sourcewell account number.

- 6) **Additional Terms and Conditions Permitted.** Participating Entity and Supplier may negotiate and include additional terms and conditions within transaction documentation as mutually agreed. Such terms may supplant or supersede this Master Agreement when necessary and as solely determined by Participating Entity. Sourcewell has expressly reserved the right for Supplier and Participating Entity to address any necessary provisions within transaction documents not expressly included within this Master Agreement, including but not limited to transaction cancellation, dispute resolution, governing law and venue, non-appropriation, insurance, defense and indemnity, force majeure, and other material terms as mutually agreed.
- 7) **Subsequent Agreements and Survival.** Supplier and Participating Entity may enter into a separate agreement to facilitate long-term performance obligations utilizing the terms of this Master Agreement as mutually agreed. Such agreements may provide for a performance period extending beyond the full term of this Master Agreement as determined in the discretion of Participating Entity.
- 8) **Participating Addendums.** Supplier and Participating Entity may enter a Participating Addendum or similar document extending and supplementing the terms of this Master Agreement to facilitate adoption as may be required by a Participating Entity.

Sourcewell

Kubota Tractor Corporation

Signed by:



C0FD2A139D06489...

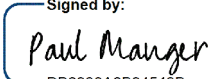
By: _____

Jeremy Schwartz

Title: Chief Procurement Officer

Date: 1/28/2025 | 7:10 PM CST

Signed by:



DB2930A6B34543B...

By: _____

Paul Manger

Title: Executive Director

Date: 1/28/2025 | 3:12 PM CST

RFP 112624 - Grounds Maintenance Equipment and Related Attachments

Vendor Details

Company Name: Kubota Tractor Corporation
Address: 1000 Kubota Drive
Grapevine, Texas 76051
Contact: Trisha Davis
Email: trisha.davis@kubota.com
Phone: 817-532-3879
Fax: 888-458-2682
HST#: 9 5 2 8 0 1 5 1 3

Submission Details

Created On: Tuesday October 22, 2024 13:18:58
Submitted On: Monday November 25, 2024 13:26:15
Submitted By: Michael Bond
Email: michael.bond@kubota.com
Transaction #: 6c8c299d-1c2e-4d96-808b-702dddc44484
Submitter's IP Address: 209.249.99.117

Specifications

Table 1: Proposer Identity & Authorized Representatives (Not Scored)

General Instructions (applies to all Tables) Sourcewell prefers a brief but thorough response to each question. Do not merely attach additional documents to your response without also providing a substantive response. Do not leave answers blank; respond "N/A" if the question does not apply to you (preferably with an explanation).

Table 1 Specific Instructions. Sourcewell requires identification of all parties responsible for providing Solutions under a resulting master agreement(s) (Responsible Supplier). Proposers are strongly encouraged to include all potential Responsible Suppliers including any corporate affiliates, subsidiaries, D.B.A., and any other authorized entities within a singular proposal. All information required under this RFP must be included for each Responsible Supplier as instructed. Proposers with multiple Responsible Supplier options may choose to respond individually as distinct entities, however each response will be evaluated individually and only those proposals recommended for award may result in a master agreement award. Unawarded entities will not be permitted to later be added to an existing master agreement through operation of Proposer's corporate organization affiliation.

Line Item	Question	Response *	
1	Provide the legal name of the Proposer authorized to submit this Proposal.	Kubota Tractor Corporation	*
2	In the event of award, is this entity the Responsible Supplier that will execute the master agreement with Sourcewell? Y or N.	Yes - Kubota Tractor Corporation	*
3	Identify all subsidiaries, D.B.A., authorized affiliates, and any other entity that will be responsible for offering and performing delivery of Solutions within this Proposal (i.e. Responsible Supplier(s) that will execute a master agreement with Sourcewell).	Kubota Tractor Corporation	*
4	Provide your CAGE code or Unique Entity Identifier (SAM):	N/A	*
5	Provide your NAICS code applicable to Solutions proposed.	423820 others apply as well	
6	Proposer Physical Address:	1000 Kubota Drive Grapevine, TX 76051	*
7	Proposer website address (or addresses):	www.kubotausa.com	*
8	Proposer's Authorized Representative (name, title, address, email address & phone) (The representative must have authority to sign the "Proposer's Assurance of Compliance" on behalf of the Proposer):	Paul Manger Executive Director 1000 Kubota Drive, Grapevine, TX 76051 Paul.Manger@kubota.com (817) 756-1171	*
9	Proposer's primary contact for this proposal (name, title, address, email address & phone):	Trisha Davis National Accounts Gov't Specialist 1000 Kubota Drive; Grapevine, TX 76051 Trisha.Davis@kubota.com (817) 876-5819	*
10	Proposer's other contacts for this proposal, if any (name, title, address, email address & phone):	Mark Adams Manager, National Accounts Sales 1000 Kubota Drive; Grapevine, TX 76051 Mark.Adams@kubota.com (630) 488-8001	*

Table 2A: Financial Viability and Marketplace Success (50 Points)

Line Item	Question	Response *
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11	Provide a brief history of your company, including your company's core values, business philosophy, and industry longevity related to the requested Solutions.	Who Kubota is, and will continue to be, is summed up in this statement - We are dedicated to food, water, and life. Kubota Corporation was established in 1890 as a metal casting business. When cholera was spreading through Japan, Kubota began mass domestic production of the nation's first cast iron pipes to help people avoid the disease. The company's founder Gonshiro Kubota believed, "Products that help the country prosper cannot be born without pouring all of your knowledge and soul into its development." He also believed, "Our products should not only be technically excellent, but also useful for the good of society." Inheriting these philosophies, the company has always stood up to social issues. Kubota Corporation developed agricultural machinery to combat the food shortage in post-war Japan, and established water and waste management, as well as an urban infrastructure development business to deal with the rapid economic growth of the country. Starting at the turn of the century, Kubota Corporation began expanding its global operations. In 2021, overseas revenue ratio reached 78%, spanning 120 countries and regions around the world where it is tackling sophisticated local climate and environmental challenges. Currently, Kubota Corporation treats food, water, and environment as one business area that leverages each other and is developing new solutions to combat the challenging and complex issues. In 1972 Kubota established the first overseas tractor sales base in the United States. As Kubota had been approached by the American company Ford about the OEM supply of small tractors in 1967, it had been decided to enter the North American market with its own brand. The demand there was overwhelmingly for petrol engines, but Kubota had completed a multi-cylinder, lightweight and compact engine that overcame the problems with diesel engines, so it decided to limit exports to these diesel products. The company's compact diesel tractors were highly rated as having a performance and usability in line with larger models, and they became established in the American market, with over 2,000 sold in 1972. The company therefore created the Kubota Tractor Corporation (KTC) in Compton City, California, as a joint operation with the Marubeni Corporation, an export partner. KTC acted as a sales base and greatly expanded the market for the products. In 1974 In order to rebuild the company's construction machinery business, a decision was made to focus on compact vehicles, and the organization, production bases and sales system were all renewed. The KH1 fully-rotating mini back-hoe (compact pneumatic shovel) was completed in 1974, and would become the base machine for the company. In the latter half of the 1970s, the opportunities for the use of the mini back-hoe increased as there was an increase in small-scale construction work ordered by local authorities and urban-style construction for the improvement of the living environment. As Kubota had been first in the market, the sales volumes rose steadily. In 1979, a new construction machinery division was created to bring together the technology, sales and manufacturing of the products. For a full selection of Kubota literature please refereee to KubotaUSA.com and kubotaengine.com for up to date history and product knowledge.
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12	What are your company's expectations in the event of an award?	Kubota Tractor Corporation is honored to have served our Sourcewell partnership and its prospective members who have purchased our Kubota equipment through Sourcewell since 2012. Kubota expects to meet and exceed the expectations of Sourcewell members for products, services, and support. Kubota will position Sourcewell as our first and best solution for cooperative purchasing. Our dedicated National Account Manager for Municipal and Business Development makes our Sourcewell contracts a focus for sales growth throughout the United States. Kubota is committed to supporting Sourcewell members wherever they are located at a level that meets and exceeds their expectations. Kubota has an extensive array of dealer training tools to support continued growth. Sourcewell member aftersales support, and marketing direction to ensure success. We will engage our 1,100 dealers to promote our contract, and support Sourcewell members to the greatest extent possible. Kubota will engage government entities in the adoption of our Sourcewell contract in place of establishing individual government contracts. Kubota and the National Account Team for Municipal and New Business will partner with Sourcewell for marketing materials and trade show support. Kubota looks forward to attending and supporting Sourcewell "Get to Know Us" forums and will encourage dealer participation to understand the value of contract purchasing with Sourcewell members. Kubota will incorporate all Sourcewell marketing materials, resources, and tools (e.g. training videos, Talking Tactics, Webinars, etc.) into dealer education and business development. Lastly, Kubota's expectations are when Sourcewell members reach out to their local Kubota dealer, the dealer knows who they are and how they can help. Kubota's expectations in the event of an award would be to focus on customer needs and continued growth across all our governmental segments. Sourcewell has built a strong reputation within the industry that has shown the importance of how this cooperative contract delivers upon customer needs. This contract will be a top factor in our go to market strategy within our strong Kubota dealer network of over 1,100 plus dealers. If awarded, we will send out an internal Dealer Bulletin to our entire dealer network and Kubota salesforce, applicable to governmental, introducing the contract along with ways to train our salesforce, market and grow the contract. We are looking forward to this exciting opportunity to further grow our Kubota business and serve member needs together with our Dealer Network in the new RFP 112624 - Grounds Maintenance Equipment and Related Attachments. If awarded, we will be able to offer a wide array of equipment to fit the needs of Sourcewell members.	*
13	Demonstrate your financial strength and stability with meaningful data. This could include such items as financial statements, SEC filings, credit and bond ratings, letters of credit, and detailed reference letters. Upload supporting documents (as applicable) in the document upload section of your response. DO NOT PROVIDE ANY TAX INFORMATION OR PERSONALLY IDENTIFIABLE INFORMATION.	Financial information has been uploaded. These documents include general information such as Dunn and Bradstreet number, and federal ID numbers. As well as more specific financial information such as creditors and banking information.	*
14	What is your US market share for the Solutions that you are proposing?	Kubota Tractor Corporation considers its market share data to be proprietary information. While we do not publicly release market share information, Kubota Tractor Corporation holds a top-level market share position across our entire product portfolio's in the US.	*
15	What is your Canadian market share for the Solutions that you are proposing?	Kubota Tractor Corporation considers its market share data to be proprietary information. While we do not publicly release market share information, Kubota Tractor Corporation holds a top-level market share position across our entire Ag & Turf product portfolio in Canada.	*
16	Disclose all current and completed bankruptcy proceedings for Proposer and any included possible Responsible Party within the past seven years. Proposer must provide notice in writing to Sourcewell if it enters a bankruptcy proceeding at any time during the pendency of this RFP evaluation.	No, Kubota Tractor Corporation has never petitioned for bankruptcy protection.	*

17	How is your organization best described: is it a manufacturer, a distributor/dealer/reseller, or a service provider? Answer the question that best applies to your organization, either a) or b). a) If your company is best described as a distributor/dealer/reseller (or similar entity), provide your written authorization to act as a distributor/dealer/reseller for the manufacturer of the products proposed in this RFP. If applicable, is your dealer network independent or company owned? b) If your company is best described as a manufacturer or service provider, describe your relationship with your sales and service force and with your dealer network in delivering the products and services proposed in this RFP. Are these individuals your employees, or the employees of a third party?	Kubota Tractor Corporation is a United States licensed Distributor and marketer of Kubota Japan (KBT). We are supported by our 1,100 plus dealer network which is independent of Kubota Tractor Corporation. Our dealers are independently owned companies who are able to support a wide variety of customers, markets, and product support including technical, parts, service, and onsite warranty work. Our dealerships have been proudly transacting and serving Sourcewell customers for many years, and look forward to a continued and prosperous partnership under this RFP. Our Kubota dealers are very experienced in properly quoting and transacting Sourcewell bids, and have formed many long - term relationships over the years with the Sourcewell purchasing entities. We at Kubota Tractor Corporation are fully authorized by Kubota Japan to transact on their behalf as their fully authorized USA distributor. Kubota also has a dedicated full time staffed government department to represent all governmental needs.	*
18	If applicable, provide a detailed explanation outlining the licenses and certifications that are both required to be held, and actually held, by your organization (including third parties and subcontractors that you use) in pursuit of the business contemplated by this RFP.	Kubota maintains all licenses and certifications necessary to conduct business in the U.S. and Canada. Our commitment to environmental excellence is witnessed in achieving our SO 14001 environmental certifications. SO 14001 certification has been achieved at all domestic sites and 14 production sites in Japan. ISO 14001 certification is an environmental certification issued by the International Organization for Standardization. Additionally, all divisions have achieved SO 9001 certification. 24 Kubota Group companies whose primary operation is manufacturing have acquired certification. Certifications demonstrate Kubota's commitment to excellence in quality and design, development, and environmental sustainability. Some examples include employing DRBFM, a cross functional disciplined process to evaluate proposed changes to designs. Kubota self-audits quality, quality compliance, cross audits, and audits at short notice. This focus on auditing and compliance is to achieve operational excellence. It is these kinds of actions that result in Kubota's operational excellence and our certifications	*
19	Disclose all current and past debarments or suspensions for Proposer and any included possible Responsible Party within the past seven years. Proposer must provide notice in writing to Sourcewell if it enters a debarment or suspension status any time during the pendency of this RFP evaluation.	None - Not Applicable	*
20	Describe any relevant industry awards or recognition that your company has received in the past five years.	CSS Design Awards is one of the top three global web design awards alongside FWA (Favorite Website Awards) and awards. Judges from around the world evaluate websites on three categories: UI Design, UX Design, and Innovation. Kubota's Kubota Future Cube was ranked eighth out of 365 entries for 2022's Website of the Year. Furthermore, the cutting-edge website was awarded the Best Innovation award. Kubota is the first Japanese company to receive the annual award from CSS Design Awards. #1 selling compact excavator in the world for 18 years; #1 selling sub-compact tractor in the US; #1 rated reliability and durability by Progressive Farmer; Highest resale value for select construction equipment. Kubota Tractor Corporation has beefed up its compact tractor lineup with four new models. The company announced the addition of a new LX20 Series, with the LX3520 and LX4020 as the first two entrants. It also is expanding its popular LO2 Series, with the introduction of the L2502 and L4802. The two models added to the LX20 Series offer a multitude of improvements. Along with new horsepower offerings of 35 and 40, both are available in a factory-installed cab or ROPS configuration. A "special utility," or SU, model cab option is available for the LX3520. 2023 - U10-5 Rental Equipment Register, Innovation Award, 2023 - CE Attachments Concrete Contractor: Top Product Award, 2023 (plate compactors)- F3710 Front Mount Mower Landscape Business: 20 for 2023 Award, - F3710 Front Mount Mower Green Industry Pros: Editor's Choice Award 2022 - L47 TLB: Equipment Watch: Highest Retained Value Awards, 2022 - U10-5 Landscape Business: 20 for 2022 Awards, 2022 - U10-5 Green Industry Pros: Editor's Choice Awards, 2022 - U10-5 Rental Magazine: Editor's Choice Awards, 2022 - U10-5 Equipment Today: Contractor's Top 50 New Products, 2022 - U10-5 Construction Equipment: Top 100 New Products, 2022 - U10-5 Compact Equipment: Innovative Iron Awards, 2022 - K008-5 Green Industry Pros: Editor's Choice Awards, 2022 2021 - SSV Series: Equipment Watch: Highest Retained Value Awards, 2021 - SVL97-2 Equipment Today: Contractor's Top Products, 2021 - SVL97-2 Rental Magazine: Editor's Choice Awards, 2021	*

		- KX057-5 Rental Magazine: Editor's Choice Awards, 2021 - KX057-5 Construction Equipment: Top 100 New Products, 2021 - U55-5 Rental Magazine: Editor's Choice Awards, 2021 - U55-5 Construction Equipment: Top 100 New Products, 2021 - RTV-520 Pro Tools Review: Innovation Awards, 2021 - SZ Series Landscape Business: 20 for 2021 New Product Awards, 2021 - SZ Series Green Industry Pros: Editor's Choice Awards, 2021 - Z422 Zero Turn Mower Pro Tools Review: Innovation Awards, 2021 - SZ Series Pro Tools Review: Innovation Awards, 2020 - SVL65-2 Rental Equipment Register: Innovative Product Awards, 2020 - SCL1000 Landscape Business: 20 for 2020 New Product Awards, 2020 - SCL1000 Construction Equipment: Innovative Iron Showcase, 2020 - SCL1000 Construction Equipment: Top 100 New Products, 2020 - SCL1000 Green Industry Pro's: Editor's Choice Awards, 2020 - SCL1000 Rental Magazine: Editor's Choice Awards, 2020 - SCL1000 Equipment Today: Contractor's Top 50 New Products, 2020 - CE Attachments Construction Equipment: Attachments Awards, 2020 - RTV-XG850 Sidekick Pro Tools Review: Innovation Awards, 2020 2019 - U35-4: Equipment Watch: Highest Retained Value Awards, 2019 - SVL65-2 Equipment Today: Top 50 New Products, 2019 - SVL65-2 Rental Equipment Register: Innovative Product Awards, 2019 - SVL65-2 Rental Magazine: Editor's Choice Awards, 2019 - SZ Series Green Industry Pros: Editor's Choice Awards, 2019 - B01 Series Construction Equipment: Top 100 New Products, 2019 2018 - SVL Series: Equipment Watch: Highest Retained Value Awards, 2018 - RTV-XG850 Sidekick Equipment Today: Contractor's Top 50, 2018 - RTV-XG850 Sidekick Compact Equipment: Innovative Iron Awards, 2018 - RTV-XG850 Sidekick Construction Equipment: Top 100 New Products, 2018 - RTV-X1120 Construction Equipment: Top 100 New Products, 2018 By Product Line: ZD Series - ZD Series mowers rank as the number one selling diesel zero-turn mower series for more than 5 years." - Claim is based on Outdoor Power Equipment Institute market statistics from 2017 - 2021 unit shipments. Z400 Series - "Class-leading speed." - Claim is based on speeds published on company websites as of 11/08/2021 for the following 52"- 54" zero-turn models Gravely Pro-Turn ZX, Scag Patriot, Exmark Radius S Series, Toro Titan HD 2000 Series, Hustler Fastrak SDX, John Deere ZTrak. BX Series- #1 selling sub-compact tractor in the U.S. for over Ten years. Disclaimer: Based on EDA tractor sales data of under 20 horsepower models from 2009 to 2020 -Rated #1 for durability and owner experience - Disclaimer: Award based on 2021 Progressive Farmer Reader Insights Study. - #1 rated reliability under 100 HP tractors in the USA." Disclaimer: 2020 Progressive Farmer Reader Insights Awards for Fewest Report Problems Overall in the category of Small Tractor (Under 100 Horse Power). Award based on 2020 Progressive Farmer Readers Insights Tractor Study. " B series - "#1 rated reliability under 100 HP tractors in the USA." - 2020 Progressive Farmer Reader Insights Awards for Fewest Reported Problems Overall in the category of Small Tractor (Under 100 Horse Power). Award based on 2020	*
21	What percentage of your sales are to the governmental sector in the past three years?	Due to Kubota Tractor Corporation's proprietary information, we would prefer not to provide the governmental sector sales volume history of our valued customers. We are a partner who is fully committed to our governmental customer purchase requirements. With our dedicated team we work solely with our government customers and our dealer network as we continue to increase our sales volume in this key segment.	*
22	What percentage of your sales are to the education sector in the past three years?	Due to Kubota Tractor Corporation's proprietary information, we would prefer not to provide the educational sector sales volume history of our valued customers. We are a partner who is fully committed to our educational customer purchase requirements. With our dedicated team we work solely with our educational customers and our dealer network as we continue to increase our sales volume in this key segment.	*
23	List all state, cooperative purchasing agreements that you hold. What is the annual sales volume for each of these agreement over the past three years?	Kubota holds a variety of state participating addendums. Including but not limited to New York state, Nevada, Kentucky, and Arkansas.	*
24	List any GSA contracts or Standing Offers and Supply Arrangements (SOSA) that you hold. What is the annual sales volume for each of these contracts over the past three years?	KTC dealerships individually hold specific GSA and SOSA contracts and act independently in their transactions under these contracts.	*

Table 2B: References/Testimonials

Line Item 25. Supply reference information from three customers who are eligible to be Sourcewell participating entities.

Entity Name *	Contact Name *	Phone Number *	
Miami-Dade County	Bernalt Velasquez	(305) 794-2051	*
City of Hollywood	Jacques Pierre-Louis	(305) 761-9737	*
Arlington Independent School District	Todd Lane	(214) 435-8368	*

Table 3: Ability to Sell and Deliver Solutions (150 Points)

Describe your company's capability to meet the needs of Sourcewell participating entities across the US and Canada, as applicable. Your response should address in detail at least the following areas: locations of your network of sales and service providers, the number of workers (full-time equivalents) involved in each sector, whether these workers are your direct employees (or employees of a third party), and any overlap between the sales and service functions.

Line Item	Question	Response *	
26	Sales force.	Kubota's has over 1,100 dealer locations nationwide as well as our sales force within the Kubota Tractor Corporation National Accounts department. The sales coverage is in place for all 50 states and Canada by both our dealers sales force which averages four sales representatives per location which conservatively averages over 4,000 representatives. Kubota in Canada has 155 dealer locations with similar sales force averages. Additionally, Kubota Tractor Corporation directly employs 51 regional sales managers, five district sales managers, and five division sales managers. The Kubota sales force is essential for educating and instructing dealers in promoting and supporting government, educational, and non-profit entities. This combined sales effort will also drive new Sourcewell member growth and engagement with our Global Major Brand. Kubota dealers are also supported by a network of product sales specialist specific in Agricultural, Construction equipment business development managers, Compact Utility Specialist, Hay Tool Specialist, Turf Field Staff and Utility Vehicle Product and Sales Team Specialist throughout the United States and Canada. All positions are designed to fully support our dealers in market trends, relevant industry updates and sales campaigns, market support and pricing to better position our dealers for sustained sales growth within their regions. The Kubota dealers are all fully authorized sellers on our contract and can quote, accept PO's, and invoice Sourcewell member entities.	*
27	Describe the network of Authorized Sellers who will deliver Solutions, including dealers, distributors, resellers, and other distribution methods.	The Kubota dealer network encompasses approx. 500 dealer owners with approx. 1,145 dealer locations throughout the USA. Over 60% of our dealer owners own multiple dealer locations, and average 25 or more years of industry experience.	*
28	Service force.	Kubota places a high level of importance on quality, dependability and service support. Kubota dealers average over twice as many service technicians as sales representatives. Kubota dealers invest heavily in training and recruiting of service technicians, with each averaging 9 service technicians on average. This has resulted in nearly 10,000 certified service technicians across Kubota's dealer network. Many of these have mobile service vehicles as well to service onsite. Kubota's Canadian dealer network has similar averages of service technicians in its 150 plus dealerships. Kubota internally employs approximately 50 field-based technical service representatives to assist the dealer network with ensuring maximum up time and value for Kubota users. Kubota has stringent dealer requirements to provide a strong customer service support and obligations are high. Each dealership is required to have a factory trained service technician on staff at all times. The factory training is facilitated by the Kubota Corporate technical service center in Grapevine, TX. A corporate service training staff ensures dealers have access to, and take advantage of, world-class service training. Every dealer is also required to participate annually in service training school which last multiple days. These requirements ensure Kubota dealers meet our stated service goals and expectations. Kubota also provides training on all equipment within our Kubota University entity who holds an annual training in Florida for both US and Canada dealers in the months of January through February where dealers are allowed to learn about Kubota's products as well as the competitor's equipment.	*

29	Describe the ordering process. If orders will be handled by distributors, dealers or others, explain the respective roles of the Proposer and others.	All of the Sourcewell transactions are handled by our dealer network directly. This allows Sourcewell members the opportunity to interact with their local Kubota dealerships. The local dealers within Kubota are very active members of their local communities, and have strong ties to them. Any purchasing entity that requests quotations from Kubota Tractor is automatically redirected to their local Kubota dealership for follow up, including them gaining an understanding of what the purchasing entity is seeking, including what kind of attachments and accessories it seeks. From there, the dealership is able to build an accurate quote based on what the Sourcewell member has requested. If the Sourcewell member approves of the quotation, our Kubota dealers are well skilled to not only procure the equipment internally, but also very capable in assembling the requested attachments and accessories. Once fully assembled and inspected, our dealers not only provide transportation to the Sourcewell member, but will also assist them with equipment familiarization, maintenance tips, and any other assistance in the safe operation of the equipment. Kubota offers extensive maintenance contracts for those purchasing entities for those who choose it. It allows Sourcewell members to take their equipment to the dealer of their choice to provide routine maintenance at various usage thresholds (50 hours, 100 hours, etc.) Sourcewell members will contact their local Kubota dealers directly for a quote. If Kubota National Accounts are contacted by a Sourcewell member, we assist them in directing them to their local dealer. The local Kubota dealership will provide the Sourcewell member with a Kubota authorized quotation, reflecting the proper discounts on the contract. The quotes are created utilizing the internal quote tool utilized by Kubota, "Build My Kubota (BMK) quote tool.	*
30	Describe in detail the process and procedure of your customer service program, if applicable. Include your response-time capabilities and commitments, as well as any incentives that help your providers meet your stated service goals or promises.	The customer service aspect of our Sourcewell relationship remains vital to our dealer network. Our dealers work on the front line for KTC by handling customers at a personal level. Our dealer metrics program has been updated for 2025 and will reward our top performing dealers, giving them the incentive to be the best in multiple categories. Beyond our dealers, support is provided by the various departments at KTC. Customer service outlets such as the Technical Service Center, Customer Satisfaction, parts/warranty departments are there to provide Sourcewell a quick solution. Response time during business hours will be typically be immediate, and never to exceed 4 hours.	*
31	Describe your ability and willingness to provide your products and services to Sourcewell participating entities.	Kubota will provide full service and support to all Sourcewell members in all 50 states in the US.	*
32	Describe your ability and willingness to provide your products and services to Sourcewell participating entities in Canada.	Kubota Canada Ltd. is able to provide all Sourcewell member full service and support in Canada.	*
33	Identify any geographic areas of the United States or Canada that you will NOT be fully serving through the proposed agreement.	Kubota will fully service all geographic areas of the United States and Canada with the proposed Sourcewell Contract.	*
34	Identify any account type of Participating Entity which will not have full access to your Solutions if awarded an agreement, and the reasoning for this.	Kubota will fully service and honor all Participating Entities if awarded under this contract.	*
35	Define any specific requirements or restrictions that would apply to our participating entities in Hawaii and Alaska and in US Territories.	There are no specific contract restrictions to supporting Sourcewell members in Alaska and Hawaii. Kubota has dealers located in both states to support Sourcewell members efficiently.	*
36	Will Proposer extend terms of any awarded master agreement to nonprofit entities?	Kubota is able to provide service to all participating entities including state/county/local government, educational, and non-profit sectors. As a Global Major Brand with a global presence, Kubota is committed to serving all Sourcewell members equally and fully in the US and Canada.	*

Table 4: Marketing Plan (100 Points)

Line Item	Question	Response *
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37	Describe your marketing strategy for promoting this opportunity. Upload representative samples of your marketing materials (if applicable) in the document upload section of your response.	This marketing plan leverages Kubota's established reputation, government and educational sector growth, and Sourcewell's cooperative purchasing advantages to attract and retain government, educational, and non-profit clients. 1. Marketing Strategy for Sourcewell Opportunities • Targeted Outreach to Government and Educational Entities: Kubota's marketing approach includes promoting Sourcewell cooperative contracts to government agencies, municipalities, non-profit organizations, and educational institutions to highlight streamlined purchasing processes, competitive pricing, and high-quality equipment that Sourcewell contracts offer. • Local Dealer Involvement and Training: Kubota collaborates with its extensive dealer network to ensure they are knowledgeable about Sourcewell contracts. Dealers are trained to reach out to local government, school districts, and non-profits to showcase the ease and benefits of using Sourcewell contracts for their equipment needs. • Digital Marketing and Online Visibility: Kubota leverages its online platform and digital advertising to target Sourcewell-eligible organizations. This includes informative content on Kubota's website, social media channels, and educational videos on how government and educational entities can benefit from Sourcewell contracts. • Trade Shows and Industry Events: Kubota participates in trade shows focused on municipal, educational, and non-profit sectors, showcasing equipment suitable for these audiences and providing Sourcewell information directly to attendees. • Cooperative Purchasing Webinars: Kubota hosts webinars or partners with Sourcewell to conduct informational sessions aimed at educating prospective buyers on the benefits of cooperative purchasing. This includes case studies of successful implementations in similar entities. 2. Growth in Government, Non-Profit, and Educational Sales • Government Sales Growth: Kubota has seen growth in government sales, driven largely by increased awareness of cooperative purchasing benefits through Sourcewell. This includes increased contracts with municipal maintenance departments for equipment such as mowers, compact tractors, and utility vehicles that support grounds maintenance, landscaping, and snow removal. • Non-Profit Sector Sales: Kubota's partnerships with non-profit organizations have expanded, particularly in sectors needing durable outdoor equipment, like conservation organizations and community development groups. The Sourcewell contract's streamlined process allows non-profits to acquire essential equipment within budget constraints. • Educational Institutions: Kubota has seen increased interest from K-12 schools, universities, and other educational facilities for groundskeeping and facility maintenance solutions. School districts, in particular, benefit from using Sourcewell contracts to purchase mowers, compact tractors, and utility vehicles for campus upkeep. 3. Contracts and Initiatives Supporting Growth • Dedicated Sourcewell Contracts: Kubota's dedicated Sourcewell contract enables eligible entities to access equipment at pre-negotiated rates without a lengthy bid process. This contract has facilitated growth in Kubota's public sector sales by providing a reliable framework for purchasing. • Sustainability Initiatives: Kubota's commitment to environmentally friendly technology has supported growth in the non-profit sector, as organizations increasingly seek eco-friendly options. Kubota promotes its energy-efficient engines and low-emission equipment in marketing materials targeting these sectors. • Community and Educational Support Programs: Kubota has initiated community outreach programs, including partnerships with technical schools and universities. These initiatives not only promote Kubota's equipment but also support educational development in agricultural and construction fields. 4. Messaging and Key Selling Points for Sourcewell-Eligible Entities • Emphasis on Ease and Efficiency of Cooperative Purchasing: Kubota's marketing emphasizes the simplicity and time savings of using Sourcewell contracts, which eliminate the need for a lengthy bid process. • Showcasing Product Reliability and Versatility: Marketing materials emphasize Kubota's reputation for durable, versatile equipment, which is ideal for government and educational needs. Examples include tractors and mowers that can be used across multiple applications, from landscaping to snow removal. • Highlighting Long-Term Value and Service Commitment: Kubota promotes its long-term value proposition by highlighting service plans, genuine parts availability, and extended warranties, which are particularly appealing to budget-conscious government and non-profit buyers.
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38	Describe your use of technology and digital data (e.g., social media, metadata usage) to enhance marketing effectiveness.	Kubota uses a range of digital technologies to support and enhance its Sourcewell marketing efforts, effectively reaching government, non-profit, and educational entities. Through these technology-driven strategies, Kubota enhances its Sourcewell marketing by building awareness, engaging directly with potential buyers, and providing convenient resources for decision-making. This integrated approach improves Kubota's reach and effectiveness in the public and institutional market segments. Here are some key strategies and examples of Kubota's technology-driven marketing efforts: 1. Social Media for Brand Awareness and Engagement • Targeted Content on Social Media Platforms: Kubota actively uses social media channels, including LinkedIn, Facebook, Twitter, and Instagram, to promote Sourcewell opportunities to government and educational entities. LinkedIn, for example, allows Kubota to connect directly with public sector professionals and share relevant posts about cooperative purchasing benefits and case studies of successful Sourcewell partnerships. • Campaigns Highlighting Sourcewell Benefits: Kubota runs targeted ad campaigns focused on Sourcewell contracts, emphasizing the streamlined purchasing process and cost savings. These campaigns may highlight specific equipment suitable for government and educational use (e.g., mowers for school campuses, utility vehicles for municipalities). • Customer Testimonials and Case Studies: Kubota shares posts and videos on social media that showcase real-life testimonials from Sourcewell users in government and non-profit organizations, creating relatable content that resonates with potential buyers. 2. Metadata and SEO to Improve Online Visibility • Optimized Website Content for Sourcewell Searches: Kubota's website content, especially pages related to government and institutional purchasing, is optimized with keywords like "Sourcewell contracts," "government equipment purchasing," and "Kubota cooperative contracts." This helps Kubota rank higher in search results for public procurement professionals looking for relevant information. • Structured Data and Meta Tags: Kubota uses metadata, structured data, and meta tags to provide search engines with clear signals about their Sourcewell offerings. By tagging pages with terms that are commonly searched by municipal and educational buyers, Kubota can increase organic visibility for users researching cooperative purchasing options. • Landing Pages and Conversion Optimization: Kubota has developed specific landing pages that detail the benefits of Sourcewell contracts, making it easy for visitors to access relevant information and connect with a representative. These pages are optimized for conversions, with clear calls to action, contact forms, and interactive tools to locate nearby dealers. 3. Email Marketing for Direct Outreach • Targeted Email Campaigns: Kubota uses email marketing to target Sourcewell-eligible entities, such as government departments, school districts, and non-profits. By segmenting these lists, Kubota can deliver personalized content, like special contract offers, product updates, and case studies showing the impact of Kubota equipment in similar sectors. • Automated Drip Campaigns: Email automation allows Kubota to nurture leads over time. For example, if a government official downloads a Sourcewell brochure, they may enter a series of follow-up emails with information on specific products, dealer contacts, and the benefits of cooperative purchasing. 4. Website and Analytics Tools • Sourcewell Resource Pages with Downloadable Content: Kubota's website features dedicated Sourcewell resource pages that include downloadable PDFs, video case studies, and product catalogs tailored to government and institutional buyers. This content provides valuable information while giving Kubota insights into user engagement through download tracking. • Analytics and Conversion Tracking: Using analytics tools like Google Analytics, Kubota tracks the effectiveness of their Sourcewell-related web traffic, measuring conversion rates, page views, and user flow. This data helps Kubota refine its content strategy to better attract and convert potential Sourcewell buyers. 5. Geotargeting and Digital Ads • Geotargeted Digital Ad Campaigns: Kubota uses geotargeted ads to reach Sourcewell-eligible entities within specific states or regions. These ads highlight the unique advantages of Sourcewell contracts and the equipment suited to local government needs. • Programmatic Advertising: Kubota leverages programmatic advertising to display ads to users who have shown interest in government and institutional procurement. This approach helps Kubota maximize ad spend efficiency by reaching users likely to benefit from Sourcewell opportunities. 6. Webinars and Virtual Demos • Educational Webinars on Sourcewell Contracts: Kubota conducts webinars to explain the Sourcewell contract process, with presentations on cooperative purchasing benefits, equipment overviews, and case studies. These webinars are recorded and hosted on Kubota's website for future access, creating a valuable resource for ongoing engagement. • Virtual Demos of Equipment: Kubota offers virtual demonstrations of equipment well-suited to government, non-profit, and educational uses, such as mowers, tractors, and UTVs. These demos are accessible online, allowing buyers to view equipment capabilities remotely and understand their practical applications in their respective sectors.
39	In your view, what is Sourcewell's role in promoting agreements arising out of this RFP? How will you integrate a Sourcewell-awarded agreement into your sales process?	Kubota can expect Sourcewell to actively promote their contracts through a variety of established channels and initiatives. Sourcewell has a dedicated team and platform specifically designed to help suppliers reach government, non-profit, and educational sectors. By leveraging Sourcewell's promotional efforts, Kubota can strengthen its sales and marketing processes to maximize engagement and effectiveness.

Sourcewell's promotional efforts create a strong foundation for Kubota to build upon, providing access to a large network of public sector buyers. By closely aligning Kubota's sales and marketing processes with Sourcewell's channels, messaging, and events, Kubota can increase its market penetration in government, educational, and non-profit sectors. Kubota's proactive use of Sourcewell promotions will reinforce its reputation as a cooperative-friendly supplier, making it easier for public entities to choose Kubota for their equipment needs.

1. Sourcewell's Marketing and Outreach Initiatives

- Website Promotion and Contract Listings: Sourcewell lists Kubota's contracts on their website, which is a central hub for government, education, and non-profit buyers seeking cooperative purchasing options. This exposure helps prospective buyers discover Kubota's offerings and understand the benefits of the contract.
- Email Campaigns to Eligible Entities: Sourcewell conducts targeted email campaigns to promote new and existing contracts to eligible entities. These emails reach municipal, educational, and non-profit organizations nationwide, raising awareness of Kubota's available equipment under Sourcewell.
- Direct Outreach through Representatives: Sourcewell has a team of regional representatives who work directly with public sector organizations to introduce them to new contracts. These representatives can present Kubota's contract to potential buyers, answer questions, and highlight the advantages of cooperative purchasing.
- Trade Shows and Conferences: Sourcewell participates in industry trade shows and conferences where government, educational, and non-profit decision-makers gather. Kubota's Sourcewell contract may be featured in these events, further increasing its visibility.
- Educational Webinars and Training: Sourcewell hosts webinars to educate potential buyers on cooperative purchasing, sometimes inviting suppliers to participate. This provides a valuable platform for Kubota to present its product lineup, demonstrate value, and interact with potential buyers directly.

2. Using Sourcewell's Promotion in Kubota's Sales and Marketing

Kubota can maximize the impact of Sourcewell's promotional efforts by integrating them into their own sales and marketing strategies as follows:

- Link to Sourcewell Contracts in Digital Campaigns: Kubota can link to their Sourcewell contract page from digital campaigns, including social media posts, email marketing, and targeted ads. This direct connection provides immediate access for potential buyers, emphasizing the ease of the cooperative purchasing process.
- Highlight Sourcewell Partnership in Sales Presentations: Sales representatives can incorporate Sourcewell's role and promotional efforts in their presentations to public sector clients. Emphasizing this partnership can assure buyers that Kubota is well-integrated with a respected cooperative purchasing agency, making it a reliable and simplified choice.
- Collaborate on Joint Marketing Materials: Kubota can create joint marketing materials with Sourcewell's brand and logo, highlighting that Kubota equipment is readily accessible under an established cooperative contract. These materials can be distributed at trade shows, conferences, and in digital format, lending credibility to Kubota's public sector offerings.
- Leverage Sourcewell's Trade Show Presence: Since Sourcewell attends major trade shows, Kubota can work with Sourcewell representatives to ensure that their booth and promotional materials feature Kubota's equipment prominently. Kubota's team can also attend these shows, using Sourcewell's presence as a strategic advantage to connect with more leads.
- Incorporate Sourcewell Testimonials and Case Studies: Sourcewell's direct outreach may result in testimonials or case studies from satisfied buyers in government, educational, or non-profit sectors. Kubota can incorporate these testimonials into its marketing collateral, showcasing real-world examples of successful Sourcewell purchases to build trust and demonstrate proven benefits.

3. Process Enhancements to Align with Sourcewell Promotion

- Streamline Sales Training on Sourcewell Benefits: Kubota should train its sales team extensively on the benefits and process of Sourcewell contracts so they can confidently discuss the cooperative purchasing option with prospects. This will enhance sales readiness and ensure representatives can answer any questions buyers may have about Sourcewell.
- Use Sourcewell Contract as a Selling Point: Emphasizing Sourcewell's streamlined purchasing process as part of Kubota's value proposition can speed up sales cycles and help prospects understand the simplicity of acquiring Kubota equipment.
- Track Leads from Sourcewell Channels: By closely tracking leads that originate from Sourcewell promotions (e.g., inquiries from Sourcewell's website or trade shows), Kubota can evaluate the effectiveness of this partnership and refine its strategy based on the data.

4. Collaborative Events and Campaigns

- Join Sourcewell in Webinars and Educational Sessions: Kubota can co-host or participate in Sourcewell's webinars and educational sessions, offering direct insights to potential buyers. By showcasing their expertise and specific product offerings in these forums, Kubota can build rapport with a wider public sector audience.
- Coordinate Seasonal Campaigns with Sourcewell: Kubota can plan seasonal campaigns (e.g., promoting snow removal equipment in winter) in coordination with Sourcewell's outreach to maximize visibility. These campaigns can highlight relevant products, demonstrate their application in municipal and educational settings, and align with seasonal needs.

40	Are your Solutions available through an e-procurement ordering process? If so, describe your e-procurement system and how governmental and educational customers have used it.	E-Procurement Access for Sourcewell Members Kubota works with its dealers and partners to ensure that Sourcewell members can order through e-procurement platforms, allowing for an efficient and compliant purchasing experience. Kubota products are accessible to Sourcewell members through authorized dealers who support various e-procurement platforms. This approach aligns with Kubota's focus on streamlined cooperative purchasing, allowing government and institutional buyers to complete purchases with ease and compliance through the systems they commonly use. Here's how this typically functions: 1. Dedicated Sourcewell Contract Platform: Kubota's Sourcewell contract details are available on the Sourcewell website, which links directly to Kubota's authorized dealer network. This network facilitates ordering for Sourcewell members by providing transparent pricing and pre-negotiated terms. 2. Integration with E-Procurement Systems: While Kubota does not have a direct e-commerce site, many of Kubota's authorized dealers and suppliers are integrated with various public-sector e-procurement platforms used by Sourcewell members, such as ProcureNow or OpenGov. Through these systems, Sourcewell members can browse Kubota equipment options, review pricing, and place orders with ease. 3. Simplified Quote and Purchase Order Process: For Sourcewell members, Kubota's streamlined purchasing process includes the ability to request quotes and complete purchase orders directly with authorized dealers. These dealers handle all necessary paperwork and contract compliance with Sourcewell terms, providing a simplified experience. 4. Support for Cooperative Purchasing Platforms: Kubota's dealers also provide direct support for cooperative purchasing platforms, guiding Sourcewell members through any specific procurement steps. This includes assistance with purchase orders, invoicing, and contract compliance, all compatible with the e-procurement systems preferred by public sector entities. 5. Future E-Procurement Advancements: Kubota continues to explore additional ways to facilitate e-procurement for Sourcewell contracts. For example, some dealers are actively working toward creating more seamless online ordering solutions, including online product catalogs and virtual ordering portals tailored to Sourcewell members' needs.	*
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Table 5A: Value-Added Attributes (100 Points)

Line Item	Question	Response *	
41	Describe any product, equipment, maintenance, or operator training programs that you offer to Sourcewell participating entities. Include details, such as whether training is standard or optional, who provides training, and any costs that apply.	Kubota Tractor Corporation and your local Kubota dealer are dedicated to delivering exceptional service to meet your needs. Our dealer technicians are connected to a state-of-the-art online Service Center, granting them access to vital technical information. They also undergo extensive hands-on training from factory-certified instructors to enhance and maintain their expertise. We pride ourselves on providing timely and accurate diagnostics and repairs whenever necessary. Training is available for all products listed in this contract through our dealer network, tailored to each member's current knowledge and needs. Operator training is included with the delivery of every product, and more advanced training options can be requested. Additional on-site training can also be arranged and discussed with dealers, potentially included as a separate line item in a Sourcewell member quote. Additionally Kubota will be instituting a national accounts training program geared towards assisting Sourcewell entities on Kubota diagnostic, service, and warranty processes. The MyKubota app is a free tool available on iOS and Android through the Apple App Store and Google Play Store. It offers features like equipment tracking, browsing compatible attachments, and more. KubotaNOW Telematics provides advanced reporting and insights for select equipment models, enhancing customer awareness of their machinery's performance, with costs varying by equipment type. You can also purchase Kubota On Board Diagnostic Software, repair manuals, and specialized tools through your local dealer for self-diagnosis and repair of your equipment.	*
42	Describe any technological advances that your proposed Solutions offer.	Kubota is dedicated to crafting solutions that herald a new era in agriculture, providing enhanced value and inspiration to all participants across various scales of the industry. With a steadfast commitment to innovation, the company continually refines its products. As information and communications technology (ICT) significantly reshapes societal and economic structures both domestically and internationally, Kubota is pioneering precision farming techniques that leverage ICT. In Japan, the agricultural sector grapples with a declining and aging labor force, alongside the pressing need to improve cost-effectiveness and production efficiency. The traditional reliance on the expertise of seasoned farmers and intuitive practices has become increasingly untenable. Consequently, there is considerable optimism surrounding the potential of data-driven management approaches that scientifically analyze and visualize agricultural processes, positioning them as a vital force for the industry's future.	*

43	Describe any "green" initiatives that relate to your company or to your Solutions, and include a list of the certifying agency for each.	The Kubota Group aspires to enhance its value by contributing to societal advancement and environmental sustainability, particularly within the realms of food, water, and environmental management. As part of our commitment, we prioritize environmental conservation as a core tenet of our business strategy, undertaking the following initiatives: 1. Commitment to a Decarbonized Society (1) The Kubota Group is dedicated to achieving net-zero greenhouse gas emissions across our value chains by 2050. We will also transparently report on our efforts to reduce emissions across Scopes 1, 2, and 3. (2) By 2025, our global production facilities aim to reduce CO₂ emissions per production value by at least 25% compared to 2014 levels. (3) Additionally, we target an 18% reduction in energy consumption per production value by 2025, compared to 2014 benchmarks. (4) Our facilities will increase renewable energy usage to at least 1% of total electricity consumption by 2025. (5) For our Japanese operations, we have set a long-term goal of reducing CO₂ emissions by 30% by 2030, based on 2014 levels. (6) To meet these goals, we are leveraging cutting-edge technologies to enhance the efficiency of production equipment, HVAC, and lighting systems; adopting cleaner fuels; improving building insulation; monitoring and minimizing energy use; capturing waste heat; and implementing solar and green electricity solutions. (7) In alignment with our global mission, we will quantify our greenhouse gas reduction impacts and share this data with stakeholders worldwide. This information aims to promote decarbonization by encouraging the adoption of eco-friendly products, services, and technologies. Our efforts include improving fuel efficiency in agricultural and construction machinery, advancing smart agriculture through robotics and ICT, and developing decarbonized energy solutions, including electrification, hybridization, and fuel cell applications. (8) Finally, we endorse the recommendations of the TCFD (Task Force on Climate-related Financial Disclosures) and actively disclose our climate-related strategies and progress. Through these initiatives, the Kubota Group is determined to drive meaningful change toward a sustainable, low-carbon future for the communities we serve. 2030 Targets: Reduce CO₂ emissions from the Kubota Group by 50% compared to the base year FY2014; In FY 2023, CO₂ emissions of the Kubota Group were reduced by 28% compared to the base year FY2014. In FY 2023, Kubota designated 37 new Eco-Products, bringing the sales ratio of Eco-Products to 70.1% globally.	*
44	Identify any third-party issued eco-labels, ratings or certifications that your company has received for the Solutions included in your Proposal related to energy efficiency or conservation, life-cycle design (cradle-to-cradle), or other green/sustainability factors.	Kubota Group Environmental Charter: -The Kubota Group aspires to create a society where sustainable development is possible on a global scale. -The Kubota Group contributes to the conservation of global and local environments through its environmentally friendly operations, products, technologies, services, and global activities. The following are a select few products that were certified as Eco-Products in 2023: -M5002 Series: Compliant with exhaust gas regulations(North America) -LX2620: Compliant with exhaust gas regulations(North America) -M7 Series: Compliant with exhaust gas regulations(North America) -RTV-X: Compliant with exhaust gas regulations(North America) -RTV-X1130: Compliance with RoHS -SVL 75-3: Compliant with exhaust gas regulations(North America) -Diesel Engine EP-2309: Fuel consumption reduced by 12%	*
45	What unique attributes does your company, your products, or your services offer to Sourcewell participating entities? What makes your proposed solutions unique in your industry as it applies to Sourcewell participating entities?	Kubota's advanced and reliable engines offer exceptional horsepower and performance with low noise, vibration, and outstanding fuel efficiency. Anti-Theft System: The engine can only be started with "programmed keys." Even if a key has the same shape, it won't start the engine unless it's properly programmed. If an unprogrammed key is used, the anti-theft alarm will activate and continue until a programmed key is inserted and the engine is started. Auto Idling System: Save fuel with Kubota's Auto Idle feature, which automatically lowers engine RPM when full power isn't needed. After four seconds of inactivity with the control levers in neutral, the engine idles. Moving any control lever will instantly restore the engine to full RPM. This feature reduces noise and emissions, enhancing operational efficiency. Eco Plus: Kubota's unique ECO PLUS feature maximizes fuel efficiency and supports environmental responsibility. With a simple switch, you can activate 'Eco Mode' for enhanced fuel savings over the standard mode.	*
46	Describe the safety features your equipment offers such as emergency stop, operator presence control, roll over protection systems, guarding, noise reduction, stability controls, warning lights, etc.	Safety is a top priority at Kubota. All machines come from the factory with Roll over protection system(ROPS), Seatbelt, OPC/Neutral safety switches, and any other necessary safety equipment to keep the operator safe. Seat belts are an integral part of any ROPS and should always be used. However, the seat belt should not be used when a foldable ROPS is down or a fixed ROPS is removed. All PTO shafts feature a safety guard and should be used at all times. The Anti-Stall system and other stability assistance features ensure the smooth operation of the machine. New models, such as the LX3310, feature enhanced noise reduction with improved window seals and the 4-pillar design with rounded glass offers more space and panoramic views of your surroundings. Kubota also offers various safety option kits such as backup/travel alarms, lights, etc. to further workspace safety.	

47	Describe any ergonomic features your equipment has such as anti-vibration, suspension and swivel seating, adjustable handles, ergonomic control layout for ease of reach, padded shoulder straps or harnesses, easy pull-start cords, etc.	The BX2380 and BX2680 models feature a deluxe operator's station, equipped with tilt steering and a high-back seat with armrests, creating a comfortable operator experience that transforms any chore into an enjoyable task. Meanwhile, the LX20 Series' factory-installed cab enhances year-round comfort, providing premium amenities such as air conditioning, heating, front LED headlights, and work lights. Its wide, spacious flat deck, reclining high-back suspension seat with armrests, tilt steering, and cruise control ensure that operators remain at ease. Additional features include telescopic stabilizers, mid and rear PTO, an integrated loader joystick, and intuitive, color-coded controls. The SCL1000 model offers a 4.3" color LCD monitor with keyless start, passcode protection, and consolidated machine monitoring with service reminders, making it easy to keep the equipment in top condition. A convenient 12-volt charging port comes standard. The patented T-drive handle delivers intuitive, ergonomic steering, while hydraulic pilot-operated loader and drive control valves ensure precise, responsive operation. In the SVL Series, operators enjoy a spacious cab with a luxurious, adjustable full-suspension seat and ample legroom, designed for comfort and convenience. This is reflected in the SVL 97-3 that contains a one piece cab that reduces dust collection in the cab, reduces decibels within the cab, and allows for easy clean out. Lastly for excavator operators, the KX033-4 model offers a redefined experience with a larger entrance, more legroom, and enhanced ergonomics that make routine tasks simpler. Its refined cabin combines functionality and comfort, setting a new standard in operator satisfaction. Finally, the RTV product line has received notable enhancements with the release of the new 2025 RTV-X series. This updated series now features a redesigned T-handle parking brake, strategically positioned to the left of the steering wheel for improved accessibility and ease of use. Additionally, the headrest has been refined, offering a fresh upgrade to enhance comfort and support.
48	Describe features your equipment offers that positively impact the environment such as low-emission engines, battery powered and electric, eco-mode settings, biodegradable fuel use, water conservation technology, solar powered charging capability, smart technology, auto-shut off/no-idling systems, etc.	Kubota offers three core solutions—Pure Engine Solutions, Hybrid Solutions, and Fuel Solutions—each uniquely designed to advance carbon neutrality. Pure Engine Solutions aim to enhance the fuel efficiency of existing engines. A notable example is the D902-K, an electronically controlled small engine, which entered mass production in 2022. It utilizes Kubota's proprietary combustion system, TVCR, which incorporates a common rail electronic control system typically found in larger diesel engines, adapted specifically for smaller engines. This technology minimizes black smoke emissions, reduces fuel consumption, and maintains a compact engine design. Hybrid Solutions integrate an engine with an electric motor to optimize performance. In scenarios requiring immediate high output and load, the electric motor supplements the engine's power, allowing a smaller engine—such as a 2.4L or 1.8L class—to replace a 3L class engine. This approach promotes downsizing and greater fuel efficiency. Fuel Solutions focus on alternative fuels to reduce reliance on fossil fuels. For example, the D1105-K engine runs on hydrotreated vegetable oil (HVO), a fuel produced by introducing hydrogen to vegetable oil. As plants, the source of HVO, absorb CO₂ while growing, this fuel essentially offsets the CO₂ released during combustion, making HVO-compatible engines a sustainable, carbon-neutral solution. In addition, Kubota is developing hydrogen-fueled industrial engines, drawing on its long standing expertise. These engines emit no CO₂ during combustion, marking a significant step toward decarbonization. Kubota is also committed to sustainable manufacturing by utilizing recycled materials in engine components. Ductile iron pipes, fittings, and various machine-cast products—such as crankcases, cylinder heads, and transmission cases—are produced primarily from recycled scrap iron, sourced both internally and externally. The recycling process effectively removes impurities, preserving the quality of the iron. As part of Kubota's Medium-Term Environmental Conservation Targets for 2025, the company aims to maintain a recycled material usage rate of at least 70%, promoting sustainability in production. (**See supporting documents for more information**)
49	Describe the serviceability of the products included in your proposal (parts availability, warranty and technical support, etc.)	Kubota's dealer network ensures efficient access to parts and service, enabling timely support for all machines. Dealers are equipped with KPAD and a streamlined parts ordering system to enhance order processing speed. Additionally, with the integration of Smart Supply in select partner dealerships, Kubota aims to proactively stock high-demand parts—helping dealers maintain inventory before shortages arise. For any questions or assistance with parts ordering, Kubota offers dedicated technical support through our divisional offices. *For details on warranty information, please refer to the supporting documents.*

Table 5B: Value-Added Attributes

Line Item	Question	Certification	Offered	Comment	
50	Select any Women or Minority Business Entity (WMBE), Small Business Entity (SBE), or veteran owned business certifications that your company or hub partners have obtained. Upload documentation and a listing of dealerships, HUB partners or resellers if available. Select all that apply.		☐ Yes ☒ No	Kubota Tractor Corporation fully supports all Women- and Minority-Owned Business Enterprises (WMBE) and Small Business Enterprises (SBE). However, as a subsidiary of Kubota Japan, we do not currently track this information internally. Nonetheless, we remain fully committed to supporting these businesses.	*
51		Minority Business Enterprise (MBE)	☐ Yes ☒ No	In regards to MBE Kubota dealerships are independently owned and operated. Under Kubota's business model, dealerships retain the right and discretion to conduct business with parties of their choosing.	*
52		Women Business Enterprise (WBE)	☒ Yes ☐ No	In regards to WBE Kubota dealerships are independently owned and operated. Under Kubota's business model, dealerships retain the right and discretion to conduct business with parties of their choosing.	*
53		Disabled-Owned Business Enterprise (DOBE)	☐ Yes ☒ No	In regards to DOBE Kubota dealerships are independently owned and operated. Under Kubota's business model, dealerships retain the right and discretion to conduct business with parties of their choosing.	*
54		Veteran-Owned Business Enterprise (VBE)	☐ Yes ☒ No	Even though Kubota is not a VBE Kubota strives to help the veteran community whenever possible. Most recently reflected with a partnership with Boot Campaign, designed to help and support military families.	*
55		Service-Disabled Veteran-Owned Business (SDVOB)	☐ Yes ☒ No	In regards to SDVOB Kubota dealerships are independently owned and operated. Under Kubota's business model, dealerships retain the right and discretion to conduct business with parties of their choosing.	*
56		Small Business Enterprise (SBE)	☐ Yes ☒ No	In regards to SBE Kubota dealerships are independently owned and operated. Under Kubota's business model, dealerships retain the right and discretion to conduct business with parties of their choosing.	*
57		Small Disadvantaged Business (SDB)	☐ Yes ☒ No	In regards to SDB Kubota dealerships are independently owned and operated. Under Kubota's business model, dealerships retain the right and discretion to conduct business with parties of their choosing.	*
58		Women-Owned Small Business (WOSB)	☐ Yes ☒ No	In regards to WOSB Kubota dealerships are independently owned and operated. Under Kubota's business model, dealerships retain the right and discretion to conduct business with parties of their choosing.	*

Table 6: Pricing (400 Points)

Provide detailed pricing information in the questions that follow below.

Line Item	Question	Response *	
59	Describe your payment terms and accepted payment methods.	Kubota Tractor Corporation payment terms of sale are net thirty days and accepted payments may vary based on individual dealer network. The standard is cash typically by check or ACH payment, P-Card or Business credit card as well as finance and lease options via Kubota Credit Corporation (KCC).	*

60	Describe any leasing or financing options available for use by educational or governmental entities.	Kubota offers financing and leasing options to Sourcewell members through Kubota Credit Corporation (KCC). The target customer base of Sourcewell are municipal/government customers, educational and non-profits and for those type customers we only offer standard lease options. This special language in our lease agreements allow the entity to exit the lease if the government cuts funding for the project, and this is essential as this type of customer only approve budgets yearly and therefore need this language. When we talk about our municipal leases, we have two options. First let's discuss the Full Payout lease. This is like a loan, the customer makes regular payments and then at the end owns the equipment for \$100. This is the option for the customer looking to own it at the end like a loan. The second option is the FPPO (Fixed Purchase Price Option) lease. This option gives the customer a lower payment and then at the end of the term, the customer can choose to purchase the equipment for a locked in purchase price (that is stated on their lease from the start) or they can turn the equipment back. If you have a Sourcewell customer who is not a true govt/muni - the product options would be different as they'd only have the FPPO option available for leasing but they would be eligible for a loan using the standard rates. When you select these options, there are two pricing program options. A dealer working this up can choose "muni lease promo" or "muni lease standard". Promo is our promotional pricing that can only be used in sales with govt customers who are not taking discounts that make them ineligible (like the KTC governmental discount). When using Sourcewell, the dealer MUST select the "muni standard rates" . This is because they are getting the advantage of the Sourcewell pricing (discount) and cannot be combined with any additional promotions. Once this is entered, they can select terms from 24-60 months. They can choose four options that are available on intervals of 300, 600, 900,1200, (and sometimes offered in 1500, and 2000 depending on term/model). . Dealers can access this by entering the deal in Showroom, but this program is posted in Kubotalink. We have some current changes which took effect on October 1, 2024 as follows: Promo Municipal Leasing Leasing APRs for the Promo Municipal Leasing Program are being lowered to match the current APRs for the Commercial Leasing Program. This change will lower the price point for this program across all models and reduce the complexity of managing different rates across promo programs. Standard Municipal Leasing Leasing APRs for the Standard Municipal Leasing Program have been lowered, and residuals have been increased to match the residuals on the Promo Municipal Leasing Program. These changes are designed to significantly reduce the price point for this program across all models and, when combined with the government discount, make price points more consistent with the Promo Leasing Program for most models. Please refer to RFB-2024-L03-R2 for complete details on these updates and refer to the applicable sales bulletins for incentive eligibility rules.
61	Describe any standard transaction documents that you propose to use in connection with an awarded agreement (order forms, terms and conditions, service level agreements, etc.). Upload all template agreements or transaction documents which may be proposed to Participating Entities.	Kubota Dealers utilize our internal Integrated Kubota Quote (IKQ) or Build My Kubota (BMK) configurator for standard quotes to our Sourcewell customers. Each dealership salesperson has their individual access and login to this quote tool which provides the Dealer Name, Address, Salesperson's Name and Email address along with phone number for ease of identifying the quoting dealer and how to reach them directly for questions or confirmation of purchase. The individual dealer invoices and accepts purchase orders and payments directly from their individual customer's and handle the transaction from start of quote to final billing directly with the Sourcewell customer. Please see a sample of an attached Kubota integrated web quote.

62	Do you accept the P-card procurement and payment process? If so, is there any additional cost to Sourcewell participating entities for using this process?	Kubota dealers may, at their discretion, accept the P-card procurement and payment process. Kubota encourages dealers to accept the P-card and encourages Sourcewell members to consult with their local supporting dealer for participation. Each dealership operates independently and therefore it's at the dealer discretion whether the finance charges assessed by the credit card (P-Card) transaction will be passed on to the customer or absorbed by the dealership. This fee should be a separate line item identified by the dealership and can range from 3 -5 percent in processing fees. The Sourcewell customer should confirm these fees if any with the participating dealership.	*
63	Describe your pricing model (e.g., line-item discounts or product-category discounts). Provide detailed pricing data (including standard or list pricing and the Sourcewell discounted price) on all of the items that you want Sourcewell to consider as part of your RFP response. If applicable, provide a SKU for each item in your proposal. Upload your pricing materials (if applicable) in the document upload section of your response.	Kubota pricing structure will range from 22-24 percent discount off Published MSRP price for each series and product family in our proposed solution. These discounts can be found in the supporting pricing documentation submitted.	*
64	Quantify the pricing discount represented by the pricing proposal in this response. For example, if the pricing in your response represents a percentage discount from MSRP or list, state the percentage or percentage range.	Kubota will offer a specific discount from our published list price for each series and product family in our proposed solution. These discounts from MSRP can be found in the supporting pricing documentation submitted in the documents step. The discount from published list price is as follows: Tractors B series - 22% BX series - 22% L series - 22% M series - 22% Turf F Series - 22%, GR Series - 22%, T Series - 22%, Z Series - 22% TLB series - B26, L47 & M62 - 22% Land Management Disc mowers - 22%, Rotary tedders - 22%, Rotary rakes - 22%, Spreaders - 22% We offer a 24% across the board for all Construction Equipment.	*
65	Describe any quantity or volume discounts or rebate programs that you offer.	Kubota will offer it's best and last pricing for individual units without requiring Sourcewell members to buy in volume or apply for rebates after the sale.	*
66	Propose a method of facilitating "sourced" products or related services, which may be referred to as "open market" items or "non-contracted items". For example, you may supply such items "at cost" or "at cost plus a percentage," or you may supply a quote for each such request.	Kubota Requests for open market "sourced" or non-standard items can be added to Sourcewell members quotes at their request in order to complete the purchase of a Kubota item. Acceptance of these quoted sourced/non-standard items will be at the discretion of each Sourcewell members and their dealer who will provide a separate line item below the configured Kubota pricing structure for each sourced "open market" item.	*
67	Identify any element of the total cost of acquisition that is NOT included in the pricing submitted with your response. This includes all additional charges associated with a purchase that are not directly identified as freight or shipping charges. For example, list costs for items like pre-delivery inspection, installation, set up, mandatory training, or initial inspection. Identify any parties that impose such costs and their relationship to the Proposer.	Pre-delivery inspections and freight will be shown on all Sourcewell member quotes to ensure complete costs of acquisition and complete transparency prior to Sourcewell member taking acquisition. These items will be clearly shown as line items on the customers web quote from Build My Kubota web quote form. All common accessories and attachments have a standard labor time associated with the installation of accessories. Dealer labor rates will vary due to regional economic differences (e.g. Seattle, WA and New York, NY labor rates are typically higher than Greenville, SC or Bowling Green, KY). Kubota reviews all dealer labor rate differences and ensures that all dealer rates are justified and compliant with normal regional economic conditions. Kubota strives to maintain a labor rate relative to \$110./hour. All charges will be turnkey solutions with no hidden costs and will be clearly identified on all Sourcewell members quotes prior to solution acquisition.	*
68	If freight, delivery, or shipping is an additional cost to the Sourcewell participating entity, describe in detail the complete freight, shipping, and delivery program.	Freight charges will be shown on every Sourcewell member quote and based on prior to acquisition. Kubota's proposed solution includes many various models with great weight and size disparities (e.g. a Z242KW-48 Zero Turn Mower weighs 900lbs, an M6-101DTC-F-1 Tractor weighs 11,387lbs). These units will be shipped from east coast, west coast, and central US warehouses to all 50 states, territories, Canada, and wherever Sourcewell members dealerships are located. A flat rate charge to ensure costs are covered would be prohibitively and artificially high. Our solution is a freight pricing model of showing freight charges tailored by size, model, weight, to a specific location. This solution best addresses the logistical variances in supporting all Sourcewell members equally.	*

69	Specifically describe freight, shipping, and delivery terms or programs available for Alaska, Hawaii, Canada, or any offshore delivery.	The freight pricing model for Alaska Hawaii, Canada, and all offshore deliveries will be to show all freight charges on Sourcewell member quotes prior to acquisition. Freight in Canada by Kubota Canada Ltd. will follow this process. Freight for Hawaii and Alaska will be provided by a freight forwarder and shown on all quotes prior to acquisition by our quoting dealer network.	*
70	Describe any unique distribution and/or delivery methods or options offered in your proposal.	An innovative and unique aspect of Kubota's distribution method is having new forward inventory placed within our Kubota dealer network. Many products, attachments, accessories, and solutions are already in place and close to Sourcewell Members within our 1,100 plus location dealer network. This ultimately allows for a Sourcewell members to visit local dealers and many times have a hands-on opportunity with a solution prior to acquisition. While Kubota does ship products from its three US warehoused (California, Georgia, and Kansas) and one in Canada (greater Toronto area), this access to solutions locally is an added benefit to our Sourcewell Members. Additionally, having a local, servicing dealer allows for specialization of products to meet local and unique Sourcewell member needs and requirements prior to delivery (e.g. dealers based in and familiar with local subzero winterization requirements).	*
71	Specifically describe any self-audit process or program that you plan to employ to verify compliance with your proposed agreement with Sourcewell. This process includes ensuring that Sourcewell participating entities obtain the proper pricing.	All of our Kubota dealers are authorized to become seller's off the Sourcewell contract by logging into their Sales portal with access to our contractual pricing agreement. Each Sourcewell member receives their equipment quotes directly from their local Kubota dealer. The quotation tool has all the necessary contract information embedded in the quote tool (discount %, eligible equipment, applicable contract #'s). Kubota self-audits multiple product groups regularly reviewing and auditing pricing along with our digital marketing group that manages our electronic pricing database. In addition, the National Accounts group regularly reviews dealer quoting for pricing and accuracy. These multiple layers of self-audit and review process elevate accuracy and compliance. Kubota dealers are not paid for their sales using the Sourcewell program without submitting all of the required information to report accurately on the Sourcewell contract usage reports. This information is in turn downloaded to create our usage reports for the Sourcewell program. This series of overlapping auditing for pricing and reporting drives contract compliance.	*
72	If you are awarded an agreement, provide a few examples of internal metrics that will be tracked to measure whether you are having success with the agreement.	Kubota tracks all Sourcewell transactions which are reported to our Division offices and are downloaded on a weekly basis. These sales are tracked by Kubota dealers, purchasing entity, type of equipment purchased, and transaction amount. Quarterly sales reports are reviewed to compare the Sourcewell contract sales growth quarter over quarter and year over year.	*
73	Provide a proposed Administration Fee payable to Sourcewell. The Fee is in consideration for the support and services provided by Sourcewell. The propose an Administrative Fee will be payable to Sourcewell on all completed transactions to Participating Entities utilizing this Agreement. The Administrative Fee will be calculated as a stated percentage, or flat fee as may be applicable, of all completed transactions utilizing this Master Agreement within the preceding Reporting Period defined in the agreement.	Kubota proposes paying a 1.5% administrative fee of the total sales generated from this contract less freight, assembly fees, and pre-delivery inspection fees for Kubota products only. Kubota has been a strategic partner of Sourcewell's for the past 14 years. The Sourcewell contracts Kubota holds have seen continued growth year over year and are very popular with our customers and frequently used by our 1,100 plus dealer network. The utilization of our Sourcewell contracts continues to grow and expand.	*

Table 7: Pricing Offered

Line Item	The Pricing Offered in this Proposal is: *	Comments	
74	The pricing offered is consistent with standard market pricing typically offered to individual municipalities, universities, or school districts.	The pricing offered on behalf of Kubota Tractor Corporation is a specified discount from the published list price for each series and product family in our proposed solution. The discount from MSRP can be found in the supporting pricing documentation. We offer the the best and last pricing for individual units without requiring Sourcewell members to buy in volume or apply for rebates after the sale.	*

Table 8A: Depth and Breadth of Offered Solutions (200 Points)

Line Item	Question	Response *	
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75	Provide a detailed description of all the Solutions offered, including used, offered in the proposal.	1. Products: Kubota USA offers a wide range of products, primarily focused on equipment for agriculture, construction, landscaping, and turf management. Including: • Agricultural Equipment: Tractors (small to large), combines, hay tools, and other implements for farming and crop production. • Construction Equipment: Excavators, skid-steer loaders, wheel loaders, backhoes, and compact track loaders. • Lawn & Garden Equipment: Zero-turn mowers, riding mowers, and garden tractors. • Utility Vehicles: RTV (Rough Terrain Vehicles) for off-road work environments. • Attachments and Implements: Wide variety of attachments like loaders, backhoes, mowers, and snow blowers that are compatible with Kubota equipment. 2. Parts: KubotaUSA ensures that all parts and components are readily available for their equipment. This includes: • Genuine Kubota Parts: Original equipment manufacturer (OEM) parts designed to maintain optimal performance and ensure the longevity of Kubota products. • Parts Availability: Extensive availability of parts across the network of dealers and online through Kubota's website. • Online Parts Catalog: Kubota provides an easy-to-navigate parts catalog to help customers find the right components quickly. 3. Service: KubotaUSA's service offering includes a network of authorized service centers and highly trained technicians. Key features include: • Dealer Network: A nationwide network of Kubota dealers who are trained to provide repair, maintenance, and troubleshooting services. • Maintenance Packages: Kubota offers maintenance schedules and service packages to ensure that products are serviced on time and run smoothly. • Mobile Service: In some areas, Kubota offers mobile service for on-site repairs, minimizing downtime for customers. 4. Warranty: Kubota offers comprehensive warranty coverage for their products, which varies depending on the type of equipment. Key points to highlight include: • Standard Warranty Coverage: Kubota typically provides a 2-year or 3-year limited warranty on most equipment, with extended warranty options available. • Powertrain Warranty: Some Kubota products offer a separate powertrain warranty for components like engines, transmissions, and drive systems. • Warranty Transferability: Kubota allows warranty coverage to be transferred if the equipment is sold, offering peace of mind for new owners. 5. Financing: KubotaUSA provides a range of financing options to help customers purchase equipment, including: • Kubota Credit Corporation (KCC): A subsidiary of Kubota that offers flexible financing solutions tailored to both personal and business needs. • Leasing Options: Kubota offers leasing plans with flexible terms, including seasonal payments for agricultural customers. • Special Promotions: Kubota frequently runs promotional offers, such as low-interest rates or deferred payment plans, depending on the season and equipment type. 6. Customer Support: Kubota USA offers comprehensive customer support options to help customers with everything from product inquiries to troubleshooting. • Online Support Center: A resource-rich website with FAQs, manuals, parts diagrams, and how-to guides for all Kubota products. • 24/7 Support: Some customer service is available outside of normal business hours to provide urgent assistance. • Training and Education: Kubota offers product training for dealers and customers, covering everything from safe operation to equipment maintenance. • Customer Service: A dedicated customer service hotline for troubleshooting, warranty issues, and general inquiries.
76	Within this RFP category there may be subcategories of solutions. List subcategory titles that best describe your products and services.	1. Products - Land Pride Attachments: Land Pride offers a wide range of attachments that are compatible with Kubota tractors and other Kubota equipment. These products are designed to enhance the versatility and performance of Kubota machines across various applications, from agriculture to landscaping. Including: • Mowers & Finish Mowers: - o Finish Mowers: Land Pride's finish mowers provide a clean, precise cut for residential and commercial lawns. - o Rough Cut Mowers: These mowers are ideal for clearing overgrown fields, pastures, and roadways. - o Flail Mowers: Land Pride's flail mowers are designed for more challenging environments and are great for mowing thick vegetation and brush.

	• Tillage Equipment: - o Disc Harrows: Land Pride offers disc harrows that provide high-efficiency soil cultivation and are easy to adjust for different soil conditions. - o Cultivators: Used for seedbed preparation, these tillers are available in various widths and configurations for Kubota tractors. • Post-Hole Diggers: - o Land Pride post-hole diggers are designed to handle the toughest digging jobs and are ideal for fencing, landscaping, or planting applications. • Snow Removal Equipment: - o Snow Blowers: High-performance snow blowers that are designed for heavy snow removal, particularly in agricultural or rural settings. - o Snow Pushers: Heavy-duty snow pushers designed for clearing snow from large surfaces quickly and efficiently. • Landscape and Construction Attachments: - o Box Blades: Used for grading and leveling, these are essential for landscaping and roadwork projects. - o Rear Blades: A versatile tool for grading, backfilling, and snow removal. - o Skid Steer Attachments: A range of attachments like pallet forks, buckets, and grapples that fit Kubota skid steer loaders. • Forks and Pallet Forks: - o Land Pride offers a variety of forks and pallet forks to help Kubota owners move materials, whether for farming, construction, or landscaping. • Loaders & Loader Attachments: - o Loader buckets, forks, and grapple attachments are specifically designed to enhance Kubota's compact loaders and tractors. 2. Parts: Land Pride, like Kubota, emphasizes the importance of using high-quality, genuine parts for their attachments. Here's what to include: • Genuine Land Pride Parts: Land Pride offers OEM parts to ensure the continued performance and longevity of their attachments. • Parts Availability: These parts are available through Kubota dealers and Land Pride dealers across the country. • Easy Access to Parts Catalog: Land Pride provides a detailed parts catalog that helps customers easily find replacement components for their attachments. 3. Service: Land Pride attachments are supported by a network of Kubota dealers, who can assist with installation, maintenance, and repairs. • Dealer Network Support: Land Pride attachments are serviced by Kubota-authorized dealers, who are trained to maintain and repair both Kubota equipment and Land Pride attachments. • Installation Services: Many Kubota dealers offer installation services for Land Pride attachments, ensuring they are properly fitted and ready for use. • Maintenance and Repairs: Routine maintenance and repair services are available for Land Pride attachments, ensuring long-lasting performance. 4. Warranty: Land Pride attachments typically come with a 1-year limited warranty from the date of purchase, with some exceptions for specific attachments. • Warranty Coverage: The warranty typically covers defects in material and workmanship under normal use and service. • Transferability: Like Kubota's equipment warranties, Land Pride's warranty may be transferable when the equipment is sold, adding value for used equipment buyers. • Extended Warranty: Some Kubota dealers offer extended warranty options for Land Pride attachments. 5. Financing: Kubota offers financing options for Land Pride attachments through Kubota Credit Corporation (KCC), similar to financing for Kubota equipment. • Flexible Payment Plans: KCC provides financing solutions with flexible payment options to fit a customer's budget. • Promotional Financing: Kubota and KCC frequently offer seasonal promotional financing, such as low-interest rates or deferred payments, to help customers purchase Land Pride attachments. • Leasing Options: Leasing may also be available for Land Pride attachments, offering flexibility for businesses or customers with changing needs. 6. Customer Support: Kubota provides robust customer support for both Kubota equipment and Land Pride attachments, ensuring that customers have access to the help they need. • Online Resources: Customers can access parts catalogs, service manuals, and troubleshooting guides for Land Pride attachments on the Kubota and Land Pride websites. • Dealer Support: Kubota dealers provide direct customer support for issues related to both Kubota equipment and Land Pride attachments. • Technical Assistance: Technical support is available for installation, maintenance, and troubleshooting of Land Pride attachments, either through the dealer network or Kubota's customer service.
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Table 8B: Depth and Breadth of Offered Solutions

Indicate below if the listed types or classes of Solutions are offered within your proposal. Provide additional comments in the text box provided, as necessary.

Line Item	Category or Type	Offered *	Comments
77	Lawn and garden equipment for all types of lawn, field and turf care, golf course, landscape, sidewalk, walking path, and parking lot maintenance, and snow removal	☒ Yes ☐ No	1. Mowers & Lawn Equipment • Zero-Turn Mowers: Kubota's zero-turn mowers come in both commercial and residential models. The Z700 Series is built for professional landscapers with high horsepower and large cutting decks, while the Z200 Series caters to residential use with user-friendly controls and powerful performance for larger lawns. • Stand-On Mowers: The SZ Series of stand-on mowers is designed for maneuverability and efficiency in tight spaces. These mowers offer excellent visibility and quick controls, perfect for landscapers working on residential properties. • Walk-Behind Mowers: The W Series includes commercial-grade walk-behind mowers. They're compact and designed for precision cutting in smaller or complex landscape areas, such as around flower beds or obstacles. • Compact Mowers: The T Series lawn tractors are designed for homeowners with small- to medium-sized lawns, featuring easy-to-use controls, comfortable seating, and smooth operation. • Grass-Cutting Attachments: In addition to their mower lineup, Kubota offers various grass-cutting attachments and accessories, including mulching kits, bagging systems, and striping kits, to enhance cutting performance and versatility. 2. Hay and Farm Implements • Hay Balers: Kubota's balers, such as the BV4160 and BV4180 series, are designed for high-density baling with features like low horsepower requirements and simplified controls, making them suitable for small to mid-sized farms. • Disc Mowers: The DM Series disc mowers are designed to work efficiently in a variety of crop types. These mowers are built for low maintenance and high-speed cutting, helping operators cover more ground quickly. • Tedders and Rakes: The TE Series tedders spread and aerate hay to promote drying, while the RA Series rotary rakes gather the hay into windrows, ensuring it's ready for efficient baling. • Wrappers: Kubota offers wrappers like the WR1100, which wrap bales in protective film to maintain hay quality during storage. • Spreaders and Seeders: Kubota's VS Series spreaders provide even distribution of fertilizer or seed over large fields, while their seeders ensure precision and control, improving crop yield. • Cultivators and Plows: Kubota

offers a range of tillage equipment, such as plows and cultivators, to prepare fields for planting by aerating the soil, reducing compaction, and supporting root growth.

3. Utility Vehicles (UTVs)

- RTV-X Series: Known for rugged durability, the RTV-X Series includes models like the RTV-X1140, which can be converted from a 2-passenger to a 4-passenger configuration. It features a robust suspension system, high ground clearance, and an integrated cargo bed, making it ideal for heavy-duty off-road applications.
- RTV500: The RTV500 is compact and fuel-efficient, equipped with a liquid-cooled EFI engine and an independent suspension system. It's a great fit for light-duty tasks around farms, parks, and properties with tight spaces.
- RTV900 Series: This series, featuring the RTV900XT, is a powerful workhorse with a diesel engine, high torque, and excellent hauling capabilities, designed for transporting tools, supplies, or workers over rough terrain.
- Specialty Models (RTV-XG850 Sidekick): This model provides a high-speed option with a 48-horsepower gasoline engine, perfect for users who need speed and efficiency for larger properties or event management.
- Attachments for UTVs: Kubota offers a variety of utility vehicle attachments, such as snowblades, winches, and cargo racks, allowing operators to customize their UTVs for various tasks and conditions.

4. Lawn, Field, and Turf Care

- Zero-Turn Mowers: Kubota's Z-Series zero-turn mowers offer options for both commercial and residential turf care, with models capable of covering large fields efficiently. The mowers provide precise cutting, high horsepower, and are suitable for large estates, parks, and sports fields.
- Stand-On and Walk-Behind Mowers: The SZ Series (stand-on) and W Series (walk-behind) mowers provide flexibility and maneuverability, ideal for smaller or more intricate turf areas like residential lawns, commercial properties, and tight spaces on landscapes.
- Tractors with Turf Tires: Kubota's compact and sub-compact tractors can be equipped with turf tires to minimize ground impact, allowing them to work on golf courses and delicate lawns without damaging the turf.

5. Golf Course Maintenance

- Precision Mowers: Kubota's range of mowers, especially the zero-turn models, can provide the close, consistent cut required for golf course fairways, greens, and roughs.
- Utility Vehicles (UTVs): The RTV series UTVs, with their low impact on turf and utility bed options, are ideal for transporting tools and materials around golf courses efficiently.

- Compact Tractors and Attachments: These tractors can handle a variety of golf course maintenance tasks, from seeding and aeration to topdressing. Kubota's compact tractors are equipped to manage tight fairway turns and maintain precise control, essential for golf course upkeep.
6. Landscape and Garden Maintenance
- Multi-Use Tractors and Attachments: Kubota's BX and B Series compact tractors support a wide array of attachments such as loaders, backhoes, and tillers. These are versatile tools for landscapers working on tasks like planting, mulching, or grading.
 - Tillers and Cultivators: Kubota offers tillers and cultivators that help in soil preparation for gardens, flower beds, and landscaping projects.
 - Front-Mounted Blades and Loaders: Attachments like front-mounted blades, loaders, and grapples allow for efficient clearing and shaping of landscapes.
7. Sidewalk, Walking Path, and Parking Lot Maintenance
- Compact Tractors and Attachments for Path Maintenance: Compact and sub-compact tractors are perfect for maintaining sidewalks and walking paths. They can handle a variety of attachments, such as brushes, blowers, and sweeper attachments, which are effective in keeping paths clear.
 - Sweepers and Brooms: Kubota offers sweeper and rotary broom attachments that are ideal for cleaning up sidewalks, parking lots, and walking paths, removing debris, leaves, and dirt.
 - RTV Series Utility Vehicles: These UTVs are perfect for transporting maintenance tools across paths and lots while minimizing the impact on pathways. They also offer snow removal options, making them versatile for year-round maintenance.
8. Snow Removal Equipment
- Snowblowers and Snow Blades: Kubota offers snowblowers and snow blade attachments for both tractors and UTVs, suitable for sidewalks, driveways, parking lots, and larger open areas.
 - Utility Vehicles with Snow Attachments: Kubota's RTV-X Series utility vehicles can be equipped with snowblades and spreaders, providing an efficient snow removal solution for tight areas such as sidewalks and parking lots.
 - Compact Tractors with Front-Mounted Blades: Kubota's compact tractors can also be fitted with front-mounted snow blades or snow blowers, allowing operators to clear snow in more confined areas such as paths and lots.

78	Irrigation and aeration equipment, systems, parts, and installation	☒ Yes ☐ No	While Kubota itself doesn't offer standalone irrigation and aeration systems, their equipment supports these applications effectively when combined with compatible attachments and third-party systems. If you're considering a specific type of irrigation or aeration solution, local Kubota dealers can often provide recommendations for compatible attachments and equipment to meet these needs. 1. Aeration • Compatible Aerator Attachments: Kubota's compact and sub-compact tractors (such as the BX and B Series) can be fitted with aerator attachments from third-party manufacturers. These attachments work well for golf courses, sports fields, and landscapes that require regular aeration to maintain soil health. • Pull-Behind Aerators for Tractors: Many users add pull-behind aerators to Kubota tractors. This setup enables efficient aeration for large turf areas, golf courses, and other fields, providing deep soil penetration for optimal water and nutrient absorption. • Compact Tractors for Golf and Lawn Aeration: Kubota's smaller tractors with turf tires help prevent turf damage, making them suitable for delicate aeration work on golf courses and lawns. 2. Irrigation Systems and Parts • Irrigation-Related Attachments and Implements: While Kubota does not manufacture irrigation systems, their tractors and utility vehicles can transport irrigation parts and systems for installation and repair projects. Compact and sub-compact models work well for maneuvering in tighter spaces often found in landscaping and golf course maintenance. • Utility Vehicles for Irrigation Maintenance: Kubota's RTV utility vehicles can assist maintenance teams by transporting irrigation equipment and supplies across expansive properties like golf courses, farms, and parks. 3. Installation and Support Capabilities • Use of Kubota Tractors in Installation: Kubota tractors are useful for preparing the ground for irrigation installation by grading, trenching, or digging as needed. They can be paired with third-party trenching and digging attachments for efficient setup of irrigation lines. • Dealer Network for Support: Kubota's extensive dealer network provides guidance and support, often working with landscape and agricultural professionals who can suggest compatible aeration and irrigation equipment from partner brands.	
79	Beach and waterfront maintenance equipment and accessories	☒ Yes ☐ No	Although Kubota doesn't directly manufacture beach and waterfront maintenance equipment, their tractors, UTVs, and attachments can support a range of tasks commonly associated with waterfront care when paired with	

		the appropriate third-party accessories. For specific beach grooming and waterfront solutions, it's often helpful to consult with a Kubota dealer who may have local recommendations for compatible tools and attachments. 1. Sand Grooming and Beach Cleaning • Compact and Sub-Compact Tractors with Compatible Attachments: Kubota's BX and B Series tractors can be paired with third-party beach grooming attachments, like sand rakes and groomers, to help clean and level sandy areas on beaches. • Box Blades and Land Planes: These attachments are available for Kubota tractors and can assist in leveling sand and smoothing surfaces on beachfront areas, though they aren't specifically beach groomers. 2. Waterfront Vegetation Control • Mowers and Brush Cutters: For areas near water that require vegetation control, Kubota's zero-turn mowers or compact tractors with brush cutters can manage grassy, brushy areas near the shore. • Tractors with Flail Mowers: Kubota tractors with flail mower attachments can clear heavy vegetation around waterfronts or in hard-to-reach spots along riverbanks or lakeshores. 3. Erosion Control and Shoreline Maintenance • Utility Tractors for Erosion Prevention: Kubota's larger tractors, such as the L or M Series, can assist with shoreline maintenance by carrying and positioning materials like rocks, sandbags, or erosion control blankets. • Front Loaders and Backhoes: Kubota's compact and utility tractors can be equipped with front loaders or backhoes to transport, dig, and position materials along shorelines for erosion prevention projects. 4. Debris Removal and Transport • RTV Utility Vehicles for Shoreline Clean-Up: Kubota's RTV Series utility vehicles can be fitted with cargo beds to help transport trash, driftwood, and other debris from waterfronts to disposal areas. The RTVs' off-road capability makes them suitable for traversing sandy or uneven terrain near shorelines. • Fork Attachments for Large Debris: Front forks on Kubota tractors allow for the transport of larger objects or debris that may wash up on shore. 5. Dredging and Silt Removal • While Kubota does not produce dredging equipment, their tractors and RTVs can be used to transport silt or dredged material away from the waterfront area after it has been removed by specialized equipment.	
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Table 9: Exceptions to Terms, Conditions, or Specifications Form

Line Item 80. **NOTICE:** To identify any exception, or to request any modification, to Sourcewell standard Master Agreement terms, conditions, or specifications, a Proposer must submit the proposed exception(s) or requested modification(s) via redline in the Master Agreement Template provided in the “Bid Documents” section. Proposer must upload the redline in the “Requested Exceptions” upload field. All exceptions and/or proposed modifications are subject to review and approval by Sourcewell and will not automatically be included in the Master Agreement.

Do you have exceptions or modifications to propose?	Acknowledgement *
	☒ Yes ☐ No

Documents

Ensure your submission document(s) conforms to the following:

1. Documents in PDF format are preferred. Documents in Word, Excel, or compatible formats may also be provided.
2. Documents should NOT have a security password, as Sourcewell may not be able to open the file. It is your sole responsibility to ensure that the uploaded document(s) are not either defective, corrupted or blank and that the documents can be opened and viewed by Sourcewell.
3. Sourcewell may reject any response where any document(s) cannot be opened and viewed by Sourcewell.
4. If you need to upload more than one (1) document for a single item, you should combine the documents into one zipped file. If the zipped file contains more than one (1) document, ensure each document is named, in relation to the submission format item responding to. For example, if responding to the Marketing Plan category save the document as “Marketing Plan.”
 - [Pricing](#) - Sourcewell Discount Structure.pdf - Tuesday November 19, 2024 14:09:43
 - [Financial Strength and Stability](#) - KBT 2nd Quarter Financials.pdf - Wednesday November 13, 2024 08:21:04
 - Marketing Plan/Samples (optional)
 - WMBE/MBE/SBE or Related Certificates (optional)
 - [Standard Transaction Document Samples](#) - RTVX1140WLHS WEB QUOTE #2828724.pdf - Tuesday November 19, 2024 15:09:00
 - Requested Exceptions (optional)
 - [Upload Additional Document](#) - Sourcewell Additional Documents.zip - Monday November 25, 2024 12:20:49

Addenda, Terms and Conditions

PROPOSER AFFIDAVIT OF COMPLIANCE

I certify that I am an authorized representative of Proposer and have authority to submit the foregoing Proposal:

1. The Proposer is submitting this Proposal under its full and complete legal name, and the Proposer legally exists in good standing in the jurisdiction of its residence.
2. The Proposer warrants that the information provided in this Proposal is true, correct, and reliable for purposes of evaluation for award.
3. The Proposer certifies that:
 - (1) The prices in this Proposal have been arrived at independently, without, for the purpose of restricting competition, any consultation, communication, or agreement with any other Proposer or competitor relating to-
 - (i) Those prices;
 - (ii) The intention to submit an offer; or
 - (iii) The methods or factors used to calculate the prices offered.
 - (2) The prices in this Proposal have not been and will not be knowingly disclosed by the Proposer, directly or indirectly, to any other Proposer or competitor before award unless otherwise required by law; and
 - (3) No attempt has been made or will be made by Proposer to induce any other concern to submit or not to submit a Proposal for the purpose of restricting competition.
4. To the best of its knowledge and belief, and except as otherwise disclosed in the Proposal, there are no relevant facts or circumstances which could give rise to an organizational conflict of interest. An organizational conflict of interest is created when a current or prospective supplier is unable to render impartial service to Sourcewell due to the supplier's: a. creation of evaluation criteria during performance of a prior agreement which potentially influences future competitive opportunities to its favor; b. access to nonpublic and material information that may provide for a competitive advantage in a later procurement competition; c. impaired objectivity in providing advice to Sourcewell.
5. Proposer will provide to Sourcewell Participating Entities Solutions in accordance with the terms, conditions, and scope of a resulting master agreement.
6. The Proposer possesses, or will possess all applicable licenses or certifications necessary to deliver Solutions under any resulting master agreement.
7. The Proposer will comply with all applicable provisions of federal, state, and local laws, regulations, rules, and orders.
8. Proposer its employees, agents, and subcontractors are not:
 1. Included on the "Specially Designated Nationals and Blocked Persons" list maintained by the Office of Foreign Assets Control of the United States Department of the Treasury found at: <https://www.treasury.gov/ofac/downloads/sdnlist.pdf>;
 2. Included on the government-wide exclusions lists in the United States System for Award Management found at: <https://sam.gov/SAM/>; or
 3. Presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from programs operated by the State of Minnesota; the United States federal government, as applicable; or any Participating Entity. Vendor certifies and warrants that neither it nor its principals have been convicted of a criminal offense related to the subject matter of this solicitation.

☒ By checking this box I acknowledge that I am bound by the terms of the Proposer's Affidavit, have the legal authority to submit this Proposal on behalf of the Proposer, and that this electronic acknowledgment has the same legal effect, validity, and enforceability as if I had hand signed the Proposal. This signature will not be denied such legal effect, validity, or enforceability solely because an electronic signature or electronic record was used in its formation. - Mark Adams, Senior Manager National Account Sales, Kubota Tractor Corporation

The Proposer declares that there is an actual or potential Conflict of Interest relating to the preparation of its submission, and/or the Proposer foresees an actual or potential Conflict of Interest in performing the obligations contemplated in the solicitation proposal.

☐ Yes ☒ No

The Bidder acknowledges and agrees that the addendum/addenda below form part of the Bid Document.

Check the box in the column "**I have reviewed this addendum**" below to acknowledge each of the addenda.

File Name	I have reviewed the below addendum and attachments (if applicable)	Pages
Addendum 6 Grounds Maintenance Eqpt RFP Tue November 12 2024 03:29 PM	☒	1
RFP 112624 Grounds Maintenance Equipment Pre-Proposal Recording Link Mon November 11 2024 08:17 AM	☒	1
Addendum 5 Grounds Maintenance Eqpt RFP Fri November 8 2024 10:31 AM	☒	2
Addendum 4 Grounds Maintenance Eqpt RFP Mon November 4 2024 04:03 PM	☒	1
Addendum 3 Grounds Maintenance Eqpt RFP Mon October 28 2024 03:53 PM	☒	2
Addendum 2 Grounds Maintenance Eqpt RFP Wed October 16 2024 08:40 AM	☒	2
Addendum 1 Grounds Maintenance Eqpt RFP Wed October 9 2024 07:54 AM	☒	2



CITY OF COLUMBIA TENNESSEE
CITY COUNCIL
STAFF REPORT

STAFF REPORT CONTACT INFORMATION

Michele Stevens, Administrative Assistant, mstevens@columbiatn.gov, 931-560-1010

AGENDA ITEM TITLE: APPROVE AND AUTHORIZE THE MAYOR TO SIGN THE CONTRACT BETWEEN THE CITY OF COLUMBIA AND CUMBERLAND VALLEY CONSTRUCTORS, INC. FOR THE CONSTRUCTION OF THE BEAR CREEK PIKE SEWAGE PUMP STATION REPLACEMENT IN THE AMOUNT OF \$5,272,800.00

RECOMMENDATION: Approve.

INFORMATION: The City of Columbia's Wastewater Department requests the mayor to sign the Contract between the City of Columbia and Cumberland Valley Constructors, Inc. for the construction of the Bear Creek Pike Sewage Pump Station Replacement in the amount of \$5,272,800.00. The bid award was previously approved by City Council on February 13, 2025.

CERTIFICATION: The Chief Financial Officer certifies that \$5,272,800 is budgeted and unencumbered in Wastewater – Pump Station-Bear Creek PS.

ATTACHMENTS: Staff Report, Cumberland Valley Constructors Bear Creek Pik Contract and Specs.

ADDENDUM NO. 4
SEWER SYSTEM IMPROVEMENTS
CONTRACT 24-01
BEAR CREEK SEWAGE PUMPING STATION REPLACEMENT
CITY OF COLUMBIA, TENNESSEE
WAUFORD PROJECT NO. 2198
ARPA Grant No. 8437-WW-COStru-1

Date of Addendum: Monday, January 27, 2025
Pre-Bid Meeting: Wednesday, January 15, 2025, 10:00 a.m. Central Time
Bid Opening: Thursday, January 30, 2025, 2:00 p.m. Central Time

1. Attached is the Questions and Clarifications document regarding questions submitted.
2. Advertisement for Bids, Page AB-3:

Revise the following statement:

“No bidder may withdraw his bid for **90 days**, while the Owner considers the bids. Mutually agreed upon time extensions may be made if necessary.”

3. Detailed Specifications, Section 8, Miscellaneous Metals, Paragraph 11, Sluice Gates, Sub-Paragraph a. and Sub-Paragraph I., Page DS 8-5:

Revise the Sub-Paragraphs a. and I. as follows:

“a. The Contractor shall furnish and install one rising stem, handcrank operated 36-inch diameter influent pipe sluice gate and wall thimble as shown on the Plans. The sluice gate shall be of the flush-bottom closure type. The gate and accessories shall operate properly, with a practical degree of watertightness under a maximum unbalanced unseating head of 25 feet. The gate shall be designed with a minimum safety factor of five to withstand, without permanent distortion of any part, service for which it was designed. The sluice gate shall be Model No. HY-Q as manufactured by Rodney Hunt, **Heavy Duty HG560 by Hydro Gate**, or equal. All operators shall be manual gearbox with handcrank.”

“I. Flush Bottom Closure

The flush bottom closure type of gate shall have a compressible resilient seal attached to the bottom of the disc (sliding member) with a stainless steel bar and fasteners. The seal shall be of a specially extruded shape, and designed to accurately fit to the bottom rib of the disc. The seal shall be shaped to

produce a wide sealing area on a machined cast iron stop bar that is bolted to the gate frame to form a flush invert. The differential sealing pressure of the resilient seal on the stop bar shall be variable by adjustment of the side wedges on the gate. ~~The flush bottom closure gates shall be the Hy-Q design as manufactured by Rodney Hunt Company or equal.~~

4. Detailed Specifications, Sub-Section 9A, Mechanically Cleaned Bar Screen Paragraph 3, Performance and Design, Page DS 9A-2:

Revise the last sentence of Paragraph 3 as follows:

“The screen shall be designed to resist hydraulic pressure from 100% blinding of the screen at **50%** channel depth”

5. Detailed Specifications, Sub-Section 9A, Mechanically Cleaned Bar Screen Paragraph 6, Equipment and Materials, Sub-Paragraph b.(3), Control Panels and Accessories, Page DS 9A-7:

Revise the fourth bullet point of Sub-Paragraph b.(3) as follows:

“One (1) ~~hand-off~~ **H/O/A** selector switch for screen ~~and conveyer~~”

6. Detailed Specifications, Sub-Section 9A, Mechanically Cleaned Bar Screen Paragraph 6, Equipment and Materials, Sub-Paragraph b.(10), Submersible Level Transducer, Page DS 9A-13:

Revise as follows:

“One submersible level transducer shall be supplied with the automatic bar screen to sense upstream water surface elevation. The transducer shall be equal to the equipment specified in section 9C, **Paragraph 9.(v) Submersible Level Transducer (2 Required).**”

7. Detailed Specifications, Sub-Section 9B, Wet Pit Submersible Pumps and Accessories, Paragraph 6, Equipment and Materials, Sub-Paragraph b.(10), Page DS 9B-9:

Replace as follows:

“(10) Manufacturers

The variable frequency drives shall be manufactured ABB, Danfoss, **Yaskawa**, or pre-approved equal.”

8. Detailed Specifications, Sub-Section 9C, Pump Automatic Control System and Accessories, Paragraph 9, Control Panel Subparagraph h.(10), Page DS 9C-9*:

Insert the following Sub-Paragraph h.(10) as follows:

“(10) The controller shall provide the following (4-20ma) process signals to the Bar Screen Control Panel:

- (a) Wetwell Level – Submersible Transducer No. 1 (if lead)***
- (b) Wetwell Level – Submersible Transducer No. 2 (if lead)”***

9. Detailed Specifications, Sub-Section 9C, Pump Automatic Control System and Accessories, Paragraph 9, Control Panel Subparagraph v, Page DS 9C-18*:

Revised the second paragraph as follows:

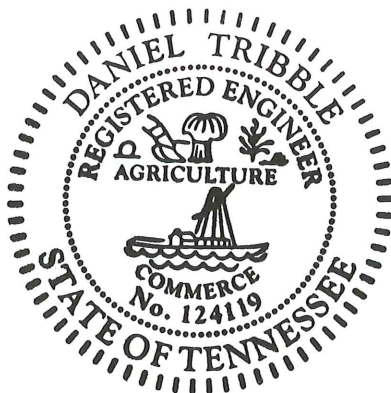
“The Transducer shall be of the solid-state head-pressure sensing type, suitable for continuous submergence and operation and shall be installed in accordance with manufacturer's instructions. The bottom diaphragm face of the sensor shall be installed 12 inches above the floor at elevation **539.50**. The sensor shall be mounted using a stainless steel cable system in a location and as shown on the Plans.”

10. BID FORM, Page BF-5:

Replace Page BF-5* with the attached revised Page BF-5**.

11. PLANS, Sheet No. E3:

Replace Sheet E3 with the attached revised Sheet E3.



J. R. WAUFORD & COMPANY,
CONSULTING ENGINEERS, INC.

Daniel G. Tribble, P.E.
Tennessee License No. 124119

PRE-BID QUESTIONS AND CLARIFICATIONS
CONTRACT 24-01 – BEAR CREEK SEWAGE PUMPING STATION REPLACEMENT
COLUMBIA, TENNESSEE

Bid Date: Thursday, January 30, 2025

Time: 2:00 PM Central Time

Questions/Answers and Clarifications:

1. **Clarification – The bid opening is Thursday, January 30, 2025, at 2:00 p.m. Central Time at the Wastewater Treatment Plant located at 1244 Treatment Plant Road, Columbia, TN 38401.**
2. **Clarification – Liquidated damages for this project will be \$1,000 per calendar day. The time of completion for this contract is four hundred fifty (450) calendar days. The Notice to Proceed date is planned to be set for on or before May 1, 2025 with a substantial completion date of July 24, 2026.**
3. **Clarification – A site visit to the existing Bear Creek Sewage Pumping Station (SPS) may be requested by contacting Wayne Pruitt with Columbia at 931-797-4771.**
4. **Clarification – Select previous plans of the existing Bear Creek SPS are provided at the Dropbox link below for reference only.**
<https://www.dropbox.com/scl/fo/goas514z1njgk6r65hv05/AN46kD5dVbyoVs8hrusMDP8?rlkey=4j0r1qmerpw3on0nk7v8f7t7w&st=lmta6dpv&dl=0>
5. **Question – Who is responsible for paying fees related to electrical service from the local electrical provider?**
The Contractor is responsible for fees required for service modifications and extensions as required by the local power company (Columbia Power & Water Systems). Per CPWS, the contribution in aid of construction for electrical service to the proposed project is \$42,423.00. The Contractor's attention is called to Section DS 10, Paragraph 1.a.(k). Contractors may contact Trevor Gilmer with Columbia Power and Water Systems at Trevor.Gilmer@cpws.com for information related to the electrical service.
6. **Question – What are the required bypass flows to be provided for this project?**
Flow monitoring was conducted at this site from June – August, 2022 and indicated the average flow to the station was around 400 GPM during that time. The existing station pump operating condition for each pump is reportedly 1,400 GPM at 208' TDH.

7. Question – What are the funding sources for this project?
This project will be partially funded by a grant from the American Rescue Plan Act (ARPA) and by local funds.
8. Question – What equipment is desired to be removed by the Owner from the existing Bear Creek SPS?
The Owner has not decided at this time what equipment is desired to be salvaged.
9. Question – Please confirm concrete kickers, Megalugs, and restraining rods are all required at the piping around the Flow Meter Pit on Sheet 7.
Confirmed.
10. Question – Is the 4" drain line from the valve pit considered to be underground pipe or exposed pipe?
It is intended for the drain line to be an underground pipe after rip-rap backfill is completed.
11. Question – Does the 36" 11 ¼° vertical bend need Megalugs or a concrete kicker?
Both Megalugs and a concrete kicker should be provided. See added vertical kicker detail on Sheet 5.
12. Question – Does interior piping 12" and below need to be insulated and heat traced per Detailed Specification DS5 Paragraph 5.b.(5)?
No. This addendum updates the requirement for piping insulation and heat tracing.
13. Question - Is there a domestic or AIS requirement for this project?
No.
14. Question - What coating is required for exposed ductile iron pipe?
When exposed, the exterior surface of ductile iron pipe shall be coated per the specification listed in Section 6 of the Detailed Specifications.
15. Question – Are there any requirements for corrosion protection on rock anchors?
No.
16. Question – Are there any valves on the existing force main that can be closed when connecting to the new force main? Is there an estimate on the amount of flow that could come back to the tie in point once the pipe is cut?
There are no known valves on the existing Bear Creek SPS force main other than a check valve located at the manifold connection point with the Carter's Creek SPS. There is an air release valve approximately 8,000 linear feet from the proposed force main connection point that appears to be the high point provided on previous plans.
17. Clarification – Slight deviations of the proposed bar screen steel thicknesses will be approved on a case-by-case basis during shop drawing approval.

18. Question – How is the screen control panel receiving the downstream water surface elevation information?

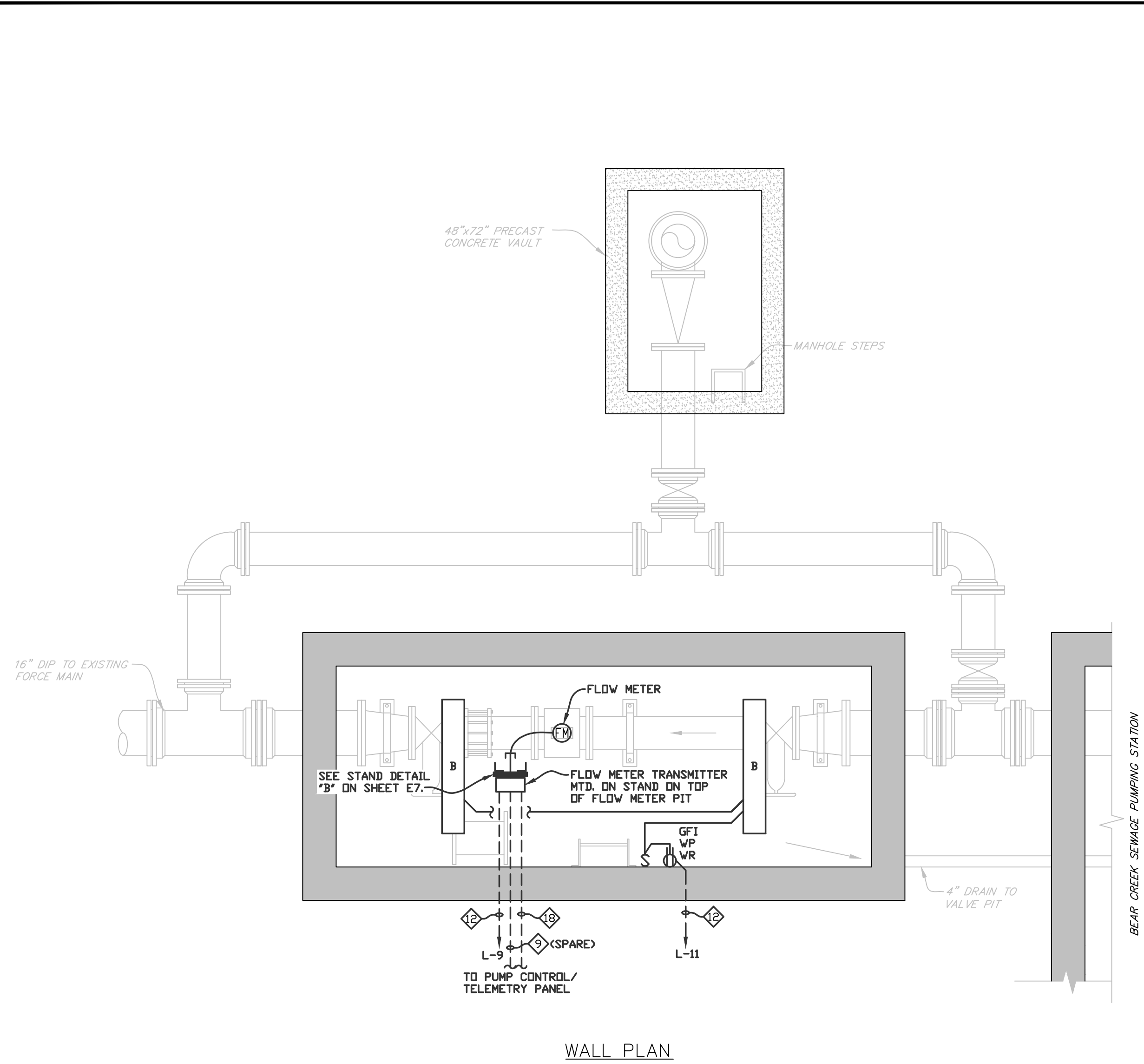
The Screw Pump Control Panel will receive a signal for the main control panel of the downstream water surface elevation as a 4-20mA signal. The Screw Pump Control Panel shall calculate the difference in elevation and operate accordingly.

9. CONTRACT 24-01 – BEAR CREEK SEWAGE PUMPING STATION REPLACEMENT (cont'd)

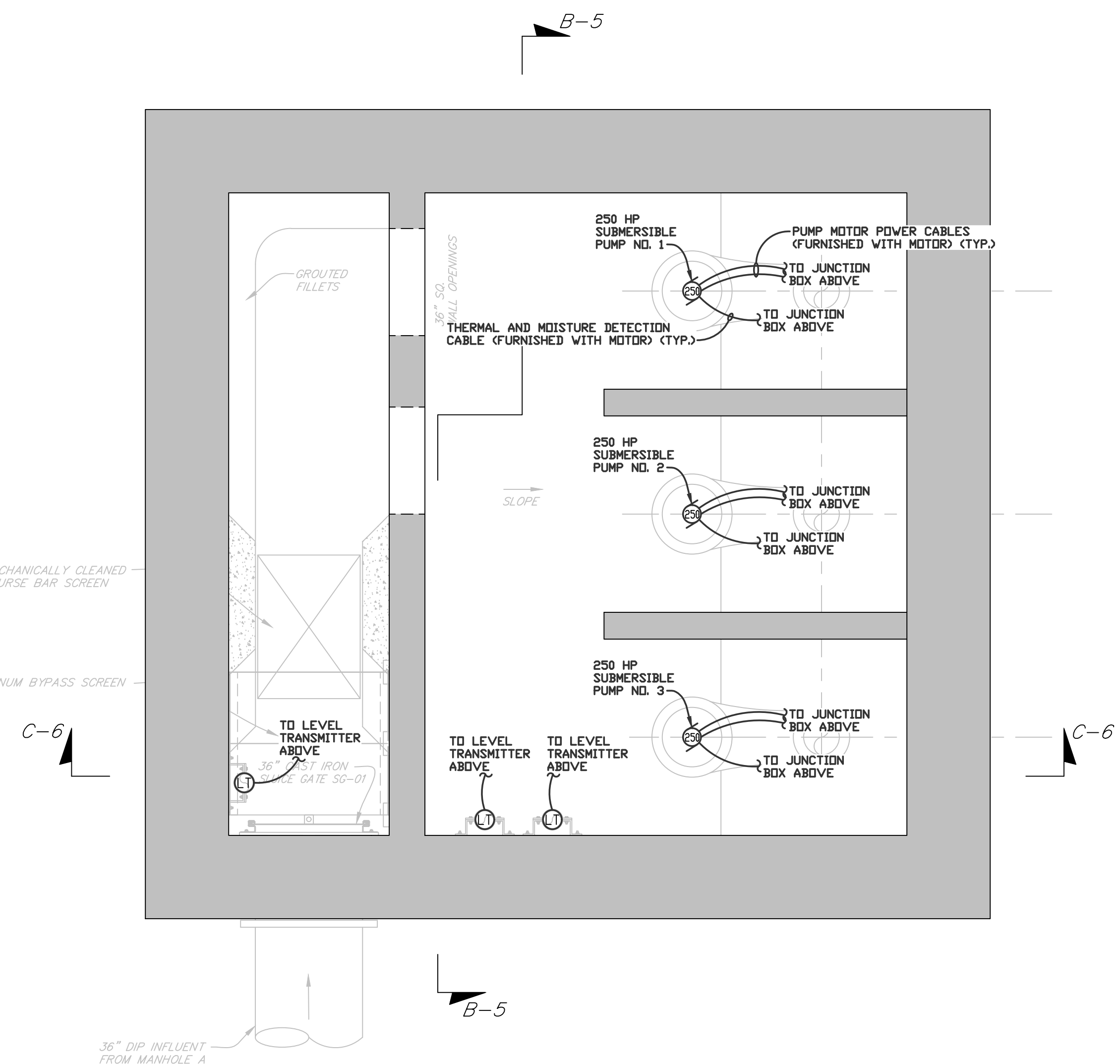
9.b. Equipment to be Furnished (cont'd)

Sub-Section	Description	Price	Equipment Used in Base Bid (Show only one per Sub-Section)
9B	<u>Variable Frequency Drives</u>		
	ABB	\$ _____	\$ _____
	Danfoss	\$ _____	\$ _____
	Yaskawa	\$ _____	\$ _____
	Pre-approved equal	\$ _____	\$ _____
9C	<u>Pump Automatic Control System and Accessories</u>		
	Southern Sales Company, Inc.	\$ _____	\$ _____
	<i>Southern Flow Inc.</i>	\$ _____	\$ _____
	Pre-approved equal	\$ _____	\$ _____
10	<u>Electrical Equipment</u>		
	Square D (Delivery Time Frame From Date Of Approved Submittal = _____ Days – Fill In)	\$ _____	\$ _____
	Eaton (Delivery Time Frame From Date Of Approved Submittal = _____ Days – Fill In)	\$ _____	\$ _____
	_____ “Pre-Approved Equal”	\$ _____	\$ _____

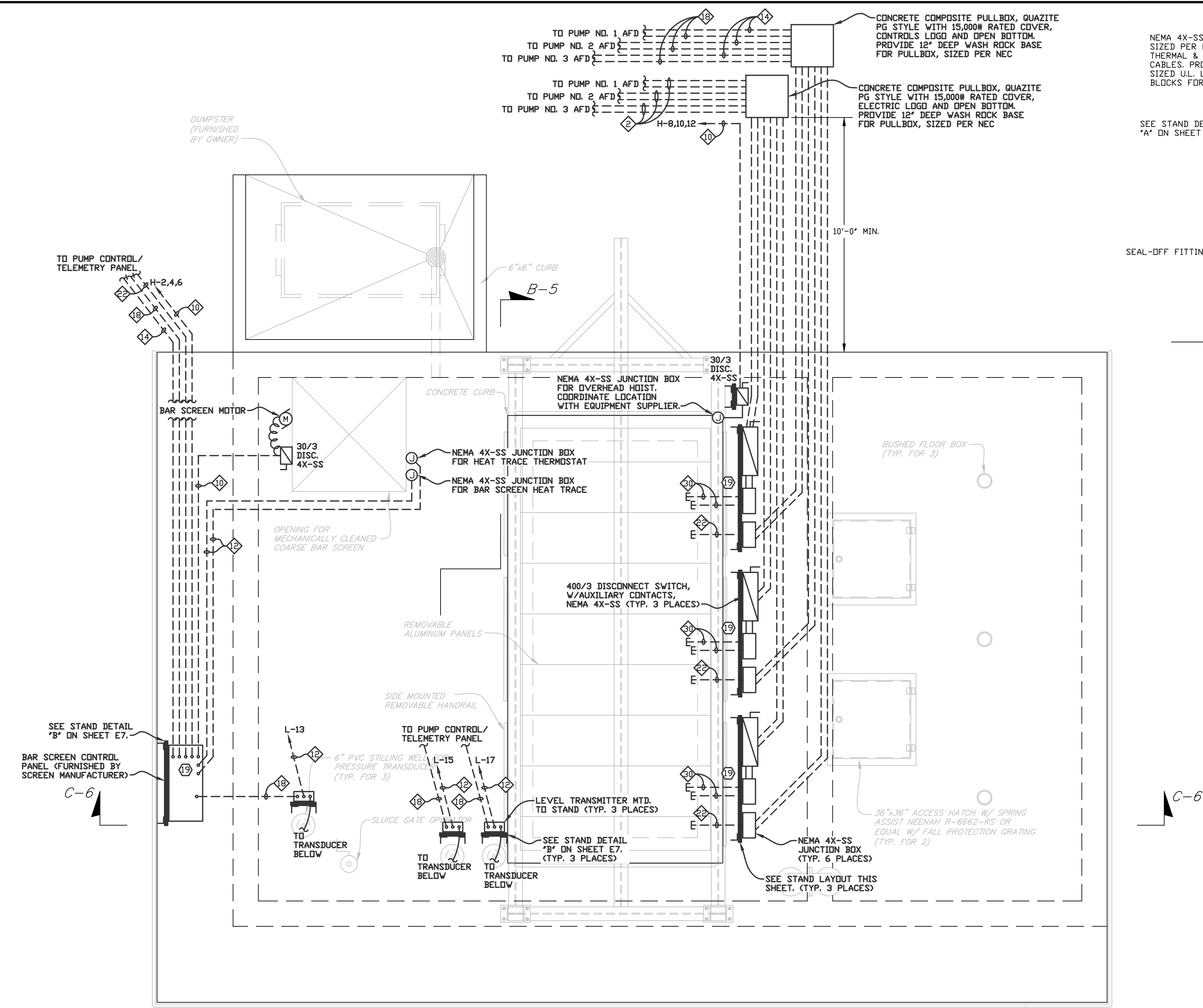
\\server01\2024\24004\24004-E3.dwg [E3] 1/24/2025 - 11:55am Last Login by: Trevor



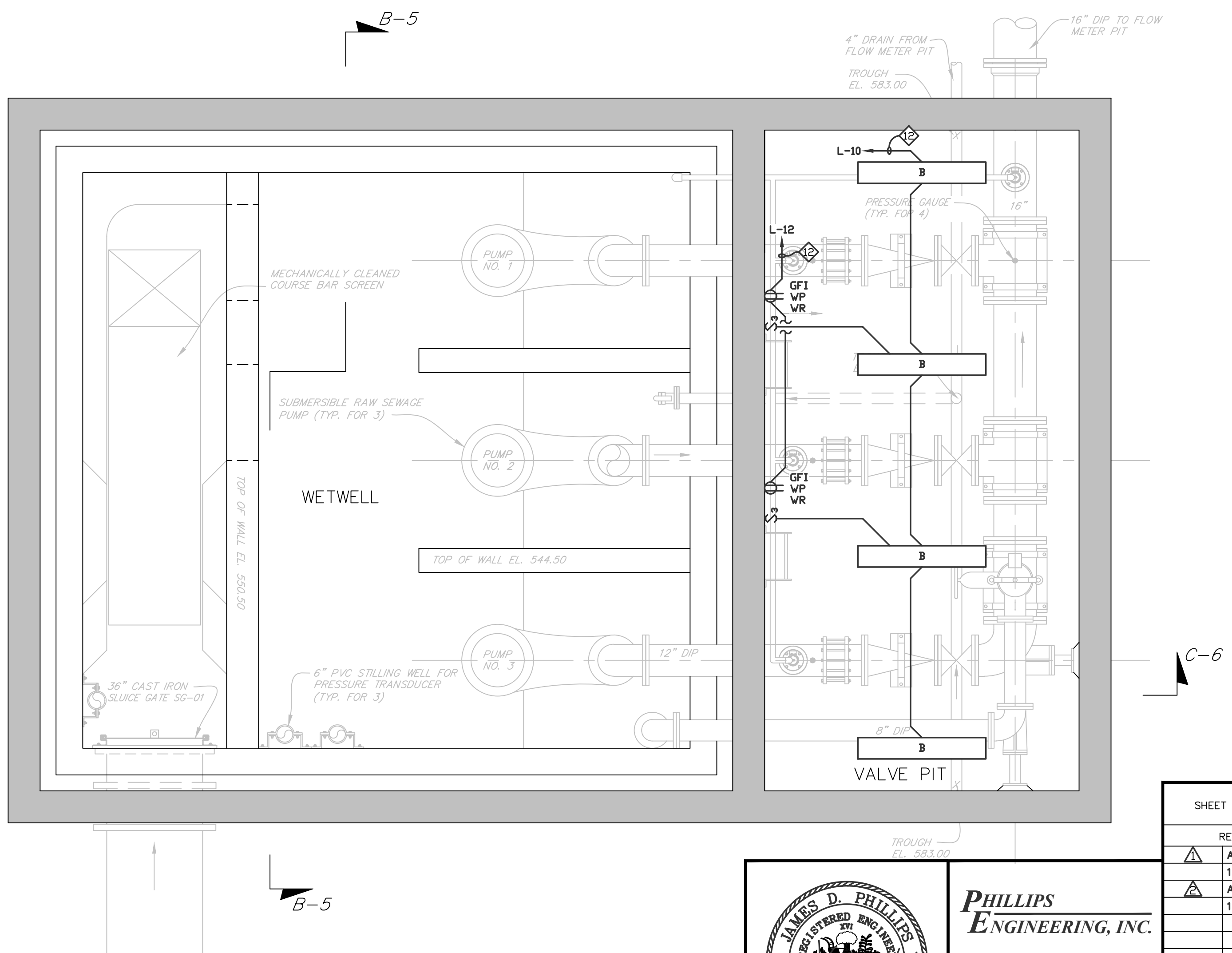
WALL PLAN
FLOW METER PIT ELECTRICAL PLAN
SCALE: 3/8" = 1'-0"



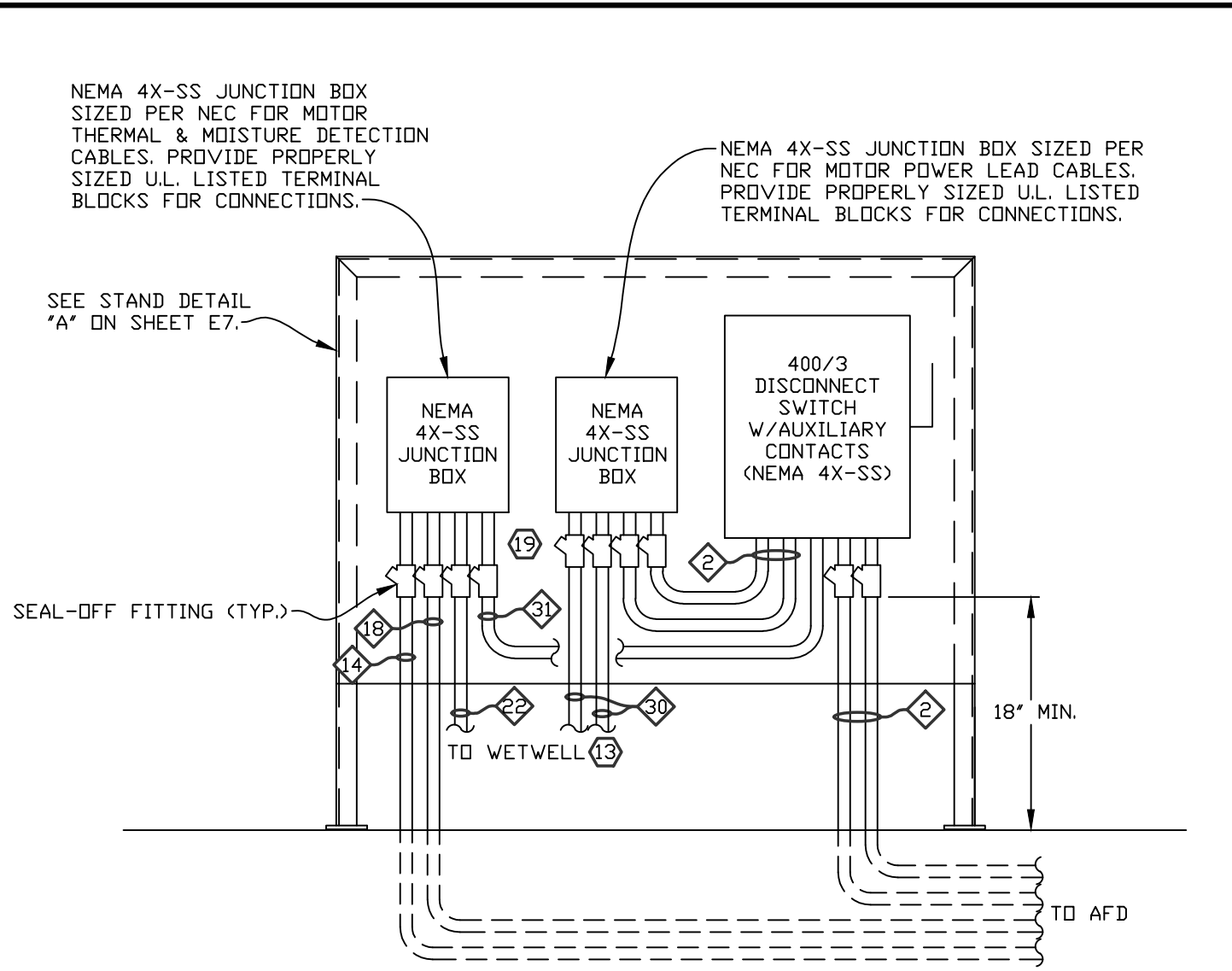
LOWER WALL POWER PLAN @ EL. 540.00
SCALE: 3/8" = 1'-0"



TOP POWER PLAN
SCALE: 3/8" = 1'-0"

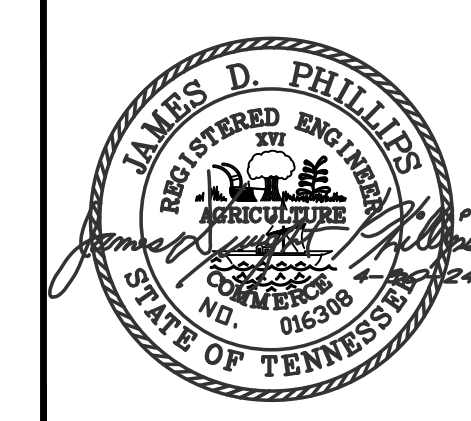


UPPER WALL POWER PLAN @ EL. 585.00
SCALE: 3/8" = 1'-0"



STAND LAYOUT
(TYP. 3 PLACES)
SCALE: NONE

- NOTES:
- THE CONTRACTOR SHALL REFER TO THE CIVIL, STRUCTURAL, MECHANICAL AND PIPING PLAN FOR THE BUILDING AND ROOM LAYOUTS, ALL DIMENSIONS, SECTIONS, DETAILS, ELEVATIONS, VOLTAGE REQUIREMENTS AND PHYSICAL SIZE OF ALL EQUIPMENT FURNISHED BY OTHER TRADES. COORDINATE AND ADJUST ALL ELECTRICAL INSTALLATIONS ACCORDINGLY.
 - ALL CONDUIT ROUTING SHOWN IS DIAGRAMMATIC. THE CONTRACTOR SHALL COORDINATE ALL OF THE RACEWAY INSTALLATIONS WITH OTHER TRADES TO AVOID INTERFERENCES WITH STRUCTURES AND PIPING. MAINTAIN APPROX. 24" CLEARANCE BETWEEN BURIED CONDUIT AND ALL STRUCTURES.
 - ALL PROPOSED POWER, CONTROL, AND SIGNAL WIRING & CABLES SHALL BE PROPERLY IDENTIFIED AND LABELED WITH AN APPROVED MARKING SYSTEM AT ALL LOCATIONS AS CALLED FOR IN THE DETAILED SPECIFICATIONS. ALL POWER AND BRANCH CIRCUIT WIRING SHALL BE TAGGED TO MATCH MOTOR CONTROL CENTER, VFD OR PANEL SCHEDULES. ALL MOTOR LEAD WIRING SHALL BE TAGGED TO MATCH MOTOR NUMBERS WITH T1, T2, T3 IDENTIFYING EACH LEAD. ALL CONTROL AND SIGNAL WIRING SHALL BE TAGGED TO MATCH THE EQUIPMENT VENDOR'S INTERCONNECTION DRAWINGS.
 - INSTALL A FULL SIZE NEUTRAL FOR EACH CIRCUIT. GROUP HOME RUN CIRCUITS PER NEC ARTICLE 310, TABLE 310.15(A)(2)(a).
 - ALL CONDUITS ENTERING WETWELLS OR OTHER WASTEWATER HOLDING STRUCTURES SHALL BE EQUIPPED WITH HAZARDOUS LOCATION SEALING FITTINGS TO PREVENT WASTEWATER GASES FROM ENTERING RACEWAY AROUND CONDUCTORS OR CABLES. PROVIDE STAINLESS STEEL KELLEN TYPE CORD GRIP V/STRAIN RELIEF FOR ALL CABLES TERMINATING IN RACEWAYS, JUNCTION BOXES OR ENCLOSURES.
 - ALL CONDUIT SHALL BE RUN CONCEALED IN CONCRETE WALLS, FLOORS AND CEILINGS.
 - ALL OUTLET AND DEVICE LOCATIONS AND MOUNTING HEIGHTS SHALL BE VERIFIED WITH THE OWNER PRIOR TO ROUGH-IN. COORDINATE THE INSTALLATIONS WITH EQUIPMENT AND SYSTEMS SUPPLIERS AND OTHER TRADES.
 - ALL ELECTRICAL INSTALLATIONS SHALL CONFORM TO THE 2017 NATIONAL ELECTRICAL CODE, 2018 INTERNATIONAL BUILDING CODE AND ALL STATE AND LOCAL CODES.
 - ALL ELECTRICAL INSTALLATIONS SHALL CONFORM TO SEISMIC INSTALLATION STANDARDS PER 2018 EDITION OF INTERNATIONAL BUILDING CODE AND ALL STATE AND LOCAL CODES.
 - PROVIDE LIGHTNING PROTECTION SYSTEM FOR PROPOSED ELECTRICAL BUILDING WITH UL "MASTER LABEL" PER DETAILED SPECIFICATIONS. PROVIDE DRIVEN GROUND RODS AT EACH LIGHTNING PROTECTION DOWNLEAD.
 - ALL PENETRATIONS THRU FIRE RATED WALLS AND CEILINGS SHALL BE SEALED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE ARTICLE 300.21.
 - CONTRACTOR TO COORDINATE THE EXACT LOCATION AND ELECTRICAL REQUIREMENTS FOR ALL HVAC AND MECHANICAL EQUIPMENT WITH MECHANICAL CONTRACTOR AND/OR OWNER. VERIFY THE MINIMUM CIRCUIT AMPERE RATING AND MAXIMUM OVERCURRENT PROTECTION DEVICE RATING OF THE ACTUAL UNIT BEING INSTALLED AND ADJUST THE FEEDER CIRCUIT ACCORDINGLY.
 - COORDINATE CONDUIT SIZE WITH PUMP MOTOR CABLES.
 - COORDINATE MOTOR OVERCURRENT PROTECTION, FEEDER, DISCONNECT SWITCH, AND ALL ELECTRICAL DEVICES WITH SUBMERSIBLE PUMP SHOP DRAWINGS.
 - 120 VOLT POWER SUPPLY, 9 V. BATTERY BACK UP, TANDEN SHOCK DETECTOR EQUAL TO GENTRY MODEL NO. 917-0004-2. VERIFY COMPATIBLE WITH PROPOSED PUMP STATION TELEMETRY PANEL.
 - LOCAL DISCONNECT SWITCHES FOR MOTORS CONTROLLED BY ADJUSTABLE FREQUENCY DRIVES SHALL BE EQUIPPED WITH AUXILIARY CONTACTS AND CONTROL WIRING INTERLOCK WITH RESPECTIVE AFD.
 - ALL WIRING METHODS AND ELECTRICAL INSTALLATIONS SHALL CONFORM TO NFPA 70 - STANDARD FOR FIRE PROTECTION IN WASTEWATER TREATMENT AND COLLECTION FACILITIES.
 - ALL WIRING METHODS AND ELECTRICAL INSTALLATIONS ASSOCIATED WITH MAIN SPS SHALL CONFORM TO NATIONAL ELECTRICAL CODE CLASS I, DIVISION 2 HAZARDOUS LOCATIONS PER ARTICLE 501.
 - PROVIDE SEALING FITTINGS AS REQUIRED BY THE NATIONAL ELECTRICAL CODE FOR CLASS I, DIVISION 2 INSTALLATIONS.



PHILLIPS
ENGINEERING, INC.
ELECTRICAL DESIGN
P.O. BOX 585
617 S. FIRST ST.
UNION CITY, TN 38261
(731) 866-9532

SHEET	E3	OF	7
REVISION OR ISSUE			
ADDENDUM NO. 1	12/19/24		
ADDENDUM NO. 4	1/27/25		
PROJECT NUMBER	2198		

SEWER SYSTEM IMPROVEMENTS CONTRACT 24-01 BEAR CREEK SEWAGE PUMPING STATION REPLACEMENT	
BEAR CREEK SPS ENLARGED POWER PLANS	
FOR COLUMBIA, TENNESSEE	
SCALE	AS SHOWN
DATE	MAY 2024
DESIGNED	ERT
DRAWN	TWR
CHECKED	JDP

WAUFORD
Nashville, Tennessee
(615) 883-3243
www.jwauford.com

ADDENDUM NO. 3
SEWER SYSTEM IMPROVEMENTS
CONTRACT 24-01
BEAR CREEK SEWAGE PUMPING STATION REPLACEMENT
CITY OF COLUMBIA, TENNESSEE
WAUFORD PROJECT NO. 2198
ARPA Grant No. 8437-WW-COStru-1

Date of Addendum: Tuesday, January 21, 2025
Pre-Bid Meeting: Wednesday, January 15, 2025, 10:00 a.m. Central Time
Bid Opening: Thursday, January 30, 2025, 2:00 p.m. Central Time

1. The following Contractors are pre-qualified to submit bids for Contract 24-01 – Bear Creek Sewage Pumping Station Replacement:

Bowen Engineering Corp.
361 Mallory Station Rd
Franklin, TN 37067
Phone: 615-814-4895

Cumberland Valley Constructors, Inc.
2518 Plum Street
Nashville, TN 37207
Phone: 615-730-6182

Haren Construction Company, Inc.
1715 Highway 411 North
Etowah, TN 3733
Phone: 423-263-5561

J. Cumby Construction, Inc.
165 W Broad Street
Cookeville, TN 38501
Phone: 931-526-5158

Judy Construction Co.
P O Box 457
Cynthiana, KY 41031
Phone: 859-234-6900

Smith Contractors, Inc.
P.O Box 480
Lawrenceburg, KY 40342
Phone: 502-839-4196

W & O Construction Co., Inc.
150 Construction Drive
Livingston, TN 38570
Phone: 931-403-1000

2. Pre-Bid Conference Attendance Sheet:

See the attached attendance sheet from the Pre-Bid conference.

3. Attached is the Questions and Clarifications document regarding questions submitted.

4. Davis Bacon Wage Rate:

Replace the Davis Bacon Wage Rate for Heavy and Building Construction types dated 07/26/2024 with the attached Davis Bacon Wage Rates dated 01/03/2025.

5. BID FORM, Page BF-5 Sub-Section 9C:

Replace Page BF-5 with the attached revised Page BF-5*.

6. Detailed Specifications, Section 5, Piping, Fittings, Valves, Manholes, and Accessories, Paragraph 5, Piping System Installation, Sub-paragraph b(5), Page DS 5-8

Modify the first paragraph as follows:

“All piping **6-inches** and small located in areas which are unheated shall be heated traced and insulated. Larger piping shall be heat traced and insulated if indicated on the Plans.”

7. Detailed Specifications, Section 6, Building Construction, Paragraph 2, Masonry, Sub-paragraph e, Page DS 6-3:

Modify as follows:

“e. Control Joints

Control joints in masonry walls shall be located as shown on the Plans.

Control joint strips in concrete masonry unit walls shall be pre-molded, solid rubber, **11 1/8-inch RS Series** Rubber Control Joint by Hohmann and Barnard or equal.”

8. Detailed Specifications, Section 6, Building Construction, Paragraph 3, Shop Fabricated Wood Truss and Standing Seam Metal Roof System, Sub-paragraph b, Page DS 6-7:

Modify as follows:

“b. Wood Truss Roof System

The roofing system for the proposed buildings shall be constructed of prefabricated fire-retardant treated wood trusses with a steel standing seam roof covering applied to a fire retardant treated exterior grade plywood deck and fire retardant treated interior grade plywood ceiling. Flame retardant treated wood shall be impregnated with chemicals by a pressure process or

other means during manufacture and shall have, when tested in accordance with ASTM E84 or UL 723, a listed flame spread index of 25 or less and show no evidence of significant progressive combustion when the test is continued for an additional 20-minute period. Additionally, the flame front shall not progress more than 10 1/2 feet (3,200 mm) beyond the centerline of the burners at any time during the test.

The roof deck at the proposed buildings shall be minimum 3/4-inch fire retardant treated exterior grade plywood fastened to each prefabricated wood truss top chord using galvanized flat head nails at 16-inches on center. The plywood deck shall be covered with one layer of 30 pound felt and a slip sheet of rosin paper.

The roof deck at the proposed buildings shall be supported by wood truss roof system designed by the manufacturer to support the loads described at the accompanying Plans. The wood truss roof system shall be designed by the manufacturer to resist the live loads, dead loads, seismic loads, wind loads, and snow loads shown on the Plans ~~or as required by 2018 International Building Code~~. All connections shall be designed and detailed by the manufacturer, resulting in a complete roof diaphragm system for each building as shown on the Plans. Detailed drawings of all roof truss systems depicting member sizes, lumber grade, connection details and all design calculations shall be submitted to the Designer for review prior to fabrication of the trusses. The drawings shall bear the stamp of a licensed professional engineer registered in the State of Tennessee.

Plywood ceilings shall be 5/8-inch interior grade fire retardant treated plywood utilized to provide lateral support for the wood trusses. Plywood ceilings shall be covered by FRP panels equal to NUDO Fiberlite. Color samples book shall be provided during the shop drawing phase for color selection. FRP ceiling panels shall be attached to the plywood ceiling in accordance with the manufacturer's recommendations. No visible sagging shall occur.

R-30 Batt insulation shall be installed above all ceilings as shown on the Plans. Batt insulation shall be in accordance with ASTM C 665 and ASTM E 136."

9. Detailed Specifications, Section 7, Painting and Coating:

Replace Section 7, Painting and Coating with the attached Section 7*, Painting and Coating

10. Detailed Specifications, Sub-Section 9B, Wet Pit Submersible Pumps and Accessories, Paragraph 6, Equipment and Materials, Sub-paragraph b, Page DS 9B-9:

Replace as follows:

“b. Variable Frequency Drive (Three Required)

(1) General

The Variable Frequency Drive (VFD) system for motors shall use an Active Front End (AFE) Low Harmonic design and shall contain all components required to meet the performance, protection, safety and certification criteria of this specification.

The variable frequency drive shall comply with all of the applicable provisions of NEMA, ANSI, NEC, and IEEE, and shall be U.L. or E.T.L. listed. A U.L. or E.T.L. listed label shall be attached to the inside of each drive enclosure for verification of listing.

The variable frequency drive ampere rating shall be equal to or greater than the ampere rating listed on the motor being driven by the variable frequency drive.

The VFD shall be solid state, with a Pulse Width Modulated (PWM) output. The VFD shall be a Sensor-less Vector AC to AC converter utilizing the latest Insulated Gate Bipolar Transistor (IGBT) technology. The VFD shall employ a Sensor-less Vector inner loop torque control strategy that mathematically determines motor torque and flux. The VFD must also provide an optional operational mode for V/Hz Operation.

(2) Variable Frequency Drive Enclosures

The enclosures shall comply with the requirements for NEMA 1 enclosures. Operation, maintenance and parts replacement shall be through front access doors.

Access doors shall have a lockable handle and a thru-door, lockable input circuit breaker shall be provided.

(3) Drive Construction

The drive units shall be modularly constructed. Printed circuit boards shall be connected in such manner that they are easily removed from the unit. Power components shall be readily accessible and be connected in such manner that they are easily removed from the unit. The printed circuit boards (PCB) shall be conformal coated to protect from atmospheric contamination by H₂S (Hydrogen Sulfide), SO₂ (Sulfur Dioxide), NO₂ (Nitrogen Dioxide), NH₃ (Ammonia) and Cl₂ (Chlorine) per IEC 60721-3-3 edition 3/ISO9223 at a concentration level of C4.

(4) Input Power Conditioning

The manufacturer shall be aware that the variable frequency drives shall be operated by a standby diesel generator during times of power failure and shall include any necessary power conditioning equipment necessary for proper operation.

(5) Harmonic Mitigation

The VFD construction shall maintain current distortion levels at the VFD's input terminals to levels at or below those listed in "IEEE Recommended Practice and Requirements for Harmonic Control in Electric Power Systems, IEEE Std. 519." Compliance to IEEE Std 519 shall not require the use of additional 12 or 18 Pulse Rectifier bridges, external active filters or passive harmonic filters.

Active Front End Ultra Low Harmonic drives (ULH) are required. The ULH must contain, within the same enclosure a T-Configured, Series rated LCL filter specifically engineered by the drive manufacturer. The LCL line filter rated for the full current of the drive to remove high order components cleaning the AC waveform above switching frequency of the active supply unit.

VFD's without an LCL circuit are not allowed, as the LCL circuit adds extra impedance to the line reducing overall current, including harmonics, and lowering fault current potential. The LCL filter must contain a contactor system that shall remove the capacitor within the LCL filter while in a powered but not running state.

The PCC shall be the input lugs of the drive solution without exception. This requirement ensures compliance with IEEE519,

alleviates concerns regarding harmonic loading on the transformer (utility provided power) and standby generator, ensuring reduce electrical stress placed on the standby generator.

6 pulse VFDs (a drive solution only using diodes in the rectifier section) along with ac line reactors or dc chokes are disallowed. 6 pulse VFDs (a drive solution only using diodes in the rectifier section), along with ac line reactors or dc chokes with the addition of active filter or passive filter with or without shorting contactors are disallowed.

The VFD shall have a total harmonic content of 5% or less of full rated current at the input terminals of the VFD. The VFD solution provided must maintain IEEE519 at the input lugs with up to and including 3% phase unbalance. All harmonic mitigating components must be internal to the VFD and supplied as a complete integrated solution. Regenerative front end VFDs used as harmonic solutions are not acceptable, due to possible regeneration on to power distribution network. The VFD shall not interfere with the Emergency Back-up Generator's voltage regulator. Stand alone Active or Passive harmonic filters are not acceptable.

The VFD drive solution provided must maintain Unity Power Factor (1.0 Power Factor) across the useable speed range. Harmonic solutions that have a potential to produce leading power factor shall not be acceptable. VFD's without DC Bus capacitors are not acceptable. The VFD shall have a DC bus voltage controller to automatically maintain the DC bus levels in high or low line conditions, for the purpose of maintaining full motor voltage at all times, with a less than a 10% voltage drop. The ULH standard VFD efficiency shall be 96.5% or better at full speed and load.

The VFD shall maintain rated output motor voltage. The VFD shall be capable of operating the motor at full output with a 10% drop on input voltage. The VFD shall employ an active supply unit design, implemented in multiple variants and generations of drives of similar technology, with over 20 years of use in industry. All models shall provide a complete, ready-to-install solution.

Built in Power Quality values: There shall be built in Power quality values to provide connected grid information.

1. **Line Current**
2. **Active Current**
3. **Reactive Current**
4. **Grid Voltage**
5. **Grid Power**
6. **Power Factor of the Drive**

(6) Operation

The alternating current (AC) variable frequency drives shall convert input AC main power to an adjustable frequency and voltage. The output frequency and voltage of the AC drive shall be adjustable to maintain a constant voltage to frequency ratio throughout the operating range.

The variable frequency drive units shall convert the fixed voltage, fixed frequency, AC line power to a fixed DC power. The DC bus voltage shall be filtered to protect against large voltage transients on the incoming line. The rectifier shall not be affected by phase rotation of the AC power. An inverter shall convert the fixed DC voltage signal from the rectifier to a variable frequency that can be sensed by a standard NEMA B motor.

The input signal to the drive units received from the automatic control system shall be a 4 to 20 milliamp signal proportional to the wastewater level in the wetwell. The output signal from the variable frequency drive shall be a PWM type frequency waveform ranging from 0 to 60 Hertz. The variable frequency drive units shall provide an output frequency signal to increase or decrease the speed of the pump motor in order to vary the level in the wetwell as described in Sub-Section 9B of these Detailed Specifications. In the event of loss of the input signal from the automatic pump control system, the drive shall give the user the option of: (1) stopping and displaying a fault; (2) running at a programmable preset speed and displaying an alarm; (3) hold the VFD speed based on the last good reference received and displaying an alarm. The drive shall be programmable to signal this condition via a control panel warning, relay output and/or over the serial communication bus.

(7) Design Features

The variable frequency drives shall include all standard design features of the manufacturer along with the features described hereinafter. The variable frequency drives shall include a motor

overload protection circuit that senses a motor load current exceeding 150 percent of the rated torque and reduces the drive output voltage or acceleration rate of pump startup until the load is reduced to acceptable levels.

The variable frequency drives shall be capable of starting the pump motor at a preset startup speed and accelerate to the speed as described in Sub-Section 9C of these Detailed Specifications. The acceleration rate shall be adjustable. The drive shall be capable of generating a discrete signal indicating that the associated motor is operating at minimum amperage usage. This signal shall be processed by the automatic pump control system to confirm that a variable speed pump is in operation.

The variable frequency drive units shall be capable of restarting automatically after malfunction is repaired or after a loss of primary power. Power interruptions up to 0.5 seconds shall be allowable without the drive shutting down on a fault. The drive unit shall attempt to restart a maximum of five times. If the drive is unsuccessful in restarting and running for 120 seconds, the restart circuit shall lockout and activate the variable frequency drives fault alarm.

The VFD shall have a specific "Pump cleaning" functionality, based on a series of rapid reverse and forward rotation of the impeller, to prevent pump and pipe clogging. The VFD shall have the cleaning cycle counter and user-programmable cleaning count time to give a warning and indicate the need for manual inspection. The cleaning function shall consist of forced stopping, reverse and forward rotations to allow debris to be removed from the impeller. There shall be a cleaning cycle status visible on the control panel screen when the cleaning function is active for monitoring the cleaning progress. The VFD shall resume normal operation after the cleaning cycle is complete.

The variable frequency drive units shall be a microprocessor based and utilize digital input for parameter adjustment. Use of potentiometer for parameter adjustment is acceptable for manual control switches, but unacceptable for configuration control. The command center shall include the following:

(a) Hand/Off/Auto Selector Switch

Provide a "Hand/Off/Auto" selector switch, mounted on the enclosure door. The "Hand/Off/Auto" selector switch shall

start the drive in the “Hand” mode and stop the drive in the “Off” mode. In the “Auto” mode the drive shall be started and stopped from a remote “RUN” contact. In all modes, Auxiliary and Enable inputs to the drive control interface board must be present before the drive shall start.

When a HIM is present, the stop function shall always be available to stop the drive regardless of the selected mode (“Hand” or “Auto”). The HIM shall be non-functional (except for the display and programming) when the switch is in “Off” mode. The HIM shall stop the drive if the switch is in the “Auto” mode with the remote start contact initiated. The drive speed reference shall be controlled from the HIM, unless a separate door-mounted potentiometer is provided, when in “Hand” mode (factory default setting).

(b) Configuration Controller

The configuration controller shall allow the following parameters to be programmed: startup speed, minimum speed, maximum speed, acceleration and deceleration rates, volts/Hertz ratio, torque boost, slip compensation, over frequency limit, current limit and jog frequency. The controller shall have an internal means of deactivating keypad parameter adjustments to eliminate unauthorized data entry.

(c) Display

A light emitting diode (LED) or alphanumeric display readable through a cutout in the front of the enclosure shall be provided that digitally indicates: frequency output of the variable frequency drive in Hertz, voltage output of the variable frequency drive in volts, motor speed in RPM, variable speed drive fault indication. The display shall be alphanumeric only.

The variable frequency drives to be used for submersible pump operation shall be equipped with modules to transmit thermal and moisture signals sent by the pumps in a failure condition. These devices shall transmit any thermal or moisture indication to the control and monitoring system.

(8) Drive Monitoring Circuit

The drive units shall monitor the following functions, generate a discrete signal for transmission to the Control and Monitoring Panel, and stop the drive unit. The integral display panel shall provide first fault indication of these functions.

- (a) *Motor current exceeding 110% of rated torque for longer than one minute***
- (b) *Output phase-to-phase short circuit condition***
- (c) *Ground fault under any operating condition (starting and running)***
- (d) *High input line voltage***
- (e) *Low input line voltage***
- (f) *Loss of input signal***
- (g) *External fault***
- (h) *Thermal overload***
- (i) *CPV Error***
- (j) *Controller Overheat***

(9) Accessories

Drive enclosures shall be provided with the following items:

- 1. Mechanical H-O-A switch***
- 2. "Power On" Light***
- 3. "Fault" Light***
- 4. "Running" Light***
- 5. Manual Speed Potentiometer***
- 6. Mechanical Elapsed Time Meter***

(10) Manufacturers

The variable frequency drives shall be manufactured ABB, Danfoss, or pre-approved equal."

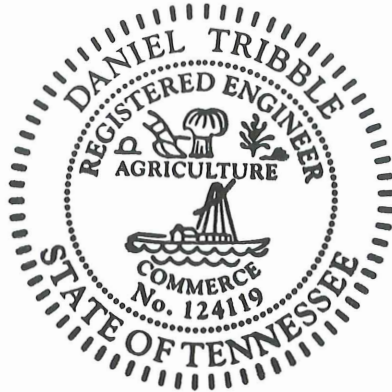
11. Detailed Specifications, Sub-Section 9C, Pump Automatic Control System and Accessories:

Replace Sub-Section 9C, Pump Automatic Control System and Accessories with the attached Sub-Section 9C*, Pump Automatic Control System and Accessories

12. PLANS, Sheet No. 1, 2, 4, 5, 6, 7, E1, E5 and L1:

Replace Sheets 1, 2, 4, 5, 6, 7, E1, E5 and L1 with the attached revised Sheets 1, 2, 4, 5, 6, 7, E1, E5 and L1.

J. R. WAUFORD & COMPANY,
CONSULTING ENGINEERS, INC.



A handwritten signature in blue ink, appearing to read "Daniel G. Tribble", written over a horizontal line.

Daniel G. Tribble, P.E.
Tennessee License No. 124119

Sign in Sheet – Pre-Bid Meeting

SEWER SYSTEM IMPROVEMENTS
BEAR CREEK SEWAGE PUMPING STATION REPLACEMENT
CITY OF COLUMBIA, TENNESSEE
WAUFORD PROJECT NO. 2198 CONTRACT 24-01
ARPA GRANT No. 8437-WW-COStru-1

PRE-BID CONFERENCE: WEDNESDAY, JANUARY 15, 2025, 10:00 A.M. CENTRAL TIME

Name	Organization	Email
DANIEL TRIBBLE	WAUFORD	danieltej@wauFord.com
Donald J. Baskers	City of Columbia	dbaskers@columbiatn.gov
Wayne Pruitt	City of Columbia	wpruitt@columbia tn.gov
Billy Wolford	Haren Construction	cosborne@haren construction.com
ERIC BEIER	BOWEN ENGINEERING	EBEIER@BOWENENGINEERING.COM
Greg Shirley	J. Cumby Construction	gshirley@jcumbyconstruction.com
Brian Kyffin	WTO Construction	brids@wacc.com
STEVEN LOWE	CUMBERLAND VALLEY CONSTRUCTION	SLowe@CVCBUILDS.COM
Robert Calhoun	Adman Electric	RCalhoun@AdmanElectric.com
Mike Leach	Southern Flow	mleach@Southernflowinc.com
Jordan Middleton	GeoSpecialties	Jordan.Middleton@geospecialties.com
Tim Westfall	Superior Mechanical	twestfall@smtvco.com
Steven Bass	Superior Electrical	sbass@setvco.com

Name	Organization	Email
Josh Napier	SETVLO	jnapier@setvco.com
Ben Bergeron	Blue Tank & Pump	bbergeron@bluetankandpump.com
STEVEN SANDLIN	JUDY CONST	SSANDLIN@JUDYCC.COM
JOE SMITH	SMITH CONTRACTORS	jso@scibz.com
Ryan Potts	Crawford Electric	ryan.potts@crawfordelectric.com
STOB GLADDING	BOWEN	STOB.GLADDING@BowenEngineering.com
COLTON MOTZ	BOWEN	cmotz@bowenengineering.com
Ryan Filipkowski	Columbia	rfilipkowski@columbia.tn.gov
Matt Payne	Jarrett Site work	matt@JarrettSiteWork.com
BRYTON DUGAN	Jarrett Site Work	Bryton@JarrettSiteWork.com

PRE-BID QUESTIONS AND CLARIFICATIONS
CONTRACT 24-01 – BEAR CREEK SEWAGE PUMPING STATION REPLACEMENT
COLUMBIA, TENNESSEE

Bid Date: Thursday, January 30, 2025

Time: 2:00 PM Central Time

Questions/Answers and Clarifications:

1. **Clarification – The bid opening is Thursday, January 30, 2025, at 2:00 p.m. Central Time at the Wastewater Treatment Plant located at 1244 Treatment Plant Road, Columbia, TN 38401.**
2. **Clarification – Liquidated damages for this project will be \$1,000 per calendar day. The time of completion for this contract is four hundred fifty (450) calendar days. The Notice to Proceed date is planned to be set for on or before May 1, 2025 with a substantial completion date of July 24, 2026.**
3. **Clarification – A site visit to the existing Bear Creek Sewage Pumping Station (SPS) may be requested by contacting Wayne Pruitt with Columbia at 931-797-4771.**
4. **Clarification – Select previous plans of the existing Bear Creek SPS are provided at the Dropbox link below for reference only.**
<https://www.dropbox.com/scl/fo/goas514z1njgk6r65hv05/AN46kD5dVbyoVs8hrusMDP8?rlkey=4j0r1qmerpw3on0nk7v8f7t7w&st=lmta6dpv&dl=0>
5. **Question – Who is responsible for paying fees related to electrical service from the local electrical provider?**
The Contractor is responsible for fees required for service modifications and extensions as required by the local power company (Columbia Power & Water Systems). Per CPWS, the contribution in aid of construction for electrical service to the proposed project is \$42,423.00. The Contractor's attention is called to Section DS 10, Paragraph 1.a.(k). Contractors may contact Trevor Gilmer with Columbia Power and Water Systems at Trevor.Gilmer@cpws.com for information related to the electrical service.
6. **Question – What are the required bypass flows to be provided for this project?**
Flow monitoring was conducted at this site from June – August, 2022 and indicated the average flow to the station was around 400 GPM during that time. The existing station pump operating condition for each pump is reportedly 1,400 GPM at 208' TDH.

7. Question – What are the funding sources for this project?
This project will be partially funded by a grant from the American Rescue Plan Act (ARPA) and by local funds.
8. Question – What equipment is desired to be removed by the Owner from the existing Bear Creek SPS?
The Owner has not decided at this time what equipment is desired to be salvaged.
9. Question – Please confirm concrete kickers, Megalugs, and restraining rods are all required at the piping around the Flow Meter Pit on Sheet 7.
Confirmed.
10. Question – Is the 4" drain line from the valve pit considered to be underground pipe or exposed pipe?
It is intended for the drain line to be an underground pipe after rip-rap backfill is completed.
11. Question – Does the 36" 11 ¼° vertical bend need Megalugs or a concrete kicker?
Both Megalugs and a concrete kicker should be provided. See added vertical kicker detail on Sheet 5.
12. Question – Does interior piping 12" and below need to be insulated and heat traced per Detailed Specification DS5 Paragraph 5.b.(5)?
No. This addendum updates the requirement for piping insulation and heat tracing.
13. Question - Is there a domestic or AIS requirement for this project?
No.
14. Question - What coating is required for exposed ductile iron pipe?
When exposed, the exterior surface of ductile iron pipe shall be coated per the specification listed in Section 6 of the Detailed Specifications.

"General Decision Number: TN20250124 01/03/2025

Superseded General Decision Number: TN20240124

State: Tennessee

Construction Type: Heavy
Including Water and Sewer Line Construction

Counties: Giles, Houston, Humphreys, Lawrence, Lewis, Lincoln, Marshall, Maury, Moore, Perry, Van Buren, Warren and Wayne Counties in Tennessee.

HEAVY CONSTRUCTION PROJECTS (including sewer/water construction).

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	- Executive Order 14026 generally applies to the contract. - The contractor must pay all covered workers at least \$17.75 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2025.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	- Executive Order 13658 generally applies to the contract. - The contractor must pay all covered workers at least \$13.30 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2025.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <http://www.dol.gov/whd/govcontracts>.

Modification Number Publication Date
0 01/03/2025

ENGI0369-011 05/01/2023

	Rates	Fringes
Operating Engineers:		
Bulldozer and Crane.....	\$ 33.15	13.62

SUTN2009-123 12/02/2009		

	Rates	Fringes
ELECTRICIAN.....	\$ 20.06	0.00
LABORER: Common or General.....	\$ 9.18 **	0.50
LABORER: Flagger.....	\$ 10.50 **	0.00
LABORER: Pipelayer.....	\$ 9.96 **	0.30
OPERATOR:		
Backhoe/Excavator/Trackhoe.....	\$ 13.36 **	0.75
TRUCK DRIVER: Dump Truck.....	\$ 11.68 **	0.70

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 (\$17.75) or 13658 (\$13.30). Please see the Note at the top of the wage determination for more information. Please also note that the minimum wage requirements of Executive Order 14026 are not currently being enforced as to any contract or subcontract to which the states of Texas, Louisiana, or Mississippi, including their agencies, are a party.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within

the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classifications and wage rates that have been found to be prevailing for the type(s) of construction and geographic area covered by the wage determination. The classifications are listed in alphabetical order under rate identifiers indicating whether the particular rate is a union rate (current union negotiated rate), a survey rate, a weighted union average rate, a state adopted rate, or a supplemental classification rate.

Union Rate Identifiers

A four-letter identifier beginning with characters other than ""SU"", ""UAVG"", ?SA?, or ?SC? denotes that a union rate was prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2024. PLUM is an identifier of the union whose collectively bargained rate prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2024 in the example, is the effective date of the most current negotiated rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing the classification.

Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE: UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

Survey Rate Identifiers

The ""SU"" identifier indicates that either a single non-union rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SUFL2022-007 6/27/2024. SU indicates the rate is a single non-union prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the

year of the survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 6/27/2024 in the example, indicates the survey completion date for the classifications and rates under that identifier.

?SU? wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

State Adopted Rate Identifiers

The ""SA"" identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the ?SA? identifier took effect under state law in the state from which the rates were adopted.

----- WAGE DETERMINATION APPEALS PROCESS

1) Has there been an initial decision in the matter? This can be:

- a) a survey underlying a wage determination
- b) an existing published wage determination
- c) an initial WHD letter setting forth a position on a wage determination matter
- d) an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to davisbaconinfo@dol.gov or by mail to:

Branch of Wage Surveys
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to BCWD-Office@dol.gov or by mail to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2) If an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the

decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to dba.reconsideration@dol.gov or by mail to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210.

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END OF GENERAL DECISION"

"General Decision Number: TN20250203 01/03/2025

Superseded General Decision Number: TN20240203

State: Tennessee

Construction Type: Building
BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories)

Counties: Macon and Maury Counties in Tennessee.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	. Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least \$17.75 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2025.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	. Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least \$13.30 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2025.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <http://www.dol.gov/whd/govcontracts>.

Modification Number Publication Date
0 01/03/2025

ASBE0086-002 03/01/2024

	Rates	Fringes
ASBESTOS WORKER/HEAT & FROST INSULATOR.....	\$ 36.52	18.47

ELEV0093-001 01/01/2024

	Rates	Fringes
ELEVATOR MECHANIC.....	\$ 50.56	37.885+a+b

PAID HOLIDAYS:

a. New Year's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, the Friday after Thanksgiving, and Christmas Day.

b. Employer contributes 8% of regular hourly rate to vacation pay credit for employee who has worked in business more than 5 years; 6% for less than 5 years' service.

IRON0492-002 05/01/2024

	Rates	Fringes
IRONWORKER, ORNAMENTAL.....	\$ 33.73	17.73
IRONWORKER, REINFORCING.....	\$ 33.73	17.73
IRONWORKER, STRUCTURAL.....	\$ 33.73	17.73

PLUM0572-001 05/01/2024

	Rates	Fringes
PLUMBER.....	\$ 43.84	17.68

SHEE0004-009 01/01/2024

	Rates	Fringes
SHEET METAL WORKER (Excludes HVAC Duct Installation).....	\$ 34.95	16.66

SHEE0177-008 05/01/2024

	Rates	Fringes
Sheet metal worker (HVAC Duct Installation Only).....	\$ 35.37	16.13

SUTN2017-056 04/16/2021

	Rates	Fringes
BRICKLAYER.....	\$ 20.00	0.00
CARPENTER (Drywall Hanging Only).....	\$ 18.32	0.00

CARPENTER, Excludes Drywall Hanging.....	\$ 19.68	0.38
CEMENT MASON/CONCRETE FINISHER...	\$ 22.79	0.00
ELECTRICIAN.....	\$ 22.53	8.00
GLAZIER.....	\$ 16.00 **	1.11
HVAC MECHANIC (Installation of HVAC Unit Only).....	\$ 18.00	0.79
LABORER DEMOLITION.....	\$ 16.74 **	0.00
LABORER GRADE CHECKER.....	\$ 13.01 **	0.00
LABORER: Asphalt, Includes Raker, Shoveler, Spreader and Distributor.....	\$ 16.12 **	0.00
LABORER: Common or General.....	\$ 12.49 **	0.00
LABORER: Mason Tender - Brick...	\$ 13.54 **	0.00
LABORER: Mason Tender - Cement/Concrete.....	\$ 15.97 **	0.00
LABORER: Pipelayer.....	\$ 14.99 **	2.41
OPERATOR: Backhoe/Excavator/Trackhoe.....	\$ 24.50	0.00
OPERATOR: Bobcat/Skid Steer/Skid Loader.....	\$ 16.84 **	0.00
OPERATOR: Bulldozer.....	\$ 28.19	9.65
OPERATOR: Crane.....	\$ 26.50	2.81
OPERATOR: Drill.....	\$ 26.50	4.09
OPERATOR: Forklift.....	\$ 15.00 **	0.00
OPERATOR: Paver (Asphalt, Aggregate, and Concrete).....	\$ 14.70 **	0.00
OPERATOR: Roller.....	\$ 14.35 **	0.00
PAINTER (Brush and Roller).....	\$ 14.30 **	0.00
PIPEFITTER.....	\$ 29.54	12.41
ROOFER.....	\$ 17.00 **	0.00
SPRINKLER FITTER (Fire Sprinklers).....	\$ 20.87	9.81
TILE FINISHER.....	\$ 14.00 **	0.00
TILE SETTER.....	\$ 19.65	0.00
TRUCK DRIVER: Dump Truck.....	\$ 15.28 **	0.00

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 (\$17.75) or 13658 (\$13.30). Please see the Note at the top of the wage determination for more information. Please also note that the minimum wage requirements of Executive Order 14026 are not currently being enforced as to any contract or subcontract to which the states of Texas, Louisiana, or Mississippi, including their agencies, are a party.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classifications and wage rates that have been found to be prevailing for the type(s) of construction and geographic area covered by the wage determination. The classifications are listed in alphabetical order under rate identifiers indicating whether the particular rate is a union rate (current union negotiated rate), a survey rate, a weighted union average rate, a state adopted rate, or a supplemental classification rate.

Union Rate Identifiers

A four-letter identifier beginning with characters other than "SU", "UAVG", "SA", or "SC" denotes that a union rate was prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2024. PLUM is an identifier of the union whose collectively bargained rate prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2024 in the example, is the effective date of the most current negotiated

rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing the classification.

Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE: UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

Survey Rate Identifiers

The ""SU"" identifier indicates that either a single non-union rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SUFL2022-007 6/27/2024. SU indicates the rate is a single non-union prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the year of the survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 6/27/2024 in the example, indicates the survey completion date for the classifications and rates under that identifier.

?SU? wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

State Adopted Rate Identifiers

The ""SA"" identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the ?SA? identifier took effect under state law in the state from which the rates were adopted.

----- WAGE DETERMINATION APPEALS PROCESS

1) Has there been an initial decision in the matter? This can be:

- a) a survey underlying a wage determination
- b) an existing published wage determination
- c) an initial WHD letter setting forth a position on a wage determination matter
- d) an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to davisbaconinfo@dol.gov or by mail to:

Branch of Wage Surveys
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to BCWD-Office@dol.gov or by mail to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2) If an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to dba.reconsideration@dol.gov or by mail to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210.

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END OF GENERAL DECISION"

9. CONTRACT 24-01 – BEAR CREEK SEWAGE PUMPING STATION REPLACEMENT (cont'd)

9.b. Equipment to be Furnished (cont'd)

Sub-Section	Description	Price	Equipment Used in Base Bid (Show only one per Sub-Section)
9B	<u>Variable Frequency Drives</u>		
	ABB	\$ _____	\$ _____
	Danfoss	\$ _____	\$ _____
	Siemens	\$ _____	\$ _____
	Yaskawa	\$ _____	\$ _____
	Pre-approved equal	\$ _____	\$ _____
9C	<u>Pump Automatic Control System and Accessories</u>		
	Southern Sales Company, Inc.	\$ _____	\$ _____
	<i>Southern Flow Inc.</i>	\$ _____	\$ _____
	Pre-approved equal	\$ _____	\$ _____

SECTION 7

PAINTING AND COATING

1. Scope

a. General

The work to be performed under this Section consists of the furnishing of all materials and equipment and performing all labor for cleaning and painting as specified herein.

Painting materials shall be delivered to the project in labeled unbroken containers.

The products of Tnemec Company are specified; however, equal painting systems will be considered based on their Pre-Bid Submittals which will be acknowledged by addendum.

Aluminum, stainless steel, bronze, concrete floors, and plastics except exposed inside pipe will not be painted unless specifically named in the paint schedule.

b. Facilities to be Painted or Coated

All new and existing facilities are to be painted or coated, including but not limited to, the following:

- All equipment including pumps and motors
- All interior and exterior masonry walls
- All piping except PVC and stainless steel
- All exposed structural steel, cast iron, ductile iron, piping, and valve and gate operators except free standing overhead crane system
- All exposed rigid galvanized electrical conduit
- Where factory or manufacturer applied coatings are specified, the Contractor shall touch up all coatings in accordance with the manufacturer's recommendations

Note: Stainless steel, weathering steel, and aluminum shall not be painted.

2. Protection of Work

The Contractor's cleaning and coating shall be carried out in a workmanlike manner. Care shall be taken to protect new and existing work from overspray and blast debris. The Contractor shall mask and tarp all areas where cleaning and coating operations are being completed. Floors shall be covered and protected adequately. The Contractor shall immediately clean any areas of overspray or blast debris from new or existing work.

3. Materials

All materials specified herein shall be manufactured by Tnemec or equal approved by Addendum.

Coating materials in contact with water shall be approved by the Tennessee Department of Environment and Conservation and NSF for contact with Potable Water. Materials shall meet the following performance data as certified by a qualified testing laboratory:

- Abrasion - ASTM D4060, CS-17 Wheel, 1,000 grams load
- Adhesion - ASTM D3359 Method B
- Hardness - ASTM D3363
- Humidity - ASTM D2247
- Salt Spray (FOG) - ASTM B117

4. Acceptance as Work Progresses

All Surface Preparation shall be approved by the Engineer before primer is applied. Coatings shall be applied the same day surface preparation occurs. Work will be inspected by the Engineer at the close of each day's work.

There shall be a color change between each coat applied and acceptance of each coat shall be obtained before applying the next coat.

Work that is not acceptable shall be corrected as work progresses.

5. Environmental Conditions During Paint Application

Coatings shall be applied during good painting conditions. Air and surface temperatures shall be within limits prescribed by the manufacturer for the coating being applied and work areas shall be reasonably free of airborne dust at the time of application and while coating is drying.

6. Surface Preparation and Painting

- a. Interior Pipes and Ferrous Metal (Non-Submerged)

(1) Surface Preparation:

Remove all loose rust from bolt heads and nuts by power tools or blasting.

SSPC-SP6 Commercial Blast Cleaning is the standard for ferrous metals excluding pipe. Media selected shall produce a profile minimum 1.5 mils in depth. Areas not reasonably accessible for the blast nozzle shall be prepared in accordance with SSPC-SP-11 Power Tool Cleaning to bare metal to provide a suitable surface. All abrasive blasting shall be accomplished within containment areas erected by the contractor and all gauges, motors, and other equipment not to be blast cleaned shall be protected from the blasting nozzle and spent media.

Ductile Iron Pipe shall be cleaned in accordance with Standard 500-03-04 of the National Association of Pipe Fabricators.

All areas where surface preparation has occurred shall be primed the day surfaces have been prepared.

(2) Prime Coat: Tnemec 1-1216 Omnithane @ 2.5 to 3.5 mils DFT.

(3) Intermediate Coat: Tnemec N69 - Color Hi-Build Epoxoline II at 4.0 to 6.0 mils DFT.

(4) Finish Coat: Tnemec N69 - Color Hi-Build Epoxoline II at 4.0 to 6.0 mils DFT.

b. Exterior Pipes and Ferrous Metal (Non-Submerged)

(1) Surface Preparation:

Remove all loose rust from bolt heads and nuts by power tools or blasting.

All welds shall be thoroughly cleaned to remove any loose material.

SSPC-SP6 Commercial Blast Cleaning is the standard for ferrous metals excluding pipe. Media selected shall produce a profile minimum 1.5 mils in depth. Areas not reasonably accessible for the blast nozzle shall be prepared in accordance with SSPC-SP-11 Power Tool Cleaning to bare metal to provide a suitable surface. All abrasive blasting shall be accomplished within containment areas erected by the contractor and all gauges, motors, and other

equipment not to be blast cleaned shall be protected from the blasting nozzle and spent media.

Ductile Iron Pipe shall be cleaned in accordance with Standard 500-03-04 of the National Association of Pipe Fabricators.

All areas where surface preparation has occurred shall be primed the day surfaces have been prepared.

- (2) Prime Coat: Tnemec 1-1216 Omnithane @ 2.5 to 3.5 mils DFT.
- (3) Intermediate Coat No. 1: Tnemec N69 - Color Hi-Build Epoxoline II at 4.0 to 6.0 mils DFT.
- (4) Intermediate Coat No. 2: Tnemec N69 - Color Hi-Build Epoxoline II at 4.0 to 6.0 mils DFT.
- (5) Finish Coat: Tnemec 1094 Endurashield at 2.0 to 3.0 mils DFT.

c. Submerged Piping and Ferrous Metal

- (1) Surface Preparation:

Remove all loose rust, dust, oil, grease or other foreign matter.

All welds shall be thoroughly cleaned to remove all loose material.

SSPC-SP10 Near White Blast Cleaning is the standard. Media selected shall produce a minimum profile of 1.5 mils in depth with a sharp jagged surface.

Ductile Iron Piping to be prepared per NAPF-500-03-04

All areas where surface preparation has occurred shall be primed the day surfaces have been prepared.

- (2) Prime Coat: Tnemec N-69 Hi-Build Epoxoline at 4.0-6.0 mils DFT.
- (3) Finish Coat: Tnemec G435 Perma Glaze at 20.0-40.0 mils DFT in one or two coats.

As an alternative to the above coating system, submerged Ductile Iron Piping may be factory coated with Tnemec 431 Perma-Shield PL at 40.0 mils DFT following the surface preparation described in item (1) previously.

d. Galvanized Steel – Pipe, Conduit, and Miscellaneous Fabrications – Non Immersion Interior

(1) Surface Preparation:

Surfaces shall be prepared in accordance with SSPC-SP1 Solvent Cleaning. Abrasive blast per SSPC SP-16 to mechanically scarify and provide a minimum 1.0 mil anchor profile.

(2) Prime Coat: Tnemec N69 - Color Hi-Build Epoxyline II at 2.0 to 3.0 Mils 0 ft.

(3) Finish Coat: Tnemec N69 - Color Hi-Build Epoxyline II at 2.0 to 3.0 Mils DFT.

e. Interior Floor Slab

(1) Surface preparation shall be in accordance with SSPC-13/ICRI CSP 1-3.

(2) Prime Coat: Tnemec Series 205 – 02SF Tera Tread FC at 3.0 to 5.0 mils DFT

(3) Finish Coat: Tnemec Series 205 – 02SF Tera Tread FC at 3.0 to 5.0 mils DFT

f. Interior Concrete Masonry Unit Walls and Concrete Ceilings

The concrete masonry unit walls shall be clean and dry, and shall receive one prime coat of Tnemec Series 1254 Epoxoblock at (75 to 100 S.F./gallon), one intermediate coat of Tnemec Series 66 Hi-Build Epoxoline (4.0 to 6.0 mils DFT), and one finish coat of Tnemec Series 66 Hi-Build Epoxoline (4.0 to 6.0 mils DFT).

g. Exterior Split Face Finished Masonry Unit Veneers

All exterior split face finished masonry unit veneer surfaces shall be coated with a clear water-repellent coating and stain.

The clear water-repellent coating shall be Prime a Pell Plus 662 manufactured by the Chemprobe Coating Masonry Division of Tnemec Company, Inc. and shall be applied in two coats by spraying in accordance with the manufacturer's written instructions.

The stain shall be Conformal Stain Series 607 manufactured by the Chemprobe Coating Masonry Division of Tnemec Company, Inc. and shall

be applied after both coats of clear water-repellent coating have been applied and cured. The stain may be applied using airless spray, brush or deep nap roller in accordance with the Manufacturer's written instructions. Color shall be selected by the Owner prior to beginning coating work. A sealed and stained mock-up panel shall be prepared having dimensions of approximately two feet by two feet for approval by the Engineer. Up to three mock-up panels may be required for selection of stain color.

7. Colors and Labeling

The pipelines, process control valves, and equipment shall be color coded and labeled in 2-inch high labels at approximately 10 feet between labels with direction of flow indicated. Valves shall be labeled as "Backwash Valve No. 1," etc. Chemical pipe with colored bands shall have bands at ten feet on center unless shorter pipe lengths require more frequent bands. Colors and Labeling shall be as follows:

<u>Pipeline</u>	<u>Label & (Color of Label)</u>	<u>Tnemec Color</u>
Potable Water	Potable Water (Black)	True Blue/Safety (11SF)
CSO Piping	CSO Piping (White)	Brown (EN05)
Other	----	Light Gray (IN01)
<u>Equipment</u>	<u>Label & (Color of Label)</u>	<u>Tnemec Color</u>
Pumps and Motors	Tank Pump No. 1	Lemon Yellow/Safety (SC01)
Valves or Flow Meters	(Insert application location) Valve No 1, 2 or 3 (Black)	Lemon Yellow/Safety (SC01)

Miscellaneous

Doors (not FRP) Facing & Other Indoor Trim	Desert Sands (04BR)
Miscellaneous Metals	Mediterranean Blue (34BL)

Interior Concrete Block Walls and Ceilings

Walls and Ceilings	Warm Sun (01BR)
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Although Tnemec colors are listed in the color schedule, color selection charts shall be submitted to the Engineer for confirmation/selection by the Owner. Additionally, color selection charts shall be provided for all items not listed in the color schedule.

8. Clean-Up

Remove and dispose of all rubbish or other unsightly material in a legal manner, leaving the premises in a clean condition.

SUB-SECTION 9C

PUMP AUTOMATIC CONTROL SYSTEM AND ACCESSORIES

1. Scope

The work described at this Sub-Section consists of furnishing and installing the control system to automatically start and stop each pump and vary the speed of the pumps driven by the variable frequency drive units in response to input signals relating to the wetwell level and time, the submersible pressure transducer and all accessories necessary for installation as depicted at the accompanying Plans.

Electrical work associated with equipment described at this Sub-Section, including all connecting signal and power wiring, is depicted in the accompanying Plans and described in these Detailed Specifications, and should be reviewed and taken into account by the Vendor of equipment described at this Sub-Section.

THE VENDOR OF EQUIPMENT DESCRIBED AT THIS SUB-SECTION IS DIRECTED TO READ ALL OF SECTION 9 – MECHANICAL AND CONTROL AND MONITORING EQUIPMENT – GENERAL BEFORE PROCEEDING WITH READING THIS SUB-SECTION

2. Vendors

The control system to automatically start and stop each pump and vary the speed of the pumps driven by the variable frequency drive units, the submersible pressure transducers, and appurtenances shall be provided as an integrated system by either:

Southern Sales Company, Inc. of Nashville, Tennessee utilizing PRIMEX VPAC PLC Pumping Station Monitoring and Control System

Southern Flow Inc. of Alpharetta, Georgia utilizing Horner EXL6 PLC Pumping Station Monitoring and Control System

Or pre-approved equal.

3. Performance Requirements

a. Pump Automatic Control System – Bear Creek Sewage Pumping Station

Hardware and software components shall be integrated into a system to automatically monitor and control the operation of the variable frequency drives and their driven pumps and monitor certain other conditions. The integrated system shall automatically control and monitor the following performance:

The wastewater level in the wetwell shall be continuously sensed via a submersible pressure transducer generating a 4 to 20 milliamp output signal proportional to wetwell level over a range of two feet (one foot above the submersible pressure transducer) to fifteen feet (fourteen feet above the submersible pressure transducer).

The pump operation protocols in response to wetwell levels and elevations are as follows:

<u>Operation</u>	<u>Wetwell Level (Transducer Level)</u>	<u>Wetwell Elevation</u>
Low Water Alarm	3.50' (2.50')	543.00
Stop All Pumps	4.00' (3.00')	543.50
Start Lead Pump Minimum Speed	6.00' (5.00')	545.50
Lead Pump Maximum Speed	7.00' (6.00')	546.50
Start Lag Pump Minimum Speed	9.00' (8.00')	548.50
Lag Pump Maximum Speed	10.00' (9.00')	549.50
High Water Alarm	10.50' (9.50')	550.00

Normal pump operation protocol shall consist of the station operating on either a Flow PID Loop as measured by the flow meter and adjusted by the variable frequency drives or by Wetwell Level as measured by the transducer in the wetwell and adjusted by the variable frequency drives. A toggle switch shall be provided that allows the Owner to select which desired condition the station shall operate from when the pump operation selector switches for both pumps are in the "Automatic" position.

(1) Wetwell Level Automatic Control

- (a) Start the pump motor, designated by the control system software as the “next pump motor to operate”, at the Hertz value output from the associated variable frequency drive unit coinciding with the minimum motor speed setting in response to the 4 to 20 milliamp signal generated by the submersible pressure transducer installed in the wetwell coinciding with the level of wastewater in the wetwell designated as the “Start Pump Minimum Speed” level. Maintain a 20 second “ramp-up” time from zero to the minimum motor speed setting.
- (b) Continually increase the motor speed of the pump if the wetwell level continues to rise until the pump is running at maximum speed at the “Pump Maximum Speed” setpoint.
- (c) Perform the same starting sequence if a rising wetwell level indicates ‘Start Lag Pump Minimum Speed’. Maintain a 20 second “ramp-up” time from zero to the large pump motor speed being called for by the control system in response to the 4 to 20 milliamp signal generated by the submersible level transducer installed in the wetwell.
- (d) Continually increase the motor speed of the lag pump if the wetwell level continues to rise until two pumps are running at maximum speed at the “Lag Pump Maximum Speed” setpoint
- (e) Decrease motor speeds in reverse order as the wetwell level decreases.
- (f) Stop the pump motor(s) in reverse order of the Pump Start Sequence.
- (g) Designate the pump motor with the least total runtime as the “Next Pump Motor to Operate”.
- (h) Repeat this normal pump operational protocol until two or all of the pump operation selector switches are moved from the “Automatic” position.

(2) Flow Meter Automatic Control

- (a) Start the pump motor, designated by the control system software as the “next pump motor to operate”, at the Hertz

value output from the associated variable frequency drive unit coinciding with the minimum motor speed setting in response to the 4 to 20 milliamp signal generated by the submersible pressure transducer installed in the wetwell coinciding with the level of wastewater in the wetwell designated as the "Start Pump Minimum Speed" level. Maintain a 20 second "ramp-up" time from zero to the minimum motor speed setting.

- (b) Gradually increase or decrease the motor speed of the pump to the "Target Flow Rate" level set by the Owner. The pump shall operate at the Hertz value output from the associated variable frequency drive unit coinciding with the motor speed setting in response to the 4 to 20 milliamp signal generated by the flow meter coinciding with the flow rate of wastewater designated as the "Target Flow Rate" level.
- (c) Stop the pump motor in reverse order of the Pump Start Sequence.
- (d) Designate the pump motor with the longest time elapsed since being stopped as the "Next Pump Motor to Operate".
- (e) Repeat this normal pump operational protocol until all of the pump operation selector switches are moved from the "Automatic" position.

In the event any pump operation selector switch is in the "Off" position, the control system software shall automatically designate the operating pump motor as the "Next Pump Motor to Operate" after that pump motor is started.

Only two pump motors shall operate at any time when the selected position of both pump control switches is at "Automatic" or at "On".

No pump motor shall start and operation of all pumps shall be ceased at any time the 4 to 20 milliamp signal generated by the submersible pressure transducer controlling the pump operation installed in the wetwell indicates the wastewater level is at or below the level designated as the "Low Wetwell Level" regardless of the position of the three-position pump operation selector switch for any pump.

No pump motor shall be started automatically when the three- position operation selector switch for that pump is placed in the "Off" position.

No pump shall continuously operate for more than four (4) hours when the three-position operation selector switch for all pumps are placed in the "Automatic" position. The control system software shall automatically stop pumps that have been running for four (4) hours and start the "Next Pump Motor to Operate". When two pumps are running, the control system software shall cycle the pumps such that no pump operates for more than eight (8) hours when the three-position operation selector switch for all pumps are placed in the "Automatic" position.

Submersible Transducer No. 1 shall be the default wetwell level indicator. The control system shall allow the controlling transducer to be set by the Owner. In the event a submersible transducer is out of service or unable to be used for control of the pump start and speed sequence, the other submersible transducer shall control the pump operation.

4. Intent

It is the intention that this specification that the Contractor shall furnish, install, and place a 120 volt, 1 phase, 3 wire, Triplex pump station control panel into successful operation. System shall be as hereinafter described and all necessary appurtenances that might normally be considered a part of the complete electrical system for this installation. All of the automatic control equipment is to be supplied by one manufacturer except the variable frequency drives (VFDs) which shall be supplied by the Pump Vendor. The control panel shall be factory assembled, wired, and tested and covered by complete electrical drawings and instructions.

The control panel will be powered from a protected power source. Metering equipment are existing or to be furnished by others.

5. References

The entire system shall be constructed in strict accordance with the latest published standards of NEMA, IEEE and ANSI. Wherever possible, control system components shall be Underwriters Laboratory listed. All control hardware and software shall be factory assembled, wired, and thoroughly tested prior to shipment.

6. 3rd Party Approval

The control panel(s) shall be constructed in compliance with Underwriter's Laboratories Category 698A - enclosed industrial control panel relating to hazardous locations with intrinsically safe circuit extensions listing and following-up service. The control panel(s) shall bear the Underwriter's Laboratories serialized "698A" label.

Prior to shipment from the manufacturer's facility to the jobsite for installation, the completed pump control panel(s) shall be inspected by an Underwriter's Laboratories (U.L.) representative. Upon successful completion of the inspection, the panel shall be assigned the required 698A serialized U.L. label, indicating the equipment is built in accordance with the practices and requirements of this Underwriter's Laboratories category.

The control panel submittal shall contain a copy of the front page of the control panel builders UL698A standard that shows their UL file number. The name on the front page of the UL Standard shall match the name in the title block of the control panel submittal.

7. Experience

All of the equipment listed herein shall be furnished by a single supplier with at least ten (10) years experience in furnishing comparable systems and shall be of the latest and most modern design. The supplier shall be responsible for the correct operation of the equipment as specified.

8. Construction Standards

Wire Numbers – Each wire in the control panel shall be marked with a wire number that corresponds to the page and ladder rung of the schematic diagrams. A unique wire number shall be provided between component contacts and coils. Wire markers shall be Brady Thermal Transfer Self-Laminating Vinyl or equal by Grafoplast or Thomas & Betts.

Color Coding – Wires shall also be color-coded as follows: 120 VAC Line = black; Neutral = white; Ground = green; Switched 120 VAC = red; DC current carrying conductor = blue, DC non-current carrying conductor = white with blue stripe, Foreign voltage = yellow, Intrinsically safe = light blue.

Component Identification – Each component in the system shall be identified by a unique number that corresponds to its coil's page and ladder rung location on the schematic drawings.

Wire – AC control conductors shall be 600 volt and a minimum of 18 gauge. DC control conductors shall be a 300-volt and a minimum of 18 gauge. Control conductors shall be UL Type MTW rated for 105o C. Analog conductors shall be 22 gauge shielded twisted three conductor rated for 300 volts. Wire shall be Beldon 8771 or equal. Shields shall be grounded at the PLC or panel location. Power conductors shall be sized per UL and NEC standards and rated for 600 volts. Conductors shall be UL Type MTW, THHN or THWN rated for 90o C.

Control Terminals – All field control conductors shall be connected to terminal blocks. Terminals shall have machine marked wire numbers. Connection of field

control conductors directly to control panel components will not be allowed. Terminal blocks shall be rated for 30 amps at 600 volts. They shall be screw terminal type capable of terminating 10 to 26 gauge wire. Terminal bridge bars shall be provided when it is necessary to bridge multiple like terminals together. Terminals and accessories shall be Phoenix Contact "Clipline" or equal by Allen Bradley or Weidemueller.

9. Control Panel

a. Enclosure

All control and power equipment shall be mounted in a 14-gauge, NEMA 12 Stainless Steel enclosure. A gasket shall be provided for each outer door. All internal components shall be mounted on a painted steel back plate. Operators and indicators shall be mounting the front door to facilitate easy access. A padlock hasp shall be provided on the enclosure door.

Enclosure shall be sized sufficiently to allow for easy access to all internal equipment. Enclosure shall be not less than 60" High x 36" Wide x 16" Deep.

Enclosure shall include environmental controls to maintain internal panel temperature within operating temps of internal equipment. Thermostatically controlled heaters and cooling systems shall be provided as needed.

b. Enclosure Lighting

Enclosure shall be supplied with an interior light and switch. Interior light shall be a minimum of 18" in length and based on energy efficient LED technology with minimum life expectancy of 60,000 hours and have a luminous density not less than 213 lm/ft. LED beam angle shall not be less than 120 Deg.

The system shall have a temperature operating range of -22 Deg F to 140 Deg F or better.

The lighting system shall be controlled by a door switch that will activate when the enclosure door is opened. Light will remain active until the door is closed.

c. Power Entry

The control panel shall include a 120/1P main circuit breaker to provide an incoming power disconnect means and short circuit/overcurrent protection for the control panel equipment. Unit shall be rated 10,000 AIR or higher.

d. Lightning Arrestor

The control panel shall be protected from electrical surges caused by lightning and high current/voltage surges.

e. Heater Condensation

A thermostatically controlled heater shall be provided to prevent condensation. The heater shall be minimum 100-watt with a long life heating element.

Heater shall in no event reach an external temperature of more than 428 Deg. F. The heater shall be mounted at the base of the enclosure in a fashion to allow for the maximum heat transfer to the interior and away from any equipment, wire way, or other materials that could lose their integrity or be adversely affected by the heat source.

A thermostat shall be provided to control the heater. In the event panel temperatures exceed 85 Deg F. the heater will not be allowed to operate.

Heater shall be protected by its own circuit breaker allowing for overcurrent protection and a means to switch the heater off.

f. GFCI Duplex Receptacle

A GFCI Duplex power receptacle shall be mounted inside the enclosure to provide a power source for use by an operator.

The GFCI duplex receptacle shall include a 10-amp circuit breaker to provide cutout on an overcurrent condition.

Unit shall incorporate GFCI fault test button and reset on the face of the unit.

Unit shall detect and indicate via face mounted LED if the line/load wiring is reversed.

Internal circuitry shall monitor the condition of the GFCI and will trip unit if a malfunction is present. Unit will not permit reset if the GFCI is not able to provide the necessary protection.

g. Power Supply Systems

The control panel shall be supplied with a DC power supply.

- (1) Power supply will be sized so that under normal conditions, no more than 60% of its rated wattage output is used.

- (2) The DC power outputs shall be protected by separately mounted replaceable fuses.

An Uninterruptable Power Supply (UPS) System shall be furnished. The UPS shall supply both regulated 24 VDC and 12 VDC power for powering control and sensor equipment.

Unit shall be sized to provide battery back-up operation for a minimum of 4 hours during an incoming service power interruption.

System will allow controller, sensors and telemetry equipment to remain operational under battery back-up

The UPS shall monitor battery life and provide indication via LED to replace battery.

The battery shall be non-maintenance gel type cell and easily replaceable. UPS will not be damaged in the event the battery is connected in reverse polarity.

The DC power outputs shall be protected by separately mounted replaceable fuses.

h. Microprocessor Based Controller

The Lift Station Controller shall be preprogrammed and dedicated to the application, microprocessor based controller capable of monitoring process variable inputs and automatically control up to three variable speed pumps.

The operator interface shall display the current level in feet and represent the level in bar graph form, which dynamically updates based on the level in the wet well.

- (1) An active/dynamic graphical representation of each pump and its status shall be displayed on the same screen along with flow in gallons per minute. Pump graphic shall change state to indicate – “Off”, “Called”, “Running”, and “Failed/Out of Service”.
- (2) Touching an active pump on the home screen takes you to the respective pump status screen.
- (3) A trend screen showing, a minimum of, the last 2 hours of wet well level fluctuations shall also be available.

- (4) The operator interface shall have a display area not less than 5.7” with 640 x 480 pixel resolution, TFT Touch screen graphic display with backlit LED having not less than 30,000 life.
- (5) The controller shall incorporate advanced control capabilities including.
 - (a) floating point, multiple auto-tuning PID loops and string handling
 - (b) Full featured built-in I/O including advanced high-speed digital inputs (500kHz)
 - (c) Expansion I/O up to 2048 (DI/DO) and 512 (AI/AO)
 - (d) 32GB removable storage for programs, data logging and screen captures.
 - (e) USB 2.0 (mini-B) for programming and data access
 - (f) USB 2.0 (USB A) for flash drives up to two terabytes (2TB)
- (6) The operator interface shall be suitable for Type 12, 4 & 4X environment. Additionally, the display shall be manufactured from a UV resistant polyester substrate.

To prevent the loss of data during an extended power outage, longer than 4 hours, the controller shall have a built in replaceable battery system to keep volatile memory active for approximately 10 years.

The controller shall be programmed with herein specified inputs and outputs. The controller shall also have the ability to accommodate additional expansion I/O without the need to replace hardware or upgrade the controller.

- (7) The controller shall be configured to monitor the following discrete input status signals:
 - (a) Pump 1, 2, 3 Running
 - (b) Pump 1, 2, 3 HOA In Auto
 - (c) Pump 1, 2, 3 Overtemp
 - (d) Pump 1, 2, 3 VFD/Pump Failure
 - (e) High Wetwell Level
 - (f) Low Wetwell Level
 - (g) High Building Temperature
 - (h) Low Building Temperature
 - (i) Smoke Detector Alarm
 - (j) Vandal Door Open
 - (k) Generator Running
 - (l) Screen Running
 - (m) Screen HOA in Auto
 - (n) Screen Failure
 - (o) Common Alarm

- (8) The controller shall provide the following discrete output signals:
 - (a) Pump 1, 2, 3 Call
 - (b) Common Alarm
- (9) The controller shall monitor the following (4-20 mA) process signals:
 - (a) Wetwell Level – Submersible Transducer No. 1
 - (b) Wetwell Level – Submersible Transducer No. 2
 - (c) Pump 1, 2, 3 Speed Signal, 4-20ma
 - (d) Flow Rate

A three level security system shall be provided for authorized operators (OPER) and supervisors (SUPER). The security system code shall be field configurable using 1, 2, 3, 4, or 5 characters. A successful log on or log off shall be recorded as an event on the removable memory module.

1st Level – System will default to non-logged in mode operation. Without being logged in, screens are view only. No adjustments or alarm acknowledgments shall be possible.

2nd Level shall be an authorized OPER – Operator Access

- After successful OPER authorization code has been interceded the operator shall have rights to edit set points and acknowledge alarms

3rd Level shall be an authorized SUPER – Supervisor Access

- All privileges as the OPER
- Right to change the passwords of both SUPER and OPER users
- Right to set lifetime pump runtime and start totals.
- Right to toggle communication ports between telemetry communications or local programming modes
- Right to set the controller time and date
- Right to access removable media system screen

Shall be provided with factory default passwords.

To prevent unauthorized controller adjustments, an adjustable 0-999 second delay shall be provided to automatically logoff the current user after the adjustable time period, and no operator screen navigation has been detected.

The controller shall be capable of operating pumps in an automatic or fixed mode. In automatic mode, a built in alternator shall be available to equalize motor starts, stops, and run time. The alternator shall have the capability of being put into fixed sequence mode at any time. Alternation shall also have the capability to alternate cyclically or following an adjustable period of time.

Alternator shall have pump fail replace logic allowing a failed pump to be detected and the lag pump to be called into service without level increasing to lag start setpoint.

Auto Alternation Mode

If the running signal input is not received within 60 seconds (adjustable) of the respective pump being called to start, a pump failure alarm shall be displayed in the alarm banner and the next pump in sequence shall be called to start.

Fixed Alternation Mode

If the running signal input is not received within 60 seconds (adjustable) of the respective pump being called the respective pump shall continue to be called until the level in the wet well reaches the next level setpoint at which point the next pump in the sequence shall be called to start.

The following system setpoints shall be provided: (* indicates an associated, user adjustable (0-999) seconds time delay shall also be provided to prevent momentary process fluctuations from impacting alarm or control.)

Wet Well Level High and Low Level Alarm *	xx.x ft.
Start Lead*, Lag 1*	xx.x ft.
Stop Lead*, Lag 1*,	xx.x ft.
Target Flow Rate	xxxx GPM
VFD Ramp Min/Max Lead, Lag stages	0-100 %
Pump 1, 2, 3 Failure To Start Delay	xxx sec
Pump 1, 2, 3 Over Temp Delay	xxx sec

The controller shall monitor, display and log the following alarms:

- High or Low Wet Well Level Alarm (Transducer)
- Wetwell Level Transducer No. 1 Signal Failure
- Wetwell Level Transducer No. 2 Signal Failure
- Pump 1, 2, 3 Over Temp
- Pump 1, 2, 3 VFD Failure
- Pump 1, 2, 3 Failure (internal to controller, Call No Run)
- Intrusion/Vandal Entry Alarm
- Control Power Failure
- Generator Failure
- Screen Fail

The controller shall have Pump Status screens that provide the following information and control options:

- Pump 1, 2, 3 Status (Off, Called, Running, & Failed)
- Pump 1, 2, 3 H-O-A Status
- Target Flow Rate: xxxx GPM
- Actual Flow Rate: xxxx GPM
- Pump 1, 2, 3 Over Temp Status
- Pump 1, 2, 3 Pump Fail/VFD Fault Status
- Today: Pump 1, 2, 3 Runtime xx.x Hours
- Today: Pump 1, 2, 3 Starts xxx
- Yesterday: Pump 1, 2, 3 Runtime xx.x Hours
- Yesterday: Pump 1, 2, 3 Starts xxx
- Current (CRNT) Month (MNTH): Pump 1, 2, 3 Runtime xxx.x Hours
- Current (CRNT) Month (MNTH): Pump 1, 2, 3 Starts xxx
- Last Month (MNTH): Pump 1, 2, 3 Runtime xxx.x Hours
- Last Month (MNTH): Pump 1, 2, 3 Starts xxx
- Total: Pump 1, 2, 3 Runtime 999999.9 Hours
- Total: Pump 1, 2, 3 Starts 999999
- Screen Status(Off, Called, Running, & Failed)
- Screen H-O-A Status
- Screen Fault Status

i. Navigation

A menu system shall be provided for the user with proper access to change setpoints, setup pump starts, stops, alarms, alarm delays and setup pump alternation. The following parameters shall be provided:

- (1) Level and Level Delay Setpoints
- (2) Alternation – Auto or Fixed mode; Timed or Cyclical
- (3) The operator shall have a choice of selecting automatic or a fixed sequence.
- (4) Pump Failure – call, no run
- (5) The user shall be able to enter pump failure time for each pump that is enabled. A failed pump will be replaced with the next available pump.
- (6) Over Temp
- (7) The user shall be able to enter seal failure and over temp time delays for each respective pump that is enabled.
- (8) Miscellaneous Alarms
- (9) The user shall be able to enter delays for communications failure, intrusion and high or low temperature.
- (10) Transducer Range (wet well level)
 - (a) A field shall be provided to scale the transducer in feet to setup the vertical scale on the Home screen and an adjustable offset in feet, shall be provided to compensate for the transducer to be raised off the bottom.

- (11) Flow
 - (a) The controller shall provide station flow information based on external flow transmitter.
 - (b) The controller shall provide the following flow related information as a minimum:
 - i. Station Effluent Today's flow total.
 - ii. Station Effluent Yesterday's flow total
 - iii. Station Effluent Previous Month Flow Total
 - iv. Station Effluent Current Month Flow Total
- (12) Selector switch for Level or Flow control
- (13) Controller shall log the pump run time data, alarms and analog data to the removable memory card.

j. Alarms and Historical Events

When an alarm is activated, it shall be logged with a time and date stamp and displayed in the alarms summary screen until the operator acknowledges it.

A historical screen shall provide a historical log for the most recent 64 events.

An additional screen shall be provided to indicate today's, yesterday's, previous month and current month flow through the pump station.

k. Removable Memory

A removable memory storage device shall be provided to store a backup of the program and historical data. Memory module can be used to copy and install configurations including graphics to like controllers in the system or inserted to like replacement controllers. Removable memory shall be sized to allow a minimum of 5 years of data storage or 78 million time and date stamped process data readings. Data storage rates shall provide sufficient resolution of monitored process signals to provide an accurate historical representation of the process. Data shall be formatted in .CSV format and easily read and importable to Windows based applications including Excel or Access for manipulation or longer term storage of historical data. The memory card shall be easily accessible, without having to remove or disconnect panels, wires or other equipment, allowing for quick removal and replacement.

l. Controller Communications

The controller shall be supplied as telemetry capable for LAN and WAN operations.

The controller shall include a minimum of two RS-232/RS-485 serial ports (Operating at up to 115 Kbs) and 1 CAN network port.

m. Configurable serial protocols

Built-in 100Mbps Ethernet ports support an integrated Web Server, FTP Host, Email, Modbus TCP Master/Slave and programming.

An Ethernet Connection using Modbus TCP/IP protocol shall be provided for connection to cellular modem by others allowing communications back to existing master station.

Communication capability shall allow the controller to communicate over optional telemetry equipment including: Phone Line, VHF/UHF/900/Spread Spectrum, Satellite Radio, Fiber Optic and Cellular communication mediums.

Dual CAN ports shall be provided to interface with optional CAN-based remote I/O.

n. Diagnostics

The controller shall have built-in diagnostics allowing for on-site troubleshooting of equipment without the need for a Laptop, special programs or specialized training. Diagnostics shall be viewable from the front of the display. The following minimum set of diagnostics shall be available via a self-test command:

- (1) Run and OK status
- (2) Network Status and Usage
- (3) Average Logic Scan rate
- (4) Application Memory Usage
- (5) Loaded Firmware Versions
- (6) Loaded Protocols
- (7) Removable media access

o. Certifications

The controller shall be compliant with CE, UL, UL-C and for use in applications requiring Class 1, Division 1 - A, B, C & D classifications.

The Lift Station Controller shall be VPAC LSC 6 Controller as provided by PRIMEX or Horner EXL6 as provided by Southern Flow, Inc.

p. Pilot Devices

Selector switches shall include removable 10 Amp, 600-volt double make double break contacts. All pilot lights, selector switches and pushbuttons shall be rated for NEMA/UL 4 applications. They shall be not less than 30.5mm diameter.

Pilot lights shall be Push To Test allowing for operator verification of indicator light operation.

Contact blocks/terminals shall be finger safe meeting IP20 standards.

Operators shall be rated for a minimum life of 500,000 operations with a MTBF of less than 1 fault per 10 million operations.

All Pilot devices shall be clearly identified by a phenolic nameplate with black surface and white letters not less than 3/16" in height placed over the associated pilot device.

The following Pilot Lights shall be mounted on the inner door:

- (1) Pump 1, 2, 3, Required On
- (2) Pump 1, 2, 3, Run
- (3) Pump 1, 2, 3, Fail
- (4) Pump 1, 2, 3, Overtemp
- (5) High Level Alarm
- (6) Low Level Alarm
- (7) Screen Run
- (8) Screen Fail
- (9) Generator Run

The following Selector Switches shall be mounted on the inner door:

- (1) Pump 1, 2, 3 Hand-Off-Auto
- (2) Automatic Control System – Wetwell Level, Flow Meter

The following Push Buttons shall be mounted on the control panel:

- (1) Pump 1, 2, 3, Reset (Overtemp)

q. Running Timer Meters

An elapsed time meter shall be mounted on the inner enclosure door for each pump. It shall be 6 digit (99999.9 hours) non-reset types.

Unit shall have quartz accuracy. Accuracy shall be within +/- .02% over entire range.

r. Relays

Relays shall be provided as needed to provide the specified functionality of these specifications.

Relays shall be general-purpose plug-in type.

Each relay shall be a minimum of 4-pole with contacts rated for 6 amps at 240 VAC resistive load and 3 amps at 240 VAC inductive load.

Each relay shall have a built in LED indicator and illuminate when active.

Minimum mechanical life is 20,000,000 operations AC, 30,000,000 operations DC.

s. Timers shall be 4-pole solid-state plug-in type.

Timers shall be provided as necessary to provide the specified functionality of these specifications.

Each timer shall have contacts rated for 3 amps at 220 VAC resistive load and .8 amps inductive load.

All relay and timer sockets shall be of the same type and shall be 14-blade. Timers shall be adjustable from 0 – 6 hours. A "time cycle in progress" and "timed out" indicating LED shall be provided.

Minimum mechanical life is 500,000 operations.

t. Motor Over-temperature

Motor Over-temperature indication shall be provided for each pump on the operator display. The alarm light shall remain on and the pump shall not be allowed to restart until the motor has cooled and the reset button has been pressed.

u. Intrinsically Safe Barriers

All float switches and transducers located in the wet well shall be provided with intrinsically safe barriers that meet UL 913 specification, 6th edition and are labeled as such. Each device shall be mounted in an intrinsically safe area that is mechanically protected from non-intrinsically safe wiring.

v. Submersible Level Transducer (2 Required)

The liquid level of the wet well shall be sensed by Siemens Water Technology Bulletin A1000, Model 157GSCD Submersible Level Transducer. The transducer shall be a 4-20 mA DC, 2-wire, 15 to 40 VDC loop-powered type with its output signal directly proportional to the measured level excursion over a factory-calibrated range of zero to 15 feet of water.

The Transducer shall be of the solid-state head-pressure sensing type, suitable for continuous submergence and operation and shall be installed in accordance with manufacturer's instructions. The bottom diaphragm face of the sensor shall be installed 12 inches above the floor at elevation 563.85. The sensor shall be mounted using a stainless steel cable system in a location and as shown on the Plans.

The transducer housing shall be fabricated of type 316 stainless steel with a bottom diaphragm 2-5/8" diameter of heavy-duty, limp, foul-free, molded Teflon (TM) bonded to a synthetic rubber back/seal.

A hydraulic fill liquid behind the diaphragm shall transmit the sensed pressure to a solid-state variable-capacitance transducer element to convert the sensed pressure to a corresponding electrical value. The sensed media shall exert its pressure against the diaphragm which flexes minutely so as to vary the proximity between an internal ceramic diaphragm and a ceramic substrate to vary the capacitance of an electrical field created between the two surfaces. A stable, hybrid, and operational amplifier assembly shall be incorporated in the transducer to excite and demodulate the sensing mechanism. The transducer shall incorporate laser-trimmed, temperature compensated, high quality components and construction to provide a precise, reliable, stable output signal directly proportional to the sensed pressure over a factory-calibrated range.

The transducer element shall incorporate high over-pressure protection and be designed to withstand intermittent over-pressures five times the full scale range being sensed.

The transducer/transmitter shall include easily accessible offset and span adjustments in the upper assembly. Span shall be adjustable from 100% down to 15% of the sensor range. Fine and coarse adjustments for both span and offset shall be provided, using 25-turn potentiometers. Offset and span adjustments shall be non- interactive, for ease of calibration.

The internal pressure of the lower transducer assembly shall be relieved to atmospheric pressure through a heavy-duty urethane jacketed hose/cable assembly and a slack PVC bellows mounted in the

weatherproof fiberglass upper assembly. The sealed breather system shall compensate for variations in barometric pressure and expansion and contraction of air due to temperature changes and altitude as well as prevent fouling from moisture and other corrosive elements.

The transducer assembly shall be installed where directed by the Engineer and connected with other system elements and placed in successful operation. It shall be provided with input power and output signal transient protection, associated control elements as specified herein and in accordance with manufacturer's instructions.

w. Master Telemetry and SCADA

Control panel supplier shall provide necessary programming of existing LC3000 master station telemetry unit and existing SCADA system.

Programming modifications shall allow for monitoring and remote control operations consistent with existing stations.

SCADA HMI shall be updated to show the new station.

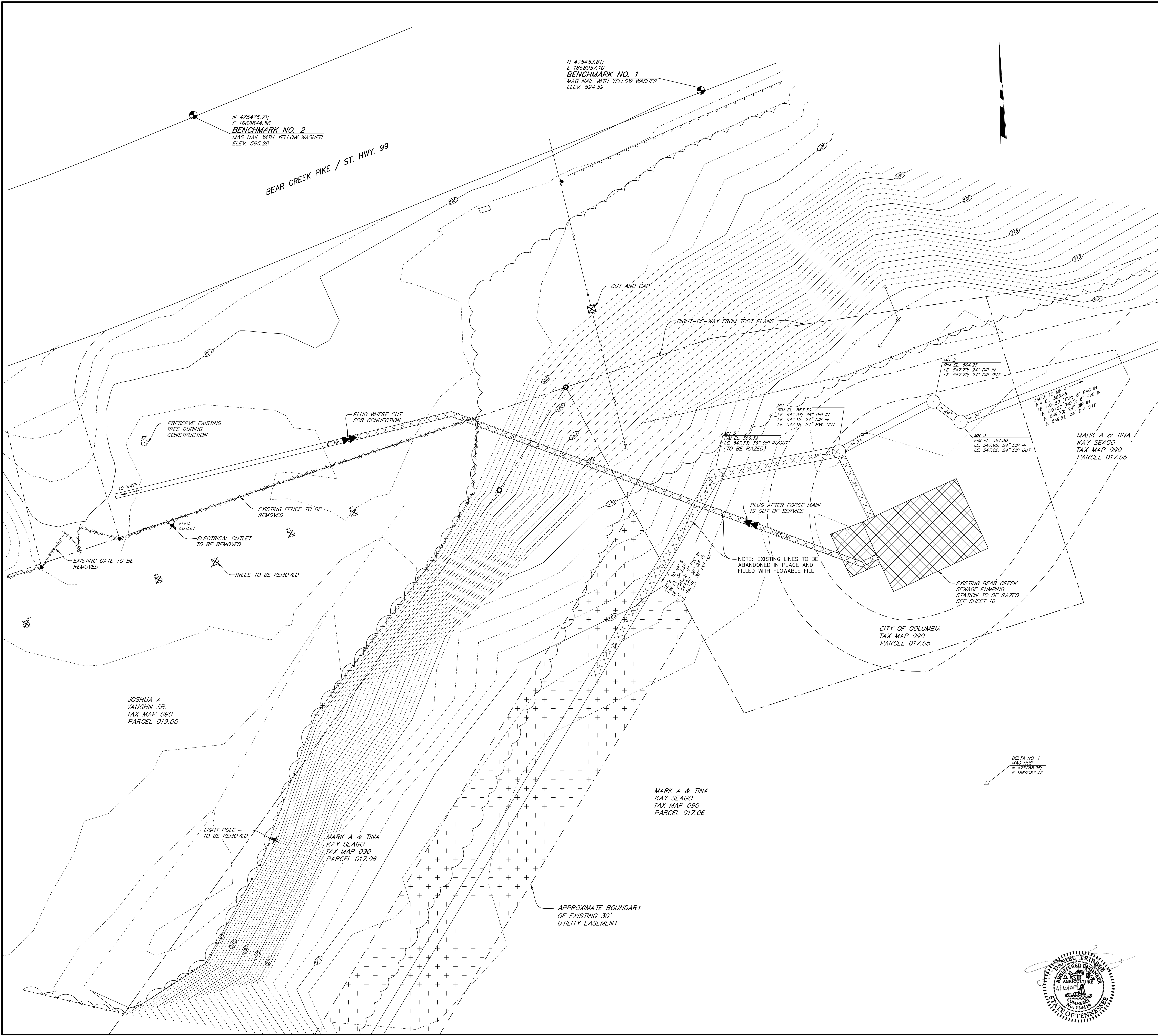
10. Field Supervision

The services of a factory trained, qualified representative shall be provided to inspect the completed installation, make all adjustments necessary to place the system in trouble-free operation and instruct the operating personnel in the proper care and operation of the equipment.

After the system has been installed, the Supplier shall demonstrate with simulated I/O the performance of each unit, and document that the system operates properly as specified. Monitoring signals shall register at all required locations and loop checks on all loops shall have been completed and tested. Each station must be tested and accepted by the city prior to proceeding to the next installation.

11. Guarantee

All equipment shall be guaranteed against defects in material and workmanship for a period of one year from the date of Owner's final inspection and acceptance to the effect that any defective equipment shall be repaired or replaced without cost or obligation to the Owner.

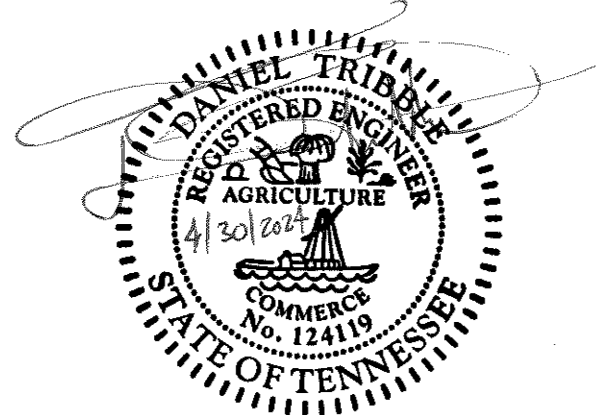


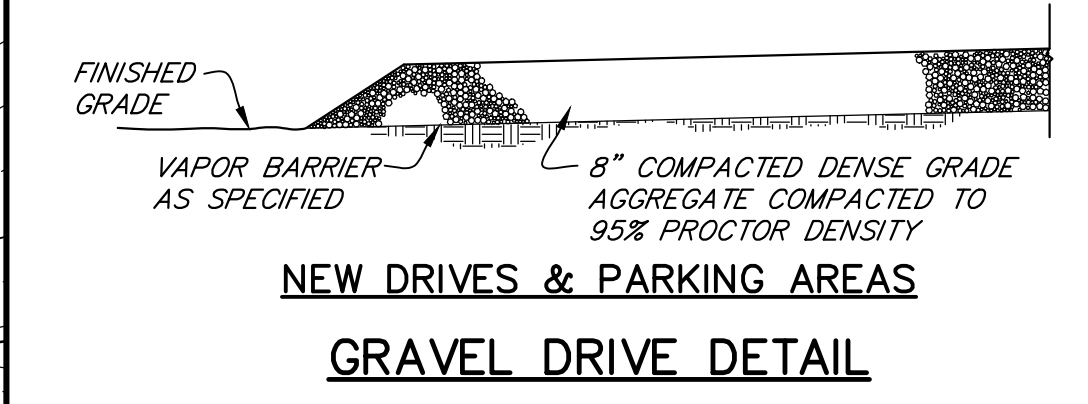
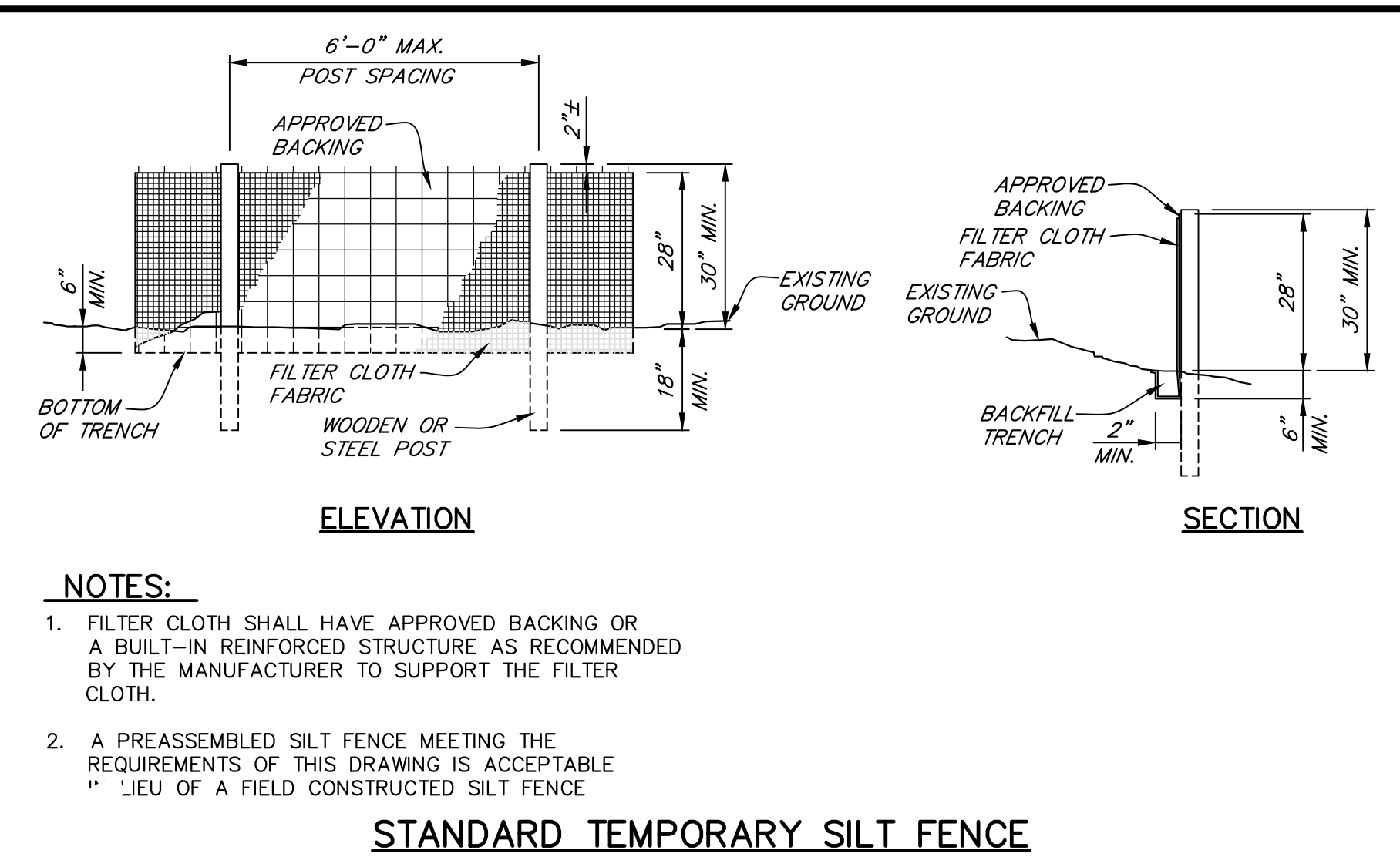
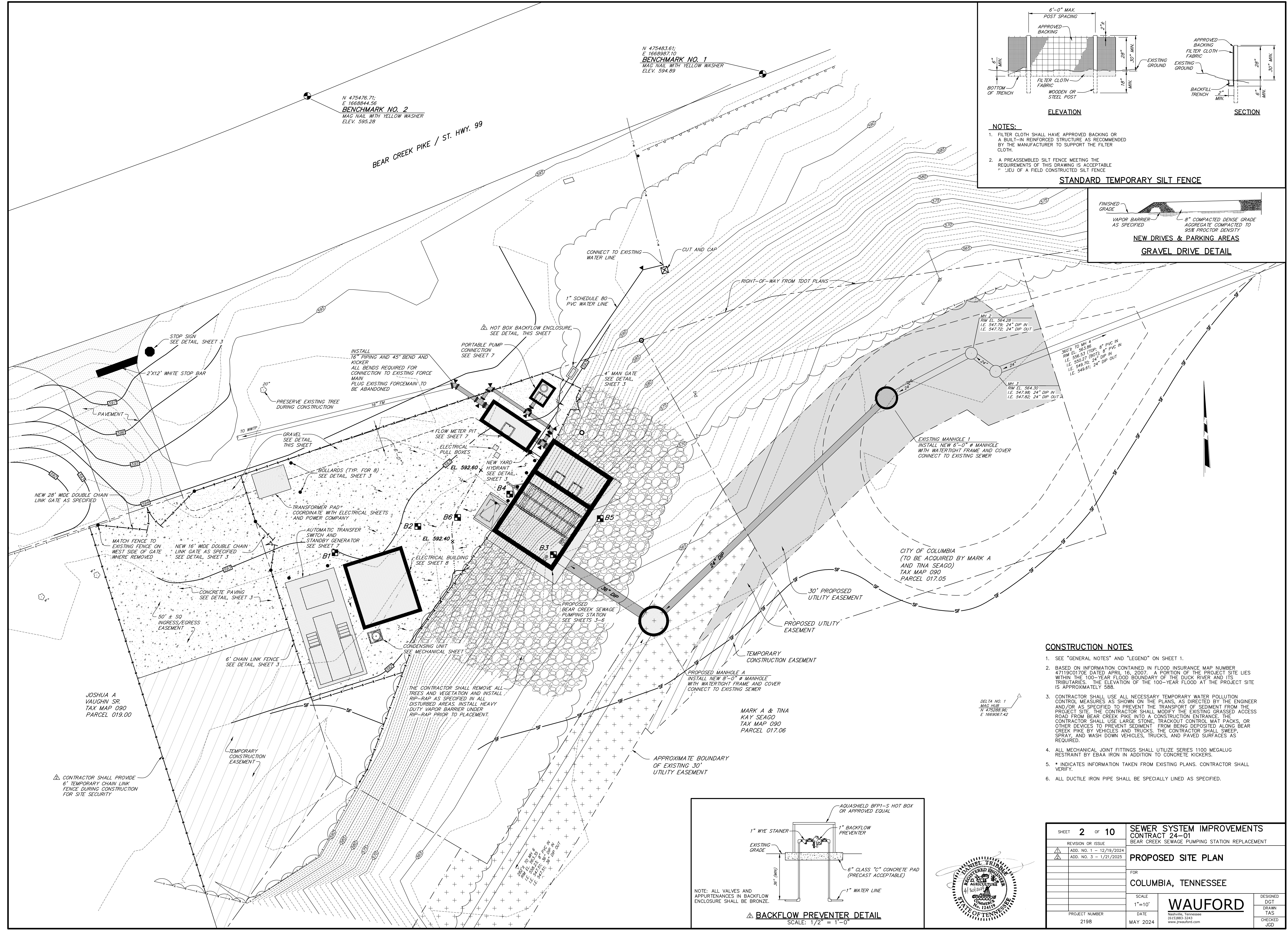
- GENERAL NOTES**
1. ALL STANDARD MANHOLE FRAMES AND COVERS SHALL BE SELF-SEALING AS SET OUT IN THE DETAILED SPECIFICATIONS AND SHOWN ON THE PLANS, UNLESS OTHERWISE NOTED.
 2. THE CONTRACTOR SHALL STAY WITHIN THE LIMITS OF CONSTRUCTION AS SET OUT IN SECTION 1 OF THE DETAILED SPECIFICATIONS.
 3. THE NAMES OF THE PROPERTY OWNERS, LOCATIONS OF PROPERTY LINES AND LOCATIONS OF STREETS AND ROAD RIGHTS-OF-WAY SHOWN ON THESE PLANS WERE OBTAINED FROM THE TAX MAPS, THE MAURY COUNTY TAX ASSESSOR AND PROPERTY SURVEYS PROVIDED BY THE OWNER. THIS INFORMATION IS GENERAL IN NATURE AND THE ENGINEER MAKES NO CLAIM TO THE ACCURACY OF THIS INFORMATION.
 4. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE DISPOSAL OF WASTE MATERIALS GENERATED DURING CONSTRUCTION. THE OWNER SHALL HAVE RIGHTS TO ALL SALVAGEABLE MATERIALS. REFER TO SECTION 1 OF THE DETAILED SPECIFICATIONS.
 5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIRS AND/OR REPLACEMENT IN KIND OF ALL EXISTING DRAINAGE CULVERTS AND OTHER STRUCTURES DISTURBED DURING CONSTRUCTION. NO ADDITIONAL PAYMENT WILL BE MADE FOR THIS WORK.
 6. ANY BYPASS PUMPING REQUIRED TO PERFORM THIS CONTRACT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. BYPASS PUMPING IS NOT A SEPARATE PAY ITEM. THE CONTRACTOR SHALL PREPARE A BYPASS PUMPING PLAN OR A SHOP DRAWING AND SUBMIT TO THE ENGINEER FOR REVIEW AS SPECIFIED.
 7. THE LOCATION AND DEPTH OF ALL EXISTING UNDERGROUND UTILITIES SHALL BE FIELD VERIFIED PRIOR TO THE CONTRACTOR COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY REQUIRED MODIFICATIONS IMMEDIATELY.

- CONSTRUCTION NOTES**
1. BASED ON INFORMATION CONTAINED IN FLOOD INSURANCE MAP NUMBER 47119C0170E DATED APRIL 16, 2007. A PORTION OF THE PROJECT SITE LIES WITHIN THE 100-YEAR FLOOD BOUNDARY OF THE DUCK RIVER AND ITS TRIBUTARIES. THE ELEVATION OF THE 100-YEAR FLOOD AT THE PROJECT SITE IS APPROXIMATELY 588.
 2. CONTRACTOR SHALL USE ALL NECESSARY TEMPORARY WATER POLLUTION CONTROL MEASURES AS SHOWN ON THE PLANS, AS DIRECTED BY THE ENGINEER AND/OR AS SPECIFIED TO PREVENT THE TRANSPORT OF SEDIMENT FROM THE PROJECT SITE.
 3. ALL MECHANICAL JOINT FITTINGS SHALL UTILIZE SERIES 1100 MEGALUG RESTRAINT BY EBAA IRON IN ADDITION TO CONCRETE KICKERS.
 4. * INDICATES INFORMATION TAKEN FROM EXISTING PLANS. CONTRACTOR SHALL VERIFY.
 5. ALL DUCTILE IRON PIPE SHALL BE SPECIALLY LINED AS SPECIFIED.
 6. THE EXISTING MANHOLES TO BE RAZED SHALL HAVE THE TOP CONE REMOVED (24" MIN.) AND THE ENTIRE MANHOLE FILLED WITH CRUSHED STONE. 24" OF TOP SOIL SHALL BE PLACED OVER THE GRAVEL BACKFILL, SEEDED AND STRAWED IN ACCORDANCE WITH THE SPECIFICATIONS.

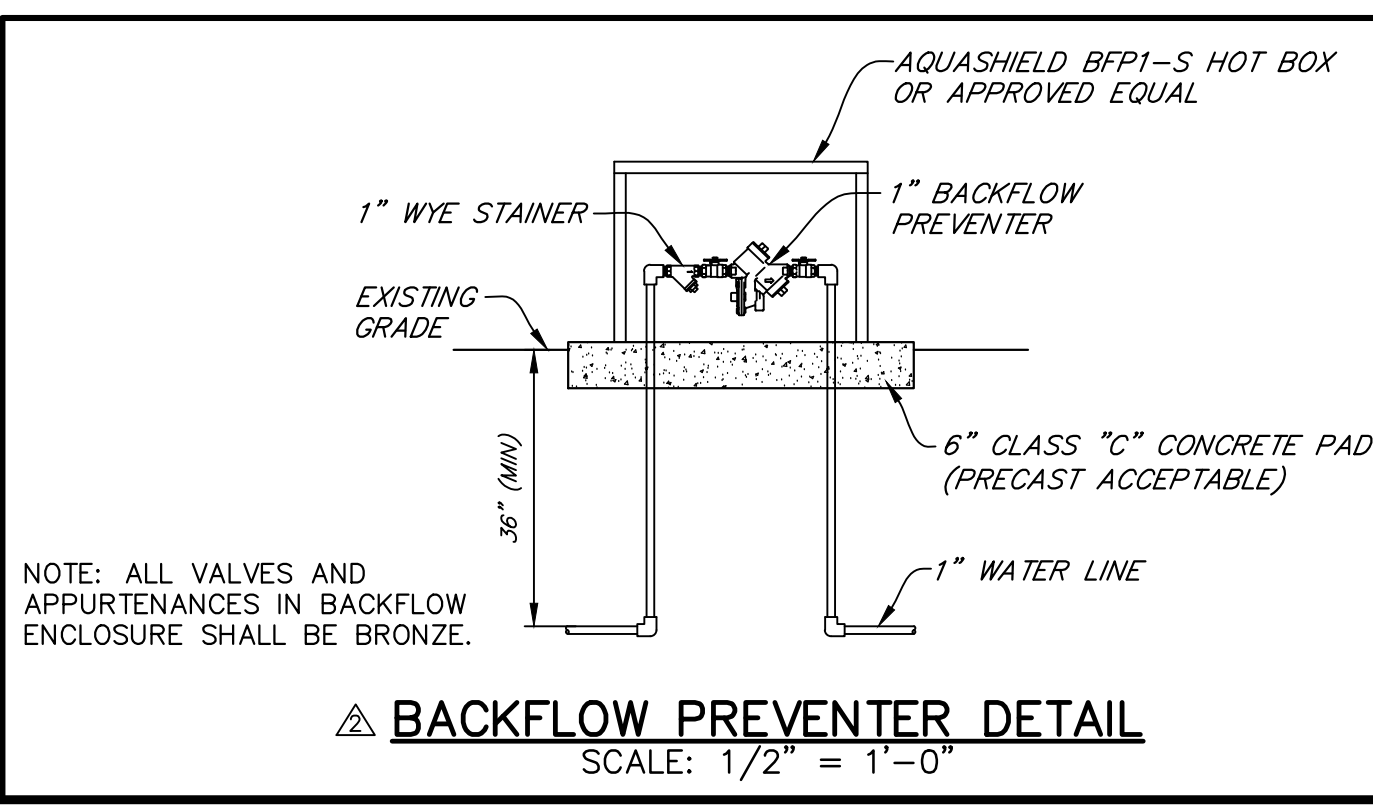
LEGEND	
	EXISTING SIDEWALK
	EXISTING CULVERT
	EXISTING DITCH
	EXISTING OVERHEAD ELECTRIC
	EXISTING WATER LINE
	EXISTING GAS LINE
	EXISTING GUARDRAIL
	EXISTING FENCE
	PROPOSED FENCE
	EXISTING CONTOURS
	PROPOSED CONTOURS
	PROPERTY LINE
	RIGHT-OF-WAY
	PROPOSED SILT FENCE
	BENCH MARK
	EXISTING PIPING 8" AND LARGER
	PROPOSED PIPING 6" AND LARGER
	PROPOSED PIPING 8" AND LARGER
	EXISTING VALVE
	EXISTING TREE
	EXISTING POWER POLE
	EXISTING SIGN
	IRON PIN (FOUND)
	IRON PIN (NOT FOUND)
	EXISTING MANHOLE
	PROPOSED MANHOLE
	EXISTING TO REMAIN
	EXISTING TO BE DEMOLISHED
	EXISTING PAVEMENT
	PROPOSED PAVEMENT
	PROPOSED CONCRETE
	EXISTING GRAVEL
	PROPOSED GRAVEL
	PROPOSED RIP-RAP
	PROPOSED STRUCTURES
	GEOTECHNICAL BORE PIT SEE SPECIFICATIONS
	EXISTING EASEMENT
	PROPOSED EASEMENT
	PROPOSED CONSTRUCTION EASEMENT

SHEET 1 OF 10		SEWER SYSTEM IMPROVEMENTS CONTRACT 24-01 BEAR CREEK SEWAGE PUMPING STATION REPLACEMENT	
REVISION OR ISSUE		EXISTING SITE PLAN	
ADD. NO. 1 - 12/19/2024		FOR	
ADD. NO. 3 - 1/21/2025		COLUMBIA, TENNESSEE	
PROJECT NUMBER		SCALE	
2198		1"=10'	
DATE		MAY 2024	
DESIGNED		DGT	
DRAWN		TAS	
CHECKED		JGD	

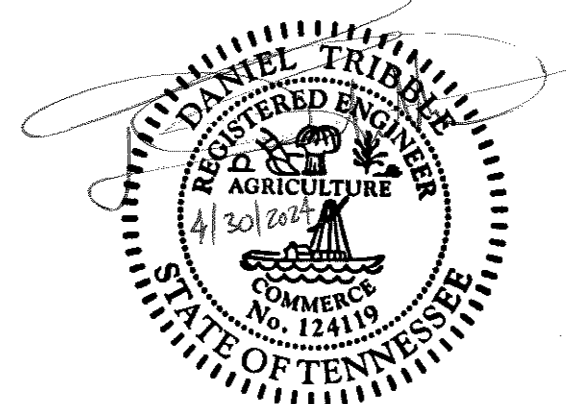


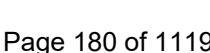


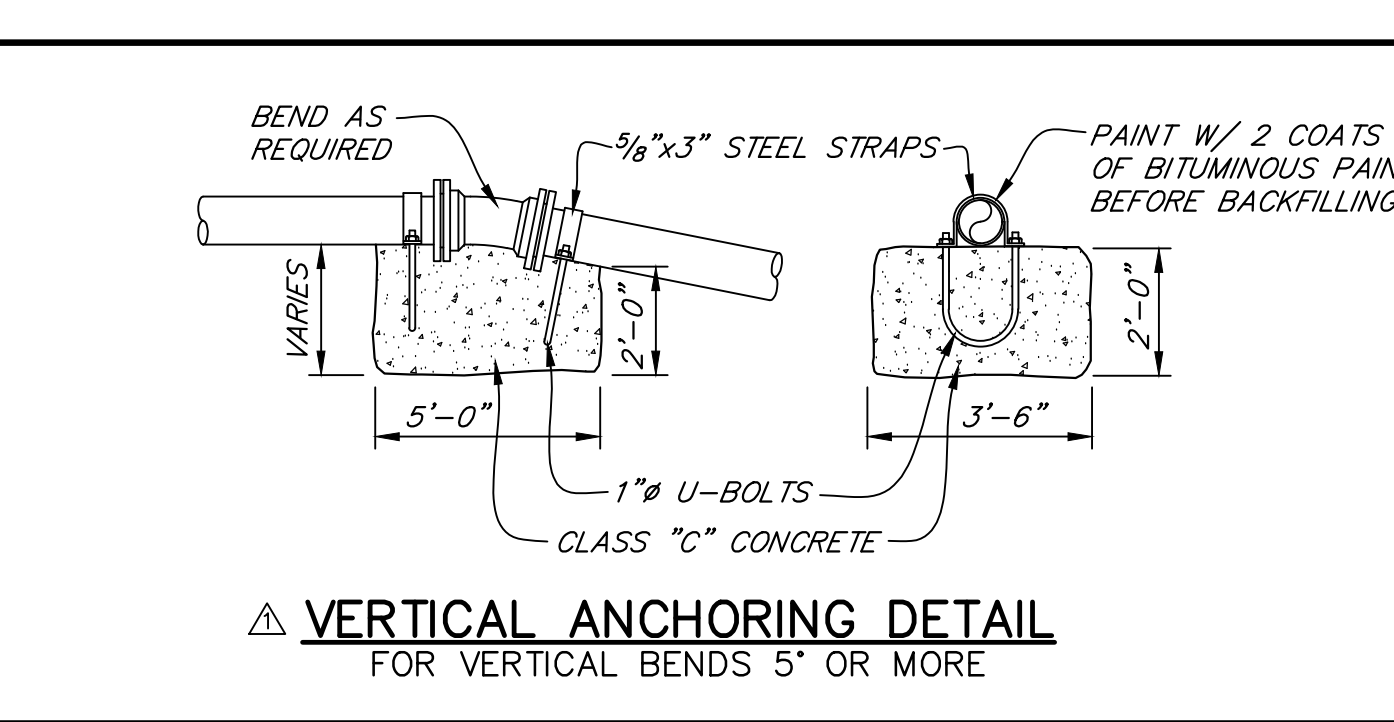
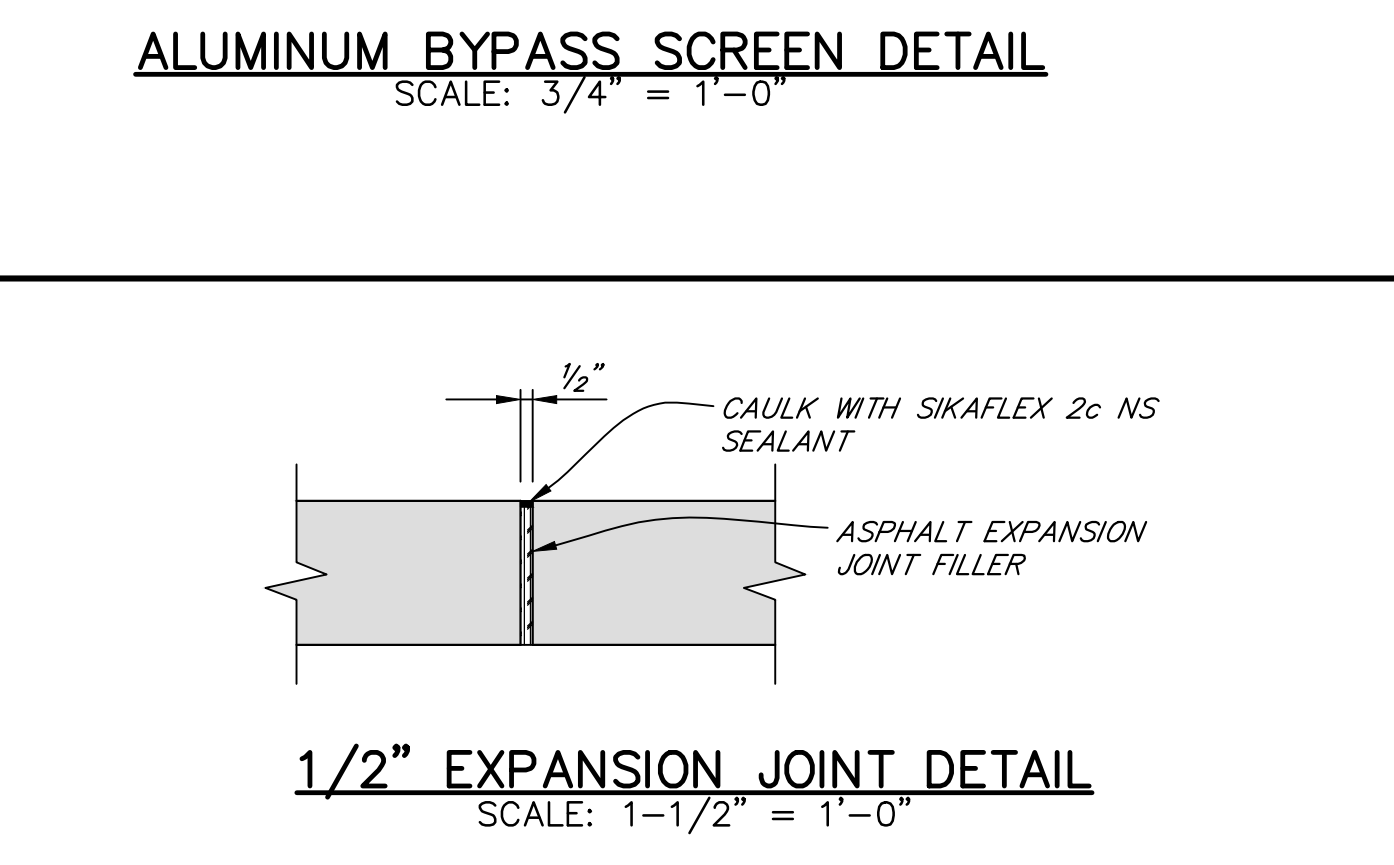
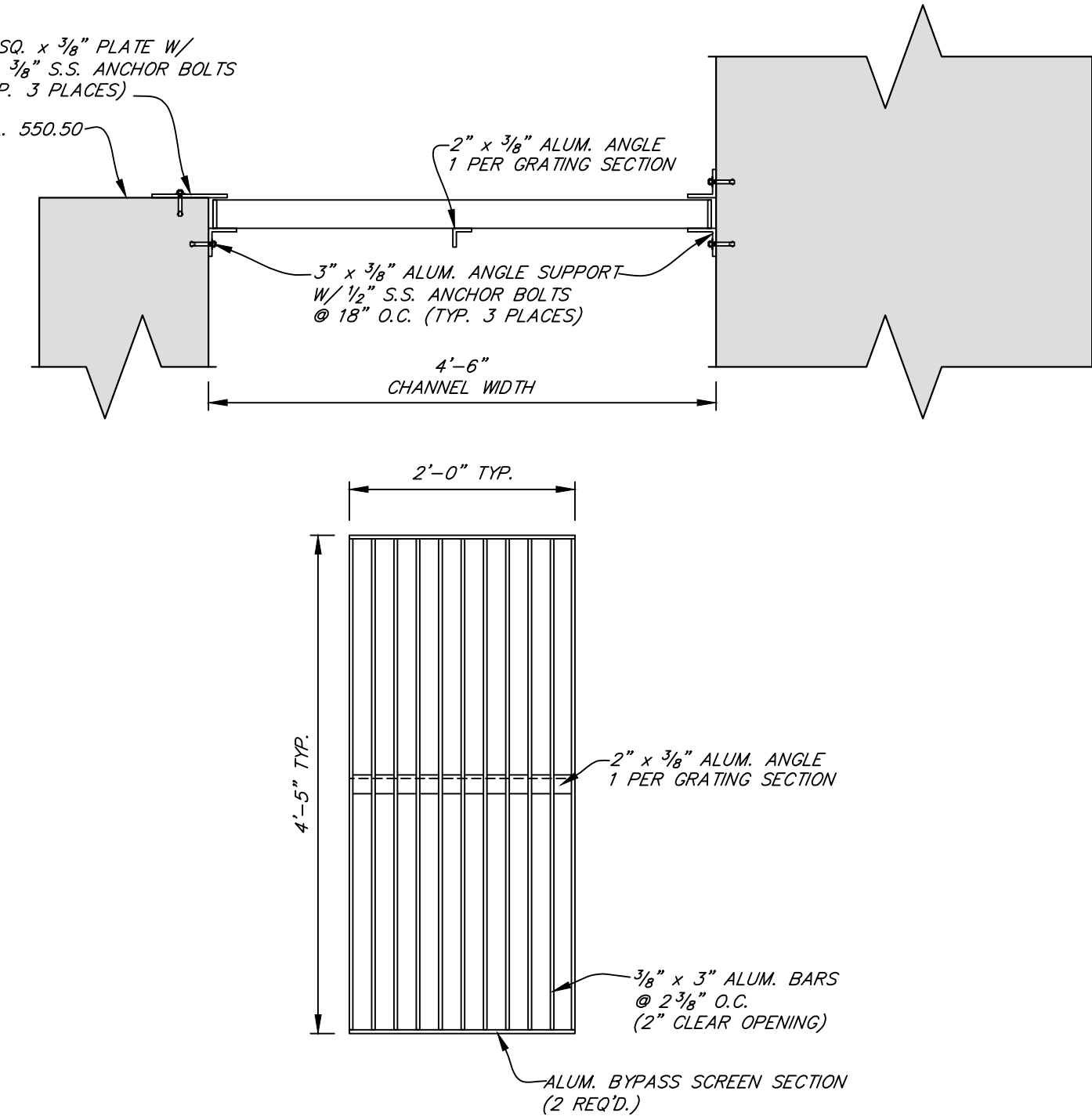
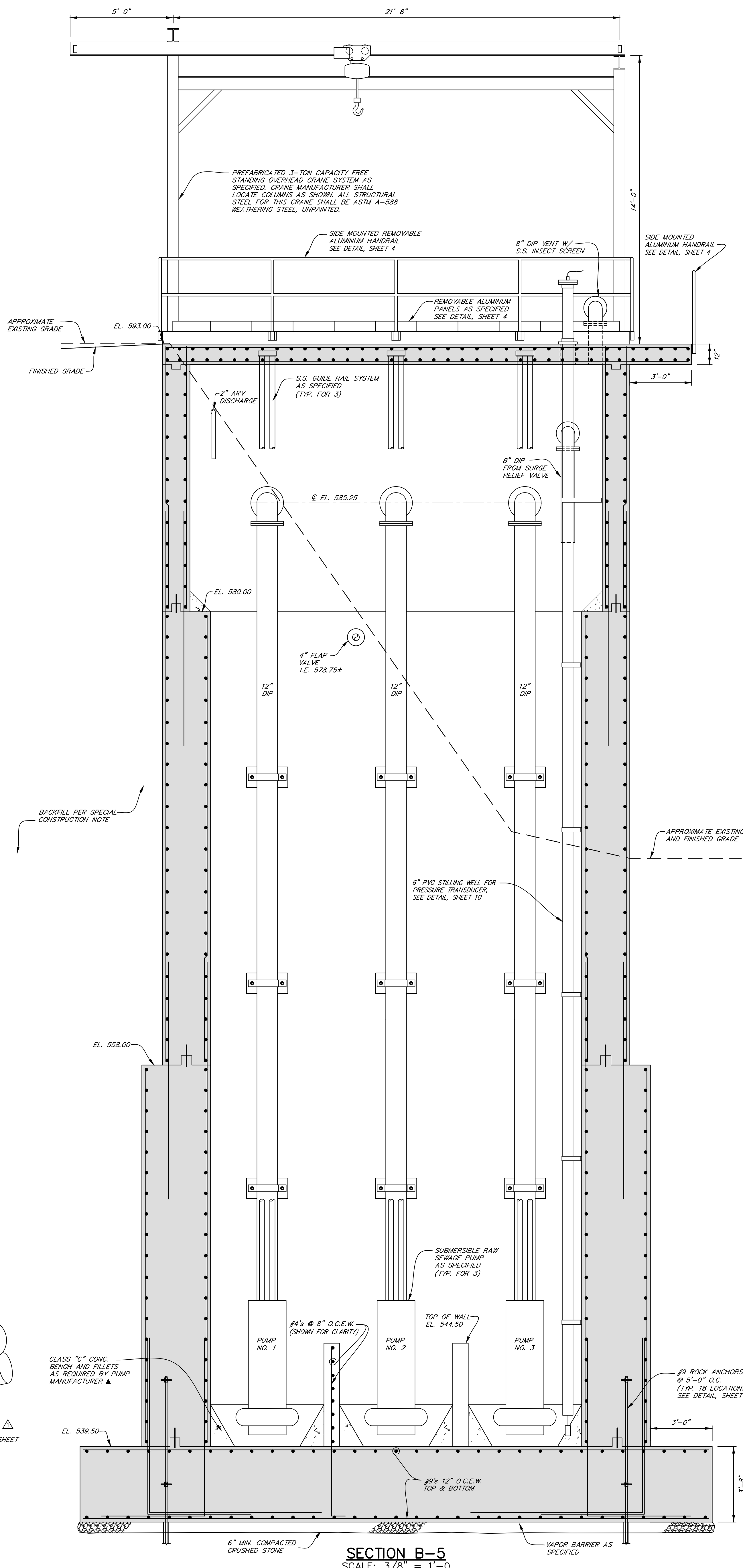
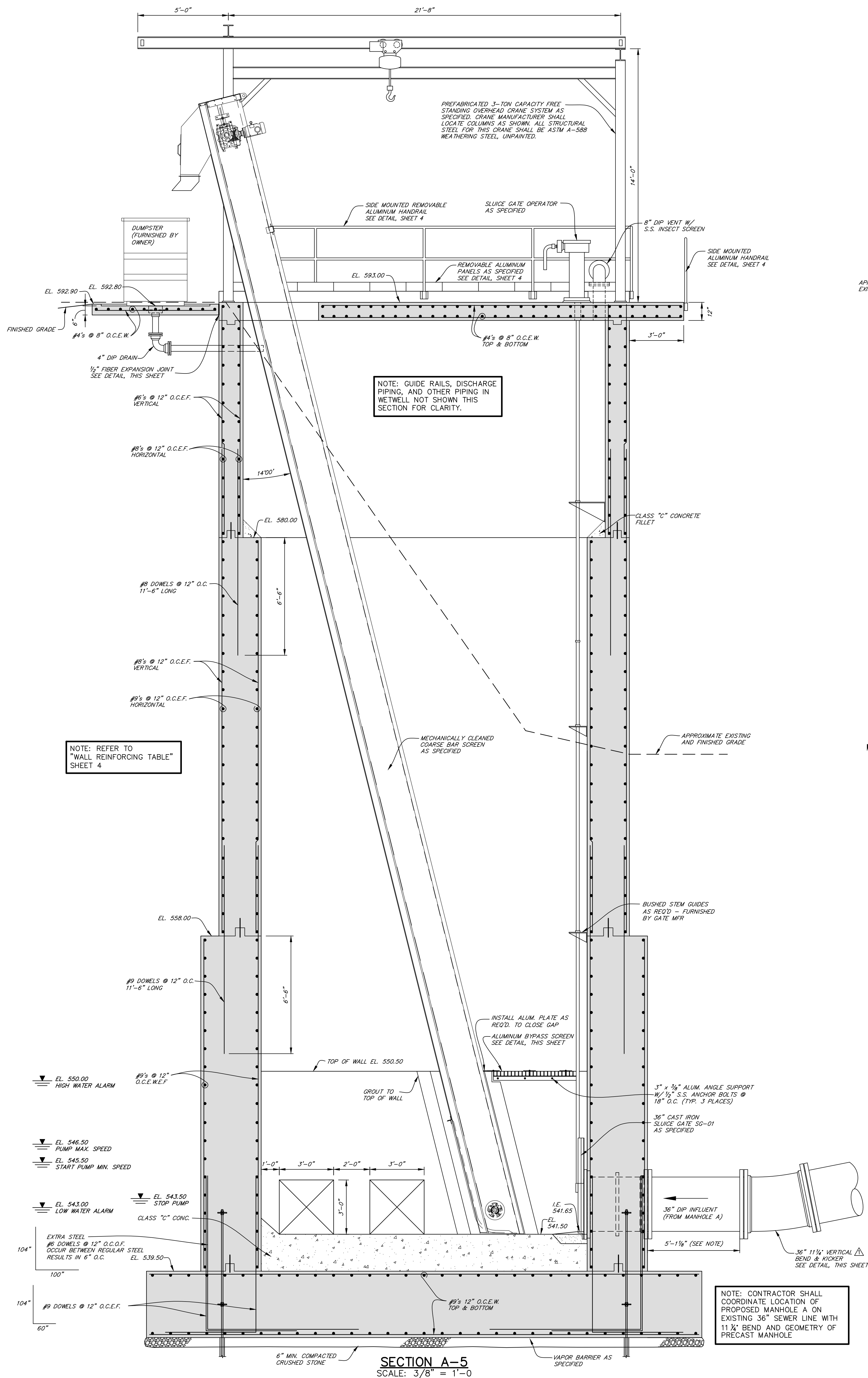
- CONSTRUCTION NOTES**
- SEE "GENERAL NOTES" AND "LEGEND" ON SHEET 1.
 - BASED ON INFORMATION CONTAINED IN FLOOD INSURANCE MAP NUMBER 47119C0170E DATED APRIL 16, 2007. A PORTION OF THE PROJECT SITE LIES WITHIN THE 100-YEAR FLOOD BOUNDARY OF THE DUCK RIVER AND ITS TRIBUTARIES. THE ELEVATION OF THE 100-YEAR FLOOD AT THE PROJECT SITE IS APPROXIMATELY 588.
 - CONTRACTOR SHALL USE ALL NECESSARY TEMPORARY WATER POLLUTION CONTROL MEASURES AS SHOWN ON THE PLANS, AS DIRECTED BY THE ENGINEER AND/OR AS SPECIFIED TO PREVENT THE TRANSPORT OF SEDIMENT FROM THE PROJECT SITE. THE CONTRACTOR SHALL MODIFY THE EXISTING GRASSED ACCESS ROAD FROM BEAR CREEK PIKE INTO A CONSTRUCTION ENTRANCE. THE CONTRACTOR SHALL USE LARGE STONE, TRACKOUT CONTROL MAT PACKS, OR OTHER DEVICES TO PREVENT SEDIMENT FROM BEING DEPOSITED ALONG BEAR CREEK PIKE BY VEHICLES AND TRUCKS. THE CONTRACTOR SHALL SWEEP, SPRAY, AND WASH DOWN VEHICLES, TRUCKS, AND PAVED SURFACES AS REQUIRED.
 - ALL MECHANICAL JOINT FITTINGS SHALL UTILIZE SERIES 1100 MEGALUG RESTRAINT BY EBAA IRON IN ADDITION TO CONCRETE KICKERS.
 - * INDICATES INFORMATION TAKEN FROM EXISTING PLANS. CONTRACTOR SHALL VERIFY.
 - ALL DUCTILE IRON PIPE SHALL BE SPECIALLY LINED AS SPECIFIED.



SHEET 2 OF 10		SEWER SYSTEM IMPROVEMENTS CONTRACT 24-01 BEAR CREEK SEWAGE PUMPING STATION REPLACEMENT	
REVISION OR ISSUE		PROPOSED SITE PLAN	
ADD. NO. 1 - 12/19/2024		FOR	
ADD. NO. 3 - 1/21/2025		COLUMBIA, TENNESSEE	
SCALE		1"=10'	
DATE		MAY 2024	
PROJECT NUMBER		2198	
DESIGNED		DGT	
DRAWN		TAS	
CHECKED		JGD	







SPECIAL CONSTRUCTION NOTE

1. THE CONTRACTOR SHALL TAKE CARE TO EVENLY BACKFILL THE WETWELL IN EQUAL LIFTS TO ELEVATION 568.
2. THE CONTRACTOR SHALL BACKFILL THE WETWELL WITH CRUSHED STONE OR SELECT SHOT-ROCK APPROVED BY THE ENGINEER.

CONSTRUCTION NOTES

1. SEE "GENERAL NOTES" AND "LEGEND" ON SHEET 1.
2. SEE "GENERAL STRUCTURAL NOTES AND DETAILS" ON SHEET 9.
3. * INDICATES INFORMATION TAKEN FROM EXISTING PLANS OR FIELD SURVEY WHICH SHALL BE VERIFIED BY THE CONTRACTOR.
4. ▲ INDICATES INFORMATION WHICH MAY VARY BY MANUFACTURER.
5. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ACTUAL DIMENSIONS REGARDING THE FABRICATION OF EQUIPMENT AND MATERIALS.
6. ALL BOLTS AND HARDWARE SHALL BE STAINLESS STEEL WITH NEVERSEIZE OR EQUAL APPLIED TO THE THREADS.
7. ALL HATCHES SHALL HAVE ALUMINUM OR FIBERGLASS FALL PROTECTION GRATE.

SEWER SYSTEM IMPROVEMENTS
CONTRACT 24-01
BEAR CREEK SEWAGE PUMPING STATION REPLACEMENT

SECTIONS – PUMP STATION

FOR
COLUMBIA, TENNESSEE

SCALE
AS SHOWN

DATE
MAY 2024

PROJECT NUMBER
2198

DESIGNED
DGT

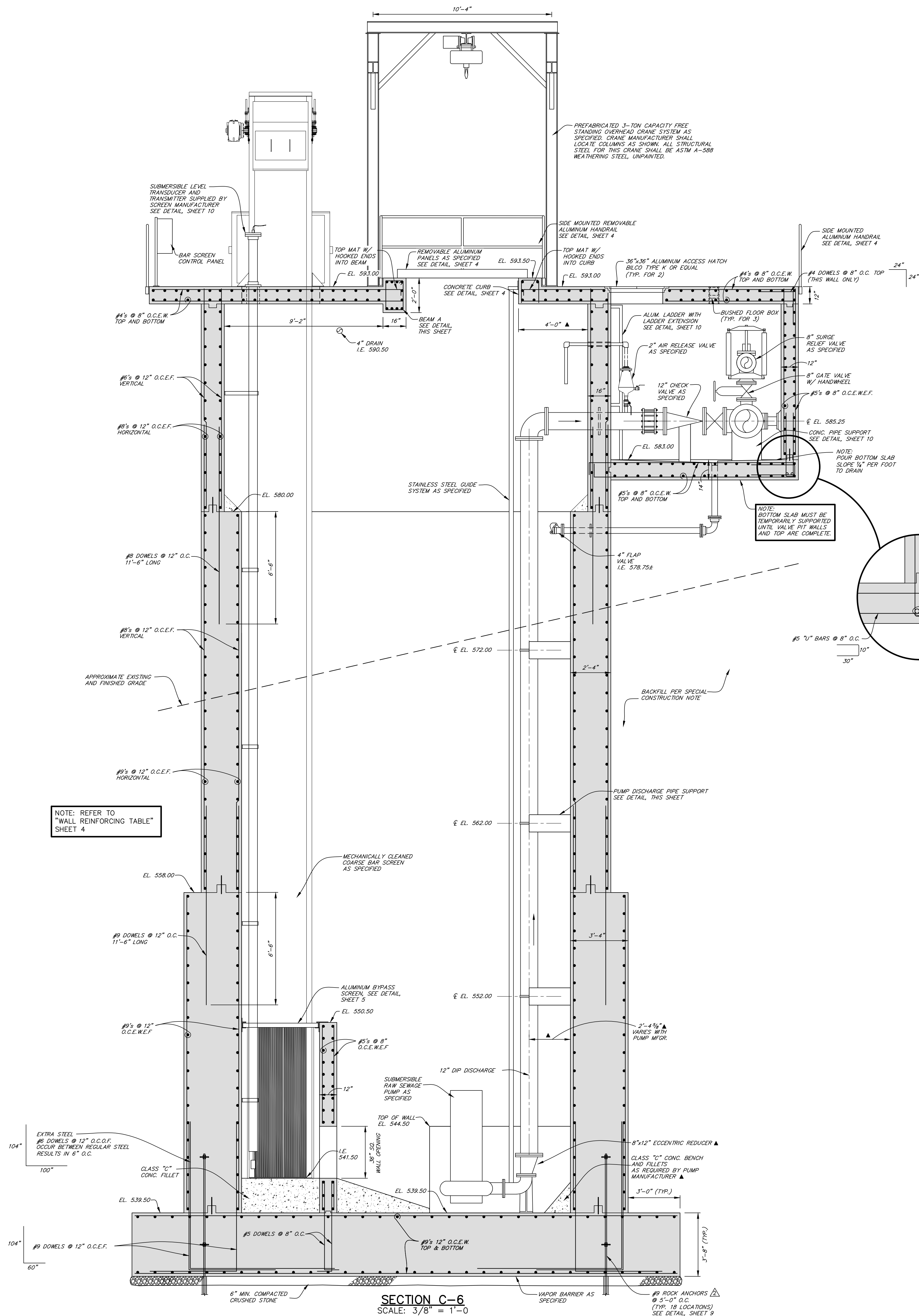
DRAWN
TAS

CHECKED
JGD

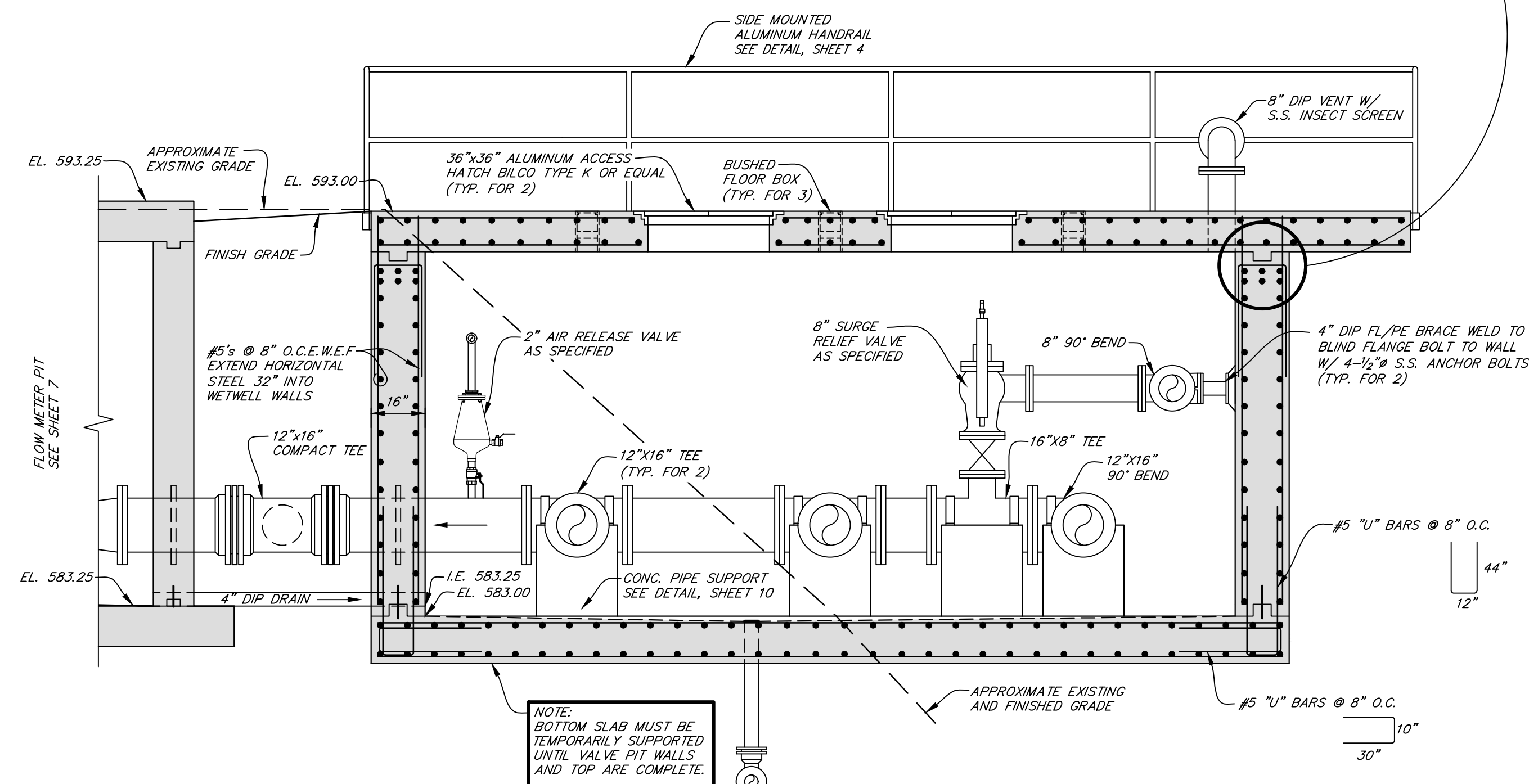
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REVISION OR ISSUE
ADD. NO. 3 – 1/21/2025

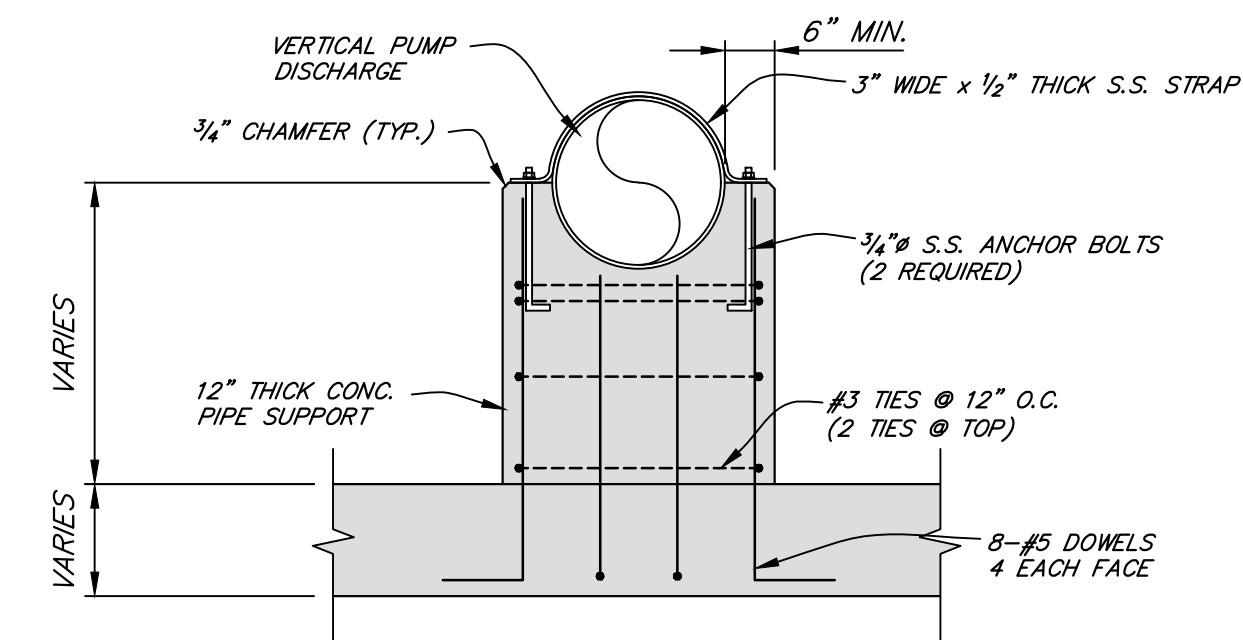
SHEET 5 OF 10



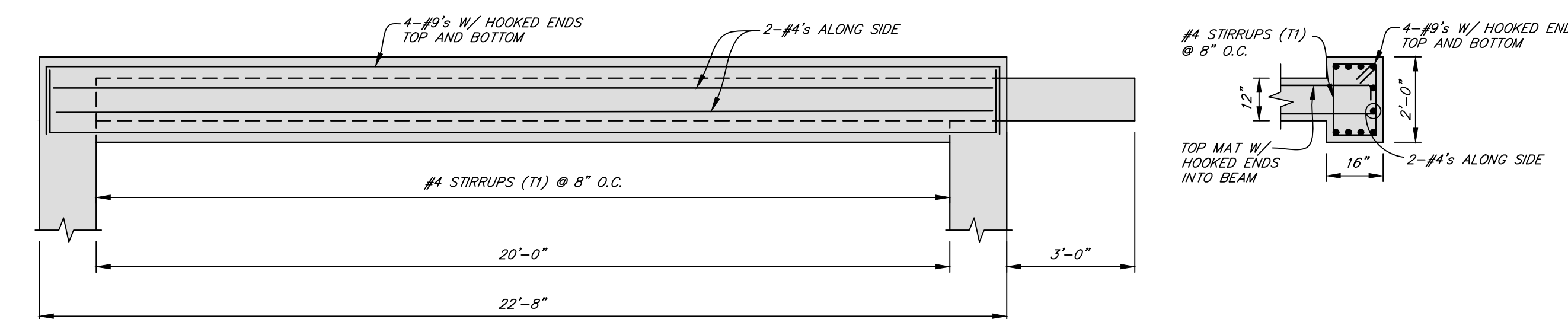
SECTION C-6
SCALE: 3/8" = 1'-0"



SECTION D-6
SCALE: 3/8" = 1'-0"



PUMP DISCHARGE PIPE SUPPORT
SCALE: 1/2" = 1'-0"



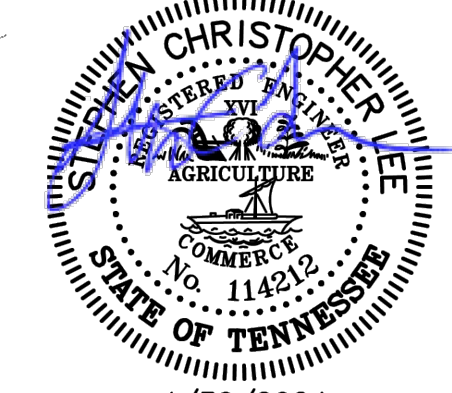
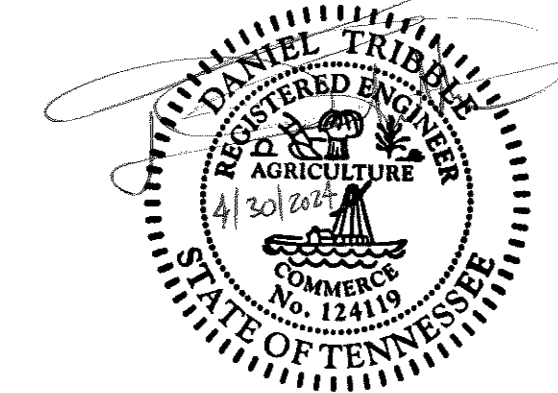
BEAM A DETAIL
SCALE: 3/8" = 1'-0"

SPECIAL CONSTRUCTION NOTE

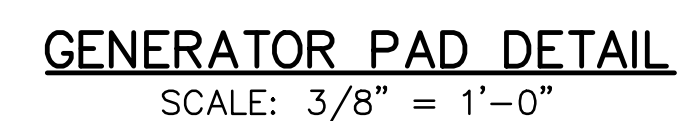
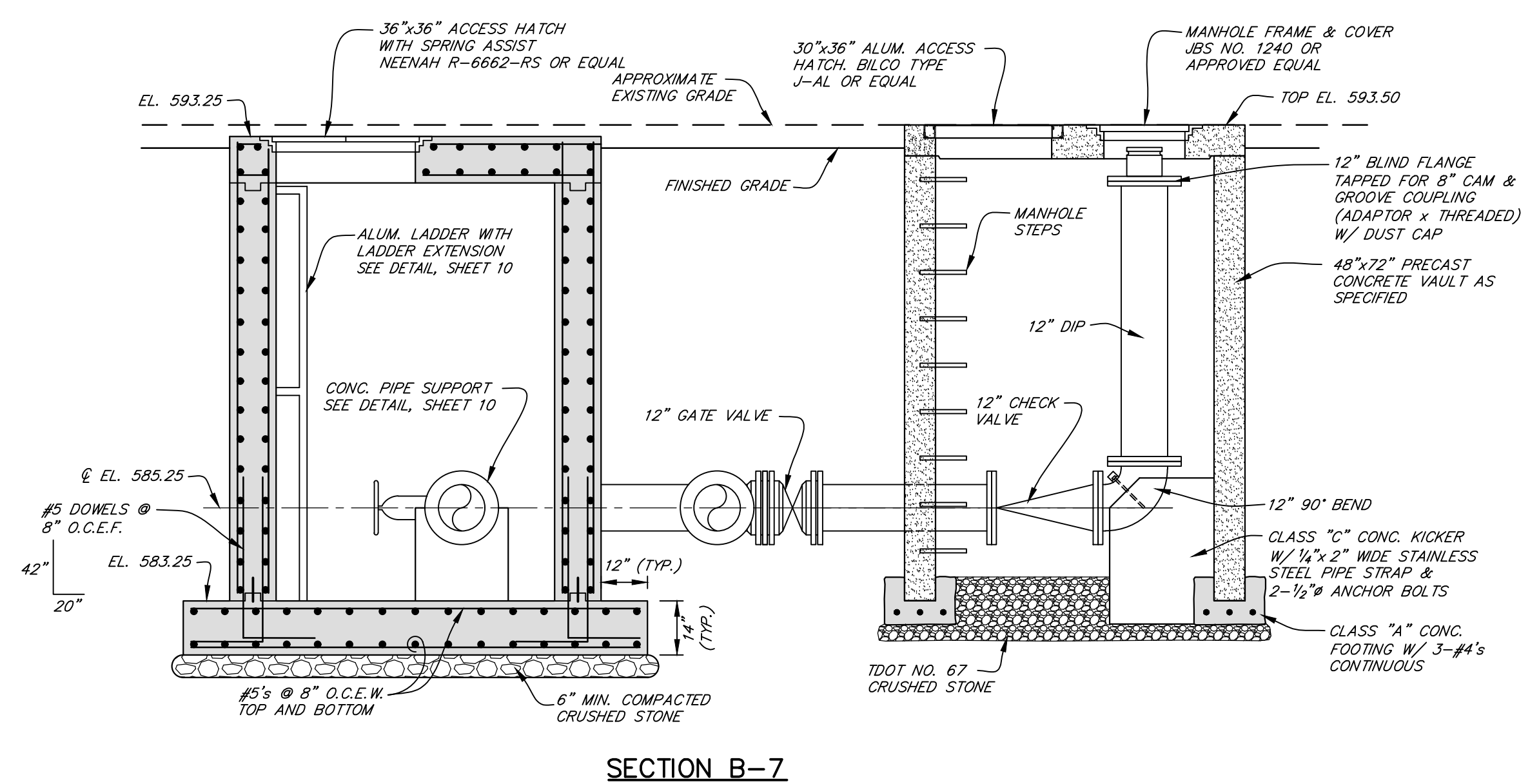
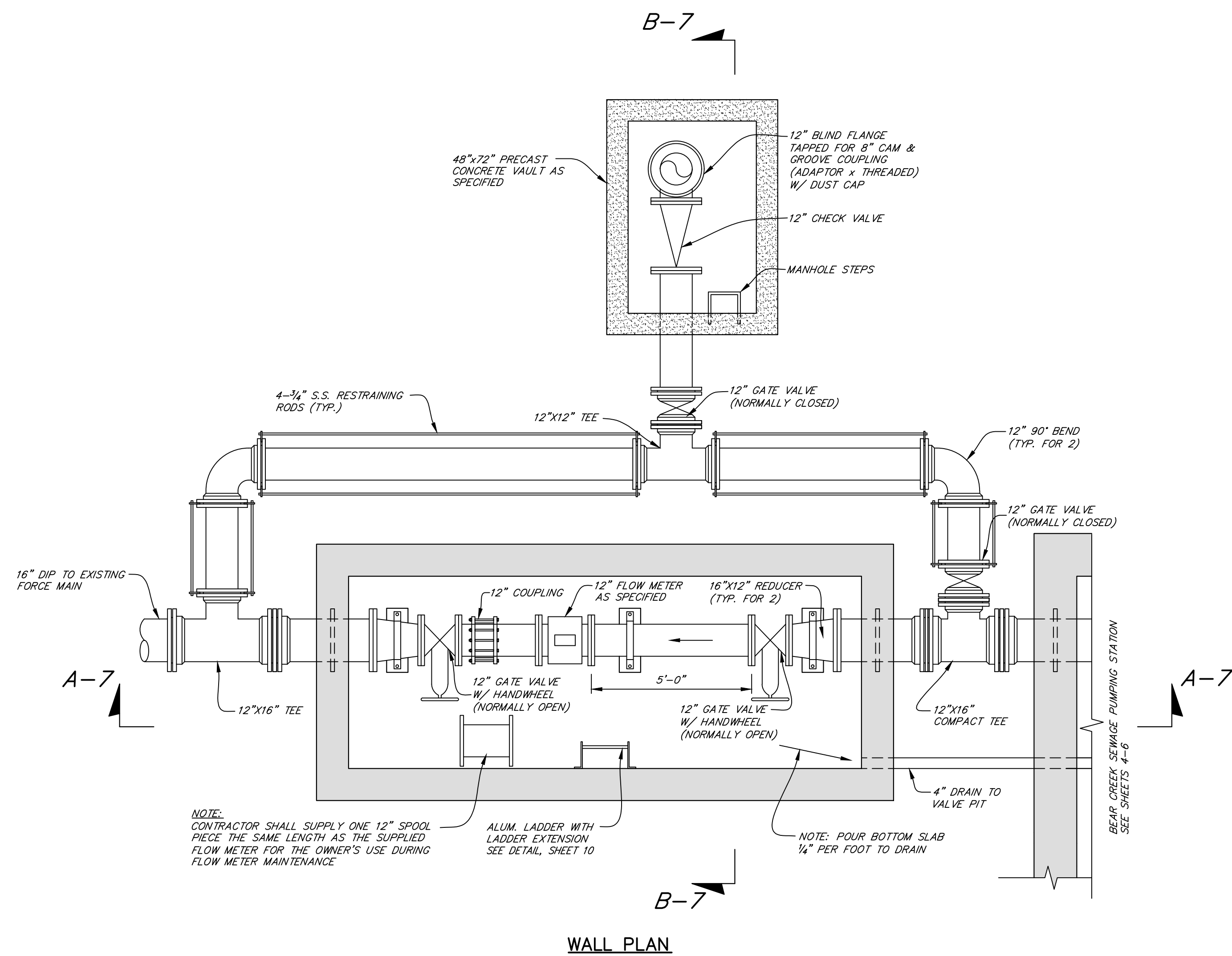
- THE CONTRACTOR SHALL TAKE CARE TO EVENLY BACKFILL THE WETWELL IN EQUAL LIFTS TO ELEVATION 568.
- THE CONTRACTOR SHALL BACKFILL THE WETWELL WITH CRUSHED STONE OR SELECT SHOT-ROCK APPROVED BY THE ENGINEER.

CONSTRUCTION NOTES

- SEE "GENERAL NOTES" AND "LEGEND" ON SHEET 1.
- SEE "GENERAL STRUCTURAL NOTES AND DETAILS" ON SHEET 9.
- * INDICATES INFORMATION TAKEN FROM EXISTING PLANS OR FIELD SURVEY WHICH SHALL BE VERIFIED BY THE CONTRACTOR.
- ▲ INDICATES INFORMATION WHICH MAY VARY BY MANUFACTURER.
- THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ACTUAL DIMENSIONS REGARDING THE FABRICATION OF EQUIPMENT AND MATERIALS.
- ALL BOLTS AND HARDWARE SHALL BE STAINLESS STEEL WITH NEVERSEIZE OR EQUAL APPLIED TO THE THREADS.
- ALL HATCHES SHALL HAVE ALUMINUM OR FIBERGLASS FALL PROTECTION GRATE.

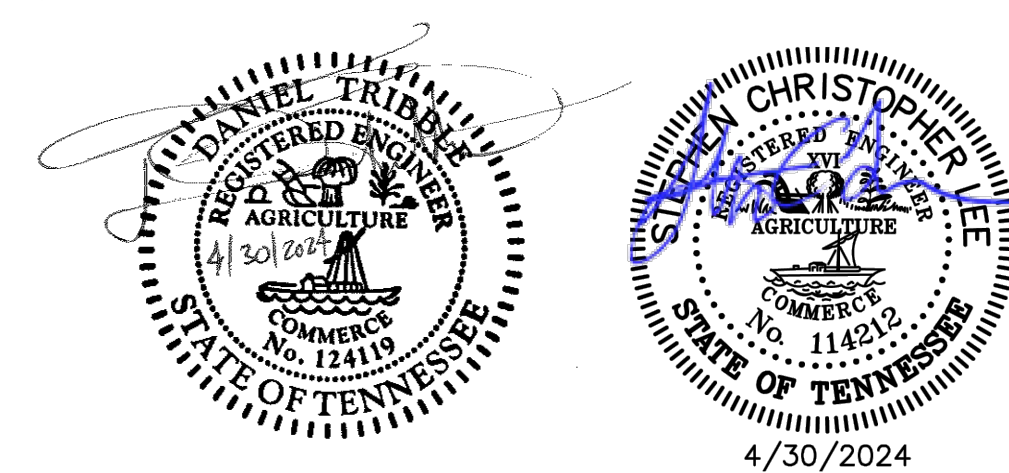


SHEET 6 OF 10		SEWER SYSTEM IMPROVEMENTS	
REVISION OR ISSUE		CONTRACT 24-01	
ADD. NO. 1 - 12/19/2024		BEAR CREEK SEWAGE PUMPING STATION REPLACEMENT	
ADD. NO. 3 - 1/21/2025		SECTIONS -	
		PUMP STATION AND VALVE PIT	
		FOR	
		COLUMBIA, TENNESSEE	
		SCALE	
		AS SHOWN	
		DATE	
		MAY 2024	
		PROJECT NUMBER	
		2198	
		DESIGNED	
		DGT	
		DRAWN	
		TAS	
		CHECKED	
		JGD	



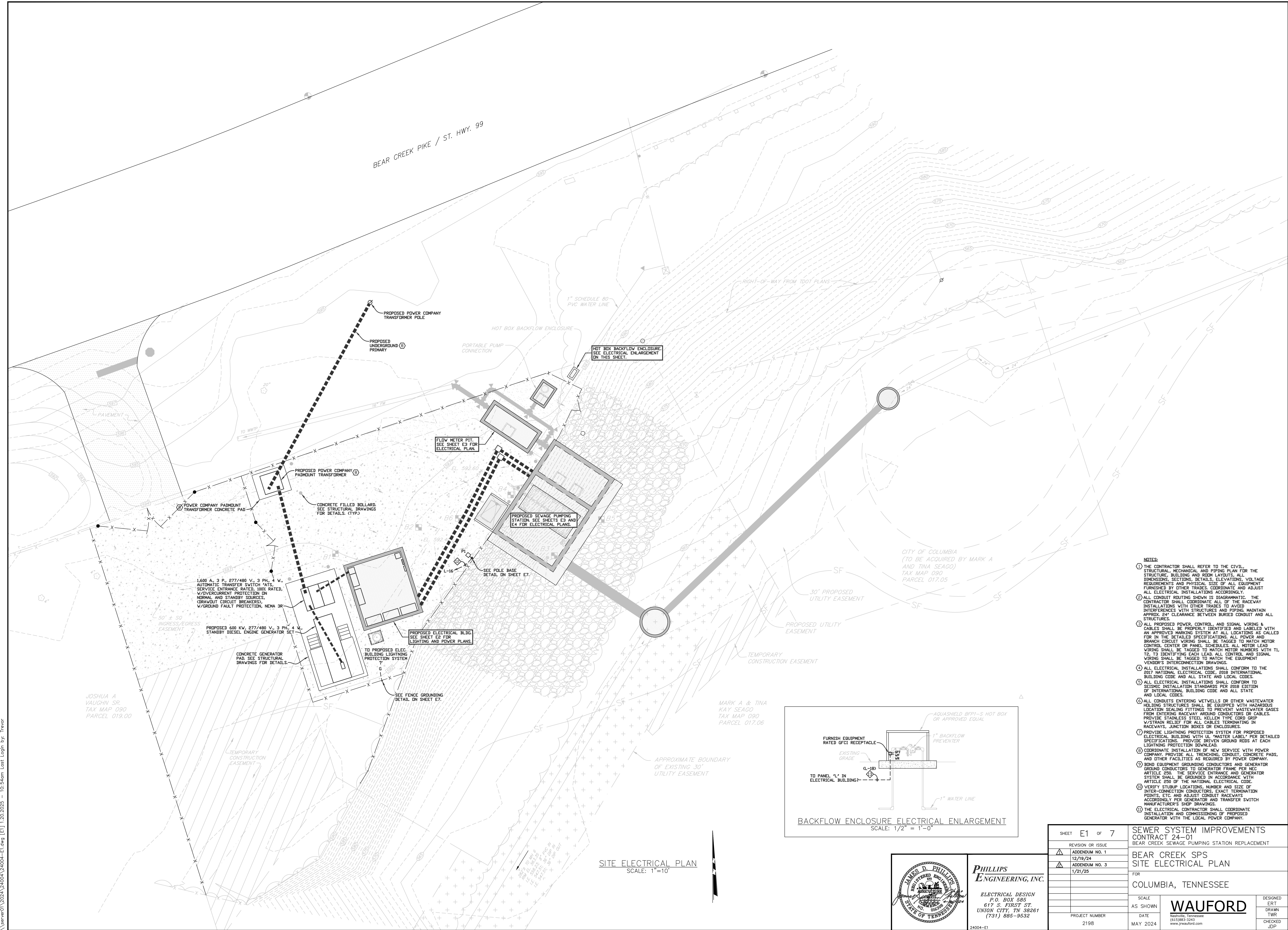
SECTION B-7

1. SEE "GENERAL NOTES" AND "LEGEND" ON SHEET 1.
2. SEE "GENERAL STRUCTURAL NOTES AND DETAILS" ON SHEET 9.
3. * INDICATES INFORMATION TAKEN FROM EXISTING PLANS OR FIELD SURVEY WHICH SHALL BE VERIFIED BY THE CONTRACTOR.
4. ▲ INDICATES INFORMATION WHICH MAY VARY BY MANUFACTURER.
5. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ACTUAL DIMENSIONS REGARDING THE FABRICATION OF EQUIPMENT AND MATERIALS.
6. ALL BOLTS AND HARDWARE SHALL BE STAINLESS STEEL WITH NEVERSEIZE OR EQUAL APPLIED TO THE THREADS.
7. ALL HATCHES SHALL HAVE ALUMINUM OR FIBERGLASS FALL PROTECTION GRATE.
8. ALL BURIED BENDS AND FITTINGS SHALL HAVE CONCRETE KICKERS IN ADDITION TO MEGALUGS.

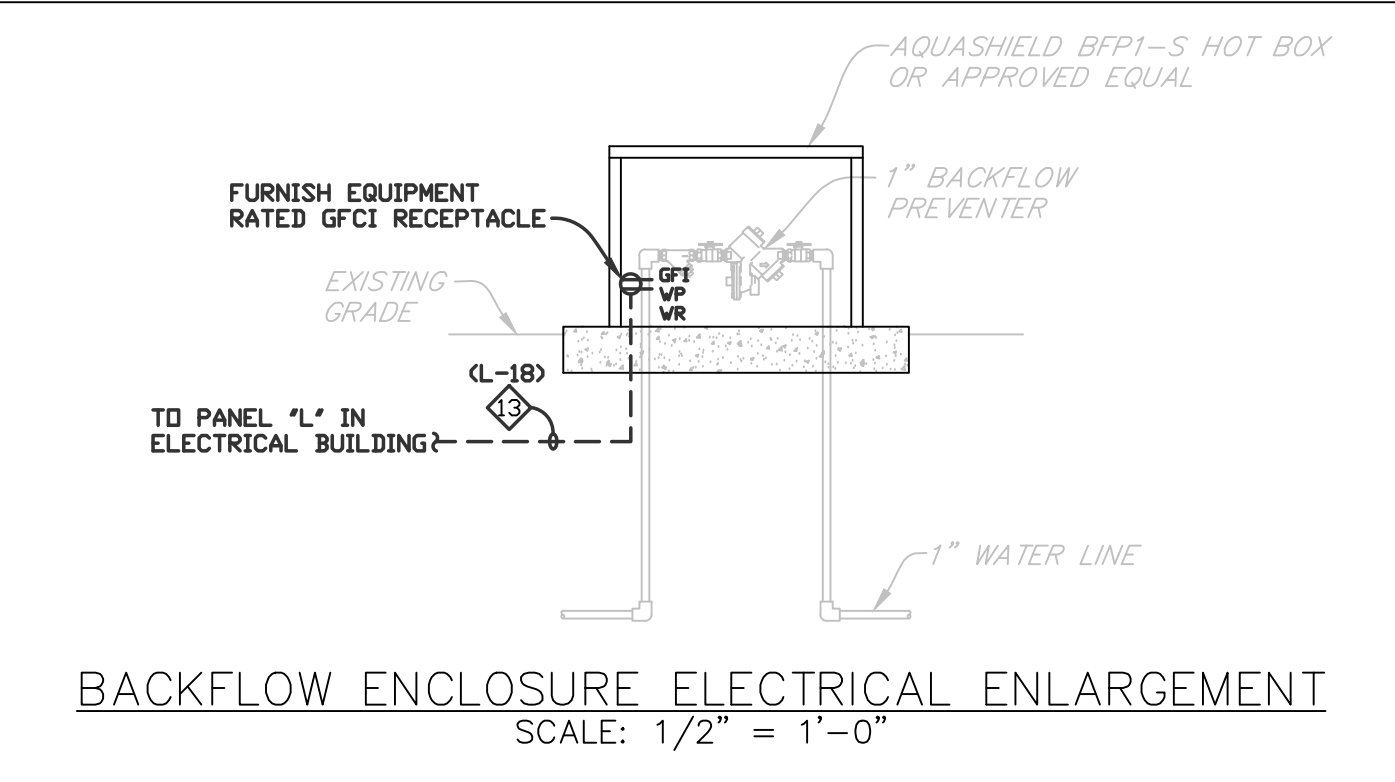


SHEET	7	OF	10	SEWER SYSTEM IMPROVEMENTS CONTRACT 24-01	
REVISION OR ISSUE				BEAR CREEK SEWAGE PUMPING STATION REPLACEMENT	
	ADD. NO. 1 - 12/19/2024			FLOW METER PIT AND PORTABLE PUMP CONNECTION	
	ADD. NO. 3 - 1/21/2025				
PROJECT NUMBER				FOR	
2198				COLUMBIA, TENNESSEE	
SCALE		AS SHOWN		WAUFORD	
DATE		MAY 2024			
		Nashville, Tennessee 615-993-3343 www.jwauford.com		DESIGNED DGT	
				DRAWN TAS	
				CHECKED GCD	

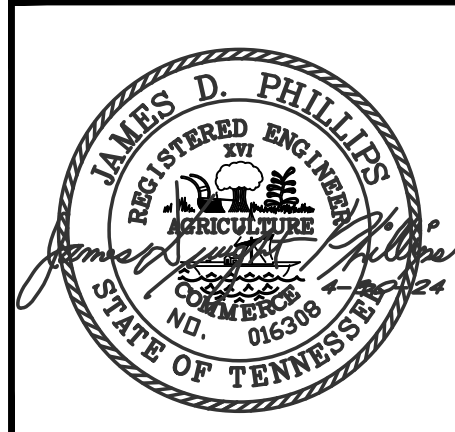
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- NOTES:
1. THE CONTRACTOR SHALL REFER TO THE CIVIL, STRUCTURAL, MECHANICAL AND PIPING PLAN FOR THE STRUCTURE, BUILDING AND ROOM LAYOUTS. ALL DIMENSIONS, SECTIONS, DETAILS, ELEVATIONS, VOLTAGE REQUIREMENTS AND PHYSICAL SIZE OF ALL EQUIPMENT FURNISHED BY OTHER TRADES. COORDINATE AND ADJUST ALL ELECTRICAL INSTALLATIONS ACCORDINGLY.
 2. ALL CONDUIT ROUTING SHOWN IS DIAGRAMMATIC. THE CONTRACTOR SHALL COORDINATE ALL OF THE RACEWAY INSTALLATIONS WITH OTHER TRADES TO AVOID INTERFERENCES WITH STRUCTURES AND PIPING. MAINTAIN APPROX. 24" CLEARANCE BETWEEN BURIED CONDUIT AND ALL STRUCTURES.
 3. ALL PROPOSED POWER, CONTROL, AND SIGNAL WIRING & CABLES SHALL BE PROPERLY IDENTIFIED AND LABELED WITH AN APPROVED MARKING SYSTEM AT ALL LOCATIONS AS CALLED FOR IN THE DETAILED SPECIFICATIONS. ALL POWER AND BRANCH CIRCUIT WIRING SHALL BE TAGGED TO MATCH MOTOR CONTROL CENTER OR PANEL SCHEDULES. ALL MOTOR LEAD WIRING SHALL BE TAGGED TO MATCH MOTOR NUMBERS WITH T1, T2, T3 IDENTIFYING EACH LEAD. ALL CONTROL AND SIGNAL WIRING SHALL BE TAGGED TO MATCH THE EQUIPMENT VENDORS INTERCONNECTION DRAWINGS.
 4. ALL ELECTRICAL INSTALLATIONS SHALL CONFORM TO THE 2017 NATIONAL ELECTRICAL CODE, 2018 INTERNATIONAL BUILDING CODE AND ALL STATE AND LOCAL CODES.
 5. ALL ELECTRICAL INSTALLATIONS SHALL CONFORM TO SEISMIC INSTALLATION STANDARDS PER 2018 EDITION OF INTERNATIONAL BUILDING CODE AND ALL STATE AND LOCAL CODES.
 6. ALL CONDUITS ENTERING WETWELLS OR OTHER WASTEWATER HOLDING STRUCTURES SHALL BE EQUIPPED WITH HAZARDOUS LOCATION SEALING FITTINGS TO PREVENT WASTEWATER GASES FROM ENTERING RACEWAY AROUND CONDUCTORS OR CABLES. PROVIDE STAINLESS STEEL KELLEM TYPE CORD GRIP V/STRAIN RELIEF FOR ALL CABLES TERMINATING IN RACEWAYS, JUNCTION BOXES OR ENCLOSURES.
 7. PROVIDE LIGHTNING PROTECTION SYSTEM FOR PROPOSED ELECTRICAL BUILDING WITH UL "MASTER LABEL" PER DETAILED SPECIFICATIONS. PROVIDE DRIVEN GROUND RODS AT EACH LIGHTNING PROTECTION DOWNLEAD.
 8. COORDINATE INSTALLATION OF NEW SERVICE WITH POWER COMPANY. PROVIDE ALL TRENCHING, CONDUIT, CONCRETE PADS, AND OTHER FACILITIES AS REQUIRED BY POWER COMPANY.
 9. BOND EQUIPMENT GROUNDING CONDUCTORS AND GENERATOR SYSTEM SHALL BE GROUNDED IN ACCORDANCE WITH ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE.
 10. VERIFY STUBUP LOCATIONS, NUMBER AND SIZE OF INTER-CONNECTION CONDUCTORS, EXACT TERMINATION POINTS, ETC. AND ADJUST CONDUIT RACEWAYS ACCORDINGLY PER GENERATOR AND TRANSFER SWITCH MANUFACTURER'S SHOP DRAWINGS.
 11. THE ELECTRICAL CONTRACTOR SHALL COORDINATE INSTALLATION AND COMMISSIONING OF PROPOSED GENERATOR WITH THE LOCAL POWER COMPANY.



SITE ELECTRICAL PLAN
SCALE: 1"=10'



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ELECTRICAL DESIGN
P.O. BOX 585
617 S. FIRST ST.
UNION CITY, TN 38261
(731) 866-9532

REVISION OR ISSUE	DATE
ADDENDUM NO. 1	12/19/24
ADDENDUM NO. 3	1/21/25
PROJECT NUMBER	2198

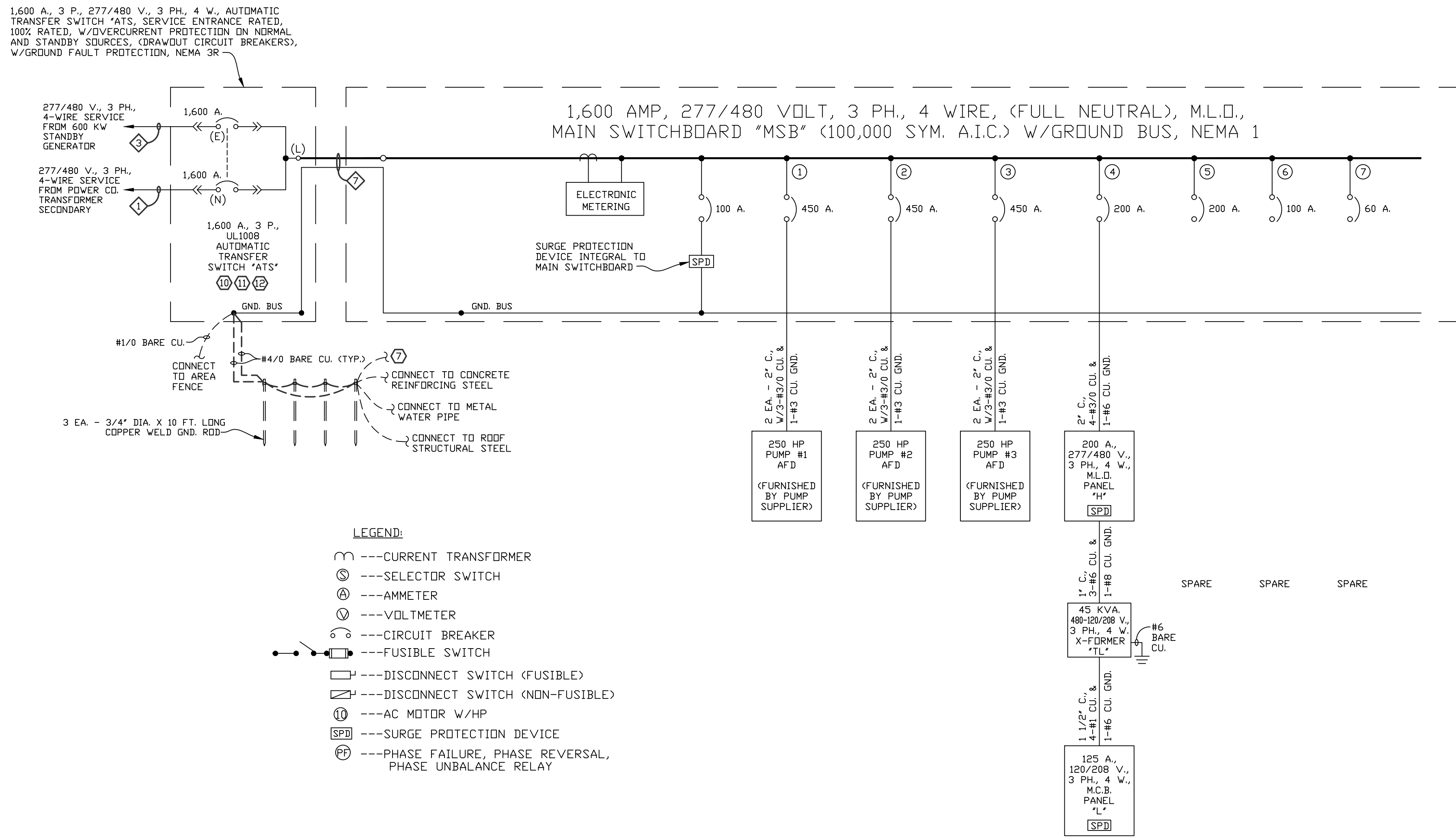
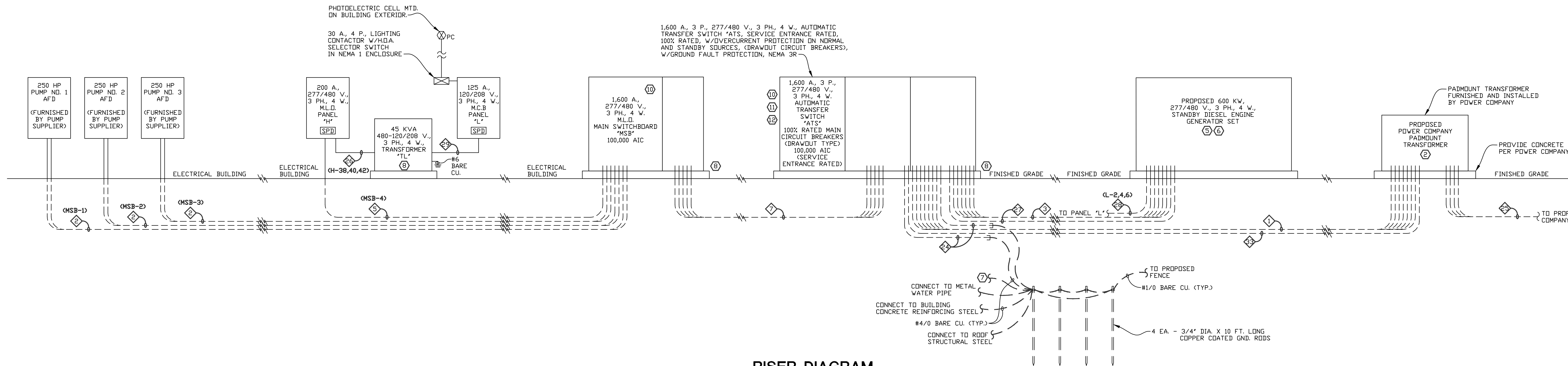
SHEET E1 OF 7	
SEWER SYSTEM IMPROVEMENTS CONTRACT 24-01 BEAR CREEK SEWAGE PUMPING STATION REPLACEMENT	
BEAR CREEK SPS SITE ELECTRICAL PLAN	
FOR COLUMBIA, TENNESSEE	
SCALE AS SHOWN	DESIGNED ERT
DATE MAY 2024	DRAWN TWR
	CHECKED JDP

TYPE: SERVICE: 277/480 V., 3 PH., 4 W.									
POLES: 3									
LOCATION: ELECTRICAL BLDG.									
☑ SURFACE ☐ FLUSH									
BUS AMPACITY: 200 A.									
MAINS: M.L.D.									
NEUTRAL: FULL									
SHORT CIRCUIT RATING: 65,000									
☑ NEMA 1 ☐ NEMA 3R									
CKT. KVA	CB TRIP	WIRE	LOAD NAME		LOAD NAME	WIRE	CB TRIP	CKT. KVA	
ΦA	ΦB	ΦC				ΦA	ΦB	ΦC	
4.4	—	—	#10 CONDENSING UNIT 'CU-1'	1	2 BAR SCREEN CONTROL PANEL	#10	1'	30/3	5.5
—	4.4	—	#10 CONDENSING UNIT 'CU-1'	3	4 BAR SCREEN CONTROL PANEL	#10	—	—	5.5
—	—	4.4	#10 CONDENSING UNIT 'CU-1'	5	6 BAR SCREEN CONTROL PANEL	#10	—	—	5.5
1.1	—	—	#10 AIR HANDLING UNIT 'AHU-1'	7	8 OVERHEAD HOIST	#10	1'	20/3	1.4
—	1.1	—	#10 AIR HANDLING UNIT 'AHU-1'	9	10 OVERHEAD HOIST	#10	—	—	1.4
—	—	1.1	#10 AIR HANDLING UNIT 'AHU-1'	11	12 OVERHEAD HOIST	#10	—	—	1.4
4.2	—	—	#10 EXHAUST FAN 'EF-1'	13	14 ELECTRIC HEATER 'EHU-1'	#10	3/4	15/3	1.2
—	4.2	—	#10 EXHAUST FAN 'EF-1'	15	16 ELECTRIC HEATER 'EHU-1'	#10	—	—	1.2
—	—	4.2	#10 EXHAUST FAN 'EF-1'	17	18 ELECTRIC HEATER 'EHU-1'	#10	—	—	1.2
—	—	—	SPARE	19	20 SPARE	—	—	—	—
—	—	—	SPARE	21	22 SPARE	—	—	—	—
—	—	—	SPARE	23	24 SPARE	—	—	—	—
—	—	—	SPARE	25	26 SPARE	—	—	—	—
—	—	—	SPARE	27	28 SPARE	—	—	—	—
—	—	—	SPARE	29	30 SPARE	—	—	—	—
—	—	—	SPARE	31	32 SPARE	—	—	—	—
—	—	—	SPARE	33	34 SPACE	—	—	—	—
—	—	—	SPARE	35	36 SPACE	—	—	—	—
—	—	—	SPARE	37	38 TRANSFORMER 'TL'	#6	1'	60/3	3.5
—	—	—	SPARE	39	40 TRANSFORMER 'TL'	#6	—	—	3.2
—	—	—	SPARE	41	42 TRANSFORMER 'TL'	#6	—	—	2.5
9.7	9.7	9.7	TOTAL CONNECTED KVA: 62.6			11.6	11.3	10.6	

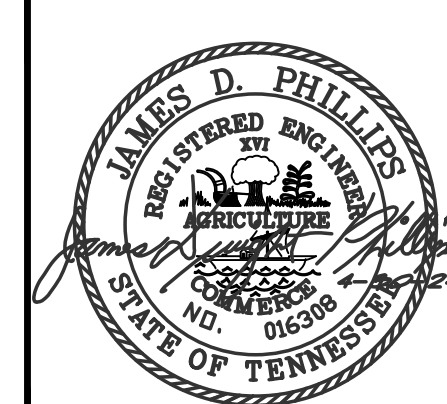
NOTE: (1) PROVIDE SWITCHING DUTY CIRCUIT BREAKERS AS REQUIRED.
(2) PROVIDE GFCI PROTECTED CIRCUIT BREAKERS AS REQUIRED.
(3) PROVIDE HACR RATED CIRCUIT BREAKERS AS REQUIRED.

TYPE: SERVICE: 120/208 V., 3 PH., 4 W.									
POLES: 3									
LOCATION: ELECTRICAL BLDG.									
☑ SURFACE ☐ FLUSH									
BUS AMPACITY: 200 A.									
MAINS: 125 A.									
NEUTRAL: FULL									
SHORT CIRCUIT RATING: 10,000									
☑ NEMA 1 ☐ NEMA 3R									
CKT. KVA	CB TRIP	WIRE	LOAD NAME		LOAD NAME	WIRE	CB TRIP	CKT. KVA	
ΦA	ΦB	ΦC				ΦA	ΦB	ΦC	
0.2	—	—	#10 ELECTRICAL ROOM LIGHTS	1	2 GENERATOR HEATER	#10	1'	30/2	1.5
—	0.2	—	#10 WALLPACK LIGHTS	3	4 GENERATOR HEATER	#10	—	—	1.5
—	—	0.2	#10 LIGHTING CONTACTOR	5	6 GENERATOR BATTERY CHARGER	#10	1'	20/1	0.5
0.7	—	—	#10 ELECTRICAL ROOM RECPTS.	7	8 MAIN CONTROL PANEL	#10	3/4	20/1	0.4
—	0.5	—	#10 FLOW METER	9	10 VALVE PIT LIGHTS	#10	1'	20/1	0.2
—	—	0.5	#10 FLOW METER PIT LTS. AND RECPT.	11	12 VALVE PIT RECPTS.	#10	1'	20/1	0.4
0.5	—	—	#10 LEVEL TRANSMITTER	13	14 SMOKE DETECTOR	#10	3/4	20/1	0.2
—	0.5	—	#10 LEVEL TRANSMITTER	15	16 SITE LIGHT	#10	1'	20/1	0.3
—	—	0.5	#10 LEVEL TRANSMITTER	17	18 HOT BOX HEAT TRACE RECPT.	#10	1'	20/1	0.4
—	—	—	#10 LOUVER 'L-1'	19	20 SPARE	—	—	—	—
—	—	—	SPARE	21	22 SPARE	—	—	—	—
—	—	—	SPARE	23	24 SPARE	—	—	—	—
—	—	—	SPARE	25	26 SPACE	—	—	—	—
—	—	—	SPARE	27	28 SPACE	—	—	—	—
—	—	—	SPARE	29	30 SPACE	—	—	—	—
1.4	1.2	1.2	TOTAL CONNECTED KVA: 9.2			2.1	2.0	1.3	

NOTE: (1) PROVIDE CIRCUIT BREAKER LOCKING MECHANISM ON CKT. NOS. 1, 3, 17.
(2) PROVIDE SWITCHING DUTY CIRCUIT BREAKERS AS REQUIRED.
(3) PROVIDE GFCI PROTECTED CIRCUIT BREAKERS AS REQUIRED.
(4) PROVIDE HACR RATED CIRCUIT BREAKERS AS REQUIRED.



- NOTES:
- THE CONTRACTOR IS TO CONFIRM ALL SERVICE ENTRANCE INSTALLATIONS WITH THE LOCAL POWER COMPANY AND COMPLY WITH ALL NECESSARY REQUIREMENTS.
 - COORDINATE INSTALLATION OF NEW SERVICE WITH POWER COMPANY. PROVIDE ALL TRENCHING, CONDUIT, CONCRETE PADS, AND OTHER FACILITIES AS REQUIRED BY POWER COMPANY.
 - ALL ELECTRICAL INSTALLATIONS SHALL CONFORM TO THE 2017 NATIONAL ELECTRICAL CODE, 2018 INTERNATIONAL BUILDING CODE AND ALL STATE AND LOCAL CODES.
 - ALL ELECTRICAL INSTALLATIONS SHALL CONFORM TO SEISMIC INSTALLATION STANDARDS PER 2018 EDITION OF INTERNATIONAL BUILDING CODE AND ALL STATE AND LOCAL CODES.
 - BOND EQUIPMENT GROUNDING CONDUCTORS AND GENERATOR GROUND CONDUCTORS TO GENERATOR FRAME PER NEC ARTICLE 250. THE SERVICE ENTRANCE AND "STANDBY" GENERATOR SYSTEM SHALL BE GROUNDED IN ACCORDANCE WITH ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE.
 - VERIFY STUBUP LOCATIONS, NUMBER AND SIZE OF INTER-CONNECTION CONDUCTORS. EXACT TERMINATION POINTS, ETC. AND ADJUST CONDUIT RACEWAYS ACCORDINGLY PER GENERATOR AND TRANSFER SWITCH MANUFACTURER'S SHOP DRAWINGS.
 - FURNISH AND INSTALL AN INTERSYSTEM BONDING TERMINATION ADJACENT TO THE SERVICE ENTRANCE EQUIPMENT PER NEC ARTICLE 250.94.
 - PROVIDE 4" HIGH CONCRETE PADS FOR ALL LARGE SWITCHGEAR AND ANCHOR ALL TO FLOOR AND WALLS.
 - THE EXACT AIC RATING OF THE AUTOMATIC TRANSFER SWITCH, SWITCHBOARD AND ALL PANELBOARDS SHALL BE COORDINATED WITH THE POWER COMPANY'S AVAILABLE FAULT CURRENT AND ADJUSTED ACCORDINGLY.
 - AUTOMATIC TRANSFER SWITCH AND SWITCHBOARD SHALL MEET ALL THE REQUIREMENTS OF NEC ARTICLE 240.87 ARC ENERGY REDUCTION.
 - CIRCUIT BREAKERS (NORMAL AND STANDBY SOURCES) SHALL INCLUDE AN ARC FLASH REDUCTION MAINTENANCE SYSTEM (ARMS). THE ARMS TECHNOLOGY SHALL BE PROVIDED TO REDUCE ARC ENERGY DURING PERIODS OF MAINTENANCE. THE SYSTEM SHALL ENGAGE AN INDEPENDENT, REDUCED INSTANTANEOUS PICKUP AND REDUCE TOTAL CLEARING TIME WHEN ACTIVATED.
 - CIRCUIT BREAKERS MEETING THE REQUIREMENT OF 240.87 SHALL INCLUDE AN ARC FLASH REDUCTION MAINTENANCE SYSTEM (ARMS). THE ARMS TECHNOLOGY SHALL BE PROVIDED TO REDUCE ARC ENERGY DURING PERIODS OF MAINTENANCE. THE SYSTEM SHALL ENGAGE AN INDEPENDENT, REDUCED INSTANTANEOUS PICKUP AND REDUCE TOTAL CLEARING TIME WHEN ACTIVATED.
 - MAIN SWITCHBOARD "MSB" CIRCUIT BREAKERS SHALL BE EQUIPPED WITH LONG TIME, SHORT TIME, INSTANTANEOUS AND GROUND FAULT (LSIO) PROTECTION.
 - ALL FEEDER CIRCUIT BREAKERS SHALL BE EQUIPPED WITH "LOCK-OFF" DEVICES.
 - THE CONTRACTOR SHALL PROVIDE A COMPLETE SHORT-CIRCUIT/COORDINATION STUDY/ARC FLASH HAZARD ANALYSIS PERFORMED BY A LICENSED ENGINEER PER THE DETAILED SPECIFICATIONS. THE STUDY SHALL INCLUDE ALL PROPOSED AND EXISTING ELECTRICAL SWITCHGEAR, GENERATOR, AUTOMATIC TRANSFER SWITCH, PANELBOARDS, ADJUSTABLE FREQUENCY DRIVES, ETC. WARNING LABELS SHALL BE PROVIDED AND APPLIED TO EQUIPMENT.



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ELECTRICAL DESIGN
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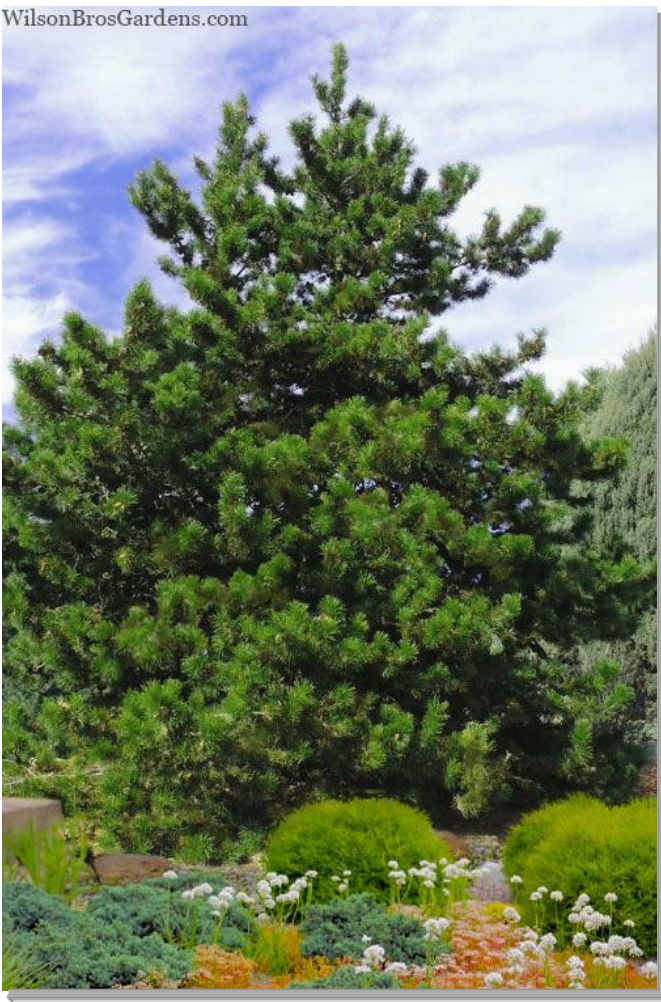
SHEET	E5	OF	7
REVISION OR ISSUE	ADDENDUM NO. 3 1/21/25		
PROJECT NUMBER	2198		
DATE	MAY 2024		
DESIGNED	JDP		
DRWN	TWR		
CHECKED	JDP		

SEWER SYSTEM IMPROVEMENTS CONTRACT 24-01 BEAR CREEK SEWAGE PUMPING STATION REPLACEMENT	
ELECTRICAL PANEL SCHEDULES, RISER DIAGRAM AND "MSB" ONE-LINE DIAGRAM	
FOR COLUMBIA, TENNESSEE	
SCALE AS SHOWN	DESIGNED ERT
DATE MAY 2024	DRWN TWR
PROJECT NUMBER 2198	CHECKED JDP

WAUFORD	DESIGNED ERT
Nashville, Tennessee (615) 883-3243 www.wauford.com	DRWN TWR
	CHECKED JDP



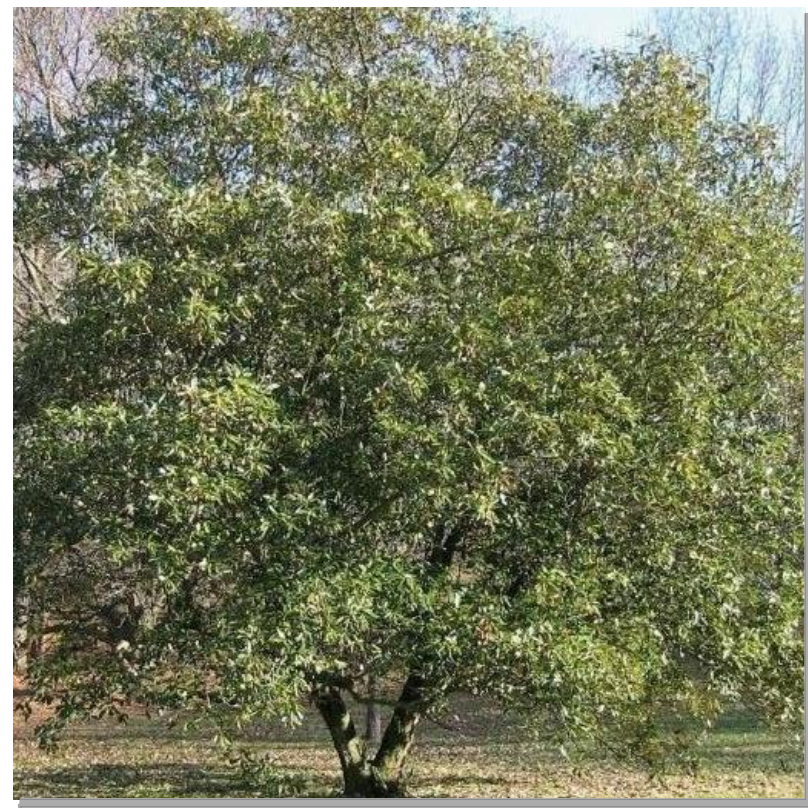
Ilex opaca



Pinus virginiana



Ilex x 'Nellie R. Stevens'



Magnolia virginiana



Cercis canadensis

- GENERAL NOTES:**
1. UNDERGROUND UTILITIES:
 - 1.1. UNDERGROUND UTILITIES HAVE NOT BEEN VERIFIED BY THE OWNER, LANDSCAPE ARCHITECT, OR THEIR REPRESENTATIVES. BEFORE YOU DIG, CALL 811.
 - 1.2. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK AND AGREES TO BE RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT RESULT FROM THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY UNDERGROUND UTILITIES TO REMAIN.
 2. THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS TO ENSURE THAT THE NEW WORK SHALL FIT INTO THE EXISTING SITE IN THE MANNER INTENDED AND AS SHOWN ON THE DRAWINGS. SHOULD ANY CONDITIONS EXIST THAT ARE CONTRARY TO THOSE ON THE DRAWINGS, THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE PRIOR TO PERFORMING ANY WORK IN THE AREA INVOLVING DIFFERENCES. NOTIFICATION SHALL BE IN THE FORM OF A DRAWING OR SKETCH INDICATING FIELD MEASUREMENTS AND NOTES RELATING TO THE AREA.

PLANT SCHEDULE

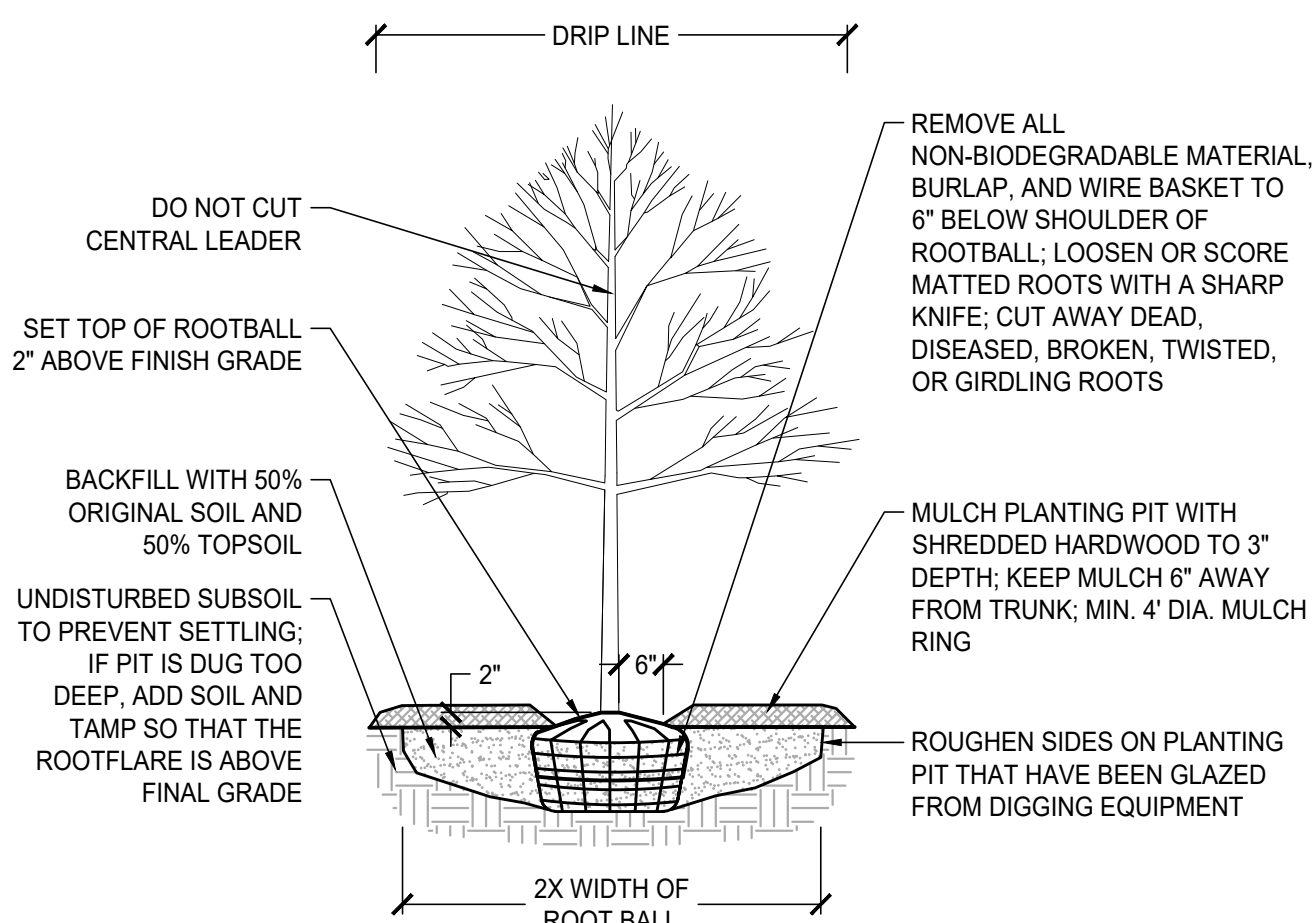
SYMBOL	CODE	QTY	BOTANICAL NAME	COMMON NAME	ROOT	CAL	HT	REMARKS
TREES								
	CER CAN	1	CERCIS CANADENSIS	EASTERN REDBUD	B&B	2"	8'-10' MIN HT	FULL PLANT, MATCHING
	ILE AME	1	ILEX OPACA	AMERICAN HOLLY	B&B		8'-10' MIN HT	FULL TO GROUND
	ILE NEL	5	ILEX X 'NELLIE R. STEVENS'	NELLIE R. STEVENS HOLLY	B&B		8' MIN	MATCHED TREES, FULL TO GROUND
	JUN VIR	2	JUNIPERUS VIRGINIANA	EASTERN REDCEDAR	B&B		8'-10' MIN HT	FULL TO GROUND
	MAG SWE	2	MAGNOLIA VIRGINIANA	SWEETBAY MAGNOLIA	B&B	1" MIN. PER CANE	8'-10' MIN HT	MATCHED TREES, MULTI-STEMMED
	PIN VIR	2	PINUS VIRGINIANA	VIRGINIA PINE	B&B		8'-10' MIN HT	FULL PLANT

PLANT STOCK NOTES:

1. ALL UNDERSTORY TREES SHALL BE LIMBED UP AT LEAST 4' WITH A MINIMUM HEIGHT OF 8'.
2. ALL CANOPY AND UNDERSTORY TREES SHALL HAVE ONE STRONG CENTRAL LEADER TRUNK. NO MULTI-TRUNK UNLESS SPECIFIED.
3. THE SOUTH SIDE OF ALL TREES SHALL BE MARKED BEFORE TRANSPLANT FOR DIRECTIONAL PLACEMENT AT THE TIME OF PLANTING. CONTRACTOR SHALL BE RESPONSIBLE FOR DIRECTIONAL PLACEMENT.
4. ALL TREES SHALL BE MATCHED SPECIMENS WITH A FULL CANOPY AND A UNIFORM BRANCHING HABIT.
5. EVERGREEN TREES SHALL BE FULL TO GROUND WITH A HEAVY CANOPY AND STRONG CENTRAL LEADER.
6. MULCH "VOLCANOES" ARE UNACCEPTABLE. MULCH MUST BE INSTALLED PER DETAILS.
7. INSTALL ALL PLANTS IN ACCORDANCE WITH ALL APPLICABLE DETAILS AND NOTES INCLUDED WITHIN THE CONSTRUCTION PACKAGE.
8. ALL PLANTS MUST BE SELECTED, INSTALLED, AND MAINTAINED ACCORDING TO THE PLAN.
9. ALL TREES MUST BE PLANTED A MINIMUM OF 5 FEET FROM MAJOR UTILITY LINES. CONTACT LANDSCAPE ARCHITECT WHERE DISCREPANCIES OCCUR FOR FIELD ADJUSTMENT.

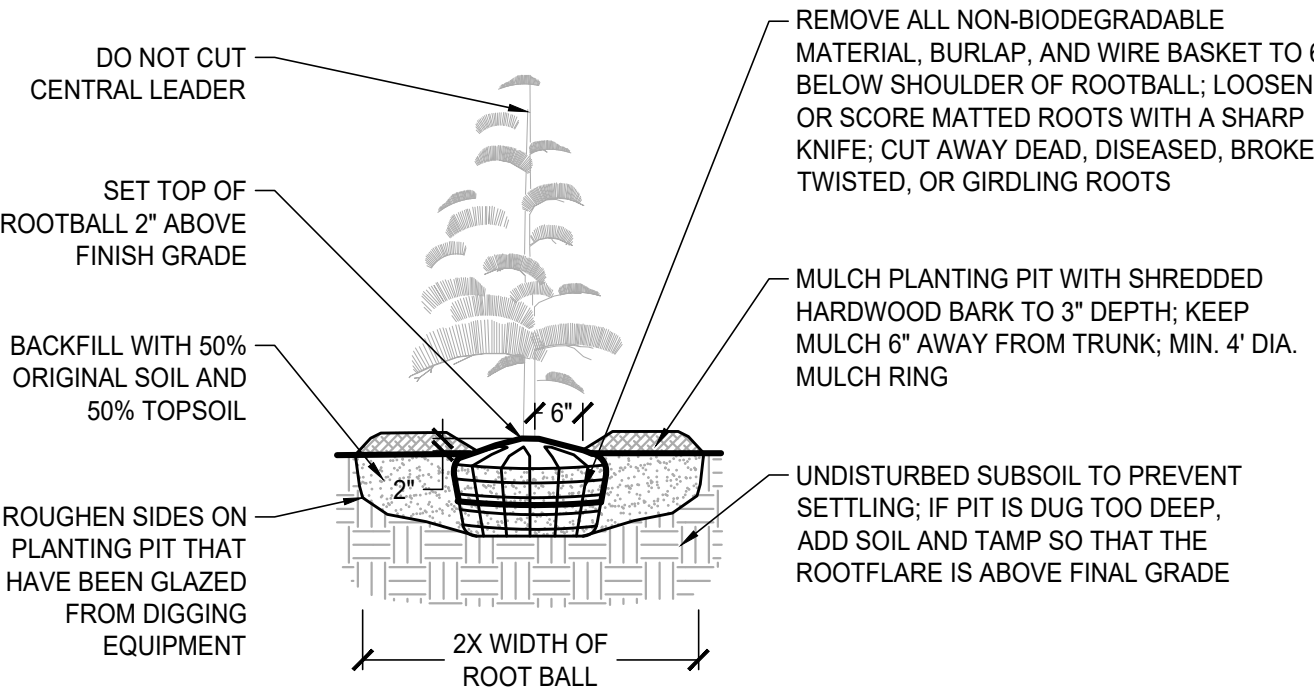
LANDSCAPE NOTES:

1. PLANTING BEDS AND PLANT LOCATIONS SHALL BE STAKED BY THE LANDSCAPE CONTRACTOR. THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE OWNER OR THE OWNER'S REPRESENTATIVE FOR APPROVAL PRIOR TO INSTALLATION OF THE PLANTS.
2. PLANTING BEDS SHALL BE CLEARED OF ALL GRASS AND WEEDS PRIOR TO INSTALLATION OF PLANTS, INCLUDING SPRAYING "ROUND-UP" OR APPROVED SUBSTITUTE TO KILL ACTIVELY GROWING PLANTS. PLANT BEDS SHALL BE PREPARED AS CALLED FOR IN THE SPECIFICATIONS AND DETAILS.
3. ADDITIONAL SEEDING, IF REQUIRED, WILL BE AS DIRECTED BY THE OWNER OR OWNER'S REPRESENTATIVE.
4. PLANTING BEDS SHALL HAVE A THREE (3) INCH SHREDDED HARDWOOD BARK MULCH OVER THE ENTIRE BED, UNLESS OTHERWISE NOTED ON THE DRAWINGS.
5. PRIOR TO PLANTING, ALL PLANTED AREAS SHALL BE TREATED WITH A WATER-SOLUBLE HERBICIDE FOR THE NON-SELECTIVE CONTROL OF ANNUAL AND PERENNIAL WEEDS PRIOR TO PLANTING.
6. ALL TREE AND SHRUB PLANTING PITS SHALL BE BACKFILLED WITH A PLANTING SOIL MIXTURE OF ONE (1) PART ORIGINAL SOIL AND ONE (1) PART TOPSOIL, THOROUGHLY MIXED. SAMPLE OF MIXTURE TO BE APPROVED IN WRITING BY OWNER OR OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
7. PLANT GROUND COVER AND ANNUAL BEDS IN SAME MIXTURE AS SHRUBS. AFTER PLANTING & MULCHING, WATER AREAS TO POINT OF SATURATION.
8. ALL PLANTED AREAS ARE TO BE FERTILIZED WITH GRANULAR FERTILIZER. LANDSCAPE CONTRACTOR IS TO PROVIDE SOIL TEST RESULTS AND PROPOSED FERTILIZER APPLICATION RATES TO THE OWNER OR OWNER'S REPRESENTATIVE FOR APPROVAL.
9. ALL PLANT MATERIAL IS TO BE NURSERY GROWN AND TO COMPLY WITH AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z60.1-2004) OR LATEST EDITION. PLANTS NOT IN COMPLIANCE WILL BE REJECTED AND REPLACED WITH PLANTS THAT MEET THE STANDARDS.
10. SPRAY TREES AND SHRUBS WITH AN ANTI-DESICCANT IF FOLIAGE IS PRESENT.
11. EVERGREEN TREES AND SHRUBS SHALL BE PLANTED IN THE SAME MANNER AS DECIDUOUS MATERIAL IS PLANTED.
12. DO NOT PRUNE ANY PLANT MATERIAL UNTIL IT HAS BEEN INSPECTED AND ACCEPTED BY THE OWNER OR OWNER'S REPRESENTATIVE.
13. ALL LANDSCAPE MATERIAL SHALL BE APPROVED BY THE OWNER OR OWNER'S REPRESENTATIVE BEFORE INSTALLATION. MATERIALS MAY BE VIEWED AT LANDSCAPE CONTRACTOR'S HOLDING SITE OR AT THIS SITE. IT SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR TO NOTIFY THE OWNER OR OWNER'S REPRESENTATIVE OF THE AVAILABILITY OF THE MATERIALS TO BE INSPECTED.
14. ALL MATERIALS INSPECTED ON THE SITE AND FOUND TO BE UNACCEPTABLE SHALL BE REMOVED FROM THE SITE ON THE DAY OF INSPECTION.
15. FIELD CHANGES MUST BE APPROVED IN WRITING BY THE OWNER OR OWNER'S REPRESENTATIVE.
16. ALL PLANT MATERIAL SHALL BE SUPPLIED BY APPROPRIATE SOURCES TO PREVENT UNDUE STRESS OR PROLONGED ACCLIMATIZATION WHICH WOULD INHIBIT PLANT GROWTH.
17. LANDSCAPE CONTRACTOR IS TO VERIFY PLANT QUANTITIES SHOWN ON PLAN AND IN PLANT LIST. IF DISCREPANCIES OCCUR, LANDSCAPE CONTRACTOR IS TO CONTACT LANDSCAPE ARCHITECT IMMEDIATELY. QUANTITIES SHOWN ON PLAN TAKE PRECEDENCE.
18. EVERGREEN TREES TO BE A MINIMUM OF 6" IN HEIGHT AT TIME OF PLANTING - DECIDUOUS TREES TO BE 2" DBH MIN AT TIME OF PLANTING. SEE PLANT LIST FOR LARGER MATERIAL REQUIRED.
19. MULTI-TRUNK PLANT MATERIAL SHALL BE ONE PLANT GROWN FROM SINGLE SEEDLING. NO CLUMP MULTI-PLANT STOCK WILL BE ACCEPTED.
20. IF IN THE OPINION OF THE LANDSCAPE ARCHITECT, THE CENTRAL LEADER OF ANY TREE HAS BEEN CUT IN THE HISTORY OF THE PLANT'S GROWTH, THE MATERIAL SHALL BE REPLACED AT NO ADDITIONAL COST TO THE OWNER. THE DECISION OF THE LANDSCAPE ARCHITECT WILL BE FINAL.



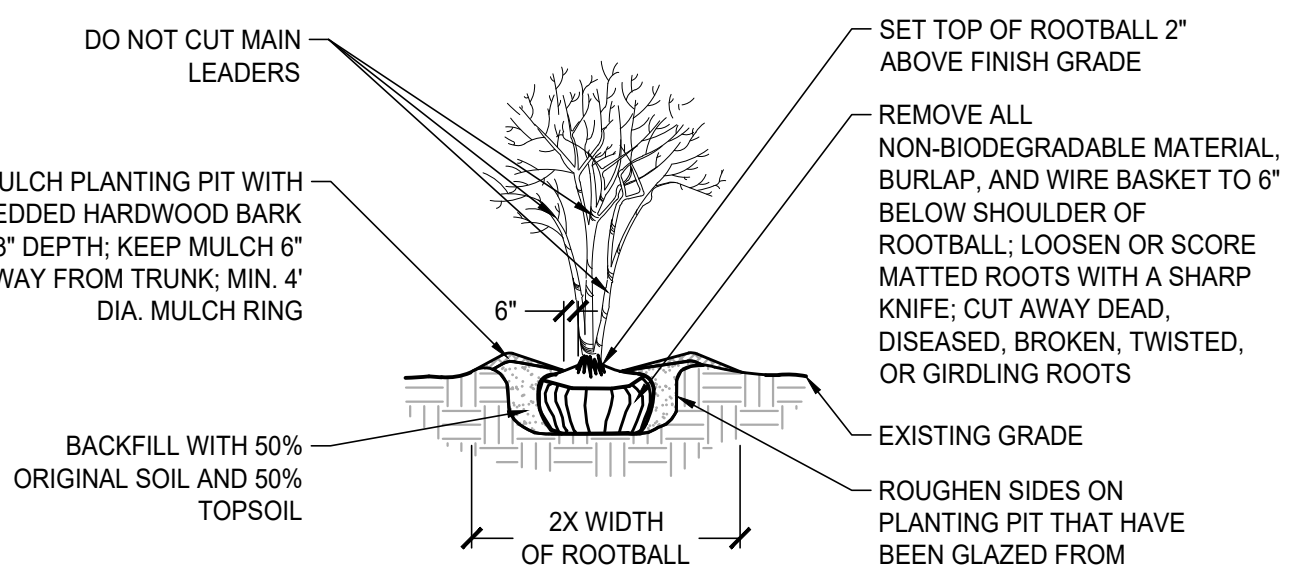
- NOTES:**
1. WATER TREES IMMEDIATELY AFTER PLANTING.
 2. TREES OF SAME SPECIES TO BE MATCHED IN UNIFORMITY AND GROWTH.
 3. TREE MUST MEET AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z60.1)

1 DECIDUOUS TREE
SCALE: NTS



- NOTES:**
1. WATER TREES IMMEDIATELY AFTER PLANTING.
 2. TREES OF SAME SPECIES TO BE MATCHED IN UNIFORMITY AND GROWTH

2 CONIFER TREE
SCALE: NTS

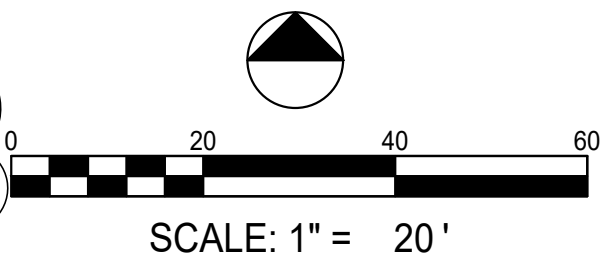


- NOTES:**
1. WATER MULTI-TRUNK TREES IMMEDIATELY AFTER PLANTING.
 2. MULTI-TRUNK TREES OF SAME SPECIES TO BE MATCHED IN UNIFORMITY AND GROWTH

3 MULTI-TRUNK TREE
SCALE: NTS

IRRIGATION NOTE:

1. THE CONTRACTOR MAY UTILIZE THE PROPOSED 3/4" FARM SPIGOT TO PROVIDE WATER TO IRRIGATE NEW VEGETATION WHICH MAY INCLUDE THE USE OF AN AUTOMATIC SYSTEM, DRIP IRRIGATION TUBING, AND/OR OTHER MEANS AS DESIRED BY THE CONTRACTOR UNTIL THE VEGETATION HAS BEEN ESTABLISHED OR THE ONE-YEAR PROJECT GUARANTEE PERIOD IS COMPLETE. THE OWNER SHALL PAY FOR WATER USAGE FOR IRRIGATION PURPOSES UP TO 20,000 GALLONS PER MONTH WITH ANY EXCESS COST TO BE REIMBURSED TO THE OWNER BY THE CONTRACTOR



NO.	DATE	DESCRIPTION
1	1/21/25	ADD NO. 3

ADDENDUM NO. 2
SEWER SYSTEM IMPROVEMENTS
CONTRACT 24-01
BEAR CREEK SEWAGE PUMPING STATION REPLACEMENT
CITY OF COLUMBIA, TENNESSEE
WAUFORD PROJECT NO. 2198
ARPA Grant No. 8437-WW-COStru-1

Date of Addendum: Monday, December 23, 2024
Pre-Bid Meeting: Wednesday, January 15, 2025, 10:00 a.m. Central Time
Bid Opening: Thursday, January 30, 2025, 2:00 p.m. Central Time

1. Plans, Cover Sheet

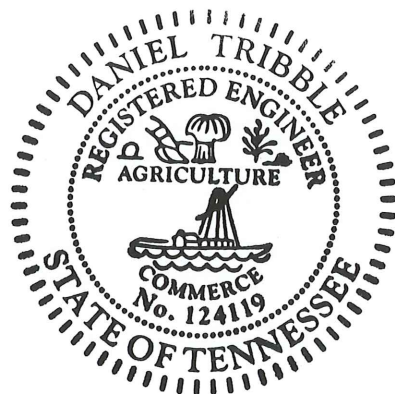
Replace the Cover Sheet with the attached Cover Sheet.

2. Plans, Sheet M1:

Insert attached Plan Sheet M1.

3. Plans, Sheet L1:

Insert attached Plan Sheet L1.



J. R. WAUFORD & COMPANY,
CONSULTING ENGINEERS, INC.

Daniel G. Tribble, P.E.
Tennessee License No. 124119

SEWER SYSTEM IMPROVEMENTS

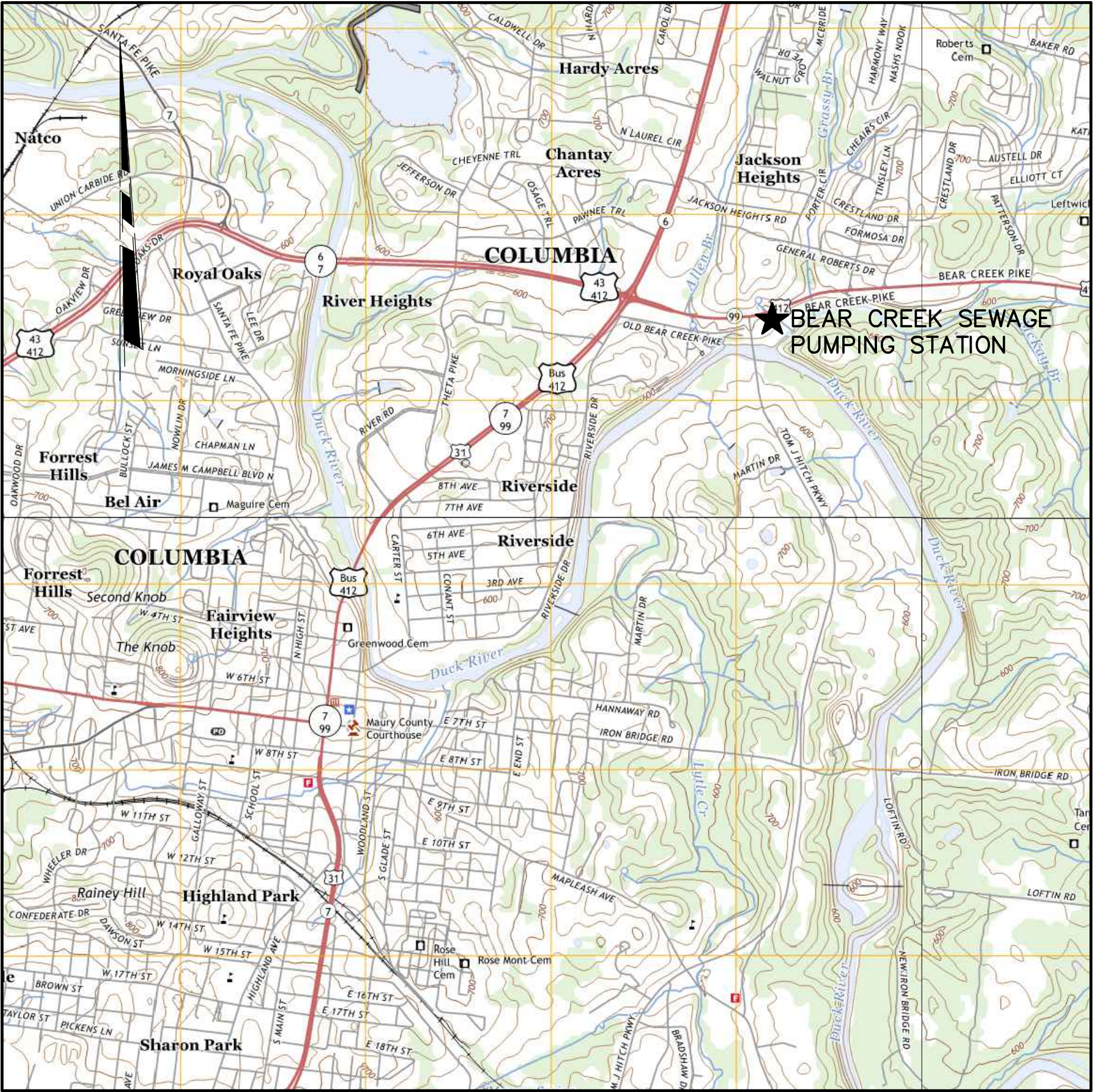
FOR THE CITY OF

COLUMBIA, TENNESSEE

CONTRACT 24-01

BEAR CREEK SEWAGE PUMPING
STATION REPLACEMENT

FUNDED BY ARPA GRANT NO. 8437-WW-COSTRU-1



LOCATION MAP
SCALE: 1" = 2000'

INDEX OF DRAWINGS

SHEET	DESCRIPTION
1.	EXISTING SITE PLAN
2.	PROPOSED SITE PLAN
3.	SITE PIPING PROFILE AND SITE DETAILS
4.	PLAN VIEWS
5.	SECTIONS – PUMP STATION
6.	SECTIONS – PUMP STATION AND VALVE PIT
7.	FLOW METER PIT AND PORTABLE PUMP CONNECTION
8.	PROPOSED ELECTRICAL BUILDING
9.	GENERAL STRUCTURAL NOTES AND DETAILS
10.	EXISTING S.P.S. DEMOLITION AND DETAILS
E1.	BEAR CREEK SPS SITE ELECTRICAL PLAN
E2.	BEAR CREEK SPS ELECTRICAL BLDG. LIGHTING AND POWER PLANS
E3.	BEAR CREEK SPS ENLARGED POWER PLANS
E4.	BEAR CREEK SPS ENLARGED SECTION B & C ELECTRICAL PLAN
E5.	ELECTRICAL PANEL SCHEDULES, RISER DIAGRAM AND "MSB" ONE-LINE DIAGRAM
E6.	CONDUIT INSTALLATION DETAILS
E7.	ELECTRICAL SCHEDULES, DETAILS AND LEGEND
M1.	HVAC
L1.	LANDSCAPE PLAN

CITY OFFICIALS

MAYOR
CHAZ MOLDER

VICE MAYOR
RANDY McBROOM

COUNCIL MEMBERS
DAVENA HARDISON - WARD 1
DEBBIE WILES - WARD 2
TONY GREENE - WARD 3
KENNY MARSHALL - WARD 4
DANNY COLEMAN - WARD 5

CITY MANAGER
TONY MASSEY

WASTEWATER DIRECTOR
DONALD J. BOSHERS

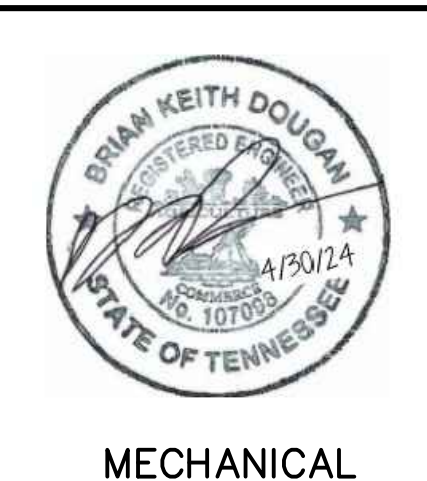
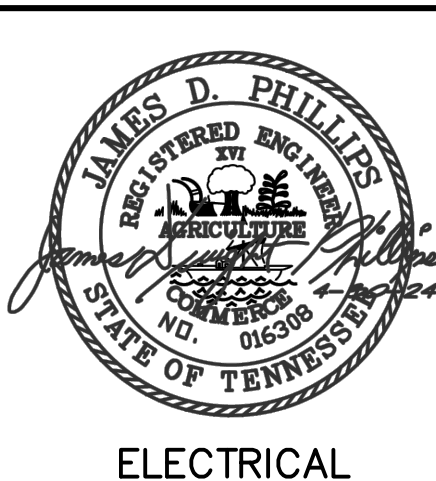
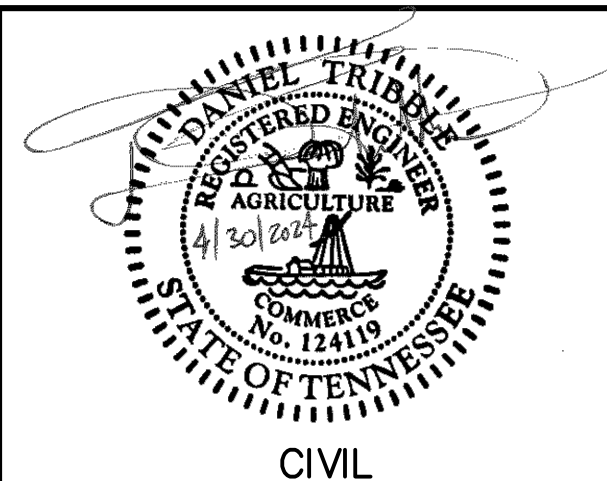
PROJECT NO. 2198

MAY, 2024

ADDENDUM NO. 1 IS INCORPORATED INTO THIS SET OF DRAWINGS

WAUFORD

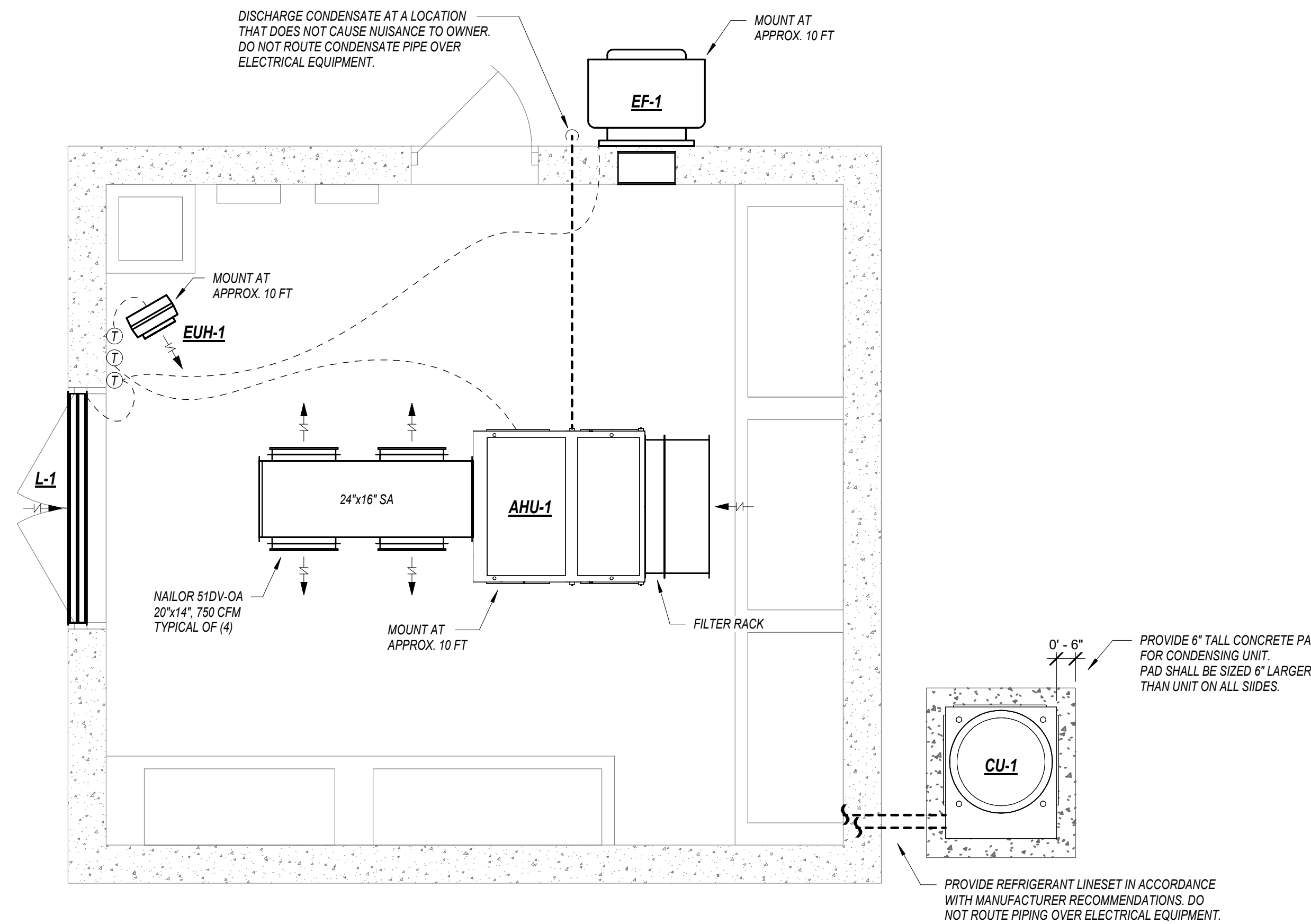
Nashville, Tennessee
(615) 883-3243
www.jrwauford.com



APPROVED: 
DONALD J. BOSHERS, DIRECTOR

HVAC NOTES

- THE CONTRACTOR SHALL SECURE AND PAY FOR ALL NECESSARY PERMITS, INSPECTIONS, ETC.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SITE COORDINATION.
- CONTRACTOR SHALL REVIEW ALL DRAWINGS AND DISCIPLINES. COORDINATE BEFORE CONSTRUCTION. AVOID INTERFERENCE WITH ARCHITECTURAL FEATURES, BEAMS, FOOTINGS, DOORS, CRANE CLEARANCES, PROCESS EQUIPMENT, ETC. NOTIFY ARCHITECT OF ANY CONFLICTS. CONTRACTOR MAY REROUTE DUCT TO AVOID CONFLICT WITH OTHER TRADES AT NO ADDITIONAL COST TO THE OWNER AFTER FIRST RECEIVING THE APPROVAL OF THE ARCHITECT/ENGINEER.
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE LOCAL STATE, & FEDERAL BUILDING CODE AND STATE HEALTH REGULATIONS AS WELL AS ANY APPLICABLE LOCAL REQUIREMENTS.
- THESE DRAWINGS ARE DIAGNOMATIC AND ARE NOT SHOP DRAWINGS. THIS CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS BEFORE FABRICATION OF DUCTWORK OR PIPING AND PROVIDE NECESSARY OFFSETS AND APPURTENANCES IN DUCTWORK AND PIPING TO AVOID ALL OBSTRUCTIONS AT NO ADDITIONAL COST TO THE OWNER. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PREPARE DETAILED SHOP DRAWINGS AND TO CONFIRM SPACE ALLOCATIONS.
- ALL MATERIALS SHALL BE NEW AND OF THE FINEST QUALITY.
- ALL WORK SHALL BE PERFORMED BY TRADESMEN THAT ARE TRAINED AND HIGHLY SKILLED IN THE WORK THAT THEY ARE TO PERFORM.
- ALL EQUIPMENT, MATERIALS, AND LABOR FURNISHED BY THIS CONTRACTOR SHALL BE WARRANTED BY HIM FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE.
- HVAC CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR ALL VOLTAGES, ELECTRICAL LOADS, ETC. OF ELECTRICALLY OPERATED EQUIPMENT PRIOR TO ORDERING. ALL WIRING BY ELECTRICAL CONTRACTOR. DISCONNECT FOR PACKAGED AIR CONDITIONERS SHALL BE SUPPLIED AND INSTALLED BY ELECTRICAL CONTRACTOR.
- ROUTE ALL DUCTWORK PARALLEL AND PERPENDICULAR TO BUILDING LINES. DUCTWORK SHALL BE HUNG LEVEL AND FREE OF BENDS, CRIMPS AND SAGS.
- DUCTWORK SHALL BE CONSTRUCTED OF PRIME GALVANIZED SHEET METAL. USE OF FIBERGLASS DUCTBOARD IS NOT ACCEPTABLE. ALL JOINTS SHALL BE SEALED WITH HIGH-PRESSURE DUCT SEALANT. PROVIDE TURNING VANES AT ALL ELBOWS AND OFFSETS. ALL DUCTWORK SHALL BE SECURELY SUPPORTED FROM THE BUILDING STRUCTURAL ELEMENTS.
- ALL INSULATED DUCTWORK SHALL HAVE EITHER EXTERNAL WRAP OR ANTI-MICROBIAL LINER. DUCT SIZES SHOWN ARE CLEAR AIR SPACE AND MUST BE ADJUSTED FOR LINER.
- CONSTRUCT ALL SUPPLY AIR DUCTWORK IN ACCORDANCE WITH SMACNA STANDARDS FOR 2" PRESSURE CATEGORY EXCEPT FOR RTU-4 WHICH SHALL BE IN ACCORDANCE WITH 4" STANDARDS. CONSTRUCT ALL RETURN AIR DUCTWORK IN ACCORDANCE WITH SMACNA STANDARDS FOR 1" PRESSURE CATEGORY.
- LIMIT LENGTHS OF FLEXIBLE DUCTWORK TO 6'-0" OR LESS.
- ALL DUCTWORK LOCATED OUTSIDE OF THE BUILDING ENVELOPE, INCLUDING UNINSULATED ATTIC OR MEZZANINE SPACES, SHALL BE INSULATED WITH MINIMUM R-8 INSULATION. DUCTWORK LOCATED IN UNCONDITIONED SPACES WITHIN THE BUILDING ENVELOPE SHALL BE INSULATED WITH MINIMUM R-8 INSULATION. DUCTWORK LOCATED IN CONDITIONED SPACES, INCLUDING CEILING SPACES USED AS RETURN AIR FLENUMS SHALL BE INSULATED FOR CONDENSATION CONTROL ONLY.
- INSULATE THE TOPS OF ANY OFFICE AREA SUPPLY DIFFUSERS AND FLENUMS WITH FIBERGLASS DUCTWRAP WITH FOIL SCRIM VAPOR BARRIER JACKET, BUTT AND TAPE ALL SEAMS TO FORM A CONTINUOUS VAPOR TIGHT SEAL.
- SEAL ALL LONGITUDINAL AND TRANSVERSE SEAMS BEFORE APPLYING INSULATION. SEALANT SHALL BE NON-HARDENING, WATER RESISTANT, FIRE RESISTIVE, COMPATIBLE WITH MATING MATERIALS. LIQUID USED ALONE OR WITH TAPE OR HEAVY MASTIC.
- ALL CONTROL WIRING TO THERMOSTATS, ETC. SHALL BE IN CONDUIT AND SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE.
- PROVIDE DEEP SEAL PVC CONDENSATE TRAPS ON AIR CONDITIONERS. IN THE OPERATIONS BUILDING, IF ALLOWED BY LOCAL CODE, CONDENSATE PIPING SHALL BE ASTM D-2865, D-1785, SCHEDULE 40 PVC WITH PVC FITTINGS. JOINTS SHALL BE ASTM D-2855. SOLVENT WELDED WITH ASTM D-2564 SOLVENT CEMENT. IN THE REMAINING AIR CONDITIONED TREATMENT BUILDINGS, THE CONDENSATE PIPING SHALL BE GALVANIZED STEEL.
- THE COMPLETED INSTALLATION SHALL BE IN ACCORDANCE WITH ALL UTILITY COMPANY REGULATIONS, APPLICABLE INDUSTRY STANDARDS OF GOOD PRACTICE AND SAFETY AND THE MANUFACTURERS' RECOMMENDATIONS FOR EQUIPMENT AND PRODUCT APPLICATION AND INSTALLATION.
- THE CONTRACTOR SHALL VISIT THE SITE, OBSERVE EXISTING CONDITIONS AND VERIFY THAT THE WORK CAN BE INSTALLED IN ACCORDANCE WITH THE DESIGN AND THE ARCHITECT'S RESTRICTIONS. THE CONTRACTOR SHALL PERFORM THE ENTIRE INSTALLATION IN A FIRST CLASS WORKMANLIKE MANNER. VERIFY THE EXACT LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO BEGINNING OF THE WORK.
- PROVIDE ALL REQUIRED GENERAL CONSTRUCTION ACCESS PANELS TO ACCESS VALVES, METERS AND ALL DEVICES REQUIRING ADJUSTMENTS AND SERVICE.
- SUBMIT PRODUCT DATA SHEETS AND SHOP DRAWINGS REPRESENTING THE WORK PROPOSED TO BE INSTALLED PRIOR TO THE ACTUAL INSTALLATION, FOR REVIEW AND COMMENT BY THE ARCHITECT. SHOP DRAWINGS SHALL SHOW ALL EQUIPMENT, MAINTENANCE CLEARANCE, ETC.
- ALL PENETRATIONS THROUGH RATED WALLS OR FLOORS SHALL BE SEALED WITH AN APPROVED U.L. LISTED FIREPROOFING TO MAINTAIN THE INTEGRITY OF THE WALL OR FLOOR.
- FOR PURPOSE OF BALANCING HVAC SYSTEMS, THIS CONTRACTOR SHALL OBTAIN THE SERVICES OF AN INDEPENDENT TESTING AND BALANCING CONTRACTOR. THE TESTING AND BALANCING CONTRACTOR SHALL TEST AND BALANCE ALL AIR SYSTEMS AND SHALL SUBMIT COPIES OF TEST AND BALANCE REPORTS TO THE ENGINEER FOR REVIEW. ALL COST FOR TESTING, ADJUSTING AND BALANCING SHALL BE PAID BY THE HVAC CONTRACTOR. SUBMIT COPIES OF BALANCING REPORTS TO THE ARCHITECT WITHIN 10 DAYS OF SUBSTANTIAL COMPLETION OF THE MECHANICAL SYSTEM.
- INSTALL SMOKE DETECTORS IN THE RETURN AIR DUCTWORK AT AIR CONDITIONERS FOR FAN SHUTDOWN IN ACCORDANCE WITH CODE. DETECTORS TO BE SUPPLIED BY THE MECHANICAL CONTRACTOR AND WIRED BY ELECTRICAL CONTRACTOR UNLESS OTHER ARRANGEMENTS CAN BE COORDINATED BY THE MECHANICAL CONTRACTOR.
- SUPPLY, INSTALL AND WIRE DIGITAL, NON-MERCURY, SEVEN-DAY PROGRAMMABLE THERMOSTATS FOR EACH AIR CONDITIONER. MOUNT THERMOSTATS WHERE INDICATED ON THE DRAWING AT 48" ABOVE THE FLOOR. THERMOSTATS SHALL BE CONTROLLABLE THROUGH A INTERNET BASED MONITORING PROGRAM.
- VERIFY THAT EACH PIECE OF EQUIPMENT OR SYSTEM HAS BEEN CHECKED FOR PROPER LUBRICATION, DRIVE ROTATION, BELT TENSION, CONTROL SEQUENCE OR FOR OTHER CONDITIONS WHICH MAY CAUSE DAMAGE.
- DEMONSTRATE OPERATION AND MAINTENANCE OF PRODUCTS TO OWNER'S PERSONNEL ONE WEEK PRIOR TO DATE OF FINAL INSPECTION.
- EXECUTE FINAL CLEANING PRIOR TO FINAL PROJECT ASSESSMENT.
- LOCATE DUCTS AND EQUIPMENT WITH SUFFICIENT SPACE AROUND EQUIPMENT TO ALLOW NORMAL OPERATING AND MAINTENANCE ACTIVITIES.
- PROVIDE CANVAS FLAME RETARDANT DUCT CONNECTORS AT ALL CONNECTIONS OF EQUIPMENT TO DUCTWORK.
- VERIFY FLOOR PLAN AND WALL/FLOOR/CEILING RATINGS WITH ARCHITECTURAL PLANS. PROVIDE RATED PENETRATIONS AT EACH INSTANCE WHERE MECHANICAL INSTALLATION PENETRATES A RATED ASSEMBLY. PENETRATIONS SHALL BE PER DETAILS ON DRAWINGS OR SOME OTHER U.L. LISTED DESIGN.
- ANY CEILING SUPPLY AIR DIFFUSERS SHALL HAVE 4-WAY THROW UNLESS INDICATED OTHERWISE ON THE PLANS.
- FRAME STYLE OF ALL AIR DISTRIBUTION DEVICES SHALL MATCH THE TYPE OF CEILING/WALL IN WHICH THEY ARE INSTALLED. VERIFY WITH ARCHITECTURAL PLANS.
- THE COLOR OF ALL OFFICE AREA AIR DISTRIBUTION DEVICES SHALL BE AS DIRECTED BY THE ARCHITECT.
- COORDINATE WITH GENERAL CONTRACTOR ON SIZE AND LOCATION OF CONCRETE PADS FOR ANY EQUIPMENT REQUIRING A CONCRETE PAD.
- USE EQUIVALENT SQUARE INCHES TO CHANGE DUCT DIMENSIONS OR CONSULT WITH MECHANICAL ENGINEER IF NEEDED.
- DUCT PENETRATIONS THROUGH THE EXTERIOR WALL SHALL BE WEATHERPROOFED WITH FLASHING AND CAULK.
- THE AIR CONDITIONING EQUIPMENT SHALL BE MANUFACTURED BY DAIKIN, TRANE, YORK, CARRIER OR AN APPROVED EQUAL. THE EXHAUST FANS SHALL BE MANUFACTURED BY LOREN COOK, GREENHECK, AEROVENT OR AN APPROVED EQUAL.

**1 HVAC PLAN**
3/8" = 1'-0"

ELECTRICAL COMPONENT RESPONSIBILITY SCHEDULE												
Equip	Starters		VFD's		Disconnects		Controls		Contactors/ Switches		Power Interconnect Wiring	
	Prov. By	Install By	Prov. By	Install By	Prov. By	Install By	Prov. By	Install By	Prov. By	Install By	Prov. By	Install By
AHU's	MC	MC	NA	NA	EC	EC	MC	MC	NA	NA	EC	EC
CUs	MC	MC	NA	NA	EC	EC	MC	MC	NA	NA	EC	EC
Fans	EC	EC	NA	NA	MC	MC	MC	MC	EC	EC	EC	EC
Elec Heaters	EC	EC	NA	NA	MC	MC	MC	MC	MC	EC	EC	EC
Louvers	EC	EC	NA	NA	EC	EC	MC	MC	EC	EC	EC	EC

AIR HANDLING UNIT SCHEDULE												
MARK	NOMINAL TONNAGE	AREA SERVED	COOLING COIL CAPACITY BTU/HR	CFM	ESP	HEATING TYPE	ELEC HEATING COIL CAPACITY KW	VOLTAGE	MCA	MOCF	WEIGHT LBS	MODEL
AHU-1	7.5	ELECTRICAL ROOM	90,000	3,000	0.25"	N/A	N/A	460/3	4	15	375	TWE09044

- NOTES:
- PROVIDE 7-DAY PROGRAMMABLE THERMOSTAT WITH AND AUTO CHANGEOVER.
 - ALL HVAC SYSTEMS MUST BE PURCHASED AND INSTALLED ACCORDING TO ALL LOCAL CODES INCLUDING THE ENERGY CODES. DESIGN ON CONDITIONS ARE 95/75 DEG F.
 - PROVIDE FILTER SECTION WITH MERV 8 FILTERS DOWNSTREAM OF OSA INTAKE.
 - INSTALL A SMOKE DETECTOR IN THE RETURN DUCT TO SHUT DOWN UNIT WHEN TRIPPED.
 - PROVIDE REFRIGERATION LINE SET TO CORRESPONDING CONDENSING UNIT.
 - PROVIDE AUXILIARY DRAIN PAN WITH EMERGENCY SHUT-OFF.
 - PROVIDE CORROSION RESISTANT COATED COILS.
 - PROVIDE A PROTECTIVE PLASTIC COVER WITH KEYED LOCK OVER THE THERMOSTAT.

CONDENSING UNIT SCHEDULE									
MARK	NOMINAL TONNAGE	AREA SERVED	COOLING CAPACITY BTU/HR	TYPE	VOLTAGE	MCA	MOCF	MODEL	NOTES
CU-1	7.5	ELECTRICAL ROOM	90,000	COOLING ONLY	460/3	16	25	TRANE TTA09044	1,2,3,4,5

- NOTES:
- ALL HVAC SYSTEMS MUST BE PURCHASED AND INSTALLED ACCORDING TO ALL LOCAL CODES INCLUDING THE ENERGY CODES. DESIGN ON CONDITIONS ARE 95/75 DEG F. USE 115 DEG F FOR CONDENSING UNIT SELECTION.
 - PROVIDE REFRIGERATION LINE SETS TO CORRESPONDING AIR HANDLER.
 - PROVIDE LOW AMBIENT CONTROLS.
 - PROVIDE CORROSION RESISTANT COATED COILS.
 - COORDINATE CONCRETE PAD WITH GENERAL CONTRACTOR.

ELECTRIC HEATER SCHEDULE						
MARK	DESCRIPTION	AREA SERVED	INPUT SIZE	VOLTAGE	MODEL	NOTES
EHU-1	ELECTRIC UNIT HEATER	ELECTRICAL ROOM	3 KW	480/3	BERKO BWD	1,2,3,4

- NOTES:
- THERMOSTAT CONTROLLED.
 - PROVIDE DISCONNECT.
 - CORROSION RESISTANT CONSTRUCTION.
 - PROVIDE A PROTECTIVE PLASTIC COVER WITH KEYED LOCK OVER THE THERMOSTAT.

FAN SCHEDULE										
MARK	DESCRIPTION	AREA SERVED	FUNCTION OR OPERATION	CFM	ESP	FAN RPM	MOTOR HP	VOLTAGE	MODEL	NOTES
EF-1	WALL CENTRIFUGAL EXHAUST	ELECTRICAL ROOM	BACKUP HEAT EXHAUST	5,000	0.125"	1,137	2	460/3	GREENHECK CUBE-200	130 1,2,3,4,5,6,7,8,9

- NOTES:
- FAN TO BE USED AS AUTOMATIC BACK-UP HEAT EXHAUST IF ROOM AIR CONDITIONING FAILS.
 - TIE INTO LOUVER.
 - THERMOSTAT CONTROLLED. PROVIDE A PROTECTIVE PLASTIC COVER WITH KEYED LOCK OVER THE THERMOSTAT.
 - PROVIDE DISCONNECT.
 - PROVIDE BACKDRAFT DAMPER.
 - PROVIDE CORROSION RESISTANT CONSTRUCTION.
 - MOTOR TO BE TEFC.
 - PROVIDE WALL SLEEVE.
 - SPARKPROOF CONSTRUCTION.

LOUVER SCHEDULE									
MARK	DESCRIPTION	AREA SERVED	SERVICE	SIZE (W X H)	HP	VOLTAGE	TIED TO	MODEL	NOTES
L-1	MOTORIZED WALL LOUVER	ELECTRICAL ROOM	BACKUP HEAT EXHAUST	72"x24"	0.1	120/1	EF-1	GREENHECK EAD-635	1,2,3,4

- NOTES:
- PROVIDE DISCONNECT.
 - MOUNT ABOVE DOOR.
 - PROVIDE BIRD SCREEN - 1/4" MESH.
 - MOTOR TO BE TEFC.

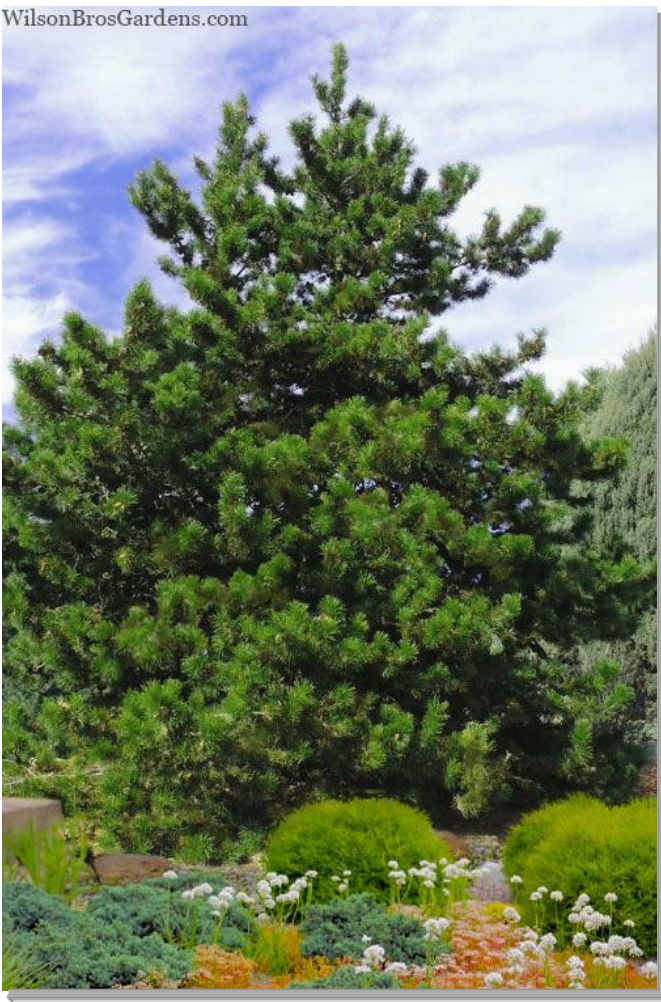
JM2 ASSOCIATES
98 North Star Drive - Suite D
Jackson Tennessee 38305
Ph: 731-736-4441

SHEET M1 OF 1	SEWER SYSTEM IMPROVEMENTS CONTRACT 24-01 BEAR CREEK SEWAGE PUMPING STATION REPLACEMENT	
REVISION OR ISSUE	HVAC	
ADDENDUM NO. 2 - 12/23/24	FOR	
	COLUMBIA, TENNESSEE	
	SCALE As indicated	WAUFORD
	DATE MAY 2024	
PROJECT NUMBER 2198	Nashville, Tennessee (615)883-3243 www.jm2ass.com	
		DESIGNED B/K/D DRAWN R/T/J CHECKED ---





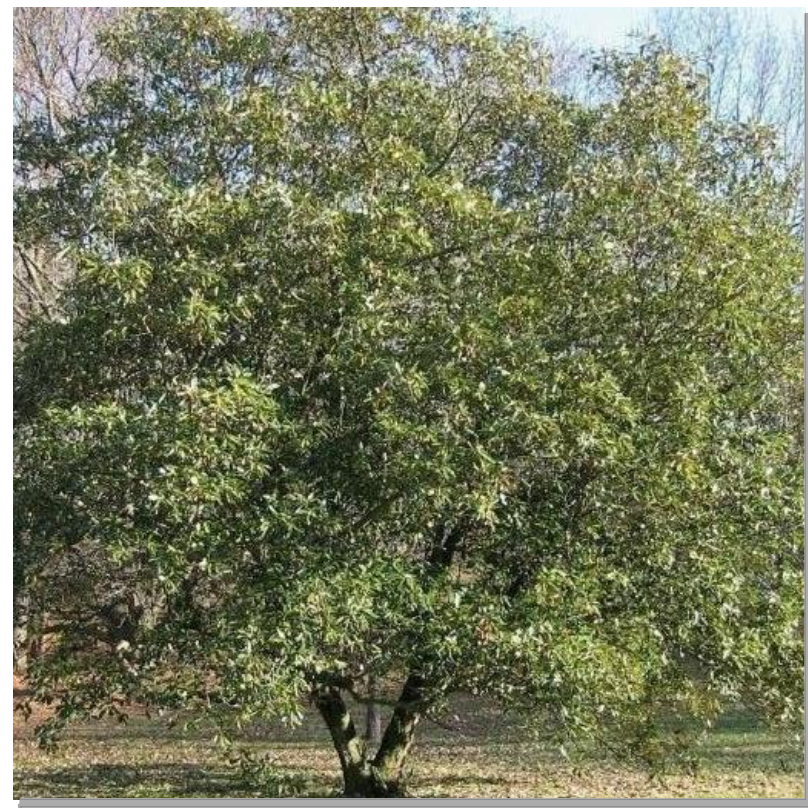
Ilex opaca



Pinus virginiana



Ilex x 'Nellie R. Stevens'



Magnolia virginiana



Cercis canadensis

PLANT SCHEDULE

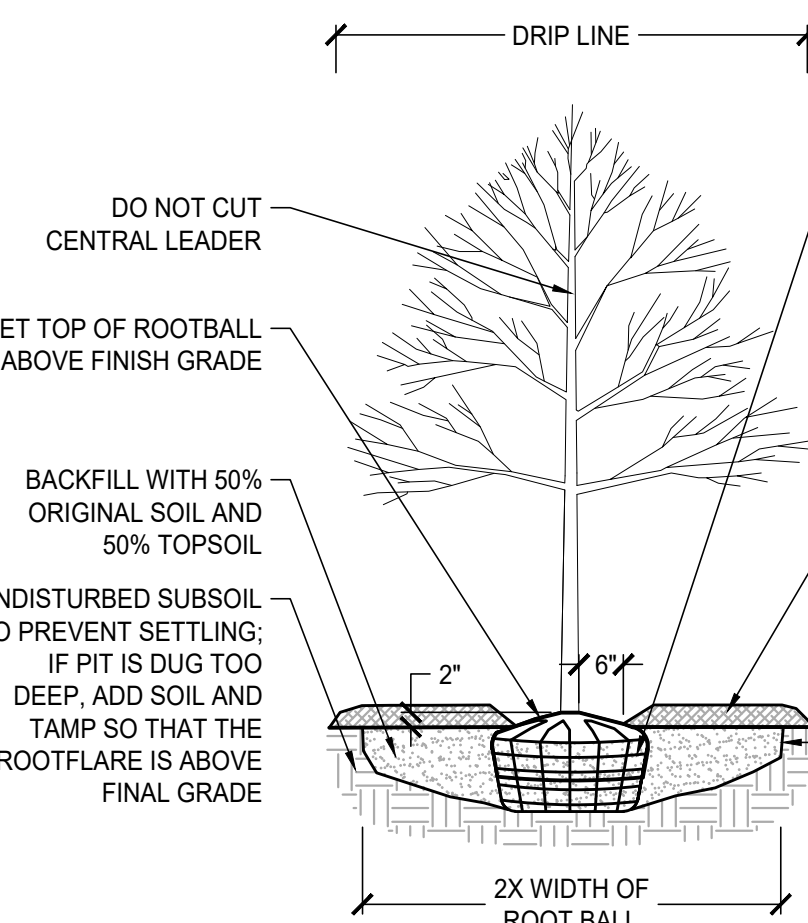
SYMBOL	CODE	QTY	BOTANICAL NAME	COMMON NAME	ROOT	CAL	HT	REMARKS
TREES								
	CER CAN	1	CERCIS CANADENSIS	EASTERN REDBUD	B&B	2"	8'-10' MIN HT	FULL PLANT, MATCHING
	ILE AME	1	ILEX OPACA	AMERICAN HOLLY	B&B		8'-10' MIN HT	FULL TO GROUND
	ILE NEL	5	ILEX X 'NELLIE R. STEVENS'	NELLIE R. STEVENS HOLLY	B&B		6' MIN	MATCHED TREES, FULL TO GROUND
	JUN VIR	2	JUNIPERUS VIRGINIANA	EASTERN REDCEDAR	B&B		8'-10' MIN HT	FULL TO GROUND
	MAG SWE	2	MAGNOLIA VIRGINIANA	SWEETBAY MAGNOLIA	B&B	1" MIN. PER CANE	8'-10' MIN HT	MATCHED TREES, MULTI-STEMMED
	PIN VIR	2	PINUS VIRGINIANA	VIRGINIA PINE	B&B		8'-10' MIN HT	FULL PLANT

PLANT STOCK NOTES:

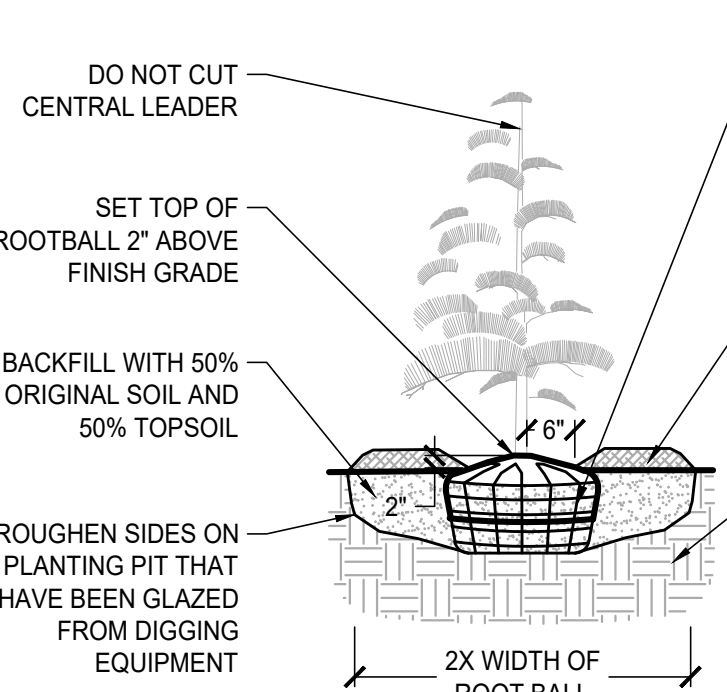
1. ALL UNDERSTORY TREES SHALL BE LIMBED UP AT LEAST 4' WITH A MINIMUM HEIGHT OF 8'.
2. ALL CANOPY AND UNDERSTORY TREES SHALL HAVE ONE STRONG CENTRAL LEADER TRUNK. NO MULTI-TRUNK UNLESS SPECIFIED.
3. THE SOUTH SIDE OF ALL TREES SHALL BE MARKED BEFORE TRANSPLANT FOR DIRECTIONAL PLACEMENT AT THE TIME OF PLANTING. CONTRACTOR SHALL BE RESPONSIBLE FOR DIRECTIONAL PLACEMENT.
4. ALL TREES SHALL BE MATCHED SPECIMENS WITH A FULL CANOPY AND A UNIFORM BRANCHING HABIT.
5. EVERGREEN TREES SHALL BE FULL TO GROUND WITH A HEAVY CANOPY AND STRONG CENTRAL LEADER.
6. MULCH "VOLCANOES" ARE UNACCEPTABLE. MULCH MUST BE INSTALLED PER DETAILS.
7. INSTALL ALL PLANTS IN ACCORDANCE WITH ALL APPLICABLE DETAILS AND NOTES INCLUDED WITHIN THE CONSTRUCTION PACKAGE.
8. ALL PLANTS MUST BE SELECTED, INSTALLED, AND MAINTAINED ACCORDING TO THE PLAN.
9. ALL TREES MUST BE PLANTED A MINIMUM OF 5 FEET FROM MAJOR UTILITY LINES. CONTACT LANDSCAPE ARCHITECT WHERE DISCREPANCIES OCCUR FOR FIELD ADJUSTMENT.

LANDSCAPE NOTES:

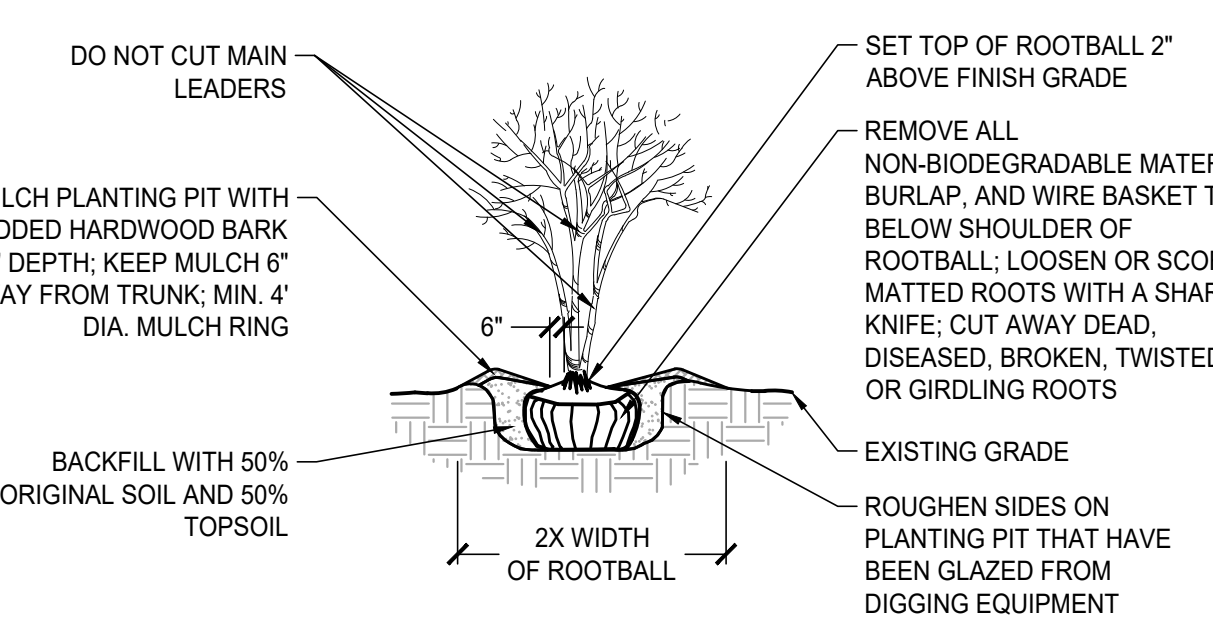
1. PLANTING BEDS AND PLANT LOCATIONS SHALL BE STAKED BY THE LANDSCAPE CONTRACTOR. THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE OWNER OR THE OWNER'S REPRESENTATIVE FOR APPROVAL PRIOR TO INSTALLATION OF THE PLANTS.
2. PLANTING BEDS SHALL BE CLEARED OF ALL GRASS AND WEEDS PRIOR TO INSTALLATION OF PLANTS, INCLUDING SPRAYING "ROUND-UP" OR APPROVED SUBSTITUTE TO KILL ACTIVELY GROWING PLANTS. PLANT BEDS SHALL BE PREPARED AS CALLED FOR IN THE SPECIFICATIONS AND DETAILS.
3. ADDITIONAL SEEDING, IF REQUIRED, WILL BE AS DIRECTED BY THE OWNER OR OWNER'S REPRESENTATIVE.
4. PLANTING BEDS SHALL HAVE A THREE (3) INCH SHREDDED HARDWOOD BARK MULCH OVER THE ENTIRE BED, UNLESS OTHERWISE NOTED ON THE DRAWINGS.
5. PRIOR TO PLANTING, ALL PLANTED AREAS SHALL BE TREATED WITH A WATER-SOLUBLE HERBICIDE FOR THE NON-SELECTIVE CONTROL OF ANNUAL AND PERENNIAL WEEDS PRIOR TO PLANTING.
6. ALL TREE AND SHRUB PLANTING PITS SHALL BE BACKFILLED WITH A PLANTING SOIL MIXTURE OF ONE (1) PART ORIGINAL SOIL AND ONE (1) PART TOPSOIL, THOROUGHLY MIXED. SAMPLE OF MIXTURE TO BE APPROVED IN WRITING BY OWNER OR OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
7. PLANT GROUND COVER AND ANNUAL BEDS IN SAME MIXTURE AS SHRUBS. AFTER PLANTING & MULCHING, WATER AREAS TO POINT OF SATURATION.
8. ALL PLANTED AREAS ARE TO BE FERTILIZED WITH GRANULAR FERTILIZER. LANDSCAPE CONTRACTOR IS TO PROVIDE SOIL TEST RESULTS AND PROPOSED FERTILIZER APPLICATION RATES TO THE OWNER OR OWNER'S REPRESENTATIVE FOR APPROVAL.
9. ALL PLANT MATERIAL IS TO BE NURSERY GROWN AND TO COMPLY WITH AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z60.1-2004) OR LATEST EDITION. PLANTS NOT IN COMPLIANCE WILL BE REJECTED AND REPLACED WITH PLANTS THAT MEET THE STANDARDS.
10. SPRAY TREES AND SHRUBS WITH AN ANTI-DESICCANT IF FOLIAGE IS PRESENT.
11. EVERGREEN TREES AND SHRUBS SHALL BE PLANTED IN THE SAME MANNER AS DECIDUOUS MATERIAL IS PLANTED.
12. DO NOT PRUNE ANY PLANT MATERIAL UNTIL IT HAS BEEN INSPECTED AND ACCEPTED BY THE OWNER OR OWNER'S REPRESENTATIVE.
13. ALL LANDSCAPE MATERIAL SHALL BE APPROVED BY THE OWNER OR OWNER'S REPRESENTATIVE BEFORE INSTALLATION. MATERIALS MAY BE VIEWED AT LANDSCAPE CONTRACTOR'S HOLDING SITE OR AT THIS SITE. IT SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR TO NOTIFY THE OWNER OR OWNER'S REPRESENTATIVE OF THE AVAILABILITY OF THE MATERIALS TO BE INSPECTED.
14. ALL MATERIALS INSPECTED ON THE SITE AND FOUND TO BE UNACCEPTABLE SHALL BE REMOVED FROM THE SITE ON THE DAY OF INSPECTION.
15. FIELD CHANGES MUST BE APPROVED IN WRITING BY THE OWNER OR OWNER'S REPRESENTATIVE.
16. ALL PLANT MATERIAL SHALL BE SUPPLIED BY APPROPRIATE SOURCES TO PREVENT UNDUE STRESS OR PROLONGED ACCLIMATIZATION WHICH WOULD INHIBIT PLANT GROWTH.
17. LANDSCAPE CONTRACTOR IS TO VERIFY PLANT QUANTITIES SHOWN ON PLAN AND IN PLANT LIST. IF DISCREPANCIES OCCUR, LANDSCAPE CONTRACTOR IS TO CONTACT LANDSCAPE ARCHITECT IMMEDIATELY. QUANTITIES SHOWN ON PLAN TAKE PRECEDENCE.
18. EVERGREEN TREES TO BE A MINIMUM OF 6" IN HEIGHT AT TIME OF PLANTING. DECIDUOUS TREES TO BE 2" DBH MIN AT TIME OF PLANTING. SEE PLANT LIST FOR LARGER MATERIAL REQUIRED.
19. MULTI-TRUNK PLANT MATERIAL SHALL BE ONE PLANT GROWN FROM SINGLE SEEDLING. NO CLUMP MULTI-PLANT STOCK WILL BE ACCEPTED.
20. IF IN THE OPINION OF THE LANDSCAPE ARCHITECT, THE CENTRAL LEADER OF ANY TREE HAS BEEN CUT IN THE HISTORY OF THE PLANT'S GROWTH, THE MATERIAL SHALL BE REPLACED AT NO ADDITIONAL COST TO THE OWNER. THE DECISION OF THE LANDSCAPE ARCHITECT WILL BE FINAL.



- NOTES:
1. WATER TREES IMMEDIATELY AFTER PLANTING.
 2. TREES OF SAME SPECIES TO BE MATCHED IN UNIFORMITY AND GROWTH.
 3. TREE MUST MEET AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z60.1)



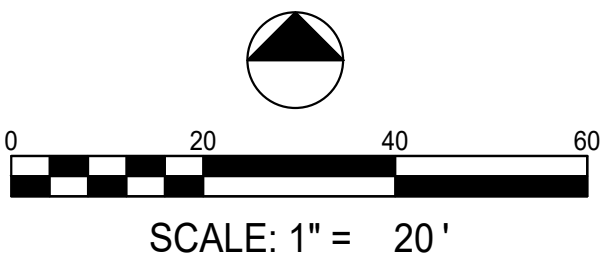
- NOTES:
1. WATER TREES IMMEDIATELY AFTER PLANTING.
 2. TREES OF SAME SPECIES TO BE MATCHED IN UNIFORMITY AND GROWTH



- NOTES:
1. WATER MULTI-TRUNK TREES IMMEDIATELY AFTER PLANTING.
 2. MULTI-TRUNK TREES OF SAME SPECIES TO BE MATCHED IN UNIFORMITY AND GROWTH

IRRIGATION NOTES:

1. A PERMANENT AUTOMATIC UNDERGROUND IRRIGATION SYSTEM IS TO BE PROVIDED ON A DESIGN BUILD BASIS.



SUBMITTALS / REVISIONS	
NO.	DESCRIPTION

SHEET TITLE

LANDSCAPE PLAN

PROJECT NO. 24170	DATE 11/18/24
DRAWN BY JS	SCALE 1" = 30'-0"
CHECKED BY JC	
SHEET NO. L1	

PROJECT MANUAL

SPECIFICATIONS AND CONTRACT DOCUMENTS

SEWER SYSTEM IMPROVEMENTS

FOR THE

CITY OF COLUMBIA, TENNESSEE

CONTRACT 24-01

BEAR CREEK SEWAGE PUMPING STATION REPLACEMENT

Funded By ARPA Grant No. 8437-WW-COStru-1

**Addendum No. 1 is incorporated into
this Project Manual**

PROJECT NUMBER 2198

MAY 2024

WAUFORD

2835 Lebanon Pike
Nashville, Tennessee 37214
www.jrwauford.com

PROJECT MANUAL

SPECIFICATIONS AND CONTRACT DOCUMENTS

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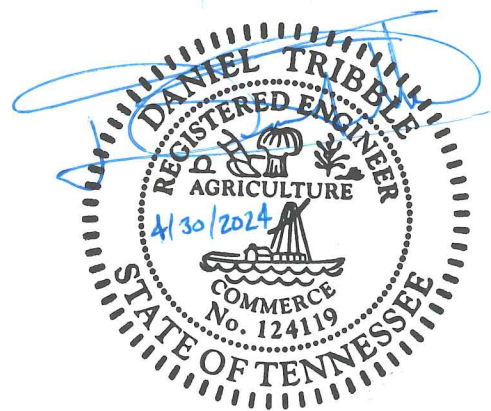
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PROJECT NUMBER 2198

MAY 2024

WAUFORD

2835 Lebanon Pike
Nashville, Tennessee 37214
www.jrwauford.com



OFFICIALS
FOR THE
CITY OF COLUMBIA, TENNESSEE

MAYOR

Charles (Chaz) M. Molder

VICE-MAYOR

Randy McBroom

COUNCIL MEMBERS

Davena Hardison
Debbie Wiles
Tony Greene
Kenny Marshall
Danny Coleman

CITY MANAGER

Tony Massey

WASTEWATER DEPARTMENT DIRECTOR

Donald J. Boshers

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ADVERTISEMENT FOR BIDS
2198 – May 2024

ADVERTISEMENT FOR BIDS
SEWER SYSTEM IMPROVEMENTS
CITY OF COLUMBIA, TENNESSEE
Funded By ARPA Grant No. 8437-WW-COStru-1

Separate sealed BIDS for the construction of Sewer System Improvements for the City of Columbia, Tennessee will be received by Columbia Wastewater Department, 1244 Treatment Plant Road, Columbia, Tennessee 38401 until 2:00 p.m. Central Time, Thursday, January 30, 2025, and then at said time and place will be publicly opened and read aloud. Mailed bids should be addressed Donald J. Boshers, Director, Columbia Wastewater Department, 1244 Treatment Plant Road, Columbia, Tennessee 38401, and each bidder shall be responsible for timely delivery.

The work is in one Contract and is generally described as follows:

CONTRACT 24-01
BEAR CREEK SEWAGE PUMPING STATION REPLACEMENT

- Construction of a new cast-in-place concrete sewage pumping station with submersible pumps, mechanically cleaned bar screen, cantilevered valve pit, electrical building, flow meter pit, bypass connection pit, and standby generator
- Miscellaneous site development including site piping, manholes, bypass pumping, connection to existing force main, fencing, tree clearing, earthwork, and paving
- Razing of the existing Bear Creek Sewage Pumping Station

The allotted time for construction for this contract is four hundred fifty (450) calendar days; liquidated damages for non-completion are \$1,000 per calendar day.

A mandatory pre-bid conference will be held for bidders at the Columbia Wastewater Department, 1244 Treatment Plant Road, Columbia, Tennessee 38401 at 10:00 a.m. Central Time, Wednesday, January 15, 2025, and must be attended by representatives of each prospective bidder. Pre-qualification information required herein shall be submitted at this meeting.

Prospective Bidders shall provide a Pre-Bid Submittal at the Pre-Bid Conference containing the following information:

1. Evidence of similar previous projects of at least \$5 million value completed in the previous 10 years, including detailed description, bid amount, final contract amount, scheduled time of completion, actual time of completion, Owner's contact information, and Engineer's contact information.
2. Description of any lawsuits or claims the Bidder has been party to in the previous 10 years including resolution.
3. Number of employees directly employed by the Bidder.
4. Resumes or description of the proposed Project Manager and Project Superintendent including name, relevant experience, and employment history with the Bidder.

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2198 – May 2024

5. **A statement by the Bidder stating the Bidder will directly perform all concrete forming and placement. If the Bidder elects to subcontract concrete forming and placement, the Bidder shall submit evidence of two previous projects the selected subcontractor has provided concrete forming and placement services for the Bidder. The Bidder shall submit evidence that the concrete forming and placement subcontractors have provided concrete and forming services on five previous water and wastewater projects with a minimum of 1,000 C.Y. of concrete placed for each project.**

The CONTRACT DOCUMENTS may be examined at the following location:

J. R. Wauford & Company, 2835 Lebanon Pike, Nashville, TN 37214

Complete digital project bidding documents are available at www.questcdn.com and/or www.jrwauford.com. Bidders may download the digital plan documents for \$45.00 by inputting Quest project # 9468774 on the QuestCDN project search page. Please contact QuestCDN at 952-233-1632 or info@questcdn.com for assistance in free membership registration, downloading, and working with the digital project information. Inquiries should be directed to Daniel G. Tribble, P.E., Project Manager, email danielt@jrwauford.com.

This project is being supported with Treasury, Coronavirus State and Local Recovery Fund grant funding; therefore, certain restrictions and other federal requirements attach to this opportunity.

Each bidder must deposit with his bid, security in the amount, form and subject to the conditions provided in the Instructions for Bidders.

All bidders must be licensed general contractors as required by the Contractor's Licensing Act of 1976 of the General Assembly of the State of Tennessee and qualified for the type of construction being bid upon. EACH BIDDER SHALL WRITE ON THE OUTSIDE OF THE ENVELOPE CONTAINING THE BID THE CONTRACTOR'S LICENSE NUMBER, THE EXPIRATION DATE, AND THAT PART OF THE CLASSIFICATION APPLYING TO THIS BID. If this is not done, the bid will not be opened.

Each bidder shall be properly licensed and abide by the provisions of TCA 62-6-119 including part (b) which states in part:

“(b) The person or entity involved in the preparation of the invitation to bid or comparable bid documents, including any electronic bid documents, shall direct that the following information be written upon the bid envelope or provided within the electronic bid document: (1) The name, license number, expiration date thereof, and license classification of the contractor applying to bid for the prime contract; (2) The name, license number, expiration date thereof, and license classification of the contractor applying to bid for the masonry contract where the total cost of the materials and labor for the masonry portion of the construction project exceeds one hundred thousand dollars (\$100,000); (3) The name, license number, expiration date thereof, and license classification of the contractor applying to bid for the electrical, plumbing, heating, ventilation, or air conditioning contracts except when such contractor's portion of the construction project is less than twenty-five thousand

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dollars (\$25,000); (4) For each vertical closed loop geothermal heating and cooling project, the company name, Tennessee Department of Environment and Conservation license number, classification (G, L or G,L) and the expiration date, except when the geothermal portion of the construction project is in an amount less than twenty-five thousand dollars (\$25,000); (5) Prime contractor bidders who are to perform the masonry portion of the construction project which exceeds one hundred thousand dollars (\$100,000), materials and labor, the electrical, plumbing, heating, ventilation or air conditioning or the geothermal heating and cooling must be so designated; and (6) Only one (1) contractor in each of the classifications listed above shall be written on the bid envelope or provided within the electronic bid document.”

The successful bidder is required to furnish both an acceptable performance bond and payment bond each in the amount of one hundred percent (100%) of the contract price.

In compliance with TCA 12-4-126(a) and (b) the ENGINEER will not issue addenda less than forty-eight (48) hours before the bid opening date and time; further, any questions concerning the bid documents shall be received by the ENGINEER before ninety-six (96) hours prior to the bid opening date and time.

The Owner reserves the right to reject any and all bids, to waive informalities, and to negotiate with the apparent qualified best bidder or bidders to such extent as may be necessary.

No bidder may withdraw his bid for 60 days, while the Owner considers the bids. Mutually agreed upon time extensions may be made if necessary.

Attention of bidders is particularly called to the requirements as to conditions of employment to be observed and minimum wage rates to be paid under the contract, Section 3, Segregated Facility, Section 109 and E.O. 11246.

CITY OF COLUMBIA, TENNESSEE
COLUMBIA WASTEWATER DEPARTMENT
/s/

Donald J. Boschers
Director

DAVIS-BACON WAGE RATE

**(Applicable for \$10,000,000 contracts
and above)**

"General Decision Number: TN20240203 07/26/2024

Superseded General Decision Number: TN20230203

State: Tennessee

Construction Type: Building

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories)

Counties: Macon and Maury Counties in Tennessee.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	. Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least \$17.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2024.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	. Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least \$12.90 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2024.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker

protections under the Executive Orders is available at
<http://www.dol.gov/whd/govcontracts>.

Modification Number	Publication Date
0	01/05/2024
1	03/22/2024
2	06/21/2024
3	07/26/2024

ASBE0086-002 03/01/2024

	Rates	Fringes
ASBESTOS WORKER/HEAT & FROST INSULATOR.....	\$ 36.52	18.47

 ELEVO093-001 01/01/2024

	Rates	Fringes
ELEVATOR MECHANIC.....	\$ 50.56	37.885+a+b

PAID HOLIDAYS:

a. New Year's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, the Friday after Thanksgiving, and Christmas Day.

b. Employer contributes 8% of regular hourly rate to vacation pay credit for employee who has worked in business more than 5 years; 6% for less than 5 years' service.

 * IRON0492-002 05/01/2024

	Rates	Fringes
IRONWORKER, ORNAMENTAL.....	\$ 33.73	17.73
IRONWORKER, REINFORCING.....	\$ 33.73	17.73
IRONWORKER, STRUCTURAL.....	\$ 33.73	17.73

 PLUM0572-001 05/01/2024

	Rates	Fringes
PLUMBER.....	\$ 43.84	17.68

 SHEE0004-009 01/01/2024

	Rates	Fringes
SHEET METAL WORKER (Excludes HVAC Duct Installation).....	\$ 34.95	16.66

 SHEE0177-008 05/01/2024

	Rates	Fringes
Sheet metal worker (HVAC Duct		

Installation Only).....\$ 35.37 16.13

* SUTN2017-056 04/16/2021

	Rates	Fringes
BRICKLAYER.....	\$ 20.00	0.00
CARPENTER (Drywall Hanging Only).....	\$ 18.32	0.00
CARPENTER, Excludes Drywall Hanging.....	\$ 19.68	0.38
CEMENT MASON/CONCRETE FINISHER...	\$ 22.79	0.00
ELECTRICIAN.....	\$ 22.53	8.00
GLAZIER.....	\$ 16.00 **	1.11
HVAC MECHANIC (Installation of HVAC Unit Only).....	\$ 18.00	0.79
LABORER DEMOLITION.....	\$ 16.74 **	0.00
LABORER GRADE CHECKER.....	\$ 13.01 **	0.00
LABORER: Asphalt, Includes Raker, Shoveler, Spreader and Distributor.....	\$ 16.12 **	0.00
LABORER: Common or General.....	\$ 12.49 **	0.00
LABORER: Mason Tender - Brick...	\$ 13.54 **	0.00
LABORER: Mason Tender - Cement/Concrete.....	\$ 15.97 **	0.00
LABORER: Pipelayer.....	\$ 14.99 **	2.41
OPERATOR: Backhoe/Excavator/Trackhoe.....	\$ 24.50	0.00
OPERATOR: Bobcat/Skid Steer/Skid Loader.....	\$ 16.84 **	0.00
OPERATOR: Bulldozer.....	\$ 28.19	9.65
OPERATOR: Crane.....	\$ 26.50	2.81
OPERATOR: Drill.....	\$ 26.50	4.09
OPERATOR: Forklift.....	\$ 15.00 **	0.00
OPERATOR: Paver (Asphalt, Aggregate, and Concrete).....	\$ 14.70 **	0.00
OPERATOR: Roller.....	\$ 14.35 **	0.00
PAINTER (Brush and Roller).....	\$ 14.30 **	0.00

PIPEFITTER.....	\$ 29.54	12.41
ROOFER.....	\$ 17.00 **	0.00
SPRINKLER FITTER (Fire Sprinklers).....	\$ 20.87	9.81
TILE FINISHER.....	\$ 14.00 **	0.00
TILE SETTER.....	\$ 19.65	0.00
TRUCK DRIVER: Dump Truck.....	\$ 15.28 **	0.00

WELDERS - Receive rate prescribed for craft performing
operation to which welding is incidental.

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** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 (\$17.20) or 13658 (\$12.90). Please see the Note at the top of the wage determination for more information. Please also note that the minimum wage requirements of Executive Order 14026 are not currently being enforced as to any contract or subcontract to which the states of Texas, Louisiana, or Mississippi, including their agencies, are a party.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage

determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current

negotiated/CBA rate of the union locals from which the rate is based.

State Adopted Rate Identifiers

Classifications listed under the "SA" identifier indicate that the prevailing wage rate set by a state (or local) government was adopted under 29 C.F.R. 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 01/03/2024 reflects the date on which the classifications and rates under the SA identifier took effect under state law in the state from which the rates were adopted.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material,

etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION"

"General Decision Number: TN20240124 11/15/2024

Superseded General Decision Number: TN20230124

State: Tennessee

Construction Type: Heavy
Including Water and Sewer Line Construction

Counties: Giles, Houston, Humphreys, Lawrence, Lewis, Lincoln, Marshall, Maury, Moore, Perry, Van Buren, Warren and Wayne Counties in Tennessee.

HEAVY CONSTRUCTION PROJECTS (including sewer/water construction).

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	- Executive Order 14026 generally applies to the contract. - The contractor must pay all covered workers at least \$17.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2024.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	- Executive Order 13658 generally applies to the contract. - The contractor must pay all covered workers at least \$12.90 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2024.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <http://www.dol.gov/whd/govcontracts>.

Modification Number	Publication Date
0	01/05/2024
1	11/15/2024

* ENGI0369-011 05/01/2023

	Rates	Fringes
Operating Engineers:		
Bulldozer and Crane.....	\$ 33.15	13.62

* SUTN2009-123 12/02/2009		

	Rates	Fringes
ELECTRICIAN.....	\$ 20.06	0.00
LABORER: Common or General.....	\$ 9.18 **	0.50
LABORER: Flagger.....	\$ 10.50 **	0.00
LABORER: Pipelayer.....	\$ 9.96 **	0.30
OPERATOR:		
Backhoe/Excavator/Trackhoe.....	\$ 13.36 **	0.75
TRUCK DRIVER: Dump Truck.....	\$ 11.68 **	0.70

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 (\$17.20) or 13658 (\$12.90). Please see the Note at the top of the wage determination for more information. Please also note that the minimum wage requirements of Executive Order 14026 are not currently being enforced as to any contract or subcontract to which the states of Texas, Louisiana, or Mississippi, including their agencies, are a party.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons

resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion

date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

State Adopted Rate Identifiers

Classifications listed under the "SA" identifier indicate that the prevailing wage rate set by a state (or local) government was adopted under 29 C.F.R. 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 01/03/2024 reflects the date on which the classifications and rates under the ?SA? identifier took effect under state law in the state from which the rates were adopted.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION"



MAR 22 2013

MEMORANDUM NO. 213

TO: ALL CONTRACTING AGENCIES OF THE FEDERAL
GOVERNMENT AND THE DISTRICT OF COLUMBIA

FROM: 
MARY BETH MAXWELL
Acting Deputy Administrator

SUBJECT: Application of the Davis-Bacon and Related Acts requirement that wage rates for additional classifications, when “conformed” to an existing wage determination, bear a “reasonable relationship” to the wage rates in that wage determination

This Memorandum is notification from the Department of Labor’s Wage and Hour Division (WHD) of the proper application of the Davis-Bacon and Related Acts (DBRA) requirements for wage rates for additional classifications that are “conformed” to an existing wage determination by agency contracting officers. The regulations at 29 C.F.R. § 5.5(a)(1)(ii)(A) provide that contracting officers shall approve an additional classification and its proposed wage rate in conformance with an existing wage determination only when the work to be performed by the proposed classification is not performed by a classification in the wage determination and the proposed wage rate bears a “reasonable relationship” to the wages rates in the wage determination. Although this Memorandum primarily focuses on the “reasonable relationship” requirement, it is essential at the threshold to reiterate that a conformance is not appropriate when the work of the proposed classification is already performed by a classification on the wage determination. The conformance process is narrow in scope and has the limited purpose of establishing a new classification when it is necessary to do so because work needed to perform the contract is not performed by an existing classification. *See Cambridge Plaza*, ARB Case No. 07-102 (ARB Oct. 29, 2009). Accordingly, the WHD will not add a new classification through a conformance action unless the first criterion for issuance of a conformance is satisfied, i.e., the proposed work in question is not performed by any classification in the existing wage determination. 29 C.F.R. § 5.5(a)(1)(ii)(A)(1).

In those circumstances in which the duties of the proposed classification are not performed by any classification in the existing wage determination, the WHD will consider whether the proposed wage rate bears a “reasonable relationship” to the wage rates in the wage determination. In the past, WHD has generally approved proposed wage rates for a conformed skilled craft and a power equipment operator when such rates were not less than the rate for the lowest classification in the respective category on the contract wage determination. The practice of using the lowest rate in the relevant category as a benchmark also occurred on occasion with laborers and truck drivers. In keeping with the remedial purpose of the DBRA and the governing

regulations, the wage rate of the lowest skilled craft, laborer, power equipment operator, or truck driver classification on the contract wage determination has no longer been an automatic benchmark when reviewing conformance requests. WHD's approach of not using the lowest wage rate as a benchmark has been progressively implemented over the last year.

The Conformance Process

In accordance with 29 C.F.R. § 5.5(a)(1)(ii)(A), the contracting officer shall require that any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and a wage rate (including fringe benefits) for the classification only when the following criteria have been met:

- (1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and
- (2) The classification is utilized in the area by the construction industry; and
- (3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

Further, if the contractor, the laborers or mechanics (if known) to be employed in the classification or their representatives, and the contracting agency agree on the classification and wage rate proposed, a report of the action taken is sent by the contracting officer to the Administrator of WHD for approval, denial, or modification. The Administrator (or an authorized representative) shall respond within 30 days of receipt, or the contracting officer will be notified that more time is necessary. *See* 29 C.F.R. § 5.5(a)(1)(ii)(B). In the event that the contractor, the laborers or mechanics (if known) to be employed in the classification or their representatives, and the contracting agency do not agree on the classification and wage rate proposed, the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator of WHD for determination. The Administrator (or an authorized representative) shall issue a determination within 30 days of receipt and so advise the contracting officer, or the contracting officer will be notified that more time is necessary. *See* 29 C.F.R. § 5.5(a)(1)(ii)(C).

"Reasonable Relationship"

WHD previously typically approved conformance requests from contracting officers for wage rates (including fringe benefits) for skilled classifications and power equipment operators by automatically using as a benchmark the lowest rate for a skilled classification or power equipment operator, respectively, in the applicable wage determination. The practice of using the lowest rate in the relevant category as a benchmark also occurred on occasion with laborers and truck drivers. WHD has concluded, however, that it better reflects the regulatory requirement that "the proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination" to consider the entirety of the rates within the relevant category on the wage determination and to not generally use as a benchmark the lowest rate within that category. The regulation at 29 C.F.R. §

5.5(a)(1)(ii)(A)(3) requires that the proposed wage rate bear a reasonable relationship to the “wage rates” on the wage determination and not to a particular rate or the lowest rate.

The category in which the requested additional classification falls is relevant to the reasonable relationship analysis. As background, classifications in wage determinations fall into four general categories: skilled crafts, laborers, power equipment operators, and truck drivers. To determine a “reasonable relationship,” the requested additional classification is compared to the classifications on the applicable wage determination within the same category. A proposed skilled craft classification is compared to skilled classifications in the wage determination; a proposed laborer classification is compared to existing laborer classifications; a proposed power equipment operator classification is compared to existing power equipment operator classifications; and a proposed truck driver classification is compared to existing truck driver classifications. See *Mistick Construction*, ARB Case No. 02-004 (June 24, 2003); *Tower Construction*, WAB Case No. 94-17 (Feb. 28, 1995).¹ Thus, when considering a conformance request for a skilled classification, WHD generally considers the entirety of the rates for the skilled classifications on the applicable wage determination and looks to where the proposed wage rate falls within the rates listed on the wage determination. Occasionally, however, a wage determination may contain some wage rates for laborer classifications that are higher than some wage rates for the skilled classifications or power equipment operators (likely because the laborers’ rates reflect union prevailing rates and the skilled crafts’ or power equipment operators’ rates reflect weighted average prevailing rates). On such occasions, the contracting officer should look to those skilled classifications whose rates are higher than the laborer classifications’ rates. See *M.Z. Contractors Co.*, WAB Case No. 92-06 (Aug. 25, 1992). If, however, most of the skilled classifications’ or power equipment operators’ rates are lower than the laborer classifications’ rates, then it may be reasonable to propose a rate that reflects the skilled classifications’ rates even if they are lower than the laborer classifications’ rates.

Additionally, whether the wage rates in the applicable category (skilled craft, laborer, power equipment operator, truck driver) in the wage determination are predominantly union prevailing wage rates or predominantly weighted average prevailing wage rates should be considered when proposing rates for an additional classification. For example, if a wage determination contains predominantly union prevailing wage rates for skilled classifications, it typically would be appropriate to look to the union sector skilled classifications in the wage determination and the rates for those classifications when proposing a wage rate for the additional classification. Conversely, if a wage determination contains predominantly weighted average prevailing wage rates for skilled classifications, it typically would be appropriate to look to the weighted average/non-union sector skilled classifications in the wage determination and the rates for those classifications when proposing a wage rate for the additional classification. If the wage rates in the applicable category are roughly half union prevailing rates and half weighted average prevailing rates, it would typically be appropriate to look to the lowest union rate and the highest weighted average rate (assuming the union rates are higher than the weighted average rates) when proposing a wage rate.

¹ Copies of Administrative Review Board (ARB) and Wage Appeals Board (WAB) decisions can be obtained from: www.oalj.dol.gov/libdba.htm.

While the majority of conformance requests are within the skilled classification category, the governing regulations and the principles outlined in this Memorandum apply to the other categories of workers – laborers, power equipment operators, and truck drivers. To meet the “reasonable relationship” test for a conformed power equipment operator or truck driver classification, the proposed wage rate should bear a reasonable relationship to the entirety of rates within the respective classification, and in particular to the union or weighted average rates in the classification (assuming union or weighted average rates prevail for the classification). When a conformance for a laborer classification is requested, WHD generally continues to use the common laborer rate already existing in the wage determination as a benchmark for the proposed rate.

Each conformance request and corresponding wage determination involves particular circumstances and therefore should be evaluated as such. The full range of wage rates on the wage determination for the appropriate category should be reviewed in the manner discussed above. When seeking conformed classifications and wage rates, the contractor and the contracting officer should not rely on a wage determination or conformance granted to another party regardless of the similarity of the work in question. *See, e.g., Inland Waters Pollution Control, Inc.*, WAB Case No. 94-12 (Sept. 30, 1994). Moreover, the contractor and the contracting officer should not prospectively rely on WHD’s prior approval of rates for application to a contract performed at the same location. *See E&M Sales, Inc.*, WAB Case No. 91-17 (Oct. 4, 1991). Although atypical, use of the “lowest skilled” rate may of course be appropriate when that rate in fact bears a reasonable relationship to the wage rates contained in the wage determination for the appropriate category. *See, e.g., Tower Construction*, WAB Case No. 94-17 (Feb. 28, 1995) (conformed wage rate, which equaled lowest skilled rate on wage determination, was reasonable).

In sum, contracting agencies should take the following steps when proposing a wage rate for a classification to be conformed to an existing wage determination:

- First, the contracting agency should determine the category (skilled crafts, laborers, power equipment operators, or truck drivers) of the classification which is being conformed.
- Second, the contracting agency should determine for that category whether union or weighted average/non-union sector rates prevail in the existing wage determination.
- Third, after reviewing the entirety of the rates within the appropriate sector in the applicable category, the contracting agency should determine a rate that bears a reasonable relationship to those rates on the wage determination.
- Fourth, the contracting agency should determine whether any of the considerations identified in this Memorandum apply (or whether any other relevant considerations apply). For example, if the classification being conformed is a skilled classification and some of the wage rates for skilled classifications in the wage determination are lower than the rates for laborer classifications, then the contracting agency should use those existing skilled classification rates that are higher than the laborer rates to determine the

proposed rate. And if the classification which is being conformed is a laborer classification, the proposed wage rate should generally use the existing common laborer wage rate as a benchmark.

Conclusion

The WHD Administrator has historically maintained broad discretion under the regulations to make determinations regarding proposed wage rates for additional classifications that are conformed to existing wage determinations. This broad discretion has been confirmed by the ARB and its predecessors, as illustrated by the decisions cited in this Memorandum, among others. In exercising that discretion, WHD ensures that wage rates (including fringe benefits) for the classification to be conformed bear a reasonable relationship to the range of rates for the classifications in the wage determination in the same category (skilled classifications, power equipment operators, laborers, and truck drivers), and not automatically to the lowest rate in the applicable category. Consistent with the governing regulations, contracting agencies should ensure that they request wage rates (including fringe benefits) for additional classifications in accordance with the principles set forth in this Memorandum. By following the guidance in this AAM, contracting agencies and contractors will benefit by receiving approvals from WHD that ensure consistency in conformed wage rates and increase efficiencies in government.

In conjunction with the guidance provided in this AAM, WHD has posted on www.dol.gov/whd/govcontracts/dbra.htm a series of frequently asked questions that include examples which will provide additional guidance regarding the reasonable relationship requirement in the conformance process. WHD also is updating its Prevailing Wage Resource Book and will provide compliance assistance on DBRA conformances at future Prevailing Wage Conferences. In addition, WHD's Branch of Construction Wage Determinations is available to assist with any questions.

Appendix II to Part 200 - Contract Provisions for Non-Federal Entity Contracts Under Federal Awards

In addition to other provisions required by the Federal agency or non-Federal entity, all contracts made by the non-Federal entity under the Federal award must contain provisions covering the following, as applicable.

(A) Contracts for more than the simplified acquisition threshold, which is the inflation adjusted amount determined by the Civilian Agency Acquisition Council and the Defense Acquisition Regulations Council (Councils) as authorized by 41 U.S.C. 1908, must address administrative, contractual, or legal remedies in instances where contractors violate or breach contract terms, and provide for such sanctions and penalties as appropriate.

(B) All contracts in excess of \$10,000 must address termination for cause and for convenience by the non-Federal entity including the manner by which it will be effected and the basis for settlement.

(C) Equal Employment Opportunity. Except as otherwise provided under 41 CFR Part 60, all contracts that meet the definition of "federally assisted construction contract" in 41 CFR Part 60-1.3 must include the equal opportunity clause provided under 41 CFR 60-1.4(b), in accordance with Executive Order 11246, "Equal Employment Opportunity" (30 FR 12319, 12935, 3 CFR Part, 1964-1965 Comp., p. 339), as amended by Executive Order 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," and implementing regulations at 41 CFR part 60, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor."

(D) Davis-Bacon Act, as amended (40 U.S.C. 3141-3148). When required by Federal program legislation, all prime construction contracts in excess of \$2,000 awarded by non-Federal entities must include a provision for compliance with the Davis-Bacon Act (40 U.S.C. 3141-3144, and 3146-3148) as supplemented by Department of Labor regulations (29 CFR Part 5, "Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction"). In accordance with the statute, contractors must be required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. In addition, contractors must be required to pay wages not less than once a week. The non-Federal entity must place a copy of the current prevailing wage determination issued by the Department of Labor in each solicitation. The decision to award a contract or subcontract must be conditioned upon the acceptance of the wage determination. The non-Federal entity must report all suspected or reported violations to the Federal awarding agency. The contracts must also include a provision for compliance with the Copeland "Anti-Kickback" Act (40 U.S.C. 3145), as supplemented by Department of Labor regulations (29 CFR Part 3, "Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States"). The Act provides that each contractor or subrecipient must be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled. The non-Federal entity must report all suspected or reported violations to the Federal awarding agency.

(E) Contract Work Hours and Safety Standards Act (40 U.S.C. 3701-3708). Where applicable, all contracts awarded by the non-Federal entity in excess of \$100,000 that involve the employment of mechanics or laborers must include a provision for compliance with 40 U.S.C. 3702 and 3704, as supplemented by Department of Labor regulations (29 CFR Part 5). Under 40 U.S.C. 3702 of the Act, each contractor must be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The requirements of 40 U.S.C. 3704 are applicable to construction work and provide that no laborer or mechanic must be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.

(F) Rights to Inventions Made Under a Contract or Agreement. If the Federal award meets the definition of "funding agreement" under 37 CFR § 401.2 (a) and the recipient or subrecipient wishes to enter into a

contract with a small business firm or nonprofit organization regarding the substitution of parties, assignment or performance of experimental, developmental, or research work under that "funding agreement," the recipient or subrecipient must comply with the requirements of 37 CFR Part 401, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," and any implementing regulations issued by the awarding agency.

(G) Clean Air Act (42 U.S.C. 7401-7671q.) and the Federal Water Pollution Control Act (33 U.S.C. 1251-1387), as amended - Contracts and subgrants of amounts in excess of \$150,000 must contain a provision that requires the non-Federal award to agree to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).

(H) Debarment and Suspension (Executive Orders 12549 and 12689) - A contract award (see 2 CFR 180.220) must not be made to parties listed on the governmentwide exclusions in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 CFR 180 that implement Executive Orders 12549 (3 CFR part 1986 Comp., p. 189) and 12689 (3 CFR part 1989 Comp., p. 235), "Debarment and Suspension." SAM Exclusions contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549.

(I) Byrd Anti-Lobbying Amendment (31 U.S.C. 1352) - Contractors that apply or bid for an award exceeding \$100,000 must file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier must also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the non-Federal award.

(J) See § 200.323.

(K) See § 200.216.

(L) See § 200.322.

[78 FR 78608, Dec. 26, 2013, as amended at 79 FR 75888, Dec. 19, 2014; 85 FR 49577, Aug. 13, 2020]

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STATE OF TENNESSEE

1. Preparation and Submission of BID FORM

Bidders shall inform themselves fully of all conditions relating to the proposed work. Bids shall be submitted on the separate copy of the BID FORM supplied for that purpose. The BID FORM contained in the Specifications and Contract Documents is for the convenience of the Bidders and is not to be detached from the bound set of documents or filled out or executed unless a separate BID FORM is not furnished to the Bidder.

The BID FORM shall be enclosed in a sealed envelope which shall be clearly labeled with the name of the project, contract number, name, address, and contractor's license number of the Bidder, the expiration date of the Contractor's license, that part of the classification applying to this Bid, and the date and time of opening (so as to guard against premature opening of any Bid).

BID FORMS that contain any omission, conditions, or limitations, or that show any other irregularity of any kind, may be rejected as informal.

Should the Bidder in preparing his Bid find anything necessary for the construction of the project that is not mentioned in the Specifications or shown on the Plans, or any discrepancy, he shall notify the Engineer so that such items may be included or corrected. Should the Bidder fail to notify the Engineer of such items, it will be assumed that his Bid included everything necessary for the complete construction of an operating facility in the true spirit and intent of the designs shown.

The "Bidder" shall mean all those Contractors submitting BID FORMS. After the acceptance of the BID FORM of the successful Bidder, the said term "Bidder" shall be interchangeable with the term "Contractor" as defined in the General Conditions and all things required of Bidders shall likewise apply to the Contractor.

2. Supplementary Conditions

The Supplementary Conditions contain the special requirements of the Agency which is funding the subject project or clarifications to the General Conditions.

The Supplementary Conditions shall also be considered an extension of the Instructions to Bidders. Executive Orders, Wage Determination, and any and all other items set out in the Supplementary Conditions shall be used in the preparation of the Bid.

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3. Discrepancy - Bid Price

In some instances, there will be space in the BID FORM for the bid price to be written in both words and figures. In such cases, the price written in words shall include both dollars and cents and will be considered the correct price in case of a discrepancy between it and the price written in figures. In case of a discrepancy, the correct total bid price will be considered to be the sum total of amounts bid for all items in the BID FORM. The correct product of the quantity listed in the BID FORM for the said item multiplied by the unit price bid shall be used in the total bid.

4. Qualifications of Bidders

The Contractors bidding on the work shall give evidence of their experience in the class of work involved, including at least one job of comparable size and type performed by them as general contractors.

BID FORMS submitted by Contractors who have not, in the opinion of the Engineer and/or Owner, had sufficient experience in the size and type work involved may not be considered.

5. Bid Guaranty

The Bidder shall accompany his BID FORM with the BID BOND in the amount not less than five (5%) percent of the amount of his bid executed on the form furnished as a part of the Contract Documents or with a certified check in the amount not less than five (5%) percent of the amount of his bid. A Power of Attorney of the person signing the Bid Bond shall be included. All such documents are subject to approval by the Owner's attorney and the Agency providing funding, if such funding is involved. It is assumed that the Surety Company executing the Bid Bond will also execute the Contract Bond if the Bid is accepted. If this is not to be the case, the approval of the Owner's attorney will be prerequisite to award of the contract. If a certified check is used as Bid Guaranty, the Bidder shall submit the name of his proposed surety with his BID FORM or in writing within five (5) days after being requested to do so.

6. Contract Surety; Performance and Payment Bonds

The successful Bidder will be required to furnish both a Performance Bond and a Payment Bond executed by a Surety Company duly authorized to do business in the state in which the work is to be performed and acceptable to the Owner's attorney and the Agency providing funds, if such funding is involved, and each in an amount not less than 100% of the Contract price as security for the faithful performance of this Contract and as security for the payment of all persons performing labor and furnishing materials in connection with this Contract.

THESE BONDS MUST BE EXECUTED IN THE FORM PROVIDED AS PART OF THE CONTRACT DOCUMENTS.

7. Interpretation of Contract Documents

The Project Manual contains the provisions required for the construction of the project. No information obtained from any officer, agent or employee of the Owner on any such matters shall in any way affect the risk or obligation assumed by the Contractor or relieve him from fulfilling any of the conditions of the Contract.

If any Contractor contemplating the submission of a bid for the proposed contract is in doubt as to the true meaning of any part of the Plans, Specifications, or other proposed Contract Documents, he should submit a written request for an interpretation thereof to the office of the ENGINEER advertising the work for bid. The person making the request will be responsible for its prompt delivery. Any interpretation of the Contract Documents will be made only by written communication and in accordance with the time constraints of State Law. The Owner and/or the Engineer will not be responsible for explanation or interpretations of the proposed documents except as issued in accordance herewith.

8. Modifications of Bids

Bidders will not be allowed to modify their bids after submission. A bidder may withdraw a mailed bid prior to the bid opening by contacting the Owner; however, neither the Owner nor the Engineer will be responsible for processing this request.

9. Second Hand and Salvaged Materials

The use of second hand and/or salvaged materials will not be permitted unless specifically provided for in the Specifications.

10. Award of Contract

The Owner reserves the right to reject all bids and to waive informalities. In the event that the lowest Bidder's price overruns the Owner's budget, the Owner reserves the right to negotiate with some of or all Bidders. In the event that the low bid is within the Owner's budget, the Contract will be awarded to the lowest responsive and responsible Bidder.

In determining the lowest responsive and responsible bidder, the following elements will be considered: (1) if the Bidder has a satisfactory performance record, (2) if the Bidder has a suitable financial status to meet obligations

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incidental to the work, (3) if the Bidder involved maintains a permanent place of business, (4) if the Bidder has adequate plant and equipment to perform the work properly within the time allotted, (5) number of and acceptability by the Owner of any and all proposed Subcontractors, (6) if a unit price bid is unbalanced, and (7) the completeness and regularity of the BID FORM. In addition, the Owner may consider in making his determination, (1) the selection of equipment (or materials), (2) alternate equipment (or materials), and (3) deductions or other modifications listed in the BID FORM.

11. Execution of Contracts

The construction Contract and Performance and Payment Bond(s) shall be executed by the successful Bidder within the time specified in BID FORM. The number of copies to be executed will be specified in the BID FORM.

12. Liquidated Damages for Failure to Enter into Contract

The successful Bidder, upon his failure or refusal to execute and deliver the Contract and Bonds required within ten (10) days after said Bidder has been given written notice of the acceptance of his Bid, shall forfeit to the Owner, as liquidated damages for such failure or refusal, the security deposited with his Bid.

13. Insurance, Contractor's Coverage and Cancellation Provision (Also see General Conditions Article 6)

The Contractor will not be permitted to commence work until he has obtained all insurance required by the Contract Documents and such insurance has been approved by the Engineer and/or Owner, nor shall the Contractor allow any Subcontractor to commence work until all similar insurance required of the Subcontractor has been so obtained.

If a Subcontractor does not take out insurance in his own name and his principal Contractor wishes to provide insurance protection for such Subcontractor and such Subcontractor's employees, an endorsement must be attached to the principal Contractor's policy which endorsement must identify the persons thereby covered, or else the principal Contractor must take out appropriate policies in the name of the Subcontractor.

Each policy of insurance covering the Contractor's or Subcontractor's operations under the Contract shall provide, either in the body of the policy, or by appropriate endorsement to the policy, that such policy cannot be altered or canceled in less than thirty (30) days after the receipt of written notice of such alteration or cancellation to the assured (insured) and the Owner and Engineer.

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Certificates of insurance coverages shall include a statement of the alteration or cancellation provision of the policy, sufficient to show definitely that such provisions comply with the requirements stated herein.

THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR MAINTAINING THE INSURANCE HEREIN REQUIRED AND SHALL SAVE HARMLESS THE OWNER AND/OR ENGINEER IN THE EVENT HE NEGLECTS OR FAILS TO DO SO FOR ANY REASON. IN THE EVENT THAT THE APPROVED INSURER DOES NOT RENEW THE REQUIRED POLICY AT ANY TIME DURING THE TERM OF THIS CONTRACT, THE CONTRACTOR SHALL CEASE ALL WORK ON THE CONTRACT UNTIL NEW INSURANCE IS ACQUIRED AND APPROVED BY THE OWNER.

14. Insurance: Commercial General Liability, Automobile Liability and Excess Liability (Also see General Conditions Article 6)

The Contractor shall take out and maintain during the life of this contract Commercial General Liability, Automobile Liability, and Excess Liability insurance as shall protect himself and any subcontractor performing work covered under this Contract from claims for damages because of bodily injury, including accidental death, and from claims for property damages that may arise from operations under this Contract, whether such operations be by him or by any subcontractor, or by anyone directly or indirectly employed by either of them.

The Contractor's Commercial or Comprehensive General Liability insurance coverage shall provide coverage on an "occurrence" basis and aggregate limits of insurance on a "per project" basis; and shall specifically include premises and operations; underground, explosion and collapse; products and completed operations maintained two years after completion of the contract; broad form contractual; independent contractors; broad form property damage; and personal injury coverage. If the Comprehensive General Liability Form is used, the policy must include the Broad Form Comprehensive General Liability Endorsement.

Automobile liability insurance must be provided by a Comprehensive Automobile Liability policy covering all owned, hired and non-owned vehicles.

Excess liability insurance must be provided by an Umbrella form on an "occurrence" basis.

The Contractor's Commercial General Liability, Automobile Liability and Excess Liability insurance shall insure the Owner and the Engineer. The insurance coverage of the Owner and the Engineer shall be provided by endorsement that the Owner and the Engineer are additional insureds on the Contractor's General Liability Policy, Automobile Liability Policy and Excess Liability Policy; or by a separate "Owners Protection Policy." If the Owner and the Engineer are listed as

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additional insureds on the General Liability Policy, this shall be accomplished using the CG 20-10-11-85 or its equivalent. The Owner and the Engineer shall be listed on the endorsement or separate policy using their respective full legal names.

Minimum limits of coverage shall be as follows:

General Liability

(1)	General Aggregate per Project.....	\$2,000,000
(2)	Each Occurrence	\$1,000,000
(3)	Products/Completed Operations Aggregate.....	\$2,000,000
(4)	Medical Expense (any one person)	\$10,000

Automobile Liability

Combined Single Limit Bodily Injury and Property Damage..... \$1,000,000

Umbrella

Combined Single Limit Bodily Injury and Property Damage \$2,000,000
(Each Occurrence)

The above does not include special insurance requirements of entities whose property or personnel or other interests are involved; these requirements where applicable will be set forth in the Detailed Specifications.

15. Insurance: Workmen's Compensation and Employer's Liability (Also see General Conditions Article 6)

The Contractor shall take out and maintain, during the life of this contract, Workmen's Compensation and Employer's Liability Insurance, including occupational disease provisions, for all of his employees employed at the site of the project, and in case any work is sublet, the Contractor shall require the subcontractor similarly to provide Workmen's Compensation Insurance and Employer's Liability Insurance, including occupational disease provisions, for all the latter's employees unless such employees are covered by the protection afforded by the Contractor.

In case any class of employees engaged in hazardous work under this contract at the site of the project is not protected under the Tennessee Workmen's Compensation statute, the Contractor shall provide, and shall cause each subcontractor to provide, adequate coverage for the protection of his employees not otherwise protected.

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The Workmen's Compensation and Employer's Liability policy shall include the statutory coverage required by the State of Tennessee, United States Longshoreman and Harborworkers Act Endorsement and Voluntary Compensation Endorsement.

Minimum limits of coverage shall be as follows:

Worker's Compensation

Statutory limits required by the State of Tennessee

Employer's Liability

Each Accident	\$ 100,000
Disease (policy limit)	\$ 500,000
Disease (each employee)	\$ 100,000

16. Insurance: Builders Risk (Also see General Conditions Article 6)

The Contractor shall provide Builders Risk Insurance (fire and extended coverage) for 100 percent of the insurable portion of all work in place and/or materials stored at the site. Such insurance shall provide coverage at all times for the full cash value of all completed construction and/or materials stored and shall remain in effect until the covered facilities are accepted by the Owner. Unless otherwise noted, all portions of the construction shall be covered on a 100 percent complete value basis. The Builders Risk Insurance provided by the Contractor shall cover damage to materials and equipment occurring during offloading and/or installation, regardless of the entity performing the offloading and/or installation.

The Contractor will be responsible for any losses covered by the Builder's Risk insurance policy up to the per occurrence deductible amount.

17. Certificate of Insurance (Also see General Conditions Article 6)

As a minimum, the Certificate of Insurance shall contain the following information: (1) name of insurance company, (2) policy number and liability limits on all policies, (3) date of expiration of all policies, (4) statement that ten days' notice of cancellation will be given to the Owner and the Engineer, and (5) statement that coverage that will hold the Owner and Engineer harmless for acts of the Contractor is included.

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18. Sanitary Facilities

The Contractor shall furnish, install and maintain ample sanitary facilities for the workmen. As the needs arise, enclosed temporary toilets in sufficient number shall be placed as directed by the Engineer. Permanent toilets installed under this Contract shall not be used during construction. Drinking water shall be provided from a proved safe source, so piped or transported as to be kept clean and fresh and served from single service containers of satisfactory types. The inclusion of this article in no way obligates the Owner or the Engineer to make verification of or to inspect the sanitary facilities and the Contractor shall save the Owner and/or Engineer harmless from any claims arising therefrom.

19. Lands and Rights-of-Way

It is anticipated that all easements and land required for the construction of this project will be acquired before the issuance of a Work Order or within the period stipulated in the Advertisement for Bids during which Contractors are not allowed to withdraw their bids. Unless the land(s) and/or easements are obtained or the Contractor agrees to either an extension or a work order stipulating the limitations of work or he may withdraw his bid at the end of such period stipulated in the Advertisement for Bids.

20. Commencement and Completion of Work

See General Conditions Article 4.

21. Funds for Partial Payment Estimates

See General Conditions Article 15.

22. Construction Records and Reports

The Contractor shall, upon request, furnish the Owner with proof that all payrolls for services rendered and invoices for materials supplied have been duly paid as herein required and such other pertinent data as the Owner may require.

The Owner or his authorized representatives and agents shall be permitted to inspect all payrolls, records of personnel, invoices of materials, and other relevant data and records.

On projects involving Federal or State Funds, the Federal or State Agency or Agencies participating in the project shall be considered representatives of the Owner.

INSTRUCTIONS TO BIDDERS

October 2019

23. Payment of Employees

The Contractor and each of his Subcontractors shall pay each of his employees engaged in work on the project in full (less deductions made mandatory by law), in cash (or check), and not less often than once each week.

24. Laws and Regulations

The Bidder's attention is directed to the fact that all applicable State laws, municipal ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the Contract throughout, and they will be deemed to be included in the Contract the same as though herein written out in full.

25. Subcontracts

See General Conditions Article 7.

26. Ownership of Contractor's License

In addition to the requirements of the laws of the State in which the project is located, no Bid will be accepted from any Contractor who does not propose to accomplish the major portion of the work with his own forces and under his own supervision. No Bids shall be submitted with the intent that an unlicensed Subcontractor will be utilized to construct the major portion of the work. No Bidder shall prepare and submit a Bid under the license of another Contractor. Any misrepresentation which involves submittal of a Bid by one Contractor with the intent that another Contractor will accomplish the work shall be considered grounds for rejection of the BID FORM.

27. Wages and Hours and Non-Discrimination

The Contractor shall conform in every respect to applicable rules, regulations and statutes pertaining to wages, hours of work, and non-discrimination. If Federal funding is involved, a section entitled "Supplementary Conditions" together with various attachments and possibly a Wage Determination Decision will be included in these bound documents or may be added by Addendum.

28. Drug-Free Workplace Program Requirements

The Contractor shall comply with the requirements of Tennessee Code Annotated, Section 50-9-113 and Title 50, Chapter 9 of the Tennessee Code while performing this contract.

INSTRUCTIONS TO BIDDERS

October 2019

A written affidavit by the principal officer of the Bidder at the time the Bid is submitted to the Owner shall be submitted by each Bidder with his Bid. The affidavit shall be prepared utilizing the "Drug-Free Workplace Affidavit of Prime Bidder" form provided with the BID FORM.

29. Statement of Compliance Certificate Illegal Immigrants

The Contractor shall comply with the requirements of Tennessee Code Annotated Title 12, Chapter 4, Part 1 of the Tennessee Code while performing this contract.

A written affidavit by the principal officer of the Bidder at the time the Bid is submitted to the Owner shall be submitted by each Bidder with his Bid. The affidavit shall be prepared utilizing the "Statement of Compliance Certificate Illegal Immigrants" form provided with the BID FORM.

30. Compliance with Iran Divestment Act

The Contractor shall comply with the requirements of Tennessee Code Annotated Title 12, Paragraph 12-12-106 of the Tennessee Code while performing this contract.

A written affidavit by the principal officer of the Bidder at the time the Bid is submitted to the Owner shall be submitted by each Bidder with his Bid. The affidavit shall be prepared utilizing the "Statement of Compliance Iran Divestment Act" form provided with the BID FORM.

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the controlling Laws and Regulations.

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared By



Endorsed By



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**This document has been altered by
J. R. Wauford & Company, Consulting Engineers, Inc.**

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STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

ARTICLE 1—DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
 2. *Agreement*—The written instrument, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.
 3. *Application for Payment*—The document prepared by Contractor, in a form acceptable to Engineer, to request progress or final payments, and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
 4. *Bid*—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
 5. *Bidder*—An individual or entity that submits a Bid to Owner.
 6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.
 7. *Bidding Requirements*—The Advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.
 8. *Change Order*—A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, or other revision to the Contract, issued on or after the Effective Date of the Contract.
 9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.
 10. *Claim*
 - a. A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment of Contract Price or Contract Times; contesting an initial decision by Engineer concerning the

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- requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract.
- b. A demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer's decision regarding a Change Proposal, or seeking resolution of a contractual issue that Engineer has declined to address.
 - c. A demand or assertion by Owner or Contractor, duly submitted in compliance with the procedural requirements set forth herein, made pursuant to Paragraph 12.01.A.4, concerning disputes arising after Engineer has issued a recommendation of final payment.
 - d. A demand for money or services by a third party is not a Claim.
11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), lead-based paint (as defined by the HUD/EPA standard), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to Laws and Regulations regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.
 12. *Contract*—The entire and integrated written contract between Owner and Contractor concerning the Work.
 13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.
 14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents.
 15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.
 16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.
 17. *Cost of the Work*—See Paragraph 13.01 for definition.
 18. *Drawings or Plans*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.
 19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.
 20. *Electronic Document*—Any Project-related correspondence, attachments to correspondence, data, documents, drawings, information, or graphics, including but not limited to Shop Drawings and other Submittals, that are in an electronic or digital Portable Document Format (PDF).
 21. *Electronic Means*—Electronic mail (email), upload/download from a secure Project website, or other communications methods that allow: (a) the transmission or communication of Electronic Documents; (b) the documentation of transmissions,

including sending and receipt; (c) printing of the transmitted Electronic Document by the recipient; (d) the storage and archiving of the Electronic Document by sender and recipient; and (e) the use by recipient of the Electronic Document for purposes permitted by this Contract. Electronic Means does not include the use of text messaging, or of Facebook, Twitter, Instagram, or similar social media services for transmission of Electronic Documents.

22. *Engineer*—The individual or entity named as such in the Agreement.
23. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.
24. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto.
 - a. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated into the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, is not a Hazardous Environmental Condition.
 - b. The presence of Constituents of Concern that are to be removed or remediated as part of the Work is not a Hazardous Environmental Condition.
 - c. The presence of Constituents of Concern as part of the routine, anticipated, and obvious working conditions at the Site, is not a Hazardous Environmental Condition.
25. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and binding decrees, resolutions, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
26. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.
27. *Milestone*—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date, or by a time prior to Substantial Completion of all the Work.
28. *Notice of Award*—The written notice by Owner or the Engineer to a Bidder of Owner's acceptance of the Bid.
29. *Notice to Proceed*—A written notice by Owner or the Engineer at the Owner's discretion to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.
30. *Owner*—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.
31. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising Contractor's plan to accomplish the Work within the Contract Times.

32. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.
- 32a. *Project Manual* - The written documents prepared for, or made available for, procuring and constructing the Work, including but not limited to the Bidding Documents or other construction procurement documents, geotechnical and existing conditions information, the Agreement, bond forms, General Conditions, Supplementary Conditions, and Specifications. The contents of the Project Manual may be bound in one or more volumes.
33. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative (RPR) includes any assistants or field staff of Resident Project Representative.
34. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.
35. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer’s review of the submittals.
36. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor’s Applications for Payment.
37. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.
38. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands or areas furnished by Owner which are designated for the use of Contractor.
39. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.
40. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.
41. *Submittal*—A written or graphic document, prepared by or for Contractor, which the Contract Documents require Contractor to submit to Engineer, or that is indicated as a Submittal in the Schedule of Submittals accepted by Engineer. Submittals may include Shop Drawings and Samples; schedules; product data; Owner-delegated designs; sustainable design information; information on special procedures; testing plans; results of tests and evaluations, source quality-control testing and inspections, and field or Site quality-control testing and inspections; warranties and certifications; Suppliers’ instructions and reports; records of delivery of spare parts and tools; operations and maintenance data; Project photographic documentation; record documents; and other such documents required by the Contract Documents. Submittals, whether or not approved or accepted by Engineer, are not Contract Documents. Change Proposals,

Change Orders, Claims, notices, Applications for Payment, and requests for interpretation or clarification are not Submittals.

42. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion of such Work.
43. *Successful Bidder*—The Bidder to which the Owner makes an award of contract.
44. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.
45. *Supplier*—A manufacturer, fabricator, supplier, distributor, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.
46. *Technical Data*
- a. Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (1) existing subsurface conditions at or adjacent to the Site, or existing physical conditions at or adjacent to the Site including existing surface or subsurface structures (except Underground Facilities) or (2) Hazardous Environmental Conditions at the Site.
 - b. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then Technical Data is defined, with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06, as the data contained in boring logs, recorded measurements of subsurface water levels, assessments of the condition of subsurface facilities, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical, environmental, or other Site or facilities conditions report prepared for the Project and made available to Contractor.
47. *Underground Facilities*—All active underground lines, pipelines, conduits, ducts, encasements, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or systems at the Site, including but not limited to those facilities or systems that produce, transmit, distribute, or convey telephone or other communications, cable television, fiber optic transmissions, power, electricity, light, heat, gases, oil, crude oil products, liquid petroleum products, water, steam, waste, wastewater, storm water, other liquids or chemicals, or traffic or other control systems. An abandoned facility or system is not an Underground Facility.
48. *Unit Price Work*—Work to be paid for on the basis of unit prices.
49. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.

50. *Work Change Directive*—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

1.02 Terminology

- A. The words and terms discussed in Paragraphs 1.02.B, C, D, and E are not defined terms that require initial capital letters, but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.
- B. *Intent of Certain Terms or Adjectives*: The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Article 10 or any other provision of the Contract Documents.
- C. *Day*: The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.
- D. *Defective*: The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
 - 1. does not conform to the Contract Documents;
 - 2. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
 - 3. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 15.03 or Paragraph 15.04).
- E. *Furnish, Install, Perform, Provide*
 - 1. The word “furnish,” when used in connection with services, materials, or equipment, means to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
 - 2. The word “install,” when used in connection with services, materials, or equipment, means to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
 - 3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, means to furnish and install said services, materials, or equipment complete and ready for intended use.
 - 4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words

“furnish,” “install,” “perform,” or “provide,” then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.

- F. *Contract Price or Contract Times*: References to a change in “Contract Price or Contract Times” or “Contract Times or Contract Price” or similar, indicate that such change applies to (1) Contract Price, (2) Contract Times, or (3) both Contract Price and Contract Times, as warranted, even if the term “or both” is not expressed.
- G. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2—PRELIMINARY MATTERS

2.01 *Delivery of Performance and Payment Bonds; Evidence of Insurance*

- A. *Performance and Payment Bonds*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner the performance bond and payment bond (if the Contract requires Contractor to furnish such bonds).
- B. *Evidence of Contractor’s Insurance*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each additional insured (as identified in the Contract), the certificates, endorsements, and other evidence of insurance required to be provided by Contractor in accordance with Article 6, except to the extent the Supplementary Conditions expressly establish other dates for delivery of specific insurance policies.
- C. *Evidence of Owner’s Insurance*: After receipt of the signed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each additional insured (as identified in the Contract), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

2.02 *Copies of Documents*

- A. Owner shall furnish to Contractor two copies of the executed Contract Documents, one of which Contractor shall furnish to Contractor's Surety.
- B. Owner shall furnish to Contractor up to ten printed or hard copies of the Drawings and Project Manual. Additional copies will be furnished upon request at the cost of reproduction.

2.03 *Before Starting Construction*

- A. *Preliminary Schedules*: Within 10 days after the Effective Date of the Contract (or as otherwise required by the Contract Documents), Contractor shall submit to Engineer for timely review:
 - 1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract;
 - 2. a preliminary Schedule of Submittals; and
 - 3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments

during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.04 *Preconstruction Conference; Designation of Authorized Representatives*

- A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work, and to discuss the schedules referred to in Paragraph 2.03.A, procedures for handling Shop Drawings, Samples, and other Submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.
- B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit and receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.05 *Acceptance of Schedules*

- A. At least 10 days before submission of the first Application for Payment a conference, attended by Contractor, Engineer, and others as appropriate, will be held to review the schedules submitted in accordance with Paragraph 2.03.A. It is the Contractor's responsibility to request and schedule said meeting or waive right thereto. No progress payment will be made to Contractor until acceptable schedules are submitted to Engineer.
 - 1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.
 - 2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.
 - 3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to the component parts of the Work.
 - 4. If a schedule is not acceptable, Contractor will have an additional 10 days to revise and resubmit the schedule.

2.06 *Electronic Transmittals*

- A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may send, and shall accept, Electronic Documents transmitted by Electronic Means.
- B. If the Contract does not establish protocols for Electronic Means, then Owner, Engineer, and Contractor shall jointly develop such protocols.
- C. Subject to any governing protocols for Electronic Means, when transmitting Electronic Documents by Electronic Means, the transmitting party makes no representations as to long-term compatibility, usability, or readability of the Electronic Documents resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the Electronic Documents.

- D. Project Manuals and Drawings issued by the Engineer for bidding purposes may be Electronic Documents or printed copies (also known as hard copies) as determined by the Engineer.
- E. Project Manuals and Drawings issued by the Engineer for construction purposes shall be printed copies (also known as hard copies). At the request of the Contractor, the Engineer may provide Electronic Documents of Project Manuals and Drawings issued by the Engineer for construction purposes; however, said Electronic Documents are provided for the convenience of the receiving party. Any conclusion or information obtained or derived from the Electronic Documents will be at the user's sole risk. If there is a discrepancy between the Electronic Documents and the hard copies, the hard copies shall govern.

ARTICLE 3—CONTRACT DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 *Intent*

- A. The Contract Documents are complementary; what is required by one Contract Document is as binding as if required by all.
- B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents.
- C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic versions of the Contract Documents (including any printed copies derived from such electronic versions) and the printed record version, the printed record version will govern.
- D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.
- E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.
- F. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation will be deemed stricken, and all remaining provisions will continue to be valid and binding upon Owner and Contractor, which agree that the Contract Documents will be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.
- G. Nothing in the Contract Documents creates:
 - 1. any contractual relationship between Owner or Engineer and any Subcontractor, Supplier, or other individual or entity performing or furnishing any of the Work, for the benefit of such Subcontractor, Supplier, or other individual or entity; or
 - 2. any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity, except as may otherwise be required by Laws and Regulations.

3.02 *Reference Standards*

- A. *Standards Specifications, Codes, Laws and Regulations*
 - 1. Reference in the Contract Documents to standard specifications, manuals, reference standards, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, means the standard

specification, manual, reference standard, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

2. No provision of any such standard specification, manual, reference standard, or code, and no instruction of a Supplier, will be effective to change the duties or responsibilities of Owner, Contractor, or Engineer from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner or Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility inconsistent with the provisions of the part of the Contract Documents prepared by or for Engineer.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies*

1. *Contractor's Verification of Figures and Field Measurements:* Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict, error, ambiguity, or discrepancy is resolved by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract issued pursuant to Paragraph 11.01.
2. *Contractor's Review of Contract Documents:* If, before or during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 7.15) until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract issued pursuant to Paragraph 11.01.
3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. *Resolving Discrepancies*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the part of the Contract Documents prepared by or for Engineer take precedence in resolving any conflict, error, ambiguity, or discrepancy between such provisions of the Contract Documents and:
 - a. the provisions of any standard specification, manual, reference standard, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference as a Contract Document); or

- b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Requirements of the Contract Documents*

- A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer in writing all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs) or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work.
- B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.
- C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly notify Owner and Contractor in writing that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.

3.05 *Reuse of Documents*

- A. Contractor and its Subcontractors and Suppliers shall not:
 - 1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media versions, or reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer; or
 - 2. have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner's express written consent, or violate any copyrights pertaining to such Contract Documents.
- B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein precludes Contractor from retaining copies of the Contract Documents for record purposes.

ARTICLE 4—COMMENCEMENT AND PROGRESS OF THE WORK

4.01 *Commencement of Contract Times; Notice to Proceed*

- A. The Contract Times will commence to run on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 90 days after the Effective Date of the

Contract. The Contractor shall advise the Owner and Engineer related to scheduling and equipment/material delivery dates related to a delayed Notice to Proceed.

4.02 *Starting the Work*

- A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work may be done at the Site prior to such date unless agreed to in writing by the Owner.

4.03 *Reference Points*

- A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 as it may be adjusted from time to time as provided below.
 - 1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.
 - 2. Proposed adjustments in the Progress Schedule that will change the Contract Times must be submitted in accordance with the requirements of Article 11.
- B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work will be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

4.05 *Delays in Contractor's Progress*

- A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times.
- B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.
- C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. Such an adjustment will be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption,

or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:

1. Severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
 2. Abnormal weather conditions;
 3. Acts or failures to act of third-party utility owners or other third-party entities (other than those third-party utility owners or other third-party entities performing other work at or adjacent to the Site as arranged by or under contract with Owner, as contemplated in Article 8); and
 4. Acts of war or terrorism.
- D. Contractor's entitlement to an adjustment of Contract Times or Contract Price is limited as follows:
1. Contractor's entitlement to an adjustment of the Contract Times is conditioned on the delay, disruption, or interference adversely affecting an activity on the critical path to completion of the Work, as of the time of the delay, disruption, or interference.
 2. Contractor shall not be entitled to an adjustment in Contract Price for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor. Such a concurrent delay by Contractor shall not preclude an adjustment of Contract Times to which Contractor is otherwise entitled.
 3. Adjustments of Contract Times or Contract Price are subject to the provisions of Article 11.
- E. Each Contractor request or Change Proposal seeking an increase in Contract Times or Contract Price must be supplemented by supporting data that sets forth in detail the following:
1. The circumstances that form the basis for the requested adjustment;
 2. The date upon which each cause of delay, disruption, or interference began to affect the progress of the Work;
 3. The date upon which each cause of delay, disruption, or interference ceased to affect the progress of the Work;
 4. The number of days' increase in Contract Times claimed as a consequence of each such cause of delay, disruption, or interference; and
 5. The impact on Contract Price, in accordance with the provisions of Paragraph 11.07.

Contractor shall also furnish such additional supporting documentation as Owner or Engineer may require including, where appropriate, a revised progress schedule indicating all the activities affected by the delay, disruption, or interference, and an explanation of the effect of the delay, disruption, or interference on the critical path to completion of the Work.

- F. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with

reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5, together with the provisions of Paragraphs 4.05.D and 4.05.E.

- G. Paragraph 8.03 addresses delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.
- H. Contractor shall submit any Change Proposal seeking adjustment in the Contract Price or Contract Times within 30 days of the commencement of the delaying, disrupting, or interfering event.

ARTICLE 5—SITE; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

5.01 *Availability of Lands*

- A. Owner shall furnish the Site. Owner shall notify Contractor in writing of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work.
- B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which permanent improvements are to be made and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.
- C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

5.02 *Use of Site and Other Areas*

A. *Limitation on Use of Site and Other Areas*

- 1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor's operations; (c) damage to any other adjacent land or areas, or to improvements, structures, utilities, or similar facilities located at such adjacent lands or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.
- 2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.13, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or in a court of competent jurisdiction; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and

subcontractors of each and any of them, from and against any such claim, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused directly or indirectly, in whole or in part by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.

- B. *Removal of Debris During Performance of the Work:* During the progress of the Work the Contractor shall keep the Site and other adjacent areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris will conform to applicable Laws and Regulations.
- C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site and adjacent areas all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.
- D. *Loading of Structures:* Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent structures or land to stresses or pressures that will endanger them.

5.03 *Subsurface and Physical Conditions*

- A. *Reports and Drawings:* The Supplementary Conditions identify:
 - 1. Those reports provided by Owner of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data;
 - 2. Those drawings provided by Owner of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities), that contain Technical Data; and
 - 3. Technical Data contained in such reports and drawings.
- B. *Underground Facilities:* Underground Facilities are shown or indicated on the Drawings, pursuant to Paragraph 5.05, and not in the drawings referred to in Paragraph 5.03.A. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data.
- C. *Reliance by Contractor on Technical Data:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b.
- D. *Limitations of Other Data and Documents:* Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their

officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto;
2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings;
3. the contents of other Site-related documents made available to Contractor, such as record drawings from other projects at or adjacent to the Site, or Owner's archival documents concerning the Site; or
4. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.

5.04 *Differing Subsurface or Physical Conditions*

A. *Notice by Contractor:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site:

1. is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate;
2. is of such a nature as to require a change in the Drawings or Specifications;
3. differs materially from that shown or indicated in the Contract Documents; or
4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.

B. *Engineer's Review:* After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine whether it is necessary for Owner to obtain additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.

C. *Owner's Statement to Contractor Regarding Site Condition:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating

whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.

- D. *Early Resumption of Work*: If at any time Engineer determines that Work in connection with the subsurface or physical condition in question may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the condition in question has been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.

E. *Possible Price and Times Adjustments*

1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
 - a. Such condition must fall within any one or more of the categories described in Paragraph 5.04.A;
 - b. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03; and,
 - c. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D, 4.05.E, and 4.05.H.
2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:
 - a. Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise;
 - b. The existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or
 - c. Contractor failed to give the written notice required by Paragraph 5.04.A.
3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, then any such adjustment will be set forth in a Change Order.
4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.

- F. *Underground Facilities; Hazardous Environmental Conditions*: Paragraph 5.05 governs rights and responsibilities regarding the presence or location of Underground Facilities. Paragraph 5.06 governs rights and responsibilities regarding Hazardous Environmental Conditions. The provisions of Paragraphs 5.03 and 5.04 are not applicable to the presence or location of Underground Facilities, or to Hazardous Environmental Conditions.

5.05 *Underground Facilities*

- A. *Contractor's Responsibilities:* Owner and Engineer do not warrant or guarantee the accuracy or completeness of any such information or data provided by others. Unless it is otherwise expressly provided in the Supplementary Conditions, the cost of all of the following are included in the Contract Price, and Contractor shall have full responsibility for:
1. reviewing and checking all information and data regarding existing Underground Facilities at the Site;
 2. complying with applicable state and local utility damage prevention Laws and Regulations;
 3. verifying the actual location of those Underground Facilities shown or indicated in the Contract Documents as being within the area affected by the Work, by exposing such Underground Facilities during the course of construction;
 4. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
 5. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.
- B. *Notice by Contractor:* If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated on the Drawings, or was not shown or indicated on the Drawings with reasonable accuracy, then Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing regarding such Underground Facility.
- C. *Engineer's Review:* Engineer will:
1. promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated on the Drawings, or was not shown or indicated with reasonable accuracy;
 2. prepare recommendations to Owner (and if necessary issue any preliminary instructions to Contractor) regarding the Contractor's resumption of Work in connection with the Underground Facility in question;
 3. obtain any pertinent cost or schedule information from Contractor; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and
 4. advise Owner in writing of Engineer's findings, conclusions, and recommendations.
- During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.
- D. *Owner's Statement to Contractor Regarding Underground Facility:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part.

- E. *Early Resumption of Work*: If at any time Engineer determines that Work in connection with the Underground Facility may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the Underground Facility in question and conditions affected by its presence have been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.
- F. *Possible Price and Times Adjustments*
1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, to the extent that any existing Underground Facility at the Site that was not shown or indicated on the Drawings, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
 - a. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03;
 - b. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E;
 - c. Contractor gave the notice required in Paragraph 5.05.B; and
 - d. Contractor did not know and could not reasonably have been expected to be aware of or to have anticipated the existence or actual location of the Underground Facility in question.
 2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, then any such adjustment will be set forth in a Change Order.
 3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.
 4. The information and data shown or indicated on the Drawings with respect to existing Underground Facilities at the Site is based on information and data (a) furnished by the owners of such Underground Facilities, or by others, (b) obtained from available records, or (c) gathered in an investigation conducted in accordance with the current edition of ASCE 38, Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data, by the American Society of Civil Engineers. If such information or data is incorrect or incomplete, Contractor's remedies are limited to those set forth in this Paragraph 5.05.F.

5.06 *Hazardous Environmental Conditions at Site*

- A. *Reports and Drawings*: The Supplementary Conditions identify:
1. those reports known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site;
 2. drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and

3. Technical Data contained in such reports and drawings.
- B. *Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:
1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto;
 2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
 3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions or information.
- C. Contractor shall not be responsible for removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.
- D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.
- E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition and impose a set-off against payments to account for the associated costs.
- F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition

and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.

- G. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, as a result of such Work stoppage, such special conditions under which Work is agreed to be resumed by Contractor, or any costs or expenses incurred in response to the Hazardous Environmental Condition, then within 30 days of Owner's written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off. Entitlement to any such adjustment is subject to the provisions of Paragraphs 4.05.D, 4.05.E, 11.07, and 11.08.
- H. If, after receipt of such written notice, Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.
- I. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court, arbitration, or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.I obligates Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J obligates Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- K. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 6—BONDS AND INSURANCE

6.01 *Performance, Payment, and Other Bonds*

- A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of all of Contractor's obligations under the Contract. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the Supplementary Conditions, or other specific provisions of the Contract. Contractor shall also furnish such other bonds as are required by the Supplementary Conditions or other specific provisions of the Contract.
- B. All bonds shall be in the form prescribed by the Contract except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (as amended and supplemented) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.
- C. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds in the required amounts.
- D. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or its right to do business is terminated in any state or jurisdiction where any part of the Project is located, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the bond and surety requirements above.
- E. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner's termination rights under Article 16.
- F. Upon request, Owner shall provide a copy of the payment bond to any Subcontractor, Supplier, or other person or entity claiming to have furnished labor or materials used in the performance of the Work.

6.02 *Insurance—General Provisions*

- A. Owner and Contractor shall obtain and maintain insurance as required in this Article and in the Supplementary Conditions.
- B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.

- C. Contractor shall deliver to Owner, with copies to each named insured and additional insured (as identified in this Article, in the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Contractor has obtained and is maintaining the policies, coverages, and endorsements required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.
- D. Owner shall deliver to Contractor, with copies to each named insured and additional insured (as identified in this Article, the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Owner has obtained and is maintaining the policies, coverages, and endorsements required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.
- E. Failure of Owner or Contractor to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, shall not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.
- F. If either party does not purchase or maintain all of the insurance required of such party by the Contract, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.
- G. If Contractor has failed to obtain and maintain required insurance, Owner may exclude the Contractor from the Site, impose an appropriate set-off against payment, and exercise Owner's termination rights under Article 16.
- H. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect to obtain equivalent insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and the Contract Price shall be adjusted accordingly.
- I. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests.
- J. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner and other individuals and entities in the Contract.

6.03 *Contractor's Insurance*

- A. *Workers' Compensation:* Contractor shall purchase and maintain workers' compensation and employer's liability insurance for:
 - 1. claims under workers' compensation, disability benefits, and other similar employee benefit acts.

2. United States Longshoreman and Harbor Workers' Compensation Act and Jones Act coverage (if applicable).
 3. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees.
 4. Foreign voluntary worker compensation (if applicable).
- B. *Commercial General Liability—Claims Covered:* Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against:
1. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees.
 2. claims for damages insured by reasonably available personal injury liability coverage.
 3. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.
- C. *Commercial General Liability—Form and Content:* Contractor's commercial liability policy shall be written on a 1996 (or later) ISO commercial general liability form (occurrence form) and include the following coverages and endorsements:
1. Products and completed operations coverage:
 - a. Such insurance shall be maintained until the end of the warranty (guarantee) period.
 - b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance until the end of the warranty (guarantee) period.
 2. Blanket contractual liability coverage, to the extent permitted by law, including but not limited to coverage of Contractor's contractual indemnity obligations in Paragraph 7.18.
 3. Broad form property damage coverage.
 4. Severability of interest.
 5. Underground, explosion, and collapse coverage.
 6. Personal injury coverage.
 7. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together); or CG 20 10 07 04 and CG 20 37 07 04 (together); or their equivalent.
 8. For design professional additional insureds, ISO Endorsement CG 20 32 07 04, "Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured" or its equivalent.
- D. *Automobile liability:* Contractor shall purchase and maintain automobile liability insurance against claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle. The automobile liability policy shall be written on an occurrence basis.
- E. *Umbrella or excess liability:* Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer's liability, commercial general liability, and

automobile liability insurance described in the paragraphs above. Subject to industry-standard exclusions, the coverage afforded shall follow form as to each and every one of the underlying policies.

- F. *Contractor's pollution liability insurance:* Contractor shall purchase and maintain a policy covering third-party injury and property damage claims, including clean-up costs, as a result of pollution conditions arising from Contractor's operations and completed operations. This insurance shall be maintained for no less than three years after final completion.
- G. *Additional insureds:* The Contractor's commercial general liability, automobile liability, umbrella or excess, and pollution liability policies shall include and list as additional insureds Owner and Engineer, and any individuals or entities identified in the Supplementary Conditions; include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds; and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby (including as applicable those arising from both ongoing and completed operations) on a non-contributory basis. Contractor shall obtain all necessary endorsements to support these requirements.
- H. *Contractor's professional liability insurance:* If Contractor will provide or furnish professional services under this Contract, through a delegation of professional design services or otherwise, then Contractor shall be responsible for purchasing and maintaining applicable professional liability insurance. This insurance shall provide protection against claims arising out of performance of professional design or related services, and caused by a negligent error, omission, or act for which the insured party is legally liable. It shall be maintained throughout the duration of the Contract and for a minimum of the end of the warranty (guarantee) period. If such professional design services are performed by a Subcontractor, and not by Contractor itself, then the requirements of this paragraph may be satisfied through the purchasing and maintenance of such insurance by such Subcontractor.
- I. *General provisions:* The policies of insurance required by this Paragraph 6.03 shall:
 - 1. include at least the specific coverages provided in this Article.
 - 2. be written for not less than the limits of liability provided in this Article and in the Supplementary Conditions, or required by Laws or Regulations, whichever is greater.
 - 3. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed, or renewal refused until at least 10 days prior written notice has been given to Contractor. Within three days of receipt of any such written notice, Contractor shall provide a copy of the notice to Owner, Engineer, and each other insured under the policy.
 - 4. remain in effect at least until the end of the warranty (guarantee) period and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract Documents.
 - 5. be appropriate for the Work being performed and provide protection from claims that may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed

by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable.

- J. *The coverage requirements for specific policies of insurance must be met by such policies, and not by reference to excess or umbrella insurance provided in other policies.*

6.04 *Owner's Liability Insurance*

- A. In addition to the insurance required to be provided by Contractor under Paragraph 6.03, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.
- B. Owner's liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner's liability policies for any of Contractor's obligations to the Owner, Engineer, or third parties.

6.05 *Property Insurance*

- A. *Builder's Risk:* Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the full insurable replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:
 - 1. include the Owner and Contractor as named insureds, and all Subcontractors, and any individuals or entities required by the Supplementary Conditions to be insured under such builder's risk policy, as insureds or named insureds. For purposes of the remainder of this Paragraph 6.05, Paragraphs 6.06 and 6.07, and any corresponding Supplementary Conditions, the parties required to be insured shall collectively be referred to as "insureds."
 - 2. be written on a builder's risk "all risk" policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire; lightning; windstorm; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; flood; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; water damage (other than that caused by flood); and such other perils or causes of loss as may be specifically required by the Supplementary Conditions. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; or flood, are not commercially available under builder's risk policies, by endorsement or otherwise, such insurance may be provided through other insurance policies acceptable to Owner and Contractor.
 - 3. cover, as insured property, at least the following: (a) the Work and all materials, supplies, machinery, apparatus, equipment, fixtures, and other property of a similar nature that are to be incorporated into or used in the preparation, fabrication, construction, erection, or completion of the Work, including Owner-furnished or assigned property; (b) spare parts inventory required within the scope of the Contract; and (c) temporary works which are not intended to form part of the permanent constructed Work but which are intended

to provide working access to the Site, or to the Work under construction, or which are intended to provide temporary support for the Work under construction, including scaffolding, form work, fences, shoring, falsework, and temporary structures.

4. cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects).
 5. extend to cover damage or loss to insured property while in temporary storage at the Site or in a storage location outside the Site (but not including property stored at the premises of a manufacturer or Supplier).
 6. extend to cover damage or loss to insured property while in transit.
 7. allow for partial occupation or use of the Work by Owner, such that those portions of the Work that are not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
 8. allow for the waiver of the insurer's subrogation rights, as set forth below.
 9. provide primary coverage for all losses and damages caused by the perils or causes of loss covered.
 10. not include a co-insurance clause.
 11. include an exception for ensuing losses from physical damage or loss with respect to any defective workmanship, design, or materials exclusions.
 12. include performance/hot testing and start-up.
 13. be maintained in effect, subject to the provisions herein regarding Substantial Completion and partial occupancy or use of the Work by Owner, until the Work is complete.
- B. *Notice of Cancellation or Change:* All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 6.05 shall contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured.
- C. *Deductibles:* The purchaser of any required builder's risk or property insurance shall pay for costs not covered because of the application of a policy deductible.
- D. *Partial Occupancy or Use by Owner:* If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will provide notice of such occupancy or use to the builder's risk insurer. The builder's risk insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy; rather, those portions of the Work that are occupied or used by Owner may come off the builder's risk policy, while those portions of the Work not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
- E. *Additional Insurance:* If Contractor elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.05, it may do so at Contractor's expense.

- F. *Insurance of Other Property*: If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, such as tools, construction equipment, or other personal property owned by Contractor, a Subcontractor, or an employee of Contractor or a Subcontractor, then the entity or individual owning such property item shall be responsible for deciding whether to insure it, and if so in what amount.

6.06 *Waiver of Rights*

- A. All policies purchased in accordance with Paragraph 6.05, expressly including the builder's risk policy, shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any insureds thereunder, or against Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Engineer, its consultants, all Subcontractors, all individuals or entities identified in the Supplementary Conditions as insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.
- B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for:
1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and
 2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06.
- C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 6.06.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them.
- D. Contractor shall be responsible for assuring that the agreement under which a Subcontractor performs a portion of the Work contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils

or causes of loss covered by builder's risk insurance and any other property insurance applicable to the Work.

6.07 *Receipt and Application of Property Insurance Proceeds*

- A. Any insured loss under the builder's risk and other policies of insurance required by Paragraph 6.05 will be adjusted and settled with the named insured that purchased the policy. Such named insured shall act as fiduciary for the other insureds and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.
- B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder's risk and other policies of insurance required by Paragraph 6.05 shall distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.
- C. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the money so received applied on account thereof, and the Work and the cost thereof covered by Change Order, if needed.

ARTICLE 7—CONTRACTOR'S RESPONSIBILITIES

7.01 *Contractor's Means and Methods of Construction*

- A. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.
- B. If the Contract Documents note, or Contractor determines, that professional engineering or other design services are needed to carry out Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures, or for Site safety, then Contractor shall cause such services to be provided by a properly licensed design professional, at Contractor's expense. Such services are not Owner-delegated professional design services under this Contract, and neither Owner nor Engineer has any responsibility with respect to (1) Contractor's determination of the need for such services, (2) the qualifications or licensing of the design professionals retained or employed by Contractor, (3) the performance of such services, or (4) any errors, omissions, or defects in such services.

7.02 *Supervision and Superintendence*

- A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents.
- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who will not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

7.03 *Labor; Working Hours*

- A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall maintain good discipline and order at the Site.
- B. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of Contractor's employees; of Suppliers and Subcontractors, and their employees; and of any other individuals or entities performing or furnishing any of the Work, just as Contractor is responsible for Contractor's own acts and omissions.
- C. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site will be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner's written consent.

7.04 *Services, Materials, and Equipment*

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.
- B. All materials and equipment incorporated into the Work must be new and of good quality, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications will expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.
- C. All materials and equipment must be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

7.05 *"Or Equals"*

- A. *Contractor's Request; Governing Criteria:* Whenever an item of equipment or material is specified or described in the Contract Documents by using the names of one or more proprietary items or specific Suppliers, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, Contractor may request that Engineer authorize the use of other items of equipment or material, or items from other proposed Suppliers, under the circumstances described below.
 - 1. If Engineer in its sole discretion determines that an item of equipment or material proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer will deem it an "or equal" item. For

the purposes of this paragraph, a proposed item of equipment or material will be considered functionally equal to an item so named if:

- a. in the exercise of reasonable judgment Engineer determines that the proposed item:
 - 1) is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;
 - 2) will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;
 - 3) has a proven record of performance and availability of responsive service; and
 - 4) is not objectionable to Owner.
 - b. Contractor certifies that, if the proposed item is approved and incorporated into the Work:
 - 1) there will be no increase in cost to the Owner or increase in Contract Times; and
 - 2) the item will conform substantially to the detailed requirements of the item named in the Contract Documents.
- B. *Contractor's Expense:* Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense.
- C. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each "or-equal" request. Engineer may require Contractor to furnish additional data about the proposed "or-equal" item. Engineer will be the sole judge of acceptability. No "or-equal" item will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an "or-equal," which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.
- D. *Effect of Engineer's Determination:* Neither approval nor denial of an "or-equal" request will result in any change in Contract Price. The Engineer's denial of an "or-equal" request will be final and binding and may not be reversed through an appeal under any provision of the Contract.
- E. *Treatment as a Substitution Request:* If Engineer determines that an item of equipment or material proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer consider the item a proposed substitute pursuant to Paragraph 7.06.

7.06 Substitutes

- A. *Contractor's Request; Governing Criteria:* Unless the specification or description of an item of equipment or material required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of equipment or material under the circumstances described below. To the extent possible such requests must be made before commencement of related construction at the Site.
1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for

review of proposed substitute items of equipment or material from anyone other than Contractor.

2. The requirements for review by Engineer will be as set forth in Paragraph 7.06.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.
3. Contractor shall make written application to Engineer for review of a proposed substitute item of equipment or material that Contractor seeks to furnish or use. The application:
 - a. will certify that the proposed substitute item will:
 - 1) perform adequately the functions and achieve the results called for by the general design;
 - 2) be similar in substance to the item specified; and
 - 3) be suited to the same use as the item specified.
 - b. will state:
 - 1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times;
 - 2) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item; and
 - 3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.
 - c. will identify:
 - 1) all variations of the proposed substitute item from the item specified; and
 - 2) available engineering, sales, maintenance, repair, and replacement services.
 - d. will contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.
- B. *Engineer's Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer's determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.
- C. *Special Guarantee*: Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.

- D. *Reimbursement of Engineer's Cost:* Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.
- E. *Contractor's Expense:* Contractor shall provide all data in support of any proposed substitute at Contractor's expense.
- F. *Effect of Engineer's Determination:* If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer's denial of a substitution request will be final and binding and may not be reversed through an appeal under any provision of the Contract. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.06.D, by timely submittal of a Change Proposal.

7.07 *Concerning Subcontractors and Suppliers*

- A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner. The Contractor's retention of a Subcontractor or Supplier for the performance of parts of the Work will not relieve Contractor's obligation to Owner to perform and complete the Work in accordance with the Contract Documents.
- B. Contractor shall retain specific Subcontractors and Suppliers for the performance of designated parts of the Work if required by the Contract to do so.
- C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor or Supplier to furnish or perform any of the Work against which Contractor has reasonable objection.
- D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within 10 days.
- E. Owner may require the replacement of any Subcontractor or Supplier. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors or Suppliers for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor or Supplier so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor or Supplier.
- F. If Owner requires the replacement of any Subcontractor or Supplier retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, with respect to the replacement; and Contractor shall

initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.

- G. No acceptance by Owner of any such Subcontractor or Supplier, whether initially or as a replacement, will constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.
- H. On a monthly basis, Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.
- I. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors and Suppliers.
- J. The divisions and sections of the Specifications and the identifications of any Drawings do not control Contractor in dividing the Work among Subcontractors or Suppliers, or in delineating the Work to be performed by any specific trade.
- K. All Work performed for Contractor by a Subcontractor or Supplier must be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract for the benefit of Owner and Engineer.
- L. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor for Work performed for Contractor by the Subcontractor or Supplier.
- M. Contractor shall restrict all Subcontractors and Suppliers from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed in this Contract.
- N. Nothing in the Contract Documents:
 - shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier, or other individual or entity; nor
 - shall create any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

7.08 *Patent Fees and Royalties*

- A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If an invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights will be disclosed in the Contract Documents.
- B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or

relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.

- C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

7.09 *Permits*

- A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits, licenses, and certificates of occupancy. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of the submission of Contractor's Bid (or when Contractor became bound under a negotiated contract). Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

7.10 *Taxes*

- A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

7.11 *Laws and Regulations*

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. If Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work or other action. It is not Contractor's responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this does not relieve Contractor of its obligations under Paragraph 3.03.
- C. Owner or Contractor may give written notice to the other party of any changes after the submission of Contractor's Bid (or after the date when Contractor became bound under a negotiated contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having

an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times resulting from such changes, then within 30 days of such written notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

7.12 *Record Documents*

- A. Contractor shall maintain in a safe place at the Site one printed record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, written interpretations and clarifications, and approved Shop Drawings. Contractor shall keep such record documents in good order and annotate them to show changes made during construction. These record documents, together with all approved Samples, will be available to Engineer for reference. Upon completion of the Work, Contractor shall deliver these record documents to Engineer.

7.13 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations.
- B. Contractor shall designate a qualified and experienced safety representative whose duties and responsibilities are the prevention of Work-related accidents and the maintenance and supervision of safety precautions and programs.
- C. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:
 - 1. all persons on the Site or who may be affected by the Work;
 - 2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
 - 3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- D. All damage, injury, or loss to any property referred to in Paragraph 7.13.C.2 or 7.13.C.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).
- E. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection.

- F. Contractor shall notify Owner; the owners of adjacent property; the owners of Underground Facilities and other utilities (if the identity of such owners is known to Contractor); and other contractors and utility owners performing work at or adjacent to the Site, in writing, when Contractor knows that prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.
- G. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. Any Owner's safety programs that are applicable to the Work are identified or included in the Supplementary Conditions or Specifications.
- H. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.
- I. Contractor's duties and responsibilities for safety and protection will continue until all the Work is completed, Engineer has issued a written notice to Owner and Contractor in accordance with Paragraph 15.06.C that the Work is acceptable, and Contractor has left the Site (except as otherwise expressly provided in connection with Substantial Completion).
- J. Contractor's duties and responsibilities for safety and protection will resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

7.14 *Hazard Communication Programs*

- A. Contractor shall be responsible for coordinating any exchange of safety data sheets (formerly known as material safety data sheets) or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

7.15 *Emergencies*

- A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused by an emergency or are required as a result of Contractor's response to an emergency. If Engineer determines that a change in the Contract Documents is required because of an emergency or Contractor's response, a Work Change Directive or Change Order will be issued.

7.16 *Submittals*

A. *Shop Drawing and Sample Requirements*

- 1. Before submitting a Shop Drawing or Sample, Contractor shall:
 - a. review and coordinate the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
 - b. determine and verify:
 - 1) all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect to the Submittal;

- 2) the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
 - 3) all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto;
- c. confirm that the Submittal is complete with respect to all related data included in the Submittal.
2. Each Shop Drawing or Sample must bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that Submittal, and that Contractor approves the Submittal.
 3. With each Shop Drawing or Sample, Contractor shall give Engineer specific written notice of any variations that the Submittal may have from the requirements of the Contract Documents. This notice must be set forth in a written communication separate from the Submittal; and, in addition, in the case of a Shop Drawing by a specific notation made on the Shop Drawing itself.
- B. *Submittal Procedures for Shop Drawings and Samples:* Contractor shall label and submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals.
1. *Shop Drawings*
 - a. Contractor shall submit the number of copies required in the Specifications.
 - b. Data shown on the Shop Drawings must be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide, and to enable Engineer to review the information for the limited purposes required by Paragraph 7.16.C.
 2. *Samples*
 - a. Contractor shall submit the number of Samples required in the Specifications.
 - b. Contractor shall clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the Submittal for the limited purposes required by Paragraph 7.16.C.
 3. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.
- C. *Engineer's Review of Shop Drawings and Samples*
1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the accepted Schedule of Submittals. Engineer's review and approval will be only to determine if the items covered by the Submittals will, after installation or incorporation in the Work, comply with the requirements of the Contract Documents, and be

compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction, or to safety precautions or programs incident thereto.
3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
4. Engineer's review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will document any such approved variation from the requirements of the Contract Documents in a Field Order or other appropriate Contract modification.
5. Engineer's review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for complying with the requirements of Paragraphs 7.16.A and B.
6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, will not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.
7. Neither Engineer's receipt, review, acceptance, or approval of a Shop Drawing or Sample will result in such item becoming a Contract Document.
8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.C.4.

D. Resubmittal Procedures for Shop Drawings and Samples

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous Submittals.
2. Contractor shall furnish required Shop Drawing and Sample submittals with sufficient information and accuracy to obtain required approval of an item with no more than two resubmittals. Engineer will record Engineer's time for reviewing a third or subsequent resubmittal of a Shop Drawing or Sample, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges.
3. If Contractor requests a change of a previously approved Shop Drawing or Sample, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

E. *Submittals Other than Shop Drawings, Samples, and Owner-Delegated Designs*

1. The following provisions apply to all Submittals other than Shop Drawings, Samples, and Owner-delegated designs:
 - a. Contractor shall submit all such Submittals to the Engineer in accordance with the Schedule of Submittals and pursuant to the applicable terms of the Contract Documents.
 - b. Engineer will provide timely review of all such Submittals in accordance with the Schedule of Submittals and return such Submittals with a notation of either Accepted or Not Accepted. Any such Submittal that is not returned within the time established in the Schedule of Submittals will be deemed accepted.
 - c. Engineer's review will be only to determine if the Submittal is acceptable under the requirements of the Contract Documents as to general form and content of the Submittal.
 - d. If any such Submittal is not accepted, Contractor shall confer with Engineer regarding the reason for the non-acceptance and resubmit an acceptable document.
 2. Procedures for the submittal and acceptance of the Progress Schedule, the Schedule of Submittals, and the Schedule of Values are set forth in Paragraphs 2.03, 2.04, and 2.05.
- F. Owner-delegated Designs: Submittals pursuant to Owner-delegated designs are governed by the provisions of Paragraph 7.19.

7.17 *Contractor's General Warranty and Guarantee*

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer is entitled to rely on Contractor's warranty and guarantee.
- B. Owner's rights under this warranty and guarantee are in addition to, and are not limited by, Owner's rights under the correction period provisions of Paragraph 15.08. The time in which Owner may enforce its warranty and guarantee rights under this Paragraph 7.17 is limited only by applicable Laws and Regulations restricting actions to enforce such rights; provided, however, that after the end of the correction period under Paragraph 15.08:
 1. Owner shall give Contractor written notice of any defective Work within 60 days of the discovery that such Work is defective; and
 2. Such notice will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the notice.
- C. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
 1. abuse, or improper modification, maintenance, or operation, by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
 2. normal wear and tear under normal usage.
- D. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents is absolute. None of the following will constitute an acceptance of Work that is

not in accordance with the Contract Documents, a release of Contractor's obligation to perform the Work in accordance with the Contract Documents, or a release of Owner's warranty and guarantee rights under this Paragraph 7.17:

1. Observations by Engineer;
 2. Recommendation by Engineer or payment by Owner of any progress or final payment;
 3. The issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
 4. Use or occupancy of the Work or any part thereof by Owner;
 5. Any review and approval of a Shop Drawing or Sample submittal;
 6. The issuance of a notice of acceptability by Engineer;
 7. The end of the correction period established in Paragraph 15.08;
 8. Any inspection, test, or approval by others; or
 9. Any correction of defective Work by Owner.
- E. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract will govern with respect to Contractor's performance obligations to Owner for the Work described in the assigned contract.

7.18 Indemnification

- A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from losses, damages, costs, and judgments (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising from third-party claims or actions relating to or resulting from the performance or furnishing of the Work, provided that any such claim, action, loss, cost, judgment or damage is attributable to bodily injury, sickness, disease, or death, or to damage to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom, but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable.
- B. In any and all claims against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.18.A will not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

7.19 *Delegation of Professional Design Services*

- A. Owner may require Contractor to provide professional design services for a portion of the Work by express delegation in the Contract Documents. Such delegation will specify the performance and design criteria that such services must satisfy, and the Submittals that Contractor must furnish to Engineer with respect to the Owner-delegated design.
- B. Contractor shall cause such Owner-delegated professional design services to be provided pursuant to the professional standard of care by a properly licensed design professional, whose signature and seal must appear on all drawings, calculations, specifications, certifications, and Submittals prepared by such design professional. Such design professional must issue all certifications of design required by Laws and Regulations.
- C. If a Shop Drawing or other Submittal related to the Owner-delegated design is prepared by Contractor, a Subcontractor, or others for submittal to Engineer, then such Shop Drawing or other Submittal must bear the written approval of Contractor's design professional when submitted by Contractor to Engineer.
- D. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, and approvals performed or provided by the design professionals retained or employed by Contractor under an Owner-delegated design, subject to the professional standard of care and the performance and design criteria stated in the Contract Documents.
- E. Pursuant to this Paragraph 7.19, Engineer's review, approval, and other determinations regarding design drawings, calculations, specifications, certifications, and other Submittals furnished by Contractor pursuant to an Owner-delegated design will be only for the following limited purposes:
 - 1. Checking for conformance with the requirements of this Paragraph 7.19;
 - 2. Confirming that Contractor (through its design professionals) has used the performance and design criteria specified in the Contract Documents; and
 - 3. Establishing that the design furnished by Contractor is consistent with the design concept expressed in the Contract Documents.
- F. Contractor shall not be responsible for the adequacy of performance or design criteria specified by Owner or Engineer.
- G. Contractor is not required to provide professional services in violation of applicable Laws and Regulations.

ARTICLE 8—OTHER WORK AT THE SITE

8.01 *Other Work*

- A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner's employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.

- B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any third-party utility work that Owner has arranged to take place at or adjacent to the Site, Owner shall provide such information to Contractor.
- C. Contractor shall afford proper and safe access to the Site to each contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work.
- D. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected.
- E. If the proper execution or results of any part of Contractor's Work depends upon work performed by others, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.
- F. The provisions of this article are not applicable to work that is performed by third-party utilities or other third-party entities without a contract with Owner, or that is performed without having been arranged by Owner. If such work occurs, then any related delay, disruption, or interference incurred by Contractor is governed by the provisions of Paragraph 4.05.C.3.

8.02 *Coordination*

- A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner's employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be set forth in the Supplementary Conditions, Section 1 of the Project Manual, or provided to Contractor prior to the start of any such other work:
 - 1. The identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;
 - 2. An itemization of the specific matters to be covered by such authority and responsibility; and
 - 3. The extent of such authority and responsibilities.
- B. Unless otherwise provided in Section 1 of the Project Manual, Owner shall have sole authority and responsibility for such coordination.

8.03 *Legal Relationships*

- A. If, in the course of performing other work for Owner at or adjacent to the Site, the Owner's employees, any other contractor working for Owner, or any utility owner that Owner has arranged to perform work, causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment will take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract, and any remedies available to Contractor under Laws or Regulations concerning utility action or inaction. When applicable, any such equitable adjustment in Contract Price will be conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor's entitlement to an adjustment of the Contract Times or Contract Price is subject to the provisions of Paragraphs 4.05.D and 4.05.E.
- B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site.
 - 1. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due Contractor, and assign to such other contractor or utility owner the Owner's contractual rights against Contractor with respect to the breach of the obligations set forth in this Paragraph 8.03.B.
 - 2. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due Contractor.
- C. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or

arbitration or other dispute resolution costs) arising out of or relating to such damage, delay, disruption, or interference.

ARTICLE 9—OWNER’S RESPONSIBILITIES

9.01 *Communications to Contractor*

- A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

9.02 *Replacement of Engineer*

- A. Owner may at its discretion appoint an engineer to replace Engineer, provided Contractor makes no reasonable objection to the replacement engineer. The replacement engineer’s status under the Contract Documents will be that of the former Engineer.

9.03 *Furnish Data*

- A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

9.04 *Pay When Due*

- A. Owner shall make payments to Contractor in accordance with Paragraph 15.01 D.

9.05 *Lands and Easements; Reports, Tests, and Drawings*

- A. Owner’s duties with respect to providing lands and easements are set forth in Paragraph 5.01.
- B. Owner’s duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.
- C. Article 5 refers to Owner’s identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

9.06 *Insurance*

- A. Owner’s responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 6.

9.07 *Change Orders*

- A. Owner’s responsibilities with respect to Change Orders are set forth in Article 11.

9.08 *Inspections, Tests, and Approvals*

- A. Owner’s responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 14.02.B.

9.09 *Limitations on Owner’s Responsibilities*

- A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor’s means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor’s failure to perform the Work in accordance with the Contract Documents.

9.10 *Undisclosed Hazardous Environmental Condition*

- A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 5.06.

9.11 *Evidence of Financial Arrangements*

- A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract (including obligations under proposed changes in the Work).

9.12 *Safety Programs*

- A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed.
- B. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

ARTICLE 10—ENGINEER'S STATUS DURING CONSTRUCTION

10.01 *Owner's Representative*

- A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract.

10.02 *Visits to Site*

- A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe, as an experienced and qualified design professional, the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.
- B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 10.07. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

10.03 *Resident Project Representative*

- A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the

responsibilities thereof will be as provided in the Supplementary Conditions and in Paragraph 10.07.

- B. If Owner designates an individual or entity who is not Engineer's consultant, agent, or employee to represent Owner at the Site, then the responsibilities and authority of such individual or entity will be as provided in the Supplementary Conditions.

10.04 *Engineer's Authority*

- A. Engineer has the authority to reject Work in accordance with Article 14.
- B. Engineer's authority as to Submittals is set forth in Paragraph 7.16.
- C. Engineer's authority as to design drawings, calculations, specifications, certifications and other Submittals from Contractor in response to Owner's delegation (if any) to Contractor of professional design services, is set forth in Paragraph 7.19.
- D. Engineer's authority as to changes in the Work is set forth in Article 11.
- E. Engineer's authority as to Applications for Payment is set forth in Article 15.

10.05 *Determinations for Unit Price Work*

- A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor as set forth in Paragraph 13.03.

10.06 *Decisions on Requirements of Contract Documents and Acceptability of Work*

- A. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.

10.07 *Limitations on Engineer's Authority and Responsibilities*

- A. Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, will create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.
- B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.
- D. Engineer's review of the final Application for Payment and accompanying documentation, and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of

inspection, tests and approvals, and other documentation required to be delivered by Contractor under Paragraph 15.06.A, will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.

- E. The limitations upon authority and responsibility set forth in this Paragraph 10.07 also apply to the Resident Project Representative, if any.

10.08 *Compliance with Safety Program*

- A. While at the Site, Engineer's employees and representatives will comply with the specific applicable requirements of Owner's and Contractor's safety programs of which Engineer has been informed.

ARTICLE 11—CHANGES TO THE CONTRACT

11.01 *Amending and Supplementing the Contract*

- A. The Contract may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.
- B. If an amendment or supplement to the Contract includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order.
- C. All changes to the Contract that involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, must be supported by Engineer's recommendation. Owner and Contractor may amend other terms and conditions of the Contract without the recommendation of the Engineer.

11.02 *Change Orders*

- A. Owner and Contractor shall execute appropriate Change Orders covering:
 - 1. Changes in Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;
 - 2. Changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;
 - 3. Changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.05, (b) required because of Owner's acceptance of defective Work under Paragraph 14.04 or Owner's correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters; and
 - 4. Changes that embody the substance of any final and binding results under: Paragraph 11.03.B, resolving the impact of a Work Change Directive; Paragraph 11.09, concerning Change Proposals; Article 12, Claims; Paragraph 13.02.D, final adjustments resulting from allowances; Paragraph 13.03.D, final adjustments relating to determination of quantities for Unit Price Work; and similar provisions.

- B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of Paragraph 11.02.A, it will be deemed to be of full force and effect, as if fully executed.

11.03 *Work Change Directives*

- A. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.07 regarding change of Contract Price.
- B. If Owner has issued a Work Change Directive and:
 - 1. Contractor believes that an adjustment in Contract Times or Contract Price is necessary, then Contractor shall submit any Change Proposal seeking such an adjustment no later than 30 days after the completion of the Work set out in the Work Change Directive.
 - 2. Owner believes that an adjustment in Contract Times or Contract Price is necessary, then Owner shall submit any Claim seeking such an adjustment no later than 60 days after issuance of the Work Change Directive.

11.04 *Field Orders*

- A. Engineer may authorize minor changes in the Work if the changes do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly.
- B. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

11.05 *Owner-Authorized Changes in the Work*

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work. Changes involving the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters will be supported by Engineer's recommendation.
- B. Such changes in the Work may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work must be performed under the applicable conditions of the Contract Documents.
- C. Nothing in this Paragraph 11.05 obligates Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

11.06 *Unauthorized Changes in the Work*

- A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents, as amended, modified, or supplemented, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05.C.2.

11.07 *Change of Contract Price*

- A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment of Contract Price must comply with the provisions of Article 12.
- B. An adjustment in the Contract Price will be determined as follows:
 - 1. Where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03);
 - 2. Where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.07.C.2); or
 - 3. Where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.07.C).
- C. *Contractor's Fee:* When applicable, the Contractor's fee for overhead and profit will be determined as follows:
 - 1. A mutually acceptable fixed fee; or
 - 2. If a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
 - a. For costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2, the Contractor's fee will be 15 percent;
 - b. For costs incurred under Paragraph 13.01.B.3, the Contractor's fee will be 5 percent;
 - c. Where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 11.07.C.2.a and 11.07.C.2.b is that the Contractor's fee will be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of 5 percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted Work the maximum total fee to be paid by Owner will be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the Work;

- d. No fee will be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;
- e. The amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in Cost of the Work will be the amount of the actual net decrease in Cost of the Work and a deduction of an additional amount equal to 5 percent of such actual net decrease in Cost of the Work; and
- f. When both additions and credits are involved in any one change or Change Proposal, the adjustment in Contractor's fee will be computed by determining the sum of the costs in each of the cost categories in Paragraph 13.01.B (specifically, payroll costs, Paragraph 13.01.B.1; incorporated materials and equipment costs, Paragraph 13.01.B.2; Subcontract costs, Paragraph 13.01.B.3; special consultants costs, Paragraph 13.01.B.4; and other costs, Paragraph 13.01.B.5) and applying to each such cost category sum the appropriate fee from Paragraphs 11.07.C.2.a through 11.07.C.2.e, inclusive.

11.08 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment in the Contract Times must comply with the provisions of Article 12.
- B. Delay, disruption, and interference in the Work, and any related changes in Contract Times, are addressed in and governed by Paragraph 4.05.

11.09 *Change Proposals*

- A. *Purpose and Content:* Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; contest an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; challenge a set-off against payment due; or seek other relief under the Contract. The Change Proposal will specify any proposed change in Contract Times or Contract Price, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents. Each Change Proposal will address only one issue, or a set of closely related issues.
- B. *Change Proposal Procedures*
 - 1. *Submittal:* Contractor shall submit each Change Proposal to Engineer within 30 days after the start of the event giving rise thereto, or after such initial decision.
 - 2. *Supporting Data:* The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal.
 - a. Change Proposals based on or related to delay, interruption, or interference must comply with the provisions of Paragraphs 4.05.D and 4.05.E.
 - b. Change proposals related to a change of Contract Price must include full and detailed accounts of materials incorporated into the Work and labor and equipment used for the subject Work.

The supporting data must be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event.

3. *Engineer's Initial Review:* Engineer will advise Owner regarding the Change Proposal and consider any comments or response from Owner regarding the Change Proposal. If in its discretion Engineer concludes that additional supporting data is needed before conducting a full review and making a decision regarding the Change Proposal, then Engineer may request that Contractor submit such additional supporting data by a date specified by Engineer, prior to Engineer beginning its full review of the Change Proposal.
 4. *Engineer's Full Review and Action on the Change Proposal:* Upon receipt of Contractor's supporting data (including any additional data requested by Engineer), Engineer will conduct a full review of each Change Proposal and, within 30 days after such receipt of the Contractor's supporting data, either approve the Change Proposal in whole, deny it in whole, or approve it in part and deny it in part. Such actions must be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.
 5. *Binding Decision:* Engineer's decision is final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.
- C. *Resolution of Certain Change Proposals:* If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties in writing that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice will be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.
- D. *Post-Completion:* Contractor shall not submit any Change Proposals after Engineer issues a written recommendation of final payment pursuant to Paragraph 15.06.B.

11.10 *Notification to Surety*

- A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

ARTICLE 12—CLAIMS

12.01 *Claims*

- A. *Claims Process:* The following disputes between Owner and Contractor are subject to the Claims process set forth in this article:
1. Appeals by Owner or Contractor of Engineer's decisions regarding Change Proposals;

2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents;
 3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters; and
 4. Subject to the waiver provisions of Paragraph 15.07, any dispute arising after Engineer has issued a written recommendation of final payment pursuant to Paragraph 15.06.B.
- B. *Submittal of Claim:* The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim rests with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor's knowledge and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.
- C. *Review and Resolution:* The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim will be stated in writing and submitted to the other party, with a copy to Engineer.
- D. *Mediation*
1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate will stay the Claim submittal and response process.
 2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process will resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim submittal and decision process will resume as of the date of the conclusion of the mediation, as determined by the mediator.
 3. Owner and Contractor shall each pay one-half of the mediator's fees and costs.
- E. *Partial Approval:* If the party receiving a Claim approves the Claim in part and denies it in part, such action will be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.
- F. *Denial of Claim:* If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim will be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.

- G. *Final and Binding Results*: If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim will be incorporated in a Change Order or other written document to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

ARTICLE 13—COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

13.01 Cost of the Work

- A. *Purposes for Determination of Cost of the Work*: The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:
1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or
 2. When needed to determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.
- B. *Costs Included*: Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work will be in amounts no higher than those commonly incurred in the locality of the Project, will not include any of the costs itemized in Paragraph 13.01.C, and will include only the following items:
1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor in advance of the subject Work. Such employees include, without limitation, superintendents, foremen, safety managers, safety representatives, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work will be apportioned on the basis of their time spent on the Work. Payroll costs include, but are not limited to, salaries and wages plus the cost of fringe benefits, which include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, sick leave, and vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, will be included in the above to the extent authorized by Owner.
 2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts will accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment will accrue to Owner, and Contractor shall make provisions so that they may be obtained.
 3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors

acceptable to Owner and Contractor and shall deliver such bids to Owner, which will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee will be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 13.01.

4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed or retained for services specifically related to the Work.
5. Other costs consisting of the following:
 - a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
 - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.
 - 1) In establishing included costs for materials such as scaffolding, plating, or sheeting, consideration will be given to the actual or the estimated life of the material for use on other projects; or rental rates may be established on the basis of purchase or salvage value of such items, whichever is less. Contractor will not be eligible for compensation for such items in an amount that exceeds the purchase cost of such item.
 - c. *Construction Equipment Rental*

Rentals of all construction equipment and machinery, and the parts thereof, whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.
 - d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.
 - e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
 - f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of builder's risk or other property insurance established in accordance with Paragraph 6.04), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses include settlements made with the written consent and approval of Owner. No such

losses, damages, and expenses will be included in the Cost of the Work for the purpose of determining Contractor's fee.

- g. The cost of utilities, fuel, and sanitary facilities at the Site.
- h. Minor expenses such as communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.
- i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.

C. *Costs Excluded*: The term Cost of the Work does not include any of the following items:

- 1. Payroll costs and other compensation of Contractor's officers, executives, principals, general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor's fee.
- 2. The cost of purchasing, renting, or furnishing small tools and hand tools.
- 3. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
- 4. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
- 5. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.
- 6. Expenses incurred in preparing and advancing Claims.
- 7. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.

D. *Contractor's Fee*

- 1. When the Work as a whole is performed on the basis of cost-plus-a-fee, then:
 - a. Contractor's fee for the Work set forth in the Contract Documents as of the Effective Date of the Contract will be determined as set forth in the Agreement.
 - b. for any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price on the basis of Cost of the Work, Contractor's fee will be determined as follows:
 - 1) When the fee for the Work as a whole is a percentage of the Cost of the Work, the fee will automatically adjust as the Cost of the Work changes.
 - 2) When the fee for the Work as a whole is a fixed fee, the fee for any additions or deletions will be determined in accordance with Paragraph 11.07.C.2.

2. When the Work as a whole is performed on the basis of a stipulated sum, or any other basis other than cost-plus-a-fee, then Contractor's fee for any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price on the basis of Cost of the Work will be determined in accordance with Paragraph 11.07.C.2.
- E. *Documentation and Audit*: Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor and pertinent Subcontractors shall establish and maintain records of the costs in accordance with generally accepted accounting practices. Subject to prior written notice, Owner will be afforded reasonable access, during normal business hours, to all Contractor's accounts, records, books, correspondence, instructions, drawings, receipts, vouchers, memoranda, and similar data relating to the Cost of the Work and Contractor's fee. Contractor shall preserve all such documents for a period of three years after the final payment by Owner. Pertinent Subcontractors will afford such access to Owner, and preserve such documents, to the same extent required of Contractor.

13.02 Allowances

- A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.
- B. *Cash Allowances*: Contractor agrees that:
 1. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and
 2. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment for any of the foregoing will be valid.
- C. *Owner's Contingency Allowance*: Contractor agrees that an Owner's contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.
- D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor for Work covered by allowances, and the Contract Price will be correspondingly adjusted.

13.03 Unit Price Work

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.
- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Payments to Contractor for Unit Price Work will be based on actual quantities.
- C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.
- D. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary

determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, and the final adjustment of Contract Price will be set forth in a Change Order, subject to the provisions of the following paragraph.

E. *Adjustments in Unit Price*

Within 30 days of Engineer's written decision under the preceding paragraph, Contractor may submit a Change Proposal, or Owner may file a Claim, seeking an adjustment in the Contract Price if:

the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement;

there is no corresponding adjustment with respect to any other item of Work; and

Contractor believes that it is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price, and the parties are unable to agree as to the amount of any such increase or decrease.

ARTICLE 14—TESTS AND INSPECTIONS; CORRECTION, REMOVAL, OR ACCEPTANCE OF DEFECTIVE WORK

14.01 *Access to Work*

- A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and authorities having jurisdiction have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply with such procedures and programs as applicable.

14.02 *Tests, Inspections, and Approvals*

- A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.
- B. This item intentionally deleted from these General Conditions. Section 2 – Testing and Control of Materials in the Specifications covers this subject.
- C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.
- D. Contractor shall be responsible for arranging, obtaining, and paying for all inspections and tests required:
 - 1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;

2. to attain Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work;
3. by manufacturers of equipment furnished under the Contract Documents;
4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and
5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.

Such inspections and tests will be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Engineer.

- E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.
- F. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering will be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to cover the same and Engineer had not acted with reasonable promptness in response to such notice.

14.03 *Defective Work*

- A. *Contractor's Obligation*: It is Contractor's obligation to assure that the Work is not defective.
- B. *Engineer's Authority*: Engineer has the authority to determine whether Work is defective, and to reject defective Work.
- C. *Notice of Defects*: Prompt written notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.
- D. *Correction, or Removal and Replacement*: Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.
- E. *Preservation of Warranties*: When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.
- F. *Costs and Damages*: In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs, losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

14.04 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner prefers to accept it, Owner may do so (subject, if such acceptance occurs prior to final payment, to Engineer's confirmation that such acceptance is in general accord with the design intent and applicable engineering principles and will not endanger public safety). Contractor shall pay all claims, costs, losses, and damages attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness), and for the diminished value of the Work to the extent not otherwise paid by Contractor. If any such acceptance occurs prior to final payment, the necessary revisions in the Contract Documents with respect to the Work will be incorporated in a Change Order. If the parties are unable to agree as to the decrease in the Contract Price, reflecting the diminished value of Work so accepted, then Owner may impose a reasonable set-off against payments due under Article 15. If the acceptance of defective Work occurs after final payment, Contractor shall pay an appropriate amount to Owner.

14.05 *Uncovering Work*

- A. Engineer has the authority to require additional inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.
- B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.
- C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, and provide all necessary labor, material, and equipment.
 - 1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and pending Contractor's full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.
 - 2. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

14.06 *Owner May Stop the Work*

- A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, then Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work will not give rise to any duty on the part of Owner to exercise this

right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

14.07 Owner May Correct Defective Work

- A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace defective Work as required by Engineer, then Owner may, after 7 days' written notice to Contractor, correct or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this paragraph.
- C. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.
- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 14.07.

ARTICLE 15—PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD

15.01 Progress Payments

- A. *Basis for Progress Payments:* The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments for Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.
- B. *Applications for Payments*
 - 1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents.
 - 2. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment must also be accompanied by: (a) a bill of sale, invoice, copies of subcontract or purchase order payments, or other documentation establishing full payment by Contractor for the materials and equipment; (b) at Owner's request, documentation warranting that Owner has received the materials and

equipment free and clear of all Liens; and (c) evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.

3. Beginning with the second Application for Payment, each Application must include an affidavit of Contractor stating that all previous progress payments received by Contractor have been applied to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
4. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

C. Review of Applications

1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:
 - a. the Work has progressed to the point indicated;
 - b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and
 - c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.
3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
 - a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or
 - b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.

4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
 - a. to supervise, direct, or control the Work;
 - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto;
 - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work;
 - d. to make any examination to ascertain how or for what purposes Contractor has used the money paid by Owner; or
 - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 15.01.C.2.
6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:
 - a. the Work is defective, requiring correction or replacement;
 - b. the Contract Price has been reduced by Change Orders;
 - c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or
 - e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.

D. *Payment Becomes Due*

1. The Owner will make payments promptly as funds for such payments become available from funding agencies or as otherwise agreed.

E. *Reductions in Payment by Owner*

1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:
 - a. Claims have been made against Owner based on Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages resulting from Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;
 - b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;

- c. Contractor has failed to provide and maintain required bonds or insurance;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;
 - e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;
 - f. The Work is defective, requiring correction or replacement;
 - g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
 - h. The Contract Price has been reduced by Change Orders;
 - i. An event has occurred that would constitute a default by Contractor and therefore justify a termination for cause;
 - j. Liquidated or other damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;
 - k. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens; or
 - l. Other items entitle Owner to a set-off against the amount recommended.
2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction imposed will be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.
 3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld will be treated as an amount due as determined by Paragraph 15.01.D.1 and subject to interest as provided in the Agreement.

15.02 *Contractor's Warranty of Title*

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all Liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than 7 days after the time of payment by Owner.

15.03 *Substantial Completion*

- A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a notice of Substantial Completion. Contractor shall at the same time submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.

- B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.
- C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner and Contractor a preliminary notice of Substantial Completion which will fix the date of Substantial Completion. Engineer shall attach to the notice a punch list of items to be completed or corrected before final payment. Owner shall have 7 days after receipt of the preliminary notice during which to make written objection to Engineer as to any provisions of the notice or attached punch list. If, after considering the objections to the provisions of the preliminary notice, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary notice to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the notice, or if despite consideration of Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final notice of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary notice as Engineer believes justified after consideration of any objections from Owner.
- D. At the time of receipt of the preliminary notice of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.
- E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.
- F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

15.04 *Partial Use or Occupancy*

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy any part of the Work which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work.

15.05 *Final Inspection*

- A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work, or

agreed portion thereof, is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

15.06 *Final Payment*

A. Application for Payment

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, annotated record documents (as provided in Paragraph 7.12), and other documents, Contractor may make application for final payment.
 2. The final Application for Payment must be accompanied (except as previously delivered) by:
 - a. all documentation called for in the Contract Documents;
 - b. consent of the surety, if any, to final payment;
 - c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects or will so pass upon final payment.
 - d. a list of all duly pending Change Proposals and Claims; and
 - e. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work.
 3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (b) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.
- B. Engineer's Review of Final Application and Recommendation of Payment:* If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract have been fulfilled, Engineer will, within 10 days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the final Application for Payment to Owner for payment. Such recommendation will account for any set-offs against payment that are necessary in Engineer's opinion to protect Owner from loss for the reasons stated above with respect to progress payments. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

- C. *Notice of Acceptability*: In support of its recommendation of payment of the final Application for Payment, Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to stated limitations in the notice and to the provisions of Paragraph 15.07.
- D. *Completion of Work*: The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment.
- E. *Final Payment Becomes Due*: Upon receipt from Engineer of the final Application for Payment and accompanying documentation, Owner shall set off against the amount recommended by Engineer for final payment any further sum to which Owner is entitled, including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions of this Contract with respect to progress payments. Owner shall pay the resulting balance due to Contractor.

15.07 *Waiver of Claims*

- A. The making of final payment will not constitute a waiver by Owner of claims or rights against Contractor. Owner expressly reserves claims and rights arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 15.05, from Contractor's failure to comply with the Contract Documents or the terms of any special guarantees specified therein, from outstanding Claims by Owner, or from Contractor's continuing obligations under the Contract Documents.
- B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted as a Claim or appealed under the provisions of Article 17.

15.08 *Correction Period*

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the Supplementary Conditions or the terms of any applicable special guarantee required by the Contract Documents), Owner gives Contractor written notice that any Work has been found to be defective, or that Contractor's repair of any damages to the Site or adjacent areas has been found to be defective, then after receipt of such notice of defect Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:
 1. correct the defective repairs to the Site or such adjacent areas;
 2. correct such defective Work;
 3. remove the defective Work from the Project and replace it with Work that is not defective, if the defective Work has been rejected by Owner, and
 4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting from the corrective measures.
- B. Owner shall give written notice that such Work or repairs is defective. If such notice is given within such 60 days but after the end of the correction period, the notice will be deemed a notice of defective Work under Paragraph 7.17.B.
- C. If, after receipt of a notice of defect within 60 days and within the correction period, Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the

defective Work corrected or repaired or may have the rejected Work removed and replaced. Contractor shall pay all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others). Contractor's failure to pay such costs, losses, and damages within 10 days of invoice from Owner will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the failure to pay.

- D. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.
- E. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.
- F. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph are not to be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

ARTICLE 16—SUSPENSION OF WORK AND TERMINATION

16.01 *Owner May Suspend Work*

- A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times directly attributable to any such suspension. Any Change Proposal seeking such adjustments must be submitted no later than 30 days after the date fixed for resumption of Work.

16.02 *Owner May Terminate for Cause*

- A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:
 - 1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment, or failure to adhere to the Progress Schedule);
 - 2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;
 - 3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or
 - 4. Contractor's repeated disregard of the authority of Owner or Engineer.

- B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) 10 days' written notice that Owner is considering a declaration that Contractor is in default and termination of the Contract, Owner may proceed to:
 - 1. declare Contractor to be in default, and give Contractor (and any surety) written notice that the Contract is terminated; and
 - 2. enforce the rights available to Owner under any applicable performance bond.
- C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.
- D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within 7 days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.
- E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses, and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.
- F. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.
- G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond will govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

16.03 *Owner May Terminate for Convenience*

- A. Upon 7 days' written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):
 - 1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
 - 2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in

connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; and

3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.
- B. Contractor shall not be paid for any loss of anticipated profits or revenue, post-termination overhead costs, or other economic loss arising out of or resulting from such termination.

16.04 Contractor May Stop Work or Terminate

- A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails to pay the Contractor as provided by Paragraph 15.01.D, then Contractor may, upon 7 days' written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.
- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed to pay the Contractor as provided by Paragraph 15.01.D, Contractor may, 7 days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this paragraph are not intended to preclude Contractor from submitting a Change Proposal for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this paragraph.

ARTICLE 17—FINAL RESOLUTION OF DISPUTES

17.01 Methods and Procedures

- A. *Disputes Subject to Final Resolution:* The following disputed matters are subject to final resolution under the provisions of this article:
1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full, pursuant to Article 12; and
 2. Disputes between Owner and Contractor concerning the Work, or obligations under the Contract Documents, that arise after final payment has been made.
- B. *Final Resolution of Disputes:* For any dispute subject to resolution under this article, Owner or Contractor may:
1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions;
 2. agree with the other party to submit the dispute to another dispute resolution process; or
 3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

ARTICLE 18—MISCELLANEOUS

18.01 *Giving Notice*

- A. Whenever any provision of the Contract requires the giving of written notice to Owner, Engineer, or Contractor, it will be deemed to have been validly given only if delivered:
 - 1. in person, by a commercial courier service or otherwise, to the recipient's place of business;
 - 2. by registered or certified mail, postage prepaid, to the recipient's place of business; or
 - 3. by e-mail to the recipient.

18.02 *Computation of Times*

- A. When any period of time is referred to in the Contract by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

18.03 *Cumulative Remedies*

- A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract. The provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

18.04 *Limitation of Damages*

- A. With respect to any and all Change Proposals, Claims, disputes subject to final resolution, and other matters at issue, neither Owner nor Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.

18.05 *No Waiver*

- A. A party's non-enforcement of any provision will not constitute a waiver of that provision, nor will it affect the enforceability of that provision or of the remainder of this Contract.

18.06 *Survival of Obligations*

- A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract, as well as all continuing obligations indicated in the Contract, will survive final payment, completion, and acceptance of the Work or termination of the Contract or of the services of Contractor.

18.07 *Controlling Law*

- A. This Contract is to be governed by the law of the state in which the Project is located.

18.08 *Assignment of Contract*

- A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party to this Contract of any rights under or interests in the Contract will be binding on the other party without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract.

18.09 *Successors and Assigns*

- A. Owner and Contractor each binds itself, its successors, assigns, and legal representatives to the other party hereto, its successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

18.10 *Headings*

- A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

SUPPLEMENTARY CONDITIONS
STATE OF TENNESSEE

1. Subsurface and Physical Conditions (Article 5.03)

As provided by Article 5.03 (page 15) of the General Conditions, subsurface conditions are unknown unless a Geotechnical Report is included at the end of Section 1 of the Detailed Specifications.

2. Hazardous Environmental Condition at Site (Article 5.06)

Neither the Owner nor the Engineer is aware of any hazardous environmental conditions on this project, however no specific examinations have been performed unless a report of such conditions is included in Section 1 of the Detailed Specifications.

3. Safety and Protection (Article 7.13)

Article 7.13 G refers to an Owner Safety Program, if any. If such program is known to exist to the Engineer, it will be identified in Section 1 of the Detailed Specifications.

4. Coordination (Article 8.02)

Section 1 of the Detailed Specifications and/or the Plans will show any other contracts or contractors which will interface with this work.

5. Progress Payments (Article 15.01)

Article 15.01 (page 61) is hereby amended to allow the Owner 30 days after receipt of the Engineer's approved Application for Payment (also known as Pay Request) in order to make payment to the Contractor.

Add the following as Article 15.01 B.5:

The Contractor affirms by the submission of the second Application for Payment (Pay Request) that the Contractor is discharging all financial obligations pertaining to this Contract in the customary business manner. Before final payment, as per Article 15.06, is made, the Contractor will be required to furnish an affidavit that all financial and other obligations related to this project have been satisfied listing any exceptions.

6. Investment of Retainage

As provided by TCA 66-11-144, the Owner will establish an interest-bearing escrow account for all contracts whose initial value exceeds \$500,000. All interest earned on the funds deposited in said account together with the principal thereof shall be paid to the Contractor upon acceptance of the work by written approval of the Engineer.

7. Listing of the Duties, Responsibilities and Limitations of Authority of the Resident Project Representative

A copy of this document as it appears in the Owner-Engineer Agreement is attached to these Supplementary Conditions.

8. Insurance Requirements

See Instructions to Bidders, Paragraphs 13, 14, 15, 16, and 17.

State and Local Fiscal Recovery Funds (SLRF)

Supplemental Conditions for Contracts

Equal Employment Opportunity

Any contract that uses federal funds to pay for construction work is a “federally assisted construction contract” and must include the equal opportunity clause found in 2 C.F.R. Part 200, unless otherwise stated in 41 C.F.R. Part 60. This contract provision is required for all procurements that meet the definition of a “federally assisted construction contract.”

During the performance of this contract, the contractor agrees as follows:

- (1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
- (2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.
- (3) The contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.
- (4) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and

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applicants for employment.

- (5) The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
- (6) The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- (7) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law. (8) The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through
- (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance:

Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

The applicant further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally assisted construction work: Provided, that if the applicant so participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality or subdivision of such government which does not participate in work on or under the contract.

The applicant agrees that it will assist and cooperate actively with the administering agency and the Secretary of Labor in obtaining the compliance of contractors and subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish the administering agency and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist the administering agency in the discharge of the agency's primary responsibility for securing compliance.

The applicant further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a contractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive Order and will carry out such sanctions and penalties for violation of the equal opportunity clause

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as may be imposed upon contractors and subcontractors by the administering agency or the Secretary of Labor pursuant to Part II, Subpart D of the Executive Order. In addition, the applicant agrees that if it fails or refuses to comply with these undertakings, the administering agency may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this grant (contract, loan, insurance, guarantee); refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such applicant; and refer the case to the Department of Justice for appropriate legal proceedings.

Davis-Bacon Act

U.S. Treasury exercised its federal authority outlining the requirements for water infrastructure projects executed using ARP funds. Therefore, the requirements for prevailing wages and rates slightly differs from the standards of Davis-Bacon. Individual projects less than \$10 million dollars are not required to provide certification that prevailing wages and rates were followed. Individual projects of \$10 million dollars or more require certification like Davis-Bacon and are outlined below. Please note that any project using other funding sources, like Community Development Block Grants or SRF loans, are subject to requirements for those programs. When combining funding sources on a single and complete project or phase, other funding program requirements may trump the requirements for the use of ARP funds. We recommend Grantees and Project Owners discuss project requirements with TDEC when leveraging ARP funds with other funding programs to ensure all applicable rules and regulations are followed.

Individual Water Infrastructure Projects of \$10 million dollars or more

- (1) A recipient may provide a certification that, for the relevant project, all laborers and mechanics employed by contractors and subcontractors in the performance of such project are paid wages at rates not less than those prevailing, as determined by the U.S. Secretary of Labor in accordance with subchapter IV of chapter 31 of title 40, United States Code (commonly known as the “Davis-Bacon Act”), for the corresponding classes of laborers and mechanics employed on projects of a character similar to the contract work in the civil subdivision of the State (or the District of Columbia) in which the work is to be performed, or by the appropriate State entity pursuant to a corollary State prevailing-wage-in-construction law (commonly known as “baby Davis-Bacon Acts”). If such certification is not provided, a recipient must provide a project employment and local impact report detailing:
 - a. The number of employees of contractors and sub-contractors working on the project;
 - b. The number of employees on the project hired directly and hired through a third party;
 - c. The wages and benefits of workers on the project by classification; and
 - d. Whether those wages are at rates less than those prevailing. 19 Recipients must maintain sufficient records to substantiate this information upon request.
- (2) A recipient may provide a certification that a project includes a project labor agreement, meaning a pre-hire collective bargaining agreement consistent with section 8(f) of the National Labor Relations Act (29 U.S.C. 158(f)). If the recipient does not provide such certification, the recipient must provide a project workforce continuity plan, detailing:
 - a. How the recipient will ensure the project has ready access to a sufficient supply of appropriately skilled and unskilled labor to ensure high-quality construction throughout the life of the project, including a description of any required professional certifications and/or in-house training;
 - b. How the recipient will minimize risks of labor disputes and disruptions that would jeopardize timeliness and cost-effectiveness of the project;

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- c. How the recipient will provide a safe and healthy workplace that avoids delays and costs associated with workplace illnesses, injuries, and fatalities, including descriptions of safety training, certification, and/or licensure requirements for all relevant workers (e.g., OSHA 10, OSHA 30);
 - d. Whether workers on the project will receive wages and benefits that will secure an appropriately skilled workforce in the context of the local or regional labor market; and
 - e. Whether the project has completed a project labor agreement.
- (3) Whether the project prioritizes local hires.
- (4) Whether the project has a Community Benefit Agreement, with a description of any such agreement.
- a. All transactions regarding this contract shall be done in compliance with the Davis-Bacon Act (40 U.S.C. 3141- 3144, and 3146-3148) and the requirements of 29C.F.R. pt. 5 as may be applicable. The contractor shall comply with 40 U.S.C. 3141-3144, and 3146-3148 and the requirements of 29 C.F.R. pt. 5 as applicable.
 - b. Contractors are required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor.
 - c. Additionally, contractors are required to pay wages not less than once a week.

Copeland Anti-Kickback Act

The Copeland "Anti-Kickback" Act prohibits workers on construction contracts from giving up wages that they are owed. This requirement applies to all contracts for construction or repair work above \$2,000 in situations where the Davis-Bacon Act also applies.

- a. Contractor. The contractor shall comply with 18 U.S.C. § 874, 40 U.S.C. § 3145, and the requirements of 29 C.F.R. pt. 3 as may be applicable, which are incorporated by reference into this contract.
- b. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clause above and a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all of these contract clauses.
- c. Breach. A breach of the contract clauses above may be grounds for termination of the contract, and for debarment as a contractor and subcontractor as provided in 29 C.F.R. § 5.12."

Contract Work Hours and Safety Standards Act

Where applicable, all contracts awarded by the non-Federal entity in excess of \$100,000 that involve the employment of mechanics or laborers must include a provision for compliance with 40 U.S.C. §§ 3702 and 3704, as supplemented by Department of Labor regulations at 29 C.F.R. Part 5. See 2 C.F.R. Part 200, Appendix II(E). Each contractor must be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours.

Compliance with the Contract Work Hours and Safety Standards Act.

- (1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours

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worked in excess of forty hours in such workweek.

- (2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (b)(1) of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (b)(1) of this section, in the t \$27 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (b)(1) of this section.
- (3) Withholding for unpaid wages and liquidated damages. The (write in the name of the Federal agency or the loan or grant recipient) shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b)(2) of this section.
- (4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (b)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (b)(1) through (4) of this section.

Clean Air Act and Federal Water Pollution Control Act

For contracts over \$150,000, contracts must contain a provision requiring contractors to comply with the Clean Air Act and the Federal Water Pollution Control Act. If applicable, contracts must contain a provision that requires the contractor to agree to comply with all applicable standards, orders, or regulations issued pursuant to the Clean Air Act (42 U.S.C. §§ 7401-7671q.) and the Federal Water Pollution Control Act as amended (33 U.S.C. §§ 1251-1387).

Clean Air Act

- (1) The contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7401 et seq
- (2) The contractor agrees to report each violation to the (name of subrecipient entering into the contract) and understands and agrees that the (name of the subrecipient entering into the contract) will, in turn, report each violation as required to assure notification to Treasury, and the appropriate Environmental Protection Agency Regional Office.
- (3) The contractor agrees to include these requirements in each subcontract exceeding \$150,000

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Federal Water Pollution Control Act

- (1) The contractor agrees to comply with all applicable standards, orders, or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq.
- (2) The contractor agrees to report each violation to the (name of the subrecipient entering into the contract) and understands and agrees that the (name of the subrecipient entering into the contract) will, in turn, report each violation as required to assure notification to the Treasury, and the appropriate Environmental Protection Agency Regional Office.
- (3) The contractor agrees to include these requirements in each subcontract exceeding \$150,000

Debarment and Suspension

Non-federal entities, contractors and subcontractors are subject to debarment and suspension regulations. These regulations restrict awards, subawards, and contracts with certain parties that are debarred, suspended, or otherwise excluded from or ineligible for participation in Federal assistance programs and activities. In general, an "excluded" party cannot receive a Federal grant award or a contract within the meaning of a "covered transaction," to include subawards and subcontracts. The debarment and suspension clause is required for all contracts and subcontracts for \$25,000 or more, all contracts that require the consent of an official of a federal agency, and all contracts for federally required audit services.

Suspension and Debarment

- (1) This contract is a covered transaction for purposes of 2 C.F.R. pt. 180 and 2 C.F.R. pt. 3000. As such, the contractor is required to verify that none of the contractor's principals (defined at 2 C.F.R. § 180.995) or its affiliates (defined at 2 C.F.R. § 180.905) are excluded (defined at 2 C.F.R. § 180.940) or disqualified (defined at 2 C.F.R. § 180.935).
- (2) The contractor must comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, and must include a requirement to comply with these regulations in any lower tier covered transaction it enters into.
- (3) This certification is a material representation of fact relied upon by (insert name of recipient/subrecipient/applicant). If it is later determined that the contractor did not comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, in addition to remedies available to (insert name of recipient/subrecipient/applicant), the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment.
- (4) The bidder or proposer agrees to comply with the requirements of 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The bidder or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions.

Byrd Anti-Lobbying Amendment

Contractors that apply or bid for a contract of \$100,000 or more under a federal grant must file the required certification. This is also applicable to subcontractors of more than \$100,000, must include a contract provision prohibiting the use of federal appropriated funds to influence officers or employees of the federal government. Contractors that apply or bid for a contract for more than \$100,000 must also file the required certification regarding lobbying.

Byrd Anti-Lobbying Amendment, 31 U.S.C. § 1352

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Contractors who apply or bid for an award of \$100,000 or more shall file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, officer or employee of Congress, or an employee of a Member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 U.S.C. § 1352. Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient who in turn will forward the certification(s) to the awarding agency.

Procurement of Recovered Materials

A non-Federal entity that is a state agency or agency of a political subdivision of a state and its contractors must comply with section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act. The requirements of Section 6002 include procuring only items designated in guidelines of the Environmental Protection Agency (EPA) at 40 CFR part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, where the purchase price of the item exceeds \$10,000 or the value of the quantity acquired during the preceding fiscal year exceeded \$10,000; procuring solid waste management services in a manner that maximizes energy and resource recovery; and establishing an affirmative procurement program for procurement of recovered materials identified in the EPA guidelines.

“In the performance of this contract, the Contractor shall make maximum use of products containing recovered materials that are EPA-designated items unless the product cannot be acquired competitively within a timeframe providing for compliance with the contract performance schedule; meeting contract performance requirements; or at a reasonable price. Information about this requirement, along with the list of EPA-designated items, is available at [EPA’s Comprehensive Procurement Guidelines webpage](#).

The Contractor also agrees to comply with all other applicable requirements of Section 6002 of the Solid Waste Disposal Act.”

Domestic Preference for Procurement

As appropriate, and to the extent consistent with law, NFEs should, to the greatest extent practicable under a federal award, provide a preference for the purchase, acquisition, or use of goods, products or materials produced in the United States. This includes, but is not limited to, iron, aluminum, steel, cement, and other manufactured products.

“Domestic Preference for Procurements

As appropriate, and to the extent consistent with law, the contractor should, to the greatest extent practicable, provide a preference for the purchase, acquisition, or use of goods, products, or materials produced in the United States. This includes, but is not limited to iron, aluminum, steel, cement, and other manufactured products.

For purposes of this clause:

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Produced in the United States means, for iron and steel products, that all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States. Manufactured products mean items and construction materials composed in whole or in part of non-ferrous metals such as aluminum; plastics and polymer-based products such as polyvinyl chloride pipe; aggregates such as concrete; glass, including optical fiber; and lumber.”

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Access to Records

NFEs and their contractors and subcontractors must give the Department of Treasury and other authorized representatives access to records associated with their awards during the federally required record retention period and as long as the records are retained.

The following access to records requirements apply to this contract:

(1) The Contractor agrees to provide (insert name of state agency or local or Indian tribal government), (insert name of recipient), Treasury, the Comptroller General of the United States, or any of their authorized representatives access to any books, documents, papers, and records of the Contractor which are directly pertinent to this contract for the purposes of making audits, examinations, excerpts, and transcriptions.

(2) The Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.

(3) The Contractor agrees to provide the Treasury or authorized representatives access to construction or other work sites pertaining to the work being completed under the contract.

Contract Changes or Modifications

To be eligible for ARP SLFRF assistance under the non-Federal entity's Treasury grant or cooperative agreement, the cost of the change, modification, change order, or constructive change must be allowable, allocable, within the scope of its grant or cooperative agreement, and reasonable for the completion of project scope.

Compliance with Federal Law, Regulations and Executive Orders

The recipient and its contractors are required to comply with all Federal laws, regulations, and executive orders.

"This is an acknowledgement that Treasury ARP SLFRF financial assistance will be used to fund all or a portion of the contract. The contractor will comply with all applicable Federal law, regulations, executive orders, Treasury policies, procedures, and directives."

Program Fraud and False or Fraudulent Statements or Related Acts

Recipients must comply with the requirements of The False Claims Act (31 U.S.C. §§ 3729-3733) which prohibits the submission of false or fraudulent claims for payment to the federal government. It is that the non-Federal entity include a provision in its contract that the contractor acknowledges that 31 U.S.C. Chap. 38 (Administrative Remedies for False Claims and Statements) applies to its actions pertaining to the contract.

"The Contractor acknowledges that 31 U.S.C. Chap. 38 (Administrative Remedies for False Claims and Statements) applies to the Contractor's actions pertaining to this contract."

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A LISTING OF THE DUTIES, RESPONSIBILITIES AND
LIMITATIONS OF AUTHORITY OF THE RESIDENT PROJECT REPRESENTATIVE

ENGINEER shall furnish a Resident Project Representative (RPR) to assist ENGINEER in observing performance of the Work of the Contractor.

Through more extensive on-site observations of the Work in progress and field checks of material and equipment by the RPR and assistants, ENGINEER shall endeavor to provide further protection for OWNER against defects and deficiencies in the Work but the furnishing of such services will not make ENGINEER responsible for or give ENGINEER control over construction means, methods, techniques, sequences or procedures, or for safety precautions or programs or responsibility for CONTRACTOR's failure to perform the Work in accordance with the Contract Documents.

The duties and responsibilities of the RPR are limited to those of ENGINEER in ENGINEER's agreement with the OWNER and in the construction Contract Documents, and are further limited and described as follows:

A. General

RPR is ENGINEER's agent at the site, will act as directed by and under the supervision of ENGINEER, and will confer with ENGINEER regarding RPR's actions. RPR's dealings in matters pertaining to the on-site work shall in general be with ENGINEER and CONTRACTOR keeping OWNER advised as necessary. RPR's dealings with subcontractors shall only be through or with the full knowledge and approval of CONTRACTOR. RPR shall generally communicate with OWNER with the knowledge of and under the direction of ENGINEER.

B. Duties and Responsibilities of RPR

1. Schedule: Review the progress schedule, schedule of Shop Drawings submittals and schedule of values prepared by CONTRACTOR and consult with ENGINEER concerning acceptability.
2. Conferences and Meetings: Attend meetings with CONTRACTOR, such as preconstruction conferences, progress meetings, job conferences and other project-related meetings.
3. Liaison:
 - a. Serve as ENGINEER's liaison with CONTRACTOR, working principally through CONTRACTOR's superintendent and assist in understanding the intent of the Contract Documents; and assist ENGINEER in serving as OWNER's liaison with CONTRACTOR when CONTRACTOR's operations affect OWNER's on-site operations.

- b. Assist in obtaining from OWNER additional details or information, when required for proper execution of the Work.
- 4. Shop Drawings and Samples:
 - a. Record date of receipt of Shop Drawings and samples.
 - b. Advise ENGINEER and CONTRACTOR of the commencement of any Work requiring a Shop Drawing or sample if the submittal has not been approved by ENGINEER.
- 5. Review of Work, Rejection of Defective Work, Visiting Inspectors and Tests:
 - a. Conduct on-site observations of the Work in progress to assist ENGINEER in determining if the Work is in general proceeding in accordance with the Contract Documents.
 - b. Report to ENGINEER whenever RPR believes that any Work is unsatisfactory, faulty or defective or does not conform to the Contract documents, or has been damaged, or does not meet the requirements of any test or approval required to be made; and advise ENGINEER of Work that RPR believes should be corrected or rejected or should be uncovered for observation, or requires special testing or approval.
 - c. Verify that tests, equipment and system startups and operating and maintenance training are conducted in the presence of appropriate personnel, and that CONTRACTOR maintains adequate records thereof; and observe, record and report to ENGINEER appropriate details relative to the test procedures and startups.
 - d. Accompany visiting inspectors representing public or other agencies having jurisdiction over the Project, record the results of these inspections and report to ENGINEER.
- 6. Interpretation of Contract Documents: Report to ENGINEER when clarifications and interpretations of the Contract Documents are needed and transmit to CONTRACTOR clarifications and interpretations as issued by ENGINEER.
- 7. Modifications: Consider and evaluate CONTRACTOR's suggestions for modifications in Drawings or Specifications and report with RPR's recommendations to ENGINEER. Transmit to CONTRACTOR decisions as issued by ENGINEER.

8. Records:

- a. Maintain orderly files for correspondence, reports of job conferences, Shop Drawings and samples, reproductions of original Contract Documents including all Work Directive Changes, Addenda, Change Orders, Field Orders, additional Drawings issued subsequent to the execution of the Contract, ENGINEER's clarifications and interpretations of the Contract Documents, progress reports, and other Project related documents.
- b. Keep a diary or log book, recording CONTRACTOR hours on the job site, weather conditions, data relative to questions of Work Directive Changes, Change Orders or changed conditions, list of job site visitors, daily activities, decisions, observations in general, and specific observations in more detail as in the case of observing test procedures; and send copies to ENGINEER.
- c. Record names, addresses and telephone numbers of all CONTRACTORS, subcontractors and major suppliers of materials and equipment.

9. Reports:

- a. Furnish ENGINEER periodic reports as required of progress of the Work and of CONTRACTOR's compliance with the progress schedule and schedule of Shop Drawing and sample submittals.
- b. Consult with ENGINEER in advance of scheduled major tests, inspections or start of important phases of Work.
- c. Report immediately to ENGINEER and OWNER upon the occurrence of any accident.

10. Payment Requests: Review applications for payment with CONTRACTOR for compliance with the established procedure for their submission and forward with recommendations to ENGINEER, noting particularly the relationship of the payment requested to the schedule of values, work completed and materials and equipment delivered at the site but not incorporated in the Work.

11. Certificates, Maintenance and Operation Materials: During the course of the Work, verify that certificates, maintenance and operation manuals and other data required to be assembled and furnished by CONTRACTOR are applicable to the items actually installed and in accordance with the Contract Documents, and have this material delivered to ENGINEER for review and forwarding to OWNER prior to final payment for the work.

12. Completion:

- a. Before ENGINEER issues a Notice of Substantial Completion, submit to CONTRACTOR a list of observed items requiring completion or correction.
- b. Conduct final observation in the company of ENGINEER, OWNER and CONTRACTOR and prepare a final list of items to be completed or corrected.
- c. Observe that all items on final list have been completed or corrected and make recommendations to ENGINEER concerning acceptance.

C. Limitations of Authority

Resident Project Representative:

1. Shall not authorize any deviation from the Contract Documents or substitution of materials or equipment, unless authorized by ENGINEER.
2. Shall not exceed limitations of ENGINEER's authority as set forth in the Contract Documents.
3. Shall not undertake any of the responsibilities of CONTRACTOR, subcontractors or CONTRACTOR's superintendent.
4. Shall not advise on, issue directions relative to or assume control over any aspect of the means, methods, techniques, sequences or procedures of construction unless such advice or directions are specifically required by the Contract Documents.
5. Shall not advise on, issue directions regarding or assume control over safety precautions and programs in connection with the Work.
6. Shall not accept Shop Drawing or sample submittals from anyone other than CONTRACTOR.
7. Shall not authorize OWNER to occupy the Project in whole or in part.
8. Shall not participate in specialized field or laboratory tests or inspections conducted by others except as specifically authorized by ENGINEER.

BID FORM

An Individual	☐
A Partnership	☐
A Corporation	☒
A Limited Liability Company	☐

Date January 30, 2025

1. BID for Bear Creek Sewage Pumping Station Replacement for the City of Columbia, Tennessee.

I / WE

Cumberland Valley Constructors, Inc.

Name of Bidder

2518 Plum Street, Nashville, Tennessee 37207

Address of Bidder

the undersigned, as Bidder, propose to furnish all necessary labor, machinery, tools, apparatus, materials, equipment, service and other necessary supplies, in strict accordance with the terms and conditions of the Detailed Specifications and Contract Documents hereto attached and referred to herein for the construction of Sewer System Improvements, Contract 24-01 – Bear Creek Sewage Pumping Station Replacement for the City of Columbia, Tennessee, and do such other work incidental thereto as may be ordered by the Owner, through the Engineer, at the unit or lump sum prices listed herein.

2. The Bidder declares that he has examined the sites of the work and informed himself fully in regard to all conditions pertaining to the places where the work is to be performed; that he has examined these Detailed Specifications and Contract Documents for the work and has read all special provisions furnished prior to the opening of bids; and that he has satisfied himself relative to the scope and details of the work to be performed. The Bidder further declares that he understands the Total Amount Bid or “sum” in the Agreement is subject to increase or decrease, and that should the scope of any of the items of work be changed materially, the undersigned proposes to perform the additional work or decrease the Total Amount Bid or “sum” in the Agreement based on the unit and lump sum prices set out herein. Should the quantities be decreased, the undersigned will make no claim for anticipated profits.

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3. BIDS shall include applicable sales tax and all other applicable taxes and fees.
4. Where alternate materials or methods of construction are indicated in the BID FORM, the Bidder shall check the type of material or method of construction where indicated in the BID FORM. Failure to do so will allow the Owner to make the choice with no adjustment in price due the Bidder.
5. Unit and lump sum price amounts shall be shown in both words and numerals. In case of discrepancy, the amount shown in words will govern.
6. The unit and lump sum prices shall include all labor, materials, dewatering, shoring, overhead, profit, insurance, *etc.*, to cover the finished work of the several kinds called for.
7. Bidder understands that the Owner reserves the right to reject any or all bids and to waive any informalities in the bidding.
8. The Bidder agrees that his bid shall be good and may not be withdrawn for a period of 90 calendar days after the scheduled closing time for receiving bids.

9. CONTRACT 24-01 – BEAR CREEK SEWAGE PUMPING STATION
REPLACEMENT

BID FORM A

9.a. Lump Sum Price

For performing all labor and furnishing all materials and equipment necessary for the new Bear Creek Sewage Pumping Station using submersible pumps, complete in place, including all equipment, electrical work, all site development, electrical building, flow meter pit, piping, emergency pump connection, ductile iron force main segments, and appurtenances as shown on the Plans and/or specified for the lump sum amount of:

TOTAL BID: (\$5,268,000.00)

Five Million Two Hundred Sixty-Eight Thousand Dollars

Zero Cents

9. CONTRACT 24-01 – BEAR CREEK SEWAGE PUMPING STATION REPLACEMENT (cont'd)

9.b. Equipment to be Furnished

The prices for equipment listed below for work to be constructed under Sub-Sections 9A, 9B and 9C are included in the lump sum price shown previously as Item 9.a. Lump Sum Price. The BIDDER shall use the lowest priced item listed as an acceptable Base Bid item as the basis for arriving at his overall price. The BIDDER is required to fill in the items below in order to indicate the relative prices of the equipment of various manufacturers which may be considered by the Owner for various reasons. The prices shown below shall include the cost of furnishing the various equipment items.

The prices listed hereinafter are not to be in addition to the Lump Sum Price in Paragraph 9.a., but are to be included in it.

Sub-Section	Description	Price	Equipment Used in Base Bid (Show only one per Sub-Section)
9A	<u>Mechanically Cleaned Bar Screen</u>		
	Duperon	\$ _____	\$ _____
	Huber Technology, Inc.	\$ _____	\$ _____
	Vulcan Industries, Inc.	<u>\$271,000.00</u>	<u>\$271,000.00</u>
	Pre-approved equal	\$ _____	\$ _____
9B	<u>Submersible Pumps and Accessories</u>		
	KSB	<u>\$228,360.00</u>	<u>\$228,360.00</u>
	Pentair	\$ _____	\$ _____
	ABS Sulzer	\$ _____	\$ _____
	Pre-approved equal	\$ _____	\$ _____

9. CONTRACT 24-01 – BEAR CREEK SEWAGE PUMPING STATION REPLACEMENT (cont'd)

9.b. Equipment to be Furnished (cont'd)

Sub-Section	Description	Price	Equipment Used in Base Bid (Show only one per Sub-Section)
9B	<u>Variable Frequency Drives</u>		
	ABB	<u>\$209,466.00</u>	<u>\$209,466.00</u>
	Danfoss	<u>\$</u>	<u>\$</u>
	Yaskawa	<u>\$</u>	<u>\$</u>
	Pre-approved equal	<u>\$</u>	<u>\$</u>
9C	<u>Pump Automatic Control System and Accessories</u>		
	Southern Sales Company, Inc.	<u>\$</u>	<u>\$</u>
	<i>Southern Flow Inc.</i>	<u>\$79,000.00</u>	<u>\$79,000.00</u>
	Pre-approved equal	<u>\$</u>	<u>\$</u>
10	<u>Electrical Equipment</u>		
	Square D (Delivery Time Frame From Date Of Approved Submittal = _____ Days – Fill In)	<u>\$</u>	<u>\$</u>
	Eaton (Delivery Time Frame From Date Of Approved Submittal = <u>210</u> Days – Fill In)	<u>\$132,000.00</u>	<u>\$132,000.00</u>
	<u>“Pre-Approved Equal”</u>	<u>\$</u>	<u>\$</u>

9. CONTRACT 24-01 – BEAR CREEK SEWAGE PUMPING STATION REPLACEMENT (cont'd)

BID FORM B – ADJUSTMENT ITEMS

9.c. Unit Prices for Adjustment Items

NOTE: The following items (Item Nos. 1 through 3) are for use in performing work not shown on the Plans or specified under the scope of BID FORM A, Lump Sum Price. Prices listed for adjustment items will be used only for accomplishing any field changes directed by the Engineer outside the scope of the Lump Sum Price.

ITEM NUMBER	APPROXIMATE QUANTITY	DESCRIPTION WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
1.	15 C.Y.	Undercut excavation in earth 0 to 5 feet deep below subgrade For <u>One Hundred Fifty</u> Dollars <u>Zero</u> Cents, per cubic yard	<u>\$150.00</u>	<u>\$2,250.00</u>
2.	15 C.Y.	Undercut stone refill (Shot Rock) For <u>One Hundred</u> Dollars <u>Zero</u> Cents, per cubic yard	<u>\$100.00</u>	<u>\$1,500.00</u>
3.	15 C.Y.	Undercut stone refill (TDOT No. 57) For <u>Seventy</u> Dollars <u>Zero</u> Cents, per cubic yard	<u>\$70.00</u>	<u>\$1,050.00</u>

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9. CONTRACT NO. 23-03 – WEST SIDE SEWAGE PUMPING STATION
RENOVATION (cont'd)

BID FORM B – ADJUSTMENT ITEMS (cont'd)

9.c. Unit Prices for Adjustment Items (cont'd)

ITEM NUMBER	:	APPROXIMATE QUANTITY	:	DESCRIPTION WITH UNIT BID PRICE WRITTEN IN WORDS	:	UNIT PRICE	:	TOTAL PRICE
TOTAL BID FORM B ADJUSTMENT ITEMS 1-3 INCLUSIVE						\$4,800.00		
TOTAL BID FORM A (REPEAT FROM BF-3)						\$5,268,000.00		
TOTAL BID, CONTRACT 24-01, SUM OF BID FORM A PLUS BID FORM B						\$5,272,800.00		

9. Time of Commencement and Completion

The Bidder further proposes and agrees hereby to commence the work with adequate force and equipment on a date to be specified in a written order of the Engineer, and complete all work within the calendar days shown:

Contract 24-01: Four Hundred Fifty (450) consecutive calendar days

10. Liquidated Damages

The Bidder further agrees that if the work is not completed within the time stipulated, liquidated damages in the amount of One Thousand Dollars (\$1,000) per calendar day will be deducted from the compensation otherwise due him in accordance with the terms and conditions of the Contract Documents for each day thereafter, Sundays and holidays included, that the work remains uncompleted.

11. Time Limit for Execution of Documents

The undersigned further agrees that, in case of failure on his part to execute the Agreement and the Bonds in the eight counterparts and furnish the required certificate of insurance within ten consecutive calendar days after written notice being given of the award of the Contract, the check or Bid Bond accompanying this Bid and the monies payable thereon shall be paid into the funds of the City of Columbia, Tennessee as liquidated damages for such failure; otherwise the check or bid bond accompanying this BID FORM shall be returned to the undersigned.

12. Bid Guaranty

Attached hereto is a certified check on the _____ Bank of _____ or a Bid Bond on the form provided for the sum of 5% of Bid Dollars (\$_____) made payable to the City of Columbia, Tennessee to ensure that the Contractor will enter into the Construction Contract and Contract Bond.

13. Interested Parties

The undersigned, as Bidder, hereby declares that the only person or persons interested in the BID FORM as principal or principals is or are named herein, and that no person other than mentioned herein has any interest in this BID FORM or in the Agreement to be entered into; that this BID FORM is made without connection with any other person, company, or parties making a bid or proposal and that it is in all respects fair and in good faith without collusion or fraud.

<u>NAME</u>	<u>ADDRESS</u>
<u>Jarrold Imler, President</u>	<u>2518 Plum Street, Nashville, TN 37207</u>
<u>Greg Schiefer, Vice President</u>	<u>2518 Plum Street, Nashville, TN 37207</u>
<u>Ryan Gutridge, Treasure/Secretary</u>	<u>2518 Plum Street, Nashville, TN 37207</u>

14. Addenda

I hereby certify that I have received, read and examined the following numbered Addenda: 1 , 2 , 3 , 4 , , , , .

BY: Cumberland Valley Constructors, Inc.
Name of Bidder

2518 Plum Street, Nashville, TN 37207
Address of Bidder

Signature of Authorized Representative

Greg Schiefer, Vice President
Title

ATTEST (For Corporations)

(Name)

Ryan Gutridge, Treasure/Secretary
Title

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned,
_____ as
Principal, and _____ as
Surety, are hereby held and firmly bound unto the City of Columbia, Tennessee, as
Owner, in the penal sum of:

_____ for the payment of which, well and truly to be made, we hereby jointly and severally bind
ourselves, our heirs, executors, administrators, successors and assigns.

Signed this _____ day of _____, 20____.

The condition of the above obligation is such that whereas the Principal has
submitted to the City of Columbia, Tennessee, a certain BID, attached hereto and made
a part hereof to enter into Contract in writing for the construction of Sewer System
Improvements, Contract 24-01 – Bear Creek Sewage Pumping Station Replacement,
for the City of Columbia, Tennessee.

NOW THEREFORE,

- (a) If said Bid shall be rejected, or in the alternate,
- (b) If said Bid shall be accepted and the Principal shall execute and deliver a
Contract in the Form of Contract attached hereto (properly completed in
accordance with said Bid) and shall furnish a bond for his faithful
performance of said Contract, and for the payment of all persons
performing labor or furnishing materials in connection therewith, and shall
in all other respects perform the agreement created by the acceptance of
said BID, then this obligation shall be void, otherwise the same shall
remain in force and effect, it being expressly understood and agreed that
the liability of the Surety for any and all claims hereunder shall, in no event,
exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations
of said Surety and its bond shall be in no way impaired or affected by any extension of
the time within which the Owner may accept such BID; and said Surety does hereby
waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

Principal

Firm Name

BY: _____

Signature

Printed Name

ADDRESS: _____

Seal

Surety

Firm Name

BY: _____

Signature

Printed Name

ADDRESS: _____

Seal

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NOTE: A copy of the Power of Attorney of the Surety's Principal is required and the amount of the bond must not be less than five percent (5%) of the amount of bid.

Surety companies executing bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State where the project is located.

ACKNOWLEDGEMENT REGARDING BIDDER SAM REGISTRATION

Contractors procured directly by grantees, sub-grantees, and/or sub-recipients of American Rescue Plan Act (ARPA) funds, are required to have an active registration in the System of Award Management (SAM). This document shall be completed and submitted as part of the bid proposal.

1. By submitting this proposal, the prospective bidder certifies that it has an active registration in SAM that is not set to expire within the next 90 days.
2. By submitting this proposal, the prospective bidder certifies neither it, its principals nor affiliates, is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.
3. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that an erroneous certification was rendered, in addition to other remedies available to the Federal Government, the Department or agency with which this transaction originated may pursue available remedies.
4. Further, the prospective bidder shall provide immediate written notice to the person to which this proposal is submitted if at any time the Participant learns that this certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
5. By submitting this proposal, it is agreed that should the proposed covered transaction be entered into, the prospective bidder will not knowingly enter into any lower-tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction unless authorized by the agency with which this transaction originated.
6. It is further agreed that by submitting this proposal, the prospective bidder will include Certification of Subcontractor Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion without modification, in all lower-tier covered transactions and in all solicitations for lower-tier covered transactions.

Provide the following information as detailed in the prospective bidder's SAM registration:

Entity Name _____

Address _____

City: _____ State: _____ Zip: _____

SAM Entity ID: _____ Expiration Date: _____

Active Exclusions: ☐ Yes ☐ No

CERTIFICATION OF BIDDER REGARDING EQUAL EMPLOYMENT OPPORTUNITY

This certification is required pursuant to Executive Order 11246 (30 F. R. 12319-25). The implementing rules and regulations provide that any bidder or prospective contractor, or any of their proposed subcontractors, shall state as an initial part of the bid or negotiations of the contract whether it has participated in any previous contract or subcontract subject to the equal opportunity clause; and, if so, whether it has filed all compliance reports due under applicable instructions.

Where the certification indicates that the bidder has not filed a compliance report due under applicable instructions, such bidder shall be required to submit a compliance report within seven calendar days after bid opening. No contract shall be awarded unless such report is submitted.

Certification by Bidder

Bidder/Firm: _____

Address: _____

City: _____ State _____ Zip _____

1. Bidder has participated in a previous contract or subcontract subject to the Equal Opportunity Clause. ☐ Yes ☐ No
2. Compliance reports were required to be filed in connection with such contract or subcontract. ☐ Yes ☐ No
3. Bidder has filed all compliance reports due under applicable instructions, including SF-100. ☐ Yes ☐ No ☐ None Req.
4. Have you ever been or are you being considered for sanction due to violation of Executive Order 11246, as amended? ☐ Yes ☐ No

Bidder Name: _____

Title: _____

Signature: _____

Date: _____



STATE OF TENNESSEE
CERTIFICATION OF BIDDER REGARDING
USE OF WOMEN/MINORITY SUBCONTRACTORS
****Construction Projects Only****

This certification is required for the contractor to demonstrate that when subcontractors are to be used on this project, an attempt will be made to utilize women/minority owned firms.

Documentation must be on file to show who has been contacted.

- ☐ I certify that every attempt was made to utilize female/minority contractors on this project.
- ☐ I am unable to certify to the above statements. Explanation is attached.

Signature of Authorized Representative	Date
Printed Name	Phone Number
Email Address	Address



STATE OF TENNESSEE
CERTIFICATION REGARDING DEBARMENT, SUSPENSION
AND OTHER RESPONSIBILITY MATTERS

The prospective participant certifies to the best of its knowledge and belief that it and its principals:

- ☐ Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
- ☐ Have not within a three-year period preceding this proposal been convicted of or had a civil judgement rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
- ☐ Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (b) of this certification; and
- ☐ Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.

I understand that a false statement on this certification may be grounds for rejection of this proposal or termination of the award. In addition, under 18 USC Sec. 1001, a false statement may result in a fine of up to \$10,000 or imprisonment for up to 5 years, or both.

Signature of Authorized Representative	Date
Printed Name	Phone Number / Email Address

☐ I am unable to certify to the above statements. Explanation is attached.

CERTIFICATION BY PROPOSED SUBCONTRACTOR REGARDING EQUAL EMPLOYMENT OPPORTUNITY

NAME OF PRIME CONTRACTOR: _____

PROJECT NUMBER: _____

This certification is required pursuant to Executive Order 11246 (30 F. R. 12319-25). The implementing rules and regulations provide that any bidder or prospective contractor, or any of their proposed subcontractors, shall state as an initial part of the bid or negotiations of the contract whether it has participated in any previous contract or subcontract subject to the equal opportunity clause; and, if so, whether it has filed all compliance reports due under applicable instructions.

Where the certification indicates that the subcontractor has not filed a compliance report due under applicable instructions, such subcontractor shall be required to submit a compliance report before the owner approves the subcontract or permits work to begin under the subcontract.

SUBCONTRACTOR'S CERTIFICATION

Subcontractor Name: _____

Address: _____

City: _____ State _____ Zip _____

1. Bidder has participated in a previous contract or subcontract subject to the Equal Opportunity Clause. ☐ Yes ☐ No
2. Compliance reports were required to be filed in connection with such contract or subcontract. ☐ Yes ☐ No
3. Bidder has filed all compliance reports due under applicable instructions, including SF-100. ☐ Yes ☐ No ☐ None Req.
4. Have you ever been or are you being considered for sanction due to violation of Executive Order 11246, as amended? ☐ Yes ☐ No

Name: _____

Title: _____

Signature: _____

Date: _____

CERTIFICATION OF SUBCONTRACTOR REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND EXCLUSION

Subcontractors for projects that are funded in whole or in part by Coronavirus State and Local Fiscal Recovery Fund (SLFRF) and American Rescue Plan Act (ARPA) funds must provide information concerning the entity's debarment, suspension, ineligibility or exclusion status. This document shall be completed and provided to the prime contractor.

1. By signing and submitting this proposal, the prospective lower-tier participant certifies that neither it, its principals nor affiliates, is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency. Further, the Participant provides the certification set out below:
2. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that an erroneous certification was rendered, in addition to other remedies available to the Federal Government, the Department or agency with which this transaction originated may pursue available remedies.
3. Further, the Participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the Participant learns that this certification was erroneous when submitted or has become erroneously reason of changed circumstances.
4. By submitting this document, it is agreed that should the proposed covered transaction be entered into, the Participant will not knowingly enter into any lower-tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction unless authorized by the agency with which this transaction originated.

The subcontracting entity may satisfy the requirement of this document via one of the two options below:

Option 1: SAM.gov Active Registration

Entity Name _____

Address _____

City: _____ State: _____ Zip: _____

SAM Entity ID: _____ Expiration Date: _____

Active Exclusions: ☐ Yes ☐ No

Option 2: Signed Certification

Entity Name _____

Address _____

City: _____ State: _____ Zip: _____

Entity Representative: _____ Title: _____

Signature _____



STATE OF TENNESSEE

BYRD ANTI-LOBBYING AMENDMENT CERTIFICATION

Contractors who apply or bid for an award of \$100,000 or more shall file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, officer or employee of Congress, or an employee of a Member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 U.S.C. § 1352.

Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient who in turn will forward the certification(s) to the awarding agency.

APPENDIX A, 44 C.F.R. PART 18 – CERTIFICATION REGARDING LOBBYING – REQUIRED FOR CONTRACTS OVER \$100,000 *Certification for Contracts, Grants, Loans, and Cooperative Agreements*

The undersigned certifies, to the best of his or her knowledge and belief, that:

- ☐ No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- ☐ If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
- ☐ The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

The Contractor certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. Chap. 38, Administrative Remedies for False Claims and Statements, apply to this certification and disclosure, if any.

Signature of Authorized Representative	Date
Printed Name and Title	Phone Number / Email Address

DRUG-FREE WORKPLACE AFFIDAVIT

STATE OF _____

COUNTY OF _____

The undersigned, principal officer of _____, an employer of five (5) or more employees contracting with _____ government to provide construction services, hereby states under oath as follows:

1. The undersigned is a principal officer of _____ (hereinafter referred to as the "Company"), and is duly authorized to execute this Affidavit on behalf of the Company.
2. The Company submits this Affidavit pursuant to T.C.A. § 50-9-113, which requires each employer with no less than five (5) employees receiving pay who contracts with the state or any local government to provide construction services to submit an affidavit stating that such employer has a drug-free workplace program that complies with Title 50, Chapter 9, of the Tennessee Code Annotated.
3. The Company is in compliance with T.C.A. § 50-9-113.

Further affiant saith not.

Principal Officer

STATE OF _____

COUNTY OF _____

Before me personally appeared _____, with whom I am personally acquainted (or proved to me on the basis of satisfactory evidence), and who acknowledged that such person executed the foregoing affidavit for the purposes therein contained.

Witness my hand and seal at office this _____ day of _____, 20____.

Notary Public

My commission expires: _____

STATEMENT OF COMPLIANCE CERTIFICATE ILLEGAL IMMIGRANT

EACH CONTRACTOR BIDDING SHALL FILL IN AND SIGN THE FOLLOWING

Bidder Name: _____

Address: _____

City: _____ State _____ Zip _____

This is to certify that _____ have
fully complied with all the requirements of T.C.A. § 12-3-309, stating:

- (1) No state governmental entity shall contract to acquire goods or services from any person who knowingly utilizes the services of illegal immigrants in the performance of a contract for goods or services entered into with a state governmental entity;
- (2) No person may contract to supply goods or services to a state governmental entity if that person knowingly utilizes the services of illegal immigrants in the performance of a contract to supply goods or services entered into with the state or a state entity.

All Bidders for construction services on this project shall be required to submit an affidavit (by executing this compliance document) as part of their bid, that attests that such Bidder shall comply with requirements of T.C.A. § 12-3-309.

Name: _____

Title: _____

Signature: _____

Date: _____



**STATE OF TENNESSEE
IRAN DIVESTMENT ACT CERTIFICATION**

SUBJECT CONTRACT NUMBER(S):	
CONTRACTOR LEGAL ENTITY NAME:	
EDISON SUPPLIER IDENTIFICATION NUMBER:	

The Iran Divestment Act, Tenn. Code Ann. § 12-12-101 et. seq. requires a person that attempts to contract with the state, including a contract renewal or assumption, to certify at the time the bid is submitted or the contract is entered into, renewed, or assigned, that the person or the assignee is not identified on a list created pursuant to § 12-12-106.

Currently, the list is available online at the following website: <https://www.tn.gov/generalservices/procurement/central-procurement-office--cpo-/library-/public-information-library.html>

The Contractor, identified above, certifies by signature below that it is not included on the list of persons created pursuant to Tenn. Code Ann. § 12-12-106 of the Iran Divestment Act.

CONTRACTOR SIGNATURE

NOTICE: This certification MUST be signed by an individual with legal capacity to contractually bind the Contractor.

PRINTED NAME AND TITLE OF SIGNATORY

DATE



NOTICE

Tenn. Code Ann. § 12-12-106 requires the chief procurement officer to publish, using credible information freely available to the public, a list of persons it determines engage in investment activities in Iran, as described in § 12-12-105.

For these purposes, the State intends to use the attached list of “Entities determined to be non-responsive bidders/offers pursuant to the New York State Iran Divestment Act of 2012.”

While inclusion on this list would make a person ineligible to contract with the state of Tennessee, if a person ceases its engagement in investment activities in Iran, it may be removed from the list.

If you feel as though you have been erroneously included on this list please contact the Central Procurement Office at CPO.Website@tn.gov.

Entities determined to be non-responsive bidders/offerers pursuant to The New York State Iran Divestment Act of 2012

1. Ak Makina, Ltd.
2. Amona
3. Bank Markazi Iran (Central Bank of Iran)
4. Bank Mellat
5. Bank Melli Iran
6. Bank Saderat Iran
7. Bank Sepah
8. Bank Tejarat
9. China Precision Machinery Import-Export Corporation (CPMIEC)
10. ChinaOil (China National United Oil Corporation)
11. China National Offshore Oil Corporation (CNOOC)
12. China National Petroleum Corporation (CNPC)
13. Indian Oil Corporation
14. Kingdream PLC
15. Naftiran Intertrade Co. (NICO)
16. National Iranian Tanker Co. (NITC)
17. Oil and Natural Gas Corporation (ONGC)
18. Oil India, Ltd.
19. Persia International Bank
20. Petroleos de Venezuela (PDVSA Petróleo, SA)
21. PetroChina Co., Ltd.
22. Petronet LNG, Ltd.
23. Sameh Afzar Tajak Co. (SATCO)
24. Shandong FIN CNC Machine Co., Ltd.
25. Sinohydro Co., Ltd.
26. Sinopec Corp. (China Petroleum & Chemical Corporation)
27. SKS Ventures
28. SK Energy Co., Ltd.
29. Som Petrol AS
30. Unipet (China International United Petroleum & Chemicals Co., Ltd.)
31. Zhuhai Zhenrong Co.

List Date: December 4, 2023

For more information you may call: (518) 474-5988 or email: NYSIranDivestmentAct@ogs.ny.gov



STATE OF TENNESSEE
NON-BOYCOTT OF ISRAEL CERTIFICATION

The Bidder certifies that it is not currently engaged in, and will not for the duration of the contract engage in, a boycott of Israel as defined by Tenn. Code Ann. § 12-4-119. This provision shall not apply to contracts with a total value of less than two hundred fifty thousand dollars (\$250,000) or to contractors with less than ten (10) employees.

According to the law, a boycott of Israel means engaging in refusals to deal, terminating business activities, or other commercial actions that are intended to limit commercial relations with Israel, or companies doing business in or with Israel or authorized by, licensed by, or organized under the laws of the State of Israel to do business, or persons or entities doing business in Israel, when such actions are taken:

- 1) In compliance with, or adherence to, calls for a boycott of Israel, or
- 2) In a manner that discriminates on the basis of nationality, national origin, religion, or other unreasonable basis, and is not based on a valid business reason. Tenn. Code Ann. § 12-4-119.

Signature of Authorized Representative	Date
Printed Name	Phone Number / Email Address

AGREEMENT

THIS AGREEMENT made and entered into this the ____ day of _____, 2025, by and between Cumberland Valley Constructors, Inc. doing business as a Corporation hereinafter called the Contractor, and the City of Columbia, Tennessee hereinafter called the Owner:

WITNESSETH:

That the Contractor, for the consideration hereinafter fully set out, hereby agrees with the Owner as follows:

1. Scope of the Work

That the Contractor shall furnish all labor, materials, tools, machinery, and service to complete the construction of Sewer System Improvements, Contract 24-01 – Bear Creek Sewage Pumping Station Replacement for the Owner, in the manner and form as provided by the Plans, Detailed Specifications and Contract Documents attached hereto and enumerated as follows:

a. Plans

Sewer System Improvements for the City of Columbia, Tennessee, Contract 24-01 – Bear Creek Sewage Pumping Station Replacement, Project Number 2198, Sheets 1 through 10, E1 through E7, and M1.

b. Specifications and Contract Documents

	<u>Pages</u>
(1) Advertisement for Bids	AB 1 – 3
(2) Davis-Bacon Wage Rate	
(3) Instructions to Bidders	IB 1 – 10
(4) General Conditions	GC 1 – 72
(5) Supplementary Conditions	SC 1 – 2
(6) SLRF Supplemental Conditions	
(7) A Listing of the Duties, Responsibilities, and Limitations of Authority of the Resident Project Representative	Pages 1 – 4
(8) BID FORM	BF, 1 – 9
(9) Bid Bond	BB, 1 – 3
(10) Acknowledgement Regarding SAM Registration	
(11) Certification of Bidder Regarding Equal Employment Opportunity	
(12) Certification of Bidder Regarding Use of Women/ Minority Subcontractors	
(13) Certification Regarding Debarment, Suspension and Other Responsibility Matters	
(14) Certification by Proposed Subcontractor Regarding Equal Employment Opportunity	
(15) Certification of Subcontractor Regarding Debarment, Suspension, Ineligibility and Exclusion	
(16) Byrd Anti-Lobbying Amendment Certification	
(17) Drug-Free Workplace Affidavit	
(18) Statement of Compliance Certificate Illegal Immigrants	
(19) Iran Divestment Act Certification	
(20) Non-Boycott of Israel Certification	
(21) Agreement	A, 1 – 7
(22) Performance Bond	PEB, 1 – 2
(23) Payment Bond	PAB, 1 – 2
(24) Detailed Specifications	
Section 1 – General Scope and Special Provisions	DS 1, 1 – 15
Geotechnical Engineering Report	
Section 2 – Testing and Control of Materials	DS 2, 1 – 5
Section 3 – Concrete and Reinforcing Steel	DS 3, 1 – 26
Section 4 – Site Preparation and Development	DS 4, 1 – 12
Section 5 – Piping, Fittings, Valves, Manholes, and Accessories	DS 5, 1 – 20
Section 6 – Building Construction	DS 6, 1 – 16
Section 7 – Painting and Coating	DS 7, 1 – 7
Section 8 – Miscellaneous Metals	DS 8, 1 – 10
Section 9 – Mechanical and Control Equipment – General	DS 9, 1 – 9

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Sub-Section 9A – Mechanically Cleaned Bar Screen	DS 9A, 1 – 15
Sub-Section 9B – Wet Pit Submersible Pumps and Accessories	DS 9B, 1 – 14
Sub-Section 9C – Pump Automatic Control System and Accessories	DS 9C, 1 – 16
Section 10 – Electrical Work	DS 10, 1 – 69
(25) Addenda <u>1</u> , <u>2</u> , <u>3</u> , <u>4</u> , _____, _____	

all identified as Sewer System Improvements, for the City of Columbia, Tennessee, Contract 24-01 – Bear Creek Sewage Pumping Station Replacement, Project Number 2198, May 2024, as prepared by J. R. Wauford & Company, Consulting Engineers, Inc., Nashville, Tennessee, and shall do everything required by this Agreement, Advertisement for Bids, Instructions to Bidders, General Conditions, Supplementary Conditions, Detailed Specifications, Bid Form, Payment Bond, Performance Bond, and Addenda.

2. Time for Commencement and Completion

That the Contractor shall commence the work to be performed under this Agreement on written order of the Engineer, and shall fully complete all work hereunder within the following number of consecutive calendar days from and including said date.

Contract 24-01 – Four Hundred Fifty (450) calendar days

3. Payments

The Owner hereby agrees to pay to the Contractor for the faithful performance of this Agreement, subject to additions and deductions as provided in the Detailed

Specifications and Contract Documents, in lawful money of the United States, as follows:

the full sum of Five Million, Two Hundred Seventy-Two Thousand, Eight Hundred Dollars and 00/100 Cents (\$5,272,800.00).

4. Current Estimates

The Owner shall, in a timely manner, make partial payments to the Contractor on the basis of Partial Payment Request approved by the Engineer for work performed during the preceding calendar month by the Contractor, less five (5) percent, as required by Tennessee law, of the amount of such Partial Payment Request which is to be retained by the Owner until all work has been performed strictly in accordance with this Agreement and until such work has been accepted by the Owner.

5. Final Estimates

Upon submission by the Contractor of evidence satisfactory to the Owner that all payrolls, material bills, and other costs incurred by the Contractor in connection with the construction of the work have been paid in full, final payment on account of this Agreement shall be made within sixty (60) days after the completion by the Contractor of all work covered by this Agreement, and the acceptance of such work by the Owner.

6. Liquidated Damages

It is mutually agreed between the parties hereto that time is the essence on each and every portion of this Contract. If the said Contractor shall neglect, fail or refuse to complete the work within the time specified within the Contract, or within any proper extension thereof granted by the Owner, then the Contractor does hereby agree to pay, either by means of deduction from the compensation due the Contractor under this Contract or by direct payment by the Contractor to the Owner, not as a penalty, but as liquidated damages, the sum of One Thousand (\$1,000.00) Dollars, per calendar day for each day thereafter, Sundays and Holidays included, that the work remains incomplete. In addition, any fines paid as a result of the Contractor's failure to complete the project on time or neglect shall be borne by the Contractor.

7. Additional Bond

It is further mutually agreed between the parties hereto that if, at any time after the execution of this Agreement and the Performance Bond and the Payment Bond hereto attached for its faithful performance, the Owner shall, for cause, deem the surety or sureties upon such bond to be unsatisfactory, or if for any reason such bonds ceases to be adequate to cover the performance of the work, the Contractor shall, at his expense, within ten days after the receipt of notice from the Owner so to do, furnish an additional bond or bonds in such form and amount, and with such surety or sureties as shall be satisfactory to the Owner. In such event, no further payment to the Contractor shall be deemed to be due under this Agreement until such new or additional security for the faithful

AGREEMENT
2198 – May 2024

performance of the work shall be furnished in manner and form satisfactory to the Owner.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on the day and date first above written in six (6) counterparts, each of which shall, without proof or accounting for the other counterparts, be deemed an original contract.

AGREEMENT
2198 – May 2024

CONTRACTOR: Cumberland Valley Constructors, Inc.

BY: _____

NAME: Jarrold Imler

(PLEASE TYPE)

TITLE: President

(SEAL)

ATTEST OR WITNESS:

NAME: Ryan Gutridge, Treasure/Secretary

(PLEASE TYPE)

OWNER: CITY OF COLUMBIA, TENNESSEE

BY: _____

NAME: Charles M. Molder

(PLEASE TYPE)

TITLE: Mayor

(SEAL)

ATTEST:

NAME: Thad H. Jablowski

(PLEASE TYPE)

APPROVED AS TO LEGAL FORM

BY: _____

Jake Hubbell, City Attorney

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: that

Cumberland Valley Constructors, Inc.

(Name of Contractor)

2518 Plum Street, Nashville, Tennessee 37207

(Address of Contractor)

a _____ Corporation hereinafter called
(Corporation, Partnership or Individual)

Principal, and _____
(Name of Surety)

(Address of Surety)

hereinafter called "Surety", are held and firmly bound unto

City of Columbia, Tennessee

(Name of Owner)

700 North Garden Street, Columbia, Tennessee 38401

(Address of Owner)

hereinafter called "Owner", in the penal sum of Five Million Two Hundred Seventy-Two Thousand Eight Hundred Dollars 00/100 Cents (\$5,272,800.00) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the Owner dated _____ day of _____, 2025, a copy of which is hereto attached and made a part hereof for the construction of:

Sewer System Improvements

Contract 24-01 – Bear Creek Sewage Pumping Station Replacement

Wauford Project No. 2198

NOW, THEREFORE, if the Principal shall well, truly and faithfully performs its duties, all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term thereof, and any extensions thereof which may be granted by the Owner, with or without notice to the Surety, and if he shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the Owner from all cost and damages which it may suffer by reason of failure to do, and shall reimburse and repay the Owner all outlay and expense which the Owner may incur in making good any default, then this obligation shall be void; otherwise to

PERFORMANCE BOND
2198 – May 2024

remain in full force and effect.

PROVIDED, FURTHER, that the said surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the work to be performed thereunder or the specifications accompanying the same shall in any wise affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the work or to the specifications.

PROVIDED, FURTHER, that no final settlement between the Owner and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in 6 counterparts, each one of which shall be deemed an original, this the _____ day of _____, 2025.

WITNESSES:

Cumberland Valley Constructors, Inc.
Principal

BY: _____
Jarrod Imler, President

2518 Plum Street, Nashville, Tennessee 37207
Address

(SEAL)

WITNESSES:

Surety

BY: _____
Attorney-in-Fact

NOTE: Surety companies executing bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the project is located.

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: that

Cumberland Valley Constructors, Inc.

(Name of Contractor)

2518 Plum Street, Nashville, Tennessee 37207

(Address of Contractor)

a _____ Corporation hereinafter called
(Corporation, Partnership or Individual)

Principal, and _____
(Name of Surety)

(Address of Surety)

hereinafter called "Surety", are held and firmly bound unto

City of Columbia, Tennessee

(Name of Owner)

700 North Garden Street, Columbia, Tennessee 38401

(Address of Owner)

hereinafter called "Owner", in the penal sum of Five Million Two Hundred Seventy-Two Thousand Eight Hundred Dollars 00/100 Cents (\$5,272,800.00) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the Owner dated _____ day of _____, 2025, a copy of which is hereto attached and made a part hereof for the construction of:

Sewer System Improvements

Contract 24-01 – Bear Creek Sewage Pumping Station Replacement

Wauford Project No. 2198

NOW, THEREFORE, if the Principal shall promptly make payment to all persons, firms, subcontractors, and corporations furnishing materials for or performing labor in the prosecution of the work provided for in such contract, and any authorized extension or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and tools consumed or used in connection with the construction of such work, and all insurance premiums on said work, and for all labor, performed in such work whether by subcontractor or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

PAYMENT BOND
2198 – May 2024

PROVIDED, FURTHER, that the said surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the work to be performed thereunder or the specifications accompanying the same shall in any wise affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the work or to the specifications.

PROVIDED, FURTHER, that no final settlement between the Owner and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in 6 counterparts, each one of which shall be deemed an original, this the _____ day of _____, 2025.

WITNESSES:

Cumberland Valley Constructors, Inc.
Principal

BY:

Jarrod Imler, President

2518 Plum Street, Nashville, Tennessee 37207
Address

(SEAL)

WITNESSES:

Surety

BY:

Attorney-in-Fact

NOTE: Surety companies executing bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the project is located.

SECTION 1

GENERAL SCOPE AND SPECIAL PROVISIONS

1. Scope

The work to be accomplished under these Detailed Specifications consists of furnishing all labor, materials, equipment and services necessary for the construction of Sewer System Improvements, Contract 24-01 – Bear Creek Sewage Pumping Station Replacement for the City of Columbia, Tennessee, hereinafter called Owner. The work involved is in one (1) contract and consists of the following generally described work:

CONTRACT 24-01 BEAR CREEK SEWAGE PUMPING STATION REPLACEMENT

- Construction of a new cast-in-place concrete sewage pumping station with submersible pumps, mechanically cleaned bar screen, cantilevered valve pit, electrical building, flow meter pit, bypass connection pit, and standby generator
- Miscellaneous site development including site piping, manholes, bypass pumping, connection to existing force main, fencing, tree clearing, earthwork, and paving
- Razing of the existing Bear Creek Sewage Pumping Station

and appurtenances as described in these Detailed Specifications.

All of the work is described more fully in these Detailed Specifications.

2. Execution and Coordination of the Work

It is intended that the work covered by this Contract be done so as to cause the minimum interference with the normal operation of the existing facilities of the Owner.

The Contractor shall be required to organize and schedule his work so as to keep the existing facilities in full operation during the construction period insofar as is consistent with the nature of the construction work to be performed.

The manner in which shutdowns will be made and the Contractor's work schedule are subject to the approval of the Owner and the Engineer. Although every effort will be made to cause the minimum amount of interference with the Contractor's work, the interest of the Owner in regard to the existing facilities must always take precedence over the construction work.

THEREFORE, THE RIGHT IS RESERVED BY THE OWNER TO PUT ANY LINES OR OTHER FACILITIES THAT MAY BE SHUT DOWN FOR THE CONSTRUCTION WORK BACK INTO SERVICE WHEN AN EMERGENCY ARISES.

The importance of maintaining the flow in the existing sanitary sewer lines is paramount. If the Contractor does plug or interrupt the flow through any sanitary sewer line that will cause sewage to backup and cause flooding or damage to any public or private property, he must at his own expense provide pumps, bypass pipes, operators or any other necessary equipment and personnel to reroute the sewage flow into another acceptable portion of the sewer system unless provided for hereinafter. The cost of rerouting sewage flow during construction is NOT a separate pay item and shall be included in the cost for other items. NO BYPASSING OF UNTREATED SEWAGE TO THE SURFACE OF THE GROUND OR TO WATERCOURSES WILL BE PERMITTED unless the Contractor secures written permission from the Tennessee Department of Environment and Conservation and/or the U.S. Environmental Protection Agency.

The Contractor must have sufficient materials, equipment, labor, and supervision available to accomplish the work required in the time allocated for any shutdown of the existing sanitary sewer system.

3. Temporary Traffic Control Plan

When work is conducted within the right-of-way of transportation agencies or city or county roadways, the Contractor shall provide temporary traffic control (TTC) in accordance with the Manual on Uniform Traffic Control Devices (MUTCD). TTC devices shall include but shall not be limited to signs, barricades, flagmen and channelization devices. The Contractor shall provide TTC for all roadway users including motorists, bicyclists and pedestrians. All TTC shall be in accordance with the Americans with Disabilities Act of 1990, Title II, Paragraph 35.130.

4. Temporary Site Security

The Contractor shall maintain temporary security measures throughout the duration of the construction to prevent access to the construction area, equipment, open trenches, and materials. The Contractor shall use measures such as but not limited to: heavy duty mesh fence, wire mesh netting, and plastic portable barriers.

5. Time of Completion and Liquidated Damages (See **Article 4** of the General Conditions)

Time is of the essence on this contract and work on this contract shall be prosecuted in a timely manner.

Time of completion after notice to proceed will be as follows:

Contract 24-01: Four Hundred Fifty (450) consecutive calendar days

If the work is not completed within the time specified, liquidated damages in the amount of One Thousand Dollars (\$1,000) per calendar day will be deducted from the compensation otherwise due to the Contractor(s) in accordance with the Contract Documents for each calendar day thereafter, Sundays and holidays included, that the work remains uncompleted.

6. Bypass Pumping

The Contractor shall bypass the sewage flow in the existing sewer around the section where construction is taking place by plugging an existing manhole and pumping the sewage into an existing downstream manhole. The pumps and bypass lines shall be of adequate capacity and size to handle any flow encountered. The Contractor shall make provisions to bypass pump wastewater flow from individual sanitary sewer service lines when sanitary sewer service lines are disconnected from the collector or interceptor sewer and must remain disconnected overnight. The Contractor shall submit a bypass pumping plan that includes the following items at a minimum:

- 8 hour human checks (mechanic) during periods of no rain
- Auto dialer for failure alarms
- Redundant capacities

UNDER NO CIRCUMSTANCES WILL THE PUMPING OF RAW SEWAGE ON PRIVATE PROPERTY, OR INTO STREAMS STORM SEWERS OR IN STREETS BE ALLOWED.

Except as may be approved by the Engineer at the end of each working day, temporary connections shall be made so that overnight pumping is not required. BYPASS PUMPING OF SEWAGE SHALL BE CONSIDERED A SUBSIDIARY OBLIGATION OF THIS CONTRACT AND NO SEPARATE PAYMENT SHALL BE MADE FOR THIS WORK.

7. Guarantee – One Year Warranty

The Contractor(s) shall guarantee all work performed under this contract for a period of one year after the date of Substantial Completion in accordance with requirements of **Paragraph 15.08** of the General Conditions.

8. Engineer's Authority

See **Article 10** of the General Conditions.

9. Shop Drawings (See **Paragraph 7.16** of the General Conditions)

Due to funding requirements, shop drawings submitted by the Contractor shall be provided within 45 days of execution of purchase orders with manufacturers. The Contractor shall guarantee delivery of all material and equipment within 12 months of receipt of approved shop drawings. Failure to meet these deadlines will constitute grounds for total rejection of the proposed equipment manufacturer or supplier as being unable or unwilling to meet these Detailed Specifications.

The Contractor(s) shall submit shop drawings for all preconstruction submittals, materials, equipment, and services used on this project.

For submittals containing less than 25 pages, the Contractor shall email one (1) digital copy of the submittal to ntoshopdrawings@jrwauford.com. For submittals containing 25 pages or more, the Contractor shall submit one (1) digital copy and three (3) hard copies to the Engineer for review. Note that all sheets shall be printed at 100% of original size.

THE ENGINEER WILL HOLD ALL SUBMITTED OR REVIEWED SHOP DRAWINGS UNTIL THE CONTRACTOR HAS PROVIDED ACCEPTABLE SUBMITTALS FOR THE CONTRACTOR'S PLANNED ORDER OF WORK, PROGRESS SCHEDULE, PRE-CONSTRUCTION VIDEOS/PICTURES AND SHOP DRAWING LOG. IF REQUESTED BY THE CONTRACTOR, AN ACCEPTABLE TEMPLATE OF THE SHOP DRAWING LOG WILL BE PROVIDED BY THE ENGINEER

REJECTION OF THE SAME SHOP DRAWING ON THREE (3) SEPARATE OCCASIONS WILL CONSTITUTE GROUNDS FOR TOTAL REJECTION OF THE PROPOSED EQUIPMENT MANUFACTURER OR SUPPLIER AS BEING UNABLE OR UNWILLING TO MEET THESE DETAILED SPECIFICATIONS.

Shop drawings submittals shall include a transmittal letter listing the submittal description, project name, project contract number, and project location. Shop drawings shall be checked by the Contractor(s) and evidence of such checking shall be indicated on the transmittal letter. The Contractor(s) shall be completely

responsible for accuracy, completeness, compliance with Plans and Detailed Specifications, and compatibility, the Engineer's approval notwithstanding. WORK SHALL BE PERFORMED ONLY BY USE OF APPROVED SHOP DRAWINGS. THE CONTRACTOR(S) SHALL PLAINLY MARK ON HIS SUBMITTAL THE ITEM OR ITEMS IN WHICH HE IS REQUESTING APPROVAL. FAILURE TO DO SO WILL GIVE THE ENGINEER THE RIGHT TO EITHER REJECT THE SUBMITTAL OR SELECT THE ITEM OF HIS CHOICE AT NO ADDITIONAL COST TO THE OWNER.

THE ENGINEER RESERVES THE RIGHT TO TAKE UP TO TWENTY (20) WORKING DAYS FOR ACTION ON ANY GIVEN SHOP DRAWING. THE CONTRACTOR(S) SHALL BE SOLELY RESPONSIBLE FOR TIMELY SUBMISSION OF SHOP DRAWINGS BASED ON THE ABOVE AND NO EXTRA FOR TIME OR COSTS WILL BE ACCEPTABLE.

After approval, the Engineer will make the following distribution: one (1) set to the Owner, one (1) set to Engineer's central files, one (1) set to the Engineer's Resident Project Representative, and one (1) digital set to the Contractor. The Contractor shall keep one (1) hard copy of the approved shop drawing at the project site and shall be responsible for providing the document to suppliers and/or manufacturers.

10. Initial Videos, Pictures, and Progress Pictures

Before beginning the job, the Contractor shall make videos and pictures showing the status before any construction has begun. The videos and pictures shall be made, submitted and approved prior to the beginning of work. The Contractor shall submit the videos and pictures in an electronic format suitable to the Engineer.

The Contractor shall furnish digital progress pictures to the Engineer at the end of each month at the time the partial pay estimate is submitted. Pictures shall be of highest quality clearly showing the work and preferably not showing workmen or passersby. The name of the project, the item or scene pictured, Contractor's name, and the date shall be incorporated into the file name for each picture. Five (5) pictures shall be required with each partial pay estimate. Each electronic file should be date and time stamped. REQUESTS BY THE CONTRACTOR FOR PARTIAL PAYMENTS WILL NOT BE CONSIDERED WITHOUT THE REQUIRED PROGRESS PICTURES.

After construction and clean-up are completed, the Contractor shall submit video and pictures showing the cleaned up work and all of the progress pictures for the project in an electronic format suitable to the Engineer.

11. Progress Schedule and Progress Meetings

The Contractor(s) shall furnish for approval one (1) electronic copy of a suitable progress chart or schedule in graphical form showing the estimated schedule for the project as required in **Paragraphs 2.03 and 4.04** of the General Conditions. After approval, the Contractor(s) shall keep the chart current showing the actual progress on the project in relation to the estimated schedule. FAILURE TO SUBMIT SAID PROGRESS SCHEDULE AND KEEP IT CURRENT MONTHLY SHALL BE GROUNDS FOR NONPAYMENT OF PARTIAL PAYMENT REQUESTS. The first Progress Schedule should be submitted at the preconstruction meeting.

THE CONTRACTOR SHALL KEEP CURRENT RECORD DOCUMENTS AS REQUIRED BY **PARAGRAPH 7.12** OF THE GENERAL CONDITIONS. FAILURE TO KEEP RECORD DOCUMENTS CURRENT SHALL BE GROUNDS FOR NONPAYMENT OF PARTIAL PAYMENT REQUESTS.

The Contractor's Superintendent(s) shall be required to attend weekly coordination meetings with the Owner and Engineer's Resident Project Representative. In addition, monthly progress meetings are expected to be held with the Contractor's Project Manager, Engineer's Project Manager, and the Owner.

12. Utilities Required by Contractor

All electric current and/or any utility service required by the Contractor shall be furnished at his own expense.

13. Project Sign

A project sign is required as depicted at the end of Section 1.

14. Field Office and Supervision

The Contractor shall establish and maintain a Contractor's field office on the project at a location to be provided by the Owner and have available at that office a responsible representative who can officially receive instructions from the Engineer. The Contractor shall have one complete up-to-date set of Plans and Specifications and Shop Drawings in this office at all times. The Contractor's failure to comply with this requirement shall cause the Contractor to work at his own risk. The office shall be provided with high-speed internet service, toilet facilities, lights and heat. The Contractor shall establish and maintain a separate Owner/Engineer field office. The Owner/Engineer field office shall include high speed internet service, bathroom facilities, heat and air conditioning, desk, drafting table with light, four (4) chairs, two (2) each four drawer file cabinets, one (1) four level open face bookshelf, and all windows shall have blinds.

15. Existing Utilities

Special precautions shall be taken by the Contractor to avoid damage to existing overhead and underground utilities owned and operated by the Owner or by public or private utility companies.

Before proceeding with the work under this Contract, the Contractor shall confer with all public or private utilities in the vicinity of the construction work and call Tennessee One-Call at 811. The purpose of the conference or conferences shall be to notify said companies, agencies or departments of the proposed construction schedule, verify the location of, and possible interference with, the existing utilities and arrange for necessary suspension of service where possible and approved by the utility. The Contractor shall bear the entire responsibility for locating and avoiding or repairing damage to said existing utilities. NO WORK SHALL PROCEED WITHOUT ALL UNDERGROUND UTILITIES BEING LOCATED AND MARKED.

The Contractor shall locate all unknown metallic hazards, namely buried pipe, metals, *etc.*, by using a pipe locator or whatever better methods the Contractor may elect to use. The pipe locator should immediately precede the trench ditching and all hazards located and marked with a pointed stake in such manner as to notify the ditch operator of such hazard.

Where existing utilities or other underground structures are encountered, they shall not be displaced or molested unless necessary and approved by the Owner of the facility, and in such case they shall be replaced in as good or better condition than found as quickly as practical. ALL SUCH UTILITIES THAT ARE DAMAGED OR MOLESTED SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE, UNLESS IN THE OPINION OF THE ENGINEER SUCH DAMAGE WAS CAUSED THROUGH NO FAULT OF THE CONTRACTOR.

It is expected that the Contractor will be diligent in his efforts and use every possible means to locate existing utilities. Any claims for unavoidable damage, based on improper or unknown locations, will be thoroughly examined in light of the Contractor's efforts to locate the said utilities or obstructions prior to beginning construction.

16. Permits, Codes, Agreements and/or Contracts with Private Utilities

The Contractor shall make application for, obtain, and pay for all licenses, permits, agreements, bond fees and/or contracts with private utility companies and shall pay all fees and charges in connection therewith at no cost to the Owner.

17. Protection of Roadways On and Off-Site

In the hauling of materials and/or equipment to and from the site of the work, the Contractor shall take care to protect county roads, highways, parking areas and/or city streets. The Contractor shall be responsible for repair of highways, roads, parking areas or streets damaged by his operations (or operations of his subcontractors) and shall repair said damage to the original condition. If repair to the original condition is not practical or possible, the Contractor shall be responsible for obtaining proper release from the owner of the damaged roadway.

18. Lands, Rights-of-Way and Limits of Work (see **Article 5** of the General Conditions)

a. Lands and Easements

In general, the water line installation will be constructed on easements held by the Owner or on street rights-of-way owned by the Owner.

The Contractor shall be responsible for obtaining necessary work permits from the City of Columbia.

b. Limits of Work

The Contractor shall limit his work area and storage to the Owner's property and/or permanent utility easements. The Contractor shall not encroach or dump excess or waste materials on property adjacent to the work sites unless written permission is first received from the affected property owner and a copy submitted to the Engineer. Where excess materials are to be dumped off-site, the Contractor shall furnish the Owner written evidence of the property owner's permission.

In connection with work performed on easements or adjacent to private property, the Contractor shall take all reasonable care to avoid damage to the property owners' buildings, grounds and facilities and shall be completely responsible for the repair of damage to same. It is intended that when construction is complete, the easements and the private property owners' facilities and grounds shall be restored to as good or better than original condition as possible.

Large trees or other facilities within the actual construction limits that cannot be preserved and replaced shall be removed by the Contractor. THE OWNER WILL ASSUME THE RESPONSIBILITY FOR SETTLING WITH THE PROPERTY OWNER FOR THE LOSS OF SAID TREES OR FACILITIES WITHIN THE CONSTRUCTION AREA. THE CONTRACTOR IS RESPONSIBLE FOR ALL OTHER DAMAGES.

Reasonable care shall be taken during construction to avoid damage to vegetation. Ornamental shrubbery and tree branches shall be temporarily tied back, where appropriate, to minimize damage. Trees which receive damage to branches shall be trimmed of those branches to improve the appearance of the tree. Tree trunks receiving damage from equipment shall be treated with a tree dressing.

19. Undesirable Workmen

The Engineer reserves the right, but in so doing does not assume responsibility to make a judgment (the primary responsibility rests upon the Contractor), to remove inept or uncooperative servicemen as "Undesirable Workmen".

20. Work Hours

Except as otherwise required for the safety or protection of persons or the Work or property at the site or adjacent thereto, and except as otherwise indicated in the Contract Documents, all Work at the site shall be performed during regular working hours and Contractor will not permit overtime work or the performance of work on Saturday, Sunday or any legal holiday without Owner's written consent given after prior written notice to Engineer.

21. Materials or Equipment to be Furnished (see **Paragraphs 7.04 and 7.05** of the General Conditions)

Where the specifications state "or equal" followed by a brand name or model, a standard of quality is being set. The naming of a brand or model is a matter of convenience to avoid writing a volume. Other brands or equipment under this category may be submitted at the shop drawing stage of construction. The Engineer will consider other products on the basis of materials of construction, weight, function, size (it must fit the space provided), service history and electrical and mechanical characteristics.

Where the specifications state one or more model numbers and manufacturers followed by the words "or approved equal" the meaning is that the product(s) specified is acceptable and that, while there may be other products that are acceptable, the only way to be assured that another product will be acceptable is to submit the desired substitution during the BID PROCESS and receive an affirmative answer in the form of a letter or an addendum. The Engineer will consider the factors previously described in making the determination.

Unless otherwise specified, all materials shall be the best of their respective kinds and shall be in all cases fully equal to approved samples. The Engineer shall have the right to require the use of such specifically designated material, article, or process. The Engineer, where practical, may require submission of actual samples of materials or products.

22. Occupational Safety and Health Act

The Contractor's attention is called to **Paragraph 7.13** of the General Conditions.

23. Noise and Odor Control

The work hereunder is to be performed within urban areas of Columbia. The Contractor shall be responsible for noise and odor abatement procedures and shall not commence work before 7:00 a.m. local prevailing time unless approved by the Owner and the Engineer.

24. Chemical Requirements

All chemicals used during project construction or furnished for project operation, whether herbicide, pesticide, disinfectant, polymer, reactant or of other classifications, must show approval of either EPA or USDA. Use of all such chemicals and disposal of residues shall be in strict conformance with instructions.

25. Confined Spaces

During the construction of the facilities to be built under the terms of this contract, it may be necessary for the OWNER'S or the ENGINEER'S representative(s) to enter "confined space(s)", as defined by OSHA Regulations, in order to observe the work of the Contractor and/or in order to determine compliance with the terms of the contract. The Contractor shall provide the proper "Permit", the "Attendant", and/or the "Entry-Supervisor", the testing safety and emergency equipment and all other means of compliance with OSHA regulations. The OWNER or the ENGINEER will provide general training to their respective proposed "authorized Entrant(s)" who are employees of the OWNER or the ENGINEER, however the Contractor shall provide any specialized training required for the equipment furnished, the Contractor's Permit System or any other condition special to the work to be performed. The Contractor shall submit a copy of its written Permit System prior to the commencement of construction and shall be fully responsible for compliance with the appropriate regulations.

26. Lines and Grades

The Engineer has established survey baselines for the work. Benchmarks were set at the time of the original survey, the locations and elevations of which are shown on the Plans. These benchmark elevations were checked and verified at the time of the original survey.

Where tie-ons to existing lines or structures are to be made, the actual inverts of the existing lines or elevations of existing structures shall be field checked for verification before construction begins.

Any apparent discrepancy or error discovered in these benchmark elevations shall be reported to the Engineer immediately at telephone number 615-883-3243. Written approval from the Engineer shall be obtained before any changes are made.

27. Restoration of Disturbed Areas/Work on or Adjacent to Private Property

In connection with work performed on or adjacent to private property, the Contractor(s) shall take all reasonable care to avoid damage to the property owners' buildings, grounds and facilities and shall be completely responsible for the repair of damage to same. Fences, hedges, shrubs, *etc.*, within the construction limits shall be carefully removed, preserved, and replaced when the construction is completed. Grassed areas shall be graded, fertilized, and seeded when construction is completed in accordance with the requirements set out in Section 4, Paragraph 11. Finish Grading, Topsoiling, and Seeding of these Detailed Specifications. It is intended that when construction is completed the private property owner's facilities and grounds shall be restored to as near their original condition as possible.

Foundations adjacent to an excavation which is to be carried below the bottom of the foundation shall be supported by shoring, bracing, or underpinning, and the Contractor(s) shall be held strictly responsible for any damage to said foundation.

Work on the rights-of-way of the Tennessee Department of Transportation and/or the City Street Department and/or the County Road Department shall be considered work on Private Property. It shall be the Contractor's responsibility to obtain any necessary work permits.

28. Reference to Tennessee Department of Transportation Specifications and Standard Roadway and Structure Drawings

Where items are referred as being in conformance with Tennessee Department of Transportation Specifications and/or Standard Drawings, certain materials, equipment and construction methods required under this Section of the Detailed Specifications for Road and Bridge Construction and subsequent special provisions and revisions issued by the Tennessee Department of Transportation; and the Standard Roadway and Structure Drawings (current revision) adopted by the Tennessee Department of Transportation (TDOT), Bureau of Highways, on January 1, 2021 as amended and/or modified herein.

29. References to Standard General Conditions of the Construction Contract

Where references are provided within this Project Manual to the Standard General Conditions of the Construction Contract, they are provided for the benefit of the Contractor. Where conditions may be repeated or expanded in this

Section, they shall be in addition to those requirements stated in the Standard General Conditions of the Construction Contract. Where any conflicts may exist with the Standard General Conditions of the Construction Contract and text found elsewhere in the Project Manual, the Standard General Conditions of the Construction Contract shall prevail.

30. Applicability of Governing Standards

The latest version of any standard listed in these Detailed Specifications as of the bid date shall apply. In cases that an incorrect revision year is listed, it shall not apply - the latest version as of the bid date shall apply.

31. Connecting to Existing Lines

The Contractor shall make the required connections to existing sewer lines as specified in these Detailed Specifications. The work of connecting new lines to existing lines is the responsibility of the Contractor and is NOT a separate pay item unless indicated otherwise in the BID FORM; it being the intent of these Detailed Specifications to provide a complete operable facility.

32. Water and Uplift

The Contractor(s) shall, by the use of well points, pumps or other approved methods, prevent the accumulation of water in excavated areas. Should water accumulate, it shall be promptly removed. The Contractor(s) shall also provide for dewatering areas adjacent to structures or lines to prevent uplift during construction operations. The Contractor(s) will be held responsible for any damage due to uplift of such structures or lines and to existing structures during construction operations.

33. Subsurface Conditions/Site Conditions

As provided by **Paragraph 5.03** and **5.04** of the General Conditions, subsurface conditions are unknown unless a Geotechnical Report is included at the end of Section 1.

The Geotechnical Engineering Report provides the Owner's information for the Bidder's convenience and is intended to supplement rather than serve in lieu of the Bidder's own investigations. The Geotechnical Engineering Report is made available for the Bidder's convenience and information but is not a warranty of existing conditions and is not part of the Contract Documents. The Bidder is responsible for examination of the project site and existing conditions.

34. Blasting

Blasting will be permitted.

A pre-blast survey shall be completed of all existing structures and provided to the Engineer and Owner before the commencement of blasting operations. Any damage to the structures shall be repaired at the direction of the Engineer at the Contractor's expense.

All blasting operations including storage of explosives shall be in accordance with the municipal ordinances and state and Federal laws and regulations, and all explosives shall be stored in conformity with said ordinances and laws. Pre-blast surveys of all existing structures are required. No blasting shall be done within five feet (5') of any water mains or structures, except with light charges of explosives. Any damage done by blasting is the responsibility of the Contractor and shall be promptly and satisfactorily repaired by him.

To implement these requirements and unless otherwise required by ordinance or law, each excavating crew shall be provided with two (2) metal boxes with suitable locks. One of these boxes shall be for storing explosives and one for caps. The boxes shall be painted a bright color and stenciled with appropriate warning signs. At night, all explosives and caps shall be removed from the boxes and stored in a central magazine. Compliance with laws, ordinances and regulations shall be the Contractor's responsibility, and he shall save the Owner and/or Engineer harmless from any and all claims of any type or nature arising from blasting or storage of explosives.

35. Flooding

Some of the work is to be conducted near or will cross ditches and drainage canals which may flood. Obstructions to flow which would cause flooding in the event of heavy rainfall shall be avoided by the Contractor. Flood insurance under PL 93-234 is not required.

36. Temporary Project Water Pollution Control (Soil Erosion)

Temporary pollution control provisions shall be taken to avoid damage to embankments and cut slopes and to avoid transport of sediment to adjacent property owners and/or streams.

Pollution and erosion control methods shall include but are not limited to the following:

a. Temporary Berms

Temporary berms shall be constructed of compacted soil with or without a shallow ditch at the top of all excavation and embankment slopes to prevent excessive erosion until the slopes are stabilized.

b. Temporary Slope Drains

Temporary slope drains shall be stone gutters, fiber mats, plastic sheets, concrete or asphalt gutters, half-round pipe, metal pipe, plastic pipe, sod or other material acceptable to the Engineer that may be used to carry water down slopes to reduce erosion.

c. Temporary Silt Fences

Temporary silt fences with baled hay or straw shall be placed on the natural ground, at the bottom of fill slopes, in ditches or other areas where siltation is a problem or where shown on the Plans.

Silt fences are constructed of wire mesh fence with a covering of filter cloth composed of burlap, plastic filter fabric or some other suitable material on the upper grade side of the fence and anchored into the soil.

Bales shall be either hay or straw containing five (5) cubic feet or more of material.

The above listed pollution and erosion control methods shall be used at the discretion of the Contractor or where directed by the Engineer. Temporary pollution control is NOT a separate pay item.

The Contractor shall be solely and strictly liable for any violations of State or Federal water pollution laws, regulations, or standards caused during construction by the Contractor's forces or subcontractors and shall pay any penalties levied by any party due to said violations.

The Contractor shall maintain all areas where excavation and backfill construction operations are being performed or have been performed in order that siltation, erosion and other forms of storm water pollution caused by construction activities will be kept to a minimum during construction.

37. Substantial Completion/Delays in Final Completion (See **Paragraph 15.03** of the General Conditions)

In order to allow all outstanding incomplete items to be completed during the initial start-up and operating period, a semi-final inspection will be made upon request by the Contractor after the beginning of the initial start-up period. In no event

will the date of substantial completion of the Contract for purposes of determining payment of the liquidated damages be set before the beginning of the initial start-up period.

38. Final Clean-Up

Before the work is considered as complete, all rubbish and unused material due to or connected with the construction shall be removed and the premises left in a condition satisfactory to the Engineer. Streets, curbs, crosswalks, pavements, sidewalks, fences and other public and private property disturbed or damaged shall be restored to their former condition at the Contractor's expense. Final acceptance will be withheld until such work is completed.

39. Disposal of Excess Materials and Debris

The Contractor shall dispose of excess materials and debris. The Contractor shall furnish the Owner written evidence of the property owner's permission for disposal of excess materials.

40. Basis of Payment

a. General

The Contractor(s) shall furnish all necessary tools, labor, machinery, apparatus, materials, equipment, service, and other necessary supplies and do all work including all excavation and backfilling at the lump sum prices for the items listed in the BID FORM.

ROCK EXCAVATION, SHEETING, SHORING, AND BRACING OF EXCAVATIONS AS SHOWN ON THE PLANS ARE NOT SEPARATE PAY ITEMS.

These items refer to and are the same items listed in the BID FORM and constitute all of the pay items. Any other items of work listed in these Detailed Specifications or shown on the Plans shall be considered incidental to the following items.

b. Bear Creek Sewage Pumping Station Replacement

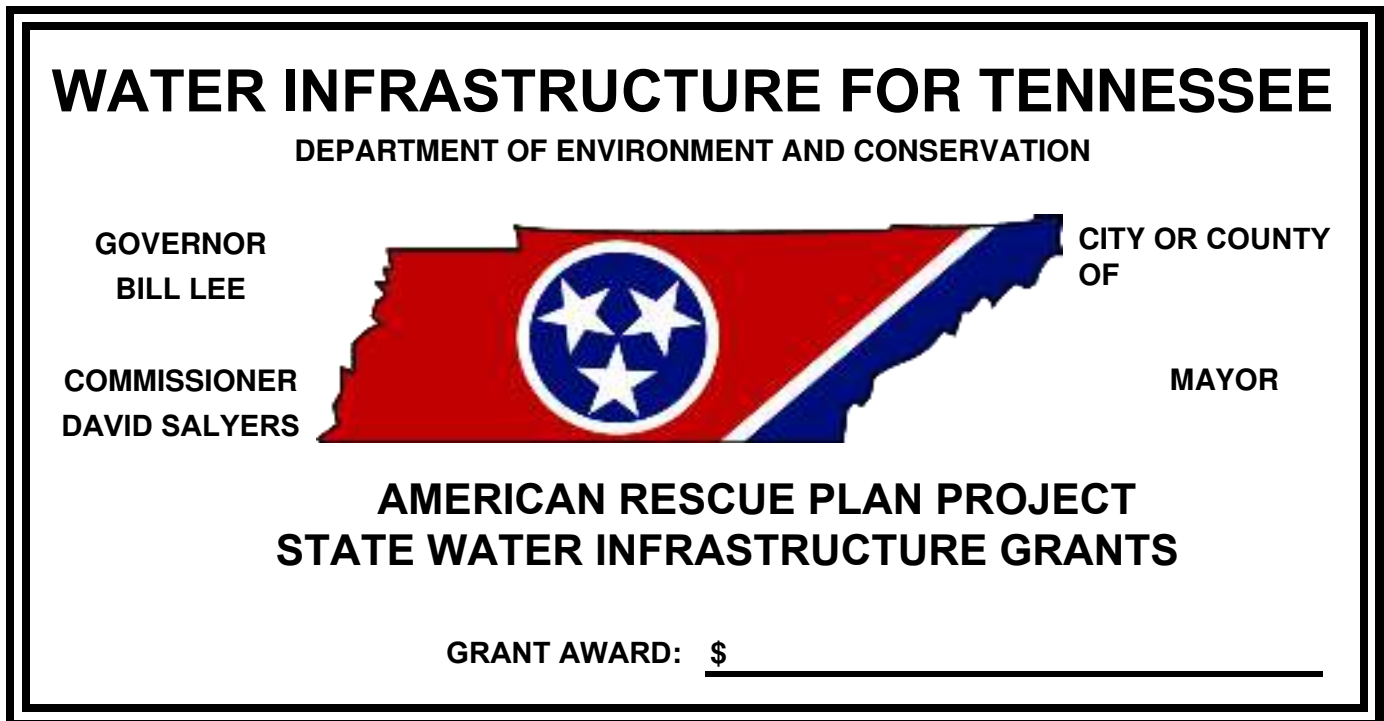
The Contractor shall furnish all necessary labor, machinery, tools, apparatus, materials, equipment, service, and other necessary supplies and perform all work including all excavation, pipeline installation and backfilling (without additional compensation except where specifically set out in these Detailed Specifications) at the lump sum prices listed in the BID FORM. The lump sum prices shall include payment for all items at the new Bear Creek Sewage Pumping Station.

STATE WATER INFRASTRUCTURE GRANTS

IDENTIFICATION SIGN

All plans and specifications for each project approved shall contain provisions for requiring the general contractor to provide identification signs. The signs shall conform to the following basic features:

1. The following diagram shall be used as a design:



2. The sign shall be a 4'0" X 8'0" sheet of exterior grade plywood and shall be built so as to remain erected during the entire construction phase of the project.
3. The background of both sides shall be white. The lettering shall be black and shall be large enough to take advantage of the full size of the plywood. The stars shall be white set on a blue field and surrounded by a white ring placed inside a state map in red with a stripe of white and blue on the right side. The sign shall be bordered by a one-inch blue stripe.

Geotechnical Engineering Report

ENGINEERING & TESTING SOLUTIONS, LLC

March 13, 2024

City of Columbia
c/o Mr. Daniel Tribble, P.E.
Vice President
J.R. Wauford & Co., Consulting Engineers, Inc.
2835 Lebanon Pike
Nashville, TN 37214

Subject: Report of Subsurface Exploration
Bear Creek SPS
Columbia, Tennessee
ETS Project Number 24-40

Mr. Tribble:

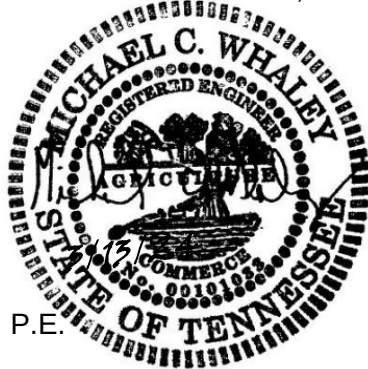
We are pleased to transmit our Report of Subsurface Exploration for the subject site in Columbia, Tennessee. Our services were performed in general accordance with our proposal No. 24-03, dated January 5, 2024.

This report reviews the information provided to us, discusses the site and subsurface conditions, and presents our conclusions and recommendations. The Appendices contain a Boring Location Plan, Boring Logs, and Laboratory Test Results.

We appreciate the opportunity to perform these services and look forward to assisting you during the construction of this project. We are available to discuss any questions concerning this report. Please contact us if we may be of further service.

Sincerely,

ENGINEERING & TESTING SOLUTIONS, LLC



Michael C. Whaley, P.E.
Principal
mwhaley@ets-tn.com

A handwritten signature in black ink, appearing to read "Z Looney".

Zachary Looney, E.I.
Staff Professional
zlooney@ets-tn.com

REPORT OF SUBSURFACE EXPLORATION

**Bear Creek SPS
Columbia, TN**

Prepared for:
City of Columbia
c/o Mr. Daniel Tribble, P.E.
J.R. Wauford & Co.

March 13, 2024

ETS Project 24-40

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APPENDIX:

- A. BORING LOCATION PLAN
- B. FIELD EXPLORATORY PROCEDURES, KEY SHEET, BORING LOGS &
ROCK CORE PHOTOS
- C. LABORATORY TEST PROCEDURES AND TEST RESULTS

1.0 INTRODUCTION

The purpose of this subsurface exploration was to determine general subsurface conditions as they are related to engineering properties and obtain data to evaluate the site for shallow foundations and an appropriate soil bearing pressure. This report presents our findings of subsurface conditions and our recommendations regarding foundation design and site preparation.



View of existing site conditions upper elevations of site

2.0 PROJECT DESCRIPTION

The project site is located south of Bear Creek Pike in Columbia, Tennessee. The proposed construction consists of a new sewage pumping station, electrical building and generator pad.

Project information has been provided to us by J.R. Wauford & Company Consulting Engineers, Inc. We have been provided a draft site plan dated October 2023 and a draft set of plans dated February 2024 prepared by J.R. Wauford & Company Consulting Engineers, Inc.

Based on review of the draft set of plans the structures typically consist of reinforced concrete slabs and walls. Based on our experience with similar structures, we anticipate wall loads will be in the range of 2 to 8 kips per linear foot.

The proposed sewage pumping station will be located near an existing pump station. The existing site terrain in this area consists of two gently rolling and mainly grass covered areas separated by a rock bluff with an elevation difference of approximately 25 feet. Based on the elevations shown on the site plans, cuts as much as about 60 feet will be required to achieve subgrade in the sewage pump station structure.



View of existing site conditions lower elevations of site

3.0 GEOLOGICAL CONDITIONS

Review of the *Geologic Map and Mineral Resources Summary of the Godwin Quadrangle* (Burwell, H.B., and Jewell, J.W., 1964), indicates this site is geologically mapped to be underlain by Carters Limestone.

The Carters Limestone formation consists of light-gray to brownish-gray and yellowish-brown, very fine-grained, medium to thick thick bedded limestone with a thickness of about 60 feet.

Limestone, which is present in this geologic setting, are of great geologic age and have been subject to solution weathering for many millions of years. Rainwater falling onto the surface and percolating downward through the soil and into cracks and fissures in the bedrock gradually dissolves the rock, producing insoluble impurities such as chert and clay. Since limestone varies greatly in resistance to weathering, the soil/bedrock contact in these areas may be extremely irregular. More soluble bedrock develops a thicker soil cover and a more irregular bedrock surface, with pinnacles and slots and less soluble bedrock usually develops a thinner soil cover and a less irregular soil-bedrock surface.

These large variations in bedrock depth in the limestone of this geologic formation are greatly enhanced by the presence of fractures, bedding planes, and faults, which provide an increased opportunity for a greater influx of percolating water. The weaknesses may form clay-filled cavities or enlarge into caves and may be connected by a network of passageways. If a cave forms close to the bedrock surface, its roof may collapse, and the overlying soils may erode into the cave. Once the weight of the overlying soil exceeds the soil's arching strength, the soil collapses and an open hole or depression may appear at the ground surface. Such a feature is termed a sinkhole.

Although it is our opinion that the risk of ground subsidence associated with sinkhole formation cannot be eliminated, we have found several measures are useful in the design and site development to reduce this potential risk. These measures include the following:

1. Optimize the location of the buildings on the site relative to closed depressions and sinkholes,
2. The scarification and re-compaction of the upper 9 inches of soil exposed in cut sections, thereby creating a blanket of less permeable material,
3. Avoiding the routing of roof drains beneath the structure, and
4. Ensuring that all piping beneath structures is carefully constructed and pressure tested prior to its placement into service.

The owner should be aware that there is the inherent risk of sinkholes developing on any site underlain by calcareous rocks. However, we do not believe the probability of sinkhole development at this site is any greater than on surrounding successfully developed sites in this geologic setting. None of our borings encountered any voids or signs indicative of sinkhole activity.

It is our understanding commercial insurance for damage related to sinkhole activity varies from provider to provider. The owner should confirm their insurance policies include coverage for damage as the result of sinkhole activity. If necessary, the policy should be amended accordingly.

4.0 SUBSURFACE CONDITIONS

Six soil test borings were performed for the proposed project. The boring locations shown on the attached Boring Location Plan should be considered approximate.

Subsurface conditions encountered at the boring locations are shown on the Soil Test Boring Records in Appendix B. The Soil Test Boring Records represent our interpretation of the subsurface conditions based on the field logs and visual examination of the field samples by our engineer. The lines designating the interfaces between various strata on the Soil Test Boring Records represent the approximate interface locations.

All borings were advanced to auger refusal. Refusal depths ranged from 1 ft in borings B-1, B-2 and B-4 to 6 feet in B-6.

Beneath a surficial layer of topsoil, the soil test borings encountered residual soils. Residual soils are soils that have developed from the in-place weathering of the parent bedrock. These soils generally consisted of brown silty clay with limestone fragments. N values for these soils ranged from 8 to 50+, indicating firm to very hard consistencies. Limestone fragments were judged to amplify some of the N values. Moisture contents for these soils ranged from about 22 percent to 24 percent. Plasticity Index (PI) tests were performed on one sample indicating a PI of 22.

Rock coring techniques were performed at boring location B-3. The rock was cored to a depth of approximately 10 feet below proposed subgrade elevation. The bedrock was typically composed of a gray limestone.

The Recovery Ratio and Rock Quality Designation (RQD) of the rock core samples recovered were determined in our laboratory. The Recovery Ratio is defined as the percentage ratio between the length of core recovered and the length of core drilled on a given core run. RQD is defined as the percentage ratio between the sum of length of core recovered that are at least four inches in length to the length of core drilled on a given core run. Recovery ratios ranged from 57 percent to 100 percent and RQD values ranged from 0 to 100, indicating very poor to excellent rock qualities. Rock qualities of very poor were encountered in the upper elevations of the boring. Typically, recovery ratios of the limestone ranged from 96 percent to 100 percent and RQD values ranged from 76 to 100, indicating good to excellent rock qualities at depth.

Samples obtained during drilling at the site were transported to our facility for laboratory testing. A summary of the laboratory tests can be found in Appendix C.

Groundwater was not observed in any of the borings at the time of drilling. We note, the borings were backfilled upon completion of drilling activities and therefore, long-term readings were not obtained.

5.0 SITE PREPARATION RECOMMENDATIONS

We recommend all vegetation and topsoil be removed and wasted from the areas to be developed.

Because of previous development at the site, foundations, abandoned utilities, and other subsurface obstructions such as pits, septic tanks, and drain fields may be encountered within the construction area. If encountered, these items should be removed or remediated (other treatment) so as not to impact the new construction.

Once stripping is complete in areas requiring fill and once subgrade elevations are achieved in cuts, we recommend proofrolling be performed. Proofrolling should be done after a suitable period of dry weather to avoid degrading an otherwise acceptable subgrade. Proofrolling should be performed with a heavily loaded dump truck or with similar approved construction equipment. We recommend the exposed subgrade and proofrolling operation be observed and documented by our personnel.

If unsuitable conditions are encountered at the subgrade level, our geotechnical engineer can provide recommendations to the owner's representative for dealing with the conditions. Soft, organic, highly plastic, wet soils, or soils that pump, rut, or wave, during site grading or proofrolling operations should be excavated and replaced with compacted fill or evaluated for stabilization alternatives. We recommend subgrade stabilization requirements be determined by the geotechnical engineer at the time of site preparation based on the stability of the subgrades as determined by proofrolling.

During rough grading, positive surface drainage should be maintained to prevent the accumulation of water. If the exposed subgrade becomes excessively wet or frozen, or if conditions differ from those described previously in this report are encountered, our geotechnical engineer should be contacted.

6.0 COMPACTED FILL RECOMMENDATIONS

Areas requiring fill should be constructed by spreading acceptable soil in loose layers not more than 8 to 10 inches thick and compacting with appropriate equipment. The soils used within the proposed structure and building areas should be compacted in lifts to a minimum compaction of 98 percent of the standard Proctor maximum dry density (ASTM D 698). The upper 12 inches of fill beneath slab areas should be compacted to at least 100 percent of standard Proctor maximum dry density.

Qualified testing personnel approved by the geotechnical engineer should observe the filling operation. Field density tests, moisture content tests, and Proctor verification tests should be performed during placement to determine the compaction achieved. As a general rule, the moisture content of the compacted fill soils should be maintained within -3 to +3 percentage points of the optimum moisture content as determined from the standard Proctor compaction test. This provision may require the contractor to dry soils during periods of wet weather or to wet soils during the hot summer months.

Soil fill material should have a standard Proctor maximum dry density of 85 pcf or greater, with a liquid limit of less than 50 and a plasticity index (PI) of 35 or less. Before grading activities begin, bulk samples of the proposed fill soils should be collected to determine natural moisture content, maximum dry density, optimum moisture content, and PI.

The fill surface must be adequately maintained during construction to achieve an acceptable compacted fill. We recommend the fill surface be sloped to achieve sufficient drainage and to prevent ponding of water on the fill. If precipitation is expected while fill construction is temporarily halted, the surface should be rolled with rubber-tired or steel-drummed equipment to improve surface run-off. If the surface soils become excessively wet or frozen, fill operations should be halted, and the geotechnical engineer should be consulted for guidance.

Should fill slopes be required for site development, the slopes should be compacted in horizontal benches. To achieve the required compaction, the edge of the compacted fill should be extended horizontally beyond the planned limit of the slope and the excess fill soil removed from the face of the fill slope using appropriate grading equipment. Based on our experience with native soils, we recommend compacted fill slopes be constructed no steeper than 2H:1V and preferably 2-1/2H:1V or flatter. All fill slopes should be protected from erosion shortly after construction. All fills should extend horizontally at least 15 feet beyond the perimeter foundation of proposed buildings before sloping.

7.0 FOUNDATION AND SLAB-ON-GRADE DESIGN RECOMMENDATIONS

Once the site has been prepared in accordance with the site preparation procedures as shown on the project plans, the proposed structure areas should be suitable for a shallow foundation system consisting of a concrete reinforced mat with thickened sections along walls. Foundations bearing in compacted fill and/or residual soils should be designed for a maximum allowable soil bearing pressure of 2500 pounds per square foot (psf). Foundations for structures bearing entirely on bedrock can be designed for a maximum allowable bearing pressure of 5000 psf.

For foundations and slabs that encounter bedrock, we recommend over excavating 18 inches and backfilling with #57 or #67 crushed stone.

Foundation concrete should be placed as soon as possible to limit exposure of bearing soils. If footing excavations will remain open for an extended period of time and rainfall is possible, we recommend a “mud mat” of flowable fill or lean concrete be placed on the bearing soils for protection. The footings should be over excavated to compensate for the “mud mat”. Remedial measures will most likely be required if bearing soils are exposed to weather or rainfall and the bearing soils become softened. If the bearing soils become softened due to exposure, our representative should observe conditions and provide appropriate recommendations.

Construction of the structure’s foundation should be observed and documented by our geotechnical engineer or their approved representative. We recommend the footing excavations be observed by our geotechnical engineer to verify the exposed soils are consistent with our recommendations based on conditions encountered during our exploration. For structures bearing on bedrock, we recommend 2” diameter test holes be drilled to depths of 5 feet and observed by the geotechnical engineer’s representative. If unsuitable conditions are encountered, our geotechnical engineer can provide appropriate recommendations for dealing with the conditions.

The use of a slab-on-grade will be acceptable, provided the building areas are prepared in accordance with the recommendations of this report. We recommend the slab-on-grade bear on a minimum 4-inch layer of crushed stone (#57 or #67). The subgrade should be approved prior to the placement of the crushed stone. Joints should be constructed in the slab around columns and walls to reduce damage due to differential settlement of the slab and foundation walls and columns.

We have been requested to provide the seismic site classification for the proposed project. Per the 2015 IBC, peak ground acceleration shall be determined based on Chapter 21 of ASCE 7 or in accordance with Section 11.8.3 of ASCE 7. The table below provides site specific spectral response accelerations for both short and 1-second periods, taken from the on-line version of the ASCE 7 Hazards Report.

Project Location	S_s	S₁	S_{DS}	S_{D1}
Bear Creek SPS	0.48	0.17	0.25	0.11

Latitude 35.634988 Longitude -87.008218

Based on the preceding data, subsurface information obtained, and our previous experience in this geologic setting, the site is categorized as Seismic Site Class B under the IBC. In some, but not all cases, shear wave velocity measurements, which are more accurate than SPT tests, can be used to possibly re-classify a site.

8.0 RETAINING AND SUBSURFACE WALL RECOMMENDATIONS

Subsurface foundation walls will be required as part of the proposed construction. The proposed walls should be designed with site specific conditions. Based on review of the provided plans the walls will be cast in place reinforced concrete walls.

The following recommendations are for a conventional cast-in-place concrete retaining wall with a maximum height of 20 feet.

The retaining walls may be designed for the active earth pressure condition if the tops of the walls will not be restrained. However, braced walls and along corners of walls, the structural rigidity is much greater. In these areas, the earth pressure on the walls will exceed the active pressure. Therefore, we recommend these areas be designed to withstand at-rest pressures.

We recommend clean aggregate, such as ASTM nos. 57 or 67, be used as backfill directly behind the walls to lessen lateral earth pressures exerted on the walls. The wedge of clean aggregate backfill should extend from the back edge of the footing heel and increase in width at a minimum rate of 0.6 feet per foot of wall height.

Surface-water seepage into the backfill will increase lateral pressures on the wall. To reduce the possibility of excessive surface-water seepage, we recommend capping the backfill with a 1- to 2-foot-thick layer of clayey soil, sloping away from the structure.

Compaction of on-site or borrow soils can cause higher lateral pressure on the walls. Heavy compactors and grading equipment should not be allowed to operate within 10 feet of the walls during the backfilling to lessen temporary and long-term lateral soil pressures. Backfill adjacent to the walls should be densified by light compaction equipment. Given the backfill, compaction, and drainage recommendations provided in this report, and assuming a horizontal backfill surface without a surcharge, the following values of equivalent fluid- - pressure may be used to design the proposed below-grade walls.

Above Ground Water Level (not subject to hydrostatic loading)

Backfill Type	Estimated Unit Weight (PCF)	Pressure per Foot of Depth (PSF)	
		Active	At Rest
No. 57 or No. 67 Size Crushed Stone	100	35	50

If any of the structures will have below grade retaining walls they may be subject to hydrostatic loading from groundwater. The following values of equivalent fluid-pressure may be used to design the proposed below-grade walls.

Below Ground Water Level (subject to hydrostatic loading)

Backfill Type	Estimated Unit Weight (PCF)	Pressure per Foot of Depth (PSF)	
		Active	At Rest
On-site silty clay (CL, CH)	120	n/a	105
No. 57 or No. 67 Size Crushed Stone	100	n/a	80

9.0 DIFFICULT EXCAVATION

All our borings encountered auger refusal. A summary table is listed below:

Boring Designation	Refusal depth (ft.)	Refusal Elevation (approx.)	Structure Subgrade Elevation
B-1	1	592	unknown
B-2	1	592	unknown
B-3	5	562	533
B-4	1	592	533
B-5	3	565	533
B-6	6	587	unknown

Refusal materials will likely be encountered during site excavation at the boring refusal depths. The owner/contractor should anticipate that the use of rock removal equipment will be needed to achieve grades. Additionally, rock removal will likely be required in deep utility trenches and excavations.

10.0 LIMITATIONS AND BASIS OF RECOMMENDATIONS

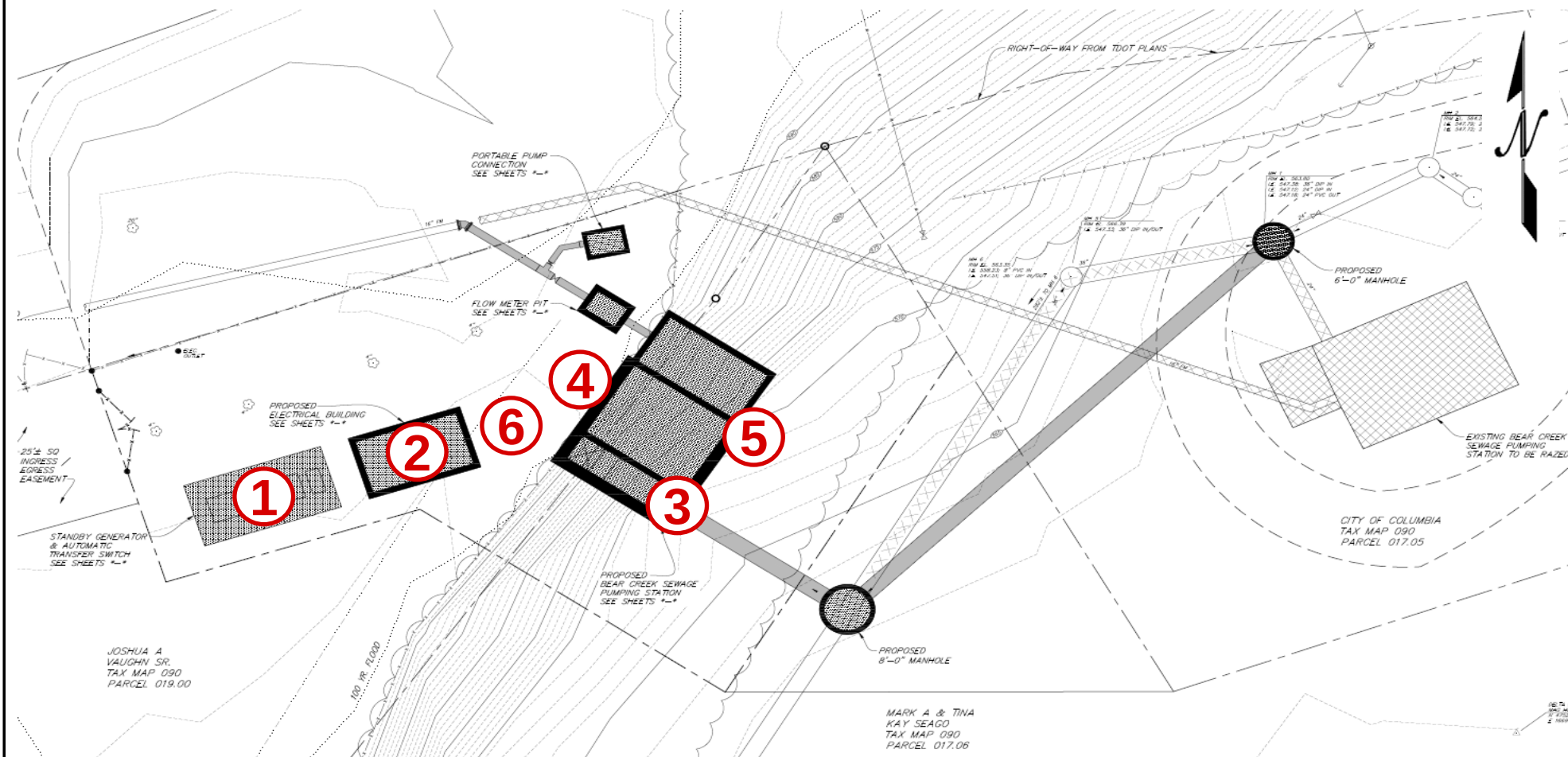
This report has been prepared in accordance with generally accepted geotechnical engineering practice for specific application to this project. Our findings and recommendations are based upon standards of our practice in this area at the time this report is prepared.

The recommendations provided herein are based on the subsurface conditions and on project information provided to us; they apply only to the specific project and site discussed in this report. In the event that any changes in the nature, design or location of buildings and roadways, the findings and recommendations contained in this report may become invalid. If the project information section in this report contains incorrect information or if additional information becomes available, you should convey the corrected or additional information to us and retain us to review our recommendations. We will then modify them if the new information has rendered them inappropriate for the proposed project.

Regardless of the thoroughness of a geotechnical exploration, there is always a possibility that conditions between test borings will differ from those at specific test boring locations and that conditions will not be as anticipated by the designers or contractors. In addition, the construction process may itself alter soil conditions. Therefore, experienced geotechnical personnel should observe and document the construction procedures used and the conditions encountered. Unanticipated conditions and inappropriate procedures will be reported to the design team, along with timely recommendations to solve the problems created. We recommend the owner retain ETS to provide this service, based upon our familiarity with the subsurface conditions, the project design, and the intent of the recommendations.

APPENDIX A

BORING LOCATION PLAN



LEGEND

ETS

ENGINEERING & TESTING SOLUTIONS
 Sevierville, TN Knoxville, TN
 865-428-4468 865-474-6200

www.ets-tn.com

BORING LOCATION PLAN

Bear Creek SPS
 Columbia, TN

1 BORING LOCATION

ETS NUMBER :
 24-40

DATE:
 3/6/24

SCALE:
 NTS

EDITED BY:
 ZL

APPENDIX B

FIELD EXPLORATORY PROCEDURES

BORING KEY SHEET

BORING LOGS

ROCK CORE PHOTOS

FIELD EXPLORATORY PROCEDURES

Soil Test Boring (Hollow Stem)

All boring and sampling operations were conducted in general accordance with ASTM D 1586. The borings were advanced by mechanically twisting continuous steel hollow-stem auger flights into the ground. At regular intervals, soil samples were obtained with a standard 1.4-inch I.D., 2-inch O.D., split-tube sampler. The sampler was first seated 6 inches to penetrate any loose cuttings and then driven an additional foot with blows of a 140-pound hammer falling 30 inches. The number of hammer blows required to drive the sampler the final foot of penetration was recorded and is designated the "standard penetration resistance (SPT)." Proper evaluation of the penetration resistance provides an index to the soil's strength, density, and ability to support foundations.

Representative portions of the soil samples obtained from the split-tube sampler were sealed in bags and transported to our laboratory, where they were examined by our engineer to verify the driller's field classifications. Test Boring Records are attached, graphically showing the soil descriptions and penetration resistances.

Rock Coring

Prior to coring, casing is set in the hole drilled through the overburden soils to keep the hole from caving. Refusal materials are then cored according to ASTM D 2113, using a diamond-studded bit fastened to the end of a hollow, double-tube core barrel. This device is rotated at high speeds, and the cuttings are brought to the surface by circulating water. Core samples of the material penetrated are protected and retained in the swivel-mounted inner tube. Upon completion of each core run, the core barrel is brought to the surface, the core recovery is measured, the samples are removed, and the core is placed in boxes for transportation and storage.

The core samples are returned to the laboratory where the refusal material is identified, and the percent core recovery and rock quality designation are determined by a soils engineer or geologist. Refusal material descriptions, recoveries, are shown on the "Soil Boring Records".

BORING LOG KEY SHEET

LEGEND TO SOIL AND ROCK SYMBOLS

	TOPSOIL		ASPHALT / GRAVEL
	SILTSTONE		ALLUVIAL
	BEDROCK		RESIDUAL
	DOLOMITE		COLLUVIAL
	LIMESTONE		FILL

DRILLING SYMBOLS

	water table @ time of drilling		split spoon sample
	water table, 24 hours		undisturbed sample

Correlation of Penetration Resistance to Consistency and Relative density

Silts & Clays		Sands & Gravels	
N Value	consistency	N Value	relative density
0-2	very soft	0-4	very loose
3-4	soft	5-10	loose
5-8	firm	11-30	firm
9-15	stiff	31-50	dense
16-30	very stiff	50+	very dense
31-50	hard		
50+	very hard		

Particle Size Identification

Silts & Clays	Less than 0.075 mm
Fine Sand	0.075 mm to 0.425 mm
Medium Sand	0.425 mm to 2.00 mm
Coarse Sand	2.00 mm to 4.75 mm
Fine Gravel	4.75 mm to 19.0 mm
Coarse Gravel	19.0 mm to 75 mm
Cobbles	75 mm to 300 mm
Boulders	Greater than 300 mm

Rock Quality Designation (RQD)

RQD	Description of Rock Quality
0 - 25%	Very Poor
25 - 50%	Poor
50 - 75%	Fair
75 - 90%	Good
90 - 100%	Excellent

ENGINEERING AND TESTING SOLUTIONS

D E P T H	SOIL DESCRIPTION AND REMARKS SEE KEY SHEET FOR EXPLANATION OF SYMBOLS AND ABBREVIATIONS	L E G E N D	E L E V A T I O N	SAMPLES				SPT (bpf)							Lab Results			
				T Y P E	BLOWS			N V A L U E	5	10	15	20	25	30	%	M	LL	PI
					1st 6"	2nd 6"	3rd 6"											
0	Topsoil/Rootzone		593															
	Auger refusal at 1 foot																	
5			588															
10			583															
15			578															
20			573															
25			568															
30			563															
Remarks:				SOIL TEST BORING RECORD														
Groundwater was not encountered at the time of drilling. Borings were backfilled after drilling. Therefore, long term groundwater depth was not measured.																		
This is an interpretation of subsurface conditions at the boring location. Subsurface conditions may differ at other times and other locations. The interfaces shown between strata are approximate. Transitions between strata may be gradual.																		
				PROJECT: Bear Creek SPS Columbia, TN BORING: B-1 DRILLED: 2/21/2024 ETS PROJECT NO. 24-40														

ENGINEERING AND TESTING SOLUTIONS

D E P T H	SOIL DESCRIPTION AND REMARKS SEE KEY SHEET FOR EXPLANATION OF SYMBOLS AND ABBREVIATIONS	L E G E N D	E L E V A T I O N	SAMPLES				SPT (bpf)							Lab Results			
				T Y P E	BLOWS			N V A L U E	5	10	15	20	25	30	%	M	LL	PI
					1st 6"	2nd 6"	3rd 6"											
0	Topsoil/Rootzone		593															
	Auger refusal at 1 foot																	
5			588															
10			583															
15			578															
20			573															
25			568															
30			563															
Remarks: Groundwater was not encountered at the time of drilling. Borings were backfilled after drilling. Therefore, long term groundwater depth was not measured.			SOIL TEST BORING RECORD															
This is an interpretation of subsurface conditions at the boring location. Subsurface conditions may differ at other times and other locations. The interfaces shown between strata are approximate. Transitions between strata may be gradual.			PROJECT: Bear Creek SPS Columbia, TN BORING: B-2 DRILLED: 2/21/2024 ETS PROJECT NO. 24-40															

ENGINEERING AND TESTING SOLUTIONS

DEPTH	SOIL DESCRIPTION AND REMARKS SEE KEY SHEET FOR EXPLANATION OF SYMBOLS AND ABBREVIATIONS	LEGEND	ELEVATION	SAMPLES				SPT (bpf)	Lab Results								
				TYPE	BLOWS				% M	LL	PI						
					1st 6"	2nd 6"	3rd 6"					N VALUE					
0	Topsoil/Vegetation		567					5	10	15	20	25	30				
	Very hard brown silty clay with limestone boulders - Residual			spt	50+		50+								24.3		
5	Auger refusal at 4.9 feet. Begin rock core.		562	spt	50+		50+	REC.	RQD	QUAL.					22.4		
	Gray highly fractured, highly to moderately weathered limestone			ROCK CORE				57%	0%	Very poor							
10			557					84%	18%	Very poor							
	Gray fractured limestone							96%	86%	Good							
15			552														
								98%	84%	Good							
20			547														
								100%	94%	Excellent							
25	Gray lightly fractured limestone		542														
30			537					100%	100%	Excellent							
	Approximate subgrade elevation		533					98%	90%	Excellent							
Remarks:				SOIL TEST BORING RECORD													
Groundwater was not encountered at the time of drilling. Borings were backfilled after drilling. Therefore, long term groundwater depth was not measured.																	
This is an interpretation of subsurface conditions at the boring location. Subsurface conditions may differ at other times and other locations. The interfaces shown between strata are approximate. Transitions between strata may be gradual.				PROJECT: Bear Creek SPS Columbia, TN DRILLED: 2/26/2024 BORING: B-3 ETS PROJECT NO. 24-40 page 1 of 2													

ENGINEERING AND TESTING SOLUTIONS

DEPTH	SOIL DESCRIPTION AND REMARKS SEE KEY SHEET FOR EXPLANATION OF SYMBOLS AND ABBREVIATIONS	LEGEND	ELEVATION	SAMPLES				SPT (bpf)						Lab Results		
				TYPE	BLOWS									%	LL	PI
					1st 6"	2nd 6"	3rd 6"	N VALUE	5	10	15	20	25			
35			532	ROCK CORE					REC.	RQD	QUAL.					
	Gray lightly fractured limestone								98%	90%	Excellent					
#	Gray fractured limstone		527						100%	76%	Good					
	Gray lightly fractured limestone		522						98%	94%	Excellent					
45																
	Coring terminated at 47.0 feet															
50			517													
55			477													
60			472													
65			467													
Remarks:				SOIL TEST BORING RECORD												
Groundwater was not encountered at the time of drilling. Borings were backfilled after drilling. Therefore, long term groundwater depth was not measured.																
This is an interpretation of subsurface conditions at the boring location. Subsurface conditions may differ at other times and other locations. The interfaces shown between strata are approximate. Transitions between strata may be gradual.																
PROJECT:				Bear Creek SPS Columbia, TN												
DRILLED: 2/27/2024				BORING: B-3												
ETS PROJECT NO.				page 2 of 2 24-40												

ENGINEERING AND TESTING SOLUTIONS

D E P T H	SOIL DESCRIPTION AND REMARKS SEE KEY SHEET FOR EXPLANATION OF SYMBOLS AND ABBREVIATIONS	L E G E N D	E L E V A T I O N	SAMPLES				SPT (bpf)							Lab Results			
				T Y P E	BLOWS			N V A L U E	5	10	15	20	25	30	%	M	LL	PI
					1st 6"	2nd 6"	3rd 6"											
0	Topsoil/Rootzone		593															
5	Auger refusal at 1.0 foot		588															
10			583															
15			578															
20			573															
25			568															
30			563															
Remarks: Groundwater was not encountered at the time of drilling. Borings were backfilled after drilling. Therefore, long term groundwater depth was not measured. This is an interpretation of subsurface conditions at the boring location. Subsurface conditions may differ at other times and other locations. The interfaces shown between strata are approximate. Transitions between strata may be gradual.			SOIL TEST BORING RECORD															
			PROJECT: Bear Creek SPS DRILLED: 2/21/2024 ETS PROJECT NO. Columbia, TN BORING: B-4 24-40															

ENGINEERING AND TESTING SOLUTIONS

D E P T H	SOIL DESCRIPTION AND REMARKS SEE KEY SHEET FOR EXPLANATION OF SYMBOLS AND ABBREVIATIONS	L E G E N D	E L E V A T I O N	SAMPLES				SPT (bpf)							Lab Results			
				T Y P E	BLOWS			N V A L U E	5	10	15	20	25	30	%	M	LL	PI
					1st 6"	2nd 6"	3rd 6"											
0	Topsoil/Rootzone		568															
	Very hard brown silty clay with limestone fragments - Residual			spt	50+													
						50+												
5	Auger refusal at 3 feet		563															
10			558															
15			553															
20			548															
25			543															
30			538															
Remarks: Groundwater was not encountered at the time of drilling. Borings were backfilled after drilling. Therefore, long term groundwater depth was not measured. This is an interpretation of subsurface conditions at the boring location. Subsurface conditions may differ at other times and other locations. The interfaces shown between strata are approximate. Transitions between strata may be gradual.				SOIL TEST BORING RECORD														
				PROJECT: Bear Creek SPS Columbia, TN DRILLED: 2/26/2024 BORING: B-5 ETS PROJECT NO. 24-40														

ENGINEERING AND TESTING SOLUTIONS

DEPTH	SOIL DESCRIPTION AND REMARKS SEE KEY SHEET FOR EXPLANATION OF SYMBOLS AND ABBREVIATIONS	LEGEND	ELEVATION	SAMPLES				SPT (bpf)							Lab Results			
				TYPE	BLOWS										%			
					1st 6"	2nd 6"	3rd 6"	N VALUE										
0	Topsoil/Rootzone		593															
	Firm brown silty clay - Residual			spt	5	4		4	8							22.4		
5			spt	4	3		5	8							23.8	43	22	
	Auger refusal at 6.0 feet																	
10																		
15																		
20																		
25																		
30																		

Boring B-3 rock core 4.9 feet to 12.0 feet



Boring B-3 rock core 12.0 feet to 22.0 feet



Boring B-3 rock core 22.0 feet to 32.0 feet



Boring B-3 rock core 32.0 feet to 42.0 feet



Boring B-3 rock core 42.0 feet to 47.0 feet



APPENDIX C

LABORATORY TEST PROCEDURES
AND
LABORATORY TEST RESULTS

LABORATORY TEST PROCEDURES

Atterberg Limits (PI)

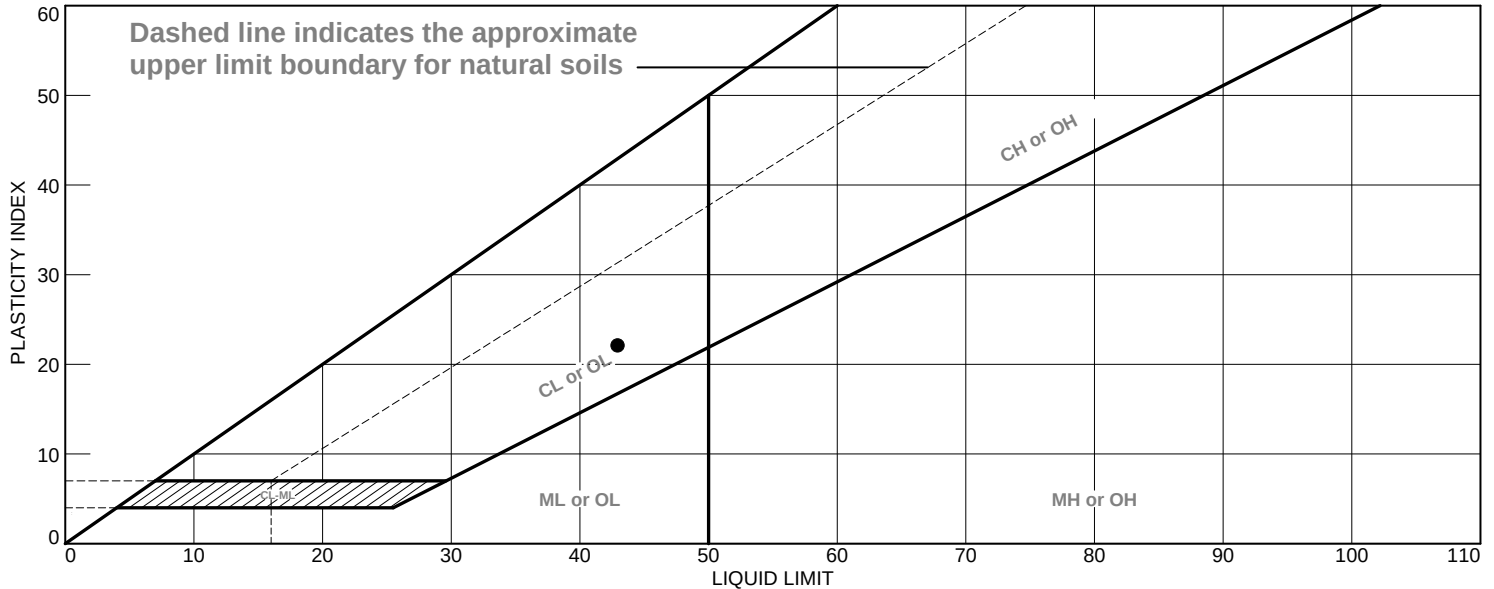
Originally, the Atterberg Limits consisted of seven "limits of consistency" of fine-grained soils. In current engineering usage, the term usually refers only to the liquid limit (LL) and plastic limit (PL). The LL (between the liquid and plastic states) is the water content at which a trapezoidal groove of specified shape, cut in moist soil held in a special cup, is closed after 25 taps on a hard rubber plate. The PL (between plastic and semi-solid states) is the water content at which the soil crumbles when rolled into threads of 1/8-inch in diameter.

The LL has been found to be proportional to the compressibility of the normally consolidated soil. The PI is the calculated difference in water contents between the LL and the PL. Together the LL and PI are used to classify silts and clays according to the Unified Soil Classification System (ASTM D 2487). The PI is used to predict the potential for volume changes in confined soils beneath foundations or grade slabs. The LL, PL, and PI are determined in accordance with ASTM D 4318.

Moisture Content

The moisture content in a given mass of soil is the ratio, expressed as a percentage, of the weight of the water to the weight of the solid particles. This test was conducted in accordance with ASTM D 2216.

LIQUID AND PLASTIC LIMITS TEST REPORT



MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
● Brown silty clay	43	21	22			

Project No. 24-40 Client: JR Wauford

Project: Bear Creek SPS

Location: B-6

Sample Number: S-2 Depth: 4.0 ft. to 5.5 ft.

Remarks:

● Natural Moisture: 23.8%

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Figure

Tested By: NC Checked By: AW

Soil Data Summary

Bear Creek SPS

Columbia, TN					
Page 1 of 1					
Boring No.	Depth (feet)	Moisture Content	Atterberg Limits		
			LL	PL	PI
B-3	1.5-3.0	24.3			
B-3	4.0-5.5	22.4			
B-6	1.5-3.0	22.4			
B-6	4.0-5.5	23.8	43	21	22

SECTION 2

TESTING AND CONTROL OF MATERIALS

1. Scope

This Section together with such additions, deletions, or modifications, if any, as may appear in any other particular Section of these Detailed Specifications shall govern the furnishing and testing of materials to be used in the work.

Materials of construction, particularly those upon which the strength and durability of the structure or the integrity of a pipeline may depend, shall be subject to inspection and testing to establish conformance with specifications and suitability for uses intended.

2. Cost of Tests and Selection of Testing Agencies

All materials and equipment used in the construction of the project shall be subject to adequate review and testing in accordance with accepted standards. The laboratory or inspection agency will be selected by the Contractor subject to the approval of the Engineer and the Owner. THE CONTRACTOR SHALL PAY FOR ALL DULY AUTHORIZED LABORATORY INSPECTION AND/OR TESTING SERVICE.

3. Sources of Supply

The Contractor shall submit a list indicating their proposed sources of supply of all materials including manufactured items and receive the Engineer's approval prior to the placing of orders. The Engineer may require representative samples of any materials prior to approval of the source. The Engineer's approval of the source of any sample shall not be construed to relieve the Contractor of furnishing materials which fully meet all provisions of these Detailed Specifications.

If it is found that sources which have been approved do not furnish uniformly acceptable products, the approval may be withdrawn. The Contractor and his supplier shall afford the Engineer's representative opportunities for inspecting products and materials at any time during their preparation. The Contractor and/or supplier shall furnish shipment thereof, without charge.

These requirements are not intended to stifle or hinder completion but are intended to assure quality and/or performance.

4. Approval of Testing Agencies and Reports

Whenever in these Detailed Specifications review and testing of materials are required, bureaus, laboratories, and/or agencies selected by the Contractor for such inspection and testing service shall be subject to approval by the Engineer.

Documentary evidence, satisfactory to the Engineer, that the material has passed the required inspection and testing must be furnished prior to the incorporation of such materials in the work, and rejected materials must be promptly removed from the premise.

Six (6) copies of all test reports shall be sent to the Engineer's office for checking and distribution.

Test reports shall contain as a minimum (1) the name and location of the supplier's plant, (2) the name of the person gathering the sample, (3) the date of the sampling, and (4) such other like data as may be required by the Engineer.

5. Governing Specifications

It is the intention of the Engineer in the preparation of these General and Detailed Specifications to define properly the kind and quality of materials to be furnished. The standards and tentative standards of the American Society of Testing Materials (ASTM); standards of the American Waterworks Association (AWWA); standards of the American National Standards Institute (ANSI); standards promulgated by the Federal Specification Board (Fed. Spec.); American Association of State Highway and Transportation Officials (AASHTO); the Federal Aviation Agency (FAA); or other such agencies may be referred to in the Detailed Specifications. Where such standards are referred to, said references shall be construed to mean the latest amended and/or revised versions of the said standard or tentative specifications. In the selection of samples and the routine testing of materials, the testing laboratory shall follow the standard procedure as outlined by the ASTM, unless otherwise set out.

6. Extent of Inspection and Testing Service

It is intended that materials of construction, particularly those upon which the strength and durability of structures may depend, shall be inspected and tested to establish conformance with specifications and suitability for uses intended. The following is a schedule showing the extent of testing and requirements and methods of reporting. If it is found that this list does not cover all items that will require testing, then such materials shall be tested as directed by the Engineer.

7. Cement

Cement shall have been shipped from the mill not more than three (3) months prior to receipt on the work. Testing and certification of ASTM C 150 shall apply and shall be supplied by the manufacturer.

8. Fine Aggregate (For Use in Cement Concrete)

Fine aggregate shall consist of natural river sand except that upon request the Engineer may approve manufactured sand. SAND MINED FROM HIGHLAND DEPOSITS WILL NOT BE APPROVED.

Standard tests shall be made in advance of concreting by an approved independent laboratory per ASTM C 33 and ASTM C 40 on each fine aggregate proposed to be used. Other tests being satisfactory, the aggregate may be used pending results of 28-day strength tests.

9. Coarse Aggregate (For Use in Cement Concrete)

Standard tests shall be made in advance of concreting by an approved laboratory on each grading of each coarse aggregate proposed to be used per ASTM C 33.

10. Advance Tests of Concrete Design Mix(es)

Before commencement of concrete placing and after approval of cement and aggregates, an independent laboratory shall make from a single batch for each proposed mix a set of six (6) standard four (4) inch cylinders per ASTM C 31 and test in accordance therewith: Test two (2) cylinders at seven (7) days, two (2) cylinders at fourteen (14) days, and two (2) cylinders at twenty-eight (28) days per ASTM C 39. Two (2) beam flexure tests as per ASTM C 78 shall likewise be made and tested from the design batch if the total requirement exceeds 1,000 cubic yards.

The requirements for tests may be modified at the Engineer's discretion without prejudice to the Engineer later requiring same (if he becomes in doubt about the quality of the concrete) if less than fifty (50) cubic yards are required.

11. Reinforcing Steel

A certificate of origin and affidavit will be required for all reinforcing steel. All reinforcing steel shall be manufactured in the United States unless specifically approved by the Engineer. Reinforcing steel shall be inspected for section, rust, shape and dimension. The manufacturer shall supply test reports depicting inspection results plus heat numbers.

12. Structural Steel

Structural steel shall be evaluated at the mill and shop for each heat number to determine compliance with specification designated in these Detailed Specifications.

13. Steel Bar Joists

The manufacturer shall supply test data proving the efficiency of the design of the proposed joists for the purpose intended and certificates that the joists, as furnished, are in accordance with project requirements and with the Standard Specifications for Steel Joists as given in the current handbook "Steel Joist Construction" published by the Steel Joist Institute or other specifications designated in these Detailed Specifications.

14. Brick

Visual examination for shape, color, soundness, cracks, and other imperfections.

15. Building Stone

Visual examination for shape and color.

16. Concrete Pipe

Visual examination at the site, as practicable, per ASTM or other designated specification together with certified test reports from the supplier.

17. Polyvinyl Chloride (PVC) Pressure Pipe

Examination at the site, as practicable, per AWWA, ASTM or other designated specification plus certified test reports from the supplier as performed by the manufacturer.

The following test results shall be supplied by the manufacturer:

Long-Term Pressure Test (Min.)	1,000 hours at 400 psi
Burst Pressure Short Term (Min.)	630 psi
Impact (Min.)	60 ft/lbs at 72°F. 16 ft/lbs at 0°F.
Acetone	20 minutes no flaking
Crush (Ring Section)	100% crush no cracking
Vacuum Test (Min.)	22 in/HG for 1 hr.

18. Polyvinyl Chloride (PVC) Sewer Pipe

Examination at the site, as practicable, per ASTM or other designated specification plus certified test reports from the supplier. Testing shall be in accordance with the requirements of ASTM D 2412. Minimum "pipe stiffness" (F/Y) at five (5) percent deflection shall be forty-six (46) psi or greater for all pipe sizes. The result of all tests shall be reported to the Engineer.

19. Ductile Iron Pipe and Special Castings

Each piece of pipe shall bear the manufacturer's name or trademark and the date cast. Each piece of pipe should also be certified by the manufacturer to have met the requirements of the governing ASTM or other designated specification. Also, each piece shall be visually inspected in the field for specification conformance.

20. Grey Iron Castings

- a. Field Examination: For dimensions, coating, holes hammer test.
- b. Laboratory Tests: Certified test reports by foundry.

21. Polyethylene Pipe

Examination at the site, as practicable, per ASTM or other designated specification plus certified test reports from the supplier. Testing shall be performed in accordance with the procedure outlined in ASTM D 2513.

SECTION 3

CONCRETE AND REINFORCING STEEL

1. Scope

This Section covers the materials, mixing, transporting, and placing of all concrete and reinforcing steel including all labor, materials, and equipment.

The provisions of Section 2, Paragraph 2. Cost of Tests and Selection of Testing Agencies applies to this Section of these Detailed Specifications.

Where brand names or manufacturers are used in this Section, it is not intended that the use of products of equal quality and function by other manufacturers be prohibited. Concrete admixtures may be as furnished by Master Builders, Grace Construction Materials, Sika Chemical Corporation, or approved equal. Concrete forms and accessories may be furnished by Universal Form Company, Dayton Sure-Grip and Shore Company, Heckman Building Products, or equal.

2. Reference Codes and Standards

All work covered by this Section of these Detailed Specifications shall be performed in accordance with the applicable portions of the following American Concrete Institute (ACI) and Concrete Reinforcing Steel Institute Standards (CRSI), as modified in this Section.

<u>ACI 224.3R:</u>	"Joints in Concrete Construction"
<u>ACI 301:</u>	"Specifications for Structural Concrete"
<u>ACI 302.1R:</u>	"Guide for Concrete Floor and Slab Construction"
<u>ACI 305R:</u>	"Guide to Hot Weather Concreting"
<u>ACI 306R:</u>	"Guide to Cold Weather Concreting"
<u>ACI 315:</u>	"Manual of Standard Practice for Details and Guide to Presenting Reinforcing Steel Design Details"
<u>ACI 318:</u>	"Building Code Requirements for Structural Concrete"
<u>ACI 347R:</u>	"Guide to Formwork for Concrete"
<u>ACI 350:</u>	"Code Requirements for Environmental Engineering Concrete Structures"
<u>CRSI-MSP:</u>	"Manual of Standard Practice"

The most recent published version (as of the project bid date) of any standard listed in these Detailed Specifications shall apply.

3. Class of Concrete

Concrete shall be two (2) classifications as follows:

CLASS "A" - All concrete shall be Class "A" unless otherwise shown on the Plans. ALL reinforced concrete shall be Class "A". Class "A" concrete shall possess the following characteristics and/or proportions of materials.

Minimum Cement Content: 6.0 bags (564 pounds) per cubic yard.

NO FLY ASH WILL BE ALLOWED

Minimum 28-day compressive strength: 4,500 psi average of any three (3) cylinders selected by the Engineer.

Anticipated 28-day compressive strength: 5,000 psi plus.

Slump: Three and one-half (3½) to six (6) inches in walls and columns and piers. Two and one-half (2½) to five (5) inches in slabs, beams, and footings.

Admixtures: A retardant may be required where slow set is desired; where quick set is desired Portland Cement content of 6.2 bags may be required. Air entraining agents optional and subject to Engineer's approval. Additional special admixtures may be specified in subsequent sections of these Detailed Specifications.

The Contractor shall incorporate XYPEX Admix C-1000 into all concrete and grout cast at the new Bear Creek Sewage Pumping Station. The admixture shall be introduced at the batch plant in the presence of the Engineer at the rate of sixteen (16) pounds per cubic yard (3% cement weight of 546 pounds), subject to approval by the Manufacturer. The admixture shall not alter the color of the cement. No concrete pours shall take place without the Engineer witnessing the XYPEX admixture being introduced at the batch plant.

CLASS "C" - Concrete used for anchors, kickers, and encasement for pipe lines, for subfoundations and mass footings, and for fill shall be Class "C". No concrete containing reinforcement shall be Class "C". Class "C" concrete shall possess the following characteristics and/or proportions of materials:

<u>Minimum Cement Content:</u>	5.0 bags (470 pounds) per cubic yard.
<u>Minimum 28 day compressive strength</u>	2,500 psi - average of any three (3) cylinders selected by the Engineer.

NO FLY ASH WILL BE ALLOWED

Slump: Five (5) to eight (8) inches for encasement. Two (2) to four (4) inches in subfoundations and sealing as per Paragraph 10.d. hereinafter.

Admixtures: None required.

4. Determination of Strength of Concrete

Compressive strength of concrete shall be determined by use of standard four (4) inch diameter by eight (8) inch test cylinders in accordance with ASTM C39 and C 31.

5. Concrete Design Mixes

An independent commercial testing laboratory, approved by the Engineer, shall prepare a design mix for each Class "A" and Class "C" concrete and submit five (5) copies to the Engineer for general approval of the proportions and materials. The design mix shall be accompanied by the quality tests of the materials which are proposed in accordance with Section 2. Testing and Control of Materials, Paragraphs 5, 8, 9, and 10 of these Detailed Specifications. The sources of supply and the producer of the concrete, if a ready-mix plant, shall be subject to all the requirements of Section 2. Testing and Control of Materials, and particularly to Paragraph 3. Sources of Supply, thereof. After general approval of the materials and proportions the tests required in Paragraph 10. Advance Tests of Concrete Design Mix(es) of Section 2 shall be submitted for approval. No concrete may be placed prior to submission and approval of the design mix and of the test results. The cost of obtaining an approvable concrete mix will be paid for by the Contractor.

6. Materials for Concrete

a. Portland Cement

Portland Cement shall be of American manufacture and shall conform to the "Standard Specifications for Portland Cement" (ASTM C150), of the American Society for Testing and Materials and shall be Type II with an equivalent alkali ($\text{Na}_2\text{O} + 0.658 \text{ K}_2\text{O}$) content of less than 0.60 percent and shall have been shipped from the mill not more than three (3) months

prior to incorporating into the work unless specifically waived in writing by the Engineer. For job site mixing all cement shall be in sacks. FLY ASH IS NOT AN ACCEPTABLE SUBSTITUTE FOR PORTLAND CEMENT. PREMIXED BAG CONCRETE IS NOT AN ACCEPTABLE SUBSTITUTE FOR PORTLAND CEMENT.

b. Water

Water used in concrete shall be clear and free from objectionable substances such as oil, acid, alkali, vegetable matter, clay, or silt. Water of doubtful quality shall be tested in briquettes which shall reach a strength equal to that of similar briquettes made with water of known satisfactory quality.

c. Admixtures

An air entraining admixture equal to Master Builders AE200, Darex A.E.A. or Aermix, meeting the requirements of ASTM C260 for Air Entraining Admixtures may be used but is not required. Use of such admixtures is subject to the approval of the Engineer.

The amount of air-entraining admixture to be used will be determined by the percent of air entrained in the concrete. The limits of air will be five (5) percent plus or minus one (1) percent.

The concrete when an approved air entraining agent is used shall have a reduction in weight of not more than three (3) to six (6) pounds per cubic foot as compared with concrete of the same consistency and cement content made without the use of the agent. The specified cement factor shall be maintained by adjusting the quantity of aggregate and water used to the satisfaction of the Engineer. Reduction in the twenty-eight (28) day strength as specified will not be permitted. The use of any other admixture will not be permitted without the written consent of the Engineer as to the admixture to be used and its proportion in the mix.

d. Fine Aggregate

Sand for concrete shall consist of clean, hard, durable uncoated particles, free from lumps of clay, soft or flaky material, loam, and organic matter. In no case shall fine aggregate containing lumps of frozen material be used. Fine aggregate containing appreciable quantities of mica, shale, slate, or other soft grains shall not be used. It shall not contain more than two (2) percent by weight of material which may be removed by the elutriation test. Sands which do not pass the standard colormetric tests shall not be used unless it can be shown that the failure to pass is caused by particles of lignite or coal. Fine aggregate shall conform to ASTM C33 with gradation as follows:

<u>Screen</u>	<u>Percent Passing</u>
No. 4	95 -100
No. 16	45 - 95
No. 50	10 - 30
No. 100	2 - 10

ONLY NATURAL RIVER SAND OR SPECIALLY APPROVED
MANUFACTURED SAND SHALL BE USED.

e. Coarse Aggregate

Unless otherwise specified, coarse aggregate may be either crushed limestone, or crushed gravel. Coarse aggregate shall show no evidence of disintegration, and the weighted percentage of loss shall be not more than ten (10) percent by weight when subjected to five (5) alternations of the sodium sulphate test for soundness. It shall be composed of clean, hard, durable, uncoated particles free from deleterious matter. Except for gradation, coarse aggregate shall conform to the requirements of ASTM C33. The coarse aggregate shall meet the following grading requirements.

Passing 1 1/2" square laboratory sieve	-	100%
Passing 1" square laboratory sieve	-	90 -100%
Passing 3/4" square laboratory sieve	-	50 - 75%
Passing 3/8" square laboratory sieve	-	10 - 25%
Passing No. 4 square laboratory sieve	-	0 - 5%

7. Proportioning of Materials for Concrete

During formulation of the design mix the proportions of aggregate to cement for the grade of concrete specified shall be such as to produce concrete of proper workability. The proportion by dry weight of fine to combined aggregates shall be controlled between limits of thirty (30) to forty-five (45) percent as directed by the Engineer, but the mix shall be so controlled as to use the minimum fine and the maximum coarse aggregate which will give a satisfactory and workable mix.

Measurement of cement, fine and coarse aggregate for all classes of concrete shall be by direct weight upon an approved type of scales. Water shall be accurately measured in gallons by equipment accurate to plus or minus five (5) percent.

The weight of cement in unopened sacks as packed by the manufacturer will be considered to be ninety-four (94) pounds per sack. The method of measuring the water shall be accurate and readily adjustable so that the proper ratio of water and cement in each batch may be secured. It is the intention of the Engineer to control rigidly the quantity of water in each mix and to get the densest possible

concrete. The Engineer may require calibration of weighing equipment. Equipment for measuring water shall be checked and adjusted daily.

8. Source of Supply of Concrete

a. General

Concrete to be placed in the work may be proportioned and mixed by the Contractor on the site of the work or may be proportioned and mixed in a "Ready-Mix" central plant. Either plant shall be subject to the Engineer's approval of equipment and adequacy prior to the commencement of concrete placement operations. Such approval may be withdrawn by the Engineer if the concrete becomes non-uniform or for other reasons. In the case of such withdrawal of approval the Contractor shall either cause corrections necessary to obtain another approved source.

b. Mixing on Job Site

When small quantities of concrete are required at remote sites or the travel time from a ready-mix plant is deemed excessive or an approvable ready-mix plant is unavailable, the Engineer may approve job site mixing. The Engineer will require what is deemed adequate mixing and quality control equipment.

c. Mixing at a Central Plant

The name and location of the proposed plant and its sources of materials shall be submitted to the Engineer for approval. The Engineer may inspect the plant facilities and proposed mixer trucks and make a determination as to whether they are adequate to meet the quality control required. The Engineer's determination in this case will be FINAL and BINDING. The concrete shall be mixed and handled in accordance with the requirements of ASTM C94 except as otherwise specified herein. During the period of placing concrete the Engineer shall be afforded free access to the plant for such examinations as the Engineer deem necessary including the stationing of a separate resident project representative at the plant during batching operations if deemed desirable.

(1) Loading Tickets

Loading tickets shall be initialed by the "weight man" stating (1) the Class of concrete, (2) the name of the project, (3) the time of the batching, and (4) the batch weights of each material including water. When the mixer truck arrives on the job site a copy of the ticket shall be given to the resident project representative BEFORE

the concrete is placed. Any additional materials added shall be noted.

(2) Transporting

Concrete shall be transported only in approved mixer trucks which will mix the concrete enroute. In extreme hot weather, when approved by the Engineer, the required amount of water may be added upon arrival of the truck at the job site in order to avoid pre-set of the mix enroute. Such approval requires close cooperation of all concerned and will be given only if equipment to accurately measure the water is available and only if strength and slump tests are found to be uniform; approval may be withdrawn for any reason including lack of cooperation. Concrete which reaches the job in a pre-set condition or fails to meet slump requirements will be rejected and shall be removed from the job site. No retempering with water or any other admixture will be allowed except in special emergencies and under the conditions set in Paragraph 9. Alteration of Concrete Slump (Retempering).

9. Alteration of Concrete Slump (Retempering)

ANY ALTERATION OF CONCRETE IS TOTALLY THE CONTRACTOR'S RESPONSIBILITY.

The concrete shall be mixed only in such quantities as required for immediate use, and shall be used while fresh and before initial set has taken place. The addition of water or some other plasticizer (sometimes called retempering) to a ready-mix truck at the job-site or such addition at any place more than ten (10) minutes after the original water charge has been added and mixing commenced is strictly prohibited except as provided herein. Any concrete which arrives on the job in which initial set has begun shall be wasted and not used in the work.

At the request of the Contractor, the Resident Observer may permit water and Portland cement to be added at the rate of twelve (12) gallons of water per sack of cement. If Portland Cement is not available without too great a time delay the Contractor may add up to one (1) gallon of water per cubic yard at his own risk.

If concrete arrives on the job too wet the slump may be altered by adding Portland cement and thoroughly mixing.

Any concrete which is altered shall have double the specified number of cylinders taken after said alteration and no work shall be added onto the pour in question until the quality is assured.

10. Placing of Concrete

a. General

All concrete shall be placed in daylight or daylight conditions approved by the Engineer and ONLY AFTER the Engineer's representative has been notified and has inspected and approved the placement of reinforcing steel and the general condition of form work.

All water and accumulated debris shall be removed from forms and observation holes shall be left in wall forms near the bottom for such purpose. For footings and on-grade slabs water shall be diverted or otherwise removed. For walls, beams, columns, and supported slabs the forms shall be wetted with water so as to tighten joints. Runways, where used, shall be independently supported so as to prevent disturbance of the forms.

CONCRETE WITHIN ANY UNIT OF WORK BETWEEN CONSTRUCTION JOINTS SHALL BE PLACED CONTINUOUSLY TO PREVENT "COLD JOINTS". New concrete shall be placed AGAINST each succeeding batch so as to build up a continuous monolithic "pour".

b. Cold Weather Placing of Concrete

No concrete shall be placed when the air temperature in a shaded area away from artificial heat is 40°F and falling. Concrete may be mixed and placed under the conditions set forth herein if the air temperature in the shade is 35°F and rising provided the Contractor makes provisions for heating to maintain 45°F and there is a U. S. Weather Bureau forecast for 45°F or above. When the air in the shade falls below 50°F the mixing water shall be heated (Maximum 140°F) so that the temperature of the concrete when deposited is between 60°F and 75°F. Several thermometers shall be maintained by the Contractor at the site of the work and placed as directed by the Engineer.

The Contractor shall supply such heating equipment as vented stoves and/or salamanders as are necessary to keep the temperature of the air surrounding the concrete from falling below 45°F until test specimens indicate the concrete has attained a compressive strength of 2,500 psi or greater or for a period of five (5) days. The Engineer may require additional heating units to be placed in operation if in the Engineer's opinion the concrete might be endangered by an additional drop in air temperature. When the required heating period has expired the concrete shall not be allowed to cool at a rate faster than 1°F per hour.

c. Hot Weather Placing of Concrete

When the temperature of the air exceeds 90°F or the average temperature for the period of placement exceeds 85°F or is predicted by a U.S. Weather Bureau forecast to exceed said limits special precautions are required. The temperature of the concrete shall not be allowed to exceed 90°F. Ice shall be substituted for mixing water prior to the addition of the other materials to mixer in order to maintain temperature. The ice shall be accurately weighed (8.34 pounds = 1 gallon) prior to its being placed in the mixer and the remaining mixing water reduced correspondingly. The temperature shall not be reduced below 65°F.

The maximum time allowed in the mixer by ASTM C94 (either three hundred [300] revolutions or one and one-half [1½] hours whichever occurs first) shall be considered the acceptable maximum at air temperatures between +45°F and +70°F. The following maximum allowables shall apply at various temperatures:

<u>Average Air Temperature</u>	<u>Maximum Time or Revolutions</u>
45°F - 70°F	1½ hours or 300
70°F - 80°F	1 hour or 200
80°F - 90°F	45 min. or 150
90°F - 100°F	30 min. or 100
100°F	No placing allowed

Extreme care shall prevail in the pouring of thin slabs and other thin sections. All forms, reinforcing steel, and/or subgrades shall be wet with cool water as shall all mixers, chutes, *etc.* immediately prior to concrete placement. No puddles of water shall be present at the time of placement.

d. Placing Concrete in Foundations

Whenever possible all foundation excavations shall be pumped dry and concrete deposited in the open. If it is not possible to proceed in this manner, a seal of concrete of sufficient thickness to resist any possible uplift shall be deposited under water in accordance with special directions of the Engineer. After the seal has set sufficiently, the foundation shall be pumped out; and the balance of the concrete placed in the dry.

e. Placing Concrete in Forms

Concrete shall be conveyed as soon as possible after mixing to the place in which it is to be deposited. The method and manner of placing shall be such as to avoid the possibility of segregation or separation of the aggregates or the displacement of the reinforcement. The concrete shall

be deposited so as to bring the construction up level and during the process, it shall be vibrated, rammed, spaded, or agitated by satisfactory tools so as to produce a compact concrete of maximum density with all spaces or voids filled and presenting a smooth, unbroken surface, free from coarse aggregate to exposed honeycomb spaces when the forms are removed.

f. Pumping or Chuting Concrete

If concrete is conveyed by pumps or chutes, the equipment shall be of such size and design as to insure a practically continuous flow. The slope of the chute or the design of the conveyance tubes shall be such as to allow concrete of a satisfactorily dry consistency to flow without separation of the ingredients. The chute or tube shall be thoroughly flushed with water before and after each run, discharging outside of the forms. Should stoppage occur in the chute or tube during concreting and the use of water be required to clean it, the water and all material removed from the chute or tube shall be wasted outside the forms. If, in the opinion of the Engineer, the arrangements for placement are such as to preclude the securing of watertight, smooth, dense concrete in any portion of the work, other and satisfactory means of transporting concrete shall be employed by the Contractor.

g. Vibrating Concrete

All concrete shall be vibrated in the forms as it is placed with mechanical internal vibrators maintaining 5,000 impulses per minute and approved by the Engineer. At least one (1) extra vibrator in operating condition shall be maintained at the job site in case of emergency.

11. Curing of Concrete

a. General

All concrete shall be protected from too rapid drying or curing by the covering of surfaces with burlap, curing compound as per ASTM C309, Type 1, or other suitable means immediately after finishing, concrete shall be kept moist for a sufficient period of time to insure satisfactory curing as directed by the Engineer, normally three (3) consecutive days.

b. Cold Weather Curing

If concrete is placed in cold weather the Contractor shall provide the necessary heat to insure that the temperature of the air immediately surrounding the fresh concrete does not drop below 45°F at any time, at any place, and that the concrete is uniformly kept warm until the concrete

has obtained a compressive strength of 2,500 psi or greater for at least five (5) days. The variations in temperature shall not exceed 10°F and no hot air shall be allowed to blow directly upon the fresh or curing concrete. The surfaces shall be protected from frost by covering with suitable blankets at any time the temperature is forecast to drop below 50°F.

c. Hot Weather Curing

During the curing of concrete in hot weather all surfaces shall be kept covered with burlap sacks or polyethylene and kept moist for a period of five (5) days after placing, after which the protective covering shall be allowed to gradually dry out.

The most extreme care shall be exercised to maintain a moist surface on slabs during the first twenty-four (24) hours after placement, and the Engineer, during periods of low humidity compounded by surface winds, may require continual wetting of the surface for a period of twenty-four (24) hours. After the first twenty-four (24) hours the surface shall be wet down when work is begun in the mornings and also at intervals during the day if required by the Engineer and left wet in the evenings.

12. Joints in Concrete

a. General

The placement of concrete shall be as shown on the Plans and/or approved "concrete placing plans" between construction joints. In general a unit shall not exceed thirty (30) feet in each direction nor more than nine hundred (900) square feet although the Engineer may approved larger pours when same are submitted in five (5) copies under the same procedure outlined for shop drawings and are to be considered as a shop drawing.

Vertical construction joints shall be provided at intervals of thirty feet (30') or less from corners and between construction joints on walls enclosing water holding basins above grade and dry spaces below grade. Horizontal construction joints shall be provided at intervals of thirty feet (30') or less in walls enclosing dry spaces below grade. Structural slabs on grade reinforced with deformed bars may be placed in pours of any dimension desired between construction joints.

Where a construction joint is made, laitance, all weak concrete, and foreign matter shall be removed and the concrete roughened.

On all joints except "expansion joints" the reinforcing shall be set to extend into subsequent sections of construction so as to make the work a

monolith. JOINTS SHALL NOT BE MADE EXCEPT AS THE ENGINEER MAY INDICATE, APPROVE, OR DIRECT TO PRESERVE THE STRENGTH, FACILITY OF PLACEMENT, OR WATERTIGHTNESS OF THE STRUCTURES. In general, the locations of the joints are shown on the Plans; but these may be changed if the Contractor requests and the Engineer approves. A period of at least forty-eight (48) hours shall elapse between the placement of adjacent concrete units or pours.

b. Watertight Expansion Joints

An expansion joint is defined as a joint specially constructed to allow movement as shown on the Plans. Expansion joints shall be constructed in accordance with the details shown on the Plans utilizing PVC waterstop, asphalt expansion joint filler, and SIKAFLEX 2c NS sealant or equal, and shall be watertight in water holding structures or dry wells. The expansion joint filler shall be the asphalt type conforming to the requirements of ASTM D994, W. R. Meadows, Inc. or equal. The exterior sealant shall be a two (2) part polysulfide rubber joint sealant conforming to the requirements of ASTM C920 for Class 25 sealants. The filler shall be applied so as to prevent "tracking" if accidentally stepped on.

c. Joints in Footings and Walls

Construction joints in footings and walls shall be located across areas of low shearing stress and shall be provided with keyways. Keyway details shall be as shown on the Plans or in special cases as directed. Waterstops shall be provided where shown on the Plans.

Expansion joints shall be located where shown on the Plans using the details of construction shown on the Plans.

d. Joints in Slabs and Beams

Construction joints shall be located near the middle of spans of slabs, beams, or girders; unless a beam intersects a girder at this point, in which case the joints in the girders shall be off-set a distance equal to twice the width of the beam. In this case, provision shall be made for shear by use of inclined reinforcement. Keyways shall be provided as shown on the Plans.

Expansion joints shall be located where shown on the Plans using the details of construction shown on the Plans.

e. Waterstops and Watertightness

Dry wells and structures housing equipment shall be watertight with no visible leaks and no accumulation of water. Any visible leaks shall be repaired to the satisfaction of the Engineer. Waterstops shall be polyvinyl chloride (PVC) and shall be of the configuration/type shown on the Plans. Keyways with nine (9) inch wide PVC waterstops for construction joints shall be used where such joints are shown. All PVC waterstops shall be installed as per the manufacturer's recommendations and shall be welded watertight.

Certain waterstops may be shown on the Plans or other material for special reasons.

f. Mastic Joints

Where joint sealer or mastic joint is noted on the Plans, the joints shall be sealed with the material designated on the Plans. All materials shall be installed in strict accordance with the manufacturer's instructions, and under the supervision of a qualified representative of the manufacturer. All surfaces and slots in concrete shall be provided as required by the manufacturer of the joint material.

g. Control Joints in Non-Reinforced, Non-Structural Slabs on Grade

Control joints in slabs on-grade which are reinforced with welded wire fabric only shall be saw cut and shall be a minimum of one-eighth inch (1/8") wide by one-fourth (1/4) the section in depth. Sawing of control joints shall be completed between twelve (12) and twenty-four (24) hours after finishing of the concrete surfaces. Timing of saw cutting shall be such that the slabs have sufficiently cured where no dislodging of aggregate occurs during the sawing operations.

The spacing of control joints and/or construction joints in slabs on grade shall generally not exceed fifteen feet (15').

Control joints in sidewalks shall be formed by tooling a groove downward from the surface with a one-fourth inch (1/4") edging tool. Spacing of control joints shall be equal to width of sidewalk.

h. Isolation Joints

Isolation joints to separate slabs from column footings, intersecting walls, *etc.* shall be provided where shown on the Plans. Isolation joint material shall be one-half inch (1/2") thick by the full depth of the slab, unless

otherwise noted on the Plans, and shall meet the requirements of ASTM D1994 for bituminous type performed joint filler.

Isolation joints, where shown on the Plans, separating concrete sidewalks from structures, concrete curbs, *etc.* shall be one-half inch ($\frac{1}{2}$ ") thick by the full depth of the sidewalk.

i. Joint Sealant

Where joint sealant is noted on the Plans and the joint sealant material is not designated, the joint sealant shall conform to the requirements of ASTM C1516 for cold application type concrete joint sealer.

13. Non-Shrink Grout

Non-shrink grout shall be used where called for on the Plans or required to insure watertightness. The proportions of the non-shrink grout mix shall be:

15 pounds Embecco or equal
100 pounds Portland Cement
100 pounds sand
150 pounds pea gravel (may be omitted)

14. Forms for Concrete Work

a. General

If required by the Engineer, forming plans shall be submitted by the Contractor and approved by the Engineer before the forms are on the work. The Contractor may submit a plan or schedule for forming for the Engineer's consideration. The Engineer's approval of the Contractor's method of forming will be for the benefit of the Contractor and will be based on the acceptability of the finished work; in no case will the Engineer pass on or be responsible for the structural adequacy of the Contractor's forms, false-work, or other construction procedures.

Forms shall be substantial and sufficiently tight to prevent leakage of mortar. They shall be properly placed or tied together so as to maintain position and shape and insure safety to workmen and passersby. Temporary openings shall be provided where necessary to facilitate cleaning and observation immediately before depositing concrete. CONCRETE SHALL NOT BE PLACED IN ANY FORM UNTIL THE FORM AND THE RESTEEL IS OBSERVED BY THE ENGINEER. Such Engineer comment or approval does not apply to the structural integrity of the framework which is the total responsibility of the Contractor. The Contractor shall be completely responsible for the strength and adequacy

of the form work and shall save the Owner and/or Engineer harmless from any claims arising therefrom for any reason.

b. False Work

All false work shall be solely the Contractor's responsibility as to strength, line, and grade, *etc.*; but the Engineer may disapprove work which is unworkmanlike, or in the opinion of the Engineer, will not yield the finished product required.

c. Material for Forms

The forms for the outside face of all exposed surfaces shall be of not less than one and one-half (1½) inch tongue and grooved lumber dressed on both edges and on the face next to the concrete or three-fourths (¾) inch plywood panels unless otherwise shown on the Plans or specifically permitted by the Engineer. Forms for all other concrete work may be constructed with one (1) inch by six (6) inch tongue and grooved sheathing or one (1) inch ship-lap. Where shown on the drawings or required in these Detailed Specifications, or by the Engineer, forms for all exposed walls (both inside and outside) shall be constructed of three-fourths (¾) inch plywood which, in all cases, must be approved by the Engineer.

Moldings and the ornamentation shown on the Plans shall be formed with wood or metal molds. The width of all boards used for such work shall be approved by the Engineer.

d. Unlined Forms

Unlined forms may be used on unexposed surfaces of walls, slabs, columns, and beams unless otherwise specified herein or as shown on the Plans. Form boards shall not be re-used in contact with exposed surfaces unless they are thoroughly cleaned and oiled and approved by the Engineer.

e. Lined Forms

Where specified herein or where shown on the Plans, plywood panel or lined forms will be used for certain portions of concrete masonry structures. Where lined forms are used, the lining shall be of fiber board or plywood which must, in all cases, be approved by the Engineer. All lining materials shall be used in as wide pieces as a single width of fiber board. The lining material shall be nailed to the backing beginning at the center of the board and working toward the edges to prevent buckling. Cigar box nails or similar nails with flat heads shall be used to attach lining material to forms. The edges of the linings shall be butted tight together,

and joints between the sheets shall be filled with a compound of litharge or Rutland Patching Plaster, or approved equal. Lining material may be re-used if it is satisfactorily cleaned and approved by the Engineer.

The smooth side of the lining materials shall be placed next to the concrete surface where smooth surfaces are specified; where granular surfaces are indicated or specified, the rough surfaces of the lining materials shall be placed next to the concrete.

f. Steel Forms

The use of steel forms may be used when approved in writing by the Engineer. Ties used with steel forms shall be of the type designed to remain permanently in place and conform to the requirements for form ties hereinafter. Steel forms, if used, shall be placed under the direction of a trained and competent representative of the supplier and the Contractor shall be totally responsible for their structural integrity.

g. Form Ties

Approved form ties shall be used for all wall construction. The ties shall be of the type that snap back in the wall, or permit removal of the tie ends. Ties shall be adjustable to permit tightening of forms, and of such type that will require a minimum amount of pointing with no metal closer than one-half (1/2) inch from face of wall. No ties will be permitted that require more than one and one-half (1½) inch for pointing. REMOVAL OR PULL-OUT TYPE TIES WILL NOT BE PERMITTED UNDER ANY CIRCUMSTANCES. Form ties with three-fourths (3/4) inch wood concrete snap ties shall be as manufactured by the Universal Form Company of Chicago, Illinois, or approved equal.

h. Form Release Agents

All forms that are not restricted by the form manufacturer from application of a form release agent shall receive a volatile organic compound (VOC) compliant, non-staining, reactive, architectural application form release agent. The form release agent shall be applied in accordance with the manufacturer's instructions. Form release agents shall be Duogard as manufactured by W. R. Meadows or equal.

i. Removal of Forms

Forms shall not be removed until the concrete has attained a strength sufficient to support itself and the superimposed loads. Under normal curing conditions (average temperature 50°F or above) the forms may be removed after following minimum time has elapsed.

Floor slabs, beams, and girders	- 10 days
Columns, pedestals, and sections less than 12 inches thick	- 4 days
Wall lifts (12 inches thick) under 10 feet	- 2 days (48 hrs. min.)
Wall lifts (12 inches thick) over 10 feet	- 3 days (72 hrs. min.)

In cold weather forms shall not be removed from any work when the danger exists of freezing the concrete or otherwise damaging the surface. Whenever a question exists as to removal of forms, the forms shall not be removed until a standard cylinder cured on the site in a manner similar to the work represented has attained a compressive strength of 3,000 psi.

The use of the foregoing table shall in no way relieve the Contractor of its responsibility for the safety and integrity of the structure.

15. Floor Drains, Sleeves, and Inserts

The Contractor shall be responsible for placing all sleeves, floor drains (which shall be placed one (1) inch low and the floor sloped thereto), wall castings, step nosing, and other inserts in the concrete walls and floors in their proper positions. If for any reason said sleeves, wall castings, and/or other inserts are not delivered prior to pouring, the Contractor shall box out for same in a manner acceptable to the Engineer. It shall then become the responsibility of the Contractor to place same and make a watertight closure of the openings in a manner satisfactory to the Engineer.

16. Slabs on Grade

a. Subgrade Preparation

Subgrade shall be prepared and constructed in accordance with "Guide for Concrete Floor and Slab Construction", ACI 302.1R and as hereinafter stipulated.

The subgrade shall be compacted in the presence of the Engineer immediately prior to the fine grading operation. All soft or unstable material detected during the final compacting shall be cut out and the area reworked to provide the specified density.

After final compacting, a six inch (6") crushed stone base shall be constructed as required to obtain the specified slab thickness within a tolerance of plus or minus one-fourth inch (1/4"). All ruts and depressions shall be filled to eliminate any abrupt changes in slab thickness.

A SIX (6) MIL POLYETHYLENE VAPOR BARRIER MEETING THE REQUIREMENTS OF ASTM D2103 SHALL BE PLACED OVER THE PREPARED CRUSHED STONE BASE PRIOR TO PLACING CONCRETE FOR THE SLAB.

b. Slab Placement

Materials and construction requirements relating to slabs on grade shall be in accordance with provisions outlined in this Section of the Specifications, in accordance with the "Guide for Concrete Floor and Slab Construction", ACI 302.1R and as hereinafter stipulated.

Slabs on grade which are not shown to pitch to drain shall be constructed to a uniform plane at the elevation shown on the Plans. Tolerance of dead-level slabs shall be plus or minus one-fourth inch ($\pm 1/4"$) in ten feet (10') (F_F22 and F_L22). Slabs at floor drains shall be finished with a four foot (4') diameter dish with center of dish one inch (1") below floor level.

Reinforcing steel shall be cut at isolation joints and expansion joints. Wire mesh reinforcement and bar reinforcement shall be placed as shown on the Plans.

Slabs shall be constructed in a strip pattern. The width of each strip shall coincide with the distance between column lines. Construction joints shall occur at the column lines in buildings.

Concrete shall be discharged as close to its final position as possible. Concrete shall be screeded with hollow metal straightedges, vibrating screeds or roller screeds. After initial screeding, low spots shall be filled with additional concrete placed by shovel and these areas shall be rescreeded. Screeding must be completed before any excess water or bleeding water is present on the surface of the concrete.

Immediately after screeding and before any excess moisture or bleeding water is present on the surface of the concrete, surfaces shall be bull floated with wood floats to eliminate ridges and fill in voids left by straight-edging operations.

Concrete shall be floated after it has stiffened to the point where foot pressure can be sustained with a maximum of one-fourth inch (1/4") indentation. Floating shall be performed, utilizing power floats or trowelling machines fitted with float shoes. Surfaces inaccessible to power driven machines shall be hand floated, utilizing wood, magnesium or aluminum hand floats.

c. Curing

(1) Interior Floor Slabs

Interior floor slabs shall be cured with a membrane curing compound designed to cure, seal, harden, and dustproof. This compound shall be applied within one-half (½) hour after completion of finishing operations and/or immediately after disappearance of the "sheen" of surface moisture. Slab surfaces shall be uniformly coated at the rate recommended by the manufacturer. Application of material shall be by means of a roller or spray gun. If the floor slab is constructed prior to completion of the building envelope, floor surfaces shall be covered with curing sheets meeting the requirements of ASTM C171. Sheets shall be securely anchored and maintained in place for a minimum of seven (7) days.

(2) Exterior Slabs and Water Holding Basin Floor Slabs

Exterior floor slabs, slabs on grade not requiring special coatings, and floor slabs of water holding basins shall be cured with a membrane curing compound designed to cure and seal. The curing and sealing compound shall be a hydrocarbon, resin-based compound meeting the requirements of ASTM C309, Type 1, 1D, Class A and Class B. This compound shall be applied within one-half (½) hour after completion of finishing operations in accordance with the manufacturer's instructions. Slab surfaces shall be uniformly coated at the rate recommended by the manufacturer. Curing and sealing compound shall be CS-309-30 OTC by W. R. Meadows or equal.

As an alternative to use of membrane curing compound, the exterior slab may be completely covered with burlap and continuously soaked for ninety-six (96) hours after placing with a potable water sprinkler system.

17. Aluminum Safety Treads

The Contractor shall furnish and install on the leading edge of stairs, steps and landings nosings which shall be eight (8) inches less than the width of the surface to which said the nosing is attached (four [4] inches each side). The nosings shall be three (3) inches wide of the non-skid type equal to Wooster Products Type 101 alumogrip abrasive cast aluminum. Attachment shall be with concealed anchors on new work (for renovations use stainless steel screws). The installations shall be such that the top of nosing is flush with the top of the slab to which it is attached.

18. Concrete Finish

a. Floor Slabs

The concrete floors of all structures shall be finished monolithically with an allowable variation of one-eighth (1/8) inch in ten (10) feet transversely and longitudinally.

Concrete floor slabs on grade shall be placed over a well tamped and compacted subgrade. Form all recesses for thickened slabs, as shown on the Plans and thoroughly compact stone. Lay vapor barrier of six (6) mil (0.006 in.) thickness polyethylene over fill. Vapor barrier shall follow the contour of the thickness of the slab.

All floor drains shall be set one (1) inch lower than grade and the slab pitched thereto.

Slabs to receive quarry tile shall be finished by tamping the concrete with special tools to force the aggregate away from the surface; then screeded with straight edges and floated to produce a reasonably true and uniform surface.

b. Walls, Beams, Ceilings, and Columns

(1) General

All concrete walls, beams, ceilings, and columns shall be pointed; those which are to be exposed permanently to view, including the interior of basins to a point twelve (12) inches below the water line, shall be pointed and rubbed. If the surface is to be painted it shall be left smooth and all loose concrete rubbed away by use of a rough burlap sack or other effective method; if the surface is not to be painted it shall be rubbed as hereinafter specified. Foundation walls shall be rubbed to a point one (1) foot below grade on the outside. All projecting fins shall be removed from the concrete and holes left by form ties shall be pointed up.

(2) Pointing

After the specified curing times have elapsed, forms and form ties shall be removed and all depressions or imperfections inspected by the Engineer. After the Engineer has approved the general integrity of the work, all imperfections shall be wetted and repaired with non-shrink sand-cement mortar.

(3) Rubbing

After pointing has set, all surfaces requiring rubbing shall be kept wetted with water with a brush and rubbed with a No. 20 carborundum stone. The rubbing shall be continued sufficiently long to remove all marks and projections, producing a smooth, even surface without marked irregularities. The final rubbing shall be done with a No. 40 carborundum stone and continued until the entire surface is of smooth texture. After the rubbing has been finished, all excess particles shall be removed by brushing the surface with burlap. The finished surface shall be uniform in color and otherwise satisfactory to the Engineer.

(4) Coating

IF APPROVED by the Engineer in lieu of rubbing concrete, all structural cast-in-place concrete foundations, walls, beams, columns, roofs, ceiling and equipment foundations exposed to view and not identified or depicted on the accompanying Plans to receive any other finish or treatment, including the interior of all water holding structures to an elevation twelve inches (12") below the minimum normal water level and exposed exterior concrete walls to an elevation twelve inches (12") below finished grade, shall be coated as described hereinafter.

The coating shall be MasterSeal 584 or equal combined with water and MasterEmaco A660 or equal, both manufactured by Master Builders Solutions, or approved equal, in the proportions recommended by the product manufacturer for a trowel finish coating approximately one-eighth inch (1/8") to one-fourth inch (1/4") thick. The coating shall be applied according to the manufacturer's printed instructions including a "key coat" cured five (5) to seven (7) days followed by a final coat applied with a steel trowel and finished with a sponge float. All concrete coating described in this Paragraph shall be applied with a trowel finish, except that the coating to the underside of overhanging walkways may be applied with a brush finish. Application by spraying will not be allowed. All products used shall be those manufactured by Harris Specialty Chemicals, Inc., or approved equal.

The color shall be selected by the Owner.

c. Exterior Slabs

All walks, platforms, and exterior floors or slabwork shall have a broomed finish. After screeding to the required grade while the concrete is still

green, but has hardened sufficiently to bear the finisher's weight the surface shall be floated with a wood float to a true and even plane with no coarse aggregate visible. The slab shall then be evenly broomed with all strokes parallel to leave a workmanlike skid resistant finish.

d. Chamfer

All exposed edges shall be chamfered three-fourths (3/4) inch unless otherwise noted.

19. Watertightness

a. General

The Contractor is required to make watertight concrete in all structures holding water or solutions or dry wells or basements. All cracks and imperfections developing at any point in the work shall be thoroughly repaired in a manner satisfactory to the Engineer. When the concrete work has attained sufficient strength, the Contractor shall fill each basin or tank, or each compartment, with water, and shall repair any imperfections which cause the water level to fall more than one-half inch ($\frac{1}{2}$ ") in twenty-four (24) hours. All noticeable leaks in any portion of the work shall be repaired in any case, even if the preceding requirements as to watertightness are satisfied. THE CONTRACTOR MAY CONDUCT THIS WATERTIGHTNESS TEST EITHER BEFORE OR AFTER BACKFILLING EXTERIOR WALLS.

It is expected that with the proper precautions, a dense watertight concrete will be obtained. If concrete which passes the above requirements for watertightness has not been obtained, the Contractor shall, under the direction of the Engineer, furnish all materials and do all work necessary to produce watertight concrete structures.

All treatment of concrete necessary to fulfill these requirements for watertightness shall be done at the Contractor's own expense.

b. Dampproofing

The outer surface of all exterior concrete walls enclosing dry spaces (e.g. pits or structures housing equipment, valves or instruments) that is to be covered by backfill or by brick or decorative block shall be coated with an emulsion type asphalt dampproofing prior to backfilling or laying of brick. The dampproofing shall conform to ASTM D1227, Type 4 for brush-on application to concrete surfaces. Concrete structures containing water or wastewater do not require dampproofing.

Surfaces to receive dampproofing shall be clean and dry before application of dampproofing. Surfaces shall be primed in accordance with the manufacturer's recommendation. The dampproofing shall be applied uniformly at a rate of not less than thirty (30) pounds per one hundred (100) square feet.

Dampproofing shall be protected from damage until brick or decorative block is laid or backfill is placed. Concrete walls exposed to view after completion of construction shall not be waterproofed.

20. Defective Concrete

Concrete shall be so placed, compacted, finished and cured so as to form a dense, compact, impervious artificial stone with smooth exposed faces. Any part of the work found to be honeycombed, porous, or otherwise defective in the opinion of the Engineer shall be removed or replaced in whole or in part at the expense of the Contractor.

21. Testing of Concrete

In general, Section 2. Testing and Control of Materials of these Detailed Specifications, governs all testing.

The following tests and/or samples shall be taken in the field as work progresses:

a. Standard Slump Tests

Field slump tests shall be made by the Contractor, using an accurately made sheet iron test cone, in accordance with the provision of ASTM C143. At least one (1) slump test shall be made for each truck; the Engineer may require additional tests if he deems it necessary to insure the desired consistency of the concrete.

b. Concrete Compression Samples

During the progress of the work and for each different mix of concrete, test cylinders shall be made from each day's pour with a minimum of one (1) for each twenty-five (25) cubic yards or a maximum of one (1) from each batch or readymix truck load. The maximum requirement will be imposed only when the Engineer deems necessary due to wide fluctuations in the concrete quality. A minimum of three (3) cylinders will be required for each day's pour if the concrete is used in structures or otherwise in a load carrying capacity. Sidewalks, manholes, *etc.*, may require only one (1) cylinder if less than twenty-five (25) cubic yards per day is placed, and the quality remains sufficiently high in the opinion of the Engineer.

Each cylinder shall be numbered and logged so as to adequately identify the location of the representative concrete in the structure.

The following "break" schedule for cylinders from the same pour will be used:

Where only one (1) cylinder is made	- 28 days
Where two (2) cylinders are made	- one at 7 days - one at 28 days
Where three (3) cylinders are made	- one at 7 days - one at 14 days - one at 28 days
Where four (4) cylinders are made	- one at 7 days - one at 14 days - one at 28 days - one reserved
Where over four (4) cylinders are made	- Same as four plus reserve or as directed

ASTM C31 shall govern with curing as required. The testing shall be done per ASTM C39.

22. Reinforcing Steel

a. General

Bar reinforcement and wire mesh reinforcement shall be furnished and tested in accordance with Section 2. Testing and Control of Materials. CERTIFIED MILL TEST REPORTS SHALL ALSO BE FURNISHED TOGETHER WITH AN AFFIDAVIT INDICATING THE ORIGIN.

b. Bar Reinforcement

Reinforcing steel shall conform to the requirements of ASTM A615 new billet steel, Grade 60, with deformations conforming with ASTM A615. An affidavit showing the heat numbers and origin shall be furnished.

All bars shall be lapped a minimum of thirty (30) diameters at splices unless a greater lap is shown on the Plans.

All detailing, fabrication, and erection of reinforcing bars, unless otherwise noted, shall be in accordance with the ACI "Manual of Standard Practice for Details and Guide to Presenting Reinforcing Steel Design Details" (ACI 315).

The Contractor shall furnish the Engineer with five (5) copies of shop drawings of reinforcing bars, and schedules showing all bends and special bars. These shop drawings and schedules must have the approval of the Engineer before shipment is made. The bars shall bear a designation on the drawings and in the schedule and shall be tagged with metal tags for identification. The Engineer's representative shall be afforded free access to the fabricating shops.

c. Wire Mesh Reinforcement

Wire mesh reinforcement shall conform to the requirements of ASTM A1064.

d. Openings

Openings twelve (12) inches and larger through concrete walls and slabs shall have a minimum of four (4) extra diagonal bars in each face of the wall or slab of the same size as the largest bar in the wall or slab. The length of extra diagonal bars at openings shall engage a minimum of forty (40) bar diameters each side of the opening unless space requires full bond to be developed by means of hooks.

e. Minimum Reinforcing Steel

If through an omission Class "A" concrete walls, slabs, and other concrete work are shown on the Plans to have no reinforcing, a minimum area of steel reinforcing equal to 0.0018 times the cross-sectional area of the concrete work shall be provided.

f. Storage and Protection

Steel reinforcement, either bars or mesh, shall be new stock free from rust scale and shall be stored above the surface of the ground upon platforms, skids, or other supports and protected from the weather. When placed in the work it shall be free from rust, dirt, scale, paint, oil, or other foreign matter which may reduce or destroy bond. A thin coating of red rust resulting from short exposures will not be considered objectionable when bars are placed in the work; but any bars having rust scale or a thick rust coat shall be thoroughly cleaned to the satisfaction of the Engineer, or shall be rejected and removed from the premises if ordered by the Engineer.

g. Placing and Fastening of Reinforcement and Inspection Thereof

Steel reinforcement shall be placed in the exact position as shown on the Plans and held securely in place during the placing of the concrete. All

reinforcement shall be wired together at intersections or as directed by the Engineer. Sheet metal or welded wire bar spacers shall be used for bars in all steps, walls, and beams. Hychairs, or approved equal, shall be provided for the support of reinforcement of slabs and flat surfaces. When the reinforcement is placed in the work, it shall have a clean, fresh surface, free from dirt, scaly rust, mill scale, paint, oil or other foreign substances.

BEFORE ANY CONCRETE IS PLACED, THE ENGINEER SHALL HAVE EXAMINED THE PLACING OF THE STEEL REINFORCEMENT AND GIVEN PERMISSION TO DEPOSIT THE CONCRETE. CONCRETE PLACED IN VIOLATION OF THIS PROVISION MAY BE REJECTED AND THEREUPON SHALL BE REMOVED.

23. Concrete Repair Material

Where the repair of existing Portland cement concrete is noted on the accompanying Plans, the following procedures and materials shall be utilized to perform the repair.

All surfaces to be repaired shall be prepared as necessary to make them clean and structurally sound. The surface shall be cleaned by chipping, acid-etching, sandblasting and/or shot-blast cleaning methods to remove all dust, grease, paint, sealers and other foreign materials from the Portland cement concrete surface to be repaired. If acid-etching is used, the surface to be repaired shall be neutralized using a caustic solution and brushed prior to performing the repair. The Portland cement concrete surface to be repaired shall be kept damp for thirty (30) minutes prior to beginning the repair work but standing water shall not be allowed on the surface to be repaired.

The repair material shall be a two (2) component acrylic polymer modified concrete repair material. The material shall be mixed and applied in strict accordance with the manufacturer's written instructions. The concrete repair material shall be Patchcrete® manufactured by Lyons Manufacturing, Inc. or equal.

SECTION 4

SITE PREPARATION AND DEVELOPMENT

1. Scope

The work described in this Section includes furnishing all materials and equipment and performing all labor necessary for Site Preparation and Development, which includes but is not limited to temporary storm water pollution control; excavation; construction of embankments; backfilling around structures; site grading; driveway and parking areas; seeding; sodding; and all incidentals as shown on the Plans.

2. Alignments and Grades (Field Staking)

a. General

The Contractor shall be responsible for providing all survey and layout services required to perform the scope of work described at these Detailed Specifications and depicted on the accompanying Plans. For surveying on this project, the Contractor shall utilize a person or firm that is regularly engaged in the practice of surveying. Only calibrated surveying equipment shall be used. Resumes of the surveyor and proposed equipment shall be subject to the approval of the Owner/Engineer. A calibrated level equal to TopCon AT-B4 shall be kept on-site.

Any apparent discrepancy or error discovered in horizontal and/or vertical control depicted on the accompanying Plans shall be reported to the Engineer immediately.

The Engineer has established horizontal control monuments on the site and coordinates of same are depicted on the accompanying Plans. The Contractor shall be responsible for establishing all alignment and grades required for the accurate layout of the work.

WHERE CONNECTIONS OF NEW PIPELINES OR STRUCTURES ARE TO BE MADE TO EXISTING PIPELINES OR STRUCTURES, THE ACTUAL INVERTS OF THE EXISTING PIPELINES OR ELEVATIONS OF EXISTING STRUCTURES SHALL BE VERIFIED BY DIFFERENTIAL LEVEL SURVEYING METHODS BY THE CONTRACTOR BEFORE CONSTRUCTION BEGINS.

b. Gravity Sewer Pipelines

For new gravity sewer pipelines, the Contractor shall engage the services of a qualified engineering surveyor to re-establish in the field the proposed horizontal alignment of the gravity sewer pipelines and the vertical alignment of the existing ground along the entire route of the proposed gravity sewer pipelines prior to beginning any pipeline installation. Stakes, referred to hereinafter as “cut” stakes, shall be set along this re-established horizontal pipeline alignment. The maximum interval between cut stakes shall be fifty (50) feet for pipeline grades of one percent and greater, and twenty-five (25) feet for pipeline grades less than one percent. From this field survey and the proposed vertical alignment of the gravity sewer pipeline depicted on the accompanying Drawings, the Contractor shall prepare “cut sheets” indicating the depth between the existing ground elevation and the invert of the gravity sewer pipeline at the intervals required hereinbefore. The Contractor shall furnish the Engineer with five copies of each “cut sheet”. The depths and lengths depicted on approved “cut sheets” shall serve as the basis of payment for all gravity sewer pipeline construction. During installation of all gravity sewer pipelines, the Contractor shall use laser beams for alignment and grade and confirm both alignment and grade by means of an electronic distance meter (EDM) and level at each manhole.

3. Subsurface Conditions

See Section 1, Paragraph 33. Subsurface Conditions/Site Conditions, and **Paragraphs 5.03 and 5.04** of the General Conditions.

4. Clearing and Stripping of Topsoil

The site where the new structures are to be constructed shall be cleared of all obstructions interfering with the construction of new work. This work shall be coordinated as required by Section 1, Paragraph 2. Execution and Coordination of the Work.

The Contractor shall strip the entire area within cut, fill and graded areas to remove all topsoil, vegetable matter, stumps, roots, and other objectionable materials. TOPSOIL SHALL BE CAREFULLY STOCKPILED AND PRESERVED FOR REUSE. Roots and stumps shall be grubbed out and removed from the property entirely. The base of all embankments and fills shall be scarified and rolled so that the base will be well bonded with the first layers of fill.

5. Excavation

a. General

Excavation shall be accomplished at such places as indicated on the Plans to the lines, grades and elevations shown or as directed by the Engineer and shall be carried out so that the requirements shown on the Plans and/or specified herein are followed. Excavation shall be carried to such elevations as required. If rock is encountered, it shall be cleaned before placement of fill material.

Excavation shall not begin until the necessary surveying of the cleared site has been performed and permanent reference points set. Excavation may be accomplished by any customary method, unless otherwise specified.

All material encountered, of whatever nature, within the limits designated shall be removed by such means as the Contractor deems appropriate, subject to reasonable approval by the Engineer. During the process of excavation, grades shall be maintained so that the area is drained and EROSION CONTROL MEASURES SHALL BE FOLLOWED THROUGHOUT THE EXCAVATION PROCESS.

Excavation materials may be stockpiled as required or directed by the Engineer if such material cannot be placed in its proper section of permanent construction. If hauled off-site, the Contractor shall be responsible for damage to any public road over which it is hauled.

Breakage is defined as that portion of any material displaced, including slides and washes, beyond the finished work as planned or authorized by the Engineer. Payment will not be made for removal and disposal of breakage.

When excavation is near grade in rock, care shall be taken not to break up the strata, either with equipment or blasting, below grade in such a manner as to fragment the material.

b. Shoring, Sheet piling, and Bracing of Excavations

Where unstable materials are encountered or as required by law or regulations, such as those promulgated by OSHA, the sides of the trench or excavation shall be supported by substantial sheet piling, bracing and shoring, or the sides of the trench shall be sloped. The design and installation of all sheet piling, sheet piling, bracing and shoring and the design and construction of trench slopes shall be the Contractor's responsibility and shall be based on computations of pressure exerted by the materials to be retained under prevailing conditions. **Adequate and proper**

shoring of all excavations shall be the entire responsibility of the Contractor.

Existing foundations, adjacent to where the excavation is to be made below the depth of the foundation, shall be supported by shoring, bracing, or underpinning of a permanent nature as may be required to assure the integrity of the structure. The Contractor shall be responsible for any damage to existing foundations or structures. All shoring, bracing or underpinning for existing foundations shall remain in place and become a permanent part of the work.

Solid sheeting will be required for work in wet or unstable material. It shall consist of continuous vertical sheet piling of steel with suitable shores and braces.

All sheeting, planking, timbering, bracing and bridging shall be placed, renewed and maintained as long as is necessary. SHEETING, SHORING, BRACING AND UNDERPINNING IS NOT A SEPARATE PAY ITEM.

c. Classifications of Excavation

Site excavation shall be classified as follows:

(1) Common Excavation (Unclassified)

Common excavation shall include all excavation required for site grading, ditching, and construction of structures other than Undercutting. Common excavation shall be included in the Contractor's Lump Sum price and shall not be considered extra work.

(2) Rock

Rock excavation shall be defined as solid rock in the original bed or in well-defined ledges, the removal of which, in the opinion of the Engineer, requires drilling, blasting or the use of jack hammers and bull points, and shall also include all boulders and detached pieces of rock containing twelve (12) cubic feet or more. All loose, weathered or disintegrated rock unsuitable for foundations shall be excavated to solid rock. Special care shall be taken during blasting and excavating so as not to disturb any rock on which foundations are to be placed. Before placing concrete foundations on rock surfaces, the surface shall be thoroughly cleaned and inspected by the Engineer. Rock excavation shall not be considered extra work.

(3) Undercutting

Undercutting shall consist of removing and disposing of unsatisfactory materials below grade in excavated sections where structures are to be founded and from areas upon which embankments are to be placed as described at Paragraph 5.h. Undercutting of this Section. Undercutting does not include the stripping of topsoil. Additional payment will not be made to the Contractors for performing undercutting and refilling of the undercut volume which is depicted on the Plans. Contractors will be paid for any additional undercutting and filling of the undercut volume not depicted on the Plans or described in these Detailed Specifications at the unit prices listed in the BID FORM in the event additional undercutting is authorized by the Engineer.

d. Blasting

See Section 1, Paragraph 34. Blasting of these Detailed Specifications.

e. Limits

Excavations shall be made for a sufficient distance outside foundation, piers or walls to allow for inspection and to permit the various trades to install their work.

Unless otherwise specified or shown on the Plans, excavations for piers or walls shall be carried a minimum of two (2) feet outside the piers or walls. Excavation for footings shall be to the footing dimensions.

f. Depth

Care shall be taken that excavation does not extend below the exact lines of the subfoundations, footings and floor slabs on earth or rock. Should the excavation, through carelessness or negligence on the part of the Contractor be carried below such lines, the Contractor shall fill in the resulting excess excavation with Class "C" concrete and/or compacted crushed stone as directed by the Engineer. This work shall be done at the Contractor's expense.

g. Removal of Water

The Contractor shall, by the use of well points, pumps or other approved methods, prevent the accumulation of water in excavated areas. Should water accumulate it shall be promptly removed. The Contractor shall also provide for dewatering areas adjacent to structures to prevent uplift during construction and start-up operations.

The Contractor will be held responsible for any damage due to uplift of such structures during construction operations.

h. Undercutting

If wet, mucky and/or unstable or unsuitable material is encountered in the bottom of an excavated area, the Engineer may require additional excavation (undercutting) to ensure a firm foundation. In such cases, the bottom of the excavation shall be brought back up to proper grade with shotrock or crushed stone fill as shown on the Plans or directed by the Engineer. For the bottom of trenches, crushed stone, TDOT No. 67, refill shall be used; under structures, TDOT No. 67 stone as specified in Subparagraph 6.c.(2). of this Section shall be used to cap TDOT No. 1 stone used for stabilization or select shotrock as specified in Subparagraph 6.c.(4) of this Section shall be used.

i. Proofrolling

The subgrade beneath all proposed structures except the Main SPS shall be proofrolled in the presence of the Owner's representative and Geotechnical Engineer's representative prior to placing any fill materials, vapor barriers or reinforcing steel as specified hereinafter.

The subgrade for each structure shall be proofrolled at the Contractor's expense with approved rubber tire construction equipment having a minimum axle load of 10-tons, such as a fully loaded tandem-axle dump truck. The proofrolling equipment shall be operated in two perpendicular directions with overlapping passes while being observed by the Engineer's and Owner's representatives. Areas identified as having yield characteristics requiring replacement shall be undercut and refilled by the Contractor as specified at Subparagraph 5.h. of this Section.

6. Embankments and Backfilling Around and Under Structures and Pipelines

a. General

All embankments and backfills around structures shall be of selected materials properly placed in layers. Where earth is used, the layers shall be thoroughly compacted to a solid homogeneous mass having at least 95 percent of maximum theoretical density as determined by ASTM D698. Method A. The loose lift thickness of each layer shall not exceed ten (10) inches. Compaction of yard fills shall be accomplished by rolling with a sheep's foot roller until the roller "walks-out".

All materials for embankments shall be free of organic matter such as leaves, grass, roots, *etc.*, and shall be free of rock over two (2) inches in diameter.

Earthwork operations shall be suspended at any time when satisfactory results cannot be obtained due to rain or freezing weather. If the material is too dry, then it shall be sprinkled with water and manipulated to obtain a uniform moisture content so that it may be compacted as specified hereinafter. If the material is too wet, it shall be manipulated and dried or operations suspended until natural drying occurs.

Where used, the sheep's foot roller shall be of a self-cleaning type with feet projecting seven (7) inches from the shell and of such weight that the load on each tamper foot with the drum empty will not be less than 100 pounds per square inch of area in contact with a plane surface. Rolling shall be carried on until the feet will have no appreciable imprint when the shell is at maximum weight.

Where used, pneumatic tired rollers shall be suitable for ballast loading which will give a minimum compression under working conditions of 325 pounds per inch width of tire tread. Forward and rear tires shall make separate tracks. Compaction shall be equivalent to that required for the sheep's foot roller.

Backfill material used under structures shall be TDOT No. 67 crushed stone or shotrock where shown on the Plans or directed by the Engineer.

b. Special Care Around Structures and Pipelines

Compaction around structures and pipelines shall be by use of hand manipulated power tamping equipment. Loose lift thickness shall be not more than 6 inches. Selected materials shall be used for backfill around pipe in pipe trenches. Care shall be taken not to disturb the pipeline or damage the structure by reason of unsymmetrical loadings.

Where backfilling is to occur under roadways, crushed stone shall be used up to the sub-base of the roadway. This is not a separate pay item.

c. Structures on Fill

(1) Earth Fill

Where structures, including sidewalks and paved areas, rest on earth, all loam, organic, or other undesirable material shall be removed as required by the Engineer. When filling is required to bring such excavated area to the levels required to receive

structures, the fill shall be compacted by tamping and rolling to obtain 98 percent of maximum density as per ASTM D698, Method A. Loose layers shall be not more than eight (8) inches thick.

The Contractor shall place crushed stone or shotrock where shown on the Plans or otherwise required under structures or roadways and as pipe bedding.

(2) Crushed Stone Fill

Crushed stone shall meet the quality requirements of ASTM D692 and the gradation requirements for TDOT 67.

<u>Screen Opening size</u>	<u>Percent Passing</u>
1-1 ½ inch	100
1-inch	95-100
½ inch	25-60
No. 4	0-10

Crushed stone shall be placed in 12-inch lifts and compacted with multiple passes of a vibration steel drum roller. Each lift shall be observed by the Geotechnical Engineer's representative prior to proceeding with the next lift. All crushed stone fill shall be encapsulated with MIRAFL 160 N filter fabric or approved equal.

(3) Crushed Stone Fill for Stabilization

See Paragraph 5.h. Undercutting of this Section. Where required to stabilize the subgrade, the Contractor shall place TDOT No. 1 stone as directed and approved by the Engineer.

(4) Shotrock Fill

Shotrock fill shall be properly-graded shotrock from blasted or excavated bedrock. Shotrock fill shall only be placed on and keyed into properly prepared stripped and cleared subgrade. Prior to placing the first layer of shotrock, the Contractor shall cover the area to be filled with a layer of Tensar BX 1200 Geogrid or approved equal.

Shotrock shall meet the following requirements:

- (a) Material should be well graded with sufficient fine material (passing No. 4 Sieve)
- (b) No more than 20 percent fines by weight
- (c) Maximum particle size shall be 18-inches.

Shotrock shall be placed in 18-inch maximum lifts by methods that result in fines filling voids between larger particles. Each lift shall be compacted by a CAT 815 compactor or equal with multiple overlapping perpendicular passes. Each lift shall be observed by the Geotechnical Engineer's representative prior to proceeding with the next lift. Shotrock shall be encapsulated in MIRAFI 160 N filter fabric where shown on the Plans.

7. Disposition of Excavated or Waste Material

Topsoil shall be stripped from the area and stockpiled first.

Material excavated from the foundation area of basins, buildings, or other structures or excess materials from pipeline trenches or materials generated by demolition shall be disposed of in fills provided compaction can be obtained. Shotrock and demolished concrete shall be placed in fill areas first, then the area shall be capped with soil and seeded unless otherwise noted on the Plans.

All materials resulting from clearing operations shall be burned or otherwise disposed of in a satisfactory manner. Materials to be burned shall be neatly piled, and when in a suitable condition, shall be completely burned. Precautions shall be taken to avoid damage to remaining trees and/or adjacent property. Compliance with air pollution statutes, permits or ordinances will be the responsibility of the Contractor.

8. Sidewalks

Concrete walks shall be reinforced and constructed in accordance with the details shown on the Plans and finished with a "broomed finish". Concrete shall be Class "A" and shall conform to the requirements of Section 3 of these Specifications.

The subgrade shall be covered with a layer of heavy waterproof paper prior to placing the concrete. Concrete sidewalks shall be four inches thick unless otherwise shown on the Plans, of the widths shown and reinforced as shown on the Plans. Control joints shall be formed at not less than five feet intervals. Isolation joints with 1/2-inch width shall be installed at the intersections of all horizontal slabs and vertical surfaces and at intervals no greater than forty feet.

9. Roadways and Parking Areas

The roadway and parking area at the site shall be constructed in accordance with the details and to the limits shown on the Plans and shall be properly crowned or sloped to drain.

Dense grade aggregate in accordance with the requirements of TDOT shall be placed in layers. The last 2-inch layer shall be placed after construction is

complete. The compacted thickness shall not be less than 6 inches. The Contractor shall surface the roadway and parking area as shown on the Plans and specified herein.

10. Fencing (Chain Link Type)

The Contractor shall provide complete hot dip galvanized chain link fencing with entrance gate as shown.

The fabric shall be chain link type meeting AASHTO Specification M 181, Type 1, Class B using No. 9 gauge wire pickets forming a 2-inch mesh with a height of 6 feet. Fabric shall receive a Hot-Dip Zinc Coating per ASTM B6 with a minimum weight of 1.2 ounces per square foot. Three strands of barbed wire meeting TDOT Specification shall be placed on top of the fabric at an angle of 45 degrees to the outside, thereby making a total fence height of 7 feet. Privacy slats shall be installed in the fabric chain with the color to be determined by the Owner.

Line posts shall be either: (1) 1 ½-inch (1.90 O.D.) Galvanized steel pipe weighing 2.72 pounds per foot meeting ASTM A120; (2) 1.876 x 1.625-inch galvanized steel C-section weighing 2.34 pounds per foot meeting ASTM A570 Grade E; (3) 1.875 x 1.625 galvanized H-section weighing 3.26 pounds per foot; or (4) 1 ½-inch (1.90 O.D.) Triple coated steel pipe weighing 2.281 pounds per foot, with a 0.12-inch minimum wall thickness meeting the following specification:

Piping shall be manufactured by cold rolling and electric resistance welding conforming to ASTM A569 or ASTM A607 and shall be given corrosion protection by in-line application of hot-dip galvanizing followed by chromate conversion coating and electrostatically thermoplastic acrylic on the outside surface.

Hot-Dipped Zinc Coating per ASTM B6 with a minimum weight of 0.80 ounce per square foot shall be applied to all steel posts, braces, caps, fittings or other ferrous hardware. Pipe shall receive a minimum 3.0 mil thick internal zinc base protective coating capable of providing galvanic protection.

Corner and end posts shall be 2 ½-inch (2.875 O.D.) galvanized standard steel pipe weighing 5.79 pounds per foot or 2 ½-inch triple coated steel pipe, weighing 3.117 pounds per foot. Top rail and braces for end and corner posts shall be 1 ¼-inch (1.660 O.D.) galvanized steel pipe or triple coated steel pipe. Galvanized steel end posts, braces and top rail shall meet ASTM A120. Triple coated steel posts, braces and top rail shall be as specified hereinbefore.

Water crossings, water gates or special barbed wire configurations shall be used where fences cross streams, short depressions or ditches to make the enclosure secure.

Gates shall be of the types and sizes shown on the Plans complete with latches, stops, keepers, hinges and ball caps and rail ends. The Owner will furnish locks.

Line posts shall be set not more than 10 feet apart in post holes 12-inch diameter x 3.0 feet deep poured full with concrete against the native soil or rock. Corner posts and end posts shall be set in post holes 15-inch diameter x 3.5 feet deep poured full with concrete against the native soil or rock.

11. Finish Grading, Topsoiling, and Seeding

Finish grading of disturbed areas shall be performed in accordance with the finished elevations and grades shown on the Plans and shall be made to blend into conformation with remaining natural ground surfaces. All finished grading surfaces shall be left smooth and free to drain. The tops of all cuts shall have berm ditches. Selected materials, which have been obtained from stripping the site, shall be spread upon the slopes of fills and other areas around the tank to a uniform depth and compacted suitable for planting. Excess materials shall be spread and compacted as directed. The top four (4) to six (6) inches of material in areas to be grassed shall be topsoil.

Soil tests shall be performed to determine the seed and fertilizer requirements. For the purposes of bidding, the following grass and fertilizer requirements shall be used:

Annual Rye Grass	application rate	28 lb/acre
Kentucky Fescue #31	application rate	28 lb/acre
Inoculated Clover	application rate	7 lb/acre
Ammonium Nitrate	application rate	200 lb/acre
Commercial Fertilizer	application rate	400 lb/acre
Lime, if required	application rate	200 lb/acre
Straw	application rate	3,000 lb/acre

Seed shall be certified to contain not more than 3 percent weeds.

All graded areas shall be topsoiled with materials stripped from the site. If the Contractor fails to stockpile the topsoil then material shall be brought in. The topsoil shall be left smooth and, after the fertilizer and/or lime has been distributed, it shall be disced or harrowed into the soil.

The seed shall then be sowed in a uniform manner. After sowing, the seed shall then be lightly covered by use of a drag or other approved device.

All seeding, grassing, and sodding shall be watered thoroughly as soon as completed and shall be watered to provide continuous growth without setback until all growth is thoroughly established.

Any necessary reseeding, resodding, or repairing shall be accomplished by the Contractor without further compensation prior to final acceptance. Final acceptance will occur when an acceptable stand of grass is obtained.

12. Final Clean-Up

Before the work is considered as complete, all rubbish and unused material due to or connected with the construction shall be removed and the premises left in a condition satisfactory to the Engineer. Final acceptance will be withheld until such work is completed.

SECTION 5

PIPING, FITTINGS, VALVES, MANHOLES, AND ACCESSORIES

1. Scope

The work described in this Section of the Detailed Specifications includes furnishing all materials and equipment and performing all labor for the construction of the various pressure and gravity piping systems shown on the Plans. Painting or coating required for piping and valves is described in Section 7, Painting and Coating of these Detailed Specifications.

2. Submittals

Submittals in accordance with the requirements of Section 1 of these Detailed Specifications shall be furnished for each and every item specified in this Section. LAYOUTS OF ALL EXTERIOR AND INTERIOR PIPING SYSTEMS SHALL BE FURNISHED TO AND APPROVED BY THE ENGINEER AS A SUBMITTAL PRIOR TO THE ACCEPTANCE OF ANY PIPING.

One valve wrench, one extra lever, and/or one each of any special devices shall be supplied for each type and size valve actuator, hydrant or other device specified herein requiring such a device for opening and closing. Extra handwheels are not required.

3. Alignments and Grades (Field Staking)

See Section 4, Paragraph 2. Alignments and Grades (Field Staking) of these Detailed Specifications.

4. Pipe and Fittings

a. General

Except where shown on the Plans or specified otherwise, pipe material shall be as follows:

(1) Permanent Buried Piping

Piping smaller than 3-inches shall be as shown on the Plans.

Buried sanitary sewer piping 3-inches through 16-inches shall be specially lined Class 350 DIP with restrained joints.

Buried sanitary sewer piping 18-inches through 54-inches shall be specially lined Class 350 DIP with mechanical or push-on joints.

(2) Permanent Interior or Exterior Above-Ground Exposed Piping

Sanitary sewer piping 4-inches and larger shall be specially lined Class 53 DIP with Flanged Ends.

Other piping smaller than 4-inch shall be Schedule 40 PVC, Stainless Steel, copper, or ductile iron as shown on the Plans.

b. Ductile Iron Pipe and Fittings

(1) General

Ductile iron pipe shall be centrifugally cast meeting the requirements of ANSI/AWWA C151/A21.51 as modified in this Paragraph.

THE MANUFACTURER OF THE DIP SHALL FURNISH A SWORN, NOTARIZED STATEMENT THAT THE INSPECTION AND SPECIFIED TESTS REQUIRED UNDER SECTION 5.1.1.2 OF ANSI/AWWA C151/A21.51 HAVE BEEN MADE AND THAT ALL RESULTS THEREOF COMPLY WITH THIS STANDARD.

One copy of written transcripts of the results of the acceptance tests and low temperature impact tests on pipe manufactured for use in this Contract shall be furnished to the Engineer.

The weight, class, or nominal thickness, and casting period for each length of ductile iron pipe shall be shown on each length of DIP. The manufacturer's mark, country where cast, year in which the pipe was produced, and the letters "DI" or "DUCTILE" shall be cast or metal stamped on the pipe, and letters and numerals on pipe sizes 14 inches and larger shall be not less than ½ inch in height. All required markings shall be clear and legible, and all cast or metal-stamped marks shall be on or near the bell.

(2) DIP Installed Outside, Above-Ground, and Inside Buildings and Structures

All ductile iron pipe installed outside above ground and inside buildings and structures shall conform to the wall thickness requirements of Special Thickness Class 53 and shall be flanged and shall conform to the requirements of ANSI/AWWA C115/21.15. Unless otherwise shown, flanges shall be dimensioned for facing

and drilling in accordance with ASME/ANSI B16.1 Class 125 and meeting the dimensional and bolting requirements of AWWA C110/A21.10, Table 14. Bolts, gaskets and installation of flanged DIP and ductile iron fittings shall comply with the requirements of ANSI/AWWA C111/A21.11, Appendix B.

Unless special coating is indicated on the Plans, the outside of ductile iron pipe and fittings for installation outside above-ground or inside buildings and structures shall be provided to the job site uncoated or prime coated. After installation, piping shall be cleaned and coated as specified at Section 7, Painting and Coating of these Detailed Specifications. The inside of all DIP for wastewater service installed outside above-ground or inside buildings and structures shall be specially lined as specified hereinafter.

(3) Buried DIP

Unless otherwise noted, all buried ductile iron pipe shall conform to the wall thickness requirements of Pressure Class specified and shall have restrained joints in accordance with ANSI/AWWA C111/A21.11.

Unless special lining is indicated on the Plans, the inside of all buried DIP for wastewater service shall be specially lined as specified hereinafter.

All buried DIP and fittings shall have restrained joints. The restrained joints shall be Flex-Ring Joint Pipe manufactured by American Cast Iron Pipe Company or TR Flex Joint Pipe manufactured by U.S. Pipe and Foundry Company or approved equal. Connections to existing DIP may utilize “gripper gaskets” with stainless steel teeth.

(4) DIP Fittings

All ductile iron fittings shall be Class 350 and shall conform to the requirements of ANSI/AWWA C153/A21.53.

The manufacturer of the ductile iron fittings shall furnish a sworn, notarized statement that the inspection and specified tests required in Section 1.5 of ANSI/AWWA C110/A21.10 have been made and that all results thereof comply with this standard.

The inside of all DIP fittings for wastewater service shall be specially lined.

Fittings for all DIP installed outside above-ground or inside buildings and structures shall be flanged and shall conform to the applicable requirements of ANSI/AWWA C153/A21.53. Fittings for all buried DIP shall be restrained joint and shall conform to the applicable requirements of ANSI/AWWA C153/A21.53.

Ductile iron fittings shall have distinctly cast on them the pressure rating, nominal diameters of openings, manufacturer's identification, the country where cast, and the number of degrees or fraction of the circle on all bends. Ductile iron fittings shall have the letters "DI" or "DUCTILE" cast on them. Cast letters and figures shall be on the outside body of the fitting and shall have dimensions no smaller than the following:

Size inches	Height of Letters inches	Relief inches
Less than 8	As large as practical	As large as practical
8-10	3/4	3/32
12-60	1 1/4	3/32

(5) Special Linings and Coatings

Ductile iron pipe shall have either U.S. Pipe Polythene® or American Pipe Induron Protecto 401™ ceramic epoxy lining applied at the manufacturer's facility. The manufacturer's recommended procedures for repairing the lining and handling of the pipe shall be strictly followed by the Contractor.

The outside of exposed ductile iron pipe shall have either 3M Scotchkote or Tnemec Series 22/FC22 applied at 30 mils in one coat at the pipe manufacturer's facility. Minimum surface preparation shall be NAPF 500-03-04.

(6) Gaskets and Bolts for Flanged Ductile Iron Pipe

Gaskets shall be of the ring type and shall be vulcanized synthetic rubber for liquid service. Gaskets shall be 1/16-inch in thickness.

Bolts for use in making flanged connections shall have square or hexagonal heads, hexagonal nuts, be of proper lengths, and with U.S. Standard Threads and shall meet the requirements of Section 8, Miscellaneous Metals, Paragraph 3. Stainless Steel of these Detailed Specifications. See Section 7, Painting and Coating for painting required at pipe flanges and bolts.

c. Schedule 80 PVC Pipe and Fittings

All Schedule 80 PVC pipe and fittings shall be manufactured from a Type I, Grade I polyvinyl chloride compound with a cell classification of 12454 in accordance with ASTM D1784. The pipe shall be manufactured to iron pipe size (IPS) in conformance with ASTM D1785, consistently meeting and/or exceeding the quality assurance test requirements of this standard with regard to material, workmanship, burst pressure, flattening, and extrusion quality.

All PVC flanges shall be designed and manufactured to meet a Class 150 bolt pattern in accordance with ANSI B16.5 and rated for a maximum internal pressure of one hundred fifty (150) psi, non-shock at 73°F. All Schedule 80 PVC pipe and fittings shall comply with National Sanitation Foundation (NSF) Standards 14 and 61 and shall carry said seals of approval.

d. Exposed Small Piping

Pipe smaller than 4-inch nominal diameter but larger than 1/2-inch shall be stainless steel AISI 304, 304L, or 316. Fittings shall be the same material as the pipe except as provided herein; fittings shall be threaded unless shown otherwise on the Plans.

e. Observation of Pipeline Material

Before allowing any pipe or fittings to be paid for as “stored materials” the Engineer shall be afforded the opportunity to view and mark it on-site.

The visual observation shall consist of a check for obvious cracks, improper markings, or other defects. The Contractor(s) shall furnish templates or other means of ascertaining the compliance of the pipe to the dimensional allowances in the governing specifications if requested by the Engineer.

Rejected pipe or fittings will be painted with an orange or red “X” and the date. Such rejected materials shall be immediately segregated from acceptable pipe and shall be removed from the project within 14 days.

5. Piping System Installation

a. Buried Piping

All buried piping shall be installed in accordance with the details as shown on the Plans.

The bed for each piece of pipe shall be carefully prepared so that each individual piece of pipe shall have a uniform bearing. Pipes shall be laid in a straight line and grade without kinks or sags, and in a workmanlike manner.

Before each piece of pipe is lowered into the trench, it shall be thoroughly swabbed out to ensure its cleanliness. Each piece of pipe shall be lowered separately unless special permission is given otherwise by the Engineer.

Care shall be taken to prevent injury to the pipe coating both inside and out. If any defective pipe or fittings are discovered after the pipeline is laid, they shall be removed and replaced with a satisfactory pipe or fitting at no additional cost. Where a length of pipe is cut to fit in a line, it shall be so cut as to leave a smooth end at right angles to the longitudinal axis of the pipe.

All angles or bends in the pipelines, either vertical or horizontal, shall be satisfactorily braced or anchored against the tendency of movement with joint harnesses or concrete anchors as shown on the Plans or to the satisfaction of the Engineer.

Open ends of unfinished pipelines shall be securely plugged or closed at the end of each day's work or when the line is left unfinished at any other time.

b. Interior and Above-Ground Piping

(1) General

Unless shown otherwise on the Plans, all pipe runs shall be parallel with or at right angles to walls, ceilings, equipment, *etc.*; 45° fittings or angle runs shall be avoided where possible. Piping shall be neatly arranged and installed so that it both meets the intended service requirements and leaves the machine or equipment it is supplying accessible. Insofar as possible, all valves shall be accessible for operation by a person standing on the floor. ALL VALVES MORE THAN SIX FEET ABOVE FLOORS SHALL BE PROVIDED WITH OPERATORS THAT ARE ACCESSIBLE FROM THE FLOOR.

(2) Pipe Drainage

All piping installed for the purpose of gravity drainage shall be installed with the required slope in the proper alignment.

(3) Parallel Runs

All parallel runs of piping shall be installed with equidistant spaces between the piping and shall be neatly grouped. Grouping shall be such that cross-overs, except at branches, are avoided.

(4) Hangers and Supports

Piping systems shall be supported as shown on the Plans or as specified herein so as to prevent loosening under vibration and so as to prevent excessive or eccentric loads.

Maximum support spacing and hanger rod sizes for metallic piping shall be as follows:

<u>Nominal Pipe Size, In.</u>	<u>Support Spacing, Ft.</u>	<u>Rod One</u>	<u>Diameter, In. Two</u>
1-1/2	8	3/8	3/8
2	10	3/8	3/8
2-1/2	11	1/2	3/8
3	12	1/2	3/8
4 and 5	14	1/2	3/8
6 and larger	17	1/2	3/8

Maximum support spacing and hanger rod sizes for non-metallic piping shall be as follows:

<u>Nominal Pipe Size, In.</u>	<u>Support Spacing, Ft.</u>	<u>Rod One</u>	<u>Diameter, In. Two</u>
1-1/2	5-1/2	3/8	3/8
2	6	3/8	3/8
3	7	3/8	3/8
4	7-1/2	1/2	3/8
6	9	1/2	3/8
8 and larger	9-1/2	1/2	3/8

Valves two inches and larger in horizontal lines shall have supports on both sides within 12 inches of the valve. Provide additional supports as necessary to prevent damaging stresses on the pipe, valves, supports or equipment.

Piping one and one-quarter inch size and smaller in diameter shall not be hung from rod hangers. Rod hangers, where used for piping one and one-half inch size and larger, shall be of the adjustable split pattern type fabricated entirely from stainless steel meeting the

requirements of ASTM A276, Type 304. Piping shall not be clamped directly to masonry surfaces. Stainless steel brackets meeting the requirements of ASTM A276, Type 304 shall be used so that there will be a space (0.75 inches minimum) between the pipe and any masonry. Piping one and one-quarter inch size and smaller shall be clamped to brackets with stainless steel meeting the requirements of ASTM A276, Type 304 which will allow no axial movement. Clamps and clamping arrangements shall be of the "Unistrut" type, properly supported for the required arrangement. Specially detailed supports shall be in accordance with the details shown on the Plans.

(5) Insulation and Heat Tracing

All piping 12-inches and smaller located in areas which are unheated shall be heat traced and insulated. Larger piping shall be heat traced and insulated if indicated on the Plans.

Where heat tracing is required, the heat tracing shall be accomplished using self-regulating electric heater cable. Temperature control shall be with a pipe sensing style thermostat housed in a NEMA 4 enclosure (no painted steel). The thermostat shall have a 0 to 100°F temperature range. The heater cable shall be supplied with appropriate power connection kits and end termination kits. The heat cable shall be covered with a metal braid and fluoropolymer overjacket and shall be for 120 volt electric service.

Where heat tracing is required, the pipe and heater cable shall be covered by a one and one-half inch thick fiberglass insulation and aluminum jacket. The aluminum jacket shall be assembled with screws allowing for it to be removed if needed.

c. Testing

(1) General

When a section of pipe is complete, the pipe shall be flushed clean with water (except for chemical lines which shall be blown clean with dry, oil-free compressed air) and a leakage test conducted. The Contractor shall furnish all labor, materials, and equipment for completing these tests. Joints of pipe that leak shall be repaired or replaced and re-tested under the same conditions and for the same period of operation until the line passes the required test. Whenever possible, testing of buried piping will be completed before the trench is backfilled.

(2) Testing of Gravity Pipelines and Low Pressure Air Lines

The Contractor will be required to perform a LOW PRESSURE AIR TEST in accordance with ASTM C828 on all new gravity lines and on all air lines having a maximum 10 psig working pressure as a condition of final acceptance. The line shall be tested from manhole to manhole or from basin to basin, as appropriate. The test shall consist of installing a special pneumatic plug in the line at each manhole and pressurizing the line to approximately four psi. After a two-minute temperature stabilization period, the line pressure shall be adjusted to 3.5 psi and timing begun with a stopwatch. The time required for a drop in pressure of 1.0 psi will be recorded. The minimum allowable time in seconds for this pressure drop to occur shall not exceed the times listed in the table below:

Pipe Size (Inches)	Minimum Times Required For 1.0 psi Pressure Drop Per 100 L.F.
4	18
6	40
8	71
10	89
12	107
15	125
18	144
21	178
24	214
30	286
36	360
42	436
48	540
54	649
60	763
66	881
72	1,003

If the time for the 1.0 psi pressure drop is less than the calculated value, the line shall be repaired and retested until it passes the test.

If the ground water is present, the test pressure shall be increased 1.0 psi for each 2.3 feet of water above the pipeline.

Pressure tests shall be conducted in the presence of the Engineer and a complete tabulated report of the tests for each section of the

piping shall be prepared by the Contractor and submitted to the Engineer.

(3) Testing of Pressure Lines

Pressure piping shall be tested at the pressures shown below. The allowable leakage shall not exceed the following values for the given pipe sizes.

<u>Line Size</u> <u>(inches)</u>	<u>Pressure</u> <u>(psi)</u>	<u>Allowable</u> <u>Leakage</u> <u>per 1000 Feet</u> <u>(gal./hour)</u>
12	150	0.99
16	150	1.32

The Contractor shall furnish all gauges, meters, pumps and other equipment required and shall maintain said equipment in condition for accurate testing as determined by the Engineer.

Each section of pipe shall be slowly filled with water to the specified test pressure, based on the elevation of the highest point on the section under test. Pressure shall be applied by means of a pump connected to the pipe in a manner satisfactory to the Engineer.

Before applying the specified test pressure, air shall be expelled completely from the pipe. If permanent air vents are not located at all high points, the Contractor shall install corporation cocks at such points so that the air can be expelled as the line is filled with water. After all the air has been expelled, the corporation cocks shall be closed and the test pressure applied. At the conclusion of the pressure test, the corporation cocks shall be removed and plugged or left in place at the discretion of the Owner.

Any exposed piping, fittings and/or joints shall be examined carefully during the test. Any damaged or defective piping, fittings or joints that are discovered following the pressure test shall be repaired or replaced with sound material, and the test shall be repeated until it is satisfactory to the Owner. Where leaks are visible at exposed joints and/or evident on the surface when joints are covered, the pipe shall be rejoined and leakage minimized regardless of total leakage as shown by test.

LEAKAGE SHALL BE DEFINED AS THE QUANTITY OF WATER THAT MUST BE SUPPLIED INTO THE NEWLY LAID PIPE OR ANY VALVED SECTION THEREOF TO MAINTAIN PRESSURE

WITHIN FIVE PSI OF THE SPECIFIED TEST PRESSURE AFTER THE PIPE HAS BEEN FILLED WITH WATER AND THE AIR HAS BEEN EXPELLED. LEAKAGE SHALL NOT BE MEASURED BY A DROP IN PRESSURE IN A TEST SECTION OVER A PERIOD OF TIME.

Duration of the pressure test shall be not less than two hours where joints are exposed and not less than eight hours where joints are covered.

Lines that fail to meet the leakage requirements shall be repaired and retested until test requirements are met. All pipe, fittings and other materials found to be defective under test shall be removed and replaced at the Contractor's expense.

6. Reaction or Thrust Blocks

Buried pressure pipelines shall be secured by Class C concrete reaction or thrust blocks at all bends.

Interior or above ground exterior pressure pipelines shall be secured by base elbows or Class A concrete reaction blocks at all bends.

7. Stainless Steel Couplings

Steel couplings, where shown on the Plans, shall be bolted, sleeve-type couplings for plain-end pipe meeting the requirements of ANSI/AWWA C219 as amended herein. Steel couplings shall be Dresser Style 38 or Baker Series 200 stainless steel couplings for cast iron, or ductile iron pipe, or equal.

8. Flanged Adapters

Flanged adapters where shown on the Plans shall be Dresser Style 128 or Baker Series 600 for cast iron or ductile iron pipe, or equal.

9. Union Flanges

Union flanges adapters where shown on the Plans shall be as manufactured by McWane Incorporated, or equal.

10. Gate Valves

Gate valves shall conform to AWWA C509-latest revision as extended and/or modified herein. All gate valves shall be of the resilient seat type, iron body, non-rising stem, fully bronze mounted, suitable for water working pressure of 150 psi. Valves shall be of standard manufacture and of the highest quality both as to

materials and workmanship. An affidavit of compliance is required. Bolting materials shall be cadmium plated. The stem sealing shall be by an O-ring.

Buried gate valves shall be furnished with mechanical joint end-connections and above ground gate valves shall be furnished with flanged end connections, unless otherwise shown on the Plans or specified herein. The end-connections furnished shall be suitable for connection to the pipe furnished.

All gate valves shall have the name or monogram of the manufacturer, the year the valve casting was made, the size of the valve, and the working water pressure cast on the body of the valve. The exterior surface of all valves to be installed inside buildings or structures, except finished flanges, shall be shop coated with one coat of primer only as specified in Section 7, Painting and Coating of these Detailed Specifications. Other valves shall be epoxy coated and touched up in the field as required.

Buried gate valves shall be designed for buried service and shall be provided with a 2-inch square operating nut and shall open by turning to the left (counter-clockwise). Buried valves shall be supplied with a THREE (3) PIECE cast iron valve box and a drop cover marked "Sewer".

Gate valves shall be Mueller, M & H, American-Darling, Clow, or approved equal.

11. Small Valves

Gate valves 3-inch and smaller, unless otherwise shown, shall be solid wedge, all bronze, non-rising stem, Crane 438, or equal for screwed ends. Two-inch and smaller gate valves shall be equal to Crane 1320 for solder-joint, or equal to Crane 438 for NPT. Check valves shall be bronze composition disc equal to Crane No. 34-1/2, or equal. Needle valves shall be bronze composition equal to Crane No. 88 Valve or No. 85 Angle Valve.

12. Buried Valve Installation

Buried valves shall be specially designed for buried service and shall be furnished with a solid shaft stainless steel extension stem where required to place the operating nut within three feet of the finished grade. Unless otherwise specified in the Valve Schedule on the Plans, nuts shall be two-inch AWWA Standard for all types of buried valves. A three-piece valve box with concrete pad and labeling plaque as shown on the Plans is required. Where extension of the valve box is required, six-inch SDR-21 PVC pipe may be used, secured with a flexible coupling to the three-piece valve box.

13. Valve Boxes

Valve boxes shall be cast iron, THREE-PIECE, screw type with drop cover. They shall be set vertically and properly adjusted so that the cover shall be in the same plane as the finished surface of the ground or street. For ease of location and identification a two-foot square by six-inch thick concrete pad with a cast aluminum plaque imbedded therein shall be furnished as shown on the Plans.

14. Valve Stem Extensions, Supports, and Accessories

Valve stem extensions shall be provided where shown on the Plans. Stem extensions shall be stainless steel meeting the requirements of ASTM A276, Type 304 with operators as shown on the Plans and shall be securely fastened to the valve stem at the bottom. Stem extensions shall be of the diameter recommended by the manufacturer of the valve and must be of sufficient section to withstand any torsional or other load which will be imposed.

Stem extension guides shall be bronze bushed of the split type construction, machine bored 1/16 inch larger than the stem diameter, held to the wall by stainless steel anchor bolts and adjustable in two directions. Stem guides shall be provided as recommended by the valve and stem manufacturer and shall be painted as specified in Section 7, Painting and Coating of these Detailed Specifications for submerged service.

15. Check Valves – Non-Slam Type

Check valves shall be suitable for a cold working pressure of 200 psig. Check valves shall be of the full body type with a domed access cover and only one moving flexible disc. Valves shall be designed, manufactured and tested in accordance with American Water Works Association Standards ANSI/AWWA C508.

Check valves shall have Class 125 flanges in accordance with ANSI B16.1. The valve body shall be full flow equal to nominal pipe diameter at all points through the valve. The seating surface shall be on a 45-degree angle to minimize disc travel. A threaded port with pipe plug shall be provided on the bottom of the valve to allow for field installation of a backflow actuator, without special tools or removing the valve from the line. The top access port shall be full size, allowing removal of the disc without removing the valve from the line. The access cover shall be domed in shape to provide flushing action over the disc for operating in lines containing high solids content. A threaded port with pipe plug shall be provided in the access cover to allow for field installation of a mechanical disc position indicator. The disc shall be of one-piece construction, precision molded with an integral O-ring type sealing surface, and contain alloy steel and nylon reinforcement in the flexible hinge area. The flex portion of the disc shall be warranted for twenty-five years. Non-Slam closing characteristics shall be

provided through a short 35-degree disc stroke and a memory disc return action. The valve disc shall be cycle tested in accordance with ANSI/AWWA C508. The valve body and cover shall be constructed of ASTM A536 Grade 65-45-12 ductile iron. The disc shall be precision molded Buna-N (NBR), ASTM D2000-BG.

A mechanical indicator shall be provided to show disc position indication on valves.

All valves shall be hydrostatically tested and seat tested to demonstrate zero leakage. When requested, the manufacturer shall provide test certificates, dimensional drawings, parts list drawings, and operation and maintenance manuals. The exterior and interior of the valve shall be coated with an ANSI/NSF 61 approved fusion bonded epoxy coating. Check valves shall be Series 7200 Surgebuster Model with Disc Accelerator as manufactured by Val-Matic® Valve and Manufacturing Corporation, Elmhurst, Illinois or pre-approved equal.

16. Wall Sleeves or Wall Pipe for Piping and/or Electrical Work

WALL SLEEVES AND ESCUTCHEONS SHALL BE USED IN LOCATIONS WHERE SMALL PIPING OR ELECTRIC WIRING PASSES THROUGH CONCRETE WALLS OR FLOORS.

Where ductile iron piping connects with or passes through reinforced concrete walls or floors, the Contractor shall furnish and install ductile iron wall sleeves suitable for caulking or wall pipe as shown on the Plans. Where wall sleeves are used, pipe shall run continuous through walls with a joint provided within one foot outside the wall unless the pipe terminates at the wall sleeve (in such the wall sleeve is used for flexibility). FORMED OPENINGS IN CONCRETE WALLS FOR INSERTING DUCTILE IRON PIPE WILL NOT BE ALLOWED UNLESS SPECIFICALLY SHOWN. Wall pipe sleeves shall be accurately located and securely fastened in place before concrete is poured.

Where any pipe passes through a masonry or corrugated metal wall, the Contractor shall furnish and install a hot-dip galvanized steel wall sleeve for use with masonry and create a watertight seal around the pipe using an appropriate caulking material and an escutcheon or an approved mechanical seal.

17. Manholes and Precast Structures

a. General

Only precast manholes will be allowed. Precast manholes and structures shall be of the type and size shown on the Plans.

b. Precast Concrete Manholes and Structures

Precast manholes and structures shall be constructed on a reinforced concrete foundation or layer of compacted crushed stone as shown on the Plans and shall be wet or dry cast as modified herein. The bottom section of the manhole shall be precast integrally with the precast ring and shall be the diameter shown on the Plans. All concrete used in connection with the construction of manholes shall be Class "A" concrete as specified in Section 3 of these Detailed Specifications. Wet cast precast manholes shall be Oldcastle, Forterra, or pre-approved equal.

Precast concrete rings shall be constructed using standard forms and shall conform to ASTM C478 except that:

- (1) The concrete mixture shall contain no less than 846 pounds per cubic yard (9.0 bag mix) of Portland Cement.
- (2) An eccentric top core will be allowed provided it meets these Detailed Specifications.
- (3) All joints shall conform to Section 8 of ASTM C361; except the Contractor(s) shall utilize a double seal of Ram-Neck as shown on the Plans.
- (4) Xypex admixture C-1000 shall be used in all precast manholes and structures.

The precast sections shall be manufactured and installed in a manner so that there is no visible leakage in the manholes. The manhole sections shall be manufactured in lengths such that a finished manhole will have the least possible number of joints. One section less than four feet in length will be allowed per manhole and that being the section required to bring the manhole to grade. NO HOLES FOR LIFTING WILL BE ALLOWED. The precast rings shall be of the tongue and groove design sealed watertight, and the joint shall be grouted smooth on the inside and outside of the manhole so that no crack is visible.

The outside surface of all precast sanitary sewer manholes and structures shall be coated with two layers of bitumastic coating applied at right angles to each other.

c. Connection of Sewer Line to Manhole

For sanitary sewer, the connection of the manhole to the pipeline(s) shall be accomplished with the use of a neoprene boot equal to Press Seal PSX Positive Boot Seal with two stainless steel bands or cast in A-Lok STM

connector. At locations where a manhole is being installed on an existing sewer, the Contractor shall replace up to 5 L.F. of each connected sewer pipe. Flexible couplings equal to Fernco are required at pipeline connections.

Where main sanitary sewer lines enter a proposed manhole two (2) feet or more above the invert, a drop shall be installed. Drop connections shall be made of flanged or mechanical joint cast iron or ductile iron pipe.

d. Watertight Manhole Frames and Covers

The manhole frames shall be set in the same manner prescribed for standard frames except special attention shall be paid to securing a watertight connection to the manhole barrel.

The watertight manhole frame and cover shall be a traffic type of grey cast iron ASTM A48 with a twenty-four (24) inch diameter minimum clear opening weighing not less than three hundred (300) pounds and shall be of the single cover design as shown on the Plans.

The surface cover shall be the solid type with no holes except watertight pick notches or a heavy lifting ring. The surface between this cover and frame shall fit without rocking. The cover shall be of the solid type with four (4) holes for the purpose of securing the manhole cover to the frame and shall have a neoprene sealing gasket at least 7/16-inch diameter cross-section with a hollow center. The bolts shall be hex-head a minimum of 3/8-inch diameter and 1 1/2-inch long and made of stainless steel. Each bolt shall be equipped with a stainless steel washer. The frame shall be attached to the manhole barrel by means of four (4) 5/8-inch anchor bolts and shall be set in a bed of mastic so as to constitute a watertight seal between the barrel and the frame. Watertight manhole frames and covers shall be equal to John Bouchard & Sons No. 1123.

An actual sample manhole frame and cover may be required shipped prepaid to the Engineer's Nashville office along with the shop drawings. The Engineer will test the manhole frame and cover; no leakage will be permitted.

e. Manhole Inverts

Manhole inverts shall be formed from Class "C" concrete as shown on the Plans. Curved inverts shall be constructed of concrete and shall form a smooth, even, half-pipe section as shown on the Plans. The inverts shall be constructed when the manhole is being built. Xypex admixture shall be added for Class "C" concrete used for manhole inverts.

f. Manhole Steps

Manhole steps shall be made of copolymer polypropylene plastic meeting the latest revision of ASTM D2146, Type II Grade 16906 and shall have a ½-inch diameter Grade 60 reinforcing rod meeting the latest revision of ASTM A615 through its center. Each step shall be 12 inches in width and capable of carrying a load of 1,000 pounds in the center of the step when projected 6 inches from the wall. Each step shall be equipped with non-skid grooves.

18. Escutcheons

Escutcheons shall be furnished where a pipe penetrates a concrete block or other type building wall unless a wall pipe or caulked sleeve is required. Escutcheons shall be nickel plated brass with set screws sized adequately to cover the opening.

19. Adapters for Dissimilar Materials

Where non-pressure pipelines of dissimilar materials are joined, a Fernco or equal coupling with stainless steel bonds shall be provided.

20. Flexible Couplings

Flexible couplings shall be located as shown on the Plans and shall be Mercer Rubber Company, Procco Products, Inc. or approved equal rated for the working pressure of the piping system. The coupling shall be capable of an allowable elongation of three-eighth inch (3/8") and an allowable traverse deflection of one-half-inch (1/2").

21. Pressure Gauges (Four Required)

The Contractor shall furnish and install Ashcroft or equal 4-inch face, oil filled, ¼-inch NPT bottom connection stainless steel case pressure gauges calibrated in psi from zero to 150 psi. Taps for the location of the pressure gauges shall be provided for each pump. One tap shall be placed on the discharge side of the check valves and one tap on the pump side of the check valves. A lever handle shut-off valve and snubber for gauge installation shall be provided for both taps.

22. Electromagnetic Flow Meter

An electromagnetic flow meter shall be provided as a system consisting of a flow tube and separate converter/transmitter complete with interconnection cables. Converter/transmitter shall be suitable for full-scale flow velocities from 2.0 to 30 feet per second. System error shall not exceed the greater of 0.4 percent of rate or 0.0033 foot per second.

Flow tubes located in lined or non-conductive pipelines shall be provided with grounding rings, spools, or swages fabricated from ASTM A312, type 316 stainless steel. Grounding spools or swages inside diameter shall be 1/16-inch smaller than flow tube inside diameter. Where pipe run size is different from specified flow tube size, uniformly diverging swages with a total angle between walls not exceeding 15 degrees shall be provided.

Flow tube and associated electrical connections shall be rated for direct burial and for IP68 continuous submergence in 30 feet of water.

Flow tubes shall have 316 stainless steel electrodes. Unless otherwise specified, the liner shall be Elastomer. Flow tube and flanges shall be rated for minimum 150 psi working pressure.

<u>Location</u>	<u>Magnetic Flow Tube Size</u>	<u>Flow Range</u>
Flow Meter Pit	12-inch	500 gpm to 5,000 gpm

The transmitter shall contain all electronics associated with the magnetic flow meter system. Enclosure shall be NEMA 4X (no painted steel allowed) with a compartment for power, field connections, and calibration adjustments separate from digital circuitry. The transmitter shall contain means to calibrate the metering system without use of external calibration units. The transmitter shall contain self-diagnostics, shall be able to measure in the forward and reverse directions, and shall be interchangeable with other units of the same type without special re-calibration. The transmitter shall include an integral LCD flow indication calibrated in process units with displays for forward and reverse totalization. One 4-20 mA output shall be powered by the transmitter. Adjustable dampening shall be provided. Provisions for accepting an external contact or programmed minimum flow velocity to force signal output to zero shall be provided. Sufficient cable length to connect from the flow meter to the transmitter shall be supplied.

Electromagnetic flow meters shall be manufactured by ABB, Krohne, Foxboro, or approved equal.

23. Sewage Surge Relief Valve

The Contractor shall furnish and install one 8-inch sewage surge relief valve at the new Bear Creek Sewage Pumping Station as shown on the Plans which shall utilize adjustable springs under compression to set the opening pressure.

The body of the valve shall cast iron A126 Class B or cast semi-steel ASTM A95 with ANSI 125 point flanges. The shaft shall be stainless steel and the packing and O-rings shall be rated for use with raw sewage and associated gases.

The valve shall open immediately when the pressure for which the spring pressure is set is reached or exceeded. The initial setting for all surge valves shall be to open at 150 psi. The closing speed of the valve shall be determined by the movement of oil from one chamber to another. The adjustment shall be accomplished by means of adjustment of a bronze or brass needle valve. Initial closing speed shall be set at 60 seconds. The self-contained oil chamber(s) shall be designed to prevent hammering actions and shall cause a cushioned closing. The valve shall be rated for relief at a flow of at least 2,100 GPM.

The valve disc shall have a replaceable resilient seat held securely in place by a bronze or stainless steel ring. The disc stem shall be stainless steel. The disc stem bushing shall be bronze capped with a lantern gland vented to atmosphere for revealing seal leakage.

One set of spare parts shall be furnished for each valve carefully packaged and labeled. These parts shall include piston seals, gland packing, gland seal, upper disc seal, lower disc seal, seat washer and bushing seal.

The Contractor will be required to test the settings of the valve by applying water pressure to the test cock shown on the Plans. The Contractor shall furnish a 3½-inch face pressure gauge with shutoff and diaphragm for sewage service, 0-200 psi with resettable red lag hand for each valve.

The Sewage Surge Relief Valves shall be GA Industries, Inc. Figure 625-D or approved equal.

24. Air / Vacuum Release Valves

Air valves of sizes and types shown shall be installed as depicted on the Plans. Valves shall be stainless steel wastewater type ARI D-025 or preapproved equal. The valves shall be stainless steel fitted, and have a maximum working pressure of 150 PSI or greater.

The entire valve shall be manufactured of stainless steel with the exception of the floats, nozzle seat, O-ring/seal and seats. All air valve piping shall be stainless steel.

25. Water Lines and Appurtenances

a. General

The Contractor shall install a new water system and necessary piping as shown on the Plans and as specified herein.

Buried piping 3-inches and larger shall be ductile iron and 2-inch piping and smaller shall be Schedule 80 PVC. Exposed piping 3-inches and

larger shall be ductile iron or stainless steel as shown on the Plans and piping smaller than 3-inches shall be stainless steel.

b. Yard Hydrants

Frost-proof yard hydrants shall be Murdock type “M-Expello” or approved equal.

26. Disinfection of Potable Water Facilities

Potable water facilities shall not be placed in service – either temporarily or permanently – until they have been thoroughly disinfected in accordance with the following requirements and the requirements of the Tennessee Department of Environment and Conservation.

Disinfection shall be accomplished by filling the new and/or repaired portions of the system with water having a chlorine content of at least 50 parts per million and at the end of a 24-hour contact time a residual of at least 25 parts per million shall remain. The Contractor shall submit, in writing to the Owner, the method he proposes for dechlorinating. Recommended chemicals, as given in AWWA C651, are sulfur dioxide, sodium bisulfate, sodium sulfite, and sodium thiosulfate.

After initial disinfection and flushing, the Owner will collect water samples for bacteriological testing. A core zone, which includes up to the first 1/2 mile, shall be established. Two samples shall be taken from the core zone. Additionally, one sample taken from each mile of new distribution main shall be submitted to the Cabinet. A new or routine replacement main shall not be placed in service until negative laboratory results are obtained on the bacteriological analyses. Sample bottles shall be clearly identified as “special” construction tests. If any of the samples are found positive or contain confluent growth, the Contractor shall repeat the disinfection procedure until the required numbers of negative samples are obtained.

27. Flap Valves

Flap Valves shall be fully bronze mounted with bronze hinge pin, flapping and seat ring shall be equal to clow 3000 series.

SECTION 6
BUILDING CONSTRUCTION

1. Scope

The work covered by this Section of these Detailed Specifications consists of furnishing all labor, equipment, appliances and materials, and of performing all operations in connection with the construction of the sewage pumping station electrical building.

2. Masonry

Masonry shall include the furnishing and laying of all concrete masonry unit walls as depicted at the accompanying Plans and as described in this Paragraph.

a. General

Where not described hereinafter in detail, materials and workmanship shall be in accordance with the "Specification for Masonry Structures" (ACI 530.1/ASCE 6/TMS 602). The minimum f'm for masonry walls shall be 2,000 psi.

Masonry shall not be erected if the ambient temperature falls below 40°F unless suitable means are provided to enclose and heat both sides. **NO ANTI-FREEZE INGREDIENT SHALL BE USED IN MASONRY MORTAR.**

Window and door frames shall be set a minimum of 1/8-inch clear to allow caulking. Joints between frames and masonry shall be caulked with an approved caulking compound applied in accordance with the manufacturer's printed directions, using a pressure gun.

These specifications are intended to produce sound, watertight exterior walls, and the Contractor will be held strictly responsible for the watertightness of said walls. **If leaky walls should develop, the Contractor will be required to correct this condition at his own expense to the satisfaction of the Engineer.**

b. Concrete Masonry Units (Concrete Block)

Concrete masonry units shall meet the requirements of the latest revision of ASTM C90 for hollow load-bearing concrete masonry units and shall be Grade N, Type I. The minimum specified compressive strength of all concrete masonry units shall be 2,000 psi.

c. Samples

Samples of masonry units shall be submitted to the Engineer and Owner for approval prior to placing of orders.

d. Mortar for Masonry Work

(1) Materials

(a) Masonry Cement

Masonry cement shall be prepackaged meeting the requirements of the latest revision of ASTM C91. The cement shall be shipped and stored in UNBROKEN packages. One set of certified test reports shall be furnished for each shipment. The elapsed time from packaging to actual use shall not exceed six months UNLESS the materials are re-tested.

Mixing and use procedures shall be in accordance with the manufacturer's printed instructions and these Detailed Specifications.

(b) Mortar Sand

Mortar sand shall be natural or manufactured sand, meeting the requirements of the latest revision of ASTM C144.

(c) Portland Cement

Portland cement shall meet the requirements of the latest revision of ASTM C150 Type I, II, or III, natural gray, unless otherwise specified.

(d) Water

Water shall be potable, clean and free from oil, acid, alkali, organic materials or other deleterious substances.

(2) Mortar Types

All mortar for unit masonry shall meet the requirements of the latest revision of ASTM C270.

Type “S” mortar shall be a mixture of 1 part mortar cement, ½ part Portland cement, 2 ¼ to 3 parts mortar sand and water as required for workability.

e. Control Joints

Control joints in masonry walls shall be located as shown on the Plans.

Control joint strips in concrete masonry unit walls shall be pre-molded, solid rubber, DA 2005-8-inch Wide Flange Rubber Control Joint by Hohmann and Barnard or equal.

f. Masonry Reinforcement and Metal Accessories

(1) Reinforcement

(a) Horizontal Reinforcement

Horizontal reinforcement in masonry walls shall be deformed steel bars meeting the requirements of ASTM A615 for Grade 60 steel and/or horizontal joint reinforcement as indicated on the plans and specified hereinafter.

Horizontal joint reinforcement for interior non-load bearing walls shall be two wire ladder type manufactured from size W1.7 (9 gauge) cold drawn steel wire conforming to the latest revision of ASTM A82 and shall consist of longitudinal side rods welded at 16-inch intervals to a cross rod forming a ladder design. Cross rods shall not be less than size W 1.7 (9 gauge).

All horizontal reinforcing assemblies shall be hot dipped galvanized after fabrication in compliance with the requirements at ASTM A153 for Class B2.

All horizontal reinforcement shall be continuous except that only bond beam steel shall pass through vertical masonry control joints. Side rods shall be lapped at least 6 inches at splices. Reinforcement shall be so placed as to assure a 5/8-inch mortar cover on the exterior face of walls and ½-inch mortar cover on interior faces.

(b) Vertical Reinforcement

Vertical reinforcement in masonry walls shall be deformed steel bars meeting the requirements of ASTM A615 for

Grade 60 steel. Vertical reinforcement shall be placed in hollow concrete masonry unit cores at the locations shown on the Plans and grouted in place.

(2) Grout

Grout for vertical reinforcement in masonry shall meet the requirements of the latest revision of ASTM C476. Grout may be either fine grout or coarse grout.

Fine grout shall be proportioned by volume as follows:

1 part Portland cement
0 to 1/10th part hydrated lime
2 ¼ to 3 parts fine aggregate
Water necessary to produce an 8 to 11 inch slump as measured in accordance with the latest revision of ASTM C143

Coarse grout shall be proportioned as follows:

1 part Portland cement
0 to 1/10th part hydrated lime
2 ¼ to 3 parts fine aggregate
1 to 2 parts coarse aggregate
Water necessary to produce an 8 to 11 inch slump as measured in accordance with the latest revision of ASTM C143

All grout shall have a minimum 2,000 psi compressive strength.

Grout shall be placed in lifts not exceeding 5 feet and each lift shall be consolidated by mechanical vibration prior to placing the next lift.

g. Erection and Insulation of Concrete Masonry Units (Blocks)

Concrete masonry units shall be laid plumb, level and true to line. Joints shall be finished with a round jointer when the mortar is thumbprint hard. **Bed and head joints shall be 3/8-inch thick.**

Concrete masonry units shall be laid in running bond. Mortar protrusions extending ½-inch or more into cells to be grouted shall be removed.

Each course shall be bonded at corners and intersections and vertical joints shall be broken at least every eight (8) inches. Bond beam courses

and blocks noted to receive resteel shall be filled with concrete using small aggregate – mortar shall not be used for this purpose. All other blocks shall be filled with vermiculite specially treated for water repellency Zonolite Masonry Insulation as manufactured by W. R. Grace & Company or equal.

The joints for all masonry shall be as specified for each material. THE COURSES SHALL BE LAID TO CORRESPOND EXACTLY IN HEIGHT WITH SILLS AND LINTELS OVER WINDOWS, DOORS, OPENINGS, BELT COURSES, *ETC.*, WITHOUT ANY CUTTING OR CHIPPING OF THE BLOCK. Walls shall be plumb and level and shall be laid with whole block. All exposed joints shall be finished as shown on the Plans.

For bed joints, a thick bed of mortar shall be spread and a shallow furrow made so that the joint will be completely filled with mortar. Spreading of the mortar shall extend only as far ahead that the mortar will be plastic when the blocks are laid.

For head joints, the end of the block shall be buttered with an ample quantity of mortar and the block shoved into place so that the vertical joint is completely filled with mortar.

In making closures, ample mortar shall be spread in the closure space and the closure block shall be buttered on both ends and shoved into place so that both horizontal and vertical joints are completely filled. The previously laid block shall not be disturbed in making the closure.

h. Erection Tolerances

Variations from plumb for any masonry work shall not exceed 1/4-inch per 10 feet. Total variation shall not exceed 1/2-inch.

Variations from level for bed joints and the top surface of bearing walls shall not exceed 1/4-inch in 10 feet. Total variation shall not exceed 1/2-inch.

Variations from the building line shall not exceed 1/4-inch per 10 feet. The maximum allowable variation of the building line shall be 1/2-inch.

i. Built-in Work

Other building trades and Subcontractors shall be consulted in advance of installing masonry walls and provisions shall be made for installation of their work in order to avoid cutting and patching. Built-in work specified under other Sections of these Detailed Specifications shall be placed as the work progresses.

Chases shall be built as indicated or as required to accommodate pipes, ducts, conduits, or other work provide under other Sections of these Detailed Specifications.

Block jambs at door locations and at control joints shall be filled with mortar or grout.

Spaces around door frames and other built-in items shall be solidly filled with mortar. The joint between the frame and the masonry shall be raked-out for caulking unless otherwise noted on the Plans.

j. Pointing and Cleaning

On completion, all exposed masonry shall be pointed up, and all holes and joints filled. Loose mortar shall be removed and defective joints cut out and re-pointed where necessary. Masonry surfaces shall be thoroughly cleaned with potable water and detergent. All surfaces shall be left free from mortar and other stains at completion of work. **Acid or caustic solutions shall not be used to clean masonry.**

k. Dampproofing

The outer surface of all exterior concrete block walls enclosing dry spaces that are to be covered by backfill, brick, stone or metal panel facades shall be coated with a cold-applied water-based emulsified asphalt waterproofing prior to backfilling, installing brick or stone veneers, or installing metal panel facades. The water-based emulsified asphalt shall conform to the latest revision of ASTM D1227, Type 2, Class I and D1187, Type I for concrete masonry unit surfaces.

Surfaces to receive dampproofing shall be clean and dry before application of dampproofing. Surfaces shall be primed in accordance with the manufacturer's recommendation. The water-based emulsified asphalt shall be applied uniformly at a rate of not less than 30 pounds per 100 square feet.

Dampproofing shall be protected from damage until backfill is placed, brick or stone veneers are installed, or metal panel facades are installed. Concrete block wall surfaces to be painted after completion of construction shall not be dampproofed.

l. Flashing of Masonry Work

The Contractor shall provide concealed flashings in masonry work where shown on the Plans and/or as required for a weathertight installation. Also see Paragraph 7. Flashing hereinafter for additional information.

Masonry surfaces shall be smooth and free from projections which might puncture flashings. Thru-wall flashing shall be placed on a bed of mortar and covered with mortar. Flashing penetration shall be sealed with mastic before application of the mortar cover. All flashings shall terminate ½-inch from face of wall unless otherwise shown on the Plans. Flashing shall extend beyond the edge of lintels and sills at least 4-inches and edges shall be turned up on sides to form a pan to direct moisture to the exterior.

Weep holes shall be provided in the head joints of the first course of masonry immediately above concealed flashings. Weep holes shall be spaced 24-inches on center unless otherwise shown.

All flashings shall be installed in accordance with the manufacturer's instructions.

3. Shop Fabricated Wood Truss and Standing Seam Metal Roof System

a. General

The work described in this Paragraph of these Detailed Specifications includes furnishing all materials, equipment, and appliances, and performing all labor associated with wood trusses and standing seam metal roofs for the proposed buildings. The Contractor is responsible for coordinating the work of all of the trades involved in building construction.

The Contractor shall protect work, keep work in the dry, and provide heat or ventilation to workspace where appropriate during construction. The Contractor shall carefully cover, box and protect all work in inclement weather. The Contractor shall place suitable boxing where the work is at risk of injury. Any damaged or unsatisfactory work shall be promptly removed and replaced by the Contractor at his expense. Also see the requirements at Paragraph 4. Carpentry and Millwork.

b. Wood Truss Roof System

The roofing system for the proposed buildings shall be constructed of prefabricated fire-retardant treated wood trusses with a steel standing seam roof covering applied to a fire retardant treated exterior grade plywood deck and fire retardant treated interior grade plywood ceiling. Flame retardant treated wood shall be impregnated with chemicals by a pressure process or other means during manufacture and shall have, when tested in accordance with ASTM E84 or UL 723, a listed flame spread index of 25 or less and show no evidence of significant progressive combustion when the test is continued for an additional 20-minute period. Additionally, the flame front shall not progress more than 10 1/2 feet (3,200 mm) beyond the centerline of the burners at any time during the test.

The roof deck at the proposed buildings shall be minimum 3/4-inch fire retardant treated exterior grade plywood fastened to each prefabricated wood truss top chord using galvanized flat head nails at 16-inches on center. The plywood deck shall be covered with one layer of 30 pound felt and a slip sheet of rosin paper.

The roof deck at the proposed buildings shall be supported by wood truss roof system designed by the manufacturer to support the loads described at the accompanying Plans. The wood truss roof system shall be designed by the manufacturer to resist the live loads, dead loads, seismic loads, wind loads, and snow loads shown on the Plans or as required by 2018 International Building Code. All connections shall be designed and detailed by the manufacturer, resulting in a complete roof diaphragm system for each building as shown on the Plans. Detailed drawings of all roof truss systems depicting member sizes, lumber grade, connection details and all design calculations shall be submitted to the Designer for review prior to fabrication of the trusses. The drawings shall bear the stamp of a licensed professional engineer registered in the State of Tennessee.

Plywood ceilings shall be 5/8-inch interior grade fire retardant treated plywood utilized to provide lateral support for the wood trusses. Plywood ceilings shall be covered by FRP panels equal to NUDO Fiberlite. Color samples book shall be provided during the shop drawing phase for color selection. FRP ceiling panels shall be attached to the plywood ceiling in accordance with the manufacturer's recommendations. No visible sagging shall occur.

R-30 Batt insulation shall be installed above all ceilings as shown on the Plans. Batt insulation shall be in accordance with ASTM C 665 and ASTM E 136.

c. Metal Roof Covering and Fascia Panel Material

The metal roof panels and fascia panels shall be vertical leg structural standing seam panels with standing seams spaced at 12 3/4-inch minimum intervals produced from 24-gauge steel manufactured from high strength Galvalume or equal produced to conform with the requirements of the latest revision of ASTM A792 (AZ50 or AZ55).

The panels shall be finished with a Kynar 500 paint system or equal. The roof panels and finish shall have a minimum 20 year warranty. The Owner will select the color from samples submitted to the Designer.

All trim and flashing shall be manufactured from the same gauge steel and have the same finish as the panels.

Roof and fascia panels shall be Lockseam or equal panels finished with a Signature 300 paint system as manufactured by MBCI or approved equal.

Ridge vent shall be supplied by metal roof panel manufacturer.

The roof panels shall be attached to the plywood roof deck by means of concealed fastening clips spaced at 12-inches on center along the standing seam. Fastening clips shall be nailed to the roof deck using 7/8-inch flathead stainless steel nails. **The fastening clips shall be of a size and design to maintain the connection between the roof panels and the plywood roof deck under the wind loads described at the accompanying Plans.**

d. Eave Gutter and Downspouts

Eave gutters and downspouts shall be fabricated from aluminum with a smooth surface and in gauges and sizes as recommended by the SMACNA manual and in accordance with the requirements of the International Building Code. The gutters and downspouts shall be formed to a true profile free of objectionable waviness and any other imperfections. The face of the gutter shall match the profile of the rake trim. The gutter shall provide positive counter flashing. Sections shall be securely fastened and sealed at endflaps. The outside face of the gutter shall be supported by heavy gauge aluminum supports. The color shall be selected by the Owner from samples submitted to the Engineer.

e. Snow Guards

All standing seam metal roofs shall be furnished with a complete clamp-on type snow retention system. The snow guard system shall form a continuous barrier along the bottom of all sloped roofs. All components shall be aluminum or stainless steel and installation shall not require penetration of the standing seam roof system. Snow retention systems shall be equal to Model A2 by Ace Clamp or equal. Color of snow retention systems shall match roof color.

4. Carpentry and Millwork

Moisture content shall not exceed 19 percent for framing lumber and 12 percent for millwork. Lumber must be sound, thoroughly seasoned, well manufactured and free from warp. Woodwork exposed to view on outside of building or in finished interior spaces shall be surfaced four sides. All wood utilized on this project for permanent installation shall be Fire Retardant Treated Wood (FRTW).

FRTW shall be impregnated with chemicals by a pressure process or other means during manufacture and shall have, when tested in accordance with

ASTM E 84 or UL 723, a listed flame spread index of 25 or less and show no evidence of significant progressive combustion when the test is continued for an additional 20-minute period. Additionally, the flame front shall not progress more than 10 1/2 feet (3,200 mm) beyond the centerline of the burners at any time during the test.

Provide all nails, bolts, screws, washers, anchors, and other rough hardware as shown or required to secure the work, described in these Detailed Specifications, in place.

Lumber used in the construction of the roof installation shall be No. 2 KD Southern Pine or No. 2 Douglas-Fir-Larch. Connector plates shall be a minimum thickness of 0.036" made of hot-dipped galvanized steel meeting the requirements of ASTM A446 Grade A or higher. Lumber characteristics such as wane or knots shall not affect more than ten percent of the required plate area.

Connector plates shall be applied to both faces at each joint and provide firm, even contact between the plate and the wood. All wood members shall be accurately cut and fabricated so that all truss units are uniform.

Wood members that will contact masonry or concrete shall be pressure treated with chromated copper arsenate or fluorochrome arsenate phenol. Minimum net retention of solid preservative shall be 0.35 pounds per cubic foot. All other permanent wood in place shall be pressure treated with any of the following: Celcure, Wolman Salts, Copperized Chromated Zinc Arsenate or Pentachlorophenol dissolved in a volatile mineral spirits solvent and bear an approved AWP1-LP-2 or LP-3 quality mark. Clear heart Redwood may be substituted for pressure treated lumber.

All blocking shall be installed as required to secure finish work as specified herein or as shown on the Plans. Secure with nails, bolts or ties as required by field conditions.

All cants, curbs, and nailers shall be formed to the dimensions shown on the Plans; shall be evenly joined and fit together to receive sheet metal, roofing or frames as specified. Curb shall have joint shouldered, nailers butt jointed, and cants mitered at corners. Plans and details show general spacing of bolts securing nailers to the work.

Provide additional bolts 4 inches from the ends of each length of the nailer to hold edges level.

5. Finished Concrete

Where finished concrete constitutes the interior floor finish, it shall be obtained by placing, finishing and curing the concrete in accordance with the requirements

of Paragraph 16. Slabs on Grade in Section 3 of these Detailed Specifications as amended hereinafter. Prior to troweling, the concrete shall be tamped with special tools to force the coarse aggregate away from the surface, then troweled to a smooth surface, and cured and hardened with a curing, hardening and dustproofing compound. Floors generally shall be level. Where drains occur, floors shall be pitched thereto as indicated on the Plans or as directed by the Engineer.

6. Watertightness

See Section 3, Paragraph 19. Watertightness of these Detailed Specifications.

7. Flashing

Provide membrane flashing at head and sills of all door and window openings in exterior masonry walls. Flashing except where noted otherwise on the Plans or herein shall be coated aluminum.

Where necessary to pass anchors through sheets, holes shall be no larger than the anchor cross section. Such holes shall be properly waterproofed with plastic cement.

All flashings shall be applied only to dry surfaces, free from loose materials and slopes or pockets which would prevent free drainage to the weather side.

Surfaces receiving flashing shall be thoroughly brush coated with asphalt or trowel coated with plastic cement and the sheet completely embedded in the coating. All laps in sheets shall be not less than 4-inches. Sheets shall be of such sizes to avoid as much as practicable the necessity for lapping.

Flashing sheets, not exposed, shall be turned up not less than 3-inches at backs of walls and shall extend to within ½-inch of exposed wall faces at lower edges.

Through-wall flashing and flashing at heads and sills of windows shall be coated aluminum and shall be installed where specified or shown on the Plans. Flashing shall be specially formed to provide a mechanical bond in the mortar bed to prevent movement in all lateral directions. The bonding features shall occur at intervals of not more than three inches and shall consist of a series of raised ribs and buttons that traverse the sheet. All through-wall flashing shall be installed with a layer of mortar above and below the flashing. The total thickness of two layers of mortar and flashing shall equal a regular mortar joint. Ends of flashing sheets shall lap at least one raised rib forming a lap joint not less than two inches wide which shall not be soldered except for special conditions.

8. Caulking and Sealing

All joints in exterior walls shall be sealed with a multi-component, elastomeric, epoxidized, polyurethane polymer sealant, Tremco Dymeric or approved equal. Sealant shall be a non-sag, gun grade material, developing a Shore "A" hardness of 25-30 and shall comply with requirements of Federal Specification TT-S-002270e, Class "A", Type 2.

All vertical control joints in interior masonry walls shall be caulked with a one component, butyl-rubber based caulk, complying with the requirements of Federal Specification TT-S-001657, Type 1. This caulking compound shall be DAP "Butyl-Flex" or approved equal.

Sealant primer shall be a synthetic resin solution, compounded specifically for promoting adhesion between the sealant and the substrate.

Joint back-up material shall be an extruded, flexible, compressible polyethylene foam rod, Dow or approved equal "Ethafoam SB" Brand.

Joint surfaces shall be cleaned immediately before installation of sealing or caulking materials. All dirt, insecure coatings, moisture and other substances which will interfere with the bond of the sealant or caulking compounds shall be removed.

Exterior sealants shall not be applied over joint surfaces which have been painted, lacquered, waterproofed or treated with water repellent.

Where mortar joints are required to be raked out, it shall be the responsibility of the Contractor to verify the adequacy of the joint depth. Joints with excessive depths shall be brought to proper depth with fillers.

Evidence of corrosion at joints to be sealed or caulked shall be removed by wire brush or chemical cleaners. Surfaces shall be wiped dry with a dry cloth while the surface is wet with the solvent.

The installation of sealants and/or caulking compounds shall not be performed under adverse weather conditions or when temperature is below 40°F., unless specifically permitted by manufacturer's installation specifications.

No exterior sealing work shall be performed in damp or rainy weather or until surfaces have thoroughly dried from the effects of such weather.

Joints shall be primed with priming compounds recommended by the manufacturer. Primer shall be applied by brush or spray in a continuous unbroken film, free of pinholes. Primer shall be allowed to dry prior to the application of the sealing or caulking materials.

Polyethylene rod or other approved back-up materials shall be installed in joint to be sealed and/or caulked where required by the Plans and/or recommended by the manufacturer to provide an acceptable joint depth. Depth of joint shall not exceed 1/2-inch.

Exterior sealant compound shall be applied with pressure equipment or hand operated caulking gun, employing a nozzle suitable for joint size and design. Sealant shall be forced against sides of joint and into all crevices to press out any air bubbles. Exterior joints shall be filled with the specified compound to a depth equal to 40% of the joint width, but no less than 1/4-inch nor more than 1/2-inch.

Caulking compounds shall be applied with pressure gun as required to completely fill the joint. Caulking compound shall be stored and applied in accordance with manufacturer's recommendations. Joints shall be filled to a depth in the range of 75% to 125% of the joint width.

All joints shall be pointed or tooled slightly concave to provide a uniform, smooth and neat appearance, free of sag or other surface imperfections.

9. Fiberglass Reinforced Plastic (FRP) Doors and Frames

a. General

Fiberglass Reinforced Plastic (FRP) Doors and Fiberglass Resin Transfer Molded Door Frames shall be equal to Chem-Pruf Model CP1 or approved equal. Colors shall be selected by the Engineer or Owner. All fiberglass doors and frames have a lifetime guarantee against failure due to corrosion. Additionally, fiberglass doors and fiberglass frames are guaranteed for ten years against failure due to materials and workmanship, including warp, separation or delamination, and expansion of the core. Glass for windows in doors shall be furnished and installed by door and frame manufacturer. See Paragraph 10. Finish Hardware and Paragraph 11. Glass and Glazing for additional requirements.

b. Doors

Doors shall be made of fiberglass reinforced plastic (FRP) using Class 1 premium resin with no fillers that is specifically tailored to resist chemicals and contaminants typically found in environment for which these specifications are written. Doors shall be 1 3/4 inch thick and of flush construction, having no seams or cracks. For consistency in the resin chemistry tailored for this application and to maintain the same physical properties throughout the structure.

Door Plates shall be 0.125 inch thick minimum, molded in one continuous piece, starting with 25 mil gelcoat of the color specified, integrally molded

with multiple layers of 1.5 ounces per square foot fiberglass mat and one layer of 18 ounce per square yard fiberglass woven roving. Each layer shall be individually laminated with resin as mentioned above. Door plate weight shall not be less than 0.97 lbs per square foot at a ratio of 30/70 glass to resin.

Stiles and Rails shall be reinforced with a matrix of at least three layers of 1.5 ounce per square foot of fiberglass mat.

Core material shall be Polypropylene plastic honeycomb core with 180 PSI typical compression range.

Internal Reinforcement shall be dense matrix of cloth glass fibers and resin of sufficient amount to adequately support required hardware and function of same.

Finish of door shall be identical with 25 mil resin-rich gelcoat of the specified color integrally molded in at time of manufacture resulting in a smooth gloss surface that is dense and non-porous.

Window openings shall be provided for at time of manufacture and shall be completely sealed so that the interior of the door is not exposed to the environment. Fiberglass retainers, which hold the glazing in place, shall be resin transfer molded with a profile that drains away from glazing. The window retainer must match the color and finish of the door plates with 25 mil of resin-rich gelcoat integrally molded in at time of manufacture. Glass, as specified herein, shall be furnished and installed by door and frame manufacturer.

Where louvers are shown on the plans, openings shall be completely sealed so that the interior of the door is not exposed to the environment. Louvers are to be solid fiberglass "V" Vanes and shall match the color and finish of the door plates.

Transoms shall be identical to the doors in finish, construction, materials, thickness and reinforcement.

c. Frames

Frames (rated and non-rated) shall be fiberglass and manufactured using the resin transfer method creating one solid piece (no voids) with complete uniformity in color and size. All frame profiles shall have a core material of 2 psf polyurethane foam. Metal frames will not be accepted.

Finish of frame shall be identical to the door with 25 mil resin-rich gelcoat of the specified color integrally molded in at time of manufacture.

Jamb/Header connection shall be mitered for tight fit.

Internal Reinforcement shall be continuous within the structure to allow for mounting of specified hardware. Reinforcing material shall be a dense matrix of cloth glass fibers and premium resin with a minimum hinge screw holding value of 1,000 lbs. per screw. All reinforcing materials shall be completely encapsulated. Documented strength of frame screw holding value after third insert must be submitted. Dissimilar materials, such as steel, will be deemed unacceptable as reinforcement for hardware attachment.

Hinge pockets shall be accurately machined by CNC to facilitate heavy duty hinges at all hinge locations, using shims when standard weight hinges are used.

10. Finish Hardware

The following Federal Specifications form a part of this specification. Unless otherwise indicated, the type numbers are related to the Federal Specifications:

FF-H-106a Hardware, Builders; Locks and Door Trim
FF-H-111a Hardware, Builders; Shelf and Miscellaneous
FF-H-116b Hardware, Builders; Hinges (non-template)
FF-H-121a Hardware, Builders; Door Closers

All outside doors shall be equipped with safety (Exit) bars also known as panic bars whereby the door is opened by pushing on a stainless steel bar which shall unlock and unlatch the door. These devices shall be equal to Sargent 60 series.

All hardware shall be properly wrapped in separate packages complete with trimmings, screws, *etc.*, each plainly labeled and numbered to agree with the door numbers and Contractor's typewritten schedule. The Contractor shall submit his schedule for correction and approval to the Engineer before proceeding with any work. Hardware shall be delivered to shops of the various door manufacturers, or to the building as directed.

All hardware shall be stainless steel unless otherwise specified.

All butts and other hardware where required shall be cut to standard template where required. Butt hinges for interior doors and in-swinging exterior doors shall be Type 2105 (U.S. 28) unless otherwise specified.

Locks for all doors in the same building shall be keyed alike in one set. Furnish two (2) keys for each lock. Grand-master key these sets and furnish three (3) grand-master keys. Grand-master keys shall match the Owner's other lockets at the WWTP site. The keys supplied shall match the Owner's existing lock system.

All hardware shall meet the approval of the State Building Code requirements, the National Board of Fire Underwriters, and other authorities having jurisdiction.

The hardware supplier shall furnish seven (7) copies of a complete detail list with manufacturer's catalog cuts, of all items of hardware he proposes to furnish for this project, for the Engineer's approval. Hardware schedules are shown on the Plans.

Door hardware shall be supplied by the Owner and installed by the Contractor.

11. Glass and Glazing

Glass and related materials and accessories specified in this Paragraph shall apply to all windows and glazed doors.

Each light of glass shall bear a temporary label identifying the manufacturer of brand, quality of glass and nominal thickness. Labels shall remain in place until approved by the Engineer.

Insulating glass units and tempered glass shall have a permanent label in the corner in accordance with ANSI Z97.1.

Glass units for exterior windows and doors shall be double insulated consisting of one interior pane of 1/4-inch thick plate or float glass, tempered, clear Kind FT, Condition A), Type 1, Class 1, Quality q3; and one exterior pane of 1/4-inch thick plate or float glass, tempered, solar bronze tinted Kind FT, Condition A) Type 1, Class 1, Quality q3. Panes shall be separated by dehydrated air space.

Butyl rubber sealant shall be polymerized butyl rubber and inert fillers (pigment), solvent based with minimum 75 percent solids, non-sag consistency, tack-free, non-staining and paintable. Sealant shall be Tremco "400" or approved equal.

SECTION 7

PAINTING AND COATING

1. Scope

a. General

The work to be performed under this Section consists of the furnishing of all materials and equipment and performing all labor for cleaning and painting as specified herein.

Painting materials shall be delivered to the project in labeled unbroken containers.

The products of Tnemec Company are specified; however, equal painting systems will be considered based on their Pre-Bid Submittals which will be acknowledged by addendum.

Aluminum, stainless steel, bronze, concrete floors, and plastics except exposed inside pipe will not be painted unless specifically named in the paint schedule.

b. Facilities to be Painted or Coated

All new and existing facilities are to be painted or coated, including but not limited to, the following:

- All equipment including pumps and motors
- All interior and exterior masonry walls
- All piping except PVC and stainless steel
- The exposed top slab of the sewage pumping station
- All exposed structural steel, cast iron, ductile iron, piping, and valve and gate operators
- All exposed rigid galvanized electrical conduit
- Where factory or manufacturer applied coatings are specified, the Contractor shall touch up all coatings in accordance with the manufacturer's recommendations

Note: Stainless steel and aluminum shall not be painted.

2. Protection of Work

The Contractor's cleaning and coating shall be carried out in a workmanlike manner. Care shall be taken to protect new and existing work from overspray

and blast debris. The Contractor shall mask and tarp all areas where cleaning and coating operations are being completed. Floors shall be covered and protected adequately. The Contractor shall immediately clean any areas of overspray or blast debris from new or existing work.

3. Materials

All materials specified herein shall be manufactured by Tnemec or equal approved by Addendum.

Coating materials in contact with water shall be approved by the Tennessee Department of Environment and Conservation and NSF for contact with Potable Water. Materials shall meet the following performance data as certified by a qualified testing laboratory:

- Abrasion - ASTM D4060, CS-17 Wheel, 1,000 grams load
- Adhesion - ASTM D3359 Method B
- Hardness - ASTM D3363
- Humidity - ASTM D2247
- Salt Spray (FOG) - ASTM B117

4. Acceptance as Work Progresses

All Surface Preparation shall be approved by the Engineer before primer is applied. Coatings shall be applied the same day surface preparation occurs. Work will be inspected by the Engineer at the close of each day's work.

There shall be a color change between each coat applied and acceptance of each coat shall be obtained before applying the next coat.

Work that is not acceptable shall be corrected as work progresses.

5. Environmental Conditions During Paint Application

Coatings shall be applied during good painting conditions. Air and surface temperatures shall be within limits prescribed by the manufacturer for the coating being applied and work areas shall be reasonably free of airborne dust at the time of application and while coating is drying.

6. Surface Preparation and Painting

a. Interior Pipes and Ferrous Metal (Non-Submerged)

(1) Surface Preparation:

Remove all loose rust from bolt heads and nuts by power tools or blasting.

SSPC-SP6 Commercial Blast Cleaning is the standard for ferrous metals excluding pipe. Media selected shall produce a profile minimum 1.5 mils in depth. Areas not reasonably accessible for the blast nozzle shall be prepared in accordance with SSPC-SP-11 Power Tool Cleaning to bare metal to provide a suitable surface. All abrasive blasting shall be accomplished within containment areas erected by the contractor and all gauges, motors, and other equipment not to be blast cleaned shall be protected from the blasting nozzle and spent media.

Ductile Iron Pipe shall be cleaned in accordance with Standard 500-03-04 of the National Association of Pipe Fabricators.

All areas where surface preparation has occurred shall be primed the day surfaces have been prepared.

(2) Prime Coat: Tnemec 1-1216 Omnithane @ 2.5 to 3.5 mils DFT.

(3) Intermediate Coat: Tnemec N69 - Color Hi-Build Epoxoline II at 4.0 to 6.0 mils DFT.

(4) Finish Coat: Tnemec N69 - Color Hi-Build Epoxoline II at 4.0 to 6.0 mils DFT.

b. Exterior Pipes and Ferrous Metal (Non-Submerged)

(1) Surface Preparation:

Remove all loose rust from bolt heads and nuts by power tools or blasting.

All welds shall be thoroughly cleaned to remove any loose material.

SSPC-SP6 Commercial Blast Cleaning is the standard for ferrous metals excluding pipe. Media selected shall produce a profile minimum 1.5 mils in depth. Areas not reasonably accessible for the blast nozzle shall be prepared in accordance with SSPC-SP-11

Power Tool Cleaning to bare metal to provide a suitable surface. All abrasive blasting shall be accomplished within containment areas erected by the contractor and all gauges, motors, and other equipment not to be blast cleaned shall be protected from the blasting nozzle and spent media.

Ductile Iron Pipe shall be cleaned in accordance with Standard 500-03-04 of the National Association of Pipe Fabricators.

All areas where surface preparation has occurred shall be primed the day surfaces have been prepared.

- (2) Prime Coat: Tnemec 1-1216 Omnithane @ 2.5 to 3.5 mils DFT.
- (3) Intermediate Coat: Tnemec N69 - Color Hi-Build Epoxoline II at 4.0 to 6.0 mils DFT.
- (4) Finish Coat: Tnemec 1074 Endurashield at 2.0 to 3.0 mils DFT.

c. Submerged Piping and Ferrous Metal

- (1) Surface Preparation:

Remove all loose rust, dust, oil, grease or other foreign matter.

All welds shall be thoroughly cleaned to remove all loose material.

SSPC-SP10 Near White Blast Cleaning is the standard. Media selected shall produce a minimum profile of 1.5 mils in depth with a sharp jagged surface.

All areas where surface preparation has occurred shall be primed the day surfaces have been prepared.

- (2) Prime Coat: Tnemec 1-1216 Omnithane @ 2.5 to 3.5 mils DFT.
- (3) Intermediate Coat: Tnemec N140-1255 Pota-Pox Plus @ 4.0 to 6.0 mils DFT.
- (4) Finish Coat: Tnemec N140-150L Pota-Pox Plus @ 4.0 to 6.0 mils DFT.

There shall be a color change between each coating applied and finish colors shall be in accordance with colors shown in Paragraph 7, Colors and Labeling and confirmed by the Engineer.

d. Galvanized Steel – Pipe, Conduit, and Miscellaneous Fabrications – Non Immersion Interior

(1) Surface Preparation:

Surfaces shall be prepared in accordance with SSPC-SP1 Solvent Cleaning. Abrasive blast per SSPC SP-16 to mechanically scarify and provide a minimum 1.0 mil anchor profile.

(2) Prime Coat: Tnemec N69 - Color Hi-Build Epoxyline II at 2.0 to 3.0 Mils 0 ft.

(3) Finish Coat: Tnemec N69 - Color Hi-Build Epoxyline II at 2.0 to 3.0 Mils DFT.

e. Interior Floor Slab

(1) Surface preparation shall be in accordance with SSPC-13/ICRI CSP 1-3.

(2) Prime Coat: Tnemec Series 205 – 02SF Tera Tread FC at 3.0 to 5.0 mils DFT

(3) Finish Coat: Tnemec Series 205 – 02SF Tera Tread FC at 3.0 to 5.0 mils DFT

f. Interior Concrete Masonry Unit Walls and Concrete Ceilings

The concrete masonry unit walls shall be clean and dry, and shall receive one prime coat of Tnemec Series 1254 Epoxoblock at (75 to 100 S.F./gallon), one intermediate coat of Tnemec Series 66 Hi-Build Epoxoline (4.0 to 6.0 mils DFT), and one finish coat of Tnemec Series 66 Hi-Build Epoxoline (4.0 to 6.0 mils DFT).

g. Exterior Split Face Finished Masonry Unit Veneers

All exterior split face finished masonry unit veneer surfaces shall be coated with a clear water-repellent coating and stain.

The clear water-repellent coating shall be Prime a Pell Plus 662 manufactured by the Chemprobe Coating Masonry Division of Tnemec Company, Inc. and shall be applied in two coats by spraying in accordance with the manufacturer's written instructions.

The stain shall be Conformal Stain Series 607 manufactured by the Chemprobe Coating Masonry Division of Tnemec Company, Inc. and shall

be applied after both coats of clear water-repellent coating have been applied and cured. The stain may be applied using airless spray, brush or deep nap roller in accordance with the Manufacturer's written instructions. Color shall be selected by the Owner prior to beginning coating work. A sealed and stained mock-up panel shall be prepared having dimensions of approximately two feet by two feet for approval by the Engineer. Up to three mock-up panels may be required for selection of stain color.

h. Sewage Pumping Station Exposed Top Slab

The top slab at the new sewage pumping station shall be coated per the following specification.

(1) Surface Preparation:

Scrape or grind fins and protrusions flush with surface. Power wash at minimum 2,500 psi utilizing a spinner tip to remove all visible oil, dirt, mildew, laitance and efflorescence. Verify surface is clean, dry and contaminant free prior to application of coatings. Allow new concrete to cure a minimum of 14 days.

(2) Prime Coat: Apply Tnemec Series 154 Tnemeguard thinned 25% with potable water at 80 sq.ft. per gallon. Apply by roller to surface.

(3) Intermediate Coat: Apply Tnemec Series 154 Tnemeguard (un-thinned) at 12.0 to 15.0 mils DFT by roller.

(4) Finish Coat: Apply Tnemec Series 248 Everthane at 2.0 to 3.0 mils DFT. The Contractor shall add Series 820 color packs based upon final color selected by the Owner.

7. Colors and Labeling

The pipelines, process control valves, and equipment shall be color coded and labeled in 2-inch high labels at approximately 10 feet between labels with direction of flow indicated. Valves shall be labeled as "Backwash Valve No. 1," *etc.* Chemical pipe with colored bands shall have bands at ten feet on center unless shorter pipe lengths require more frequent bands. Colors and Labeling shall be as follows:

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<u>Pipeline</u>	<u>Label & (Color of Label)</u>	<u>Tnemec Color</u>
Potable Water	Potable Water (Black)	True Blue/Safety (11SF)
CSO Piping	CSO Piping (White)	Brown (EN05)
Other	----	Light Gray (IN01)
<u>Equipment</u>	<u>Label & (Color of Label)</u>	<u>Tnemec Color</u>
Pumps and Motors	Tank Pump No. 1	Lemon Yellow/Safety (SC01)
Valves or Flow Meters	(Insert application location) Valve No 1, 2 or 3 (Black)	Lemon Yellow/Safety (SC01)
<u>Miscellaneous</u>		
Doors (not FRP) Facing & Other Indoor Trim		Desert Sands (04BR)
Miscellaneous Metals		Mediterranean Blue (34BL)
<u>Interior Concrete Block Walls and Ceilings</u>		
Walls and Ceilings		Warm Sun (01BR)

Although Tnemec colors are listed in the color schedule, color selection charts shall be submitted to the Engineer for confirmation/selection by the Owner. Additionally, color selection charts shall be provided for all items not listed in the color schedule.

8. Clean-Up

Remove and dispose of all rubbish or other unsightly material in a legal manner, leaving the premises in a clean condition.

SECTION 8

MISCELLANEOUS METALS

1. Scope

The work to be performed under this Section consists of furnishing and installing all items of miscellaneous metals shown on the Plans, specified herein, or otherwise incidental to the work.

2. Shop Drawings

The Contractor shall submit to the Engineer one (1) digital copy of detailed shop drawings for all items of miscellaneous and ornamental metal for approval. The provisions contained in Section 1 of these Detailed Specifications shall apply to the submission of shop drawings, and no fabrication or erection of miscellaneous metals shall be done prior to approval of shop drawings.

3. Stainless Steel

All anchor bolts, structural shapes, plates, bars and fabricated work shown on the Plans or specified in these Detailed Specifications to be stainless steel, shall conform to the requirements of the latest revision of ASTM A276 and/or ASTM A312, for Type 304 or Type 316. All bolts, nuts and fasteners shown on the Plans or specified in these Detailed Specifications to be stainless steel shall conform to the requirements of the latest revision of ASTM F593 and F594, Group 1 or 2. When used with dissimilar metals, stainless steel shall be furnished with neoprene rubber insulators to prevent corrosion.

4. Fabricated Steel

All connections in fabricated steel miscellaneous metal work shall be welded unless shown otherwise on the Plans. All welding shall be performed in accordance with American Welding Society Standard D1.1. In assembling and during welding, the component parts of built-up members shall be supported and held by sufficient clamps and other adequate means to hold the parts in proper relation for welding. All exposed welds shall be ground smooth. Shop drawings of all items are required. Metals shall be painted as specified in Section 7, Painting and Coating of these Detailed Specifications.

Unless otherwise noted, all angles, plates, frames, lintels, and miscellaneous structural and bar shapes shall conform to the Standard Specifications of the American Institute of Steel Construction and ASTM A36, latest revision.

W-shapes shall be ASTM A992. Bent or cold-formed steel shall be ASTM A283 Grade C.

Where called for on the Plans or in the Specifications, fabricated steel shall be hot-dip galvanized after fabrication as set forth in Paragraph 5. Galvanized Steel Items hereinafter.

5. Galvanized Steel Items

Galvanized steel items shall be hot-dip galvanized after fabrication in accordance with:

- | | | |
|----|----------------------------------|-----------|
| a. | Iron and steel hardware | ASTM A153 |
| b. | Rolled steel shapes, <i>etc.</i> | ASTM A123 |
| c. | Assembled steel items | ASTM A385 |

6. Cast Iron Items

Cast iron items shall be true to pattern, clean and free from injurious flaws and defects, and conform to the requirements of the latest revision of ASTM A48.

7. Aluminum

a. General

Where items of aluminum are called for on the Plans, the alloy shall be of the type and alloy recommended by the manufacturer for the purpose or service intended. The alloy used shall be noted on the Submittal.

Any surfaces of aluminum that come in contact with masonry materials or concrete shall be coated with heavy-bodied bituminous paint.

Aluminum which comes in direct contact with stainless steel or other dissimilar metals shall be protected by neoprene rubber insulators to prevent galvanic corrosion of the aluminum.

All aluminum shall be cleaned thoroughly with mild soap and water upon project completion. No abrasive or caustic cleaning shall be used.

b. Safety Treads

ALUMINUM SAFETY TREADS SHALL BE FURNISHED ON ALL CONCRETE STEPS. Safety treads shall be 3-inch width, 5/16-inch thick, fabricated concrete with anchors and set prior to the pouring of the step. SAFETY TREADS SET WITH SCREWS WILL NOT BE ACCEPTED.

c. Structural Sections, Checkered Plate and Weir Plates

Aluminum structural shapes and checkered plate shall be from Alloy 6063-T6 and of the size, shape, and weight shown on the Plans.

d. Aluminum Frames for Fiberglass Grating and Aluminum Hatches

Frames for all fiberglass grating and aluminum hatches shall be fabricated from aluminum alloy meeting the requirements of the latest revision of ASTM B221. All frames for fiberglass grating shall provide for two-inches bearing and shall be the depth required to match grating or hatch depth. Embedded frames shall be fabricated with concrete anchors.

e. Aluminum Tablet Dedication Plaque

One aluminum tablet, size approximately 24 inches by 30 inches, shall be installed as directed by the Engineer. The tablet shall have approximately 500 letters which shall be flat face Ribbon Style, ground and rubbed to a satin finish. Borders shall be ground and rubbed to a satin finish. Background shall have a pebble texture.

The Engineer will provide the Contractor with the exact lettering which will appear on the tablet and a preliminary tablet layout. Based on the preliminary tablet layout and prior to casting, the Contractor shall submit to the Engineer for approval a full-scale exact layout of the tablet. After the tablet has been cast but prior to shipping, the Contractor shall submit to the Engineer a “rubbing” of the finished tablet for final approval. The Contractor shall not ship the tablet to the job site until the Engineer’s written approval of the “rubbing” has been received.

The tablet shall be for wall mounting by a method approved by the Engineer. Cover rosettes shall be screwed on and securely pinned. The tablet shall be not less than 1/4-inch thick at any point.

f. Pipe Handrails

Handrails shall be designed to meet all requirements of the 2012 International Building Code. The intent of these specifications is to allow a handrail system using aluminum pipes and aluminum or stainless steel components with stainless steel fasteners and connections which will not loosen in service. Handrails shall be designed for applicable loads including a 200- pound concentrated load applied at any location in any given direction and a 50-pound / L.F. distributed load applied in any given direction (concentrated and distributed loads need not be applied simultaneously). Other or intermediate handrails shall be designed to withstand a 50-pound horizontal load on an area not exceeding 12 inches

by 12 inches. Handrails shall be 2-line minimum 1½-inch schedule 40 aluminum pipe, alloy 6063-T6 with toeplates as shown on the plans and/or required by OSHA. Toeplates shall be 4-inch high aluminum extrusions set 1/4-inch above the walking surface. Post spacing shall be a maximum of seven (7) feet or sufficiently close to meet strength requirements. Posts shall not interrupt the continuity of the top rail; the top rail shall be smooth. For welded rail, all welds shall be ground smooth. Openings in the railing shall be guarded by a self-closing gate or 1¼-inch stainless steel safety chain where shown on the Plans. Aluminum finish shall be M10-C22-A41(215-R1) as per Aluminum Association. Units shall be shipped protected by a removable plastic wrap (which shall be removed during final clean-up and start-up of the facility). Refer to Paragraph 8. Protection and Cleaning of Aluminum of this Section hereinafter for protection and cleaning of aluminum. Component handrails shall be equal to TUF Rail as manufactured by Thompson Fabricating Company, Birmingham, Alabama.

8. Protection and Cleaning of Aluminum

All sash and frame members shall receive a uniform temporary protective coating of water clear lacquer after fabrication in accordance with AAMA Specification.

Any surfaces of aluminum that come in contact with masonry materials or concrete shall be coated with heavy-bodied bituminous paint.

Aluminum which comes in direct contact with steel or other dissimilar metals shall be protected to prevent galvanic corrosion of the aluminum. After installation, all aluminum material shall be protected with a coating of suitable wax or similar compound to preserve the finish while other trades are doing their work.

All aluminum shall be cleaned thoroughly with mild soap and water or petroleum product. No abrasive or caustic cleaning shall be used.

9. Concrete Expansion Anchors

Where shown on the Plans to anchor into existing concrete, expansion anchors shall be wedge-type with one-piece wrap around expansion clip meeting the requirements of Federal Specification FF-S325, Group 11, Type 4, Class 1. Carbon steel anchors shall be zinc plated in accordance with Federal Specification QQ-Z-325C, Type 11, Class 3. Stainless steel anchors (including body and expansion clip nut and washer) shall be manufactured from 316 stainless steel. Anchors shall be Red Head wedge anchors or approved equal.

Expansion anchors shall be installed in holes drilled with carbide tipped drill bits conforming to ANSI Specification B94.12-77. Minimum installation depth and method of expansion shall be as recommended by the anchor manufacturer.

Unless noted otherwise, expansion anchors shall be rated for the following values in 4,000 psi concrete:

<u>Size</u>	<u>Ultimate Pullout (lbs.)</u>	<u>Ultimate Shear (lbs.)</u>
1/4-inch	3,000	1,900
3/8-inch	5,600	4,300
1/2-inch	7,200	7,200
5/8-inch	10,000	13,000
3/4-inch	16,000	18,500
7/8-inch	20,000	25,000
1-inch	30,000	29,000
1 1/4-inch	53,000	46,000

Anchors shall not be spaced closer than the manufacturer's recommended minimum spacing without prior approval of the Engineer.

10. Safety Chain

Chains shall be heavy duty stainless steel or aluminum capable of lifting 1,000 pounds and no less than 1 1/4-inch link.

11. Sluice Gates

- a. The Contractor shall furnish and install one rising stem, handcrank operated 36-inch diameter influent pipe sluice gate and wall thimble as shown on the Plans. The sluice gate shall be of the flush-bottom closure type. The gate and accessories shall operate properly, with a practical degree of watertightness under a maximum unbalanced unseating head of 25 feet. The gate shall be designed with a minimum safety factor of five to withstand, without permanent distortion of any part, service for which it was designed. The sluice gate shall be Model No. HY-Q as manufactured by Rodney Hunt or equal. All operators shall be manual gearbox with handcrank.

b. Gate Frame

The frame shall be of cast iron, one-piece construction with mounting flange and rectangular or circular opening as indicated on the plans. All contact surfaces of the frame will be machined. The frame shall have machined dovetailed grooves on the front face into which bronze seat facings shall be driven and machined to a 63 micro-inch finish. The back of the frame shall be machined to bolt directly to the machined face of a wall thimble. The frame shall have integrally cast pads machined with keyways to receive top and bottom wedge seats.

c. Gate Disc or Slide

The disc shall be of cast iron, one-piece construction, rectangular with integrally cast vertical and horizontal ribs. A reinforcing rib along each side shall be provided to ensure rigidity between the side wedges. The disc shall have machined dovetailed grooves on the seating face into which bronze seat facings shall be driven and machined to a 63 micro-inch finish. A tongue on each side, extending the full length of the disc, shall be machined on all sides with a 1/16" clearance maintained between the disc tongue and gate guide groove. Wedge pads for side, top, and bottom wedges shall be cast integrally on the disc and machined to receive adjustable bronze wedges. A heavily reinforced nut pocket shall be cast integrally on the vertical centerline and above the horizontal center and be of such shape to receive the square-backed thrust nut.

d. Gate Guides

The guides shall be cast iron, one-piece, designed to withstand the total thrust due to water pressure and the wedging action. The guides shall be machined on all contact surfaces, and a groove shall be machined the entire length of the guide to allow 1/16" clearance between the disc tongue and guide groove. The guides shall be of such length as to retain and support at least one half the disc in the full open position. The guides shall be integrally cast with or attached to the frame with silicon bronze or stainless steel studs and nuts, and shall be dowelled to prevent any relative motion between the guides and frame. Bronze wedge seats shall be securely attached to machined pads on the guides.

e. Wedges

The wedges shall be solid cast bronze, machined on all contact surfaces. They shall be attached to the disc with studs and nuts and shall have adjusting screws with lock nuts.

f. Seat Facings

All seat facings shall be malleable extruded bronze of a composition which shall increase in wearing ability with cold working. The extruded seat facings shall be of special shape to fill and permanently lock in the machined dovetailed grooves when driven into place. The installed seat facings shall be machined to a 63 micro-inch finish or better.

g. Stems

The operating stem shall be of a size to safely withstand, without buckling or permanent distortion, the stresses induced by normal operating forces. In addition, the stem shall be designed to transmit in compression at least 2-1/2 times the rated output of the floorstand with a 40 pound effort on the crank. The threaded portion of the stem shall have machine cut threads of the 29° Acme type. Stems of more than one section shall be joined by bronze couplings threaded and keyed to the stems. All threaded and keyed couplings of the same size shall be interchangeable. Manually operated, rising stem gates shall be provided with an adjustable stop collar on the stem above the floorstand lift nut.

h. Stem Guides

Stem guides shall be cast iron, bronze bushed, mounted on cast iron brackets. They shall be adjustable in two directions and shall be spaced at sufficient intervals to adequately support the stem. Stem guide spacing shall not exceed an L/r ratio of 200 and shall not be spaced greater than 10 feet except where required by gate travel.

i. Wall Thimble

Wall thimbles shall be A-126, Class B Iron as manufactured by Rodney Hunt or equal.

j. Painting

The gate manufacturer shall be responsible for shop priming the gate and floorstand. Field painting shall be as specified in Section 7, Painting and Coating of these Detailed Specifications.

k. Shop Testing

The completely assembled gate shall be shop inspected for proper seating. Seat facings will be machined, and wedges adjusted to exclude a 0.004" thickness gauge between the frame and disc seating surfaces. The gate disc shall be fully opened and closed in its guide system to ensure that it operates freely. The floorstands shall be shop operated to ensure proper assembly and operation.

l. Flush Bottom Closure

The flush bottom closure type of gate shall have a compressible resilient seal attached to the bottom of the disc (sliding member) with a stainless steel bar and fasteners. The seal shall be of a specially extruded shape,

and designed to accurately fit to the bottom rib of the disc. The seal shall be shaped to produce a wide sealing area on a machined cast iron stop bar that is bolted to the gate frame to form a flush invert. The differential sealing pressure of the resilient seal on the stop bar shall be variable by adjustment of the side wedges on the gate. The flush bottom closure gates shall be the Hy-Q design as manufactured by Rodney Hunt Company or equal.

m. Materials

All materials used in construction of the gates and appurtenances shall conform to the following specifications:

<u>Part</u>	<u>ASTM Designation</u>
Iron castings for wall thimbles, frame, disc and guides, stem guides, floorstands, and other items	A126, Class B
Bronze castings for wedges, thrust nut, lift nut and coupling	B584, C86500
Bronze for seat facings in frame and disc	B21, C46400
Bronze tongue and guide liners	B98, C65500
Stainless steel for stems	A276, Type 304
Stainless steel for fasteners	A276, Type 304

12. Removable Aluminum Covers

a. General

This specification covers the design, fabrication and erection of the aluminum flat cover with all appurtenances as indicated on the contract drawings and in conformance with the following specifications.

b. Scope

The flat cover fabricator/erector shall furnish all labor, materials, and equipment to completely design, fabricate, deliver, and erect the aluminum flat cover structure(s).

c. Design and Materials

The flat cover(s) shall conform to the specified dimensions. The flat cover(s) shall be clear-span and designed to be self-supporting from the periphery curbs. Full provisions shall be made to allow for thermal expansion.

The flat cover deadweight shall not exceed 150 lbs. per removable module. Each module shall be easy to remove and the lifting force shall not exceed the dead weight of the module. The flat cover surface paneling shall be designed as a relatively airtight system under the specified design loading conditions. Dissimilar materials shall be separated from each other through the use of approved gaskets or coatings.

Formed panels shall be .090-inch nominal thick 5052-H36 or 6061-T6 aluminum sheet and extrusions shall be 6061-T6 aluminum. Fasteners shall be aluminum or 300 series stainless steel. Sealant shall be Silicone by Pecora, General Electric or equal. Gaskets shall be Silicone Rubber, Hypalon or equal. Expansion Anchor Bolts shall be Series 300 stainless steel.

d. Design Loading

The flat cover frame and skin shall be designed in accordance with the "Specifications for Aluminum Structures" as published by the Aluminum Association and designed for full dead load plus live load in accordance with the Southern Building Code, latest edition. Flat cover deflection shall be less than or equal to $L/120$ under total dead and live load conditions.

e. Fabrication and Erection

All work shall be executed by mechanics skilled and experienced in the fabrication and the erection of aluminum structures. The flat cover shall be erected plumb and level and in proper alignment by the flat cover fabricator using highly skilled mechanics.

f. Shop Drawings and Design Calculations

Before executing any of the work in this section, prints or drawings shall be submitted to the Engineer showing dimensions, sizes, thicknesses, gauges, materials, finishes and attachment and erection procedure. A complete set of design calculations for the flat cover specified shall also be submitted. These calculations shall be signed by a Registered Professional Engineer licensed in the State of Tennessee. All work shall be fabricated and erected in accordance with fabricator/erector drawings.

g. Qualification to Bid and Guarantee

The manufacturer must have installed and had in satisfactory use for a period of not less than five years, at least one enclosure of size and type comparable to the unit specified. The enclosure shall be manufactured by TEMCOR of Gardena, California, Hallsten Corporation of Sacramento, California or approved equal and shall be guaranteed for a period of one (1) year against defective materials and construction.

13. Overhead Cranes

a. General

The Contractor shall supply, install, construct, and load test all hoisting equipment as shown on the Plans. Where Prefabricated Free-Standing Cranes are depicted on the Plans, drawings, and design calculations for prefabricated equipment bearing the seal of an engineer registered to practice in the State of Tennessee shall be furnished during the shop drawing phase. Electrical power for equipment shall be 480 volt, 3 phase, 60 Hz.

b. Prefabricated Free-Standing Cranes

The Contractor shall supply prefabricated base plate-mounted free-standing cranes as shown on the Plans. The free-standing cranes shall have a rated capacity and height as shown on the Plans. Outdoor cranes shall be unpainted "weathering" steel ASTM A588, stainless steel, or hot dip galvanized steel may be used for components which are not available in ASTM A588. Free-standing cranes shall be Free Standing Monorail as manufactured by the SPANCO Corporation or approved equal.

The standard capacity rating of free-standing cranes shall be the net rated load at the hook of the hoist of the same rated capacity as the crane. The design factor for the stresses in the crane shall be based upon the capacity plus 25% of the rated load for impact and 15% of the rated load for the weight of the hoist and trolley. The design shall provide a margin to allow for variations in material properties, operating conditions, and design assumptions. The design shall be sealed by a registered Tennessee Professional Engineer.

c. Hoisting Equipment

The hoist shall have a lift of 75 feet. The equipment shall consist of an electrically powered hoist with motor driven trolley. The hoists shall be equal to a 3-ton Budgit Electric Hoist, Catalog No. BEHCO310 with a 2-1/2 HP motor lift speed of 10 feet per minute and include a chain container.

SECTION 9

MECHANICAL AND CONTROL EQUIPMENT

GENERAL

1. Scope

BIDDERS SHALL TAKE NOTICE THAT "TYING" OF EQUIPMENT INTO PACKAGES FOR THE PURPOSE OF THWARTING COMPETITION IS CONSIDERED TO BE NON-COMPLIANCE WITH THESE SPECIFICATIONS. MANUFACTURERS SHALL PRICE ITEMS UNDER DIFFERENT SUB-SECTIONS OR SECTIONS SEPARATELY.

The work to be performed under this section and the alphabetized Sub-Sections following consists of furnishing all materials and equipment not provided by the Owner and performing all necessary services for complete operable installation of all mechanical and control equipment delineated in the Sub-Sections following in strict accordance with the approved manufacturer's shop drawings.

2. References

- a. American Gear Manufacturers Association (AGMA)
- b. National Electrical Manufacturers Association (NEMA)
- c. American Federation of Bearing Manufacturers Association (AFBMA)
- d. American Society for Testing and Materials (ASTM)
- e. American Welding Society (AWS)
- f. Steel Structures Painting Council, American National Standards Institute (SSPC)
- g. Underwriters Laboratory (UL)

3. Shop Drawings (Equipment Furnished by the Contractor)

Due to funding requirements, shop drawings submitted by the Contractor shall be provided within 45 days of execution of purchase orders with manufacturers. The Contractor shall guarantee delivery of all material and equipment within 12 months of receipt of approved shop drawings. Failure to meet these deadlines will constitute grounds for total rejection of the

proposed equipment manufacturer or supplier as being unable or unwilling to meet these Detailed Specifications.

The Contractor shall obtain, check and submit to the Engineer one (1) digital copy of shop drawings of each item of equipment listed in the following Sub-Sections. After approval, the Engineer will distribute the shop drawings as described at Section 1, Paragraph 9. Shop Drawings.

WORK SHALL BE PERFORMED AT THE SITE ONLY BY USE OF APPROVED SHOP DRAWINGS.

The Contractor shall carefully check shop drawings prior to submission to the Engineer. REJECTION OF THE SAME DRAWINGS ON THREE SEPARATE OCCASIONS WILL CONSTITUTE GROUNDS FOR TOTAL REJECTION OF THE PROPOSED EQUIPMENT MANUFACTURER OR SUPPLIER, AS BEING UNABLE TO OR UNWILLING TO MEET SPECIFICATIONS.

Shop drawings shall show as a minimum the following information:

- a. General and detailed arrangements.
- b. Anchor bolt setting and erection plans.
- c. Weight and load at each bearing.
- d. Guaranteed pump performance curves, wiring diagrams, lists of electrical controls including manufacturer's name and catalog number, manufacturer and horsepower of all motors, and normal full load and maximum load ampere rating for each motor.
- e. List of spare parts and special tools. Special tools shall be furnished as required by the nature of the equipment or as specifically called for in the Detailed Specifications.
- f. Installation and Operating Instructions - after approval of shop drawings but prior to installation and start-up of equipment, two (2) hard copies and one (1) digital PDF copies of installation, operating and maintenance instructions shall be furnished to the Engineer for inclusion in the facilities operation and maintenance manual. Hard copies shall be suitable for placing in a standard 3-ring notebook.
- g. Full electrical schematic, including three line power schematic, ladder logic, PLC and SCADA system interface.

4. Supervision and Installation

a. General

The Contractor shall furnish the services of competent factory representatives for the purpose of supervising the installation, start-up, and adjustment of the equipment to be furnished under this Section.

The Contractor shall furnish sufficient service for proper installation of the equipment and to make it operate as intended. Such service shall be furnished until final acceptance by the Engineer and during the one (1) year guarantee period if problems occur with the installation.

b. Tests

After installation each unit of equipment shall be operated continuously for a period of twenty-four (24) hours. During this period, the equipment or system shall be inspected for defects or weaknesses, and any part of the unit showing a defect or weakness shall at once be replaced or shall be made good in a satisfactory manner at no expense to the Owner. After any part of the system showing defects or weaknesses has been replaced or made good, additional tests will be made with the equipment or system operating continuously for a twenty-four (24) hour period until no further defects or weaknesses occur in the unit.

c. Certification

After installation and final testing of equipment or system, each vendor furnishing supervision and/or inspection services shall make written certification to both the Engineer and the Contractor that its equipment or system and the controls thereof have been properly installed in accordance with the Plans and Specifications, and that the operating and maintenance instructions have been furnished to the Owner.

5. Bids on Major Equipment

a. General

The Contractor is required to list the name of the furnishers of items of equipment in the spaces provided in the BID FORM. Failure to list such will constitute grounds for declaring the bid irregular, or if the Owner chooses, gives the prerogative of selection of equipment solely to the Owner.

b. Alternative Equipment or Systems

The Contractor may offer alternate equipment by manufacturers not listed in the Specifications. The bid price for the installation of alternate equipment shall include the cost of and all actions related or incidental to changes in the structural, mechanical, electrical, and/or appurtenant work which may be necessary for the accommodation of the said "Alternate Equipment". Necessary changes shall be subject to approval by the Engineer.

In instances where a manufacturer or a vendor is not listed by name in these Detailed Specifications, the manufacturer or vendor should submit to the Engineer, at least ten (10) days prior to the bid date, pre-submittal data sufficient to show that the proposed equipment meets the Specifications. The Engineer will be the sole judge of the submittals and will list in an addendum all acceptable manufacturers and/or vendors who submit information on approvable equipment.

Alternate equipment offered at a lower price by reason of smaller or lighter weight members or mechanisms or equipment which will require changes in the basic design or process will not be considered.

c. Standardization

Insofar as practical, an effort will be made to use equipment of the fewest number of different manufacturers in order to avoid future duplication of service calls and thereby to achieve ultimate economy.

6. Operation and Maintenance Manuals

Three (3) hard copies and one (1) electronic copy of operation and maintenance (O & M) manuals shall be submitted in three ring binders for the equipment in compliance with the Contract documents, 30 days prior to shipment. Manuals shall include but not limited to:

- Contact name, address, and telephone number of the equipment manufacturer's Service Department and Parts Department.
- Descriptive literature, including illustrations, covering the operational features of the equipment, specific for the particular installation, with all inapplicable information omitted or marked out.
- Operating, maintenance and troubleshooting information.
- Complete maintenance parts list.
- Complete connection, interconnecting and assembly diagrams.

- Approved shop drawings including complete electrical information.
- A digital PDF copy of the O & M manual.

7. Storage and Handling of Equipment

The Contractor shall store and temporarily support equipment prior to installation in strict accordance with the Manufacturer's recommendations and instructions. Protect all Exposed surfaces. Keep records of the storage parameters and the dates that storage procedures were performed. The Contractor shall be responsible for work, equipment, and materials until inspected, tested and finally accepted.

Protect equipment from being contaminated by dust, dirt, vibration, and moisture.

Temporarily connect equipment with built in space heaters to a power source and keep heaters in operation. Rotate all shafts that have bearings on at least a monthly basis.

The unit shall be erected and lubricated in strict accordance with the instructions of the Manufacturer's field engineer.

8. Submission of Approval Data Prior to Bid Date

It shall be the responsibility of the Contractor to ascertain that each manufacturer named in his BID FORM has submitted to the Engineer by the date shown in the Bid Advertisement complete information regarding the equipment offered. In the case of equipment listed or specified herein, this may be a statement to the effect that the equipment being offered meets the Specifications and conforms with the Plans in every detail; any and all exceptions shall be listed so that a decision as to compliance may be made prior to the bid date, otherwise it will be assumed the equipment conforms to these specifications in every respect.

For equipment not listed or specified herein or for revisions of equipment specified, complete drawings and specifications must be filed listing or showing weights, thicknesses, materials, performance characteristics, and other relevant data in order for the equipment or system to be considered.

9. Material to be Obtained from the Manufacturer

The Contractor shall obtain all items named in the Specifications or so noted on the Plans from the vendor and such incidental items as may be required for the safe and proper operation of the system or the equipment for the purpose(s) intended. Unless otherwise noted or described, connecting piping and valves, handrails, motor starters, and wiring described under Section 10, Electrical Work, are excluded from this requirement.

All bolts in corrosive situations shall be stainless steel alloy 316. All bolts and nuts shall be hex head with washers or lock washers.

Shop drawings will not be approved until all materials are listed along with the names and catalog numbers of any units being furnished by separate manufacturers.

Equipment offered contrary to the provision of this Paragraph will be subject to rejection.

10. Electric Motors

a. General

Electrical motors shall be furnished by the various equipment manufacturers with their bases and means of attachment suitable for the intended use. The electric motor specifications in this paragraph shall apply where specifications for electric motors are not included in the equipment Sub-Section. Refer to Section 10, Electrical Work for wiring, starters and other details. Acceptable motor manufacturers are: U. S. Motors, Reliance, or General Electric which meet these specifications. Other manufacturers may be approved upon submission of data. The motors shall be capable of bringing the equipment up to speed without exceeding the specified service factor and shall be designed for continuous duty.

b. Motor Standards and Type

Electric motors shall conform to the latest NEMA, IEEE and ANSI designed for continuous duty utilizing NEMA design B with maximum inrush current not more than 650% of full load amperage with starting torque at 100% and maximum torque at 200% of full load. Service factor shall be 1.15.

Motors 10 HP and over shall be premium efficiency, 89% minimum at the specified loading and high power factor, 85% minimum.

Unless otherwise specified with the equipment, motors for use inside buildings shall be open, drip-proof, and for outdoor service shall be Weather Protected - Type I.

Generally, vertically mounted motors shall be vertical hollowshaft NEMA style P pump base. Horizontal motors shall be solid shaft.

Motors shall have Class F insulation with a tough moisture resistant flexible varnish on each conductor, reliable slot insulation, and ends of

coils shall be securely braced. All windings shall be copper. Motors above 20 HP shall have 2 dips of encapsulated windings with treatments to protect against fungus, moisture, alkalis, acids, and abrasive conducting dust. Motors above 40 HP shall have vacuum pressure impregnation of 100 percent solids epoxy resin.

Temperature rise shall be 60°C by resistance over 40°C ambient as measured by resistance at 1.0 S.F.

Motors shall have ball bearings with sealed-in lubricants or shall be lubricated by readily accessible fittings. Motors which carry vertical thrust shall carry thrust bearing ratings as follows: 1-20 HP, B-10 (2 yr. min.), 20-100 HP, B-15 (3 year minimum); 100-250 HP, B-20 (4 year minimum).

Motors which require special features such as bearing or winding temperature detectors will have such features specified with the specifications for the equipment being driven.

c. Voltage

The voltage is shown on the Electrical Plans; generally, all motors over ½ HP are 460 volt; 3 phase, 60 Hz.

d. Testing

All motors shall receive routine tests. All motors 100 HP and larger shall receive a "complete unwitnessed initial test" certified to by the manufacturer. The complete test includes (1) full load heat run, (2) full load percent slip, (3) no load running current, (4) pullout torque, (5) locked rotor current, (6) starting torque, (7) efficiency/power factor at 100%, 75%, and 50% load, winding resistance, high potential test.

e. Nameplate

Each motor shall have an accurate nameplate firmly attached, which shall give as a minimum: manufacturer, HP, phase, Hz, frame, voltage and amps, rpm, continuous rating, design and S.F. and serial number.

f. Small Motors

Unless otherwise shown, motors less than ½ HP shall be NEMA rated 208 volt, single phase, 60 hertz with Class B insulation. Motors less than 1/4 HP may be capacitor or shaded pole type. Over 1/4 HP small motors shall be capacitor type.

g. Completeness of Electrical Installation

In general, the electrical equipment is furnished and installed, and the equipment specified herein is connected to the electrical system as indicated in Section 10, Electrical Work of these Detailed Specifications. The equipment manufacturer shall be responsible for any changes in electrical equipment caused by his equipment having requirements different from that shown on the Plans. Any changes caused shall be at no expense to the Owner.

h. Submittal of Motor Data

Motor data shall be submitted with equipment shop drawings.

11. Patents

a. General

The Contractor shall guarantee to the Owner that all equipment or systems offered under these Specifications, or that any process resulting from the use of such equipment or systems in the manner stated, is not the subject of patent litigation, and that he is not knowingly offering equipment, the installation or use of which, is likely to result in a patent controversy in which the Owner as user is likely to be made a defendant.

b. License

Where patent infringements are likely to occur, each Contractor shall submit, as a part of his bid, license arrangement between himself, or the vendor of the equipment or system offered, and the patent owner or the controller of the patent, which will permit the use in the specified manner of such equipment or system as he may be bidding upon.

c. Liability

The Contractor, by submitting his bid, agrees to hold and save the Owner or its officers, agents, servants, and employees harmless from liability of any nature or kind, including cost and expenses, for, or on account of, any patented or unpatented invention, process, article, or appliance manufactured or used in the performance of the work under this Contract, including the use of same by the Owner.

12. Examination of Other Sections of the Specifications

The Contractor's attention is called to other sections of these Specifications and to the Plans. PARTICULAR ATTENTION IS CALLED TO SECTION 1, PARAGRAPH 2. EXECUTION AND COORDINATION OF THE WORK.

The intent of these Specifications is to allow competitive bidding and to separate the electrical work, but above all to obtain a complete operable installation. The Contractor shall not avail himself of differences between the various makes of equipment or types of systems or of the inability to show or specify each and every detail, but shall coordinate between the vendors, to obtain a complete operable installation in the true spirit of the Plans and Specifications, calling the Engineer's attention to any omissions or discrepancies.

13. Piping and Connections

Completely dimensioned layouts shall be furnished by the Contractor for all piping, fittings, valves, specialties, and all other equipment. Deviations from dimensions shown on the Plans caused by equipment dimensions shall be taken into consideration by the Contractor and changes in piping, electrical conduit, and other similar items shall be made at no additional cost to Owner.

Electrical connections shall be performed as specified under Section 10, Electrical Work, but all other piping or specialty work shall be performed in accordance with this Section of the Detailed Specifications.

14. Painting and Coating

All painting, both shop and field, shall be performed as specified under Section 7, Painting and Coating or under the pertinent Sub-Section.

15. Guarantee

The Contractor shall guarantee the equipment or system furnished under this Contract to be free from defects in workmanship, design, or material for a period of one (1) year after initial operation begins and shall replace without charge any part or parts of any equipment defective or showing undue wear in this time. See Sub-Sections for additional requirements.

16. Sub-Sections

The preceding numbered paragraphs apply to each of the following alphabetized Sub-Sections as though fully repeated therein. Each Sub-Section describing a particular piece of equipment or a particular system is intended to be an integral part of this Section 9.

SUB-SECTION 9A

MECHANICALLY CLEANED BAR SCREEN

1. Scope

Furnish and install one (1) fully automatic bar screen for collecting and removing debris from the incoming wastewater flow and conveying the screenings to the dumpster.

The bar screen shall be provided complete with all accessories, spare parts, mounting, anchor bolts and other appurtenances as specified and as may be required for a complete and operating installation.

It shall be the Contractor's responsibility to ensure that the bar screen and appurtenances furnished and installed shall be compatible with and have the necessary operating clearances to the structural elements and associated equipment shown on the Contract Drawings.

Electrical work associated with equipment described at this Sub-Section, including all connecting signal and power wiring, is depicted on the accompanying Plans and described at Section 10, Electrical Work of these Detailed Specifications, and should be reviewed and taken into account by the Manufacturer of equipment described at this Sub-Section.

THE VENDOR OF EQUIPMENT DESCRIBED AT THIS SUB-SECTION IS DIRECTED TO READ ALL OF SECTION 9, MECHANICAL AND CONTROL EQUIPMENT – GENERAL BEFORE PROCEEDING WITH READING THIS SUB-SECTION.

2. Vendors / Manufacturers

The mechanically cleaned bar screen and appurtenances shall be provided as a system:

- Vulcan Industries, Inc. of Missouri Valley, Iowa
- Duperon of Saginaw, Michigan
- Huber Technology, Inc. of Denver, North Carolina
- Approved Equal as Determined by the Engineer

3. Performance and Design Requirements

The new mechanically cleaned bar screen shall be installed at the pumping station as shown on the Plans. The screen will remove all solids from the waste stream larger than 1.5 inches. The new screen shall meet the following minimum parameters:

Number of Units	One (1)
Peak Flow	5.0 MGD
Bar Rack Clear Opening	1 1/2 inches
Downstream Water Surface Elevation	See Plans
Maximum Headloss @ Peak Flow and 30% blinding	8 inches

The Manufacturer should refer to the Plans for channel dimensions and installation angle. The screen shall be designed to resist hydraulic pressure from 100% blinding of the screen at full channel depth.

4. Utilities Provided

Electric power provided for the equipment shall be alternating current, 480 volt, three phase, 60 Hertz.

5. Special Provisions

The equipment described at this Sub-Section shall comply with the following provisions:

- The materials covered by these specifications are intended to be standard equipment of proven reliability and as manufactured by a reputable manufacturer having experience in the production of screening equipment. The equipment furnished shall be designed and constructed in accordance with the best practices and methods and shall operate satisfactorily when installed as shown on the Contract Drawings and operated per the manufacturer's recommendations. The manufacturer shall have designed and manufactured multi-rake type bar screens for a minimum of ten (10) years.
- The screen shall be factory assembled and factory run tested. The main control shall also be factory tested. If the screen is manufactured outside of the United States, the screen shall be factory tested at the point of manufacture and factory tested a second time as a complete assembly (including the motor) in the United States prior to shipment to the jobsite. The main control panel shall also be factory tested prior to shipment.

6. Equipment and Materials

a. Bar Screen

(1) General

The equipment furnished shall positively clean and remove debris from the incoming wastewater by means of a bar rack, installed in a concrete channel designed to retain debris. The automatic screen will receive flow from a sanitary sewer system and shall be designed to handle debris including leaves and rags. A traveling chain and raking mechanism shall remove and elevate the debris to a discharge scraper mechanism. The bar rack shall be cleaned by multiple rakes engaging the upstream side bar rack from the bottom of the channel and removing the debris. The debris shall be lifted above the top of the wetwell and discharged through the downstream side to a dumpster.

The mechanically cleaned multiple rake bar screen system shall be fully automatic and shall consist of bar rack, dead plate, discharge chute, wiper assembly, electrical controls and local control panel, frame, supports and guides, drive machinery, anchor bolts and rake and chain assembly.

The design shall allow all manufacturer recommended preventive maintenance to be accomplished at the operating floor level. The equipment shall be designed and built for 24-hour intermittent service and for moderate shock without overheating, excessive vibration, or strain.

(2) Frame Assembly

The side frames shall be formed from plate with engineered bends and provided with bracing to form a rigid assembly capable of withstanding all operating forces. The frame shall be manufactured of 304 stainless steel plate, having a minimum thickness of 1/4-inch. Chain guides shall be manufactured of 304 stainless steel.

(3) Rake and Chain Assembly

The rake and chain assembly shall consist of multiple rakes attached to the links of chain. Lower components of the chain guide system shall be self-lubricating and capable of being replaced while the screen is in the channel. Rake drive chains shall be rated for the maximum operating force. Link plates shall be 304 stainless steel. Rollers and brushings shall be heat treated, 400 series

stainless steel. The rake teeth shall engage the clear space openings in the bar rack. The rake teeth shall engage the bar rack a minimum of 90 percent of the bar depth. The rake teeth shall be made in removable/replaceable sections and attached to the rake. The rake, teeth and attachment hardware shall be 304 stainless steel.

(4) Drive Assembly

The bar screen shall be provided with an integrated drive assembly consisting of a Class 1, Division 1, Group C & D explosion-proof electric motor. The drive motor and gear reducer shall be mounted on the drive shaft and the frame. The drive shaft shall operate in a greaseable bearing mounted on the external side of the frame. The entire drive assembly shall be supported by adjustable jacking plates mounted on the exterior of the frames to provide rake alignment and proper chain tension.

The electric motor shall be close-coupled to the reducer. The motor shall be a maximum 5 horsepower with a service factor of 1.0. Electrical characteristics shall be 460 volt, 3-phase, 60 Hertz, Class F/B rise insulation, 40°C Ambient, inverter duty.

Gear reducers shall have ball or roller bearings throughout with all moving parts immersed in oil. Helical gears shall be of alloy steel with threads precision ground and polished after casehardening. The worm gear shall be of all high strength alloy bronze. Gear shafts shall be of high strength alloy steel grounded to required tolerances. Gear reducer units shall meet the standards of the AGMA for such equipment under moderate shock, 24-hour service with a minimum service factor of 1.25. The output capacity of the gear reducer shall be equal to the motor horsepower less reducer losses at the rated service factor.

Torque limiting devices and overcurrent protection shall be provided for all electric motors and driven devices.

(5) Bar Rack

The bar screen shall be provided with a removable bar rack. The bar rack shall consist of equally spaced, parallel bars having 1 ½-inch clear spacing between each bar. The bars shall be straight and inclined at 70 degrees above the horizontal plane. The bottom of the bars shall be attached to a flush bottom, base plate. Bar racks shall not require a recess in the bottom of the flow channel.

The bars shall be manufactured of 304 stainless steel and have a minimum thickness of 1/4-inches.

(6) Dead Plate

The dead plate shall be securely fastened to the side frames and shall be manufactured of 304 stainless steel having a minimum thickness of 1/4-inch.

(7) Discharge Chute

The rakes shall be designed to reach the discharge height shown on the Plans. A directing (discharge) chute, as shown on the Plans, shall be provided. The chute shall be fully shrouded 304 stainless steel having a minimum thickness of 1/8-inch.

(8) Wiper Assembly

A wiper mechanism shall be positioned at the point of discharge and shall have a replaceable ultra-high molecular weight polyethylene wiper blade. During each cycle, the wiper blade shall scrape the debris off the end of the rake and through the discharge chute. The wiper mechanism, excluding the wiper blade, shall be manufactured of 304 stainless steel. The rake shall be capable of operating reverse without the need to manually lift the wiper assembly. The grease fillings shall be in an area where they can be easily accessed.

(9) Frame Enclosures

The bar screen shall be provided with removable enclosure panels on the upstream portions of the frame from the top of the channel to the top of the frame. The removable enclosure panels shall be manufactured of 20-gauge 304 stainless steel held in place by latches. Each panel shall be provided with two (2) handles for panel removal/replacement. All handles and latches shall be 304 stainless steel.

(10) Fasteners and Anchor Bolts

All fasteners and anchor bolts shall be 304 stainless steel unless otherwise indicated in this specification. All threaded fasteners shall be coated with a nickel based anti-seize thread lubricant prior to assembly.

(11) Lubrication

The manufacturer shall state in the operating manual the amount of and specification for any lubricant required.

(12) Protective Coatings

Stainless steel and plastic components shall not be painted. The stainless steel structural components shall be passivated after fabrication to remove embedded iron, surface rust and weld burn. All other surfaces shall be solvent cleaned to remove dirt, oil, and foreign materials.

Cleaned surfaces shall be shop primed with one (1) coat of Tnemec Series N69-1212 primer, or equal, to attain a minimum dry film thickness of 2.5 mils. The motor and gear reducer shall be finish coated with two (2) coats Tnemec Series 74 Endura-Shield, or equal, to attain a total minimum dry mil thickness of 5 mils. The motor and gear reducer shall be painted the same color.

(13) Spare Parts

The manufacturer shall furnish the following spare parts as the total amount of spare parts for this specification section:

- (a) Two (2) Drive Clevis Pins
- (b) Ten (10) Retaining Pins
- (c) Four (4) Link Clevis Pins
- (d) Four (4) Scraper Bolts
- (e) Four (4) Scraper Nuts
- (f) One (1) Can, Never Seeze
- (g) One (1) Replacement Scraper (Wiper Blade)

All spare parts shall be properly packaged, labeled, and stored where directed by the Owner or Engineer.

b. Controls and Instrumentation

(1) General

The automatic bar screen shall be provided with a complete PLC control package including a weather resistant NEMA 4X stainless steel enclosure complete with all required components including a run-time meter, H/O/A switch, forward/reverse switch for the screen, and upstream water surface submersible level transducer. All control panel enclosures shall utilize 3-point latch type doors.

Torque limiting devices and overcurrent protection shall be provided for all electric motors and driven devices. Where possible, resettable breakers shall be used in lieu of fuses.

(2) Operational Requirements

When “Automatic” is selected on the H/O/A switch, the screen shall operate at an adjustable time interval for an adjustable period of time. Initially, the screen shall be set to operate on a 30 minutes interval for a time period of 5 minutes. Additionally, the screen shall operate based on differential water surface elevation as measured by the upstream submersible level transducer and the downstream SPS wetwell level transducer.

When “Hand” is selected on the H/O/A switch, the screen shall operate continuously until another position is selected.

A mushroom head emergency STOP push button shall be provided which stops all automatic or manual operation of the equipment when depressed.

(3) Control Panels and Accessories

One (1) main control panel shall be furnished for the bar screen. The main control panel shall be totally enclosed, front access type with top/side/bottom entry. The panel shall be manufactured by a U.L. listed control panel facility and shall bear a U.L. 698A label. Construction of the control panel enclosure shall be NEMA 4X, 304 stainless steel with indicating devices and switches mounted on the front door.

Main control panel wiring shall be color-coded, labeled, neatly cabled, and supported in nonflammable wiring raceways. Wiring shall be minimum 16-gauge MTW stranded wire.

All switches, pushbuttons, and lights shall be NEMA rated components. The control panel wiring shall contain all power and control devices shown on the Contract Drawings (wiring diagrams), which shall include, but not be limited to, the following:

- One (1) control power ON-OFF selector switch
- One (1) Programmable Logic Controller (PLC)
- One (1) full voltage NEMA rated starter. The magnetic starter shall be of the heater less design and provide phase loss protection, short circuit self-protection and thermal memory.

- One (1) hand-off selector switch for screen and conveyer
- One (1) 120 VAC step down control transformer
- One (1) submersible level transducer

Control panels shall be furnished as follows:

- (a) Control panels shall be furnished with space heaters and/or ventilation as required by the application. Enclosures shall be manufactured Hoffman or approved equal
- (b) All PLC equipment shall be suitable for operation 120V, 60 Hz, single phase power. If the control panel is powered by other than 120 volts, the control panel supplier shall furnish control power transformers as necessary. Receptacles with isolated ground shall be supplied for computer devices in the control room and internal to the PLC enclosures.
- (c) All field wiring terminations shall be made to terminal strips capable of accommodating the wire size shown on the Plans. Terminal strips shall be mounted using DIN rails. Terminal strips shall be as manufactured by Phoenix Contact, Allen-Bradley or approved equal.
- (d) All analog inputs, including spare analog inputs, shall be protected from surges using pluggable three-level surge/transient suppression. Analog surge protectors shall be manufactured by Edco, CITEL or approved equal. Terminals shall be installed to allow each of the analog inputs to be configured for 2-wire or 4-wire process transmitters and to produce either 4-20 mA or 1 to 5 VDC outputs to the PLC and any future display or signal conversion devices. Terminals shall be installed adjacent to the analog surge protection to provide 24 VDC for connections of future 2-wire transmitters.
- (e) All digital outputs, including spare digital outputs, shall be isolated from field wiring through terminal strips and electromechanical relays with contact ratings of 5 Amps at 250 VAC minimum.
- (f) Separate DC power supplies shall be provided for the PLC and for field analog and digital inputs. All DC power supplies shall be protected via fast acting fuses. Indicating fuse holders shall be DIN rail mounted.

- (g) Surge protectors shall be provided internal to the PLC enclosure to provide transient and surge protection.
- (h) A minimum 1000 VA Output UPS with Automatic Voltage Regulator, Live-Interactive Topology and True Sine Wave Output Uninterruptible Power Supply shall be provided integral to each PLC enclosure. Uninterruptible Power Supply shall be Eaton or approved equal.
- (i) Two (2) circuit breakers shall be provided integral to the PLC. One circuit breaker shall provide protection to the PLC's internal power supplies and the other circuit breaker shall provide protection to a Ground Fault Interrupt (GFI) duplex utility outlet.
- (j) An Edco, CITEL, or equal power surge protector shall be installed integral to the PLC to provide transient and surge protection for incoming AC power. A separate GFI duplex utility outlet shall be protected by the surge protector and shall be used only for the UPS system.

(4) Control Relays

Control relays shall be plug-in enclosed polycarbonate type. Coil winding shall be polyurethane insulated with insulation resistance of 100 megohms minimum. Dielectric strength shall be 2500 volts R.M.S. Operating temperature range shall be -40°C to +70°C. Mechanical life expectancy shall be in excess of 10 million operations. Pull-in and release speeds shall be less than 30 milliseconds. Relays shall have a continuous duty cycle and U.L. listed. Relays shall be Finder Relays, Inc. Model 62.32 (42), Allen-Bradley, or equal.

All small plug-in relays that are driven from a TRIAC type output and have an impedance greater than 2500 ohms shall have a 4200 ohm, 5-watt wire-wound resistor installed across the coil. These resistors shall be mounted in a group away from the relays so they will be adequately cooled and so the produced heat will not affect other components. Use of relay output PLC cards is acceptable.

(5) Wiring

All conductors used in fabricating the Control and Monitoring Panels shall be stranded cable. Wiring descriptions and details shall be entered into the PLC hardware configuration for all I/O addresses. Insulation shall be MTW or better for control conductors

and THW or better for power conductors. Wiring ducts, wire wrap and hardware shall be used as required. Wiring bundles that cross door hinge areas shall be protected from chafing with a plastic spiral wrap or other suitable material. Wiring shall be in accordance with the following color and size code:

AC Control	-----RED-----	#16AWG (or larger)
DC Control	-----BLUE-----	#16AWG (or larger)
120VAC Power	-----BLACK-----	#14AWG (or larger)
480VAC Power	-----BLACK-----	#10AWG (or larger)
External Control	-----YELLOW-----	#16AWG (or larger)
Ground	-----GREEN-----	#14AWG (or larger)
Neutral	-----WHITE-----	#14AWG (or larger)
Shielded	-----	#18AWG (or larger)

All conductors inside the Control and Monitoring Panel enclosures shall be identified by permanent wire markers in accordance with the wire identification shown on the Manufacturer's submittal drawings. Wire markers shall not rotate or slide on the wire and shall be positioned with the number facing the most reasonable location of observation. Numbers shall be the same at both ends of each conductor and, if a PLC based control system is utilized, the numbers shall be listed in accordance with the PLC I/O addresses.

All wiring shall be grounded to the ground bus or other suitable ground in accordance with NEC requirements. The enclosure shall be connected to the ground bus with a dedicated grounding screw.

(6) Operator Interface Terminals (All New PLC Control Panels)

Operator Interface Terminals (OIT) shall be provided at each PLC Control Panel. The OIT shall be of the same manufacturer as the PLC. The unit enclosure shall be rated NEMA 4X and designed for operation in a non-condensing relative humidity environment of up to 90% with ambient temperatures ranging from 0 to 55 degrees C. The OIT unit shall run on Windows CE Operating System. The OIT unit shall be supplied with Ethernet communications as standard. The OIT shall be Allen-Bradley Panelview Plus 7 Performance series with a "Touch Only" 10.4 inch or larger screen.

(7) Elapsed Time Meter (One Required)

A digit elapsed time meter shall be supplied for each screen unit drive motor and each washer/compactor drive motor power circuit. The digit elapsed time meter shall be mounted on the panel front

and shall register up to 99,999.9 hours and be of the non-reset type. Each unit shall have a plastic case with large white numbers on black background. Units shall be flush mounted type and U.L. listed.

(8) Lightning Arrester

The electrical power supply to the control and monitoring panel shall be equipped with a lightning arrester. The lightning arrester shall be rated for 600 volts minimum three-phase service and U.L. listed. The lightning arrester shall be manufactured by Delta Lightning Arresters, Inc., General Electric Company "Tranquell", or equal.

(9) Programmable Logic Controllers (PLCs)

This Paragraph specifies the requirements for furnishing, installing, connecting, and testing the Programmable Logic Controllers (PLCs) System.

(a) General

The programmable logic controller (PLC) shall include but not to be limited to: Processor modules (CPU), module chassis, power supplies, I/O modules, communications modules, programming, communications configuration, data acquisition. The PLC shall collect data, process control functions, communicate with other PLCs, and distribute process information via Ethernet IP communications protocol. The PLC processor may have its program downloaded from programmer's terminal via the Ethernet network, and be locally programmed through the processors USB port.

The PLC system shall be furnished by a single vendor who has actively been manufacturing programmable logic controllers of the required specified capabilities and whose products have operated successfully for a period of at least eight years. All PLC equipment shall be UL listed.

Allen-Bradley "CompactLogix 5370 L3 Series Controllers, Model 1769-L33ER or higher processor with 1769 I/O are set forth as mandatory - no alternatives will be considered. (Processor memory size shall support a minimum of 50% future expansion capabilities.)

All Ethernet IP remote I/O shall utilize 1769 Platform I/O Modules.

The PLC shall be configured with “Heart Beat” status bits to allow detection of a “stale” or failed data communications link on the IP Network.

All PLC read and write data that shall be controlled and displayed on the SCADA network shall be configured in the controller program for contiguous tags that can be accessed over the IP network using Produced and Consumed Tags or Peer to Peer messaging. The assigned tags shall be well defined, organized, and documented for use by SCADA over the IP network. An unlocked Microsoft Excel spread sheet shall be provided with all relevant tags for use by the SCADA Systems Integrator for project development.

Each Processor chassis shall contain at a minimum the following hardware:

- 1 Ea. CompactLogix PLC, Chassis Power Supply and 1769 I/O modules. To include expansion cables and end caps as required.

Each Remote Ethernet I/O chassis shall contain at a minimum the following hardware:

- 1 Ea. 1769-AENTR remote I/O adaptor with, Chassis Power Supply and 1769 I/O modules. To include expansion cables and end caps as required.
- I/O Modules: Module count and type as required to support all system control functions (Include 25% spare I/O points for all types used)

(b) Input and Output Modules

- Provide 25 percent spare modules of each type.
- All field wiring shall be to a removable terminal block which will permit pre-wiring of the module, or removal and replacement of a module without disturbing the field wiring or any other I/O modules. All I/O modules shall be firmly attached to the I/O chassis.
- All modules shall be enclosed in rugged plastic or metallic housings.

- All digital input and output modules shall be 120 volts AC.
- Inputs shall be optically isolated to protect bus circuits from transients and surges. Light emitting diodes, one adjacent to each pair of input terminals shall be provided to indicate a closed contact, conducting transistor switch; a low positive logic level, or AC line voltage on conditions.

(c) PLC Programming

The final program logic shall include all program instruction documentation.

Program documentation shall show descriptive identification of all PLC I/O and internal logic data points. The PLC program files shall be laid out in a neat and organized manor with each major process separated its own Program Task as practical to allow for efficient logic solving and trouble shooting.

(d) PLC Configuration

“CompactLogix 5370 L3 Series Controllers, Model 1769-L33ER and 1769 I/O, components are set forth as mandatory - no alternatives will be considered.

A digital copy of the final logic program along with program documentation and a spreadsheet listing of all I/O mapping shall be included. The information shall be provided on a 32 GB or larger USB flash drive. The USB drive shall be clearly tagged to show the job name and the associated PLC. The USB flash drive shall also include associated PLC User Manuals and related control panel drawings in Adobe pdf format. Any associated system information that may be useful to the Owner shall also be included on the flash drive (Provide 2 Each).

(10) Submersible Level Transducer

One submersible level transducer shall be supplied with the automatic bar screen to sense upstream water surface elevation. The transducer shall be equal to the equipment specified in section 9C, Paragraph 5.b. (10) Submersible Level Transducer (2 Required).

c. Freeze Protection Package

The manufacturer shall provide a complete freeze protection package for each piece of equipment furnished. The freeze protection devices may be either installed by the manufacturer or the Contractor. All wash water piping shall be heat traced and protected with an aluminum or stainless steel cover. Other portions of the equipment including the discharge chute, and discharge piping shall be heat traced in accordance with the manufacturer's recommendations.

7. Supervision, Certification of Installation, and Operator Training

a. General

The Contractor shall furnish the services of vendor's competent factory representatives for the purpose of supervising the installation, start-up, and adjustment of the equipment described at this Section. **Sales representatives do not meet the definition of "factory representative".**

The Contractor shall furnish sufficient service for proper installation of the equipment and to insure operation as intended. Such service shall be furnished until satisfactory start-up of the equipment by the vendor's factory representative is accomplished and as needed throughout the warranty period.

THE CONTRACTOR SHALL PROVIDE A MINIMUM OF TWO MAN-DAYS ON-SITE VENDOR'S FACTORY SERVICE DURING ONE TRIP TO THE PROJECT SITE. This minimum on-site period does not include travel time to and from the project site.

b. Mechanical Tests

After installation, each unit of mechanical equipment shall be operated continuously for a period of 24 hours by the Contractor in the presence of the Engineer. During this period, the equipment shall be inspected for defects or weaknesses. Any part of the equipment showing a defect or weakness shall at once be replaced by the Contractor or shall be made good by the Contractor in a satisfactory manner at no expense to the Owner. After any part of the equipment showing defects or weaknesses has been replaced or made good, additional mechanical tests will be made with the equipment operating for a 24-hour period until no further defects or weaknesses occur in the equipment.

c. Certification

After installation and final testing of equipment, each Contractor shall make written certification to both the Engineer and the Owner that his equipment and associated controls have been properly installed in accordance with the stipulations at the submittal, that this equipment and/or control installation will be warranted by the Contractor as stipulated in the Contract Documents, and that the Installation, Operation and Maintenance Manuals have been furnished to the Owner.

d. Operator Training

The Contractor shall provide the services of a factory-employed service technician who shall adequately inspect the installation, test the equipment furnished under this Contract and instruct the Owner's operating personnel in its maintenance and operation. Factory personnel are required. Manufacturer's representatives are not deemed acceptable to provide the start-up service. The services of the technician shall be provided for one (1) trip of two (2) days of service to provide Owner's personnel in proper operation and maintenance of the equipment.

8. Piping and Electrical Connections

Completely dimensioned layouts shall be furnished by the Contractor for all piping, fittings, valves, electrical connections, and specialties related to the proper installation and operation of equipment described in this Section.

Unless otherwise noted, all piping or equipment furnished with flanged connections shall include flanges dimensioned for facing and drilling in accordance with ASME/ANSI Standard B16.1 Class 125 and meeting the dimensional and bolting requirements of AWWA Standard C110-98/A21.10-98, Table 14.

Electrical connections shall be performed by the Contractor.

9. Warranty

The equipment supplier shall warrant that its equipment shall be free from defects in material and workmanship; and that it will replace or repair, F.O.B. its factory, any part or parts returned to it which examination shall show to have failed under normal use and service by the user within eighteen (18) months following initial shipment or twelve (12) months following operation start-up, whichever occurs first.

SUB-SECTION 9B

WET PIT SUBMERSIBLE PUMPS AND ACCESSORIES

1. Scope

The work described at this Sub-Section consists of furnishing and installing submersible pumps with inverter duty electric drive motor, including variable frequency drives (VFD), and all accessories including Moisture and Temperature Sensing Relay Modules as depicted at the accompanying Plans. The pump types and locations are as follows:

Location	Current Number of Pumps	Type
Bear Creek Sewage Pumping Station	3	Wet Pit Submersible

Electrical work associated with equipment described at this Sub-Section, including all connecting signal and power wiring, is depicted on the accompanying Plans and described at Section 10, Electrical Work of these Detailed Specifications, and should be reviewed and taken into account by the Manufacturer of equipment described at this Sub-Section.

THE MANUFACTURER OF EQUIPMENT DESCRIBED AT THIS SUB-SECTION IS DIRECTED TO READ ALL OF SECTION 9, MECHANICAL AND CONTROL EQUIPMENT – GENERAL BEFORE PROCEEDING WITH READING THIS SUB-SECTION.

2. Vendors / Manufacturers

The submersible pump with inverter duty electric motor shall be provided by:

- ABS Sulzer
- KSB
- Pentair
- Pre-approved equal as determined by the Engineer

3. Utilities Provided

Electric power provided shall be alternating current, 480 volts, three phase, four wire, 60 Hertz. All electric motors shall be rated for use with variable frequency drives.

4. Performance and Design Requirements

Submersible pump motors shall be non-over loading for the entire pump curve. The performance requirements for the Bear Creek Sewage Pumping Station are as follow:

Minimum Speed Condition (One Pump Operation)

- Design Capacity : 1,400 GPM
- Design Total Dynamic Head : 177 Feet

Maximum Speed Condition (One Pump Operation)

- Design Capacity : 2,100 GPM
- Design Total Dynamic Head : 228 Feet

Other Requirements

Maximum Allowable Speed	1,800 RPM
Minimum Shutoff Head	275 Feet
Maximum Allowable Horsepower	250
Minimum Solids Size Passing	3 Inch
Minimum Efficiency – Max. Speed	70%
Maximum Net Positive Suction Head Required @ Max. Speed Condition	25 Feet

- ABS Sulzer = XFP 200M-CH2 with 16.00-inch Ø impeller
- KSB = KRTK 150-503/1754XNG-K with 16.97-inch Ø impeller
- Pentair = 8-inch 5436SMV with 15.61-inch Ø impeller

5. Special Provisions

The submersible type wastewater pumps and variable frequency drives shall comply with following special provisions:

- a. The pumps shall be provided with substantial nameplates of non-corrodible metal, securely fastened in place, and clearly and permanently inscribed with the manufacturer's name, model or type designation, serial number, rated capacity, electrical or other power characteristics and other appropriate nameplate data. One spare nameplate shall be furnished with each unit for the Owner's files.
- b. The pumps and motors shall be delivered with the equipment fully lubricated. If any location cannot be so serviced, it shall be clearly marked

to the effect that it is not lubricated and requires servicing prior to operation. A supply of the proper lubricant adequate for start-up of the equipment, with instructions for its application, shall be supplied with the equipment for each location not lubricated prior to shipment.

- c. All fasteners used in the assembly of the submersible type wastewater pumps and mixers shall be stainless steel meeting the requirements in Section 7 of these Detailed Specifications.
- d. The pump impellers shall be trimmed to produce the operating characteristics listed in Paragraph 4. Performance and Design Requirements of this Sub-Section.
- e. The pumps shall be constructed in accordance with the requirements of the American National Standard for Centrifugal Pumps (ANSI/HI 1.1-1.5 latest revision) as they apply to kinetic, centrifugal, overhung impeller, close coupled single stage, end suction pumps for non-clog submersible service pumping domestic sewage.
- f. The pumps and motors shall operate at the stipulated capacities in the range of heads stipulated without undue noise and vibration. Any undue noise in the pump and motor unit, which is objectionable in the opinion of the Engineer, or which is in excess of the acceptable vibration limits depicted at Figure 11.6.16B – “Vibration Limits (U.S. Units)” at the American National Standard for Submersible Pump Tests (ANSI/HI 11.6 latest revision) will be sufficient cause for rejection of the pump and motor unit.
- g. The pumps shall be tested at the pump manufacturer’s works, before shipment, at the speed, capacity, head, horsepower described in Paragraph 4. Performance and Design Requirements of this Sub-Section of these Detailed Specifications and at such other conditions of head and capacity necessary to establish properly that the equipment meets all performance requirements described in Paragraph 4. Performance and Design Requirements of this Sub-Section of these Detailed Specifications. These tests shall be conducted in accordance with the requirements of the American National Standard for Submersible Pump Tests (ANSI/HI 11.6 latest revision) as modified in this Paragraph. The acceptance of the pumps shall be based on the requirements for “Performance Test” listed in Paragraph 11.6.4 of the hereinbefore referenced Standard except that compliance with the requirements of both total head and capacity for Acceptance Level 1B described at Paragraph 11.6.4.4 of the hereinbefore referenced Standard shall be required for acceptance. THE COST OF NON-WITNESSED CERTIFIED TESTS SHALL BE INCLUDED IN THE CONTRACTOR’S PRICE. Five copies, certified by the pump manufacturer, of the results of these tests shall be sent to the Engineer for

review prior to shipment of the pumps to the project site. Test curves shall be accompanied by a tabulation of all data used to develop the curve.

- h. The motors shall be tested at the pump manufacturer's works before shipment to verify the sealing and integrity of the submersible motors. These tests shall be conducted in accordance with the requirements of the American National Standard for Submersible Pump Tests (ANSI/HI 11.6 latest revision) as modified in this Paragraph. The acceptance of the motors shall be based on the requirements for "Submersible Motor Integrity Tests" listed at Paragraph 11.6.7 of the hereinbefore referenced Standard except that compliance with the requirements at Subparagraphs 11.6.7.2.1 – Housing Pressure Test, 11.6.7.2.3 – Electrical Continuity and Resistance Test, 11.6.7.2.4 – Electrical Megohmmeter Resistance Test, and 11.6.7.2.5 Electrical High-Potential Test shall all be required. THE COST OF NON-WITNESSED CERTIFIED TESTS SHALL BE INCLUDED IN THE CONTRACTOR'S PRICE. Five copies of certification by the pump manufacturer that the motors passed the required tests shall be sent to the Engineer for review prior to shipment of the pumps and motors to the project site.
- i. The Manufacturer of the variable frequency drives shall furnish a warranty for repair including materials and labor for a three (3) year period beginning at startup.

6. Equipment and Materials

a. Submersible Pumps

(1) General Requirements

(a) Location Classification

The motors shall be rated for continuous duty and shall be approved by Factory Mutual for use in NEC Class 1 Division 1 Group C&D Hazardous Locations.

The pumps will be started against shutoff head. All bearings and seals in the pumps and motors shall be designed for the stress involved.

(b) Paint

Machinery and equipment shall be thoroughly cleaned and shall have one (1) barrier coat of 530 Omnithane (2.0-3.0 mils DFT). The finish coat shall be Series 66 at 4 to 6 mils DFT. Special care shall be used to leave all name plates

and non-ferrous finished trim unpainted unless otherwise directed by the Engineer. The pump manufacturer's standard coating system may be approved as an alternate to the specified system if considered to be equal by the Engineer.

(c) Submersible Motor Characteristics

The submersible motors and driven equipment shall be close coupled to form an integral unit. Motors shall be squirrel-cage, induction type for inverter duty in an air-filled watertight chamber. The motor(s) shall conform to NEMA design Class B and incorporate Class F insulation materials to withstand a continuous operating temperature of 155°C (311°F). Motors shall be designed for continuous operation in a wet-pit environment handling pumped media of 40°C (104°F) and capable of up to 12 starts per hour.

Motor housings shall be of cast iron. The stators shall consist of copper windings with copper connectors applied to high grade electrical steel laminations. The stators shall be held securely in place in the motor housing. Rotors shall be solid cast and dynamically balanced for vibration-free operation. Rotor end bars and short circuit rings shall be of aluminum.

The motor shafts shall be 416 stainless steel (or hardened alloy steel with protective stainless steel shaft sleeve which prevents contact of the shaft with the liquid). The shafts shall be machined with shoulders or snap ring grooves for positive placement of bearings. The upper and lower bearing shall be of heavy-duty design, capable of supporting the shaft and rotor while under maximum radial and thrust loads. The bearings shall be permanently grease lubricated and sealed at the time of installation.

The motors shall be protected from thermal and moisture conditions. Thermal monitoring shall consist of thermostatic switches embedded into the stator windings. Each switch shall open independently and terminate motor operation if temperature of the protected winding reaches the high temperature set point. Any moisture in the motor housing shall be detected by moisture sensing probes. The probes shall detect moisture and terminate operation of motor. The entire group of thermal switches and the entire group of moisture sensing devices shall each be connected to a

watertight insulated signal cable for each pump (two cables per pump) furnished by the Manufacturer for transmitting a thermal and moisture alarm signal from each pump to the Control System.

(d) Watertight Integrity of Pump, Motor, and Power Control Cable Mating Surfaces

All static seals at watertight mating surfaces shall be of the nitrile O-ring type. The power and control cables shall enter the motor through a terminal housing. The entrance shall be sealed with an epoxy mold in the motor end bracket or utilize a dual compression grommet system that does not require a secondary sealant. The pumps shall each be furnished with pre-cut lengths of oil-resistant chloroprene rubber jacketed, insulated power cable with appropriate conductor sizes to connect the motor on each pump to its respective disconnect depicted at the accompanying Plans without splicing the power cable.

The pumps, motors, and power and monitoring cables shall be capable of continuous submergence without loss of waterproof integrity to a depth of 50 feet.

(e) Guide Rail and Lifting Systems

i. Pump Guide Rail Systems

The discharge base elbow shall be permanently installed in the wetwell and connected to the discharge piping. In order to prevent binding or separation of the pump from the guide rail system, the pump(s) shall connect to the guide rail base automatically and firmly, guided by two stainless steel bars extending from the top of the station to the discharge base elbow. Single rail systems are allowed on pumps smaller than 15 HP. The sliding guide bracket shall be a separate part of the pumping unit, capable of being attached to either standard ANSI or standard DIN pump flanges, so that the bracket is interchangeable with other pumps, and not limited to a specific pump. There shall be no need for personnel to enter the wetwell to remove or reinstall the pump(s). A field replaceable Nitrile rubber profile gasket or O-ring shall accomplish positive sealing of the pump to the discharge elbow. No portion of the

pump shall bear directly on the floor of the sump. The guide rail system shall be non-sparking, approved by Factory Mutual for use in NEC Class 1, Division 1, Group C&D hazardous locations. Guide rails shall be 304L or 316 stainless steel.

ii. Lifting Chain

The pumps and mixers shall be fitted with stainless steel lifting chains of suitable strength to lift up to two times the weight of the pump or mixer. The lifting chain shall be of suitable length as shown on the Plans. All hardware, shoulders, materials, *etc.*, shall be 304L or 316 stainless steel.

In lieu of a lifting chain, a deep lift retrieval system may be provided for the Owner's consideration. The Owner reserves the right to defer the option of a deep lift retrieval system during review of shop drawings.

(f) Moisture and Temperature Sensing Relay Module

A specifically designed submersible pump/mixer moisture and temperature sensing relay module shall be provided by the pump manufacturer for each submersible pump. The module shall monitor shaft seal and stator temperature of the submersible pump motors. Seal leakage shall be detected by either a resistive float switch or a pair of conductive probes installed in the seal cavity. Over-temperature shall be detected by a normally-closed low temperature switch mounted on the stator. The over-temperature function incorporates a relay that retains its position during power failures. The Contractor shall coordinate installation of the moisture and temperature module in the control panel which is furnished by the Systems Integrator for this project.

(2) Submersible Pumps

(a) Motor Cooling System

The submersible pumping units shall be self-contained and capable of operating continuously at full load.

Each motor shall be air filled and provided with an adequately designed cooling system that utilizes an internal closed loop cooling system to cool the motor. The fluid

jacket shall encircle the stator housing; thus, providing heat dissipation for the motor. Impeller back vanes shall provide the necessary circulation of cooling liquid through the liquid jacket. The cooling media channels and ports shall be non-clogging by virtue of their dimensions. The cooling system shall provide for continuous pump operation with a liquid temperature of up to 104°F.

(b) Pump Casings

Casings shall be cast iron. The volute shall have smooth fluid passages large enough at all points to pass any size solid which can pass through the impeller and provide smooth unobstructed flow. The casing shall be removable from the motor for full inspection of the impeller.

(c) Pump Impellers

Impellers shall be cast from cast iron and statically and dynamically balanced. The impeller shall have a tapered locking fit onto the shaft and further be secured by a key and locking bolt. Impeller fasteners shall be stainless steel.

The impeller and seal housing shall incorporate auxiliary vanes to hydraulically reduce pressure on the primary seal and force fibrous materials and solids away from the primary seal area.

(d) Pump Mechanical Seals

Two (2) separate tandem mechanical seals shall be provided in each pump. Seals shall be installed and adjusted to accommodate the end play in the pump-motor shaft without damage to the seal. Mechanical seals shall be silicon carbide against silicon carbide and suitable for operation in wastewater.

(e) Pump Monitoring System

A vendor-supplied monitoring system shall be provided for each pump. The system shall consist of a NEMA 4X 304 stainless steel control panel which houses the appropriate relays for moisture probes, thermal switches, and RTDs. The panel shall also include a 120 VAC main circuit breaker, graphical interface, and terminal strip for remote interface.

b. Variable Frequency Drives (Three Required)

(1) General

The variable frequency drive units shall be 18 pulse design and shall be suitable for continuous duty operation and shall infinitely vary output speed between the limits of full speed and the minimum speed to produce the necessary pump operating conditions. Speed adjustments between the limits of maximum and minimum shall be controlled in response to a 4 to 20 milliamp signal generated by the Control System in order to maintain a constant level in the wetwell.

The variable frequency drive shall comply with all of the applicable provisions of NEMA, ANSI, NEC, and IEEE, and shall be U.L. or E.T.L. listed. A U.L. or E.T.L. listed label shall be attached to the inside of each drive enclosure for verification of listing.

The variable frequency drive ampere rating shall be equal to or greater than the ampere rating listed on the motor being driven by the variable frequency drive.

(2) Variable Frequency Drive Enclosures

The enclosures shall be for wall or floor mounting and shall comply with the requirements for NEMA Type 1 enclosures. Operation, maintenance, and parts replacement shall be through front access doors.

Access doors shall have a lockable handle and a thru-door, lockable input circuit breaker shall be provided.

(3) Drive Construction

The drive units shall be modularly constructed. Printed circuit boards shall be connected in such manner that they are easily removed from the unit. Power components shall be readily accessible and be connected in such manner that they are easily removed from the unit.

(4) Input Power Conditioning

The manufacturer shall be aware that the variable frequency drives shall be operated by a standby diesel generator during times of power failure and shall include any necessary power conditioning equipment required for proper operation.

(5) Harmonic Mitigation

The harmonics introduced by the variable frequency drives at the point of common coupling (PCC) shall meet the requirements of IEEE519-1992 for General Systems. For purposes of this specification the PCC shall be the utility feeder to the facility where multiple users are served. Short circuit amperes at this point and total demand load are noted on the system one line drawing.

A harmonic analysis of the system shall be made consisting of the current and voltage harmonics expected from the addition of the adjustable frequency drives for all harmonics through the 25th per tables 10-2 and 10-3 of IEEE519-1992. This analysis shall be included as part of the shop drawing submittal. An integrally mounted 6 pulse rectifier with a pre-wired phase shifting transformer shall be required.

The transformer shall be a single wound rated 480 Volts with a UL recognized 180 degree C insulation system. Required performance shall be obtained without exceeding the above indicated temperature rise in a 50 degree C ambient below 250HP and for 40 degree C maximum ambient above 250HP.

(6) Operation

The alternating current (AC) variable frequency drives shall convert input AC main power to an adjustable frequency and voltage. The output frequency and voltage of the AC drive shall be adjustable to maintain a constant voltage to frequency ratio throughout the operating range.

The variable frequency drive units shall include a diode bridge rectifier in the input section to convert the fixed voltage, fixed frequency, and AC line power to a fixed DC power. The DC bus voltage shall be filtered to protect against large voltage transients on the incoming line. The rectifier shall not be affected by phase rotation of the AC power and shall not cause a displacement factor of less than 0.95 under any operating speed or load conditions. An inverter shall convert the fixed DC voltage signal from the rectifier to a variable frequency that can be sensed by a standard NEMA B motor. The drive control efficiency at rated load and frequency shall be 95 percent minimum.

The input signal to the drive units received from the automatic control system shall be a 4 to 20 milliamp signal. The output signal from the variable frequency drive shall be a PWM type frequency

waveform ranging from 0 to 60 Hertz. The variable frequency drive units shall provide an output frequency signal to increase or decrease the speed of the pump motor in order to maintain the level in the wetwell. In the event of loss of the input signal from automatic pump control system, the drive shall deactivate the operating pump and activate the variable frequency drive fault alarm.

(7) Design Features

The variable frequency drives shall include all standard design features of the manufacturer along with the features described hereinafter.

The variable frequency drives shall be capable of starting the pump motor at a preset startup speed and accelerate the motor at an acceleration rate that shall be adjustable. The drive shall be capable of generating a discrete signal indicating that the associated motor is operating at minimum amperage usage. This signal shall be processed by the automatic pump control system to confirm that a variable speed pump is in operation.

The variable frequency drive units shall be capable of restarting automatically after malfunction is repaired or after a loss of primary power. Power interruptions up to 0.5 seconds shall be allowable without the drive shutting down on a fault. The drive unit shall attempt to restart a maximum of five times. If the drive is unsuccessful in restarting and running for 120 seconds, the restart circuit shall lockout and activate the variable frequency drive's fault alarm.

The variable frequency drives shall include a surge protection line reactor on the input side of the unit, an elapsed time meter and an ammeter.

The variable frequency drive units shall be microprocessor based and utilize digital input for parameter adjustment. Use of potentiometer for parameter adjustment is acceptable for manual control switches, but unacceptable for configuration control. The command center shall include the following:

- Automatic/Manual Speed Control and Speed Control Switches: In the AUTOMATIC position, the variable speed pump motor shall be controlled by the variable frequency drive based on the signal received from the control system. In the MANUAL position, the speed of the variable speed pump motor shall be manually adjusted by means of two touch speed control

switches or potentiometer that increase or decrease the speed of the motors when activated.

- Configuration Controller: The configuration controller shall allow the following parameters to be programmed: startup speed, minimum speed, maximum speed, acceleration and deceleration rates, volts/Hertz ratio, torque boost, slip compensation, overfrequency limit, current limit and jog frequency. The controller shall have an internal means of deactivating keypad parameter adjustments to eliminate unauthorized data entry.
- Display: A light emitting diode (LED) or alphanumeric display readable through a cutout in the front of the enclosure shall be provided that digitally indicates: frequency output of the variable frequency drive in Hertz, voltage output of the variable frequency drive in volts, motor speed in RPM, variable speed drive fault indication. The display shall be alphanumeric only.

The variable frequency drives to be used for submersible pump operation shall be equipped with modules to transmit thermal and moisture signals sent by the pumps in a failure condition. These devices shall transmit any thermal or moisture indication to the control and monitoring system.

(8) Drive Monitoring Circuit

The drive units shall monitor the following functions, generate a discrete signal for transmission to the Control and Monitoring Panel, and stop the drive unit. The integral display panel shall provide first fault indication of these functions:

- (a) Motor current exceeding 110% of rated torque for longer than one minute.
- (b) Output phase-to-phase short circuit condition
- (c) Ground fault under any operating condition (starting and running)
- (d) High input line voltage
- (e) Low input line voltage
- (f) Loss of input signal
- (g) External fault
- (h) Thermal overload
- (i) CPV Error
- (j) Controller Overheat

(9) Manufacturers

The variable frequency drives shall be manufactured by ABB, Danfoss, Yaskawa, or pre-approved equal.

7. Start-up, Field Acceptance Tests, and Operator Training

After completion of the installation, the equipment shall be inspected and certified by an authorized representative of the Manufacturer as being in compliance with the Manufacturer's recommendations and requirements. At such time as the Manufacturer has deemed the installation to be acceptable, the Manufacturer's authorized service representative shall make any required adjustments and shall start the equipment to assure proper operation.

The pumping/mixing units will be accepted upon the basis of the Shop tests subject to a four (4) hour field test. The test will be required for the purpose of determining if the pumping units will operate under installed conditions within a reasonable degree of correlation with the Shop Tests. Included in the field acceptance test will be a check of the motor's vibration.

If, in the opinion of the Engineer, the four (4) hour test does not indicate a close correlation with the Shop Tests, then the Engineer will direct that a complete field test be made under the applicable standard of the Hydraulics Institute. If the pumps are accepted, this test will be paid for by the Owner. It will be witnessed by representatives of the pump manufacturer and the Engineer. The results of this complete field test will then be the final basis of acceptance or non-acceptance of the pumping units. If the pumps are not accepted, the test will be paid for by the manufacturer.

The Manufacturer's authorized representative shall provide instruction to the plant personnel as to the operation and maintenance of the equipment including start-up, shut down, on-line operations, lubrication, and preventative maintenance. The Contractor shall include in his bid the cost of the above referenced authorized service representative for a minimum of two (2) eight hour days on-site to complete the certifications and training described in this specification Sub-Section. This minimum on-site period does not include travel time to and from the project site.

8. Piping and Electrical Connections

Completely dimensioned layouts shall be furnished by the Contractor for all piping, fittings, valves, electrical connections, and specialties related to the proper installation and operation of equipment described in this Section.

Unless otherwise noted, all piping or equipment furnished with flanged connections shall include flanges dimensioned for facing and drilling in

accordance with ASME/ANSI B16.1 Class 125 and meeting the dimensional and bolting requirements of AWWA C110-98/A21.10-98, Table 14.

Electrical connections shall be performed by the Contractor.

9. Warranty

The Manufacturer of the equipment supplied under this specification shall provide a warranty for a period of sixty (60) months commencing on final acceptance by the Engineer. The Manufacturer shall guarantee that the equipment furnished is suitable for the purpose intended and free from defects in design, materials, and workmanship. In the event that the equipment fails to perform as specified the Manufacturer shall, at his option, promptly repair, modify, or replace the defective equipment.

SUB-SECTION 9C

PUMP AUTOMATIC CONTROL SYSTEM AND ACCESSORIES

1. Scope

The work described at this Sub-Section consists of furnishing and installing the control system to automatically start and stop each pump and vary the speed of the pumps driven by the variable frequency drive units in response to input signals relating to the wetwell level and time, the submersible pressure transducer and all accessories necessary for installation as depicted at the accompanying Plans.

Electrical work associated with equipment described at this Sub-Section, including all connecting signal and power wiring, is depicted in the accompanying Plans and described in Section 10, Electrical Work of these Detailed Specifications, and should be reviewed and taken into account by the Vendor of equipment described at this Sub-Section.

THE VENDOR OF EQUIPMENT DESCRIBED AT THIS SUB-SECTION IS DIRECTED TO READ ALL OF SECTION 9, MECHANICAL AND CONTROL AND MONITORING EQUIPMENT – GENERAL BEFORE PROCEEDING WITH READING THIS SUB-SECTION.

2. Vendors

The control system to automatically start and stop each pump and vary the speed of the pumps driven by the variable frequency drive units, the submersible pressure transducers, and appurtenances shall be provided as an integrated system by:

- Southern Sales Company, Inc. of Nashville, Tennessee utilizing Siemens Water Technologies OI3000 operator interface and LC3000 Pumping Station Monitoring and Control System.

3. Performance Requirements

a. Pump Automatic Control System – Bear Creek Sewage Pumping Station

Hardware and software components shall be integrated into a system to automatically monitor and control the operation of the variable frequency drives and their driven pumps and monitor certain other conditions. The integrated system shall automatically control and monitor the following performance:

- (1) The wastewater level in the wetwell shall be continuously sensed via a submersible pressure transducer generating a 4 to 20 milliamp output signal proportional to wetwell level over a range of two feet (one foot above the submersible pressure transducer) to thirteen feet (twelve feet above the submersible pressure transducer).

The pump operation protocols in response to wetwell levels and elevations are as follows:

<u>Operation</u>	<u>Wetwell Level (Transducer Level)</u>	<u>Wetwell Elevation</u>
Low Water Alarm	3.50' (2.50')	543.00
Stop All Pumps	4.00' (3.00')	543.50
Start Lead Pump Minimum Speed	6.00' (5.00')	545.50
Lead Pump Maximum Speed	7.00' (6.00')	546.50
Start Lag Pump Minimum Speed	9.00' (8.00')	548.50
Lag Pump Maximum Speed	10.00' (9.00')	549.50
High Water Alarm	10.50' (9.50')	550.00

- (2) The normal pump operational protocol shall consist of the following when the pump operation selector switches for both pumps are in the "Automatic" position:
- Start the pump motor, designated by the control system software as the "next pump motor to operate", at the Hertz value output from the associated variable frequency drive unit coinciding with the minimum motor speed setting in response to the 4 to 20 milliamp signal generated by the submersible pressure transducer installed in the wetwell coinciding with the level of wastewater in the wetwell designated as the "Start Lead Pump Minimum Speed" level. Maintain a 20 second "ramp-up" time from zero to the minimum motor speed setting.
 - Continually increase the motor speed of the lead pump if the wetwell level continues to rise until the lead pump is running at maximum speed at the "Lead Pump Maximum Speed" setpoint.

- Perform the same starting sequence if a rising wetwell level indicates ‘Start Lag Pump Minimum Speed’. Maintain a 20 second “ramp-up” time from zero to the large pump motor speed being called for by the control system in response to the 4 to 20 milliamp signal generated by the submersible level transducer installed in the wetwell.
 - Continually increase the motor speed of the lag pump if the wetwell level continues to rise until two pumps are running at maximum speed at the “Lag Pump Maximum Speed” setpoint.
 - Decrease motor speeds in reverse order as the wetwell level decreases.
 - Stop the pump motor(s) in reverse order of the Pump Start Sequence.
 - Designate the pump motors with the least total runtime as the “Next Pump Motor to Operate”.
 - Repeat this normal pump operational protocol until one or both of the pump operation selector switches are moved from the “Automatic” position.
- (3) In the event any pump operation selector switch is in the “Off” position, the control system software shall automatically designate the operating pump motor as the “next pump motor to operate” after that pump motor is started.
- (4) Only two pump motors shall operate at any time when the selected position of all three pump control switches is at “Automatic” or at “On”.
- (5) No pump motor shall start and operation of all pumps shall be ceased at any time the 4 to 20 milliamp signal generated by the submersible pressure transducer installed in the wetwell indicates the wastewater level is at or below the level designated as the “Low Wetwell Level” regardless of the position of the three-position pump operation selector switch for any pump.
- (6) No pump or motor shall start and operation of pump shall stop on check valve open/close failure alarm. The pump control system shall automatically call for the next available pump.

- (7) No pump motor shall be started automatically when the three-position operation selector switch for that pump is placed in the “Off” position.
- (8) Submersible Transducer No. 1 shall be the default wetwell level indicator. The control system shall allow the controlling transducer to be set by the Owner. In the event a submersible transducer is out of service or unable to be used for control of the pump start and speed sequence, the other submersible transducer shall control the pump operation.

4. General Equipment Requirements

a. U. L. Approval

The control panel(s) shall be constructed in compliance with Underwriter's Laboratories Category 913 - enclosed industrial control panel relating to hazardous locations with intrinsically safe circuit extensions listing and following-up service. The control panel(s) shall bear the Underwriter's Laboratories serialized “913” label.

Prior to shipment from the manufacturer's facility to the jobsite for installation, the completed pump control panel(s) shall be inspected by an Underwriter's Laboratories (U.L.) representative. Upon successful completion of the inspection, the panel shall be assigned the required 913 serialized U.L. label, indicating the equipment is built in accordance with the practices and requirements of this Underwriter's Laboratories category.

b. Wiring

All wiring shall be minimum 600 volt UL type MTW or AWM and have a current-carrying capacity of not less than 125% of the full load current. The conductors shall be in complete conformity with the national electric codes, state, local and NEMA electrical standards. For ease of servicing and maintenance, all wiring shall be color coded. The wire color code shall be clearly shown on the drawings, with each wire's color indicated.

All control wiring shall be contained within plastic/PVC wiring duct with covers. Where dimensional constraints prevent the use of wiring duct, wires shall be trained to panel components in groupings. The wire groupings shall be bundled and tied not less than every 3 inches with nylon self-locking cable ties as manufactured by Panduit or equal.

Every other cable tie shall be fastened to the enclosure door or inner device panel with a cable tie mounting plate with pressure tape. Where

wiring crosses hinged areas such as when trained from the inner device panel to the enclosure door, spiral wrap shall be used.

c. Incoming Service and Lightning Arrestor

The incoming service for the control system panel shall be 120 volt, 1 phase, 60 Hertz. A single phase lightning arrestor shall be supplied in the control system panel and connected to each line of the incoming side of the power input terminals. The arrestor shall protect the control system against damage as the result of transient voltage surges caused by lightning interference, switching loads, and power line interferences.

d. Nameplates

All major components and sub-assemblies shall be identified as to function with laminated, engraved nameplates.

e. Signal Transient Protection

Transient protection shall be provided with all equipment to protect all instrumentation and telemetry devices either receiving or sending signals. The transient protectors shall be a three stage surge suppression device which shall effectively arrest transients encountered in an instrumentation environment. The first stage of the transient protector shall consist of a gas tube arrestor connected across the signal wires and to ground. This stage shall be designed to suppress transients greater than 150 to 300 volts. The second stage of the transient protector shall consist of two varistors each connected between a signal line and ground. This stage shall suppress any transients less than 150 to 300 volts and clamps them to 56 volts. The third stage of the transient protector shall consist of two special purpose, high speed zener diodes which suppress any remaining transients to 51 volts. 50 ohm, 5 watt resistors shall be connected between the stages to dissipate the potential energy of the transients. Transient protectors shall be series TP as manufactured by Siemens Water Technologies.

5. System Specifications

a. General

The control system shall consist of the following at both sewage pumping stations unless otherwise specified:

- Lift Station Controller/Telemetry Unit

The Controller/Telemetry Unit shall monitor wet well level via submersible level transducer and provide automatic variable frequency control for three motors via VFDs in a pump down mode of control. The controller shall indicate wet well level, provide alarm and control setpoints, annunciate station alarms and indicate station status as herein specified. All parameters shall be viewable and configurable from the front of the panel. The unit shall include a microprocessor-based controller/telemetry unit for pump control and sequencing as herein described.

The controller/telemetry unit shall also provide digital communications with the existing master telemetry unit via dedicated leased voice grade phone lines. A modem shall be supplied for communication with the existing master telemetry unit.

The control panel shall monitor dry pit flood via wall mounted dry pit float switch as herein described.

The control panel shall monitor station flow rate via an existing remote mounted flow meter and provide local totalization and transmission to master telemetry unit.

The control panel will interface with the necessary motor control equipment and VFDs as described in Sub-Section 9A.

b. Lift Station Controller and Telemetry Unit

(1) Power Supply

The electrical service shall be furnished and installed by the Contractor. The panel service will be 120 volts, 1 phase, 60 Hertz.

(2) Enclosure

The described equipment shall be housed in a U.L. listed NEMA 1 enclosure properly sized to accommodate all control elements. The enclosure shall be constructed of not less than 14 gauge cold rolled steel. The enclosure shall have a gray exterior. The enclosure shall have a white interior and shall include the following features:

- (a) All of the seams shall be continuously welded and ground smooth with no holes or knockouts
- (b) Door and body stiffeners shall be provided for extra rigidity
- (c) Heavy gauge continuous hinge
- (d) Oil resistant gasket and adhesive
- (e) Removable and reversible print pocket
- (f) Inner panel shall be painted white enamel

The enclosure unit shall be provided with ventilation as required for displacement of heat generated during normal operation of the specified equipment.

(3) Circuit Breaker

A single pole circuit breaker shall be supplied. The circuit breaker must have a minimum ampere interrupting capacity of 10,000 symmetrical RMS amps.

(4) 12 VDC Power Supply

The Controller/RTU control panel shall include necessary DC power supply(s) for internally mounted panel components. Unit shall also include battery and battery charger for continued operation during power interruptions for up to 4 hours.

A regulated 12 VDC power supply shall be provided for the microprocessor based digital controller and other control system components as required. The power supply shall include a terminal block for incoming AC, output DC and ground connections.

Power supply circuits shall include AC line electrical noise filtering capable of reducing induced transient voltages that may damage sensitive microprocessor circuits.

The unit shall be supplied with battery back up. Battery shall be sized to provide 4 hours of back up power to controller, alarm and transducer systems.

(5) Microprocessor Controller/Telemetry Unit

(a) Bear Creek Sewage Pumping Station

The new microprocessor-based controller remote telemetry unit (RTU) shall control, monitor, and transmit the pump station status and alarm conditions to the existing CTU for remote monitoring. All status signals, alarm and process variable data shall be transmitted via voice grade phone lines to existing SCADA system.

Logic controller telemetry units shall be furnished completely configured and tested providing the specified communication, monitoring, display, input/output, annunciation, computations and other requirements for operation of the telemetry system.

Each logic controller telemetry unit shall be a modular hardware form factor style consisting of a CPU with adequate memory and instructions, power supply, on-board and remote input/output signal conditioning, communications ports, and all other components required to make the telemetry unit perform all of the functions required in this specification.

The logic controller telemetry unit shall include a real time of day time clock w/battery back up for time stamping of data log records and scheduling of periodic time of day-based events. Clock shall not require reset after a site power failure has occurred.

The logic controller telemetry unit shall store system parameters including, logic configuration, setpoints, time delays, alarm and event data, counters and totalizers, *etc.*, in field programmable (FLASH) non-volatile memory.

Sufficient non-volatile memory must be provided to protect the required system wide variables. This data shall be unaffected by power interruptions through the use of the battery backup system previously specified.

The logic controller telemetry unit shall be furnished with a minimum of four- (4) communication ports with true multitasking and allow simultaneous support of all ports. Communication can be configured for RS485 Input/Output Ethernet module expansion, Operator Interface Terminal (OIT) display support, LAN/WAN, *etc.*

The logic controller telemetry unit shall meet the following design capabilities as a minimum:

- i. CPU - True 32 Bit running at 50 MHz.
- ii. 16 MB – 32 bit Dynamic RAM w/ 16 MB FLASH
- iii. 512 K bytes Non-volatile RAM (battery backed)
- iv. Real time clock accurate to ± 15 seconds per month
- v. One- (1) Ethernet 10/100 BaseT port (RJ45)
- vi. One- (1) RS-232 Serial Communications (115 KB PS) (RJ45)
- vii. One- (1) RS485 Serial Multi-Drop Communications
- viii. One- (1) RS232 Operator Interface Terminal Display Communications Port

- ix. On-Board Input/Output support of twelve- (12) discrete inputs (DI), eight- (8) discrete outputs (DO) and six- (6) analog inputs (AI)

Logic controller telemetry unit shall have input/outputs for the following points:

- i. Pump 1 Run
- ii. Pump 1 VFD Fail
- iii. Pump 2 Run
- iv. Pump 2 VFD Fail
- v. Pump 3 Run
- vi. Pump 3 VFD Fail
- vii. Pump 1 Overtemp
- viii. Pump 2 Overtemp
- ix. Pump 3 Overtemp
- x. Pump 1 in Auto
- xi. Pump 2 in Auto
- xii. Pump 3 in Auto
- xiii. High Building Temperature
- xiv. Low Building Temperature
- xv. Vandal Entry Alarm
- xvi. Generator Alarm
- xvii. RTU Panel Power Failure
- xviii. Submersible Level Transducer No. 1
- xix. Submersible Level Transducer No. 2
- xx. Wetwell Level, 0-XX.X ft.
- xxi. VFD 1 Speed, 0-100%
- xxii. VFD 2 Speed, 0-100%
- xxiii. VFD 3 Speed, 0-100%
- xxiv. Pump 1 Required
- xxv. Pump 2 Required
- xxvi. Pump 3 Required
- xxvii. Pump 1 Speed Signal, 4-20ma
- xxviii. Pump 2 Speed Signal, 4-20ma
- xxix. Pump 3 Speed Signal, 4-20ma
- xxx. Screen Run
- xxxi. Screen Fail
- xxxii. Screen in Auto

The logic controller telemetry unit shall operate from a 10-30 VDC power source. A battery and charger as specified elsewhere shall be supplied to power the remote telemetry unit during 120-Volt service power outage conditions.

The level signal received from the submersible transducers shall be converted to a "feet and tenths" digital display. Keyboard-configurable digital setpoints shall be provided for differential level-type automatic pump operation as well as automatic alternation and manual sequence selection or timing, variable speed pump/drive ramp control logic and alarm performance as herein described.

The Controller/RTU shall provide ON/OFF operation of the pumps based on the wet well level as sensed by the submersible level transducer.

The Controller/RTU shall monitor analog and digital information. Analog variable setpoints shall be provided for the wetwell level analog signal. Each analog shall be presented in engineering units. Setpoints based on the wetwell level signal shall be provided for the following:

Wetwell Level (Display)

- i. High Alarm On/Off
- ii. Two Pumps Max. Speed
- iii. Lead Pump On/Off
- iv. Lag Pump On/Off
- v. Low Alarm On/Off

Station Flow Rate (Display & Totalize)

The digital Controller/RTU shall be furnished with a multiple-ramp output capability implemented in hardware and software for the variable speed pumps. The ramp shall be programmed to be re-configurable with the operation of each of the control stages and the other independent ramp configurable with respect to the full-range conditioned signal of the controller without reference to control stage operations.

Each ramp shall have the following five parameters configurable from the controller keyboard:

- i. Positive or negative-going ramp.
- ii. The analog signal input at which the maximum ramp signal is to be produced.
- iii. The analog signal input at which the minimum ramp signal is to be produced.
- iv. The percentage of full-scale ramp signal output desired at the selected analog signal input.

- v. The percentage of full-scale ramp signal output desired at the selected lower analog signal input.

Each control stage shall be capable of re-defining the ramp that is common to all (for purposes of load-sharing under differing conditions). The other ramp shall be independent of the first and configurable as described without reference to the operation of the control stages. In addition to keypad configurability of each ramp, they shall also be review-able by the operator by use of a convenient keypad sequence.

The Controller/RTU shall include keypad adjustable on-delay timing logic to provide staggered pump starting following a power failure condition. Keypad adjustable off delay timing for each pump control stage shall provide smooth transition between control stages.

In addition to the pump and alarm control capability, the controller shall provide alarm annunciation. The Controller/RTU shall, upon the occurrence of an alarm, sound an audible device and flash the alpha-numeric display. The display will indicate the alarm description, complete with the time and date of the alarm occurrence. An acknowledge push-button shall be provided to allow silencing of the audible device while the digital display will continue to show the alarm function, complete with time and date information, until the condition has cleared. The following alarms shall be provided for the pump station:

- i. High Wetwell Level Alarm
- ii. Low Wetwell Level Alarm
- iii. Wetwell Level Transducer No. 1 Signal Failure
- iv. Wetwell Level Transducer No. 2 Signal Failure
- v. Pump No. 1 Failure/Overtemp
- vi. Pump No. 2 Failure/Overtemp
- vii. Pump No. 3 Failure/Overtemp
- viii. Pump No. VFD 1 Failure
- ix. Pump No. VFD 2 Failure
- x. Pump No. VFD 3 Failure
- xi. Power Failure
- xii. Telemetry Fail
- xiii. Screen Fail

The Controller/RTU shall have built in alarm and event historical log permitting operator review of time stamped historical events.

An analog simulation software module shall be supplied to provide a wetwell normal/simulated signal to test the control system. The controller shall employ an operator interface mounted on the door of the enclosure.

Logic controller telemetry units shall be capable of performing diagnostic functions. The CPU shall continuously monitor the functionality of the system and record errors and specific system events. A diagnostic buffer shall retain fault and interrupt events.

Each logic controller telemetry unit shall have memory protected built in historical archiving/data logging of system alarms & events and process variables.

- i. Data logger shall be able to log data base point on time or an event. The logic controller telemetry unit shall have enough memory allocated to allow the time and date stamping of the required discrete and analog values to be archived. Process point time stamping frequency shall be selectable within the configuration software.
- ii. The historical archive shall allow the oldest data to roll off the system as memory is used keeping the most current data points available.
- iii. It shall be possible for the archived data to be exported in Comma Separated Variable (CSV) format allowing use with standard spreadsheet and data base software applications.

The microprocessor logic controller for the telemetry unit shall be IntraLink LC3000 Logic Controller with the required standard system components as manufactured by Siemens Water Technologies.

An Operator Interface/Keyboard Display (OIT) shall be supplied for the new remote telemetry unit panel. The OIT unit shall be mounted on the inner door of the enclosure for easy Operator access. The OIT shall perform the following functions:

- i. Keypad/Display shall allow the Operator to view and modify system variables within the logic controller telemetry unit.
- ii. Keypad/Display shall be NEMA 4 rated, with backlit LCD display so that it is unaffected by a wide range of ambient light conditions.

The displays shall be configured with graphical and text based data for the specific application to meet system monitoring needs. Historical alarm and event information shall be viewable from the display including date and time of alarm being available.

The Operator Interface Terminal for the remote telemetry unit shall be IntraLink OI3000 OIT as manufactured by Siemens Water Technologies.

(6) Indicator/Pilot Lights

The control panel shall include indicator lights mounted on the door for pump run, pump overtemp, and VFD fail indication.

Indicator Lights shall be full size 1 1/8" diameter NEMA 4X, Heavy Duty, Full Voltage push to test type. Connection shall be made by screw type compression terminals.

Pilot lights shall be push to test type.

Switches shall be as manufactured by Allen-Bradley, Square D, Siemens, or equal.

(7) Pump Run Verification

A positive pump running (flow) condition shall be sensed by an auxiliary contact from the VFD.

(8) Running Time Meter

A running time meter measuring hours and tenths of hours of operation up to 99,999.9 hours shall be furnished for each VFD. This shall be a 120 volt AC device operating from the control voltage by an auxiliary contact of the running signal.

(9) Analog Input Isolator w/Loop Power Supply

The Controller shall provide isolated 24 VDC loop power to each of the wetwell level transmitters and the station flow rate transmitter. The analog signals shall be isolated from the Controller via in line transducer input isolation amplifier module. The unit shall provide a minimum of 750 Volts isolation between the voltage input of the Controller and the transducer and include three stage surge suppression for reliable operations during possible electrical transients. The isolation amplifier module shall include adjustable signal scaling potentiometers to achieve full scale signal output for better signal differentiation. The isolation amplifier shall be powered by 12 VDC to permit operation from batteries during incoming power interruptions.

(10) Submersible Level Transducer (2 Required)

The liquid level of the wet well shall be sensed by Siemens Water Technology Bulletin A1000, Model 157GSCD Submersible Level Transducer. The transducer shall be a 4-20 mADC, 2-wire, 15 to 40 VDC loop-powered type with its output signal directly proportional to the measured level excursion over a factory-calibrated range of zero to 15 feet of water.

The Transducer shall be of the solid-state head-pressure sensing type, suitable for continuous submergence and operation and shall be installed in accordance with manufacturer's instructions. The bottom diaphragm face of the sensor shall be installed 12 inches above the floor at elevation 563.85. The sensor shall be mounted using a stainless steel cable system in a location and as shown on the Plans.

The transducer housing shall be fabricated of type 316 stainless steel with a bottom diaphragm 2-5/8" diameter of heavy-duty, limp, foul-free, molded Teflon (TM) bonded to a synthetic rubber back/seal.

A hydraulic fill liquid behind the diaphragm shall transmit the sensed pressure to a solid-state variable-capacitance transducer element to convert the sensed pressure to a corresponding electrical value. The sensed media shall exert its pressure against the diaphragm which flexes minutely so as to vary the proximity between an internal ceramic diaphragm and a ceramic substrate to vary the capacitance of an electrical field created between the two surfaces. A stable, hybrid, and operational amplifier assembly shall be incorporated in the transducer to excite and demodulate the

sensing mechanism. The transducer shall incorporate laser-trimmed, temperature compensated, high quality components and construction to provide a precise, reliable, stable output signal directly proportional to the sensed pressure over a factory-calibrated range.

The transducer element shall incorporate high over-pressure protection and be designed to withstand intermittent over-pressures five times the full scale range being sensed.

The transducer/transmitter shall include easily accessible offset and span adjustments in the upper assembly. Span shall be adjustable from 100% down to 15% of the sensor range. Fine and coarse adjustments for both span and offset shall be provided, using 25-turn potentiometers. Offset and span adjustments shall be non- interactive, for ease of calibration.

The internal pressure of the lower transducer assembly shall be relieved to atmospheric pressure through a heavy-duty urethane jacketed hose/cable assembly and a slack PVC bellows mounted in the weatherproof fiberglass upper assembly. The sealed breather system shall compensate for variations in barometric pressure and expansion and contraction of air due to temperature changes and altitude as well as prevent fouling from moisture and other corrosive elements.

The transducer assembly shall be installed where directed by the Engineer and connected with other system elements and placed in successful operation. It shall be provided with input power and output signal transient protection, associated control elements as specified herein and in accordance with manufacturer's instructions.

(11) Cable Suspension Mounting Kit

The sensor shall be suspension-mounted using a Consolidated Electric Company Cable Suspension Mounting Kit or equivalent, consisting of a 2' long 1-inch NPT type 316 SS pipe with coupling, bolt, cable clamps and hardware along with the required length of 1/8 inch diameter 7 x 19 SS cable.

(12) Intrinsically-Safe Wiring Barrier

An intrinsically safe barrier ahead of each transducer assembly shall be supplied. The barrier shall render the level sensing system suitable for use in Class 1, Division 1 Groups A, B, C and D, Class

2, Division 1, Groups E, F and G, and Class 3, Division 1 hazardous locations.

(13) Condensation Protection

A 100 watt condensation protective heater with a high temp cutout thermostick shall be supplied in the control panel. The heater shall maintain internal panel temperature higher than outside ambient air temperature to prevent condensation on electronic components.

(14) Duplex Receptacle

The control panel shall include an internally mounted duplex convenience receptacle. The duplex receptacle shall be used for RTU service personnel only and not for use with drills, *etc.*

6. Field Supervision

The services of a factory trained, qualified representative shall be provided to inspect the completed installation, make all adjustments necessary to place the system in trouble-free operation and instruct the operating personnel in the proper care and operation of the equipment.

THE CONTRACTOR SHALL PROVIDE A MINIMUM OF TWO MAN-DAYS ON SITE VENDOR'S FACTORY SERVICE DURING ONE TRIP TO THE PROJECT SITE. This minimum on-site period does not include travel time to and from the project site.

After the system has been installed, the Supplier shall demonstrate the performance of the unit, and document that the system operates properly as specified. Monitoring signals shall register at all required locations and loop checks on all loops shall have been completed and tested. The station must be tested and accepted by the Owner.

SECTION 10
ELECTRICAL WORK



1. General Provisions

a. General

(1) Work Included

Provide all materials, labor and equipment required to furnish and install a complete electrical system as indicated on plans and as specified herein. Electrical work includes but is not limited to the following:

- (a) Complete distribution system for lighting and power including necessary service entrance rated automatic transfer switch, main switchboard, transformers, panelboards, motor starters, contactors, feeders, branch circuits, safety switches, lighting fixtures, control switches and receptacles.
- (b) Excavation, trenching and backfilling for conduit and/or cable.
- (c) Grounding.
- (d) Lightning protection system for Proposed Electrical Building.
- (e) Installation of standby diesel engine generator system including service entrance rated automatic transfer switch and remote annunciator. The contractor shall be responsible for the complete installation and startup of standby generator system for proper operation under standby power. This includes the proper setup of all connected load control devices including main circuit breakers, solid state reduced voltage starters, adjustable frequency drives, etc.
- (f) Surge protection devices.

- (g) Power, interlock and control wiring for equipment furnished under other Sections.

This includes, but is not limited to, heating, ventilation or exhaust fans and associated damper motors and air conditioning equipment. Install control components furnished under other Sections of these Specifications including, but not limited to controllers, relays, thermostats, etc. Wire and connect controls complete and in working order.

- (h) Conduit rough-in and wiring for all equipment furnished under other Sections.

This includes, but is not limited to, valves, level sensors and transmitters, temperature sensors, door contacts, flow meters and transmitters, adjustable frequency drives and control/telemetry panel. Exact locations of outlets for equipment furnished under other Divisions shall conform with manufacturer's rough-in plans.

Starters, alternators, power interlocks and control wiring for equipment furnished under other Sections unless otherwise noted on Plans.

Control components furnished under other sections for this equipment shall be installed under this Section. Wire and connect controls complete and in working order, in accordance with schematic diagrams on Plans and as recommended by control equipment manufacturer.

It shall be the responsibility of the contractor to review all of the final installation instructions and shop drawings from the equipment suppliers and adjust all installations accordingly. Provide a complete and fully functional installation and system.

- (i) Removal and relocation of equipment shown on Plans. Cooperate with the general and contractors involved and follow the schedule of changeover.

- (j) Supply and installation of temporary wiring for construction power and lighting for the project, in compliance with Article 590 of the National Electrical Code.
- (k) The Contractor shall make all necessary arrangements with the Electric Utility Company and telephone and internet provider concerning the electric, telephone and internet service. **The Contractor will be responsible for fees required for service modifications and extensions if and as required by the local Utility Company.**

(2) Related Work

The following work shall be furnished under other Sections of these Specifications.

- (a) Flashing of conduits into roofing and outside walls.
- (b) Concrete foundations, curbs and pads
- (c) Painting.
- (d) Cutting and patching.

(3) Definitions

Provide: As used shall mean "furnish, install and connect, and put in good working order."

Wiring: As used shall mean "wire and cable, installed in raceway with all required boxes, fittings, connectors, etc. complete."

Engineer: As used in various sections shall mean "Engineer of record whose seal is affixed to the Contract Specifications and/or Plans."

(4) Requirements of Regulatory Agencies

Equipment furnished shall be UL listed where such label is available. Installation shall conform to UL Standards where applicable.

Electrical work shall be installed in accordance with Plans and Specifications, edition of NEC in effect at project location, recommendations of NFPA, state and local electrical and building codes and special codes having jurisdiction over specific portions within complete installation. This includes, but is not limited to the following:

- (a) 2017 National Electrical Code (NEC).
- (b) 2018 International Building Code (IBC).
- (c) 2016 National Fire Protection (NFPA) 820.

In event of conflict between Plans, Specifications and such codes, Engineer shall be notified in writing prior to bid. A ruling shall then be made by Engineer in writing.

Obtain permits and certificates of approval from all authorities having jurisdiction over installation and pay all fees required.

b. Products

(No products specified under this Section.)

c. Execution

(1) Submittals

Refer to Section 1, Submittals (Shop Drawings) for general requirements of shop drawing submittals. **There shall be a separate submittal section or brochure for each product listed below with all sections or brochures submitted at the same time in one package.** In the event scheduling or other special circumstances requires the review of submittals for only a portion of the products listed hereinafter, the Engineer will review these independently submitted submittals; however, the independently reviewed submittal shall also be incorporated into the single package submittal described in this paragraph. First sheet in each product section or brochure shall summarize and list all components, manufacturer's name and catalog number. Submittals shall include but not be limited to the following:

1. Standby diesel engine generator system including sizing report.
 2. Automatic transfer switch.
 3. Main switchboard.
 4. Panelboards.
 5. Dry type transformers.
 6. Motor starters.
 7. Safety switches.
 8. Lighting contactors.
 9. Time switches.
 10. Wiring devices and plates.
 11. Aluminum conduit and fittings.
 12. Rigid galvanized steel conduit and fittings.
 13. PVC conduit and fittings.
 14. Hazardous location wiring devices and fittings.
 15. Conduit and device mounting support channels, fittings, and fasteners.
 16. Pullboxes and junction boxes
 17. Wire and cable.
 18. Low voltage shielded cable.
 19. Grounding components.
 20. Cable connectors and lugs.
 21. Insulating materials.
 22. Lighting fixtures.
 23. Lightning protection systems.
 24. Surge protection devices.
 25. Short circuit, protective device coordination and arc flash hazard analysis studies.
- (2) Submittals shall be checked by the contractor and evidence of such checking shall be indicated thereon. **SUBMITTALS NOT BEARING THE CONTRACTOR'S MARK OF ACCEPTANCE AND APPROVAL WILL NOT BE REVIEWED BY THE ENGINEER.** The contractor shall be completely responsible for the accuracy, completeness, compliance with Plans and Detailed Specifications, and compatibility of all submittals, the Engineer's approval notwithstanding.
- (3) Site Visit
- Visit job site prior to bid date to determine actual conditions under which work shall be done, to familiarize oneself with project and to verify total scope of work required. Failure to do so shall not constitute reason for extra charge.

2. Basic Materials and Methods

a. General

(1) Quality Assurance

Qualifications of Manufacturer: Products used in work of this Section shall be produced by manufacturers regularly engaged in successful manufacture of similar items and with history acceptable to Engineer.

Qualifications of Installers: Use adequate numbers of skilled workmen who are thoroughly trained and experienced in necessary crafts and who are completely familiar with specified requirements and methods needed for proper performance of work of this Section.

b. Products

(1) Substitutions

Where "or approved equal" is included, contractor may substitute equal products by another manufacturer subject to pre-approval by the Engineer.

Substitution must be approved by Engineer before purchase and/or installation. If unapproved materials are installed, work required to remove and replace unapproved items shall be done at contractor's expense.

c. Execution

(1) Installation

Electrical plans are diagrammatic and shall not be scaled for exact sizes or locations. They are not intended to disclose absolute or unconditional knowledge of actual field conditions. This Section covers installation or relocation of outlets and miscellaneous devices shown on the Plans. Any outlet or device may be installed or relocated a maximum of 10 feet in any direction from locations shown on the Plans without additional charge to the Owner.

All electrical equipment supports and conduit supports, anchors, bolts, locknuts, screws, washers, and mounting hardware including unistrut, angle iron, and structural members shall be Type 316 stainless steel.

Equipment shall be installed in accordance with manufacturer's recommendations.

The equipment vendor/manufacturer shall review the electrical drawings for completeness. Any additional equipment including special overcurrent protection devices or harmonic filters, which are required by the equipment manufacturer but not shown on the plans, shall be furnished internal the equipment, or furnished separately and installed by the electrical subcontractor at no additional cost to the Owner.

Protect work and materials from damage by weather, entrance of water and dirt. Cap conduit during installation. Avoid damage to materials and equipment in place. Satisfactorily repair or remove and replace damaged work with new materials. Deliver equipment and materials to job site in original, unopened, labeled containers. Store ferrous materials to prevent rusting and finished materials and equipment to prevent staining and discoloring.

Failure to route conduit through building without interfering with other equipment and construction shall not constitute a reason for an extra charge. Equipment, conduit and fixtures shall fit into available spaces in building and shall not be introduced into building at such times and manner as to cause damage to structure. Equipment requiring service shall be readily accessible.

(2) Testing and Equipment Servicing

Entire installation shall be free from improper grounds and short and open circuits. Perform test on conductors as required before energizing circuit. Perform test to ensure that entire system is in proper operating condition, and that adjustments and apparatus setting of circuit breakers, fuses, control equipment and apparatus have been made. Correct defects discovered during tests.

Equipment shall be turned over to Owner in lubricated condition. Instruction on further lubrication shall be included in operating instructions.

At termination of work under this Section, furnish Engineer with three complete bound sets of equipment catalog sheets, manufacturer's specifications and service and operating instructions on equipment furnished under this Section. Instruct Owner on proper usage, care and maintenance of entire electrical system including all special systems or apparatus.

(3) Removal of Debris

Remove surplus materials and debris caused by, or incidental to, electrical work. Remove such debris at frequent intervals. Keep job clean during construction.

(4) Salvageable Materials

The contractor shall be solely responsible for the disposition of waste material. The owner shall have rights to all salvageable material.

(5) Cutting and Patching

The contractor shall so organize and execute his work so as to avoid all unnecessary cutting and patching of building surfaces. Preparatory work, including accurate installation of sleeves, wall and floor openings and construction of equipment foundations and supports shall be coordinated with the building progress. Cutting, patching and repairs to damaged building surfaces, as a result of the installation, shall be provided without additional cost to the Owner.

Certain work of a general construction nature related to the work under this section of the specifications will be provided by the contractor and will include preparation of building surfaces at points of raceway and duct penetrations, necessary masonry and concrete work, etc. The contractor shall be completely responsible for the correct dimensions and general scope of all general construction requirements related to his work. All corrections to such related work, determined to be improperly executed due to the negligence of the contractor

shall be made at the contractor's expense.

(6) Identification of Wire and Cable

All abandoned power, control, and signal wire and cable shall be disconnected and removed.

All proposed power, control, and signal wire and cable shall be properly terminated and consistently numbered in all junction and pullboxes, panels, devices, and all locations where wire and cable leave raceways.

(7) Identification of Equipment

Identify the following electrical equipment with laminated plastic nameplates, engraved with 1/4" high letters.

All nameplates shall be black and white letters except nameplates for emergency panelboards and transfer switches; which shall be red with white letters. Nameplates shall be attached to metal enclosure with two screws. Nameplates attached with adhesive are not acceptable.

- (a) Automatic transfer switch.
- (b) Main switchboard.
- (c) Panelboards.
- (d) Safety switches and disconnects.
- (e) Magnetic motor starters.
- (f) Dry type transformers.
- (g) Starters, adjustable frequency drives and control panels furnished under other Sections of these specifications.

(8) Record Drawings

THE CONTRACTOR SHALL MAINTAIN ONE SET OF ELECTRICAL PRINTS ON SITE, MARKED TO SHOW ACTUAL AS CONSTRUCTED CONDITIONS AND INSTALLATIONS, PRINTS TO BE TURNED OVER TO

ENGINEER AFTER JOB IS COMPLETE. Installed location of all exterior buried conduit shall be accurately shown and referenced to above ground structures.

(9) Temporary Lighting and Power

Provide, maintain and remove after construction is completed, temporary lighting adequate for workman safety and temporary power for all trades including any 3 phase power required with a minimum as shown on the plans.

Provide and maintain barricade lighting where required to adequately protect Owner against liability for damage to public or personnel. All lamps used in barricade shall be 70 watt red installed in weatherproof socket with wire guard. All wiring shall be approved for weatherproof installation.

(10) Power Outages

Coordinate all power outages with Owner and submit for approval proposed schedule of work indicating extent, number and length of outages required to perform work. Include in bid cost of overtime labor required for power outage to occur after contractor's normal working hours.

(11) Other Materials

Work of this Section shall also include those items not specifically mentioned or described, but which are obviously necessary to conform to the design intent, applicable codes and to produce complete electrical system that functions properly. These materials shall be as selected by contractor but subject to approval of Engineer.

(12) Guarantee-Warranty

Guarantee work to be free from defects of materials and workmanship for a period of one year from date of final acceptance of all work. Repair and replace defective work and other work damaged thereby which becomes defective during term of Guarantee-Warranty. Furnish Owner with three written copies of Guarantee-Warranty.

3. Conduit

a. General

(1) Work Included

- (a) Conduit
- (b) Fittings

b. Products

(1) Conduit

- (a) Rigid Aluminum Conduit: Allied, Wheatland, Republic or equal.
- (b) Rigid Galvanized Steel Conduit: Allied, Wheatland. Republic or equal.
- (c) Flexible Aluminum Conduit (Greenfield): Triangle, Anaconda, International Metal Hose or equal.
- (d) Liquidtight flexible aluminum conduit (Sealtite): Triangle, Anaconda, International Metal Hose or equal.
- (e) Rigid Non-Metallic (PVC) Conduit: Carlon, Schedule 40 or 80, extra heavy wall as specified on the plans.

(2) Conduit Fittings

- (a) Rigid Aluminum Couplings and Connectors: Raco, Thomas & Betts or equal.
- (b) Galvanized Rigid Steel Couplings and Connectors: Raco, Thomas & Betts or equal.
- (c) Bushings: Raco, Thomas & Betts or equal.
- (d) Malleable Iron Straps and Hangers: Crouse Hinds, Appleton, Steel City or equal. Exposed: Stainless Steel.

- (e) Group Pipe Supports: Unistrut, Kindorf or equal. **Refer to paragraph 2.C.(1) for material type.**
- (f) Expansion Fittings: O.Z. Type AX, Crouse-Hinds, Carlon or equal.
- (g) Exposed Aluminum and Galvanized Rigid Steel Conduit Fittings: Crouse-Hinds, Efcor, condulets or equal.
- (h) Liquid-tight flexible metallic conduit fittings: Racor, Thomas & Betts or equal.
- (i) Underground wall penetration seals into below grade rooms or accessible spaces: The pipe to wall penetration closures shall be "Link-Seal" as manufactured by Thunderline Corporation – Belleville, Mich. Seals shall be modular mechanical type, consisting of interlocking synthetic rubber links shaped to continuously fill the annular space between the pipe and wall opening. Links shall be loosely assembled with bolts to form a continuous rubber belt around the pipe with a pressure plate under each bolt head and nut. After the seal assembly is positioned in the sleeve, tightening of the bolts shall cause the rubber sealing elements to expand and provide an absolutely water-tight seal between the pipe and wall opening. The seal shall be constructed so as to provide electrical insulation between the pipe and wall, thus reducing chances of cathodic reaction between these two members.

c. Execution

(1) Conduit

In general, conduit installation shall follow layout shown on Plans. However, this layout is diagrammatic only and where changes are necessary due to structural conditions, other apparatus or other causes, such changes shall be made without cost to Owner. Offsets in conduits are not indicated and must be furnished as required.

All wiring methods and electrical installations in enclosed wastewater treatment structures shall conform to National Electrical Code Class I, Division 1 Hazardous Locations per Articles 500 & 501. Provide sealing fittings as indicated and as required by the National Electrical Code for Class I, Division 1.

Use rigid aluminum conduit throughout except as noted herein. All straps and hangers shall be aluminum or stainless steel.

Aluminum which comes in direct contact with stainless steel or other dissimilar metals shall be protected by neoprene rubber insulations to prevent galvanic corrosion of the aluminum.

For underground installations or under concrete slabs resting on earth, use Schedule 40 PVC conduit. For exposed indoor conduit including turn-ups through slabs and entering all electrical devices, use rigid aluminum conduit.

For all conduit installed in concrete slabs and walls use galvanized rigid steel conduit. For all conduit penetrating through concrete slabs or walls, use galvanized rigid steel conduit.

All aluminum conduit installed in or penetrating through concrete slabs or walls shall be coated with two heavy coats of asphaltum.

When PVC conduit is used, turn up with galvanized rigid steel elbows and provide equipment grounding conductor in accordance with NEC Article 250. **Where PVC conduit is used outside of building line or structures, the first ten (10) feet of conduit shall be galvanized rigid steel and the entire ductbank shall be installed in minimum three (3) inch concrete encasement. The transition shall begin two (2) feet inside the building or structure.**

Underground conduit separation shall be maintained by use of PVC conduit spacers with horizontal and vertical locking at intervals of seven (7) feet maximum.

Use galvanized rigid steel factory elbows for bends in plastic conduit runs longer than 100 feet, or in plastic conduit runs, which have more than two bends regardless of length.

Coat metallic conduit placed in fill below concrete or underground with two heavy coats of asphaltum. Recoat any damage to asphaltum coating prior to backfilling.

Support conduit and secure to forms when cast in concrete so that conduit will not be displaced during pouring of concrete. Stuff boxes and cork fittings to prevent entrance of water during concrete pouring and at other times during construction, prior to completion of conduit installation.

All conduit shall be concealed wherever possible. All devices shall be flush mounted where possible. Exposed conduit and device installations must be approved by the Engineer prior to rough-in.

Route exposed conduit at right angles or parallel to walls of building.

Use proper sized tools for bending. Do not heat conduit.

Dents and flat spots will be rejected. Cut and thread conduit so ends will butt in couplings. Make threads no longer than necessary and ream pipe free of burrs.

Minimum conduit size 3/4" unless otherwise required by system.

Leave one #10 or equivalent nylon pull wire in empty conduits.

Use short pieces, approximately 2 feet of liquid-tight flexible metallic conduit to connect motors and other devices subject to motion and vibration. Use liquid-tight flexible metallic conduit where subject to water spray and installed outdoors. All liquid-tight flexible conduit fittings shall be metal type for rigid aluminum conduit installations.

(2) Conduit Fittings

All conduits entering wetwells or other wastewater holding structures shall be equipped with hazardous

location sealing fittings to prevent wastewater gases from entering raceway around conductors or cables. Provide stainless steel Kellem type cord grip with strain relief for all cables terminating in raceways, junction boxes or enclosures.

Support conduit vertically and horizontally by straps or hangers. Do not exceed these intervals as described in NEC Section 344.30 for rigid metal conduit and in NEC Section 352.30 for PVC.

Use factory expansion fittings, properly bonded to assure ground continuity, across expansion joints in floors and ceilings. Use hubs at conduit entrance into all pullboxes, junction boxes, devices in exposed areas where knockout installations occur.

When connections are made to motors or other equipment, not near walls or columns, provide vertical conduit, minimum 3/4", attached to floor with floor flange bring wiring out of conduit by means of conduit and flexible conduit extending to equipment junction box.

4. Outlet and Junction Boxes

a. General

(1) Work Included

(a) Outlet Boxes

(b) Junction Boxes

b. Products

(1) Outlet Boxes, Junction Boxes, and Wireways

Outlet and junction boxes concealed in ceilings and walls shall be galvanized steel by National, Appleton, Raco, Steel City or equal 1-1/2" deep minimum.

Outlet boxes for lighting, switches and receptacles in areas with exposed aluminum conduit shall be cast aluminum condulets and unilets with threaded hubs, Type FS or FD.

Except as noted otherwise all junction boxes, pull boxes, and wireways shall be NEMA 4X corrosion resistant 316 stainless steel.

b. Execution

(1) Outlet Boxes

Use galvanized steel for concealed boxes. All boxes shall be concealed wherever possible. Use cast aluminum conduit fittings similar to "Condulets" and "Unilets" with threaded hubs, Type FS or FD for exposed boxes.

Outlet boxes shall be securely anchored, set true and plumb and no part of box or cover shall extend beyond finished wall or ceiling.

Select boxes according to intended use and type of outlet. Use minimum 4" diameter boxes for ceiling or wall mounted lighting fixtures. Use 4" square boxes to contain flush mounted outlets. Provide plaster or masonry rings for flush mounted outlets to conceal joint between box and wall finish material. Nongangable switch boxes may be used only for single gang switches.

Mount outlet boxes worked to nearest block course.

(2) Junction Boxes

Junction boxes shall be sized according to number of conductors in box or type of service to be provided. Minimum junction box size 4-11/16" square and 2-1/8" deep. Provide screw covers for junction boxes.

Use corrosion resistant NEMA 4X 316 stainless steel with clamp covers for pull boxes. Size pull boxes according to the NEC.

All junction boxes shall be corrosion resistant, NEMA 4X 316 stainless steel.

Provide pull box every 100' of conduit run or where excessive number of bends necessitates a box for ease of wire installation.

(3) Wireways

All wireways and wiring troughs shall be NEMA 4X corrosion resistant 316 stainless steel.

5. Wire and Cable

a. General

(1) Work Included

(a) Wire and Cable

b. Products

(1) Materials

Wire and cable shall be 600 volt by Anaconda, General Cable, Habirshaw, Okonite, Rome, Triangle, Southwire or equal unless otherwise noted on Plans.

For line voltage control wiring, use #14 type THHN/THWN copper by one of the manufacturers listed above. For low voltage control wiring, use type wiring recommended by equipment manufacturer.

Use stranded copper, type THHN/THWN, for branch circuit wiring #10 and smaller. No conductor for branch circuit wiring shall be smaller than #12.

Use stranded copper, type THHN/THWN, for feeder and power circuits #8 and larger.

Fixture wire shall be in accordance with Article 402 of the National Electrical Code.

Provide color coded wire and with a different color for each phase and neutral and ground as follows: 120/208 volts circuits-phases A, B and C: black, red and blue respectively; neutral: white; ground: green; 277/480 volt circuits - phases A, B and C: brown, orange and yellow respectively; neutral gray; ground: green. Approved color tape is acceptable for feeders. Also, provide color coded wire for control circuits.

Use Scotchlok, Ideal or equal wire connectors for #14 through #18 conductors. Use Burndy, T&B or equal, compression connectors with crimpit cover, type CC, for #6-600 MCM conductors.

Where branch circuits homeruns exceed 70' in length for 120 volt and 150' in length for 208 volt, No. 10 wire shall be used to first outlet.

Fiber-optic cable installation and testing shall be in strict accordance with manufacturer's detailed installation instruction by a certified fiber-optic cable installation firm. The contractor shall install all raceways for fiber-optic cable installation in accordance with system integrator's detailed specifications and requirements.

Local Area Network (LAN) Ethernet cable shall be designed for use with a high-speed (100Mbps/Gbps) Ethernet communications network. The twisted pair cable shall have nominal impedance of 100 ohms at 1 Mhz and a maximum attenuation of 2 dB per 100m at 1 Mhz. The twisted pair cable shall be plenum rated and shall have a minimum of four 24 AWG solid copper conductor pairs. All RJ-45 terminations on the twisted pair cable shall be done as specified by the manufacturer. Terminations shall provide strain relief on the cable jacket. Strain relief on the wire and/or wire insulation shall not be acceptable. Cable and connections shall meet or exceed Category 6 ratings and upon completion of the network installation, the system shall be tested to Category 6 standards. Category 6 cable shall be as manufactured by Belden, Phoenix Contact or equal.

c. Execution

(1) Installation

Complete conduit system before pulling any wire or cable. Only approved cable lubricants (such as soaptone) shall be used as necessary.

Conductors shall be continuous from outlet to outlet or to branch circuit overcurrent devices. Make splices only in junction boxes. Splices shall not be made in panelboards.

Sufficient slack shall be left at terminations to make proper connections.

Connect No. 10 wire and smaller with Type R, 3M Scotchlock, Ideal 400 Series tapeless connectors or equal.

Connect No. 8 wire and larger with Lock-Tite type silicon bronze type connectors, T&B Series 35000 or 54000, or equal. Insulate connections of No. 8 wire and larger with 3M #33, Scotch 33+ or equal tape.

Fiber-optic cable shall be furnished by the systems integrator and installed by contractor. Fiber-optic cable shall be underground rated suitable for use in PVC conduit raceways. Cable shall be required to properly function with control and PLC equipment in accordance with manufacturer's detailed specifications.

6. Wiring Devices, Plates and Control Switches

a. General

(1) Work Included

- (a) Switches
- (b) Receptacles
- (c) Plates
- (d) Selector Switches
- (e) Pushbutton Switches

b. Products

(1) Materials

Wiring devices shall be Hubbell, Leviton or equal.

(2) Switches: Single pole 20 amp., 120/277 volt AC:

Single Pole	Hubbell #1221 or equal
Two Pole	Hubbell #1222 or equal

Three Way

Hubbell #1223 or equal

Install switches on lock side and clear of door frame a minimum of 3". Prior to rough-in, coordinate with Building Details on Plans to determine lockside of door.

- (3) Time Switches: Paragon Electric Co., Inc. Electronic Time Control Series EC7000 or equal.

- (4) Receptacles

General Purpose, Duplex, 20 Amp, 125 Volt: Hubbell #5362 or equal.

Corrosion Resistant, Duplex, 20 Amp, 125 Volt: Hubbell #53CM62 or equal.

Ground Fault Interrupter Receptacles, Duplex, 20 Amp, 125 Volt: Hubbell #GF5362 or equal.

Weather Resistant Ground Fault Interrupter Receptacles, Duplex, 20 Amp, 125 Volt: Hubbell #GFWRST20 or equal.
Special Receptacles: As indicated.

- (5) Manual Motor Starting Switches

Eaton MS Series or equal with thermal overload.

- (6) Device Plates

Stainless Steel: Hubbell, Leviton or equal.

Use weatherproof heavy duty cast aluminum "in-use" type covers for outside duplex receptacles: Hubbell, Pass & Seymour or equal.

Provide properly designed plates and covers when devices are installed in exposed boxes or conduit fittings.

- (7) Selector Switches

Selector switches shall be installed on the front of NEMA 4X enclosures as depicted on the Plans. Selector switches shall be Model CR 104 P heavy-duty, non-illuminating lever

operated selector switches manufactured by General Electric Company, Eaton or approved equal.

(8) Pushbutton Switches

Pushbutton switches shall be heavy duty, oil-tight units installed in NEMA 4X enclosures as depicted on the plans. Pushbutton switches shall be Model CR 104 P manufactured by General Electric Company, Eaton or approved equal.

c. Execution

(1) Installation

Provide proper size outlet boxes for all wiring devices of types specified in outlet and junction box section of these specifications.

All receptacles installed outdoors shall be corrosion resistant.

7. Safety Switches

a. General

(1) Work Included

(a) Safety Switches

(b) Fuses

b. Products

(1) Safety Switches (Motors and Circuits)

Switches shall be Eaton or pre-approved equal.

(a) All switches shall have interlocking cover.

(b) Use heavy duty type, quick make, quick break.

(c) Provide NEMA 4X 316 stainless steel, corrosion resistant enclosure for installations throughout except as noted herein and as shown on the Plans.

- (d) Fusible switches if indicated on plans shall be equipped with Class 'R' fuse kits.
- (e) Provide equipment ground lug in each switch.
- (f) All safety switches used in motor circuits controlled by solid state reduced voltage (SSRV) motor starters or adjustable frequency drives (AFD) shall be equipped with auxiliary contacts wired back to the respective SSRV or AFD control circuit.

(2) Fuses

In fusible safety switches provide Bussman fusetrons or equal, dual element, time delay fuses for motor loads and one time fuses for non-motor loads.

c. Execution

(1) Installation

Provide safety switches, enclosures and sizes as indicated on Plans.

8. Lighting Fixtures

a. General

(1) Work Included

- (a) LED Fixtures
- (b) LED Drivers
- (c) LED Modules
- (d) LED Downlights
- (e) LED Troffers
- (f) LED Compatible Dimmers
- (g) Photoelectric Cells

(h) Contactors

b. Products

(1) LED Fixtures

- (a) Luminaires shall be manufactured in accordance with NFPA Article 70, NEMA Standards and shall be U.L. listed and labeled and shall be complete with lamps, plates, rings, hangers, ballasts, lenses, trim and all other accessories necessary to accomplish a complete and secure installation.
- (b) Luminaire types, numbers and manufacturer shall be as detailed and scheduled on the drawings by Lithonia, Hubbell Lighting or approved equal.
- (c) Recessed troffer luminaires shall be supplied with four (4) hold-down clips per fixture. These clips shall be installed on ceiling tees after luminaire is in place.
- (c) Led light fixtures shall be in accordance with IES, NFPA, UL as shown on the drawings, and as specified. Fixtures shall be UL listed.
- (d) LED light fixtures shall be Reduction of Hazardous Substances (RoHS) – compliant.

(2) LED Drivers

- (a) Minimum efficiency: 85% at full load.
- (b) Minimum Operating Ambient Temperature: -20 degrees C. (-4 degrees F).
- (c) Input Voltage: 120-277V (±10%) at 60 Hz.
- (d) Integral short circuit, open circuit, and overload protection.
- (e) Power Factor: ≥.95.
- (f) Total Harmonic Distortion: ≤20%.

- (g) Comply with FCC 47 CFR Part 15.

(3) LED Modules

- (a) Comply with IES LM-79 and LM-80 requirements.
- (b) Minimum CRI 80 and color temperature 3000 degrees K unless otherwise specified in lighting fixture schedule.
- (c) Minimum Rated Life: 50,000 hours per IES L70.
- (d) Light output lumens as indicated in the lighting fixture schedule.

(4) LED Downlights

- (a) Housing, LED drive, and LED module shall be products of the same manufacturer.

(5) LED Troffers

- (a) LED drivers, modules and reflector shall be accessible, serviceable, and replaceable from below the ceiling.
- (b) Housing, LED driver and LED module shall be products of the same manufacturer.
- (c) All LED fixtures shall have a full five (5) year warranty.

(6) LED Compatible Dimmers

- (a) Provide wall box dimmer where noted on drawings and as recommended by fixture manufacturer for compatibility with fixture type. Dimmers shall have adjustable slider with manual push button override.
- (b) Dimmer to be rated for a minimum of 4 times connected load and as recommended by manufacturer for fixture load inrush protection.
- (c) Dimmer shall be lead/lag type as required by specific fixture driver characteristics. Modify wiring indicated

on drawings as necessary for specific dimmer and driver requirements.

- (d) Dimmer schedule to be included in submittals indicating specific fixture types to be controlled.
- (e) Where multiple dimmers are installed in a single location, provide engraved nameplates indicating dimmer function.

(7) Photoelectric Cells

- (a) Photoelectric cell units shall be 120 volt, SPST @ 190U watt tungsten or ballast capacity complete with movable light level selector, weatherproof enclosure and 1/2" standard threaded stem. Units shall be mounted on cast FS boxes installed on roof as shown on drawings.
- (b) Photoelectric cell shall be for control of exterior lighting system as indicated on plans. Photoelectric cell shall be as manufactured by Tork or approved equal by Pierce or Lumatrol.

(8) Contactors

- (a) The contactor shall be 600 volt rated and shall have poles as required by the drawings, continuously rated with amperes rating per pole as shown on the drawings and shall be capable of making and breaking all classes of loads without the aid of auxiliary arcing contacts. Auxiliary arcing contacts are not accepted.
- (b) The contactor shall have totally closed, double break, silver-cadmium oxide power contacts. Contact inspection and replacement shall be possible without disturbing line or load wiring.
- (c) The contactor shall have straight-through wiring, with all terminals clearly marked. Terminals shall accept copper or aluminum wire.

- (d) The contactors shall be UL listed per 508 or CSA, and designed in accordance with NEMA ICS2-211B. They shall be industrial duty rated for applications to 600 volts.
- (e) The contactor shall be electrically operated, electrically held type, unless otherwise noted on the drawings.
- (f) The control coil of contactors shall be 120 volt unless otherwise noted on the drawings.
- (g) Install all contactors in NEMA 1 enclosures.
- (h) Acceptable manufacturers
 - 1. Eaton, ASCO or approved equal.

c. Execution

(1) Installation

- (a) Install lighting fixtures at locations and heights, as indicated, in accordance with the plans and specifications, and with recognized industry practices to ensure that lighting fixtures fulfill requirements.
- (b) Coordinate with other electrical work, as appropriate, to properly interface installation of interior lighting fixtures with other work.
- (c) Furnish and install all necessary structural supports, U-channel strut system. chains, rods, hangers, bolts, etc. to properly support light fixtures from the building structure, as indicated on the plans or as recommended by the manufacturer.
- (d) Furnish and install swivel fixture hangers where lighting fixtures are pendant mounted from a pitched roof structure.
- (e) All lighting fixtures, whether surface-mounted or recessed, shall be supported directly from the building

structure and completely independent from the ceiling membrane or ceiling support system.

- (f) Support of fixtures in suspended ceilings shall be securely fastened to the ceiling framing system by mechanical means as required by Article 410.16 of the National Electrical Code.
- (g) All recessed lighting fixtures shall be protected with thermal protective devices as required by Article 410.65 of the National Electrical Code.
- (h) Furnish and install spacers between all surface mounted lighting fixtures and wall or ceiling surface.
- (i) At completion of project, clean all fixtures, lenses and interiors, removing all construction debris and accumulated dust.
- (j) Install photoelectric cell in accordance with manufacturer's recommended procedures.

9. Service and Distribution System and Grounding

a. General

(1) Work Included

- (a) Service system
- (b) Distribution system
- (c) Grounding
- (d) Bonding to lightning protection systems.

b. Products

(1) Materials

Furnish service entrance conduit and cable and miscellaneous hardware required.

c. Execution

(1) Service and Distribution System

- (a) System secondary shall commence at proposed power company pad mount transformer and continue through service entrance rated automatic transfer switch, main switchboard, transformers, panelboards, feeder circuits and branch circuits to wiring devices, appliances, apparatus and other utilization equipment.

Service shall be 277/480 volts, three phase, four wire, Wye from power company padmount transformer.

Coordinate metering with power company.

(2) Grounding

Ground electrical system in accordance with Article 250, National Electrical Code local authorities having jurisdiction, and as indicated on the Plans.

Do not use flexible metal conduit and fittings as a grounding means. Pull a green wire in each piece of flexible and conduit and screw to conduit system with lugs at both ends.

Install green bonding jumpers in flush mounted receptacle ground terminal. Install green bonding jumpers between outlet box and wall bracket mounted lighting fixtures. Screw jumpers to fixture chassis with lugs.

Install code size green grounding conductors in all branch circuits feeding receptacles, motors or other permanently wired fixed equipment and all feeder circuits. Bond conductors to chassis of fixed equipment. All grounding conductors shall be bonded to multi-terminal ground bus at panelboard. Grouping of grounding conductors under a single lug is not acceptable.

Install a #4/0 bare copper conductor grounded to main metal water piping and concrete reinforcing steel.

All separate grounding electrodes shall be bonded together to limit potential differences between them and between their

associated wiring systems. This includes the power system and lightning protection system grounding electrodes.

10. Automatic Load Transfer Switch

a. General

Amperage rating and NEMA enclosure type of automatic load transfer switch shall be as indicated on plans.

The entire automatic transfer switch assembly shall be front accessible.

Automatic transfer switch shall be service entrance rated (100,000 AIC) with overcurrent protection on normal and standby sources. Lugs shall be suitable for wire size specified.

Automatic transfer switch shall be 100% rated.

Automatic transfer switches shall be mechanically held on both standby and normal side and rated for continuous duty in an unventilated enclosure. Switch shall be double throw with main contacts rigidly and mechanically interlocked to insure only two possible positions: Normal or Standby. Manual operator must be provided to enable manual operation.

Automatic transfer switch shall meet all the requirements of NEC Article 240.87 Arc Energy Reduction.

Automatic transfer switches shall be listed under UL 1008. Switches utilizing reversing contactor mechanism as means to transfer load are disallowed and will not be considered.

b. Products

(1) Circuit Breakers (Normal and Standby Sources) - Microprocessor-Based Trip Units with ground fault, drawout type (interchangeable and identical).

(a) All circuit breakers shall include an Arc Flash Reduction Maintenance System (ARMS). The ARMS technology shall be provided to reduce arc energy during periods of maintenance. The system shall engage an independent, reduced instantaneous pickup and reduce

total clearing time when activated. The pick-up valve shall be adjustable with a minimum of (5) settings (2.5 to 10 x I_n) to allow the greatest arc energy reduction without nuisance tripping. With the ARMs technology active, total clearing time shall not exceed 40 msec for any fault currents above the pick-up value. Activation and deactivation of the ARMs technology and local indication shall be accessible from the face of the trip unit without opening the circuit breaker door and exposing operators to energized parts. Recalibration or adjustment of trip unit parameters shall not be required when enabling/disabling the ARMs technology. (Breakers shall include a separate, local, lockable ARMs activation selector switch and pilot light indication.

- (2) Accessories for Transfer Switches: The automatic load transfer switch shall include the following accessories:
 - (a) Engine starting contacts to provide for generator starting.
 - (b) Test switch, to simulate power outage.
 - (c) Adjustable time delay (1-300 seconds) on transfer switch for delayed automatic transfer of load to generator.
 - (d) Adjustable time delay on retransfer to load to normal with five-minute cooldown timer wherein generator set runs unloaded after transfer to line.
 - (e) Programmed transition controls for transfer and retransfer of load connection.
 - (f) Plant exerciser to start and run generator set each 168 hours for a 30-minute interval.
 - (g) One auxiliary contact closed and one auxiliary contact open on emergency.
 - (h) Pilot lights to indicate normal and standby position of transfer switch.

- (i) Isolated (ungrounded) neutral bar.
- (j) Disconnect plug.
- (k) Automatic transfer switch shall be Eaton type ATV Series Square D or pre-approved equal.

c. Execution

(1) Factory Testing

- (a) Each switch shall be factory tested in accordance with UL and NEMA standards. In addition, the manufacturer shall perform the following tests:
 - 1. Insulation check to ensure the integrity of insulation and continuity of the entire system.
 - 2. Visual inspection to ensure that the switch matches the specification requirements and to verify that the fit and finish meet quality standards.
 - 3. Mechanical tests to confirm compatibility of the switch's logic and power sections and to verify that they are free of mechanical hindrances. Switches shall be cycled through a minimum of 50 operations by alternately removing normal and emergency power sources.
 - 4. Electrical tests to verify the complete electrical operation of the switch and to set up the time delays and voltage sensing settings of the logic.

(2) Installation

- (a) Installation of all switches shall be in accordance with all applicable codes, standards, and practices as well as in accordance with the recommendations of the manufacturer.
- (b) The contractor's field wiring terminating within the enclosure shall comply with NFPA 70. If wiring is not color coded, wires shall be permanently marked near the terminal at each end with the wire number shown on the approved shop drawings.

- (c) The contractor shall supply grounding lugs as required to meet with the local inspection and applicable codes.

(3) Start-up and Field Service

- (a) **ALL OPERATIONAL DATA AND SETTINGS FOR THE AUTOMATIC TRANSFER SWITCH AND ASSOCIATED PROTECTION DEVICES SHALL BE CALCULATED AND PROVIDED BY THE MANUFACTURER'S APPLICATION ENGINEER. THESE SETTINGS ARE TO BE PROGRAMMED, SET AND CHECKED BY THE MANUFACTURER'S FIELD ENGINEER PRIOR TO STARTUP. ALL STARTUP AND ADJUSTMENTS ARE TO BE PERFORMED BY THE MANUFACTURER'S FIELD ENGINEER.**

- (b) The Contractor shall take care in the installation of all equipment specified under this Sub-Section of these Detailed Specifications.

- (c) The manufacturer's field engineer or representative shall inspect and check the installation after erection and provide instruction and start-up service including but not limited to adjustment of any and all control functions and setting of all equipment to provide a complete and operable system. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH COPIES OF THE MANUFACTURER'S REPRESENTATIVE FIELD SERVICE AND START-UP REPORT. FAILURE TO SUBMIT THIS INFORMATION WILL PREVENT PAYMENT FOR EQUIPMENT BEYOND NINETY (90) PERCENT OF THE EQUIPMENT COST.

- (d) The contractor shall field adjust all timing and voltage settings of the transfer switch as necessary for proper operation of the unit.

(4) Warranty

Equipment furnished under this Section shall be guaranteed against defective parts and workmanship under terms of manufacturer's and dealer's standard five (5) year comprehensive warranty.

Five (5) year comprehensive warranty terms shall not include any exclusions for number of trips required to perform warranty work or travel time and mileage limitations to job site.

Manufacturer authorized service must be within 200 miles of job site.

11. Main Switchboard "MSB"

a. General

(1) Work Included

(a) Main Switchboard

b. Products

(1) General

Main switchboard, 277/480 volt, 3 phase, 4 wire shall be equal to free standing switchboard, Type POW-R-LINE C, as manufactured by Eaton, Square D or pre-approved equal and in accordance with details shown on the drawings. The entire switchboard assembly shall be uniform in height. The switchboard assembly and components shall be designed, manufactured and tested in accordance with the latest applicable standards of the IEEE, ASA and NEMA.

Amperage rating and NEMA enclosure type shall be as indicated on plans.

The entire switchboard assembly shall be front accessible.

All major components of the complete assembly shall be the product of a single manufacturer that are factory tested as a complete assembly.

The manufacturer of the assembly shall be the manufacturer of the major components within the assembly,

For the equipment specified herein, the manufacturer shall be ISO 9001 or 9002 certified.

The manufacturer of this equipment shall have produced similar electrical equipment for a minimum period of five (5) years. When requested by the Engineer, an acceptable list of installations with similar equipment shall be provided demonstrating compliance with this requirement.

Main switchboard shall be 100% rated.

Main switchboard shall be listed under UL891.

Main switchboard shall meet all the requirements of NEC Article 240.87 Arc Energy Reduction.

This equipment and major components shall be suitable for and certified by actual seismic testing to meet all applicable seismic requirements of the 2018 International Building Code Site Classification for the jobsite location.

(2) Pull Section

Bottom feed pull section shall be bus connected to main switchboard.

(3) Distribution Sections

Distribution sections to house 3 pole distribution circuit breakers. Circuit breakers and sizes to be as required by schedules and details on the drawings. Branch circuit breakers shall be group mounted of the type and size scheduled on drawings. Circuit breaker spaces shall have all busbars, straps, braces, etc., necessary for accepting future circuit breakers. Each circuit breaker and space shall be provided with an engraved nameplate. All circuit breakers shall have "lock-off" provisions.

Feeder circuit breakers shall be equipped with long time, short time, instantaneous and ground fault protection (LSIG).

Circuit breakers 1,200 amp and above shall be equipped with arc energy reduction maintenance system (ARMS).

(4) Bussing

Switchboard bussing shall be full-rated, amperage rating as

shown on drawings, horizontal phase and neutral with full rated ground bus. All bus bars shall be plated copper. All bus connections shall be made with hardened steel bolts and pressure (Belleville) washers. Busses shall be braced for 65,000 amperes "RMS" symmetrical.

(5) Metering

Provide electronic metering equivalent to Eaton IQ250.

The electronic metering shall meet the accuracy portion of ANSI C12.16 Class 10 for revenue metering. All monitoring parameters shall be viewable at the display.

1. Metered values shall be as follows with accuracy in percent of full scale as indicated:

(a)	AC Phase Amperes	+/- 0.5%
(b)	AC Phase Voltage	+/- 0.5%
(c)	Watts	+/- 1.0%
(d)	VA	+/- 1.0%
(e)	Vars	+/- 1.0%
(f)	Power Factor	+/- 2.0%
(g)	Frequency	+/- 0.1%
(h)	Watthours	+/- 1.0%
(i)	Varhours	+/- 1.0%
(j)	VA hours	+/- 1.0%
(k)	Watt Demand with 10-, 15-, 20-, 25-, 30-, 45-, 60- minute interval.	
(l)	Voltage	minimum/maximum
(m)	Current	minimum/maximum

- | | | |
|-----|--------------|-----------------|
| (n) | Power | minimum/maximum |
| (o) | Power Factor | minimum/maximum |
| (p) | Frequency | minimum/maximum |
| (q) | Peak Demand | |

c. Execution

Install switchboards per manufacturer's detailed installation guidelines. All testing, startup, training and setup shall be performed by a factory trained manufacturer representative.

ALL REQUIRED OPERATIONAL DATA SETTINGS FOR THE APPLICABLE FEEDER CIRCUIT BREAKERS SHALL BE CALCULATED AND PROVIDED BY THE MANUFACTURER'S APPLICATION ENGINEER. ALL SETTINGS ARE TO BE PROGRAMMED, SET AND CHECKED BY THE MANUFACTURER'S FIELD ENGINEER PRIOR TO STARTUP.

Provide engraved nameplates for each circuit breaker in main switchboard.

12. Standby Diesel Engine Generator System

a. General

(1) Scope

Under this section of Specifications, Contractor shall furnish and install a diesel engine driven generator set designed for outdoor installation. System shall consist of:

- (a) Diesel engine driven electric generating set to provide standby power.
- (b) Automatic load transfer control to provide automatic starting and stopping.
- (c) Mounted accessories as specified.

(2) Rating

The standby diesel engine generating set shall be rated for 600 kW at 0.80 power factor, 750 KVA standby service. Set output shall be at voltage, phase and frequency shown on Plans.

Power plant shall be standard product of Caterpillar, Cummins or pre-approved equal conforming to these Specifications and rated not less than specified. Generator set shall be factory assembled.

(3) Submittals

Shop plans for standby power plant shall contain not less than the information listed as follows:

- (a) **Certification that power plant furnished will serve electrical loads indicated including motor starting loads with type of starting indicated.**
- (b) Continuous and standby rating of plant including voltage and phase.
- (c) Frequency and voltage regulation with maximum instantaneous voltage dip and time of recovery to stable operation.
- (d) Output voltage adjustment range in percentage of rated plant voltage.
- (e) Alternator type and method of connection to prime mover.
- (f) Components contained in alternator instrument panel.
- (g) Rating of engine at operating speed, engine cycle and number of cylinders.
- (h) Type of engine lubrication system and verification of components.
- (i) Type of engine governor.

- (j) Fuel consumption at rated load.
- (k) Verification that all equipment specified is to be provided. This includes fuel tank with capacity indicated, cold weather starting aid with rating and voltage indicated, exhaust system with muffler type indicated, outdoor housing with verification of space available within housing for batteries and all specified equipment.
- (l) Starting batteries including ampere hour rating.
- (m) EPA certificate of conformity.
- (n) Exhaust emissions data.

(4) Regulatory Requirements

Conform to latest edition of NEC and applicable inspection authority.

Generator manufactured to NEMA standards.

b. Products

(1) Engine

Engine shall be diesel-fueled, turbocharged, water cooled with unit mounted 122 degrees Fahrenheit radiator, fan and water pump. At 1800 RPM, engine shall develop not less than horsepower indicated on schedule on drawings. Engine displacement shall not be less than indicated on schedule on drawings.

Full pressure lubrication shall be provided by lube oil pump. Engine shall have an air cleaner and oil filter with replaceable elements, fuel filters and lube oil cooler. Radiator shall be 122 degrees Fahrenheit high ambient rated.

Engine speed shall be governed by electronic governor to maintain alternator frequency within 0.25 Hertz from no load to full load alternator output. Engine shall have a 24 volt D.C. battery charging alternator and voltage regulator. Remote starting shall be 24 volt electric starter.

Power plant shall contain engine start-stop controls and cranking limiter to cycle engine starting circuit for 15 second intervals with 5 seconds between starts and shall open engine starting circuit in 90 seconds if engine is not started within that time. Engine control panel shall contain solid state engine monitor with individual fault pilot lamps and shut down for overcrank, over speed, high engine temperature and low oil pressure per NFPA 110.

(2) Alternator

Alternator shall be 125 degrees C. rise four pole revolving field design, three phase with temperature compensated solid state voltage regulator and brushless rectifier exciter system.

Stator shall be directly connected to engine flywheel housing. Rotor shall be driven through a semi-flexible driving flange. Alternator insulation shall be Class H.

Frequency regulation shall not exceed 0.25 Hz. Voltage regulation shall be within plus or minus 0.5% of rated voltage. Following application of full load via transfer switch to generator set, RMS voltage determined on symmetrical basis for each complete cycle starting at first zero crossing after load application through 6th cycle must not drop below 65% of RMS voltage prior to application of load. RMS voltage starting at seventh cycle from first zero crossing after load application shall be sustained at no less than 90% of RMS voltage before load application. This voltage must be maintainable for a period of at least 30 seconds without tripping overcurrent devices in generator or causing overheating of any component beyond its design limits. Recovery to stable operation shall be within two seconds. Rheostat shall be provided to allow adjustment of rated voltage through +5%.

(3) Engine-Generator Set Control

The generator set shall be provided with a microprocessor-based control system, which is designed to provide automatic starting, monitoring, and control functions for the generator set. The control system shall also be designed to allow local monitoring and control of the generator set, and remote monitoring and control as described in this specification. The control shall be mounted at the location shown on the project

drawings for medium voltage applications, and on the generator set for 600 volt and lower applications. When mounted on the generator set the control shall be vibration isolated and prototype tested to verify the durability of all components in the system under the vibration conditions encountered. **The control shall be mounted at a maximum height of 5 feet 6 inches above concrete pad or access platform/walkway for operator viewing per NFPA 110.** The control shall be UL508 labeled, CSA282-M1989 certified, and meets IEC8528 part 4. All switches, lamps, and meters shall be oil-tight and dust-tight, and the enclosure door shall be gasketed. There shall be no exposed points in the control (with the door open) that operate in excess of 50 volts. The controls shall meet or exceed the requirements of Mil-Std 461C part 9, and IEC Std 801.2, 801.3, and 801.5 for susceptibility, conducted, and radiated electromagnetic emissions. The entire control shall be tested and meet the requirements of IEEE587 for voltage surge resistance. The generator set mounted control shall include the following features and functions:

- (a) Three position control switch labeled RUN/OFF/AUTO.

In the RUN position the generator set shall automatically start, and accelerate to rated speed and voltage. In the OFF position the generator set shall immediately stop, bypassing all time delays. In the AUTO position the generator set shall be ready to accept a signal from a remote device to start and accelerate to rated speed and voltage.

- (b) Red "mushroom-head" push-button EMERGENCY STOP switch.

Depressing the emergency stop switch shall cause the generator set to immediately shut down, and be locked out from automatic restarting.

- (c) Push-button RESET switch.

The RESET switch shall be used to clear a fault and allow restarting the generator set after it has shut down for any fault condition.

(d) Push-button PANEL LAMP switch.

Depressing the panel lamp switch shall cause the entire panel to be lighted with DC control power. The panel lamps shall automatically be switched off 10 minutes after the switch is depressed, or after the switch is depressed a second time.

(e) Generator Set Metering:

The generator set shall be provided with a metering set with the following features and functions:

2.5 inch, 90 degree scale analog voltmeter, ammeter, frequency meter, and kilowatt (kW) meters. These meters shall be provided with a phase select switch and an indicating lamp for upper and lower scale on the meters. Ammeter and kW meter scales shall be color coded in the following fashion: readings from 0-90% of generator set standby rating: green; readings from 90-100% of standby rating: amber; readings in excess of 100%: red.

Digital metering set, 0.5% accuracy, RMS type, to indicate generator voltage, frequency, output current, output kW, KW-hours, and power factor. Generator output voltage shall be available in line-to-line and line-to-neutral voltages, and shall display all three phase voltages (line to neutral or line to line) simultaneously.

(f) Generator Set Alarm and Status Indication:

The generator set shall be provided with alarm and status indicating lamps to indicate non-automatic generator status, and existing alarm and shutdown conditions. The lamps shall be high-intensity LED type. The lamp condition shall be clearly apparent under bright room lighting conditions. The generator set control shall indicate the existence of the following alarm and shutdown conditions on a digital display panel:

low oil pressure (alarm)
low oil pressure (shutdown)

- oil pressure sender failure (alarm)
- low engine temperature (alarm)
- high engine temperature (alarm)
- high engine temperature (shutdown)
- engine temperature sender failure (alarm)
- low coolant level (alarm or shutdown-selectable)
- fail to crank (shutdown)
- overcrank (shutdown)
- overspeed (shutdown)
- low DC voltage (alarm)
- high DC voltage (alarm)
- weak battery (alarm)
- low fuel-daytank (alarm)
- high AC voltage (shutdown)
- low AC voltage (shutdown)
- under frequency (shutdown)
- over current (warning)
- over current (shutdown)
- short circuit (shutdown)
- ground fault (alarm)(optional-when required by code or specified)
- over load (alarm)
- under frequency (alarm)

In addition, provisions shall be made for indication of two customer-specified alarm or shutdown conditions. The non-automatic indicating lamp shall be red, and shall flash to indicate that the generator set is not able to automatically respond to a command to start from a remote location.

(g) Engine Status Information:

The following information shall be available from a digital status panel on the generator set control:

- engine oil pressure (psi or kPA)
- engine coolant temperature (degrees F or C; Both left and right bank temperature shall be indicated on V-block engines.)
- engine oil temperature (degrees F or C)
- engine speed (rpm)
- number of hours of operation (hours)
- number of start attempts

battery voltage (DC volts)

(h) Control Functions

The control system provided shall include a cycle cranking system, which allows for user selected crank time, rest time, and # of cycles. Initial settings shall be for 3 cranking periods of 5 seconds each, with 15 second rest period between cranking periods.

The control system shall include an idle mode control, which allows the engine to run in idle mode in the RUN position only. In this mode, the alternator excitation system shall be disabled.

The control system shall include an engine governor control, which functions to provide steady state frequency regulation as noted elsewhere in this specification. The governor control shall include adjustments for gain, damping, and a ramping function to control engine speed and limit exhaust smoke while the unit is starting. The governor control shall be suitable for use in paralleling applications without component changes.

The control system shall include time delay start (adjustable 0-300 seconds) and time delay stop (adjustable 0-600 seconds) functions.

The control system shall include sender failure monitoring logic, which is capable of discriminating between failed sender or wiring components and an actual failure conditions.

(i) Alternator Control Functions:

The generator set shall include an automatic voltage regulator. The voltage regulator shall be immune from misoperation due to load-induced voltage waveform distortion. The voltage regulator shall be equipped with three-phase RMS sensing. The regulator shall control buildup of AC generator voltage to provide a linear rise and limit overshoot. The regulator shall include a torque-matching characteristic, which shall reduce

output voltage in proportion to frequency below a threshold of [58-59] HZ. The voltage regulator shall include adjustments for gain, damping, and frequency roll-off. The regulator shall include provisions reactive load sharing and electronic voltage matching for paralleling applications. Motorized voltage adjust pot is not acceptable for voltage matching.

Controls shall be provided to monitor the output current of the generator set and initiate an alarm when load current exceeds 110% of the rated current of the generator set on any phase for more than 5 seconds. The controls shall shut down and lock out the generator set when output current level approaches the thermal damage point of the alternator.

Controls shall be provided to monitor the kW load on the generator set, and initiate an alarm condition when total load on the generator set exceeds the generator set rating for in excess of 5 seconds.

Controls shall include a load shed control, to operate a set of dry contacts (for use in shedding customer load devices) when the generator set is overloaded.

An AC over/under voltage monitoring system shall be provided which initiates shutdown of the generator set when alternator output voltage exceeds 110% of the operator-set voltage level for more than 10 seconds, or instantaneously when voltage exceeds 130%. Under voltage shall be indicated when the output voltage of the alternator is less than 85% for more than 10 seconds.

A battery monitoring system shall be provided which initiates alarms when the DC control and starting voltage is less than 25 VDC or more than 32 VDC. During engine starting, the low voltage limit shall be disabled, and if DC voltage drops to less than 14.4 volts for more than two seconds a "weak battery" alarm shall be initiated.

When required by National Electrical Code or indicated on project drawings, the control system shall include a

ground fault monitoring relay. The relay shall be adjustable from 100-1200 amps, and include adjustable time delay of 0-1.0 seconds. The relay shall be for indication only and not trip or shut down the generator set. Note bonding and grounding requirements for the generator set, and provide relay, which will function correctly in system as installed.

(j) Control Interfaces for Remote Monitoring:

All control and interconnection points from the generator set to remote components shall be brought to a separate connection box. No field connections shall be made in the control enclosure or in the AC power output enclosure. Provide the following features in the control system:

A Discrete Input/Output Module shall be provided to translate alarm, fault, and status conditions to a set of relay contacts. Contacts shall represent conditions of:

- EMCP diagnostic fault system not in automatic alarm
- High coolant temperature alarm
- Low coolant temperature alarm
- Low oil pressure alarm
- Low oil pressure fault
- High coolant temperature fault
- Overcrank fault
- Overspeed fault

Form "C: dry common alarm contact set to indicate existence of any alarm or shutdown condition on the generator set.

A fused 10 amp switched 24VDC power supply circuit shall be provided for customer use. DC power shall be available from this circuit whenever the generator set is running.

The control shall be provided with provisions for connection of remote monitoring equipment as described herein or shown on the drawings.

(4) Remote Annunciator Panel

Provide generator remote annunciator panel Caterpillar #EMCP3 or equal to be located as shown on the plans.

(5) Main Line Circuit Breaker

Type: A main-line, molded case circuit breaker mounted upon and sized to the output of the generator shall be installed as load circuit interrupting and protection device. It shall operate both manually for normal switching functions and automatically during overload and short circuit conditions.

The circuit breaker shall be mounted at a height not exceeding 6 feet 7 inches above the concrete pad or working platform per NEC Article 240.24(A). This height is to include sub-base fuel tank if applicable. Provide access steps and working platform as required for accessibility.

(6) Coolant Heater

Provide 208 volts, A.C., 1 phase heater, thermostatically controlled in engine coolant system as cold weather starting aid.

Electric heater shall be permanently connected to circuit extended from building electrical system.

(7) Antifreeze

Provide antifreeze to protect coolant to -35 degrees F.

(8) Starting Battery

Wet cell batteries, lead-acid type shall be provided with stand-by power plant. Batteries shall be selected for starting requirements of stand-by power plant and shall be rack mounted within plant housing. Batteries shall be permanently connected to two step battery charger.

(9) Muffler

Provide residential rated muffler complete with raincap and supports, installed inside weatherproof housing.

(10) Battery Charger

Provide a ten (10) amp voltage regulated battery charger for engine starting battery. Charger shall be equipped with float, taper, and equalize charge settings. Charger shall automatically taper amps to zero when battery approaches full charge.

(11) Housing

Stand-by power plant shall be provided in outdoor, weatherproof, sound attenuated **[75 dB(A) at 23 feet]** housing with removable panels for access to equipment. Starting batteries shall be rack mounted within housing.

(12) Access Platform/Walkway

Stand-by power plant shall be provided with a dual walkaround platform/walkway equal to Tramont Option No. KMWA with required steps, handrails and all accessories required to meet the standards of OSHA 3124 and 1910.24 to allow readily observation of the control panel per NFPA 110. The platform shall provide for operator/maintenance personnel viewing of the engine-generator set control and monitoring panel at a maximum height of 5 feet 6 inches above platform or concrete pad. The platform shall be designed shall be designed to allow opening and closing of outward swinging doors while standing on the platform. The access platform/walkway shall be equivalent to that manufactured by Tramont KM Walkway, Milwaukee, WI.

(13) Fuel Tank

Fuel tank shall be a skid base mounted double wall tank with minimum capacity to provide 48 hours operation at full diesel engine-generator set capacity. Fuel tank shall be equipped with a fuel leak detector.

The fuel tank shall be designed and constructed to prevent the collection and standing of water on top of the tank.

Provide single pole, double throw low level alarm switch that senses the fuel level by pressure changes. When activated,

circuit shall sound alarm at remote annunciator. Provide fuel level gauge on skid base mounted tank.

At completion and final acceptance of installation and testing, Contractor shall fill fuel tank to full capacity with No. 2 diesel fuel.

(14) Venting and Piping

Venting for fuel tank and piping between engine, fuel tank, levelometer, fuel pumps, etc. shall be furnished and installed in accordance with NFPA Standard 37.

c. Execution

(1) Stand-by Electric Power System

Performance of plant shall be certified in writing, with respect to full power rating, voltage and frequency regulation and motor starting capability. Certifications shall be submitted with submittal.

Plant shall be provided with spring type, vibration isolators and mounted on a welded steel base. Plant shall be anchored to concrete base per manufacturer's recommendations.

Install standby generator in accordance with manufacturer's recommendations.

(2) Testing

The actual performance of each unit shall be certified in writing, with respect to full power rating, voltage and frequency regulation and motor starting capability.

On completion of installation, start-up shall be performed by the engine manufacturer's trained service representative.

Prior to acceptance of installation, equipment shall be tested for any defects and will start automatically and be subjected to full load test through the use of portable dry type load banks supplied for this purpose at job site by generator set supplied.

Load bank test shall be witnessed by designated project representatives and generator set installation approved prior to acceptance. Load bank test shall be scheduled two (2) weeks in advance to confirm day and time of test. A complete test report shall be submitted within two (2) weeks after test.

Operating and maintenance instruction manuals shall be supplied and procedures explained to operating personnel.

The Contractor shall be responsible for the complete installation and start-up of standby generator system for proper operation under standby power. This includes the proper setup of all connected load control devices including automatic transfer switch, circuit breakers, solid state reduced voltage starters, adjustable frequency drives, etc.

(3) Warranty

Equipment furnished under this Section shall be guaranteed against defective parts and workmanship under terms of manufacturer's and dealer's standard five (5) year comprehensive warranty.

Five (5) year comprehensive warranty terms shall not include any exclusions for number of trips required to perform warranty work or travel time and mileage limitations to job site.

Manufacturer authorized service must be within 200 miles of job site.

13. Panelboards

a. General

(1) Work Included

(a) Panelboards.

b. Products

(1) Panelboards

120/208 or 277/480 volts, 3 phase, 4 wire as indicated on Plans: Eaton, or pre-approved equal.

Panelboards shall be factory assembled, dead front type with plated copper bus bars, lugs, finish trim and thermal-magnetic molded case circuit breakers of frame and trip ratings shown on the Plans.

Provide single door with spring latch lock. Key panel locks alike.

Circuit breakers shall be HACR rated as required.

277/480 volt AC, 3 phase, 4 wire S/N, Lighting and Appliance Panelboards shall be Eaton, Type POW-R-LINE, Square D or pre-approved equal, equipped with bolt-on thermal-magnetic circuit breakers. Breakers shall be 1, 2, or 3 pole with an integral crossbar to assure simultaneous opening of all poles in multipole circuit breakers. Bolt-on circuit breakers shall be able to be installed in same panelboard without requiring additional mounting hardware. Circuit breakers shall be rated 277 volts AC (single pole, 15-30 amperes) or 480Y/277 volts AC (2 and 3 pole, 15-225 amperes) with continuous current ratings as noted on the plans. Interrupting rating shall be 65,000 rms symmetrical amperes. Single pole 15 and 20 ampere circuit breakers shall carry the SWD marking and H.I.D. rating. Each panelboard shall be equipped with a bare uninsulated equipment grounding bar for use in terminating separate equipment grounding conductors. Panelboards shall be equipped with full or 200 percent neutral bars as scheduled.

120/208 volt AC, 3 phase, 4 wire S/N, Branch Circuit Panelboards shall be Eaton, Type POW-R-LINE, Square D or pre-approved equal, equipped with bolt on thermal-magnetic circuit breakers. Breakers shall be 1, 2 or 3 pole with integral crossbar to assure simultaneous opening of all poles in multipole circuit breakers. Bolt on circuit breakers shall be able to be installed in the same panelboard without requiring additional hardware. Circuit breakers shall be rated 120/240 volts AC single pole 15-50 ampere) or 240 volt AC (2 and 3 pole, 15-50 amperes) with continuous current ratings as noted

on the plans. Interrupting rating shall be 10,000 RMS symmetrical amperes. Single pole 15 and 20 ampere circuit breakers shall carry the SWD marking and H.I.D rating. Each panelboard shall be equipped with a bare uninsulated equipment grounding bar for use in terminating separate equipment grounding conductors. Panelboards shall be equipped with full or 200 percent neutral bars as scheduled.

c. Execution

(a) Panelboards

Provide typewritten directory cards listing location of circuit controlled. Insert with plastic cover into directory frame on door.

Provide arc flash marking for all switchboards, panelboards and control panels per NEC Article 110.16.

Provide identification indicating voltage, phase, device designation, source fed from and other required marking per NEC Article 110.21.

14. Transformers

a. General

(1) Work Included

(a) Dry Type Transformers.

b. Products

(1) Dry Type Transformers

Transformers shall be manufactured by Eaton, Square D or pre-approved equal.

Transformers shall be 3 phase, 480 volts Delta to 208Y/120 volts, 150 degree C rise, Class H insulation. Provide standard taps.

Transformer sound levels shall be guaranteed by the manufacturer to be no greater than NEMA standard sound levels.

c. Execution

(1) Installation

Ceiling hung transformers shall be supported by 1/2" (minimum) 316 stainless steel rod hangers and braced per Seismic Requirements.

All floor mounted dry type transformers shall be installed on a minimum 4" high concrete pad.

Mounting of transformers on floor in damp or wet locations, and where exposed to possible flooding is prohibited.

Install transformers to provide working clearances required in NEC 110.26(A) and 450.

15. Surge Protection Devices (SPD)

Competitive products submitting against this specification must provide a single impulse surge current test report issued by a nationally recognized testing facility. The test report should demonstrate that the competitive surge protection device (SPD) can withstand, in its installed configuration, the specified value surge current without failure of any internal component (MOV's, wiring, printed circuit board and disconnect).

- a. Furnish and install integrated surge protection device (SPD) at the entrance of the primary power supply in the main switchboard "MSB". This unit shall be suitable for installation on a three phase 277/480 VAC, four wire plus ground type service. Surge protection device (SPD) shall be of a passive parallel, thermal stress reducing design with a response time of less than or equal to one nanosecond. The unit shall be UL 1449 Third Edition and CSA listed, and it shall have a full fifteen (15) year non-limited warranty. SPD shall have a peak surge current rating of no less than 250,000 amps per phase (L-N + L-G). The UL 1449 Third Edition let through voltage, line-to-neutral, shall not exceed 1,000 volts peak when the unit hit with an ANSI/IEEE 62.41 Category B (6,000 volt, 6,500 amp) impulse hit.

Surge protection device shall be Eaton Cat. No. SPD250480Y2B or pre-approved equal.

- b. Furnish and install integrated surge protection device (SPD) at the entrance of the primary power supply in the panelboards "H". This unit shall be suitable for installation on a three phase 277/480 VAC, four wire plus ground type service. Surge protection device (SPD) shall be of a passive parallel, thermal stress reducing design with a response time of less than or equal to one nanosecond. The unit shall be UL 1449 Third Edition and CSA listed, and it shall have a full fifteen (15) year non-limited warranty. SPD shall have a peak surge current rating of no less than 160,000 amps per phase (L-N + L-G). The UL 1449 Third Edition let through voltage, line-to-neutral, shall not exceed 1,000 volts peak when the unit hit with an ANSI/IEEE 62.41 Category B (6,000 volt, 6,500 amp) impulse hit.

Surge protection device shall be Eaton Cat. No. SPD160480Y2C, Square D or pre-approved equal.

- c. Furnish and install integrated surge protection device (SPD) at the 120/208 volt panelboards "L". Each unit shall be suitable for installation on a three phase 120/208 VAC, four wire plus ground type service. Each surge protection device (SPD) shall be of a passive parallel, thermal stress reducing design with a response time of less than or equal to one nanosecond. Each unit shall be UL 1449 Third Edition and CSA listed, and it shall have a full fifteen (15) year non-limited warranty. Each SPD shall have a peak surge current rating of no less than 100,000 amps per phase (L-N + L-G). The UL 1449 Third Edition let through voltage, line-to-neutral, shall not exceed 1,000 volts peak when the unit hit with an ANSI/IEEE 62.41 Category B (6,000 volt, 4,000 amp) impulse hit.

Surge protection devices shall be Eaton Cat. No. SPD100208Y2C, Square D or pre-approved equal.

16. Short-Circuit/Coordination Study/Arc Flash Hazard Analysis

a. General

(1) Scope

- (a) The contractor shall furnish short-circuit and protective device coordination studies which shall be prepared by the equipment manufacturer. Studies

shall be prepared for each electrical service and distribution system.

- (b) The contractor shall furnish an Arc Flash Hazard Analysis Study per NFPA 70E - Standard for Electrical Safety in the Workplace, reference Article 130.3 and Annex D.

(2) Related Sections

(3) References

- (a) Institute of Electrical and Electronics Engineers, Inc. (IEEE):

1. IEEE 141 – Recommended Practice for Electric Power Distribution and Coordination of Industrial and Commercial Power Systems
2. IEEE 242 – Recommended Practice for Protection and Coordination of Industrial and Commercial Power Systems
3. IEEE 399 – Recommended Practice for Industrial and Commercial Power System Analysis
4. IEEE 241 – Recommended Practice for Electric Power Systems in Commercial Buildings
5. IEEE 1015 – Recommended Practice for Applying Low-Voltage Circuit Breakers Used in Industrial and Commercial Power Systems
6. IEEE 1584 – Guide for Performing Arc-Flash Hazard Calculations

- (b) American National Standards Institute (ANSI):

1. ANSI C57.12.00 – Standard General Requirements for Liquid-Immersed Distribution, Power, and Regulating Transformers
2. ANSI C37.13 – Standard for Low Voltage AC Power Circuit Breakers Used in Enclosures
3. ANSI C37.010 – Standard Application Guide for AC High Voltage Circuit Breakers Rated on a Symmetrical Current Basis
4. ANSI C 37.41 – Standard Design Tests for High Voltage Fuses, Distribution Enclosed Single-Pole Air Switches, Fuse Disconnecting Switches and Accessories

5. ANSI C37.5 – Methods for Determining the RMS Value of a Sinusoidal Current Wave and Normal-Frequency Recovery Voltage, and for Simplified Calculation of Fault Currents
- (c) The National Fire Protection Association (NFPA)
1. NFPA 70 - National Electrical Code, latest edition.
 2. NFPA 70E – Standard for Electrical Safety in the workplace.
- (4) Submittals for Review/Approval
- (a) The short-circuit and protective device coordination studies shall be submitted to the design engineer prior to receiving final approval of the distribution equipment shop drawings and/or prior to release of equipment drawings for manufacturing. If formal completion of the studies may cause delay in equipment manufacturing, approval from the engineer may be obtained for preliminary submittal of sufficient study data to ensure that the selection of device and characteristics will be satisfactory.
- (5) Submittals for Construction
- (a) The results of the short-circuit, protective device coordination and arc flash hazard analysis studies shall be summarized in a final report.
- (b) The report shall include the following sections.
1. One-line diagram
 2. Descriptions, purpose, basis and scope of the study
 3. Tabulations of the worst-case calculated short circuit duties for each applied device rating (automatic transfer switches, circuit breakers, fuses, etc.);
 4. Protective device time versus current coordination curves with associated one line diagram identifying the plotted devices, tabulations of ANSI protective relay functions and adjustable circuit breaker trip unit settings
 5. Fault study input data, case descriptions, and current calculations

6. Incident energy and flash protection boundary calculations
7. Comments and recommendations for system improvements, where needed
8. Executive Summary including source of information and assumptions made

(6) Qualifications

- (a) The short-circuit, protective device coordination and arc flash hazard analysis studies shall be conducted under the supervision and approval of a Registered Professional Electrical Engineer skilled in performing and interpreting the power system studies.

b. Studies

(1) General

- (a) The short circuit and coordination study shall begin with the utility company's transformer and feeder protective device and include all of the electrical protective devices down to and include the service entrance rated automatic transfer switch, switchboard, motor control centers, distribution panelboards, step-down transformers, branch circuit panelboards, feeder circuit breakers and all motor controlling devices. The study shall also include power factor correction equipment, adjustable frequency drives, solid state reduced voltage starters and all equipment associated with the standby generator systems. **This shall include all applicable switchgear, motor starters, adjustable frequency drives, generator and distribution equipment whether or not furnished by the contractor.**
- (b) The contractor shall furnish an Arc Flash Hazard Analysis Study per NFPA 70E - Standard for Electrical Safety in the Workplace, reference Article 130.3 and Annex D.

(2) Data Collection

- (a) Contractor shall furnish all field data as required by the power system studies. The Engineer performing the short-circuit, protective device coordination and arc flash hazard analysis studies shall furnish the

contractor with a listing of required data immediately after award of the contract. The contractor shall expedite collection of the data to eliminate unnecessary delays and assure completion of the studies as required for final approval of the distribution equipment shop drawings and/or prior to the release of the equipment for manufacturing.

- (b) Source combination may include present and future utility supplies, motors, and generators.
- (c) Load data utilized may include existing and proposed loads obtained from Contract Documents provided by Owner or contractor.
- (d) Include fault contribution of existing motors in the study, with motors < 50 hp grouped together. The contractor shall obtain required existing equipment data, if necessary, to satisfy the study requirements.

(3) Short-Circuit and Protective Device Evaluation Study

- (a) Use actual conductor impedances if known. If unknown, use typical conductor impedances based on IEEE Standards 141, latest edition.
- (b) Transformer design impedances and standard X/R ratios shall be used when test values are not available.
- (c) Provide the following:
 - 1. Calculation methods and assumptions.
 - 2. Selected base per unit quantities.
 - 3. One-line diagram of the system being evaluated.
 - 4. Source impedance data, including electric utility system and motor fault contribution characteristics.
 - 5. Typical calculations.
 - 6. Tabulations of calculated quantities.
 - 7. Results, conclusions, and recommendations.
- (d) Calculate short-circuit momentary and interrupting duties for a three-phase bolted fault at each:

1. Electric utility's supply termination point.
 2. Incoming switchgear.
 3. Low voltage switchgear.
 4. Motor control centers.
 5. Standby generators and automatic transfer switches.
 6. Branch circuit panelboards.
 7. Other significant locations throughout the system.
- (e) For grounded systems, provide a bolted line-to-ground fault current study for areas as defined for the three-phase bolted fault short-circuit study.
- (f) Protective Device Evaluation:
1. Evaluate equipment and protective devices and compare to short circuit ratings.
 2. Adequacy of switchgear, motor control centers, and panelboard bus bracing to withstand short-circuit stresses.
 3. Adequacy of transformer windings to withstand short-circuit stresses.
 4. Cable and busway sizes for ability to withstand short-circuit heating.
 5. Notify Owner in writing, of existing, circuit protective devices improperly rated for the calculated available fault current.
- (4) Protective Device Coordination Study
- (a) Proposed protective device coordination time-current curves shall be graphically displayed on log-log scale paper.
- (b) Include on each curve sheet a complete title and one-line diagram with legend identifying the specific portion of the system covered.
- (c) Terminate device characteristic curves at a point reflecting maximum symmetrical or asymmetrical fault current to which device is exposed.
- (d) Identify device associated with each curve by manufacturer type, function, and, if applicable, tap, time delay, and instantaneous settings recommended.

- (e) Plot the following characteristics on the curve sheets, where applicable:
 - 1. Electric utility's protective device.
 - 2. Low voltage fuses including manufacturer's minimum melt, total clearing, tolerance, and damage bands.
 - 3. Low voltage equipment circuit breaker trip devices, including manufacturer's tolerance bands.
 - 4. Transformer full-load current, magnetizing inrush current, and ANSI transformer withstand parameters.
 - 5. Conductor damage curves.
 - 6. Ground fault protective devices, as applicable.
 - 7. Pertinent motor starting characteristics and motor damage points.
 - 8. Pertinent generator short-circuit decrement curve and generator damage point.
 - 9. Other system load protective devices for the largest branch circuit and the largest feeder circuit breaker in each motor control center.
- (f) Provide adequate time margins between device characteristics such that selective operation is provided, while providing proper protection.

(5) Arc Flash Hazard Analysis

- (a) The arc flash hazard analysis shall be performed according to the IEEE 1584 equations that are presented in NFPA 70E, Annex D.
- (a) When appropriate, the short circuit calculations and the clearing times of the phase overcurrent devices will be retrieved from the short-circuit and coordination study model. Alternative methods shall be presented in the proposal.
- (b) The flash protection boundary and the incident energy shall be calculated at all significant locations in the electrical distribution system (switchboards, switchgear, motor-control centers, panelboards, busway and splitters) where work could be performed on energized parts.

- (c) The Arc-Flash Hazard Analysis shall include all 480v locations and significant locations in 240 volt and 208 volt systems fed from transformers equal to or greater than 125 kVA.
 - (d) Safe working distances shall be specified for calculated fault locations based upon the calculated arc flash boundary considering an incident energy of 1.2 cal/cm².
 - (e) The Arc Flash Hazard analysis shall include calculations for maximum and minimum contributions of fault current magnitude. The minimum calculation shall assume that the utility contribution is at a minimum and shall assume a minimum motor load. Conversely, the maximum calculation shall assume a maximum contribution from the utility and shall assume motors to be operating under full-load conditions.
 - (f) Arc flash computation shall include both line and load side of main breaker calculations, where necessary.
 - (g) Arc Flash calculations shall be based on actual overcurrent protective device clearing time. Maximum clearing time will be capped at 2 seconds based on IEEE 1584-2018.
- (6) Report Sections
- (a) Input Data:
 - 1. Utility three-phase and line-to-ground available contribution with associated X/R ratios.
 - 2. Short-circuit reactance of rotating machines with associated X/R ratios.
 - 3. Cable type, construction, size, # per phase, length, impedance and conduit type.
 - 4. Bus duct type, size, length, and impedance.
 - 5. Transformer primary & secondary voltages, winding configurations, kVA rating, impedance, and X/R ratio.
 - 6. Reactor inductance and continuous ampere rating.
 - 7. Aerial line type, construction, conductor spacing, size, # per phase, and length.

(b) Short-Circuit Data:

1. Source fault impedance and generator contributions.
2. X to R ratios.
3. Asymmetry factors.
4. Motor contributions.
5. Short circuit kVA.
6. Symmetrical and asymmetrical fault currents.

(c) Recommended Protective Device Settings:

1. Phase and Ground Relays:

- a. Current transformer ratio.
- b. Current setting.
- c. Time setting.
- d. Instantaneous setting.
- e. Specialty non-overcurrent device settings.
- f. Recommendations on improved relaying systems, if applicable.

2. Circuit Breakers:

- a. Adjustable pickups and time delays (long time, short time, ground).
- b. Adjustable time-current characteristic.
- c. Adjustable instantaneous pickup.
- d. Recommendations on improved trip systems, if applicable.

(d) Incident energy and flash protection boundary calculations.

1. Arcing fault magnitude.
2. Device clearing time.
3. Duration of arc.
4. Arc flash boundary.
5. Working distance.
6. Incident energy.
7. Hazard Risk Category.
8. Recommendations for arc flash energy reduction.

c. Execution

(1) Field Adjustment

- (a) Adjust relay and protective device settings according to the recommended settings table provided by the coordination study. Field adjustments to be completed by the engineering service division of the equipment manufacturer.
- (b) Make minor modifications to equipment as required to accomplish conformance with short circuit and protective device coordination studies.
- (c) Notify Owner in writing of any required major equipment modifications.

(2) Arc Flash Warning Labels

- (a) The vendor shall provide a 3.5 in. x 5 in. adhesive label for each work location analyzed.
- (b) The label shall have an orange header with the wording, "WARNING, ARC FLASH HAZARD", and shall include the following information:
 - 1. Location designation.
 - 2. Nominal voltage.
 - 3. Flash protection boundary.
 - 4. Hazard risk category.
 - 5. Incident energy.
 - 6. Working distance.
 - 7. Engineering report number, revision number and issue date.
- (c) Labels shall be machine printed, with no field markings.
- (d) Arc flash labels shall be provided in the following manner and all labels shall be based on recommended overcurrent device settings.
 - 1. For each automatic transfer switch device, one arc flash label shall be provided.
 - 2. For each switchboard and motor control center device, one arc flash label shall be provided.

3. For each 480 and applicable 208 volt panelboards and disconnects, one arc flash label shall be provided.
4. For each adjustable frequency drive or solid state reduced voltage motor starter whether supplied by the contractor or not, one flash label shall be provided.

(e) Labels shall be field installed by the contractor.

(3) Arc Flash Training

- (a) The equipment vendor shall train personnel of the potential arc flash hazards associated with working on energized equipment (minimum of 4 hours). Maintenance procedures in accordance with the requirements of NFPA 70E, Standard for Electrical Safety Requirements For Employee Workplaces, shall be provided in the equipment manuals. The training shall be certified for continuing education units (CEUs) by the International Association for Continuing Education Training (IACET).

17. Seismic Restraint Systems

a. General

(1) Work Included

Provide all labor, materials, tools, equipment and supplies required to complete installation of seismic restraint systems as indicated on the drawings and described herein.

- (a) All electrical equipment shall be seismically protected per 2018 International Building Code.

Seismic isolation shall be provided utilizing snubbers and/or neoprene mounting brackets with captive steel inserts.

- (b) All isolators and isolation materials, where required by seismic study shall be of the same manufacture and shall be selected and certified using published or factory certified data. Any variance or non-compliance with these specification requirements shall be corrected

by the contractor in an approved manner.

- (c) All equipment whether isolated or non-isolated must include verifying calculations and analysis.
- (d) The contractor shall install all isolators and restraints per written installation instructions submitted by isolation/seismic restraint manufacturer.

(2) Related Work Specified In Other Sections

- (a) General provisions of the contract, including General and Supplementary Conditions and General Requirements apply to the work specified in this section.
- (b) Applicable requirements of the Technical Specifications apply to the work specified in this section.

(3) Contractor Responsibilities

- (a) Seismic study to determine vibration isolation and seismic restraint sizes and locations including restraint anchorage to structure and equipment.
- (b) Provide electrical equipment isolation systems and seismic restraints on equipment as specified.
- (c) Provide installation instructions and drawings where required.
- (d) Provide calculations performed by a licensed professional engineer to determine restraint loads resulting from seismic forces presented in 2018 International Building Code, governing codes, project seismic requirements.

b. Products

(1) Protective Devices

- (a) Non-isolated equipment to be field bolted to resist seismic forces. Calculations showing anchor bolt type, size, embedment and number shall be provided by

contractor.

- (b) Furnish and install a flexible conduit connector section on all conduits 2-1/2 inches in diameter and larger where conduit terminates to fixed mounted panelboard or piece of switchgear.

c. Execution

(1) Electrical Equipment Requiring Seismic Protection

- (a) Furnish and install seismic isolation on all electrical equipment, conduit and lighting fixtures as required in 2018 International Building Code.
- (b) Furnish seismic protection for the following equipment.
 - 1. Conduit systems.
 - 2. Automatic transfer switch.
 - 3. Main switchboard.
 - 4. Generator.
 - 5. Distribution panelboards.
 - 6. Branch circuit panelboards.
 - 7. Dry type transformers.
 - 8. All lighting fixtures.
 - 9. Adjustable frequency drives.
 - 10. Control panels.

(2) Installation

- (a) Except otherwise indicated, seismic protection shall comply with manufacturer's instructions for the installation and load application to vibration isolation materials and units.

(3) Lighting Fixture Supports

- (a) All recessed lighting fixtures shall be independently supported from structure with suitable hanger wires per paragraph (1). Troffer type fixtures shall be supported at each corner of fixture from seismic clip and tying to structure. Other lighting fixtures are also to be independently supported.

18. Lightning Protection Systems

a. General

(1) Work Included

- (a) Lightning protection systems

(2) System Description

Furnish all labor, materials and service items required for completion of functional and unobtrusive system of air terminals, conductors, grounds and other components necessary for protection of the Proposed Electrical Building against lightning damage as described herein and/or shown on the Plans. The lightning protection system shall be equivalent to a system as designed by Jenkins and Associates, Inc. of Nashville, TN or equal.

(2) Submittals

Before starting any part of installation, contractor shall submit for approval of Engineer, seven (7) sets of layout plans of complete system, supplementing any Plans and Details shown on Plans.

b. Products

(1) Components

System shall be semi-concealed type with only air terminals and roof conductors visible, and shall comply in all respects with National Fire Protection Association Standard No. NFPA 78 and one of the following codes:

- (a) Underwriters Laboratories, Inc. (UL) No. UL96A, or
(b) Lightning Protection Institute (LPI) No. LPI-175.

c. Execution

(1) Installation

The installing contractor shall be engaged actively in installation of approved lightning protection systems, and shall be so listed by UL or certified by LPI with a minimum of three years of experience in this work.

All materials used shall be in factory inspected and labeled by testing agency acceptable, to UL or LPI.

- (a) A conductor bend shall not form a sharper angle than 90 degrees or have a radius less than 8 inches.
- (b) Metal bodies of inductance located within 6 feet of a main lightning component shall be bonded to the lightning protection system. (Including but not limited to metal vents, flashing, louvers & roof drains.)
- (c) Connections to ground and/or counterpoise shall be made at a point not less than 2 feet below grade, and 3 feet to 8 feet away from foundation wall.
- (d) Air terminals shall be placed at the locations indicated, not more than 2 feet from the ends of ridges, outside corners, or outside edges of main roofs, and must extend a minimum of 10 inches above the object to be protected.
- (e) Mid-roof air terminals shall be spaced at 50 feet on center max. spacing.
- (f) Perimeter air terminals that are less than 24 inches in height shall be spaced at 20 feet on center max. Perimeter air terminals that are 24 inches in height or greater shall be spaced at 25 feet on center max.
- (g) Job conditions may dictate slight variations in air terminal and ground rod locations, but in no instance shall a variation break compliance with these notes and requirements.
- (h) Conductors shall maintain a horizontal or downward path free from "U" and "V" pockets. No rise in conductors shall occur.

- (i) Copper lightning protection materials shall not be placed on aluminum, galvalum, or bare galvanized steel surfaces. Aluminum materials shall not be placed on copper surfaces.
- (j) Electric, telephone, antenna system and other miscellaneous grounds shall be connected with main sized conductor to any lightning protection ground.
- (k) All adhesive fixtures shall be set with an adhesive compound compatible with the roofing material. Adhesives shall be approved in advance by the roofing contractor.
- (l) Bond all metal pipes such as water, gas, fire, storm, sewer which enter the structure to the nearest downlead, ground rod or counterpoise.
- (m) Cable must be fastened every 3 feet on center max.
- (n) The lightning protection installer is to check and verify all dimensions and conditions before the work is started. Installers who fail to verify, review, and coordinate the work shall take full responsibility for the work and any portion of the work that is improperly installed or located. The installer shall notify the designer if dimensional errors or design conflicts occur and shall proceed only upon clarification or revision as issued by lightning protection system suppliers engineer.
- (o) All lightning protection systems require properly installed surge protective devices as outlined in paragraph 13 of UL 96A.
- (p) **Pictures need to be taken where bonds are going to be concealed or buried such as water, gas and electric bonds; ground rods; thru walls and thru roofs.**
- (q) Lightning protection systems shall be installed in a neat, professional manner.

- (r) When anchoring in masonry, holes made to receive the body of the anchor shall be made in the brick, stone, or other masonry unit rather than in mortar joints.

(2) Master Label or LPI Certification

Upon completion of installation, contractor shall complete application for UL "Master Label" or "LPI Certification" and forward to manufacturer for processing and completion before forwarding to UL or LPI.

FILE/24004-SE10



CITY OF COLUMBIA TENNESSEE
CITY COUNCIL
STAFF REPORT

STAFF REPORT CONTACT INFORMATION

Ginger Adams, Sr Administrative Assistant to Fire Chief, 931-560-1723, GAdams@columbiatn.gov

AGENDA ITEM TITLE: APPROVE BID AWARD TO INTEGRATION TECHNOLOGY LLC FOR 100-FOOT ROHN RTL100M RADIO TOWER IN THE AMOUNT OF \$115,875.

RECOMMENDATION: Approve.

INFORMATION: The City of Columbia solicited bids for the purchase and installation of a 100-Foot Rohn RTL100M Radio Tower. The new tower will replace the existing tower that sustained damage during the May 2024 tornado events. The tower will be installed at 1539 Nicholson Schoolhouse Road. The cost of this item is \$115,875.

CERTIFICATION: The Chief Financial Officer certifies that \$115,875 is budgeted and unencumbered in Grants – Fire Suppression - Communication Equipment.

ATTACHMENTS: Staff Report, Bid Tabulation, Integration Technology, LLC bid.



Bid Tabulation

ITB: 100-Foot Rohn RTL100M Radio Tower

Solicitation # 422-1224-07

Bid Opening Date: January 21, 2025

VENDOR	Cost	Estimated Time to Complete	Estimated Start Date
Advanced Wireless Solutions Inc Carrol Montgomery 423-467-5855 cmontgomery@awsinc.biz	\$116,692.00	8 months (240 Days) Tower 26 week lead time	7 days after receipt of PO
Communications International Mindy Swetz 772-569-5355 mswetz@ask4ci.com	\$127,292.16	26 – 27 weeks for delivery and installation	30 days after PO
Integration Technology Inc Christa Harmon 865-524-5052 christaharmon@intechtn.com	\$115,875.00	May 2, 2025	February 3, 2025

This is a complete tabulation of all bids received.

Sommar Jaynes, Purchasing Agent

1508 Ninth Avenue, Knoxville, TN 37917-6144
865-524-5052
www.intechtn.com

January 21,2025

Invitation to Bid – 100-Foot Rohn RTL100M Radio tower

Solicitation # 422-1224-07

ATTN: City Manager's Office at City Hall

Purchasing Agent -Third Floor

700 North Street

Columbia, TN

Project: Purchasing and installation of 100-Foot Rohn RTL 100M Radio Tower

Bidder: Integration Technology, LLC

TN License: 59423

Classifications: BC-A; BC-B; CE

License Expiration Date: May 31,2025

Contact Information:

Cody Gibson 865-438-3328 Codygibson@intechtn.com

Dustin Latham 865-599-3411 Dustinlatham@intechtn.com

Bid Sheet - City of Columbia
Invitation to Bid – 100-Foot Rohn RTL100M Radio tower
Solicitation # 422-1224-07

Lump Sum Bid \$ \$115,875.00

Estimated start Date February 3, 2025 Estimated days to complete May 2, 2025

- Have you inspected the work site? Yes X No
- Can you furnish proof of insurance as required? Yes X No
- Are you able to perform all the services as required? Yes X No

If No, please explain on separately attached sheet.

Are there any other terms and conditions of the bid as submitted? If so please attach

In compliance with this Invitation to Bid for 100-Foot Rohn RTL100M Radio tower solicitation 422-1224-07 and subject to all conditions thereof, the undersigned offers and agrees to furnish any or all items and/or services upon which prices are quoted.

My signature certifies that the accompanying bid is not the result of or affected by, any act of collusion with another person or company engaged in the same line of business or commerce, or any act of fraud punishable under the Laws of the State of Tennessee or the United States. Furthermore, I understand that fraudulent and collusive bidding is a crime and can result in fines, prison sentences, and civil damage awards. I hereby certify that I am authorized to sign this bid for the bidder.

Vendor Name Integration Technology, LLC

Signature: 

Print Name & Title: Dustin Latham Chief Manager/Owner Date: January 21, 2025

DRUG-FREE WORKPLACE AFFIDAVIT

The undersigned, principal officer of Integration Technology, LLC
an employer of five (5) or more employees contracting with the City of Columbia Tennessee
to provide construction services, hereby states under oath as follows:

1. The undersigned is a principal officer of Integration Technology, LLC
(hereinafter referred to as the "Company"), and is duly authorized to execute this
Affidavit on behalf of the Company.
2. The Company submits the Affidavit pursuant to T.C.A. § 50-9-113, which requires each
employer with no less than five (5) employees receiving pay who contracts with the state or
any local government to provide construction services to submit an affidavit stating that
such employer has a drug-free workplace program that complies with Title 50, Chapter 9, of
the *Tennessee Code Annotated*.
3. The Company is in compliance with T.C.A. § 50-9-113.

Further affiant saith not.

Dustin Latham

Principal Officer

STATE OF Tennessee

COUNTY OF Knox

Before me personally appeared Dustin Latham, with whom I am personally
acquainted (or proved to me on the basis of satisfactory evidence), and who acknowledged
that such person executed the foregoing affidavit for the purposes therein contained.

Witness my hand and seal at office this 21st day January, 2025.

Christa Harmon

Notary Public

My commission expires: 9/5/2027



IRAN DIVESTMENT ACT

A person engages in investment activities in Iran if:

(1) The person provides goods or services of twenty million dollars (\$20,000,000) or more in the energy sector of Iran, including a person that provides oil or liquefied natural gas tankers, or products used to construct or maintain pipelines used to transport oil or liquefied natural gas, for the energy sector of Iran; or

(2) The person is a financial institution that extends twenty million dollars (\$20,000,000) or more in credit to another person, for forty-five (45) days or more, if that person will use the credit to provide goods or services in the energy sector in Iran and is identified on a list, created pursuant to § 12-12-106, as a person engaging in investment activities in Iran as described in this section.

By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of its knowledge and belief that each bidder is not on the list created pursuant to Tennessee Code Annotated § 12-12-106."

Vendor Name: Integration Technology, LLC

Vendor Signature:  Date: January 21, 2025

The City of Columbia is subject to certain governmental recordkeeping and reporting requirements for the administration of state and federal funded projects, bids and proposals. In order to comply with these laws, the City invites vendors, consultants, contractors, etc. to voluntarily self-identify their race or ethnicity, if they are a disadvantaged business enterprise, or a women owned business.

Submission of this information is voluntary and refusal to provide it will not subject you to any adverse treatment. The information obtained may only be used in accordance with the provisions of applicable laws, executive orders, and regulations, including those that require the information to be summarized and reported to the state or federal government. When reported, data will not identify any specific individual.

White ☒ African American ☐ American Indian/Alaskan Native ☐

Native Hawaiian/Other Pacific Islander ☐ Asian ☐ Hispanic ☐ Women Owned ☐

Certified DBE ☐

State of Tennessee

NOT 7-11 13414482

BOARD FOR LICENSING CONTRACTORS
CONTRACTOR
INTEGRATION TECHNOLOGY, LLC

This is to certify that all requirements of the State of Tennessee have been met.

ID NUMBER: 59423

LIC STATUS: ACTIVE

EXPIRATION DATE: May 31, 2025

\$1,500,000; BC-A; BC-B; CE



IN-1313
DEPARTMENT OF
COMMERCE AND INSURANCE



CITY OF COLUMBIA TENNESSEE
CITY COUNCIL
STAFF REPORT

STAFF REPORT CONTACT INFORMATION

Ginger Adams, Sr Administrative Assistant to Fire Chief, 931-560-1723, GAdams@columbiatn.gov

AGENDA ITEM TITLE: APPROVE EMERGENCY REPAIR OF SEWER LINES OF FIRE STATION NO. 4
LOCATED AT 5040 TROTWOOD AVENUE IN THE AMOUNT OF \$55,989 -

RECOMMENDATION: Approve.

INFORMATION: Fire station 4, located on Trotwood Avenue, has been experiencing sewer line problems. It was investigated to find the cause of the problems by Hiller Plumbing, and they completed a camera inspection of all the drain lines in the building for proper design and solutions on February 11, 2025. The cost of this phase of the project was \$4,980.

Due to cracked, broken and rotten lines, reline work is necessary on approximately 200 feet of 3" and 4" pipe in the fire station.

The cost of the full sewerline reline project amounts to \$55,989, which includes \$4,980 for camera day.

CERTIFICATION: The Chief Financial Officer certifies that \$55,989 is budgeted and unencumbered in Capital Projects – Fire Admin - Operational.

ATTACHMENTS: Staff Report; Hiller Invoice; Hiller explanation.

Ginger Adams

From: Chris Cummins
Sent: Tuesday, February 18, 2025 2:00 PM
To: Ginger Adams
Subject: FW: [Caution External Email] - Re: Plans for Station 4

From: Thomas Elam IV <Thomas.ElamIV@happyhiller.com>
Sent: Friday, February 14, 2025 7:36 AM
To: Chris Cummins <CCummins@Columbiatn.gov>
Subject: Re: [Caution External Email] - Re: Plans for Station 4

I'll get the ball rolling! Thank you!

Thomas

From: Chris Cummins <CCummins@Columbiatn.gov>
Sent: Thursday, February 13, 2025 5:39:45 PM
To: Thomas Elam IV <Thomas.ElamIV@happyhiller.com>
Subject: RE: [Caution External Email] - Re: Plans for Station 4

[EXTERNAL Email Message]

Good Afternoon, I have reviewed the modified scope and price adjustment. I do approve of this change and please schedule the work.

Thanks

Chris Cummins
931-398-9735

Sent from my Galaxy

----- Original message -----

From: Thomas Elam IV <Thomas.ElamIV@happyhiller.com>
Date: 2/13/25 1:41 PM (GMT-06:00)
To: Chris Cummins <CCummins@Columbiatn.gov>
Cc: Nick Brown <NBrown@Columbiatn.gov>, Tony Massey <TMassey@Columbiatn.gov>, Thad Jablonski <TJablonski@Columbiatn.gov>
Subject: [Caution External Email] - Re: Plans for Station 4

Good afternoon, Chief-

We're ready to start 3/3 as I emailed yesterday. Just need your approval for the modified scope and modified price and then we will be set. Thanks!

Thomas

From: Thomas Elam IV <Thomas.ElamIV@happyhiller.com>
Sent: Wednesday, February 12, 2025 10:53:48 AM
To: Chris Cummins <CCummins@Columbiatn.gov>; Robert Stamper <Robert.Stamper@happyhiller.com>
Cc: Nick Brown <NBrown@Columbiatn.gov>; Tony Massey <TMassey@Columbiatn.gov>; Thad Jablonski <TJablonski@Columbiatn.gov>
Subject: Re: Plans for Station 4

[@Robert Stamper](#) please send the chief the videos that James uploaded into Service Titan.

REVISED ESTIMATE AFTER CAMERA JOB

Chief,

After inspecting the drains under the slab, we are modifying the job scope to match the videos. We found that there is a double wye under the first bedroom. We cannot reline this wye, but the video shows it is in good condition. With this in mind, we are going to have to redesign the first liner.

We will line from the main bathroom toilet to the double wye with the first liner in the first bedroom. The double wye will stay in place. Then we will line from the half bathroom toilet to the double wye with the second liner. The kitchen drain is 2" and dumps into the toilet 90 under the floor of the half bath, we will attempt to clean and inspect this drain. Then we will line from the double wye to the PVC out the front of the building with a third liner.

The drain coming from the Bay sink and laundry is a 2-inch line that pours into the double wye, we will clean and inspect this 2-inch drain and give an update on that while we are there. If it's linable we can give a price for that at that time.

The bays are on a separate system and go through an oil separator. They will not need to be lined.

With these new findings, we are going to remove the bay liners that are not necessary. The main building, however, will now have 3 liners instead of 2 in total. With the additional work in some areas, and omission of work in other areas, the new investment will shift to \$55,989 vs \$66,927 in total (a reduction of \$10,938). With the camera day being removed from the total, the price for phase 2 reduces to \$51,009 vs \$61,947 originally quoted.

The work is estimated to take approximately 10 days to complete and can be scheduled for 3/3-3/7 and 3/10-3/14/2025.

Please send approval agreeing to the new job scope, the reduced total investment, and dates for installation.

Thomas Elam IV

ORIGINAL ESTIMATE

Chief,

Thanks for your patience in getting this estimate over to you and your team. It is a very complex project/solution, so it takes a lot of time and people to make it happen.

After discussing with Robert, here is what he is recommending:

Step 1: Hiller will need to spend a day on site doing a thorough camera inspection to verify what the blueprints state. We want to verify that we have a 100% accurate solution and plan before shutting down the station. The costs for this portion of the project will be \$4,980. If you move forward with the reline work, this total will be deducted from the reline final total. If you decide not to move forward with the reline work, this total will be due to Hiller in full upon completion.

Step 2 (if approved): Station will be shut down for 10-14 days to complete the reline work. Based on the blueprints (and verified with the camera day) Hiller will be relining approximately 200' of 3" and 4" pipe in the station. 4 total liners will be installed based on the layout. Liner 1 will run from the group bathroom, down the main hallway to the front door. Liner 2 will run from the kitchen and hall bathroom to the front door and go to the exterior where the line exits the station. Liner 3 will be from the back clean out in the station bay to the front clean out in the bay. Liner 4 will be from the front clean out in the bay to the front door. The 3" and 4" drains entail approximately 200' in total.

- *No 2 inch or smaller lines will be relined*
- *No demo or remodeling of bathrooms will be included*
- *No concrete, demo or floor replacement is required for the areas that are relined*
- *Work should start once the group bathroom is demoed and access to the main line is achievable*
- *All work includes materials, labor, installation*
- *All work includes a 2-year labor warranty and 10-year parts warranty*

Full Reline Project: \$66,927 (includes \$4,980 for camera day)

I hope you and your team have a Merry Christmas and look forward to speaking with you on this in the future.

*Thomas Elam IV
Hiller PHCE
Thomas.elamiv@happyhiller.com
[615-405-3796](tel:615-405-3796)*

T

From: Chris Cummins <CCummins@Columbiatn.gov>
Sent: Wednesday, February 12, 2025 8:58:31 AM
To: Thomas Elam IV <Thomas.ElamIV@happyhiller.com>
Cc: Nick Brown <NBrown@Columbiatn.gov>; Tony Massey <TMassey@Columbiatn.gov>; Thad Jablonski <TJablonski@Columbiatn.gov>
Subject: RE: Plans for Station 4

[EXTERNAL Email Message]

Thanks Thomas, please have him send me a video or link of the bad section of drain pipe. I would also like to go ahead and get this scheduled out to do phase 2 since he can reline the pipes from the toilet flange.

Thanks
Chris Cummins

From: Thomas Elam IV <Thomas.ElamIV@happyhiller.com>
Sent: Wednesday, February 12, 2025 8:31 AM
To: Chris Cummins <CCummins@Columbiatn.gov>
Cc: Ginger Adams <GAdams@Columbiatn.gov>; Nick Brown <NBrown@Columbiatn.gov>; Tony Massey <TMassey@Columbiatn.gov>; Thad Jablonski <TJablonski@Columbiatn.gov>
Subject: [Caution External Email] - Re: Plans for Station 4

Chief-

Please see the notes from James visit yesterday. He has videos if those are needed as well. And yes, to your additional question.

Thomas

From: Chris Cummins <CCummins@Columbiatn.gov>
Sent: Wednesday, February 12, 2025 8:13:13 AM
To: Thomas Elam IV <Thomas.ElamIV@happyhiller.com>
Cc: Ginger Adams <GAdams@Columbiatn.gov>; Nick Brown <NBrown@Columbiatn.gov>; Tony Massey <TMassey@Columbiatn.gov>; Thad Jablonski <TJablonski@Columbiatn.gov>
Subject: RE: Plans for Station 4

[EXTERNAL Email Message]

Thomas, can you send me a summary of what conditions was found by doing phase 1? I do have a question, are you able to do phase 2 by accessing the main line from the toilet closet flange?

Thank you

Chris Cummins
931-398-9735

From: Thomas Elam IV <Thomas.ElamIV@happyhiller.com>
Sent: Tuesday, February 11, 2025 3:08 PM
To: Chris Cummins <CCummins@Columbiatn.gov>
Cc: Ginger Adams <GAdams@Columbiatn.gov>; Nick Brown <NBrown@Columbiatn.gov>
Subject: [Caution External Email] - Re: Plans for Station 4

Phase 1 is completed and the team will have all the information required for phase 2 once it is accepted.

Ginger, please let me know what is needed to get payment for phase 1.

Thomas
615-405-3796

From: Thomas Elam IV <Thomas.ElamIV@happyhiller.com>
Sent: Wednesday, February 5, 2025 11:50:12 AM
To: Chris Cummins <CCummins@Columbiatn.gov>
Cc: Ginger Adams <GAdams@Columbiatn.gov>; Nick Brown <NBrown@Columbiatn.gov>
Subject: Re: Plans for Station 4

Moving this to Tuesday the 11th instead of Monday the 10th. Thanks.

Thomas

From: Thomas Elam IV <Thomas.ElamIV@happyhiller.com>
Sent: Monday, February 3, 2025 1:55:40 PM
To: Chris Cummins <CCummins@Columbiatn.gov>
Cc: Ginger Adams <GAdams@Columbiatn.gov>; Nick Brown <NBrown@Columbiatn.gov>
Subject: Re: Plans for Station 4

Step 1 scheduled for 2/10/25.

Thanks.

Thomas

From: Chris Cummins <CCummins@Columbiatn.gov>
Sent: Monday, February 3, 2025 10:41:03 AM
To: Thomas Elam IV <Thomas.ElamIV@happyhiller.com>
Cc: Ginger Adams <GAdams@Columbiatn.gov>; Nick Brown <NBrown@Columbiatn.gov>
Subject: RE: Plans for Station 4

[EXTERNAL Email Message]

Thomas, please proceed with the step 1 of the plan for fire station 4. Please work with Ginger on billing for the work that will be done in prep for step 2.

Thanks

Chris Cummins
931-398-9735

From: Thomas Elam IV <Thomas.ElamIV@happyhiller.com>
Sent: Monday, December 23, 2024 12:45 PM
To: Chris Cummins <CCummins@Columbiatn.gov>
Subject: [Caution External Email] - Re: Plans for Station 4

Chief,

Thanks for your patience in getting this estimate over to you and your team. It is a very complex project/solution, so it takes a lot of time and people to make it happen.

After discussing with Robert, here is what he is recommending:

Step 1: Hiller will need to spend a day on site doing a thorough camera inspection to verify what the blueprints state. We want to verify that we have a 100% accurate solution and plan before shutting down the station. The costs for this portion of the project will be \$4,980. If you move forward with the reline work, this total will be deducted from the reline final total. If you decide not to move forward with the reline work, this total will be due to Hiller in full upon completion.

Step 2 (if approved): Station will be shut down for 10-14 days to complete the reline work. Based on the blueprints (and verified with the camera day) Hiller will be relining approximately 200' of 3" and 4" pipe in the station. 4 total liners will be installed based on the layout. Liner 1 will run from the group bathroom, down the main hallway to the front door. Liner 2 will run from the kitchen and hall bathroom to the front door and go to the exterior where the line exits the

station. Liner 3 will be from the back clean out in the station bay to the front clean out in the bay. Liner 4 will be from the front clean out in the bay to the front door. The 3" and 4" drains entail approximately 200' in total.

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- *All work includes materials, labor, installation
- *All work includes a 2-year labor warranty and 10-year parts warranty

Full Reline Project: \$66,927 (includes \$4,980 for camera day)

I hope you and your team have a Merry Christmas and look forward to speaking with you on this in the future.

Thomas Elam IV
Hiller PHCE
Thomas.elamiv@happyhiller.com
615-405-3796

From: Chris Cummins <CCummins@Columbiatn.gov>
Sent: Wednesday, December 18, 2024 8:06:59 AM
To: Thomas Elam IV <Thomas.ElamIV@happyhiller.com>
Cc: Jeremy Finley <JFinley@Columbiatn.gov>
Subject: Plans for Station 4

[EXTERNAL Email Message]

Plans for 5040 Trotwood

Chris Cummins
Fire Chief
Columbia Fire & Rescue
1000 South Garden Street
Columbia, TN 38401
931-398-9735
ccummins@columbiatn.gov

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CITY OF COLUMBIA TENNESSEE
CITY COUNCIL
STAFF REPORT

STAFF REPORT CONTACT INFORMATION

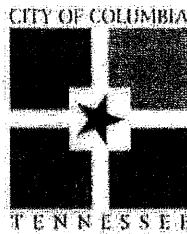
Jill Carlson, Sr. Administrative Assistant, jcarlson@columbiatn.com, 931-560-1451

AGENDA ITEM TITLE: APPROVE AND AUTHORIZE THE MAYOR TO SIGN THE NON-EXCLUSIVE USE AND OCCUPANCY PERMIT BETWEEN THE CITY OF COLUMBIA AND THE MAURY COUNTY SCHOOL BOARD OF EDUCATION.

RECOMMENDATION: Approve.

INFORMATION: The Maury County Board of Education is requesting the renewal of their annual Non-Exclusive Use and Occupancy Permit to utilize various City athletic facilities to host some of the local county schools' sporting events such as baseball, soccer, cross-country and tennis. The facilities are Cook Soccer Park, Woodland Park Tennis Courts; Fairview Park and Babe Ruth Baseball Fields; Ridley Park; Eva Gilbert Softball Fields; and Eva Gilbert Football field. Upon approval, each school will be scheduled for usage pending availability in alliance with any of the approved leagues that may also be using the fields/courts. There will be no fee collected for use of the facilities; however, schools are required to provide their own supplies and equipment to drag and mark the ball fields where applicable and any other program supplies to implement the events. All terms of the agreement are exactly the same as last year.

ATTACHMENTS: Maury County Board of Education Non-Exclusive Use and Occupancy Permit 2025 w/insurance



**Parks and Recreation Department
NON-EXCLUSIVE
USE AND OCCUPANCY PERMIT
2025**

This permit is executed by and between the City of Columbia, hereinafter called "City", and Maury County Board of Education, whose address is 501 West 8th Street, Columbia, TN 38401, hereinafter called "Permittee".

WHEREAS, the City desires to provide facilities to its citizens, and non-commercial local societies, clubs and organizations engaged in civic, social, educational, cultural, recreational or philanthropic work or activities.

WHEREAS, the Permittee is such an organization and, in the promotion and sponsorship of such activities, generates revenues from voluntary contributions, special events, membership dues, fees and charges, and fund-raising projects.

NOW, THEREFORE, it is mutually agreed by and between the City and Permittee as follows:

1. **PREMISES**

City does hereby grant to Permittee a Non-Exclusive Use Permit for the use and occupancy of those certain premises described as, Cook Soccer Park, Woodland Park Tennis Courts, Fairview Baseball Field, Ridley Park, Eva Gilbert Softball Field, and Eva Gilbert Football Field and other park facilities, here in after called "Premises."

2. **TERM**

The term of this permit shall begin on March 13, 2025 and shall terminate on March 12, 2026, unless sooner terminated as specified herein.

3. **PURPOSE**

The premises specified in this permit shall be used only for the purposes of hosting weekly games in accordance with each school's schedule and for no other purpose than provided herein.

4. **PUBLIC USE**

The public shall not be excluded from these premises or any portion thereof. Permittee shall open premises to the public in accordance with the schedule approved by the Parks and Recreation Department Director or designated representative.

5. **MAINTENANCE**

Permittee shall, at its sole cost and expense, assist with routine maintenance to include, but not limited to: marking and lining fields (*where necessary*), litter pick up after games and removing any banners that may be displayed during games.

The Permittee agrees to maintain the premises in good repair while they are under their control and to reimburse the City for required repairs which are attributable to a breach of this duty, such as, but not limited to, repair of facility damages due to vandalism occurring during Permittee use; plumbing and janitorial services as a result of misuse; and special modifications of a facility that may be required to accommodate use.

6. OPERATION

In scheduling the use of City of Columbia facilities, City of Columbia Parks & Recreation programs shall have first priority. Game dates for each school activity shall run concurrently with all other City approved league programs and no conflicts shall result.

All recreational programs, events, and activities sponsored by Permittee at said premises shall be at the sole cost and expense of Permittee and shall be approved by the Parks & Recreation Department Director, or designated representative, at least two (2) weeks prior to the activity.

7. INDEMNITY

Permittee agrees to indemnify and save the City of Columbia and its agents and employees harmless from any and all liability, claims, damages or injuries to any person, including injury to Permittee or any of Permittee's employees, representatives, agents, guests, licensees, patrons or of any other person whomsoever, and all expenses of investigating and defending against same:

- A. Arising from or alleged to have arisen from or connected with the use of or operations on the permit premises;
- B. Caused or claimed to be caused by the independent acts of Permittee, Permittee's agents or employees, or the concurrent acts of the Permittee, the City or their agents or employees.

8. CONCESSIONS RIGHTS

- A. Permittee shall have the right to operate a concession stand, PROVIDED, HOWEVER, that no organization has been granted priority usage.
- B. Where no concession stand exists, Permittee shall have the right to operate a portable concession stand that will be removed from City property after each game.

9. ADVERTISING

Permittee shall not place or cause to be placed upon the premises any billboards, banners, posters, or any other media advertising products or services, without the approval of the Columbia Parks & Recreation Department. Signs of any nature installed on said premises must be first authorized and approved by City. This provision does not include uniforms as provided by team sponsors.

10. NON-EXCLUSIVE OCCUPANCY

It is specifically understood and agreed that Permittee's use hereunder shall be non-exclusive and shall not result in any proprietary rights. City reserves, and shall always have the right to enter said premises for the purpose of viewing and ascertaining the condition thereof, or to protect its interest in the premises or to inspect the operations.

11. COMPLIANCE WITH THE LAW

Permittee shall, at its sole cost and expense, comply with all the requirements of all Municipal, State and Federal authorities now in effect or which may be in effect which pertain to the permit premises or any operations of the Permittee conducted thereon.

12. INSURANCE

On or before the execution date of this Permit by the City, Permittee shall submit to City an insurance policy or Certificate of Insurance evidencing that Permittee has obtained from a generally recognized insurer, insurance in the following form and minimum amounts specified.

Comprehensive General Liability insurance of:

- A. \$1,000,000 Bodily Injury - per person
- B. \$2,000,000 Bodily Injury - Each Occurrence
- C. \$ 250,000 Property Damage

-2-

The Policy shall name the City of Columbia as additional insured. The Policy of Insurance shall contain the following clauses:

"It is agreed that the Policy shall not be cancelled nor the coverage reduced until thirty (30) days after the Parks and Recreation Department Director of the City of Columbia, shall have received written notice of such cancellation or reduction. The notice shall be deemed effective the date delivered to said Director, as evidenced by properly validated return receipt."

"The insured waives any right of subrogation against City of Columbia which might arise by reason of any payment under this Policy."

The City reserves the right to re-evaluate the amount and type of insurance required during the term of this permit. Permittee shall provide the amount and type of insurance as required by the Parks and Recreation Department Director within thirty (30) days after Permittee shall have received written notice of such requirement.

13. EQUAL OPPORTUNITY

Permittee will not discriminate against any employee or applicant for employment because of age, race, color, religion, physical handicap, ancestry, sex or national origin. This provision shall include, but is not limited to, the following: Employment, upgrading, demotion, transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training including apprenticeship.

14. NON-DISCRIMINATION

Permittee, in the operations to be conducted pursuant to the provisions of this permit and otherwise in the use of the facility, will not discriminate or permit discrimination against any person or class of persons by reason or race, color, creed or national origin, sex, age, handicap, or marital status in any manner.

15. DRUG AND ALCOHOL POLICY

In accordance with City of Columbia Substance Abuse Policy (Change 1) dated November 1, 1993, neither Permittee nor its employees, consultants agents or contractors while in any way using the permitted property, shall be in any way impaired because of being under the influence of alcohol or a drug, shall possess an open container of alcohol or consume alcohol or possess or be under the influence of an illegal drug, or shall sell, offer or provide alcohol or a drug to another person.

16. UTILITIES AND SERVICES

The City shall provide all utilities and services required.

17. AMENDMENT TO PERMIT

This Permit fully expresses all understanding of the parties to this Permit and no verbal understanding of the parties, their officers, employees or agents shall be valid unless made in the form of a written amendment to this Permit and duly approved and executed by Permittee and Parks and Recreation Department Director.

18. PARTIAL INVALIDITY

If any provision of this Permit or the application thereof to any person or circumstances shall to any extent, be invalid or unenforceable, the remainder of this Permit, or the application of such provision to persons or circumstances other than those as to which it is invalid or unenforceable, shall not be affected thereby, and each provision of this Permit shall be valid and be enforced to the fullest extent permitted by law.

19. GOVERNING LAW

This Permit shall in every respect be binding upon the parties hereto and their respective successors and assigns. The laws of the State of Tennessee shall govern this Permit.

20. PROVISIONS REQUIRED BY LAW

Each and every provision of law and clause required by law to be inserted in this Permit shall be deemed to be inserted herein and the Permit shall be read and enforced as though it were included herein, and if for any reason any such provision is not inserted, or is not correctly stated, then upon application of either party the Permit shall forthwith be physically amended to make such insertion or correction.

-3-

21. NOTICE

Any notices required or permitted to be given pursuant to this Permit may be personally served on the other party by the party giving such notice, or may be served by certified mail, return receipt requested, to the following address:

PERMITTEE

Maury County Board of Education
c/o Lisa Ventura, Director of Schools
501 West 8th Street
Columbia, TN 38401
Phone: (931) 388-8403 (Work)

CITY

Columbia Parks & Recreation Department
c/o Mackel Reagan, Director
821 West 9th Street
Columbia, TN 38401
Phone: (931) 388-8119

22. SPECIAL PROVISIONS

In the event there is any conflict between the following special provisions and any other provisions of this permit, the special provisions shall govern. The special provisions are as follows:

- Permittee or designee must provide the Parks & Recreation Director a complete copy of the game schedule within one week of the 1st game.
- The Permittee shall not commence games on premises until permit terms are approved by Council and signed by all parties as required.
- Permittee shall not sublet, transfer, or assign the fields to any other organizations or groups outside of Permittee for any reason.
- The parties agree to attempt to execute any renewal of this agreement with such revisions as necessary within 30 days of the expiration date on this agreement.
- The Permittee shall be responsible for opening and closing signage at the entrance to the parks informing the public that no weapons of any kind, including firearms, shall be allowed in City Parks during school activities pursuant to Tennessee Code Annotated 39-17-1309.

A. Portable Pitching Mounds

The portable pitching mounds are not regulation size. ONLY tennis shoes or rubber cleats allowed, no metal spikes.

23. TERMINATION

A. FOR CAUSE: The Parks and Recreation Department Director, by giving written notification specifying an effective date, not less than five (5) days after the date of written notification, may terminate this Permit on behalf of the City, in whole or part, for cause which shall include:

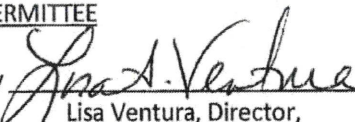
- 1.) Failure for any reason of Permittee to fulfill its obligations under this Permit in a timely manner acceptable to the Parks and Recreation Department Director, including non-compliance with other City directives, Federal, State and local statutes, rules, laws, regulations or directives non-applicable or as may become applicable.
- 2.) Any ineffective or improper use of the site by Permittee, its employees, agents, subcontractors, guests, or any person or group under Permittee's responsibility.
- 3.) Any conduct on the site by Permittee, its employees, agents or subcontractors unacceptable to the Parks and Recreation Department Director.

B. FOR CONVENIENCE: Either City or Permittee may seek termination of this Permit upon thirty (30) days written notice to the other party.

IN WITNESS WHEREOF, the City and the Permittee have caused this Permit to be executed, effective the date first above written, by their duly authorized agents.

PERMITTEE

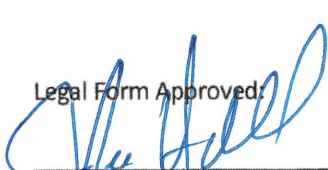
By


Lisa Ventura, Director,
Maury County Board of Education

Date

2/13/25

Legal Form Approved:


Jake Hubbell,
City Attorney

Date:

3/3/25

CITY OF COLUMBIA

By

Mackel Reagan, Director,
Parks & Recreation

Date

By

Charles (Chaz) M. Molder,
Mayor

Date

By

Thad H. Jablonski,
City Recorder

Date

Title VI Policy

City of Columbia, Tennessee

It is the policy of the City of Columbia to ensure that no citizen shall, on the grounds of race, color or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance.



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

07/01/2024

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Public Risk Insurors 1881 Gen. George Patton Drive, Suite 105 Franklin, TN 37067	CONTACT NAME: Laura Jungmichel PHONE (A/C, No, Ext): 615.369.0646 FAX (A/C, No): 615.369.0647 E-MAIL ADDRESS: laura@publicriskinsurors.com																					
INSURED Maury County Board of Education 501 West 8th Street Columbia, TN 38401	<table><tr><th colspan="2">INSURER(S) AFFORDING COVERAGE</th><th>NAIC #</th></tr><tr><td>INSURER A:</td><td>Liberty Mutual Fire Insurance Company</td><td>23035</td></tr><tr><td>INSURER B:</td><td>Liberty Insurance Corporation</td><td>42404</td></tr><tr><td>INSURER C:</td><td></td><td></td></tr><tr><td>INSURER D:</td><td></td><td></td></tr><tr><td>INSURER E:</td><td></td><td></td></tr><tr><td>INSURER F:</td><td></td><td></td></tr></table>	INSURER(S) AFFORDING COVERAGE		NAIC #	INSURER A:	Liberty Mutual Fire Insurance Company	23035	INSURER B:	Liberty Insurance Corporation	42404	INSURER C:			INSURER D:			INSURER E:			INSURER F:		
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INSURER C:																						
INSURER D:																						
INSURER E:																						
INSURER F:																						

COVERAGES**CERTIFICATE NUMBER:** MauryCoBOE00021-24**REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL SUBR INSD WVR	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS														
A	☒ COMMERCIAL GENERAL LIABILITY ☐ CLAIMS-MADE ☒ OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: ☒ POLICY ☐ PRO-JECT ☐ LOC OTHER:	X	TB2-Z51-293330-024	07/01/2024	07/01/2025	<table><tr><td>EACH OCCURRENCE</td><td>\$ 1,000,000</td></tr><tr><td>DAMAGE TO RENTED PREMISES (Ea occurrence)</td><td>\$ 500,000</td></tr><tr><td>MED EXP (Any one person)</td><td>\$ 15,000</td></tr><tr><td>PERSONAL & ADV INJURY</td><td>\$ 1,000,000</td></tr><tr><td>GENERAL AGGREGATE</td><td>\$ 2,000,000</td></tr><tr><td>PRODUCTS - COM/OP AGG</td><td>\$ 2,000,000</td></tr><tr><td></td><td>\$</td></tr></table>	EACH OCCURRENCE	\$ 1,000,000	DAMAGE TO RENTED PREMISES (Ea occurrence)	\$ 500,000	MED EXP (Any one person)	\$ 15,000	PERSONAL & ADV INJURY	\$ 1,000,000	GENERAL AGGREGATE	\$ 2,000,000	PRODUCTS - COM/OP AGG	\$ 2,000,000		\$
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	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N ☐ N/A				<table><tr><td>PER STATUTE</td><td>OTH-ER</td></tr><tr><td>E.L. EACH ACCIDENT</td><td>\$</td></tr><tr><td>E.L. DISEASE - EA EMPLOYEE</td><td>\$</td></tr><tr><td>E.L. DISEASE - POLICY LIMIT</td><td>\$</td></tr></table>	PER STATUTE	OTH-ER	E.L. EACH ACCIDENT	\$	E.L. DISEASE - EA EMPLOYEE	\$	E.L. DISEASE - POLICY LIMIT	\$						
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E.L. DISEASE - POLICY LIMIT	\$																			

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

City of Columbia, Tennessee is Additional Insured as respects the use of the parks and ballfields facilities of the City of Columbia, Tennessee by Maury County Board of Education including Cook Soccer Park, Woodland Park Tennis Courts, Fairview and Babe Ruth Baseball Fields, Eva Gilbert Softball Field, Eva Gilbert Football Field, Ridley Sports Complex, and Cox Middle School Athletic Fields as outlined in the School Amendatory Endorsement LC 99 44 07 18 - Section R. Additional Insured - by Contract, Agreement, or Permit.

CERTIFICATE HOLDER**CANCELLATION**

City of Columbia, Tennessee 700 North Garden Street Columbia, TN 38401	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE <i>Laura Jungmichel</i>
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CITY OF COLUMBIA TENNESSEE
CITY COUNCIL
STAFF REPORT

STAFF REPORT CONTACT INFORMATION

Donna Osmon - Senior Administrative Assistant

AGENDA ITEM TITLE: APPROVE BID AWARD TO S&W CONTRACTING COMPANY, LLC FOR MAST ARM REPLACEMENT DOWNTOWN IN THE AMOUNT OF \$1,308,800.00.

RECOMMENDATION: Approve bid award to S&W Contracting Company, LLC for mast arm replacement downtown.

INFORMATION: Due to age and wear, signal mast arms are in need of replacement in the downtown Columbia area. Funds were approved in the FY25 budget for this project. Bids were submitted for downtown signal mast arm replacement at Garden St. & James Campbell Blvd., Garden St. & W 4th St., Garden St. & W 5th St., Garden St. & W 6th St., Garden St. & W 7th St., Garden St. & W 8th St., and W 7th St. & High St. S&W Contracting Company was the sole response to the request for a bid with a cost of \$1,308,800. Estimated days to completion will be 90 days.

CERTIFICATION: The Chief Financial Officer certifies that \$1,308,800 is budgeted and unencumbered in Capital Projects – Streets - Traffic - Roads, Street, And Parking Lots.

ATTACHMENTS: Staff Report, S&W Contracting, S&W Contracting bid.

Bid Sheet - City of Columbia
Invitation to Bid – Mast Arm Replacement Downtown
Solicitation # 431-0225-08

	<u>Mast Arms</u>	<u>Wire</u>	<u>Signal Heads</u>	<u>Wavetronix</u>	<u>Cameras</u>
<u>Garden St & James Campbell</u>	<u>\$66,000.00</u>	<u>\$5,000.00</u>	<u>\$10,000.00</u>	<u>\$34,500.00</u>	<u>\$9,000.00</u>
<u>Garden St & W 4th St</u>	<u>\$108,000.00</u>	<u>\$10,000.00</u>	<u>\$23,000.00</u>	<u>\$44,000.00</u>	<u>\$1,000.00</u>
<u>Garden St & W 5th St</u>	<u>\$113,000.00</u>	<u>\$10,000.00</u>	<u>\$23,000.00</u>	<u>\$44,000.00</u>	<u>\$9,000.00</u>
<u>Garden St & W 6th St</u>	<u>\$116,000.00</u>	<u>\$10,000.00</u>	<u>\$21,300.00</u>	<u>\$44,000.00</u>	<u>\$9,000.00</u>
<u>Garden St & W 7th St</u>	<u>\$113,000.00</u>	<u>\$11,000.00</u>	<u>\$25,000.00</u>	<u>\$44,000.00</u>	<u>\$9,000.00</u>
<u>Garden St & W 8th St</u>	<u>\$117,700.00</u>	<u>\$11,000.00</u>	<u>\$21,300.00</u>	<u>\$44,000.00</u>	<u>\$9,000.00</u>
<u>W 7th St & High St</u>	<u>\$110,000.00</u>	<u>\$10,000.00</u>	<u>\$21,000.00</u>	<u>\$44,000.00</u>	<u>\$9,000.00</u>

One million three hundred eight thousand eight hundred dollars and 00/00.

\$1,308,800.00

Estimated start Date 2/2/2026 Estimated days to complete 90 days

- Have you inspected the work site? Yes X No
 - Can you furnish proof of insurance as required? Yes X No
 - Are you able to perform all the services as required? Yes X No
- If No, please explain on separately attached sheet.

Are there any other terms and conditions of the bid as submitted? If so please attach
N/A

In compliance with this Invitation to Bid for Mast Arm Replacement Downtown solicitation# 431-0225-08 and subject to all conditions thereof, the undersigned offers and agrees to furnish any or all items and/or services upon which prices are quoted.

My signature certifies that the accompanying bid is not the result of or affected by, any act of collusion with another person or company engaged in the same line of business or commerce, or any act of fraud punishable under the Laws of the State of Tennessee or the United States. Furthermore, I understand that fraudulent and collusive bidding is a crime and can result in fines, prison sentences, and civil damage awards. I hereby certify that I am authorized to sign this bid for the bidder.

Vendor Name: S&W Contracting Company, LLC

Signature: 

Print Name & Title Taylor Bolin - Vice President Date: 02/20/2025



CITY OF COLUMBIA TENNESSEE
CITY COUNCIL
STAFF REPORT

STAFF REPORT CONTACT INFORMATION

Liz Bermudez, Executive Secretary, lbermudez@columbiatn.gov 931.560.1510

AGENDA ITEM TITLE: APPROVE THE O'CONNORS VS. CITY OF COLUMBIA SETTLEMENT AGREEMENT

RECOMMENDATION: Approve.

INFORMATION: The settlement agreement calls for the City to accept Chasepoint Place as a public street, replace the culvert and conduct the final paving. The easements necessary for replacement of the culvert and any other maintenance of the road will be provided by the O'Connors.

CERTIFICATION:

ATTACHMENTS: Staff Report, Settlement Agreement.

SETTLEMENT AGREEMENT AND GENERAL RELEASE

Plaintiffs Kirk M. O'Connor and Elissa K. O'Connor (hereafter "**PLAINTIFFS**") and Defendant City of Columbia, Tennessee (hereafter the "**CITY**"), hereby enter into the following final and binding settlement agreement (hereinafter "**AGREEMENT**"). **PLAINTIFFS** and the **CITY** are collectively referred to as the "**SETTLING PARTIES**" for purposes of the **AGREEMENT**.

WHEREAS, on September 10, 2020, **PLAINTIFFS** filed a lawsuit against the **CITY**, Carl and Melinda Bedford, the State of Tennessee, Heather Maccarrone, SC Appraisal Network, Sam Gray, and Gold Standard Construction in the Chancery Court of Maury County, Tennessee captioned *Kirk M. O'Connor and Elissa K. O'Connor v. Carl Bedford and wife, Melinda Bedford, City of Columbia, State of Tennessee, Heather V. Maccarrone d/b/a SC Appraisal Network, Sam Gray, Gold Standard Construction*, Case No. 20-419 (hereafter the "**LAWSUIT**").

WHEREAS, on December 11, 2020, **PLAINTIFFS** filed a Motion to Amend and to Transfer the case to the Circuit Court of Maury County, which was then granted and designated as Case No. 2021-CV-16959.

WHEREAS, on February 5, 2021, **PLAINTIFFS** filed a Second Motion for Leave to Amend the Complaint, which was then granted.

WHEREAS, on March 7, 2022, **PLAINTIFFS** filed a Third Motion for Leave to Amend the Complaint, which was then granted.

WHEREAS, **PLAINTIFFS** presented claims in the **LAWSUIT** that existed or which otherwise could have been presented against the **CITY** that arise from or relate to the allegations asserted in the **LAWSUIT** regardless of how the claims were designated in the **LAWSUIT**.

WHEREAS, on December 4, 2024 and February 3, 2025, **PLAINTIFFS** participated in a mediation with Defendants Carl C. Bedford, Jr. and Melinda L. Bedford, the **CITY**, and the State of Tennessee, which was conducted by Attorney J. Christopher Williams.

WHEREAS, the **SETTLING PARTIES** agree and understand that they are entering into the following final and binding **AGREEMENT** to resolve **PLAINTIFFS'** claims in the **LAWSUIT** that existed or which otherwise could have been presented against the **CITY**, and all differences between the **SETTLING PARTIES**, to avoid the time and expense of litigation and buy their peace.

WHEREAS, the **PLAINTIFFS** agree and understand that the **CITY** has denied and expressly denies that it or any of the **CITY's** employees have engaged in any unlawful action or wrongdoing and denies that **PLAINTIFFS** are entitled to any relief whatsoever under federal, state or local law. Under no circumstances shall this

AGREEMENT be construed as an admission of liability by the **CITY** under any federal, state or local law.

THEREFORE, in consideration of the promises made herein and of the mutual benefits and obligations set forth in this **AGREEMENT**, the **SETTLING PARTIES** agree as follows:

1. In full satisfaction and settlement of any and all claims that could have been brought against the **CITY** in the **LAWSUIT** or otherwise, the **SETTLING PARTIES** agree that all disputes and claims regarding the allegations in the **CITY** are now resolved and the following settlement terms (the "Settlement Amounts") shall apply in accordance with the agreement reached:

a. The **CITY**, through its insurance carrier **PUBLIC ENTITY PARTNERS**, will pay **PLAINTIFFS** the total sum of Seventy-One Thousand Dollars and 00/100 (\$71,000.00). This sum shall be inclusive of all costs, expenses and attorney fees.

No other sum or monetary compensation shall be due to **PLAINTIFFS** from the **CITY** as a result of any of the allegations, act or omissions alleged in any of the claims related directly or indirectly to this matter. **PUBLIC ENTITY PARTNERS** shall not make any withholdings of taxes from the settlement amount paid by it. In the event this **AGREEMENT** is challenged by the Internal Revenue Service or any other taxing authority **PLAINTIFFS** agree that any tax consequences as a result of the payment to them are solely their responsibility and further agrees to be liable for, indemnify and hold harmless **PUBLIC ENTITY PARTNERS** for any federal, state and local tax liability arising out of these payments for which they may be legally responsible. **PUBLIC ENTITY PARTNERS** is required to meet any Internal Revenue Service/Federal 1099 reporting requirements.

b. The **CITY** shall accept Chasepointe Place as a public street and shall maintain the road according to its standards, ensuring that it meets or exceeds all applicable municipal codes and regulations.

c. The **CITY** shall replace the culvert under Chasepointe Place which is a subject of the **LAWSUIT**. In replacing the culvert, the new culvert should meet or exceed any and all applicable municipal codes and regulations as well as all engineering specifications and standards, considering the stormwater drainage from General Forrest Drive to the south and the stormwater drainage from that point north along U.S. Highway 31. The **CITY** shall replace the culvert within six (6) months after the City Council has approved the acceptance of Chasepointe Place as a public street.

d. The **CITY** shall conduct the final paving of Chasepointe Place with a final layer of asphalt, or topcoat. The **CITY** shall conduct the final paving of

Chasepointe Place within one (1) year after the City Council has approved the acceptance of Chasepointe Place as a public street.

e. **PLAINTIFFS** agree to provide all necessary easements to the **CITY** for its replacement of the culvert under Chasepointe Place and any other maintenance to the road.

2. In further consideration of the promises made herein by the **CITY**, **PLAINTIFFS**, for themselves and for their heirs, executors, administrators, successors and assigns, agree to and do hereby acquit, remise, fully release, and forever discharge and covenant not to sue the **CITY** its, successors and assigns, and the **CITY's** respective officers, employees, agents, and representatives, former officers, employees, agents and representatives, attorneys, insurers, affiliated entities or any other entities together with any and all persons, firms, corporations, affiliates and subsidiaries, who are or may be liable for any and all **CLAIMS** (which term includes, but is not limited to, actions and causes of action, suits, charges, actions, debts, sums of money, controversies, agreements, promises, damages, costs, losses, expenses, judgments and any demands whatsoever, at law or in equity, of whatever kind and nature, whether based upon alleged violation of state or federal law, or before any federal, state or local administrative agency, whether known or unknown, whether accrued or unaccrued, whether contingent or certain), which **PLAINTIFFS** now have or otherwise could have asserted against the **CITY**, its officials, and/or employees as of the date of the execution of this **AGREEMENT**. **PLAINTIFFS** understand this is a full, complete and general release.

3. **PLAINTIFFS** expressly agree that the relief referenced in Paragraph 1 of this **AGREEMENT** shall be provided only if **PLAINTIFFS** sign and execute this **AGREEMENT** and deliver this **AGREEMENT** via electronic copy to the **CITY's** attorney, A. Ryan Simmons, at Farrar Bates Berexa. The **SETTLING PARTIES** understand and agree that upon **PLAINTIFFS** signing and executing this **AGREEMENT**, the **CITY's** attorney will, upon receipt of the executed settlement agreement, send its settlement check to **PLAINTIFFS'** counsel.

4. Within seven (7) days of the receipt of the settlement funds, **PLAINTIFFS** shall file or approve for filing an Agreed Order of Compromise and Dismissal as to the **CITY**, specifically including all causes of action that arise out of or could have arisen out of the legal action.

5. The **SETTLING PARTIES** agree that they will bear their own costs, attorney fees, disbursements, and expenses of any kind incurred in prosecuting the above-referenced lawsuit, including the costs of filings with any administrative or governmental agency.

6. The **SETTLING PARTIES** declare, represent and warrant that no promise, inducement or agreement that is not contained in this written **AGREEMENT** has been made to them and that this **AGREEMENT** contains the entire agreement

between the **SETTLING PARTIES** and the terms of this **AGREEMENT** are contractual and not a mere recital.

7. The **SETTLING PARTIES** agree that the provisions of this **AGREEMENT** are both reasonable and enforceable. In the unlikely event that any part or provision of this **AGREEMENT** is deemed by a court of competent jurisdiction to be unlawful or void or voidable for any reason, the court shall limit the application of any such part or provision, or modify such part or provision, and proceed to enforce those terms as so limited or modified. Any such determination shall not affect or limit the enforceability of the remaining provisions.

8. This **AGREEMENT** shall be interpreted, enforced, and governed under the laws of the State of Tennessee. The **SETTLING PARTIES** agree that any dispute over the interpretation, breach or enforceability of this Agreement must be maintained only in a court of competent jurisdiction setting in Maury County, Tennessee.

9. **PLAINTIFFS** have consulted with their attorney prior to executing this **AGREEMENT**. **PLAINTIFFS** agree that this **AGREEMENT** is written in plain and understandable language and that they have read and understand it. **PLAINTIFFS** understand that by signing this **AGREEMENT** they are expressly representing that they have fully considered its terms and agree to these terms.

10. This **AGREEMENT** may be executed in counterparts and each counterpart shall be considered an original and operate as such.

11. In witness whereof, the **SETTLING PARTIES** have executed this **AGREEMENT** on the dates written below.

KIRK M. O’CONNOR

I, **KIRK M. O’CONNOR**, have fully read and understand the terms of the foregoing **AGREEMENT** and have caused this **AGREEMENT** to be executed.

SIGNED, SEALED and DELIVERED this the ____ day of _____, 2025.

KIRK M. O’CONNOR

STATE OF TENNESSEE)
)
COUNTY OF _____)

Before me, the undersigned, a Notary Public in and for the County and State aforesaid, personally appeared **KIRK M. O’CONNOR**, with whom I am personally acquainted (or proved to me on the basis of satisfactory evidence), and who acknowledged that he executed the within instrument for the purposes therein contained.

WITNESS my hand and seal in _____, this ____ day of _____, 2025.

Notary Public

My commission expires: _____

ELISSA K. O’CONNOR

I, **ELISSA K. O’CONNOR**, have fully read and understand the terms of the foregoing **AGREEMENT** and have caused this **AGREEMENT** to be executed.

SIGNED, SEALED and DELIVERED this the ____ day of _____, 2025.

ELISSA K. O’CONNOR

STATE OF TENNESSEE)
)
COUNTY OF _____)

Before me, the undersigned, a Notary Public in and for the County and State aforesaid, personally appeared **ELISSA K. O’CONNOR**, with whom I am personally acquainted (or proved to me on the basis of satisfactory evidence), and who acknowledged that he executed the within instrument for the purposes therein contained.

WITNESS my hand and seal in _____, this ____ day of _____, 2025.

Notary Public

My commission expires: _____

CITY OF COLUMBIA, TENNESSEE

I, _____, have fully read and understand the terms of the foregoing **AGREEMENT** and have caused this **AGREEMENT** to be executed.

SIGNED, SEALED and DELIVERED this the ____ day of _____, 2025.

City of Columbia, Tennessee

STATE OF TENNESSEE)
)
COUNTY OF _____)

Before me, the undersigned, a Notary Public in and for the County and State aforesaid, personally appeared _____ on behalf of the City of Columbia, Tennessee, with whom I am personally acquainted (or proved to me on the basis of satisfactory evidence), and who acknowledged that he executed the within instrument for the purposes therein contained.

WITNESS my hand and seal in _____, this ____ day of _____, 2025.

Notary Public

My commission expires: _____



CITY OF COLUMBIA TENNESSEE
CITY COUNCIL
STAFF REPORT

STAFF REPORT CONTACT INFORMATION

Lauryn Shockey, Administrative Assistant, LShockey@Columbiatn.gov, 931-560-1529

AGENDA ITEM TITLE: RESOLUTION NO. 25-19 - A RESOLUTION TO ACCEPT THE STREETS AND DRAINAGE IMPROVEMENTS IN CHASEPOINTE PARK SUBDIVISION, SECTION 1, FOR OWNERSHIP AND MAINTENANCE.

RECOMMENDATION: Approve Resolution No. 25-19.

INFORMATION: The City of Columbia, as part of a legal settlement agreement, has agreed to accept the streets and drainage improvements in Chasepointe Park Subdivision, Section 1, as well as completion of a culvert replacement and asphalt surface.

CERTIFICATION:

ATTACHMENTS: Resolution 25-19 Staff Report, Resolution 25-19, Chasepointe Park Final Plat.

**A RESOLUTION TO ACCEPT THE STREETS AND DRAINAGE IMPROVEMENTS
IN CHASEPOINTE PARK SUBDIVISION, SECTION 1, IN THE CITY OF
COLUMBIA FOR OWNERSHIP AND MAINTENANCE**

WHEREAS, the City of Columbia, Tennessee, agreed to accept the streets and drainage improvements in Chasepointe Park Subdivision, Section 1, for ownership and maintenance as a part of a legal settlement agreement; and

WHEREAS, the City of Columbia also agreed to complete a culvert replacement and asphalt surface in the Chasepointe Park Subdivision, Section 1, to meet requirements of the City of Columbia.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY OF COLUMBIA, that the City of Columbia does hereby accept the ownership and maintenance of said streets and drainage improvements located in Chasepointe Park Subdivision, Section 1.

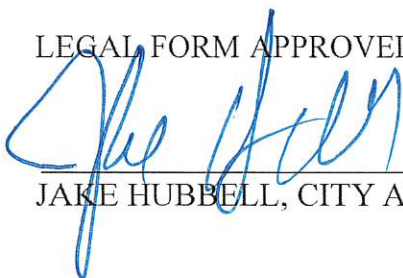
PASSED AND ADOPTED BY THE CITY COUNCIL OF THE CITY OF COLUMBIA, TENNESSEE, this is the 13th day of March, 2025.

CHARLES (CHAZ) M. MOLDER, MAYOR

ATTEST:

THAD H. JABLONSKI, CITY RECORDER

LEGAL FORM APPROVED:

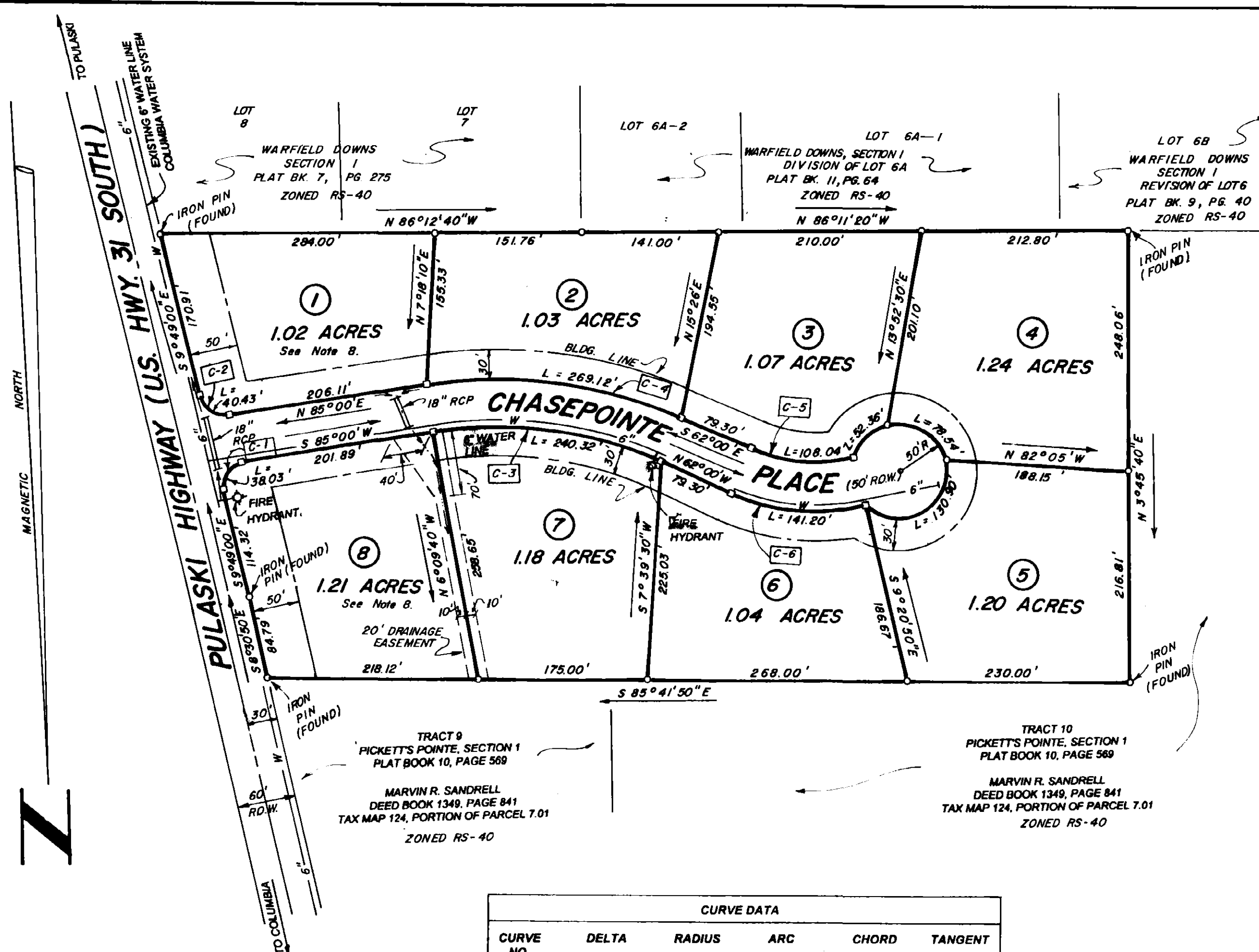


JAKE HUBBELL, CITY ATTORNEY



NOTES

- 1) The lots shown are a portion of the property obtained by Daniel F. Frederick, Trustee of the Daniel F. Frederick Living Trust and Kathryn L. Frederick, Trustee of the Kathryn L. Frederick Living Trust as recorded in Deed Book 1284, Page 309, and Deed Book 1284, Page 313, Register's Office, Maury County, Columbia, Tennessee. See also Deed Book 1165, Page 691. The lots shown are all of Tax Map 124, Parcel 7.14
- 2) ☐ Indicates Concrete Monument (set)
 ☐ Indicates Iron Pin (set unless noted)
- 3) There is a public utility and drainage easement 10' in width on front and rear property lines and on all property lines parallel to or abutting roads, and there is a public utility and drainage easement 5' in width, on all other interior lot lines, except as otherwise shown.
- 4) The lots shown are not in a designated flood hazard area as per F.E.M.A. F.I.R.M. Community Panel No. 470123 0160 B, effective date 11-3-89.
- 5) The lots shown are zoned RS-40, Single Family Low Density Residential District.
- 6) Minimum Building Lines: Front 50' (Pulaski Hwy. Lots)
 Front 30' (Interior Lots)
 Side 25'
 Rear 30'
- 7) Streets are curbed, no driveway tile required.
- 8) No driveway access to Pulaski Highway from Lots 1 and 8.
- 9) 8.99 Acres in Lots
 1.01 Acres in Road
 10.00 Total Acres



CURVE DATA					
CURVE NO.	DELTA	RADIUS	ARC	CHORD	TANGENT
C-1	94°49'00"	22.98'	38.03'	33.84'	25.00'
C-2	85°11'00"	27.20'	40.43'	36.81'	25.00'
C-3	33°00'00"	417.25'	240.32'	237.01'	123.80'
C-4	35°00'00"	487.25'	289.12'	285.41'	138.41'
C-5	38°00'00"	182.90'	108.04'	106.07'	56.09'
C-6	38°00'00"	212.90'	141.20'	138.63'	73.31'



ENVIRONMENTAL ASSISTANCE CENTER
TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
 2434 PARK PLUS DRIVE
 COLUMBIA, TENNESSEE 38401
 PHONE (931) 386-2371 STATEWIDE 1-888-891-4332 FAX (931) 386-2891

General approval is hereby granted for lots 1 thru 8 defined in Chasepointe, Pulaski Pike, Columbia, Tennessee. The following shall be defined as general restrictions and shall apply to all lots with specific restrictions on each lot following general restrictions.

General Restrictions: Prior to any construction of a structure, permanent or mobile, the plans for the exact house/structure location and the subsurface sewage system must be approved by the Environmental Specialist with the Division of Ground Water Protection in Maury County. Any cutting or filling after February 26, 1998 may render the site unsuitable. Drainageways, gullied areas, cut and fill material and disturbed soil areas are unsuitable for sewage disposal areas. Structures must be properly located to obtain gravity flow to drainfield or a pump will be required. Water taps, waterlines and driveways should be located at side property lines unless otherwise noted. The High Intensity Soils Map designating suitable soil areas for this subdivision is on file at the Environmentalist's office.

S.S.D. denotes Subsurface Sewage Disposal System.

- Lot #1** Eastern half of lot and southwestern corner are suitable for S.S.D. Structure not to exceed three bedrooms.
- Lot #2, 3, 4, 5, & 7** Lot is suitable for S.S.D. Structure not to exceed five bedrooms.
- Lot #6** Northwestern corner of lot and southeastern portion of lot are suitable for S.S.D. Structure not to exceed four bedroom.
- Lot #8** Lot is suitable for S.S.D. except for midportion of lot and southwestern corner of lot. Structure not to exceed three bedrooms.

May 29, 1998
Date

Dale Robinson
Environmental Specialist

State of Tennessee, County of MAURY
Received for record the 28 day of
DECEMBER 1998 at 10:36 AM. CRECH 846
Recorded in official records 846
Book P11 pages 293- 293
State Tax \$.00 Clerks Fee \$.00
Recordings \$ 12.00, Total \$ 12.00.
Register of Deeds L. WAYNE WHITE
Deputy Register NANCY MCNEEN

Chasepointe Park

Section 1

CERTIFICATE OF APPROVAL OF WATER SYSTEM

I HEREBY CERTIFY THAT THE WATER SYSTEM OUTLINED OR INDICATED ON THIS FINAL SUBDIVISION PLAT HAS BEEN INSTALLED IN ACCORDANCE WITH CURRENT LOCAL AND STATE GOVERNMENT REQUIREMENTS, OR A SUFFICIENT BOND OR OTHER SURETY HAS BEEN FILED TO GUARANTEE SAID INSTALLATION.

11/24/98
Date

James Kelly Powell
Water Superintendent,
Columbi Water System

CERTIFICATE OF COMPLIANCE

I HEREBY CERTIFY THAT THE SUBDIVISION PLAT SHOWN
HEREON HAS BEEN FOUND TO COMPLY WITH THE COLUMBIA
SUBDIVISION REGULATIONS AND OTHER ADOPTED
ORDINANCES AND POLICIES

12/21/28

DATE

John C. Modzelewski
JOHN C. MODZELEWSKI
ENFORCING OFFICER FOR THE
SUBDIVISION REGULATIONS

CERTIFICATION

I Hereby certify that I have surveyed the tracts shown and that this plat is a true representation of the survey, and that this is a Category "I" Survey and the ratio of precision of the unadjusted survey is 1:10,000+ as shown hereon.

James D. Webb
JAMES D. WEBB
TENNESSEE NO. 596

CERTIFICATE OF OWNERSHIP AND DEDICATION

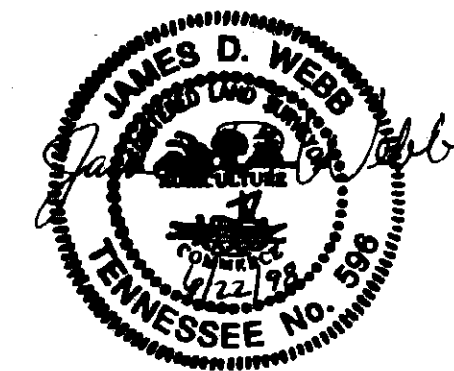
I (WE) HEREBY CERTIFY THAT I AM (WE ARE) THE OWNER(S) OF THE PROPERTY SHOWN AND DESCRIBED HEREON AND THAT I (WE) HEREBY ADOPT THIS PLAN OF SUBDIVISION WITH MY (OUR) FREE CONSENT, ESTABLISH THE MINIMUM BUILDING RESTRICTION LINES, AND DEDICATE ALL STREETS, ALLEYS, WALKS, PARKS AND OTHER OPEN SPACES TO PUBLIC OR PRIVATE USE AS NOTED.

DATE 6-23-98 OWNER Daniel F. Frederick, Trustee
DATE 6-23-98 OWNER DANIEL F. FREDERICK, TRUSTEE
DATE 6-23-98 OWNER KATHRYN L. FREDERICK, TRUSTEE

CERTIFICATE OF APPROVAL FOR RECORDING

I hereby certify that the subdivision plat shown hereon has been found to comply with the subdivision regulations for Columbia, Tennessee, with the exception of such variances, if any as are noted in the minutes of the Planning Commission and that it has been approved for recording in the Office of the Maury County Register.

12-21-98 Edward S. Campbell
Date Secretary, Columbia--Municipal
Regional Planning Commission



FILMED BY:
PLEASANT VALLEY
MICROFILMING SERVICES
3810 Pleasant Valley Road
Cosby, TN 37722
PH/Fax (423) 487-3464

NO.		DATE		REVISION	
				BY	
SHEET TITLE				PROJECT NO.	
FINAL PLAT OF SURVEY (8 LOTS,				96-34	
9th CIVL DISTRICT 8.99 ACRES)				SCALE	
MAURY COUNTY, TENNESSEE				1" = 100'	
PROJECT				DATE	
DANIEL F FREDERICK, TRUSTEE and				6-22-98	
KATHRYN L FREDERICK, TRUSTEE				DRAWN BY	
1514 HATCHER LANE				D DALE	
COLUMBIA, TENNESSEE 38401				CHECKED BY	
				J.D.W.	
				DRAWING NO.	
JAMES D. WEBB, ENGINEER-SURVEYOR				96-34 C	
223 East James M. Campbell Boulevard					
COLUMBIA, TENNESSEE 38401					
PHONE (931) 388-2329 • FAX (931) 381-6106					
				/ OF / SHTS	



CITY OF COLUMBIA TENNESSEE
CITY COUNCIL
STAFF REPORT

STAFF REPORT CONTACT INFORMATION

Ginger Adams, Sr Administrative Assistant to Fire Chief, 931-560-1723, GAdams@columbiatn.gov

AGENDA ITEM TITLE: RESOLUTION NO. 25-10 - A RESOLUTION TO AUTHORIZE THE MAYOR TO SIGN AUTOMATIC RESPONSE AID OF FIRE SERVICES WITH MAURY COUNTY TENNESSEE FIRE DEPARTMENT -

RECOMMENDATION: Approve Resolution No. 25-10.

INFORMATION: Columbia Fire & Rescue request for the City Council to review the attached Inter-Local agreement for Automatic Response Aid of Fire services between the City of Columbia and Maury County Tennessee Fire Department and authorize the Mayor to execute the attached agreement.

CERTIFICATION:

ATTACHMENTS: Staff Report; Resolution No. 25-10; Interlocal Agreement for Automatic Response of Fire Services; Exhibit 1; Automatic Aid Boundary Map.

**A RESOLUTION AUTHORIZING THE MAYOR TO SIGN AN INTERLOCAL
AGREEMENT FOR AUTOMATIC RESPONSE OF FIRE SERVICES WITH MAURY
COUNTY TENNESSEE FIRE DEPARTMENT**

WHEREAS, the City Council of the City of Columbia, Tennessee, is desirous of entering into an agreement whereby automatic response aid may be provided by various local agencies for the benefit of each participating agency; and

WHEREAS, the statutes of the State of Tennessee authorize local incorporated cities to enter into agreements with other cities, counties, or public agencies for fire-fighting assistance; and

WHEREAS, agreements can be prepared which will provide for automatic response aid among those local governments or agencies in Tennessee with which the City of Columbia is interested in entering into such agreements for automatic response aid; and

WHEREAS, the City of Columbia seeks to enter into such an agreement with Maury County Tennessee Fire Department for the provision of automatic response aid for fire services.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY OF COLUMBIA, TENNESSEE, that the Mayor of the City of Columbia, Tennessee, is authorized and empowered to enter into an automatic response aid agreement on behalf of the City of Columbia, Tennessee, with Maury County Tennessee Fire Department. The mayor is further authorized to execute any and all agreements with said entity to effectuate an automatic response aid agreement with said agency.

PASSED AND ADOPTED BY THE CITY OF COLUMBIA, TENNESSEE, this _____ day of _____, 2025.

CHARLES (CHAZ) M. MOLDER, MAYOR

ATTEST:

THAD H. JABLONSKI, CITY RECORDER

LEGAL FORM APPROVED:



JAKE HUBBELL, CITY ATTORNEY

INTERLOCAL AGREEMENT FOR AUTOMATIC RESPONSE OF FIRE SERVICES

Pursuant to T.C.A. §6-54-601, et seq. and T.C.A. §12-9-104 et seq.

THIS AGREEMENT entered as of the _____ day of _____ 2025, by and among **THE CITY OF COLUMBIA** and its Fire Department, **COLUMBIA FIRE & RESCUE** (hereinafter called "COLUMBIA FIRE & RESCUE"), and **MAURY COUNTY TENNESSEE FIRE DEPARTMENT**.

WHEREAS, Sections 12-9-101 through 12-9-109, Tennessee Code Annotated, authorizes public agencies of the State of Tennessee to enter into interlocal agreements; and

WHEREAS, Sections 6-54-601 through 6-54-603, Tennessee Code Annotated, specifically authorizes incorporated cities to enter into agreements with other counties and agencies for fire-fighting assistance; and

WHEREAS, the parties hereto desire to avail themselves of the authority conferred by these laws; and

WHEREAS, the purpose of this Agreement is to provide each of the parties, through their cooperation, a predetermined plan by which each might render aid to the other as needed for firefighting services under specific arrangements as provided herein; and

WHEREAS, it is deemed in the public interest for the parties hereto to enter into an agreement for Automatic Response with regard to firefighting services to provide aid as needed to assure each party of adequate depth of protection.

NOW THEREFORE, pursuant to Tennessee Code Annotated §6-54-601 and §12-9-102, et seq., and in consideration of the mutual covenants contained herein, the parties agree as follows:

1. **Purpose/Scope of Service.** The parties agree to provide Automatic Response to certain areas called "Automatic Response Zones," as the boundaries of such zones are described in Exhibit 1, attached to this document. As part of this Automatic Response, **COLUMBIA FIRE & RESCUE (CFR)** is requesting specific equipment and apparatus to be included in the response. These resources will be used to support firefighting services in the identified areas. Adding or subtracting specific properties or zones, or altering the equipment and apparatus requested for aid, may be done through mutual agreement by both fire chiefs of the parties to this Agreement, and such changes may amend Exhibit 1. Automatic Response is defined as the simultaneous dispatch and response of two or more fire departments, along with the specified equipment and apparatus, to the same property, area, or zone, regardless of the actual location or jurisdiction of the property.
2. **Authority to Enter into Agreement.** This Agreement is made and entered into pursuant to the authority granted by the parties under the Interlocal Cooperation Act, Tenn. Code Ann. §12-9-101, et seq., and the parties agree that all approvals and filings required by

the terms of said Act shall be achieved as soon as possible from and after the execution of this Agreement.

3. **Term.** The initial term of this agreement shall be for one (1) year from its effective date as defined in Paragraph 4 herein and shall automatically renew for one (1) year terms. The parties agree that either party may terminate this agreement at any time, with or without cause, upon sixty (60) days written notice to the other party.
4. **Effective Date.** This Agreement shall be valid between the signed parties when the mayor and/or fire chief of the respective political jurisdictions execute it pursuant to the ordinance/resolution of each jurisdiction authorizing the mayor and/or fire chief to execute it.
5. **Other Aid or Assistance.** With the exception of the specific services described in this Interlocal Agreement, all other requests for aid or assistance between the parties shall be governed by Tennessee Code Annotated §58-8-101 et seq.
6. **Force Majeure or Impossibility.** Under extraordinary circumstances, this Automatic Aid Agreement may not be performed by either or both parties.
7. **Choice of Law; Venue and Jurisdiction.** The choice of law shall be the state law of Tennessee. The exclusive venue and jurisdiction shall be in the Circuit Court of Maury County, Tennessee.
8. **Severability.** The parties agree that if any part, term, or provision of this Agreement is determined to be illegal or in conflict with any law of the State of Tennessee by any court with jurisdiction, the validity of the remaining portions or provisions shall not be affected. The rights and obligations of the parties shall be construed and enforced as if the Agreement did not contain that particular part, term, or provision held to be invalid.
9. **Entire Agreement.** This Agreement represents the entire agreement between the parties and supersedes all prior negotiations, representations, or agreements, either written or oral, with respect to the subject matter hereof. This Agreement may be amended only by written instrument signed by both parties.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year written above.

CHARLES (CHAZ) M. MOLDER, MAYOR CITY OF COLUMBIA

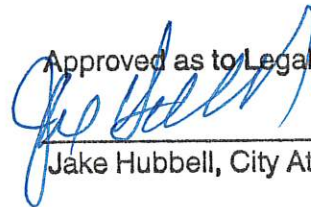
ATTEST:

THAD H. JABLONSKI, CITY RECORDER

CHRIS CUMMINS, FIRE CHIEF COLUMBIA FIRE & RESCUE

JOSE PERIUT, CHIEF OF MAURY COUNTY FIRE DEPARTMENT

Approved as to Legal Form:



Jake Hubbell, City Attorney

Columbia Fire & Rescue

Maury County Fire Department

Exhibit 1

Automatic Response Zones

- City Limits of Columbia, TN
- Approx. Urban growth district outside of City Limits of Columbia, TN
 - Columbia Fire & Rescue and Maury County Fire Department are authorized to adjust boundaries as necessary to meet operational requirements for both departments, provided that both Fire Chiefs mutually agree. Such modifications may be required to address logistical, operational, or dispatch needs, ensuring optimal coordination and efficiency in service delivery.

Flexibility in adjusting boundaries allows for a more effective and adaptive response to emergency situations. It ensures that both departments can seamlessly manage resources and respond to incidents, particularly when unforeseen challenges arise, such as changes in call volumes, resource availability, or geographic complexities. Mutual agreement between the Fire Chiefs ensures that any boundary modifications are carefully considered and in the best interest of both departments, promoting collaboration and minimizing service disruptions.

Automatic Aid Plan

- Maury County Fire Department (MCFD) will be automatically dispatched and respond automatic aid to structure fires located in the City of Columbia, TN
- Columbia Fire & Rescue (CFR) will be automatically dispatched and respond automatic aid to structure fires located within defined area of City of Columbia, TN outside of city limits

Radio Communications

- When CFR is responding to MCFD, CFR will communicate on MCFD main channel.
- When MCFD is responding to CFR, MCFD will communicate on CFR TAC 3 or another assigned channel

Response

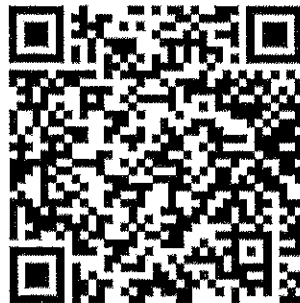
- When responding to incidents in Maury County, all times will be recorded using MDIS and the CAD (buttons) located in each apparatus. In the event that MDIS or CAD is down, radio communications should be used for dispatch to record times

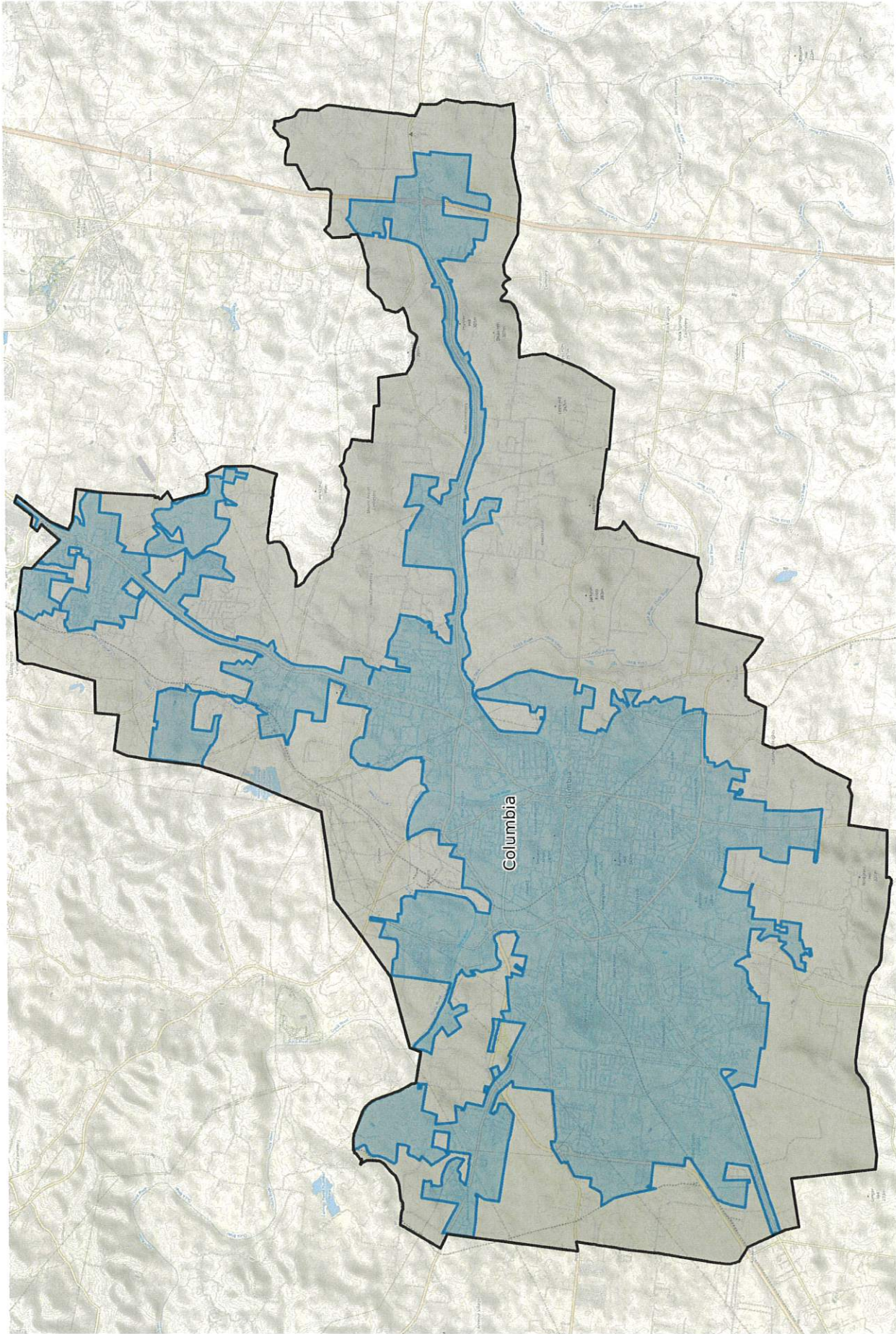
Equipment and Apparatus

- When Automatic Aid is requested for MCFD, CFR will send 1 Suppression Unit (Closest Unit or Battalion Chief Discretion) and 1 Chief Officer to the emergency.
 - CFR will provide functions requested by MCFD
- When Automatic Aid is requested for CFR, MCFD will send 2 tankers and 1 Chief Officer (If available)
 - Chief Officer and Tankers will coordinate with CFR's water operation using TAC 3 or another assigned channel

Under Extraordinary circumstances this Automatic Aid Agreement may not be performed by either or both parties

Automatic Aid Boundary Map





Auto Aid
WGS84
UTM Zone 16S
CALTPO

Scale 1:113020 1 inch = 1.8 miles

20 km 12 mi

1 2 3 4 5 6 7 8 9 10 11 12

MN -4.0°



CITY OF COLUMBIA TENNESSEE
CITY COUNCIL
STAFF REPORT

STAFF REPORT CONTACT INFORMATION

Michele Stevens, Administrative Assistant, mstevens@columbiatn.gov, 931-560-1010

AGENDA ITEM TITLE: RESOLUTION NO. 25-16 - A RESOLUTION TO ACCEPT THE OWNERSHIP AND MAINTENANCE OF SEWER IMPROVEMENTS SERVING SUMMIT AT CARTERS STATION WEST PHASE 3

RECOMMENDATION: Approve Resolution No. 25-16

INFORMATION: Summit at Carters Station West Phase 3 consists of 2,660 linear feet of 8" sanitary sewer main. The Developers met all of the qualifications for acceptance. The Wastewater Department has performed the necessary testing and inspections.

CERTIFICATION:

ATTACHMENTS:

Resolution No. 25-16

Resolution No. 25-16 Dedication Letter

**A RESOLUTION TO ACCEPT THE OWNERSHIP AND MAINTENANCE OF
SEWER IMPROVEMENTS SERVING SUMMIT AT CARTERS STATION
WEST PHASE 3**

WHEREAS, The City of Columbia, has been requested to accept ownership and maintenance of 2,660 linear feet of 8" gravity main serving Summit at Carters Station West Phase 3; and

WHEREAS, the City of Columbia has inspected said sewer improvements and has determined that said sewer improvements meet the requirements imposed by the City of Columbia.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY OF COLUMBIA, that the City of Columbia does hereby accept the ownership and maintenance of said sanitary sewer improvements serving Summit at Carters Station West Phase 3.

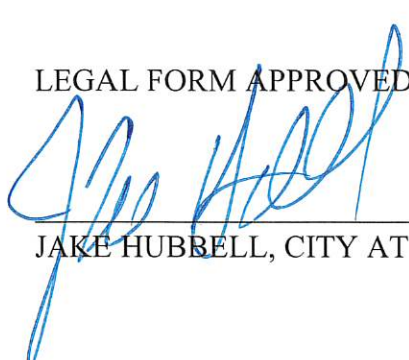
PASSED AND ADOPTED BY THE CITY COUNCIL OF THE CITY OF COLUMBIA, TENNESSEE, this the 13th day of March, 2025.

CHARLES (CHAZ) M. MOLDER - MAYOR

ATTEST:

THAD H. JABLONSKI - CITY RECORDER

LEGAL FORM APPROVED:



JAKE HUBBELL, CITY ATTORNEY

Date: 24 January 2025

Columbia City Council
City of Columbia, Tennessee
City Hall
700 North Garden Street
Columbia, Tennessee 38401

Dear Council Members:

I wish to present for dedication to the Council of the City of Columbia, Tennessee, the wastewater system improvements installed to service Summit at Carter's Station West Phase 3 in the amount of 2660 linear feet . The Contractor installed the sanitary sewer according to the Standard Sewer Specifications of the City of Columbia.

You have been provided with CCTV and as-built drawings of the project and all inspections and testing has been completed. All fees required for dedication have been paid. You have also been provided a one-year maintenance surety in the amount of \$64,505.00, set to expire one year from date of Council acceptance.

Acceptance by the Columbia City Council for these wastewater system improvements would be appreciated.

Sincerely,
Signed:



Print:

Jason DeWitt

Lot Numbers included in this dedication:

125-139, 143-159, 8-34



CITY OF COLUMBIA TENNESSEE
CITY COUNCIL
STAFF REPORT

STAFF REPORT CONTACT INFORMATION

Regina Connelly, City Recorder's Office, rconnelly@columbiatn.com, 931-560-1520

AGENDA ITEM TITLE: RESOLUTION NO. 25-17 – TAX CORRECTIONS

RECOMMENDATION: Approve Resolution No. 25-17.

INFORMATION: The City Recorder is presenting tax corrections through 2/21/2025 for Council consideration as submitted by Mr. Bobby Daniels, Maury County Tax Assessor.

CERTIFICATION:

ATTACHMENTS: Staff Report for Resolution 25-17; Resolution No. 25-17; Resolution No. 25-17 Exhibit A.

RESOLUTION

WHEREAS, the City of Columbia, Tennessee, has on its books certain property that is assessed which should not be assessed; and

WHEREAS, the City of Columbia, Tennessee, has on its books certain property that is incorrectly assessed; and

WHEREAS, the City of Columbia, Tennessee, desires to correct these errors to properly reflect the corrections on the books of the City of Columbia.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY OF COLUMBIA, that the following corrections are hereby approved:

(SEE SCHEDULE "A" ATTACHED HERETO)

PASSED AND ADOPTED BY THE CITY COUNCIL OF THE CITY OF

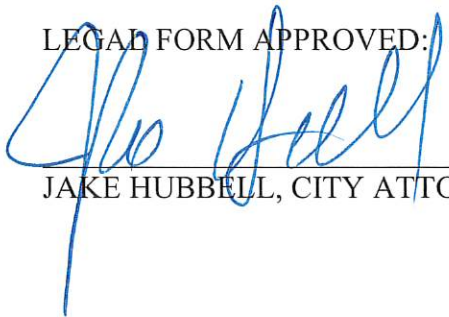
COLUMBIA, TENNESSEE, this the _____ day of _____, 2025.

CHARLES (CHAZ) M. MOLDER - MAYOR

ATTEST:

THAD H. JABLONSKI, CITY RECORDER

LEGAL FORM APPROVED:



JAKE HUBBELL, CITY ATTORNEY

TAX CORRECTIONS – EXHIBIT A
RESOLUTION NO. 25-17

1. DELETE 2024 PERSONAL PROPERTY TAX IN THE NAME OF SIMPLY CLEAN. MAP 089D A 010.00 P 002, 304 GREENVIEW DR. PROPERTY VALUE \$13,992.00, ASSESSED VALUE \$4,198.00, AND TAXES \$35.00. DUE TO BUSINESS CLOSED PER MAURY COUNTY TAX ASSESSOR.
2. DELETE 2024 PERSONAL PROPERTY TAX IN THE NAME OF THE FRIEND FOUNDATION. MAP 074 033.26 P 003, 700 BAKER RD. PROPERTY VALUE \$25,000.00, ASSESSED VALUE \$7,500.00, AND TAXES \$62.00. DUE TO KEYING ERROR OF CITY CODE PER MAURY COUNTY TAX ASSESSOR.
3. DELETE 2024 PERSONAL PROPERTY TAX IN THE NAME OF DUCK RIVER SERVICES. MAP 100M P 001.00 P 011, 2019 S MAIN ST. PROPERTY VALUE \$17,250.00, ASSESSED VALUE \$5,175.00, AND TAXES \$43.00. DUE TO BUSINESS CLOSED PER MAURY COUNTY TAX ASSESSOR.
4. DELETE 2023 PERSONAL PROPERTY TAX IN THE NAME OF AVILES CONCRETE. MAP 113C A 009.00 P 002, 2226 DENISE DR LOT 1. PROPERTY VALUE \$18,505.00, ASSESSED VALUE \$5,552.00, AND TAXES \$46.00. DUE TO BUSINESS CLOSED PER MAURY COUNTY TAX ASSESSOR.
5. DELETE 2024 PERSONAL PROPERTY TAX IN THE NAME OF AVILES CONCRETE. MAP 113C A 009.00 P 002, 2226 DENISE DR LOT 1. PROPERTY VALUE \$21,281.00, ASSESSED VALUE \$6,384.00, AND TAXES \$53.00. DUE TO BUSINESS CLOSED PER MAURY COUNTY TAX ASSESSOR.
6. DELETE 2023 PERSONAL PROPERTY TAX IN THE NAME OF ARMCHAIR SPORTS. MAP 113 049.01 P 106, 2411 PULASKI HWY. PROPERTY VALUE \$3,000.00, ASSESSED VALUE \$900.00, AND TAXES \$7.00. DUE TO BUSINESS CLOSED PER MAURY COUNTY TAX ASSESSOR.

7. DELETE 2024 PERSONAL PROPERTY TAX IN THE NAME OF ARMCHAIR SPORTS. MAP 113 049.01 P 106, 2411 PULASKI HWY. PROPERTY VALUE \$3,450.00, ASSESSED VALUE \$1,035.00, AND TAXES \$9.00. DUE TO BUSINESS CLOSED PER MAURY COUNTY TAX ASSESSOR.
8. PICK UP 2024 PERSONAL PROPERTY TAX IN THE NAME OF CSH INC, ATTN: MATT BOSHERS. MAP 090P C 020.00 P S/I 500, 215 W 5TH ST. PROPERTY VALUE \$25,640.00, ASSESSED VALUE \$7,692.00, AND TAXES \$33.00. PICKUP DUE TO 2024 AUDIT FOR 2023 TAX YEAR PER MAURY COUNTY TAX ASSESSOR.
9. PICK UP 2024 PERSONAL PROPERTY TAX IN THE NAME OF FERNANDEZ DELIA DDS. MAP 112 006.02 P S/I 500, 6006 TROTWOOD AVE. PROPERTY VALUE \$109,277.00, ASSESSED VALUE \$32,783.00, AND TAXES \$270.00. PICKUP DUE TO 2024 AUDIT FOR 2024 TAX YEAR PER MAURY COUNTY TAX ASSESSOR.
10. PICK UP 2024 PERSONAL PROPERTY TAX IN THE NAME OF FERNANDEZ DELIA DDS. MAP 112 006.02 P S/I 501, 6006 TROTWOOD AVE. PROPERTY VALUE \$30,893.00, ASSESSED VALUE \$9,268.00, AND TAXES \$76.00. PICKUP DUE TO 2024 AUDIT FOR 2023 TAX YEAR PER MAURY COUNTY TAX ASSESSOR.
11. PICK UP 2024 PERSONAL PROPERTY TAX IN THE NAME OF FASTENAL COMPANY. MAP 114 074.09 P S/I 501, 310 JAMES M CAMPBELL BLVD. PROPERTY VALUE \$24,973.00, ASSESSED VALUE \$7,492.00, ASSESSED VALUE WITH EQ FACTOR \$5,932.00, AND TAXES \$49.00. PICKUP DUE TO 2024 AUDIT FOR 2024 TAX YEAR PER MAURY COUNTY TAX ASSESSOR.
12. PICK UP 2024 PERSONAL PROPERTY TAX IN THE NAME OF FASTENAL COMPANY. MAP 114 074.09 P S/I 500, 310 JAMES M CAMPBELL BLVD. PROPERTY VALUE \$21,950.00, ASSESSED VALUE \$6,585.00, AND TAXES \$54.00. PICKUP DUE

TO 2024 AUDIT FOR 2023 TAX YEAR PER MAURY COUNTY TAX ASSESSOR.

13. PICK UP 2024 PERSONAL PROPERTY TAX IN THE NAME OF SAVE-A-LOT #152, C/O HOUCHENS INDUSTRIES INC. MAP 113E C 004.00 P S/I 500, 112 E JAMES M CAMPBELL BLVD. PROPERTY VALUE \$3,870.00, ASSESSED VALUE \$1,161.00, ASSESSED VALUE WITH EQ FACTOR \$919.00, AND TAXES \$8.00. PICKUP DUE TO 2024 AUDIT FOR 2024 TAX YEAR PER MAURY COUNTY TAX ASSESSOR.
14. PICK UP 2024 PERSONAL PROPERTY TAX IN THE NAME OF SAVE-A-LOT #152, C/O HOUCHENS INDUSTRIES INC. MAP 113E C 004.00 P S/I 501, 112 E JAMES M CAMPBELL BLVD. PROPERTY VALUE \$3,723.00, ASSESSED VALUE \$1,117.00, AND TAXES \$9.00. PICKUP DUE TO 2024 AUDIT FOR 2023 TAX YEAR PER MAURY COUNTY TAX ASSESSOR.
15. PICK UP 2024 PERSONAL PROPERTY TAX IN THE NAME OF ROYAL MARBLE AND GRANITE LLC, C/O PADGETT BUSINESS SERVICES. MAP 114A A 001.01 P S/I 500, 134 DYER ST UNIT D. PROPERTY VALUE \$140,297.00, ASSESSED VALUE \$42,089.00, AND TAXES \$347.00. PICKUP DUE TO 2024 AUDIT FOR 2024 TAX YEAR PER MAURY COUNTY TAX ASSESSOR.
16. PICK UP 2024 PERSONAL PROPERTY TAX IN THE NAME OF ROYAL MARBLE AND GRANITE LLC, C/O PADGETT BUSINESS SERVICES. MAP 114A A 001.01 P S/I 501, 134 DYER ST UNIT D. PROPERTY VALUE \$21,663.00, ASSESSED VALUE \$6,499.00, AND TAXES \$54.00. PICKUP DUE TO 2024 AUDIT FOR 2023 TAX YEAR PER MAURY COUNTY TAX ASSESSOR.
17. PICK UP 2024 PERSONAL PROPERTY TAX IN THE NAME OF ROYAL MARBLE AND GRANITE LLC, C/O PADGETT BUSINESS SERVICES. MAP 114A A 001.01 P S/I 502, 134 DYER ST UNIT D. PROPERTY VALUE \$15,220.00, ASSESSED VALUE \$4,566.00, AND TAXES \$38.00. PICKUP DUE TO 2024 AUDIT FOR 2021 TAX YEAR PER MAURY COUNTY TAX ASSESSOR.

18. PICK UP 2024 PERSONAL PROPERTY TAX IN THE NAME OF PATTERSON'S AIR CONDITIONING & HEATING. MAP 100M N 001.01 P S/I 500, 209 WESTFIELD DR. PROPERTY VALUE \$19,500.00, ASSESSED VALUE \$5,850.00, AND TAXES \$48.00. PICKUP DUE TO 2024 AUDIT FOR 2024 TAX YEAR PER MAURY COUNTY TAX ASSESSOR.
19. PICK UP 2024 PERSONAL PROPERTY TAX IN THE NAME OF PATTERSON'S AIR CONDITIONING & HEATING. MAP 100M N 001.01 P S/I 501, 209 WESTFIELD DR. PROPERTY VALUE \$51,597.00, ASSESSED VALUE \$15,479.00, AND TAXES \$128.00. PICKUP DUE TO 2024 AUDIT FOR 2023 TAX YEAR PER MAURY COUNTY TAX ASSESSOR.
20. PICK UP 2024 PERSONAL PROPERTY TAX IN THE NAME OF PATTERSON'S AIR CONDITIONING & HEATING. MAP 100M N 001.01 P S/I 502, 209 WESTFIELD DR. PROPERTY VALUE \$50,693.00, ASSESSED VALUE \$15,208.00, AND TAXES \$125.00. PICKUP DUE TO 2024 AUDIT FOR 2022 TAX YEAR PER MAURY COUNTY TAX ASSESSOR.
21. PICK UP 2024 PERSONAL PROPERTY TAX IN THE NAME OF PATTERSON'S AIR CONDITIONING & HEATING. MAP 100M N 001.01 P S/I 503, 209 WESTFIELD DR. PROPERTY VALUE \$31,277.00, ASSESSED VALUE \$9,383.00, AND TAXES \$77.00. PICKUP DUE TO 2024 AUDIT FOR 2021 TAX YEAR PER MAURY COUNTY TAX ASSESSOR.
22. REFUND 2024 PERSONAL PROPERTY TAX IN THE NAME OF TRISTAN LONG. MAP 113D H 014.00 P 001, 2312 DENHAM AVE. PROPERTY VALUE \$4,000.00, ASSESSED VALUE WITH EQ FACTOR \$1,000.00, ASSESSED VALUE \$1,200.00 AND TAXES \$10.00. REFUND DUE TO BUSINESS CLOSED PER MAURY COUNTY TAX ASSESSOR.



CITY OF COLUMBIA TENNESSEE
CITY COUNCIL
STAFF REPORT

STAFF REPORT CONTACT INFORMATION

Michele Stevens, Administrative Assistant, mstevens@columbiatn.gov, 931-560-1010

AGENDA ITEM TITLE: RESOLUTION NO. 25-18 - A RESOLUTION TO ACCEPT THE OWNERSHIP AND MAINTENANCE OF SEWER IMPROVEMENTS SERVING HONEY FARM CROSSING

RECOMMENDATION: Approve Resolution No. 25-18

INFORMATION: Honey Farm Crossing consists of 515 linear feet of 8" sanitary sewer main. The Developers met all of the qualifications for acceptance. The Wastewater Department has performed the necessary testing and inspections.

CERTIFICATION:

ATTACHMENTS:

Resolution No. 25-18

Resolution No. 25-18 Dedication Letter

**A RESOLUTION TO ACCEPT THE OWNERSHIP AND MAINTENANCE OF
SEWER IMPROVEMENTS SERVING HONEY FARM CROSSING**

WHEREAS, The City of Columbia, has been requested to accept ownership and maintenance of 515 linear feet of 8" gravity main serving Honey Farm Crossing; and

WHEREAS, the City of Columbia has inspected said sewer improvements and has determined that said sewer improvements meet the requirements imposed by the City of Columbia.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY OF COLUMBIA, that the City of Columbia does hereby accept the ownership and maintenance of said sanitary sewer improvements serving Honey Farm Crossing.

PASSED AND ADOPTED BY THE CITY COUNCIL OF THE CITY OF COLUMBIA, TENNESSEE, this the 13th day of March, 2025.

CHARLES (CHAZ) M. MOLDER - MAYOR

ATTEST:

THAD H. JABLONSKI - CITY RECORDER

LEGAL FORM APPROVED:



JAKE HUBBELL, CITY ATTORNEY



Date: 18 February 2025

Columbia City Council
City of Columbia, Tennessee
City Hall
700 North Garden
Street Columbia,
Tennessee 38401

Dear Council Members:

I wish to present for dedication to the Council of the City of Columbia, Tennessee, the wastewater system improvements installed to service Honey Farm Crossing in the amount of 515 linear feet. The Contractor installed the sanitary sewer according to the Standard Sewer Specifications of the City of Columbia.

You have been provided with CCTV and as-built drawings of the project and all inspections and testing has been completed. All fees required for dedication have been paid. You have also been provided a one-year maintenance surety in the amount of \$12,488.75, set to expire one year from date of Council acceptance.

Acceptance by the Columbia City Council for these wastewater system improvements would be appreciated.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Drew Smith', with a stylized flourish at the end.

Drew Smith
Senior Vice President



CITY OF COLUMBIA TENNESSEE
CITY COUNCIL
STAFF REPORT

STAFF REPORT CONTACT INFORMATION

Thad H. Jablonski, Assistant City Manager/CFO, tjablonski@columbiatn.gov, (931) 560-1559

AGENDA ITEM TITLE: RESOLUTION NO. 25-20 - A RESOLUTION TO AUTHORIZE THE CITY OF COLUMBIA TO APPLY FOR THE TENNESSEE DEPARTMENT OF ECONOMIC AND COMMUNITY DEVELOPMENT BLOCK GRANT AND AUTHORIZE THE MAYOR TO EXECUTE DOCUMENTS RELATED TO ACCEPTING AND ADMINISTERING THE GRANT PROJECT - WARD 3

RECOMMENDATION: Approve Resolution No. 25-20.

INFORMATION: The City of Columbia City Manager's Office requests authorization to apply for the Tennessee Department of Economic and Community Development "Small Cities" Community Development Block Grant (CDBG) Program.

The CDBG grant funds would support improvements to drainage flow in East Columbia at the intersection of East 9th St. and South Main St., reducing extreme flooding of driveways, roads, and culverts and providing residents and businesses access to key public and private services during extreme weather events. The East 9th St. and South Main St. Drainage Project was identified in the City of Columbia Strategic Plan in 2017.

The maximum funded project is not to exceed \$1,265,823, including state and local funds. If the \$1,000,000 maximum amount is awarded by the Tennessee Department of Economic and Community Development, the agency will require a local match totaling \$265,823 from the City of Columbia.

Applications are due March 28, 2025. The City should receive information on the status of the city's application by the fall of 2025.

CERTIFICATION: The Chief Financial Officer certifies that \$1,265,823 will be included in a subsequent appropriation amendment with matching funds reserved in General City Admin – Reserves pending the award of funds.

ATTACHMENTS: Staff Report, Resolution No. 25-20.

**A RESOLUTION AUTHORIZING THE CITY OF COLUMBIA TO APPLY FOR
THE STATE OF TENNESSEE "SMALL CITIES" COMMUNITY
DEVELOPMENT BLOCK GRANT PROGRAM, ACCEPTING THE AWARD
AND AUTHORIZING THE MAYOR TO EXECUTE DOCUMENTS RELATED
TO ACCEPTING AND ADMINISTERING THE GRANT PROJECT**

WHEREAS, the City of Columbia is eligible for funds under the Federally-funded, State of Tennessee "Small Cities" Community Development Block Grant Program (CDBG); and

WHEREAS, the East Columbia neighborhood is experiencing significant drainage problems which negatively affects the health and safety of the residents and motorists in this drainage basin; and

WHEREAS, the residents of the East Columbia drainage area have requested assistance to improve the drainage flow which will reduce the extreme flooding of driveways, roads, and culverts, as well as improve public health, mobility, and emergency services response times; and

WHEREAS, the total cost of the project is estimated to be \$1,265,823.00, and the maximum grant amount is \$1,000,000.00; and

WHEREAS, the City of Columbia wishes to make an application for said project.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY OF COLUMBIA, as follows:

- (1) The City of Columbia is hereby authorized and directed to execute and submit an application for funds to the Tennessee Department of Economic and Community Development.
- (2) The Mayor of the City of Columbia is hereby authorized and directed to enter into all necessary agreements to receive and administer such grant funds.
- (3) The total cost of the project is estimated to be One Million Two Hundred Sixty-Five Thousand Eight Hundred Twenty Three Dollars (\$1,265,823.00). The maximum grant amount is One Million (\$1,000,000.00) Dollars. Therefore, the City of Columbia is hereby authorized to contribute a local match in an amount not to exceed Two Hundred Sixty Five Thousand Eight Hundred Twenty Three (\$265,823.00) Dollars.

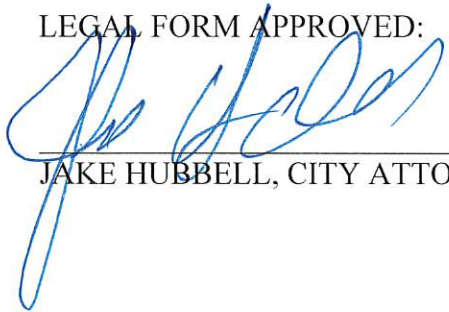
PASSED AND ADOPTED BY THE CITY OF COLUMBIA, TENNESSEE, this
the ____ day of _____, 2025.

CHARLES (CHAZ) M. MOLDER, MAYOR

ATTEST:

THAD H. JABLONSKI, CITY RECORDER

LEGAL FORM APPROVED:


JAKE HUBBELL, CITY ATTORNEY



CITY OF COLUMBIA TENNESSEE
CITY COUNCIL
STAFF REPORT

STAFF REPORT CONTACT INFORMATION

Jill Carlson, Sr. Admin Assistant, jcarlson@columbiatn.gov, 931.560.1451

AGENDA ITEM TITLE: RESOLUTION NO. 25-21 - A RESOLUTION TO ACCEPT SPONSORSHIP DONATIONS FOR THE 2025 MIDSTATE CLASSIC SOFTBALL GAMES TO BE HELD AT RIDLEY SPORTS COMPLEX ON MARCH 18, 2025, IN THE AMOUNT OF NINETEEN THOUSAND DOLLARS (\$19,000) – WARD 4

RECOMMENDATION: Approve Resolution No. 25-21.

INFORMATION: The City of Columbia has confirmed donations totaling \$19,000 from Atmos Energy, Line To Line, Columbia Power & Water Systems, Maury Regional, Rotary Breakfast Club, Columbia Noon Rotary, Redman-Davis Risk Management & Insurance, JR Wauford & Company, Maury County Visitors Bureau, Lose & Design, and Columbia Kubota for the Midstate Classic Softball games to be held on March 18, 2025, at Ridley Sports Complex to help cover the cost of meals and other costs related to the teams/games.

CERTIFICATION:

ATTACHMENTS: Staff Report, Resolution No. 25-21.

**A RESOLUTION ACCEPTING SPONSORSHIP DONATIONS FOR THE 2025
MIDSTATE CLASSIC SOFTBALL GAMES TO BE HELD AT RIDLEY SPORTS
COMPLEX ON MARCH 18, 2025 IN THE AMOUNT OF NINETEEN THOUSAND
DOLLARS (\$19,000.00)**

WHEREAS, the City of Columbia has confirmed sponsorships totaling Nineteen Thousand Dollars (\$19,000.00) from the following: Atmos Energy, Line To Line, Columbia Power & Water Systems, Maury Regional Medical Center, Rotary Breakfast Club, Columbia Noon Rotary, Redman-Davis Risk Management & Insurance, JR Wauford & Company, Maury County Visitors Bureau, Lose & Design, and Columbia Kubota for the Midstate Classic Softball Games to be held on March 18, 2025, at Ridley Sports Complex; and

WHEREAS, the sponsorship donations will be used for the cost of meals and services related to the games.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY OF COLUMBIA, that the City of Columbia does hereby accept these sponsorship donations to cover the cost of meals and services.

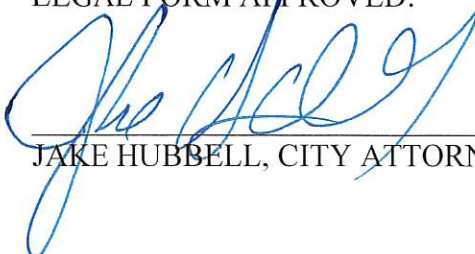
PASSED AND ADOPTED BY THE CITY OF COLUMBIA, TENNESSEE, this the 13th day of March, 2025.

CHARLES (CHAZ) M. MOLDER, MAYOR

ATTEST:

THAD H. JABLONSKI, CITY RECORDER

LEGAL FORM APPROVED:



JAKE HUBBELL, CITY ATTORNEY



CITY OF COLUMBIA TENNESSEE
CITY COUNCIL
STAFF REPORT

STAFF REPORT CONTACT INFORMATION

Paul Keltner, AICP, Development Services Director pkeltner@columbiatn.gov 931-560-1560

AGENDA ITEM TITLE: 2ND CONSIDERATION ON ORDINANCE NO. 4536 - AN ORDINANCE AMENDING ORDINANCE NO. 4400, THE SAME BEING THE ZONING ORDINANCE FOR THE CITY OF COLUMBIA, TENNESSEE REGARDING BUILDING, LOT AND SITE STANDARDS IN ARTICLE 4 BY REPEALING SUCH ARTICLE AND REPLACING IT WITH A NEW ARTICLE 4 BUILDING, LOT AND BUILDING SITE STANDARDS - CITYWIDE, MORE ATTRACTIVE, LIVABLE CITY.

RECOMMENDATION: Approve Ordinance 4536 on second consideration.

INFORMATION: The Department of Development Services is requesting to amend the Article 4 of Zoning Ordinance 4400. The proposed amendments include Uses, Limitations and Standards regarding Short Term Rentals, Home Occupations, Vape, Tobacco, & Cannabinoids, and Bars, Taverns & Nightclubs. The Planning Commission recommended approval of this request with a vote of 6-0 at their December 4, 2024 meeting with the conditions from the Planning Commission recommending:

- That within the Columbia Arts District Overlay the applicant shall demonstrate that no pre-existing place of Worship, School, or Public Park be located within 200 ft. (reduced from 500 ft.) of a proposed bar, tavern, or nightclub.
- Modification of the Planning Fee Schedule for Short Rentals requiring Conditional Use Approval with the Board of Zoning Appeals to be \$300 with staff approval of Short-Term Rentals being \$150.
- That the separation requirement for Tobacco, Vape, and Cannabinoid Retailers be increased from 500 feet to 1,000 feet from an already existing establishment from a new proposed Tobacco, Vape, and Cannabinoid Retailer, and keeping the separation of such newly established retailer from Schools, parks, and religious facilities remain at 500 feet and not allowed with a CD-5 district as drafted by Staff.

The Planning Commission reviewed this item at the February 12, 2025 meeting as requested by City Council. No new changes were made to the previously reviewed uses. The Planning Commission recommended the removal of the word "Primary" in relation to required Building Materials in the standards for district tables along with the replacement of Table 4.3.7.A, Private Frontage Types. The recommendation passed by a vote of 6-0.

CERTIFICATION: N/A

ATTACHMENTS: Ordinance 4536; Exhibit A; Home Occupation Use Table; STR Posting; STR Use

AN ORDINANCE AMENDING ORDINANCE NO. 4400, THE SAME BEING THE ZONING ORDINANCE OF THE CITY OF COLUMBIA, TENNESSEE BY REPEALING ARTICLE 4 AND REPLACING SUCH ARTICLE WITH NEW ARTICLE 4 BUILDING, LOT AND BUILDING SITE STANDARDS.

WHEREAS, Section §13-7-201 of the Tennessee Code Annotated empowers the city to enact a zoning ordinance and to provide for its administration, enforcement, and amendment; and

WHEREAS, the City Council deems it necessary for the purpose of promoting the health, safety, morals and general welfare of the city to enact such an ordinance; and

WHEREAS, the City Council, pursuant to the provisions of Section §13-4-101 of the Tennessee Code Annotated has appointed a Planning Commission to recommend the appropriate regulations to be enforced therein; and

WHEREAS, on the 4th day of December 2024, the Planning Commission reviewed and recommended specific changes in accordance to Section 8.5.18, to the Zoning Ordinance regarding Building, Lot and Building Site Standards in Article 4. As a result, Article 4 is being repealed in its entirety and replaced with a new Article 4 which is attached hereto as Exhibit A and incorporated herein by reference. Said recommendations are being considered after a public hearing held on the 9th day of January, 2025, notice of which was published in the Daily Herald of Columbia fifteen (15) days or more prior to said meeting; and

NOW, THEREFORE, BE IT ORDAINED BY THE CITY OF COLUMBIA:

Section 1: That Ordinance number 4400, the same being the Zoning Ordinance of the City of Columbia, Tennessee is hereby amended repealing Article 4 in its entirety and replacing such Article with a new Article 4, Building, Lot, and Building Site Standards which is attached hereto as Exhibit A and incorporated herein by reference;

Section 2: That pursuant to Section 8.5.18.J.4, the City Council makes the following specific findings:

- a. The extent to which the proposed Zoning Ordinance Amendment is consistent with the remainder of this Ordinance, including, specifically, any purpose and intent statements;
- b. The extent to which the proposed Zoning Ordinance Amendment represents a new idea not considered in this Ordinance, or represents a revision necessitated by changing circumstances over time;
- c. Whether or not the proposed Zoning Ordinance Amendment corrects an error in this Ordinance; and
- d. Whether or not the proposed Zoning Ordinance Amendment revises this Ordinance to comply with state or federal statutes or case law.

Section 3: That ordinances or parts of ordinances in conflict herewith are hereby repealed

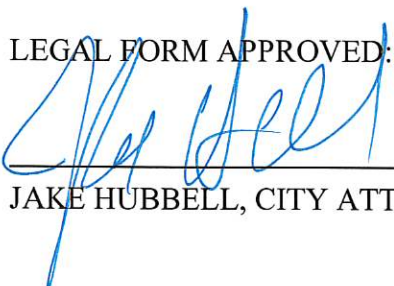
PASSED AND ADOPTED BY THE CITY COUNCIL OF THE CITY OF
COLUMBIA, TENNESSEE, this the 13th day of February, 2025.

CHARLES (CHAZ) M. MOLDER, MAYOR

ATTEST:

THAD H. JABLONSKI, CITY RECORDER

LEGAL FORM APPROVED:



JAKE HUBBELL, CITY ATTORNEY

APPROVED FOR FIRST CONSIDERATION:

ANTHONY R. MASSEY – CITY MANAGER

Passed on 1st consideration _____

Passed on 2nd consideration: _____

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

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ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

ARTICLE 4 BUILDING, LOT & SITE STANDARDS

SECTION 4.1 GENERAL

This Article applies to all Buildings, Lots, and Building Sites located or proposed within the City, except as otherwise provided in Section 1.22 with respect to Nonconformities.

SECTION 4.2 PLAN REQUIRED

No Building shall be constructed, re-constructed, Altered, modified, raised, moved, extended, reduced, or enlarged, and no Lot or Building Site or other land shall be Developed, re-Developed, Improved, subdivided, or re-subdivided, and none of the same shall be used, except in compliance with this Article 4, the Official Zoning Map, and pursuant to a Development Plan or Master PUD Development Plan that conforms with and has been prepared, submitted, reviewed and approved in accordance with Article 8 (Administration, Procedures & Enforcement), this Article 4, and all other standards and requirements applicable thereto.

SECTION 4.3 BUILDING, LOT & BUILDING SITE STANDARD

4.3.1 CIVIC DISTRICT BUILDINGS & LOTS

A. Definitions

The terms Civic District, Civic Space and Civic Building are defined in **Article 9 (Definitions)**.

B. Design; Compliance

If a Building, Lot, or Building Site is located within an area designated on the Official Zoning Map as Civic District, Civic Space or Civic Building.

1. Civic Space shall be designed generally as described in **Table 5.3.3-A (Civic Space Types - Summary)** and **Table 5.3.3-B (Civic Space Types - Specific Standards)**, as related to the Adjacent District, or if Adjacent more than one, as related to the Adjacent District with the largest number of linear feet of common boundary with the Civic Space.
2. Development, re-Development, Lots, Buildings, Building Sites, Structures, and Improvements and Use thereof within Civic Districts must comply with the applicable standards and requirements of **Table 4.3.1-N (District Standards-Civic)**, subject, however, to Section 4.3.1.B.4.
3. Without limitation to Section 4.3.1.B.2, Civic Buildings within Civic Districts must comply with the standards and requirements of Table 4.3.1-N(District Standards-Civic) and any other requirements as may be determined by the City Council.
4. Buildings operated for Civic purposes but not located within a Civic District must comply with the applicable District standards of the District in which they are situated.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

4.3.2 DISTRICT BUILDINGS, LOTS & BUILDING SITES

The standards for Buildings, Lots, and Building Sites within Districts are set forth in this Section 4.3 and elsewhere in this Ordinance.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-2 TABLE 4.3.1-A DISTRICT STANDARDS: RURAL CHARACTER DISTRICT



General Description

The CD-2 Rural Character District consists of large-lot semi-rural estates, open spaces, and legacy agricultural operations in low density single-family detached Residential areas. CD-2 is an appropriate District for the Rural Transition and Hillsides & Natural Spaces future land use Character Areas described in the Comprehensive Plan.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-2 TABLE 4.3.1-A DISTRICT STANDARDS: RURAL CHARACTER DISTRICT

Density / Floor Area Ratio (FAR)

**Applicable only to Development Parcels*

1 Density Unit per acre max

BLOCK SIZE*

**Applicable only to Development Parcels*

Block Perimeter

NR

Private Frontage Types

Common Yard	P	Stepfront	NP
Porch	P	Shopfront	NP
Fence	P	Gallery	NP
Terrace/Lightwell	NP	Arcade	NP
Forecourt	NP	Officefront	NP
Stoop	NP		

See Table 4.3.7.A (Private Frontage Types)

Civic Space Types*

**Applicable only to Development Parcels*

Natural Area	P	Playground	P
Green	P	Sport Field	P
Square	NP	Community Garden	P
Plaza	NP	Pocket Park	NP

See Table 5.3.3.A (Civic Space Types - Summary) and Table 5.3.3.B (Civic Space - Specific Standards)

Permitted Uses

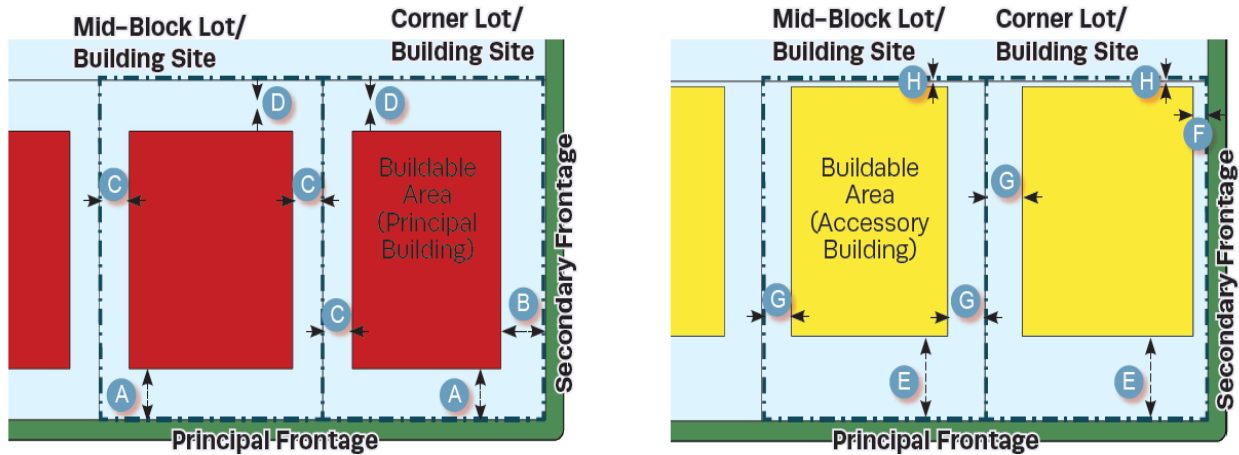
See Table 4.3.9.A-1 (Building, Lot & Building Site Principal Use), Table 4.3.9.A-2 (Building, Lot & Building Site Accessory Uses), and Table 4.3.9.A-3 (Building, Lot & Building Site Temporary Uses). For Development Parcels, see also Table 5.1.7 (Principal Use Mix).

Number of Buildings

Principal Building	1 max
Accessory Buildings	2 max

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-2 **TABLE 4.3.1-A DISTRICT STANDARDS:**
RURAL CHARACTER DISTRICT



Lot Occupation

Lot/ Building Site Width	125 ft. min.
Frontage Buildout	NR
Lot/ Building Site Area	12,500 sp. ft. min.
Impervious Surface Coverage	NR
Lot/ Building Site Enfrontment	Must enfront a vehicular Thoroughfare
Lot/ Building Site Access	All lots must have legal and physical vehicular access to a vehicular Thoroughfare via Driveway or Easement.

Setbacks / Yards

Setbacks / Yards – Principal Building			Setbacks / Yards – Accessory Building		
Front Setback / Yard, Principal Frontage	30 ft. min	A	Front Setback / Yard, Principal Frontage	20 ft. min + Principal Building Front Setback / Yard	E
Front Setback / Yard, Secondary Frontage	30 ft. min	B	Front Setback / Yard, Secondary Frontage	30 ft. min	F
Side Setback / Yard, each side	20 ft. min	C	Side Setback / Yard, each side	20 ft. min	G
Rear Setback	30 ft. min; or 15 ft. min from center line of Rear Alley	D	Rear Setback	5 ft. min	H

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-2 TABLE 4.3.1-A DISTRICT STANDARDS: RURAL CHARACTER DISTRICT

Building Standards

Building Height*

Principal Building	3 Stories max
--------------------	---------------

Accessory Building	2 Stories max
--------------------	---------------

*Stories and height do not include Attics and Basements, chimneys, flagpoles, towers, spires, belfries, parapet walls, aerials, or antennas. Any Building exceeding 35 feet in height must obtain approval from the stipulations made by the Fire Department in accordance with the above cited codes shall be required.

*The Fire Department may stipulate special fire measures in accordance with National Fire Protection Association and International Building Code criteria as a condition of approval of such Structure. In such instance stipulations made by the Fire Department in accordance to with the above cited codes shall be required. *

Ceiling Height

NR

Building Composition

Vertical Composition	Each Principal Building must have an identifiable Base, Middle, & Cap
----------------------	---

Finished Floor Level	NR
----------------------	----

Façade

Main Entrance	Main Entrance must be in Façade of Principal Frontages, located no further than 50% of the total Façade width for the Principal Frontage from the First Layer
---------------	---

Façade Position	Parallel to straight Frontage Line or to tangent of curved Frontage Line
-----------------	--

Façade & Façade Element Design Proportions	NR
--	----

Blank Walls	NP at Frontage
-------------	----------------

Porch Frontages	Min. 6 ft. clear depth, excluding rails, pillars, columns or other features
-----------------	---

Roof Type & Pitch

Flat	NP
------	----

Shed	P at rear only and if ridge is attached to an exterior Building wall; except for porches, stoops or dormers which may have a shed rood anywhere on the Building.
------	--

Hip	P
-----	---

Gable	P
-------	---

Pitch	6:12 – 6:14, except for shed roofs which may be 3:12 – 14:12 and except rood pitch may match the primary roof pitch of an existing Building that is less than 6:12
-------	--

Roof Design

Eaves shall extend no less than nine inches beyond the supporting walls.

Gable end rakes shall overhang at least six inches.

Eaves and rakes on Accessory Buildings and dormers shall overhang at least six inches.

Soffits shall be placed perpendicular to the Building wall, not sloping in plane with the roof (except for gable end rakes).

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-2 **TABLE 4.3.1-A DISTRICT STANDARDS:**
RURAL CHARACTER DISTRICT

Building Materials Continued

Building Materials

Brick	P	Exposed concrete	NP
Natural stone	P	Vinyl siding	P
Wood	P	Aluminum siding	NP
Cementitious siding	P	Corrugated and/or sheet metal	NP
Authentic stucco over masonry	P		

Changes in Building Materials Primary materials must continue alongside Elevations through 2nd layer. Primary materials shall continue for entire length of all Facades facing a frontage. Any material changes must coincide with form, structural, or massing changes and shall not occur at outside corner of any such change.

Building Colors

Foundation Cladding	Required; brick, stone, or stucco except renovations and minor expansions of existing structures may match current material, or absence of cladding.
Porch Pier Cladding	Required; brick or stone, with any space under Porch concealed by painted or stained latticework between piers, except renovations and minor expansions of existing structures, pier cladding, or absence of cladding, may match current material.
Chimney Cladding	Required; brick, natural stone, with material matching primary material of Façade

Building Types

House	P	Commercial	NP
Duplex	NP	Mixed Use	NP
Townhouse	NP	Flex	NP
Small Multifamily	NP	Mid-Rise	NP
Large Multifamily	NP	Large Scale Commercial	NP
Live/Work	NP	Civic	P

See *Table 4.3.8.A (Principal Building Types - Summary)* and *Table 4.3.8.B (Principal Building Types - Specific Standards)*. For Development Parcels, see also *Table 5.1.6 (Building Type Mix)*.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-2 **TABLE 4.3.1-A DISTRICT STANDARDS:**
RURAL CHARACTER DISTRICT

Vehicular Parking Requirements		
Parking Location		
	On-Street Parking	Off-Street Parking
Domestic Vehicles	P	P in 3 rd Layer only, and in Driveway
Recreational Vehicles	NP	P in 3 rd Layer only, and in Driveway
Heavy Equipment	NP	P in 3 rd Layer only, and in Driveway
Tractor trailers (including trailers for storage)	NP on-Street, except for delivery and Temporary Use of trailers	NP
All other vehicles	NP	P in 3 rd Layer only, and in Driveway

Additional Parking Requirements	
Off-Street Parking Surface	P Prepared surface of gravel, asphalt, concrete, or other hard surface
Garage Location	In 2 nd or 3 rd Layer only; Min interior dimensions 10 ft. x 20 ft. per vehicle Parking space
Garage Design	If Garage faces Street in 1 st or 2 nd layer: max. Garage door width 33% of total Garage
Driveway/ Vehicular Entrance Location	P in any Layer
Driveway/ Vehicular Entrance Maximum Width	10' – 20' in 1 st Layer
Parking Structure	NP
Parking Structure Pedestrian Exit Location	N/A

Bicycle Parking

See Section 4.3.13

Thoroughfare & Internal Drive Types* * Applicable only to Development Parcels

See Article 5 (Development Parcel Standards) for additional requirements

Loading & Access	
Off-Street Loading and Storage	P in 3 rd Layer only
Utility Box & Service Meter* Locations (*Not including water meters)	P in 3 rd Layer only
Off-Street Trash Receptacle Locations	P in 3 rd Layer only
Off-Street Dumpster Locations	N/A
Drive- Through Locations	N/A

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-2 TABLE 4.3.1-A DISTRICT STANDARDS: RURAL CHARACTER DISTRICT

Non-Building Components			
	1 st Layer	2 nd Layer	3 rd Layer
HVAC Equipment, Utility, Service and Mechanical Equipment	NP	NP	P
Solar Panels	P if coplanar to and integrated into roof design	P if coplanar to and integrated into roof design	P
Antennas & Satellite Equipment	P in 1 st or 2 nd Layer if such Layer is only possible location for satisfactory reception	P in 1 st or 2 nd Layer if such Layer is only possible location for satisfactory reception	P
Recreation or Play Equipment	NP	P	P
Animals Enclosures, Runs or Shelters	NP	NP	P
Swimming pools, Hot Tubs and Spas	NP		P
Transmitting and/or receiving towers, or antennas and wind-generating machines	NP	NP	P

Signs

See Sign Standards in Article 7 (Sign Standards) and Table 7.12.B-1 (Sign Types - Summary) and Table 7.1.2.B-2 (Sign Types- Specific Standards)

Lighting

See Private Lighting Requirements in Section 4.3.17 and Table 4.3.17.B (Private Lighting Standards)

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-2 TABLE 4.3.1-A DISTRICT STANDARDS: RURAL CHARACTER DISTRICT

Private Landscaping and Fencing

Landscaping

In compliance with Section 4.3.16; with one (1) tree min per 50 ft. of Frontage

Walls & Fencing (not including Screens)

Height	4 ft. max at Frontage; otherwise, 6 ft. max; height measured from avg. undisturbed grade of Adjacent property at property line.
Construction	Finished side must face Adjacent property, Thoroughfare, Path, Passage or Waterbody
Maintenance	Must be well maintained, in upright condition and free of missing or broken parts and graffiti.

Materials

Natural Wood	P	Chain Link	P at sides and rear only
Brick, Natural Stone, or Stucco over Masonry	P	Barbed/ Razor/ Concertina Wire	NP
Wrought Iron or Aluminum	P	Exposed or Painted Aggregate Concrete	NP
Vinyl	P	Smooth or Split-faced Block	NP

Additional Standards

Pedestrian Connections through to Adjacent Neighborhoods or Uses	Required
--	----------

Locations of Retaining Walls	P within required Yards, per Section 4.3.10
------------------------------	---

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-2 **TABLE 4.3.1-A DISTRICT STANDARDS:**
RURAL CHARACTER DISTRICT

Screens, Street-Screens & Buffers	
Height	
	At Frontage or Adjacent to Civic Space
	3ft. to 3.5ft.
Wall Screen/Street-Screen Height	5ft. to 6ft; Minimum 6ft. for Dumpsters and Trash Receptacles
Fence Screen/ Street-Screen Height	NP 5ft. to 6ft. for Dumpsters and Trash Receptacles
Hedge Screen/ Street-Screen Height	3ft. to 3.5ft at installation 5ft. to 6ft. at installation
Materials	
Wall Screen or Street-Screen	Brick, Natural Stone or Stucco over Masonry
Fence Screen or Street-Screen	Natural Wood, painted or unpainted
Hedge Screen or Street-Screen	Evergreen plants with min. 80% opacity
Additional Standards	
Non-Residential & Multi-Family Residential Screen/ Streetscreen Adjacent to or across Thoroughfare from Non-Multi-Family Residential	N/A (Uses not permitted in District)
Screening of Parking, Loading Areas, Service Areas, Outdoor Storage, Drive-Throughs, Trash Receptacles/ Dumpsters, HVAC and other equipment Screened from Frontage, Civic Space and Adjacent Property.	R ; except as Driveways. Parking Lots and Parking Areas must be Screened from Frontage and Civic Space by Building or Streetscreen, Screening must be by Building wall, hedge, or fence at Frontage or Building, Wall, hedge or fence not at Frontages or Adjacent to Civic Space.
Rooftop Antenna Screening	NR
HVAC, Mechanical and other Equipment Screening	R ; must be Screened from Frontage and Civic Space by Building parapet or other Building Element
Self-Storage Warehouse Screening	N/A (not permitted in District)
Streetscreen Location	2 nd Layer
Parcel Buffer	Sections 4.3.11.H
Project Buffer	Section 5.8

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-3L

TABLE 4.3.1-B DISTRICT STANDARDS: NEIGHBORHOOD LARGE LOT CHARACTER DISTRICT



General Description

The CD-3L Neighborhood Large Lot Character District consist of primarily a low density single-family detached Residential area in which House is the predominant Building type. It has large Lot or Building Sites, medium deep front Setback and medium to wide side Setbacks. Its Thoroughfares and Internal Drives have curbs and may include Sidewalks, and/or street trees, and form medium to large blocks. CD-3L is an appropriate District for the Suburban Neighborhoods future land use Character Area described in the Comprehensive plan.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-3L TABLE 4.3.1-B DISTRICT STANDARDS: NEIGHBORHOOD LARGE LOT CHARACTER DISTRICT

Density / Floor Area Ratio (FAR)

**Applicable only to Development Parcels*

2 Density Unit per acre max

BLOCK SIZE*

**Applicable only to Development Parcels*

Block Perimeter 3600 ft. max

Private Frontage Types

Common Yard	P	Stepfront	NP
Porch	P	Shopfront	NP
Fence	P	Gallery	NP
Terrace/Lightwell	NP	Arcade	NP
Forecourt	NP	Officefront	NP
Stoop	NP		

See Table 4.3.7.A (Private Frontage Types)

Civic Space Types*

**Applicable only to Development Parcels*

Natural Area	P	Playground	P
Green	P	Sport Field	P
Square	NP	Community Garden	P
Plaza	NP	Pocket Park	P

See Table 5.3.3.A (Civic Space Types - Summary) and Table 5.3.3.B (Civic Space - Specific Standards)

Permitted Uses

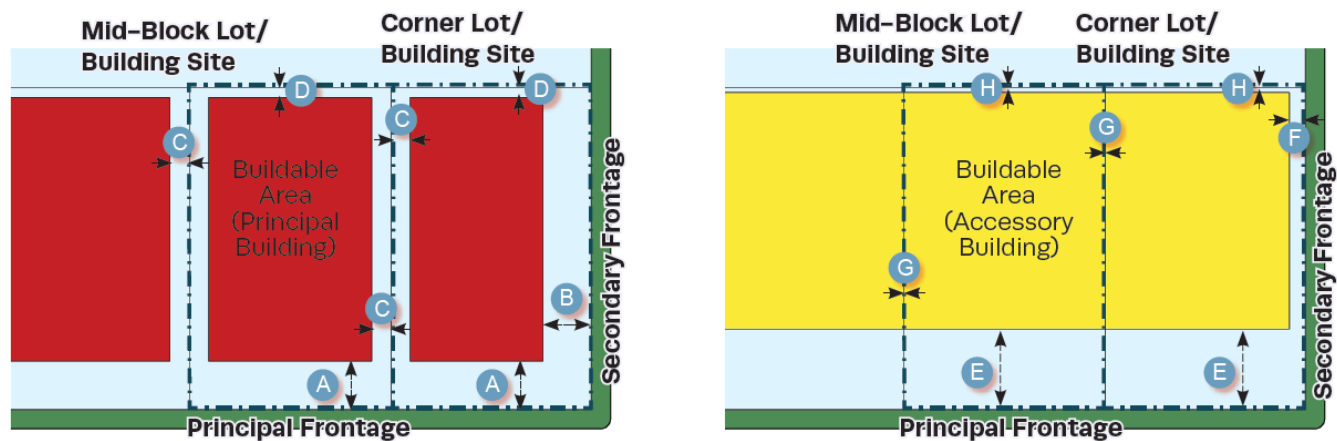
See Table 4.3.9.A-1 (Building, Lot & Building Site Principal Use), Table 4.3.9.A-2 (Building, Lot & Building Site Accessory Uses), and Table 4.3.9.A-3 (Building, Lot & Building Site Temporary Uses). For Development Parcels, see also Table 5.1.7 (Principal Use Mix).

Number of Buildings

Principal Building	1 max
Accessory Buildings	2 max

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-3L TABLE 4.3.1-B DISTRICT STANDARDS:
NEIGHBORHOOD LARGE LOT CHARACTER DISTRICT



Lot Occupation

Lot/ Building Site Width	100 ft. min.
Frontage Buildout	NR
Lot/ Building Site Area	NR
Impervious Surface Coverage	NR
Lot/ Building Site Enfrontment	Must enfront a vehicular Thoroughfare or Internal Drive, except $\leq 20\%$ of the Lots or Building Sites within each type of Character District of a Development Parcel may Enfront a Pedestrian Path, Passage, pedestrian walkway or water body if such Lots have legal and physical vehicular access to a vehicular Thoroughfare via Driveway or Easement.
Lot/ Building Site Access	All lots must have legal and physical vehicular access to a vehicular Thoroughfare or Internal drive via Driveway or Easement.

Setbacks / Yards

Setbacks / Yards – Principal Building			Setbacks / Yards – Accessory Building		
Front Setback / Yard, Principal Frontage	30 ft. min	A	Front Setback / Yard, Principal Frontage	20 ft. min behind Principal Building Frontage	E
Front Setback / Yard, Secondary Frontage	30 ft. min	B	Front Setback / Yard, Secondary Frontage	30 ft. min	F
Side Setback / Yard	12 ft. min	C	Side Setback / Yard	10 ft. min	G
Rear Setback / Yard	30 ft. min; or 15 ft. min from center line of rear Alley.	D	Rear Setback / Yard	5 ft. min; or 15 ft. min from center line of rear Alley.	H

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-3L TABLE 4.3.1-B DISTRICT STANDARDS: NEIGHBORHOOD LARGE LOT CHARACTER DISTRICT

Building Standards

Building Height*

Principal Building	3 Stories max
--------------------	---------------

Accessory Building	2 Stories max
--------------------	---------------

*Stories/ Height do not include Attics and Basements, chimneys, flagpoles, towers, spires, belfries, parapet walls, aerials, or antennas. Any Building exceeding 35 feet in height must obtain approval from stipulations made by the Fire Department in accordance with the above cited codes shall be required. *

*The Fire Department may stipulate special fire measures in accordance with National Fire Protection Association and International Building Code criteria as a condition of approval of such Structure. In such instance stipulations made by the Fire Department in accordance to with the above cited codes shall be required. *

Ceiling Height

NR

Building Composition

Vertical Composition	Each Principal Building must have an identifiable Base, Middle, & Cap
----------------------	---

Finished Floor Level	NR
----------------------	----

Façade

Main Entrance	Main Entrance must be in Façade of Principal Frontages, located no further than 50% of total Façade width for the Principal Frontage from the First Layer
---------------	---

Façade Position	Parallel to straight Frontage Line or to tangent of curved Frontage Line
-----------------	--

Blank Walls	NP at Frontage
-------------	----------------

Façade Articulation	NR
---------------------	----

Porch Frontages	Min. 6 ft. clear depth, excluding rails, pillars, columns or other features
-----------------	---

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-3L TABLE 4.3.1-B DISTRICT STANDARDS:
NEIGHBORHOOD LARGE LOT CHARACTER DISTRICT

Building Standards (continued)				
Roof Type & Pitch				
Flat	NP			
Shed	P at rear only and if ridge is attached to an exterior Building wall; except for porches, stoops or dormers which may have a shed roof anywhere on the Building.			
Hip	P			
Gable	P			
Pitch	6:12 – 6:14, except for shed roofs which may be 3:12 – 14:12 and except roof pitch may match the primary roof pitch of an existing Building that is less than 6:12			
Roof Design				
Eaves shall extend no less than nine inches beyond the supporting walls.				
Gable end rakes shall overhang at least six inches.				
Eaves and rakes on Accessory Buildings and dormers shall overhang at least six inches.				
Soffits shall be placed perpendicular to the Building wall, not sloping in plane with the roof (except for gable end rakes).				
Building Materials				
	Brick	P	Exposed concrete	NP
	Natural stone	P	Vinyl siding	P
	Wood	P	Aluminum siding	NP
	Cementitious siding	P	Corrugated and/or sheet metal	NP
	Authentic stucco over masonry	P		
Changes in Building Materials	Primary materials must continue alongside Elevations through 2 nd layer. Primary materials shall continue for entire length of all Facades facing a frontage. Any material changes must coincide with form, structural, or massing changes and shall not occur at outside corner of any such change.			
Building Colors	NR			
Foundation Cladding	Required; brick, stone, or stucco except renovations and minor expansions of existing structures may match current material, or absence of cladding.			
Porch Pier Cladding	Required; brick or stone, with any space under Porch concealed by painted or stained latticework between piers, except renovations and minor expansions of existing structures, pier cladding, or absence of cladding, may match current material.			
Chimney Cladding	Required; brick, natural stone, with material matching primary material of Façade			

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-3L TABLE 4.3.1-B DISTRICT STANDARDS: NEIGHBORHOOD LARGE LOT CHARACTER DISTRICT

Building Types

House	P	Commercial	NP
Duplex	NP	Mixed Use	NP
Townhouse	NP	Flex	NP
Small Multifamily	NP	Mid-Rise	NP
Large Multifamily	NP	Large Scale Commercial	NP
Live/Work	NP	Civic	P

See Table 4.3.8.A (Principal Building Types - Summary) and Table 4.3.8.B (Principal Building Types - Specific Standards). For Development Parcels, see also Table 5.1.6 (Building Type Mix).

Vehicular Parking Requirements

Parking Location

	On-Street Parking	Off-Street Parking
Domestic Vehicles	P	P in 3 rd layer only, and in Driveway
Recreational Vehicles	NP	P in 3 rd layer only, and in Driveway
Heavy Equipment	NP	P in 3 rd layer only, and in Driveway
Tractor Trailers (including trailers for Storage)	NP on Street, except for delivery and Temporary Use of Trailers	NP
All Other Vehicles	NP	P in 3 rd layer only, and in Driveway

Additional Parking Requirements

Off-Street Parking Surface	P Prepared surface of, asphalt, concrete, or another hard surface for 30 feet from Thoroughfare or Internal Drive, gravel permitted for any remaining depth of driveway.
Garage Location	P In 2 nd or 3 rd Layer only
Garage Design	Min. interior dimensions 10 ft. x 20 ft. per vehicle Parking space If Garage faces Street in 1 st or 2 nd layer: max. Garage door width 33% of total Garage + Façade width
Driveway/ Vehicular Entrance Location	P in any Layer
Driveway/ Vehicular Entrance Maximum Width	10 – 20 ft. in 1 st Layer
Parking Structure	NP
Parking Structure Pedestrian Exit Location	

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-3L TABLE 4.3.1-B DISTRICT STANDARDS: NEIGHBORHOOD LARGE LOT CHARACTER DISTRICT

Bicycle Parking

See Section 4.3.13

Thoroughfare & Internal Drive Types*

* Applicable only to Development Parcels

See Article 5 (Development Parcel Standards) for additional requirements

Loading & Access

Off-Street Loading and Storage	P in 3 rd Layer only
Utility Box & Service Meter* Locations (*Not including water meters)	P in 3 rd Layer only
Off-Street Trash Receptacle Locations	P in 3 rd Layer only
Off-Street Dumpster Locations	N/A
Drive- Through Locations	N/A

Non-Building Components

	1 st Layer	2 nd Layer	3 rd Layer
HVAC Equipment, Utility, Service and Mechanical Equipment	NP	NP	P
Solar Panels	P if coplanar to and integrated into roof design		P
Antennas & Satellite Equipment	P in 1 st or 2 nd Layer if such Layer is only possible location for satisfactory reception		P
Recreation or Play Equipment	NP	P	P
Animals Enclosures, Runs or Shelters	NP	NP	P
Swimming pools, Hot Tubs and Spas	NP	P	P
Transmitting and/or receiving towers, or antennas and wind-generating machines	NP	NP	P

Signs

See Sign Standards in Article 7 (Sign Standards) and Table 7.12.B-1 (Sign Types - Summary) and Table 7.1.2.B-2 (Sign Types- Specific Standards)

Lighting

See Private Lighting Requirements in Section 4.3.17 and Table 4.3.17.B (Private Lighting Standard)

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-3L TABLE 4.3.1-B DISTRICT STANDARDS: NEIGHBORHOOD LARGE LOT CHARACTER DISTRICT

Private Landscaping and Fencing

Landscaping

In compliance with Section 4.3.16; with one (1) tree min per 50 ft. of Frontage and continuous shrubs around foundation at Frontage

Walls & Fencing (not including Screens)

Height	4 ft. max at Frontage; otherwise, 6 ft. max; height measured from avg. undisturbed grade of Adjacent property at property line
Construction	Finished side must face Adjacent property, Thoroughfare or Internal Drive, Path, Passage or Waterbody.
Maintenance	Must be well-maintained, in up-right condition and free of missing or broken parts and graffiti.

Materials

Natural Wood	P	Chain Link	P at sides and rear only
Brick, Natural Stone, or Stucco over Masonry	P	Barbed/ Razor/ Concertina Wire	NP
Wrought Iron or Aluminum	P	Exposed or Painted Aggregate Concrete	NP
Vinyl	P	Smooth or Split-faced Block	NP

Additional Standards

Pedestrian Connections through to Adjacent Neighborhoods or Uses	Required
Location of Retaining Walls	P within required Yards, per Section 4.3.10 If supporting grade 8 ft. or higher than grade at property line, must be set back 10 ft. from property line.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

**CD-3L TABLE 4.3.1-B DISTRICT STANDARDS:
NEIGHBORHOOD LARGE LOT CHARACTER DISTRICT**

Screens, Street-Screens & Buffers		
Height		
	At Frontage or Adjacent to Civic Space	Not at Frontage or Adjacent to Civic Space
Wall Screen/Street-Screen Height	3ft. to 3.5ft.	5ft. to 6ft; Minimum 6ft. for Dumpsters and Trash Receptacles
Fence Screen/ Street-Screen Height	NP	5ft. to 6ft. for Dumpsters and Trash Receptacles
Hedge Screen/ Street-Screen Height	3ft. to 3.5ft at installation	5ft. to 6ft. at installation
Materials		
Wall Screen or Streetscreen	Brick, Natural Stone or Stucco over Masonry	
Fence Screen or Streetscreen	Natural Wood, painted or unpainted	
Hedge Screen or Streetscreen	Evergreen plants with min. 80% opacity	
Additional Standards		
Non-Residential & Multi-Family Residential Screen / Streetscreen Adjacent to or across Throughfare from Non-Multi-Family Residential	N/A (Uses not permitted in District)	
Screening of Parking, Loading Areas, Service Areas, Outdoor Storage, Drive-Throughs, Trash Receptacles/Dumpsters, HVAC and other equipment screened from Frontage, Civic Space and Adjacent Property	R; except at Driveways: Parking Lots and Parking Areas must be Screened from Frontage and Civic Space by Building or Streetscreen; otherwise, Screening must be by Building, wall, hedge, or fence at Frontage or Building, Wall, hedge or fence not at Frontages or Adjacent to Civic Space.	
Rooftop Antenna Screening	NR	
HVAC, Mechanical and other Equipment Screening	R; must be Screened from Frontage and Civic Space by Building parapet or other Building Element	
Self-Storage Warehouse Screening	N/A (not permitted in District)	
Streetscreen Location	2 nd Layer	
Parcel Buffer	Section 4.3.11.H	
Project Buffer	Section 5.8	

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-3 TABLE 4.3.1-C DISTRICT STANDARDS: NEIGHBORHOOD CHARACTER DISTRICT



General Description

The CD-3 Neighborhood Large Lot Character District consist of primarily medium density single-family detached Residential area in which House is the predominant Building type. It has medium to deep front Setback and medium to wide side Setbacks. Its Thoroughfares and Internal Drives have curbs and may include Sidewalks, and/or street tress, and form medium to large blocks. CD-3 is an appropriate District for the Suburban Neighborhoods Future Land Use Character Area described in the Comprehensive plan; it is also appropriate for City Center Urban Village Future Land Use Character Area where the Planning Commission determines that is compatible with the established land use pattern in the surrounding area.



ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-3 TABLE 4.3.1-C DISTRICT STANDARDS: NEIGHBORHOOD CHARACTER DISTRICT

Density / Floor Area Ratio (FAR)

**Applicable only to Development Parcels*

4 Density Unit per acre max

BLOCK SIZE*

**Applicable only to Development Parcels*

Block Perimeter

2800 ft. max

Private Frontage Types

Common Yard	P	Stepfront	NP
Porch	P	Shopfront	NP
Fence	P	Gallery	NP
Terrace/Lightwell	NP	Arcade	NP
Forecourt	NP	Officefront	NP
Stoop	P		

See Table 4.3.7.A (Private Frontage Types)

Civic Space Types*

**Applicable only to Development Parcels*

Natural Area	P	Playground	P
Green	P	Sport Field	P
Square	NP	Community Garden	P
Plaza	NP	Pocket Park	P

See Table 5.3.3.A (Civic Space Types - Summary) and Table 5.3.3.B (Civic Space - Specific Standards)

Permitted Uses

See Table 4.3.9.A-1 (Building, Lot & Building Site Principal Use), Table 4.3.9.A-2 (Building, Lot & Building Site Accessory Uses), and Table 4.3.9.A-3 (Building, Lot & Building Site Temporary Uses). For Development Parcels, see also Table 5.1.7 (Principal Use Mix).

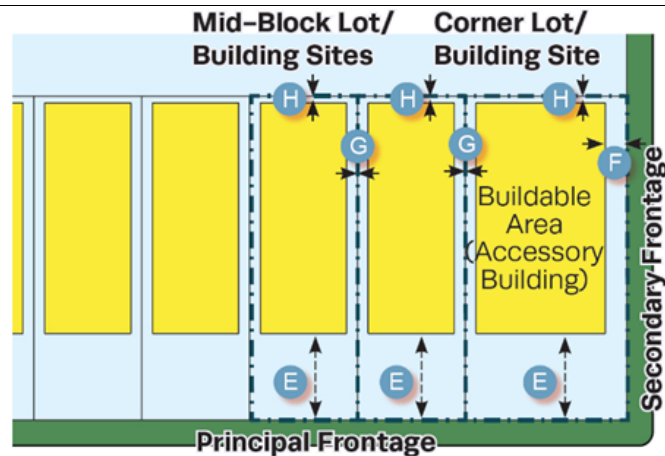
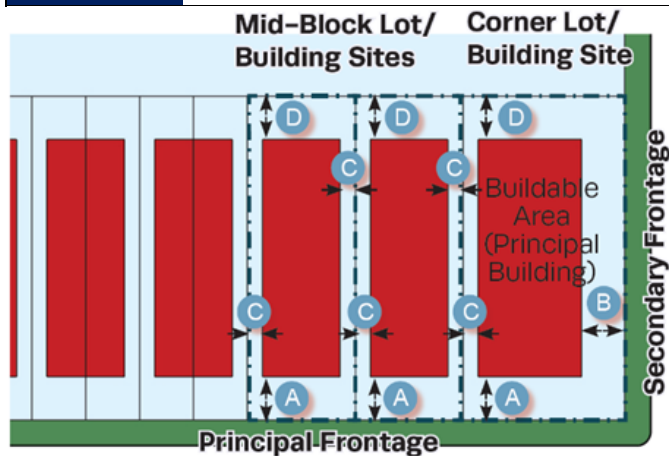
Number of Buildings

Principal Building	1 max
Accessory Buildings	2 max

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-3

**TABLE 4.3.1-C DISTRICT STANDARDS:
NEIGHBORHOOD CHARACTER DISTRICT**



Lot Occupation

Lot/ Building Site Width	House: 40 ft. min if Alley loaded at rear, otherwise 65 ft. min Duplex: 50 ft. min for each unit of Duplex Civic: 50 ft. min
Frontage Buildout	NR
Lot/ Building Site Area	NR
Impervious Surface Coverage	50% max
Lot/ Building Site Enfrontment	Must enfront a vehicular Thoroughfare or Internal Drive, except $\leq 20\%$ of the Lots or Building Sites within each type of Character District of a Development Parcel may Enfront a Pedestrian Path, Passage, pedestrian walkway or water body if such Lots have legal and physical vehicular access to a vehicular Thoroughfare via Driveway or Easement. The Planning Commission may approve alternative enfrontment within a Development Parcel as described in 8.5.6.O.
Lot/ Building Site Access	All lots must have legal and physical vehicular access to a vehicular Thoroughfare or Internal drive via Driveway or Easement.

Setbacks / Yards

Setbacks / Yards – Principal Building			Setbacks / Yards – Accessory Building		
Front Setback / Yard, Principal Frontage	25 ft. min	A	Front Setback / Yard, Principal Frontage	20 ft. min behind Principal Building Frontage	E
Front Setback / Yard, Secondary Frontage	20 ft. min	B	Front Setback / Yard, Secondary Frontage	20 ft. min	F
Side Setback / Yard	8 ft. min	C	Side Setback / Yard	5 ft. min	G
Rear Setback / Yard	25 ft. min; or 15 ft. min from center line of rear Alley.	D	Rear Setback / Yard	5 ft. min; or 15 ft. min from center line of rear Alley.	H

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-3 TABLE 4.3.1-C DISTRICT STANDARDS: NEIGHBORHOOD CHARACTER DISTRICT

Building Standards

Building Height*

Principal Building	3 Stories max
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Accessory Building	2 Stories max
--------------------	---------------

*Stories/ Height do not include Attics and Basements, chimneys, flagpoles, towers, spires, belfries, parapet walls, aerials, or antennas. Any Building exceeding 35 feet in height must obtain approval from stipulations made by the Fire Department in accordance with the above cited codes shall be required. *

*The Fire Department may stipulate special fire measures in accordance with National Fire Protection Association and International Building Code criteria as a condition of approval of such Structure. In such instance stipulations made by the Fire Department in accordance to with the above cited codes shall be required. *

Ceiling Height

NR

Building Composition

Vertical Composition	Each Principal Building must have an identifiable Base, Middle, & Cap
----------------------	---

Finished Floor Level	NR
----------------------	----

Façade

Main Entrance	Main Entrance must be in Façade of Principal Frontages, located no further than 50% of total Façade width for the Principal Frontage from the First Layer
---------------	---

Façade Position	Parallel to straight Frontage Line or to tangent of curved Frontage Line
-----------------	--

Façade & Façade Element Design Proportions	NR
--	----

Blank Walls	NP at Frontage
-------------	----------------

Façade Articulation	NR at Frontage
---------------------	----------------

Façade Openings	NR
-----------------	----

Façade Glazing	NR
----------------	----

Window Shape	NR
--------------	----

Window Alignment	NR
------------------	----

Window Types	NR
--------------	----

Window Glazing Material	NR
----------------------------	----

Window Trim in 1 st Layer	NR
---	----

Shutters	NR
----------	----

Façade Window Sill Height	NR
------------------------------	----

Porch Frontages	Min. 6 ft. clear depth, excluding rails, pillars, columns or other features
-----------------	---

Shopfront Frontages	NR
---------------------	----

Façade Variety	NR
----------------	----

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-3 **TABLE 4.3.1-C DISTRICT STANDARDS:**
NEIGHBORHOOD CHARACTER DISTRICT

Building Standards (continued)

Roof Type & Pitch

Flat	NP
Shed	P at rear only and if ridge is attached to an exterior Building wall; except for porches, stoops or dormers which may have a shed roof anywhere on the Building.
Hip	P
Gable	P
Pitch	6:12 – 6:14, except for shed roofs which may be 3:12 – 14:12 and except roof pitch may match the primary roof pitch of an existing Building that is less than 6:12

Roof Design

Eaves shall extend no less than nine inches beyond the supporting walls.

Gable end rakes shall overhang at least six inches.

Eaves and rakes on Accessory Buildings and dormers shall overhang at least six inches.

Soffits shall be placed perpendicular to the Building wall, not sloping in plane with the roof (except for gable end rakes).

Building Materials

Brick	P	Exposed concrete	NP
Natural stone	P	Vinyl siding	P for Residential Use
Wood	P	Aluminum siding	NP
Cementitious siding	P	Corrugated and/or sheet metal	NP
Authentic stucco over masonry	P		

Changes in Building Materials Primary materials must continue alongside Elevations through 2nd layer. Primary materials shall continue for entire length of all Facades facing a frontage. Any material changes must coincide with form, structural, or massing changes and shall not occur at outside corner of any such change.

Building Colors

NR

Foundation Cladding **Required**; brick, stone, or stucco except renovations and minor expansions of existing structures may match current material, or absence of cladding.

Porch Pier Cladding **Required**; brick or stone, with any space under Porch concealed by painted or stained latticework between piers, except renovations and minor expansions of existing structures, pier cladding, or absence of cladding, may match current material.

Chimney Cladding **Required**; brick, natural stone, with material matching primary material of Façade

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-3 **TABLE 4.3.1-C DISTRICT STANDARDS:**
NEIGHBORHOOD CHARACTER DISTRICT

Building Types			
House	P	Commercial	NP
Duplex	P	Mixed Use	NP
Townhouse	NP	Flex	NP
Small Multifamily	NP	Mid-Rise	NP
Large Multifamily	NP	Large Scale Commercial	NP
Live/Work	NP	Civic	P

See Table 4.3.8.A (Principal Building Types - Summary) and Table 4.3.8.B (Principal Building Types - Specific Standards). For Development Parcels, see also Table 5.1.6 (Building Type Mix).

Vehicular Parking Requirements		
Parking Location		
	On-Street Parking	Off-Street Parking
Domestic Vehicles	P	P in 3 rd layer only, and in Driveway
Recreational Vehicles	NP	P in 3 rd layer only, and in Driveway
Heavy Equipment	NP	P in 3 rd layer only, and in Driveway
Tractor Trailers (including trailers for storage)	NP on Street, except for delivery and Temporary Use of Trailers	NP
All other Vehicles	NP	P in 3 rd layer only, and in Driveway

Additional Parking Requirements	
Off-Street Parking Surface	P Prepared surface of, asphalt, concrete, or another hard surface for 100 feet from Thoroughfare or Internal Drive, gravel permitted for any remaining depth.
Garage Location	P In 2 nd or 3 rd Layer only
Garage Design	Min. interior dimensions 10 ft. x 20 ft. per vehicle Parking space If Garage faces Street in 1 st or 2 nd layer: max. Garage door width 33% of total Garage + Façade width
Driveway/ Vehicular Entrance Location	P in any Layer
Driveway/ Vehicular Entrance Maximum Width	20 ft. max in 1 st Layer
Parking Structure	NP
Parking Structure Pedestrian Exit Location	N/A

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-3 TABLE 4.3.1-C DISTRICT STANDARDS: NEIGHBORHOOD CHARACTER DISTRICT

Bicycle Parking

See Section 4.3.13

Thoroughfare & Internal Drive Types*

* Applicable only to Development Parcels

See Article 5 (Development Parcel Standards) for additional requirements

Loading & Access

Off-Street Loading and Storage	P in 3 rd Layer only
Utility Box & Service Meter* Locations (*Not including water meters)	P in 3 rd Layer only
Off-Street Trash Receptacle Locations	P in 3 rd Layer only
Off-Street Dumpster Locations	N/A
Drive- Through Locations	N/A

Non-Building Components

	1st Layer	2nd Layer	3rd Layer
HVAC Equipment, Utility, Service and Mechanical Equipment	NP	P	P
Solar Panels	P if coplanar to and integrated into roof design	P if coplanar to and integrated into roof design	P
Antennas & Satellite Equipment	P in 1 st or 2 nd Layer if such Layer is only possible location for satisfactory reception	P in 1 st or 2 nd Layer if such Layer is only possible location for satisfactory reception	P
Recreation or Play Equipment	NP	P	P
Animals Enclosures, Runs or Shelters	NP	NP	P
Swimming pools, Hot Tubs and Spas	NP	P	P
Transmitting and/or receiving towers, or antennas and wind- generating machines	NP	NP	P

Signs

See Sign Standards in Article 7 (Sign Standards) and Table 7.12.B-1 (Sign Types - Summary) and Table 7.1.2.B-2 (Sign Types- Specific Standards)

Lighting

See Private Lighting Requirements in Section 4.3.17 and Table 4.3.17.B (Private Lighting Standards)

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-3 TABLE 4.3.1-C DISTRICT STANDARDS: NEIGHBORHOOD CHARACTER DISTRICT

Private Landscaping and Fencing

Landscaping

In compliance with Section 4.3.16; with one (1) tree min per 50 ft. of Frontage and continuous shrubs around foundation at Frontage

Walls & Fencing (not including Screens)

Height	4 ft. max at Frontage; otherwise, 6 ft. max; height measured from avg. undisturbed grade of Adjacent property at property line
Construction	Finished side must face Adjacent property, Thoroughfare or Internal Drive, Path, Passage or Waterbody.
Maintenance	Must be well-maintained, in up-right condition and free of missing or broken parts and graffiti.

Materials

Natural Wood	P	Chain Link	P at sides and rear only
Brick, Natural Stone, or Stucco over Masonry	P	Barbed/ Razor/ Concertina Wire	NP
Wrought Iron or Aluminum	P	Exposed or Painted Aggregate Concrete	NP
Vinyl	P	Smooth or Split-faced Block	NP

Additional Standards

Pedestrian Connections through to Adjacent Neighborhoods or Uses	Required
Location of Retaining Walls	P within required Yards, per Section 4.3.10 If supporting grade 8 ft. or higher than grade at property line, must be set back 10 ft. from property line.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-3 **TABLE 4.3.1-C DISTRICT STANDARDS:**
NEIGHBORHOOD CHARACTER DISTRICT

Screens, Street-Screens & Buffers

Height

	At Frontage or Adjacent to Civic Space	Not at Frontage or Adjacent to Civic Space
Wall Screen/Street-Screen Height	3ft. to 3.5ft.	5ft. to 6ft; Minimum 6ft. for Dumpsters and Trash Receptacles
Fence Screen/ Street-Screen Height	NP	5ft. to 6ft. for Dumpsters and Trash Receptacles
Hedge Screen/ Street-Screen Height	3ft. to 3.5ft at installation	5ft. to 6ft. at installation

Materials

Wall Screen or Street-Screen	Brick, Natural Stone or Stucco over Masonry
Fence Screen or Street-Screen	Natural Wood, painted or unpainted
Hedge Screen or Street-Screen	Evergreen plants with min. 80% opacity

Additional Standards

Non-Residential & Multi-Family Residential Screen / Streetscreen Adjacent to or across Throughfare from Non-Multi-Family Residential	N/A (Uses not permitted in District)
Screening of Parking, Loading Areas, Service Areas, Outdoor Storage, Drive-Throughs, Trash Receptacles/Dumpsters, HVAC and other equipment screened from Frontage, Civic Space and Adjacent Property	R ; except at Driveways: Parking Lots and Parking Areas must be Screened from Frontage and Civic Space by Building or Streetscreen; otherwise, Screening must be by Building, wall, hedge, or fence at Frontage or Building, Wall, hedge or fence not at Frontages or Adjacent to Civic Space.
Rooftop Antenna Screening	NR
HVAC, Mechanical and other Equipment Screening	R ; must be Screened from Frontage and Civic Space by Building parapet or other Building Element
Self-Storage Warehouse Screening	N/A (not permitted in District)
Streetscreen Location	2 nd Layer
Parcel Buffer	Section 4.3.11.H
Project Buffer	Section 5.8

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-4 TABLE 4.3.1-D DISTRICT STANDARDS: GENERAL URBAN CHARACTER DISTRICT



General Description

The CD-4 General Urban Character District consist of a medium density area that has a mix of Building Types and primarily Residential, Retail/ Personal Service/ Artisan, Office, Lodging and Civic Uses. There are medium, shallow or no front Setbacks and narrow to medium side Setbacks. It has variable private landscaping. Has Thoroughfares and Internal Drives with curbs, Sidewalks and tress that define medium-sized blocks. CD-4 is an appropriate District for the City Center Urban Village Future Land Use Character described in the Comprehensive Plan.



ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-4 TABLE 4.3.1-D DISTRICT STANDARDS: GENERAL URBAN CHARACTER DISTRICT

Density / Floor Area Ratio (FAR)

**Applicable only to Development Parcels*

12 Density Units per acre max

BLOCK SIZE*

**Applicable only to Development Parcels*

Block Perimeter 2400 ft. max

Private Frontage Types

Common Yard	P	Stepfront	P
Porch	P	Shopfront	P
Fence	P	Gallery	P
Terrace/Lightwell	P	Arcade	NP
Forecourt	P	Officefront	P
Stoop	P		

See Table 4.3.7.A (Private Frontage Types)

Civic Space Types*

**Applicable only to Development Parcels*

Natural Area	P	Playground	P
Green	P	Sport Field	P
Square	P	Community Garden	P
Plaza	NP	Pocket Park	P

See Table 5.3.3.A (Civic Space Types - Summary) and Table 5.3.3.B (Civic Space - Specific Standards)

Permitted Uses

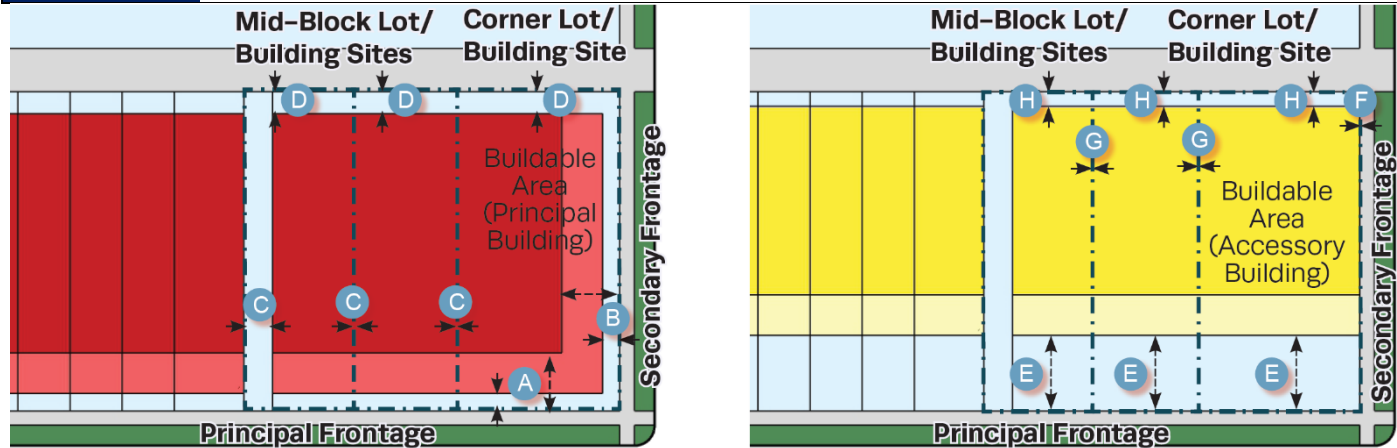
See Table 4.3.9.A-1 (Building, Lot & Building Site Principal Use), Table 4.3.9.A-2 (Building, Lot & Building Site Accessory Uses), and Table 4.3.9.A-3 (Building, Lot & Building Site Temporary Uses). For Development Parcels, see also Table 5.1.7 (Principal Use Mix).

Number of Buildings

Principal Building	1 max
Accessory Buildings	1 max

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-4 TABLE 4.3.1-D DISTRICT STANDARDS:
GENERAL URBAN CHARACTER DISTRICT



Lot Occupation	
Lot/ Building Site Width	House: 38 ft. min if Alley loaded Garage at rear, otherwise 50 ft. min Duplex: 30 ft. min for each unit of Duplex Townhouse: For Townhouses with each unit on its own Lot or Building Site: 18- 36 ft. for single Townhouse unit attached to other Townhouse units x8 max. attached Townhouse units. For multiple Townhouses on a single Lot or Building Site 18-20 ft. per Townhouse unit X 8max. attached Townhouse units All other Building Types: 18 ft. max All Building Types: 120 ft max
Frontage Buildout	60% min
Lot/ Building Site Area	NR
Impervious Surface Coverage	80% max
Lot/ Building Site Enfrontment	Townhouse: Must enfront a vehicular Thoroughfare, Internal Drive, or Courtyard, except ≤ 20% of the Lots or Building Sites within a Development Parcel may Enfront a Pedestrian Path, Passage, pedestrian walkway or water body if such Lots have legal and physical vehicular access to a vehicular Thoroughfare via Driveway or Easement. All others; Must enfront a vehicular Thoroughfare or Internal Drive, except ≤ 20% of the Lots or Building Sites within each type of Character District of a Development Parcel may Enfront a Pedestrian Path, Passage, pedestrian walkway or water body if such Lots have legal and physical vehicular access to a vehicular Thoroughfare via Driveway or Easement. The Planning Commission may approve alternative enfrontment within a Development Parcel as described in 8.5.6.O.
Lot/ Building Site Access	All lots must have legal and physical vehicular access to a vehicular Thoroughfare or Internal drive via Driveway or Easement.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-4 **TABLE 4.3.1-D DISTRICT STANDARDS:**
GENERAL URBAN CHARACTER DISTRICT

Setbacks / Yards					
Setbacks / Yards – Principal Building			Setbacks / Yards – Accessory Building		
Front Setback / Yard, Principal Frontage	6 ft. min, 20 ft. max	A	Front Setback / Yard, Principal Frontage	20 ft. min behind Principal Building Frontage	E
Front Setback / Yard, Secondary Frontage	6 ft. min, 20 ft. max	B	Front Setback / Yard, Secondary Frontage	0 ft. min	F
Side Setback / Yard	0 ft. min. between individual Townhouse Units & Duplex Units; otherwise, 6 ft. min.	C	Side Setback / Yard	0 ft. min	G
Rear Setback / Yard	3 ft. min; or 15 ft. min from center line of rear Alley.	D	Rear Setback / Yard	3 ft. min; or 15 ft. min from center line of rear Alley.	H
Building Standards					
Building Height*					
Principal Building	3 Stories max				
Accessory Building	2 Stories max				

*Stories/ Height do not include Attics and Basements, chimneys, flagpoles, towers, spires, belfries, parapet walls, aerials, or antennas. Any Building exceeding 35 feet in height must obtain approval from stipulations made by the Fire Department in accordance with the above cited codes shall be required. *

*The Fire Department may stipulate special fire measures in accordance with National Fire Protection Association and International Building Code criteria as a condition of approval of such Structure. In such instance stipulations made by the Fire Department in accordance to with the above cited codes shall be required. *

Ceiling Height	
May not exceed 14 ft. from finished floor to finished ceiling, except for a first floor Shopfront Facade, which may not exceed 25ft.	

Building Composition	
Vertical Composition	Each Principal Building must have an identifiable Base, Middle & Cap
Finished Floor Level	If Residential: 18 ft., 48 in. max above average grade at façade

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-4 **TABLE 4.3.1-D DISTRICT STANDARDS:**
GENERAL URBAN CHARACTER DISTRICT

Building Standards (continued)	
Façade	
Main Entrance	Main Entrance must be in Façade of Principal Frontages. If Shop Frontage at corner Main Entrance may be at Principal Frontage, or at corner.
Façade Position	Parallel to straight Frontage Line or to tangent of curved Frontage Line
Façade & Façade Element Design Proportions	Must be vertically proportioned
Blank Walls	NP at Frontage
Façade Articulation	A Façade greater than 100 ft. in width must be differentiated so that it appears to be comprised of two or more Adjacent Buildings, by dividing such Façade into two segments each of which includes a separate entrance and (1) differs from each of the other segments with respect to all of the following: (a) a change in shape, sill, and header height, detail, size, spacing, rhythm, and muntin pattern of windows; (b) a change of Building or cornice height; (c) a change in cornice details; (d) a change of wall material or wall color; a change in trim courses and other horizontal elements; (e) a change in dormer or balcony design, if any, and (f) providing or changing pilasters, columns, or other Façade elements; and (2) is composed with a defined center and edges. (See Illustration 4.3.5.A-3)
Façade Openings	Windows, and/or doors spaced ≤ 20 ft. apart In Stories above first Façade openings must be $\leq 50\%$ of the total Façade area
Façade Glazing	20% - 60% of total ground floor Façade area
Window Shape	Square or vertical in proportion, except transoms
Window Alignment	Upper floor windows and other features must be aligned with those of first floor
Window Types	Except for transoms and sidelights, Windows in Façade and 1st & 2nd Layers must be single-hung, double-hung, casement or awning types
Window Glazing Material	Clear glass is Required for all Elevations
Window Trim in 1 st Layer	Min. 4 in. trim with sill and top plate if siding surrounding window; soldier course above lintel and rollock course below sill if brick or stone surrounds window
Shutters	If any, must be functional and proportioned to cover half of window width from each side or entire window width, with shutter dogs
Façade Window Sill Height	If Residential, 5 ft. min above average grade at Façade
Porch Frontages	Min. 6 ft. clear depth, excluding rails, pillars, columns or other features
Shopfront Frontages	12 in. – 24 in. knee wall required at Frontage
Façade Variety	Within a Development Parcel no Façade may exist more than once in a Block Face

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-4 **TABLE 4.3.1-D DISTRICT STANDARDS:**
GENERAL URBAN CHARACTER DISTRICT

Building Standards (continued)	
Roof Type & Pitch	
Flat	P
Shed	P at rear only and if ridge is attached to an exterior Building wall; except for porches, stoops or dormers which may have a shed roof anywhere on the Building.
Hip	P
Gable	P
Pitch	If pitched, 6:12 – 14:12, except for shed roofs which may be 3:12 – 14:12 and except roof pitch may match the primary roof pitch of an existing Building that is less than 6:12
Roof Design	
Eaves shall extend no less than nine inches beyond the supporting walls.	
Gable end rakes shall overhang at least six inches.	
Eaves and rakes on Accessory Buildings and dormers shall overhang at least six inches.	
Soffits shall be placed perpendicular to the Building wall, not sloping in plane with the roof (except for gable end rakes).	

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-4 **TABLE 4.3.1-D DISTRICT STANDARDS:**
GENERAL URBAN CHARACTER DISTRICT

Building Materials				
	Brick	P	Exposed concrete	NP
	Natural stone	P	Vinyl or Aluminum siding	NP
	Wood	P	Aluminum siding	NP
	Cementitious siding	P	Corrugated and/or sheet metal	NP
	Authentic stucco over masonry	P		
Changes in Building Materials	Primary materials must continue alongside Elevations through 2 nd layer. Primary materials shall continue for entire length of all Facades facing a frontage. Any material changes must coincide with form, structural, or massing changes and shall not occur at outside corner of any such change.			
Building Colors	Up to three (3) colors, including the natural color of any allowed materials, but not excluding trim			
Foundation Cladding	Required; except foundation cladding, or absence of cladding, may match current material on renovations and minor expansions of existing structures.			
Porch Pier Cladding	Required; brick or stone, with any space under Porch concealed by painted or stained latticework between piers, except pier cladding, or absence of cladding, may match current material on renovations and minor expansions of existing structures.			
Chimney Cladding	Required; brick, natural stone, with material matching primary material of Façade			
Building Types				
House	P	Commercial		P
Duplex	P	Mixed Use		P
Townhouse	P	Flex		P
Small Multifamily	P	Mid-Rise		NP
Large Multifamily	P	Large Scale Commercial		NP
Live/Work	P	Civic		P

See *Table 4.3.8.A (Principal Building Types - Summary)* and *Table 4.3.8.B (Principal Building Types - Specific Standards)*. For Development Parcels, see also *Table 5.1.6 (Building Type Mix)*.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-4 TABLE 4.3.1-D DISTRICT STANDARDS: GENERAL URBAN CHARACTER DISTRICT

Vehicular Parking Requirements

Parking Location	On-Street Parking	Off-Street Parking
Domestic Vehicles	P	P in 3 rd layer only, and in Driveway
Recreational Vehicles	NP	P in 3 rd layer only, and in Driveway
Heavy Equipment	NP	P in 3 rd layer only, and in Driveway
Tractor Trailers (including trailers for storage)	NP on Street, except for delivery and Temporary Use of Trailers	NP
All other Vehicles	NP	P in 3 rd layer only, and in Driveway

Additional Parking Requirements

Off-Street Parking Surface	Asphalt, concrete, or another hard surface
Garage Location	P In 3 rd Layer only
Garage Design	Min. interior dimensions 10 ft. x 20 ft. per vehicle Parking space If Garage faces Street in 1 st or 2 nd layer: max. Garage door width 33% of total Garage + Façade width Garage must be detailed, finished, & designed like the rest of the Building with carriage house doors; max. Garage door width 9ft; each Garage door must have ornamental lighting fixture above it; min 2ft separation between Garage doors.
Driveway/ Vehicular Entrance Location	P in any Layer
Driveway/ Vehicular Entrance Maximum Width	10 ft. max in 1 st Layer if Residential; 36 ft. max in 1 st layer if non-Residential; regardless if shared or not.
Parking Structure	P if Screen from Frontage by Liner Buildings
Parking Structure Pedestrian Exit Location	Via pedestrian access to Frontage

Bicycle Parking

See Section 4.3.13

Thoroughfare & Internal Drive Types*

* Applicable only to Development Parcels

See Article 5 (Development Parcel Standards) for additional requirements

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-4 TABLE 4.3.1-D DISTRICT STANDARDS: GENERAL URBAN CHARACTER DISTRICT

Loading & Access

Off-Street Loading and Storage	P in 3 rd Layer only
Utility Box & Service Meter* Locations (*Not including water meters)	P in 3 rd Layer only
Off-Street Trash Receptacle Locations	P in 3 rd Layer only
Off-Street Dumpster Locations	P in 3 rd Layer only
Drive- Through Locations	P in 3 rd Layer only

Non-Building Components

	1 st Layer	2 nd Layer	3 rd Layer
HVAC Equipment, Utility, Service and Mechanical Equipment	NP	P if Screened from Frontage	P
Solar Panels	P if coplanar to and integrated into roof design		P
Antennas & Satellite Equipment	P in 1 st or 2 nd Layer if such Layer is only possible location for satisfactory reception		P
Recreation or Play Equipment	NP	NP	P
Animals Enclosures, Runs or Shelters	NP	NP	P
Swimming pools, Hot Tubs and Spas	NP	NP	P
Transmitting and/or receiving towers, or antennas and wind-generating machines	NP	NP	P

Signs

See Sign Standards in Article 7 (Sign Standards) and Table 7.12.B-1 (Sign Types - Summary) and Table 7.1.2.B-2 (Sign Types- Specific Standards)

Lighting

See Private Lighting Requirements in Section 4.3.17 and Table 4.3.17.B (Private Lighting Standards)

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-4 TABLE 4.3.1-D DISTRICT STANDARDS: GENERAL URBAN CHARACTER DISTRICT

Private Landscaping and Fencing

Landscaping

Required continuous shrubs around foundation at Frontage if 1st Layer $\geq$ 3ft. deep, plus if 1st Layer is $\geq$ 15ft. deep, 1 tree planted in 1st Layer every 50' ft of Frontage. Drive aisles within 1st Layer, continuous shrubs Landscaping must comply with Section 4.3.16

Walls & Fencing (not including Screens)

Height 4 ft max at Frontage, otherwise 6 ft max; height measured from average undisturbed grade of Adjacent property at property line

Construction Finished side must face Adjacent property, Thoroughfare, Path, Passage or Waterbody

Maintenance Must be well maintained, in upright condition and free of missing or broken parts and graffiti.

Materials

Natural Wood	P only Picket type allowed at Frontage; other types allowed on sides and rear	Chain Link	P at sides and rear only
Brick, Natural Stone, or Stucco over Masonry	P	Barbed/ Razor/ Concertina Wire	NP
Wrought Iron or Aluminum	P	Exposed or Painted Aggregate Concrete	NP
Vinyl	P	Smooth or Split-faced Block	NP

Additional Standards

Pedestrian connections through to Adjacent Neighborhoods or Uses **Required**

Location of Retaining Walls **P** within required Yards, per Section 4.3.10
If supporting grade 8 ft. or higher than grade at property line, must be set back 10 ft. from property line

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-4 **TABLE 4.3.1-D DISTRICT STANDARDS:**
GENERAL URBAN CHARACTER DISTRICT

Screens, Street-Screens & Buffers		
Height		
	At Frontage or Adjacent to Civic Space	Not at Frontage or Adjacent to Civic Space
Wall Screen/Street-Screen Height	3 ft. to 5 ft.	5ft. to 6ft; Minimum 6ft. for Dumpsters and Trash Receptacles
Fence Screen/ Street-Screen Height	NP	5ft. to 6ft. for Dumpsters and Trash Receptacles
Hedge Screen/ Street-Screen Height	3 ft. to 5 ft at installation	5ft. to 6ft. at installation
Materials		
Wall Screen or Street-Screen	Brick, Natural Stone or Stucco over Masonry	
Fence Screen or Street-Screen	Natural Wood, painted or unpainted	
Hedge Screen or Street-Screen	Evergreen plants with min. 80% opacity	
Additional Standards		
Non-Residential & Multi-Family Residential Screen / Streetscreen Adjacent to or across Throughfare from Non-Multi-Family Residential	N/R	
Screening of Parking, Loading Areas, Service Areas, Outdoor Storage, Drive-Throughs, Trash Receptacles/Dumpsters, HVAC and other equipment screened from Frontage, Civic Space and Adjacent Property	R; except at Driveways: Parking Lots and Parking Areas must be Screened from Frontage and Civic Space by Building or Streetscreen; otherwise, Screening must be by Building, wall, hedge, or fence at Frontage or Building, Wall, hedge or fence not at Frontages or Adjacent to Civic Space.	
HVAC, Mechanical and other Equipment Screening	R; must be Screened from Frontage and Civic Space by Building parapet or other Building Element	
Self-Storage Warehouse Screening	N/A (not permitted in District)	
Streetscreen Location	2 nd Layer	
Parcel Buffer	Section 4.3.11.H	
Project Buffer	Section 5.8	

CD-4C **TABLE 4.3.1-E DISTRICT STANDARDS:**
GENERAL URBAN CORRIDOR CHARACTER DISTRICT



General Description

The CD-4C General Urban – Corridor Character District consists of a medium density area along a corridor. It provides for a balanced automobile and pedestrian-oriented built environment and a mix of Building Types and primarily Residential, Retail/ Personal Service/ Artisan, Office, Lodging and Civic Uses; there are medium, narrow or no front Setbacks and narrow to medium side Setbacks. It has variable private landscaping and it has Thoroughfares and Internal Drives with curbs, Sidewalks and trees that define medium-sized blocks. CD-4C is an appropriate District for parcels identified as Facilitate or Active on the Areas of Change map of the Comprehensive Plan, which have access onto a public right-of-way classified as principal arterial or minor arterial in the Transportation element of the Plan and are located in Suburban Neighborhoods and City Center Urban Village Future Land Use Character Areas described in the Comprehensive Plan.



ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-4C TABLE 4.3.1-E DISTRICT STANDARDS: GENERAL URBAN CORRIDOR CHARACTER DISTRICT

Density / Floor Area Ratio (FAR)

**Applicable only to Development Parcels*

24 Density Units per acre max

BLOCK SIZE*

**Applicable only to Development Parcels*

Block Perimeter

2400 ft. max

Private Frontage Types

Common Yard	P	Stepfront	NP
Porch	P	Shopfront	P
Fence	P	Gallery	P
Terrace/Lightwell	P	Arcade	NP
Forecourt	P	Officefront	P
Stoop	P		

See Table 4.3.7.A (Private Frontage Types)

Civic Space Types*

**Applicable only to Development Parcels*

Natural Area	NP	Playground	P
Green	NP	Sport Field	NP
Square	P	Community Garden	P
Plaza	P	Pocket Park	P

See Table 5.3.3.A (Civic Space Types - Summary) and Table 5.3.3.B (Civic Space - Specific Standards)

Permitted Uses

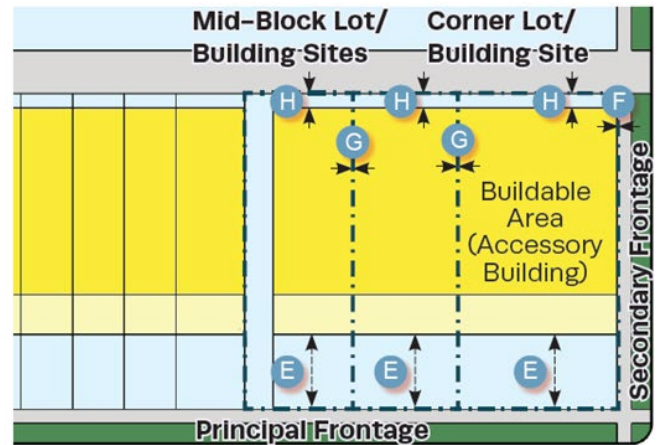
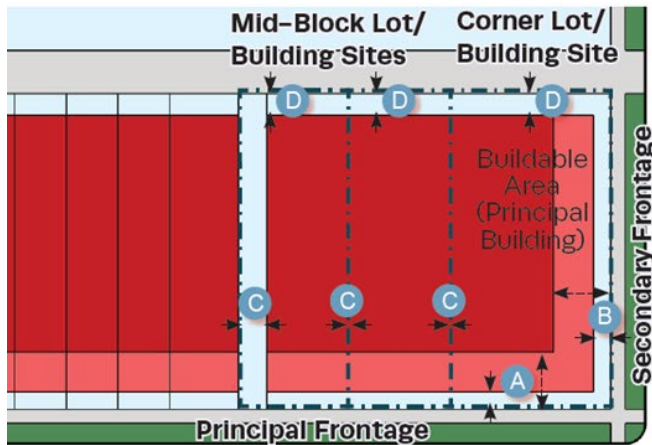
See Table 4.3.9.A-1 (Building, Lot & Building Site Principal Use), Table 4.3.9.A-2 (Building, Lot & Building Site Accessory Uses), and Table 4.3.9.A-3 (Building, Lot & Building Site Temporary Uses). For Development Parcels, see also Table 5.1.7 (Principal Use Mix).

Number of Buildings

Principal Building	1 max
Accessory Buildings	1 max

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-4C **TABLE 4.3.1-E DISTRICT STANDARDS:**
GENERAL URBAN CORRIDOR CHARACTER DISTRICT



Lot Occupation

Lot/ Building Site Width

House: 38' min if Alley loaded Garage at rear, otherwise 50 ft. min
 Duplex: 30 ft. min for each unit of Duplex
 Townhouse: For Townhouses with each unit on its own Lot or Building Site: 18- 36 ft. for single Townhouse unit attached to other
 Townhouse units x8 max. attached Townhouse units. For multiple Townhouses on a single Lot or Building Site 18-20 ft. per Townhouse unit x6max. attached Townhouse units
 Large Scale Commercial: 600 ft max
 All other Building Types: 18 ft. min – 200 ft. max

Frontage Buildout

60% min except commercial 40% min

Lot/ Building Site Area

NR

Impervious Surface Coverage

80% max

Lot/ Building Site Enfrontment

Must enfront a vehicular Thoroughfare or Internal Drive, except $\leq$ 20% of the Lots or Building Sites within each type of Character District of a Development Parcel may Enfront a Pedestrian Path, Passage, pedestrian walkway or water body if such Lots have legal and physical vehicular access to a vehicular Thoroughfare via Driveway or Easement. The Planning Commission may approve alternative enfrontment within a Development Parcel as described in 8.5.6.O

Lot/ Building Site Access

All lots must have legal and physical vehicular access to a vehicular Thoroughfare or Internal drive via Driveway or Easement.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-4C **TABLE 4.3.1-E DISTRICT STANDARDS:**
GENERAL URBAN CORRIDOR CHARACTER DISTRICT

Setbacks / Yards					
Setbacks / Yards – Principal Building			Setbacks / Yards – Accessory Building		
Front Setback / Yard, Principal Frontage	6 ft. min, 40 ft. max except where the Lot or Building Site enfronts a Thoroughfare with a functional classification of Arterial and parking is located in the First Layer, max 85 ft	A	Front Setback / Yard, Principal Frontage	20 ft. min behind Principal Building Frontage	E
Front Setback / Yard, Secondary Frontage	6 ft. min, 40 ft. max except where the Lot or Building Site enfronts a Thoroughfare with a functional classification of Arterial and parking is located in the First Layer, max 85 ft	B	Front Setback / Yard, Secondary Frontage	5 ft. min	F
Side Setback / Yard, each side	0 ft. min. per side	C	Side Setback / Yard, each side	5 ft. min	G
Rear Setback / Yard	3 ft. min; or 15 ft. min from center line of rear Alley.	D	Rear Setback / Yard	3 ft. min; or 5 ft. min if Garage faces rear Alley.	H

Building Standards

Building Height*

Principal Building 4 Stories max

Accessory Building 2 Stories max

*Stories/ Height do not include Attics and Basements, chimneys, flagpoles, towers, spires, belfries, parapet walls, aerials, or antennas. Any Building exceeding 35 feet in height must obtain approval from stipulations made by the Fire Department in accordance with the above cited codes shall be required. *

*The Fire Department may stipulate special fire measures in accordance with National Fire Protection Association and International Building Code criteria as a condition of approval of such Structure. In such instance stipulations made by the Fire Department in accordance to with the above cited codes shall be required. *

Ceiling Height

May not exceed 14 ft. from finished floor to finished ceiling, except for a first floor Shopfront Facade, which may not exceed 25 ft.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

Building Composition

Vertical Composition	Each Principal Building must have an identifiable Base, Middle & Cap
Finished Floor Level	NR

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-4C **TABLE 4.3.1-E DISTRICT STANDARDS:**
GENERAL URBAN CORRIDOR CHARACTER DISTRICT

Building Standards	
Façade	
Main Entrance	Main Entrance must be in Façade of Principal Frontages. If Shop Frontage at corner Main Entrance may be at Principal Frontage, or at corner.
Façade Position	Parallel to straight Frontage Line or to tangent of curved Frontage Line
Façade & Façade Element Design Proportions	Must be vertically proportioned
Blank Walls	NP at Frontage
Façade Articulation	Except for House Building Types, A Façade greater than 100 ft. in width must be differentiated so that it appears to be comprised of two or more Adjacent Buildings, by dividing such Façade into two segments each of which includes a separate entrance and (1) differs from each of the other segments with respect to all of the following: (a) a change in shape, sill, and header height, detail, size, spacing, rhythm, and muntin pattern of windows; (b) a change of Building or cornice height; (c) a change in cornice details; (d) a change of wall material or wall color; a change in trim courses and other horizontal elements; (e) a change in dormer or balcony design, if any, and (f) providing or changing pilasters, columns, or other Façade elements; and (2) is composed with a defined center and edges. (See Illustration 4.3.5.A-3)
Façade Openings	Windows, and/or doors spaced ≤ 20 ft. apart In Stories above first Façade openings must be $\leq 50\%$ of the total Façade area
Façade Glazing	Non-Shopfront: 20% - 60% of total ground floor Façade area for Shopfront: min. 50% of total ground floor Façade area, min. 20% of total Façade area on upper floors and secondary elevations
Window Shape	Square or vertical in proportion, except transoms
Window Alignment	Upper floor windows and other features must be aligned with those of first floor
Window Types	Except for transoms and sidelights, Windows in Façade and 1st & 2nd Layers must be single-hung, double-hung, casement or awning types
Window Glazing Material	Clear glass is Required for all Elevations
Window Trim in 1 st Layer	Min. 4 in. trim with sill and top plate if siding surrounding window; soldier course above lintel and rollock course below sill if brick or stone surrounds window
Shutters	If any, must be functional and proportioned to cover half of window width from each side or entire window width, with shutter dogs
Façade Window Sill Height	If Residential, 5 ft. min above average grade at Façade
Porch Frontages	Min. 6 ft. clear depth, excluding rails, pillars, columns or other features
Shopfront Frontages	12 in. – 24 in. knee wall required at Frontage
Façade Variety	No Façade may exist more than once in a Block Face

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-4C **TABLE 4.3.1-E DISTRICT STANDARDS:**
GENERAL URBAN CORRIDOR CHARACTER DISTRICT

Building Standards (Continued)

Roof Type & Pitch

Flat	P
Shed	P at rear only and if ridge is attached to an exterior Building wall; except for porches, stoops or dormers which may have a shed roof anywhere on the Building.
Hip	P
Gable	P
Pitch	6:12 – 14:12, except for shed roofs which may be 3:12 – 14:12 and except roof pitch may match the primary roof pitch of an existing Building that is less than 6:12

Roof Design

Eaves shall extend no less than nine inches beyond the supporting walls.

Gable end rakes shall overhang at least six inches.

Eaves and rakes on Accessory Buildings and dormers shall overhang at least six inches.

Soffits shall be placed perpendicular to the Building wall, not sloping in plane with the roof (except for gable end rakes).

Building Materials

Brick	P	Authentic stucco over masonry	P
Natural stone	P	Exposed concrete	NP
Wood	P	Vinyl or Aluminum siding	NP
Cementitious siding	P	Corrugated and/or sheet metal	NP

Changes in Building Materials Primary materials must continue alongside Elevations through 2nd layer. Primary materials shall continue for entire length of all Facades facing a frontage. Any material changes must coincide with form, structural, or massing changes and shall not occur at outside corner of any such change.

Building Colors Up to three (3) colors, including the natural color of any allowed materials, but not excluding trim

Foundation Cladding **Required;** brick, stone, or stucco except renovations and minor expansions of existing structures may match current material, or absence of cladding.

Porch Pier Cladding **Required;** brick or stone, with any space under Porch concealed by painted or stained latticework between piers, except renovations and minor expansions of existing structures, pier cladding, or absence of cladding, may match current material.

Chimney Cladding **Required;** brick, natural stone, with material matching primary material of Façade

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-4C TABLE 4.3.1-E DISTRICT STANDARDS: GENERAL URBAN CORRIDOR CHARACTER DISTRICT

Building Types

House	P	Commercial	P
Duplex	P	Mixed Use	P
Townhouse	P	Flex	P
Small Multifamily	P	Mid-Rise	NP
Large Multifamily	P	Large Scale Commercial	P
Live/Work	P	Civic	P

See Table 4.3.8.A (Principal Building Types - Summary) and Table 4.3.8.B (Principal Building Types - Specific Standards). For Development Parcels, see also Table 5.1.6 (Building Type Mix).

Vehicular Parking Requirements

Parking Location

	On-Street Parking	Off-Street Parking
Domestic Vehicles	P	P in 3 rd layer only, and in Driveway
Recreational Vehicles	NP	P in 3 rd layer only, and in Driveway
Heavy Equipment	NP	P in 3 rd layer only, and in Driveway
Tractor Trailers (including trailers for storage)	NP	P in 3 rd layer only, and in Driveway
All other vehicles	NP	P in 3 rd layer only, and in Driveway except where the Lot or Building Site utilizing Commercial, Large-Scale Commercial, Mixed Use, or Flex buildings enfronts a Thoroughfare with an Arterial functional classification, a maximum of two bays of on-site parking and a drive aisle between the building and the Thoroughfare is permitted.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-4C TABLE 4.3.1-E DISTRICT STANDARDS: GENERAL URBAN CORRIDOR CHARACTER DISTRICT

Vehicular Parking Requirements (Continued)

Additional Parking Requirements

Off-Street Parking Surface	Prepared surface of asphalt, concrete, or another hard surface
Garage Location	P In 3 rd Layer only
Garage Design	Min. interior dimensions 10 ft. x 20 ft. per vehicle Parking space If Garage faces Street: max Garage door width 33% of total Garage + Façade width Garage must be detailed, finished, & designed like the rest of the Building with carriage house doors; max. Garage door width 9ft; each Garage door must have ornamental lighting fixture above it; min 2ft separation between Garage doors.
Driveway/ Vehicular Entrance Location	P in any Layer
Driveway/ Vehicular Entrance Maximum Width	10 ft. max in 1 st Layer if Residential; 36 ft. max in 1 st layer if non-Residential; regardless if shared or not.
Parking Structure	P if Screen from Frontage by Liner Buildings
Parking Structure Pedestrian Exit Location	Via pedestrian access to Frontage

Bicycle Parking

See Section 4.3.13

Thoroughfare & Internal Drive Types*

* Applicable only to Development Parcels

See Article 5 (Development Parcel Standards) for additional requirements

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-4C TABLE 4.3.1-E DISTRICT STANDARDS: GENERAL URBAN CORRIDOR CHARACTER DISTRICT

Loading & Access

Off-Street Loading and Storage	P in 3 rd Layer only
Utility Box & Service Meter* Locations (*Not including water meters)	P in 3 rd Layer only
Off-Street Trash Receptacle Locations	P in 3 rd Layer only
Off-Street Dumpster Locations	P in 3 rd Layer only
Drive- Through Locations	P in 3 rd Layer only

Non-Building Components

	1 st Layer	2 nd Layer	3 rd Layer
HVAC Equipment, Utility, Service and Mechanical Equipment	NP	P if Screened from Frontage	P
Solar Panels	P if coplanar to and integrated into roof design		P
Antennas & Satellite Equipment	P in 1 st or 2 nd Layer if such Layer is only possible location for satisfactory reception		P
Recreation or Play Equipment	NP	NP	P
Animals Enclosures, Runs or Shelters	NP	NP	P
Swimming pools, Hot Tubs and Spas	NP	NP	P
Transmitting and/or receiving towers, or antennas and wind-generating machines	NP	NP	P

Signs

See Sign Standards in Article 7 (Sign Standards) and Table 7.12.B-1 (Sign Types - Summary) and Table 7.1.2.B-2 (Sign Types- Specific Standards)

Lighting

See Private Lighting Requirements in Section 4.3.17 and Table 4.3.17.B (Private Lighting Standards)

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-4C

**TABLE 4.3.1-E DISTRICT STANDARDS:
GENERAL URBAN CORRIDOR CHARACTER DISTRICT**

Private Landscaping and Fencing

Landscaping

Required continuous shrubs around foundation at Frontage if 1st Layer $\geq$ 3ft. deep, plus if 1st Layer is $\geq$ 15ft. deep, 1 tree planted in 1st Layer every 50' ft of Frontage. Drive aisles within 1st Layer, continuous shrubs Landscaping must comply with Section 4.3.16

Walls & Fencing

Height	3.5 - 4 ft max at Frontage, otherwise 6 ft max; height measured from avg. undisturbed grade of Adjacent property at property line
Construction	Finished side must face Adjacent property, Thoroughfare, Path, Passage or Waterbody
Maintenance	Must be well maintained, in upright condition and free of missing or broken parts and graffiti

Materials

Natural Wood	P only Picket type allowed at Frontage; other types allowed on sides and rear	Chain Link	P at sides and rear only
Brick, Natural Stone, or Stucco over Masonry	P	Barbed/ Razor/ Concertina Wire	NP
Wrought Iron or Aluminum	P	Exposed or Painted Aggregate Concrete	NP
Vinyl	P	Smooth or Split-faced Block	NP

Additional Standards

Pedestrian connections through to Adjacent Neighborhoods or Uses	Required Where parking is located in the First Layer, continuous pedestrian connection shall be provided from the Main Entrance of the Building to the Frontage Line and adjacent uses by way of an elevated crosswalk traversing the parking area and connected sidewalks
Location of Retaining Walls	P within required Yards, per Section 4.3.10 If supporting grade 8 ft. or higher than grade at property line, must be set back 10 ft. from property line.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-4C **TABLE 4.3.1-E DISTRICT STANDARDS:**
GENERAL URBAN CORRIDOR CHARACTER DISTRICT

Screens, Street-Screens & Buffers		
Height		
	At Frontage or Adjacent to Civic Space	Not at Frontage or Adjacent to Civic Space
Wall Screen/Street-Screen Height	3 ft. to 5 ft.	5ft. to 6ft; Minimum 6ft. for Dumpsters and Trash Receptacles
Fence Screen/ Street-Screen Height	NP	5ft. to 6ft. for Dumpsters and Trash Receptacles
Hedge Screen/ Street-Screen Height	3 ft. to 5 ft at installation	5ft. to 6ft. at installation
Materials		
Wall Screen or Street-Screen	Brick, Natural Stone or Stucco over Masonry	
Fence Screen or Street-Screen	Natural Wood, painted or unpainted	
Hedge Screen or Street-Screen	Evergreen plants with min. 80% opacity	
Additional Standards		
Non-Residential & Multi-Family Residential Screen / Streetscreen Adjacent to or across Throughfare from Non-Multi-Family Residential	N/R	
Screening of Parking, Loading Areas, Service Areas, Outdoor Storage, Drive-Throughs, Trash Receptacles/Dumpsters, HVAC and other equipment screened from Frontage, Civic Space and Adjacent Property	R; except at Driveways: Parking Lots and Parking Areas must be Screened from Frontage and Civic Space by Building or Streetscreen; Parking Structures must be Screened from Frontages by Liner Buildings. Otherwise, Screening must be by Building, wall, hedge or fence at Frontage or Building, Wall, hedge or fence not at Frontages or Adjacent to Civic Space. Where parking is located in the First Layer, it shall be screened by a landscape buffer at least 10 feet in width consisting of two canopy trees and two accent trees per 100 linear feet of property frontage.	
HVAC, Mechanical and other Equipment Screening	R; must be Screened from Frontage and Civic Space by Building parapet or other Building Element	
Self-Storage Warehouse Screening	N/A (not permitted in District)	
Streetscreen Location	2 nd Layer	
Parcel Buffer	Section 4.3.11.H	
Project Buffer	Section 5.8	

CD-5 TABLE 4.3.1-F DISTRICT STANDARDS: URBAN CENTER CHARACTER DISTRICT



General Description

The CD-5 Urban Center Character District consists of medium to high-density Mixed-Use areas. It has a tight network of Thoroughfares and Internal Drives with Sidewalks, streetlights, and regular tree spacing, defining medium sized blocks. Buildings are set close to the Sidewalks. CD-5 is an appropriate District for the City Center Urban Village Future Land Use Character Area described in the Comprehensive Plan.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-5 TABLE 4.3.1-F DISTRICT STANDARDS: URBAN CENTER CHARACTER DISTRICT

Density / Floor Area Ratio (FAR)

**Applicable only to Development Parcels*

NR

BLOCK SIZE*

**Applicable only to Development Parcels*

Block Perimeter 2000 ft. max or 3000 ft max if a parking structure provided within Block

Private Frontage Types

Common Yard	NP	Stepfront	P
Porch	NP	Shopfront	P
Fence	NP	Gallery	P
Terrace/Lightwell	P	Arcade	P
Forecourt	P	Officefront	P
Stoop	P		

See Table 4.3.7.A (Private Frontage Types)

Civic Space Types*

**Applicable only to Development Parcels*

Natural Area	NP	Playground	P
Green	NP	Sport Field	NP
Square	P	Community Garden	P
Plaza	P	Pocket Park	P

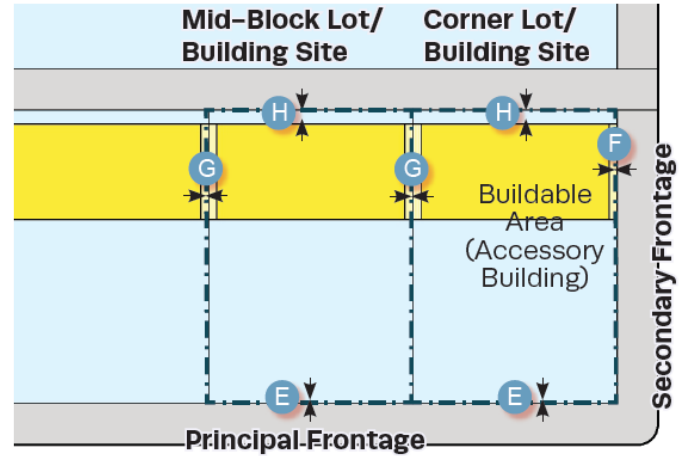
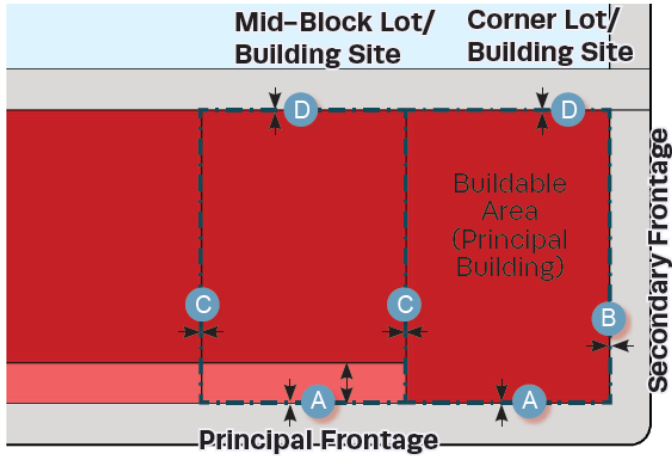
See Table 5.3.3.A (Civic Space Types - Summary) and Table 5.3.3.B (Civic Space - Specific Standards)

Permitted Uses

See Table 4.3.9.A-1 (Building, Lot & Building Site Principal Use), Table 4.3.9.A-2 (Building, Lot & Building Site Accessory Uses), and Table 4.3.9.A-3 (Building, Lot & Building Site Temporary Uses). For Development Parcels, see also Table 5.1.7 (Principal Use Mix).

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

**CD-5 TABLE 4.3.1-F DISTRICT STANDARDS:
URBAN CENTER CHARACTER DISTRICT**



Number of Buildings

Principal Building	1 max
Accessory Buildings	1 max

Lot Occupation

	House: 38 ft min if Alley loaded Garage at rear, otherwise 50 ft. min Duplex: 30 ft. min for each unit of Duplex Townhouse:
Lot/ Building Site Width	For Townhouses with each unit on its own Lot or Building Site: 18- 36 ft. for single Townhouse unit attached to other Townhouse units x8 max. attached Townhouse units. For multiple Townhouses on a single Lot or Building Site 18- 20 ft. per Townhouse unit x6max. attached Townhouse units All other Building Types: 18 ft. min – 120 ft. max
Frontage Buildout	80% min except House and Duplex 60% min
Lot/ Building Site Area	NR
Impervious Surface Coverage	100% max
Lot/ Building Site Enfrontment	Must enfront a vehicular Thoroughfare or Internal Drive, except $\leq 20\%$ of the Lots or Building Sites within each type of Character District of a Development Parcel may Enfront a Pedestrian Path, Passage, pedestrian walkway or water body if such Lots have legal and physical vehicular access to a vehicular Thoroughfare via Driveway or Easement.
Lot/ Building Site Access	All lots must have legal and physical vehicular access to a vehicular Thoroughfare or Internal drive via Driveway or Easement.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-5 TABLE 4.3.1-F DISTRICT STANDARDS: URBAN CENTER CHARACTER DISTRICT

Setbacks / Yards					
Setbacks / Yards – Principal Building			Setbacks / Yards – Accessory Building		
Front Setback / Yard, Principal Frontage	0 ft. at corners; 0 ft. min; 15 ft. max. elsewhere	A	Front Setback / Yard, Principal Frontage	40 ft. max from rear property line; except	E
Front Setback / Yard, Secondary Frontage	0 ft. at corners; 0 ft. min; 15 ft. max. elsewhere	B	Side Setback / Yard	3 ft. max	F
Side Setback / Yard, each side	0 ft. min; 24 ft. max per side	C	Rear Setback / Yard	5 ft. min	G
Rear Setback / Yard	NR	D			

Building Standards

Building Height*

Principal Building	2 Story min; 5 Stories max. adjacent to CD-5; all other areas 3 stories max
Accessory Building	2 Stories max

*Stories/ Height do not include Attics and Basements, chimneys, flagpoles, towers, spires, belfries, parapet walls, aerials, or antennas. Any Building exceeding 35 feet in height must obtain approval from stipulations made by the Fire Department in accordance with the above cited codes shall be required. *

*The Fire Department may stipulate special fire measures in accordance with National Fire Protection Association and International Building Code criteria as a condition of approval of such Structure. In such instance stipulations made by the Fire Department in accordance to with the above cited codes shall be required. *

Ceiling Height

May not exceed 14 ft. from finished floor to finished ceiling, except for a first floor Business/ Commercial, Office, Retail/ Personal Service, or Accommodation/ Lodging Use, which must be a minimum of 11ft. with a maximum of 25 ft.

Building Composition

Vertical Composition	Each Principal Building must have an identifiable Base, Middle & Cap
Finished Floor Level	If Residential: 18 in. min., 48 in. max. above average grade at Façade

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-5 TABLE 4.3.1-F DISTRICT STANDARDS: URBAN CENTER CHARACTER DISTRICT

Building Standards (Continued)	
Façade	
Main Entrance	Main Entrance must be in Façade of Principal Frontages. If Shop Frontage at corner Main Entrance may be at Principal Frontage, or at corner.
Façade Position	Parallel to straight Frontage Line or to tangent of curved Frontage Line
Façade & Façade Element Design Proportions	Must be vertically proportioned
Blank Walls	NP at Frontage
Façade Articulation	A Façade greater than 100 ft. in width must be differentiated so that it appears to be comprised of two or more Adjacent Buildings, by dividing such Façade into two segments each of which includes a separate entrance and (1) differs from each of the other segments with respect to all of the following: (a) a change in shape, sill, and header height, detail, size, spacing, rhythm, and muntin pattern of windows; (b) a change of Building or cornice height; (c) a change in cornice details; (d) a change of wall material or wall color; a change in trim courses and other horizontal elements; (e) a change in dormer or balcony design, if any, and (f) providing or changing pilasters, columns, or other Façade elements; and (2) is composed with a defined center and edges. (See Illustration 4.3.5.A-3)
Façade Openings	Windows, and/or doors spaced ≤ 20 ft. apart In Stories above first Façade openings must be $\leq 50\%$ of the total Façade area
Façade Glazing	Non-Shopfront 20% - 60% of total ground level Façade area; for Shopfront: min 50% of total ground level Façade area, min. 20% of total Façade area on upper floors and secondary elevations
Window Shape	Square or vertical in proportion, except transoms
Window Alignment	Upper floor windows and other features must be aligned with those of first floor
Window Types	Except in Shopfront or Gallery Frontage, and except for Transoms and sidelights, Windows in Façade and 1st & 2nd Layers must be single-hung, double-hung, casement or awning types. In Stories above first, Façade openings must be $\leq 50\%$ of total Façade area.
Window Glazing Material	Clear glass is Required for all Elevations
Window Trim in 1 st Layer	Min. 4 in. trim with sill and top plate if siding surrounding window; soldier course above lintel and rollock course below sill if brick or stone surrounds window
Shutters	If any, must be functional and proportioned to cover half of window width from each side or entire window width, with shutter dogs
Façade Window Sill Height	If Residential, 5 ft. min above average grade at Façade
Porch Frontages	Min. 6 ft. clear depth, excluding rails, pillars, columns or other features
Shopfront Frontages	12 in. – 24 in. knee wall required at Frontage
Façade Variety	No Façade may exist more than once in a Block Face or within view of the same Façade

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

**CD-5 TABLE 4.3.1-F DISTRICT STANDARDS:
URBAN CENTER CHARACTER DISTRICT**

Building Standards (continued)				
Roof Type & Pitch				
Flat	P			
Shed	P at rear only and if ridge is attached to an exterior Building wall; except for porches, stoops or dormers which may have a shed roof anywhere on the Building.			
Hip	P			
Gable	P			
Pitch	6:12 – 14:12, except for shed roofs which may be 3:12 – 14:12 and except roof pitch may match the primary roof pitch of an existing Building that is less than 6:12			
Roof Design				
Eaves shall extend no less than nine inches beyond the supporting walls.				
Gable end rakes shall overhang at least six inches.				
Eaves and rakes on Accessory Buildings and dormers shall overhang at least six inches.				
Soffits shall be placed perpendicular to the Building wall, not sloping in plane with the roof (except for gable end rakes).				
Building Materials				
	Brick	P	Authentic stucco over masonry	P
	Natural stone	P	Exposed concrete	NP
	Wood	P	Vinyl or Aluminum siding	NP
	Cementitious siding	P	Corrugated and/or sheet metal	NP
Changes in Building Materials	Primary materials must continue alongside Elevations through 2 nd layer. Primary materials shall continue for entire length of all Facades facing a frontage. Any material changes must coincide with form, structural, or massing changes and shall not occur at outside corner of any such change.			
Building Colors	Up to three (3) colors, including the natural color of any allowed materials, but not excluding trim			

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-5 TABLE 4.3.1-F DISTRICT STANDARDS: URBAN CENTER CHARACTER DISTRICT

Building Types			
House	P	Commercial	P
Duplex	P	Mixed Use	P
Townhouse	P	Flex	P
Small Multifamily	P	Mid-Rise	P
Large Multifamily	P	Large Scale Commercial	NP
Live/Work	P	Civic	P

See **Table 4.3.8.A (Principal Building Types - Summary)** and **Table 4.3.8.B (Principal Building Types - Specific Standards)**. For Development Parcels, see also **Table 5.1.6 (Building Type Mix)**.

Vehicular Parking Requirements		
Parking Location		
	On Street Parking	Off-Street Parking
Domestic Vehicles	P	P in 3 rd layer only, and in Driveway
Recreational Vehicles	NP	P in 3 rd layer only, and in Driveway
Heavy Equipment	NP	P in 3 rd layer only, and in Driveway
Tractor trailers (including trailers for storage)	NP	P in 3 rd layer only, and in Driveway
All Other Vehicles	NP	P in 3 rd layer only, and in Driveway

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-5 TABLE 4.3.1-F DISTRICT STANDARDS: URBAN CENTER CHARACTER DISTRICT

Additional Parking Requirements

Off-Street Parking Surface	Prepared surface of asphalt, concrete, or another hard surface
Garage Location	P In 3 rd Layer only
Garage Design	Min. interior dimensions 10 ft. x 20 ft. per vehicle Parking space If Garage faces Street: max Garage door width 33% of total Garage + Façade width Garage must be detailed, finished, & designed like the rest of the Building with carriage house doors; max. Garage door width 9ft; each Garage door must have ornamental lighting fixture above it; min 2ft separation between Garage doors.
Driveway/ Vehicular Entrance Location	P in any Layer
Driveway/ Vehicular Entrance Maximum Width	24 ft. max in 1 st Layer; regardless if shared or not.
Parking Structure	P if Screen from Frontage by Liner Buildings
Parking Structure Pedestrian Exit Location	Via pedestrian access to Frontage

Vehicular Parking Requirements

Bicycle Parking

See Section 4.3.13

Thoroughfare & Internal Drive Types*

* Applicable only to Development Parcels

See Article 5 (Development Parcel Standards) for additional requirements

Loading & Access

Off-Street Loading and Storage	P in 3 rd Layer only
Utility Box & Service Meter* Locations (*Not including water meters)	P in 3 rd Layer only
Off-Street Trash Receptacle Locations	P in 3 rd Layer only
Off-Street Dumpster Locations	P in 3 rd Layer only
Drive- Through Locations	P in 3 rd Layer only

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-5 TABLE 4.3.1-F DISTRICT STANDARDS: URBAN CENTER CHARACTER DISTRICT

Non-Building Components

	1 st Layer	2 nd Layer	3 rd Layer
HVAC Equipment, Utility, Service and Mechanical Equipment	NP	P if Screened from Frontage	P
Solar Panels	P if coplanar to and integrated into roof deign	P if coplanar to and integrated into roof deign	P
Antennas & Satellite Equipment	P in 1 st or 2 nd Layer if such Layer is only possible location for satisfactory reception	P in 1 st or 2 nd Layer if such Layer is only possible location for satisfactory reception	P
Recreation or Play Equipment	NP	NP	P
Animals Enclosures, Runs or Shelters	NP	NP	P
Swimming pools, Hot Tubs and Spas	NP	NP	P
Transmitting and/or receiving towers, or antennas and wind-generating machines	NP	NP	P

Signs

See Sign Standards in Article 7 (Sign Standards) and Table 7.12.B-1 (Sign Types - Summary) and Table 7.1.2.B-2 (Sign Types- Specific Standards)

Lighting

See Private Lighting Requirements in Section 4.3.17 and Table 4.3.17.B (Private Lighting Standards)

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-5 **TABLE 4.3.1-F DISTRICT STANDARDS:**
URBAN CENTER CHARACTER DISTRICT

Private Landscaping and Fencing

Landscaping

NA if paved or $\leq$ 3ft front Setback/ Yard; Otherwise, shrubs continuous around foundation at Façade. Landscaping must comply with Section 4.3.16

Walls & Fencing

Height	3.5 - 4 ft max at Frontage, otherwise 6 ft max; height measured from avg. undisturbed grade of Adjacent property at property line
Construction	Finished side must face Adjacent property, Thoroughfare, Path, Passage or Waterbody
Maintenance	Must be well maintained, in upright condition and free of missing or broken parts and graffiti

Materials

Natural Wood	P at sides and rear only	Chain Link	P at sides and rear only
Brick, Natural Stone, or Stucco over Masonry	P at sides and rear only	Barbed/ Razor/ Concertina Wire	NP
Wrought Iron or Aluminum	P	Exposed or Painted Aggregate Concrete	NP
Vinyl	NP	Smooth or Split-faced Block	NP

Additional Standards

Pedestrian connections through to Adjacent Neighborhoods or Uses	Required
Location of Retaining Walls	P within required Yards, per Sections 4.3.10 If supporting grade 8 ft. or higher that grade at property line, must be set back 10 ft. from property line

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-5

**TABLE 4.3.1-F DISTRICT STANDARDS:
URBAN CENTER CHARACTER DISTRICT**

Screens, Street-Screens & Buffers

Height

	At Frontage or Adjacent to Civic Space	Not at Frontage or Adjacent to Civic Space
Wall Screen/Street-Screen Height	3 ft. to 5 ft.	5ft. to 6ft; Minimum 6ft. for Dumpsters and Trash Receptacles
Fence Screen/ Street-Screen Height	NP	5ft. to 6ft. for Dumpsters and Trash Receptacles
Hedge Screen/ Street-Screen Height	3 ft. to 5 ft at installation	5ft. to 6ft. at installation

Materials

Wall Screen or Street-Screen	Brick, Natural Stone or Stucco over Masonry
Fence Screen or Street-Screen	Natural Wood, painted or unpainted
Hedge Screen or Street-Screen	Evergreen plants with min. 80% opacity

Additional Standards

Non-Residential & Multi-Family Residential Screen. Street-Screen Adjacent to or across Thoroughfare from Non-Family Residential	NR
Screening of Parking, Loading Areas, Service Areas, Outdoor Storage, Drive-Throughs, Trash Receptacle/Dumpsters, HVAC and other equipment Screened from Frontage, Civic Space and Adjacent Property	Required; except at Driveways: Parking Lots and Parking Areas must be Screened from Frontage and Civic Space by Building or Street-Screen; otherwise, Screening must be by Building, wall, hedge or fence at Frontage or Building wall, hedge or fence not at Frontage or Adjacent to Civic Space.
Rooftop Antenna Screening and HVAC, Mechanical and other Equipment Screening	Required; must be Screened from Frontage and Civic Space by Building Parapet or other Building element
Self-Storage Warehouse Screening	N/A (not permitted in District)
Street-Screen Location	2 nd Layer
Parcel Buffer	Section 4.3.11.H
Project Buffer	Section 5.8

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-5C

TABLE 4.3.1-G DISTRICT STANDARDS:
URBAN CENTER CORRIDOR CHARACTER DISTRICT



General Description

The CD-5C Urban Center Corridor Character District consists of medium to higher density Mixed Use areas. It provides for a balanced automobile and pedestrian oriented built environment, a mix of Building Types and primarily has a tight network of Thoroughfares and Internal Drives with Sidewalks, street lights, and regular tree spacing defining medium-sized blocks. Buildings are set close to Sidewalks. CD-5C is limited to parcels identified as Active on the Areas of Change map of the Comprehensive Plan which have access to a Principal Arterial identified in the Transportation Plan located in the City Center Urban Village Character Area described in the Comprehensive Plan.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-5C

TABLE 4.3.1-G DISTRICT STANDARDS: URBAN CENTER CORRIDOR CHARACTER DISTRICT

Density / Floor Area Ratio (FAR)

**Applicable only to Development Parcels*

NR

BLOCK SIZE*

**Applicable only to Development Parcels*

Block Perimeter 2000 ft. max or 3000 ft max if a parking structure provided within Block

Private Frontage Types

Common Yard	NP	Stepfront	NP
Porch	NP	Shopfront	P
Fence	NP	Gallery	P
Terrace/Lightwell	P	Arcade	P
Forecourt	P	Officefront	P
Stoop	P		

See Table 4.3.7.A (Private Frontage Types)

Civic Space Types*

**Applicable only to Development Parcels*

Natural Area	NP	Playground	P
Green	NP	Sport Field	NP
Square	P	Community Garden	P
Plaza	P	Pocket Park	P

See Table 5.3.3.A (Civic Space Types - Summary) and Table 5.3.3.B (Civic Space - Specific Standards)

Permitted Uses

See Table 4.3.9.A-1 (Building, Lot & Building Site Principal Use), Table 4.3.9.A-2 (Building, Lot & Building Site Accessory Uses), and Table 4.3.9.A-3 (Building, Lot & Building Site Temporary Uses). For Development Parcels, see also Table 5.1.7 (Principal Use Mix).

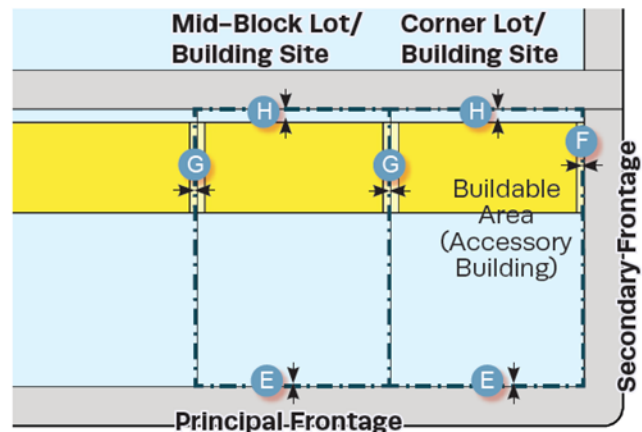
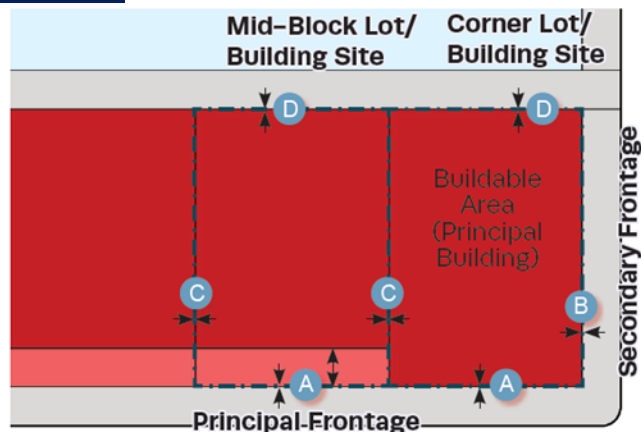
Number of Buildings

Principal Building	1 max
Accessory Buildings	1 max

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-5C

TABLE 4.3.1-G DISTRICT STANDARDS:
URBAN CENTER CORRIDOR CHARACTER DISTRICT



Lot Occupation

Lot/ Building Site Width	Townhouse: For Townhouses with each unit on its own Lot or Building Site: 18-36 ft. for single Townhouse unit attached to other Townhouse units x8 max. attached Townhouse units. For multiple Townhouses on a single Lot or Building Site 18-20 ft. per Townhouse unit x8 max. attached Townhouse units All other Building Types: 18 ft. min All Building Types: 120 ft. max
Frontage Buildout	80% min.
Lot/ Building Site Area	NR
Impervious Surface Coverage	100% max
Lot/ Building Site Enfrontment	Must enfront a vehicular Thoroughfare or Internal Drive, except $\leq 20\%$ of the Lots or Building Sites within each type of Character District of a Development Parcel may Enfront a Pedestrian Path, Passage, pedestrian walkway or water body if such Lots have legal and physical vehicular access to a vehicular Thoroughfare via Driveway or Easement.
Lot/ Building Site Access	All lots must have legal and physical vehicular access to a vehicular Thoroughfare or Internal drive via Driveway or Easement.

Setbacks / Yards

Setbacks / Yards – Principal Building			Setbacks / Yards – Accessory Building		
Front Setback / Yard, Principal Frontage	0 ft. at corners; 0 ft. min; 15 ft. max elsewhere	A	Front Setback / Yard, Principal Frontage	40 ft. max. from rear property line	E
Front Setback / Yard, Secondary Frontage	0 ft. at corners; 0 ft. min; 15 ft. max elsewhere	B	Side Setback / Yard	3 ft. max.	F
Side Setback / Yard, each side	0 ft. min; 24 ft. max. per side	C	Rear Setback / Yard	3 ft. min. or 5 ft. min. if Garage door faces Rear Alley	G
Rear Setback	NR	D			

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-5C

**TABLE 4.3.1-G DISTRICT STANDARDS:
URBAN CENTER CORRIDOR CHARACTER DISTRICT**

Building Standards

Building Height*

Principal Building 2 Story min; 4 Stories max

Accessory Building 2 Stories max

*Stories/ Height do not include Attics and Basements, chimneys, flagpoles, towers, spires, belfries, parapet walls, aerials, or antennas. Any Building exceeding 35 feet in height must obtain approval from stipulations made by the Fire Department in accordance with the above cited codes shall be required. *

*The Fire Department may stipulate special fire measures in accordance with National Fire Protection Association and International Building Code criteria as a condition of approval of such Structure. In such instance stipulations made by the Fire Department in accordance to with the above cited codes shall be required. *

Ceiling Height

May not exceed 14 ft. from finished floor to finished ceiling, except for a first floor Business/ Commercial, Office, Retail/ Personal Service, or Accommodation/ Lodging Use, which must be a minimum of 11ft. with a maximum of 25 ft.

Building Composition

Vertical Composition Each Principal Building must have an identifiable Base, Middle & Cap

Finished Floor Level If Residential: 18 in. min., 48 in. max. above average grade at Façade

Façade

Main Entrance Main Entrance must be in Façade of Principal Frontages. If Shop Frontage at corner Main Entrance may be at Principal Frontage, or at corner.

Façade Position Parallel to straight Frontage Line or to tangent of curved Frontage Line

Façade & Façade Element Design Must be vertically proportioned Proportions

Blank Walls **NP** at Frontage

Façade Articulation Except for House Building Types, a Façade greater than 100 ft. in width must be differentiated so that it appears to be comprised of two or more Adjacent Buildings, by dividing such Façade into two segments each of which includes a separate entrance and (1) differs from each of the other segments with respect to all of the following: (a) a change in shape, sill, and header height, detail, size, spacing, rhythm, and muntin pattern of windows; (b) a change of Building or cornice height; (c) a change in cornice details; (d) a change of wall material or wall color; a change in trim courses and other horizontal elements; (e) a change in dormer or balcony design, if any, and (f) providing or changing pilasters, columns, or other Façade elements; and (2) is composed with a defined center and edges. (See **Illustration 4.3.5.A-3**)

Façade Openings Windows, and/or doors spaced ≤ 20 ft. apart
In Stories above first Façade openings must be $\leq 50\%$ of the total Façade area

Façade Glazing 20% - 60% of total Façade area for non-Shopfront; 70% of total Façade area, min. for Shopfront

Window Shape Square or vertical in proportion, except transoms

Window Alignment Upper floor windows and other features must be aligned with those of first floor

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-5C

**TABLE 4.3.1-G DISTRICT STANDARDS:
URBAN CENTER CORRIDOR CHARACTER DISTRICT**

Building Standards (Continued)

Façade

Window Types	Except in Shopfront or Gallery Frontage, and except for Transoms and sidelights, Windows in Façade and 1 st & 2 nd Layers must be single-hung, double-hung, casement or awning types. In Stories above first, Façade openings must be ≤ 50% of total Façade area.
Window Glazing Material	Clear glass is Required for all Elevations
Window Trim in 1 st Layer	Min. 4 in. trim with sill and top plate if siding surrounding window; soldier course above lintel and rollock course below sill if brick or stone surrounds window
Shutters	If any, must be functional and proportioned to cover half of window width from each side or entire window width, with shutter dogs
Façade Window Sill Height	If Residential, 5 ft. min above average grade at Façade
Porch Frontages	Min. 6 ft. clear depth, excluding rails, pillars, columns or other features
Shopfront Frontages	12 in. – 24 in. knee wall required at Frontage
Façade Variety	No Façade may exist more than once in a Block Face or within view of the same Façade

Roof Type & Pitch

Flat	P
Shed	P at rear only and if ridge is attached to an exterior Building wall; except for porches, stoops or dormers which may have a shed roof anywhere on the Building.
Hip	P
Gable	P
Pitch	6:12 – 14:12, except for shed roofs which may be 3:12 – 14:12 and except roof pitch may match the primary roof pitch of an existing Building that is less than 6:12

Roof Design

Eaves shall extend no less than nine inches beyond the supporting walls.

Gable end rakes shall overhang at least six inches.

Eaves and rakes on Accessory Buildings and dormers shall overhang at least six inches.

Soffits shall be placed perpendicular to the Building wall, not sloping in plane with the roof (except for gable end rakes).

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-5C

**TABLE 4.3.1-G DISTRICT STANDARDS:
URBAN CENTER CORRIDOR CHARACTER DISTRICT**

Building Standards (Continued)

Building Materials

	Brick	P	Authentic stucco over masonry	P
	Natural stone	P	Exposed concrete	NP
	Wood	P	Vinyl or Aluminum siding	NP
	Cementitious siding	P	Corrugated and/or sheet metal	NP
Changes in Building Materials	Primary materials must continue alongside Elevations through 2 nd layer. Primary materials shall continue for entire length of all Facades facing a frontage. Any material changes must coincide with form, structural, or massing changes and shall not occur at outside corner of any such change.			
Building Colors	Up to three (3) colors, including the natural color of any allowed materials, but not excluding trim			
Foundation Cladding	Required ; brick, stone, or stucco except renovations and minor expansions of existing structures may match current material, or absence of cladding.			
Porch Pier Cladding	Required ; brick or stone, with any space under Porch concealed by painted or stained latticework between piers, except renovations and minor expansions of existing structures, pier cladding, or absence of cladding, may match current material.			
Chimney Cladding	Required ; brick, natural stone, with material matching primary material of Façade			

Building Types

House	NP	Commercial	P
Duplex	NP	Mixed Use	P
Townhouse	P	Flex	P
Small Multifamily	P	Mid-Rise	P
Large Multifamily	P	Large Scale Commercial	P
Live/Work	P	Civic	P

See *Table 4.3.8.A (Principal Building Types - Summary)* and *Table 4.3.8.B (Principal Building Types - Specific Standards)*. For Development Parcels, see also *Table 5.1.6 (Building Type Mix)*.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-5C

TABLE 4.3.1-G DISTRICT STANDARDS:
URBAN CENTER CORRIDOR CHARACTER DISTRICT

Vehicular Parking Requirements

Parking Location

	On-Street Parking	Off-Street Parking
Domestic Vehicles	P	P in 3 rd layer only, and in Driveway
Recreational Vehicles	NP	P in 3 rd layer only, and in Driveway
Heavy Equipment	NP	P in 3 rd layer only, and in Driveway
Tractor trailers (including trailers for storage)	NP on-Street, except for delivery	P in 3 rd layer only, and in Driveway and Temporary Use of trailers
All Other Vehicles	NP	P in 3 rd Layer only, and in Driveway

Vehicular Parking Requirements (Continued)

Additional Parking Requirements

Off-Street Parking Surface	Prepared surface of asphalt, concrete, or another hard surface
Garage Location	P In 3 rd Layer only
Garage Design	Min. interior dimensions 10 ft. x 20 ft. per vehicle Parking space If Garage faces Street: max Garage door width 33% of total Garage + Façade width Garage must be detailed, finished, & designed like the rest of the Building with carriage house doors; max. Garage door width 9ft; each Garage door must have ornamental lighting fixture above it; min 2ft separation between Garage doors.
Driveway/ Vehicular Entrance Location	P in any Layer
Driveway/ Vehicular Entrance Maximum Width	24 ft. max in 1 st Layer; regardless if shared or not.
Parking Structure	P if Screen from Frontage by Liner Buildings
Parking Structure Pedestrian Exit Location	Via pedestrian access to Frontage

Bicycle Parking

See Section 4.3.13

Thoroughfare & Internal Drive Types*

**Only applicable to Development Parcels*

See Article 5 (Development Parcel Standards) for additional requirements

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-5C

**TABLE 4.3.1-G DISTRICT STANDARDS:
URBAN CENTER CORRIDOR CHARACTER DISTRICT**

Loading & Access

Off-Street Loading and Storage	P in 3 rd Layer only
Utility Box & Service Meter* Locations (*Not including water meters)	P in 3 rd Layer only
Off-Street Trash Receptacle Locations	P in 3 rd Layer only
Off-Street Dumpster Locations	P in 3 rd Layer only
Drive- Through Locations	P in 3 rd Layer only

Non-Building Components

	1 st Layer	2 nd Layer	3 rd Layer
HVAC Equipment, Utility, Service and Mechanical Equipment	NP	P if Screened from Frontage	P
Solar Panels	P if coplanar to and integrated into roof design		P
Antennas & Satellite Equipment	P in 1 st or 2 nd Layer if such Layer is only possible location for satisfactory reception		P
Recreation or Play Equipment	NP	NP	P
Animals Enclosures, Runs or Shelters	NP	NP	P
Swimming pools, Hot Tubs and Spas	NP	NP	P
Transmitting and/or receiving towers, or antennas and wind-generating machines	NP	NP	P

Signs

See Sign Standards in Article 7 (Sign Standards) and Table 7.12.B-1 (Sign Types - Summary) and Table 7.1.2.B-2 (Sign Types- Specific Standards)

Lighting

See Private Lighting Requirements in Section 4.3.17 and Table 4.3.17.B (Private Lighting Standards)

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-5C

TABLE 4.3.1-G DISTRICT STANDARDS:
URBAN CENTER CORRIDOR CHARACTER DISTRICT

Private Landscaping and Fencing

Landscaping

NA if paved or $\leq$ 3ft front Setback/ Yard; Otherwise, shrubs continuous around foundation at Façade. Landscaping must comply with Section 4.3.16

Walls & Fencing

Height	3.5 - 4 ft max at Frontage, otherwise 6 ft max; height measured from avg. undisturbed grade of Adjacent property at property line
Construction	Finished side must face Adjacent property, Thoroughfare, Path, Passage or Waterbody
Maintenance	Must be well maintained, in upright condition and free of missing or broken parts and graffiti.

Materials

Natural Wood	P at sides and rear only	Chain Link	P at sides and rear only
Brick, Natural Stone, or Stucco over Masonry	P at sides and rear only	Barbed/ Razor/ Concertina Wire	NP
Wrought Iron or Aluminum	P	Exposed or Painted Aggregate Concrete	NP
Vinyl	NP	Smooth or Split-faced Block	NP

Additional Standards

Pedestrian Connections through to Adjacent Neighborhoods or Uses	Required
	P within required Yards, per Section 4.3.10
Locations of Retaining Walls	If supporting grade 8 ft. or higher than property line, must be set back 10 ft. from property line

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CD-5C

TABLE 4.3.1-G DISTRICT STANDARDS:
URBAN CENTER CORRIDOR CHARACTER DISTRICT

Screens, Street-Screens & Buffers

Height

	At Frontage or Adjacent to Civic Space	Not at Frontage or Adjacent to Civic Space
Wall Screen/Street-Screen Height	3.5 ft. to 5 ft.	5ft. to 6ft; Minimum 6ft. for Dumpsters and Trash Receptacles
Fence Screen/ Street-Screen Height	NP	5ft. to 6ft. for Dumpsters and Trash Receptacles
Hedge Screen/ Street-Screen Height	3 ft. to 5 ft at installation	5ft. to 6ft. at installation

Materials

Wall Screen or Street-Screen	Brick, Natural Stone or Stucco over Masonry
Fence Screen or Street-Screen	Natural Wood, painted or unpainted
Hedge Screen or Street-Screen	Evergreen plants with min. 80% opacity

Additional Standards

Non-Residential & Multi-Family Residential Screen. Street Screen Adjacent to or across Thoroughfare from Non-Family Residential	NR
Screening of Parking, Loading Areas, Service Areas, Outdoor Storage, Drive-Throughs, Trash Receptacle/Dumpsters, HVAC and other equipment Screened from Frontage, Civic Space and Adjacent Property	Required; except at Driveways: Parking Lots and Parking Areas must be Screened From Frontage and Civic Space by Building or Street-Screen; otherwise, Screening must be by Building, wall, hedge or fence at Frontage or Building wall, hedge or fence not at Frontage or Adjacent to Civic Space.
Rooftop Antenna Screening and HVAC, Mechanical and other Equipment Screening	Required; must be Screened from Frontage and Civic Space by Building Parapet or other Building element
Self-Storage Warehouse Screening	N/A (not permitted in District)
Street-Screen Location	2 nd Layer
Parcel Buffer	Section 4.3.11.H
Project Buffer	Section 5.8

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

SD-MHP	TABLE 4.3.1-H DISTRICT STANDARDS: MANUFACTURED HOME PARK RESIDENTIAL SPECIAL DISTRICT
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General Description
This District is designed to provide suitable areas for Manufactured Home Parks where sufficient urban facilities are available prior to Development. Manufactured Homes and Buildings necessary to support the Residential occupancy of Manufactured Homes are permitted. This District is intended also to permit community facilities and public utility installations that are necessary to service specifically the residents of this District, or which are benefited by and compatible with a Residential environment. SD-MHP is appropriate for the Suburban Neighborhoods Future Land Use Character Area described in the Comprehensive Plan.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

SD-MHP

TABLE 4.3.1-H DISTRICT STANDARDS:
MANUFACTURED HOME PARK RESIDENTIAL SPECIAL DISTRICT

Density / Floor Area Ratio (FAR)

**Applicable only to Development Parcels*

6 Density Unites per acre max

BLOCK SIZE*

**Applicable only to Development Parcels*

Block Perimeter 2,400 ft. max

Private Frontage Types

Common Yard	NP	Stepfront	P
Porch	NP	Shopfront	P
Fence	NP	Gallery	P
Terrace/Lightwell	P	Arcade	P
Forecourt	P	Officefront	P
Stoop	P		

See Table 4.3.7.A (Private Frontage Types)

Civic Space Types*

**Applicable only to Development Parcels*

Natural Area	P	Playground	P
Green	P	Sport Field	P
Square	NP	Community Garden	P
Plaza	NP	Pocket Park	P

See Table 5.3.3.A (Civic Space Types - Summary) and Table 5.3.3.B (Civic Space - Specific Standards)

Permitted Uses

See Table 4.3.9.A-1 (Building, Lot & Building Site Principal Use), Table 4.3.9.A-2 (Building, Lot & Building Site Accessory Uses), and Table 4.3.9.A-3 (Building, Lot & Building Site Temporary Uses). For Development Parcels, see also Table 5.1.7 (Principal Use Mix).

Number of Buildings Per Lot or Building Site

Principal Building	1 max. per Manufactured Home Site or Building Site
Accessory Buildings	1 max. per Manufactured Home Site or Building Site

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

SD-MHP

TABLE 4.3.1-H DISTRICT STANDARDS:
MANUFACTURED HOME PARK RESIDENTIAL SPECIAL DISTRICT

Manufactured Home Site / Building Site / Manufactured Home Park Occupation

Manufactured Home / Building Site Width	Residential: ⁽¹⁾ Non-Residential Use: 60 ft. min.
Manufactures Home Park Minimum Street / Highway Frontage	50 ft. min.
Frontage Buildout	if non-mobile: 40% min, otherwise NR
Manufactured Home Site / Building Site Depth	NR
Manufactured Home Site / Building Site Area	Residential Use: 6,000 sf. Min. Non-Residential Use: 10,000 sf. min.
Manufactured Home Stand	max. 25% of Manufactured Home Site
Impervious Surface Coverage	35% max
Building Site Enfrontment	Must enfront a vehicular Thoroughfare or Internal Drive, except ≤ 20% of the Manufactured Home Site if a Development Parcel may Enfront a Pedestrian Path, Passage, pedestrian walkway or waterbody if such Manufactured Home Sites have legal and Physical vehicular access to a vehicular Thoroughfare via Driveway or Easement. All Manufactured Home Sites must have legal and physical vehicular access to a vehicular Thoroughfare via Driveway or Easement.

Setbacks / Yards

Setbacks / Yards – Principal Building			Setbacks / Yards – Accessory Building		
Street Yard-Arterial	Residential: ⁽¹⁾ Non-Residential: 50 ft. min.	A	Side Yard-Per side	Residential: ⁽¹⁾ Non-Residential: 2 Stories or less 15 ft. min 3 or more Stories 25 ft. min	B
Street Yard-Collector	Residential: ⁽¹⁾ Non-Residential: 50 ft. min.	A	Side Yard-Total	Residential: ⁽¹⁾ Non-Residential: NR	B
Street Yard-Minor	Residential: ⁽¹⁾ Non-Residential: 50 ft. min.	A	Rear Yard	Residential: ⁽¹⁾ Non-Residential: 20 ft. min	

⁽¹⁾ Within a manufactured Home Park, dimensional standards shall be required for the park. All other Residential uses of a Manufactured Home (including a Manufactured Home not in a park) shall conform to the standards of the CD-3 Character District.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

SD-MHP

TABLE 4.3.1-H DISTRICT STANDARDS:
MANUFACTURED HOME PARK RESIDENTIAL SPECIAL DISTRICT

Building Standards

Building Height*

Principal Building	2 Stories max
Accessory Building	2 Stories max

*Stories/ Height do not include Attics and Basements, chimneys, flagpoles, towers, spires, belfries, parapet walls, aerials, or antennas. Any Building exceeding 35 feet in height must obtain approval from stipulations made by the Fire Department in accordance with the above cited codes shall be required. *

*The Fire Department may stipulate special fire measures in accordance with National Fire Protection Association and International Building Code criteria as a condition of approval of such Structure. In such instance stipulations made by the Fire Department in accordance to with the above cited codes shall be required. *

Ceiling Height

NR

Building Composition

Vertical Composition	NR
Finished Floor Level	NR
Support piers, plumbing, HVAC, hitch and Wheels	Required to be concealed by apron between floor level and ground on all sides, including beneath Porch or Stoop

Façade

Main Entrance	If non-mobile: Required prominently located on Façade at Principal Frontage; otherwise, NR
Façade Position	If non-mobile: Parallel to straight Frontage Line or tangent of curved Frontage Line; otherwise, NR
Blank Walls	NP at Frontage
Façade Glazing	20% - 60% of total Façade area

Roof Type & Pitch

NR

Building Materials

NR except **Required** clear glass for windows at Frontage

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

SD-MHP

TABLE 4.3.1-H DISTRICT STANDARDS:
MANUFACTURED HOME PARK RESIDENTIAL SPECIAL DISTRICT

Building Types

Manufactured Homes & Associated
Buildings

Vehicular Parking Requirements

Parking Location

	On-Street Parking	Off-Street Parking
Domestic Vehicles	P	P in 3 rd layer only, and in Driveway
Recreational Vehicles	NP	P in 3 rd layer only, and in Driveway
Heavy Equipment	NP	P in 3 rd layer only, and in Driveway
Tractor trailers (including trailers for storage)	NP on-Street except for delivery	P in 3 rd layer only, and in Driveway
All Other Vehicles	NP	P in 3 rd Layer only, and in Driveway

Additional Parking Requirements

Off-Street Parking Surface	Prepared surface of asphalt, concrete, or another hard surface
Garage Location	P In Rear Yard only
Garage Design	NR
Driveway/ Vehicular Entrance Location	P in any Layer
Driveway/ Vehicular Entrance Maximum Width	10 ft. max. single lane; 20 ft. max. width double lane
Parking Structure	N/A
Parking Structure Pedestrian Exit Location	N/A

Bicycle Parking

NR

Thoroughfare & Internal Drive Types*

**Applicable only to Development Parcels*

See Article 5 (Development Parcel Standards) for additional requirements

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

SD-MHP

**TABLE 4.3.1-H DISTRICT STANDARDS:
MANUFACTURED HOME PARK RESIDENTIAL SPECIAL DISTRICT**

Loading & Access

Off-Street Loading and Storage	P in 3 rd Layer only
Utility Box & Service Meter* Locations (*Not including water meters)	P in 3 rd Layer only
Trash Receptacle Locations – Manufactured Home Sites	P in 3 rd Layer only, except when moved to 1 st or 2 nd Layer for pickup
Community Trash Receptacle or Dumpster Locations	P in 3 rd Layer only, must be screened from Frontage and fully enclosed on 3 sides and enclosed on the 4 th side with self-closing gate
Drive- Through Locations	N/A

Non-Building Components

	1 st Layer	2 nd Layer	3 rd Layer
HVAC Equipment, Utility, Service and Mechanical Equipment	NP	NP	P
Solar Panels	P if coplanar to and integrated into roof deign		P
Antennas & Satellite Equipment	P in 1 st or 2 nd Layer if such Layer is only possible location for satisfactory reception		P
Recreation or Play Equipment	NP	NP	P
Animals Enclosures, Runs or Shelters	NP	NP	P
Swimming pools, Hot Tubs and Spas	NP	NP	P
Transmitting and/or receiving towers, or antennas and wind-generating machines	NR		

Signs

See Sign Standards in Article 7 (Sign Standards) and **Table 7.12.B-1 (Sign Types - Summary)** and **Table 7.1.2.B-2 (Sign Types- Specific Standards)**

Lighting

See Private Lighting Requirements in Section 4.3.17 and **Table 4.3.17.B (Private Lighting Standards)**

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

SD-MHP

TABLE 4.3.1-H DISTRICT STANDARDS:
MANUFACTURED HOME PARK RESIDENTIAL SPECIAL DISTRICT

Private Landscaping and Fencing

Landscaping

Required Street Yard and any required Side Yard of a corner Manufactured Home Site must be landscaped in compliance with Section 4.3.16., including 1 tree per Manufactured Home Site and continuous shrub plantings around foundation facing Frontage.

Walls & Fencing

Height	4 ft max at Frontage, otherwise 6 ft max; height measured from avg. undisturbed grade of Adjacent property at property line
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Construction	Finished side must face Adjacent property, Thoroughfare, Path, Passage or Waterbody
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Maintenance	Must be well maintained, in upright condition and free of missing or broken parts and graffiti.
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Materials

Natural Wood	P	Chain Link	NP
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Brick, Natural Stone, or Stucco over Masonry	P	Barbed/ Razor/ Concertina Wire	NP
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Wrought Iron or Aluminum	NP	Exposed or Painted Aggregate Concrete	NP
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Vinyl	NP	Smooth or Split-faced Block	NP
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Additional Standards

Pedestrian Connections through to Adjacent Neighborhoods or Uses	Required
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P within required Yards, per Section 4.3.10

Locations of Retaining Walls	If supporting grade 8 ft. or higher than property line, must be set back 10 ft. from property line
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ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

SD-MHP

**TABLE 4.3.1-H DISTRICT STANDARDS:
MANUFACTURED HOME PARK RESIDENTIAL SPECIAL DISTRICT**

Screens, Street-Screens & Buffers		
Height		
	At Frontage or Adjacent to Civic Space	Not at Frontage or Adjacent to Civic Space
Wall Screen/Street-Screen Height	3.5 ft. to 5 ft.	5ft. to 6ft; Minimum 6ft. for Dumpsters and Trash Receptacles
Fence Screen/ Street-Screen Height	NP	5ft. to 6ft. for Dumpsters and Trash Receptacles
Hedge Screen/ Street-Screen Height	3 ft. to 5 ft at installation	5ft. to 6ft. at installation
Materials		
Wall Screen or Street-Screen	Brick, Natural Stone or Stucco over Masonry	
Fence Screen or Street-Screen	Natural Wood, painted or unpainted	
Hedge Screen or Street-Screen	Evergreen plants with min. 80% opacity	
Additional Standards		
Non-Residential & Multi-Family Residential Screen. Street Screen Adjacent to or across Thoroughfare from Non-Family Residential	N/A (Uses not permitted in District)	
Screening of Parking, Loading Areas, Service Areas, Outdoor Storage, Drive-Throughs, Trash Receptacle/Dumpsters, HVAC and other equipment Screened from Frontage, Civic Space and Adjacent Property	Required ; except at Driveways: Parking Lots and Parking Areas must be Screened From Frontage and Civic Space by Building or Street-Screen; Parking Structures must be Screened from Frontages and Civic Space by Liner Buildings otherwise, Screening must be by Building, wall, hedge or fence at Frontage or Building wall, hedge or fence not at Frontage or Adjacent to Civic Space.	
Rooftop Antenna Screening and HVAC, Mechanical and other Equipment Screening	Required ; must be Screened from Frontage and Civic Space by Building Parapet or other Building element	
Self-Storage Warehouse Screening	N/A (Uses not permitted in District)	
Parcel Buffer	Section 4.3.11.H	
Project Buffer	Section 5.8	

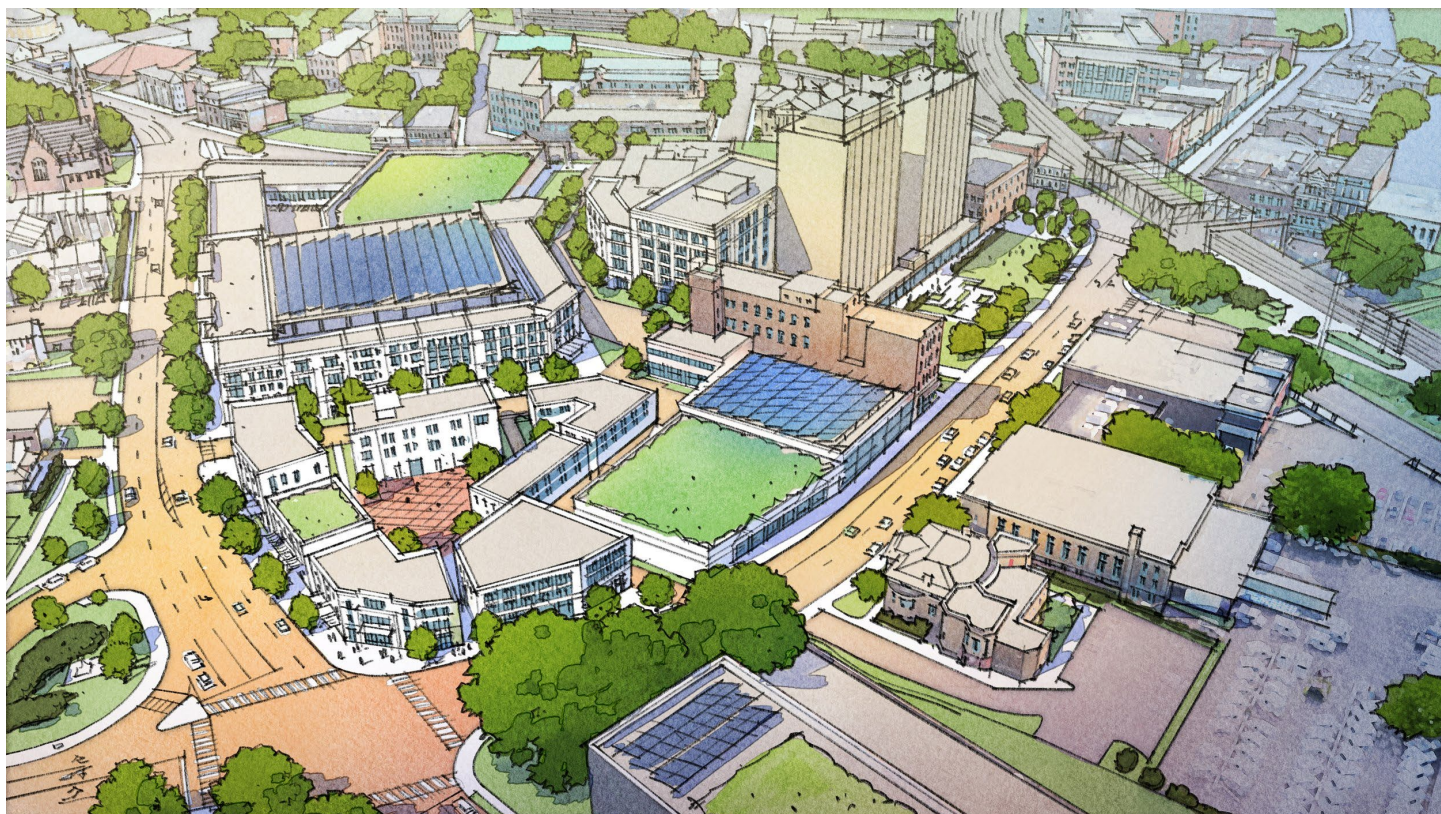
ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

SD-INT

TABLE 4.3.1-I DISTRICT STANDARDS:
INTERSTATE SERVICE SPECIAL DISTRICT

General Description

This District is designed to provide space along I-65 to serve the needs of the motoring public. Automobile and other vehicular service establishments, transient sleeping accommodations, and eating and drinking establishments to primarily characterize this District. Appropriate locations for this District are along I-65 in an environment of general Commercial and Mixed-Use activity. Due to the high traffic volumes and general incompatibility between some of the Uses permitted within this District and those in CD-3L and CD-3 areas, this District shall not be located in or Adjacent to a CD-3L or CD-3 District. The SD-INT District is an appropriate District for the Technology Employment Center Future Land Use Character Area described in the Comprehensive Plan. SD-INT is limited to Parcels within 3,690 feet of an Interstate, Freeway, or other limited access highway identified in the Transportation element of the Plan.



ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

SD-INT

TABLE 4.3.1-I DISTRICT STANDARDS: INTERSTATE SERVICE SPECIAL DISTRICT

Density / Floor Area Ratio (FAR)

**Applicable only to Development Parcels*

24 Density Unites per acre max

Parcel Size

Parcel Size Min. 1 gross acre

Block Size*

**Applicable only to Development Parcels*

Block Perimeter NR

Private Frontage Types

NR

Civic Space Types*

**Applicable only to Development Parcels*

NR

Permitted Uses

See **Table 4.3.9.A-1 (Building, Lot & Building Site Principal Use)**, **Table 4.3.9.A-2 (Building, Lot & Building Site Accessory Uses)**, and **Table 4.3.9.A-3 (Building, Lot & Building Site Temporary Uses)**. For Development Parcels, see also **Table 5.1.7 (Principal Use Mix)**.

Number of Buildings Per Lot or Building Site

Principal Building	1 max. per Lot or Building Site
Accessory Buildings	1 max.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

SD-INT

**TABLE 4.3.1-I DISTRICT STANDARDS:
INTERSTATE SERVICE SPECIAL DISTRICT**

Lot Occupation		
Lot/ Building Width	100 ft. min	
Lot Frontage on Street / Highway	100 ft. min	
Lot Depth	NR	
Frontage Buildout	NR	
Lot/ Building Site Area	20,000 SF min.	
Impervious Surface Coverage	NR	
Usable Open Space	Min. 7% of gross site area	
Lot/ Building Site Enfrontment	Must enfront a vehicular Thoroughfare, Internal Drive, or Driveway. Lots or Building Sites within a Development Parcel may Enfront a Pedestrian Path, Passage, pedestrian walkway or water body if such Lots have legal and physical vehicular access to a vehicular Thoroughfare via Driveway or Easement.	
Lot/ Building Site Access	All Lots and Building Sites must have legal and physical vehicular access to a vehicular Thoroughfare vis Driveway or Easement	
Setback / Yards		
Setback / Yards – Principal Building		
	As applicable:	
Street Yard – Min	1.	For sites Adjacent to a District which a Residential use is allowed:
	a)	An Addition to an existing Building with a Façade of variable distance from the Street may be extended to the plane of the existing Façade closest to the Street.
	b)	Except for an addition to an existing Building described in 1.a above, the lesser of
	i)	The Average depth of Street Yards of existing Buildings within 100 ft. on each side of a Lot or Building Site or
	ii)	60 ft.
	2.	Otherwise, 30 ft.
Side Yard – Per side	0 ft. min along Lot Lines or Building Site Lines Adjacent to a Lot or Building Site on which no Mixed Use or Residential Use is located, or is being constructed; Otherwise, 10 ft. min ⁽¹⁾⁽²⁾⁽³⁾	B
Rear Yard	0 ft. min along Lot Lines or Building Site Lines Adjacent to a Lot or Building Site on which no Mixed Use or Residential Use is located, or is being constructed;	C

Notes: *See Article 9 (definitions) for FAR measurement information

- (1) Additional Side Yard or Rear Yard depth may be necessary to accommodate Buffers and landscaping required in Sections 4.3.11, 4.3.16, and 5.8
- (2) The Required Rear Yard Depth shall be reduced as provided below if the Lot does not abut a different District and is owned separately and individually from all other tracts of land, both on the Effective date of this Ordinance and on the date of application for a Zoning Permit. Such reduction shall be as follows:
 - a. For all interior Lots between 80 ft. and 100 ft. deep, the required Rear Yard shall be reduced by an amount equal to the lesser of (1) 100 ft. minus the depth of the Lot or (2) 10ft.
 - b. For Interior Lots < 80 ft. deep within Non-Residential Districts, the required Rear Yard depth shall be 0 ft., but if any Rear Yard is provided, it must be at least 10 ft. deep.
- (3) Buffering requirements are not applicable to Side Yards or Rear Yards with zero depth.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

Otherwise, 10 ft. min ⁽¹⁾⁽²⁾⁽³⁾

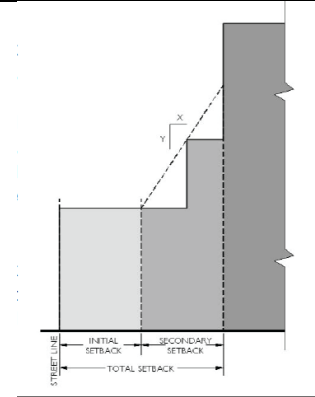
SD-INT

**TABLE 4.3.1-I DISTRICT STANDARDS:
INTERSTATE SERVICE SPECIAL DISTRICT**

Building Standards

Building Height*

Principal Building	Initial Stepback = depth of required Front Setback / Street Yard, within which no Structure is allowed
	Max, height within 1 st 30 ft. beyond initial Stepback ("Secondary Stepback"): 45 ft. + 1.5 ft. (Y) for every additional 1 ft. (X) Building is Stepped back from Initial Stepback (slope of Sky Exposure Plane (x:y) = 1:1.5).
	From and beyond 40 ft. from back of sidewalk ("Total Stepback"), greater of 75 ft. max or height permitted by Conditional Use Permit, if total Impervious Surface Coverage is 40% or less.
Accessory Building	45 ft. max



*Stories/ Height do not include Attics and Basements, chimneys, flagpoles, towers, spires, belfries, parapet walls, aerials, or antennas. Any Building exceeding 35 feet in height must obtain approval from stipulations made by the Fire Department in accordance with the above cited codes shall be required. *

*The Fire Department may stipulate special fire measures in accordance with National Fire Protection Association and International Building Code criteria as a condition of approval of such Structure. In such instance stipulations made by the Fire Department in accordance to with the above cited codes shall be required. *

Ceiling Height

May not exceed 14 ft. from finished floor to finished ceiling, except for a first floor Business/Commercial, Office, Retail/ Personal Service, or Accommodation/ Lodging Use, which must be a minimum of 11 ft. with a maximum of 25 ft.

Building Composition

Vertical Composition	Each Principal Building must have an identifiable Base, Middle & Cap
Finished Floor Level	NR

Façade

Main Entrance	Main Entrance must be in Façade of Principal Frontages.
Façade Position	Parallel to straight Frontage Line or to tangent of curved Frontage Line.
Façade & Façade Element Design Proportions	Must be vertically proportioned.
Blank Walls	NP at Frontage

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

SD-INT

**TABLE 4.3.1-I DISTRICT STANDARDS:
INTERSTATE SERVICE SPECIAL DISTRICT**

Building Standards (Continued)	
Façade (Continued)	
Façade Articulation	A façade greater than 100 ft. in width must be differentiated so that it appears to be compromised of two or more Adjacent Buildings, by dividing such Façade into two segments each of which includes a separate entrance and (1) differs from each of the other segments with respect to all of the following: (a) a change in shape, sill, and header height, detail, size, spacing, rhythm, and muntin pattern of windows; (b) a change of Building or cornice height; (c) a change in cornice detail; (d) a change of wall material or wall color; a change in trim courses and other horizontal element (e) a change in dormer or balcony design, if any; and (f) providing or changing pilasters, columns, or other Façade elements; and (2) is composed of a defined center and edges. (See Illustration 4.3.5.A-3)
Façade Openings	Windows and/or doors spaced $\leq$ 20 ft. apart. In Stories above first, Façade openings must be $\leq$ 50% of total Façade area.
Façade Glazing	20% - 60% of total Façade Area for non-Shopfront; 70% of total Façade Area, min. for Shopfront.
Window Shape	Square or vertical in proportion, except transoms.
Window Alignment	Upper floor windows and other features must be aligned with those of first floor.
Window Types	Except in Shopfront or Gallery Frontage, and except for transoms and sidelights, Windows in Façade and 1 st & 2 nd Layers must be single-hung, double-hung, casement or awning types. In Stories above first, Façade openings must be $\leq$ 50% of total Façade area.
Window Glazing Material	Clear glass Required for windows at Frontage.
Window Trim in 1 st Layer	Min. 4 in. trim with sill and top plate if siding surrounding window, soldier course above lintel and rollock course below sill if brick or stone surrounds window.
Shutters	If any, must be functional and proportioned to cover half of window width from each side or entire window width, with shutter dogs.
Façade Window Sill Height	If Residential: 5 ft. min. above average grade at Frontage.
Porch Frontages	Min. 6 ft. clear depth, excluding rails, pillars, columns or other features.
Shopfront Frontages	12 in. – 24 in. knee wall required at Frontage.
Façade Variety	No Façade may exist more than once on a Block Face or within view of the same Façade.
Roof Type & Pitch	

NR

Roof Design

NR

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

SD-INT

**TABLE 4.3.1-I DISTRICT STANDARDS:
INTERSTATE SERVICE SPECIAL DISTRICT**

Building Standards (Continued)

Building Materials

Brick	P	Authentic stucco over masonry	P
Natural stone	P	Exposed concrete	NP
Wood	P	Vinyl or Aluminum siding	NP
Cementitious siding	P	Corrugated and/or sheet metal	NP

Changes in Building Materials	NR
Building Colors	NR
Foundation Cladding	NR
Porch Pier Cladding	NR
Chimney Cladding	NR

Building Types

House	NP	Commercial	P
Duplex	NP	Mixed Use	P
Townhouse	NP	Flex	P
Small Multifamily	NP	Mid-Rise	P
Large Multifamily	P	Large Scale Commercial	P
Live/Work	NP	Civic	P

See **Table 4.3.8.A (Principal Building Types - Summary)** and **Table 4.3.8.B (Principal Building Types - Specific Standards)**. For Development Parcels, see also **Table 5.1.6 (Building Type Mix)**.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

SD-INT

TABLE 4.3.1-I DISTRICT STANDARDS: INTERSTATE SERVICE SPECIAL DISTRICT

Vehicular Parking Requirements (Continued)

Parking Location

	On-Street Parking	Off-Street Parking
All Vehicles	NR	P behind first 10 ft. from Frontage Lot Line if site not abutting Residential District; Otherwise, P only in Side Yard or Rear Yard

Additional Parking Requirements

Off-Street Parking Surface	Asphalt, concrete, or other hard surface
Garage Location	P In Rear Yard only
Garage Design	NR
Driveway/ Vehicular Entrance Location	P in any Layer
Driveway/ Vehicular Entrance Maximum Width	10 ft. max. in 1 st Layer if Residential; 36 ft. max. in 1 st Layer if non-Residential, regardless if shared or not
Parking Structure	P, if screened from Frontage by Liner Buildings
Parking Structure Pedestrian Exit Location	Via pedestrian access to Frontage

Bicycle Parking

See Section 4.3.13

Thoroughfare & Internal Drive Types*

**Applicable only to Development Parcels*

See Article 5 (Development Parcel Standards) for additional requirements

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

SD-INT

**TABLE 4.3.1-I DISTRICT STANDARDS:
INTERSTATE SERVICE SPECIAL DISTRICT**

Loading & Access

Off-Street Loading and Storage	P in 3 rd Layer only
Utility Box & Service Meter* Locations	P in 3 rd Layer only
(*Not including water meters)	
Trash Receptacle Locations –	P in 3 rd Layer only, except when moved to 1 st or 2 nd Layer for pickup
Manufactured Home Sites	
Community Trash Receptacle or Dumpster Locations	P in 3 rd Layer only, must be screened from Frontage and fully enclosed on 3 sides and enclosed on the 4 th side with self-closing gate
Drive- Through Locations	P in 3 rd Layer only

Non-Building Components

	1st Layer	2 nd Layer	3 rd Layer
HVAC Equipment, Utility, Service and Mechanical Equipment	NP	P if Screened from Frontage	P
Solar Panels	P if coplanar to and integrated into roof design		P
Antennas & Satellite Equipment	P in 1 st or 2 nd Layer if such Layer is only possible location for satisfactory reception		P
Recreation or Play Equipment	NP	NP	P
Animals Enclosures, Runs or Shelters	NP	NP	P
Swimming pools, Hot Tubs and Spas	NP	NP	P
Transmitting and/or receiving towers, or antennas and wind- generating machines	NP	NP	P

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

SD-INT	TABLE 4.3.1-I DISTRICT STANDARDS: INTERSTATE SERVICE SPECIAL DISTRICT
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Signs
See Sign Standards in Article 7 (Sign Standards) and Table 7.12.B-1 (Sign Types - Summary) and Table 7.1.2.B-2 (Sign Types- Specific Standards)

Lighting
See Private Lighting Requirements in Section 4.3.17 and Table 4.3.17.B (Private Lighting Standards)

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

SD-INT

**TABLE 4.3.1-I DISTRICT STANDARDS:
INTERSTATE SERVICE SPECIAL DISTRICT**

Private Landscaping and Fencing

Landscaping

Required continuous shrubs around foundation facing Frontage if 1st Layer is $\geq$ 3 ft. deep, plus if 1st Layer is $\geq$ 15 ft. deep, 1 tree planted in 1st Layer. Landscaping must comply with Section 4.3.16.

Walls & Fencing

Height	3.5- 4 ft max at Frontage, otherwise 6 ft max; height measured from avg. undisturbed grade of Adjacent property at property line
Construction	Finished side must face Adjacent property, Thoroughfare, Path, Passage or Waterbody
Maintenance	Must be well maintained, in upright condition and free of missing or broken parts and graffiti.

Materials

Natural Wood	P at sides and rear only	Chain Link	P at sides and rear only
Brick, Natural Stone, or Stucco over Masonry	P at sides and rear only	Barbed/ Razor/ Concertina Wire	NP
Wrought Iron or Aluminum	P	Exposed or Painted Aggregate Concrete	NP
Vinyl	NP	Smooth or Split-faced Block	NP

Additional Standards

Pedestrian Connections through to Adjacent Neighborhoods or Uses	NR
	P within required Yards, per Section 4.3.10
Locations of Retaining Walls	If supporting grade 8 ft. or higher than property line, must be set back 10 ft. from property line

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

SD-INT

**TABLE 4.3.1-I DISTRICT STANDARDS:
INTERSTATE SERVICE SPECIAL DISTRICT**

Screens, Street-Screens & Buffers		
Height		
	At Front or Adjacent to Civic Space	Not at Frontage or Adjacent to Civic Space
Wall Screen/Street-Screen Height	3.5 ft. to 5 ft.	5ft. to 6ft; Min. 6ft. for Dumpsters and Trash Receptacles
Fence Screen/ Street-Screen Height	NP	5ft. to 6ft; Min. 6ft. for Dumpsters and Trash Receptacles
Hedge Screen/ Street-Screen Height	3 ft. to 5 ft at installation	5ft. to 6ft. at installation
Materials		
Wall Screen or Street-Screen	Brick, Natural Stone or Stucco over Masonry	
Fence Screen or Street-Screen	Natural Wood, painted or unpainted	
Hedge Screen or Street-Screen	Evergreen plants with min. 80% opacity	
Additional Standards		
Non-Residential & Multi-Family Residential Screen. Street Screen Adjacent to or across Thoroughfare from Non-Family Residential	NR	
Screening of Parking, Loading Areas, Service Areas, Outdoor Storage, Drive-Throughs, Trash Receptacle/Dumpsters, HVAC and other equipment Screened from Frontage, Civic Space and Adjacent Property	Required; except at Driveways:	
	Parking Lots and Parking Areas must be Screened From Frontage and Civic Space by Building or Street-Screen;	
	Parking Structures must be Screened from Frontages and Civic Space by Liner Buildings.	
	Otherwise, Screening must be by Building, wall, hedge or fence at Frontage or Building wall, hedge or fence not at Frontage or Adjacent to Civic Space.	
Rooftop Antenna Screening and HVAC, Mechanical and other Equipment Screening	Required; must be Screened from Frontage and Civic Space by Building Parapet or other Building element	

SD-LI

TABLE 4.3.1-J DISTRICT STANDARDS:
LIGHT INDUSTRIAL SPECIAL DISTRICT

General Description

This District is intended to provide space for a wide range of wholesale trade, warehousing of a wide variety of products or materials, manufacturing processes, and industrial and related uses that conform to a high level of performance criteria and have few objectionable characteristics. All operations must be carried on within completely enclosed Buildings, thus providing a standard of Development that removes most adverse characteristics that affect neighboring properties. This District may provide a buffer between other Districts and other industrial activities that have more objectionable influences. This District may require types of Structures and have Uses and other characteristics that cannot be facilitated in other Districts. New Residential Development, Commercial establishments, Retail establishments, personal service Uses, and community facilities and utilities, are permitted, as well as additional Uses that provide needed complementary services or are necessary for the general community welfare. SD-LI is an appropriate District for Technology Employment Center Future Land Use Character Area described in the Comprehensive Plan.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

SD-LI

TABLE 4.3.1-J DISTRICT STANDARDS:
LIGHT INDUSTRIAL SPECIAL DISTRICT

Density / Floor Area Ratio (FAR)

*Applicable only to Development Parcels

NR

Parcel Size

Parcel Size

Min. 1 acre

Block Size*

*Applicable only to Development Parcels

Block Perimeter

2,000 ft. max. or 3,000 ft. max. if a Parking Structure provided within Block

Private Frontage Types

NR

Civic Space Types*

*Applicable only to Development Parcels

NR

Permitted Uses

See **Table 4.3.9.A-1 (Building, Lot & Building Site Principal Use)**, **Table 4.3.9.A-2 (Building, Lot & Building Site Accessory Uses)**, and **Table 4.3.9.A-3 (Building, Lot & Building Site Temporary Uses)**. For Development Parcels, see also **Table 5.1.7 (Principal Use Mix)**.

Number of Buildings Per Lot or Building Site

Principal Building

Accessory Buildings

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

SD-LI

**TABLE 4.3.1-J DISTRICT STANDARDS:
LIGHT INDUSTRIAL SPECIAL DISTRICT**

Lot Occupation		
Lot/ Building Width	100 ft. min	
Lot Depth	NR	
Frontage Buildout	NR	
Lot/ Building Site Area	40,000 SF min.	
Impervious Surface Coverage	70% max	
Usable Open Space	Min. 7% of gross site area	
Lot/ Building Site Enfrontment	Must enfront a vehicular Thoroughfare, Internal Drive, or Driveway. Lots or Building Sites within a Development Parcel may Enfront a Pedestrian Path, Passage, pedestrian walkway or water body if such Lots have legal and physical vehicular access to a vehicular Thoroughfare via Driveway or Easement.	
Lot/ Building Site Access	All Lots and Building Sites must have legal and physical vehicular access to a vehicular Thoroughfare vis Driveway or Easement	
Setback / Yards		
Setback / Yards – Principal Building		
Street Yard – Min	As applicable:	
	1. For sites Adjacent to a District which a Residential use is allowed:	
	a. An Addition to an existing Building with a Façade of variable distance from the Street may be extended to the plane of the existing Façade closest to the Street.	
	b. Except for an addition to an existing Building described in 1.a above, the lesser of	
	I. The Average depth of Street Yards of existing Buildings within 100 ft. on each side of a Lot or Building Site or 40 ft. ⁽¹⁾ Otherwise , 20ft.	
Side Yard – Per side	As applicable:	
	1. For sites abutting a Residential District, 50 ft. along the common boundary;	
	2. Otherwise, 10 ft. min ⁽¹⁾⁽²⁾⁽³⁾⁽⁴⁾	
Rear Yard	3. For sites abutting a Residential District, 50 ft. along the common boundary;	
	4. Otherwise, 20 ft. min ^{(1)(2)(3))(4)}	

Notes:

- (1) Additional Side Yard or Rear Yard depth may be necessary to accommodate Buffers and landscaping required in Sections 4.3.11, 4.3.16, and 5.8
- (2) The Required Rear Yard Depth shall be reduced as provided below if the Lot does not abut a different District and is owned separately and individually from all other tracts of land, both on the Effective date of this Ordinance and on the date of application for a Zoning Permit. Such reduction shall be as follows:
 - a. For all interior Lots between 80 ft. and 100 ft. deep, the required Rear Yard shall be reduced by an amount equal to the lesser of (1) 100 ft. minus the depth of the Lot or (2) 10ft.
 - b. For Interior Lots < 80 ft. deep within Non-Residential Districts, the required Rear Yard depth shall be 0 ft., but if any Rear Yard is provided, it must be at least 10 ft. deep.
- (3) In Industrial Districts, the required Side Yard and Rear Yard depth for Lots along Lot Lines abutting other Industrial Districts or along a railroad Right-Of-Way is 0 ft.
- (4) In Industrial Districts, Buffering requirements are not applicable to Side Yards with zero depth.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

SD-LI **TABLE 4.3.1-J DISTRICT STANDARDS:**
LIGHT INDUSTRIAL SPECIAL DISTRICT

Building Standards

Building Height*

Principal Building	45 ft. max
Accessory Building	45 ft. max

*Any Building exceeding 35 feet in height must obtain approval from the Fire Department prior to the issuance of a Building Permit. *

*The Fire Department may stipulate special fire measures in accordance with National Fire Protection Association and International Building Code criteria as a condition of approval of such Structure. In such instance stipulations made by the Fire Department in accordance to with the above cited codes shall be required. *

Ceiling Height

NR

Building Composition

Vertical Composition	Each Principal Building must have an identifiable Base, Middle, & Cap
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Finished Floor Level	NR
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Façade

Main Entrance	Main Entrance must be in Façade of Principal Frontages.
---------------	---

Façade Position	Parallel to straight Frontage Line or to tangent of curved Frontage Line
-----------------	--

Façade & Façade Element Design Proportions	NR Flex Building with Industrial Category Use Other – Must be vertically proportioned
--	--

Blank Walls	NP at Frontage
-------------	----------------

Façade Articulation	NR Flex Building with Industrial Category Use Others- Façade greater than 100 ft. in width must be differentiated so that it appears to be comprised of two or more Adjacent Buildings, by dividing such Façade into two segments each of which includes a separate entrance and (1) differs from each other segments with respect to all of the following: (a) a change in shape, sill, and header height, detail, size, spacing, rhythm, and muntin pattern of windows; (b) a change of Building or cornice height; (c) a change in cornice details; (d) a change of wall material, or wall color; a change in trim courses and other horizontal elements; (e) a change in dormer or balcony design, if any; and (f) providing or changing pilasters, columns, or other Façade elements; and (2) is composed with a defined center and edges. (See Illustration 4.3.5.A-3)
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Façade Openings	NR Flex Building with Industrial Category Use Others – Windows and/or doors spaced < 20 ft. apart; in Stories above first, Façade openings must be < 50% of total Façade area.
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ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

SD-LI

**TABLE 4.3.1-J DISTRICT STANDARDS:
LIGHT INDUSTRIAL SPECIAL DISTRICT**

Building Standards (Continued)

Façade (Continued)

Façade Glazing	NR Flex Building with Industrial Category Use Others – 20% - 60% of total Façade area.
Window Shape	NR Flex Building with Industrial Category Use Others - Square or vertical in proportion, except transoms
Window Alignment	NR Flex Building with Industrial Category Use Others - Upper floor windows and other features must be aligned with those of first floor
Window Types	NR Flex Building with Industrial Category Use Others - Except in Shopfront or Gallery Frontage, and except for Transoms and sidelights, Windows in Façade and 1 st & 2 nd Layers must be single-hung, double-hung, casement or awning types.
Window Glazing Material	Flex Building with Industrial Category Use - Clear glass is Required for windows at Frontage Others - Clear glass is Required for all Elevations
Window Trim in 1 st Layer	NR Flex Building with Industrial Category Use Others - Min. 4 in. trim with sill and top plate if siding surrounding window; soldier course above lintel and rollock course below sill if brick or stone surrounds window
Shutters	NR Flex Building with Industrial Category Use Others - If provided must be functional and proportioned to cover half of window width from each side or entire window width, with shutter dogs
Façade Window Sill Height	If Residential, 5 ft. min above average grade at Façade Others – NR
Porch Frontages	NR Flex Building with Industrial Category Use Others – If provided, min. 6 ft. clear depth, excluding rails, pillars, columns or other features
Shop Frontages	NR Flex Building with Industrial Category Use For Shopfront Private Frontage – 12 in. – 24 in. knee wall required at Frontage
Façade Variety	NR Flex Building with Industrial Category Use Others – No façade may exist more than once on a Block Face or within view of the same Façade.

Roof Type & Pitch

Flat	NR Flex Building with Industrial Category Use Others - P
Shed	NR Flex Building with Industrial Category Use P at rear only and if ridge is attached to an exterior Building wall; except for porches, stoops or dormers which may have shed roof anywhere on the Building
Hip	NR Flex Building with Industrial Category Use Others - P
Gable	NR Flex Building with Industrial Category Use Others - P
Pitch	If pitched, 6:12 – 14:12, except for shed roofs which may be 3:12 – 14:12 and except roof pitch may match the primary roof pitch of an existing Building that is less than 6:12

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

SD-LI

**TABLE 4.3.1-J DISTRICT STANDARDS:
LIGHT INDUSTRIAL SPECIAL DISTRICT**

Building Standards (Continued)

Roof Design

Eaves shall extend no less than nine inches beyond the supporting walls.

Gable end rakes shall overhang at least six inches.

Eaves and rakes on Accessory Buildings and dormers shall overhang at least six inches.

Soffits shall be placed perpendicular to the Building wall, not sloping in plane with the roof (except for gable end rakes).

Building Materials

Brick	P	Authentic stucco over masonry	P
Natural stone	P	Exposed concrete	P Flex Buildings with Industrial Category Use NP Others
Wood	P	Vinyl or Aluminum siding	NP
Cementitious siding	P	Corrugated and/or sheet metal	P Flex Buildings with Industrial Category Use NP Others
Changes in Building Materials	NR		
Building Colors	NR		
Foundation Cladding	NR		
Porch Pier Cladding	NR		
Chimney Cladding	NR		

Building Types

House	NP	Commercial	P
Duplex	NP	Mixed Use	P
Townhouse	NP	Flex	P
Small Multifamily	P	Mid-Rise	P
Large Multifamily	P	Large Scale Commercial	P
Live/Work	P	Civic	P

See **Table 4.3.8.A (Principal Building Types - Summary)** and **Table 4.3.8.B (Principal Building Types - Specific Standards)**. For Development Parcels, see also **Table 5.1.6 (Building Type Mix)**.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

SD-LI

**TABLE 4.3.1-J DISTRICT STANDARDS:
LIGHT INDUSTRIAL SPECIAL DISTRICT**

Vehicular Parking Requirements

Parking Location

	On-Street Parking	Off-Street Parking
Domestic Vehicles	NP	P in any Required Yard, unless specifically prohibited* Except Residential and Commercial in 3 rd Layer only.
Recreational Vehicles	NP	P in any Required Yard, unless specifically prohibited* Except Residential and Commercial in 3 rd Layer only.
Heavy Equipment	NP	P in any Required Yard, unless specifically prohibited* Except Residential and Commercial in 3 rd Layer only.
Tractor Trailers (including trailers for storage)	NP	P in any Required Yard, unless specifically prohibited* Except Residential and Commercial in 3 rd Layer only.
All other Vehicles	NP	P in any Required Yard, unless specifically prohibited* Except Residential and Commercial in 3 rd Layer only.

**Driveways are not permitted within required Project Buffers & may penetrate required Lot/Building Site/ Parcel Buffers to minimum amount necessary to comply with this Ordinance.*

Additional Parking Requirements

Off-Street Parking Surface	Asphalt or concrete
Garage Location	P In 3 rd Layer only Min. interior dimensions 10 ft. x 20 ft. per vehicle Parking space
Garage Design	If Garage faces Street: max Garage door width 33% of total Garage + Façade width Garage must be detailed, finished, & designed like the rest of the Building with carriage house doors; max. Garage door width 9ft; each Garage door must have ornamental lighting fixture above it; min 2ft separation between Garage doors.
Driveway/ Vehicular Entrance Location	P in any Layer
Driveway/ Vehicular Entrance Maximum Width	10 ft max. in 1 st Layer and 2 nd Layer if Residential; 24 ft. max in 1 st Layer if non-Residential, regardless if shared or not.
Parking Structure	P if Screen from Frontage by Liner Buildings
Parking Structure Pedestrian Exit Location	Via pedestrian access to Frontage

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

SD-LI

**TABLE 4.3.1-J DISTRICT STANDARDS:
LIGHT INDUSTRIAL SPECIAL DISTRICT**

Vehicular Parking Requirements (Continued)

Bicycle Parking

See Section 4.3.13

Thoroughfare & Internal Drive Types*

**Applicable only to Development Parcels*

See Article 5 (Development Parcel Standards) for additional requirements

Loading & Access

Off-Street Loading and Storage	P only in any Required Side Yard or Rear Yard, unless specifically prohibited
Utility Box & Service Meter* Locations (*Not including water meters)	P only in any Required Side Yard or Rear Yard, unless specifically prohibited
Off-Street Trash Receptacle Locations	P in 3 rd Layer only
Off-Street Dumpster Locations	P in 3 rd Layer only, must be Screened from Frontage and fully enclosed on 3 sides and enclosed on the 4 th side with self-closing gate
Drive- Through Locations	P in 3 rd Layer only

Non-Building Components

	1 st Layer	2 nd Layer	3 rd Layer
HVAC Equipment, Utility, Service and Mechanical Equipment	NP	P if Screened from Frontage	P
Solar Panels	P if coplanar to and integrated into roof design		P
Antennas & Satellite Equipment	P in 1 st or 2 nd Layer if such Layer is only possible location for satisfactory reception		P
Recreation or Play Equipment	NP	NP	P
Animals Enclosures, Runs or Shelters	NP	NP	P
Swimming pools, Hot Tubs and Spas	NP	NP	P
Transmitting and/or receiving towers, or antennas and wind-generating machines	NP	NP	P

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

SD-LI

**TABLE 4.3.1-J DISTRICT STANDARDS:
LIGHT INDUSTRIAL SPECIAL DISTRICT**

Signs

See Sign Standards in Article 7 (Sign Standards) and Table 7.12.B-1 (Sign Types - Summary) and Table 7.1.2.B-2 (Sign Types- Specific Standards)

Lighting

See Private Lighting Requirements in Section 4.3.17 and Table 4.3.17.B (Private Lighting Standards)

Private Landscaping and Fencing

Landscaping

Required continuous shrubs around foundation at Façade if 1st Layer id > 3 ft. deep, plus if 1st Layer is > 15 ft. deep, 1 tree per 50 ft. of Frontage width, planted in 1st Layer. Landscaping must comply with Section 4.3.16

Walls & Fencing (not including Screens)

Height 3.5 - 4 ft max at Frontage, otherwise 6 ft max; height measured from avg. undisturbed grade of Adjacent property at property line

Construction Finished side must face Adjacent property, Thoroughfare, Path, Passage or Waterbody

Maintenance Must be well maintained, in upright condition and free of missing or broken parts and graffiti

Materials

Natural Wood	P only picket type allowed at Frontage; other types allowed at sides and at rear	Chain Link	P at sides and rear only
Brick, Natural Stone, or Stucco over Masonry	P at sides and rear only	Barbed/ Razor/ Concertina Wire	P at sides and rear only & only if not Adjacent to Residential Use
Wrought Iron or Aluminum	P	Exposed or Painted Aggregate Concrete	NP
Vinyl	NP	Smooth or Split-faced Block	NP

Additional Standards

Pedestrian connections through to Adjacent Neighborhoods or Uses **Required**

Location of Retaining Walls **P** within required Yards, per Sections 4.3.10
If supporting grade 8 ft. or higher that grade at property line, must be set back 10 ft. from property line

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

SD-LI

**TABLE 4.3.1-J DISTRICT STANDARDS:
LIGHT INDUSTRIAL SPECIAL DISTRICT**

Screens, Street-Screens & Buffers		
Height		
	At Frontage or Adjacent to Civic Space	Not at Frontage or Adjacent to Civic Space
Wall Screen/Street-Screen Height	3.5 ft. to 5 ft.	5ft. to 6ft; Minimum 6ft. for Dumpsters and Trash Receptacles
Fence Screen/ Street-Screen Height	NP	5ft. to 6ft. for Dumpsters and Trash Receptacles
Hedge Screen/ Street-Screen Height	3 ft. to 5 ft at installation	5ft. to 6ft. at installation
Materials		
Wall Screen or Street-Screen	Brick, Natural Stone or Stucco over Masonry	
Fence Screen or Street-Screen	Natural Wood, painted or unpainted	
Hedge Screen or Street-Screen	Evergreen plants with min. 80% opacity	
Additional Standards		
Non-Residential & Multi-Family Residential Screen.		
Street Screen Adjacent to or across Thoroughfare from Non-Family Residential	NR	
Screening of Parking, Loading Areas, Service Areas, Outdoor Storage, Drive-Throughs, Trash Receptacle/Dumpsters, HVAC and other equipment Screened from Frontage, Civic Space and Adjacent Property	Required ; except at Driveways: Parking Lots and Parking Areas must be Screened From Frontage and Civic Space by Building or Street-Screen; Parking Structures must be Screened from Frontages and Civic Space by Liner Buildings otherwise, Screening must be by Building, wall, hedge or fence at Frontage or Building wall, hedge or fence not at Frontage or Adjacent to Civic Space.	
Rooftop Antenna Screening and HVAC, Mechanical and other Equipment Screening	Required ; must be Screened from Frontage and Civic Space by Building Parapet or other Building element	
Self-Storage Warehouse Screening	Required ; except at Driveways; Screening must be by Building, wall, hedge or fence at Frontage or Building, Wall, hedge or fence not at Frontages or Adjacent tom Civic Space.	
Street-Screen Location	2 nd Layer	
Parcel Buffer	Section 4.3.11.H	
Project Buffer	Section 5.8	

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

SD-HI TABLE 4.3.1-K DISTRICT STANDARDS: HEAVY INDUSTRIAL SPECIAL DISTRICT

General Description

This District is intended to provide suitable areas for intense or potentially noxious Industrial operations, including open land operations. It is specifically intended that all newly created Districts be so located and Buffered as to prevent possible negative impact upon Adjacent land and Uses. SD-HI is an appropriate District for Technology Employment Center future land Use Character Area described in the Comprehensive Plan.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

SD-HI TABLE 4.3.1-K DISTRICT STANDARDS:
HEAVY INDUSTRIAL SPECIAL DISTRICT

Density / Floor Area Ratio (FAR)		<i>*Applicable only to Development Parcels</i>	
NR			
Parcel Size			
Parcel Size	NR		
Block Size*		<i>*Applicable only to Development Parcels</i>	
Block Perimeter	Not Regulated		
Private Frontage Types			
NR			
Civic Space Types*		<i>*Applicable only to Development Parcels</i>	
NR			
Permitted Uses			
<i>See Table 4.3.9.A-1 (Building, Lot & Building Site Principal Use), Table 4.3.9.A-2 (Building, Lot & Building Site Accessory Uses), and Table 4.3.9.A-3 (Building, Lot & Building Site Temporary Uses). For Development Parcels, see also Table 5.1.6 (Principal Use Mix).</i>			
Number of Buildings			
Principal Building			
Accessory Buildings			

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

Lot Occupation

Lot/ Building Width	100 ft. min.
Lot/ Building Site/ Parcel Frontage on Street/ Highway	24 ft min.
Lot Depth	NR
Frontage Buildout	NR
Lot/ Building Site Area	As required to meet all other applicable requirements of this Ordinance
Impervious Surface Coverage	70% max
Usable Open Space	Min. 7% of gross site area
Lot/ Building Site Enfrontment	Must enfront a vehicular Thoroughfare, Internal Drive, or Driveway. Lots or Building Sites within a Development Parcel may Enfront a Pedestrian Path, Passage, pedestrian walkway or water body if such Lots have legal and physical vehicular access to a vehicular Thoroughfare via Driveway or Easement.
Lot/ Building Site Access	All Lots and Building Sites must have legal and physical vehicular access to a vehicular Thoroughfare via Driveway or Easement

Setback / Yards

Setback / Yards – Principal Building

As applicable:	
Street Yard – Min	1. For sites Adjacent to a District which a Residential use is allowed:
	a. An Addition to an existing Building with a Façade of variable distance from the Street may be extended to the plane of the existing Façade closest to the Street.
	c. Except for an addition to an existing Building described in 1.a above, the lesser of I. The Average depth of Street Yards of existing Buildings within 100 ft. on each side of a Lot or Building Site or 40 ft. ⁽¹⁾
	2. Otherwise, 20 ft.
As applicable:	
Side Yard – Per side	1. For sites abutting a Residential District, 50 ft. along the common boundary;
	2. Otherwise, 10 ft. min ⁽¹⁾⁽²⁾⁽³⁾⁽⁴⁾

Notes:

- (1) Additional Side Yard or Rear Yard depth may be necessary to accommodate Buffers and landscaping required in Sections 4.3.11, 4.3.16, and 5.8
- (2) The Required Rear Yard Depth shall be reduced as provided below if the Lot does not abut a different District and is owned separately and individually from all other tracts of land, both on the Effective date of this Ordinance and on the date of application for a Zoning Permit. Such reduction shall be as follows:
 - a. For all interior Lots between 80 ft. and 100 ft. deep, the required Rear Yard shall be reduced by an amount equal to the lesser of (1) 100 ft. minus the depth of the Lot or (2) 10ft.
 - b. For Interior Lots < 80 ft. deep within Non-Residential Districts, the required Rear Yard depth shall be 0 ft., but if any Rear Yard is provided, it must be at least 10 ft. deep.
- (3) In Industrial Districts, the required Side Yard and Rear Yard depth for Lots along Lot Lines abutting other Industrial Districts or along a railroad Right-Of-Way is 0 ft.
- (4) In Industrial Districts, Buffering requirements are not applicable to Side Yards with zero depth.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

As applicable:

Rear Yard

1. For sites abutting a Residential District, 50 ft. along the common boundary;
2. Otherwise, 20 ft. min ^{(1)(2)(3) (4)}

C

SD-HI

TABLE 4.3.1-K DISTRICT STANDARDS: HEAVY INDUSTRIAL SPECIAL DISTRICT

Building Standards

Building Height*

Principal Building 45 ft. max

Accessory Building 45 ft. max

Any Building exceeding 35 feet in height must obtain approval from the Fire Department prior to the issuance of a Building Permit.

*The Fire Department may stipulate special fire measures in accordance with National Fire Protection Association and International Building Code criteria as a condition of approval of such Structure. In such instance stipulations made by the Fire Department in accordance to with the above cited codes shall be required. *

Ceiling Height

NR

Building Composition

Vertical Composition Each Principal Building must have an identifiable Base, Middle, & Cap

Finished Floor Level NR

Façade

Main Entrance Main Entrance must be in Façade of Principal Frontages.

Façade Position Parallel to straight Frontage Line or to tangent of curved Frontage Line

Façade & Façade Element Design Proportions NR

Blank Walls NP at Frontage

Façade Articulation NR

Façade Openings NR

Façade Glazing NR

Window Shape NR

Window Alignment NR

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

Window Types	NR
Window Glazing Material	Clear glass is Required for windows at Frontage
Window Trim in 1 st Layer	NR
Shutters	NR
Façade Window Sill Height	NR
Porch Frontages	NR
Shopfront Frontages	NR
Façade Variety	NR

Roof Type & Pitch

NR

Roof Design

NR

Building Materials

Brick	P	Authentic stucco over masonry	P
Natural stone	P	Exposed concrete	NP
Wood	P	Vinyl or Aluminum siding	NP
Cementitious siding	P	Corrugated and/or sheet metal	P
Changes in Building Materials	NR		
Building Colors	NR		
Foundation Cladding	NR		
Porch Pier Cladding	NR		
Chimney Cladding	NR		

Building Types

NR

Vehicular Parking Requirements

Parking Location

	On-Street Parking	Off-Street Parking
Domestic Vehicles	NP	P in any Required Yard, unless specifically prohibited* Except Residential and Commercial in 3 rd Layer only.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

SD-HI

**TABLE 4.3.1-K DISTRICT STANDARDS:
HEAVY INDUSTRIAL SPECIAL DISTRICT**

Vehicular Parking Requirements (Continued)

Additional Parking Requirements

Off-Street Parking Surface	Asphalt or concrete
Garage Location	P In 3 rd Layer only
Garage Design	NR
Driveway/ Vehicular Entrance Location	P in any Layer
Driveway/ Vehicular Entrance Maximum Width	10 ft max. in 1 st Layer and 2 nd Layer if Residential; 36 ft. max in 1 st Layer if non-Residential, regardless if shared or not.
Parking Structure	P if Screen from Frontage by Liner Buildings
Parking Structure Pedestrian Exit Location	Via pedestrian access to Frontage

Bicycle Parking

See Section 4.3.13

Thoroughfare & Internal Drive Types*

**Applicable only to Development Parcels*

See Article 5 (Development Parcel Standards) for additional requirements

Loading & Access

Off-Street Loading and Storage	P only in any Required Side Yard or Rear Yard, unless specifically prohibited
Utility Box & Service Meter* Locations (*Not including water meters)	P only in any Required Side Yard or Rear Yard, unless specifically prohibited
Off-Street Trash Receptacle Locations	P in 3 rd Layer only
Off-Street Dumpster Locations	P in 3 rd Layer only, must be Screened from Frontage and fully enclosed on 3 sides and enclosed on the 4 th side with self-closing gate
Drive- Through Locations	P in 3 rd Layer only

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

SD-HI

**TABLE 4.3.1-K DISTRICT STANDARDS:
HEAVY INDUSTRIAL SPECIAL DISTRICT**

Non-Building Components			
	1st Layer	2 nd Layer	3 rd Layer
HVAC Equipment, Utility, Service and Mechanical Equipment	NP	P if Screened from Frontage	P
Solar Panels	P if coplanar to and integrated into roof deign		P
Antennas & Satellite Equipment	P in 1 st or 2 nd Layer if such Layer is only possible location for satisfactory reception		P
Recreation or Play Equipment	NP	NP	P
Animals Enclosures, Runs or Shelters	NP	NP	P
Swimming pools, Hot Tubs and Spas	NP	NP	P
Transmitting and/or receiving towers, or antennas and wind-generating machines	NP	NP	P

Signs

See Sign Standards in Article 7 (Sign Standards) and Table 7.12.B-1 (Sign Types - Summary) and Table 7.1.2.B-2 (Sign Types- Specific Standards)

Lighting

See Private Lighting Requirements in Section 4.3.17 and Table 4.3.17.B (Private Lighting Standards)

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

Private Landscaping and Fencing

Landscaping

Required if 1st Layer $\geq$ 10 ft, minimum of 30% of 1st Layer must be landscaped in compliance with Section 4.3.16, with continuous shrubs around foundation at Façade if 1st Layer is $\geq$ 3 ft. deep, plus if 1st Layer is $\geq$ 15 ft. deep, 1 tree per 50 ft. of Frontage width, planted in 1st Layer. Landscaping must comply with Section 4.3.16

Walls & Fencing (not including Screens)

Height	3.5 - 4 ft max at Frontage, otherwise 6 ft max; height measured from avg. undisturbed grade of Adjacent property at property line
Construction	Finished side must face Adjacent property, Thoroughfare, Path, Passage or Waterbody
Maintenance	Must be well maintained, in upright condition and free of missing or broken parts and graffiti

Materials

Natural Wood	P only picket type allowed at Frontage; other types allowed at sides and at rear	Chain Link	P at sides and rear only
Brick, Natural Stone, or Stucco over Masonry	P at sides and rear only	Barbed/ Razor/ Concertina Wire	P at sides and rear only & only if not Adjacent to Residential Use
Wrought Iron or Aluminum	P	Exposed or Painted Aggregate Concrete	NP
Vinyl	NP	Smooth or Split-faced Block	NP

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

SD-HI

**TABLE 4.3.1-K DISTRICT STANDARDS:
HEAVY INDUSTRIAL SPECIAL DISTRICT**

Private Landscaping and Fencing

Additional Standards

Non-Residential & Multi-Family Residential Screen. Street Screen Adjacent to or across Thoroughfare from Non-Family Residential	NR
Screening of Parking, Loading Areas, Service Areas, Outdoor Storage, Drive-Throughs, Trash Receptacle/Dumpsters, HVAC and other equipment Screened from Frontage, Civic Space and Adjacent Property	Required; except at Driveways: Parking Lots and Parking Areas must be Screened From Frontage and Civic Space by Building or Street-Screen; Parking Structures must be Screened from Frontages and Civic Space by Liner Buildings otherwise, Screening must be by Building, wall, hedge or fence at Frontage or Building wall, hedge or fence not at Frontage or Adjacent to Civic Space.
Rooftop Antenna Screening and HVAC, Mechanical and other Equipment Screening	Required; must be Screened from Frontage and Civic Space by Building Parapet or other Building element
Self-Storage Warehouse Screening	Required; except at Driveways; Screening must be by Building, wall, hedge or fence at Frontage or Building, Wall, hedge or fence not at Frontages or Adjacent tom Civic Space.
Street-Screen Location	2 nd Layer
Parcel Buffer	Section 4.3.11.H
Project Buffer	Section 5.8

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

PUD-R

TABLE 4.3.1-L DISTRICT STANDARDS:
PLANNED UNIT DEVELOPMENT RESIDENTIAL DISTRICT

General Description

This District permits utilization of the Planned Unit Development process under TCA Section 13-4-310, implementation of the Comprehensive Plan, and review and approval of a Master PUD Development Plan that complies with these standards and establishes them and other standards as entitlements for a property, including a customized combination of Permitted Uses, Building Types, Private Frontage Types, Setbacks and Yards, and Throughfares and Internal Drives.

Specifically, this District is intended for predominately Residential areas on sites with sufficient existing infrastructure, services, and utilities available for a proposed Development. Development in this District (a) is walkable and provides a diverse mixture of housing choices and Building Types, (b) is necessary to implement and is consistent with the Comprehensive Plan, (c) cannot under any circumstances, plan, or design conform to one or more of the other Districts and standards therefore due to its necessary and intrinsic Uses or size or form, (d) provides an innovative plan and design, (e) is harmonious with and respects the land use, character, and natural or man-made features of both the subject property and Adjacent property, (f) promotes quality and environmentally sensitive planning and design by taking advantage of special site characteristics, locations, and land uses, (g) provides Civic Space, (h) is the best use of the site consistent with the goals of protecting and enhancing the natural environment. There are specific Development standards provided for this District, which may be supplemented by additional standards approved in the applicable Final Master PUD Development Plan. The Planning Commission may determine that a specific PUD-R Master Plan is consistent with the future land map use of the Comprehensive Plan.



ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

PUD-R

**TABLE 4.3.1-L DISTRICT STANDARDS:
PLANNED UNIT DEVELOPMENT RESIDENTIAL DISTRICT**

Density / Floor Area Ratio (FAR)

**Applicable only to Development Parcels*

12 Density Units per acre max

Parcel Size

Parcel Size

Min. more than 10 gross acres

BLOCK SIZE*

**Applicable only to Development Parcels*

Block Perimeter

2000 ft. max or 3000 ft max if a parking structure provided within Block

Private Frontage Types

Common Yard	P	Stepfront	P
Porch	P	Shopfront	P
Fence	P	Gallery	NP
Terrace/Lightwell	P	Arcade	NP
Forecourt	P	Officefront	NP
Stoop	P		

See **Table 4.3.7.A (Private Frontage Types)**

Civic Space Types*

**Applicable only to Development Parcels*

Natural Area	P	Playground	P
Green	P	Sport Field	NP
Square	P	Community Garden	P
Plaza	P	Pocket Park	P

See **Table 5.3.3.A (Civic Space Types - Summary)**

Permitted Uses

See **Table 4.3.9.A-1 (Building, Lot & Building Site Principal Use)**, **Table 4.3.9.A-2 (Building, Lot & Building Site Accessory Uses)**, and **Table 4.3.9.A-3 (Building, Lot & Building Site Temporary Uses)**. For Development Parcels, see also **Table 5.1.6 (Principal Use Mix)**.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

PUD-R

TABLE 4.3.1-L DISTRICT STANDARDS:
PLANNED UNIT DEVELOPMENT RESIDENTIAL DISTRICT

Number of Buildings Per Lot or Building Site

Principal Building	6 max per Lot / Building Site for attached Townhouse Buildings; otherwise, 1 max. per Lot / Building Site
Accessory Buildings	1 max per Building Site

Lot Occupation

	18 ft. min; 180 ft. max;
Lot/ Building Site Width	For Townhouses with each unit on its own Lot or Building Site: 18-36 ft. for single Townhouse unit attached to other Townhouse units x 8 max. attached Townhouse units. For multiple Townhouses on a single Lot or Building Site: 18-20 ft. per Townhouse unit x 8 max. attached Townhouse units.
	38 ft. min for House, 25 ft. min, for each Duplex unit or 50 ft. min for both units of Duplex, and 100 ft. max. for small Multifamily Building.
Frontage Buildout	60% min.
Lot/ Building Site Area	NR
Impervious Surface Coverage	70% max; except 90% max. for each group of attached Townhouse units.
Lot/ Building Site Enfrontment	Must enfront a vehicular Thoroughfare or Internal Drive, except $\leq 20\%$ of the Lots / Building Sites within a Development Parcel may Enfront a Pedestrian Path, Passage, pedestrian walkway or water body if such Lots / Building Sites have legal and physical vehicular access to a vehicular Thoroughfare via Driveway or Easement.
Lot/ Building Site Access	All lots must have legal and physical vehicular access to a vehicular Thoroughfare or Internal drive via Driveway or Easement.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

PUD-R

**TABLE 4.3.1-L DISTRICT STANDARDS:
PLANNED UNIT DEVELOPMENT RESIDENTIAL DISTRICT**

Setbacks / Yards					
Setbacks / Yards – Principal Building			Setbacks / Yards – Accessory Building		
Front Setback / Yard, Principal Frontage	15 ft. – 35 ft.	A	Front Setback / Yard, Principal Frontage	40 ft. max. from Rear Lot / Building Site Line	E
Front Setback / Yard, Secondary Frontage	15 ft. – 35 ft.	B	Side Setback / Yard	0 ft. min.	F
Side Setback / Yard, each side	0 ft. min. on attached side(s) of attached Building Types; otherwise, 10 ft. min; 24 ft. max. per side	C	Rear Setback / Yard	3 ft. max	G
Rear Setback	10 ft. min.	D			

Building Standards	
Building Height*	
Principal Building	1-2 Stories for House and Duplex Building Types; 2-3 Stories for Townhouse, Live/ Work and Small Multifamily Building Types; 2-4 Stories for Large Multifamily Building Type.
Accessory Building	2 Stories max; Allowed in 3 rd Layer only.

*Stories/ Height do not include Attics and Basements, chimneys, flagpoles, towers, spires, belfries, parapet walls, aerials, or antennas. Any Building exceeding 35 feet in height must obtain approval from stipulations made by the Fire Department in accordance with the above cited codes shall be required. *

*The Fire Department may stipulate special fire measures in accordance with National Fire Protection Association and International Building Code criteria as a condition of approval of such Structure. In such instance stipulations made by the Fire Department in accordance to with the above cited codes shall be required. *

Ceiling Height

May not exceed 14 ft. from finished floor to finished ceiling.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

PUD-R

**TABLE 4.3.1-L DISTRICT STANDARDS:
PLANNED UNIT DEVELOPMENT RESIDENTIAL DISTRICT**

Building Composition	
Vertical Composition	Each Principal Building must have an identifiable Base, Middle & Cap
Finished Floor Level	Min. 18 in. above average grade at Façade
Façade	
Main Entrance	Main Entrance must be in Façade of Principal Frontages. If Shop Frontage at corner Main Entrance may be at Principal Frontage, or at corner.
Façade Position	Parallel to straight Frontage Line or to tangent of curved Frontage Line
Façade & Façade Element Design Proportions	Must be vertically proportioned
Blank Walls	NP at Frontage
Façade Articulation	Except for House Building Types, a Façade greater than 100 ft. in width must be differentiated so that it appears to be comprised of two or more Adjacent Buildings, by dividing such Façade into two segments each of which includes a separate entrance and (1) differs from each of the other segments with respect to all of the following: (a) a change in shape, sill, and header height, detail, size, spacing, rhythm, and muntin pattern of windows; (b) a change of Building or cornice height; (c) a change in cornice details; (d) a change of wall material or wall color; a change in trim courses and other horizontal elements; (e) a change in dormer or balcony design, if any, and (f) providing or changing pilasters, columns, or other Façade elements; and (2) is composed with a defined center and edges. (See Illustration 4.3.5.A-3)
Façade Openings	Façade windows, and/or doors spaced ≤ 20 ft. apart In Stories above first Façade openings must be $\leq 50\%$ of the total Façade area
Façade Glazing	20% - 60% of total Façade area for non-Shopfront; 70% of total Façade area, min. for Shopfront
Window Shape	Square or vertical in proportion, except transoms
Window Alignment	Upper floor windows and other features must be aligned with those of first floor
Window Types	Except in Shopfront or Gallery Frontage, and except for Transoms and sidelights, Windows in Façade and 1 st & 2 nd Layers must be single-hung, double-hung, casement or awning types. In Stories above first, Façade openings must be $\leq 50\%$ of total Façade area.
Window Glazing Material	Clear glass is Required for all Elevations
Window Trim in 1 st Layer	Min. 4 in. trim with sill and top plate if siding surrounding window; soldier course above lintel and rollock course below sill if brick or stone surrounds window
Shutters	If any, must be functional and proportioned to cover half of window width from each side or entire window width, with shutter dogs
Façade Window Sill Height	If Residential: 5 ft. min above average grade at Façade
Porch Frontages	Min. 6 ft. clear depth, excluding rails, pillars, columns or other features
Shopfront Frontages	12 in. – 24 in. knee wall required at Frontage
Façade Variety	No Façade may exist more than once in a Block Face or within view of the same Façade

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

PUD-R

TABLE 4.3.1-L DISTRICT STANDARDS:
PLANNED UNIT DEVELOPMENT RESIDENTIAL DISTRICT

Building Standards (continued)

Roof Type & Pitch

Flat	NP
Shed	P at rear only and if ridge is attached to an exterior Building wall; except for porches, stoops or dormers which may have a shed roof anywhere on the Building.
Hip	P
Gable	P
Pitch	6:12 – 14:12, except for shed roofs which may be 3:12 – 14:12 and except roof pitch may match the primary roof pitch of an existing Building that is less than 6:12

Roof Design

Eaves shall extend no less than nine inches beyond the supporting walls.

Gable end rakes shall overhang at least six inches.

Eaves and rakes on Accessory Buildings and dormers shall overhang at least six inches.

Soffits shall be placed perpendicular to the Building wall, not sloping in plane with the roof (except for gable end rakes).

Building Materials

Brick	P	Authentic stucco over masonry	P
Natural stone	P	Exposed concrete	NP
Wood	P	Vinyl or Aluminum siding	NP
Cementitious siding	P	Corrugated and/or sheet metal	NP

Changes in Building Materials	Primary materials must continue alongside Elevations through 2 nd layer. Primary materials shall continue for entire length of all Facades facing a frontage. Any material changes must coincide with form, structural, or massing changes and shall not occur at outside corner of any such change.
Building Colors	Up to three (3) colors, including the natural color of any allowed materials, but not excluding trim
Foundation Cladding	Required ; brick or stone.
Porch Pier Cladding	Required ; brick or stone, with any space under Porch concealed by painted or stained latticework between piers.
Chimney Cladding	Required ; brick, natural stone, with material matching primary material of Façade

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

PUD-R

TABLE 4.3.1-L DISTRICT STANDARDS: PLANNED UNIT DEVELOPMENT RESIDENTIAL DISTRICT

Building Types

House	P	Commercial	NP
Duplex	P	Mixed Use	NP
Townhouse	P	Flex	NP
Small Multifamily	P	Mid-Rise	NP
Large Multifamily	P	Large Scale Commercial	NP
Live/Work	P	Civic	P

See Table 4.3.8.A (Principal Building Types - Summary) and Table 4.3.8.B (Principal Building Types - Specific Standards). For Development Parcels, see also Table 5.1.6 (Building Type Mix).

Vehicular Parking Requirements

Parking Location

	On-Street Parking	Off-Street Parking
All Vehicles	P	P in any Required Yard, unless specifically prohibited

Additional Parking Requirements

Off-Street Parking Surface	Asphalt, concrete, or another hard surface
Garage Location	P In 3 rd Layer only
Garage Design	Min. interior dimensions 10 ft. x 20 ft. per vehicle Parking space If Garage faces Street: max Garage door width 33% of total Garage + Façade width Garage must be detailed, finished, & designed like the rest of the Building with carriage house doors; max. Garage door width 9ft; each Garage door must have ornamental lighting fixture above it; min 2ft separation between Garage doors.
Driveway/ Vehicular Entrance Location	P in any Layer
Driveway/ Vehicular Entrance Maximum Width	10 ft. max in 1 st Layer if Residential; 24 ft. max in 1 st Layer if non-Residential, regardless if shared or not.
Parking Structure	P if Screen from Frontage by Liner Buildings
Parking Structure Pedestrian Exit Location	Via pedestrian access to Frontage

Bicycle Parking

See Section 4.3.13

Thoroughfare & Internal Drive Types*

*Applicable only to Development Parcels

See Article 5 (Development Parcel Standards) for additional requirements

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

PUD-R

**TABLE 4.3.1-L DISTRICT STANDARDS:
PLANNED UNIT DEVELOPMENT RESIDENTIAL DISTRICT**

Loading & Access

Off-Street Loading and Storage	Required for Large Multifamily Building per Table 4.3.14.b (Loading Requirements); P in 3 rd Layer only
Utility Box & Service Meter* Locations (*Not including water meters)	Required for Large Multifamily Building per Table 4.3.14.b (Loading Requirements); P in 3 rd Layer only
Off-Street Trash Receptacle Locations	P in 3 rd Layer only
Off-Street Dumpster Locations	P in 3 rd Layer only, must be Screened from Frontage and fully enclosed on 3 sides and enclosed on the 4 th side with self-closing gate
Drive- Through Locations	P in 3 rd Layer only

Non-Building Components

	1st Layer	2 nd Layer	3 rd Layer
HVAC Equipment, Utility, Service and Mechanical Equipment	NP	P if Screened from Frontage	P
Solar Panels	P if coplanar to and integrated into roof deign		P
Antennas & Satellite Equipment	P in 1 st or 2 nd Layer if such Layer is only possible location for satisfactory reception		P
Recreation or Paly Equipment	NP	NP	P
Animals Enclosures, Runs or Shelters	NP	NP	P
Swimming pools, Hot Tubs and Spas	NP	NP	P
Transmitting and/or receiving towers, or antennas and wind-generating machines	NP	NP	P

Signs

See Sign Standards in Article 7 (Sign Standards) and Table 7.12.B-1 (Sign Types - Summary) and Table 7.1.2.B-2 (Sign Types- Specific Standards)

Lighting

See Private Lighting Requirements in Section 4.3.17 and Table 4.3.17.B (Private Lighting Standards)

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

PUD-R

**TABLE 4.3.1-L DISTRICT STANDARDS:
PLANNED UNIT DEVELOPMENT RESIDENTIAL DISTRICT**

Private Landscaping and Fencing Landscaping

Required if 1st Layer $\geq$ 3ft, 30% of 1st Layer must be landscaped, with continuous shrubs along foundation at Façade and additionally if 1st Layer $\geq$ 15 ft, sod, and 1 tree per 50 ft. of Frontage, width, planted in 1st Layer. Landscaping must comply with Section 4.3.16.

Walls & Fencing

Height	3.5 - 4 ft max at Frontage, otherwise 6 ft max; height measured from avg. undisturbed grade of Adjacent property at property line
Construction	Finished side must face Adjacent property, Thoroughfare, Path, Passage or Waterbody
Maintenance	Must be well maintained, in upright condition and free of missing or broken parts and graffiti.

Materials

Natural Wood	P at sides and rear only	Chain Link	P at sides and rear only
Brick, Natural Stone, or Stucco over Masonry	P	Barbed/ Razor/ Concertina Wire	NP
Wrought Iron or Aluminum	P	Exposed or Painted Aggregate Concrete	NP
Vinyl	NP	Smooth or Split-faced Block	NP

Additional Standards

Pedestrian Connections through to Adjacent Neighborhoods or Uses	Required
Locations of Retaining Walls	P within required Yards, per Section 4.3.10 If supporting grade 8 ft. or higher than property line, must be set back 10 ft. from property line

Screens, Street-Screens & Buffers

Height	At Frontage or Adjacent to Civic Space	Not at Frontage or Adjacent to Civic Space
Wall Screen/Street-Screen Height	3.5 ft. to 5 ft.	5ft. to 6ft; Minimum 6ft. for Dumpsters and Trash Receptacles
Fence Screen/ Street-Screen Height	NP	5ft. to 6ft. for Dumpsters and Trash Receptacles
Hedge Screen/ Street-Screen Height	3 ft. to 5 ft at installation	5ft. to 6ft. at installation

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

PUD-R

TABLE 4.3.1-L DISTRICT STANDARDS:
PLANNED UNIT DEVELOPMENT RESIDENTIAL DISTRICT

Materials

Wall Screen or Street-Screen	Brick, Natural Stone or Stucco over Masonry
Fence Screen or Street-Screen	Natural Wood, painted or unpainted
Hedge Screen or Street-Screen	Evergreen plants with min. 80% opacity

Additional Standards

Non-Residential & Multi-Family Residential Screen. Street Screen Adjacent to or across Thoroughfare from Non-Family Residential	NR
Screening of Parking, Loading Areas, Service Areas, Outdoor Storage, Drive-Throughs, Trash Receptacle/Dumpsters, HVAC and other equipment Screened from Frontage, Civic Space and Adjacent Property	Required ; except at Driveways: Parking Lots and Parking Areas must be Screened From Frontage and Civic Space by Building or Street-Screen; Parking Structures must be Screened from Frontages by Liner Buildings; Otherwise, Screening must be by Building, wall, hedge or fence at Frontage or Building wall, hedge or fence not at Frontage or Adjacent to Civic Space.
Rooftop Antenna Screening and HVAC, Mechanical and other Equipment Screening	Required ; must be Screened from Frontage and Civic Space by Building Parapet or other Building element
Self-Storage Warehouse Screening	N/A (not permitted in District)
Street-Screen Location	2 nd Layer
Parcel Buffer	Section 4.3.11.H
Project Buffer	Section 5.8

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

PUD-MU

TABLE 4.3.1-M DISTRICT STANDARDS: PLANNED UNIT DEVELOPMENT – MIXED USE

General Description

This District allows utilization of the Planned Unit Development process under TCA Section 13-4-310, implementation of the Comprehensive Plan, and review and approval of a Master PUD Development Plan that complies with these standards and establishes them and other standards as entitlements for a property, including a customized combination of permitted Uses, Building Types, Private Frontage Types, Setbacks and Yards, and Thoroughfares and Internal Drives.

Specifically, this District is intended for Commercial, Office, Mixed Use, and Multifamily Uses on sites with sufficient existing infrastructure, services, and utilities available for a proposed Development. Development in this District (a) is walkable and provides a diverse mixture of housing choices and Building Types, (b) is necessary to implement an is consistent with the Comprehensive Plan, (c) cannot under any circumstances, plan, or design conform to one or more of the other Districts and standards therefore due to its necessary and intrinsic Use or size or form, (d) provides an innovative plan and design, (e) is harmonious with both the subject property and Adjacent property, (f) promotes quality and environmentally sensitive planning and design by taking advantage of special site characteristics, locations, and land uses, (g) provides Civic Space, (h) is the best use of the site consistent with the goals of protecting and enhancing the natural environment. There are specific Development standards provided for this District, which may be supplemented by additional standards approved in the applicable Final Master PUD Development Plan. The Planning Commission may determine that a specific PUD-MU Master Plan is consistent with the future land use map of this Comprehensive Plan.



ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

PUD-MU

**TABLE 4.3.1-M DISTRICT STANDARDS:
PLANNED UNIT DEVELOPMENT – MIXED USE**

Density / Floor Area Ratio (FAR)

**Applicable only to Development Parcels*

12 Density Units per acre max

Parcel Size

Parcel Size Min. more than 10 gross acres

BLOCK SIZE*

**Applicable only to Development Parcels*

Block Perimeter 2000 ft. max or 3000 ft max if a parking structure provided within Block

Private Frontage Types

Common Yard	NP	Stepfront	P
Porch	NP	Shopfront	P
Fence	NP	Gallery	P
Terrace/Lightwell	P	Arcade	P
Forecourt	P	Officefront	P
Stoop	P		

See Table 4.3.7.A (Private Frontage Types)

Civic Space Types*

**Applicable only to Development Parcels*

Natural Area	NP	Playground	P
Green	NP	Sport Field	NP
Square	P	Community Garden	P
Plaza	P	Pocket Park	P

See Table 5.3.3.A (Civic Space Types - Summary)

Permitted Uses

See Table 4.3.9.A-1 (Building, Lot & Building Site Principal Use), Table 4.3.9.A-2 (Building, Lot & Building Site Accessory Uses), and Table 4.3.9.A-3 (Building, Lot & Building Site Temporary Uses). For Development Parcels, see also Table 5.1.6 (Principal Use Mix).

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

PUD-MU

**TABLE 4.3.1-M DISTRICT STANDARDS:
PLANNED UNIT DEVELOPMENT – MIXED USE**

Number of Buildings Per Lot or Building Site					
Principal Building		1 max			
Accessory Buildings		1 max			
Lot Occupation					
Lot/ Building Site Width		18 ft. min; 180 ft. max; except for Townhouses, 18-24 ft. for single Townhouse unit attached to other Townhouse units or 18 -24 ft. per Townhouse unit X number of attached Townhouse units on single Lot or Building Site, with max of 6 units; 100 ft. max. for small Multifamily Building. Large Scale Commercial: 600 ft. max			
Frontage Buildout		60% min.			
Lot/ Building Site Area		NR			
Impervious Surface Coverage		100% max			
Lot/ Building Site Enfrontment		Must enfront a vehicular Thoroughfare or Internal Drive, except ≤ 20% of the Lots / Building Sites within a Development Parcel may Enfront a Pedestrian Path, Passage, pedestrian walkway or water body if such Lots / Building Sites have legal and physical vehicular access to a vehicular Thoroughfare via Driveway or Easement.			
Lot/ Building Site Access		All lots must have legal and physical vehicular access to a vehicular Thoroughfare or Internal drive via Driveway or Easement.			
Setbacks / Yards					
Setbacks / Yards – Principal Building			Setbacks / Yards – Accessory Building		
Front Setback / Yard, Principal Frontage	0 – 20 ft.	A	Front Setback / Yard, Principal Frontage	40 ft. max. from rear property line.	E
Front Setback / Yard, Secondary Frontage	0 – 20 ft.	B	Side Setback / Yard	0 ft. min.	F
Side Setback / Yard, each side	0 ft. min. for attached Buildings; Otherwise, 10-24 ft.	C	Rear Setback / Yard	3 ft. max	G
Rear Setback	NR	D			

If the District abuts property zoned for Residential Uses that is not included within the District, all Buildings shall be setback as follows:

- Where the property is zoned, but not currently utilized, for Residential purposes, a distance equal to the setback established for the Residential District.
- Where property is currently utilized for Residential purposes, a distance equal to the lesser of (i) the present average setback of properties located 200 feet from the nearest point on the subject property and (ii) twice the minimum setback established for the CD-4C District.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

PUD-MU

**TABLE 4.3.1-M DISTRICT STANDARDS:
PLANNED UNIT DEVELOPMENT – MIXED USE**

Building Standards

Building Height*

Principal Building	One story greater than maximum height permitted in adjacent character district, or as determined by the Planning Commission based on proposed use and site conditions
Accessory Building	2 Stories max or as determined by the Planning Commission based on proposed use and site conditions

*Stories/ Height do not include Attics and Basements, chimneys, flagpoles, towers, spires, belfries, parapet walls, aerials, or antennas. Any Building exceeding 35 feet in height must obtain approval from stipulations made by the Fire Department in accordance with the above cited codes shall be required. *

*The Fire Department may stipulate special fire measures in accordance with National Fire Protection Association and International Building Code criteria as a condition of approval of such Structure. In such instance stipulations made by the Fire Department in accordance to with the above cited codes shall be required. *

Ceiling Height

May not exceed 14 ft. from finished floor to finished ceiling, except for first floor Commercial, Office, Retail/Personal Service, or Accommodation/ Lodging Use, which must be a minimum of 11 ft. with a maximum of 25 ft.

Building Composition

Vertical Composition	Each Principal Building must have an identifiable Base Middle & Cap
Finished Floor Level	Residential: 18 in. – 48 in. above finished grade at Façade Non-Residential & Mixed Use: 48 in. max. above finished grade at Façade.

Façade

Main Entrance	Main Entrance must be in Façade of Principal Frontages. If Shop Frontage at corner Main Entrance may be at Principal Frontage, or at corner.
Façade Position	Parallel to straight Frontage Line or to tangent of curved Frontage Line
Façade & Façade Element Design Proportions	Must be vertically proportioned
Blank Walls	NP at Frontage
Façade Articulation	A Façade greater than 100 ft. in width must be differentiated so that it appears to be comprised of two or more Adjacent Buildings, by dividing such Façade into two segments each of which includes a separate entrance and (1) differs from each of the other segments with respect to all of the following: (a) a change in shape, sill, and header height, detail, size, spacing, rhythm, and muntin pattern of windows; (b) a change of Building or cornice height; (c) a change in cornice details; (d) a change of wall material or wall color; a change in trim courses and other horizontal elements; (e) a change in dormer or balcony design, if any, and (f) providing or changing pilasters, columns, or other Façade elements; and (2) is composed with a defined center and edges. (See Illustration 4.3.5.A-3)
Façade Openings	Façade windows, and/or doors spaced $\leq$ 20 ft. apart In Stories above first Façade openings must be $\leq$ 50% of the total Façade area
Façade Glazing	Non-Shopfront: 20% – 60% of total ground floor Facade area. Shopfront: min. 50% of total ground floor Facade area; min. 20% of total Façade area on upper floors and secondary elevations.
Window Shape	Square or vertical in proportion, except transoms
Window Alignment	Upper floor windows and other features must be aligned with those of first floor

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

Window Types	Except in Shopfront or Gallery Frontage, and except for Transoms and sidelights, Windows in Facade and 1 st & 2 nd Layers must be single-hung, double-hung, casement or awning types. In Stories above first, Façade openings must be ≤ 50% of total Façade area.
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PUD-MU TABLE 4.3.1-M DISTRICT STANDARDS: PLANNED UNIT DEVELOPMENT – MIXED USE

Building Standards (Continued)

Façade (Continued)

Window Glazing Material	Clear glass is Required for all Elevations
Window Trim in 1 st Layer	Min. 4 in. trim with sill and top plate if siding surrounding window; soldier course above lintel and rollock course below sill if brick or stone surrounds window
Shutters	If any, must be functional and proportioned to cover half of window width from each side or entire window width, with shutter dogs
Façade Window Sill Height	If Residential: 5 ft. min above average grade at Façade
Porch Frontages	Min. 6 ft. clear depth, excluding rails, pillars, columns or other features
Shopfront Frontages	12 in. – 24 in. knee wall required at Frontage
Façade Variety	No Façade may exist more than once in a Block Face

Roof Type & Pitch

Flat	P
Shed	P at rear only and if ridge is attached to an exterior Building wall; except for porches, stoops or dormers which may have a shed roof anywhere on the Building.
Hip	P
Gable	P
Pitch	6:12 – 14:12, except for shed roofs which may be 3:12 – 14:12 and except roof pitch may match the primary roof pitch of an existing Building that is less than 6:12

Roof Design

Eaves shall extend no less than nine inches beyond the supporting walls.

Gable end rakes shall overhang at least six inches.

Eaves and rakes on Accessory Buildings and dormers shall overhang at least six inches.

Soffits shall be placed perpendicular to the Building wall, not sloping in plane with the roof (except for gable end rakes).

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

PUD-MU

**TABLE 4.3.1-M DISTRICT STANDARDS:
PLANNED UNIT DEVELOPMENT – MIXED USE**

Building Materials

	Brick	P	Authentic stucco over masonry	P
	Natural stone	P	Exposed concrete	NP
	Wood	P	Vinyl or Aluminum siding	NP
	Cementitious siding	P	Corrugated and/or sheet metal	NP
Changes in Building Materials	Primary materials must continue alongside Elevations through 2 nd layer. Primary materials shall continue for entire length of all Facades facing a frontage. Any material changes must coincide with form, structural, or massing changes and shall not occur at outside corner of any such change.			
Building Colors	Up to three (3) colors, including the natural color of any allowed materials, but not excluding trim			
Foundation Cladding	Required; brick or stone.			
Porch Pier Cladding	Required; brick or stone, with any space under Porch concealed by painted or stained latticework between piers.			
Chimney Cladding	Required; brick, natural stone, with material matching primary material of Façade			

Building Types

House	P	Commercial	P
Duplex	P	Mixed Use	P
Townhouse	P	Flex	P
Small Multifamily	P	Mid-Rise	P
Large Multifamily	P	Large Scale Commercial	P
Live/Work	P	Civic	P

See **Table 4.3.8.A (Principal Building Types - Summary)** and **Table 4.3.8.B (Principal Building Types - Specific Standards)**. For Development Parcels, see also **Table 5.1.6 Building Type Mix**.

Additional Parking Requirements

Off-Street Parking Surface	Asphalt, concrete, or another hard surface
Garage Location	P In 3 rd Layer only
Garage Design	Min. interior dimensions 10 ft. x 20 ft. per vehicle Parking space If Garage faces Street: max Garage door width 33% of total Garage + Façade width Garage must be detailed, finished, & designed like the rest of the Building with carriage house doors; max. Garage door width 9ft; each Garage door must have ornamental lighting fixture above it; min 2ft separation between Garage doors.
Driveway/ Vehicular Entrance Location	P in any Layer
Driveway/ Vehicular Entrance Maximum Width	24 ft. max width, regardless if shared or not.
Parking Structure	P if Screen from Frontage by Liner Buildings
Parking Structure Pedestrian Exit Location	Via pedestrian access to Frontage

Vehicular Parking Requirements**Parking Location**

	On-Street Parking	Off-Street Parking
All Vehicles	P	P in 3 rd Layer only

Bicycle Parking

See Section 4.3.13

Thoroughfare & Internal Drive Types*

**Applicable only to Development Parcels*

See Article 5 (Development Parcel Standards) for additional requirements

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

PUD-MU

TABLE 4.3.1-M DISTRICT STANDARDS: PLANNED UNIT DEVELOPMENT – MIXED USE

Loading & Access

Off-Street Loading and Storage	Required per Table 4.3.14.b (Loading Requirements); P in 3 rd Layer only
Utility Box & Service Meter* Locations (*Not including water meters)	Required per Table 4.3.14.b (Loading Requirements); P in 3 rd Layer only
Off-Street Trash Receptacle Locations	P in 3 rd Layer only
Off-Street Dumpster Locations	P in 3 rd Layer only, must be Screened from Frontage and fully enclosed on 3 sides and enclosed on the 4 th side with self-closing gate
Drive- Through Locations	P in 3 rd Layer only

Non-Building Components

	1st Layer	2 nd Layer	3 rd Layer
HVAC Equipment, Utility, Service and Mechanical Equipment	NP	P if Screened from Frontage	P
Solar Panels	P if coplanar to and integrated into roof deign		P
Antennas & Satellite Equipment	P in 1 st or 2 nd Layer if such Layer is only possible location for satisfactory reception		P
Recreation or Play Equipment	NP	NP	P
Animals Enclosures, Runs or Shelters	NP	NP	P
Swimming pools, Hot Tubs and Spas	NP	NP	P
Transmitting and/or receiving towers, or antennas and wind- generating machines	NP	NP	P

Signs

See Sign Standards in Article 7 (Sign Standards) and Table 7.12.B-1 (Sign Types - Summary) and Table 7.1.2.B-2 (Sign Types- Specific Standards)

Lighting

See Private Lighting Requirements in Section 4.3.17 and Table 4.3.17.B (Private Lighting Standards)

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

PUD-MU

**TABLE 4.3.1-M DISTRICT STANDARDS:
PLANNED UNIT DEVELOPMENT – MIXED USE**

Private Landscaping and Fencing

Landscaping

Required if 1st Layer $\geq$ 3ft, 30% of 1st Layer must be landscaped, with continuous shrubs along foundation at Façade and additionally if 1st Layer $\geq$ 15 ft, sod, and 1 tree per 50 ft. of Frontage, width, planted in 1st Layer. Landscaping must comply with Section 4.3.16.

NA in front if $\leq$ 3 ft front setback.

Additionally, any Yard Adjacent to a Street must be landscaped and maintained for a distance of 10 ft. from Lot Line or Building Site Line Adjacent to the Street, except for portions that adjoin Lots or Building Sites in Residential Use, which shall be so landscaped and maintained for the full width or depth of the required Yards within 25 feet of adjoining Lot Lines or Building Site Lines.

Side Yards Adjacent to Lots or Building Sites in Residential Use shall be similarly landscaped and maintained for their full required minimum width. No such required landscaped area shall be used for Parking or loading.

Walls & Fencing

Height	3.5 - 4 ft max at Frontage, otherwise 6 ft max; height measured from avg. undisturbed grade of Adjacent property at property line
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Construction	Finished side must face Adjacent property, Thoroughfare, Path, Passage or Waterbody
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Maintenance	Must be well maintained, in upright condition and free of missing or broken parts and graffiti.
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Materials

Natural Wood	P at sides and rear only	Chain Link	P at sides and rear only
Brick, Natural Stone, or Stucco over Masonry	P	Barbed/ Razor/ Concertina Wire	NP
Wrought Iron or Aluminum	P	Exposed or Painted Aggregate Concrete	NP
Vinyl	NP	Smooth or Split-faced Block	NP

Additional Standards

Pedestrian Connections through to Adjacent Neighborhoods or Uses	Required
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Locations of Retaining Walls	P within required Yards, per Section 4.3.10 If supporting grade 8 ft. or higher than grade at interior edge of a required Buffer, must be set back 10 ft. from such interior edge.
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ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

PUD-MU

**TABLE 4.3.1-M DISTRICT STANDARDS:
PLANNED UNIT DEVELOPMENT – MIXED USE**

Screens, Street-Screens & Buffers

Height

	At Frontage or Adjacent to Civic Space	Not at Frontage or Adjacent to Civic Space
Wall Screen/Street-Screen Height	3.5 ft. to 5 ft.	5ft. to 6ft; Minimum 6ft. for Dumpsters and Trash Receptacles
Fence Screen/ Street-Screen Height	NP	5ft. to 6ft. for Dumpsters and Trash Receptacles
Hedge Screen/ Street-Screen Height	3 ft. to 5 ft at installation	5ft. to 6ft. at installation

Materials

Wall Screen or Street-Screen	Brick, Natural Stone or Stucco over Masonry
Fence Screen or Street-Screen	Natural Wood, painted or unpainted
Hedge Screen or Street-Screen	Evergreen plants with min. 80% opacity

Additional Standards

Non-Residential & Multi-Family Residential Screen. Street Screen Adjacent to or across Thoroughfare from Non-Family Residential	NR
Screening of Parking, Loading Areas, Service Areas, Outdoor Storage, Drive-Throughs, Trash Receptacle/Dumpsters, HVAC and other equipment Screened from Frontage, Civic Space and Adjacent Property	Required; except at Driveways: Parking Lots and Parking Areas must be Screened From Frontage and Civic Space by Building or Street-Screen; Parking Structures must be Screened from Frontages by Liner Buildings; Otherwise, Screening must be by Building, wall, hedge or fence at Frontage or Building wall, hedge or fence not at Frontage or Adjacent to Civic Space.
Rooftop Antenna Screening and HVAC, Mechanical and other Equipment Screening	Required; must be Screened from Frontage and Civic Space by Building Parapet or other Building element
Self-Storage Warehouse Screening	N/A (not permitted in District)
Street-Screen Location	2 nd Layer
Parcel Buffer	Section 4.3.11.H
Project Buffer	Section 5.8

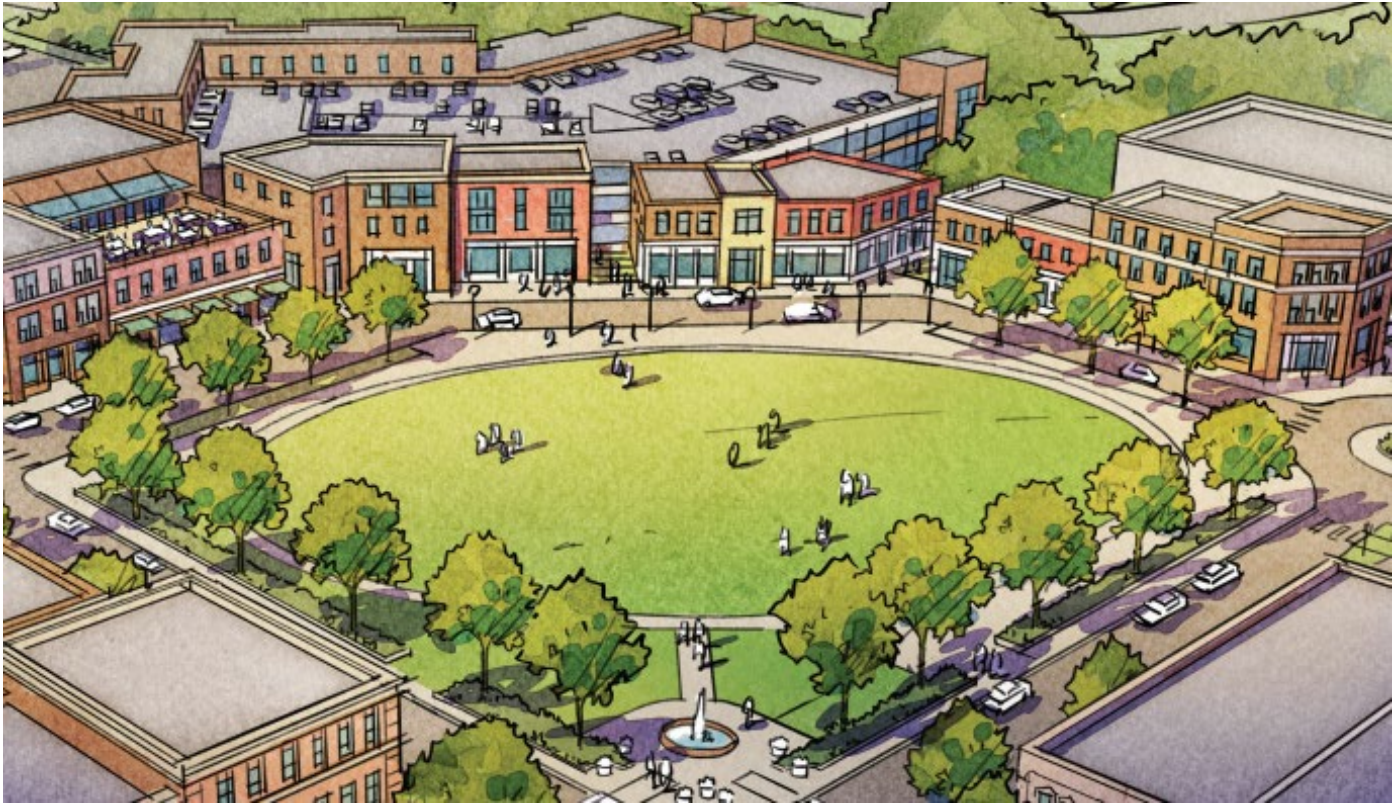
Market Analysis

The Planning Commission may require a market analysis for any proposed PUD-MU Development. The market analysis will be utilized, among other things, to determine the impact of the proposed Development on the long-range Development of the commercial land use in the Columbia area, to determine the timing of any proposed Development, to limit the extent of the PUD-Mu; to ascertain the effect of a proposed Development upon other lands used or zoned for similar purposes; to form a basis for evaluating the estimated effects on traffic, and other purposes which assist in an understanding of the public interest pertinent in the evaluation of a proposed Development. The market analysis, if required, shall be provided by the landholder and the landowner shall provide any other economic data or analysis as may be reasonably requested by the Planning Commission or City Council.

**OTHER DISTRICTS FROM PREVIOUS ORDINANCES TO BE
REGULATED BY THEIR PUD APPROVALS.**

CV

TABLE 4.3.1-N DISTRICT STANDARDS:
CIVIC DISTRICT



General Description

Civic District (CV) is assigned to areas designed for Civic purposes. These may be one or more Civic Space Types allowed within or Adjacent to any specific Character District or Special District, as well as sites dedicated to significant Buildings to be used for Civic purposes, such as City Halls, Post Offices, Libraries, Places of Assembly, Places of Worship, and community centers. This District is appropriate to all future land use Character Areas described in the Comprehensive Plan as determined by the Planning Commission.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CV

TABLE 4.3.1-N DISTRICT STANDARDS:
CIVIC DISTRICT

Density / Floor Area Ratio (FAR)	*Applicable only to Development Parcels
NR	

BLOCK SIZE*	*Applicable only to Development Parcels
Block Perimeter	NR

Private Frontage Types
NR

Civic Space Types*		*Applicable only to Development Parcels	
Natural Area	P	Playground	P
Green	P	Sport Field	NP
Square	P	Community Garden	P
Plaza	P	Pocket Park	P

See Table 5.3.3.A (Civic Space Types - Summary)

Permitted Uses
See Table 4.3.9.A-1 (Building, Lot & Building Site Principal Use), Table 4.3.9.A-2 (Building, Lot & Building Site Accessory Uses), and Table 4.3.9.A-3 (Building, Lot & Building Site Temporary Uses). For Development Parcels, see also Table 5.1.7 (Principal Use Mix).

Number of Buildings Per Lot or Building Site	
Principal Building	1 max
Accessory Buildings	1 max

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CV **TABLE 4.3.1-N DISTRICT STANDARDS:**
CIVIC DISTRICT

Lot Occupation		
Lot/ Building Site Width		NR
Frontage Buildout		NR
Lot/ Building Site Area		NR
Impervious Surface Coverage		80% max
Lot/ Building Site Enfrontment		Must enfront a vehicular Thoroughfare or Internal Drive, Pedestrian Path, Passage, pedestrian walkway or water body.
Lot/ Building Site Access		All lots must have legal and physical vehicular access to a vehicular Thoroughfare or Internal drive via Driveway or Easement.
Setbacks / Yards		
Setbacks / Yards – Principal Building		
Front Setback / Yard, Principal Frontage	0 ft. min., 50 ft. of Lot Depth max.	A
Front Setback / Yard, Secondary Frontage	0 ft. min	B
Side Setback / Yard	0 ft. min	
Rear Setback / Yard	0 ft. min	
Building Standards		
Building Height*		
Principal Building	20 ft. higher than maximum Height of any Adjacent Character District, max.	
Accessory Building	Not to exceed Principal Building Height	
*Stories/ Height do not include Attics and Basements, chimneys, flagpoles, towers, spires, belfries, parapet walls, aerials, or antennas. Any Building exceeding 35 feet in height must obtain approval from stipulations made by the Fire Department in accordance with the above cited codes shall be required. * *The Fire Department may stipulate special fire measures in accordance with National Fire Protection Association and International Building Code criteria as a condition of approval of such Structure. In such instance stipulations made by the Fire Department in accordance to with the above cited codes shall be required. *		
Ceiling Height		
14 ft. min. 1 st floor; 10 ft. min. other floors.		
Building Composition		
Vertical Composition	Each Principal Building must have an identifiable Base Middle & Cap	
Finished Floor Level	NR	

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CV

TABLE 4.3.1-N DISTRICT STANDARDS:
CIVIC DISTRICT

Building Standards (Continued)	
Façade	
Main Entrance	Main Entrance must be in Façade of Principal Frontages.
Façade Position	Parallel to straight Frontage Line or to tangent of curved Frontage Line
Façade & Façade Element Design Proportions	Must be vertically proportioned
Blank Walls	NP at Frontage
Façade Articulation	NR
Façade Openings	In Stories above first, Façade openings must be $\leq 50\%$ of the total Façade area
Façade Glazing	20% min. - 60% max.
Window Shape	Square or vertical in proportion, except transoms
Window Alignment	Upper floor windows and other features must be aligned with those of first floor
Window Types	Except in Shopfront or Gallery Frontage, and except for Transoms and sidelights, Windows in Façade and 1 st & 2 nd Layers must be single-hung, double-hung, casement or awning types. In Stories above first, Façade openings must be $\leq 50\%$ of total Façade area.
Window Glazing Material	Clear glass is Required for all Elevations
Window Trim in 1 st Layer	Min. 4 in. trim with sill and top plate if siding surrounding window; soldier course above lintel and rollock course below sill if brick or stone surrounds window
Shutters	If any, must be functional and proportioned to cover half of window width from each side or entire window width, with shutter dogs
Façade Window Sill Height	NR
Porch Frontages	NR
Shopfront Frontages	NR
Façade Variety	No Façade may exist more than once in a Block Face or within view of the same Façade
Roof Type & Pitch	
Flat	P
Shed	P at rear only and if ridge is attached to an exterior Building wall; except for porches, stoops or dormers which may have a shed roof anywhere on the Building.
Hip	P
Gable	P
Pitch	6:12 – 14:12, except for shed roofs which may be 3:12 – 14:12 and except roof pitch may match the primary roof pitch of an existing Building that is less than 6:12
Roof Design	
Eaves shall extend no less than nine inches beyond the supporting walls.	
Gable end rakes shall overhang at least six inches.	
Eaves and rakes on Accessory Buildings and dormers shall overhang at least six inches.	
Soffits shall be placed perpendicular to the Building wall, not sloping in plane with the roof (except for gable end rakes).	

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CV

**TABLE 4.3.1-N DISTRICT STANDARDS:
CIVIC DISTRICT**

Building Standards (Continued)				
Building Materials				
	Brick	P	Authentic stucco over	P
	Natural stone	P	Exposed concrete	NP
	Wood	P	Vinyl or Aluminum	NP
	Cementitious siding	P	Corrugated and/or	NP
Changes in Building Materials	Primary materials must continue alongside Elevations through 2 nd layer. Primary materials shall continue for entire length of all Facades facing a frontage. Any material changes must coincide with form, structural, or massing changes and shall not occur at outside corner of any such change.			
Building Colors	Up to three (3) colors, including the natural color of any allowed materials, but not excluding trim			
Foundation Cladding	Required; brick or stone.			
Porch Pier Cladding	Required; brick or stone, with any space under Porch concealed by painted or stained latticework between piers.			
Chimney Cladding	Required; brick, natural stone, with material matching primary material of Façade			

Building Types			
House	NP	Commercial	NP
Duplex	NP	Mixed Use	NP
Townhouse	NP	Flex	NP
Small Multifamily	NP	Mid-Rise	NP
Large Multifamily	NP	Large Scale Commercial	NP
Live/Work	NP	Civic	P

See Table 4.3.8.A (Principal Building Types - Summary) and Table 4.3.8.B (Principal Building Types - Specific Standards). For Development Parcels, see also Table 5.1.6 (Building Type Mix).

Vehicular Parking Requirements			
Parking Location			
	On-Street Parking	Off-Street Parking	
Domestic Vehicles	P	P in 3 rd layer only, and in Driveway	
Recreational Vehicles	NP	P in 3 rd layer only, and in Driveway	
Heavy Equipment	NP	P in 3 rd layer only, and in Driveway	
Tractor trailers (including trailers for storage)	NP on-Street, except for delivery and Temporary Use of trailers	NP	
All Other Vehicles	NP	P in 3 rd Layer only, and in Driveway	

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CV

TABLE 4.3.1-N DISTRICT STANDARDS: CIVIC DISTRICT

Vehicular Parking Requirements (Continued)

Additional Parking Requirements

Off-Street Parking Surface	Prepared surface of gravel, asphalt, concrete, or another hard surface
Garage Location	P In 3 rd Layer only
Garage Design	Min. interior dimensions 10 ft. x 20 ft. per vehicle Parking space. If Garage faces Street: max Garage door width 33% of total Garage + Façade width. Garage must be detailed, finished, & designed like the rest of the Building with carriage house doors; max. Garage door width 9ft; each Garage door must have ornamental lighting fixture above it; min 2ft separation between Garage doors.
Driveway/ Vehicular Entrance Location	P in any Layer
Driveway/ Vehicular Entrance Maximum Width	24 ft. max in 1 st and 2 nd Layer
Parking Structure	P if Screen from Frontage by Liner Buildings
Parking Structure Pedestrian Exit Location	Via pedestrian access to Frontage

Bicycle Parking

See Section 4.3.13

Thoroughfare & Internal Drive Types*

*Applicable only to Development Parcels

See Article 5 (Development Parcel Standards) for additional requirements

Loading & Access

Off-Street Loading and Storage	P in 3 rd Layer only
Utility Box & Service Meter* Locations (*Not including water meters)	P in 3 rd Layer only
Off-Street Trash Receptacle Locations	P in 3 rd Layer only
Off-Street Dumpster Locations	P in 3 rd Layer only, must be Screened from Frontage and fully enclosed on 3 sides and enclosed on the 4 th side with self-closing gate
Drive- Through Locations	P in 3 rd Layer only

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CV

TABLE 4.3.1-N DISTRICT STANDARDS:
CIVIC DISTRICT

Non-Building Components

	1st Layer	2 nd Layer	3 rd Layer
HVAC Equipment, Utility, Service and Mechanical Equipment	NP	P if Screened from Frontage	P
Solar Panels	P if coplanar to and integrated into roof design		P
Antennas & Satellite Equipment	P in 1 st or 2 nd Layer if such Layer is only possible location for satisfactory reception		P
Recreation or Play Equipment	NP	NP	P
Animals Enclosures, Runs or Shelters	NP	NP	NP
Swimming pools, Hot Tubs and Spas	NP	NP	P
Transmitting and/or receiving towers, or antennas and wind-generating machines	NP	NP	P

Signs

See Sign Standards in Article 7 (Sign Standards) and Table 7.12.B-1 (Sign Types - Summary) and Table 7.1.2.B-2 (Sign Types- Specific Standards)

Lighting

See Private Lighting Requirements in Section 4.3.17 and Table 4.3.17.B (Private Lighting Standards)

Private Landscaping and Fencing

Landscaping

NR

Walls & Fencing (not including Screens)

Height	3.5 - 4 ft max at Frontage, otherwise 6 ft max; height measured from avg. undisturbed grade of Adjacent property at property line
Construction	Finished side must face Adjacent property, Thoroughfare, Path, Passage or Waterbody
Maintenance	Must be well maintained, in upright condition and free of missing or broken parts and graffiti.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CV

TABLE 4.3.1-N DISTRICT STANDARDS:
CIVIC DISTRICT

Private Landscaping and Fencing (Continued)

Materials

Natural Wood	P at sides and rear only	Chain Link	P at sides and rear only
Brick, Natural Stone, or Stucco over Masonry	P	Barbed/ Razor/ Concertina Wire	NP
Wrought Iron or Aluminum	P	Exposed or Painted Aggregate Concrete	NP
Vinyl	NP	Smooth or Split-faced Block	NP

Additional Standards

Pedestrian Connections through to Adjacent Neighborhoods or Uses	Required
Locations of Retaining Walls	P within required Yards, per Section 4.3.10 If supporting grade 8 ft. or higher than grade at interior edge of a required Buffer, must be set back 10 ft. from such interior edge.

Screens, Street-Screens & Buffers

Height

	At Frontage or Adjacent to Civic Space	Not at Frontage or Adjacent to Civic Space
Wall Screen/Street-Screen Height	3.5 ft. to 5 ft.	5ft. to 6ft; Minimum 6ft. for Dumpsters and Trash Receptacles
Fence Screen/ Street-Screen Height	NP	5ft. to 6ft. for Dumpsters and Trash Receptacles
Hedge Screen/ Street-Screen Height	3 ft. to 5 ft at installation	5ft. to 6ft. at installation

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CV

**TABLE 4.3.1-N DISTRICT STANDARDS:
CIVIC DISTRICT**

Private Landscaping and Fencing (Continued)

Materials

Wall Screen or Street-Screen	Brick, Natural Stone or Stucco over Masonry
Fence Screen or Street-Screen	Natural Wood, painted or unpainted
Hedge Screen or Street-Screen	Evergreen plants with min. 80% opacity

Additional Standards

Non-Residential & Multi-Family Residential Screen. Street Screen Adjacent to or across Thoroughfare from Non-Family Residential	NA
Screening of Parking, Loading Areas, Service Areas, Outdoor Storage, Drive-Throughs, Trash Receptacle/Dumpsters, HVAC and other equipment Screened from Frontage, Civic Space and Adjacent Property	Required; except at Driveways: Parking Lots and Parking Areas must be Screened From Frontage and Civic Space by Building or Street-Screen; Parking Structures must be Screened from Frontages by Liner Buildings; Otherwise, Screening must be by Building, wall, hedge or fence at Frontage or Building wall, hedge or fence not at Frontage or Adjacent to Civic Space.
Rooftop Antenna Screening and HVAC, Mechanical and other Equipment Screening	Required; must be Screened from Frontage and Civic Space by Building Parapet or other Building element
Self-Storage Warehouse Screening	N/A (not permitted in District)
Street-Screen Location	2 nd Layer

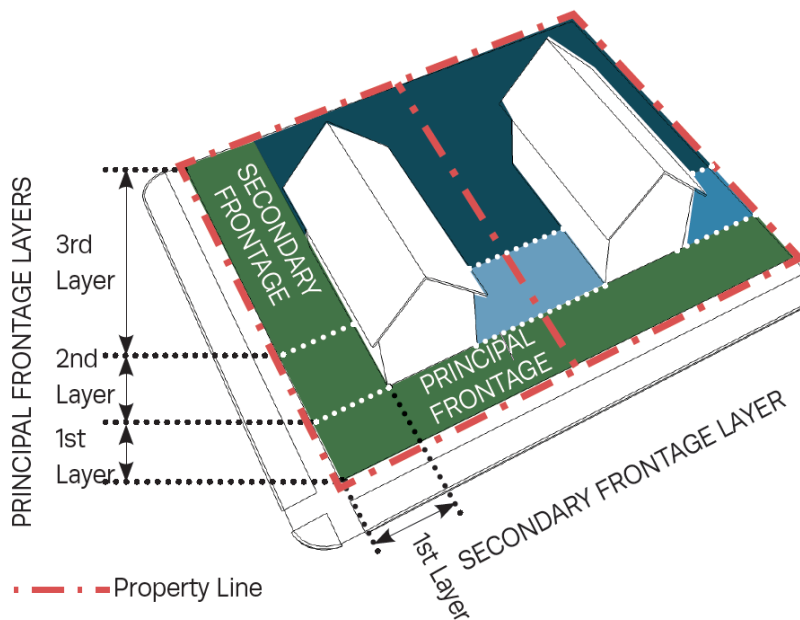
ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

4.3.3 LOTS & BUILDING SITES

A. Layers

1. Lots and Building Sites are comprised of three Layers, the First Layer, the Second Layer, and the Third Layer, as related to the Frontage(s), as shown in **Illustration 4.3.3.A (Layers)** and as defined in **Article 9 (Definitions)**.
2. Layers are used to regulate the placement of, Structures and Uses on a Lot or Building Site, as set forth in **Tables 4.3.1-A - 4.3.1-N (District Standards)**.
3. For Lots and Building Sites, which have both a Principal Frontage and Secondary Frontage(s), typically Corner Lots:
 - a. Standards and prescriptions for the First Layer apply to the First Layer as related to all Frontages, except for Through Lots and Building Sites where they are permitted by this Ordinance or exist as legal non-conforming lots of record and
 - b. Standards and prescriptions for the Second Layer pertain only to such Layers as related to the Principal Frontage.
4. Standards and prescriptions for the First Layer apply to a depth of (twenty) 20 feet as related to the secondary frontage of a Through Lot or Building Site which is parallel to the Principal Frontage.

ILLUSTRATION 4.3.3.A (LAYERS)



B. Dimensions

Lots and Building Sites within each District must be dimensioned according to Tables 4.3.1-A - 4.3.1-N (District Standards).

C. Enfrontment

Within all Districts, each Lot or Building Site must have Frontage along a Thoroughfare or Internal Drive, except as provided in Tables 4.3.1-A - 4.3.1-N (District Standards).

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

D. Through Lots

Through Lots and Building Sites are prohibited, except

1. Blocks entirely comprised of Civic Spaces;
 - a. Lots and Building Sites enfronting a roadway with a functional classification of Principal Arterial; and
 - b. Lots and Building Sites within 3,000 feet of and Interstate interchange.
2. In any case in which a Nonconforming Lot is a Through Lot or Building Site, or a Through Lot or Building Site is permitted by this Ordinance the Frontage and Front Setback regulations shall apply to both Frontages.
3. The Façade of each Principal Building located on a Through Lot and Building Site, where they are permitted by this Ordinance or exist as legal non-conforming lots of record, shall face the same Principal Frontage as Buildings on any adjacent Lot or Building Site. Where adjacent Lots and Building Sites are vacant, or the appropriate Principal Frontage cannot be determined, the Zoning Administrator shall determine which Frontage is the Principal Frontage, typically the roadway with the lesser functional classification.

E. Required Spaces or Areas

1. The Setback and Yard requirements in **Tables 4.3.1-A - 4.3.1-N (District Standards)** shall be applicable to each Lot, Building Site, or parcel of land
2. If required Setbacks and Required Yards shall be maintained and have no obstructions or Encroachments except as allowed in **Tables 4.3.1-A - 4.3.1-N (District Standards)**
3. Existing interior Lots or Building Sites may be permitted a reduction in required Rear Yard depth by Administrative Adjustment, subject to meeting the following:
 - a. The Lot must be located in a single District and not about another District
 - b. The Lot must be owned separately and individually from all other tracts of land, both on the Effective Date of this Ordinance and on the date of application for a Zoning Permit, if applicable.
 - c. For a Lot between 80 - 100 feet deep, the required Rear Yard may be reduced by the lesser of (i) 100 feet minus the depth of the Lot, or (ii) ten feet (10 ft.).

Example: if Lot is 95 ft. deep, the required Rear Yard may be reduced by five feet (5 ft.) [100 ft. – 95 ft. = 5 ft.], but if a Lot is 80 ft. deep, the required Rear Yard may only be reduced by ten feet (10 ft.).

- d. Within all Non-Residential Districts and for all Non-Residential Uses, interior Lots or Building Sites that are less than 80 ft. deep may be permitted a reduction in required Rear Yard depth to reduce the required Rear Yard depth to zero; however, if any Rear Yard is provided, the minimum required depth shall be 10 ft.
4. No Lot shall be divided or reduced so as to result in its area or dimensions not complying with the standards required by this Section 4.3.3, nor shall any Setback required for a Principal Building be included as part of a Setback required under this Ordinance for any other Building.
5. A minimum required Lot or Yard size for one Structure shall not be used in whole or in part as any part of a required Lot or Yard for a second Structure.
6. The required Lot or Yard for an existing Structure shall not be diminished below the minimum requirements of this Ordinance.
7. Where a Structure has zero clearance from an Adjacent Lot or Building Site, as defined in the International Building Code, at all points of attachment along the shared Lot Line or Building Site Line,

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

Buildings shall be separated from each other by fire-rated walls, as defined by the latest adopted version of the International Building Code and fire prevention codes, extending from footings to the underside of the roof deck without openings which would permit the spread of fire.

8. In addition to the requirements listed in paragraph 7 above, the following shall apply to common or Party Walls:
- A firewall shall bisect the line dividing each portion of the Building, Lot, or Building Site so that 1/2 of the firewall is held by each of the abutting properties.
 - If a firewall is destroyed or damaged by fire or other casualty, any owner may restore said wall and if other owners thereafter make use of the wall, they shall contribute to the cost of the restoration thereof in proportion to such use without prejudice, however, to the right of any such owner to call for a larger contribution from the others under applicable law requiring liability for negligent or willful acts and omissions.
 - Each abutter who may share in the ownership of any firewall shall have an Easement on the property of other owner(s) for the purpose of reconstruction and protection of remaining property from the elements.

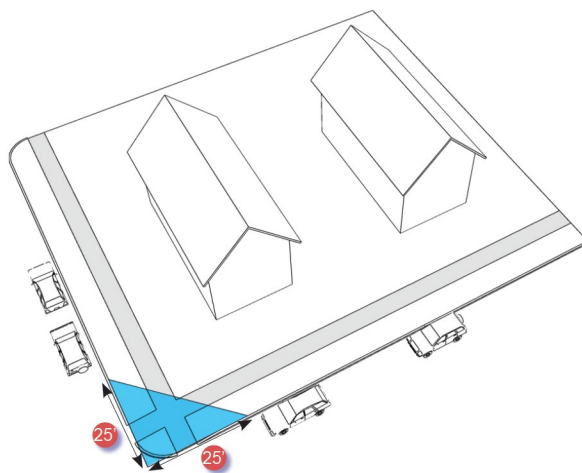
F. Lots in Two Districts

Where a District boundary divides a Lot, Building Site, or parcel in a single ownership of record at the time when such line is adopted, regulations for the less restricted portion of such Lot, Building Site, or parcel may extend not more than 30 feet into the more restricted portion, provided that the Lot, Building Site, or parcel has Frontage on a Thoroughfare or Internal Drive in a less restricted District.

G. Visibility

- On a Corner Lot or Building Site, no Fence, Wall, hedge, Structure, or planting more than 3 feet in height, measured above the Curb level shall be erected, placed, or maintained within the triangular area formed by the intersecting lines of the curbs of the enfronting Thoroughfares or Internal Drives and a line drawn between points along such Thoroughfare or Internal Drive Lines that are 25 feet distant from their point of intersection.

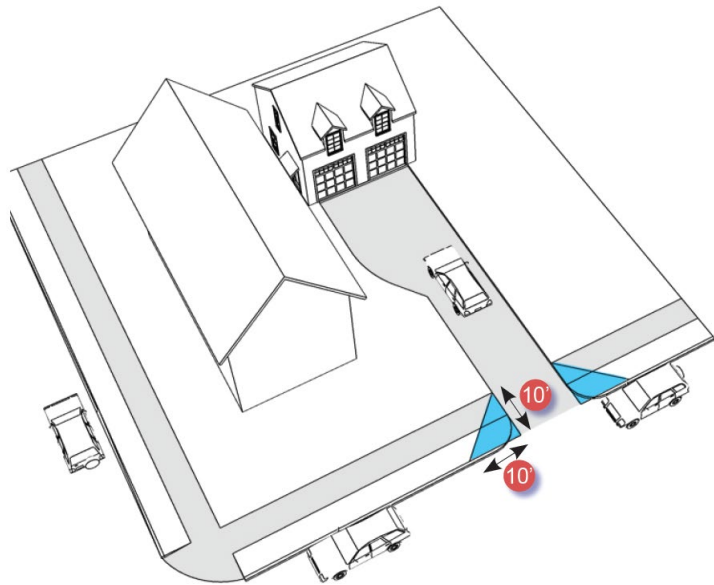
ILLUSTRATION 4.3.3.G.1 (SIGHT TRIANGLE - CORNER)



ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

2. For any Driveway, no Fence, Wall, hedge, Structure, or planting more than 3 feet in height, measured above the Curb level, shall be erected, placed, or maintained within the triangular area formed on each side of the Driveway by a line drawn between a point that is 10 feet from the back of the curb and extends 10 feet to its point of intersection with the Thoroughfare or Internal Drive.

ILLUSTRATION 4.3.3.G.2 (SIGHT TRIANGLE - DRIVEWAY)



H. Access Requirements.

1. No Building shall be erected on a Lot or Building Site that does not Abut an open public Thoroughfare, an approved private Thoroughfare or Internal Drive, or an approved private vehicular access Easement.
2. Where access is provided by an approved private street or Easement, an Easement for the same is required for each Lot, Building Site, or tract of land across which it traverses.
3. Additional access requirements may be found in Sections 4.3.12, 4.3.14, and 6.7, and elsewhere in this Ordinance, including City adopted Access Management Plan.

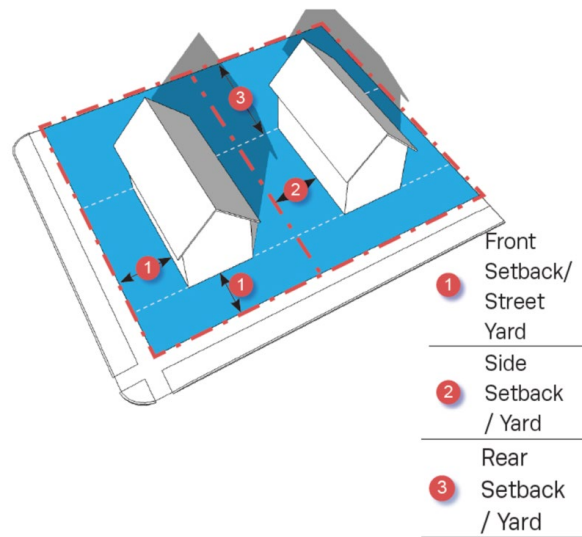
4.3.4 BUILDING PLACEMENT & NUMBER

A. Building Placement

1. Every Building shall be located on a Lot or Building Site. Buildings shall be located in relation to the boundaries of their Lots or Building Sites and shall comply with the Setback or Yard standards within each District according to **Tables 4.3.1-A - 4.3.1-N (District Standards)**.
2. To accommodate slopes over ten percent (10%), relief from front Setback or Yard requirements may be granted by Administrative Adjustment by the Zoning Administrator.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

ILLUSTRATION 4.3.4.A SETBACK /YARD DESIGNATIONS

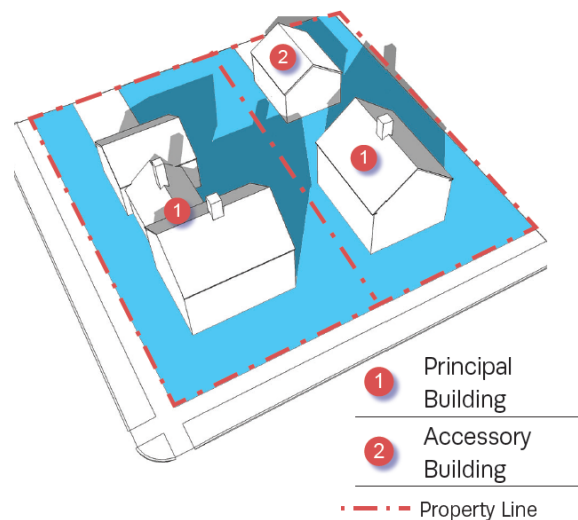


B. Principal Buildings

Within each District:

1. The number of Principal Buildings on each Lot or Building Site shall not exceed that indicated in **Tables 4.3.1-A - 4.3.1-U (District Standards)** and
2. Principal Buildings shall be oriented and situated as specified in **Tables 4.3.1-A - 4.3.1-N (District Standards)** and illustrated in **Illustration 4.3.4.B (Principal Building / Accessory Building)**.

ILLUSTRATION 4.3.4.B PRINCIPAL BUILDING / ACCESSORY BUILDING



ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

C. Accessory Buildings & Accessory Structures

1. Within each District:
 - a. The number of Accessory Buildings on each Lot or Building Site must not exceed that indicated in **Tables 4.3.1-A - 4.3.1-N (District Standards)**; and
2. Any such Accessory Buildings must be located as specified in **Tables 4.3.1-A - 4.3.1-N (District Standards)** as applicable and illustrated generally in **Illustration 4.3.4.B (Principal Building / Accessory Building)**.
3. Except within Civic Districts and Agricultural uses, Accessory Buildings or other Structures may not be erected on a Lot or Building Site on which there is no Principal Building.
4. Where Accessory Buildings and Structures are permitted:
 - a. Except within Civic Districts and CD-2, the footprint of a detached Accessory Building shall not exceed 60% of the building footprint of the Principal Building on the Lot;
 - b. Any Accessory Building shall be located in the Layer indicated in **Tables 4.3.1-A - 4.3.1-N (District Standards)**;
 - c. Except for Communications Towers, transmitting and/or receiving towers or antennas and wind turbines shall not be located in the First Layer or Second Layer; and
 - d. Guy wires or any other structural supports shall not Encroach upon any right-of-way, Adjoining property, Easements, Setback, or Yard areas.
5. An Accessory Building or Accessory Structure may be detached from or constructed as a structural part of a Principal Building, including those attached by means of a breezeway or a roofed passageway with open or latticed sides. If constructed as a structural part of a Principal Building, its walls shall be regarded as walls of the Principal Building in applying the standards and requirements of this Ordinance.
6. Where more than one Building exists or is proposed to be constructed on a single Lot or Building Site, all zoning requirements applicable to Principal Buildings or Accessory Buildings, respectively shall be applicable to each of such Buildings.

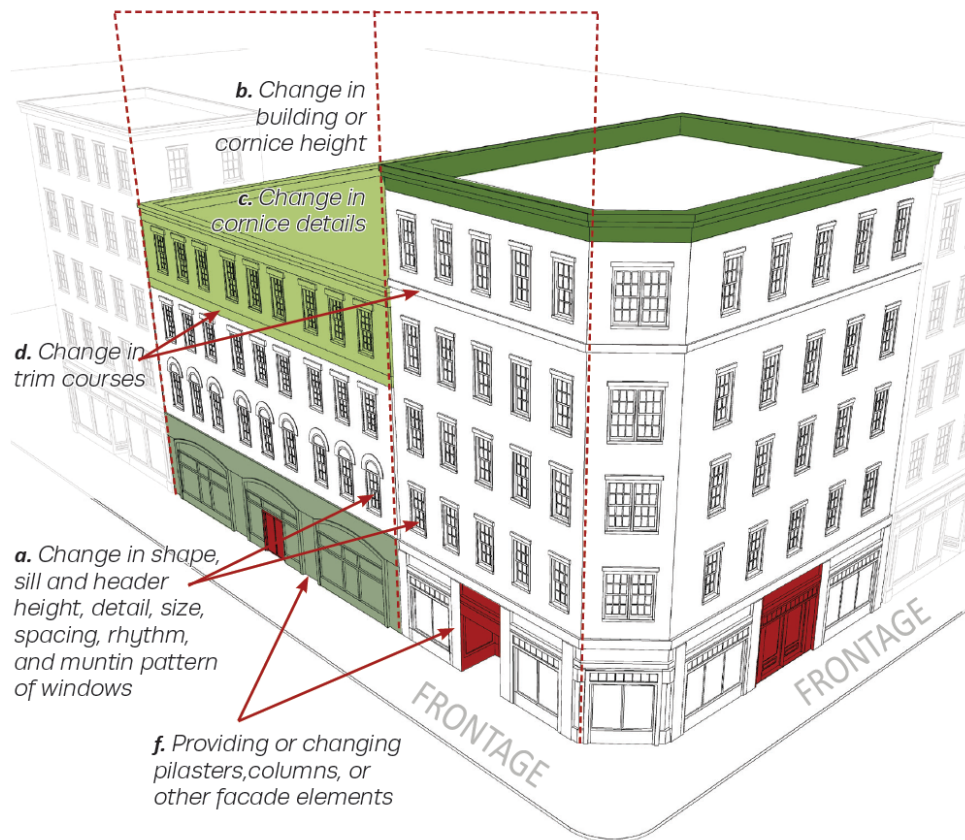
4.3.5 BUILDING STANDARDS

A. Facade

1. Principal Building Facades shall conform to **Tables 4.3.1-A - 4.3.1-N (District Standards)**.
2. The Façade of the Principal Building shall be built along the minimum percentage of the Front Lot Line or Building Site Line width at the Setback or back Street Yard line, specified as Frontage Buildout on **Tables 4.3.1-A - 4.3.1-N (District Standards)**. A Streetscreen may be substituted for a Façade for up to twenty percent (20%) of the applicable Frontage Buildout requirement. Required driveways may be subtracted from the Front Lot Line or Building Site Line where Alley access or cross access with an adjacent property is not available.
3. Principal Building Facades shall be articulated as shown in **(See Illustration 4.3.5.A-3)**.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

ILLUSTRATION 4.3.5.A-3 (FACADE ARTICULATION)



B. Building Design & Materials

The design and exterior materials of Buildings shall conform to Tables 4.3.1-A - 4.3.1-U (District Standards).

C. Building Height, Ceiling Height & Ground Floor Finish Elevation

Building Height, ceiling height, and ground floor finish elevation must conform to Tables 4.3.1-A - 4.3.1-N (District Standards).

D. Roof Type & Pitch

Building roof type and pitch must conform to Tables 4.3.1-A - 4.3.1-N (District Standards). See Illustration 4.3.5.D-1 (Roof Types) and Illustration 4.3.5.D-2 (Roof Pitch).

E. Vertical Composition

Vertical composition must conform to Tables 4.3.1-A - 4.3.1-N (District Standards) provided that:

1. The discernable Base of all new structures, where regulated, must be at least 8 (eight) inches high; and
2. The discernable Base of all new non-residential structures, where regulated, must be at least twelve (12) inches high.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

ILLUSTRATION 4.3.5.D-1 (ROOF TYPES)

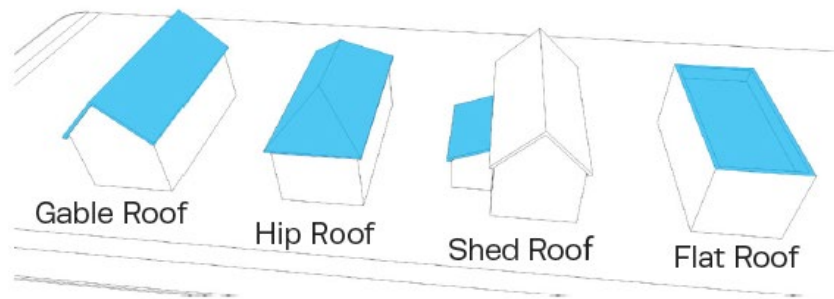
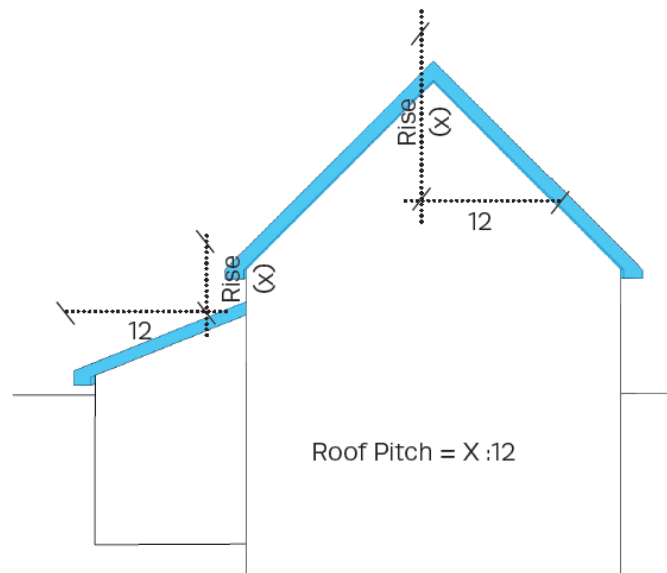


ILLUSTRATION 4.3.5.D-2 (ROOF PITCH)



4.3.6 FENCES & WALLS

A. Fences and non-Building Walls

1. Fences and non-Building Walls shall not:
 - a. Encroach a public right-of-way, including Alleys, or in areas reserved or dedicated for public right-of-way;
 - b. Obstruct sight distance visibility of intersections or driveways;
 - c. Block access within an access easement; or
 - d. Block access to fire hydrants, mechanical equipment, or utility equipment.
2. A finished side of all fences shall face off site
3. Within each District, Fences and non-Building Walls may be installed within Public Utility and Drainage Easements where permitted by the City Engineer, but shall not block or divert water

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

flow onto or off of any other property. Fences erected within Public Utility and Drainage Easements may be removed by the City or utility providers at any time without notice.

B. Height

1. Within each District, Fences and non-Building Walls must comply with the height standards in **Tables 4.3.1-A - 4.3.1-N (District Standards)**.
2. Fence and wall height shall be measured from the lowest adjacent grade to the top of the fence or wall. The use of a berm to increase a fence or wall height is prohibited, unless used in accordance with Section 8.1.2 Transition Areas Abutting Residential Lots.

C. Material

1. Within each District, Fences and non-Building Walls must comply with the material standards in **Tables 4.3.1-A - 4.3.1-N (District Standards)**.
2. Where chain link is permitted, it shall be coated with dark green or black material; plastic or metal slats in chain link are prohibited.

D. Retaining Walls

1. Within required yards on individual single-family CD-2, CD-3L, and CD-3 Lots and Building Sites, retaining walls shall conform to the limitations at Table 4.3.10 Encroachments.
2. In all other districts, and within CD-2, CD-3L, and CD-3 common areas and Civic Spaces, retaining walls shall conform to the following:
 - a. Retaining walls in CD-2, CD-3L, and CD-3 shall not exceed fifteen (15) feet in height.
 - (1) Where the overall grade change exceeds fifteen (15) feet, walls may be terraced with a minimum horizontal separation of ten (10) feet from face of wall to face of wall, provided no individual wall may exceed fifteen (15) feet in height.
 - (2) Where the overall grade change exceeds ten (10) feet, walls shall be terraced with a minimum horizontal separation of six (6) feet, provided no individual wall may exceed fifteen (15) feet in height.
 - b. Retaining walls in all other districts shall not exceed twenty (20) feet in height.
 - (1) Where the overall grade change exceeds twenty (20) feet, walls may be terraced with a minimum horizontal separation of ten (10) feet from face of wall to face of wall, provided no individual wall may exceed fifteen (20) feet in height.
 - (2) Where the overall grade change exceeds ten (10) feet, walls shall be terraced with a minimum horizontal separation of six (6) feet, provided no individual wall may exceed twenty (20) feet in height. The Zoning Administrator may approve a waiver to this requirement if the City Engineer has determined that no other practicable or feasible alternatives exist; and, the Zoning Administrator determines that there will be no harmful impact to adjacent property owners or the public
3. Each retaining wall shall be screened by a row of evergreen shrubs, planted every five feet on center, at the base of the wall. Shrubs shall be a minimum of 30 inches in height at the time of planting. The Zoning Administrator may permit alternative trees or groundcover which provide equivalent all-seasons screening.
4. Retaining walls shall be clad in brick, or stone. Where not visible from a Thoroughfare, Internal Drive, or Civic Space, stained or stamped concrete and split-face block are also permitted.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

4.3.7 PRIVATE FRONTAGE, BUILDING FORM & BUILDING TYPE; FLOOR ELEVATION

A. Private Frontage – General

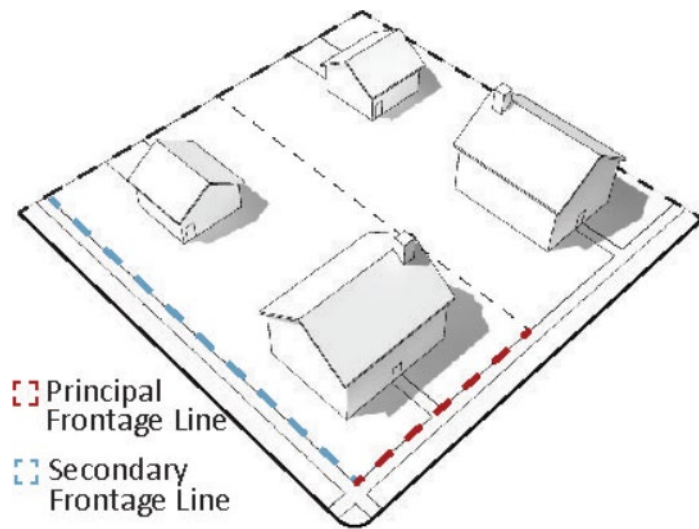
The Private Frontage of each Lot or Building Site must conform to and be allocated in accordance with Table 4.3.7.A (Private Frontage Types Summary) Table 4.3.7B (Private Frontage Types), and Tables 4.3.1-A - 4.3.1-N (District Standards).

B. Private Frontage – Corner Lots / Building Sites

Principal Buildings on Corner Lots or Building sites shall have two Private Frontages:

1. a Principal Frontage and
2. a Secondary Frontage(s), as illustrated generally in Illustration 4.3.7.B-2 (Frontage & Lot / Building Site Lines).

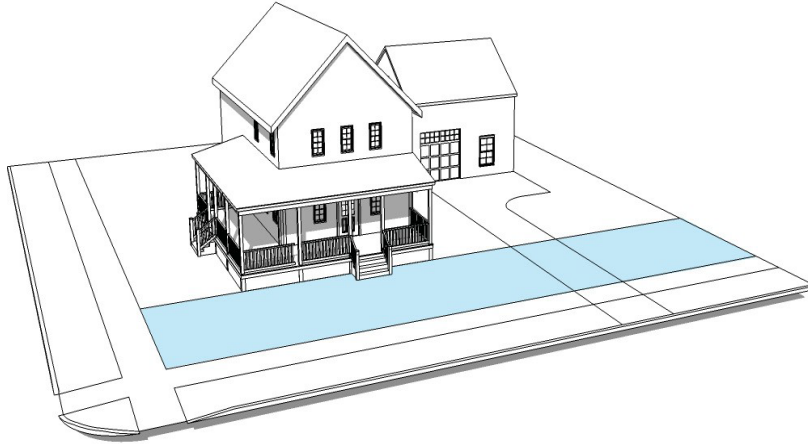
ILLUSTRATION 4.3.7.B-2 (FRONTAGE & LOT / BUILDING SITE LINES)



ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

COMMON YARD

TABLE 4.3.7.A PRIVATE FRONTAGE TYPES



Permitted Districts

CD-2

CD-3L

CD-3

CD-4

CD-4C

SD-MHP

PUD-R

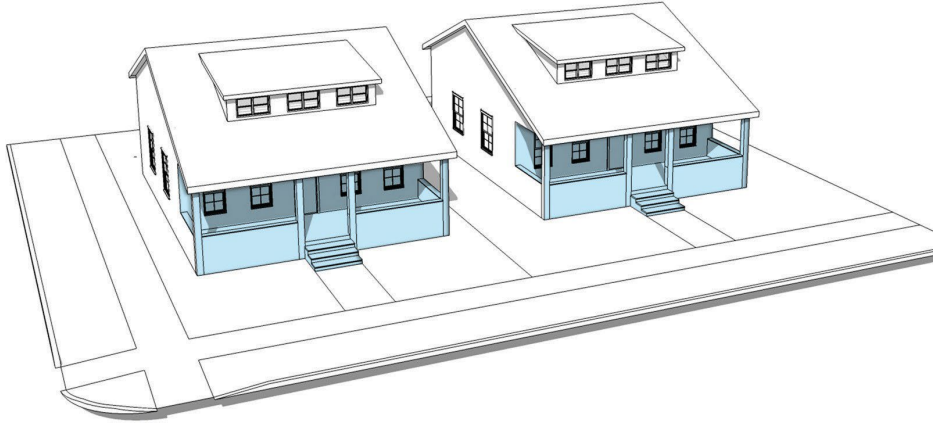
A planted Frontage wherein the Facade is set back substantially from the Frontage Line, and the Front Yard so created remains unfenced and is visually continuous with Adjacent yards, supporting a common landscape. This may be used with or without a Porch.



ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

PORCH

TABLE 4.3.7.A PRIVATE FRONTAGE TYPES



Permitted Districts

CD-2

CD-3L

CD-3

CD-4

CD-4C

SD-MHP

PUD-R

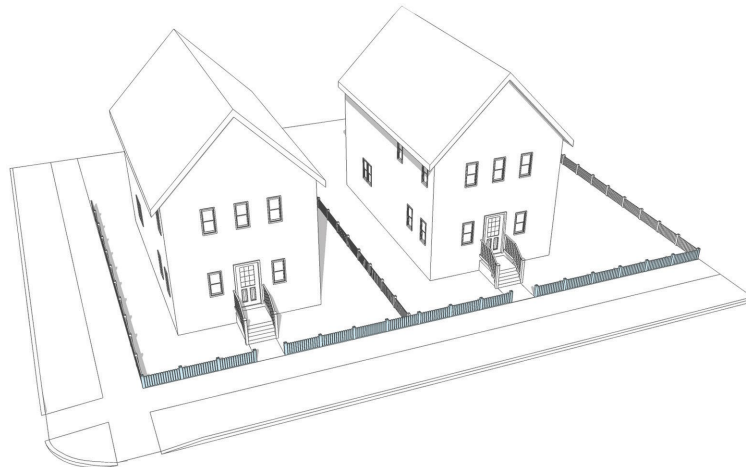
A planted Frontage wherein the Facade is set back from the Frontage Line with an attached exterior covered area large enough to accommodate outdoor furniture and/or gathering, which is permitted to Encroach into the Front Setback. This may be used with or without a Fence to maintain Thoroughfare / Internal Drive spatial definition.



ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

FENCE

TABLE 4.3.7.A PRIVATE FRONTAGE TYPES



Permitted Districts

CD-2

CD-3L

CD-3

CD-4

CD-4C

SD-MHP

PUD-R

A Frontage wherein the Facade is set back from the Frontage Line, and the Front Yard so created is separated from the Public Frontage by a Fence. This may be used with or without a Porch



ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

TERRACE/LIGHTWELL

TABLE 4.3.7.A PRIVATE FRONTAGE TYPES



Permitted Districts

CD-4

CD-4C

CD-5

CD-5C

PUD-R

PUD-MU

A Frontage wherein the Facade is set back from the Frontage Line by an elevated landing and a sunken Lightwell. This type buffers Residential Uses from urban Sidewalks with the first Story elevated from the Sidewalk for privacy, and may allow for activation of space below grade. An exterior stair and landing provides access to the entrance. This type is recommended for ground-floor Residential Use.



ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

FORECOURT TABLE 4.3.7.A PRIVATE FRONTAGE TYPES



Permitted Districts

CD-4	CD-4C	CD-5	CD-5C	PUD-R	PUD-MU
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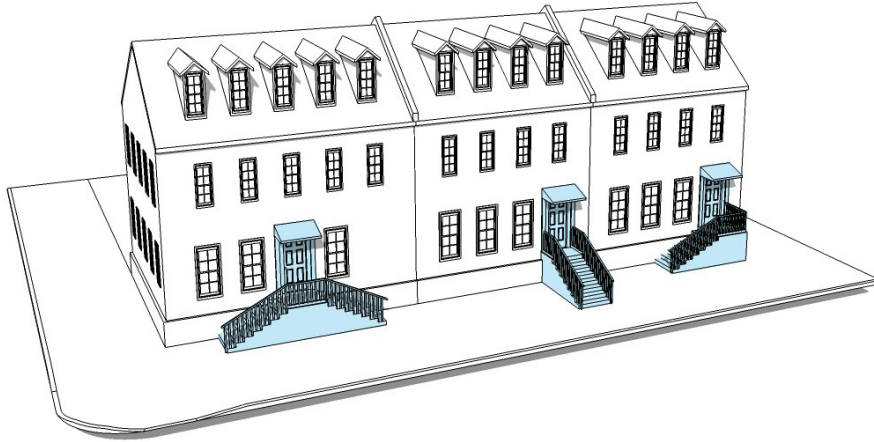
A Frontage wherein a portion of the Facade is close to the Frontage Line and the central portion is set back creating a gathering space for residents or additional shopping or restaurant seating area within Retail / Personal Service / Repair / Art / Artisan Use areas. This type should be used sparingly and may be used in conjunction with other Frontage types.



ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

STOOP

TABLE 4.3.7.A PRIVATE FRONTAGE TYPES



Permitted Districts

CD-3

CD-4

CD-4C

CD-5

CD-5C

SD-MUP

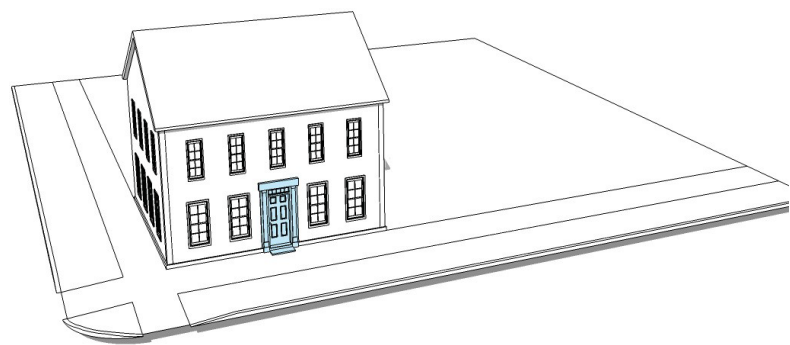
PUD-MU

PUD-R

A Frontage wherein the Facade is aligned close to the Frontage Line with the first Story elevated from the Sidewalk for privacy. An exterior stair and landing provide access to the entrance. This type is recommended for ground-floor Residential Use.



STEPFRONT TABLE 4.3.7.A PRIVATE FRONTAGE TYPES



Permitted Districts

CD-4	CD-5	PUD-R	PUD-MU
------	------	-------	--------

A Frontage wherein the Facade is aligned very close to the Frontage Line. The entrance is usually an exterior single step without a landing. This type is recommended for ground floor Residential / Retail / Personal Service / Art / Artisan Use.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

SHOPFRONT

TABLE 4.3.7.A PRIVATE FRONTAGE TYPES



Permitted Districts

CD-4

CD-4C

CD-5

CD-5C

SD-LI

PUD-MU

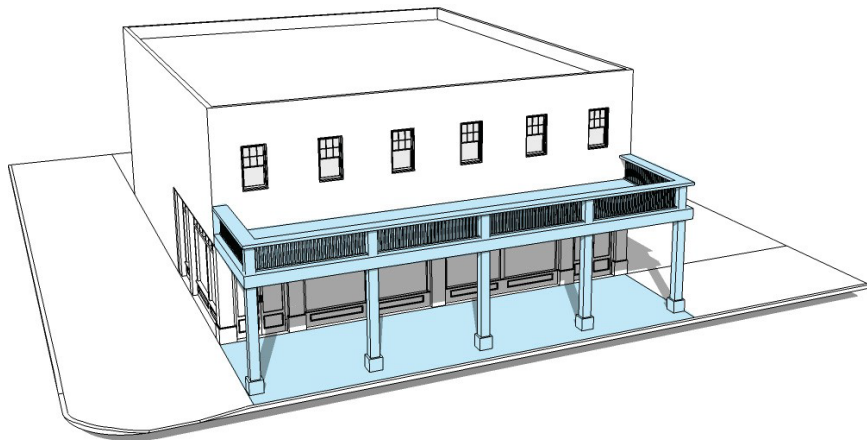
PUD-R

A Frontage conventional for Retail / Personal Service / Repair / Art / Artisan Use, wherein the Facade is aligned close to or at the Frontage Line with the Building entrance at Sidewalk grade. This Frontage has substantial glazing at the Sidewalk level and may include an awning overlapping the Sidewalk.



ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

GALLERY TABLE 4.3.7.A PRIVATE FRONTAGE TYPES



Permitted Districts

CD-4

CD-4C

CD-5

CD-5C

SD-INT

PUD-R

PUD-MU

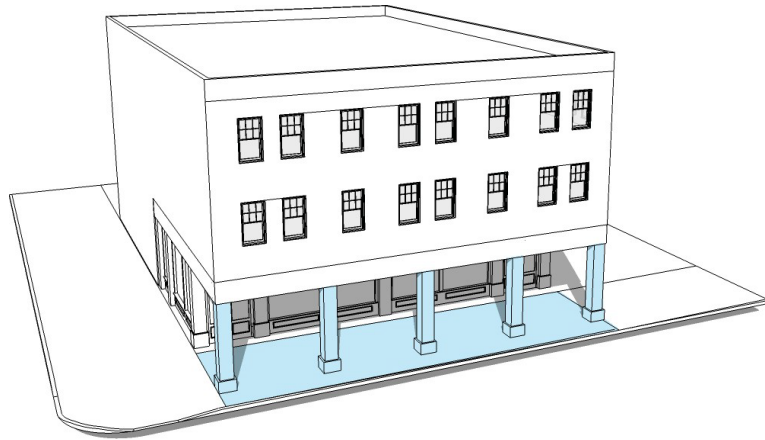
A Private Frontage conventional for Retail / Personal Service / Repair / Art / Artisan Use, wherein the Facade is aligned close to the Frontage Line with an attached cantilevered shed or lightweight colonnade overlapping the Sidewalk.



ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

ARCADE

TABLE 4.3.7.A PRIVATE FRONTAGE TYPES



Permitted Districts

CD-5

CD-5C

PUD-MU

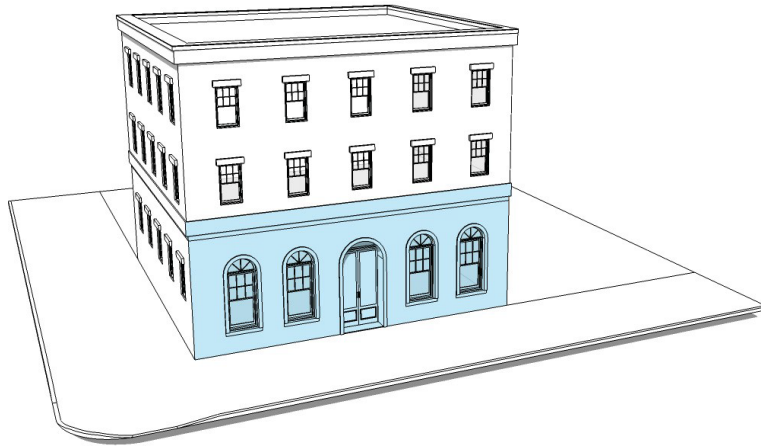
A Private Frontage conventional for Retail / Personal Service / Repair / Art / Artisan Use, wherein a colonnade supporting habitable space in one or more upper levels overlaps the Sidewalk, while the Façade at the first level remains at the Frontage Line.



ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

OFFICEFRONT

TABLE 4.3.7.A PRIVATE FRONTAGE TYPES



Permitted Districts

CD-4

CD-4C

CD-5

CD-5C

PUD-MU

A Frontage wherein the Facade is aligned close to or at the Frontage Line with the Building entrance at or above Sidewalk grade. This type is conventional for Office Use. It may have a substantial glazing on the Facade.



ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

4.3.8 BUILDING TYPES

A. General

Principal Buildings must be of one or more of the Principal Building Types specified for such District in **Table 4.3.8.A (Principal Building Types - Summary)** and **Table 4.3.8.B (Principal Building Types – Specific Standards)**. The mix of Building Types on each Development Parcel is further regulated under Section 5.1.10.

TABLE 4.3.8.A PRINCIPAL BUILDING TYPES - SUMMARY

PRINCIPAL BUILDING TYPE		PERMITTED DISTRICTS	
MANUFACTURED HOME			
A detached one family dwelling constructed as a single self-contained unit and mounted on a single chassis transportable after fabrication on its own wheels or detachable wheels, as further defined in Article 9 (Definitions).		SD-MHP	
House			
	A medium-sized Building designed as a Single-Family Detached Dwelling, situated on a medium or large Lot or Building Site with an Edgeyard, often shared with an Accessory Building in the rear.	CD-2	CD-3L
		CD-3	CD-4
		CD-4C	PUD-R
		CD-5	
		Duplex	
	A small- to medium- sized Principal Building, other than a manufactured housing unit, situated on a small-to-medium sized Lot or Building Site with an Edgeyard or Sideyard, which Building contains two Dwelling Units with separate entrances at least one of which faces the Thoroughfare or Internal Drive. Both Dwelling Units, whether side-by-side, front-to-back, or over-and-under, are contained within a single Building Massing.	CD-3	CD-4
		CD-5	PUD-R
		CD-4C	

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

Townhouse



A Principal Building in a collection of very narrow- to medium-sized attached Buildings on contiguous Lots or Building Sites with a Rearyard (or Sideyard if an end unit), which collection consists of side-by-side Dwelling Units with individual entries facing the Thoroughfare or Internal Drive. Each Building occupies the full Frontage Line of its Lot or Building Site and shares at least one party Wall with another Building of the same type.

CD-4	CD-4C
CD-5	CD-5C
SD-INT	PUD-R
PUD-MU	

Small Multi-Family Building



A Principal Building that incorporates between three (3) and six (6) side-by-side and/or horizontally stacked Dwelling Units, typically with one or more shared entries.

CD-4	CD-4C
CD-5	CD-5C
SD-LI	PUD-R
PUD-MU	SD-INT

Large Multi-Family Building



A Principal Building that incorporates between seven (7) and TWENTY-FOUR (24) side-by-side and/or horizontally stacked Dwelling Units, which may have one or more shared entries.

CD-4	CD-4C
CD-5	CD-5C
SD-LI	PUD-R
PUD-MU	SD-INT

Live/Work Building



A small- to medium-sized attached or detached Principal Building, which includes a flexible space for Commercial Use and an internally connected Residential Dwelling Unit above and/or behind the flexible space.

CD-4	CD-4C
CD-5	CD-5C
SD-LI	PUD-R
PUD-MU	SD-INT

Commercial Building



A small- to medium-sized attached or detached non-Residential Building, typically designed to facilitate pedestrian-oriented Retail / Personal Service / Repair / Art / Artisan Uses and Office Uses.

CD-4	CD-4C
CD-5	CD-5C
SD-INT	PUD-MU

Mixed-Use Building



A typically attached Principal Building, which provides a vertical and/or horizontal mix of Uses typically designed to facilitate

CD-4	CD-4C
CD-5	CD-5C
PUD-MU	

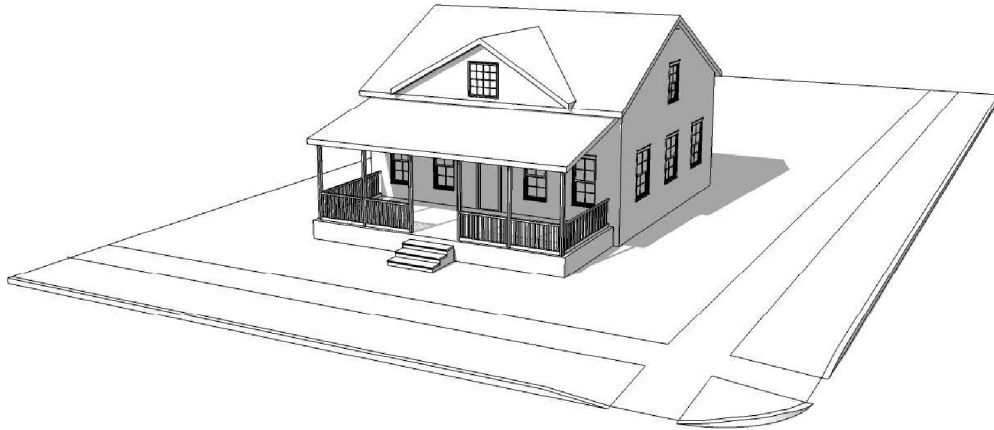
ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

	pedestrian-oriented Retail / Personal Service / Repair / Art / Artisan, Lodging, or Office Uses on the ground floor, with upper floors typically designed for Residential or Office Uses.		
	Flex Building A large footprint Principal Building designed to accommodate either a single Use or a vertical or horizontal mix of Uses.	CD-4 CD-5 SD-LI PUD-MU	CD-4C CD-5C SD-HI SD-INT
	Mid-Rise Building An attached or detached Building that may provide a vertical and/or horizontal mix of Uses, typically designed to facilitate pedestrian-oriented Retail/Personal Service, Lodging, Business/Commercial, or Office Uses on the ground floor, with upper floors typically designed for Residential or Office Uses.	CD-5 SD-LI	CD-5C PUD-MU
	Large-Scale Commercial Building A building of 50,000 square feet or more that is most commonly associated with a large-format retailer. It has in-line Retail or Liner Buildings along the front of the Building.	CD-4C SD-INT PUDMU	CD-5C SD-LI
	Civic Building A medium- to large-sized attached or detached Principal Building, which is operated by a not-for-profit organization or governmental entity dedicated to Civic activities, and is designed to stand apart from its surroundings due to the specialized nature of its Civic purpose. Examples include Libraries, Places of Worship, Places of Assembly, Courthouses, schools, centers of government, Performing Arts Venues, and Museums. Civic Buildings are often the	CD-2 CD-3 CD-4C CD-5C SD-HI PUD-R	CD-3L CD-4 CD-5 SD-LI SD-INT PUD-MU CV

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

HOUSE

TABLE 4.3.8.B PRINCIPAL BUILDING TYPES
SPECIFIC STANDARDS



Permitted Districts

CD-2 CD-3L CD-3 CD-4 CD-4C PUD-R
CD-5

General Description

A medium-sized Building designed as a Single-Family Detached Dwelling having an Edgeyard yard type that may be shared with an Accessory Building in the backyard. This Building type typically incorporates a single Residential unit.

Lot/Building Site

Width Per District Lot/Building Site Width

Number of Units

Units per Building 1 max.

Allowed Private Frontages

Common Yard	P
Fence	P
Porch	P
Stoop	P

Building Size & Massing

Height

2 Stories max

Width

Not Regulated

Pedestrian Access

Main Entrance Principal Frontage
Location

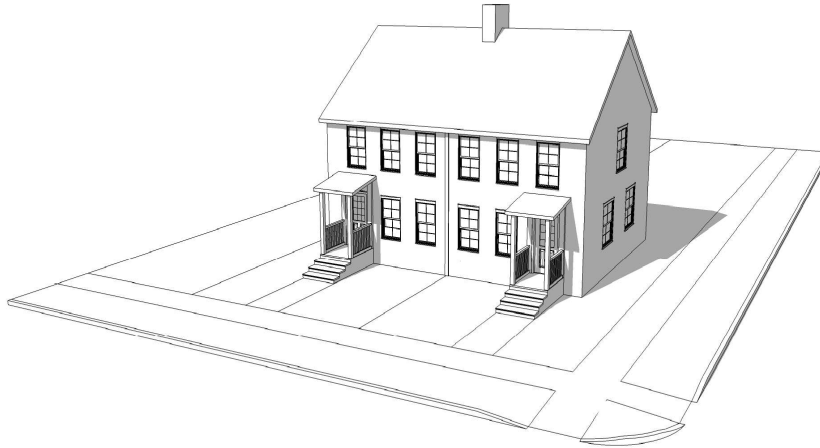
Vehicle Access & Parking

Parking may be accessed from an Alley, side Thoroughfare or Front Thoroughfare

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

DUPLEX

TABLE 4.3.8.B PRINCIPAL BUILDING TYPES
SPECIFIC STANDARDS



Permitted Districts

CD-3 CD-4 CD-4C PUD-R

General Description

A small- to medium- sized Principal Building, other than a manufactured housing unit, situated on a small-to-medium sized Lot or Building Site with an Edgeyard or Sideyard, which Building contains two Dwelling Units with separate entrances at least one of which faces the Thoroughfare or Internal Drive. Both Dwelling Units, whether side-by-side, front-to-back, or over-and-under, are contained within a single Building Massing.

Lot/Building Site

Width	Per District lot/Building site width
-------	--------------------------------------

Number of Units

Units / Building	2
------------------	---

Allowed Private Frontages

Common Yard	P
Fence	P
Porch	P
Stoop	P

Building Size & Massing

Height

2 Stories max

Width

Per District standards

Pedestrian Access

Main Entrance Location	Principal Frontage
------------------------	--------------------

Vehicle Access & Parking

Parking may be accessed from an Alley, side Thoroughfare or front Thoroughfare

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

TOWNHOUSE

TABLE 4.3.8.B PRINCIPAL BUILDING TYPES
SPECIFIC STANDARDS



Permitted Districts

CD-4 CD-4C CD-5 CD-5C PUD-R

General Description

A Principal Building in a collection of very narrow- to medium-sized attached Buildings on contiguous Lots or Building Sites with a Rearyard (or Sideyard if an end unit), which collection consists of side-by-side Dwelling Units with individual entries facing the Thoroughfare or Internal Drive. Each Building occupies the full Frontage Line of its Lot or Building Site and shares at least one Party Wall with another Building of the same type.

Lot/Building Site

Width	Per District lot/building site width
-------	--------------------------------------

Number of Units

Units per townhouse	1 max
Number of townhomes connected to another	3 min – 8 max

Allowed Private Frontages

Porch	P
Stoop	P
Terrace/Lightwell	P

Building Size & Massing

Height

Per Character District Hight Standards

Width

18 ft. min per Townhouse

Pedestrian Access

Main Entrance Location	Principal Frontage
------------------------	--------------------

Vehicle Access & Parking

Parking may be accessed from an Alley, side Thoroughfare, or front Thoroughfare

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

SMALL MULTIFAMILY

TABLE 4.3.8.B PRINCIPAL BUILDING TYPES
SPECIFIC STANDARDS



Permitted Districts

CD-4 CD-4C CD-5 CD-5C SD-LI PUD-R
PU-MU

General Description

A Principal Building that incorporates three (3) to six (6) side-by-side, and/or, horizontally stacked Dwelling Units typically with one or more shared entries.

Lot/Building Site

Width	Per district lot/building site width
-------	--------------------------------------

Number of Units

Units per building	3 min
--------------------	-------

Allowed Private Frontages

Porch	P
Stoop	P
Forecourt	P
Terrace/ Lightwell	P

Building Size & Massing

Height

Per District height standards

Width

Per district lot/building site width and side setback/ yard standards

Pedestrian Access

Main Entrance Location	Principal Frontage
------------------------	--------------------

Vehicle Access & Parking

Parking may be accessed from an Alley, Thoroughfare or internal drive at frontage

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

LARGE MULTIFAMILY

TABLE 4.3.8.B PRINCIPAL BUILDING TYPES SPECIFIC STANDARDS



Permitted Districts

CD-4 CD-4C CD-5 CD-5C SD-INT SD-LI
PUD-R PU-MU

General Description

A Principal Building that incorporates seven (7) side-by-side, and/or horizontally stacked Dwelling Units typically with one or more shared entries.

Lot/Building Site

Width	Per district lot/building site width
-------	--------------------------------------

Number of Units

Units per building	7 min
--------------------	-------

Allowed Private Frontages

Porch	P
Stoop	P
Forecourt	P
Terrace/Lightwell	P

Building Size & Massing

Height

Per district height standards

Width

Per district lot/building site width and setback/ yard standards

Pedestrian Access

Main Entrance	Principal Frontage
Location	

Vehicle Access & Parking

Parking may be accessed from an Alley, Thoroughfare or drive at frontage

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

LIVE/WORK

TABLE 4.3.8.B PRINCIPAL BUILDING TYPES
SPECIFIC STANDARDS



Permitted Districts

CD-4 CD-4C CD-5 CD-5C PUD-R
PU-MU

General Description

A small to medium sized attached or detached Principal Building which includes a flexible space for commercial use and an internally connected residential Dwelling unit above, and/or behind the flexible space.

Lot/Building Site

Width	Per district lot/building site width
-------	--------------------------------------

Number of Units

Units per building	1 residential unit per 1 flexible space
--------------------	---

Allowed Private Frontages

Stoop	P
Terrace/Lightwell	P
Shopfront	P
Officefront	P

Building Size & Massing

Height

Per district height standards

Width

18 ft min – 36 ft max

Pedestrian Access

Main Entrance	Principal frontage
---------------	--------------------

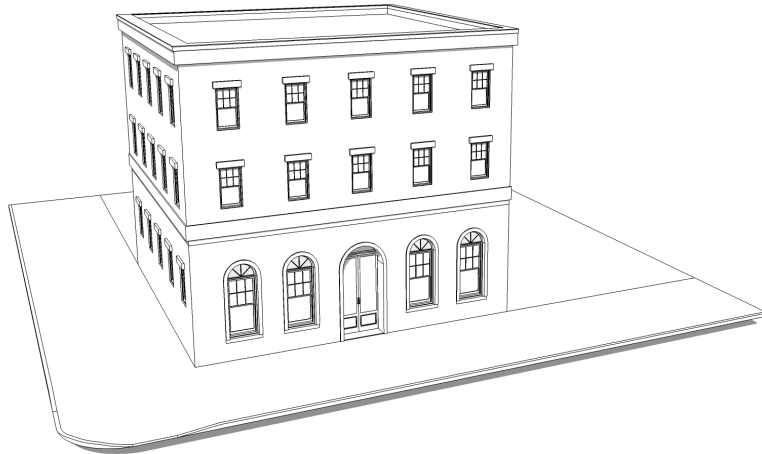
Vehicle Access & Parking

Parking may be accessed from an Alley, Thoroughfare or internal drive at frontage

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

COMMERCIAL

TABLE 4.3.8.B PRINCIPAL BUILDING TYPES
SPECIFIC STANDARDS



Permitted Districts

CD-4 CD-4C CD-5 CD-5C SD-INT
PUD-MU

General Description

A small to medium sized attached or detached non-residential building, typically designed to facilitate pedestrian-oriented Retail/Personal Service/ Repair/ Art/ Artisan Uses and Office Uses.

Lot/Building Site

Width	Per district lot/building site width
-------	--------------------------------------

Number of Units

Units per Building	Unrestricted, except as may be due to building code
--------------------	---

Allowed Private Frontages

Stoop	P
Terrace/Lightwell	P
Shopfront	P
Officefront	P

Building Size & Massing

Height

Per district height standards

Width

Per district lot/building site width and side setback/ yard standards

Pedestrian Access

Main Entrance	Principal Frontage
---------------	--------------------

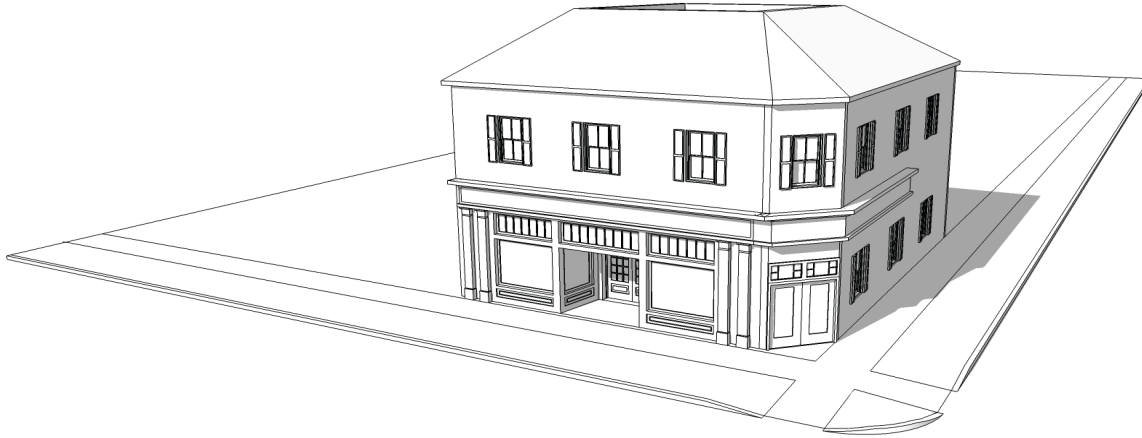
Vehicle Access & Parking

Parking may be accessed from an Alley, a Thoroughfare, or internal drive at frontage

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

MIXED-USE

TABLE 4.3.8.B PRINCIPAL BUILDING TYPES
SPECIFIC STANDARDS



Permitted Districts

CD-4 CD-4C CD-5 CD-5C PUD-MU

General Description

A typically attached Principal Building which provides a vertical and/or horizontal mix of uses typically designed to facilitate pedestrian-oriented Retail/ Personal Service/ Repair/ Art/ Artisan, Accommodations/ Lodging, or Office uses on the ground floor, with upper floors typically designed for residential or office uses.

Lot/Building Site

Width	Per district lot/building site width
-------	--------------------------------------

Number of Units

Units per Building	2 min., which must accommodate Principal Uses
--------------------	---

Allowed Private Frontages

Scoop	P	Terrace	P
Forecourt	P	Officefront	P
Terrace/Lightwell	P	Gallery	P
Shopfront	P	Arcade	P

*Only used in conjunction with a shopfront or officefront type

Building Size & Massing

Height

2 stories min, 3 stories max in CD-4, CD-5 per district height standards

Width

Per district lot/building width and yard/side setback standard

Pedestrian Access

Ground floor	Principal Frontage
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Upper floor	Principal or secondary
-------------	------------------------

Upper floors must be accessed by a common entry

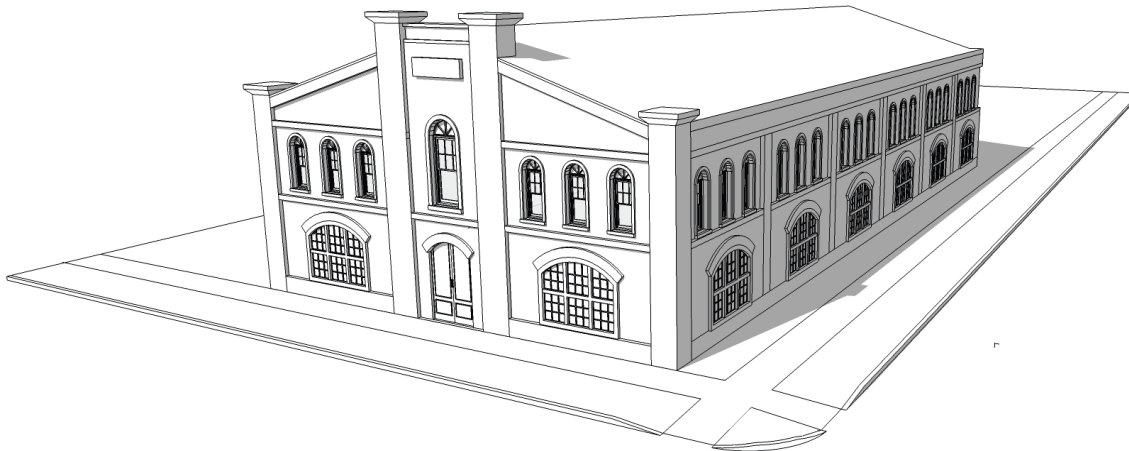
Vehicle Access & Parking

Parking may be accessed from an Alley, Thoroughfare, or internal drive at frontage

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

FLEX

TABLE 4.3.8.B PRINCIPAL BUILDING TYPES
SPECIFIC STANDARDS



Permitted Districts

CD-4 CD-4C CD-5 CD-5C SD-INT SD-LI SD-HI PUD-MU

General Description

A typically attached Principal Building which provides a vertical and/or horizontal mix of uses typically designed to facilitate pedestrian-oriented Retail/ Personal Service/ Repair/ Art/ Artisan, Accommodations/ Lodging, or Office uses on the ground floor, with upper floors typically designed for residential or office uses.

Lot/Building Site

Width Per District lot/building site width

Number of Units

Units per building 2 min, which must accommodate different principal uses

Allowed Private Frontages

Scoop	P	Terrace	P
Forecourt	P	Officefront	P
Terrace/Lightwell	P	Gallery	P
Shopfront	P	Arcade	P

*Only used in conjunction with shopfront or officefront type

Building Size & Massing

Height

2 stories min, 3 stories max in CD-4, CD-5 per district height standards

Width

Per district lot/building width and yard/side setback standard

Pedestrian Access

Ground floor Principal Frontage
Upper floor Principal or secondary frontage

Upper floors must be accessed by a common entry

Vehicle Access & Parking

Parking may be accessed from an alley, thoroughfare, or internal drive at frontage

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

MID-RISE

TABLE 4.3.8.B PRINCIPAL BUILDING TYPES
SPECIFIC STANDARDS



Permitted Districts

CD-5 CD-5C SD-LI PUD-MU

General Description

An attached or detached building that may provide a vertical and/or horizontal mix of uses. Typically designed to facilitate a pedestrian-oriented Retail/ Personal Service/ Repair/ Art/ Artisan Accommodations/ Lodging, Commercial, or Office uses on the ground floor, with upper floors typically designed for Residential or Office use.

Lot/Building Site

Width Per District lot/building Site Width

Number of Units

Units per Building 2 min, which may be residential or non-residential

Allowed Private Frontages

Scoop	P	Terrace	P
Forecourt	P	Officefront	P
Terrace/Lightwell	P	Gallery	P
Shopfront	P	Arcade	P

*Only used in conjunction with Shopfront or Officefront type

Building Size & Massing

Height

4 stories min, 5 max per district
table 4.3.1

Width

Per district lot/building site width
and side yard/ setback standards

Pedestrian Access

Ground Principal Frontage
Floors

Upper Principal or
Floors secondary frontage

Upper floors must be accessed by
common entry

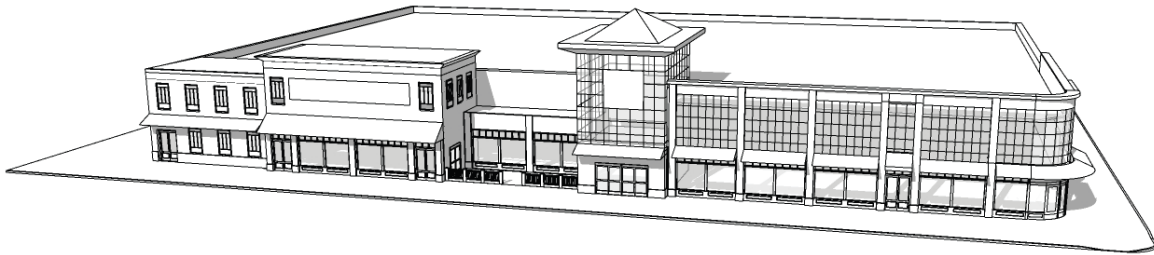
Vehicle Access & Parking

Parking may be accessed from an
alley, thoroughfare, or drive at
frontage

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

LARGE SCALE COMMERCIAL

**TABLE 4.3.8.B PRINCIPAL BUILDING TYPES
SPECIFIC STANDARDS**



Permitted Districts

CD-4C CD-5C SD-INT SD-LI PUD-MU

General Description

A building of 50,000 square feet, or more, that is most commonly associated with a large-format retailer. It has in-line Retail or Liner Buildings along the front of the building.

Lot/Building Site

Width Per District lot/Building site width

Number of Units

Units per Building Not regulated

Allowed Private Frontages

Stoop	P	Terrace	P
Forecourt	P	Officefront	P
Terrace/Lightwell	P	Gallery	P
Shopfront	P	Arcade	P

*Only used in conjunction with Shopfront or Officefront type

Building Size & Massing

Height

Per district height standards

Width

Per district lot/building site width and side yard/ setback standards

Pedestrian Access

Ground floors	Principal frontage
Upper floors	Principal or secondary frontage

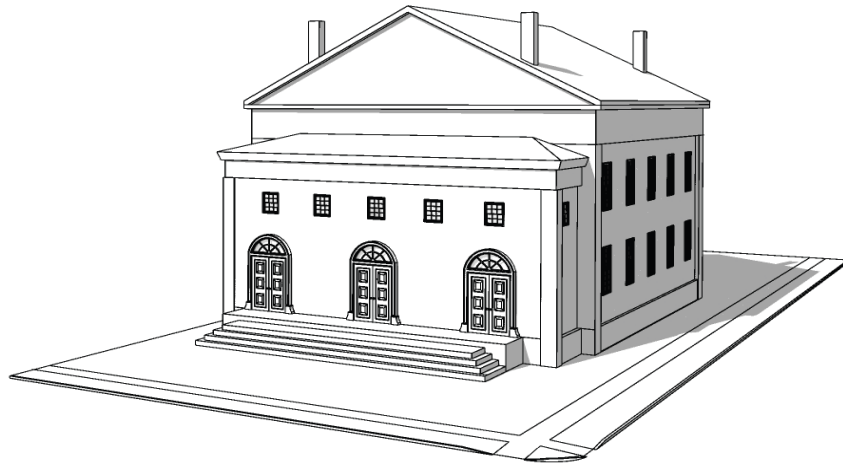
Vehicle Access & Parking

Parking may be accessed from an alley, thoroughfare, or internal drive at frontage

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

CIVIC

TABLE 4.3.8.B PRINCIPAL BUILDING TYPES
SPECIFIC STANDARDS



Permitted Districts

CD-2 CD-3L CD-3 CD-4 CD-4C CD-5 CD-5C
SD-LI SD-HI SD-INT PUD-R PUD-MU CV

General Description

A medium to large-sized attached or detached Principal Building which is operated by a not-for-profit organization or governmental entity dedicated to Civic activities, and is designed to stand apart from its surroundings due to the specialized nature of its Civic purpose. Examples include Libraries, Places of Worship, Places of Assembly, Courthouses, City Halls, schools, centers of government, Performing Arts Venues, and Museums. Civic buildings are often the most prominently sited and architecturally significant Buildings in a community.

Lot/Building Site

Width N/A

Number of Units

N/A

Building Size & Massing

Height

The height of Civic Buildings should be limited to 20 additional feet above the maximum allowed height in any adjacent district.

Width

Not Regulated.

Pedestrian Access

Except as specifically provided in this chapter, Civic Buildings are not subject to Building lot/Building site or Private frontage requirements of this chapter.

Vehicle Access & Parking

Parking may be accessed from an Alley, Thoroughfare, or internal drive at frontage.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

B. Manufactured Homes

1. No Manufactured Home shall be placed on any Lot or Building Site within a Residential District, unless it is used actively for Residential purposes, except as provided in Section 4.3.8. A.2.
2. Non-Residential use of a Manufactured Home may be permitted as a Temporary Use as a construction office during construction, subject to issuance of an annual permit by the Zoning Administrator subject to limitations pursuant to Section 4.3.9.E and **Table 4.3.9.A-3 (Temporary Uses)**.
3. Pursuant to TCA, Section 13-24-201, the provisions of Section 4.3.8.A shall not apply to Double-Wide Manufactured Homes used as single-family residences, which shall instead be considered a single-family home; provided that, pursuant to TCA, § 13-24-202, such Double-Wide Manufactured Homes must have the same general appearance as required for site-built homes and shall comply with all standards and requirements of this Ordinance.

4.3.9 USES

A. General

1. Buildings, Lots, and Building Sites must comply with the Use standards and requirements of this Section 4.3.9. For Development Parcels, the mix of Principal Uses in each District is further regulated under Section 5.1.11.
2. Principal Uses, Accessory Uses, and Temporary Uses are Permitted by Right ("P"), Permitted Subject to Limited Use Standards ("PL"), as Conditional Uses ("CU"), or Not Permitted ("NP") within each District, in each case as indicated in **Table 4.3.9.A-1 (Building, Lot & Building Site Principal Uses)**, **Table 4.3.9.A-2 (Building, Lot & Building Site Accessory Uses)**, and **Table 4.3.9.A-3 (Building, Lot & Building Site Temporary Uses)**.
3. Principal Uses, Accessory Uses, or Temporary Uses, as applicable, of Buildings, Lots, and Building Sites, which are indicated in **Table 4.3.9.A-1 (Building & Lot Principal Uses)**, **Table 4.3.9.A-2 (Building, Lot & Building Site Accessory Uses)**, or **Table 4.3.9.A-3 (Building, Lot & Building Site Temporary Uses)** as Permitted ("P"), Permitted Subject to Limited Conditions ("PL"), or as Conditional Use ("CU"), are permitted within each District, subject to compliance with all applicable standards, conditions and requirements thereof and obtaining all applicable approvals and permits therefor, including without limitation in the case of Uses Permitted Subject to Limited Use Standards ("PL") and Conditional Uses ("CU"), compliance with the applicable Use standards of Section 4.3.11.D, and in the case of Conditional Uses ("CU"), Board of Zoning Appeals approval pursuant to Article 8 (Administrative, Procedural, and Enforcement).
4. Accessory Uses of Buildings, Lots, and Building Sites in each District must conform to the Accessory Uses specified on **Table 4.3.9.A-2 (Building, Lot & Building Site Accessory Uses)** for such District and are subject to compliance with all other applicable standards and requirements of this Ordinance.
5. Temporary Uses of Buildings, Lots, and Building Sites in each District must conform to the Temporary Uses specified on **Table 4.3.9.A-3 (Building, Lot & Building Site Temporary Uses)** for such District and are subject to compliance with all other applicable standards and requirements of this Ordinance.
6. Without limitation, Accessory Uses must be subordinate and customarily incidental to a permitted Principal Use on the Lot.
7. If multiple Principal Uses are allowed within a District, they may exist within a single Building, Lot, or Building Site, subject to compliance with all other applicable standards and requirements.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

TABLE 4.3.9.A-1 BUILDING, LOT & BUILDING SITE PRINCIPAL USE

PRINCIPAL USE	CD-2	CD-3 L	CD-3	CD-4	CD-4C	CD-5	CD - 5C	SD-MHP	SD-INT	SD-LI	SD-HI	PUD - R	PUD-MU	CV
Farming	PL	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Greenhouse	PL	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Other Agricultural Uses Not Listed Under any Use Category	PL	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Sand, Stone, and Gravel Quarrying	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	CU	NP	NP	NP
Other Extractive Uses Not Listed Under any Use Category	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
House for Single-Family Dwelling	P	P	P	P	P	P	NP	NP	NP	NP	NP	P	NP	NP
Attached Dwelling - Duplex for 2-Family Dwelling	NP	NP	PL	PL	PL	PL	NP	NP	NP	NP	NP	NP	NP	NP
Attached Dwelling - Townhouses	NP	NP	NP	PL	PL	PL	PL	NP	PL	NP	NP	PL	PL	NP
Attached Dwelling -Small Multifamily Building	NP	NP	NP	PL	PL	PL	PL	NP	PL	PL	NP	PL	PL	NP
Attached Dwelling -Large Multifamily Building	NP	NP	NP	PL	PL	PL	PL	NP	PL	PL	NP	PL	PL	NP
Attached Dwelling -Residence Portion of a Live/Work, Mixed-Use, or Flex Building, if Building Type permitted in District	NP	NP	NP	PL	PL	PL	PL	NP	PL	PL	NP	PL	PL	NP

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

TABLE 4.3.9.A-1 BUILDING, LOT & BUILDING SITE PRINCIPAL USE

PRINCIPAL USE	CD-2	CD-3 L	CD-3	CD-4	CD-4C	CD-5	CD - 5C	SD-MHP	SD-INT	SD-LI	SD-HI	PUD - R	PUD-MU	CV
Attached Dwelling -Assisted Living Apartment	NP	NP	NP	PL	PL	PL	PL	NP	NP	PL	NP	NP	PL	NP
Attached Dwelling - Independent Living Apartment	NP	NP	NP	PL	PL	PL	PL	NP	NP	PL	NP	NP	PL	NP
Retirement Community or other Congregate Living Facility with individual Dwelling Units	NP	NP	NP	PL	PL	PL	PL	NP	PL	PL	NP	PL	PL	NP
Manufactured Home	PL	PL	PL	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Manufactured Home- Class A	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Manufactured Home Park	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Other Household Living Uses Not Listed Under any Use Category	NP	NP	NP	NP	NP	NP	NP	PL	NP	NP	NP	NP	NP	NP
Adult Care Home	P	P	P	P	P	NP	NP	NP	NP	NP	NP	P	NP	NP
Boarding or Rooming House, not including Group Home for Persons with Disabilities	NP	NP	NP	NP	NP	P	P	NP	P	P	NP	NP	NP	NP
Dormitory not associated with Educational Institution	NP	NP	NP	PL	PL	PL	PL	NP	NP	PL	NP	NP	NP	NP
Fraternity or Sorority House	NP	NP	NP	PL	PL	PL	PL	NP	NP	PL	NP	NP	NP	NP

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

TABLE 4.3.9.A-1 BUILDING, LOT & BUILDING SITE PRINCIPAL USE

PRINCIPAL USE	CD-2	CD-3 L	CD-3	CD-4	CD-4C	CD-5	CD - 5C	SD-MHP	SD-INT	SD-LI	SD-HI	PUD - R	PUD-MU	CV
Group Home for Persons with Disabilities or other Group Living Home	P	P	P	P	P	NP	NP	NP	NP	NP	NP	P	NP	NP
Monastery or Convent	NP	NP	NP	PL	PL	PL	PL	NP	NP	PL	NP	NP	NP	NP
Orphanage	NP	NP	NP	PL	PL	PL	PL	NP	NP	PL	NP	NP	NP	NP
Other Group Living Uses not Listed Under any Use Category	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Civic Building	NP	P	P	P	P	P	NP	NP	NP	NP	NP	NP	NP	P
Philanthropic Institution	NP	NP	NP	P	P	P	P	NP	NP	NP	NP	NP	P	P
Recreation Facility (Civic)	NP	P	P	P	P	P	P	P	NP	P	NP	P	P	P
Other Community Service Use Not Listed Under any Use Category	NP	NP	NP	P	P	P	P	P	NP	P	NP	P	P	P
Adult Day Care Facility (Civic)	P	P	P	P	P	P	P	P	P	P	NP	P	P	P
Children Day Care Facility (Civic)	P	P	P	P	P	P	P	P	P	P	NP	P	P	P
Group Day Care or Family Day Care or Facility (Civic)	PL	PL	PL	PL	PL	PL	PL	PL	PL	PL	NP	PL	PL	PL
Other Day Care Facility Use (Civic) Not Listed Under any Use Category	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P
Correctional Facilities	NP	NP	NP	NP	NP	NP	NP	NP	CU	CU	CU	NP	NP	CU

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

TABLE 4.3.9.A-1 BUILDING, LOT & BUILDING SITE PRINCIPAL USE

PRINCIPAL USE	CD-2	CD-3 L	CD-3	CD-4	CD-4C	CD-5	CD - 5C	SD-MHP	SD-INT	SD-LI	SD-HI	PUD - R	PUD-MU	CV
Other Government Facility Use (Civic) Not Listed Under any Use Category	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	P
Civic Space – Community Garden	P	P	P	P	P	P	NP	P	P	P	NP	P	P	P
Civic Space – Green	NP	P	P	P	P	P	NP	P	P	P	NP	P	P	P
Civic Space – Square or Plaza	NP	NP	NP	P	P	P	NP	NP	NP	NP	NP	NP	P	P
Civic Space – Park or Playground	P	P	P	P	P	P	NP	P	P	P	NP	P	P	P
Civic Space - Sports Field	NP	P	P	P	NP	NP	NP	P	NP	P	NP	P	NP	P
Other Civic Space Use Not Listed Under any Use Category	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Botanical Garden	P	P	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P
Nature Preserve	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Recreational Trail	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Game Preserve	P	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P
Wildlife Management Area	P	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P
Refuge	P	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P
Wild Animal Sanctuary	P	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P
Water Conservation Area	P	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

TABLE 4.3.9.A-1 BUILDING, LOT & BUILDING SITE PRINCIPAL USE

PRINCIPAL USE	CD-2	CD-3 L	CD-3	CD-4	CD-4C	CD-5	CD - 5C	SD-MHP	SD-INT	SD-LI	SD-HI	PUD - R	PUD-MU	CV
Reservoir	P	P	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P
Drainage Well	P	P	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P
Water Supply	P	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P
Water Well	P	P	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P
Zoo	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P
Other Open Space Use Not Listed Under any Use Category	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Place of Worship or other Religious Facilities	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Cemetery / Mausoleum / Columbarium / Memorial Garden	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P
Funeral Services	NP	NP	NP	P	P	P	P	NP	NP	NP	NP	NP	P	P
Fire / EMS Station	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Police Station	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Adult Continuing Education	NP	NP	NP	P	P	P	P	NP	P	P	NP	NP	P	NP
Personal Improvement Education	NP	NP	NP	P	P	P	P	NP	P	P	NP	NP	P	NP
Business, trade, or vocational school, other than Truck Driving School	NP	NP	NP	P	P	P	P	NP	P	P	NP	NP	P	NP

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

TABLE 4.3.9.A-1 BUILDING, LOT & BUILDING SITE PRINCIPAL USE

PRINCIPAL USE	CD-2	CD-3 L	CD-3	CD-4	CD-4C	CD-5	CD - 5C	SD-MHP	SD-INT	SD-LI	SD-HI	PUD - R	PUD-MU	CV
Truck Driving School	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP
Pre-School or Nursery School	P	P	P	P	P	P	P	NP	P	P	NP	P	P	P
Kindergarten	P	P	P	P	P	P	P	NP	P	P	NP	P	P	P
Elementary School	P	P	P	P	P	P	P	NP	P	P	NP	P	P	P
Middle School	P	P	P	P	P	P	P	NP	P	P	NP	P	P	P
High School	P	P	P	P	P	P	P	NP	P	P	NP	P	P	P
College or University	NP	NP	NP	P	P	P	P	NP	P	P	P	NP	P	P
Community College	NP	NP	NP	P	P	P	P	NP	P	P	P	NP	P	P
Graduate / Professional School	NP	NP	NP	P	P	P	P	NP	P	P	P	NP	P	P
Nursing or Medical Schools not accessory to a Hospital	NP	NP	NP	P	P	P	P	NP	P	P	P	NP	P	P
Seminary	NP	NP	NP	P	P	P	P	NP	P	P	P	NP	P	P
Other Educational Use Not Listed in any Use Category	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Hospital	NP	NP	NP	PL	PL	PL	PL	NP	PL	PL	NP	NP	PL	PL
Rehabilitation Facility or Center for Observation	NP	NP	NP	PL	PL	PL	PL	NP	PL	PL	NP	NP	PL	PL
Other Health Care Institution Use Not Listed Under any Use Category	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

TABLE 4.3.9.A-1 BUILDING, LOT & BUILDING SITE PRINCIPAL USE

PRINCIPAL USE	CD-2	CD-3 L	CD-3	CD-4	CD-4C	CD-5	CD - 5C	SD-MHP	SD-INT	SD-LI	SD-HI	PUD - R	PUD-MU	CV
Long Term Care Facility	NP	NP	NP	PL	PL	PL	PL	NP	NP	PL	NP	NP	PL	NP
Continuum of Care Facility	NP	NP	NP	PL	PL	PL	PL	NP	NP	PL	NP	NP	PL	NP
Bed & Breakfast	P	NP	NP	P	P	P	P	NP	NP	NP	NP	NP	P	NP
Extended Stay Hotel	NP	NP	NP	NP	NP	NP	NP	NP	PL	PL	NP	NP	NP	NP
Inn	P	NP	NP	P	P	P	P	NP	NP	NP	NP	NP	P	NP
Hotel, not including Extended Stay Hotel	NP	NP	NP	PL	PL	PL	PL	NP	PL	NP	NP	NP	PL	NP
Motel	NP	NP	NP	NP	NP	NP	NP	NP	PL	PL	NP	NP	NP	NP
Short-Term Rental Unit	NP	NP	NP	PL	PL	PL	PL	NP	NP	NP	NP	NP	NP	NP
Other Accommodation / Lodging Uses Not Listed Under any Use Category	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Adult Day Care Facility (non-Civic)	P	P	P	P	P	P	P	P	P	P	NP	P	P	NP
Child Care Facility (non-Civic), excluding Child Care in Home	P	P	P	P	P	P	P	P	P	P	NP	P	P	NP
Children's Day Camp (non-Civic)	P	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Group Day Care Facility, Family Day Care Facility or other Group Care Facility (non-Civic)	NP	NP	NP	CU	CU	CU	CU	NP	CU	CU	NP	CU	CU	NP

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

TABLE 4.3.9.A-1 BUILDING, LOT & BUILDING SITE PRINCIPAL USE

PRINCIPAL USE	CD-2	CD-3 L	CD-3	CD-4	CD-4C	CD-5	CD - 5C	SD-MHP	SD-INT	SD-LI	SD-HI	PUD - R	PUD-MU	CV
Hospice (non-Civic)	NP	NP	NP	P	P	P	P	NP	P	P	NP	NP	P	NP
Retirement Center or Life Care Community without individual Dwelling Units (non-Civic)	NP	NP	NP	P	P	P	P	NP	P	P	NP	NP	P	NP
Other Personal & Group Care Facilities Use Not Listed Under any Use Category (non-Civic)	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Bowling Alley	NP	NP	NP	P	P	P	P	NP	P	P	NP	NP	P	NP
Game Arcade	NP	NP	NP	P	P	P	P	NP	P	P	NP	NP	P	NP
Gymnastics Facility	NP	NP	NP	P	P	P	P	NP	P	P	NP	NP	P	NP
Commercial Indoor Athletic Training Facility	NP	PL	PL	PL	P	P	P	NP	P	P	NP	NP	P	NP
Indoor firing range	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	NP	NP	NP	NP
Indoor Sports Academy	NP	NP	NP	P	P	P	P	NP	P	P	NP	NP	P	NP
Membership Club or Lodge	P	NP	NP	P	P	P	P	NP	P	P	NP	NP	P	NP
Movie or other Theater	NP	NP	NP	P	P	P	P	NP	P	NP	NP	NP	P	NP
Pool Hall	NP	NP	NP	P	P	P	P	NP	P	P	NP	NP	P	NP
Recreation Facility (non-Civic)	NP	P	P	P	P	P	P	NP	P	P	NP	P	P	NP
Skating rink	NP	NP	NP	P	P	P	P	NP	P	P	NP	NP	P	NP

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

TABLE 4.3.9.A-1 BUILDING, LOT & BUILDING SITE PRINCIPAL USE

PRINCIPAL USE	CD-2	CD-3 L	CD-3	CD-4	CD-4C	CD-5	CD - 5C	SD-MHP	SD-INT	SD-LI	SD-HI	PUD - R	PUD-MU	CV
Social Club, Lodge, or Organization (non-Civic)	NP	CU	CU	P	P	P	NP	NP	P	P	NP	NP	P	NP
Other Commercial Indoor Recreation Use Not Listed Under any Use Category	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Group Assembly (non-Civic)	NP	NP	NP	PL	PL	PL	PL	NP	PL	PL	NP	NP	PL	NP
Other Commercial Group Assembly Use (non-Civic) Not Listed Under any Use Category	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Amphitheater	NP	NP	NP	PL	PL	PL	PL	NP	PL	PL	NP	NP	PL	NP
Sports Field	NP	NP	NP	PL	PL	PL	PL	NP	PL	PL	NP	NP	PL	NP
BMX Bicycle Park	NP	NP	NP	NP	NP	NP	NP	NP	PL	PL	NP	NP	NP	NP
Campground	NP	NP	NP	NP	NP	NP	NP	NP	PL	PL	NP	NP	NP	NP
Drive-in Theater	NP	NP	NP	NP	NP	NP	NP	NP	PL	PL	NP	NP	NP	NP
Firing Range such as Rifle Range, Archery Range, Handgun, or Skeet Shooting	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	PL	NP	NP	NP
Golf Course, Country Club, Swim Club, and Tennis Club	PL	PL	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Marina / Boating Facility	PL	PL	PL	PL	PL	PL	PL	PL	NP	NP	NP	PL	PL	NP
Recreational Vehicle (RV) Park	NP	NP	NP	NP	NP	NP	NP	NP	PL	PL	NP	NP	NP	NP

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

TABLE 4.3.9.A-1 BUILDING, LOT & BUILDING SITE PRINCIPAL USE

PRINCIPAL USE	CD-2	CD-3 L	CD-3	CD-4	CD-4C	CD-5	CD - 5C	SD-MHP	SD-INT	SD-LI	SD-HI	PUD - R	PUD-MU	CV
Paintball Park	NP	NP	NP	NP	NP	NP	NP	NP	PL	PL	NP	NP	NP	NP
Outdoor Entertainment Activity such as Batting Cage, Golf Driving Range, Amusement Park, Miniature Golf Facility	NP	NP	NP	NP	NP	NP	NP	NP	PL	PL	NP	NP	NP	NP
Skateboard Park	NP	NP	NP	NP	NP	NP	NP	NP	PL	PL	NP	NP	NP	NP
Stadium / Arena	NP	NP	NP	NP	NP	NP	NP	NP	NP	PL	NP	NP	NP	NP
Summer Camp (overnight)	NP	NP	NP	NP	NP	NP	NP	NP	PL	PL	NP	NP	NP	NP
Swimming Pool	PL	PL	PL	PL	PL	PL	PL	PL	PL	PL	NP	PL	PL	NP
Tennis Court	PL	PL	PL	PL	PL	PL	PL	PL	PL	PL	NP	PL	PL	NP
Water Park	NP	NP	NP	NP	NP	NP	NP	NP	PL	PL	NP	NP	NP	NP
Other Commercial Outdoor Recreation Use Not Listed Under any Use Category	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Parking Lot	NP	NP	NP	PL	PL	PL	PL	PL	PL	PL	PL	PL	PL	PL
Parking Structure	NP	NP	NP	P	P	P	P	NP	P	P	P	NP	P	P
Restaurant or other Food Service Business without Drive-Through	NP	NP	NP	P	P	P	P	NP	P	P	NP	NP	P	NP
Small-scale Catering Establishment without Drive-Through	NP	NP	NP	P	P	P	P	NP	P	P	NP	NP	P	NP

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

TABLE 4.3.9.A-1 BUILDING, LOT & BUILDING SITE PRINCIPAL USE

PRINCIPAL USE	CD-2	CD-3 L	CD-3	CD-4	CD-4C	CD-5	CD - 5C	SD-MHP	SD-INT	SD-LI	SD-HI	PUD - R	PUD-MU	CV
Drive-in Restaurant and Any Restaurant with Drive-Through	NP	NP	NP	PL	PL	PL	PL	NP	PL	PL	NP	NP	PL	NP
Bar, Tavern, or Nightclub	NP	NP	NP	PL	PL	PL	PL	NP	PL	PL	NP	NP	PL	NP
Alcoholic Beverage Retail Sales	NP	NP	NP	P	P	P	P	NP	P	P	NP	NP	P	NP
Artisan Establishment, with or without Retail Sales, & without Drive-Through	NP	NP	NP	P	P	P	P	NP	NP	P	NP	NP	P	NP
Arts-Related Uses	NP	NP	NP	P	P	P	P	NP	NP	P	NP	NP	P	NP
Convenience Store with Gasoline Sales Facility without Drive-Through	NP	NP	NP	PL	PL	PL	PL	NP	PL	PL	PL	NP	PL	NP
Retail, Personal Service, Repair, Arts, or Artisan Establishment with Drive-Through	NP	NP	NP	PL	PL	PL	PL	NP	PL	PL	NP	NP	PL	NP
Food Truck Court	NP	NP	NP	PL	PL	PL	PL	NP	PL	PL	NP	NP	NP	NP
Personal Services, other than Motor Vehicle Body Shop, and Motor Vehicle Maintenance, Repair, Fuel Sales, Service, or Cleaning, without Drive-Through	NP	NP	NP	P	P	P	P	NP	P	P	NP	NP	P	NP
Repair Services, other than Motor Vehicle Body Shop,	NP	NP	NP	P	P	P	P	NP	P	P	NP	NP	P	NP

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

TABLE 4.3.9.A-1 BUILDING, LOT & BUILDING SITE PRINCIPAL USE

PRINCIPAL USE	CD-2	CD-3 L	CD-3	CD-4	CD-4C	CD-5	CD - 5C	SD-MHP	SD-INT	SD-LI	SD-HI	PUD - R	PUD-MU	CV
and Motor Vehicle Maintenance, Repair, Fuel														
Retail Membership Club	NP	NP	NP	P	P	P	P	NP	P	P	NP	NP	P	NP
Retail Food Sales, with or without on-premises preparation or processing, without Drive-Through	NP	NP	NP	P	P	P	P	NP	P	P	NP	NP	P	NP
Retail Sales, Rental, or Leasing, other than Motor Vehicle - Related Uses, Retail Food Sales, Retail Membership Club, Restaurant, and Warehouse Retail	NP	NP	NP	P	P	P	P	NP	P	P	NP	NP	P	NP
Other Retail Sales, Rental, or Leasing Not Listed Above without Drive-Through	NP	NP	NP	P	P	P	P	NP	P	P	NP	NP	P	NP
Tobacco, Vape, and Cannabinoid Retailers	NP	NP	NP	PL	PL	NP	PL	NP	PL	PL	NP	NP	PL	NP
Veterinary Clinic, Animal Hospital, or Non-Agricultural Kennel	NP	NP	NP	P	P	P	P	NP	P	P	NP	NP	P	NP
Other Personal Service or Repair Uses Not Listed Under any Use Category	NP	NP	NP	P	P	P	P	NP	P	P	NP	NP	P	NP
Other Art or Artisan Uses Not Listed Under any Use	NP	P	P	P	P	P	P	NP	P	P	NP	NP	P	NP

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

TABLE 4.3.9.A-1 BUILDING, LOT & BUILDING SITE PRINCIPAL USE

PRINCIPAL USE	CD-2	CD-3 L	CD-3	CD-4	CD-4C	CD-5	CD - 5C	SD-MHP	SD-INT	SD-LI	SD-HI	PUD - R	PUD-MU	CV
Category without Drive-Through														
Self-Service Storage Facilities	NP	NP	NP	NP	NP	NP	NP	NP	PL	PL	PL	NP	NP	NP
Motor Vehicle Body Shop	NP	NP	NP	NP	NP	NP	NP	NP	P	P	P	NP	NP	NP
Motor Vehicle Maintenance, Repair, Fuel Sales, Service or Cleaning, other than Car Wash	NP	NP	NP	PL	PL	PL	PL	NP	PL	PL	PL	NP	NP	NP
Car Wash	NP	NP	NP	PL	PL	PL	PL	NP	PL	PL	PL	NP	PL	NP
Gasoline Sales Facility or Fuel Sales	NP	NP	NP	PL	PL	PL	PL	NP	PL	PL	PL	NP	PL	NP
Motor Vehicle Sales, Rental, or Leasing	NP	NP	NP	NP	PL	NP	PL	NP	PL	PL	NP	NP	NP	NP
Motor Vehicle Storage	NP	NP	NP	NP	NP	NP	NP	NP	P	P	P	NP	NP	NP
Tire Sales	NP	NP	NP	NP	P	NP	P	NP	P	P	P	NP	NP	NP
Towing Service	NP	NP	NP	NP	NP	P	NP	P	P	P	NP	NP	NP	NP
Other Motor Vehicle - Related Use Not Listed Under any Use Category	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Manufactured Home Sales	NP	NP	NP	NP	NP	NP	NP	NP	PL	PL	NP	NP	NP	NP
Sale of building and construction materials, special trade tools, welding supplies, machine parts,	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP	NP

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

TABLE 4.3.9.A-1 BUILDING, LOT & BUILDING SITE PRINCIPAL USE

PRINCIPAL USE	CD-2	CD-3 L	CD-3	CD-4	CD-4C	CD-5	CD - 5C	SD-MHP	SD-INT	SD-LI	SD-HI	PUD - R	PUD-MU	CV
electrical supplies, janitorial supplies, restaurant equipment, store fixtures, Other Wholesale Sales Uses Not Listed Under any Use Category	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP	NP
Business Office, Business Incubator or Professional Office	NP	NP	NP	P	P	P	P	NP	P	P	NP	NP	P	NP
Conference Center or Office with Conference Center (non-Civic)	NP	NP	NP	P	P	P	P	NP	P	P	NP	NP	P	NP
Co-Working Space	NP	NP	NP	P	P	P	P	NP	P	P	NP	NP	P	NP
Financial Institution or Financial Services	NP	NP	NP	P	P	P	P	NP	P	P	NP	NP	P	NP
Office with Drive-Through Facilities	NP	NP	NP	PL	PL	PL	PL	NP	PL	PL	NP	NP	PL	NP
Non-Banking Financial Institution	NP	NP	NP	PL	PL	PL	PL	NP	PL	PL	NP	NP	PL	NP
Radio / Television / Recording Studio or Station without Communications Tower	NP	NP	NP	P	P	P	P	NP	P	P	NP	NP	P	NP
Other Business / Government / Non-Profit Office Uses Not Listed Under any Use Category	NP	NP	NP	P	P	P	P	NP	P	P	NP	NP	P	NP

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

TABLE 4.3.9.A-1 BUILDING, LOT & BUILDING SITE PRINCIPAL USE

PRINCIPAL USE	CD-2	CD-3 L	CD-3	CD-4	CD-4C	CD-5	CD - 5C	SD-MHP	SD-INT	SD-LI	SD-HI	PUD - R	PUD-MU	CV
Dental Office / Dental Clinic, Medical Office / Medical Clinic / Outpatient Clinic, or Medical or Dental Lab	NP	NP	NP	P	P	P	P	NP	P	P	NP	NP	P	NP
Asphalt Plant or other Facilities for Manufacture and Storage of Chemicals, Petroleum Products, Explosives, and Allied Products	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	PL CU	NP	NP	NP
Concrete Batch or Concrete Manufacturing Plant	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	PL CU	NP	NP	NP
Hazardous & Low-Level Nuclear Disposal & Storage	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	PL CU	NP	NP	NP
Wrecking, Junk, & Salvage Yards, & Scrap Operations	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	PL CU	NP	NP	NP
Tile or Brick Manufacturing	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	PL CU	NP	NP	NP
Automobile, Truck, or Tire Manufacturing or Assembly	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	PL CU	NP	NP	NP
Ammonia or Chlorine Manufacturing	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	CU	NP	NP	NP
Metal Casting or Foundries	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	CU	NP	NP	NP
Gas Manufacturing	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	CU	NP	NP	NP

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

TABLE 4.3.9.A-1 BUILDING, LOT & BUILDING SITE PRINCIPAL USE

PRINCIPAL USE	CD-2	CD-3 L	CD-3	CD-4	CD-4C	CD-5	CD - 5C	SD-MHP	SD-INT	SD-LI	SD-HI	PUD - R	PUD-MU	CV
Metal or Metal Ore Production, Refining, Smelting, or Alloying	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	CU	NP	NP	NP
Petroleum or Petroleum Product Storage or Refining	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	CU	NP	NP	NP
Boat, Pool, or Spa Manufacturing	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	CU	NN	NP	NP
Keeping, Selling, or Slaughtering of Animals	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	CU	NP	NP	NP
Glass Manufacturing	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	CU	NP	NP	NP
Paper Manufacturing	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	CU	NP	NP	NP
Manufacturing of Materials into Compost	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	CU	NP	NP	NP
Rail Equipment Storage / Repair	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	CU	NP	NP	NP
Railroad Freight Yard	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	CU	NP	NP	NP
Sawmill	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	CU	NP	NP	NP
Wood or Lumber Processing	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	CU	NP	NP	NP
Animal processing, Rendering, Packing, Treating, and Storage	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	CU	NP	NP	NP
Livestock Slaughtering	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	CU	NP	NP	NP

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

TABLE 4.3.9.A-1 BUILDING, LOT & BUILDING SITE PRINCIPAL USE

PRINCIPAL USE	CD-2	CD-3 L	CD-3	CD-4	CD-4C	CD-5	CD - 5C	SD-MHP	SD-INT	SD-LI	SD-HI	PUD - R	PUD-MU	CV
Processing of Food and Related Products	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	CU	NP	NP	NP
Sale of Farm Equipment and Machinery and Earth Moving and Heavy Construction Equipment	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	CU	NP	NP	NP
Production of Chemical, Rubber, Leather, Clay, Bone, Plastic, Stone, or Glass Materials or Products	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	CU	NP	NP	NP
Other Heavy Industrial Not Listed in any Use Category	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	CU	NP	NP	NP
Brewery, excluding Brewpubs	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP
Bottling Plants	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP
Building Systems / Construction Business	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP
Carpet cleaning plants or manufacturing	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP
Catering Service or Catering Events Establishment	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP
Textile Manufacturing	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP
Commercial bakery	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP
Contractor Materials Sales	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

TABLE 4.3.9.A-1 BUILDING, LOT & BUILDING SITE PRINCIPAL USE

PRINCIPAL USE	CD-2	CD-3 L	CD-3	CD-4	CD-4C	CD-5	CD - 5C	SD-MHP	SD-INT	SD-LI	SD-HI	PUD - R	PUD-MU	CV
Crematorium	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP
Dairy Plant	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP
Distillery	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP
Distribution / Distribution Facility	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP
Dry Cleaning Plants	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP
Equipment Rental	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP
Fabrication, work, or storage on-site by building, heating, plumbing, electrical, or general contractors, and	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP
Food Processing plants	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP
Horticulture and Landscaping Services	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP
Ice plant	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP
Institutional bakeries	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP
Laundry Plant	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP
Light Manufacturing Plant	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP
Machine Shop / Woodworking Shop, other than Artisan Establishment	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

TABLE 4.3.9.A-1 BUILDING, LOT & BUILDING SITE PRINCIPAL USE

PRINCIPAL USE	CD-2	CD-3 L	CD-3	CD-4	CD-4C	CD-5	CD - 5C	SD-MHP	SD-INT	SD-LI	SD-HI	PUD - R	PUD-MU	CV
Maintenance yard or facility	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP
Manufacture or assembly of equipment, instruments (including musical instrument	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP
Non-Hazardous Waste Treatment or Disposal	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP
Outdoor Storage	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP
Printing, Publishing, and lithography	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP
Production of artwork	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP
Rail Equipment Storage / Repair	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP
Recycling Processing Facility	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP
Repair of scientific or professional instruments, electric motors;	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP
Regional recycling center;	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP
Research Laboratory / Research & Development	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP
Sheet metal shop	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP
Soft drink bottling	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP
Solid Waste Facility	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

TABLE 4.3.9.A-1 BUILDING, LOT & BUILDING SITE PRINCIPAL USE

PRINCIPAL USE	CD-2	CD-3 L	CD-3	CD-4	CD-4C	CD-5	CD - 5C	SD-MHP	SD-INT	SD-LI	SD-HI	PUD - R	PUD-MU	CV
Warehouse / Warehousing	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP
Welding, machine, tool repair shop	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP
Winery	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP
Woodworking, including cabinet makers and furniture manufacturing, but excluding Artisan Establishments	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP
Other Light Industrial Not Listed in any Use Category	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP
Bulk storage, including nonflammable liquids, feed and grain storage	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP
Bus barn	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP
Cold storage plants, frozen food lockers,	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP
Household moving and general freight storage	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP
Separate warehouse used by Retail store such as a furniture or appliance store	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP
Stockpiling of sand, gravel, or other aggregate materials	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	NP	NP	NP
Transfer and storage Business with no individual storage	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

TABLE 4.3.9.A-1 BUILDING, LOT & BUILDING SITE PRINCIPAL USE

PRINCIPAL USE	CD-2	CD-3 L	CD-3	CD-4	CD-4C	CD-5	CD - 5C	SD-MHP	SD-INT	SD-LI	SD-HI	PUD - R	PUD-MU	CV
areas or where employees are the primary movers of the goods														
Other Warehouse & Freight Movement Not Listed in any Use Category	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP
Animal waste processing	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	PL	NP	NP	NP
Septic Equipment Installation, Service, or Cleaning	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	PL	NP	NP	NP
Landfill	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	PL	NP	NP	NP
Incinerator	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	PL	NP	NP	NP
Manufacture and production of goods from composting organic material	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	PL	NP	NP	NP
Recyclable material storage, including construction material	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	PL	NP	NP	NP
Recycling center	NP	NP	NP	NP	NP	NP	NP	NP	NP	PL	PL	NP	NP	NP
Transfer station	NP	NP	NP	NP	NP	NP	NP	NP	NP	PL	PL	NP	NP	NP
Recycling Station	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP
Other Waste-Related Service Not Listed in any Use Category	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

TABLE 4.3.9.A-1 BUILDING, LOT & BUILDING SITE PRINCIPAL USE

PRINCIPAL USE	CD-2	CD-3 L	CD-3	CD-4	CD-4C	CD-5	CD - 5C	SD-MHP	SD-INT	SD-LI	SD-HI	PUD - R	PUD-MU	CV
Utility Facilities	PL	PL	PL	PL	PL	PL	PL	PL	PL	PL	PL	PL	PL	PL
Utility Transmission Line	PL	PL	NP	NP	NP	NP	NP	NP	PL	PL	PL	PL	PL	NP
Wireless Communication Facility	CU	CU	CU	CU	CU	CU	CU	CU	CU	CU	CU	CU	CU	CU
Other Utilities Use Not Listed Under any other Category	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Adult - Oriented Establishment	NP	NP	NP	NP	NP	NP	NP	NP	PL	NP	NP	NP	NP	NP

B. Uses Permitted by Right

Principal Uses, Accessory Uses, or Temporary Uses, as applicable, of Buildings, Lots, and Building Sites, which are indicated for each District in **Table 4.3.9.A-1 (Building, Lot & Building Site Principal Uses)**, **Table 4.3.9.A-2 (Building, Lot & Building Site Accessory Uses)**, or **Table 4.3.9.A-3 (Building, Lot & Building Site Temporary Uses)** as Permitted ("P") are allowed by right, subject to compliance with all other applicable provisions of this Ordinance.

C. Required Uses

1. Commercial Corridors

Within the CD-4C Character District, Principal Buildings on any Lot or Building Site located within 400 feet of a Thoroughfare with a Functional Classification of Arterial must contain a Retail Sales or Service use, Restaurant use, Arts-Related Use, or Office use for the entire ground floor. Any permitted use may be established on second, third, and fourth stories of a Principal Building.

2. Downtown Pedestrian Streets

Buildings enfronting the following rights of way must contain a retail sales or service use, restaurant use, arts-related use, or office use at the sidewalk level through the depth of the second layer for at least 80 percent of the building frontage.

- Public Square;
- North Main Street between West 4th Street and Public Square;
- South Main Street between Public Square and West 9th Street, inclusive of all building sites with frontage at the corners of South Main and West 9th street;
- North Garden Street between West 6th Street and West 7th Street, inclusive of all building sites with frontage at the corners of North Garden Street and West 6th Street;

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

- e. North Garden Street between West 7th Street and West 9th Street, inclusive of all building sites with frontage at the corners of South Garden Street and West 9th Street;
- f. South High Street between West 7th Street and West 9th Street, inclusive of all building sites with frontage at the corners of South High Street and West 7th Street, all building sites with frontage at the corners of South High Street and West 8th Street, and all building sites with frontage at the corners of South High Street and West 9th Street;
- g. West 7th Street between Public Square and Frierson Street, inclusive of all building sites with frontage at the corners of Frierson Street and West 7th Street;
- h. East 7th Street between Public Square and North Water Street, inclusive of all building sites with frontage at the corners of South Glade Street and East 7th Street;
- i. West 6th Street between North Main Street and Woodland Street, inclusive of all building sites with frontage at the corners of West 6th Street and Woodland Street;
- j. West 6th Street between North Main Street and North Garden Street; and
- k. West 8th Street between South Garden and South Glade Street, inclusive of all building sites with frontage at the corners of West 8th Street and South Garden Street as well as all building sites with frontage at the corners of West 8th Street and South Glade Street.

D. Prohibited Uses

1. Except as otherwise determined by the Zoning Administrator pursuant to Section 8.5.8 with respect to a Use that is not specifically listed as Permitted (“P”), Permitted Subject to Limited Conditions (“PL”), or as a Conditional Use (“CU”) in **Table 4.3.9.A-1 (Building & Lot Principal Uses)**, **Table 4.3.9.A-2 (Building, Lot & Building Site Accessory Uses)**, or **Table 4.3.9.A-3 (Building, Lot & Building Site Temporary Uses)**, as applicable, any Use that is not specifically listed as Permitted (“P”), Permitted Subject to Limited Conditions (“PL”), or as a Conditional Use (“CU”), and any Use that is specifically listed Not Permitted (“NP”) in such applicable Table or is otherwise prohibited pursuant to any other provision of the City Code, is prohibited.
2. In the CD-4C Character District, all uses listed under the heading Residential Uses Category on **Table 4.3.9.A-1** are prohibited on the entire ground floor of any Building located within 400 feet of a Thoroughfare with a Functional Classification of Arterial. Any permitted use may be established on second, third, and fourth stories of a Principal Building.

E. Uses Permitted Subject to Limited Use Standards & Conditional Uses

1. Any Principal Use, Accessory Use, or Temporary Use shown for the applicable District as Permitted Subject to Limited Use Standards (“PL”) on **Table 4.3.9.A-1 (Building & Lot Principal Uses)**, **Table 4.3.9.A-2 (Building & Lot Accessory Uses)**, or **Table 4.3.9.A-3 (Building & Lot Temporary Uses)**, is allowed subject to compliance with all applicable conditions and requirements imposed by this Section 4.3.9.E and Section 4.3.9.4.h.
2. Any Principal Use, Accessory Use, or Temporary Use shown for the applicable District as Conditional Use (“CU”) on **Table 4.3.9.A-1 (Building, Lot, & Building Site Principal Uses)**, **Table 4.3.9.A-2 (Building, Lot, & Building Site Accessory Uses)**, or **Table 4.3.9.A-3 (Building, Lot, & Building Site Temporary Uses)**, is allowed subject to compliance with all applicable conditions and requirements imposed by this Section 4.3.9.E in addition to Conditional Use approval and issuance of a Conditional Use permit pursuant to Article 8 (Administration, Procedures & Enforcement).

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3. The conditions, standards, and requirements of each Use Permitted Subject to Limited Use Standards or Conditional Use shall be applicable, irrespective of the Use being a Principal Use, an Accessory Use, or a Temporary Use.
4. The conditions and requirements applicable to any Use Permitted Subject to Limited Use Standards or Conditional Use shall be enforceable, and failure to comply with any condition or requirement of a Use Permitted Subject to Limited Use Standards or as a Conditional Use shall subject such Use Permitted Subject to Limited Use Standards or Conditional Use to revocation pursuant to Section 8.6.1.J.
5. No Use Permitted Subject to Limited Use Standards or Conditional Use shall commence or exist, or be conducted or engaged in, on any Lot or Building Site, or within any Building except in accordance with all applicable conditions and requirements for such Use, including without limitation in the case of a Conditional Use, review, approval, and issuance of a Conditional Use Permit by the Board of Zoning Appeals.
6. The following standards shall apply only to those Districts and Uses where the “PL” and / or “CU” is designated on the applicable **Table 4.3.9.A-1 (Building, Lot & Building Site Principal Uses)**, **Table 4.3.9.A-2 (Building, Lot & Building Site Accessory Uses)**, or **Table 4.3.9.A-3 (Building, Lot & Building Site Temporary Uses)**, as applicable:
 - a. **Accessory Dwelling**
 - (1) Only one Accessory Dwelling is permitted on any Lot or Building Site.
 - (2) The Accessory Dwelling must be accessory to a House or Townhouse used for Household Living.
 - (3) If the Accessory Dwelling is not attached to the primary dwelling, it must be separated a minimum of ten (10) feet from the primary dwelling.
 - (4) In all districts except CD-2, an Accessory Dwelling may not exceed 600 square feet of habitable space; in a CD-2 Character District, an Accessory Dwelling may not exceed 1,000 square feet of habitable space.
 - (5) An Accessory Dwelling Unit may not be used for Transient accommodations or as a Short-Term Rental Unit.
 - (6) The Accessory Dwelling must share ownership and utility connections with the primary dwelling.
 - b. **Adult - Oriented Establishments** shall be permitted in accordance with the applicable Use Table, subject to the following:
 - (1) No Adult - Oriented Establishment shall be operated or maintained in the City within 1,000 feet, measured from property line to property line, of a school, religious facility, public recreation facility, or licensed day care facility.
 - (2) No Adult - Oriented Establishment shall be operated or maintained in the City within 1,000 feet, from property line to property line, of a boundary of a Residential District or a Residential Use.
 - (3) No Building or Structure associated with the Adult - Oriented Establishment shall be closer than 50 feet to a property line of an adjacent Non-Residential District or Use.
 - (4) No Adult - Oriented Establishment shall be operated or maintained in the City within 1,000 feet, measured from property line to property line, of another Adult - Oriented Establishment.
 - c. **Agricultural Activities**, except as certain enterprises that produce the majority of their income from agricultural activities may be exempted from certain zoning restrictions pursuant to TCA. Section 44-18-104(c)(4) shall be subject to the following:

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

- (1) Barns, feed Lot or Building Sites, pens, and stockyards may be permitted in accordance with the applicable Use Table, subject to the following:
 - (a) Barns, feed Lot or Building Sites, pens and stockyards shall require a minimum separation of 200 feet from all property lines.
 - (b) The location of such an activity shall be in an area sparsely developed during the length of time the Use as a stockyard or feed Lot or Building Site is anticipated;
 - (c) The site area shall be a minimum of twice the minimum required for the applicable District. Sites containing outdoor animal pens shall require a minimum site area of four acres.
 - (d) All proposals shall include a site plan which contains, at minimum, the following information:
 - Existing and proposed contours of the site and up to 100 feet beyond the site boundary. Contour intervals shall be at two foot intervals;
 - Location of the area in which the proposed keeping of animals is to be conducted;
 - Location of all proposed buildings, animal pens, roadways and other facilities proposed on the site;
 - Proposed method of drainage of the animal pens and any proposed waste lagoons;
 - Proposed fencing of the site; and
 - Location of all existing or platted residences on adjacent properties.
- d. **Asphalt Plants and Other Facilities for the Manufacture and Storage of Chemicals, Petroleum Products, Explosives, and Allied Products** shall be permitted in accordance with the applicable Use Table, subject to the following:
 - (1) A Heavy Manufacturing Permit shall be required (See Section 8.5.22) in addition to a Conditional Use Permit.
 - (2) The boundary of the property shall be at least 1,500 feet from any Residential Use or District.
 - (3) The Use shall be totally enclosed by a security fence or wall at least 8 feet high or enclosed within a fire proof Building.
 - (4) All plans shall be reviewed by Fire and Emergency staff prior to approval in order to determine that existing services provide adequate protection for citizens.
 - (5) Any additional conditions imposed during the Heavy Manufacturing Permit or Conditional Use Permit process.
- e. **Attached Dwellings, which includes Apartments, the Residence portion of a Live/Work Building, Mixed Use Building, or Flex Building, Multifamily Dwellings, Two-Family Dwellings, Duplexes, Rowhouses, Large Multi-family Buildings and Small Multi-Family Buildings, shall be permitted in accordance with the applicable Use Table, subject to the following:**
 - (1) Within the CD-2, CD-3L, and CD-3 District no more than one (1) Duplex Building (each Duplex Building containing two Dwellings) may be located on any Block Face.
 - (2) Within the CD-3 District, Duplex Buildings shall have only one entrance along the frontage, with any additional exterior entrances located within the 3rd layer.
 - (3) Party walls, subject to the provisions of the Standard Building Code and National Fire Protection Association Fire Code, shall be provided along all points of attachment.
 - (4) Additional Use limitations may be applicable to specific types of Attached Dwellings.

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- (5) Within the CD-5 District buildings enfronting the rights of way identified in Section 4.3.9.C must contain a retail sales or service use, restaurant use, arts-related use, or office use at the sidewalk level through the depth of the second layer for at least 80 percent of the building frontage.
- (6) In all districts, Townhouses shall be subject to the following limitations:
 - (a) Garages, when they are provided, must be located at the rear of the Building facing an Alley or Driveway;
 - (b) Individual unit parking and driveways must be located at the rear of the Building;
 - (c) On-street parallel parking is permitted;
 - (d) Parking Lots and Parking Areas are permitted in accordance with 4.3.9. E.6.jj and 4.3.12.
- f. **Bar, Tavern, or Nightclub** shall be permitted in accordance with the applicable Use Table, subject to the following:
 - (1) With the exception of nightclubs, taverns, or bars located within the District CD-5 and the Columbia Arts District Overlay, the applicant shall demonstrate that no pre-existing Place of Worship, Schools or public park is located within 500 feet of the proposed nightclub or similar establishment. Within the Columbia Arts District Overlay the applicant shall demonstrate that no pre-existing Place of Worship, Schools or public park is located within 200 feet of the proposed nightclub or similar establishment.
 - (a) The distance shall be measured in a straight line from the front door of the building to the front door of the church.
 - (b) For public parks, said distance shall be measured in a straight line from the front door of the building to the closest point of the park property.
 - (c) For schools, said distance shall be measured in a straight line from the front door of the building to the front door of the school.
 - (2) No nightclub, tavern, or bar shall be located on a Lot or Building Site Adjoining any property zoned CD-2, CD-3L, CD-3, SD-MHP, or PUD-R.
 - (3) No outside storage shall be located on the site.
- g. **Car Wash** shall be permitted in accordance with the applicable Use Table, subject to the following:
 - (1) No storage, repair, or sales of vehicles shall be allowed on the site.
 - (2) Provisions shall be made for an on-site drainage system to capture water used to wash vehicles. This water shall be discharged into a sanitary sewer system or another approved on-site system and shall not be discharged into the stormwater system.
 - (3) No wash bay shall face or be located in the 1st or 2nd Layer or the Frontage.
- h. **Civic Buildings** in all districts may utilize the lot occupation, building, and other standards of the Civic District listed at **Table 4.3.1-N**
- i. **Concrete Batch Plants and Concrete Manufacturing Plants** shall be permitted in accordance with the applicable Use Table, subject to the following:
 - (1) A Heavy Manufacturing Permit shall be required (See Section 8.5.22) in addition to a Conditional Use Permit.
 - (2) The facility shall be at least 1,500 feet from any Residential Use or Residential District.
 - (3) The property may not be adjacent to an existing Hospital, Day Care Facility, Educational facility, Religious Facility, Long Term Care Facility, Continuum of Care Facility, or Assisted Living Facility.
 - (4) The site shall be at least four acres in size and shall have access on a major or minor thoroughfare.

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- (5) Property boundaries facing public streets shall be fenced with a six foot high fence.
- (6) Any additional conditions imposed during the Heavy Manufacturing Permit or Conditional Use Permit process.
- j. **Correctional Facilities** shall be permitted in accordance with the applicable Use Table, subject to the following:
 - (1) In order to accommodate outdoor recreational facilities and to allow for potential building expansion, the site size for facilities located outside the CD-5 Character District shall be a minimum of one acre in size or the minimum of the District, whichever is larger; provided that County and City jail facilities have no minimum site size.
 - (2) The facility shall be at least 650 feet from the nearest property which is Residentially zoned or used.
 - (3) The facility shall not be established within 1,320 feet of a public or private school, day care, or Place of Worship.
 - (4) Site Development shall be in conformance with the landscaping and dimensional requirements of the applicable District.
 - (5) The Use requires a Conditional Use Permit, which may be denied when the Use would be detrimental to nearby properties or may add conditions or safeguards to the approval in order to protect the health and welfare of citizens.
- k. **Drive-Through Facilities** shall be permitted in accordance with the applicable Use Table, subject to the following:
 - (1) Where no street separates the Use and a Residentially zoned or Residentially used property, at least 40 feet of separation shall be maintained between such Residential property Line and the Drive-Through facility.
 - (2) Drive-through Facilities must be located in the 3rd Layer and the location of Drive-Through Facilities and associated facilities (for example: communications systems and access aisles) shall be identified on all submitted Plans.
 - (3) Any speaker systems associated with a Drive-Through Facility shall be designed and located so as not to be audible beyond the Lot or Building Site on which the Drive-Through Facility is located.
 - (4) Vehicular access to a Drive-Through Facility that is between a Thoroughfare or Internal Drive and a Building shall require a Parcel Buffer pursuant to Section 4.3.11 if such access is within 50 feet of, and visible from, the Thoroughfare or Internal Drive. Such Buffer shall be installed and maintained along the entire length of such vehicular access and the Adjacent Thoroughfare or Internal Drive
 - (5) Vehicle stacking areas shall be provided in accordance with Section 4.3.12.H.
 - (6) All other requirements for Drive-Throughs in this Code must be met.
- l. **Extractive Uses** may be permitted in accordance with the applicable Use Table, subject to the following:
 - (1) The application for the Use shall include a plan for restoration procedures once the operation ceases.
 - (2) The location of such an activity shall be in an area sparsely developed during the length of time the mining or quarrying activity is anticipated;
 - (3) Any permit or approval issued or granted hereunder shall be based on a Development Plan or other documents submitted with an application which shall provide, together with all other requirements for such Development Plan, the following:
 - (a) Existing contours of the site and up to 100 feet beyond the site boundary. Contour intervals shall be at two foot intervals.

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- (b) Location of the area in which the proposed quarrying activity is to be conducted.
 - (c) Location of all proposed buildings, crusher and screening equipment, roadways, and other facilities proposed on the site.
 - (d) Proposed method of drainage of the quarry area.
 - (e) Proposed fencing of the quarry area. Fencing shall be provided around all open excavations.
 - (f) Methods proposed for blasting. Open blasting commonly referred to as “pop shots” shall be prohibited.
 - (g) Methods proposed to control noise, vibration and other particulate matter in order to meet the performance standards as set out in this Ordinance.
 - (h) Finished contours of the site after the quarrying operation has been terminated. The site shall be graded and / or filled so as to be in substantial conformity with the topography of the surrounding lands. All fill material shall be nontoxic, nonflammable, and noncombustible solids. All areas that are back – filled shall be left so that adequate drainage is provided.
- (4) Approval for mining and quarrying activity may also include accessory concrete batching plants, asphaltic cement mixing plants and/ or rock crushing activities on the same or Abutting Lots or Building Sites, which may have directly opposing Frontages on the same public street. If such accessory activities are included on the quarry site, the total site must meet all of the Conditional Use requirements for mining and quarrying activities; however, in conditions of multiple Lots or Building Sites, the outer perimeter of the site shall be considered the Lot Line or Building Site Line;
- (5) Before issuing a Conditional Use permit, the Board of Zoning Appeals shall require the owner of the quarry facility to execute a bond not less than \$1,000 per acre or more than \$2,000 per acre of active quarry throughout a five year period to restore the lands in the manner prescribed herein, including the removal of all Structures and machinery;
- (6) Any permit issued hereunder shall not be for a period exceeding five years. After the expiration date of such permit, the Board of Zoning Appeals may review and grant an extension of time in the manner and procedure as prescribed for an original application.
- m. **Family Day Care Facilities** shall be permitted in accordance with the applicable Use Table, subject to the following:
- (1) A maximum of 12 clients may be served at any one time.
 - (2) Overnight accommodation shall not be permitted.
 - (3) No outdoor public address systems shall be allowed.
 - (4) The facility shall contain twice the minimum Lot area for the underlying District.
 - (5) When the facility is located within a Non-Residential area, the Fire Marshall shall review the proposal prior to approval and make a recommendation.
 - (6) A client drop off area shall be provided. All required Parking shall be in the Rear Yard or Side Yards; however, required Parking may be located in the Street Yard if the Zoning Administrator finds that such Parking is safe, not detrimental to the neighborhood, accessible, and compatible with surrounding properties.
 - (7) All other standards of the applicable District shall be met.
- n. **Food Truck Courts** shall be permitted as a Principal Use on any Lot or Building Site in accordance with **Table 4.3.9.A-1**, subject to the following:

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- (1) Approval of a Development Plan pursuant to Section 8.5.6. As part of the Development Plan application, the Zoning Administrator shall review the items listed below and may request review by other City of Columbia officials.
- (2) Each Food Truck operating within a Food Truck Court must hold a current Mobile Vending permit from the City of Columbia.
- (3) A designated manager must be responsible for the orderly organization of the site, the cleanliness of the site, and compliance with all City of Columbia regulations.
- (4) The Food Truck Court must be kept clear of litter and debris at all times.
- (5) Waste receptacles must be provided on site during all hours of operation.
- (6) At least 30 percent of the lot or building site area must be shared common area not utilized for Food Truck stalls or parking.
- (7) The common area shall be designed for customer use and must include designated seating for patrons.
- (8) Electrical service must be provided on-site.
- (9) Food Truck Courts on lots or building sites greater than or equal to 0.50 acres in area must provide on-site accessible restroom facilities available for both customers and employees within a permanent structure.
- (10) Food Truck Courts on lots or building sites less than 0.50 acres in area must either provide on-site accessible restroom facilities; or a written agreement granting use of restrooms within 300 feet of the Food Truck Court for customers and employees during hours of operation.
- (11) Temporary or portable toilet facilities are not permitted.
- (12) Each Food Truck shall occupy a designated Food Truck Stall.
- (13) Food Truck stalls shall conform to the dimensional standards of a parallel parking stall in **Table 4.3.12.C-1** and to the off-street parking surface requirements of the applicable Character District or Special District.
- (14) There shall be at least ten feet of unobstructed clearance between each Food Truck.
- (15) Food, drink, and other merchandise must be sold directly from Food Trucks or other Mobile Vending Apparatuses.
- (16) Except in Character District CD-5, the sale of alcohol in a Food Truck Court is prohibited.
- (17) Food Truck Courts with more than five Food Truck stalls must utilize a single point of sale system associated with a business entity with a situs and current business license and in the City of Columbia.
- (18) Required parking shall be provided as described at § 4.3.12.B.3; on another lot or building site within 1,320 feet of the Food Truck Court by parking agreement or easement, provided the principal use on the shared site shall maintain minimum required parking;
- (19) On street space within 1,320 feet of the Food Truck Court; or a combination of all above.
- (20) The Food Truck Court operator shall provide a detailed operating plan which includes:
 - (a) The maximum number of Food Trucks that can operate on the site at one time;
 - (b) A copy of the rules of operation to which Food Trucks operating on the site must adhere;
 - (c) A plan for the appropriate disposal of fats, oils, and grease which prevents release into the city sanitary sewer;
 - (d) Hours of operation of the Food Truck Court;
 - (e) Contact information for the designated manager;
 - (f) An explanation of how required parking will be provided; and

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- (g) An explanation of how required restroom facilities will be provided.
- (21) The Food Truck Court operator shall provide a plot or building site plan which depicts:
 - (a) The location of all seating areas, trash receptacles and other movable and permanent physical elements of the Food Truck Court; and
 - (b) All other information deemed necessary by the Zoning Administrator.
- O. Fuel Sales and Gasoline Sales Facilities, including Convenience Store with Gasoline Sales Facility,** shall be permitted in accordance with the applicable Use Table, subject to the following:
 - (1) Fuel pumps shall be located at least 15 feet from any property line.
 - (2) No outdoor storage shall be allowed.
 - (3) Storage of vehicles for more than 24 hours is prohibited.
 - (4) A spill prevention and counter measures plan shall be provided prior to construction plan approval that includes, at a minimum:
 - (a) Clean up procedures for fuel (or other hazardous material) spills occurring inside and outside the Building;
 - (b) Counter measures for use in preventing fuel (or other hazardous material) spills from entering the stormwater collection system;
 - (c) Routine cleanup procedures for work area and Parking Areas; and
 - (d) Washdown water shall not be permitted to enter the stormwater collection system.
 - (5) Pumps shall be located in the 3rd Layer.
 - (6) Within Districts CD-4, CD-4C, CD-5C, and PUD-MU, the maximum number of fuel dispensing pumps shall be eight per Lot or Building Site. Within District CD-5, the maximum number of fuel-dispensing pumps shall be eight for the entire District.
- p. Golf Course, Country Club, Swim Club, and Tennis Club** shall be permitted in accordance with the applicable Use Table, subject to the following:
 - (1) No maintenance Building or clubhouse shall be closer than 100 feet from any Residentially zoned or Residentially used land.
- q. Group Assembly Facilities** shall be permitted in accordance with the applicable Use Table, subject to the following:
 - (1) The locations, size and design of such facilities shall be situated so that the proposed Development shall be compatible with the Development within the surrounding area thus reducing the impact upon the surrounding area;
 - (2) The traffic generated by such facility shall be safely accommodated along major streets without traversing local minor streets; and
 - (3) When an application for a Group Assembly permit includes an amusement park, sports arena, fairground, racetrack, or similar recreational pursuits, the following requirements shall be observed:
 - (a) The minimum site area shall 25 acres;
 - (b) The minimum setback of all Structures from all public roads shall be 100 feet;
 - (c) Such facility shall be situated so that no Residentially zoned or Residentially used property is located closer than 500 feet from the Building entrance of such facility;
 - (4) Access to such facility shall be by a paved public major arterial or major collector thoroughfare. Traffic shall not be directed through Residentially zoned or Residentially used property, through areas that are Adjacent to Residentially zoned or Residentially used property, or on minor Residential

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streets traversing Residentially zoned or Residentially used property areas or areas that are Adjacent thereto;

- (5) Any lighting provided at such facilities shall be designed so that no direct light falls on Adjacent Residential property; and
 - (6) Accessory Uses may be permitted in conjunction with the Principal Use of the property provided that such uses are physically designed as a part of or within the principal Structure. Such Uses may include food sales, beverage sales, gift or souvenir shops, and similar activities.
- r. **Group Living Uses** indicated on the applicable Use Table as Uses Permitted with Limited Conditions are permitted subject to following:
- (1) The home shall be operated in a manner that is compatible with the neighborhood and shall not be detrimental to Adjacent properties as a result of traffic, noise, refuse, parking, or other activities.
 - (2) When located in a Residential neighborhood, the home shall maintain a residential appearance compatible with the neighborhood.
 - (3) The home shall meet all state requirements, and all applicable housing and building codes.
- s. **Hazardous and Low Level Nuclear Material Disposal and Storage Areas** shall be permitted in accordance with the applicable Use Table, subject to the following:
- (1) A Heavy Manufacturing Permit shall be required (See Section 8.5.22) in addition to a Conditional Use Permit.
 - (2) The facility shall comply with all applicable State and federal regulations.
 - (3) The facility shall be located at least 1,500 feet from any Residential property.
 - (4) Maps and engineering drawings shall be provided showing proposed drainage, proposed sewer system design, the depth of the water table, soil composition, all existing surface water, and all existing uses within ¼-mile of the property line.
 - (5) The site shall be enclosed by a fence or wall at least 6 feet high. Entrance and exit shall be through a gate which shall be locked during non-business hours.
 - (6) Any additional conditions imposed during the Heavy Manufacturing Permit or Conditional Use Permit process.
- t. **Heavy Industrial Facilities, Not Otherwise Classified** may be permitted in accordance with the applicable Use Table, subject to the following:
- (1) A Heavy Manufacturing Permit shall be required (See Section 8.5.22) in addition to a Conditional Use Permit.
 - (2) The facility shall comply with all applicable State and federal regulations.
 - (3) Any additional conditions imposed during the Heavy Manufacturing Permit or Conditional Use Permit process.
- u. **Home Occupation**, the following standards are intended to ensure that home occupations are compatible with the residential character of neighborhoods where they are located.
- (1) There are two classes of Home Occupation:
 - a. A Minor Home Occupation shall be permitted upon approval of a Minor Home Occupation permit by the Zoning Administrator. The Zoning Administrator shall establish a process for review and issuance of permits for minor home occupations.
 - b. A Major Home Occupation shall be allowed only with the approval of the Board of Zoning Appeals. Such approval shall follow the process of a conditional use permit.

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The Zoning Administrator shall review such Major Home Occupation requests and recommend appropriate conditions of approval to the Board of Zoning Appeals.

- (2) The Zoning Administrator may refer Minor Home Occupations to the Board of Zoning Appeals upon a determination that the proposed home occupation presents a risk to the residential character of the neighborhood or quiet enjoyment of other property owners.
- (3) If the Zoning Administrator denies a request for a Minor Home Occupation, or revokes a previously issued permit, the applicant may appeal the decision to the Board of Zoning Appeals. Such a request shall be evaluated as a Conditional Use for a Major Home Occupation permit.
- (4) The following limitations apply to all Home Occupations:
 - a. The home occupation shall be clearly incidental and secondary to the use of the property for residential purposes;
 - b. A home occupation shall not be established prior to the residents conducting the home occupation taking possession of, and residing in, the dwelling;
 - c. Outside storage or display of materials, merchandise, or inventory is prohibited;
 - d. Exterior alteration that changes the residential character of the principal building is prohibited;
 - e. No exterior building signs shall be permitted except as specifically provided in Article 7 of this ordinance;
 - f. Receipt, sale or shipment to and from the premises is permitted by regular U.S. Mail and express shipping service characteristic of residential neighborhoods; large-volume, business-to-business commercial deliveries are prohibited; and
 - g. The applicant shall obtain all appropriate licensure required by the State of Tennessee.
- (5) The following limitations apply to Minor Home Occupations:
 - a. The Home Occupation must be conducted entirely within the principal structure;
 - b. The Home Occupation shall not exceed fifty percent of the total floor area of the principal building;
 - c. No person other than a family member residing on the premises shall be employed as part of a minor home occupation unless such employee(s) works off-premises;
 - d. There shall be no customers or clients on the premises of a minor home occupation; and
 - e. No commercial vehicles or trailers, other than ordinary passenger vehicles; shall be permitted on premises.
- (6) The following limitations apply to Major Home Occupations:
 - a. A Major Home Occupation may be conducted within an accessory building;
 - b. A major home occupation may include two employees who do not reside in the home;
 - c. Except in-home childcare licensed by the State of Tennessee, a major home occupation may have no more than two customers or clients on the premises at one time;
 - d. Shipment and delivery to and from the premises are prohibited between the hours of 9 pm and 7 am;

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- e. No employees, customers, or clients may be on the premises between the hours of 9 pm and 7 am;
- f. Trailers, equipment, and commercial vehicles, when permitted by the Board of Zoning Appeals, must be stored in the Third Layer and screened from view; and
- g. The Board of Zoning Appeals may further restrict the number of employees, hours of operation, deliveries, and parking of commercial vehicles and equipment on site.

(7) Revocation

- a. The Zoning Administrator may revoke the Home Occupation permit for failure to comply with these limited use standards, conditions imposed by the Board of Zoning Appeals, or other violations of City of Columbia ordinances.

v. Hospitals, Rehabilitation Facilities, and Centers for Observation shall be permitted in accordance with the applicable Use Table, subject to the following:

- (1) The minimum Side Yards and Rear Yards for Hospitals and Centers for Observation or Rehabilitation Facility shall be 50 feet for one or two Story Buildings, increased by five feet for each Story above two Stories.
- (2) The location and operation of such facility shall be in keeping with the character of the surrounding area and shall not have an adverse effect on the properties in the surrounding area.
- (3) All public utilities including a Central Sewage Collection and Treatment System shall be available to the site.

w. Hotels, Motels, and Extended Stay Hotels shall be permitted in accordance with the applicable Use Table, subject to the following:

- (1) The parcel shall be accessed from a Thoroughfare or Internal Drive.
- (2) Where the property line of a Motel is Adjacent to Residentially zoned or Residentially used property, the minimum depth for the required Yard along such Adjacent property shall be 50 feet and no Structures or Parking shall be permitted in the required Yard.
- (3) Any Accessory Uses such as restaurants and outdoor recreational activities shall not be located on the side of Adjacent to Residentially zoned or Residentially used property.

x. Long Term Care Facilities, Continuum of Care Facilities and Group Care Facilities shall be permitted in accordance with the applicable Use Table, subject to the following:

- (1) The purpose(s) of the facility must be clearly established by the agency responsible and the appropriate staff services must be provided to achieve the stated purpose(s).
- (2) Group Care Facilities accommodating from seven to 12 individuals shall have 24-hour staff and professional services in the behavioral sciences available.
- (3) Group Care Facilities accommodating more than 12 individuals shall have resident 24-hour staff, and shall provide professional services in the behavioral sciences.
- (4) The Planning Commission must make a written finding to the Board of Zoning Appeals regarding the foregoing requirements based on advice from such agencies as the Tennessee Department of Human Services.
- (5) An appropriate license must be secured for any activity regulated by any public agency, including the Tennessee Department of Human Services. Any activity lawfully regulated by any public agency may be permitted for only that time period for which a valid license is obtained. Where grades or classes of approvals are granted, only the most restrictive may be permitted.

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- (6) No more than one of either a Long Term Care Facility, Continuum of Care Facility, or Group Care Facility may be permitted on a single Block.
 - (7) A Family Care Facility may not accommodate more than one individual (excluding staff) per living room.
 - (8) The home shall be operated in a manner that is compatible with the neighborhood and shall not be detrimental to Adjacent properties as a result of traffic, noise, refuse, Parking or other activities.
 - (9) The home shall maintain a Residential appearance compatible with the neighborhood.
 - (10) The home shall meet all state requirements, and all applicable housing and building code requirements.
 - (11) A Group Care Facility must contain 1,500 square feet of net floor space for the first six residents, including resident staff, and 150 square feet of net floor space per person above six residents.
 - (12) Necessary utilities including a Central Sewage Collection and Treatment System shall be available to the site.
 - (13) Group Care Facilities accommodating from seven to 12 persons, and Family Care Facilities accommodating from one to six persons shall meet all bulk regulations for a Residence in the applicable District.
 - (14) Group Care Facilities accommodating from 13 to 50 persons shall have a minimum Lot/Building Site Area of five acres. When more than 50 persons are accommodated, there shall be one additional acre is required for each ten persons accommodated.
 - (15) The minimum Side Yards and Rear Yards for Group Care Facilities accommodating 13 or more persons shall be 50 feet for a one – or two – story building, increased by five feet for each story above two.
 - (16) The Development Plan shall be subject to approval by the Planning Commission, taking into account but not limited to the following considerations:
 - (a) Compatibility with the surrounding area;
 - (b) Any adverse impact of the proposed activity on the character of the area;
 - (c) Needed fencing and screening;
 - (d) Adequate open space and recreation space if appropriate; and
 - (e) All other requirements of this Section.
 - (17) Notwithstanding the factors listed above, the Board of Zoning Appeals shall be permitted to vary the Required Yards or Setbacks and the Screening for Parking when the application involves a change in activities in existing Structures. The Development Plan shall provide for compensating features to offset any potentially adverse conditions that might be brought about by said modification to the requirements.
- y. **Manufactured Homes** shall be permitted in accordance with the applicable Use Table, subject to the following:
- (1) No person shall place a Manufactured Home on any Lot or Building Site within a Residential District, unless it is used actively for Residential purposes. Non-Residential Use of a Manufactured Home may be permitted as a Temporary Use subject to Section 4.3.8.B, Temporary Construction Offices.
- z. **Manufactured Home Parks** shall be permitted in accordance with the applicable Use Table, subject to the following:
- (1) Applications for a Multi-family Dwelling shall be subject to the Site Development Plan Review requirements of Section 8.5.6 and shall require Planning Commission approval.

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- (2) Manufactured Home Parks must be designed and constructed to the same standards as a site-built subdivision to assure a safe, healthy Residential environment.
- (3) Where permitted, Manufactured Homes within a Manufactured Home Park shall be located to minimize hazards due to possible subsidence, flood or erosion, and insect or rodent infestation.
- (4) Landscaping and Buffering shall be provided in conformance with Section 4.3.11. A planting plan shall be submitted with the final Development Plan.
- (5) Publication "NCSBCS Standard for Manufactured Home Installations" (ANSI A 225.1 – 1982), including NFPA Standard for Fire safety Criteria for Manufactured Home Installations, Sites and Communities (NFPA 501A – 1982), shall be applicable to Manufactured Home Parks, and is hereby adopted by reference.
- (6) Each Manufactured Home Park shall be served by a public water supply of adequate quantity, quality and pressure.
- (7) Adequate fire protection, as determined by the Municipal Fire Department, shall be provided for each Manufactured Home located within a Manufactured Home Park.
- (8) Each Manufactured Home within a Manufactured Home Park shall be served by a Central Sewage Collection and Treatment System.
- (9) Solid waste collection stands shall be provided for waste facilities. Such stands shall be so designed as to prevent containers from being tipped, to minimize spillage and container deterioration, and to facilitate cleaning around them. Stands shall be screened in accordance with Section 4.3.11.
- (10) Service Buildings housing sanitation and laundry facilities shall be permanent Structures complying with all applicable Ordinances and statutes regulating buildings, electrical installations, and plumbing and sanitation systems.
- (11) All Manufactured Home Stands shall be located within reasonable proximity to a fire hydrant or similar fire protection facilities.
- (12) A safe, convenient, all-season pedestrian circulation system shall be provided and maintained between locations where pedestrian traffic is concentrated. Such common walks shall have an adequate gradient and a minimum width of three feet.
- (13) Direct vehicular access to the Manufactured Home Park shall be provided by means of an abutting improved public street or way and access to each Manufactured Home site shall be by a permanently maintained private street or way which is protected by a permanent Easement. Sole vehicular access shall not be by an Alley.
- (14) All Vehicular Use Areas used for common access for two or more residents shall be suitably paved and maintained as a condition of approval of the Manufactured Home Park.
- (15) The limits of each Manufactured Home Site shall be marked on the ground by suitable means. Location of Manufactured Home Site limits on the ground shall be the same as shown on accepted plans.
- (16) Manufactured Homes shall have a minimum side-to-side clearance of 25 feet and a minimum end-to-end clearance of 15 feet.
- (17) There shall be a minimum distance of ten feet between the nearest edge of any Manufactured Home Stand and an Abutting Street or Internal Drive.
- (18) Each Manufactured Home Site shall be provided with an outdoor living and service area. Such area shall be improved as necessary to assure reasonable privacy and comfort. The minimum area of such

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outdoor living and service area shall be at least 300 square feet, with a minimum dimension of 15 feet. This area shall not be counted towards required Civic Space.

aa. **Manufactured Home Sales** shall be permitted in accordance with the applicable Use Table, subject to the following:

- (1) The boundary of the property shall be a minimum of 500 feet from any Residentially zoned or Residentially used property.
- (2) The display area shall be set back a minimum of 25 feet from the street right-of-way and shall be Screened from the Frontage in accordance with Section 4.3.11.
- (3) In addition to the landscaping requirements in Sections 4.3.11 and 4.3.16, the following landscaping shall be provided within any Front (Street) Yard:
 - (a) An evergreen hedge which is at least 24 inches in height; or
 - (b) Plantings which meet the requirements for plantings under Section 4.3.9.D.6.y(5).
 - (c) Storage and repair activities shall be screened from off-site views.
- (4) A minimum separation of at least 10 feet shall be maintained between display homes. Display homes which are visible off-site shall be provided with some type of material and/or landscaping around the base which will prevent open views underneath the Manufactured Home.

bb. **Mobile Vending** shall be permitted in accordance with **Table 4.3.9.A-3**, subject to the following:

- (1) Issuance of a Temporary Use Permit pursuant to Section 8.5.9.
- (2) All Mobile Vending shall be subject to the following requirements and limitations:
 - (a) Access, ingress, egress, and interior vehicular or pedestrian circulation at the vending location shall not be impeded.
 - (b) Mobile vendors may not obstruct corner or driveway sight triangles depicted in **Tables 4.3.3.G.1 and 4.3.3.G.2**.
 - (c) The primary use on site shall maintain an adequate parking supply.
 - (d) Upon request of the Zoning Administrator or the Columbia Police Department the Mobile Vendor shall provide a written and signed agreement from the property owner, or owner's authorized agent, granting permission for the temporary use of the property, which shall include a provision for the usage of onsite restroom facilities when tables and/or chairs are incorporated.
 - (e) Trash receptacle of adequate size shall be provided by the vendor.
 - (f) All signage shall be on located on the mobile vending apparatus.
 - (g) With the exception of special events, vending shall only take place on a hard surface conforming to Section 4.3.12.C-7 or on properties with existing non-conforming parking areas with an approved driveway entrance.
 - (h) With the exception of Food Trucks, mobile vendors shall not remain on a single site for more than four (4) consecutive days.
 - (i) Food Trucks and shall remain movable at all times and may not be permanently secured to the site; upon request of the Zoning Administrator, each operator of a Food Truck must show current registration to operate the apparatus on public roads and demonstrate that the apparatus is movable.
 - (j) Mobile vendors must dispose of fats, oils, and grease appropriately and may not connect to city sanitary sewer.
 - (k) Any Mobile Vendor serving alcohol must be licensed by the Tennessee Alcoholic Beverage Commission and must comply with all regulations related to the sale of alcohol. Restroom facilities required for employees.

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- (l) Mobile Vendors operating at a location for a duration of more than four hours must have a written agreement, available upon request by the Zoning Administrator or the City of Columbia Police Department, that permits employees to have access to a restroom no more than 300 feet from the vending location during all the hours of operation.
- (3) Within Character District CD-5, Food Trucks and Pushcarts may be permitted to set up for service or to conduct business in the public right of way under the following criteria:
 - (a) Mobile Vending locations shall be limited to street segments designated as appropriate for Mobile Vending by the Zoning Administrator; the Zoning Administrator shall create a map of street segments designated for mobile vending at least quarterly; Mobile Vendors who set up for service in the right of way must verify allowable vending locations;
 - (b) Hours of operation shall be limited to 7:00 am to 10:00 pm;
 - (c) Only one parking space shall be occupied;
 - (d) Such Food Truck shall be removed from the parking space each day; no Food Truck may remain in the public rights of way for more than six (6) consecutive hours;
 - (e) Mobile Vendors shall not reserve, obstruct, or otherwise limit the use of parking spaces while not actually occupying the space;
 - (f) The Zoning Administrator, the Department of Public Works, or the City of Columbia Police Department may direct the Mobile Vendor to vacate the right of way at any time, the Mobile Vendor must immediately comply with directions to leave a parking space;
 - (g) The mobile vendor shall clearly identify the mobile vending area with traffic cones or similar device.
- (4) Within CIVIC Districts, Food Trucks may be permitted to set up for service or to conduct business under the following criteria:
 - (a) The Mobile Vendor holds a current Mobile Vending Permit
 - (b) The City of Columbia, or a person or organization that has entered into a use agreement with the City of Columbia, has invited the Mobile Vendor to cater a community event;
 - (c) The serving window of the Food Truck must face away from any right of way; and
 - (d) The mobile vendor shall clearly identify the mobile vending area with traffic cones or similar device.
- (5) Except as set forth in Section 4.3.9.E.aa.(3) with respect to Character District CD-5, in order to maintain the safe movement of vehicles and pedestrians on the City's roadways, Mobile Vendors, excluding Ice Cream Truck and Canteen Truck operations, shall not be permitted to set up for service or to conduct business on any public right-of-Way.
- (6) In addition to the circumstances under which Mobile Vendors may be permitted to set up for service or to conduct business in the public right of way of Character District CD-5 under Section 4.3.9.E.aa.(3), Mobile Vendors shall be permitted to set up for service or to conduct business in Character District CD-5 for a special event that includes full or partial street closures, or mass gathering permits sanctioned by the City.
- (7) A canteen truck with a current mobile food vending permit may operate on private property or from the right of way adjacent to a construction site with an active building permit in order to cater to on-site workers: between the hours of 6:00 a.m. and 6:00 p.m. on week days; a Canteen Truck may not remain on any one site for more than one (1) hour each day; the serving window of the Canteen Truck must face private property.
- (8) An Ice Cream Truck with a current mobile food vending permit may operate on private property or from the right of way; an Ice Cream Truck may not remain at any one location for more than 15

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minutes before relocating to another location not less than one- quarter mile from the previous location; the serving window of the Ice Cream Truck must face private property.

(9) The Zoning Administrator may revoke the annual temporary use permit found to be in violation of any provision of this Ordinance.

cc. **Motor Vehicle Maintenance, Repair, Fuel Sales, Service or Cleaning, other than Car Wash** shall be permitted in accordance with the applicable Use Table, subject to the following:

(1) Fuel and oil pumps, if present, shall be at least 15 feet from property lines.

(2) Pump island canopies shall be so located that a vertical downward projection of the edge nearest the Front Lot Line or Building Line shall not be closer than 1/2 the required yard depth for the District in which the Use is located.

(3) Any repair, servicing, maintenance or other work on vehicles shall be conducted within an enclosed Structure.

(4) No outdoor storage shall be allowed.

(5) Storage of vehicles for 15 days or more shall be prohibited.

(6) A spill prevention and counter measures plan shall be provided prior to construction plan approval that includes, at a minimum:

(a) Cleanup procedures for spills occurring inside and outside the Building;

(b) Counter measures for use in preventing spills from entering the stormwater collection system;

(c) Routine cleanup procedures for work areas and Parking areas; and

(d) Wash-down water shall not be permitted to enter the stormwater collection system.

dd. **Motor Vehicle Sales, Leasing, and Rentals** shall be permitted in accordance with the applicable Use Table, subject to the following:

(1) All Junk Vehicles or inoperable vehicles or equipment shall be within a completely enclosed Building.

(2) Vehicle or equipment repairs made on-site shall be conducted within an enclosed Structure.

(3) Adequate on-site area shall exist for the loading and unloading of vehicles from car carriers to ensure that no such loading or unloading occurs in any Right-of-Way.

(4) No vehicles shall be displayed in required landscaping or in Rights-of-Way.

(5) Vehicle sales, leasing, and rental facilities shall meet the following Parking Area landscaping standards rather than those of Section 4.3.12.C:

(a) Trees shall be planted at the rate of one tree per 50 linear feet, and shrubs at the rate of one shrub per five linear feet of display area.

(b) Plants may be grouped together, provided that at least 250 square feet of contiguous growing area, not encroached upon by impervious surfaces, surrounds each planted tree.

(6) The provisions of Section 4.3.9.E (ff) shall not apply.

ee. **Non-Banking Financial Institution** shall be permitted in accordance with the applicable Use Table, subject to the following:

(1) A Non-Banking Financial Institution shall be located no less than 1,320 linear feet from the property line of another property upon which another Non-Banking Financial Institution is located.

ff. **On-Street Vending** shall be permitted in accordance with the applicable Use Table, subject to the following:

(1) Issuance of a Temporary Use Permit pursuant to Section 8.5.9.

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gg. **Outdoor Display** shall be permitted in accordance with the applicable Use Table, subject to the following:

- (1) Outdoor Display shall be permitted only through the Administrative Adjustment process in Section 8.5.8.
- (2) A binding site plan illustrating the extent of the permitted area for outdoor display shall be required.
- (3) Vehicles for sale, lease or rent as part of a properly permitted Use (including boats and manufactured housing) shall not be considered merchandise, material or equipment subject to the restrictions of this Section.
- (4) Plant material at a Plant Nursery or Plant Nursery with Landscape Supply shall not be considered merchandise, material or equipment subject to the restrictions of this Section.
- (5) Waste generated on-site and deposited in ordinary refuse containers shall not be subject to the restrictions of this Section.
- (6) Temporary uses permitted by these zoning regulations are not subject to the requirements of this Section.
- (7) The requirements of this Section do not supersede any previously issued Conditional Use or special exception for outdoor display or storage.
- (8) The outdoor location of soft drink or similar vending machines shall be considered outdoor display where the location is visible from Adjacent Residential Development.
- (9) Outdoor acceptance of payment or other remittance (including cash registers or similar devices) shall not be permitted, except for activities permitted through a Temporary Use permit.

hh. **Outdoor Recreation** shall be permitted in accordance with the applicable Use Table, subject to the following:

- (1) The use shall have direct access from a major or minor thoroughfare.
- (2) Food sales shall be provided for patrons of the recreational activity only.
- (3) Passive recreational activities may use alternative Parking surfaces as approved by the City Engineer.

ii. **Outdoor Storage**, where permitted by this Ordinance, shall be located at least 15 feet from the public right-of-way and any Abutting Residential Use or Residential District. All areas utilized for outdoor storage should be screened from view from the public right-of-way.

jj. **Parking Lots** shall be permitted in accordance with the applicable Use Table, subject to the following:

- (1) No storage, repair, or sales of vehicles shall be allowed on the site.
- (2) A wall or continuous evergreen hedgerow of at least 24 inches and fence no more than 48 inches in height shall be placed around the perimeter of the Parking area to prevent Encroachment of vehicles into the surrounding area. Openings for pedestrian and vehicular access are permitted.
- (3) Compliance with all other applicable provisions of this Code related to Parking Lots.

kk. **Self-Service Storage Facilities** shall be permitted in accordance with the applicable Use Table, subject to the following:

- (1) Except when located within District SD-LI or SD-HI, there shall be a Parcel Buffer provided pursuant to Section 4.3.11.H, which shall include a perimeter fence no less than four feet and no more than eight feet in height. Such fence shall be Screened in accordance with Section 4.3.1.
- (2) Barbed-wire, razor wire, or similar accoutrements may not be used on portions of the fence visible from a roadway. Acceptable materials include wrought iron, aluminum, stone, brick or other materials with similar appearance.

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- (3) One Loading Space shall be provided for each 10,000 square feet of enclosed storage area.
- (4) When located within a PUD District, the Use shall maintain a minimum 300 foot Setback from any property line along arterial roadways.

ll. **Short-Term Rental Units** shall be permitted in accordance with the applicable Use Table, subject to the following:

- (1) the Short-Term Rental Unit must be in a Building originally used or designed to be used as an abode or home of a person, family, or household in either a portion of a single-family house, or an individual Dwelling Unit in a two-family Dwelling, or townhouse, which Short-Term Rental Unit is rented wholly or partially for a period of less than thirty (30) continuous days occupancy for a fee;
- (2) the owner, defined as Single-Family Dwelling, of such Short-Term Rental Unit must reside on the premise;
- (3) each Short-Term Rental Unit must be registered with and licensed by the City.
- (4)

mm. **Tobacco, Vape, and Cannabinoid Retailers** shall be permitted where the Building, Lot and Building Site Principal Uses Table permits Retail Sales subject to the following limitations:

- (1) Tobacco, Vape, and Cannabinoid retailers shall be located no less than one thousand feet from
 - a. A existing Tobacco, Vape, and Cannabinoid retailer;
- (2) Tobacco, Vape, and Cannabinoid retailers shall be located no less than five hundred feet from
 - a. Private school serving any grades between kindergarten and twelfth grade;
 - b. A city or county park;
 - c. A daycare center; or
 - d. A church.
- (3) Tobacco, Vape, and Cannabinoid retailers shall be located no less than two hundred feet from any property zoned CD-2, CD-3, CD-3L, SD-MHP, or PUD-R.
- (4) Tobacco, Vape, and Cannabinoid retailers shall be located no less than fifty feet from any property used as a Single-Family or Two-Family home or Townhouse.
- (5) Required distances shall be measured from property line to property line.
- (6) The hours of operation for a Tobacco, Vape, and Cannabinoid Retailers shall be no earlier than six A.M. and no later than ten P.M.

nn. **Townhouses or Rowhouses** shall be permitted in accordance with the applicable Use Table, subject to the following:

- (1) Party walls, subject to the provisions of the Standard Building Code and National Fire Protection Association Fire Code, shall be provided along all points of attachment.

oo. **Transfer Stations and Recycling Facilities** shall be permitted in accordance with the applicable Use Table, subject to the following:

- (1) The transfer station shall handle only waste that can be legally handled or disposed of in a solid waste landfill facility. This limitation shall not preclude use of the transfer station site for collection, processing, storage, and transfer of recyclable materials or for other waste reduction activities.
- (2) Recycling facilities shall handle only recyclable materials for which a permit has been obtained through the appropriate regulatory agency.

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- (3) The entrance Driveway shall be located on a major thoroughfare located within 2,000 feet of an interstate highway interchange.
 - (4) There shall be at least 500 feet of separation between the facility [building and vehicular use areas adjacent to the building] and the nearest Residential Structure.
 - (5) The facility shall conform to all applicable State and federal regulations.
- pp. **Utility Facilities** shall be permitted in accordance with the applicable Use Table, subject to the following:
- (1) Utility Facilities in Residential areas or adjoining Residential Uses shall maintain Residential area Setbacks or Required Yards, be fenced (unless totally enclosed with a Structure), and either be screened from view or designed to have a Residential appearance.
 - (2) Expansion of Utility Facilities originally approved through the issuance of a Conditional Use Permit pursuant to Section 8.5.16 of up to 20% or 1,000 square feet, whichever is greater, may be approved administratively by the Zoning Administrator.
- qq. **Waste Handling Facility, Not Otherwise Classified** may be permitted in accordance with the applicable Use Table, subject to the following:
- (1) A Heavy Manufacturing Permit shall be required (See Section 8.5.22) in addition to a Conditional Use Permit.
 - (2) The facility shall comply with all applicable State and federal regulations.
 - (3) Any additional conditions imposed during the Heavy Manufacturing Permit or Conditional Use Permit process.
- rr. **Wireless Communication Facilities other than Communications Towers** shall be permitted in accordance with the applicable Use Table, subject to the following:
- (1) The requirements set forth in this Section 4.3.9.D.6.n. shall govern the location of Towers that exceed, and antennas that are installed at a height in excess of 70 feet. The height limitations applicable to Buildings and Structures shall not apply to Towers and Antennas.
 - (2) Antennas or Towers located on property owned, leased, or otherwise controlled by the CITY shall be exempt from the requirements of this subsection, provided a license or lease authorizing such Antenna or Tower has been approved by City Council.
 - (3) This Section shall not govern any Tower, or the installation of any Antenna, that is under 70 feet in height and is owned and operated by a federally – licensed amateur radio station operator or is used exclusively for receive – only Antennas.
 - (4) The following requirements must be met:
 - (a) Site and landscape plans drawn to scale and landscape plans drawn to scale;
 - (b) A report including a description of the Tower with technical reasons for its design;
 - (c) Documentation establishing the structural integrity for the Tower’s proposed uses, certified by a professional engineer licensed in the State of Tennessee competent in such design, the general capacity of the Tower and information necessary to assure that ANSI (American National Standard Institute) standards are met;
 - (d) A statement of intent whether excess space on the Tower will be leased;
 - (e) Proof of ownership of the site or a copy of the owner’s authorization to use the site;
 - (f) Copies of any Easements necessary to gain access or limited Development areas;
 - (g) An analysis of the site containing existing topographical contours;

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

- (h) A written opinion from an appropriate authority that the soils and underlying materials will support the intended Structure;
 - (i) Evidence that the Tower facility meets technical emissions standards set by the FCC (Federal Communication Commission);
 - (j) Evidence of “Determination of No Hazard” from the FAA (Federal Aviation Administration), as well as all required FCC permit information;
 - (k) Alternatives to the Tower location and why this site was selected; and
 - (l) Evidence that the site complies with requirements of the NEPA (National Environmental Policy Act) in regard to impact on wildlife, endangered species, historical sites, Native American religious sites, floodplains, wetlands, high intensity white lights in Residential neighborhoods ,and frequency emissions in excess of FCC guidelines.
- (5) Towers may be built on the same Lot or Building Site with another Principal Use. A separation a minimum of the Tower height between the Tower and any other Principal Use is required in order to provide for the health, safety and welfare of individuals and Structures occupying the same site. Joint use is prohibited on a Lot or Building Site where a proposed or existing Principal Use includes the storage, distribution or sale of volatile, flammable, explosive or hazardous wastes such as LP gas, propane, gasoline, natural gas and corrosive or dangerous chemicals.
- (6) Towers 80 feet or more in height shall be located on the Lot so that the distance from the base of the Tower to any adjoining property line or supporting Structure of another Tower is a minimum of 100% of the proposed Tower height. No Variance shall be granted from this minimum setback requirement.
- (7) Except as specifically required by the FAA (Federal Aviation Administration) or the FCC (Federal Communication Commission), transmission Structures shall:
- (a) use colors such as gray, blue or green which reduce their visual impacts; provided, wooden poles do not have to be painted; and
 - (b) not be illuminated, except equipment shelters may use lighting for security reasons which is compatible with the surrounding neighborhood;
 - (c) not use strobe lights unless specifically required by FAA.
- (8) Any proposed Tower shall be structurally designed so as to accommodate the minimum number of foreseeable shared users.
- (9) No advertising or display is permitted on any Communication Tower.
- (10) Any Accessory Buildings or Structures shall be located a minimum of 50 feet from any adjoining property line. Except for emergency purposes, the accessory facilities may not include offices, long-term vehicular storage, other outdoor storage, or broadcast studios, unless the Use is permitted in the District.
- (11) The Tower base and equipment area shall be enclosed with a fence no less than six feet in height. Access shall be locked at all times when the site is not occupied.
- (12) Where the Tower site abuts or is contiguous to any Residential District, there shall be provided a continuous, solid Screening and it shall be of such plant material as will provide an evergreen Screen. Screening as required herein shall be not less than four feet in height at the time of planting and shall be permanently maintained.
- (13) Location on any other Structure other than a Tower (i.e., water tank, utility poles, roof tops, etc.) is permitted subject to the provisions listed above relating to a Tower location.

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- (14) Co – location on Towers is encouraged. The Zoning Administrator has authority to approve a co – location on an existing Tower subject to:
 - (a) receipt of a letter from a licensed engineer stating that the Tower is structurally adequate to handle the additional load; and
 - (b) the FCC technical emissions standards not being exceeded.
- (15) Any Antenna or Tower that is not operated for a continuous period of 12 months shall be considered abandoned and the owner of such antenna or tower, as well as any shared user(s) of the Tower or Antenna, shall remove same within 90 days of receipt of notice from the City notifying the owner and shared user(s) of such abandonment. If such Antenna or Tower is not removed within said 90 days, the City may remove or have the Structure removed at the owner's expense.
- ss. **Wrecking, junk, and salvage yards** shall be permitted in accordance with the applicable Use Table, subject to the following:
 - (1) A Heavy Manufacturing Permit shall be required (See Section 8.5.22) in addition to a Conditional Use Permit.
 - (2) The facility shall not be within 1,000 feet of Residentially zoned or Residentially used property; however, intervening highways, streets, railroads, and similar Rights-of-Ways shall be included in the 1,000-foot measurement.
 - (3) The facilities shall be enclosed by a fence and shall be Screened from view. The fence shall be six-feet high, measured from the lowest point of grade. The fence shall be maintained in good condition. No stored materials shall be visible from ground level immediately outside the fence.
 - (4) A spill prevention and countermeasures plan shall be provided prior to construction plan approval that includes, at a minimum:
 - (a) Cleanup procedures for spills occurring inside and outside the Building;
 - (b) Countermeasures to prevent spills from entering the stormwater collection system; and
 - (c) Routine cleanup procedures for work areas and parking areas. Washdown water shall not be permitted to enter the stormwater collection system.
 - (5) Any additional conditions imposed during the Heavy Manufacturing Permit or Conditional Use Permit process.

F. General Performance Standards for All Uses

- 1. Any activity which releases smoke, particulate matter, gases or contaminants into the atmosphere shall comply with all applicable federal and State regulations.
- 2. All activities shall comply with the City Fire Codes.
- 3. All activities shall comply at a minimum with all applicable State and federal regulations as well as the appropriate County Health Department regulations and City and County fire department regulations for hazardous materials and wastes.
- 4. All activities shall control electromagnetic frequencies so that there is no interference in the operation of equipment off-site and no adverse effects to persons off-site.
- 5. Any activity which discharges material or liquids into sanitary sewers shall conform to all federal, state and local discharge and release regulations. City sanitation ordinances may also apply. The drainage of waste or stored materials onto adjacent properties or directly into creeks and watercourses or into the stormwater conveyance system is prohibited. Only uncontaminated stormwater runoff may be discharged into the stormwater conveyance system.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

6. All activities shall comply with all federal and State regulations which apply to the handling, storage, and disposal of nuclear material.
7. All activities shall comply with all City regulations which pertain to the emanation of sound waves.

G. Accessory Uses

1. Accessory Uses are Permitted by Right, Permitted Subject to Limited Use Standards, as Conditional Uses, or Not Permitted, as indicated in **Table 4.3.9.A-2 (Building, Lot & Building Site Accessory Uses)**.
2. Those Uses shown in **Table 4.3.9.A-2 (Building, Lot & Building Site Accessory Uses)** as “P” (Permitted Accessory Use) are permitted in the applicable District, as indicated, if subordinate and customarily incidental to a permitted Principal Use existing on the Lot or Building Site.
3. Those Uses shown in **Table 4.3.9.A-2 (Building, Lot & Building Site Accessory Uses)** as “CU” (Conditional Use) are permitted in the applicable District, as indicated, if compliant with all applicable standards, requirements and conditions of Section 4.3.9.E and subject to issuance of a Conditional Use Permit pursuant to Section 8.5.16.
4. Those Uses shown in **Table 4.3.9.A-2 (Building, Lot & Building Site Accessory Uses)** as “PL” (Permitted Subject to Limited Use Standards) are permitted in the applicable District, as indicated, if compliant with all applicable standards, requirements and conditions of Section 4.3.9.E

TABLE 4.3.9.A-2 BUILDING, LOT & BUILDING SITE ACCESSORY USES

ACCESSORY USE	CD-2	CD-3 L	CD-3	CD-4	CD-4C	CD-5	CD - 5C	SD-MHP	SD-INT	SD-LI	SD-HI	PUD - R	PUD-MU	CV
Accessory Building	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Accessory Dwelling Unit	PL	PL	PL	PL	PL	PL	PL	NP	PL	PL	NP	NP	PL	PL
Accessory Garden Center	NP	NP	NP	NP	P	NP	P	NP	P	P	NP	NP	NP	NP
Parish House, Rectory, Parsonage, Monastery, or Convent on Site with Place of Worship	P	P	P	P	P	P	P	P	P	P	NP	P	NP	P
Dormitory on Site with Educational Institution	NP	NP	NP	P	P	P	P	P	P	P	NP	NP	NP	P

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

Hazardous Materials Storage	NP	NP	NP	NP	NP	NP	NP	NP	CU	CU	CU	NP	NP	NP
Minor Home Occupation	PL	PL	PL	PL	PL	PL	PL	PL	PL	PL	NP	PL	PL	NP
Major Home Occupation	CU	CU	CU	CU	CU	CU	CU	CU	CU	CU	NP	CU	CU	NP
Child Care for 4 or fewer In Home	P	P	P	P	P	P	P	P	NP	P	NP	P	P	NP
Outdoor Storage	NP	NP	NP	NP	NP	NP	NP	NP	NP	PL	PL	NP	NP	NP
Parking Area	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Recreation, refreshment and service uses of Structures in Civic Space incidental to the Civic Principal Use	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	P
Retail Sales Accessory to Light Manufacturing or Warehouse	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	NP	NP	NP
Motor Vehicle Maintenance that is routine, periodic and incidental, if inside Garage or in 3rd Layer& vehicle is owned and registered occupant of Dwelling	P	P	P	P	P	P	P	P	P	P	P	P	P	NP
Outdoor Display	NP	NP	NP	PL	PL	PL	PL	PL	PL	PL	NP	NP	PL	PL
School on site with Place of Worship	P	P	P	P	P	P	P	P	P	P	NP	P	NP	P
Seminary on site with Place of Worship	P	P	P	P	P	P	P	P	P	P	NP	P	NP	P
Solar Panels	P	P	P	P	P	P	P	P	P	P	P	P	P	P

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

Sports Court, Swimming Pool, Hot Tub in 3rd Layer	P	P	P	P	P	P	P	P	P	P	NP	P	NP	NP
Tasting Room on site with Brewery, Distillery, Winery	NP	NP	NP	P	P	P	P	P	P	P	P	NP	NP	NP
Telecommunications Receiving Equipment	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Wireless Telecommunications Facility	CU	CU	CU	CU	CU	CU	CU	CU	CU	CU	CU	CU	CU	CU

H. Temporary Uses

1. Temporary Uses indicated in Table 4.3.9.A-3 (Building, Lot & Building Site Temporary Uses) as Permitted (“P”) are allowed by right, subject to the issuance of a Temporary Use Permit by the Zoning Administrator.
2. Temporary Uses indicated in Table 4.3.9.A-3 (Building, Lot & Building Site Temporary Uses) as Permitted Subject to Limited Use Standards (“PL”) are allowed by right provided that the applicable standards and requirements are met, subject to the issuance of a Temporary Use Permit by the Zoning Administrator.
3. Temporary Uses indicated in Table 4.3.9.A-3 (Building, Lot & Building Site Temporary Uses) as Conditional Use (“CU”) are allowed by Conditional Use Permit, subject to compliance with the Conditional Use requirements of this Article and the issuance of a Temporary Use Permit by the Zoning Administrator.
4. Temporary Uses indicated in Table 4.3.9.A-3 (Building, Lot & Building Site Temporary Uses) as Not Permitted (“NP”), not allowed as Permitted (“P”) or allowed as a Conditional Use (“CU”), or otherwise prohibited by this Ordinance are prohibited as Temporary Uses.

TABLE 4.3.9.A-3 BUILDING, LOT & BUILDING SITE TEMPORARY USES

PRINCIPAL USE	CD-2	CD-3 L	CD-3	CD-4	CD-4C	CD-5	CD-5C	SD-MHP	SD-INT	SD-LI	SD-HI	PUD-R	PUD-MU	CV
Trailers in Third Layer for Storage of Goods Associated with Commercial Principal Use, for up to 6 months with	NP	NP	NP	CU	CU	CU	CU	CU	CU	CU	CU	NP	CU	NP

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

TABLE 4.3.9.A-3 BUILDING, LOT & BUILDING SITE TEMPORARY USES

PRINCIPAL USE	CD-2	CD-3 L	CD-3	CD-4	CD-4C	CD-5	CD - 5C	SD-MHP	SD-INT	SD-LI	SD-HI	PUD - R	PUD-MU	CV
possible extension to 12 months														
Seasonal Uses or Uses for Unusual Non- Recurrent Events, for no more than 30 days	P	P	P	P	P	P	P	P	P	P	P	P	P	P
New Subdivision Sales & Management Office, until development completion	P	P	P	P	P	P	P	P	NP	P	P	P	P	NP
Construction Office Trailer	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Mobile Vending	PL	PL	PL	PL	PL	PL	PL	PL	PL	PL	PL	PL	PL	PL

4.3.10 ENCROACHMENTS

Encroachments of Building Elements are allowed within each District and Civic District only as set forth in **Table 4.3.10 (Encroachments)**.

TABLE 4.3.10 ENCROACHMENTS

ENCROACHMENTS - REQUIRED SETBACKS & YARDS*			
*ENCROACHMENTS SHALL MEET REQUIREMENTS FOR A CLEAR SIGHT TRIANGLE.			
Encroachment Type	FRONT/STREET	SIDE	REAR
Steps to Building Entrance	P	P	P
Open Porches, including Steps	P	P	P
	≤ 25% Setback/Yard		
Patios, in permitted applicable Layer	NP	P	P
Decks, in permitted applicable Layer	NP	P	P

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

ENCROACHMENTS - REQUIRED SETBACKS & YARDS*

*ENCROACHMENTS SHALL MEET REQUIREMENTS FOR A CLEAR SIGHT TRIANGLE.

Encroachment Type	FRONT/STREET	SIDE	REAR
		≤ 25% Setback/Yard	≤ 25% Setback/Yard
Openwork Fire Escapes & Fire Balconies	NP	P ≤ 6 ft.	P ≤ 6 ft.
Chimney flues, sills, belt courses, cornices, buttresses eaves and other Architectural Features	P	P	P
Satellite dishes/ antennae	NP	NP	P
Mechanical equipment, including HVAC	NP	P	P
Underground utility lines, wires and associated Structures (e.g. poles)	P	P	P
Fences, hedges, walls, Shrubbery, and other landscape features	P	P	P
Parking Areas, Loading Areas and Driveways in 3rd Layer	NP	P	P
Bicycle Parking	P	P	P
Stoops	P	P	P
Balconies and Bay Windows	P	P	P
Driveways & Sidewalks	P	P	P
Retaining walls	P ≤ 3 ft. in height	P ≤ 4 ft. in height	P ≤ 6 ft. in height
Awnings or canopies w/out support other than integral or wall support	P ≤ 6 ft.	P	P
Signs permitted by Article 7 (Signs)	P	P	P
Eaves, gutters, or Downspouts	P ≤ greater of 24" or 20% of Setback / Yard	P ≤ greater of 24" or 20% of setback / Yard	P ≤ greater of 24" or 20% of Setback /Yard

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

ENCROACHMENTS - REQUIRED SETBACKS & YARDS*

**ENCROACHMENTS SHALL MEET REQUIREMENTS FOR A CLEAR SIGHT TRIANGLE.*

Encroachment Type	FRONT/STREET	SIDE	REAR
Flagpoles w/ < 1 structural ground member	P	P	P
Clothes poles or lines	NP	NP	P
Mailboxes	P	P	P
Sculptures or similar artistic Objects	P	P	P
Street furniture, such as benches, drinking fountains, trash receptacles, ash trays, & lighting standards	P	P	P

4.3.11 SCREENS, STREETSCREENS, & LOT/BUILDING SITE/PARCEL BUFFERS

A. Compliance with Standards

Any Screen, Streetscreen, or Buffer required under this Ordinance shall comply with the applicable standards and requirements in **Tables 4.3.1-A - 4.3.1-N(District Standards)**, and this Section 4.3.11.

B. When Screening Required

Screening of the items and conditions indicated shall be provided as required for each applicable District in **Tables 4.3.1-A - 4.3.1-N(District Standards)**, and this Section 4.3.11, except in each case, at any Driveway.

C. Location of Streetscreen

Any Streetscreen must be located as set forth in **Tables 4.3.1-A - 4.3.1-N(District Standards)**.

D. Wall Screen / Streetscreen Material

A Wall Screen or Streetscreen shall be constructed of the materials specified in **Tables 4.3.1-A - 4.3.1-N(District Standards)**.

E. Fence Screen / Streetscreen Material

A Fence Screen or Streetscreen shall be constructed of the materials specified in **Tables 4.3.1-A - 4.3.1-N(District Standards)**.

F. Hedge Screen / Streetscreen Standards

A hedge Screen or Streetscreen shall consist of plants meeting the standards of **Tables 4.3.1-A - 4.3.1-N(District Standards)**.

G. Openings in Streetscreens

Streetscreens shall have openings no larger than necessary to allow vehicular and pedestrian access.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

H. Lot/Building Site/Parcel Buffer Requirements

- 1. For Project Buffers applicable to Development Parcels, see Section 5.8.
- 2. If a Project Buffer exists or is required pursuant to Section 5.7, a Lot/Building Site/ Parcel Buffer is not required under this Section 4.3.11.H.
- 3. Except as provided in paragraph 4.3.11.H.2 or as otherwise specifically provided in this Ordinance, a Lot/Building Site/ Parcel Buffer must be provided for any new Development or Structure within Districts CD-4C, CD-5C, PUD-R, PUD-MU, or any Special District, along the common Lot, Building Site, or parcel boundary of such Development or Structure and that of any Lot, Building Site, or parcel on which a single-family Dwelling or Two-Family Detached Residential Dwelling is located. Except as otherwise specifically provided in this Ordinance, all Lot/Building Site/ Parcel Buffers required under this Article 4 must meet the following requirements:

I. Modification

- 1. The Lot/Building Site/Parcel Buffer requirement at 4.3.11.H. may be modified by the Zoning Administrator upon a finding that:
 - a. a modification would be consistent with the purpose of protecting residential land uses from noise, odor, and unsightliness of adjacent higher intensity land uses;
 - b. the actual proposed use of the Lot or Building Site is not incompatible with the use of the abutting parcel;
 - c. a modified buffer, fence, or screening adequately mitigates any potential deleterious impact to abutting parcels; or
 - d. site conditions render the required buffer ineffective.
- 2. The applicant may appeal the Zoning Administrator’s determination as described in 8.5.17.

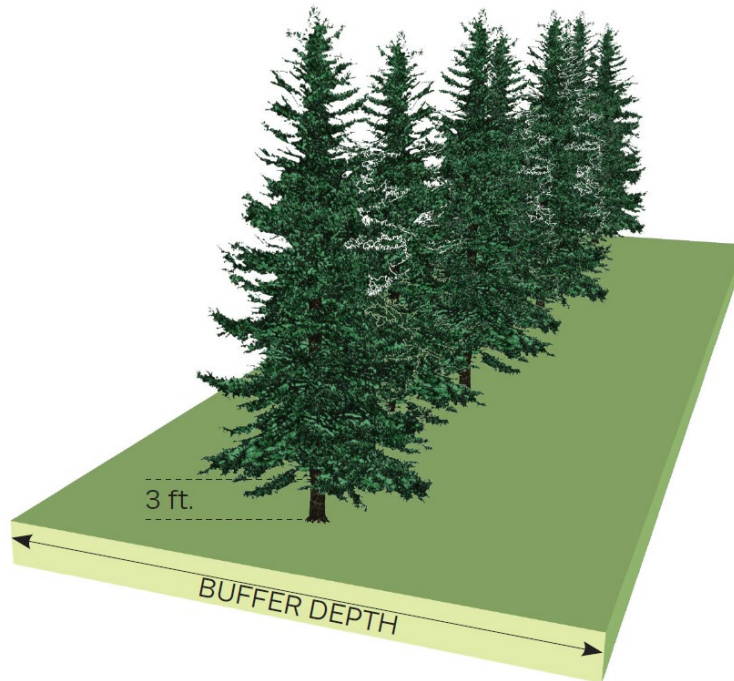
TABLE 4.3.11.H.-1 LOT/BUILDING SITE/PARCEL BUFFER

District of New Dev/Structure	Buffer Depth	Buffer
CD-4	25 ft	Min. 90% opacity 3 ft. from ground and up; Evergreen plants ≥2.5 in, caliper measured 3 ft. from ground & 8 ft. tall @ installation & 20 ft. tall @ maturity, planted ≤10 ft. O.C
CD-4C	25 ft.	Same
CD-5C	25 ft.	Same

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

PUD-R or PUD-MU	75 ft.	Same
SD-MHP	50 ft.	Same
SD-INT, SD-LI, or SD-HI	100 ft.	Same

ILLUSTRATION 4.3.11.H-2 BUFFER



4.3.12 PARKING

A. General

Within each District, all Parking Areas, Parking Structures, Parking Lots, Garages, and other Parking accommodations shall be provided, located, designed, accessed, constructed, maintained, operated, and otherwise meet the standards and requirements specified for the applicable District in **Tables 4.3.1-A– 4.3.1-N (District Standards), Table 4.3.12.B (Vehicular Parking Requirements) and Table 4.3.12.C (Off-Street Vehicular Parking Space Dimensions) or Table 4.3.12.A-3 (Off-Street Compact Vehicular Parking Space Dimensions)**, except as they may be modified by the handicapped Parking regulations found in Section 4.3.12.B.9 and 4.3.12.B.10.

B. Parking Required

Vehicular Parking shall be provided in accordance with this Section 4.3.12.B and **Table 4.3.12.B (Vehicular Parking Requirements)**, shall comply with and be located and in accordance with **Tables 4.3.1-A–4.3.1-N (District Standards)** and shall be designed in accordance with Section 4.3.12.C and **Table 4.3.12.C (Off-Street Vehicular Parking Space Dimensions)**.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

- 1. Vehicular Parking required for each Lot or Building Site shall be determined based on the quantity of Principal Use(s) of the Lot or Building Site and the number of spaces available to the Lot or Building Site, as determined by Section 4.3.12.B, Section 4.3.12.4, and Table 4.3.12.B-1 (Vehicular Parking Requirements).
- 2. The number of spaces of Parking available to a Lot or Building Site is the sum of:
 - a. All spaces within the Lot or Building Site;
 - b. All spaces Adjacent to the Frontage Line on the same side of the Thoroughfare or Internal Drive as the Lot or Building Site, and
 - c. If elected by the Applicant, all spaces within the same or an Adjacent Block within a public Parking Lot or Parking Structure or by Parking agreement or Easement.
- 3. Any fractional spaces shall be rounded down to the nearest whole number.
- 4. Exemptions
 - a. Within CD-5, the Columbia Arts District Overlay, and the Columbia West End Historic District, existing buildings and uses shall comply with the following:
 - (1) When a non-residential use is changed to another non-residential use, additional parking spaces are not required;
 - (2) A one-time building expansion of ten percent (10%) or less of the existing floor area, up to a maximum expansion of 1,000 square feet, shall not require additional parking spaces, provided that the number of existing parking spaces on the Lot or Building Site shall not be reduced to accommodate the expansion;
 - (3) When a building is demolished and a new building is constructed, or the area of the structure is expanded by more than ten percent (10%), parking shall comply with the standards of this section for the entire square footage of the building.
 - (4) For new construction, the Zoning Administrator may approve counting all public and on-street spaces within 1,320 feet of the Lot or Building Site; and
 - (5) When a residential use is changes to a non-residential use, the Zoning Administrator may approve counting all public and on-street spaces within 1,320 feet of the Lot or Building Site.
 - (6) The number of spaces of Parking available to a Lot or Building Site may not exceed, the number of spaces of Parking determined by Table 4.3.12.B-1 (Vehicular Parking Requirements) by more than thirty percent (30%) based on the quantity of Principal Use(s) on the Lot or Building Site, provided that the minimum number of spaces may be reduced pursuant to Section 4.3.12.B.5 and Section 4.3.12.B.6.
 - (7) For purposes of this Section 4.3.12.B-2, the number of Parking spaces available to a Lot or Building Site may be reduced, at the election of the Applicant, by dividing the number of spaces of Parking required to be available to the Lot or Building Site by the applicable Shared Parking Factor. The Zoning Administrator may assign an appropriate factor to uses not listed.
 - (8) The applicable Shared Parking Factor is determined under Table 4.3.12-B (Shared Parking Factor) for any two Principal Uses within the Lot or Building Site or within the Lot or Building Site and any other Lot or Building Site within the same or any Adjacent Block.

TABLE 4.3.12.B-1 VEHICULAR PARKING REQUIREMENTS

PRINCIPAL USE	MINIMUM NUMBER OF SPACES OF PARKING AVAILABLE TO LOT PER UNIT OF MEASUREMENT
AGRICULTURAL & EXTRACTIVE USES CATEGORY	
Agricultural	
Any Agricultural Use	Not Regulated

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

TABLE 4.3.12.B-1 VEHICULAR PARKING REQUIREMENTS

PRINCIPAL USE	MINIMUM NUMBER OF SPACES OF PARKING AVAILABLE TO LOT PER UNIT OF MEASUREMENT
Extractive	
Any Extractive Use	Not Regulated
RESIDENTIAL USES CATEGORY	
Household Living	
Attached Dwellings, except Two Family Dwelling	2 per Dwelling Unit in PUD-R & PUD-MU; 1.5 per Dwelling Unit in other Districts
Residence Portion of a Live/Work, Mixed-Use, or Flex Building	1.5 per Dwelling Unit
Single-Family Detached Dwelling	2 per Dwelling Unit, plus 1 per any rented room
Two Family Dwelling	2 per Dwelling Unit
Group Living	
Group Living Home	2 per Group Living Home + 1 per each Counselor
Other Residential Use Not Listed Under Any Use Category	1.5 per Dwelling Unit
CIVIC USES CATEGORY	
Community Service	
Auditorium (Civic)	1 per 200 square feet of total Usable Floor Area
Civic Building	1 per 3 permanent seats, or 1 per each 40 square feet of seating area where fixed seating is not provided
Civic Space- Community Garden, Green, Square, Plaza, Park, Playground, Sports Field	1 per 5,000 square feet of grass land area
Club or Lodge (Civic)	1 per 1,000 square feet of total Usable Floor Area
Conference/ Convention/ Exhibition Center	1 per 3 permanent seats, or 1 per each 40 square feet of seating area where fixed seating is not provided

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

TABLE 4.3.12.B-1 VEHICULAR PARKING REQUIREMENTS

PRINCIPAL USE	MINIMUM NUMBER OF SPACES OF PARKING AVAILABLE TO LOT PER UNIT OF MEASUREMENT
Courthouse	1 per employee plus 1 per every 3 seats of seating available to the public in the courtrooms
Food Distribution Center (Civic)	1 per 1,000 square feet of total Useable Floor Area
Gallery/ Museum	1 per 3 permanent seats, or 1 per each 40 square feet of seating area where fixed seating is not provided
Library	1 per 100 square feet of seating area
Parking Lot/ Parking Structure (Civic)	Not Regulated
Performing Arts Venue	1 per 3 permanent seats, or 1 per each 40 square feet of seating area where fixed seating is not provided
Place of Assembly	1 per 3 permanent seats, or 1 per each 40 square feet of seating area where fixed seating is not provided
Post Office	1 per 500 square feet of Usable Floor Area
Recreation Facility (Civic)	1 per 200 square feet of activity Usable Floor Area + 1 per 200 square feet of gross swimming water surface area + 2 spaces per tennis court + 5 spaces per basketball court + 15 spaces per athletic field
Sports Venue	1 per 3 permanent seats, or 1 per each 40 square feet of seating area where fixed seating is not provided
Transit Shelter	Not Regulated
Transit Station or Terminal	Transit vehicle storage space + 1 per 50 feet of waiting area + 1 per 2 employees
Day Care Facilities (Civic)	
All Day Care Facilities (Civic)	1 per employee + 1 per 10 clients accommodated
CIVIC USES CATEGORY CONTINUED	

Government Facilities

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

TABLE 4.3.12.B-1 VEHICULAR PARKING REQUIREMENTS

PRINCIPAL USE	MINIMUM NUMBER OF SPACES OF PARKING AVAILABLE TO LOT PER UNIT OF MEASUREMENT
Correctional Facilities	1 per employee and 1 per 20 inmates
Other Government Facility Use not listed under any Use Category	1 per employee + 1 per 500 square feet of public Usable Floor Area
Open space	
Any Open Space, excluding Civic Space	Not Regulated
Religious Facilities	
Any Place of Worship or other Religious Facility	1 per 3 permanent seats, or 1 per each 40 square feet of seating area where fixed seating is not provided
Other Civic Uses	
Other Civic Use not listed under any Use Category	Not Regulated
CIVIL SUPPORT USES CATEGORY	
Cemetery/ Funeral Services	1 per full time employee + 1 per 40 square feet of public Usable Floor Area
Fire/ EMS Station or Police Station	Not Regulated
EDUCATIONAL USES CATEGORY	
Adult Education/ Personal Improvement/ Business, Trade & Vocational Schools	
Adult Continuing Education	1 per Teacher or other staff + .50 per Student seat
Business, Trade, or Vocational School other than truck driving	1 per Teacher or other staff + .50 per Student seat
Personal Improvement Education	0.50 per Student seat + 1 per Teacher or other staff
Truck Driving School	1 per Teacher or other staff + 1 per Student
Pre-school/ Primary/ Intermediate/ Secondary Schools	
Pre-school	1 per Teacher or other staff + 1 per 20 Students

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

TABLE 4.3.12.B-1 VEHICULAR PARKING REQUIREMENTS

PRINCIPAL USE	MINIMUM NUMBER OF SPACES OF PARKING AVAILABLE TO LOT PER UNIT OF MEASUREMENT
Kindergarten	1 per Teacher or other staff + 1 per 20 Students
Elementary School	1 per Teacher or other staff + 1 per 20 Students
Middle School	1 per Teacher or other staff + 1 per 20 Students
High School	1 per Teacher or other staff + 0.50 per Student seat
Post-Secondary School	
College or University	1 per Teacher or other staff + 1 per Student
Community College	1 per Teacher or other staff + 1 per Student
Graduate or Professional School	1 per Teacher or other staff + 1 per Student
Nursing Por Medical School not accessory to a Hospital	1 per Teacher or other staff + 1 per Student
Seminary	1 per Teacher or other staff + 1 per Student
Other Educational Use	
Other Educational Use Not Listed in Any Other Category	1 per Teacher, Instructor, Care Giver or other staff + 1 per 20 Students or Children
INSTITUTIONAL USE CATEGORY	
Health Care	
Clinic	2 per patient rooms
Hospice, other than at-home care	.50 per bed
Hospital	.50 per bed
Rehabilitation Facility or Facility for Observation	.50 per bed
Long Term Care	
Long Term Care Facility or Continuum of Care Facility	1 per 3 beds
Other Institutional Use	

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

TABLE 4.3.12.B-1 VEHICULAR PARKING REQUIREMENTS

PRINCIPAL USE	MINIMUM NUMBER OF SPACES OF PARKING AVAILABLE TO LOT PER UNIT OF MEASUREMENT
Other Institutional Uses Not Listed in any Use Category	1 per patient or Client room
COMMERCIAL USES CATEGORY	
Accommodations / Lodging	
Bed & Breakfast or Inn	1 per Dwelling Unit + 1 per guest bedroom + 1 per each 2 employees on the premises at one time
Boarding or Rooming House	1 per guest bedroom + 1 per each 2 employees on the premises at one time
Hotel, Extended Stay Hotel, or Motel	1 per guest bedroom + 1 per each 2 employees on the premises at one time
Short-Term Rental Unit	1 per guest bedroom + 1 per each additional bed, cot, sofa or other sleeping accommodation
Other Accommodation/ Lodging/ Use Not Listed Under any Use Category	Not Regulated
Day Care/ Personal & Group Care (non-Civic)	
Adult Day Care (non-Civic)	1 per staff member + 1 per 3 seats or 1 per 200 square feet of activity Usable Floor Area, whichever is greater
Child Care Facility (non-Civic), excluding Child Care in Home	1 per staff member + .50 per child
Children's Day Camp	1 per staff member + .50 per child
Group Day Care or Facility or Family Day Care	1 per staff member + .50 per client
Other Day Care/ Personal & Group Care (non-Civic)	
Other Day Care/ Personal & Group Care (non-Civic)	Not Regulated
Indoor Recreation- Commercial	
Bowling Alley	1 per 500 square feet of total Usable Floor Area
Commercial Indoor Athletic Training Facility	1 per 1,00 square feet of total Usable Floor Area

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

TABLE 4.3.12.B-1 VEHICULAR PARKING REQUIREMENTS

PRINCIPAL USE	MINIMUM NUMBER OF SPACES OF PARKING AVAILABLE TO LOT PER UNIT OF MEASUREMENT
Game Arcade	1 per 100 square feet of total Usable Floor Area
Gymnastics Facility	1 per 1,000 square feet of total Usable Floor Area
Indoor Firing Range	1 per 500 square feet of total Usable Floor Area
Indoor Sports Academy	1 per 1,000 square feet of total Usable Floor Area
Movie or other Theater (non-Civic)	1 per theater, bar, or dining seat or 1 per 100 square feet of total Usable Floor Area, whichever is greater
Pool Hall	1 per 300 square feet of total Usable Floor Area
Recreation Facility	1 per 200 square feet of activity Usable Floor Area + 1 per 200 square feet of gross swimming water surface area + 2 spaces per tennis court + 5 spaces per basketball court + 15 spaces per athletic field
Skating Rink	1 per 300 square feet of total Usable Floor Area
Social (or Civic) Club, Lodge, or Organization	1 per 200 square feet of gathering or activity Usable Floor Area
Other Indoor Recreation- Commercial Use Not Listed Under any Use Category	1 per 500 square feet of total Usable Floor Area
Group Assembly (non-Civic)	
Any Group Assembly (non-Civic)	1 per 4 seats
Outdoor Recreation - Commercial	
Amphitheater	1 per 2 seats + 1 per 20 square feet of standing area
BMX Bicycle Park	1 per biker accommodated or 1 per 5,000 square feet, whichever is greater
Campground	1 per campsite
Drive-In Theater	1 per vehicle accommodation

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

TABLE 4.3.12.B-1 VEHICULAR PARKING REQUIREMENTS

PRINCIPAL USE	MINIMUM NUMBER OF SPACES OF PARKING AVAILABLE TO LOT PER UNIT OF MEASUREMENT
Firing Range, such as a Rifle Range, Archery Range, Handgun Range, or Skeet Shooting	1 per customer firing squad
Golf Course, Swim club, Tennis Club, Country Club	Per Planning Commission Approval
Marina/ Boating Facility	1 per Boat Slip
Recreational Vehicle (RV) Park	1 per motorized RV space + 1 per non-motorized vehicle space
Paintball Park	Per Planning Commission Approval
Outdoor Entertainment Activity, such as Batting Cage, Golf Driving Range, Amusement Park, Miniature Golf Facility	Per Planning Commission Approval
COMMERCIAL USES CONTINUED	
Skateboard Park	Per Planning Commission Approval
Sports Field	Per Planning Commission Approval
Stadium / Arena	Per Planning Commission Approval
Summer Camp (overnight)	Per Planning Commission Approval
Swimming Pool	Per Planning Commission Approval
Tennis Club	Per Planning Commission Approval
Water Park	Per Planning Commission Approval
Other Outdoor Recreational Use – Commercial not listed under any other Use Category	Per Planning Commission Approval
Parking – Commercial	
Parking Lot	Not Regulated
Parking Structure	Not Regulated
Restaurant	
Restaurant without Drive-Through Facility or Drive- In Facility	1 per 100 square feet of total Usable Floor Area

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

TABLE 4.3.12.B-1 VEHICULAR PARKING REQUIREMENTS

PRINCIPAL USE	MINIMUM NUMBER OF SPACES OF PARKING AVAILABLE TO LOT PER UNIT OF MEASUREMENT
Restaurant with Drive-Through Facility or Drive-In Facility	1 per 100 square feet of total Usable Floor Area
Small-scale without Drive-Through Facility	1 per 300 square feet of total Usable Floor Area
Bars, Taverns, or Nightclub	
Bar, Tavern, or Nightclub	1 per 100 square feet of total Usable Floor Area
Retail/ Personal Service/ Repair/ Art/ Artisan	
Alcoholic Beverage Retail Sales	1 per 300 square feet of total Usable Floor Area
Artisan Establishment, with or without Retail Sales	1 per 500 square feet of total Usable Floor Area
Arts-Related Uses	1 per 500 square feet of total Usable Floor Area
Mail-Order or On-Line Retail Sales	1 per 1,000 square feet of total Usable Floor Area
Motor Vehicle Sales, Rental, leasing, or Motor Vehicle Maintenance/ Cleaning/ Repair/ Service	1 per 500 square feet of total Usable Floor Area
Retail Membership Club	1 per 500 square feet of total Usable Floor Area
Retail Food Sales, with or without on-premises preparation or processing	1 per 200 square feet of total Usable Floor Area
Recreation Facility (non-Civic)	1 per 1,000 square feet of total Usable Floor Area
Veterinarian Clinic, Animal Hospital, or non-Agricultural Kennel	1 per treatment, procedure, or surgical room + 100 square feet of total Usable Floor Area
Warehouse Retail	1 per 1,000 square feet of total Usable Floor Area
Other Retail Sales, Rental, or Leasing uses not listed above	1 per 5000 square feet of total Usable Floor Area
Self Service Storage	
Self Service Storage	1 per 2,000 square feet of storage space
Boat-Related Uses	
All Boat-Related uses other than Marina/ Boating Facility	1 per 200 square feet of administrative space + 1 per Boat storage spaces + 2 per Boat ramp + 1 per

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

TABLE 4.3.12.B-1 VEHICULAR PARKING REQUIREMENTS

PRINCIPAL USE	MINIMUM NUMBER OF SPACES OF PARKING AVAILABLE TO LOT PER UNIT OF MEASUREMENT
	Boat available for rental + 1 per employee work station + 2 per work day
Motor Vehicle-Related Uses	
All motor vehicle-related uses, other than Gasoline or motor vehicle sales, rental or leasing, motor vehicle maintenance/ cleaning/ repair/ service parts sales and tire sales	1 per 500 square feet for Usable Floor Area + .25 per vehicle available for rental + 1 per employee work station + vehicle storage space + 1 per work bay
Tire Sales	2 per work station or service bay + 1 per 200 square feet of customer waiting area
Towing Service	1 per 500 square feet of Usable Floor Space + spaces for towed vehicles
Manufactured Home Sales	
Manufactured home Sales	1 per 500 square feet of Usable Floor Area + 1 per employee work station + inventory space + 1 work bay
Wholesale Sales	
All Wholesales not listed under any other category	1 per 10,00 square feet of Usable Floor Area, with a minimum of 2 spaces per employee on premises at one time, but no fewer than 2 spaces
OFFICE USES CATEGORY	
All Office Uses not listed under any other Category	1 per 200 square feet of total Usable Floor Area
INDUSTRIAL USES CATEGORY	
Heavy Industrial	
All heavy industrial uses	Not regulated
Light Industrial	
Brewery, excluding Brewpubs	1 per 2,000 square feet of Usable Floor Area, with a minimum of 2 spaces per employee on premises at one time, but no fewer than 2 spaces

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

TABLE 4.3.12.B-1 VEHICULAR PARKING REQUIREMENTS

PRINCIPAL USE	MINIMUM NUMBER OF SPACES OF PARKING AVAILABLE TO LOT PER UNIT OF MEASUREMENT
Bottling Plants	1 per 2,000 square feet of Usable Floor Area, with a minimum of 2 spaces per employee on premises at one time, but no fewer than 2 spaces
Building Systems / Construction Business	1 per 2,000 square feet of Usable Floor Area, with a minimum of 2 spaces per employee on premises at one time, but no fewer than 2 spaces
Carpet Cleaning Plants or Manufacturing	1 per 2,000 square feet of Usable Floor Area, with a minimum of 2 spaces per employee on premises at one time, but no fewer than 2 spaces
Catering Service or Catering Event Establishment	1 per 400 square feet of food preparation area + 1 per 3 permanent seats, or 1 per each 40 square feet of seating area where fixed seating is not provided
Clothing or Textile Manufacturing	1 per 2,000 square feet of Usable Floor Area, with a minimum of 2 spaces per employee on premises at one time, but no fewer than 2 spaces
Commercial or Institutional Bakery	1 per 2,000 square feet of Usable Floor Area, with a minimum of 2 spaces per employee on premises at one time, but no fewer than 2 spaces
Contractor Material Sales	1 per 2,000 square feet of Usable Floor Area, with a minimum of 2 spaces per employee on premises at one time, but no fewer than 2 spaces
Crematorium	1 per employee on the premise at one time, but no fewer than 2 spaces
Dairy Plant	1 per 2,000 square feet of Usable Floor Area, with a minimum of 2 spaces per employee on premises at one time, but no fewer than 2 spaces
Distillery	1 per 2,000 square feet of Usable Floor Area, with a minimum of 2 spaces per employee on premises at one time, but no fewer than 2 spaces

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

TABLE 4.3.12.B-1 VEHICULAR PARKING REQUIREMENTS

PRINCIPAL USE	MINIMUM NUMBER OF SPACES OF PARKING AVAILABLE TO LOT PER UNIT OF MEASUREMENT
Distribution Facility	1 per 10,000 square feet of Usable Floor Area, with a minimum of 2 spaces per employee on premises at one time, but no fewer than 2 spaces
Dry Cleaning Plant	1 per 2,000 square feet of Usable Floor Area, with a minimum of 2 spaces per employee on premises at one time, but no fewer than 2 spaces
Equipment Rental	1 per 2,000 square feet of Usable Floor Area, with a minimum of 2 spaces per employee on premises at one time, but no fewer than 2 spaces
Fabrication, work or storage on-site by building, heating, plumbing, electrical, or general contractors and others who perform services off-site	1 per 2,000 square feet of Usable Floor Area, with a minimum of 2 spaces per employee on premises at one time, but no fewer than 2 spaces
Food Processing for Wholesale Sales	1 per 2,000 square feet of Usable Floor Area, with a minimum of 2 spaces per employee on premises at one time, but no fewer than 2 spaces
Horticulture & Landscaping Services	.50 space per employee on premises at one time, but no fewer than 2 spaces
INDUSTRIAL USES CONTINUED	
Ice Plant	1 per 5,000 square feet of Usable Floor Area, with a minimum of 2 spaces per employee on premises at one time, but no fewer than 2 spaces
Information Services	.50 space per employee on premises at one time, but no fewer than 2 spaces
Janitorial & Building Maintenance Services	1 per 2,000 square feet of Usable Floor Area, with a minimum of 2 spaces per employee on premises at one time, but no fewer than 2 spaces
Laundry Plant	1 per 2,000 square feet of Usable Floor Area, with a minimum of 2 spaces per employee on premises at one time, but no fewer than 2 spaces

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

TABLE 4.3.12.B-1 VEHICULAR PARKING REQUIREMENTS

PRINCIPAL USE	MINIMUM NUMBER OF SPACES OF PARKING AVAILABLE TO LOT PER UNIT OF MEASUREMENT
Light Manufacturing Plant with or without Retail Sales	1 space per 2,000 square feet of Usable Floor Area, with a minimum of 1 space per 2 employees on premises at one time, but no fewer than 2 spaces
Machine Shop/ Woodworking Shop, other than Artisan Establishment	1 space per 1,000 square feet of Usable Floor Area, with a minimum of 1 space per 2 employees on premises at one time, but no fewer than 2 spaces
Maintenance Yard or Facility	
Manufacture or assembly of equipment, instruments, appliances, precision items or electrical items, or toys	1 per 2,000 square feet of Usable Floor Area, with a minimum of 2 spaces per employee on premises at one time, but no fewer than 2 spaces
Non-Hazardous Waste Treatment or Disposal	1 per 5,000 square feet of Usable Floor Area, with a minimum of 2 spaces per employee on premises at one time, but no fewer than 2 spaces
Outdoor Storage	Not Regulated
Photo-Finishing or Photography Lab	1 per 2,000 square feet of Usable Floor Area, with a minimum of 2 spaces per employee on premises at one time, but no fewer than 2 spaces
Printing, Publishing, and Lithography	1 space per 1,000 square feet of Usable Floor Area, with a minimum of 1 space per 2 employees on premises at one time, but no fewer than 2 spaces
Production of Artwork	1 per 2,000 square feet of Usable Floor Area, with a minimum of 2 spaces per employee on premises at one time, but no fewer than 2 spaces
Rail Equipment Storage or Repair	1 per employee + 2 per acre
Recycling Collection	1 per collection container
Recycling Processing Facility	1 per 5,000 square feet of Usable Floor Area, with a minimum of 2 spaces per employee on premises at one time, but no fewer than 2 spaces

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

TABLE 4.3.12.B-1 VEHICULAR PARKING REQUIREMENTS

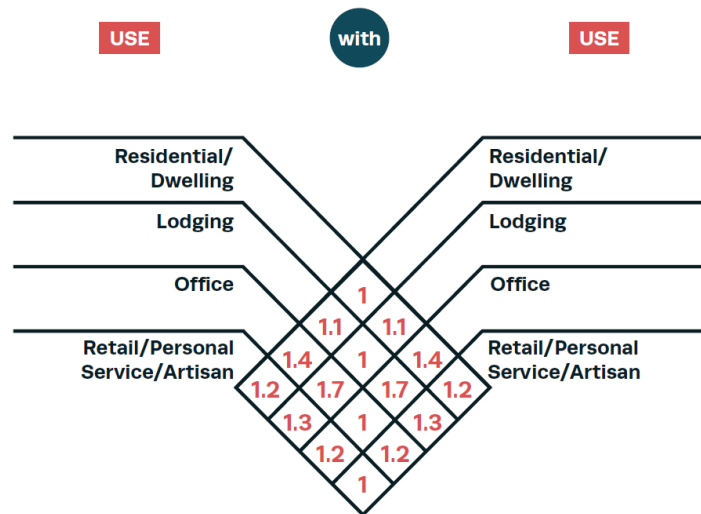
PRINCIPAL USE	MINIMUM NUMBER OF SPACES OF PARKING AVAILABLE TO LOT PER UNIT OF MEASUREMENT
Repair of scientific or professional instruments or electric motors	1 per 2,000 square feet of Usable Floor Area, with a minimum of 2 spaces per employee on premises at one time, but no fewer than 2 spaces
Research Lab / Research Development	1 per 2,000 square feet of Usable Floor Area, with a minimum of 2 spaces per employee on premises at one time, but no fewer than 2 spaces
Scrap or Salvage Yard	1 per employee + 2 per acre
Sheet Metal Shop	1 per 2,000 square feet of Usable Floor Area, with a minimum of 2 spaces per employee on premises at one time, but no fewer than 2 spaces
Solid Waste Facility	Not Regulated
Towing Facility	Not Regulated
Welding, machine, tool repair shop	1 per 2,000 square feet of Usable Floor Area, with a minimum of 2 spaces per employee on premises at one time, but no fewer than 2 spaces
Wholesale Sales	1 per 2,000 square feet of Usable Floor Area, with a minimum of 1 per employee on premises at one time, but no fewer than 2 spaces
Winery	1 per 2,000 square feet of Usable Floor Area, with a minimum of 2 spaces per employee on premises at one time, but no fewer than 2 spaces
INDUSTRIAL USES CONTINUED	
Woodworking, including cabinet makers and furniture manufacturing, but excluding Artisan Establishment	1 per 2,000 square feet of Usable Floor Area, with a minimum of 2 spaces per employee on premises at one time, but no fewer than 2 spaces
Other Light Industrial Uses not listed in any other Use Category	1 per 2,000 square feet of Usable Floor Area, with a minimum of 1 per employee on premises at one time, but no fewer than 2 spaces
Warehouse & Freight Movement	

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

TABLE 4.3.12.B-1 VEHICULAR PARKING REQUIREMENTS

PRINCIPAL USE	MINIMUM NUMBER OF SPACES OF PARKING AVAILABLE TO LOT PER UNIT OF MEASUREMENT
All Warehouse/ Warehousing & Freight Movement	1 per 10,000 square feet of Usable Floor Area, with a minimum of 2 spaces per employee on premises at one time, but no fewer than 2 spaces
Waste-Handling	
All Waste-Handling Services	Not Regulated
UTILITIES USES CATEGORY	
All Utility Uses	Not Regulated
OTHER USES CATEGORY	
Adult Entertainment	1 per 2,000 square feet of Usable Floor Area but no fewer than 2 spaces

TABLE 4.3.12.B-2 (SHARED PARKING FACTOR)



5. In determining compliance with this Section 4.3.12.B, the following shall not be counted:
- Accessory Dwelling Units; and
 - Liner Buildings fewer than 30 feet deep and no more than two Stories.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

6. Up to 10% of the total number of Parking spaces in Parking Areas, Parking Lots, and Parking Structures that provide Parking for fifty (50) or more cars may be provided as Parking for compact cars, designed in compliance with Section 4.3.12.C.
7. Parking spaces to accommodate the needs of handicapped individuals shall be provided in accordance with the following Table 4.3.12.B-3 (Off-Street Handicapped-Accessible Parking), designed in compliance with Section 4.3.12.C.
8. One out of every eight required handicapped accessible spaces shall be van-accessible. A minimum of one van-accessible space shall be provided.
9. Any Plan submitted under this Ordinance must show the proposed types, numbers, and arrangement of Parking accommodations, including access to such areas from the Thoroughfares and Internal Drives, with spaces complying with all requirements of this Section 4.3.12.B.

C. Design

1. In all Districts, Parking Lots shall be designed in accordance with this Section 4.3.12.C and other applicable provisions of this Article 4.
2. Except as otherwise provided for compact vehicle Parking accommodations under Section 4.3.12.C.3, the dimensional standards set forth in **Table 4.3.12.C-1 (Off-Street Vehicular Parking Space Dimensions)** are applicable to off-street Parking accommodations:

TABLE 4.3.12.C-1 (OFF-STREET VEHICULAR PARKING SPACE DIMENSIONS)

Angle of Parking (degrees)	Width of Space (feet)	Length of Space (feet)	Aisle Width (feet)
0	8 ft.	21 ft.	12 ft.
45	9 ft.	19 ft. except 18 ft if adjacent to curb	16 ft.
60	9 ft.	19 ft. except 18 ft if adjacent to curb	18 ft.
90	9 ft.	19 ft. except 18 ft if adjacent to curb	24 ft.

3. Any compact car spaces must be separately signed and marked in distinct, separate areas. The dimensional requirements for compact car spaces are as set forth in Table 4.3.12.C-2 (Off-Street Compact Vehicle Parking Space Dimensions):

TABLE 4.3.12.C-2 (OFF-STREET COMPACT VEHICLE PARKING SPACE DIMENSIONS)

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

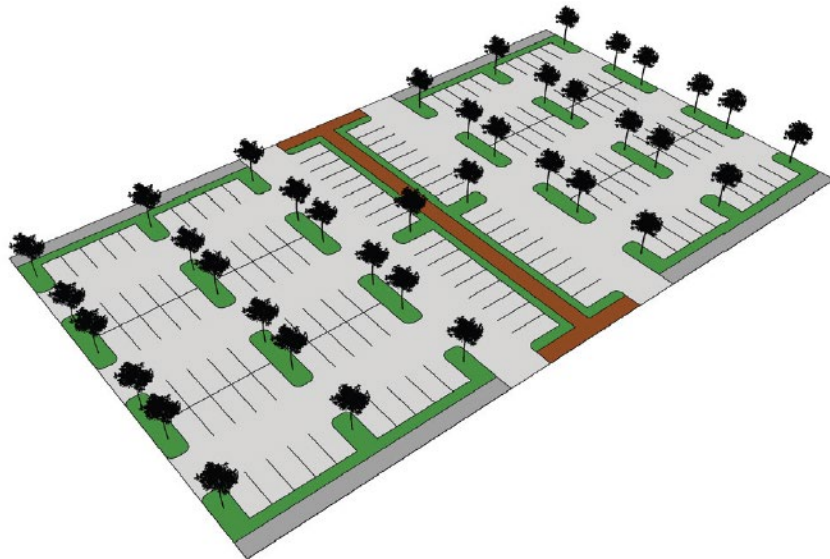
Angle of Parking (degrees)	Width of Space (feet)	Length of Space (feet)	Aisle Width (feet)
0	7.5 ft.	17 ft.	12 ft.
45	7.5 ft.	17 ft.	12 ft.
60	7.5 ft.	18 ft.	15 ft.
90	7.5 ft.	16 ft.	21 ft.

4. Any ramps leading from a Thoroughfare or Internal Drive to a Parking Lot, Parking Area, Garage, or Parking Structure shall be at least twenty feet (20 ft.) wide for two-way traffic and 10 feet (10 ft.) wide for one-way traffic.
5. Curbs must be made of granite or concrete at heights between six inches (6 in.) and eight inches (8 in.) above the elevation of the Thoroughfare and must be at least six inches (6 in.) wide.
6. Curb cuts must be at least 20 feet (20 ft.) wide for two-way access and 10 feet (10 ft.) wide for one-way access. Except as otherwise expressly provided in this Ordinance with respect to numbers of Driveways, Lots and Building Sites shall be limited to one curb cut per Lot or Building Site.
7. Unless alternative Parking surfaces are otherwise permitted by this Ordinance, all off – street Parking Areas and Parking Lots shall be surfaced with asphalt or concrete. Asphalt Parking Areas and Parking Lots shall be compacted after sub-grade with a minimum six-inch stone base, a minimum two inches of modified asphalt binder, and a minimum 1-½ inches of asphalt mix topping and must follow the construction detail provided below. Concrete Parking Areas and Parking Lots shall be constructed according to recognized construction standards. Construction plans for all Parking Areas and Parking Lots construction plans shall be subject to review and approval by the City Engineering Department.
8. Except in District CD-2, all Parking accommodations counted toward the applicable Parking requirements shall be paved and completed prior to issuance of the Final Certificate of Occupancy for the related Building(s).
9. Any Parking Area or Parking Lot in the First or Second Layer shall be Screened from view in accordance with Section 4.3.11 and Tables 4.3.1-A - 4.3.1-U (District Standards).
10. Any Parking Area or Parking Lot having five (5) or more spaces shall include Curbs, paving, Sidewalks, drainage facilities and lighting in accordance with this Ordinance and all other applicable laws, regulations and specifications.
11. The maximum grade permitted for any required Parking shall not exceed 8%.
12. Except in Districts CD-2, CD-3L, and CD-3, all off-street Parking spaces shall be striped with paint or some other form of permanent marking.
13. All access to any City Street from a Driveway shall have a concrete Driveway apron as approved by the City Engineering Department.
14. Any Parking Area or Parking Lot having ten (10) or more parking spaces shall conform to the following:
 - a. Parking Areas and Parking Lots shall contain at least one landscape island for every ten (10) parking spaces. Parking Lots with more than one landscape island shall have such islands distributed throughout the Parking Lot.
 - b. Interior parking rows shall be terminated at both ends with landscape islands.
 - c. Each parking island shall be of a minimum size equal to a standard parking space; provided that each parking island abutting two rows of head-to-head parking spaces shall be of a minimum size and length equal to two (2) parking spaces.
 - d. Parking islands shall contain a minimum of one (1) shade tree for every single island. If a parking island is double length or width, then two (2) shade trees shall be required.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

- e. Rows of parking fronting on drive aisles including alleys shall be provided with a minimum five feet (5 ft.) (excluding curbs) landscaped buffer.
- f. Root zones for existing trees to remain shall be a minimum of 48 square feet.
- g. For every 2,000 square feet of Parking Area or Parking Lot, at least one tree shall be installed or preserved within the Parking Area or Parking Lot except to the extent that trees outside of the Lot containing the Parking Area or Parking Lot are allowed to satisfy this requirement as set forth below.
- h. No parking space shall be more than seventy-two feet (72 ft.) from a tree within the Lot, as measured from the center of the Tree to the nearest line demarcating the space.
- i. Except for trees allowed to be counted outside the Parking Area or Parking Lot, new trees shall be installed and/or existing trees preserved in Tree islands provided pursuant to this Section and/or at the perimeter of the Parking Area or Parking Lot, provided that the perimeter of the Parking Area or Parking Lot where trees are installed or preserved to meet this requirement lies within the Lot on which the Parking Area or Parking Lot is located.
- j. Trees outside of the Parking Area or Parking Lot located within twenty feet (20 ft.) of the closest portion of such Parking Area or Parking Lot, including but not limited to Trees within Thoroughfare Rights-of-Way, Internal Drive Easements, and Civic Spaces, may be counted toward satisfying the requirements.
- k. In addition to any walkway or Sidewalk around a Parking Area or Parking Lot, each such Parking Area or Parking Lot exceeding one hundred and twenty (120) spaces shall have least one pedestrian walkway bisecting the Parking Area or Parking Lot and connecting to adjoining sidewalks of a minimum width of eight feet (8 ft.) that is paved differently from the parking spaces with respect to texture, material, style, and/or color.

ILLUSTRATION 4.3.12.C-3 PARKING AREA / LOT OR BUILDING SITE LANDSCAPING



- l. Any Parking Area or Parking Lot in the First or Second Layer shall be Screened from view in accordance with Section 4.3.11.
- 15. Parking Areas and Parking Lots shall include Curbs, paving, Sidewalks, drainage facilities and lighting in accordance with this Article as well as any other applicable laws, regulations and specifications.
- 16. Parking Area paving shall be confined to the minimum area necessary to comply with the parking requirements of this Article.
- 17. Any Plan submitted under this Article shall show the proposed arrangement of Parking accommodations, including access to such areas from the Thoroughfares or Internal Drives, with Parking spaces to comply with the requirements of this Section 4.3.12.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

18. Parking Structures must be Screened from view of any Frontage by one or more Liner Buildings as set forth in **Table 4.3.1-A– Table 4.3.1-N (District Standards)**. Such Liner Buildings must be the same or greater height as the associated Parking Structure that they Screen.
19. Lighting illuminating off-street Parking accommodations in all Districts other than Districts CD-2, CD-3L, and CD-3 must be installed within and directed only within the applicable Parking Area, Parking Lot, Garage, or Parking Structure.
20. Handicapped-accessible Parking shall comply with the following:
 - a. Handicapped-accessible Parking shall be located as near as possible to the main public entrances of a single Building or centrally located in Parking Areas that serve more than one Building.
 - b. All off-street handicapped-accessible Parking spaces shall be located in the closest Parking Area to a public entrance to the Building but no more than 250 feet from such entrance.
 - c. No stairs or curbs are permitted between a handicapped-accessible Parking space and the entrance which it is intended to serve, and the slope along the accessible route shall not exceed 1:12.
 - d. All off-street handicapped accessible Parking spaces shall be designated by a Sign or other means accepted by State requirements. Van- accessible spaces shall be designated by a sign indicating “Van Accessible” in addition to any other means used.
 - e. A minimum width of 96 inches shall be required for all van-accessible spaces. Van- accessible spaces shall further require a minimum vertical clearance of 98 inches.
 - f. An access aisle of 60 inches shall be provided for all handicapped accessible spaces and an aisle of 96 inches shall be provided for all van-accessible spaces one 96-inch aisle may serve both types of spaces. No ramps may project into this access aisle.
 - g. No required Parking accommodation shall be Encroached upon by any Building, Structure, or Use.

D. Operation & Maintenance

1. No Parking space required for Dwelling Units shall be rented to Persons not living on the premises. All required Parking spaces or Dwelling Units must be made available to occupants of the Dwelling Units as an integral part of their occupancy.
2. Required Parking Accommodations must be available and maintained for such period as the Use or Structure exists that the facilities are designed to serve.

E. Access

1. All Parking Areas, Parking Structures, and Garages shall be accessed by Rear Alleys, when such are available on the Zoning Map or otherwise available.
2. Vehicular access to Parking Areas, Garages, and Parking Lots shall not conflict with general vehicular movement serving the site. Ingress and egress points must be at Curb cuts approved by City Engineer.
3. In all Districts, vehicular entrances and exits shall be designed to be easily identifiable by drivers and pedestrians. Any signage must be simple, clear, and concise. Any gates, arms, or booths must be set back at least 20 feet from the Frontage.
4. Off-street Parking accommodations other than those in Districts CD-2, CD-3L, and CD-3, and Single-family Residential Lots and Building Sites in Districts SD-MHP and PUD-R shall provide access so that backing directly onto a Thoroughfare or Internal Drive is unnecessary.
5. A Driveway, drive aisle, or Internal Drive must be provided for off-street Parking accommodations in all Districts.
6. Driveways and entrances and exits for off-street Parking accommodations in all Districts other than Districts CD-2, CD-3L, and CD-3 and Single-family Residential Lots and Building Sites in Districts SD-MHP and PUD-R, shall be at least 25 feet from a Thoroughfare or Internal Drive at an intersection.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

7. Except in Districts CD-2, CD-3L, and CD-3, cross-access Easements must be provided between all contiguous Parking Areas and Parking Lots except where such areas and Lots are accessed from a Rear Alley.
8. In all Districts, Driveways at Frontages must be no wider in the First Layer than the width specified for the applicable District in **Table 4.3.1-A– 4.3.1-N(District Standards)**.
9. For Residential Uses other than Townhomes and Multifamily, Driveways shall not be located within five feet of a Side Building Site Line or Rear Building Site Line unless a shared Driveway is used.
10. In all other Districts, except 4.3.12.E-9, no Driveway shall be constructed within 25 feet of an Adjacent Driveway. This dimension shall be increased to the greater of 40 feet Adjacent Driveways on State highways.
11. No Driveway curb return shall extend beyond an Adjacent Side Building Site Line or Rear Building Site Line or more than one-half (1/2) the distance to a Driveway located on the same property. This provision may require increased separation from Adjacent properties over the minimum indicated in Sections 4.3.12.E.10 or 4.3.12.E.11 above.
12. In all Districts, pedestrian exits from all Parking Lots, Parking Areas, Garages, and Parking Structures must conform to **Table 4.3.1-A– 4.3.1-N(District Standards)**, except for underground Parking accommodations.

F. Parking Restrictions

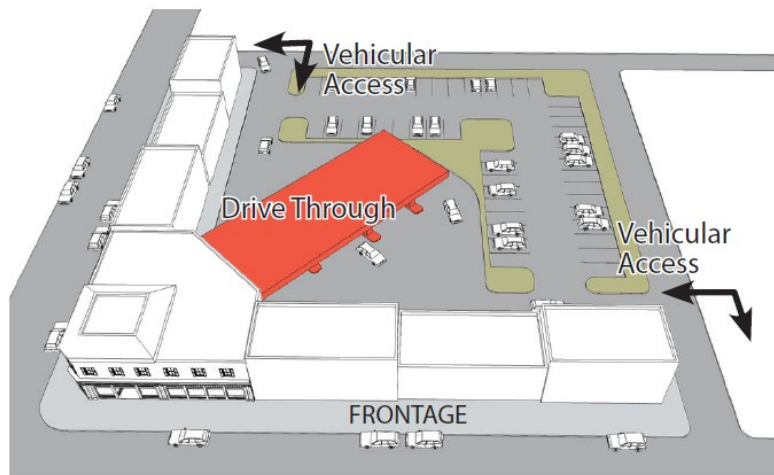
1. Domestic and recreational vehicles such as boats, camper trailers, and utility trailers shall be stored off - street, subject to the location requirements of **Table 4.3.1-A– 4.3.1-N(District Standards)**. Boats, camper trailers, and utility trailers may be stored on an unpaved surface, provided they are parked in the third layer and screened from view from the public right-of-way and adjacent properties.
2. Parking of buses on the site of and directly associated with a permitted Non-Residential Use shall be permitted.
3. Parking of heavy equipment or tractor trailers (including trailers as storage) shall not be permitted. This requirement shall not prohibit commercial vehicles from making deliveries. Trailers may be permitted for temporary storage in association with a construction with a Temporary Use Permit (Sec. 3.8).
4. Single and double axel trucks that exceed 90 inches in width and are greater than 12 feet in height are prohibited from Parking on a street for more than four (4) consecutive hours, unless it is related to performing a service for a property owner, i.e. construction, remodeling, etc.
5. Required Parking spaces and loading facilities shall not be used for the storage or sale of merchandise, vehicle storage, vehicles for sale, or vehicle repair. Non-required spaces proposed for these uses shall be designated on a site plan.
6. The private sale or storage of one vehicle per Dwelling Unit may be permitted as an Accessory Use in association with a Residential Use.
7. Any area designated for required off-street Parking or loading shall not be changed to another use until adequate Parking and/or loading facilities in conformance with this Article have been established.
8. Required Parking spaces may be temporarily used for uses other than Parking and loading with the issuance of a Temporary Use Permit pursuant to Section 8.5.9; provided such use does not negatively impact adjacent roadways, neighborhoods, or other uses and is clearly temporary in nature.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

G. Drive-Through Locations & Standards

1. Any drive-through facilities must be located and designed and comply with all standards as specified for the applicable District as set forth in **Tables 4.3.1-A– 4.3.1-N (District Standards)**. See **Illustration 4.3.12.G (Drive-Throughs)**.

ILLUSTRATION 4.3.12.G DRIVE-THROUGH



2. Any drive-through locations must be accessed by Rear Alleys, when such are available on the Zoning Map or otherwise available.
3. Off-street vehicular stacking spaces shall be provided for all drive-through facilities in accordance with Section 4.3.12.H.

H. Stacking Spaces

1. Off-street vehicular stacking spaces shall be provided in accordance with **Table 4.3.12.H (Stacking Spaces)** for the activity type indicated as follows:

TABLE 4.3.12.H (STACKING SPACES)

Activity Type	Min. # of Stacking Spaces	Measured From
Automated Teller Machine	4	Machine
Drive-Through	3	Teller
Bank Teller Drive-Through	4	Teller or Window
Car Wash Bay, Full Service	6	Bay
Car Wash Bay, Self-Service	2	Bay
Dry Cleaning/ Laundry Drive-Through	2	Cleaner/ Laundry Window

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

Activity Type	Min. # of Stacking Spaces	Measured From
Gasoline Pump Island	1	Pump Island
Gatehouse, Staffed	4	Gatehouse
Gate, Unstaffed	2	Gate
Pharmacy Pickup	3	Pharmacy Windows
Restaurant Drive-Through	8	Pickup Window
Valet Parking	3	Valet Stand

*Other as determined by Zoning Administrator in consideration of approved study prepared by a registered engineer with expertise in Transportation Engineering

2. Required stacking spaces shall be subject to the following design and layout standards:
 - a. Stacking spaces shall be a minimum of eight feet in width by 25 feet in length.
 - b. Stacking spaces by shall not impede on- or off-site traffic movement or movement into or out of off-street Parking spaces.
 - c. Stacking spaces for each type of activity or accommodation shall be subject to any location standards applicable to the activity or accommodation itself.
 - d. Stacking spaces shall be separated from other drive aisles, Driveways, or Internal Drives by raised medians. if deemed necessary by the City Engineer for traffic movement and safety.

4.3.13 BICYCLE PARKING

Bicycle Parking Required:

Bicycle Parking shall be provided within CD-4, CD-4C, and CD-5 for a Lot or Building Site as set forth in Table 4.3.13 (Bicycle Parking).

A. Bicycle Parking Standards

1. Bicycle parking shall be provided using Bicycle Racks, Bicycle Lockers, restricted access bicycle enclosures, or similar secured facilities.
2. Bicycle Racks shall be securely anchored.
3. An aisle providing access to bicycle parking areas shall clear maneuverable access without limiting use of any sidewalk. Access aisles must be at least 4-feet wide.
4. Bicycle parking areas may be located in any layer and should be accessible from the main entrance by a continuous sidewalk connection.
5. Bicycle parking areas shall be separated from automobile parking and circulation areas by a physical barrier or a distance of feet.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

TABLE 4.3.13 BICYCLE PARKING

USE TYPE	BICYCLE PARKING REQUIREMENT
Residential/ Dwelling Uses	
Single Family Dwellings	None Required
Two Family Dwellings	None Required
Multi-Family Dwellings	1 space per 20 parking spaces
Mobile Home	None Required
Lodging Uses	
All Uses	None Required
Educational/ Institutional/ Civic Uses	
All Uses	1 space per 4,00 sq. ft. gross floor area
Medical Uses	
All Uses	None Required
Commercial/ Retail/ Professional & Service Uses	
All Uses	1 space per 4,00 sq. ft. gross floor area
Office Uses	
All Uses	1 space per 20 parking spaces
Communication Uses	
All Uses	None Required
Industrial Uses	
All Uses	None Required
Agricultural Uses	
All Uses	None Required
Utility Uses	
All Uses	None Required
Public or Private Uses	
All Uses	None Required

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

4.3.14 LOADING SPACE

A. General

1. Loading spaces shall be provided, designed, accessed, and located in accordance with this Section and **Table 4.3.14.B (Loading Space Requirement)** and **Tables 4.3.1-A– 4.3.1-N (District Standards)**.
2. Loading areas must be accessed by Rear Alleys, when such are available on the Zoning Map or otherwise available.

B. Loading Space Required

1. Each Lot or Building Site shall have the minimum number of loading spaces per quantity of the indicated Use as set forth in **Table 4.3.14.B (Loading Space Requirements)**.

TABLE 4.3.14.B LOADING SPACE REQUIREMENTS

Principal Use Category in District	Quantity of Use	# of Loading Spaces	Size of Loading Space(s)
Residential – Multifamily Building	≥100 Dwelling Units	1	10 ft. W x 50 ft. L x 15 ft. H
Commercial, Office, Retail/ Personal Service/ Artisan, Industrial	> 5,000-25,000sf	1	10.ft W x 50 ft. L x 15 ft. H
	25,001-60,000sf	2	
	60,001-120,000sf	3	
	120,001-200,000sf	4	
	201,000-290,000sf	5	
	≥ 290001sf	5+1 for each Additional 90,000sf	
Other	N/A	N/A	N/A

2. Without limitation to the other requirements of this Section, loading spaces shall be provided for each delivery bay, loading dock or delivery entrance.
3. Loading spaces must be available at all times without conflict with any Plan or Improvement element.
4. Space allocated to any loading area or access thereto shall not be used to satisfy the requirements for any Parking or garbage, recycling, or trash facilities.
5. Parking spaces may not be used or counted as meeting loading requirements.
6. No required loading space shall be Encroached upon by Buildings, Structures, Open Storage or any other Use.
7. Required loading facilities may be temporarily used for uses other than loading with the issuance of a Temporary Use Permit pursuant to Section 8.5.9, provided such use does not negatively impact adjacent roadways, neighborhoods, or other uses and is clearly temporary in nature.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

C. Location, Design & Access

1. Except as otherwise provided in subparagraph 4.3.14.C.2 below, all required loading spaces shall be provided within the applicable Lot or Building Site.
2. In Districts CD-4, CD-4C, CD-5, and CD-5C, required loading spaces may be provided either within the applicable Lot or Building Site or in the parking lane of the Enfronting Thoroughfare or Internal Drive.
3. Off-street loading spaces shall be located in accordance with **Tables 4.3.1-A– 4.3.1-N(District Standards)**.
4. Off-street loading areas must be accessed by Rear Alleys, when such are available on the Zoning Map or otherwise available.
5. No loading facility shall be located within 30 feet of a Thoroughfare or Internal Drive intersection.
6. Off-street loading areas shall include Curbs, paving, drainage facilities, and lighting in accordance with City standards and this Ordinance, as well as any other applicable laws, regulations and specifications.
7. Each required loading space shall have the minimum dimensions set forth in **Table 4.3.14.B (Loading Space Requirements)**.
8. Loading facilities may not obstruct facilities required for emergency access, including fire lanes.
9. Each off-street loading space shall be directly accessible from a Thoroughfare, Driveway, drive aisle, Internal Drive, or Alley without crossing or entering any other required off-street loading facility. Such loading space shall be accessible from the interior of the Building it serves and shall be arranged for convenient and safe ingress and egress by motor truck and/or trailer combination.
10. The required dimensions of loading spaces shall not include any access or entrances to, or exits from, such spaces.
11. All off-street loading spaces shall be surfaced with asphalt, concrete, or other hard surfaced material, and constructed so as to support the heaviest anticipated load, including without limitation fire and sanitation equipment and delivery vehicles, and shall provide for adequate drainage, and prevent the release of dust.
12. Loading Spaces provided within a Thoroughfare or Internal Drive shall meet construction requirements of provided by the City Engineer.
13. Each loading space shall be permanently marked and identified as a loading space in which no Parking is allowed. Permanent wheel stops or curbing shall be provided for each off-street loading space to prevent any vehicle using the loading space from Encroaching on the required Yards or Adjacent property.
14. Off-street loading areas shall be Screened in conformance with Section 4.3.11.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

4.3.15 REFUSE, SERVICE, EQUIPMENT & OTHER ITEMS

A. Trash Receptacle / Dumpster Requirement

Trash receptacles and dumpsters must be provided for each Lot or Building Site and must be located in accordance with Section 4.3.15.B.

B. Trash Receptacle/Dumpster Locations & Standards

1. Dumpsters and trash and recycling receptacles shall be located as specified for the applicable District in **Tables 4.3.1-A– 4.3.1-N (District Standards)**.
2. All dumpsters and trash and recycling receptacles shall be enclosed as required in this Section and **Tables 4.3.1-A– 4.3.1-N (District Standards)**. The enclosures shall be designed to prevent debris from leaving enclosure or being scattered by wind or animals. Except in Districts CD-2, CD-3L, and CD-3, dumpsters and garbage, trash, and recycling receptacles must be placed on concrete pads. The enclosure must be kept closed at all times other than for servicing. Except in Districts CD-2, CD-3L, and CD-3, bollards or posts must be placed on the interior of the enclosure to protect the walls from damage by the trash containers within.
3. Dumpsters and garbage, trash and recycling receptacle locations shall be accessed by Rear Alleys, when such are available on the Official Zoning Map or otherwise available.
4. Space allocated to any off-street garbage, trash, or recycling areas, receptacles, or dumpsters shall not be used to satisfy any Parking or loading requirements.
5. All Uses that generate food-related garbage shall provide water quality treatment to mitigate runoff.

C. Equipment & Other Items Locations & Standards

All heating, ventilation and air-conditioning equipment, utility meters (not including water meters) and equipment, mechanical equipment, antennas and satellite equipment, communications transmitting and receiving equipment, solar panels, recreation, play, and swimming pool, hot tub and spa locations shall be located and meet the other standards and requirements specified for the applicable District, as required in **Tables 4.3.1-A– 4.3.1-N (District Standards)**.

D. Service Areas

1. Service areas shall be located as required in **Tables 4.3.1-A– 4.3.1-U (District Standards)**.
2. Service areas shall be accessed by Rear Alleys, when such are available on the Zoning Map or otherwise available.

4.3.16 PRIVATE LANDSCAPE STANDARDS

A. General

1. Lots and Building Sites in Districts other than the Civic District shall be landscaped in accordance with **Table 4.3.1-A– 4.3.1-N (District Standards)** and this Section 4.3.16.
2. In Civic Districts, Lots and Building Sites shall be landscaped in accordance with **Table 4.3.1-A– 4.3.1-N (District Standards-Civic)** and this Section 4.3.16. Additionally, Civic Spaces shall be designed as set forth in **Table 5.3.3.B (Civic Space -Specific Standards)**.
3. Without limitation to any other provisions of this Section 4.3.16, all Screen, Streetscreen, Buffer, and Parking Area and Parking Lot landscape standards and requirements of this Ordinance must be met.
4. All bare or exposed ground on a Lots and Building Sites and/or in any other landscaped area shall be covered with live plant materials and/or mulch, with the following exceptions:
 - a. Naturally occurring river beds, rock outcroppings or similar landscape features typically lacking in vegetation.
 - b. Hiking trails and/or traces.
 - c. Clay or sand surfaces associated with recreation fields and facilities.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

5. Buildings and Structures lawfully existing as of the Effective Date may be modified without providing or modifying landscaping in conformance with this Section 4.3.16, provided that the same does not constitute an Alteration and does not increase the degree by which the Building or Structure is Non-conforming. This shall not be construed as prohibiting the provision of landscaping in full conformance with this Ordinance.
6. The standards and requirements herein set out for landscaping shall not apply to temporary uses or to Development or site work on relatively undeveloped sites which do not involve significant ground disturbance.

B. Maintenance of Landscaping

1. All landscaping must be properly maintained by the property owner and his or her successors, heirs, assignees or any consenting grantee.
2. All plantings shall be maintained in an attractive and healthy condition. Maintenance shall include, but not be limited to, watering, mulching, fertilizing and pest management, mowing, weeding, removal of litter and dead plant material, and necessary pruning and trimming.
3. Any required plantings that are dead or diseased plantings shall be removed and replaced with plants meeting all requirements of this Ordinance.
4. Natural water courses within a Buffer shall be maintained in a natural condition consistent with any applicable regulations.
5. A water source shall be supplied within 100 feet of any planting requiring continuing watering. Where non-native or non-drought tolerant native vegetation is incorporated in the Buffer, an irrigation system shall be required.
6. Landscape structural features such as walls, fences, berms or water features shall be maintained in a structurally safe and attractive condition.
7. Where other uses, including pedestrian, bike or other trails, are allowed within a Buffer, these uses shall be maintained to provide for their safe use.
8. If any Person responsible for landscape maintenance fails to maintain same according to the standards of this Ordinance, these regulations shall be enforceable by the City with the right to recover the cost of enforcement, including reasonable attorney fees. The City may also, following reasonable notice and a demand that deficiency of maintenance be corrected, enter the area to maintain same. The cost of such maintenance shall be charged to those persons having the primary responsibility for maintenance of the area.
9. Without limitation to Section 4.3.16.B, a maintenance bond lasting one (1) year must be provided for all plantings required under this Section 4.3.16.

C. Removal of Walls or Trees

None of the following may be removed without the prior approval of the Decision-Making Authority: Walls or trees required or shown on an approved site plan, Development Plan, or Master PUD Development Plan.

D. Plant Material Standards and Sizes

1. Except as otherwise required by Sections 4.3.16.D.4, 4.3.16.D.5, 4.3.16.D.8, 4.3.16.D.9 and 4.3.16.D.10, all required plant materials must meet with the minimum sizes, class and other requirements outlined in American Standards for Nursery Stock (ANSI Z60.1-2004) published by the American Nursery and Landscape Association (ANLA) or other local Nursery Association Standards.
2. Trees shall be chosen from the following list of plant species contained within this Section and/or plants identified in the guide, "Native Plants of the Tennessee Valley", published by the Tennessee Valley Authority (TVA).

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

TABLE 4.3.16.D-1 (NATIVE PLANTS OF THE TENNESSE VALLEY)

Common Name	Botanical Name
Canopy Trees	
American Beech	Fagus Grandifolia
Nuttall Oak	Q. Nuttalli
American Linden	Tilia Americana
Overcup Oak	Q. Lyrata
Baldcypress	Taxodium Distichum
Pecan	Carya Illinoensis
Black Cherry	Prunus Serotina
Persimmon	Diospyros Virginiana
Black Locust	Robinia Pseudoacacia
Post Oak	Q. Stellata
Black Oak	Q. Velutina
Red Maple	Acer Rubrum
Black Walnut	Juglans Nigra
River Birch	Betula Nigra
Blackgum	Nyssa Sylvatica
Sassafras	Sassafras Albidum
Buckeye	Aesculus Spp.
Scarlet Oak	Q. Coccinea
Bur Oak	Q. Marcocarpa
Shortleaf Pine	Pinus Echinata
Cherrybark Oak	Q. Pagoda
Shumard Oak	Q. Shumardii
Chestnut Oak	Q. Prinus
Silver Maple	Acer Saccharinum
Chinkapin Oak	Q. Muehlenbergii

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

Common Name	Botanical Name
Silverbell	Halesia Carolina
Cumcumbertree	Magnolia Acuminata
Southern Red Oak	Q. Falcata
Eastern Hemlock	Tsuga Candensis
Sugar Maple	Acer Saccharum
Eastern Red-Cedar	Juniperus Virginiana
Swamp Chestnut Oak	Q. Michauxii
Eastern White Pine	Pinus Strobus
Sweetgum	Liquidambar Stryaciflua
Green Ash	Fraxinus Pennsylvanica
Sycamore	Platanus Occcidentalis
Hickories	Carya Spp.
Water Oak	Q. Nigra
Kentucky Coffeetree	Gymnocladus Dioicus
White Ash	Fraxinus Americana
Loblolly Pine	Pinus Taeda
White Oak	Quercus Alba
Northern Catalpa	Catalpa Speciosa
Willow Oak	Q. Phellos
Northern Red Oak	Q. Rubra
Yellow-Poplar	Liriodendron Tulipifera
Accent Trees	
Alder	Alnus Serrulata
Red Buckeye	Aesculus Pavia
Allegheny Chinkapin	Castanea Pumila
Redbud	Cercis Canadensis

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

Common Name	Botanical Name
American Holly	Ilex Opaca
Serviceberry	Amelanchier Aborea
Buckthorn Bumelia	Bumelia Lyciodes
Shining Sumac	Rhus Copallina
Smoketree	Continus Obovatus
Devil's Walking Stick	Aralia Spinosa
Smooth Sumac	Rhus Galbra
Dogwood	Cornus Florida
Snowbell	Styrax Spp.
False Indigo	Amorpha Fruticosa
Sourwood	Oxydendron Arboreum
Fringetree	Chionanthus Virginicus
Staghorn Sumac	Rhus Typhina
Hawthorn	Crateagus Spp.
Striped Maple	Acer Pennsylvanicum
Hophornbeam	Ostrya Virginiana
Sweetbay	Magnolia Virginiana
Hornbeam	Carpinus Caroliniana
Sweetleaf	Symplocus Tinctoria
Mountain Maple	Acer Spicatum
Witch Hazel	Hamamelis Virginiana
Pawpaw	Asimina Triloba
Yellowwood	Cladrastis Lutea
Carolina Buckthorn	Rhamnus Caroliniana

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

3. When more than 20 trees are planted on used on a site to meet these regulations, a mix of trees (genera) shall be provided. The following table indicates the maximum percentage of same trees (same genus) that may be planted.

TABLE 4.3.16.D-2 (TREES - # PER GENERA)

Planted on Site	Minimum Number of Genera Required	Maximum Percentage of Any Genera
20 trees or less	1	Not Applicable
21 to 50 trees	2	70 percent
51 to 100 trees	3	50 percent
101 to 200 trees	4	40 percent
200 to 500 trees	5	30 percent
Over 500 trees	6	25 percent

4. Shrubs when planted as a hedge, the maximum spacing for shrubs shall be 40 inches on center.
5. Canopy trees shall have a planting area no less than 10 feet wide in all dimensions. Accent and substitution trees shall have a planting area no less than eight feet wide in all dimensions. This requirement may be modified administratively by the Zoning Administrator.
6. Plants shall be mulched a minimum of three inches deep. Where selected plant material is not tolerant of deep mulch, a specific note regarding shallower mulch shall be set forth on the final landscape plan and approved by the City as part of the landscape plan. Mulch shall be kept away from tree trunks.
7. Where specified, Building foundation planting shall meet the following requirements:
- Foundation plantings shall be placed within five feet of the building perimeter. If the Zoning Administrator determines that, due to site design considerations such as the location of sidewalks, plazas or service areas, this is not feasible, such plant materials may be located in planter boxes or in the areas of the site in a manner that enhances the overall landscape plan for the development.
 - One shrub shall be required as foundation planting for every ten (10) linear feet of Facade for Non-Residential Uses.
8. Any plant materials required for Screening must be evergreen and have an opacity of at least 90% from the ground through the full height of the plant.
9. At the time of installation, trees must be a minimum two and a half inches (2.5 in.) caliper measured three feet (3 ft.) from the base of the trunk.
10. At the time of installation, Shrubs must be a three (3) gallon container minimum and a minimum height above ground level of 30 in.
11. Plantings must not conflict at installation or maturity with the location of any other required Building and Building Site elements or other plantings.
12. Ground vegetation or Shrub plantings with spines, thorns or needles that may present hazards to pedestrians, bicyclists or vehicles are prohibited in the first two feet of the First Layer.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

E. Placement of Trees and Shrubs

1. Proposed trees and shrubs must be placed minimally 18 in. from any Sidewalk or pavement edge, measured from the center of the plant.
2. No trees shall be planted in wet retention ponds or drainage maintenance Easements.
3. Trees and shrubs shall be installed at least five feet away from the flow line of a drainage facility unless specifically designed as water quality measures adhering to best management practices.
4. Existing trees may remain in dry retention ponds provided that the natural grade is undisturbed to the tree line, they are a species adapted to seasonal flooding and the pond is adequately maintained.
5. Accent trees listed in **Table 4.3.16.D-1 (Native Plants of the Tennessee Valley)** and shrubs shall be allowed in access Easements, provided a minimum 20-foot-wide travel way is maintained clear of vegetation, and all clear sight triangle requirements are met.
6. Trees may be planted in Easements for underground utilities with approval by the City and any applicable utility provider, provided the root structure of the proposed tree is not anticipated to extend more than three feet below the ground. Shrubs may be planted, provided they are only within the outer three feet of the Easement. Where such trees and shrubs are planted, the property owner shall be responsible for replacement of such required vegetation if maintenance or other utility requirements require their temporary removal.

F. Artificial Plants / Turf

Artificial plants or artificial turf are prohibited, except on active recreation fields that are typically subject to intense use and soil compaction that prohibits the establishment of turfgrass.

G. Establishment

All required landscape areas must be watered and fertilized as necessary to ensure establishment within the first year planted in accordance with best landscape practices.

H. Screens

Screens must be provided in accordance with Section 4.3.11.

I. Soils

Soil shall be uncompacted coarse loam that is a minimum of 12 inches deep. Soils shall be appreciably free of gravel, stones, rubble or trash. All compacted soil, contaminated soil or road base fill shall be removed. Under no circumstances shall soils have greater than 5% or less than 0.5% organic matter.

J. Condition of Plants

Plants must have normal, well-developed branches and vigorous root systems.

K. Pavement of First Layer

The First Layer shall not be paved, except for the following:

1. Driveways; and
2. Pavement matching the adjoining Public Frontage in Character Districts CD-4, CD-4C, CD-5, and CD-5C, where the Building is set back no more than five feet (5 ft.) from the Front Lot / Building Site Line.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

L. Tree Protection

1. Exemptions. The following Tree Removal activities are exempt from this Section 4.3.16.L:
 - a. The tree proposed for removal is located:
 - (1) On a single-family residential Lot or Building Site of one acre or less that is not noted as a Critical Lot or Building Site; or
 - (2) On a Lot or Building Site in Districts CD-5 or CV;
2. Tree Removal. Existing trees on a Lot or Building Site or Development site shall not be removed or disturbed unless:
 - a. Trees are removed in accordance with an approved Development Plan or Master PUD Development Plan, site plan, Preliminary Plat, Building Permit, or grading permit that meets Sections 4.3.16.L.3 and 4.3.16.L.4; or
 - b. Tree Preservation Plan as part of any Application required for a Development Plan or Master PUD Development Plan, site plan, or Preliminary Plat, the Applicant shall submit a Tree Preservation Plan with the following information:
 - (1) The Lot or Building Site lines associated with the proposed development;
 - (2) A recent aerial photograph with date photograph was taken;
 - (3) The location and extent of the existing on-site tree canopy, including an estimate of the total percentage of the parcels covered by the existing on-site tree canopy;
 - (4) The exact location, health, and size of all Specimen Trees; however, in the instances of large established tree stands, the Zoning Administrator may accept an approximation of the location, health, and size of Specimen Trees if the trees are not being counted towards landscape requirements, or if the trees are located within a designated Tree Save Area; and
 - (5) The minimum tree canopy retention requirement.
3. Protection of Tree Canopy.
 - a. Tree Removal activities associated with Agricultural Uses are exempt from this Section 4.3.16.L.3.
 - b. A percentage of the existing tree canopy shall be retained on a Development or construction site in accordance with **Table 4.3.16.L (Tree Canopy Cover Retention)** below:

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

TABLE 4.3.16.L TREE CANOPY COVER RETENTION

Existing Tree Canopy Cover (as % of Total Development, Lot or Building Site Size)	Minimum Tree Canopy Retention by Zoning District (as % of Total Tree Canopy Cover)		
	CD-2	CD-4	
	CD-3L	CD-4C	SD-LI
	CD-3	CD-5C	SD-HI
	CD-4	SD-INT	
	CD-4C	PUD-MU	
	CD-5C		
	SD-MHP		
	SD-INT		
	PUD-R		
	PUD-MU		
80% - 100%	30%	15%	10%
60% - 79%	36%	18%	11%
40% - 59%	45%	22%	12%
20% - 39%	48%	24%	13%
19% - Less	54%	26%	14%

1 Additional tree canopy retention may be required under other provisions of this Ordinance.

2 CD-5 and CV do not have a minimum tree canopy retention requirement.

3 Residential portions of Development or construction in noted Districts.

4 Non-Residential portion of Development or construction in noted Districts.

c. Designation of Tree Save Areas

- (1) The minimum tree canopy to be retained within a construction or Development site shall be located within designated Tree Save Areas, which shall include the areas occupied by the Critical Root Zones of all healthy trees being retained in accordance with this Section 4.3.16.L.3.
- (2) The location of Tree Save Areas shall be based on the presence of any one or more of the following:
 - (a) Woodland forest;
 - (b) Established tree stands;
 - (c) Tree rows; or
 - (d) Specimen Trees.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

- (3) Tree Save Areas shall be depicted as an open space, conservation easement, or Civic Space on the applicable Development Plan or Master PUD Development Plan, site plan, or Preliminary Plat, and recorded on the Final Plat, as applicable.
 - (4) Each single-family residential Lot or Building Site with Tree Save Areas shall be identified on the applicable Development Plan or Master PUD Development Plan, site plan, or Preliminary Plat, and shall be platted on the Final Plat, if applicable.
- d. Tree Save Area Priorities. Consideration shall be given to the following when determining locations for Tree Save Areas:
 - (1) Woodland forests greater than five acres;
 - (2) Riparian buffers or natural drainage courses;
 - (3) Land with naturally occurring slopes of 20 percent or greater;
 - (4) Habitat used by endangered or threatened species;
 - (5) Scenic corridors and viewsheds;
 - (6) Areas that could serve to extend existing greenways, trails, parks, or recreation areas; and
 - (7) Areas needed for Buffers.
- e. Removal of Trees in Tree Save Areas. The removal, damage, or destruction of trees within a Tree Save Area shall be a violation of this Ordinance and require mitigation in accordance with the following standards:
 - (1) Any tree that is damaged or removed from the Tree Save Area shall be replaced at a rate of two caliper inches per one caliper inch removed, with each replacement tree having a minimum diameter of two caliper inches. If the total caliper inches removed cannot be determined, the area subject to Tree Removal shall be replanted at the rate of 80 trees per acre for each acre disturbed, or portion thereof. Replacement trees shall not be used to meet any other landscape requirements.
 - (2) Replacement trees for trees removed from the Tree Save Area shall be planted in the Tree Save Area or, in cases where adequate room is not available, planted elsewhere on the Lot or Building Site or Development site. In cases where adequate room on the Lot or Building Site or Development site is not available as determined by the Decision-Making Authority for the applicable review mitigation may take the form of planting on a site within 1,320 feet of the Lot, Building Site, or Development Parcel
 - (3) Following notice of violation from the Zoning Administrator related to this Section 4.3.16.L, no Decision-Making Authority shall review or approve any application for the site from the date of the violation until:
 - (a) A replacement plan has been approved by the Zoning Administrator and a performance guarantee for the associated replacement has been established in accordance with Section 1.26; or
- 4. Protection of Specimen Trees
 - a. General Protections.
 - (1) Specimen Trees shall not be cut, removed, pushed over, killed, or otherwise harmed, except as exempted by Section 4.3.16.L.1 and allowed by Section 4.3.16.L.5.c.
 - (2) The area within the Critical Root Zone, known as the Tree Protection Zone, of any Specimen Tree shall not be subject to any disturbance unless the disturbance is based on an ISA certified arborist report stating that the proposed construction shall cause no harm to the tree and is approved by the Zoning Administrator.
 - b. Designation on Plans and Plats.

Each single-family Residential Lot or Building Site with Specimen Trees shall be identified on each Development Plan, Master PUD Development Plan, and site plan and Final Plat, if applicable, noting that there is a Specimen Tree on such Lot or Building Site, which must be preserved and cannot be removed.
 - c. Removal and Replacement of Specimen Trees. The removal, damage, or destruction of Specimen Trees shall be a violation of this Ordinance and require mitigation in accordance with the following standards:
 - (1) Two caliper inches of replacement trees shall be provided for each caliper inch of Specimen Tree removed. Each replacement tree shall be a minimum of two and a half caliper inches, and shall either be replanted within 12 months of the removal of the Specimen Tree, or within a timeframe approved by the Zoning Administrator.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

Performance guarantees for the associated replacement, if warranted in the opinion of the Zoning Administrator, shall be established in accordance with Section 1.26. Replacement trees shall not be used to meet any other landscape requirements.

- (2) Replacement trees shall be planted on the Lot or Building Site or as applicable, the Development Parcel, where the Specimen Tree was removed; however, in cases where space on the Lot or Building Site is insufficient, the Zoning Administrator may allow mitigation through planting on a site within 1,320 feet of the Lot or Building Site. In cases where space on the Development Parcel is insufficient, the Planning Commission may allow mitigation through planting on a site within 1,320 feet of the Development Parcel.

5. Tree Protection During Construction

a. Tree Protection Fencing

All Specimen Trees in a Tree Protection Zone and the perimeter of Tree Save Areas shall be fenced in accordance with this Subsection before any Development or construction activity begins. Fencing shall extend at least one foot in distance from the edge of the tree for each inch of diameter at breast height (DBH), so that, at a minimum, each tree's Critical Root Zone is protected, but no case shall the tree fence be less than ten feet from the trunk. The Zoning Administrator shall consider existing site conditions in determining the exact location of any tree protection fencing.

- (1) All Specimen Trees in a Tree Protection Zone and the perimeter of Tree Save Areas shall be fenced in accordance with this Subsection before any Development or construction activity begins. Fencing shall extend at least one foot in distance from the edge of the tree for each inch of diameter at breast height (DBH), so that, at a minimum, each tree's Critical Root Zone is protected, but no case shall the tree fence be less than ten feet from the trunk. The Zoning Administrator shall consider existing site conditions in determining the exact location of any tree protection fencing
- (2) All fencing required by this Subsection shall be chain link fencing at least four feet in height and secured using appropriate posts spaced not more than ten feet apart. Such chain link fencing is not required to be vinyl coated.
- (3) Signs that are visible on all sides of the fenced-in area shall be installed on the tree protection fence at a rate of at least one sign for every 150 linear feet. The size of each sign must be a minimum of two feet by two feet and shall contain the following language in English and Spanish: "TREE PROTECTION ZONE: KEEP OUT. ZONA DE LA PROTECCION DEL ARBOL. NO SE PERMITE ENTRAR".
- (4) All tree protection measures shall be inspected by and approved by the Zoning Administrator prior to start of any Development or construction activities. Failure to install tree protection measures prior to the commencement of construction is a violation of this Ordinance.
- (5) The tree protection fencing shall be clearly shown on the Development Plan, Master PUD Development Plan, and site plan. No construction, grading, equipment or material storage, or any other activity shall be allowed within the fenced area except in accordance with the standards in Section 4.3.16.L.6.b.
- (6) Fencing shall be maintained until the Development or construction activities are complete.

b. Encroachments into Critical Root Zones

- (1) Encroachments within the Critical Root Zones of trees protected in accordance with this Subsection shall occur only in rare instances where no alternatives exist, such as may be required for the installation of streets, internal drives, sidewalks, or utilities.
- (2) If unauthorized encroachments occur, leading to trees being damaged during construction activities, the trees shall be replaced at a one caliper inch to one caliper inch ratio.

c. Owner's Responsibility During Development.

The owner, or if the owner is different from the developer, the developer, shall be responsible for the erection of all barriers necessary to protect any existing or installed trees from damage both during and after construction in accordance with the standards of this Subsection.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

4.3.17 PRIVATE LIGHTING STANDARDS

The following standards and requirements are applicable within all Districts and Civic Districts:

A. Areas to be Lighted

All Parking Areas, Parking Lots, Parking Structures, and access ways within the Lot or Building Site shall be lighted.

B. Lighting Standards

- 1. A lighting standard shall be no event higher than 30 feet in Non-Residential Parking Areas and Parking Lots or 15 feet in other areas.
- 2. Additional standards may apply within a Historic District, Historic Landmark District, or with respect to a Historic Structure.

C. Illumination

- 1. Illumination at all Building Site Lines must meet the standards of Table 4.3.17.B (Private Lighting Standards); provided that a minimum of one foot-candle (1.0 fc) of illumination must be provided throughout all Parking Areas, Parking Lots, and Parking Structures.

TABLE 4.3.17.B (PRIVATE LIGHT STANDARDS)

District	Min./Max. Lighting Level at Frontage Line
CD-2, CD-3L & CD-3	0 – 1.0 FC
CD-4 & CD-4C	0 – 1.0 FC
CD-5 & CD-5C	1.0 - 2.0 FC

- 2. Lighting fixtures shall be mounted in a manner so that the cone of illumination is contained on-site and does not cross any property line of the site.
- 3. Lighting shall not be oriented so that it directs glare or excessive illumination onto Streets in a manner that may distract or interfere with the vision of drivers.
- 4. Any fixtures used to accent architectural features, landscaping, or art shall be located, aimed or shielded to minimize light spill into the night sky.
- 5. Use of illuminated tubing or light strings outlining or defining property lines, sales areas, roof lines, doors, windows or similar areas or features in a manner that is not primarily for safety purposes, as determined by the Zoning Administrator, is prohibited. This paragraph shall not limit the use of lights illuminating outdoor dining or gathering areas.
- 6. Lighting for Internal Drives is not subject to this Section 4.3.17, but must comply with the Public Lighting Standards set forth in Article 5.

ARTICLE 4: BUILDING LOT & BUILDING SITE STANDARDS

D. Building Spotlights

Spotlights on Buildings shall not be used to meet the lighting requirements of this Ordinance.

E. Limitation on Periods of Use

Outdoor recreation areas Adjacent to Residential Uses or Districts shall not be illuminated after 10 PM Sunday through Thursday, and 11 PM Friday and Saturday.

4.3.18 SIGNAGE

All signage must comply with the standards and requirements of Article 7 (Sign Standards).

Proposed Zoning Text Amendment

Additions are Underlined
Deletions are Strikethrough

§ 4.3.9.E.6 Bar, Tavern, or Nightclub

1 Bar, Tavern, or Nightclub shall be permitted in accordance with the
2 applicable Use Table, subject to the following:

- 3 (1) With the exception of nightclubs, taverns, or bars located within
4 ~~District CD-5~~the Columbia Arts District Overlay, the applicant
5 shall demonstrate that no pre-existing Place of Worship,Schools,
6 or public park is located within 500 feet of the proposed
7 nightclub or similar establishment. Within the Columbia Arts
8 District Overlay the applicant shall demonstrate that no pre-
9 existing Place of Worship, Schools, or public park is located within
10 200 feet of the proposed nightclub or similar establishment

Measurements

- 12 a. The distance shall be made from the measured in a
13 straight line from the front door of the building to the
14 front door of the church property line of the
15 proposed night club or similar establishment and
16 from the property line of any separate Parking Lots to be
17 used by the nightclub or similar establishment.
- 18 b. For public parks, said distance shall be measured in a
19 straight line from the front door of the building to the
20 closest point of the park property.
- 21 c. For schools, said distance shall be measured in a straight
22 line from the front door of the building to the front door
23 of the school.

Adds separation
requirement from parks and
schools. Clarifies method of
measurement.

Proposed Zoning Text Amendment

Additions are Underlined
~~Deletions are Strikethrough~~

- 24 (2) Bars, Taverns, and Nightclubs located in Character District
25 CD-5 are exempt from the separation requirements listed
26 above.
- 27 (3) No nightclub, tavern, or bar shall be located on a Lot or
28 Building Site Adjoining any property zoned CD-2, CD-3L, CD-
29 3, SD-MHP, or PUD-R~~within 500 feet of a Residentially zoned~~
30 ~~or Residentially used property.~~
- 31 (4) No outside storage ~~or activities~~ shall be located on the site.
- 32 (5) ~~Outdoor activities occupying no more than 400 square feet~~
33 ~~may be permitted by Administrative Adjustment.~~

*Modifies the distance
requirement to maintain
separation from residential
areas but allow greater
flexibility in the location of
drinking establishments.*

*Does the planning
commission prefer buffer
from Abutting or Adjoining
residential properties?*

Proposed Zoning Text Amendment

Additions are Underlined
~~Deletions are Strikethrough~~

§ 4.3.9.E.6 Home Occupation

Limited Use Standards (p. 235)

1 The following standards are intended to ensure that home
2 occupations are compatible with the residential character of
3 neighborhoods where they are located.

Establishes a two-tiered review of Home Occupation permits based on the potential impact to neighbors

4 (1) There are two classes of Home Occupation:

5 a. A Minor Home Occupation shall be permitted upon
6 approval of a Minor Home Occupation permit by the
7 Zoning Administrator. The Zoning Administrator shall
8 establish a process for review and issuance of permits for
9 minor home occupations.

10 b. A Major Home Occupation shall be allowed only with the
11 approval of the Board of Zoning Appeals. Such approval
12 shall follow the process of a conditional use permit. The
13 Zoning Administrator shall review such Major Home
14 Occupation requests and recommend appropriate
15 conditions of approval to the Board of Zoning Appeals.

16 (2) The Zoning Administrator may refer Minor Home
17 Occupations to the Board of Zoning Appeals upon a
18 determination that the proposed home occupation presents a
19 risk to the residential character of the neighborhood or quiet
20 enjoyment of other property owners.

Insert cross-reference at § 8.5.10

21 (3) If the Zoning Administrator denies a request for a Minor Home
22 Occupation, or revokes a previously issued permit, the applicant
23 may appeal the decision to the Board of Zoning Appeals. Such a
24 request shall be evaluated as a Conditional Use for a Major Home
25 Occupation permit.

26 (4) The following limitations apply to all Home Occupations:

Proposed Zoning Text Amendment

Additions are Underlined
~~Deletions are Strikethrough~~

- 27 a. The home occupation shall be clearly incidental and
28 secondary to the use of the property for residential
29 purposes;
- 30 b. A home occupation shall not be established prior to the
31 residents conducting the home occupation taking
32 possession of, and residing in, the dwelling;
- 33 c. Outside storage or display of materials, merchandise, or
34 inventory is prohibited;
- 35 d. Exterior alteration that changes the residential character
36 of the principal building is prohibited;
- 37 e. No exterior building signs shall be permitted except as
38 specifically provided in Article 7 of this ordinance;
- 39 f. Receipt, sale or shipment to and from the premises is
40 permitted by regular U.S. Mail and express shipping
41 service characteristic of residential neighborhoods;
42 large-volume, business-to-business commercial
43 deliveries are prohibited; and
- 44 g. The applicant shall obtain all appropriate licensure
45 required by the State of Tennessee.
- 46 (5) The following limitations apply to Minor Home Occupations:
- 47 a. The Home Occupation must be conducted entirely within
48 the principal structure;
- 49 b. The Home Occupation shall not exceed fifty percent of
50 the total floor area of the principal building;
- 51 c. No person other than a family member residing on the
52 premises shall be employed as part of a minor home
53 occupation unless such employee(s) works off-premises;
- 54 d. There shall be no customers or clients on the premises of
55 a minor home occupation; and

Proposed Zoning Text Amendment

Additions are Underlined
~~Deletions are Strikethrough~~

- 56 e. No commercial vehicles or trailers, other than ordinary
57 passenger vehicles; shall be permitted on premises.
- 58 (6) The following limitations apply to Major Home Occupations:
- 59 a. A Major Home Occupation may be conducted within an
60 accessory building;
- 61 b. A major home occupation may include two employees
62 who do not reside in the home;
- 63 c. Except in-home childcare licensed by the State of
64 Tennessee, a major home occupation may have no more
65 than two customers or clients on the premises at one
66 time;
- 67 d. Shipment and delivery to and from the premises are
68 prohibited between the hours of 9 pm and 7 am;
- 69 e. No employees, customers, or clients may be on the
70 premises between the hours of 9 pm and 7 am;
- 71 f. Trailers, equipment, and commercial vehicles, when
72 permitted by the Board of Zoning Appeals, must be
73 stored in the Third Layer and screened from view; and
- 74 g. The Board of Zoning Appeals may further restrict the
75 number of employees, hours of operation, deliveries,
76 and parking of commercial vehicles and equipment on
77 site.
- 78 (7) Revocation
- 79 a. The Zoning Administrator may revoke the Home
80 Occupation permit for failure to comply with these
81 limited use standards, conditions imposed by the Board
82 of Zoning Appeals, or other violations of City of Columbia
83 ordinances.

Proposed Zoning Text Amendment

Additions are Underlined
~~Deletions are Strikethrough~~

§ 9.3 Definitions

Home Occupation: any gainful occupation conducted entirely within
a Dwelling ~~solely by the owners or tenant residents thereof~~ as an
Accessory Use, which does not change the character of the Structure
as a Residence; There are two types of Home Occupation: provided that

(1) Minor Home Occupations: gainful occupation conducted entirely
within a Dwelling which does not generate traffic from
employees, customers, clients, or deliveries and bears no said
activity shall not occupy more than 50% of the Floor Area of the
Dwelling, (2) there shall be external evidence of the accessory
commercial use;

(2) Major Home Occupation: gainful occupation conducted on a
residential property which

a. generates some traffic from employees, customers,
clients or deliveries;

b. bears some external evidence of the accessory
commercial use; or

c. occurs within an accessory structure.

~~other than an Identification Sign, (3) no goods shall be kept, and (4) no~~
~~mechanical or electrical equipment shall be used except customary~~
~~household equipment; and provided further that the following are not~~
~~allowed as Home Occupations~~ do not include: Clinics, Hospitals, ~~Home~~
~~Professional Office, barbershop, beauty shop, Restaurants, Kennels, Auto~~
~~Repair, antique dealer, Retail sales on the premises, or loading of~~
ammunition.

*Updates the definition of
Home Occupation to reflect
new standards.*

Proposed Zoning Text Amendment

Additions are Underlined
~~Deletions are Strikethrough~~

108 **Kennel:** Any ~~Structure or premises on~~place where ~~which four (4) or~~
109 ~~more~~ dogs, cats and/or other ~~household pets~~animals ~~over four (4)~~
110 ~~months of age~~ are kept for boarding, breeding, ~~selling~~, grooming, or
111 training, for compensation, excluding any otherwise conforming or
112 lawfully nonconforming agricultural use, ~~however, any Structure or~~
113 ~~premises on which such animals are kept solely for Retail sale.~~ A Kennel
114 may not be a Home Occupation.

*Revises definition of Kennel
to provide clarity and
improve enforceability.*

Proposed Zoning Text Amendment

Additions are Underlined
~~Deletions are Strikethrough~~

§ 4.3.9.E.6 Tobacco, Vape, and Cannabinoid Retailers

Limited Use Standards (p. 242)

Retailers of Tobacco, Vapes, and Cannabinoids shall be permitted where
the **Building, Lot and Building Site Principal Uses Table** permits Retail
Sales subject to the following limitations:

- (1) Tobacco, Vape, and Cannabinoid retailers shall be located no less than five hundred feet from an existing Tobacco, Vape, and Cannabinoid retailer.
- (2) Tobacco, Vape, and Cannabinoid retailers shall be located no less than five hundred feet from
 - a. A School;
 - b. A public park;
 - c. A Religious Facility.
- (3) Tobacco, Vape, and Cannabinoid retailers shall be located no less than two hundred feet from any property zoned CD-2, CD-3, CD-3L, SD-MHP, or PUD-R.
- (4) Tobacco, Vape, and Cannabinoid retailers shall be located no less than fifty feet from any property used as a Single-Family or Two-Family home or Townhouse.
- ~~(2)~~(5) Required distances shall be measured from Parcel or Building Site line to Parcel or Building Site line.

Standards modeled on Murfreesboro, TN and Louisville, KY (those jurisdictions use larger exclusion radius).

Proposed Zoning Text Amendment

Additions are Underlined
Deletions are Strikethrough

§ 9.3 Definitions

Tobacco, Vape, and Cannabinoid Retailers: A retail sales operation that

- (1) Devotes at least fifty-one percent of its floor area to the display, sale, distribution, delivery, offering, furnishing, or marketing of products intended for recreational/non-prescription use including but not limited to cigarettes, e-cigarettes, smokeless tobacco, pipe tobacco, vapes, products made from cannabinoid derivative plants (e.g CBD or THC products), or other nicotine or cannabinoid delivery devices, components, products, liquid nicotine or cannabinoids, or liquid nicotine or cannabinoid containers; or
- (2) Earns at least fifty-one percent of gross sales from sale distribution, delivery, or marketing of products intended for recreational/non-prescription use including but not limited to cigarettes, e-cigarettes, smokeless tobacco, pipe tobacco, vapes, products made from cannabinoid derivative plants (e.g CBD or THC products), or other nicotine or cannabinoid delivery devices, components, products, liquid nicotine or cannabinoids, or liquid nicotine or cannabinoid containers.

*Definition based on
proportion of space
OR proportion of
sales*

Proposed Zoning Text Amendment

Additions are Underlined
 Deletions are Strikethrough

TABLE 4.3.9.A-2 BUILDING, LOT & BUILDING SITE ACCESSORY USES

ACCESSORY USE	CD-2	CD-3 L	CD-3	CD-4	CD-4C	CD-5	CD - 5C	SD-MHP	SD-INT	SD-LI	SD-HI	PUD - R	PUD-MU	CV
Minor Home Occupation	RPL	RPL	RPL	RPL	RPL	RPL	RPL	RPL	RPL	RPL	NP	RPL	RPL	NP
Major Home Occupation	<u>CU</u>	<u>CU</u>	<u>CU</u>	<u>CU</u>	<u>CU</u>	<u>CU</u>	<u>CU</u>	<u>CU</u>	<u>CU</u>	<u>CU</u>	NP	<u>CU</u>	<u>CU</u>	<u>NP</u>

Distinction between Minor and Major Home Occupations in Accessory Use Table. Minor Home Occupations permitted administratively; Major Home Occupations are approved by BZA.

Proposed Zoning Text Amendment

Additions are Underlined
 Deletions are Strikethrough

TABLE 4.3.9.A-1 BUILDING, LOT & BUILDING SITE PRINCIPAL USE

PRINCIPAL USE	CD-2	CD-3 L	CD-3	CD-4	CD-4C	CD-5	CD - 5C	SD-MHP	SD-INT	SD-LI	SD-HI	PUD - R	PUD-MU	CV
<u>Tobacco, Vape, and Cannabinoid Retailers</u>	<u>NP</u>	<u>NP</u>	<u>NP</u>	<u>PL</u>	<u>PL</u>	<u>NP</u>	<u>PL</u>	<u>NP</u>	<u>PL</u>	<u>PL</u>	<u>NP</u>	<u>NP</u>	<u>PL</u>	<u>NP</u>

Vape and CBD retailers subject to limited use standards in mixed use districts (excluding CD-5) and prohibited in single-family residential character districts.

Q4 Zoning Text Amendment Housekeeping Corrections

Project #:	24-0476	Location:	N/A
Applicant:	Kevin C. McCarthy, AICP	Case Type(s):	Text Amendment
Staff Planner:	Kevin C. McCarthy, AICP	Proposed Use:	N/A

SUMMARY

The applicant, the Zoning Administrator, requests to amend the text of Ordinance 4400, the zoning ordinance for the City of Columbia. This is the fifth of five rounds of zoning text amendments staff has presented to the Planning Commission between December 2023 and December 2024. These changes will implement Connect Columbia, better align zoning regulations with community preferences, and calibrate the standards based on “lessons learned” during the first two years administering the Ordinance. This round of proposed amendments is detailed in the attached track changes documents. Specifically, the proposal relates the clarification of the lot width standard for the CD-3 Neighborhood Character District as well as corrections of scrivener errors and other minor formatting corrections.

- The Planning Commission is a **recommending body** for zoning text amendments. The City Council is the decision-making authority.
- The staff comments section details the proposed changes, which are provided in the agenda packet in ~~striketrough~~ and underlines.
- Planning Commission may recommend adoption of the proposed text, modify the proposal, or decline the request.
- Templates are provided at the end of the report to assist the Planning Commission in crafting properly formatted motions.

CONSISTENCY WITH CONNECT COLUMBIA

The ongoing current process of reviewing and updating the Zoning Ordinance and other regulating documents is part of the implementation of Connect Columbia, the City's comprehensive plan.

REVIEW PROCESS

Section **8.5.18** of the Zoning Ordinance directs the Planning Commission to review and make a recommendation on all proposed changes to the text of the Ordinance. The Planning Commission is the recommending body for text amendments under **§ 8.3.3.B.2** of the Zoning Ordinance.

Section **8.5.18.C** of the Zoning Ordinance requires that Planning Commission determine that the proposed changes are consistent with the comprehensive plan.

8.5.18.G of the Zoning Ordinance establishes the review criteria for approval of all changes to the text of the Ordinance:

- a. The extent to which the proposed Zoning Ordinance Amendment is consistent with the remainder of this Ordinance, including, specifically, any purpose and intent statements;*
- b. The extent to which the proposed Zoning Ordinance Amendment represents a new idea not considered in this Ordinance, or represents a revision necessitated by changing circumstances over time;*
- c. Whether or not the proposed Zoning Ordinance Amendment corrects an error in this Ordinance; and*
- d. Whether or not the proposed Zoning Ordinance Amendment revises this Ordinance to comply with state or federal statutes or case law.*

The criteria for City Council action on a Zoning Ordinance Amendment at § 8.5.18.J.4 are identical to the criteria for Planning Commission review at 8.5.18.G.3.

COMMENTARY FROM PROFESSIONAL PLANNING STAFF

The City Council adopted the current ordinance on July 14, 2022. The Zoning Ordinance implements the City's comprehensive plan, Connect Columbia. On November 8, 2023, the Planning Commission recommended adoption of a five-year update of the framework, land use, and transportation elements of Connect Columbia. The framework element of the plan directs planning staff to initiate revisions to the ordinance in order to bring it into consistency with changes to the future land use plan. It further directs staff to engage residents and property owners to solicit suggestions for further changes to the ordinance. As mentioned above, this is

the final round of zoning text amendments staff plans to present to the Planning Commission between December 2023 and December 2024.

The proposal includes the following changes:

- Removes the word “garage” from the width standard for alley-loaded CD-3 lots.
- Directs the Zoning Administrator to compile list of typos, cross-references, and other formatting corrections for consideration by the City Council.

Planning staff will present detailed commentary at the December 4, 2024 meeting of the Planning Commission. The proposal

The Planning Commission may recommend approval of the proposed text amendments, direct staff to prepare an alternative text amendment, or decline to act on the proposed changes.

SAMPLE MOTIONS

Approve:

Move to find, based on the analysis provided by city staff, that the criteria listed in section **8.5.18** of the City of Columbia Zoning Ordinance have been satisfied and recommend approval of the proposed text amendments **[may be subject to modifications proposed by the Planning Commission]**.

Deny:

Move to recommend denial of the requested text amendment having found, based on the analysis provided by city staff, that the criteria listed in section **8.5.18** of the City of Columbia Zoning Ordinance are not satisfied *[list specific reasons for denial and provide direction to staff]*.

Defer:

Move to find that there is insufficient information to decide, defer the matter to the next regularly scheduled meeting of the Planning Commission, and direct staff to provide: *[list additional information]* for review at a future meeting.

Q4 Zoning Text Amendment Limited Use Standards

Project #:	24-0475	Location:	N/A
Applicant:	Kevin C. McCarthy, AICP	Case Type(s):	Text Amendment
Staff Planner:	Kevin C. McCarthy, AICP	Proposed Use:	N/A

SUMMARY

The applicant, the Zoning Administrator, requests to amend the text of Ordinance 4400, the zoning ordinance for the City of Columbia. This is the fifth of five rounds of zoning text amendments staff has presented to the Planning Commission between December 2023 and December 2024. These changes will implement Connect Columbia, better align zoning regulations with community preferences, and calibrate the standards based on “lessons learned” during the first two years administering the Ordinance. This round of proposed amendments is detailed in the attached track changes documents. Specifically the proposal relates to the limited used standards in Article 4 as well as related definition and procedural references in Articles 9 and 8.

- The Planning Commission is a **recommending body** for zoning text amendments. The City Council is the decision-making authority.
- The staff comments section details the proposed changes, which are provided in the agenda packet in ~~striketrough~~ and underlines.
- The specific limited uses impacted by this amendment include: Home Occupations; Bars, Taverns, and Nightclubs; retailers of CBD, Vape, and Tobacco; and Short Term Rentals.
- Planning Commission may recommend adoption of the proposed text, modify the proposal, or decline the request.
- Templates are provided at the end of the report to assist the Planning Commission in crafting properly formatted motions.

CONSISTENCY WITH CONNECT COLUMBIA

The ongoing current process of reviewing and updating the Zoning Ordinance and other regulating documents is part of the implementation of Connect Columbia, the City's comprehensive plan.

REVIEW PROCESS

Section **8.5.18** of the Zoning Ordinance directs the Planning Commission to review and make a recommendation on all proposed changes to the text of the Ordinance. The Planning Commission is the recommending body for text amendments under **§ 8.3.3.B.2** of the Zoning Ordinance.

Section **8.5.18.C** of the Zoning Ordinance requires that Planning Commission determine that the proposed changes are consistent with the comprehensive plan.

8.5.18.G of the Zoning Ordinance establishes the review criteria for approval of all changes to the text of the Ordinance:

- a. The extent to which the proposed Zoning Ordinance Amendment is consistent with the remainder of this Ordinance, including, specifically, any purpose and intent statements;*
- b. The extent to which the proposed Zoning Ordinance Amendment represents a new idea not considered in this Ordinance, or represents a revision necessitated by changing circumstances over time;*
- c. Whether or not the proposed Zoning Ordinance Amendment corrects an error in this Ordinance; and*
- d. Whether or not the proposed Zoning Ordinance Amendment revises this Ordinance to comply with state or federal statutes or case law.*

The criteria for City Council action on a Zoning Ordinance Amendment at § 8.5.18.J.4 are identical to the criteria for Planning Commission review at 8.5.18.G.3.

COMMENTARY FROM PROFESSIONAL PLANNING STAFF

The City Council adopted the current ordinance on July 14, 2022. The Zoning Ordinance implements the City's comprehensive plan, Connect Columbia. On November 8, 2023, the Planning Commission recommended adoption of a five-year update of the framework, land use, and transportation elements of Connect Columbia. The framework element of the plan directs planning staff to initiate revisions to the ordinance in order to bring it into consistency with changes to the future land use plan. It further directs staff to engage residents and property owners to solicit suggestions for further changes to the ordinance. As mentioned above, this is

the final round of zoning text amendments staff plans to present to the Planning Commission between December 2023 and December 2024.

The proposal includes the following changes:

- Home Occupations
 - Distinguishes between “Major” and “Minor” home occupations;
 - Creates a process to allow major home occupations as a conditional use approved by the Board of Zoning Appeals;
 - Continues to permit minor home occupations administratively; and
 - Modifies definition of Home Occupation and Kennels.
- Bars, Taverns & Nightclubs
 - Removes 500 ft exclusion from residential property;
 - Adds exclusions around schools and parks;
 - Prohibits the use on lots and building sites next to residentially zoned property; and
 - Requires a 50 ft separation from property in single-family use regardless of zoning.
- Vape, Tobacco & Cannabinoid Retailers
 - Creates a use category for Vape, Tobacco & Cannabinoid Retailers;
 - Creates a definition for Vape, Tobacco & Cannabinoid Retailers;
 - Imposes a 500 ft separation requirement;
 - Imposes a 500 ft exclusion around schools, parks, and religious facilities; and
 - Requires 50 ft separation from residentially zoned property.
- Short Term Rental
 - Removes requirement that all Short-Term Rentals be accessory uses in owner-occupied dwellings;
 - Modifies the definition of Accessory Dwelling Unit (ADU) to allow the use of ADUs as short-term rentals;
 - Creates an administrative review and permitting process;



- Removes prohibition on short-term rentals in single-family character districts and allows them as a conditional use approved by the Board of Zoning Appeals;
- Allows short-term rentals by administrative approval in mixed use character districts and special districts;
- Requires a local point of contact for each permitted short-term rental; and
- Removes onerous parking requirements for short-term rentals.

Planning staff will present detailed commentary at the December 4, 2024 meeting of the Planning Commission. The proposal

The Planning Commission may recommend approval of the proposed text amendments, direct staff to prepare an alternative text amendment, or decline to act on the proposed changes.

SAMPLE MOTIONS

Approve:

Move to find, based on the analysis provided by city staff, that the criteria listed in section **8.5.18** of the City of Columbia Zoning Ordinance have been satisfied and recommend approval of the proposed text amendments **[may be subject to modifications proposed by the Planning Commission]**.

Deny:

Move to recommend denial of the requested text amendment having found, based on the analysis provided by city staff, that the criteria listed in section **8.5.18** of the City of Columbia Zoning Ordinance are not satisfied *[list specific reasons for denial and provide direction to staff]*.

Defer:

Move to find that there is insufficient information to decide, defer the matter to the next regularly scheduled meeting of the Planning Commission, and direct staff to provide: *[list additional information]* for review at a future meeting.



CITY OF COLUMBIA TENNESSEE
CITY COUNCIL
STAFF REPORT

STAFF REPORT CONTACT INFORMATION

Paul Keltner, AICP, Development Services Director pkeltner@columbiatn.gov 931-560-1560

AGENDA ITEM TITLE: 2ND CONSIDERATION ON ORDINANCE NO. 4537 - AN ORDINANCE AMENDING DEVELOPMENT SERVICES PLANNING FEE SCHEDULE FOR THE CITY OF COLUMBIA, TENNESSEE - CITYWIDE, FINANCIALLY RESPONSIBLE CITY PROVIDING EXCELLENT SERVICES.

RECOMMENDATION: Approve Ordinance 4537 on second consideration.

INFORMATION: The request is to amend the Fee Schedule for Development Services. The proposed amendments necessitate accompanying fees for the permits and processes that staff will be required to review and issue. The fees that were amended and added include a Short-Term Rental Fee of \$300 requiring Board of Zoning Appeals approval; \$150 Short Term Rental Fee requiring Administrative Approval; Small Accessory Permit fee of \$25; Circulation of Approved Final Plat Fee of \$35; and items for Annexation to notice and plan of services and resolutions to consist of an Advertising and Processing Fee of Cost. The Planning Commission recommended approval of this request with a vote of 6-0 at their December 4, 2024 meeting.

This item was reviewed at the February 12, 2025 Planning Commission meeting with no changes recommended by a vote of six to zero.

CERTIFICATION: N/A

ATTACHMENTS: Ordinance 4537; Exhibit A; DS Staff Report.

**AN ORDINANCE AMENDING DEVELOPMENT SERVICES FILING FEE
SCHEDULE FOR THE CITY OF COLUMBIA, TENNESSEE.**

WHEREAS, Section §13-7-201 of the Tennessee Code Annotated empowers the city to enact a zoning ordinance and to provide for its administration, enforcement, and amendment; and

WHEREAS, the City Council deems it necessary for the purpose of promoting the health, safety, morals and general welfare of the city to enact such an ordinance; and

WHEREAS, the City Council, pursuant to the provisions of Section §13-4-101 of the Tennessee Code Annotated has appointed a Planning Commission to recommend the appropriate regulations to be enforced therein; and

WHEREAS, on the 4th day of December, 2024, the Planning Commission reviewed and recommended specific changes, in accordance to Section 8.5.4.C.3 of the Zoning Ordinance regarding development fees. The new proposed fee schedule is attached hereto as Exhibit "A" and incorporated herein by reference. Said recommendation is being considered after a public hearing held on the 9th day of January, 2025, notice of which was published in the Daily Herald of Columbia fifteen (15) days or more prior to said meeting; and

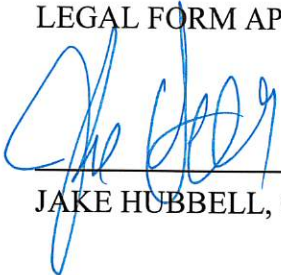
PASSED AND ADOPTED BY THE CITY COUNCIL OF THE CITY OF
COLUMBIA, TENNESSEE, this the 13th day of February, 2025.

CHARLES (CHAZ) M. MOLDER, MAYOR

ATTEST:

THAD H. JABLONSKI, CITY RECORDER

LEGAL FORM APPROVED:



JAKE HUBBELL, CITY ATTORNEY

APPROVED FOR FIRST CONSIDERATION:

ANTHONY R. MASSEY – CITY MANAGER

Passed on 1st consideration _____

Passed on 2nd consideration: _____



CITY OF
COLUMBIA
TENNESSEE

DEVELOPMENT SERVICES
700 NORTH GARDEN STREET
COLUMBIA, TN 38401
PHONE: (931) 560-1560
FAX: (931) 560-1541

PLANNING FEE SCHEDULE

Payable upon Submission of Application
Non-refundable Except as Provided in Refund Policy

Comprehensive Plan Amendment¹

Submittal Fee	\$ 300
---------------	--------

Annexation with CD-3L Base Zoning

Submittal Fee (10 acres or less); plus	\$ 300
Next 90 acres or fraction thereof; plus	\$20/acre
All over 100 acres or fraction thereof	\$3/acre

Zoning Map Amendment "Rezoning" (§8.5.19)

Submittal Fee (10 acres or less); plus	\$ 450
Next 90 acres or fraction thereof; plus	\$30/acre
All over 100 acres or fraction thereof	\$5/acre

Planned Unit Development (§8.5.21)

Preliminary Development Plan

Submittal Fee (PUD-R and PUD-MU); plus	\$ 500
PUD-R and PUD-MU; and/or	\$25/dwelling unit
PUD-MU (non-residential acreage)	\$50/acre

Final Development Plan

PUD-R	\$ 250
PUD-MU	\$ 300

Revision of a Master Plan requiring Planning Commission Approval	100% of original fee
--	----------------------

Major Site Development Plan (§8.5.6)

New Multi-Family Residential Sites, Buildings, and Additions

Submittal Fee; plus	\$ 500
Residential Units	\$10/unit

New Non-Residential and/or Mixed-Use Sites, Buildings, and Additions

Submittal Fee; plus	\$ 500
First 10,000 square feet of all floor area; plus	\$0.05/square foot
All floor area over 10,000 square feet	\$0.02/square foot

Development Plan submitted with Preliminary Plat	\$10/unit
--	-----------

Revision of Plan Requiring Planning Commission Approval (§8.5.6.D.3); plus	50% of original fee
--	---------------------

Renewal of Expiring Site Plan without Changes (§8.5.6.D.1-2) ²	100% of original fee
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Alternative Performance	\$500
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¹ Must be accompanied by a request for rezoning.

² Paid with building permit or site construction plan review, as applicable.



Minor Site Development Plan (§8.5.6)³

Administrative Development Plan Approval (§8.5.6.R)	\$500
Renewal of Expiring Site Plan without Changes (§8.5.6.D.1-2)	100% of original fee

Heavy Manufacturing Permit (§8.5.22)

Submittal Fee	\$300
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Board of Zoning Appeals (§8.5.16/8.5.17)

Appeal Of Planning Department Determination ⁴	\$ 300
Zoning Variance Owner-Occupied Residential	\$ 200
Zoning Variance	\$ 400
Conditional Use	\$ 300

Architectural Design Reviewe (§8.5.15)

Design Review for Planned Unit Development	\$ 150
Design Review for structures in Special Districts (SD-LI, SD-HI, SD-INT)	\$ 100
Alternative Compliance - ARC	\$500
Alternative Compliance - ZA	\$300
Design Review Appeals	\$50

Historic Zoning Commission (§8.5.13)

Non-Residential/Non-Owner-Occupied Residential/Signs	
Certificate of Appropriateness - Commission; plus	\$ 150
Certificate of Appropriateness - Administrative	\$ 75
Owner-Occupied Residential	
Certificate of Appropriateness - Commission	\$ 25
Certificate of Appropriateness - Administrative	No Charge
After the Fact Request for Certificate of Appropriateness/Multiple Reviews ⁵	\$300

Heavy Manufacturing Permit (§8.5.22)

Submittal Fee	\$ 300
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³ All fees applicable to Major Site Development Plans apply to a Minor Site Development Plans referred to the CMPC by the ZA.

⁴ Refunded if the BZA finds in favor of the applicant.

⁵ This fee applies to all requests for approval for work already completed as well as requests which follow a Stop Work order. The fee also applies to second and subsequent requests to revise previous Commission-level approvals. The Zoning Administrator may charge the regular application fee in cases of bona fide hardship.



Subdivision (§8.5.24 and SubRegs)

Minor Subdivisions

Referred to Planning Commission Approval ⁶	\$ 500
Staff-Approved	\$ 250
Preliminary Plat (Must Accompany a Development Plan)	
Submittal Fee; plus	\$ 500
Per Lot; plus	\$ 25
Final Plat	
Submittal Fee	\$ 500
Per Lot	\$ 25
Circulation of Approved Plat (Optional)	\$35

Zoning Fees

Zoning Verification Letter Basic	\$ 50
Zoning Verification Letter Detailed / Zoning Administrator's Determination	\$ 75
Home Occupation Permit	\$ 25
Mobile Vending Permit	\$ 50
Small Accessory Permit	\$25
Receipt of Plans Conforming to PUD or Site Development Plan	\$ 100
Engineering/Planning Reinspection ⁷	\$ 50
Short Term Rental Permit ⁸	\$300
Short Term Rental Permit Administrative	\$150
Zoning Compliance - Residential ⁹	\$ 100
Zoning Compliance - Commercial/Industrial ⁴	\$ 300
Zoning Compliance - Signs ¹⁰	Lesser of 30% of project value or \$300

Public Notice¹¹

Advertising and Processing

Items for which CMPC/ARC is the Decision Making Authority	\$70
Items for which City Council is the Decision Making Authority	\$145
Items for which BZA is the Decision Making Authority	\$70
Items for which HZC is the Decision Making Authority	\$70
Items for annexation to notice plan of services and resolution	Cost

⁶ Referred at the discretion of the Zoning Administrator or City Engineer. Fee may be reduced to \$250 at the discretion of the Zoning Administrator or City Engineer when minimal additional staff time is required.

⁷ If associated with Preliminary Plat, Site Plan, PUD or other PC, BZA, HZC, Design Review

⁸ Double fees for after the fact permitting after May 13, 2024.

⁹ Paid with building permit.

¹⁰ Signs which require a CoA from the ZA or HZC may be credited \$75 toward the Zoning Compliance fee, provided no revisions are necessary upon first review of the permit application.

¹¹ In addition to the initial fee, advertising and mailing fees must be paid each time an item is deferred at the applicant's request. May be waived at discretion of the Director of Development Services.



Mailing and Processing

Items for which City Council or BZA is the Decision Making Authority	\$9/adjacent parcel
Posting of Signs	
Items for which City Council, CMPC, BZA, or HZC is the Decision Making Authority	\$10

Additional Fees

Pre-application Meeting ¹²	\$ 225
Additional Fees for Multiple Technical Reviews ¹³	50% of original fee
Technology Fee	\$20

Refund Policy

All advertising and processing fees are non-refundable.

All mailing and processing fees are non-refundable.

Fees for Planning Commission items may be refunded, less a \$100 processing fee if the applicant withdraws the application at least twenty-four hours prior to the meeting of the Development Review Committee when the request is scheduled for its first technical review. Fees for Planning Commission items are non-refundable at any later point.

Fees for Board of Zoning Appeals may be refunded, less a \$50 processing fee if the applicant withdraws the application at least seven days prior to the scheduled meeting. Fees for Board of Zoning Appeals items are non-refundable at any later point.

Fees for Historic Zoning Commission items may be refunded if the applicant withdraws the application at least seven days prior to the scheduled meeting. Fees for Historic Zoning Commission items are non-refundable at any later point.

Zoning fees are non-refundable.

Abbreviations

Columbia Municipal Planning Commission (CMPC)
Architectural Design Review Commission (ARC)
Development Review Committee (DRC)
Board of Zoning Appeals (BZA)
Historic Zoning Commission (HZC)
City Council (CC)

¹² Only applies to proposed comprehensive plan amendments, zoning map or text amendments, planned unit developments, site plans approved by Planning Commission, and preliminary plats. Fee is only charged when the City Engineer, Fire Marshall, and Zoning Administrator (or their designees) are each in attendance. The fee may be waived at the discretion of the Director of Development Services. The fee may be credited to one subsequent related application for Planning Commission review received within six months of the meeting date.

¹³ Applicable to Planned Unit Developments, Site Development Plan, and Preliminary Plats which the Zoning Administrator deems noncompliant after two reviews by the Development Review Committee (DRC), and to applications referred back to the DRC due to technical deficiencies. May be waived at discretion of the Director of Development Services and/or the Planning Commission.



CITY OF
COLUMBIA
TENNESSEE

DEVELOPMENT SERVICES

700 NORTH GARDEN STREET

COLUMBIA, TN 38401

PHONE: (931) 560-1560

FAX: (931) 560-1541

Zoning Administrator (ZA)



CITY OF COLUMBIA TENNESSEE
CITY COUNCIL
STAFF REPORT

STAFF REPORT CONTACT INFORMATION

Paul Keltner, AICP, Development Services Director pkeltner@columbiatn.gov 931-560-1560

AGENDA ITEM TITLE: 2ND CONSIDERATION ON ORDINANCE NO. 4538 - AN ORDINANCE AMENDING ORDINANCE NO. 4400, THE SAME BEING THE ZONING ORDINANCE FOR THE CITY OF COLUMBIA, TENNESSEE, TO INCORPORATE THE CHANGES RECOMMENDED BY THE PLANNING COMMISSION - CITYWIDE, MORE ATTRACTIVE, LIVABLE CITY.

RECOMMENDATION: Approve Ordinance 4538 on second consideration.

INFORMATION: The Department of Development Services is requesting to amend the Zoning Ordinance of Columbia, Ordinance 4400, with changes concerning Article 9: Definitions, as reviewed and recommended by the Planning Commission at the December 4th, 2024 meeting. The changes and additions to definitions include the following: Minor Home Occupation; Major Home Occupation; Kennel; Short-Term Rental Unit; Tobacco, Vape, and Cannabinoid Retailers

Approval was recommended by a vote of six to zero.

This item was reviewed at the February 12, 2025 Planning Commission meeting with no new changes recommended by a vote of six to zero.

CERTIFICATION: N/A

ATTACHMENTS: Ordinance 4538; Exhibit A; Ordinance 4538 Marked Changes; DS Staff Report.

**AN ORDINANCE AMENDING ORDINANCE NO. 4400, THE SAME BEING
THE ZONING ORDINANCE OF THE CITY OF COLUMBIA, TENNESSEE
REGARDING DEFINITIONS IN ARTICLE 9 BY REPEALING SUCH ARTICLE
AND REPLACING IT WITH A NEW ARTICLE 9, DEFINITIONS.**

WHEREAS, Section §13-7-201 of the Tennessee Code Annotated empowers the city to enact a zoning ordinance and to provide for its administration, enforcement, and amendment; and

WHEREAS, the City Council deems it necessary for the purpose of promoting the health, safety, morals and general welfare of the city to enact such an ordinance; and

WHEREAS, the City Council, pursuant to the provisions of Section §13-4-101 of the Tennessee Code Annotated has appointed a Planning Commission to recommend the appropriate regulations to be enforced therein; and

WHEREAS, on the 4th day of December 2024, the Planning Commission reviewed and recommended specific changes in accordance to Section 8.5.18, to the Zoning Ordinance regarding Definitions in Article 9. As a result, Article 9 is being repealed in its entirety and replaced with a new Article 9 which is attached hereto as Exhibit A and incorporated herein. Said recommendations are being considered after a public hearing held on the 9th day of January, 2025, notice of which was published in the Daily Herald of Columbia fifteen (15) days or more prior to said meeting; and

NOW, THEREFORE, BE IT ORDAINED BY THE CITY OF COLUMBIA:

Section 1: That Ordinance number 4400, the same being the Zoning Ordinance of the City of Columbia, Tennessee is hereby amended by repealing Article 9 in its entirety and replacing such Article with a new Article 9, Definitions, which is attached hereto as Exhibit A and incorporated herein by reference;

Section 2: That pursuant to Section 8.5.18.J.4, the City Council makes the following specific findings:

- a. The proposed Zoning Ordinance Amendment is consistent with the remainder of this Ordinance, including, specifically, any purpose and intent statements;
- b. The proposed Zoning Ordinance Amendment does not represent a new idea not considered in this Ordinance, but does represent a revision necessitated by changing circumstances over time;
- c. The proposed Zoning Ordinance Amendment does not correct an error in this Ordinance; and
- d. The proposed Zoning Ordinance Amendment is not a revision of this Ordinance for the purpose of complying with state or federal statutes or case law.

Section 3: That ordinances or parts of ordinances in conflict herewith are hereby repealed

PASSED AND ADOPTED BY THE CITY COUNCIL OF THE CITY OF
COLUMBIA, TENNESSEE, this the 13th day of February 2025.

CHARLES (CHAZ) M. MOLDER, MAYOR

ATTEST:

THAD H. JABLONSKI, CITY RECORDER

LEGAL FORM APPROVED:

JAKE HUBBELL, CITY ATTORNEY

APPROVED FOR FIRST CONSIDERATION:

ANTHONY R. MASSEY – CITY MANAGER

Passed on 1st consideration _____

Passed on 2nd consideration: _____

SECTION 9.1 WORD USAGE	445
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ARTICLE 9 DEFINITIONS

SECTION 9.1 WORD USAGE

1. The following shall be applicable to certain words used in this Ordinance and the interpretation of this Ordinance. Unless the context or natural construction of the wording clearly indicates otherwise:
2. All words used in the present tense include the future tense; all words in the plural number include the singular number and all words in the singular number include the plural number.
3. The words “must” and “shall” are mandatory.
4. The words “used” or “occupied” include the words intended, designed, maintained, or arranged to be used or occupied.
5. The particular shall control the general.
6. The word “may” is permissive.
7. In the case of any difference of meaning or implication between the text of this Ordinance and any caption or illustration, the text shall control. Where in conflict, numerical metrics shall take precedence over graphical metrics.

The word “permitted” or words “permitted as of right,” whether or not capitalized, means permitted without meeting the requirements for a Conditional Use Permit or compliance with limited use standards.

The words “conditionally permitted” or “permitted by Conditional Use Permit” mean permitted subject to the requirements for Conditional Use by special permit pursuant to Section 4.3.9.D, of this Ordinance, and all other applicable provisions.

The words “Permitted Subject to Limited Use Standards” means permitted subject to compliance with the applicable limited use standards pursuant to Section 4.3.9.D and all other applicable provisions of this Ordinance.

The word “applicant” includes any authorized agent of the applicant.

The phrase “used for” shall include the phrases “arranged for”, “designed for”, intended for”, maintained for”, and “occupied for”.

Unless the context clearly indicates to the contrary, conjunctions shall be interpreted as follows:

“and” indicates that all connected items, conditions, provisions or events shall apply.

“or” indicates that any of the connected items, provisions, or events shall apply.

“either . . . or” indicates that the connected items, conditions, provisions, or events shall apply singly but not in combination.

Unless expressly provided otherwise, all public officials, bodies, and agencies to which reference is made are those of the City.

SECTION 9.2 TERMS

A. Capitalized Terms

Certain capitalized terms used in this Ordinance are defined below or elsewhere in this Ordinance and shall be given such meanings unless the context clearly indicates or requires a different meaning.

B. Undefined Terms

Undefined terms used in this Ordinance shall have the meanings customarily assigned to them.

SECTION 9.3 DEFINED TERMS

For purposes of this Ordinance, the following terms shall have the meanings set forth below unless the context clearly indicates or requires a different meaning:

ARTICLE 9: DEFINITIONS

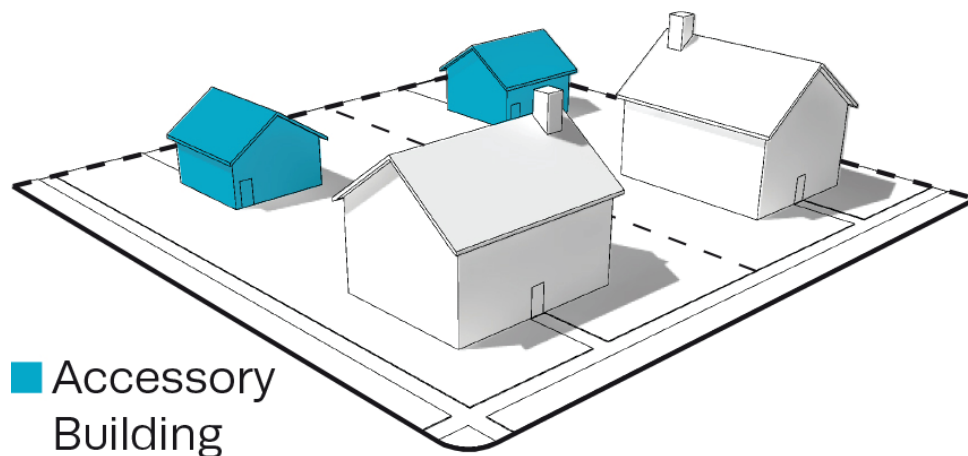
A.

Abut/Abutting: To share or sharing a common property line. For the purposes of this definition, properties across an intervening right-of-way shall not be considered abutting.

Access: As a noun, a legal and physical means of entering premises, whether by Adjacency, Easement, or otherwise; as a verb, the act of entering premises.

Accessory Building: A Building that shares a Lot or Building Site with a Principal Building and that is customarily and clearly incidental and subordinate to the Principal Building. An Accessory Building may or may not have an Accessory Unit or be occupied or devoted to one or more Accessory Uses. An Accessory Building may or may not be attached to the Principal Building. See **Illustration 9.3.A-1 (Principal Building & Accessory Building)**.

ILLUSTRATION 9.3.A-1 ACCESSORY BUILDING



Accessory Dwelling: A residential living unit on the same parcel as a single-family dwelling. The Accessory Dwelling provides complete non-transient independent living facilities for one or more persons while remaining physically subordinate and accessory to the principal residence. It may take various forms: a detached unit; a unit that is part of an accessory structure, such as a detached garage; or a unit that is part of an expanded or remodeled primary dwelling.

Accessory Use: A Use that is customarily and clearly incidental and subordinate to a Principal Use of land or a Structure and located on the same parcel of land, Lot, or Building Site as such Principal Use.

Accommodations / Lodging Uses: A Commercial Use sub-category characterized by premises available for daily or weekly renting of bedrooms or suites for periods of less than 30 days, including without limitation Bed and Breakfast, Inn, Hotel, and Motel. A Short-Term Rental Unit is not an Accommodations / Lodging Use. See **Table 4.3.9.A-1 (Building, Lot & Building Site Principal Uses)**. Private campground, hunting/fishing camp, and dude ranch, shelter for the homeless, and Recreational vehicle (RV) park are not included in Accommodations / Lodging Uses.

Actual Construction or Development: The excavation of a site and/or the systematic placement of building materials in conjunction with the Development of land or construction of a Building or other Structure.

Addition: With respect to an existing Building, any walled and roofed new construction expansion to the perimeter of a Building in which the addition is connected by a common load - bearing wall other than a fire wall or is separated by independent perimeter load – bearing walls.

Adult Day Care: As defined in the Rules of Tennessee Department of Human Services Community and Social Services.

Address Sign: A Sign type, described as such in **Table 7.1.2.B-1 (Sign Types - Summary)** and **Table 7.1.2.B-2 (Sign Types - Specific Standards)**.

Adjacent/Adjoin: Having any distance of real property boundary in common with another property, or being separated from the other property boundary by a right- of-way, Thoroughfare, Internal Drive, Alley, Easement, or Civic Space. Not synonymous with Abutting.

Administrative Adjustment: Administrative relief from a standard or requirement of this Ordinance, granted pursuant to the provisions of Article 8 (Administration, Procedure, & Enforcement) by the Zoning Administrator or other staff as specifically authorized by this Ordinance.

Adult Arcade: Any place to which the public is permitted or invited wherein coin – operated or slug – operated or electronically, electrically, or mechanically controlled still or motion picture machines, projectors or other image – producing devices are maintained to show images to five or fewer persons per machine at any one time, and where the images so displayed are distinguished or characterized by the depicting of Specified Sexual Activities or Specified Anatomical Areas.

Adult Bookstore or Adult Video Store: An establishment having as its principal Business purpose the sale or rental of books, magazines, slides, films, video cassettes, video discs, or any other form of media, which are distinguished or characterized by their emphasis on matter depicting, describing or relating to Specific Sexual Activities or Specific Anatomical Areas.

Adult Care Home: A single family residence licensed pursuant to TSA Title 68, Chapter 11, Part 2, in which twenty-four-hour residential care, including assistance with activities of daily living, is provided in a homelike environment to no more than five (5) adults who are elderly or have a disability, as defined in TSA section 68- 11-201.

Adult Day Care Facility: Premises at which care, supervision, or guidance is provided for one or more adults, whether or not the facility is operated for profit and whether or not the facility charges for services offered by it. Notwithstanding the foregoing, Adult Day Care Facility does not include:

Facilities for disabled or mentally ill Persons;

Facilities owned and operated by a local church congregation or an established religious denomination or a religious college or university which does not receive State or federal financial assistance for adult care services.

Adult Entertainment: Any conduct that presents material by books, films, slides, video cassettes, video discs, or any other media or by live presentation, or services to the patron of an establishment, which material or services are distinguished or characterized by an emphasis on matters depicting, describing engaging in, or relating to Specified Sexual Activities or Specified Anatomical Areas.

Adult Motion Picture Theater: A Building regularly used for presenting material having as a dominant theme or presenting material distinguished or characterized by an emphasis on matter depicting, describing or relating to Specified Sexual Activities or Specified Anatomical Areas, for observation by patrons therein.

Adult-Oriented Entertainment: Use whereby premises to which the public or members of the public are invited or admitted and which are so physically arranged as to provide booths, cubicles, rooms, compartments or stalls

ARTICLE 9: DEFINITIONS

separate from the common areas of the premises for the purpose of viewing Adult – Oriented Motion Pictures, or wherein an entertainer provides Adult Entertainment to a member of the public, a patron or a member, when such Adult Entertainment is held, conducted, operated or maintained for a profit, direct or indirect, including without limitation, Adult Bookstores or Adult Video Stores, Adult Motion Picture Theaters, Adult Arcades, Adult Theaters or Cabarets. any Adult Entertainment studio or any premises physically arranged and used as such, whether advertised or represented as an adult entertainment studio, rap studio, exotic dance studio, encounter studio, sensitivity studio, modeling studio or any other term of like import.

Agricultural Uses: Sub-category of Agricultural and Extractive Use category characterized by Uses that create or preserve areas intended primarily for the raising of animals and crops, and the secondary industries associated with agricultural production.

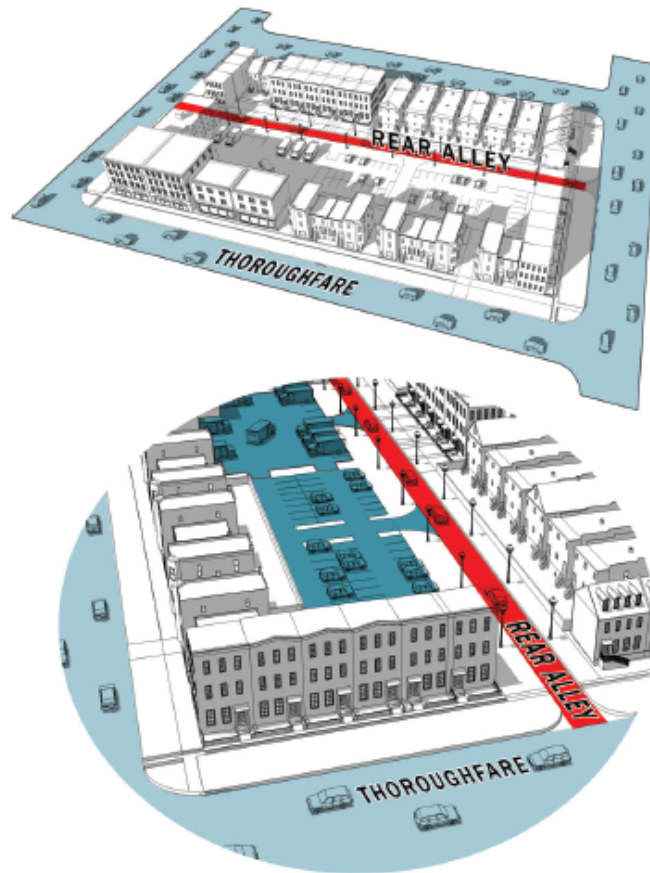
Agricultural and Extractive Uses: (1) collectively, Agricultural Uses and Extractive Uses; (2) a collective reference to Uses in the following sub- Categories: Agricultural Uses and Extractive Uses, as listed in **Table 4.3.9.A-1 (Building, Lot & Building Site Principal Uses)** **Table 4.3.9.A-2 (Building, Lot & Building Site Accessory Uses)**, and **Table 4.3.9.A-1 (Building, Lot & Building Site Temporary Uses)**.

Alcoholic Beverage: Any fermented liquor, such as wine, beer, or distilled spirit, which contains ethyl alcohol (ethanol) as an intoxicating agent.

Alcoholic Beverage Retail Sales: An establishment engaged in the Retail sale of Alcoholic Beverages for off-premises consumption.

Alley: Generally, a vehicular way, which is not intended for general traffic circulation, which affords secondary access to Abutting property, and which may or may not be dedicated to public use. An Alley is not a Thoroughfare or an Internal Drive. See **Illustration 9.3.A-2 (Alley)**. See also Rear Alley.

ILLUSTRATION 9.3.A-2 ALLEY



Alteration / Alter: As applied to a Structure, an Addition or a change, rearrangement, or modification in the structural members or elements or the exit facilities, or in any element of the Private Frontage, the Facade or any other exterior architectural feature, including without limitation erection, construction, reconstruction, or removal; any diminution; any enlargement, whether by extending on a side or by increasing in height; moving from one location or position to another; increasing the Floor Area; expending an amount more than 50% of the fair market value; or increasing the fair market value by more than 50%. Alteration does not include Ordinary Maintenance or Repair. The term Alter, in its various modes and tenses and its participial form, refers to the making of an Alteration.

Alternative Tower Structure: As related to Wireless Communication Facilities, trees, clock towers, bell steeples, light poles, water tanks and similar alternative – design mounting structures that camouflage or conceal the presence of antennas or towers.

Antenna: Any exterior apparatus designed for telephonic, radio or television communications through the sending and/or receiving of electromagnetic waves.

Applicant: The owner, lessee, or contract vendee of the subject premises, or other person or entity authorized to make application to a Decision-Making Authority or administrative Person pursuant to this Ordinance.

ARTICLE 9: DEFINITIONS

Arcade: A Private Frontage type, which is conventional for Retail / Personal Service / Repair / Artistic / Artisan Use, wherein a colonnade supporting habitable space in one or more upper levels overlaps the Sidewalk, while the Façade at the first level remains at the Frontage Line. See **Table 4.3.7.A (Private Frontage Types)**.

Area of Special Flood Hazard: As defined in Section 6.12.2. Also, may be referred to as “Special Flood Hazard Area”.

Artisan Establishment: Any Structure, premises, or establishment in or on which articles of artistic quality or effect or handmade workmanship are produced with or without Retail sales of such articles. Examples of activities that may be conducted in an Artisan Establishment are candle making, furniture making, glass blowing, weaving, pottery making, woodworking, sculpting, painting, and tailoring.

Art or Photography Studio: Premises accommodating the creation of works of art or photography, with or with the exhibition or sale of such works.

Artist Studio Space: Space used for the creation, production, rehearsal, or teaching of any performance, visual, or literary art or craft, including but not limited to painting, drawing, graphic design, photography, video, film, sculpture, pottery, written works of fiction or nonfiction, whether for live or recorded, including music, dance, and theater, and accessory sales of such art.

Assisted Living Apartment: Multiple unit Residential premises for elderly, infirm, or disabled residents, in which housekeeping, meals, and other assistance are available to residents.

Attached: An enclosure having continuing walls, roof and floor.

Attached Dwelling: Residential premises characterized by two or more Dwelling Units being incorporated into a single Structure or attached Structures, specifically being Apartments, the Residence portion of a Live/Work Building, Mixed Use Building, or Flex Building, Multifamily Dwellings, Two-Family Dwellings, Duplexes, Rowhouses, Large Multi-family Buildings and Small Multi-Family Buildings.

Attic: The interior part of a Building contained within a pitched roof structure. See **Illustration 9.3.A-3(Attic)**.

ILLUSTRATION 9.3.A-3 ATTIC



Avenue (AV): A Thoroughfare or Internal Drive of high vehicular capacity and low to moderate speed, acting as a short distance connector between urban centers, and sometimes equipped with a landscaped median, described as such in **Table 4.3.8.A (Thoroughfare Types - Summary)** and **Table 4.3.8.B (Thoroughfare Assemblies and Standards)**.

Awning Sign: The Sign Type described as such in **Table 7.1.2.B-1 (Sign Types - Summary)** and **Table 7.1.2.B-2 (Sign Types - Specific Standards)**.

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B.

Bakery: Premises at which cakes, cookies, bread, pastries, tarts, and/or other baked goods are made, whether or not such items are sold at Retail.

Band Sign: The Sign Type described as such in **Tables 7.1.2.B-1 (Sign Types - Summary)** and **7.1.2.B-2 (Sign Types - Specific Standards)**.

Bar or Tavern: An establishment serving Alcoholic Beverages to be consumed on the premises.

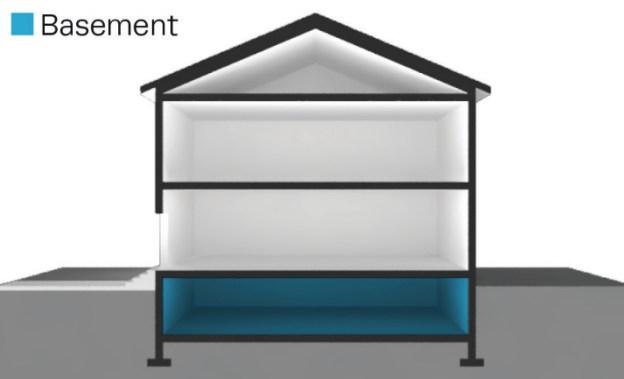
Base: The structural elements, design features, and materials associated with the part of a building that meets the ground and visually differentiates it from the Middle, typically a Knee Wall or Foundation Cladding.



Base Flood Elevation: As defined in Section 6.12.2.

Basement: A portion of a Building having more than half (1/2) of its clear floor- to- ceiling height below the average finished grade of the ground. See **Illustration 9.3.B-1 (Basement)**.

ILLUSTRATION 9.3.B-1 BASEMENT



Bed and Breakfast: An Accommodations / Lodging Use characterized by 1 to 5 bedrooms of an owner-occupied Building or Accessory Building being offered to paying guests for overnight Lodging with breakfast. A Short- Term Rental Unit is not a Bed and Breakfast.

Bicycle Lane (BL): A dedicated lane for cycling within a moderate-speed vehicular Thoroughfare, demarcated by striping. See **Table 5.2.4.B (Bikeway Types)**.

Bicycle Locker: A fully enclosed space for one bicycle, accessible only to the owner or operator of the bicycle. It protects the entire bicycle, its components and accessories from theft and inclement weather. Bicycle lockers may be pre-manufactured or may be designed for individual sites.

Bicycle Rack: A stationary object to which the bicycle user can lock the frame and one or both wheels of a bicycle with a user-provided U-shaped lock or cable, and which is either anchored to an immovable surface or is heavy enough that it cannot be easily moved.

Bicycle Route (BR): A Thoroughfare that is suitable for the shared use of bicycles and automobiles moving at low speeds. See **Table 5.2.4.B (Bikeway Types)**.

Bikeway Stub: A nonpermanent, dead-end Bikeway within a public right-of-way or a public access easement which extends to the boundary of an Adjacent property. Stubs allow the continuation of Bikeways in conjunction with development on adjacent property.

Bicycle Trail (BT): A bicycle way running independently of a vehicular Thoroughfare. See **Table 5.2.4.B (Bikeway Types)**.

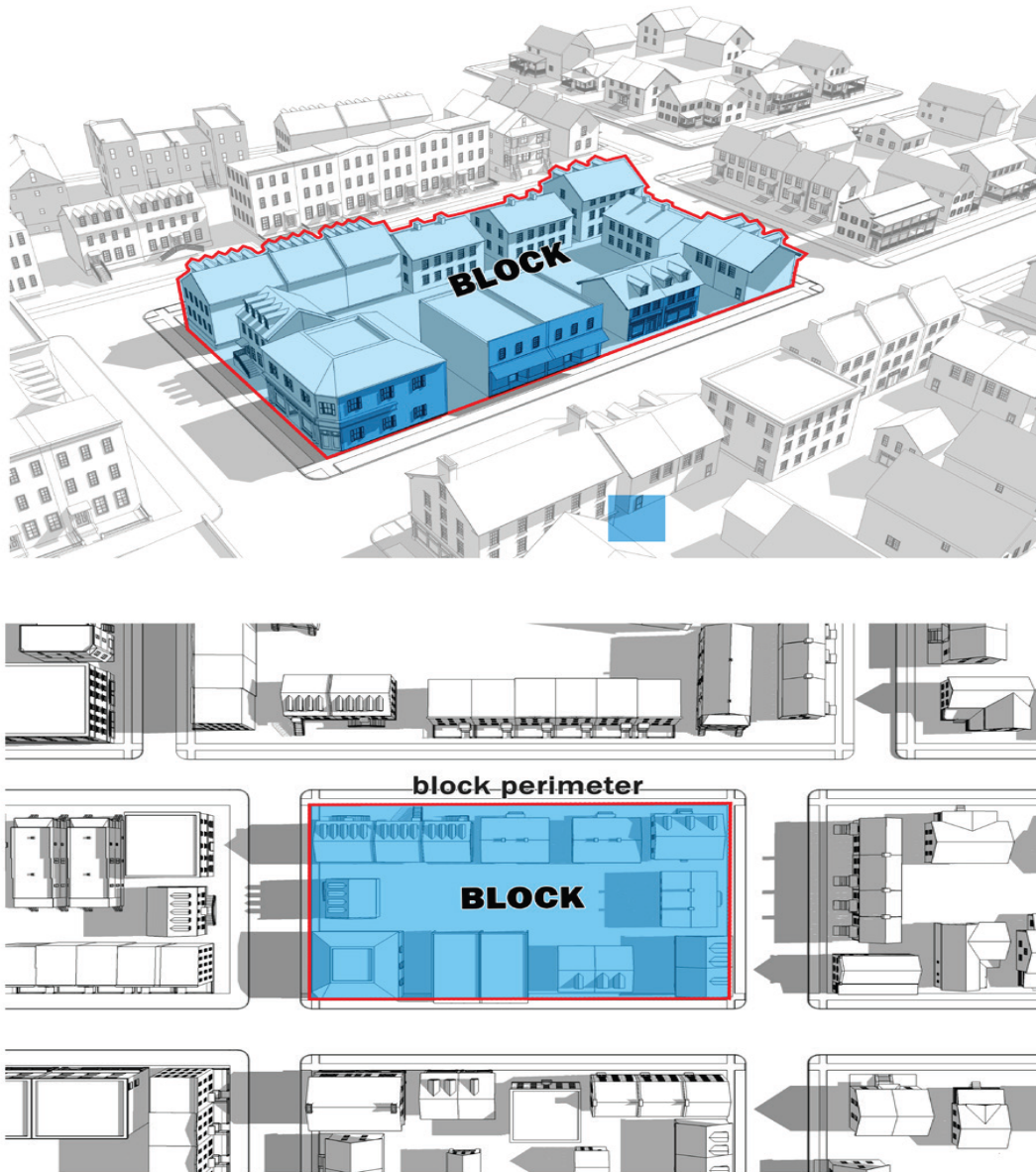
Billboard: A Sign intended for viewing from extended distances, which is mounted on one or two poles. A Pylon Sign is not a Billboard.

Blade Sign: The Sign Type described as such in **Table 7.1.2.B-1 (Sign Types - Summary)** and **Table 7.1.2.B-2 (Sign Types - Specific Standards)**.

Block: The aggregate of Lots, Building Sites, Passages, Civic Spaces and Rear Alleys, circumscribed by Thoroughfares or Internal Drives, or where applicable, circumscribed by Thoroughfares, Internal Drives, Civic Space, and/or waterbodies. See **Illustration 9.3.B-2 (Block)**.

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ILLUSTRATION 9.3.B-2 BLOCK



Block Face: The aggregate of all Building Facades on one side of a Block.

Board or Board of Appeals: The Board of Zoning Appeals of the City.

Boat - Related Uses: The term referring collectively to Boat Body Shop, Maintenance, Repair, or Cleaning, Boat Dock, Boat Sales, Rental, Leasing, or Chartering, Boat Ramp, Boat Rack, Boat Slip, Boat Slip Sales or Leasing, and Boat Storage.

Boat Body Shop, Maintenance, Repair, Cleaning, or Service: A Structure, premises, or establishment in or on which watercraft are maintained, repaired, serviced, and/ or cleaned, including without limitation, incidental storage for fewer than sixty (60) days of watercraft that are being maintained, repaired, serviced, and/or cleaned. This term does not include boat building or Boat Storage.

Boat Dock: A Structure extending into or upon a waterway or water feature, which provides access to the water for the launching and retrieving of watercraft.

Boat Rack: A storage slip for a boat in a dry stack storage facility.

Boat Ramp: An inclined area providing access to the water for the launching and retrieving of watercraft.

Boat Sales, Rental, Leasing, or Chartering: A Structure, premises, or establishment in, on, or from which watercraft are available for sale, rental, leasing, or chartering.

Boat Slip: A docking space alongside a pier, wharf or mooring dolphins in which a waterborne boat may be moored. For purposes of this Ordinance and in the absence of an authorized quantity of Boat Slips by State or federal regulating agencies, a Boat Slip shall be a minimum length of 25 feet for side mooring and 15 feet for stern moorings.

Boat Storage: A Structure, premises, or establishment in or on which watercraft are stored. This term does not include boat building or Boat Body Shop, Maintenance, Repair or Cleaning.

Breakaway Wall: As defined in Section 6.12.2.

Brewery: An establishment that is primarily used for the manufacture of beer. Such establishment may sell beer for on-site consumption or for off- site distribution in accordance with applicable state and local regulations.

Brewpub: A Use or establishment that is primarily engaged in the sale and service of food for on- premises consumption and that also brews beer for on-site consumption in accordance with applicable state and local regulations.

Buffer: A specified land area, located parallel to and within the outer perimeter of a Lot, Building Site, or parcel of land and extending to the Lot, Building Site, or parcel boundary line, together with the planting and landscaping required on the land. A Buffer may also contain, or be required to contain, a barrier such as a fence or wall, or combination thereof, where additional Screening is necessary to achieve the desired level of buffering between various Uses. The term “Buffer” is not synonymous with the term “Setback Area or Yard” or the term “Stormwater Management Area.”

Building: Any Structure, other than a Parking Structure, having a roof supported by columns or by Walls and intended for the shelter, housing, enclosure, or storage of Persons or property.

Building Element: Any component or part of a Building.

Building Official: The City Chief Building Official or designee.

Building Site: A parcel of land that has not been subdivided as a separate Lot, but which is designated by an applicant as a Building Site to be separately built on in a Development Plan or Master PUD Development Plan, site plan, permit application, or plat, and which accommodates, or is available to accommodate, a Principal Building. See **Illustration 9.3.L-4 (Lot / Building Site)**. See also “**Lot**”, “**Lot or Building Site of Record**”, and “**Zoning Lot or Building Site**”.

Building Systems Business: Establishment that installs, services, maintains, and/or repairs Building systems, such as heating, ventilation, air conditioning, electrical, and plumbing contractors.

ARTICLE 9: DEFINITIONS

Business: Operation of or engagement in for-profit activities and endeavors, including without limitation Commercial and Industrial activities and endeavors.

Business Office: Premises available for any function of a Business. Examples are advertising office, Business management, consulting, data processing, collection agency, real estate or insurance agent, sales office, travel agency, Business incubator, TV or radio studio, Utility office, and conference center.

Business, Trade, or Vocational School: An Education Use providing education or training in Business, commerce, language, or other similar activity or occupational pursuit, and not otherwise defined as a Home Occupation, College, or University.

C.

Canopy Tree: A tree that has an expected height at maturity greater than 40 feet and which produces significant shade because it has a crown that is oval, round, vase-shaped, or umbrella-shaped.

Canteen Truck: A Mobile Vending Apparatus used to serve pre-cooked products to workers at various locations where other food service options are unavailable or impractical (e.g. construction site). Service is often from the Right-of-Way.

Cap: The structural elements, design features, and materials associated with the top floor or top edge of the building to differentiate it from the middle and create a visual end to the building, typically a parapet, cornice or eaves line.



Catering Service: An establishment that prepares and provides food and related services to off-premises locations.

Catering Events Establishment: Any Non-Residential room, place, or space where food and beverages are available for consumption, that is regularly leased or hired out for functions, occasions, or events, to which the general public is not invited or admitted and wherein music or entertainment may be provided.

Cemetery: Land used or intended to be used for the burial of the dead and dedicated for purposes of containing graves, tombs, and funeral urns, including when located or operated in conjunction with and within the boundaries of the Cemetery, columbarium's, crematoriums, mausoleums, and mortuaries.

Central Sewage Collection and Treatment System: A wastewater collection and/or treatment system owned and operated by a public or quasi – public organization and approved by all appropriate licensing and oversight agencies. This term shall not be construed to include any type of privately owned and operated individual disposal system such as private septic or other similar systems.

Certificate of Appropriateness: A certificate issued by the Historic Zoning Commission indicating its approval of plans for Alteration, Construction, removal, or demolition of a Historic Structure or Structure within a Historic District or Historic Landmark District.

Certificate of Completion: A certificate issued with respect to a submission pursuant to this Ordinance, which certifies that such submission is complete in accordance with the applicable requirements under this Ordinance.

Certificate of Compliance: A certificate issued with respect to a submission pursuant to this Ordinance, which certifies that such submission complies with the applicable requirements under this Ordinance.

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Certificate of Economic Hardship: A certificate issued pursuant to Section 8.5.14, which evidences a determination that an Economic Hardship exists with respect to remedying a Condition of Neglect related to a Historic Property, which certificate authorizes such Alteration, Construction, removal, or demolition even though a Certificate of Appropriateness therefor has previously been denied.

Certificate of Occupancy: A written permit, which is required before occupying or commencing to use any Building, Lot, Building Site, or other parcel of land.

Character District: One of several areas on a Zoning Map to which certain Character District Development, Lot or Building Site, Building, Development Parcel standards are applied. See **Tables 4.3.1-A - 4.3.1.G (District Standards Character Districts)**.

Child Care Facility: Premises at which care, supervision, or guidance is provided for a minor child who is not related by blood, marriage, or adoption to the owner or operator of the facility, whether or not the facility is operated for profit and whether or not the facility charges for services offered by it. Notwithstanding the foregoing, Childcare Facility does not include:

An educational facility, whether private or public, which operates solely for educational purposes in Grades K or above;

Kindergarten programs for five-year-olds;

Children's Day Camps;

School vacation or school holiday day camps for children operating in distinct sessions running less than three weeks per session;

Summer resident camps for children;

Bible schools normally conducted during vacation periods;

Facilities for disabled or mentally ill Persons;

Facilities owned and operated by a local church congregation or an established religious denomination or a religious college or university which does not receive State or federal financial assistance for childcare services.

Children's Day Camp: Premises at which activities are offered to school-aged children in a social setting and the children return home in the evenings.

City: The City of Columbia, Tennessee.

City Code: The municipal code of the City, as the same may be amended and in effect from time to time.

City Council: The City Council of the City.

Civic Uses: (1) not-for-profit Uses dedicated to arts, charitable, philanthropic, culture, Education or Recreation, government, transit, or Parking purposes; (2) a collective reference to the Uses listed under the heading "Civic Uses" in **Table 4.3.9.1-A (Building, Lot, & Building Site Principal Use)**, **Table 4.3.9.1-B (Building, Lot, & Building Site Accessory Use)**, and **Table 4.3.9.1- C (Building, Lot, & Building Site Temporary Use)**.

Civic Building: A medium- to large-sized attached or detached Principal Building type, which is operated by a not-for-profit organization or governmental entity, is dedicated to Civic activities, and is designed to stand apart from its surroundings due to the specialized nature of its Civic purpose. Examples include but are not limited to Auditoriums, Conference / Convention / Exhibition Centers, Libraries, Places of Assembly, Courthouses, centers of government, Performing Arts Venues, and Museums. Civic Buildings are often the most prominently sited and architecturally significant Buildings in a community. See **Table 4.3.8.A (Principal Building Types)** and **Table 4.3.8.B (Principal Building Types - Specific Standards)**.

Civic Space: An outdoor area dedicated for Civic Use, which meets the applicable standards of this Ordinance. See **Table 5.3.3-A (Civic Space Types - Summary)** and **Table 5.3.3-B (Civic Space Types - Specific Standards)**.

Civic District: An area on the Official Zoning Map designated for Civic Building(s) and/or Civic Space(s).

Civil Support: Use category collectively referring to the Uses listed as such in **Table 4.3.9.A-1 (Building, Lot & Building Site Principal Uses)**.

Clinic: A Medical Clinic or Dental Clinic.

College or University: An educational institution that offers courses of general or specialized study leading to a degree.

Commercial Uses: The Use category, which is a collective reference to the Uses in the following Use sub-Categories, as listed in **Table 4.3.9.A-1 (Building, Lot & Building Site Principal Uses)**:

Accommodations / Lodging, Day Care (non-Civic), Educational Facilities (non-Civic), Indoor Recreation, (Commercial), Group Assembly, Outdoor Recreation (Commercial), Commercial Parking (Commercial), Restaurant, Retail / Personal Service / Repair / Art / Artisan, Self-Service Storage, Boat-Related Uses, Motor Vehicle-Related Uses, Manufactured Home Sales, and Wholesale Sales.

Commercial Building: A small- to medium-sized attached or detached non-Residential Building Type, typically designed to facilitate pedestrian-oriented Retail/ Personal Service / Repair / Art / Artisan Uses and Office Uses. See **Table 4.3.8.A (Principal Building Types Summary)** and **Table 4.3.8.B (Principal Building Types - Specific Standards)**.

Commercial Indoor Athletic Training Facility: Business establishment providing indoor facilities designed and used for active participatory athletic activities or training, including but not limited to personal strength and fitness training, gymnasiums, skating rinks, swimming pools, and tennis courts. Specifically excluded are Health Clubs, Day Spas, and Sports Venues.

Commercial Parking: A Parking Lot or Parking Structure operated as a for-profit endeavor.

Common Destination: An area of focused community activity, usually defining the approximate center of a Pedestrian Shed. It may include without limitation one or more of the following: a Civic Space, a Civic Building, a Commercial center, or a transit station, and may act as the social center of a neighborhood.

Common Open Space: A parcel or parcels of land and/or an area of water within a development site designated, designed, and intended for use or enjoyment of the occupants of the Development site. Common Open Space may contain such complementary Structures and Improvements as are necessary and appropriate for the benefit and enjoyment of the occupants of such Development site

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Common Yard: A planted Frontage wherein the Facade is set back substantially from the Frontage Line, and the Front Yard so created remains unfenced and is visually continuous with Abutting yards, supporting a common landscape. See **Table 4.3.7.A (Private Frontage Types)**.

Communications Equipment: Equipment used for communication, transmission or reception by Business, governmental, or other public or quasi-public users, including without limitation cellular towers. This does not include communication equipment for amateur radio operators licensed by the Federal Communications Commission that are exempt from local zoning restrictions.

Communication Services: An establishment primarily engaged in the provision of broadcasting and other information relay services accomplished through the use of electronic and telephonic mechanisms, including without limitation, Radio or Television Broadcasting Studio, News Syndicates, Video or Audio Studio, Telecommunication Service Center, and Telegraph Service Center.

Communications Tower: A tower of any size that supports Communications Equipment, transmission or reception by Commercial, governmental, or other public or quasi-public users, including without limitation cellular towers. This does not include communication towers for amateur radio operators licensed by the Federal Communications Commission that are exempt from local zoning restrictions or communications towers under 100 feet in height used solely for educational communications purposes.

Community Garden: A private or public Civic Space type for the cultivation of fruits, flowers, vegetables, or ornamental plants by more than one person or family, described as such in **Table 5.3.3.A (Civic Space Types-Summary)** and **Table 5.3.3.B (Civic Space - Specific Standards)**.

Community Service: Sub-category of the Civic Uses category, being Uses of a public, non-profit, or charitable nature providing ongoing education, training, or counseling to the general public on a regular basis, without a Residential component, including without limitation, Civic Building, club or lodge (Civic), food distribution center (Civic), gallery (Civic), Parking Lot or Parking Structure (Civic), Philanthropic Institution, Place of Assembly, post office, neighborhood arts center (Civic), recreation facility (Civic), Senior Center (Civic), Sports Venue (Civic), transit shelter, transit station, transit terminal with or without vehicle storage or maintenance, and union hall.

Completely Enclosed: Refers to a Building or other Structure having a roof, separated on all sides from adjacent open areas, by exterior walls or Party Walls, pierced only by windows or entrance and exit doors normally provided for persons, goods or vehicles.

Comprehensive Plan: The general plan of the City of Columbia as adopted according to T.C.A. § 13-4-201 through 203, also referred to as Connect Columbia. The Comprehensive Plan includes all text and maps of Connect Columbia as well as any ancillary special area plans.

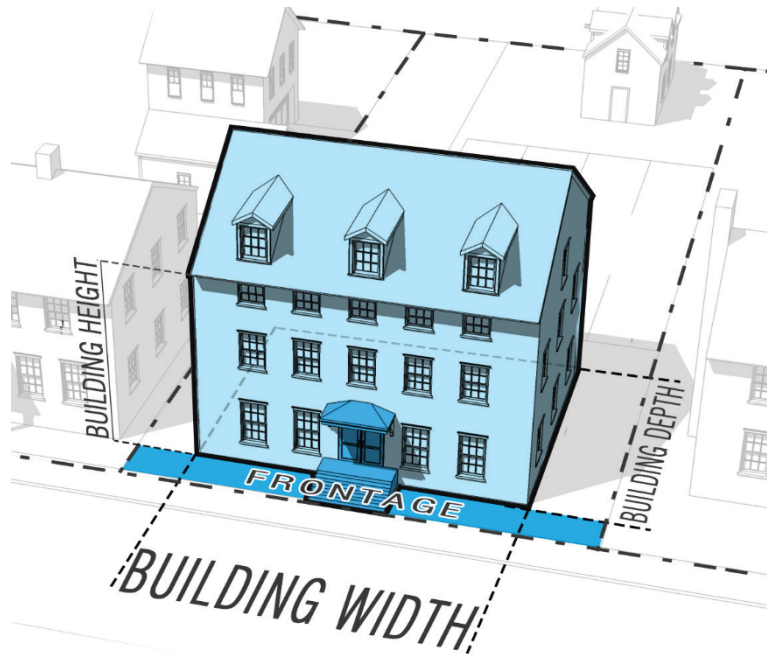
Conditional Use: A Use that would not be appropriate generally or without restriction throughout the applicable District, but which, if controlled as to number, area, location, or relation to the neighborhood, would promote the public health, safety, welfare, morals, order, comfort, convenience, appearance, prosperity, or general welfare. Conditional Uses are subject to all such controls and to approval by the Board of Zoning Appeals. For purposes of the administration of this Ordinance, Conditional Uses shall be construed as synonymous with special exceptions, as controlled by TCA Section 13 – 7 – 206.

Conditional Use Permit: A permit issued pursuant to Section 8.5.16.C.

Conditions of Neglect: As defined in Section 8.5.14.C.1.

Configuration: With respect to a Building, its form, including its Massing, Private Frontage, Width, and Height. See Illustration 9.3.C-1 (Configuration).

ILLUSTRATION 9.3.C-1 CONFIGURATION



Conference / Convention / Exhibition Center: Premises that accommodate conferences, exhibitions, meetings, seminars, training sessions, and other similar gatherings.

Construction: The act of adding an Addition to an existing Structure or the erection of a new Structure.

Construction Business: An establishment engaged in any Business involving activities generally referred to general contracting, construction trades, building, or Development.

Continuum of Care Facility: A facility providing one or any combination of assisted living, nursing home, or skilled nursing for the elderly or other individuals incapacitated in some manner for medical reasons, as determined and licensed and/or certified by the Tennessee Department of Health, Board of Licensing Health Care Facilities. Included in this definition are homes for the aged, as defined by TCA Sections 68-11-201. Continuum of Care Facilities may include a small amount of age-restricted independent living as part of the overall continuum of care.

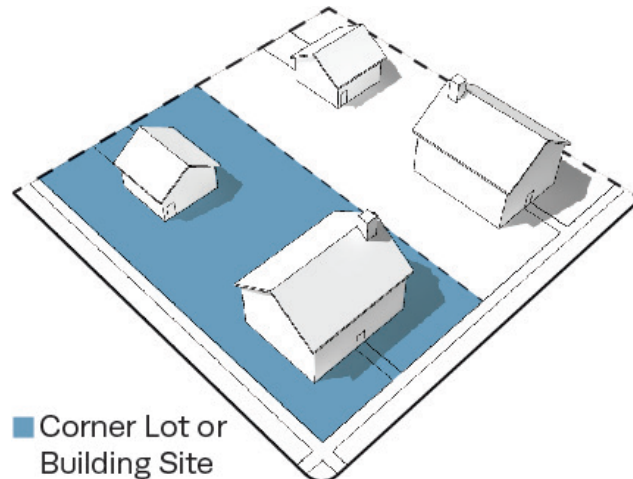
Contractor Materials Sales: The sale of building materials at wholesale without Outdoor Storage.

Convenience Store: An establishment primarily engaged in the provision of frequently or recurrently needed goods for household consumption, such as prepackaged food and beverages, newspapers, and limited household supplies, to customers who generally purchase only a few items. Convenience stores shall not include fuel pumps or the selling of fuel for motor vehicles.

Corner Lot or Building Site: A Lot or Building Site type of which at least two Abutting sides Abut Thoroughfares, Internal Drives, Pedestrian Ways, Civic Spaces, or other public places. See Illustration 9.3.C-2 (Corner Lot or Building Site).

ILLUSTRATION 9.3.C-2 CORNER LOT OR BUILDING SITE

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Corridor: A lineal geographic system incorporating a Thoroughfare, Internal Drive, Greenway, or other Civic Space.

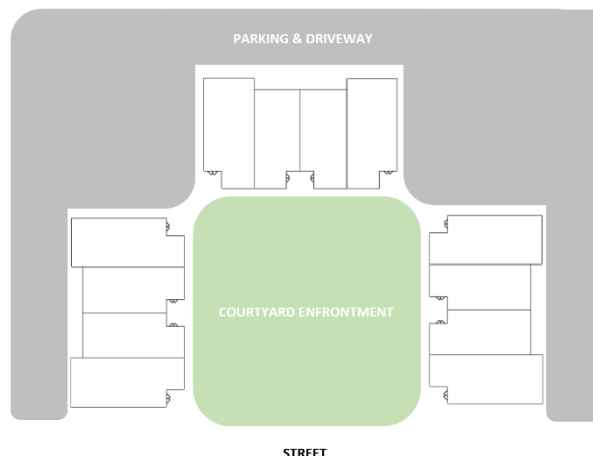
Cosmetic Reconditioning: Incidental repair and refinishing of a vehicle, limited to plastic and trim parts, including bumpers, moldings, mirrors, headlight lenses, and the restoration of alloy wheels. Vehicle side panels may also be refinished when a bumper scrape carries onto a fender. Cosmetic Reconditioning shall not include painting of a complete vehicle, or use of traditional collision repair equipment, such as a frame machine, weld, or unibody straightening machine.

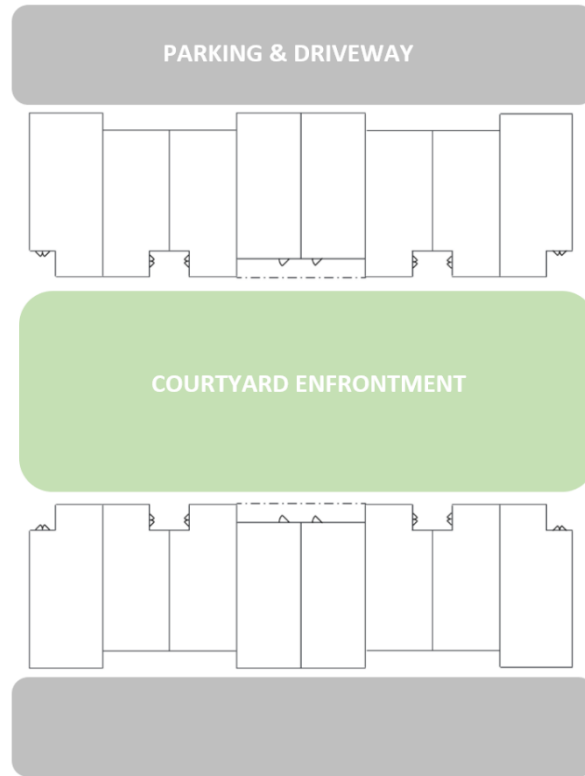
Counseling Service: An establishment providing counseling, guidance, or similar services to persons requiring rehabilitative or vocational assistance. This term includes job training and placement services.

Court: An open unoccupied space, other than a Setback Area or Yard, on the same Lot or Building Site with a Building or group of Buildings, which is bounded on two or more sides by such Building or Buildings.

Courthouse: A Building in which courts of law are held.

Courtyard Enfrontment: Where permitted in **Table 4.3.1**, the arrangement of buildings, typically Townhomes, facing a parklike area that enfronts a Thoroughfare or Internal Drive on at least one side with a minimum frontage width of fifty (50) feet.





Crisis Counseling Center: Premises from which Persons who have experienced a traumatic event are provided short-term counseling to assist in coping with the event.

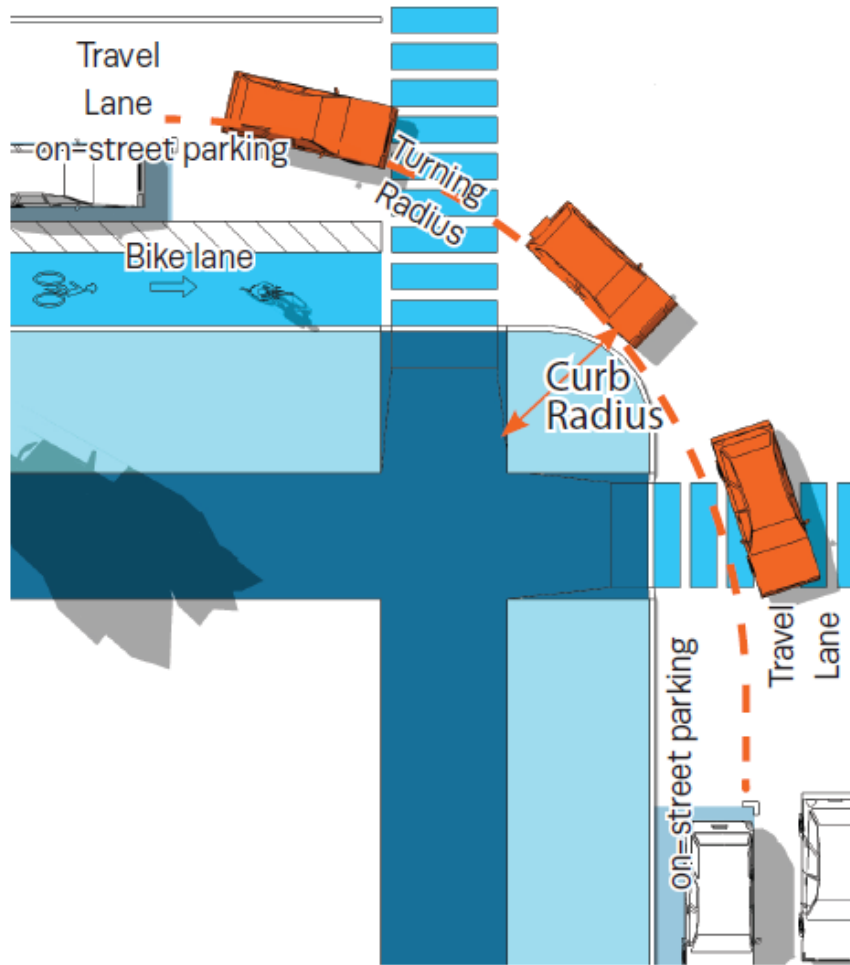
Critical Root Zone: With respect to a tree, a circular area measured outward from the tree trunk, representing the essential area of the roots that must be maintained for the tree’s survival. The Critical Root Zone is measured one foot of radial distance for every inch of tree at diameter at breast height, with a minimum of ten feet.

Cross Block Passage: A minimum 10-foot-wide pedestrian access reserved between Buildings.

Curb: The edge of the vehicular pavement that may be either raised or flush with a Swale to the extent allowed by this Ordinance. It usually incorporates or is associated with the drainage system. See **Table 4.3.8.A (Thoroughfare Types - Summary)** and **Table 4.3.8.B (Thoroughfare Assemblies and Standards)**.

Curb Radius: The radius of the curb at an intersection. See **Illustration 9.3.C-3 (Curb Radius)**.

ILLUSTRATION 9.3.C-3 CURB RADIUS



D.

Data Processing or Storage Services: Establishments primarily involved in the compiling, storage, and maintenance of documents, records, and other types of information in digital form utilizing a main frame computer.

Day Care Center or Facility: A place other than an occupied Dwelling, which for a payment, fee, or grant provides care, protection, and supervision for more than 5 children or adults on a regular basis away from their primary Residence for fewer than 18 hours each day (although the facility may be open 24 hours each day), with no overnight accommodations. Those receiving care are not all related to each other by blood or marriage and are not legal wards or foster children of the attendant adults. A Day Care Center or Facility must meet all applicable State and County requirements for standards, licensing, and inspections.

Examples are Adult Day Care program, Child Care Center, Nursery School, Preschool, and Latch-key Program.

Decision-Making Authority: Any City administrative Person, legislative or quasi-legislative body, or appellate body authorized to make decisions under this Ordinance, including without limitation, the Zoning Administrator, the Planning Commission, the Board of Zoning Appeals and the City Council.

Deck: A covered or uncovered horizontal, platform-like Structure similar to a floor, which is constructed outdoors of wood, composite wood, or vinyl material, is capable of supporting weight, and may be connected or unconnected to a Building.

Demolition: Any act or process that destroys in part or in whole a Historic Structure or a landmark or a Structure within a Historic District or Historic Landmark District.

Demolition by Neglect: The existence of any one or more Conditions of Neglect with respect to a Historic Property.

Density: The intensity of Development within a standard measure of land area. The maximum Density established for a District is not a guarantee that such Density may be obtained, nor shall the inability of a Development to achieve the stated maximum Density be considered sufficient justification for a Variance or Administrative Adjustment or otherwise adjusting other Density or other requirements.

Dental Office / Dental Clinic: An Office or other premises for the private practice of dental care professionals licensed by the State, wherein a majority of patient encounters involve dental examination, diagnosis, treatment, surgical procedures, preventive care, restorative care, cosmetic care, and/or emergency care on an outpatient basis.

Dental Lab or Laboratory: Premises or establishment at which products to assist in the provision of oral health care by a licensed dentist are made, such as crowns, bridges, dentures, dental implants, and therapeutic and orthodontic devices.

Design Guideline: As related to a Historic District, Historic Landmark District, or Structure in a Historic District or Historic Landmark District, a standard of appropriate activity that will preserve the historic and architectural character of such Structure or district.

Designed for Residential Use: A Building or part thereof which was originally designed for Residential Use.

Develop/Development: (1) commencing, making or planning for man-made changes to land, Structures, or other real property, including without limitation, re-development, clearing, excavation, grading, filling, Construction, re-Construction, Alteration, demolition, modification, subdivision or re-subdivision, installation of infrastructure, mining, dredging, paving, drilling, and storage of materials, whether such changes are horizontal, vertical, or

ARTICLE 9: DEFINITIONS

subterranean, but excluding agricultural and gardening activities and Ordinary Maintenance and Repair; (2) the resulting changes to such land, Structures, or other real property; and (3) with respect to a specific plan of development or development project, such development or project.

Development Parcel: A parcel of land:

which, either alone or together with one or more other parcels under a common Development scheme, program or plan, is ten (10) or more gross acres;

with respect to the Development of which any new Thoroughfare, Internal Drive, or extension or change of the design of any existing Thoroughfare or Internal Drive is required or will be made or proposed; or

with respect to which any District assignment or any Thoroughfare or Internal Drive or alignment thereof is proposed to be made or changed by a Zoning Map or Zoning Map amendment.

Development Area Per Dwelling Unit: The measurement of Density for Residential Development, which term refers to the number of Dwelling Units per unit of land area, subject to adjustment for Lot or Building Site Area Remainder as follows:

if an amount of Lot or Building Site Area not allocated to a Dwelling Unit is less than that required for one such Dwelling, the remaining Lot or Building Site Area may be used to satisfy Lot or Building Site Area requirements if it represents at least 75% of the total area required for a Dwelling Unit; provided, however, that the project shall comply with all other applicable regulations including without limitation access, Setbacks, Setback Areas, and Yards.

Development Plan: A Site Development Plan or Sketch Development Plan, as described in Section 8.5.6. See also “Master PUD Development Plan”.

Development Permit: Any permit or approval issued or granted pursuant to this Ordinance.

Deviation: Alternative Compliance with design standards, Alternative Performance, the customized standards of a Planned Unit Development, Administrative Adjustment, or a Variance.

Directory Sign: The Sign type described as such in **Table 7.1.2.B-1 (Sign Types - Summary)** and **Table 7.1.2.B-2 (Sign Types - Specific Standards)**.

Distillery: An establishment which is primarily used for the manufacture of alcoholic spirits in accordance with applicable state and local regulations.

Distribution: The movement of goods including the storage of goods awaiting movement.

Distribution Facility: Premises used for Distribution.

District: A Character District, Special District, PUD District, or Civic District; when capitalized and not accompanied by the word “Historic”, the word “District” specifically excludes any Local Historic Districts. See also “Zoning District”.

Dooryard: A Private Frontage type intended for ground floor Residential Use, wherein the Façade is set back a small distance and the Frontage Line is defined by a low Wall, decorative Fence or hedge, creating a small raised, sunken, or at-grade Dooryard consisting of a front garden or patio. The Dooryard shall not be used for public circulation along a Thoroughfare. See **Table 4.3.7.A (Private Frontage Types)**.

Double-Wide Manufactured Home: (1) A single detached dwelling constructed primarily off-site, designed to be transported on a flat-bed truck or Trailer in 2 or more sections to be attached on site. As used in this Ordinance, Double-Wide Manufactured Home does not include Manufactured Homes constructed as a single self-contained unit and mounted on a single chassis. (2) A Double-Wide Manufactured Home, shall be considered a Single-Family Dwelling and shall be subject to all standards and regulations applicable to Single-Family Dwellings, as provided by this Ordinance.

Drive: A Thoroughfare or Internal Drive along the boundary between an urbanized and a natural condition, usually along a waterfront, Park, or promontory, with one side having the urban character of a Street, with Sidewalk and Buildings, and the other having the qualities of a Road or Parkway with naturalistic planting and rural details. See **Table 5.3.3.F (Thoroughfare / Internal Drives Types – Summary)** and **Table 5.3.3.G (Thoroughfare / Internal Drive Assemblies and Standards)**.

Drive Aisle: A vehicular accessway that serves and is within a Parking Area, Parking Lot, or Parking Structure. A Drive Aisle is not a Thoroughfare, Internal Drive, or Driveway.

Drive-Through: Any accommodation designed or used for the transaction of Business wherein the patrons may avail themselves of the services or products of an establishment while remaining in their vehicles, whether or not patrons are also able to obtain services or products inside of a Structure.

Driveway: For Houses, Duplexes, and Townhomes, an area for parking and vehicular access conforming to the standards of Table 4.3.1. For all other Lots and Building Sites, a vehicular accessway within a Lot or Building Site to provide access only from a Thoroughfare or Internal Drive to a Parking Area, Parking Lot, Garage, Parking Structure, or Building entrance, but not designed to provide space within the First Layer or Second Layer for vehicular Parking additional to the minimum space required for such access.

Duplex: A small- to medium- sized Building, other than a Manufactured Home, situated on a single or two Abutting small- to medium- sized Lot(s) or Building Site(s) with an Edgeyard or Sideyard, which either is (a) attached to another Building of the same type, each of which consists of a separate Dwelling Unit with a separate entrance or (b) contains two Dwelling Units, each of which has a separate entrance. In each case, the entrance of at least one of the Dwelling Units must face a Thoroughfare, Internal Drive, or Civic Space. Dwelling Units may be side-by-side, front- to-back, or over-and-under. See **Table 4.3.8.A (Principal Building Types Summary)** and **Table 4.3.8.B (Principal Building Types - Specific Standards)**.

Dwelling / Dwelling Unit: A Building or portion thereof designed or used exclusively as Residential quarters for one or more Families living independently of each other, which includes separate complete sleeping, cooking, eating, and sanitation facilities for each such Family, and occupied for a monthly or longer basis. The term shall not be deemed to include Hotel, Extended Stay Hotel, Motel, Boarding or Rooming House, or any Transient living accommodations.

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E.

Easement: Privilege or right of use, access or enjoyment granted on, above, under or across a particular tract of land by the landowner to another Person.

Economic Hardship: An economic burden imposed upon the owner, which is unduly excessive and prevents a realization of a reasonable rate of return upon the value of his property.

Edgeyard: A Yard type that results from a Building being set back from its Lot or Building Site boundaries at the front, rear, and both sides.

Education or Educational: A Use category characterized by the process of receiving or giving instruction. See Table 4.3.9.A-1 (Building, Lot & Building Site Principal Use).

Educational Facility: Public and private (including charter or religious) schools at the pre-school, kindergarten, primary, intermediate, or secondary school levels; colleges, universities, community colleges, graduate and professional schools, nursing, dental, and medical schools, seminaries, and other post-secondary institutions of higher learning that offer courses of general or specialized study leading to a degree, usually in a campus setting. The following are not Educational Facilities: dance, art, music, or photographic studios or classrooms (see Retail Sales and Personal Service), driving schools other than truck driving schools (see Retail Sales and Personal Service), and Martial Arts schools (see Retail Sales and Service).

Effective Date: The date on which this Ordinance was adopted by the city Council.

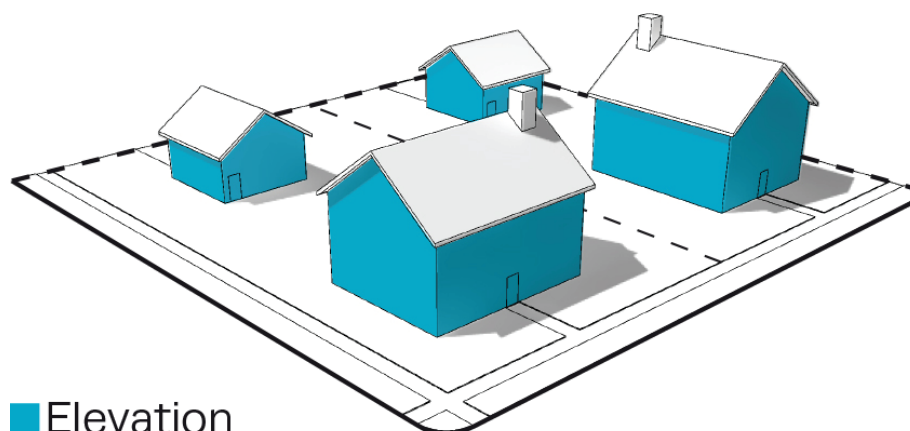
Effective Turning Radius: The measurement of the inside Turning Radius, taking parked cars into account.

Electronic Message Board: A panel or screen with the capability to display electronically programmed variable messages.

Elementary School: A public, private or parochial school offering instruction between Kindergarten and Grade 4 in the branches of learning and study required to be taught in the public schools of Tennessee.

Elevation: As related to the exterior walls of a Building, one that is not along a Frontage Line; when not capitalized, “elevation” means the height above a given level or a drawing or design that represents an object or Structure as being projected geometrically on a vertical plane parallel to one of its sides, as the context indicates. See also Facade. See Illustration 9.3.F-5 (Frontage and Lot or Building Site Lines) and Illustration 9.3.E-1 (Elevation).

ILLUSTRATION 9.3.E-1 ELEVATION



Encroach: to break the plane of a vertical or horizontal regulatory limit with a structural element, so that it extends into a Setback, Setback Area, or Yard or into the Public Frontage, or above a height limit.

Encroachment: Any structural element that breaks the plane of a vertical or horizontal regulatory limit, extending into a Setback, Setback Area, or Yard or into the Public Frontage, or above a height limit.

Enfront: To place an element along a Frontage, as in “porches Enfront the Thoroughfare.”

Exempt Wireless Communications Tower: Communication tower used by amateur radio operators licensed by the FCC that are exempt from local zoning restrictions or communications towers under 100 feet in height used solely for educational communications purposes.

Exempt Sign: A Sign listed in Section 7.1.10 that does not require a Sign Permit.

Existing Local Codes: All City laws, codes, and ordinances in effect on the Effective Date.

Extended Stay Hotel: A Building or part of a Building, containing six (6) or more guest rooms or suites, offering temporary residence for compensation and specifically constructed, licensed, and/or maintained, all or in part, for non-Transient extended stays and/or stays longer than 30 days, regardless of the presence of leases for shorter periods of time. An Extended Stay Hotel is not a Hotel, Motel, Bed and Breakfast, Inn or Short-Term Rental Unit.

Exterior Architectural Appearance: The architectural character and general composition of the exterior of a Structure, including but not limited to the kind, color, and texture of the building materials and the type, design, and character of all windows, doors, light fixtures, Signs, and appurtenant elements.

Extractive Uses: Sub-category of Agricultural and Extractive Uses Category characterized by Uses in which minerals or other solids or liquids are extracted from the earth, including without limitation, chemical fertilizer and non-metallic mineral mining, clay, ceramic, and refractory mineral mining, coal mining, crude petroleum and natural gas production field, metal ore and mineral mining, sand, stone, and gravel quarrying.

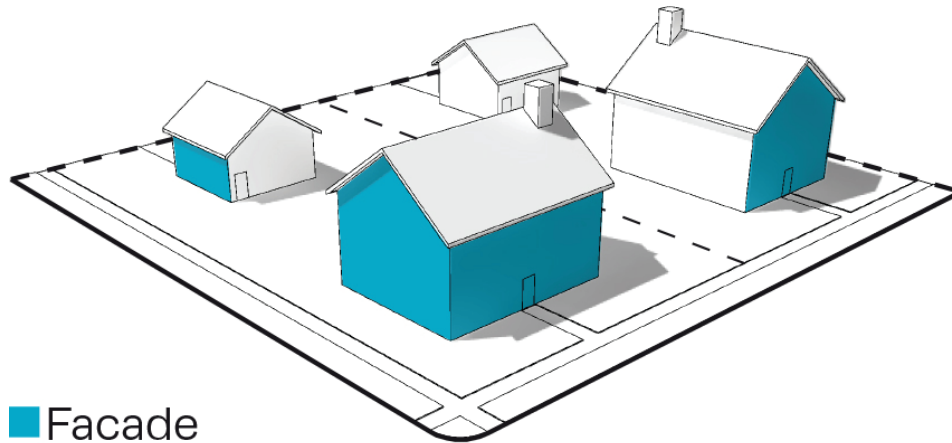
ARTICLE 9: DEFINITIONS

F.

FAA: Federal Aviation Administration.

Facade: the exterior Wall of a Building that is set along a Frontage Line. See **Illustration 9.3.F-1 (Facade)**. See also “Elevation”.

ILLUSTRATION 9.3.F-1 FACADE



Family: (1) one or two Persons and their children by birth, adoption, foster care, or guardianship or (2) any number of related or unrelated Persons living together in a single, more or less permanent and stable rather than Transient living arrangement as a not-for-profit housekeeping unit, which is the functional and factual equivalent of a traditional family, including without limitation a group headed by a householder caring for a reasonable number of children as one would be likely to find in a traditional family; provided that the criteria “stable rather than Transient living arrangement” shall not be applied in cases where handicapped persons are affected.

Family Day Care: A facility which provides day care and supervision services for up to 18 hours per day for no more than 12 recipients at any one time, without overnight accommodations, by a provider of such services who is not related to such recipients, which provider has received and maintains in full force and effect all necessary State approvals and licenses. Those receiving care are not all related to each other by blood or marriage and are not legal wards or foster children of the attendants.

Farm and Construction Equipment: Equipment used in the conduct of farming or construction activities.

Farmer’s Market: An open-air area, without or without a Structure, used for the Retail sale of fresh fruits, vegetables, nuts, grains, eggs, flowers, herbs, or plants. A Roadside Stand is not a Farmer’s Market.

FCC: Federal Communication Commission.

Fence:

- (1) As a Private Frontage type, a Frontage wherein the Facade is set back from the Frontage Line, and the Front Setback Area, Front Yard, or Street Yard so created is separated from the Public Frontage by a Fence. See **Table 4.3.7.A (Private Frontage Types)**;
- (2) As a Structure, a device erected to serve as an architectural element, landscape element, Screen, Streetscreen, or physical barrier.

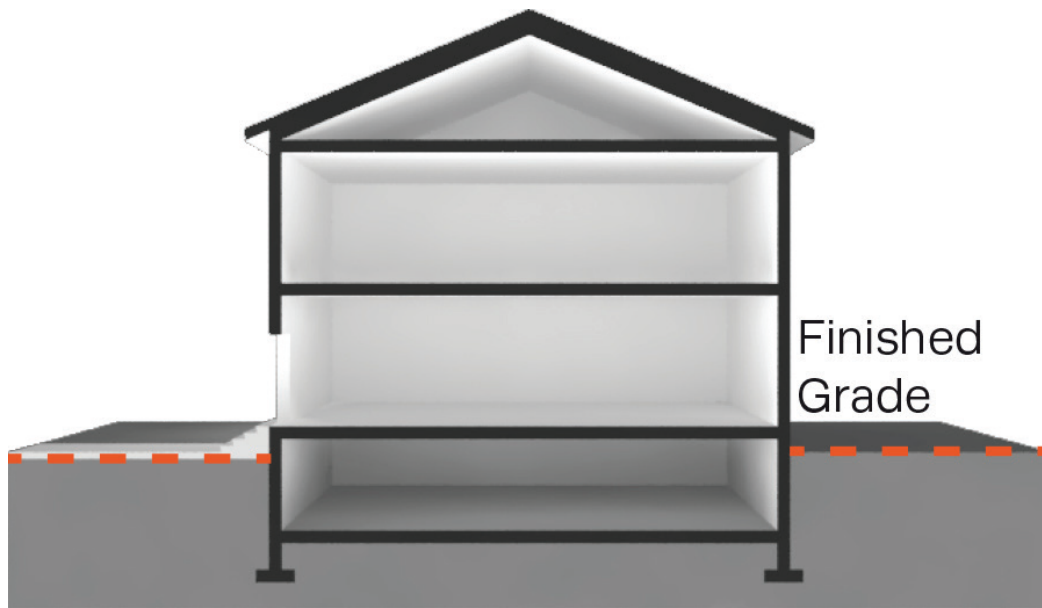
Final Plat: As defined in City Subdivision Regulation Section 2.3.

Financial Institution: An establishment that is regulated by the Federal Deposit Insurance Corporation (FDIC) and/or Tennessee Department of Financial Institutions and provides a variety of financial services, generally including banks, credit unions, and mortgage companies.

Financial Services: A Business, other than a Financial Institution or Non-Banking Financial Institution, characterized by the provision of financial, investment, and/or similar services.

Finished Grade: The elevation of the completed surfaces of lawns, walks and Thoroughfares and Internal Drives Adjoining a Building wall at that point along such wall. See **Illustration 9.3.F-3 (Finished Grade)**.

ILLUSTRATION 9.3.F-3 FINISHED GRADE



Fire / EMS Station: Premises accommodating operations of fire-fighting and emergency medical personnel and other members of staff.

First Layer: See “Layer”.

Flex Building: A large footprint Principal Building type designed to accommodate either a single Use or a vertical or horizontal mix of Uses. See **Table 4.3.8.A (Principal Building Types- Summary)** and **Table 4.3.8.B (Principal Building Types - Specific Standards)**.

Flood: As defined in Section 6.12.2.

Floodplain: As defined in Section 6.12.2.

Flood Fringe Overlay District: An area designated as such on the Official Zoning Map.

Floodplain District: As defined in Section 6.12.2.

Floodway Overlay District: An area designated as such on the Official Zoning Map.

Floor Area: The total of the gross horizontal areas of all floors, including usable Basements and cellars, below the roof and within the outer surface of the main walls of Buildings or the center lines of Party Walls separating such Buildings or portions thereof, or within lines drawn parallel to and two feet within the roof line of any Building or portion thereof without walls, but excluding the following:

Areas used for off – street Parking spaces or loading berths and Driveways and maneuvering relating thereto where required by this Ordinance

In the case of Non-Residential facilities: arcades, porticoes, and similar open areas which are accessible to the general public, and which are not designed or used as sales, display, storage, service, or production areas.

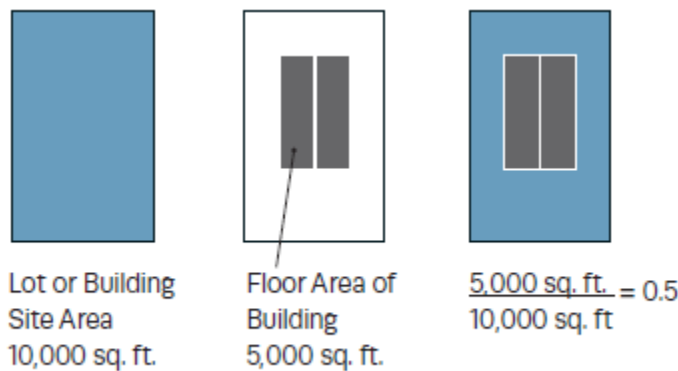
Floor Area Ratio ("FAR") or Floor-to-Area Ratio: A measurement of Non-Residential land use intensity, being the ratio of Building Floor Area- to -Lot or Building Site Area. FAR is determined by dividing (1) the aggregate Floor Area of the several floors and mezzanine areas of all Buildings on a Lot or Building Site by (2) the Lot or Building Site Area, as follows:

$$\frac{\text{Aggregate Floor Area}}{\text{Lot or Building Site Area}} = \text{Floor Area Ratio}$$

For example:

a Building containing 20,000 square feet of Floor Area on a Lot or Building Site that has a Lot or Building Site Area of 10,000 square feet has a Floor Area Ratio of 2.0; and

similarly, a Floor Area Ratio of .5:1 would mean that the Floor Area of the Building is 50% of the Lot or Building Site Area of the Lot or Building Site on which the Building is located.



Food Distribution Center: Premises operated for Civic purposes, with or without a Structure, from which edible goods are distributed to the public, with or without compensation.

Food Processing: Use characterized by processing and packaging of edible goods and beverages for consumption off of the premises.

Food Truck: A Mobile Vending Apparatus which qualifies as a vehicle or tow-behind trailer under TCA § 55-1-101-126 from which edible food products and beverage are cooked, prepared, assembled and offered for sale to the general public for immediate consumption. A food truck is not a Mobile Kitchen.

Food Truck Court: A parcel of land where two or more Mobile Vendors congregate to offer food and beverage for sale to the public as the principal use of the site, where permitted by **Table 4.3.9.A-1**. This definition shall not be

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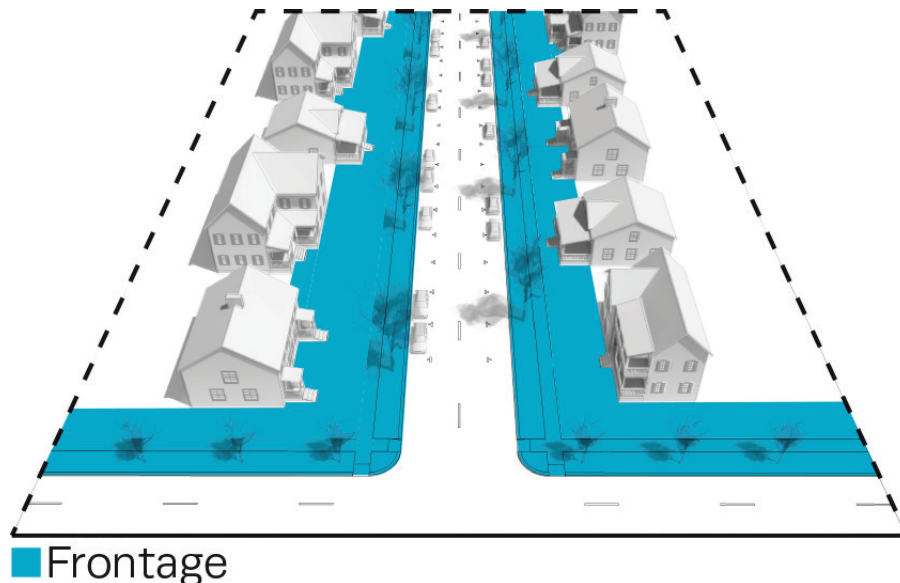
interpreted to include a congregation of mobile food vendors as an accessory use or temporary use, where permitted by **Table 4.3.9.A-2** and **4.3.9.A-3**.

Forecourt: A Private Frontage type wherein a portion of the Facade is close to the Frontage Line and the central portion is set back, creating a gathering space for residents or additional shopping or restaurant seating area within Retail / Personal Service / Repair / Art / Artisan Use areas. This type should be used sparingly and may be used in conjunction with other Private Frontage types. See **Table 4.3.7.A (Private Frontage Types)**.

Freestanding Sign: Any Sign supported by Structures or supports that are anchored in the ground and that are independent of any Building or other Structure.

Frontage: The area between a Building Facade and a Path, Passage, waterbody, Civic Space, or the curb (or if there is no curb, the edge) of the Vehicular Lanes of a Thoroughfare or Internal Drive having Vehicular Lanes, inclusive of the built and planted components of such area. Frontage is divided into Private Frontage and Public Frontage. See **Illustration 9.3.F-5 (Frontages and Lot or Building Site Lines)**, **Table 5.2.2.G-1 (Thoroughfare & Internal Drive Assemblies and Standards)**, and **Table 4.3.7.A (Private Frontage Types)**. Corner Lots and Building Sites have two Frontages, a Principal Frontage and a Secondary Frontage. See **Illustration 9.3.F-4 (Principal Frontage and Secondary Frontage)**.

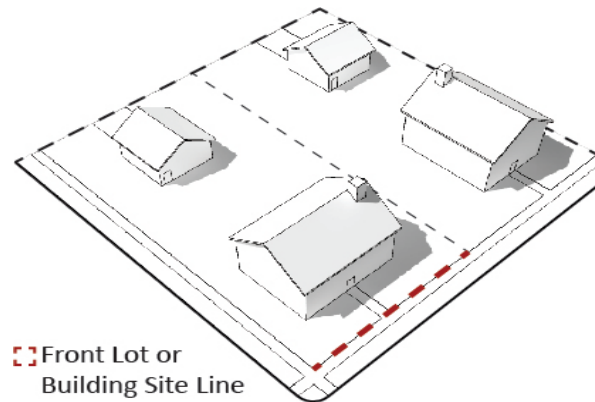
ILLUSTRATION 9.3.F-4 PRINCIPAL FRONTAGE AND SECONDARY FRONTAGE



Frontage Line: The common line that separates the Private Frontage from the Public Frontage, typically at the Front Lot or Building Site Line in cases where the entire Public Frontage is with the public right-of-way. See **Illustration 9.3.F-5 (Frontages and Lot or Building Site Lines)**. On a Corner Lot or Building Site, there are two Frontage Lines.

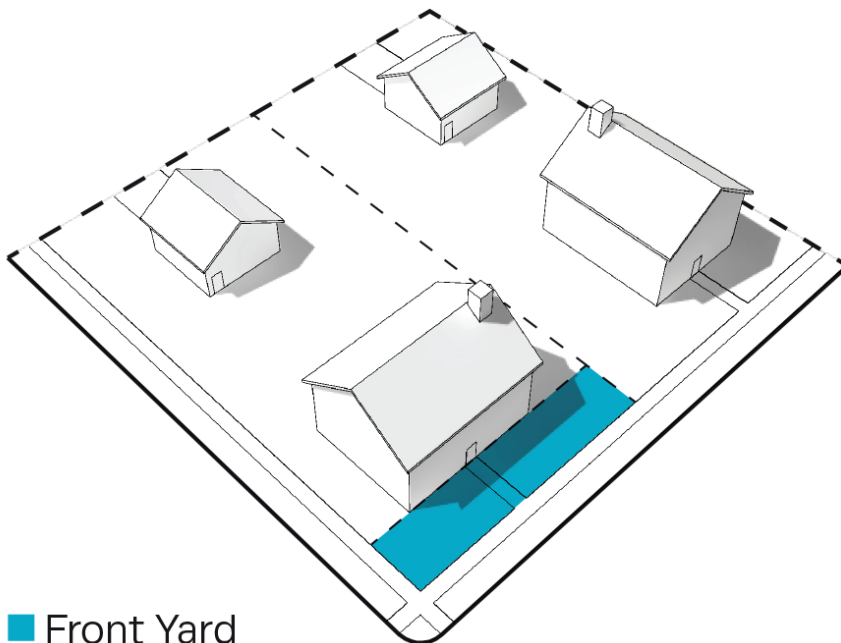
Front Lot or Building Site Line: The boundary at the front of a Lot or Building Site along the Thoroughfare right-of-way or Internal Drive. See **Illustration 9.3.F-5 (Frontages and Lot or Building Site Lines)**.

ILLUSTRATION 9.3.F-5 FRONTAGES AND LOT OR BUILDING SITE LINES



Front Setback Area or Yard: A portion of a Lot or Building Site that is situated between (1) the nearest roofed portion of the Principal Building or of any Accessory Building on the Lot or Building Site and (2) the Front Lot or Building Site Line, extending the full width of the Lot or Building Site, from Side Lot or Building Site Line to Side Lot or Building Site Line. See **Illustration 9.3.F-6 (Front Yard)**. Sometimes referred to as “Street Yard”.

ILLUSTRATION 9.3.F-6 FRONT (STREET) SETBACK AREA OR YARD



Full Value: With respect to a Nonconforming Structure or a Structure used for a Nonconforming Use, the Full Value of a Structure shall be determined by subtracting

- (1) the estimated value of the foundation as provided by the owner’s engineer and approved by the City Engineer
- from (2) the current assessed value of the Structure.

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$$\text{Current Assessed Value of Structure} - \text{Estimated Value of Foundation} = \text{Full Value}$$

Functional Classification: The categorization of Thoroughfares and Internal Drives within the transportation element of Connect Columbia and the Access Management Ordinance which represents the progressive trade-off between access and movement within the regional transportation system. The rubric includes Principal Arterials, Minor Arterials, Collectors, Major Local Streets, and Minor Local Streets.

Funeral Services: A Use characterized by an establishment engaged in undertaking services such as preparing the human or animal dead for burial and arranging and managing funerals, including without limitation, Funeral Home, Mortuary, Cemetery, and Crematorium.

Future Land Use Character Area: The general classification of land identified in the future land use element of Connect Columbia, the comprehensive plan. The comprehensive plan indicates the community's preference for general land use categories and desirable intensity of development corresponding to each future land use character area. Connect Columbia also describes the typical aesthetic and material qualities which provide distinctive character to each area. Each future land use character area corresponds to one or more Character Areas or Special Districts as provided in Article 3. The use, bulk, and design standards of this ordinance, when applied to specific properties, implement the general future land use character area designations. The Planning Commission shall determine the pace of implementation through the process of zoning map amendments (rezoning) described in Article 8.

G.

Gallery: (1) With respect to the Frontage, the Private Frontage type conventional for Retail / Personal Service/ Repair / Art / Artisan Use, wherein the Facade is aligned close to the Frontage Line with an attached cantilevered shed or lightweight colonnade overlapping the Sidewalk (see **Table 4.3.7.A (Private Frontage Types)**); (2) with respect to the Use of premises or part thereof, the collection and/or exhibition, and often the sale, of works of art, photography, objects of permanent value, or artisan or cultural items.

Garage: An enclosed, detached Building, or an enclosed extension of a Principal Building, used for the storage of one or more motor vehicles on a Lot or Building Site as an Accessory Use, provided that no Business, occupation or service is conducted for profit therein.

Governmental Facility: Governmental Offices and storage and other facilities for the operation of local, state, or federal government. Examples are Courthouses, correctional facilities, jails, prisons, emergency services, paramedic, fire department, and law enforcement facilities, and post offices. Educational Facility, Maintenance Facility, Civic Spaces and Open Areas, solid or liquid waste transfer or composting and Utility Facilities are not Governmental Facilities.

Green: A type of Civic Space for unstructured recreation, spatially defined by landscaping rather than Buildings, described as such in **Table 5.3.3.A (Civic Space Types- Summary)** and **Table 5.3.3.B (Civic Space - Specific Standards)**.

Gross: As related to an area of land, that which is inclusive of all land uses, Thoroughfares, Internal Drives, and other public areas located within a development site.

Ground Floor Elevation: The distance between the top of the fronting Sidewalk and the top of the finished ground floor.

Group Assembly: Sub-category of the Commercial Use category, characterized by people congregating regularly for participation in or holding meetings, workshops, lectures, civic activities, religious services, performances, and other similar activities, including Buildings, facilities, and venues in which such functions and activities are held.

Group Care Home or Family Boarding Home: A Group Care Home or a Family Boarding Home, as those terms are defined under the Rules of the Tennessee Department of Children's Services Social Service Division, Chapter 0250-4-2, which is licensed by the State under 0250-4- 2-.01 of said Chapter.

Group Care Facility: Shared living quarters (without separate kitchen or bathroom facilities for each room or unit) for nine (9) or more persons with physical or mental impairments that substantially limit one or more of such person's major life activities, provided that such arrangements do not meet the definition of Household Living. A Group Care Facility is not a Group Home for Persons with Disabilities.

Group Day Care: Synonymous with Family Day Care.

Group Home for Persons with Disabilities: Any home in which eight (8) or fewer unrelated "persons with disabilities" as defined in TSA section 13-24-101 reside, which may include three (3) additional persons acting as support staff or guardians, who need not be related to each other or to any of the persons with disabilities residing in the home.

Group Living: Sub-category within the Residential Uses category, characterized by Residential occupancy of a Structure by a group of people, which does not meet the definition of Household Living. Tenancy is usually arranged

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on a monthly or longer basis. Generally, Structures for Group Living have a common eating area for Residents, and the Residents may receive care, training, or treatment. Examples include but are not limited to Adult Care Home, Group Home for Persons with Disabilities, and Group Care Home or Family Boarding Home.

H.

Health Care Institution: Subcategory within the Institutional Use category, characterized by an establishment providing medical or surgical care to patients. Some uses may offer overnight care.

Nursing or medical schools not accessory to a Hospital (see Educational Facilities) and Urgent Care or Emergency Medical Clinic Offices (see Offices) are not Health Care Institutions.

Health Club: Premises that contain one or more of the following types of athletic facilities: swimming pool, racquetball courts, squash courts, exercise rooms, weight rooms, gymnasium or similar facilities available exclusively to members and their guests.

Heavy Industrial: The sub-category of Industrial Uses characterized by and collectively referring to factory production and industrial yards; research and development activities without light fabrication and assembly operations; limited industrial/manufacturing activities; Industrial Businesses, the sale of heavy equipment, Uses involving storage or use of highly flammable, toxic matter or explosive materials, or of Hazardous Materials; Uses that generate pollution, dust, odor, heat, glare, or vibration beyond the walls of such enclosed Building or any light or glare beyond the boundaries of the land on which the Building is situated; any activity or Use that (1) is detrimental to the environment, (2) poses any danger or hazard of fire or explosion or other physical hazard, (3) causes, disseminates, or discharges any material, dust, smoke, gas, fumes, odor, noise, vibration beyond the Lot or Building Site on which the Building is situated, (4) involves any Outside Storage, (5) results in any unusual traffic hazard or congestion, or (6) for which any water, air, or other environmental or pollution license or permit is required; as more specifically listed under such sub- category in **Table 4.3.9.1-A (Building, Lot, & Building Site Principal Use)**.

Not included in this sub-category are animal waste processing (see Waste-Related Service); Repair and service of Motor Vehicles, motorcycles, Recreational Vehicles, boats, or light and medium trucks (see Vehicle Sales and Service); in-store sales, lease, or rental of consumer, household, or business goods (see Retail Sales and Service).

Height: (1) as related to a Structure other than a Tower, the vertical dimension of the Structure, described as applicable, (a) in number of Stories of the Structure or (b) by the distance between (i) the average Finished Grade, as measured at the outside corners of the Structure, and (ii) the highest point of such Structure on the roof surface; excluding in each case (i) Attics under 14 feet in height at their tallest point; (ii) raised Basements; and (iii) masts, belfries, clock towers, spires, steeples, chimneys, chimney flues, flagpoles, silos, water tanks, elevator or stair bulkheads, water tanks, cooling towers, Exempt Communications Towers, or parapet walls not more than four feet (4') high. See **Illustration 9.3.H-1 (Height- Building)**.

ILLUSTRATION 9.3.H-1 HEIGHT - BUILDING



(2) as related to a Tower, the distance measured from ground level to the highest point on the Tower, even if said highest point is an Antenna.

Heritage Tree: A tree of any species listed under “Canopy Trees” in **Table 4.3.16.D-1 (Native Plants of the Tennessee Valley)** having with a trunk caliper of 24” or greater, measured 3 feet from the base of the trunk.

High School: Premises at which education is provided for students from Grade 9 through Grade 12.

Highway: A rural or suburban Thoroughfare or Internal Drive of high vehicular speed and capacity, described as such in **Table 5.3.3.F (Thoroughfare / Internal Drives Types – Summary)** and **Table 5.3.3.G (Thoroughfare / Internal Drive Assemblies and Standards)**.

Historic District: A geographically definable area which possesses a significant individual Structure or a concentration, linkage or continuity of sites, Buildings, Structures, or objects which are united by past events or aesthetically by plan or physical development, which meets one (1) or more of the following criteria:

It is associated with an event which has made a significant contribution to local, state or national history;

It includes Structures associated with the lives of persons significant in local, state or national history;

It contains Structures or groups of Structures which embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction;

It has yielded or may be likely to yield archaeological information important in history or prehistory; or

It is listed in the National Register of Historic Places.

Historic Landmark: A property, Building, district, object, site, or Structure that has outstanding historical significance and is designated as such pursuant to this Ordinance.

Historic Property: The term used as a collective reference to designated Historic Structures, Historic Landmarks, and Historic Districts, together with properties therein identified as “contributing” or “pivotal” in a designated Historic District.

Historic Structure: Any Structure that is:

listed individually in the National Register of Historic Places maintained by the Department of the Interior or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register;

certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historical district or a district preliminary determined by the Secretary to qualify as a registered Historic District;

individually listed on the state inventory of historic places and determined as eligible by states with historic preservation programs which have been approved by the Secretary of the Interior; or

individually listed on a local inventory of historic places and determined as eligible by communities with historic preservation programs which have been certified either:

by an approved state program as determined by the Secretary of the Interior; or

directly by the Secretary of the Interior.

Home Occupation: Any gainful occupation conducted entirely within a Dwelling solely by the owners- or tenant-residents thereof as an Accessory Use, which does not change the character of the Structure as a Residence; There are two types of Home Occupations;

- (1) Minor Home Occupations: gainful occupation conducted entirely within a Dwelling which does not generate traffic from employees, customers, clients, or deliveries and bears no external evidence of the accessory commercial use;
- (2) Major Home Occupation: gainful occupation conducted on a residential property which
 - a. generates some traffic from employees, customers, clients or deliveries;
 - b. bears some external evidence of the accessory commercial use; or
 - c. occurs within an accessory structure.

Home Occupations do not include: Clinics, Hospitals, Restaurants, Kennels, Auto Repair, or loading of ammunition.

Horticulture and Landscaping Services: Landscaping, tree, plant, lawn, and/or other landscape material installation, care, maintenance, and removal, and other similar services, together with associated equipment and machinery directed toward the care of trees, plants, or lawns.

Hospice: The provision of palliative care and emotional support to the terminally ill so that quality of life is maintained and family members may be active participants in care.

Hospital: Premises used for the diagnosis, medical treatment, or similar care of human ailments including without limitation: the term "Hospital" shall be deemed to include (1) psychiatric and substance abuse facilities, ambulatory care, outpatient services, diagnostic and treatment centers, Clinics, Rehabilitation Facilities, Medical Laboratories, Hospices, teaching facilities, and meeting areas associated with and on the same premises as the Hospital, and (2) Accessory Uses such as dining and housing for patients' Families and guests, staff members, nurses, interns, resident physicians and their immediate families, and maintenance, service and parking facilities. The term "Hospital" shall not be deemed to include (3) Offices of doctors, dentists, chiropractors, or nurse practitioners, sanitariums, Nursing Homes, Long Term premises used for the diagnosis, medical treatment, or similar care of human ailments including without limitation: the term "Hospital" shall be deemed to include (1) psychiatric and

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substance abuse facilities, ambulatory care, outpatient services, diagnostic and treatment centers, Clinics, Rehabilitation Facilities, Medical Laboratories, Hospices, teaching facilities, and meeting areas associated with and on the same premises as the Hospital, and (2) Accessory Uses such as dining and housing for patients' Families and guests, staff members, nurses, interns, resident physicians and their immediate families, and maintenance, service and parking facilities. The term "Hospital" shall not be deemed to include (3) Offices of doctors, dentists, chiropractors, or nurse practitioners, sanitariums, Nursing Homes, Long Term Care Facilities, Rehabilitation Facilities, psychiatric and substance abuse facilities, ambulatory care, outpatient services, diagnostic and treatment centers, Clinics, Rehabilitation Facilities, Medical Laboratories, Hospices, teaching facilities, or meeting areas not associated with and on the same premises as the Hospital, or (2) Accessory Uses such as dining and housing for patients' families and guests, staff members, nurses, interns, resident physicians and their immediate families, and maintenance, service and parking facilities not on the same premises and associated with Hospital.

Hostel: An establishment that provides inexpensive food and lodging for a specific group of people, such as students, workers, or travelers.

Hotel: A Business that offers to Transients, on a daily or weekly basis for compensation, sleeping accommodations accessible from interior hallways, whether or not such Business also includes dining facilities. Not synonymous with Motel, motor court, tourist court, auto court, motor lodge, or similar facilities. Neither a Hotel nor a room therein is a Short-Term Rental Unit.

House: A Building Type that was designed as a Single- Family Detached Dwelling on a medium or large Lot or Building Site with an Edgeyard, often shared with an Accessory Building in the rear, described as such in **Table 4.3.8.A (Principal Building Types)** and **Table 4.3.8.B (Principal Building Types - Specific Standards)**.

Household Living: The sub-Category of Uses designated as such in **Table 4.3.9.1-A (Building, Lot, & Building Site Principal Uses)**, characterized by permanent, non- Transient Residential activities that involve the occupancy of a Residential Dwelling Unit. A Short-Term Rental Unit is not a Household Living Use.

House Trailer: Any Trailer designed to be used for living purposes with its wheels, roller or skids in place.

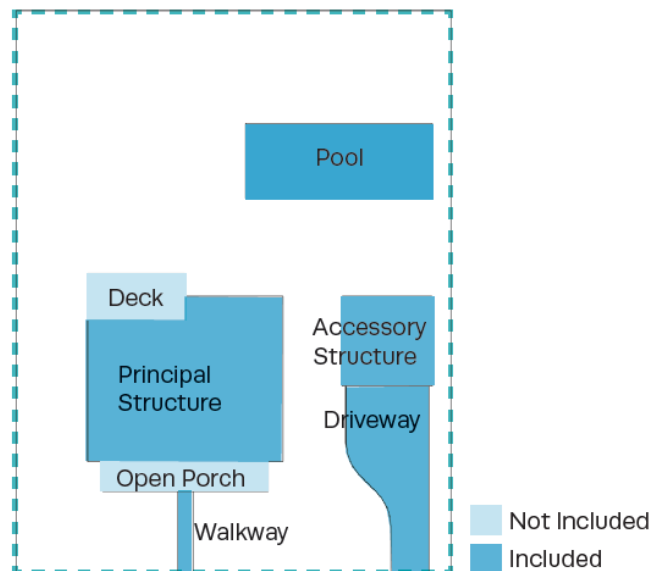
I.

Ice Cream Truck: Are motorized vehicles from which the operator vends only pre-packaged frozen dairy or frozen water-based food products. Service is often from the Right-of-Way.

Identification Sign: A Sign that directs attention to a Business, profession, or Building with Multi-Family Residential Dwelling Units, which is conducted upon the same Lot, Building Site, or Development Site where such Sign is located.

Impervious Surface Coverage: That portion of a Lot, Building Site, or Development site, as applicable, covered with Buildings, asphalt, or concrete paving or hard-packed, prepared, graveled surfaces that prevent or restrict absorption of rain or surface water into the ground. If a Lot, Building Site, or Development site, as applicable, is located in more than one District, the Impervious Surface Coverage shall be separately computed for each District and no Impervious Surface Coverage may be transferred between Districts. See **Illustration 9.3.I-1 Impervious Surface Coverage**.

ILLUSTRATION 9.3.I-1 IMPERVIOUS SURFACE COVERAGE



Impound Yard: A facility that provides temporary outdoor storage for: (1) mechanically operable/drivable, licensed vehicles that are to be claimed by titleholders or their agents; and/or (2) wrecked motor vehicles awaiting insurance adjustments and transport to repair shops. This term excludes: Scrap and Salvage Yards / Services; Junkyard; Towing Facilities; Motor Vehicle Storage; or accessory storage of inoperable vehicles.

Improvement: Any man-made change of land, a Lot, a Building Site, or Development site, or a change to or creation of a Structure.

Independent Living Apartment: A multiple Dwelling Unit accommodation that provides Residential quarters for Persons over a specified age who do not require skilled nursing care, health care, or assistance with daily activities, such as assistance with eating, dressing, ambulation, medication, bathing, or toileting.

Indoor Recreation: Use characterized by generally Commercial, for-profit Uses, varying in size, providing daily or regularly scheduled entertainment-oriented activities in an indoor setting, including without limitation bowling

ARTICLE 9: DEFINITIONS

alley, game arcade, pool hall, skating rink, gymnastic facility, indoor sports academy, Indoor firing range, membership club or lodge, and movie or other theater, but excluding Adult-Oriented Entertainment, Bar, Tavern, Nightclub, athletic, tennis, swim or Health Club (see Retail Sales and Service) and outdoor entertainment (see Outdoor Recreation).

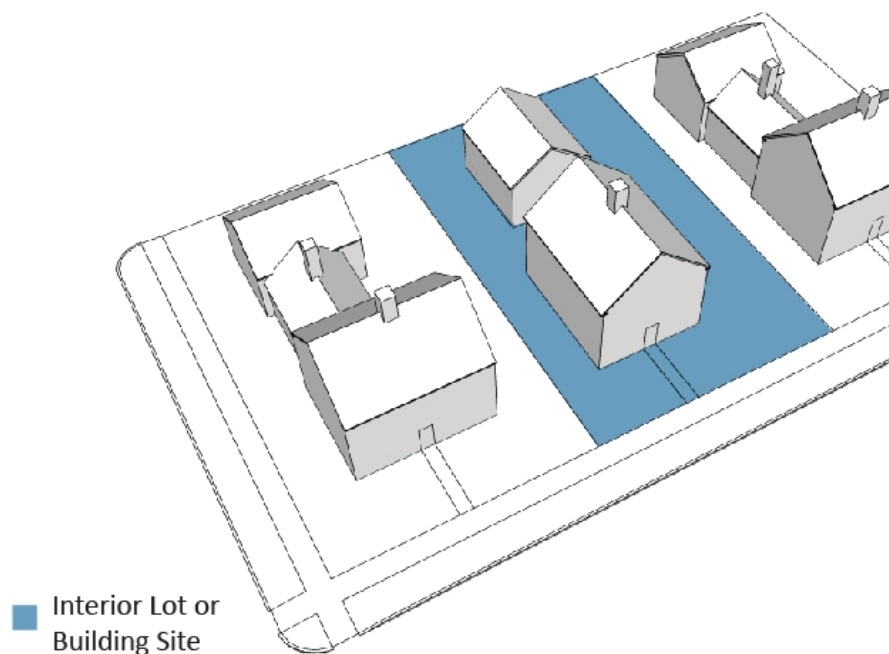
Industrial Uses: (1) a Use category characterized by manufacturing, re-manufacturing, processing, fabricating, creating, producing, packaging, converting, altering, assembling, handling, storing, stockpiling, sorting, recycling, treating, disposing of, wholesaling, warehousing, and distributing materials, products, or information, research and development, trucking, shipping, and transportation Business, repairing and maintaining commercial machinery or equipment, and waste management; (2) Industrial Uses is the Use category, which is a collective reference to Uses in the following Use sub-Categories, as listed in **Table 4.3.9.A-1 (Building, Lot & Building Site Principal Uses)** **Table 4.3.9.A-2 (Building, Lot & Building Site Accessory Uses)**, and **Table 4.3.9.A-3 (Temporary Uses)**: Heavy Industrial, Light Industrial, Warehouse and Freight Movement, and Waste-Related Service.

Information Services: Enterprises and organizations whose purpose is to produce and process information and to develop the infrastructure and delivery mechanisms to distribute information.

Inn: An owner-occupied Lodging Use, offering 6 to 12 bedrooms, which may serve breakfast to guests. See **Table 4.3.9.A-1 (Building, Lot & Building Site Principal Uses)**. Neither a Bed and Breakfast nor a Short-Term Rental Unit is an Inn.

Interior Lot or Building Site: A Lot or Building Site type other than a Corner Lot or Building Site. See **Illustration 9.3.I-2 (Interior Lot or Building Site)**.

ILLUSTRATION 9.3.I-2 INTERIOR LOT OR BUILDING SITE



K.

Kennel: Any place where dogs, cats and/or other animals are kept for boarding, breeding, grooming, or training for compensation excluding any otherwise conforming or lawfully nonconforming agricultural use. A Kennel may not be a Home Occupation.

Kindergarten: Premises accommodating a program that prepares children for first grade.

Knee Wall: As used in the Façade standards of this Ordinance, a low-wall that is incorporated into the Façade of a building beginning at grade and extending upward at least twelve (12) inches but not more than twenty-four (24) inches. Glazing is typically located above the Knee Wall.

Internal Drive: A curbed pedestrian and vehicular access way, for commercial and industrial land uses within a Lot, Building Site, or Development Parcel that connects to a Thoroughfare or another Internal Drive, and provides access and circulation to or through such Lot, Building Site, or Development Parcel and the Building(s) and Parking accommodations thereon. An Internal Drive is required to meet the Thoroughfare and Internal Drive assemblies and standards for the applicable District.

Inverted Crown: Surface shaping of an Alley, Thoroughfare, or Internal Drive having the low point in the middle, causing surface runoff to flow down the center.

Junk Vehicle: A vehicle which does not lawfully display a current license plate and which is partially dismantled or wrecked, or cannot operate under its own power.

Junkyard: Any land or Structure or part thereof used for the collection, storage or sale of wastepaper, rags, scrap metal or other scrap or discarded material or for the collecting, dismantling, storage or salvage of machinery or vehicles not in running condition or for the sale of the parts thereof.

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L

Laboratory: A place where scientific studies are conducted, including testing, research, or analysis of a medical, chemical, physical, biological, mechanical, or electronic nature.

Landholder: The legal or beneficial owner or owners of all the land proposed to be included in a Planned Unit Development. The holder of an option or contract to purchase, a lessee having a remaining term of not less than 50 years in duration, or other person having an enforceable proprietary interest may be considered a “landholder” for the purpose of this Ordinance.

Landscaping: (1) live materials such as grass, ground cover, shrubs, vines, hedges and trees, or durable natural material such as crushed stone, wood chips, rock and weathered wood; or (2) the activity of installing or maintaining such materials.

Land Use Plans: As defined in Section 8.5.20.A.

Large Multi-Family Building: Principal Building type that incorporates seven (7) or more side-by-side and/ or horizontally stacked Dwelling Units, typically with one or more shared entries. See **Table 4.3.8.A (Principal Building Types)** and **Table 4.3.8.B (Principal Building Types - Specific Standards)**.

Large Projecting Sign: The Sign Type described as such in **Table 7.1.2.B-1 (Sign Types - Summary)** and **Table 7.1.2.B-2 (Sign Types - Specific Standards)**.

Laundromat: An establishment with machines for the washing and drying of clothes and garments.

Layer: A range of depth of a Lot or Building Site within which certain elements are permitted. There are three Layers within each Lot or Building Site, as follows:

First Layer: that portion of a Lot or Building Site bounded by

the Side Lot or Building Site Lines,

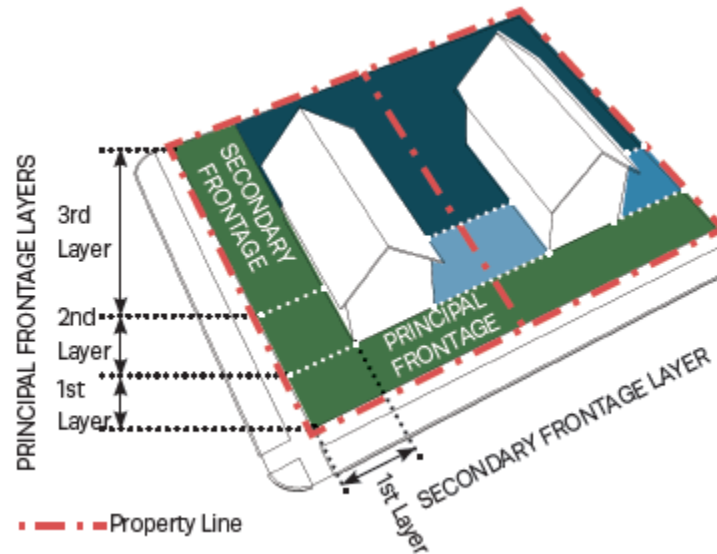
the Frontage Line, and

the Facade of the Principal Structure, or, on a Secondary Frontage, a Building Elevation.

Second Layer: that portion of a Lot or Building Site directly behind the First Layer and extending twenty (20) feet into the lot parallel to the Principal Frontage.

that Third Layer: that portion of a Lot or Building Site that is not within the First and Second Layer and is least visible from the Thoroughfare.

ILLUSTRATION 9.3.L-5 LAYERS



Library: A Building or part thereof containing collections of books, periodicals, and/or other media for Persons to read, borrow, or refer to.

Light Industrial: the sub-category of the Industrial Uses Category characterized by and collectively referring to fabrication, creation, processing, production, packaging, converting, altering, assembling, handling, storage, treatment, distribution, disposal, creation, assemblage, processing, or production, and/or treating, designing, fitting, compounding, repairing, assembling, testing, storing, warehousing, selling at wholesale, distributing or transferring, and/or repair, of or from natural, man- made, products or other goods, raw, secondary, partially completed or completed materials, components, products, by-products, goods, materials, or information, and wholesaling of industrial, Business, or consumer machinery, equipment, which activity is:

conducted solely within an enclosed Building,

is not detrimental to the environment; does not pose any danger or hazard of fire or explosion or other physical hazard;

does not generate, cause, disseminate, or discharge any pollution, material, dust, smoke, gas, fumes, odor, noise, heat, light, glare, or vibration beyond the Building Site on which the Building is situated;

does not involve any Outside Storage;

will not result in any unusual traffic hazard or congestion;

does not require any water, air, or other environmental or pollution license or permit is required; and

does not involve storage or use of highly flammable, toxic matter or explosive materials, or of Hazardous Materials;

Not included in the Light Industrial Uses sub-category are:

Heavy Industrial Uses;

Manufacture and production of goods from composting organic material (see Waste-Related Service);

Outdoor storage yard (see Warehousing and Freight Movement);

Sale or rental of machinery, equipment, heavy trucks, building materials, special trade tools, welding supplies, machine parts, electrical supplies, janitorial supplies, restaurant equipment, and store fixtures (see Wholesale Sales); or

Small-scale catering establishments (see Restaurants).

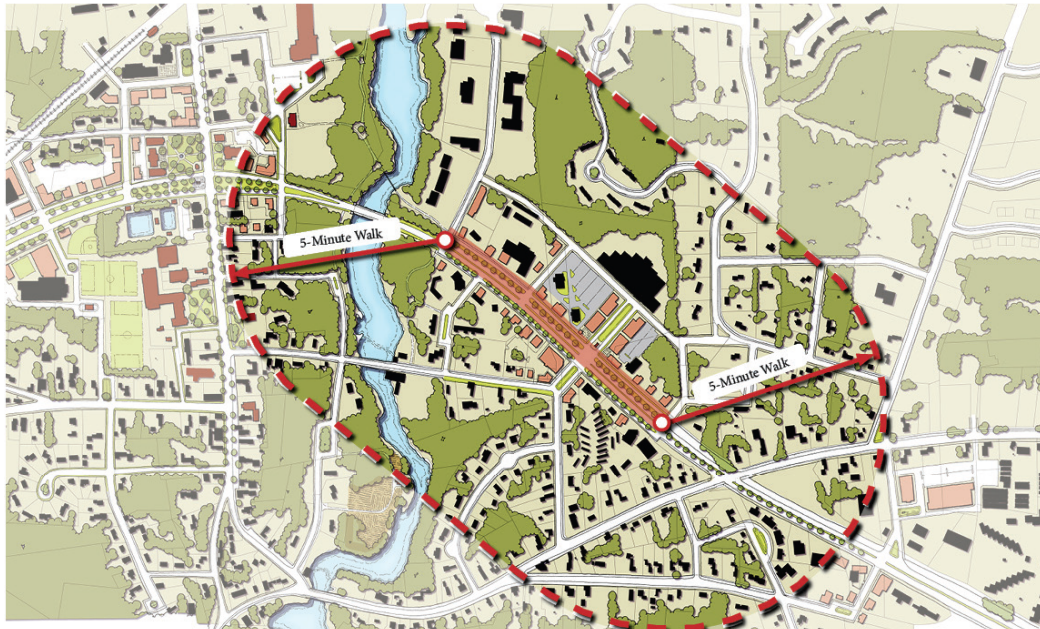
See **Table 4.3.9.A-1 (Building, Lot & Building Site Principal Uses)**.

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Lightwell: A Private Frontage type that is a below-grade entrance or recess designed to allow light into basements. See **Table 4.3.7.A (Private Frontage Types)**.

Linear Pedestrian Shed: A Pedestrian Shed that is elongated along an important Corridor. A Linear Pedestrian Shed extends approximately 1/4 mile from each side of the Corridor. The resulting area is oblong. See **Illustration 9.3.L-1 (Linear Pedestrian Shed)**.

ILLUSTRATION 9.3.L-1 LINEAR PEDESTRIAN SHED



Liner Building: A Building that is a least 20 feet deep measured from the Façade, which masks a Parking Area, Parking Lot, or a Parking Structure from the Frontage. See **Illustration 9.3.L-2 (Liner Building)**.

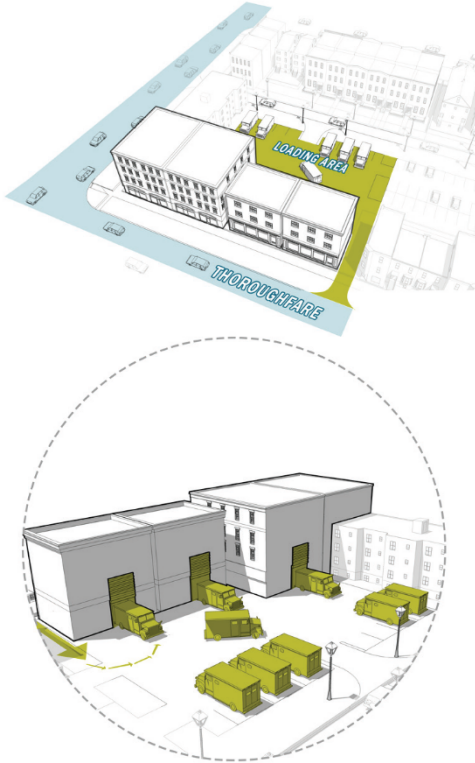
ILLUSTRATION 9.3.L-2 LINER BUILDING

Live / Work Building: A small- to medium-sized attached or detached Principal Building type, which includes a flexible space for Commercial Use and an internally connected Residential Dwelling Unit above and/or behind the flexible space. See **Table 4.3.8.A (Principal Building Types)** and **Table 4.3.8.B (Principal Building Types - Specific Standards)**.

Living Room: A room designed for general living purposes in a Dwelling Unit. Every Dwelling Unit shall be deemed to have a Living Room.

Loading Area: An area on a Lot or rear Building Site with a Building or along the Thoroughfare or Internal Drive Abutting such Lot or rear Building Site, used for temporary parking of Commercial vehicles while loading or unloading goods. See **Illustration 9.3.L-3 (Loading Area)**.

ILLUSTRATION 9.3.L-3 LOADING AREA



Loading Space: A space within a Loading Area that meets the design and dimensional requirements of Section 4.3.14.

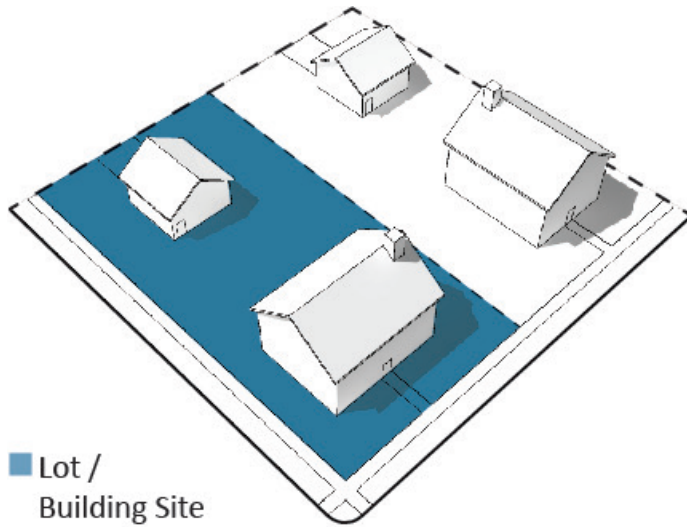
Long Term Care Facility: Premises at which living accommodations, bed care, boarding, in-patient service, and/or nursing or other medical care are provided for aged, infirm, disabled persons, persons or who are afflicted with or convalescing from any disease or ailment, or other persons requiring regular medical attention.

Long Term Care Facility does not include Rehabilitation Centers, Assisted Living Apartments, or facilities that provide surgical or emergency medical services, care for alcoholism, drug addiction, substance abuse, mental disease other than dementia, or communicable disease.

Lot: A parcel, plot, tract, or piece of land identified on and established by plat, subdivision, or as otherwise permitted by law, and recorded in the official records of the Maury County Register of Deeds, to be separately owned, used, Developed, or built on. See **Illustration 9.3.L-4 (Lot / Building Site)**. See also “Building Site”, “Lot or Building Site of Record” and “Zoning Lot or Building Site”.

ILLUSTRATION 9.3.L-4 LOT / BUILDING SITE

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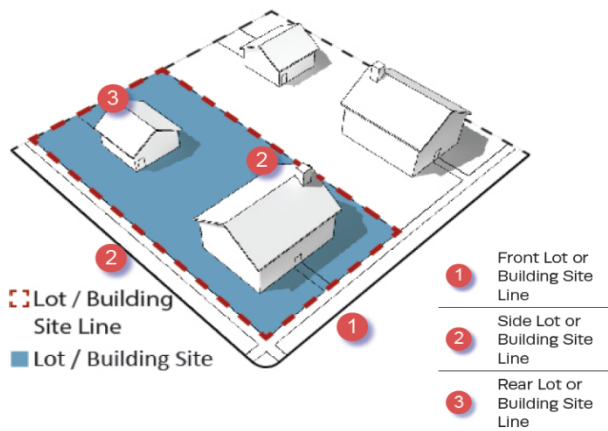


Lot or Building Site Area: The total horizontal area included within the Lot or Building Site Lines.

Lot or Building Site Depth: The shortest horizontal distance between the Front Lot or Building Site Line and Rear Lot or Building Site Line of a Lot or Building Site.

Lot or Building Site Line: Any boundary line of a Lot or Building Site. See **Illustration 9.3.L-6 (Lot or Building Site Line)**.

ILLUSTRATION 9.3.L-6 LOT OR BUILDING SITE LINE

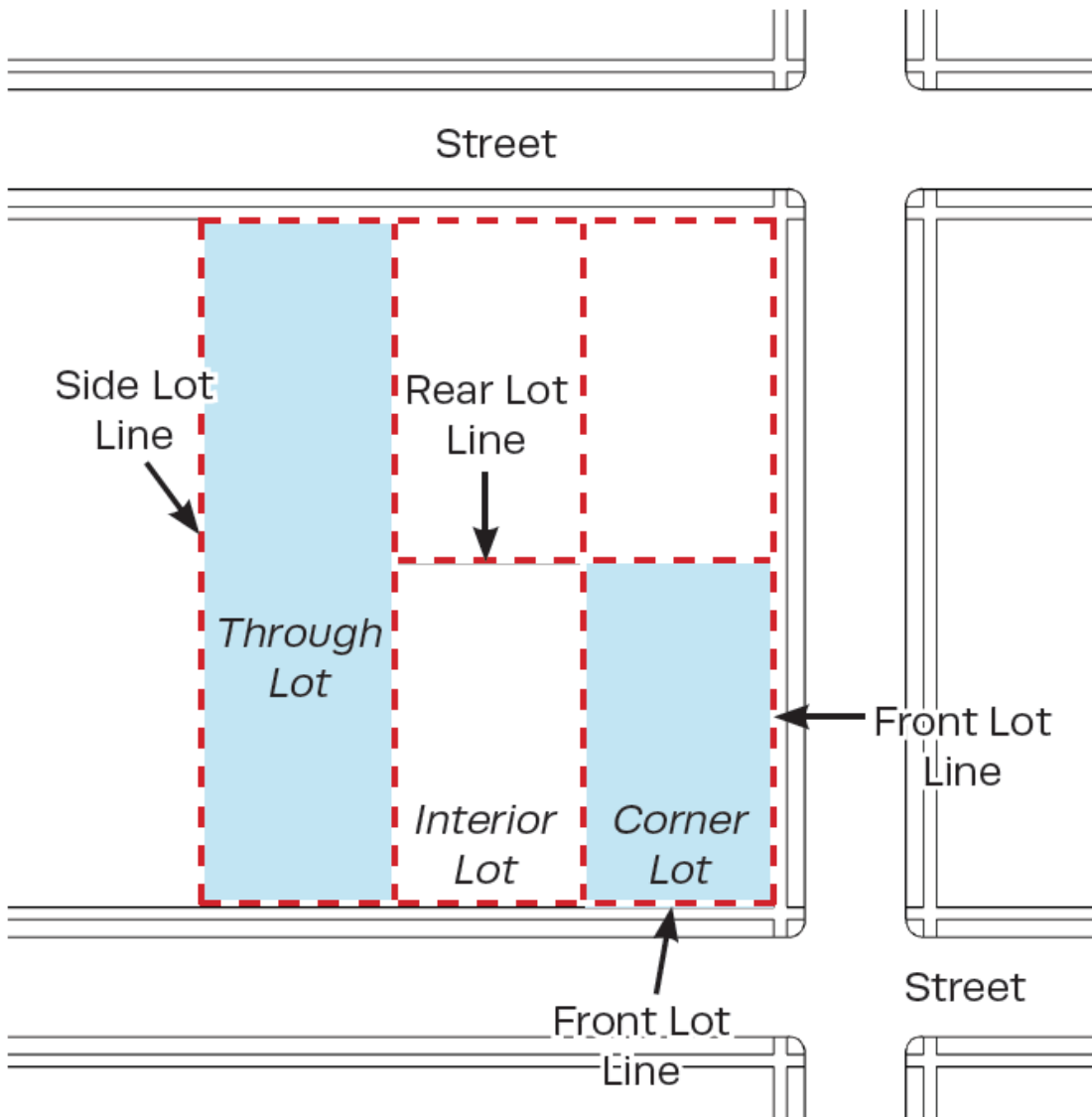


Lot or Building Site Width: The length of the Principal Frontage Line of a Lot or Building Site.

Lot or Building Site of Record: A Lot or Building Site, as applicable, which is part of a subdivision or other plat recorded in the office of the Maury County Register of Deeds, or a Lot or parcel described by metes and bounds, the description of which has been so recorded.

Lot or Building Site Type: The classification of a Lot or Building Site, as shown in the following diagram:

ILLUSTRATION 9.3.L-7 LOT OR BUILDING SITE TYPES



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M.

Machine Shop: Premises at which mechanical items are made or repaired using machinery or equipment.

Main Civic Space: The primary outdoor gathering place within a Development Parcel. The Main Civic Space may be associated with an important Civic Building.

Manufactured Home: A detached one family dwelling constructed as a single self-contained unit and mounted on a single chassis transportable after fabrication on its own wheels or detachable wheels with all the following characteristics as prescribed in Section 68-126-202, (4), (6) and (7) of TCA:

Designed for long term occupancy, and containing sleeping accommodations, a flush toilet, a tub or shower bath, and kitchen facilities with plumbing and electrical connections provided for attachment to outside systems.

Arriving at the site where it is to be occupied as a dwelling complete, including major appliances and furniture, and ready for occupancy except for minor and incidental unpacking and assembly operations, location of foundation supports, connections to utilities and the like.

Manufactured Home dwellings do not include camping Trailers, commercial mobile Structures, motor homes, recreational vehicles, travel Trailers, truck campers or similar units designed to provide temporary living quarters.

Manufactured Home- Class A: A Structure manufactured before June 15, 1976, that is not constructed in accordance with the National Manufactured Home Construction and Safety Standards Act of 1974, as amended (42 U.S.C. § 5401 et seq.). It is a Structure that is transportable in one or more sections that in the traveling mode is eight body-feet or more in width and 40 body-feet or more in length, or, when erected on site, is 320 or more square feet and that is built on a chassis and designed to be used as a dwelling with or without a permanent foundation when connected to the required utilities and includes any associated plumbing, heating, air conditioning and electrical systems.

Manufactured Home Park or Subdivision: An area, tract, site, or parcel (or contiguous parcels) of land divided into two or more Manufactured Home Sites for rent or sale and associated Lots or Building Sites and Buildings necessary to support the Residential occupancy of Manufactured Homes.

Manufactured Home Sales: A subcategory of the Commercial Use category, characterized by the offer for sale or lease and the sale or lease of Manufactured Homes.

Manufactured Home Site: A designated area within a Manufactured Home Park for the exclusive use of the occupants of a single home.

Manufactured Home Stand: That part of an individual Manufactured Home Site which has been reserved for the placement of the Manufactured Home.

Marina: Any of the following: (1) lock harbor facility; (2) any facility which provides fueling, pump-out, maintenance or repair services; or (3) any facility which has permanent docking space for three (3) or more Boat Slips (4) any water area with a Structure that is used for docking or otherwise mooring Vessels and constructed to provide temporary or permanent docking space for more than ten Vessels; or (5) a dry stack facility.

Marquee Sign: The Sign Type described as such in **Table 7.1.2.B-1 (Sign Types - Summary)** and **Table 7.1.2.B-2 (Sign Types - Specific Standards)**.

Massage Studio: An establishment at which manual manipulation of muscle, connective tissue, tendons, and/or ligaments is provided to enhance a Person's health and well-being.

Massing: The overall shape or arrangement of the Bulk or volume of a Building.

Medical Office / Medical Clinic / Outpatient Clinic / Dental Office: An Office or other premises for the private practice of health care or dental professionals licensed by the State, wherein a majority of patient encounters involve examination, diagnosis, treatment, or surgical procedures on an outpatient basis not extending beyond a 24-hour period.

Medical Laboratory: A facility where testing or observation of clinical specimens from which information about the health of a patient can be obtained in order to provide diagnosis, treatment, and/or prevention of disease.

Meeting Hall: A Building that provides accommodations as a Place of Assembly.

Middle: As used in the Façade standards of this Ordinance, all of the Façade which is visually defined by the Base and Cap of the building.

Middle School: Premises at which Education is provided for children from Grade 5 through Grade 8.

Mid-Rise Building: an attached or detached Principal Building Type of 4 Stories, which may provide a vertical and/or horizontal mix of Uses, typically designed to facilitate pedestrian-oriented Retail / Personal Service/ Repair / Art / Artisan, Accommodation / Lodging, or Office Uses on the ground floor, with upper floors typically designed for Residential or Office Uses. See **Table 4.3.8.A (Principal Building Types)** and **Table 4.3.8.B (Principal Building Types - Specific Standards)**.

Mixed Use: Multiple Uses within the same Building or on the same Lot or Building Site through superimposition or Adjacency, or in multiple Buildings or on multiple Lots or Building Sites by Adjacency or proximity.

Mixed-Use Building: A typically attached Principal Building Type, which provides a vertical and/or horizontal mix of Uses typically designed to facilitate pedestrian-oriented Retail / Personal Service / Repair / Art / Artisan, Accommodations / Lodging, or Office Uses on the ground floor, with upper floors typically designed for Residential or Office Uses. See **Table 4.3.8.A (Principal Building Types)** and **Table 4.3.8.B (Principal Building Types - Specific Standards)**.

Mobile Vending: Any temporary activity which includes preparation, assembly, or display of items with the intent to sell such items to the general public (excluding produce stands).

Mobile Vending Apparatus: Any vehicle, trailer, cart, table, tent or other equipment utilized for Mobile Vending.

Monument Sign: The Sign Type described as such in **Table 7.1.2.B-1 (Sign Types - Summary)** and **Table 7.1.2.B-1 (Sign Types - Specific Standards)**.

Motel: An establishment where short-term Accommodation / Lodging in guest rooms is offered for compensation and one or more rooms are accessed by exterior doors opening directly to exterior Parking accommodations, passageways, or the outdoors. Neither a Hotel, Extended Stay Hotel, or unit therein, nor a Short- Term Rental Unit is a Motel.

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Motor Vehicle: Every vehicle that is self-propelled by a motor, which can be licensed and registered to be driven on public streets, roads or rights-of-ways, and every vehicle that is propelled by electric power obtained from overhead trolley wires, but not operated upon rails.

Examples are passenger vehicles, trucks, motorcycles and other consumer motor vehicles, and motorized Recreational Vehicles.

This term does not include Boats or other watercraft, non-motorized Recreational Vehicles, Manufactured Homes, or Farm and Construction Equipment.

Motor Vehicle Body Shop: Premises or a portion of premises used for the adjustment, painting, replacement of parts, or body repair of Motor Vehicles.

Motor Vehicle Maintenance, Repair, Fuel Sales, Service, or Cleaning: A Structure, premises, or establishment in or on which Motor Vehicles are maintained, repaired, serviced, re-fueled, and/or cleaned, including without limitation, incidental storage for fewer than sixty (60) days of Motor Vehicles that are being maintained, repaired, serviced, and/or cleaned.

Examples are car wash, full vehicle service including alignment shop, auto upholstery shop, towing service, limited vehicle service including auto detailing, auto repair, battery sales and installation, fuel sales, quick lubrication facilities, and tire services.

This term does not include Parking Lots, Parking Structures, Motor Vehicle Storage, Motor Vehicle Body Shop, Motor Vehicle Parts Sales, or Convenience Store with Gasoline Sales (see Retail Sales and Service).

Motor Vehicle Parts Sales: A Structure, premises, or establishment in, from, or on which Motor Vehicle parts other than tires are sold, either at Retail or Wholesale.

Motor Vehicle - Related Sales and Service: Motor Vehicle Body Shop, Motor Vehicle Maintenance, Repair, Service, Fuel Sales, or Cleaning, Motor Vehicle Parts Sales, Motor Vehicle Sales, Rental, or Leasing, and Motor Vehicle Storage.

Motor Vehicle - Related Uses: The term collectively referring to Motor Vehicle Body Shop, Motor Vehicle Maintenance, Repair, Fuel Sales, Service, or Cleaning, Motor Vehicle Parts Sales, Motor Vehicle Sales, Rental, or Leasing, and Motor Vehicle Storage. See **Table 4.3.9.A-1 (Building, Lot & Building Site Principal Uses)**.

Motor Vehicle Sales, Rental, or Leasing: A Structure, premises, or establishment in or on which Motor Vehicles are sold, rented, leased, or chartered, including incidental storage, maintenance, and servicing as an Accessory Use.

Motor Vehicle Storage: Long- or short-term storage of operating Motor Vehicles. This term excludes Parking Lots, Parking Structures, Impound Yards, Towing Facilities, and any dismantling, Scrap and Salvage Yards/Service, or Junkyards.

Multi-Family Building: A Large Multi-Family Building or a Small Multi-Family Building. See **Table 4.3.8.A (Principal Building Types)** and **Table 4.3.8.B (Principal Building Types - Specific Standards)**.

Multi-Family Dwelling: A Building containing three (3) or more Dwelling Units, including without limitation Residential condominiums, cooperatives, Independent Living Apartments and other Apartments, Large Multi-Family Buildings, and Small Multi-Family Buildings.

Museum: A Use characterized by the display, preservation, collection, curation, and/or exhibit of objects of community and cultural interest in one or more of the arts and sciences.

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N.

Neighborhood Street: The Thoroughfare or Internal Drive type described as such in **Table 5.3.3.F (Thoroughfare/ Internal Drives Types – Summary)** and **Table 5.3.3.G (Thoroughfare / Internal Drive Assemblies and Standards)**.

Neon Tube Illuminated Sign: A Sign with a light source supplied by a neon tube, which is bent to form letters, symbols or other shapes.

Net Site Area: All developable land within a site including Thoroughfares and Internal Drives, but excluding land allocated as Civic Space or Civic District.

Nightclub: An establishment for nighttime entertainment, typically serving Alcoholic Beverages for consumption on site and offering music, dancing, or other entertainment. Adult-Oriented Entertainment is excluded from the term “Nightclub”.

Non-Banking Financial Institution: A Financial Institution that is not regulated by the Federal Deposit Insurance Corporation (FDIC) and is governed by T.C.A Title 45 Chapters 15, 17, and 18, including without limitation, Pawn Shops, title loan lenders, cash advance Lenders, and check cashing establishments and other Short-Term Lenders.

Nonconforming Improvement: Any Improvement, or part thereof, that legally existed at the Effective Date of this Ordinance or any amendment of this Ordinance or the Zoning Map affecting such Improvement, but upon such Effective Date does not conform to this Ordinance;

Nonconforming Lot or Building Site: Any Lot or Building Site, or part thereof, that legally existed at the Effective Date of this Ordinance or any amendment of this Ordinance or the Zoning Map affecting such Lot or Building Site, but upon such Effective Date does not conform to this Ordinance.

Nonconforming Sign: A Sign that legally existed at the Effective Date of this Ordinance or any amendment of this Ordinance or the Zoning Map affecting such Sign but upon such Effective Date does not conform to this Ordinance.

Nonconforming Structure: A Structure that legally existed at the Effective Date of this Ordinance or any amendment of this Ordinance or the Zoning Map affecting such Structure, but upon such Effective Date does not conform to this Ordinance.

Nonconforming Use: Any Use of land, of a Structure, or of an Improvement, or part thereof, that legally existed at the Effective Date of this Ordinance or any amendment of this Ordinance or the Zoning Map affecting such Use, but upon such Effective Date does not conform to this Ordinance.

Nonconformity: A Nonconforming Lot or Building Site, Nonconforming Structure, Nonconforming Sign, Nonconforming Improvement, or Nonconforming Use.

Non-Hazardous Waste Treatment or Disposal: Facilities for receiving, sorting, treatment, or disposal of nonhazardous solid waste, including waste transfer stations, compost dumps, and combustors, incinerators, and cogeneration plants, and the collection and hauling of nonhazardous waste incidental to the treatment or disposal operations.

Non-Motor Vehicle or –Boat Body Shop Maintenance/ Cleaning / Repair / Service: A Structure, premises, or establishment in or on which goods other than Motor Vehicles or Boats are maintained, repaired, serviced, and/ or cleaned. This term does not include Parking or Outdoor Storage.

Non-Motor Vehicle or –Boat Rental / Leasing: A Structure, premises, or establishment in or on which goods other than Motor Vehicles or Boats are rented or leased. This term does not include Parking or Outdoor Storage.

Non-Profit Office: Premises available for any function of a not-for-profit organization.

Nursery School: See “Pre-School”.

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O.

Occupancy: The Principal Use of a Lot, Building Site, or Structure for the performance of a function or operation by a Person.

Office Uses: (1) a Use category characterized by premises available for the transaction of Commercial, governmental, professional, medical, dental, not-for profit, or financial services, but excluding Retail / Personal Service / Repair/ Art / Artisan Uses, Light Industrial Uses, and Heavy Industrial Uses; or (2) Office Uses is the Use category, which is a collective reference to Uses in the following Use sub-Categories, as listed in **Table 4.3.9.A-1 (Building, Lot & Building Site Principal Uses)** **4.3.9.A-2 (Building, Lot & Building Site Accessory Uses)**, and **Table 4.3.9.A-3 (Building, Lot & Building Site Temporary Uses)**:

Business / Government / Non-Profit Offices (excluding Civic Uses), Medical / Dental Offices, Professional Offices, and Other Offices Not Listed;

Office Building: A Building in which space is made available for Office Use. Office Building is not a Building Type.

Office Front: A Private Frontage type wherein the Facade is aligned close to or at the Frontage Line with the Building entrance at or above Sidewalk grade. This type is conventional for Office Use. It may have a substantial glazing on the Facade. See **Table 4.3.7.A (Private Frontage Types)**.

Off-Premises Sign: A Sign the owner or lessee of which is not the owner or lessee of the premises on which such Sign is located.

Open Air Market: A Farmer's Market, a Roadside Stand, or an Outdoor Market.

Open Space: Use characterized by large expanses of land.

Ordinance or Zoning Ordinance: This City of Columbia, Tennessee Zoning Ordinance, as the same may be amended and in effect from time to time.

Ordinary Maintenance and Repair: (1) keeping a Lot or Building Site , parcel, or Structure in good condition through ongoing minor intervention, undertaken from time to time, in a manner that does not change its external appearance except through the elimination of the usual and expected effects of weathering; (2) strengthening or restoring any portion of a Structure or Improvement to a safe condition, provided no material enlargement results; (3) repairing or replacing interior walls, fixtures, wiring or plumbing; or (4) repaving Driveways, private Thoroughfares, Internal Drives, and Parking and loading accommodations, (5) replacing exterior windows and siding, and (6) painting exterior Structures and fixtures. Ordinary Maintenance and Repair does not constitute Development, Construction or building for the purposes of this Ordinance.

Outbuilding: Synonymous with "Accessory Building".

Outdoor Display Case: The Sign Type described as such in **Table 7.1.2.B-1 (Sign Types - Summary)** and **Table 7.1.2.B-2 (Sign Types - Specific Standards)**.

Outdoor Market: An open-air area, without or without a Structure, used for the Retail sale of goods other than fresh fruits, vegetables, nuts, grains, eggs, flowers, herbs, or plants.

Outdoor Recreation: Commercial uses, varying in size, providing daily or regularly scheduled recreation or entertainment-oriented activities. Such activities may take place outdoors or within a Structure.

Athletic, tennis, swim, or Health Club (see Retail Sales and Service), botanical garden, nature preserve (see Parks and Open Areas), and Indoor Recreational Facility (see Indoor Recreation) are excluded from Outdoor Recreation.

Outdoor Storage: One or more assemblages, collections, stacks, or stockpiles of vehicles, equipment, goods, materials, tanks, or other items in any area other than within a Building, including without limitation, parked operative or non-operative vehicles or equipment.

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P.

Parcel Services: Providing for-profit package and message routing, distribution, and delivery services.

Park: As a noun, a Civic Space type that is a natural preserve available for unstructured recreation, described as such in **Table 5.3.3.A (Civic Space Types - Summary)** and **Table 5.3.3.B (Civic Space - Specific Standards)**; as a verb, to stop and disengage a Motor Vehicle and leave it unoccupied.

Parking: (1) an accommodation designed for the of stopping and disengagement of a Motor Vehicle and leaving it unoccupied; or (2) the act of stopping and disengaging a Motor Vehicle and leaving it unoccupied.

Parking Area: An off-street, ground-level open area within a Lot or Building Site for Parking vehicles as an Accessory Use incidental to a Principal Use of a Lot or Building Site or a Principal Building on a Lot or Building Site. Not synonymous with Parking Lot.

Parking Lot: An off-street, ground-level open area within a Lot or Building Site for Parking vehicles as a Principal Use for which a fee may or may not be charged. Not synonymous with Parking Area. Parking Lot does not include Bus barn (see Warehouse and Freight Movement) or sale or servicing of vehicles (see Vehicle Sales and Service).

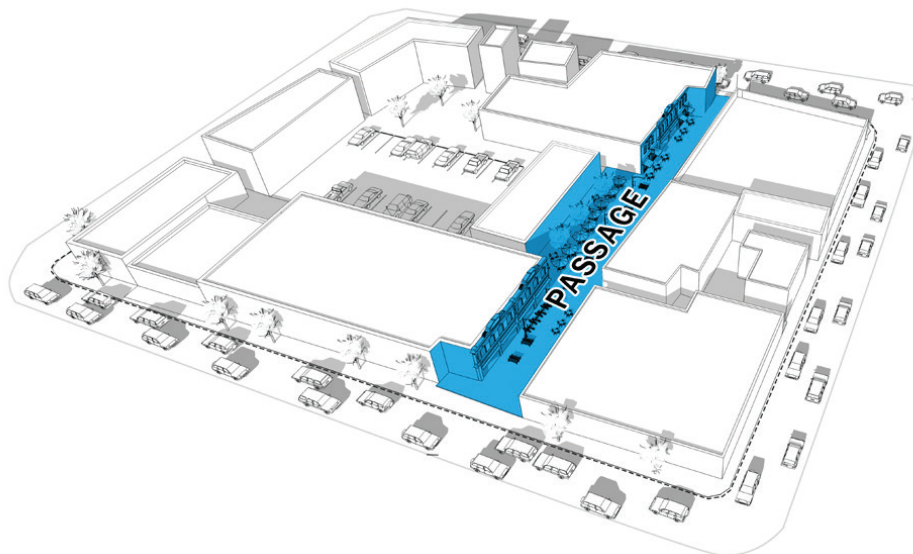
Parking Space: An area required or provided for Parking a vehicle, meeting the requirements of Section 4.3.12.

Parking Structure: A vertical or vertical and subterranean Improvement other than a Garage, containing one or more levels of vehicular Parking above grade. A Parking Structure may not be used for Motor Vehicle Body Shop, Maintenance Repair, Service or Cleaning.

Party Wall: A Wall on an Interior Lot or Building Site Line, used or adopted for joint service between two or more Buildings; such walls shall fully comply with fire and all other provisions and standards established for such walls in the Standard Building Code.

Passage (PS): A pedestrian connector, open or roofed, that passes between Buildings to provide shortcuts through long Blocks and connect rear parking areas to Frontages. See **Illustration 9.3.P-1 (Passage)**.

ILLUSTRATION 9.3.P-1 PASSAGE



Passive Recreation: Outdoor recreational activities, such as nature observation, hiking, and canoeing or kayaking, which require a minimum of facilities or Development and which have minimal environmental impact on the recreational site.

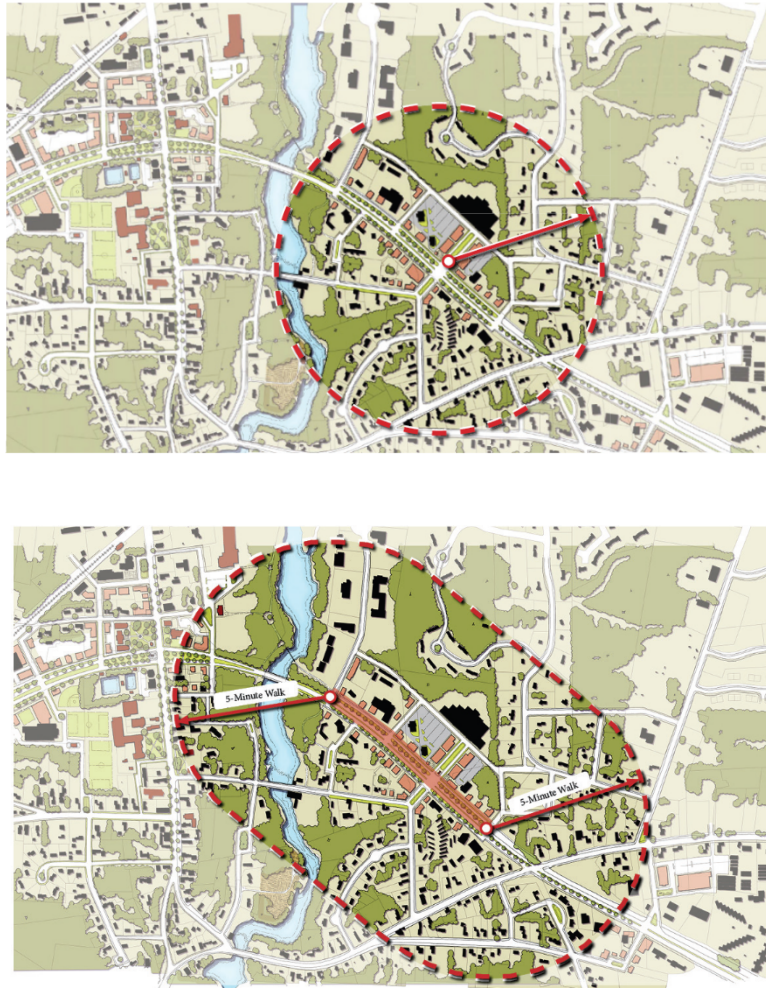
Path (PT): A pedestrian way traversing an open greenspace with a minimum area of 5,000 square feet, with landscape matching contiguous Civic Space, connecting directly with the Sidewalk network.

Pawnshop: A Business that lends money based upon the security of pledged goods left in pawn, or that is in the Business of purchasing tangible personal property to be left in pawn on the condition that it may redeemed or repurchased by the seller for a fixed price within a fixed period of time. See also, Short-Term Lender.

Pedestrian Shed: An area of a size approximately equal to the average distance comfortably walked by pedestrians and approximately centered on a Common Destination. There are two types of Pedestrian Sheds: Standard Pedestrian Sheds and Linear Pedestrian Sheds. See “Standard Pedestrian Shed” or “Linear Pedestrian Shed”. See **Illustration 9.3.P-2 (Pedestrian Sheds)**.

ARTICLE 9: DEFINITIONS

ILLUSTRATION 9.3.P-2 PEDESTRIAN SHEDS



Performance Guarantee: As defined in Section 1.26.

Performing Arts Venue: A site, with or without a Structure, intended for the presentation of performing arts, such as dance, music, and theatre.

Performing Arts Studio: An establishment that provides instruction in one or more of the performance arts, such as dance, music, and theatre.

Person: An individual, firm, partnership, corporation, company, association, organization, joint stock association, proprietorship, trust, body politic, or other legal entity, or and includes a trustee, receiver, assignee, administrator, executor, guardian, or other representative.

Plot plan: A graphic depiction, drawn to an appropriate scale, indicating the dimensions of the lot or parcel which is the subject of an application for a zoning district amendment or special use permit including a legal description of such lot or parcel and the location of the lot or parcel in relation to adjacent street right-of-way.

Day Care / Personal Care Facilities (Civic): Civic Use sub-category characterized by non-Residential care for adults, children, or families, which does not meet the definition of Household Living or Group Living.

Day Care / Personal Care Facilities (Commercial): Commercial Use sub-category characterized by non-Residential care for adults, children, or families, which does not meet the definition of Household Living or Group Living.

Personal Improvement Education: An establishment primarily engaged in the provision of information or instruction relating to a particular subject or hobby.

Personal Services: Uses in which a service is provided to or for a customer for compensation, in which the Person providing such service deals directly with the consumer, which Uses may or may not include the Retail sale of goods related to the services provided.

Excluded from Personal Services are Motor Vehicle - Related Uses, services provided by a medical or dental professional, and Adult-Oriented Entertainment.

Pharmacy: An establishment having a primary function of dispensing prescription drugs and medications and whose stock-in-trade may or may not include other merchandise.

Place of Assembly: A Building, room, or space that is occupied or arranged for occupation by the public for recreational, amusement, social, sports, or similar purposes.

Place of Worship: A Building, room, or space that is occupied or arranged for occupation for religious, spiritual, recreational, or similar purposes.

Placement: With respect to a Building, the manner in which the Building is situated on the Lot or Building Site. See “Layers”, Illustration 9.3.L-5 (Layers); see also “Setback”, and “Yard” and Illustration 9.3.S-2 (Setbacks and Yards).

Plan: A Development Plan, Master PUD Development Plan, site plan, Landscape Plan, Sign Plan, or any other plan submitted or prepared pursuant to this Ordinance.

Planned Unit Development: See Section 8.5.21.

Planned Unit Development District: One of the several Districts listed as such in Section 3.7.C. See also Section 8.5.21.

Planning Commission: The Planning Commission of the City.

Planning Director: The City Director of Planning and Development.

Planter: The element of the Public Frontage that accommodates trees along Thoroughfares and Internal Drives, whether continuous or individual.

Plaque Sign: The Sign Type described as such in Table 7.1.2.B-1 (Sign Types - Summary) and Table 7.1.2.B-2 (Sign Types - Specific Standards).

Playground: A Civic Space type, described as such in Table 5.3.3.A (Civic Space Types - Summary) and Table 5.3.3.B (Civic Space - Specific Standards).

Plaza: A Civic Space type described as such in Table 5.3.3.A (Civic Space Types - Summary) and Table 5.3.3.B (Civic Space - Specific Standards).

Police Station: Premises accommodating operations of law enforcement officers and other members of staff.

ARTICLE 9: DEFINITIONS

Porch: A Private Frontage type, having a planted Frontage, the Facade is set back from the Frontage Line, and an attached exterior covered area large enough to accommodate outdoor furniture and/or gathering, which is permitted to Encroach into the Front Setback, Setback Area, or Street Yard. This may be used with or without a Fence to maintain Thoroughfare spatial definition. A Stoop is not a Porch. See **Table 4.3.7.A (Private Frontage Types)**.

Porch Sign: The Sign Type described as such in **Table 7.1.2.B-1 (Sign Types - Summary)** and **Table 7.1.2.B-2 (Sign Types - Specific Standards)**.

Portable Sign: A Sign the principal supporting Structure of which is intended, by design and construction, to be used by resting upon the ground for support and may be easily moved or relocated. Portable Signs include, but are not limited to, Signs mounted on a Trailer, wheeled carrier, or other non-motorized mobile structure, with wheels or with wheels removed.

Post Office: Premises operated by or under contract for the United States Postal Service at which letters, parcels, packages or other mail may be received, deposited, processed, sorted, and/or handled and/or postage may be purchased.

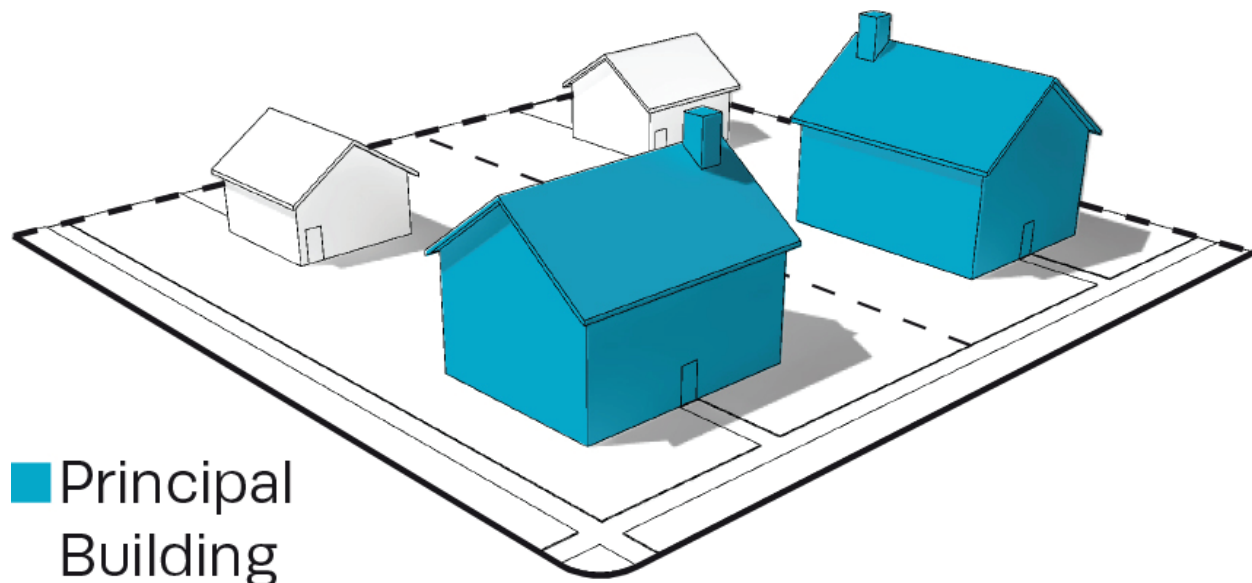
Post Sign: The Sign Type described as such in **Table 7.1.2.B-1 (Sign Types - Summary)** and **Table 7.1.2.B-2 (Sign Types - Specific Standards)**

Pre-School: A school, licensed by the State, with an accredited training program and staffed with certified teachers, providing day time care or instruction for two (2) or more children between the ages of two (2) and five (5) years old. Synonymous with Nursery School.

Preliminary Plat: As defined in City Subdivision Regulation Section 2.2.

Principal Building: the main Building on a Lot or Building Site, located toward the Frontage, in which is conducted a Principal Use of such Lot or Building Site. See **Illustration 9.3.P-3 (Principal Building)**.

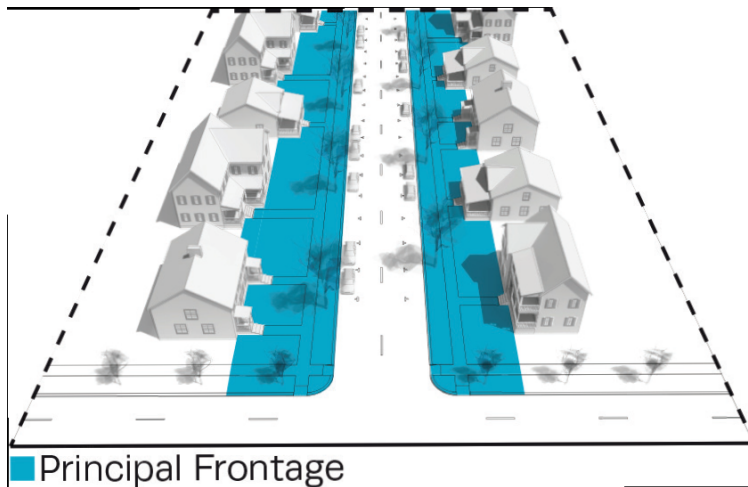
ILLUSTRATION 9.3.P-3 PRINCIPAL BUILDING



Principal Entrance: The main point of access for pedestrians into a Building; the Main Entrance. A building may have more than one Principal Entrance.

Principal Frontage: With respect to: (a) Corner Lots or Building Sites, the Frontage designated to bear the address and Principal Entrance to the Building, and the measure of minimum Lot or Building Site Width; and (b) non-Corner Lots or Building Sites, the Frontage. See “Frontage”. See **Illustration 9.3.P-4 (Principal Frontage)**.

ILLUSTRATION 9.3.P-4 PRINCIPAL FRONTAGE

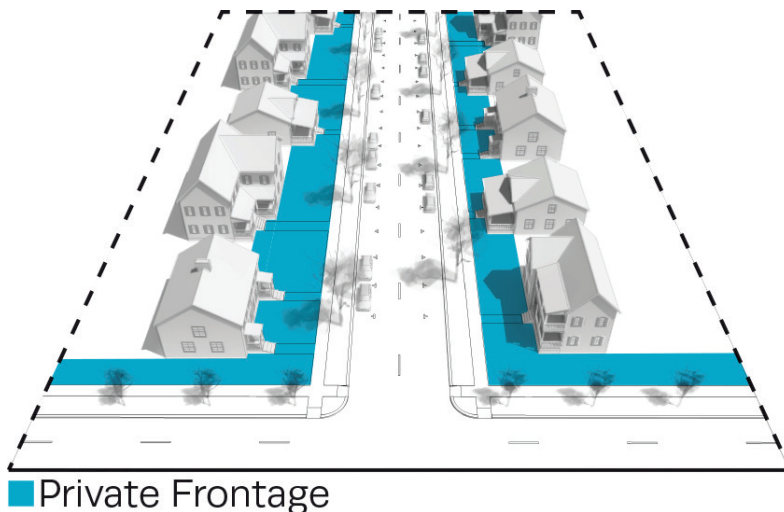


Principal Use: The primary or predominant Use of a Lot, Building Site, or Structure.

Printing Services Shop: Retail premises in which photocopying, scanning, short-run printing, and related services are provided.

Private Frontage: The privately held area between the Frontage Line and the Facade of the Principal Building. See **Illustration 9.3.P-5 (Private Frontage)**; see also **Table 4.3.7.A (Private Frontage Types)**, and **Illustration 9.3.F-5 (Frontage & Lot or Building Site Lines)**.

ILLUSTRATION 9.3.P-5 PRIVATE FRONTAGE



ARTICLE 9: DEFINITIONS

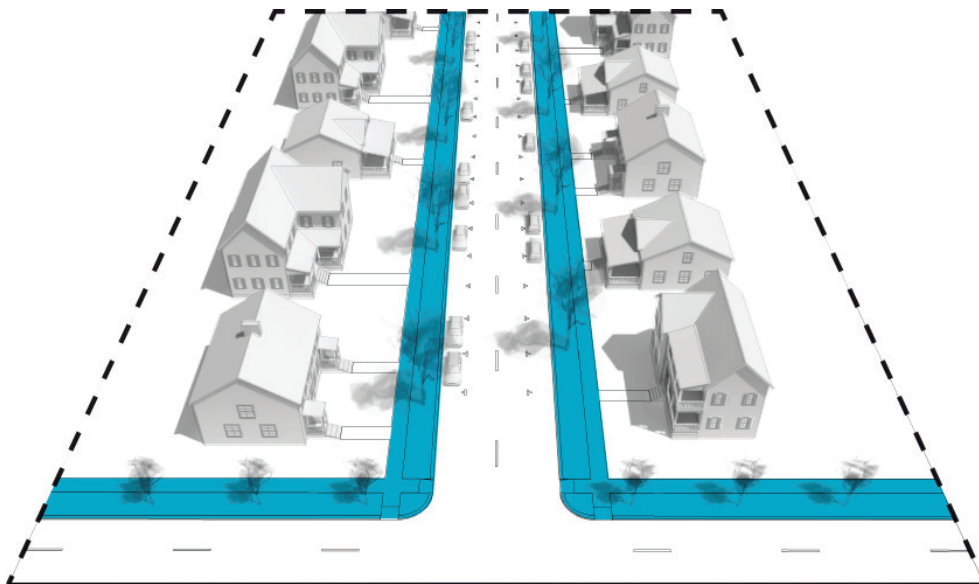
Public Frontage: The area between the Frontage Line and:

the curb (or if there is no curb, the edge) of the Vehicular Lanes in the case of a Lot or Building Site that Enfronts a Thoroughfare or Internal Drive having Vehicular Lanes, or

the Enfronting Civic Space, Path, Passage, waterbody, or Driveway in the case of a Lot or Building Site that Enfronts a Civic Space, Path, Passage, waterbody, or Driveway.

See **Illustration 9.3.P-6 (Public Frontage)**; see also **Table 5.2.2.G-1 (Thoroughfare Assemblies & Standards)**; and **Illustration 9.3.F-5 (Frontage & Lot or Building Site Lines)**

ILLUSTRATION 9.3.P-6 PUBLIC FRONTAGE



Public Frontage

Pushcart: A mobile vending apparatus which may be moved without assistance of a motor from which merchandise or food is stored and prepared with the intent to sell to the public.

Professional Office: Use sub-category of Office Uses category characterized by premises in or from which professional or consulting services in the fields of law, architecture, planning, design, engineering, accounting, bookkeeping, and similar professions are conducted. This term does not include “Medical Office”, “Dental Office”, or “Clinic”.

Project Boundary Buffer: A Buffer located along the boundary of a development.

Public Art: Art in any media that has been planned and executed with the intention of being staged in or viewed from the physical public domain, usually outside and accessible to all.

Public Meeting: A duly convened meeting of a Decision- Making Authority as contemplated under applicable state law, including public meetings, public hearings, workshops, and site visits.

Publishing: The Business of issuing software, Internet content, or newspapers, books, or other printed textual or graphical material for sale or distribution to the public.

Pylon Sign: The Sign Type described as such in **Table 7.1.2.B-1 (Sign Types - Summary)** and **Table 7.1.2.B-1 (Sign Types - Specific Standards)**.

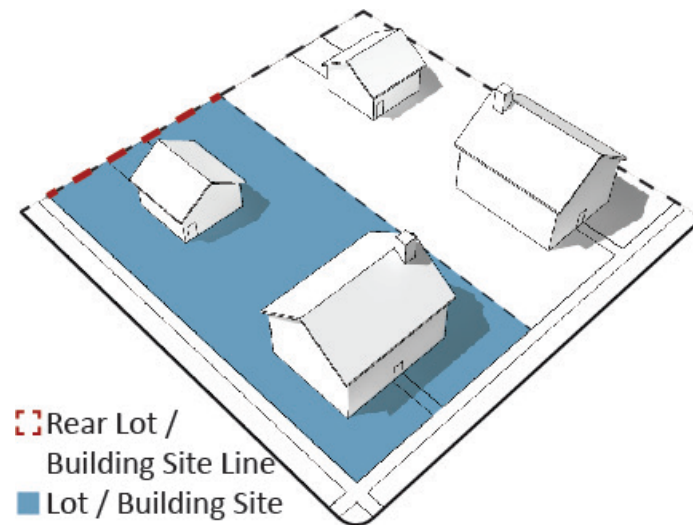
ARTICLE 9: DEFINITIONS

R.

Rail Equipment Storage / Repair: Use involving premises for storing or repairing locomotives, rail cars, or other rail vehicles.

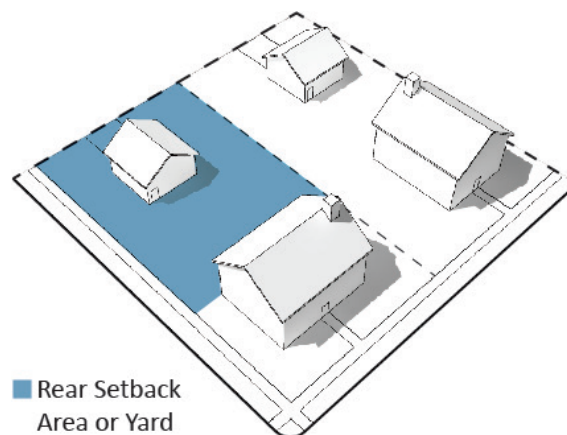
Rear Lot or Building Site Line: The Lot or Building Site Line opposite the Front Lot or Building Site Line. See Illustration 9.3.R-1 (Rear Lot or Building Site Line).

ILLUSTRATION 9.3.R-2 REAR SETBACK AREA OR REAR YARD



Rear Setback Area or Yard: A portion of a Lot or Building Site that is situated between (1) the nearest roofed portion of the Principal Building or of any Accessory Building on the Lot or Building Site and (2) the Rear Lot or Building Site Line, extending the full width of the Lot or Building Site, from Side Lot or Building Site Line to Side Lot or Building Site Line. See Illustration 9.3.R-2 (Rear Setback Area or Yard).

ILLUSTRATION 9.3.R-1 REAR LOT OR BUILDING SITE LINE



Recreation: Use characterized by activities for personal enjoyment or entertainment during a Person's discretionary time.

Recreation Facility: Premises accommodating Indoor Recreation and/or Entertainment and/or Outdoor Recreation and/or Entertainment. A Recreation Facility may be Civic or non-Civic.

Recreational Vehicle: a vehicle which is:

built on a single chassis;

four hundred (400) square feet or less when measured at the largest horizontal projection;

designed to be self – propelled or permanently towable by a light duty truck: and

designed primarily for use as a non – permanent dwelling but as temporary living quarters for recreational, camping, vacation, travel, or seasonal use. The term includes camping Trailer, motor home, travel Trailer, and truck campers.

Recreational Vehicle does not include Manufactured Homes.

Recreation and Entertainment, Indoor: Participatory and spectator-oriented Recreation activities conducted within an enclosed Building, including without limitation billiard rooms, bowling centers, ice- or roller-skating rinks, Shooting Ranges, Theater, and arcades.

Recreation and Entertainment, Outdoor: Participatory and spectator-oriented Recreation activities conducted in open, partially enclosed, or screened facilities, including without limitation amusement parks, fairgrounds, golf courses and driving ranges, and go-cart tracks.

Recycling Collection Facility: A facility used for the collection and transfer, but not the actual processing, of any of the following recyclable materials: glass, paper, plastic, cans, or other source-separated, non-decayable materials. Recyclable materials at a Recycling Collection Facility must not include motor oil, chemicals, household appliances, tires, automobiles, automobile parts, or decayable materials.

Rehabilitation Facility: A facility operated for the primary purpose of assisting in the rehabilitation of individuals through an integrated program of medical, psychological, physical, occupational, substance, social, or vocational evaluation and services under competent professional supervision.

Religious Facilities: Facilities used by a non-profit group or institution for organized religious services, meetings, assembly, practice, activities, and supporting uses.

Examples are Places of Worship, church, mosque, synagogue, temple, monastery, convent, retreat center or any permanent or temporary Structure providing regular, organized religious worship of any denomination and religious education incidental thereto. A property tax exemption for a religious group or institution obtained pursuant to state law shall constitute prima facie evidence of a Religious Facilities Use.

Athletic, tennis, swim or Health Club (see Retail Sales and Service), Educational Uses, Day Care facilities, for distribution or production of products, including printed matter, for groups other than immediate membership, public neighborhood arts center or similar community facility (see Community Service), community center, revival or gospel tent, senior center (see Community Service), Social service facility (see Social Service Institution), and Treatment center, transient lodging, or shelter for the homeless (see Social Service Institutions) are not included in this Use Category.

Required Yard or Setback Area: A Yard or Setback Area required by this Ordinance, which is open and unobstructed from 30 inches above the general ground level of the graded lot upward to the sky except as

ARTICLE 9: DEFINITIONS

permitted in Section 4.3.10 and no part of which is included as part of a Setback, Setback Area, or Yard for any other Building.

Research Laboratory: premises that contain research, development, and testing laboratories that do not involve the mass manufacture, fabrication, processing, or sale of products. Such Uses must not be detrimental to the environment through the release of dust, smoke, fumes, odor, noise, or vibration and must not create an unsafe risk of fire or explosion given the location of the use, the Building in which it is located, and the nature of the surrounding Uses and Structures.

Residence: A Building or part of a Building containing one or more Dwelling Units or Rooming Units, including Single – Family or Two – Family Dwellings, Multi-Family Dwellings, Boarding Houses, Rooming Houses, or residence-apartment hotels. Residences shall not include:

Transient accommodations, such as Transient hotels, Motels, or similar establishments;

Dormitories, fraternity or sorority houses, monasteries, or convents, or similar establishments containing Group Living or sleeping accommodations;

Nurses' residences, sanitariums, nursing homes, convalescent homes, rest homes, or other sleeping or living accommodations in community facility buildings or portions of buildings used for community facilities; or

In any Building with a mix of Uses, the part of the Building used for any Non-Residential Uses, except Uses accessory to Residential Uses.

Residential: Pertaining to premises available for long-term, non-Transient human habitation.

Residential Building: Any Building or part thereof utilized solely for Residential Use and Accessory Uses.

Residential Uses: (1) a Use category characterized by premises available for long-term non-Transient human habitation; (2) Residential Uses is the Use category, which is a collective reference to the following Use sub-Categories, as listed in **Table 4.3.9.A-1 (Building, Lot & Building Site Principal Uses)**, **Table 4.3.9.A-2 (Building, Lot & Building Site Accessory Uses)**, and **Table 4.3.9.A-3 (Building, Lot & Building Site Temporary Uses)**: Household Living and Group Living.

Restaurant: An establishment engaged in preparing, serving, and selling food at Retail for on- or off- premises consumption. Bars, Taverns, and Nightclubs are not Restaurants.

Restricted-Access Bicycle Enclosure: A locked area containing within it one bicycle rack space for each bicycle to be accommodated, and accessible only to the owners or operators of the bicycles parked within it.

Retail: Use characterized by selling, renting, or leasing new or used goods in person, on-line, or by mail-in transactions dealing directly with the consumer of such goods.

Retail / Personal Service / Repair / Arts / Artisan:

Use sub-category of the Commercial Uses category characterized by selling, renting, or leasing new or used goods in person, on-line, or by mail-in transactions dealing directly with the consumer of such goods, providing personal services or repair services to the general public, and art-related and artisan-related establishments. See **Table**

4.3.9.A-1 (Building, Lot & Building Site Principal Uses), Table 4.3.9.A-2 (Building, Lot & Building Site Accessory Uses), and Table 4.3.9.A-3 (Building, Lot & Building Site Temporary Uses).

Examples of Retail Uses included in the Retail / Personal Service / Repair / Arts / Artisan sub-category are Convenience Store (with or without petroleum sales), selling, renting or leasing Alcoholic Beverages, antiques, appliances, art supplies, baked goods, bicycles, books, cameras, carpet and floor coverings, crafts, clothing, computers, dry goods, electronic equipment, fabric, flowers, furniture, garden supplies, gasoline, gifts, groceries, hardware, home improvement goods, household products, jewelry, medical supplies, musical instruments, Open Air Market, outdoor farmers market, pets, pet supplies, pharmaceuticals, picture frames, plants, printed materials, produce, sporting goods, stationery, tobacco and related products, vehicle parts, and videos, and Brewpubs, Tasting Rooms, Retail Food Sales with or without on-premises preparation or processing, Retail Membership Clubs, and Warehouse Retail.

Examples of Personal Service Uses included in the Retail/ Personal Service / Repair / Arts / Artisan sub-category are art, music, dance, or photographic gallery or studio, athletic, tennis, swim or Health Club, mailing or package delivery service, dry-cleaning or laundry drop-off facility, Laundromat, funeral home or mortuary, hair, nail, tanning, massage therapy and personal care service, photocopy, blueprint, and quick-sign service, photo finishing psychic or medium, security service, tailor, milliner, upholsterer, taxi or ride-share dispatch center, taxidermist, veterinary clinic, animal hospital, or Kennel, and urgent care or emergency medical office.

Examples of Repair Uses included in the Retail / Personal / Service / Repair / Arts / Artisan sub-category are appliance, bicycle, canvas, clock, computer, gun, jewelry, musical instrument, office equipment, radio, shoe, television or watch repair, and locksmith.

Examples of Arts-Related Uses included in the Retail / Personal Service / Repair / Arts / Artisan sub-category are the non-Residential portion of Artist Live/Work Space, Artist Studio Space, arts-related educational facility, crafts-related retail store, non-Civic art museum/gallery, sale of art and art supplies.

Examples of Artisan-Related Uses included in the Retail / Personal Service / Repair / Arts / Artisan sub-category are Artisan Establishments, candle making, furniture making, glass blowing, weaving, pottery making, woodworking, sculpting, painting, and tailoring.

The following are excluded from the Retail / Personal Service / Repair / Arts / Artisan sub-category:

Adult Video Stores (see Indoor Recreation), any Use that is potentially dangerous, noxious or offensive to neighboring Uses or those who pass on public ways by reason of smoke, odor, noise, glare, fumes, gas, vibration, threat of fire or explosion, emission of particulate matter, interference with radio, television reception, radiation or any other likely cause (see Heavy Industrial), Motor Vehicle- and Boat- Related Uses, Crematorium (see Light Industrial), Large-scale catering (see Light Industrial), laundry or dry-cleaning plant (see Light Industrial), Restaurant (see Restaurants), Sale, lease, or rental of machinery, Farm and Construction Equipment, or other equipment, building materials, special trade tools, welding supplies, machine parts, electrical supplies, janitorial supplies, restaurant equipment, and store fixtures (see Wholesale Trade).

Retail Food Sales: The sale of food for off-premises consumption, excluding Restaurants.

Retail Membership Club: A discount Retail establishment that sells merchandise to its members.

ARTICLE 9: DEFINITIONS

Rezoning: A change in the district boundaries or district classifications of the zoning map pursuant to Section 8.5.19. For the purposes of this Ordinance, rezoning also includes the initial zoning of a property that occurs with annexation.

Right-of-Way Line: A line contiguous with a Lot or Building Site Line, dividing a Lot or Building Site from an Abutting Thoroughfare or Internal Drive.

Road (RD): A local, rural and suburban Thoroughfare or Internal Drive of low-to-moderate vehicular speed and capacity, described as such in **Table 5.3.3.F (Thoroughfare / Internal Drives Types – Summary)** and **Table 5.3.3.G (Thoroughfare / Internal Drive Assemblies and Standards)**.

Roadside Stand: A small open-air Structure for the Retail sale of produce or other goods grown or produced on the property where the Roadside Stand is located. Roadside Stand does not include Farmer's Markets or Outdoor Markets.

Rooming House: A Residential type in a private Dwelling in which at least three (3) but not more than six (6) rooms are offered for rent, payable in money and/ or other consideration, whether or not table board is furnished to roomers, and in which no Transient guests are accommodated and no Restaurant is maintained for service to any Persons who are not residents of the Rooming House.

Rooming Unit: A unit of Residential occupancy.

Rowhouse: A Townhouse Building Type described as such in **Table 4.3.8.B (Principal Building Types)**.

S.

School: Business or Trade School, College / University, High School, Middle School, Pre-School or Nursery School, Primary or Elementary School, or Secondary School.

School, Primary or Elementary: See “Primary or Elementary School”.

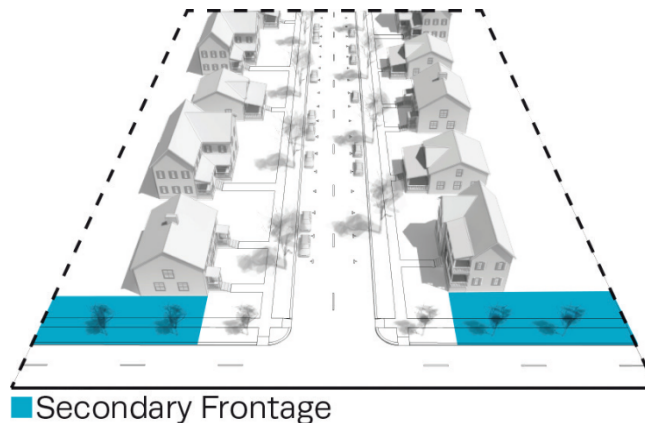
School, Secondary: See “Secondary School”.

Scrap or Salvage Yard / Service: A Use, other than an Impound Yard or Towing Facility, in which an establishment is engaged primarily in the sale, storage, assembling, dismantling, sorting, distributing, or other processing of scrap, used equipment, mechanical components, or waste materials, including a Junkyard.

Screen/Screening: (1) used as a verb, to block an item or condition from view from a vantage point in accordance with the requirements of this Ordinance by interposition of a Building, Building Element, Wall or Fence constructed of an opaque material, or an evergreen hedge; or (2) used as a noun, a Building, Building Element, Wall or Fence constructed of an opaque material or an evergreen hedge, which blocks an item or condition from view from a vantage point, as required by this Ordinance. Not synonymous with Streetscreen.

Secondary Frontage: on Corner Lots or Building Sites, the Frontage that is not the Principal Frontage. See Illustration 9.3.S-1 (Secondary Frontage).

ILLUSTRATION 9.3.S-1 SECONDARY FRONTAGE



Second Layer: See “Layer”.

Secondary School: A public, private, or parochial school offering instruction at the Middle School and /or High School levels in the branches of learning and study required to be taught in the public schools of the state.

Self-Service Storage Facility: premises at which customers rent separate storage units within a Building designed to allow private access by the customer for storing or removing personal property.

Examples are mini-warehouse, multi-story enclosed storage facility, and storage garage.

The following are not Self-Service Storage Facilities:

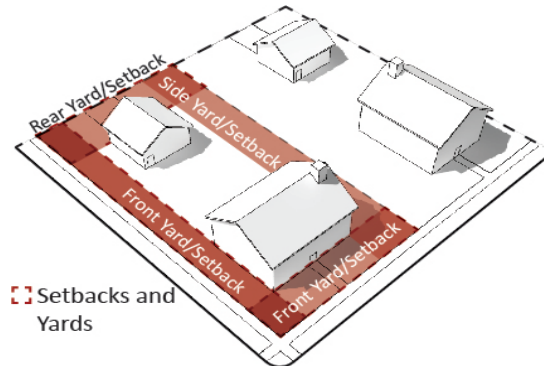
Rental of light or medium trucks, storage area used for Manufacturing use, storage area used for sales, service, and repair operations, and transfer and storage Business where there are no individual storage areas or where employees are the primary movers of the goods to be stored or transferred.

ARTICLE 9: DEFINITIONS

Septic Equipment Installation, Service, or Cleaning: establishments that install, pump, or service septic tanks and cesspools, or that rent or service portable toilets.

Setback or Setback Area: The portion of a Lot or Building Site measured from a Lot or Building Site Line to a Building Facade or Elevation, which area is maintained clear of permanent Structures, with the exception of permitted Encroachments allowed pursuant to **Tables 4.3.1-A -4.3.1.-U (District Standards)**. See **Illustration 9.3.S-2 (Setbacks)**. See also, “Yard”.

ILLUSTRATION 9.3.S-2 SETBACKS AND YARDS



Sewage Lines: Lines for the movement, distribution, or collection of sewage.

Sewage Facility: Utility facilities for the movement, receipt, treatment, and disposal of sewage.

Shared Parking: Parking spaces shared by two or more uses that are in proximity to one another and the parking area, and that have different operational characteristics such that utilization of the parking spaces by one use will not generally overlap with the utilization of the parking spaces by the other use(s). Shared parking on private property must be supported by binding agreement.

Shared Parking Factor: An accounting for Parking spaces that are available to more than one Principal Use. See **Table 4.3.12.B-2 (Shared Parking Factor)**.

Shooting or Firing Range: A specialized facility within a Building, which accommodates firearms training, practice, and qualification.

Shopfront: A Private Frontage Type conventional for Retail / Personal Service / Repair / Art / Artisan Use, wherein the Facade is aligned close to or at the Frontage

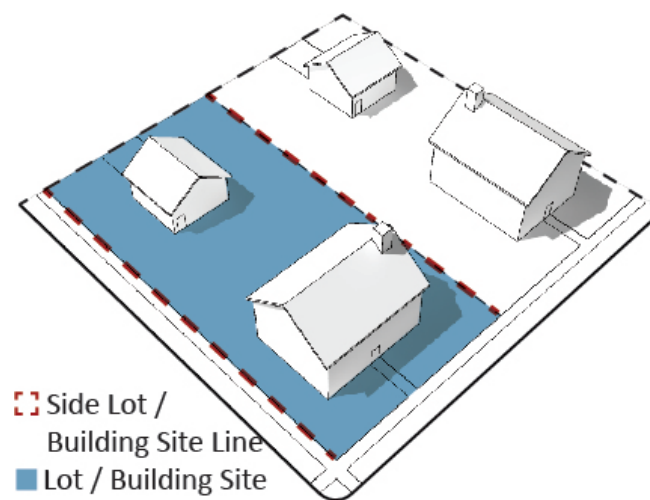
Line with the Building entrance at Sidewalk grade. This Frontage has substantial glazing at the Sidewalk level and may include an awning overlapping the Sidewalk. See **Table 4.3.7.A (Private Frontage Types)**.

Short-Term Lender: A Business or Use that regularly (1) accepts checks from a borrower drawn on the borrower’s account to be presented for payment at a later date and that charges a fee for the service or (2) extends short-term non-purchase money loans secured by titles to motor vehicles. The term does not include Financial Institutions. See also, Non-Banking Financial Institution.

Short-Term Rental Unit: A Dwelling Unit in a Building originally used or designed to be used as an abode or home of a person, family, or household in either a portion of a single-family house, or an individual Dwelling Unit in a two-family Dwelling, townhouse, or multi-family Building having no more than 6 Dwelling Units, which Short-Term Rental Unit is rented wholly or partially for a period of less than thirty (30) continuous days occupancy for a fee; specifically excluding however a “hotel” as defined in TSA section 68-14-302 or a “bed and breakfast establishment” or a “bed and breakfast homestay” as those terms are defined in TSA section 68-14-502, all as contemplated in TSA section 13-7-602. A Hotel, Extended Stay Hotel, Motel, Bed and Breakfast, or Inn is not a Short-Term Rental Unit.

Side Lot or Building Site Line: Any Lot or Building Site Line that is not a Front Lot or Building Site Line or a Rear Lot or Building Site Line. See **Illustration 9.3.S-3 (Side Lot Line)**.

ILLUSTRATION 9.3.S-3 SIDE LOT OR BUILDING SITE LINE



Side Setback, Setback Area or Yard: The portion of a Lot or Building Site that is situated between (1) the nearest roofed portion of the Building or of any Accessory Building on a Lot or Building Site and (2) the Side Lot or Building Site Line, and extending through from the Front Setback Area or Yard or from the Front Lot or Building Site Line where no Front Setback Area or Yard exists to the Rear Setback Area or Yard or to the Rear Lot or Building Site Line where no Rear Setback Area or Yard exists. See **Illustration 9.1.S-2 (Setbacks and Yards)**.

Side Setback Area or Yard Width: The dimension of a Side Setback Area or Yard, measured in such a manner that the Yard is a strip of the minimum width required by the applicable District standards, with its inner edge parallel with the Side Lot or Building Site Line.

Sidewalk: The paved section of the Public Frontage dedicated exclusively to pedestrian activity. See **Illustration 9.3.S-4 (Sidewalk)**.

ILLUSTRATION 9.3.S-4 SIDEWALK

ARTICLE 9: DEFINITIONS



Sidewalk Sign: The Sign Type described as such in **Table 7.1.2.B-1 (Sign Types - Summary)** and **Table 7.1.2.B-2 (Sign Types - Specific Standards)**.

Sign: Any name, number, symbol, identification, description, direction, declaration, demonstration, display, representation, illustration, insignia, instruction, directive, information, illustration, object, graphic, device, display, visual communication, material, Structure or device, or part thereof, in view of the general public, whether permanent, temporary, portable, or affixed, composed of lettered, or pictorial, or graphical matter or upon which lettered or pictorial, or graphical matter is used, that announces, directs attention to, names, gives notice of, informs, advertises, or promotes an ideology, position, interest, cause, object, project, product, place, activity, person, institution, organization, or Business; provided that the term “Sign” shall not be deemed to include any badge or insignia of any government agency or any civic, charitable, religious, patriotic, fraternal or similar organization, Public Art, or any directional sign erected and maintained pursuant to law.

Single-Family Detached Dwelling: A Dwelling Unit, other than a Manufactured Housing Unit, for exclusive occupancy for one only Family, situated on a Lot or Building Site with no other Dwelling Units and not attached to any other Dwelling Unit.

Single - Family Dwelling: A Dwelling Unit shall be considered a Single-Family Dwelling only if permanent occupants are limited to one of the following categories:

One individual or

Any number of persons constituting a “Family”.

For purposes of this definition, the following are not considered to be Single-Family Residences:

Boarding Houses.

Apartment houses.

Dwelling Units in which more than two rooms are rented to unrelated tenants.

Structures or portions of Structures which are designed or constructed for any of the above purposes; and such Structures and Uses of Structures are explicitly prohibited in each Residential District unless otherwise specifically permitted. Notwithstanding the foregoing, “Single-Family Residence” may include a Dwelling Unit which includes separate quarters for persons who are related by blood, marriage or adoption to the primary occupants, provided such quarters are connected by interior passageways to the other portions of the dwelling unit, and are not rented to any unrelated tenants or otherwise used in

violation of this Ordinance If more than one meter is installed for the same type of household utility service, it will be presumed that Structure is not being used as a Single- Family Residence.

Notwithstanding any other provisions to the contrary, subject to the City Manager's approval, and for such periods of time as the City Manager deems reasonable and necessary, a Single-Family Residence may include, on a temporary basis, one or more persons, not related to the primary occupants, who have been dislocated from their permanent residence due to an officially recognized local, regional or national emergency. A report shall be provided to advise the City Council, Planning Commission, and Development Services Department of any such situations approved by the City Manager.

Single Ownership: A proprietary interest of a Landholder as defined herein.

Site Development Plan: A map required by Section 8.5.6.H, which indicates the intended Development of a parcel of land and which meets the standards and requirements of, and is prepared in accordance with, Section 8.5.6.H and other applicable provisions of this Ordinance.

Small Multi-Family Building: Principal Building type that incorporates between three (3) and six (6) side-by-side and/or horizontally stacked Dwelling Units, typically with one or more shared entries. See **Table 4.3.8.A (Principal Building Types)** and **Table 4.3.8.B (Principal Building Types - Specific Standards)**.

Social or Civic Club or Lodge: A Use characterized by a Structure and/or land owned by or leased to one or more Social or Civic Organizations for meeting, recreational, or social purposes primarily by their members and their guests.

Social or Civic Organization: A private non-profit group, association, organization, club, establishment, brotherhood, membership, or other similar group providing meeting, recreational, social, fraternal, youth, or similar activities or facilities primarily for its members and guests; excluding, however any type of Residential facility such as fraternity or sorority houses.

Solid Waste Facility: Premises, appurtenances and Improvements used for treating, storing, or disposing of solid waste, whether publicly or privately owned or operated. A Solid Waste Facility may consist of several treatment, storage, or disposal operational units, including, but not limited to, one or more landfills, surface impoundments, or combination thereof.

Special District: An area which, due to its intrinsic size, Use, Configuration, cannot conform to the requirements and standards of one or more of the applicable Character Districts or Civic District as specified in this Ordinance.

Special Exception: Synonymous with Conditional Use.

Special Requirements: provisions of Section 2.2 and Section 5.7 and/or the associated designations on the Zoning Map for those provisions.

Specified Anatomical Areas: Less than completely and opaquely covered human genitals, pubic region, buttock, and female breast below a point immediately above the top of the areola. Also, human male genitals in a discernibly turgid state, even if completely and opaquely covered.

Specified Sexual Activities: Human genitals in a state of sexual stimulation or arousal; acts of human masturbation, sexual intercourse or sodomy; fondling or other erotic touching of human genitals, pubic region, buttock or female breast.

ARTICLE 9: DEFINITIONS

Specimen Tree: Any Canopy Tree with a diameter of 24 inches or greater measured at diameter breast height (DBH) 4.5 ft.

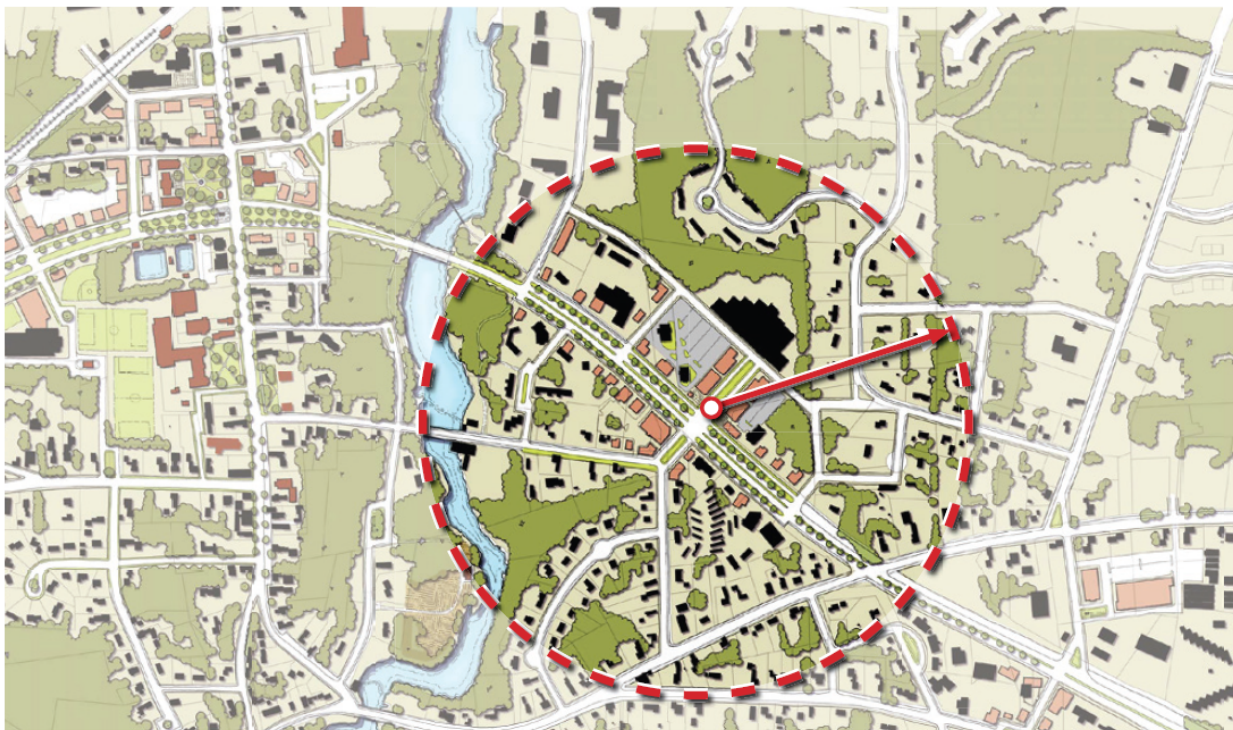
Sports Field: A Civic Space type that accommodates the play of athletic endeavors, described as such in **Table 5.3.3.A (Civic Space Types - Summary)** and **Table 5.3.3.B (Civic Space - Specific Standards)**; excluding Sports Venues. May include associated Structures.

Sports Venue: Premises at which athletic events are presented.

Square: A Civic Space type described as such in **Table 5.3.3.A (Civic Space Types - Summary)** and **Table 5.3.3.B (Civic Space - Specific Standards)**.

Standard Pedestrian Shed: A Pedestrian Shed that is an average 1/4-mile radius or 1320 feet, about the distance of a five-minute walk at a leisurely pace. See "Pedestrian Shed". See **Illustration 9.3.S-5 (Standard Pedestrian Shed)**.

ILLUSTRATION 9.3.S-5 STANDARD PEDESTRIAN SHED

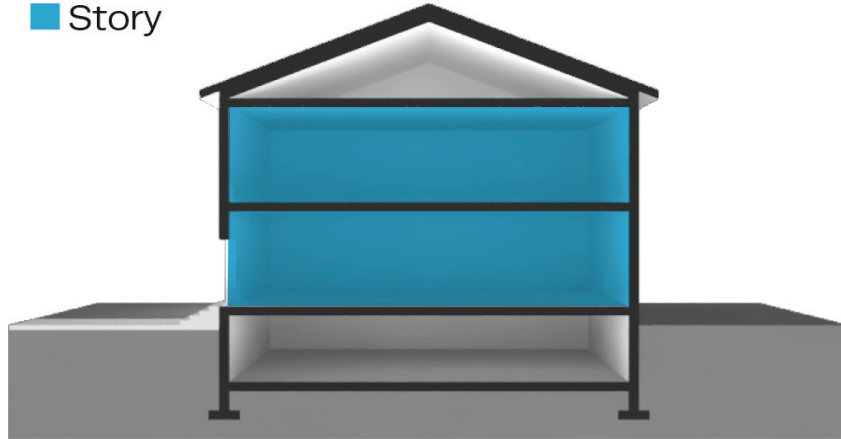


Stoop: A Private Frontage type wherein the Facade is aligned close to the Frontage Line with the first Story elevated from the Sidewalk for privacy. An exterior stair and landing provides access to the entrance. This type is recommended for ground-floor Residential Use. See **Table 4.3.7.A (Private Frontage Types)**.

Story: A habitable level within a Building, being that portion included between the surface of any floor and the surface of the floor next above it; if there is no floor above it, then the space between the floor and the ceiling next above it; excluding an Attic or a raised Basement. See **Illustration 9.3.S-6 (Story)**.

ILLUSTRATION 9.3.S-6 STORY

■ Story



Street (ST): A local urban Thoroughfare or Internal Drive of low speed and capacity, which meets the standards and requirements for such Thoroughfare type as set forth in and as described as such **Table 5.3.3.F (Thoroughfare / Internal Drive Types - Summary)** and **Table 5.3.3.G (Thoroughfare / Internal Drive Assemblies & Standards)**. When not capitalized, the term “street” means any public way not within a Lot or Building Site on which vehicles travel.

Streetscape: Street lights, trees, planting accommodations and Sidewalk along a Thoroughfare or Internal Drive.

Streetscreen: A type of Screen situated along a Frontage Line, or along the same plane as a Façade, and consisting of a planted evergreen hedge or freestanding Wall constructed of brick or stucco over masonry, which blocks the view of Parking, equipment, or other item or condition from the Frontage, provides privacy to a Side Yard, or strengthens the spatial definition of the public realm.

Street Setback, Setback Area, or Yard: Synonymous with Front Setback, Setback Area, or Yard.

Street Setback, Setback Area, or Yard Depth: the dimension of a Street Setback, Setback Area, or Yard that is measured as follows:

The depth of a Street Setback, Setback Area, or Yard shall be measured at right angles to a straight line joining the foremost points of the Side Lot or Building Site Lines; provided that in the case of rounded property corners at Thoroughfare or Internal Drive intersections, the foremost point of the Side Lot or Building Site Lines shall be the point at which the Side Lot or Building Site Lines and Front Lot or Building Site Lines would have met without such rounding.

Synonymous with Front Setback, Setback, or Yard Depth.

Structure: Anything constructed, installed, or erected, the use of which requires a permanent location on the ground or attachment to something having a permanent location on the ground, regardless whether the same is horizontal or vertical. The word “Structure” includes Buildings and other Improvements and all parts thereof.

Swimming Pool: A constructed basin or Structure for swimming and aquatic recreation, excluding plastic, canvas or rubber pools temporarily erected upon the ground and holding less than 300 gallons of water.

ARTICLE 9: DEFINITIONS

T.

Tasting Room: An establishment or portion of an establishment that allows customers to taste samples of beer, alcoholic spirits, or vinous beverages. In addition to such products, a Tasting Room may include the Retail sale of related items, marketing events, special events, entertainment, and/or food sales.

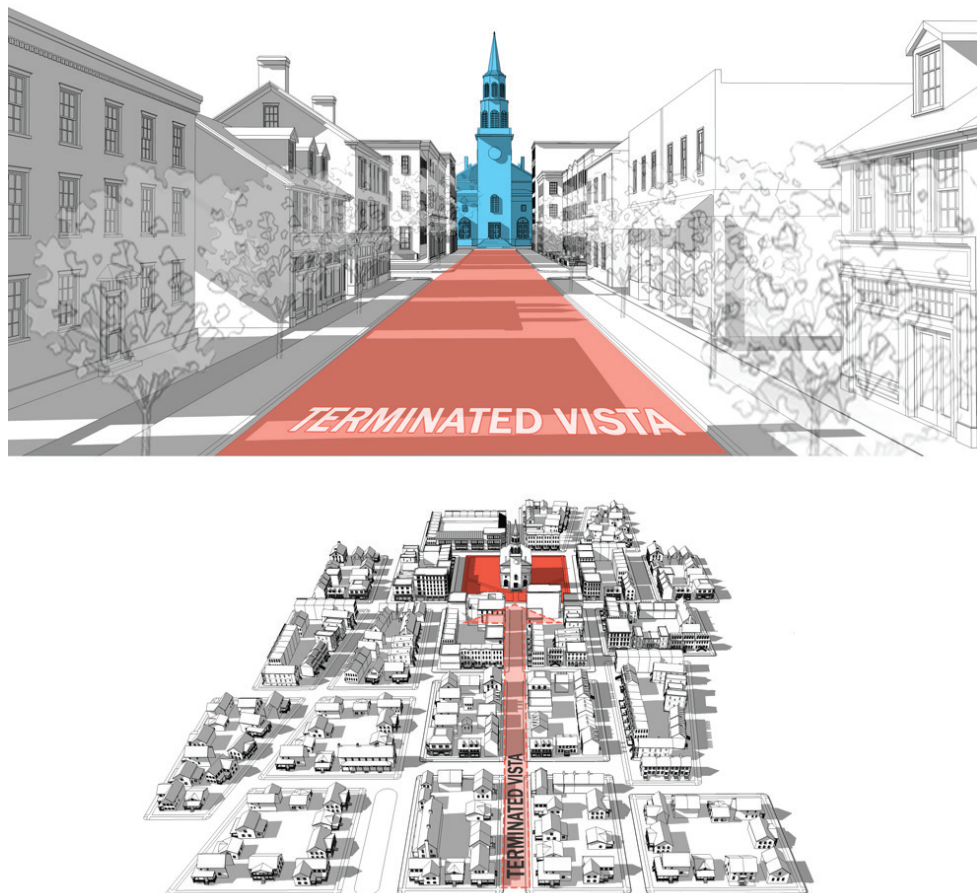
TCA: Tennessee Code Annotated.

Temporary Sign: Any Sign which is not permanently installed, mounted, or placed. Signs of the types described in **Table 7.1.2.B-1 (Summary of Sign Types)** and **Table 7.1.2.B-2 (Sign Types - Specific Standards)** are not Temporary Signs.

Temporary Use: Use of premises for fewer than 60 days or such other period as may be specifically provided in this Ordinance, and permitted by right, by conditional use, or subject to limited use standards under Section 4.3.9G in accordance with **Table 4.3.9.A-3 (Building, Lot & Building Site Temporary Uses)**, for which a Temporary Use Permit has been issued and is in effect.

Terminated Vista: A location at the axial conclusion of a Thoroughfare or Internal Drive. A Building located at a Terminated Vista location designated on a Zoning Map is required to be designed in response to the axis. See **Illustration 9.3.T-1 (Terminated Vista)**.

ILLUSTRATION 9.3.T-1 TERMINATED VISTA



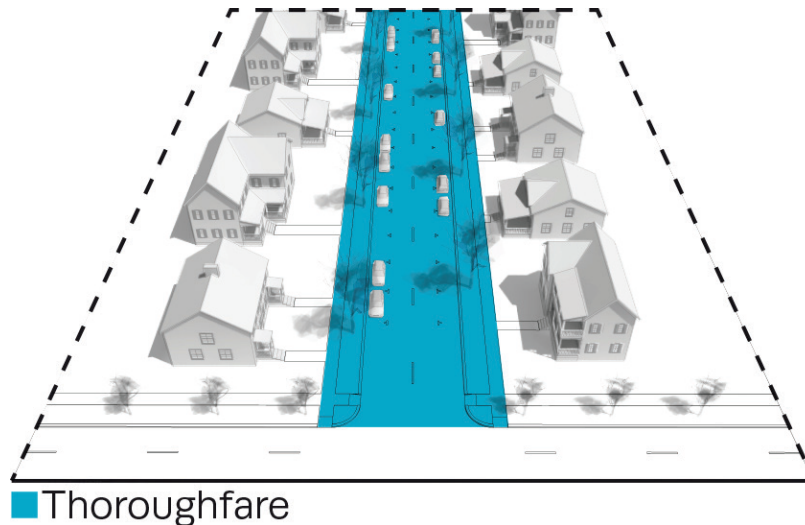
Terrace/Lightwell: A Private Frontage type wherein the Facade is set back from the Frontage Line by an elevated landing and a sunken Lightwell. This type buffers Residential Uses from urban Sidewalks with the first Story elevated from the Sidewalk for privacy, and may allow for activation of space below grade. An exterior stair and landing provides access to the entrance. This type is recommended for ground-floor Residential Use. See **Table 4.3.7.A (Private Frontage Types)**.

Theater: A Building or part of a Building devoted to the showing of motion pictures, or theatrical or performing arts productions, as a Principal Use.

Third Layer: See “Layer”.

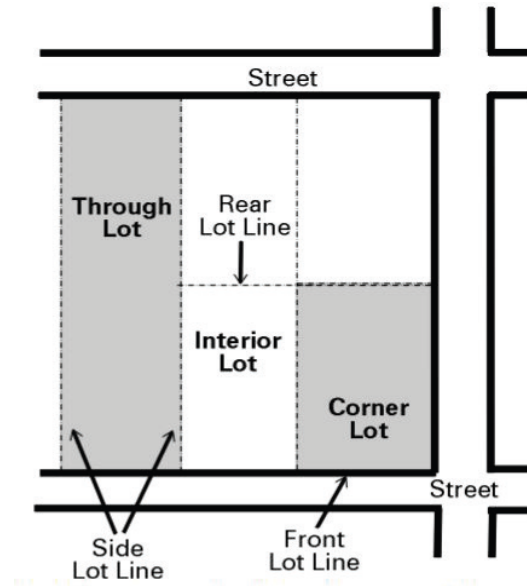
Thoroughfare: A way, whether public or private, open for common and general use by vehicular and/or pedestrian traffic and to provide access to Lots or Building Sites and Civic Spaces, consisting of Vehicular Lanes and the Public Frontage. See **Illustration 9.3.T-2 (Thoroughfare)**. See also **Table 5.3.3.F (Thoroughfare / Internal Drive Types Summary)** and **Table 5.3.3.G-1 (Thoroughfare / Internal Drive Assemblies and Standards)**. See also “Internal Drive”.

ILLUSTRATION 9.3.T-2 THOROUGHFARE



Through Lot or Building Site: A Lot or Building Site type that extends through from Thoroughfare or Internal Drive to Thoroughfare or Internal Drive.

ILLUSTRATION 9.3.T-3 THROUGH LOT / BUILDING SITE



Tire Sales: A Structure, premises, or establishment in or on which tires are sold, installed, and/or repaired.

Tobacco, Vape, and Cannabinoid Retailers: A retail sales operation that

- (1) Devotes at least fifty-one percent of its floor area to the display, sale, distribution, delivery, offering, furnishing, or marketing of products intended for recreational/non-prescription use including but not limited to cigarettes, e-cigarettes, smokeless tobacco, pipe tobacco, vapes, products made from cannabinoid derivative plants (e.g CBD or THC products), or other nicotine or cannabinoid delivery devices, components, products, liquid nicotine or cannabinoids, or liquid nicotine or cannabinoid containers; or
- (2) Earns at least fifty-one percent of gross sales from sale distribution, delivery, or marketing of products intended for recreational/non-prescription use including but not limited to cigarettes, e-cigarettes, smokeless tobacco, pipe tobacco, vapes, products made from cannabinoid derivative plants (e.g CBD or THC products), or other nicotine or cannabinoid delivery devices, components, products, liquid nicotine or cannabinoids, or liquid nicotine or cannabinoid containers.

Tower: With respect to communications equipment, any Structure that is designed and constructed primarily for the purpose of supporting one or more antennas, including self – supporting lattice towers, guy towers or monopole towers. The term includes radio and television transmission towers, microwave towers, common carrier towers, cellular telephone towers, alternative tower structures and the like.

Towing Facility: An establishment that provides vehicle towing services and accessory temporary outdoor storage for the vehicles it tows, which shall only include: (1) mechanically operable/drivable, licensed vehicles that are to be claimed by titleholders or their agents; and/or (2) wrecked motor vehicles awaiting insurance adjustments and transport to repair shops.

The term “Towing Facility” excludes: automotive services that have a tow truck on-site; Salvage or Scrap Yard / Service; Junkyards, Impound Yards; Motor Vehicle storage; and storage of inoperable vehicles.

Townhouse: The Building Type described as such in **Table 4.3.8.B (Principal Building Types)**.

Trailer: An unpowered, portable, or mobile vehicle designed to be designed to be towed by a Motor Vehicle.

Transient: As a noun, a Person who is staying in a place for fewer than thirty (30) days; as an adjective or adverb, a duration of fewer than thirty (30) days.

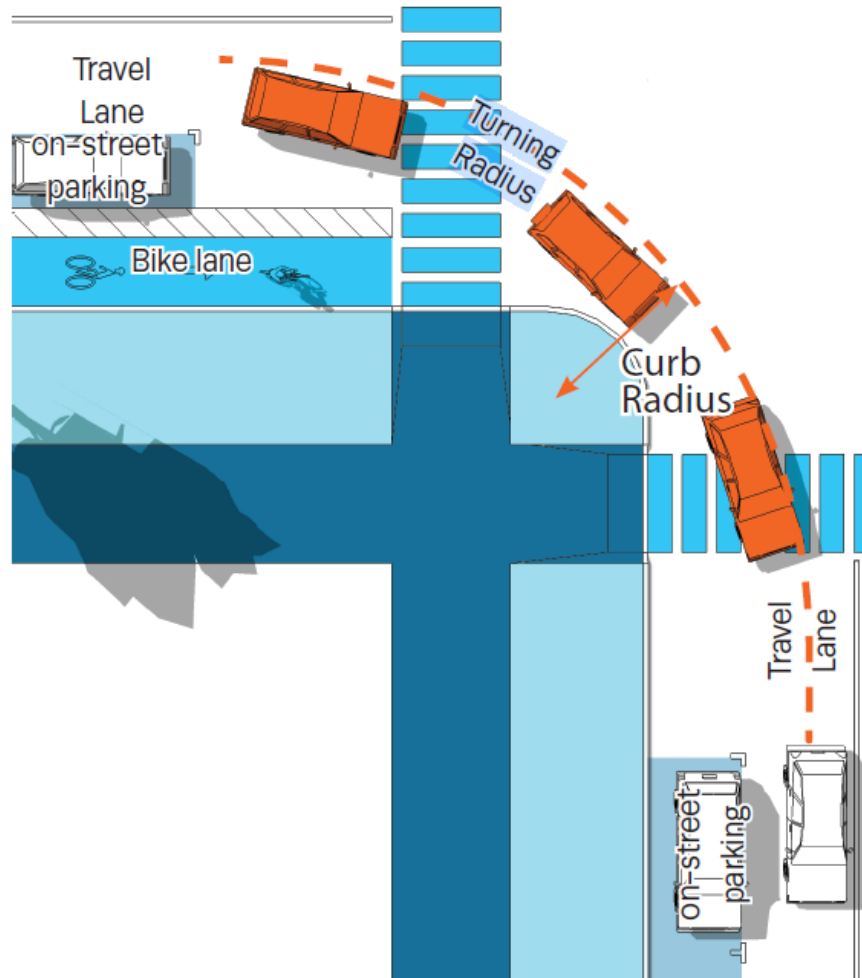
Transit Shelter: Accommodation providing shelter from the elements for waiting transit riders, excluding a Transit Station or Terminal.

Transit Station or Terminal: A facility or area at which train, rapid transit, light rail, bus, or other mass transit modality service regularly stops to load or unload passengers.

Tree Removal: Cutting down, digging up, destroying, clearing, or otherwise taking a tree from the location in which it is growing; inflicting damage to the root system; girdling; storing materials, soil compaction, changing the natural grade above or below the root system or around the trunk; inflicting damage that permits fungus infection or pest infestation; excessive pruning; excessive thinning; excessive paving with concrete, asphalt or other impervious material in such proximity as to be harmful to the tree; excessive grading; or any act of intentional or reckless damage to a tree. Without limiting the foregoing, excessive pruning or thinning shall include pruning or thinning more than 25% of the leaf surface on both the lateral branch and the overall foliage of a mature tree and pruning or thinning that does not allow 1/2 of the foliage of a mature tree to remain evenly distributed in the lower 2/3rds of the crown and individual limbs; and excessive paving or grading shall include paving or grading over any part of the Critical Root Zone of a tree.

Turning Radius: the inside radius of the Vehicular Lanes available for a vehicle to make a turn, accounting for the presence of parking, bike lanes, medians or other features. **See Illustration 9.3.C-3 (Curb Radius). Table 5.2.2.G-1 (Thoroughfare Assemblies & Standards) and Illustration 9.3.T-4 (Turning Radius). See also Curb Radius.**

ILLUSTRATION 9.3.T-4 TURNING RADIUS



Two-Family Detached Dwelling: Separate Residential premises for only two Families within a Building, whether both Dwelling Units are on a single Lot or Building Site or Abutting Lots or Building Sites. A Duplex is a specific Building Type that may accommodate a Two-Family Detached Dwelling, but the terms are not synonymous.

U.

Usable Floor Area: The Floor Area within a Building, less the area of space used for utilities or storage.

$$\begin{array}{rcl} \text{Floor Area} & \text{Space Used For} & \text{Useable} \\ \text{Within Building} & \text{Utilities or Storage} & \text{Floor Area} \\ - & & = \end{array}$$

Utility(ies): (1) As a Uses category under this Ordinance, the Uses category involving uses, activities, and equipment involved with the providing electricity, gas, water, sewage, telephone, cable, or other similar publicly regulated service, such category of Uses including without limitation Utility Lines, Utility Distribution / Substation / Switching Facility, and Utility Pumping Station (See **Table 4.3.9.A-1 (Building, Lot & Building Site Principal Use)**); (2) as a service, electricity, gas, water, sewage, telephone, cable, wireless communications, or other similar publicly regulated service provided by a Utility Provider.

Unified Control of a Landholder: With respect to a Planned Unit Development, control by a single Person of all land to be developed within the overall Planned Unit Development site.

Use: A specific function, activity, or purpose accommodated by or intended to be accommodated by land, a Lot, Building Site, or a Structure, or for which land, Lot, Building Site, or Structure is designed, arranged, intended, occupied or maintained. See **Table 4.3.9.A-1 (Building, Lot & Building Site Principal Use)** and **Table 4.3.9.A-2 Building, Lot & Building Site Accessory Uses**).

Utility Distribution / Substation / Switching Facility: Facility used for Utility distribution, including systems, and equipment used for such purposes.

Utility Facility: Premises used by a Utility Provider relative to providing a Utility service, including without limitation a Utility Pumping Station, a Utility Distribution / Substation/ Switching Facility, a water tower or tank, a Water Treatment / Supply Facility, a water or wastewater pump station, a water reclamation facility, a Sewage Facility, a Utility Generation Facility, a Wireless Communications Facility, a Communications Tower, or other facility used to provide a Utility service, excluding, however, Utility Lines.

Maintenance yard or Building (see Light Industrial Service), Utility office (see Office), TV and radio studio (see Office), and Reservoir or water supply (see Civic Space and Open Space) are not included in this Use Category.

Utility Generation Facility: Facility used for electric or gas power generation (except hydroelectric and nuclear), control and transmission. This definition includes systems that facilitate the sale of gas or electricity via power distribution systems operated by others, and gas or electric power transmission systems such as transmission towers, pipes or lines, and transformer stations, but does not include Utility Distribution / Substations / Switching Facilities.

Utility Line: A line used in providing a Utility service.

Utility Provider: A public or private entity or other Person engaged in generating, transmitting, distributing, or providing a Utility service.

Utility Pumping Station: A facility at which water, sewage, or other Utility fluids are pumped from one place to another.

Utility Transmission Line: Line used for the movement of high-powered electricity or high-pressure gas.

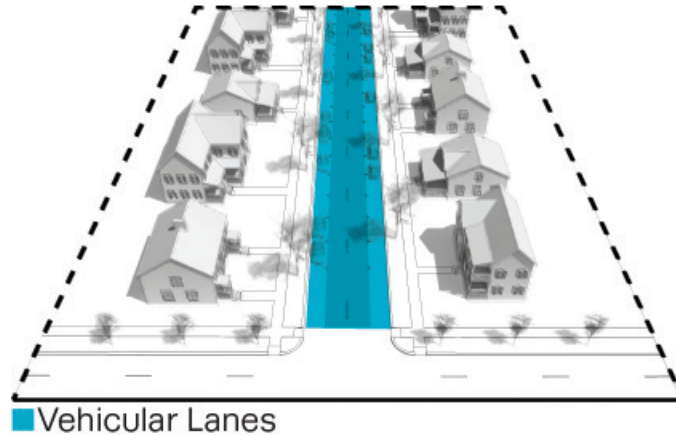
ARTICLE 9: DEFINITIONS

V.

Variance: Relief granted by the Board of Zoning Appeals from a standard or requirement of this Ordinance, which is specifically provided for in this Ordinance or granted pursuant to the provisions of Article 8 (Administration, Procedure, & Enforcement).

Vehicular Lane: An area of a Thoroughfare or Internal Drive for parked or moving vehicles. See **Illustration 9.3.V-1 (Vehicular Lane)**.

ILLUSTRATION 9.3.V-1 VEHICULAR LANE



Vessel: A Boat, yacht, ship, canoe, kayak, paddle board, jet-ski, or other recreational watercraft.

Veterinary Office, Clinic, or Hospital: Premises or an establishment offering Veterinary Services for animals.

Veterinary Services: Health or medical care provided to animals by a licensed veterinarian.

W.

Wall: A vertical Structure that (1) supports a Structure or (2) encloses or separates an area of land.

Wall Sign: The Sign Type described as such in **Table 7.1.2.B-1 (Sign Types - Summary)** and **Table 7.1.2.B-2 (Sign Types - Specific Standards)**.

Warehouse Retail: A Retail establishment that has limited customer amenities and service and sells goods at discounted prices.

Warehousing: The indoor storage of goods, not including storage in Self-Service Storage facilities.

Warehouse: Premises used for Warehousing, not including Self-Service Storage facilities.

Warehouse and Freight Movement: Use sub-category of the Industrial Category characterized by the storage or movement of goods.

Not included in this sub-category are bulk storage of flammable liquids (see Heavy Industrial), Self-Storage Facilities, Mini-warehouse, multi-story enclosed storage facility, storage garages (see Self-Service Storage), Solid or liquid waste transfer, or composting (see Waste- Related Service).

Waste-Related Service: Use sub-category of Industrial Use category characterized by Uses that receive solid or liquid wastes from others for transfer to another location and Uses involving collection of sanitary wastes or manufacture or production of goods or energy from the composting of organic material.

Not included in this sub-category are:

Stockpiling of sand, gravel, or other aggregate materials (see Warehouse and Freight Movement).

Water Treatment / Supply Facility: facilities for the treatment and supply of potable, irrigation, or industrial water supply.

Wholesale Sales: the sale, lease, or rent of goods in large quantities primarily to industrial, institutional, and commercial business customers, which goods may or may not be resold at Retail by such customers.

Retail Sales, Personal Service, Repair, Arts, and Artisan Use, in-store sales, lease, or rental of consumer, household, or business goods, Warehousing or Freight Movement (see Warehouse and Freight Movement), and Warehouse or Wholesale Club (see Retail Sales and Service) are not included in Wholesale Sales.

Window Sign: The Sign Type described as such in **Table 7.1.2.B-1 (Sign Types - Summary)** and **Table 7.1.2.B-2 (Sign Types - Specific Standards)**.

Winery: An establishment which is primarily used for the manufacture of vinous beverages in accordance with applicable state and local regulations.

Wireless Communications Facility: Any facility for the receiving or transmitting of wireless signals for commercial purposes. As used herein the term shall include any necessary support structure, connection cables and equipment buildings as well as towers or monopoles.

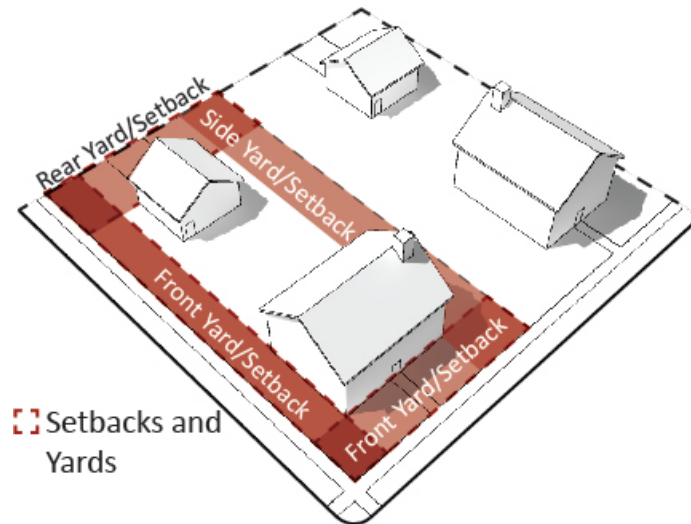
Woodworking Shop: Premises at which wooden articles are made or repaired.

ARTICLE 9: DEFINITIONS

Y.

Yard or Setback Area: An open area within a Lot or Building Site on which there is a Building. Setback Areas or Yards are described by their positions within the Lot or Building Site, and their area is calculated as the shortest horizontal distance from a Lot or Building Site Line to the nearest foundation wall supporting Building on the Lot or Building Site. See “Front Setback, Setback Area, or Yard”, “Street Setback, Setback Area, or Yard”, “Rear Setback, Setback Area, or Yard”, and “Side Setback, Setback Area, or Yard”. See **Illustration 9.3.R-1 (Setback Areas or Yards)**.

ILLUSTRATION 9.3.R-1 YARD / SETBACK AREAS



Z.

Zoning Administrator: The City Planner or other person designated to administer the provisions of Zoning Ordinance as described in Article 8.

Zoning Change: The Effective Date of any applicable Zoning Map Amendment (Rezoning) or of any applicable amendment of this Ordinance.

Zoning District: A Character District, Special District, Planned Unit Development District, or Civic District.

Zoning Map: The map or set of maps, which show the Districts, Thoroughfares and Internal Drives, and Special Requirements if any, of areas subject to, or proposed to be subject to, regulation by this Ordinance. The Zoning Map approved by the City Council, as the same may be amended from time to time, constitutes the Official Zoning Map of the City.

Zoning Permit: A permit required to Develop, construct, reconstruct, Improve, Alter, or use any Structure, Lot or Building Site.

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Proposed Zoning Text Amendment

Additions are Underlined
Deletions are Strikethrough

§ 9.3 Definitions

Home Occupation: any gainful occupation conducted entirely within a Dwelling solely by the owners- or tenant residents thereof as an Accessory Use, which does not change the character of the Structure as a Residence; There are two types of Home Occupation: provided that

(1) Minor Home Occupations: gainful occupation conducted entirely within a Dwelling which does not generate traffic from employees, customers, clients, or deliveries and bears no said activity shall not occupy more than 50% of the Floor Area of the Dwelling, (2) there shall be external evidence of the accessory commercial use;

(2) Major Home Occupation: gainful occupation conducted on a residential property which

a. generates some traffic from employees, customers, clients or deliveries;

b. bears some external evidence of the accessory commercial use; or

c. occurs within an accessory structure.

~~other than an Identification Sign, (3) no goods shall be kept, and (4) no mechanical or electrical equipment shall be used except customary household equipment; and provided further that the following are not allowed as Home Occupations~~ do not include: Clinics, Hospitals, Home Professional Office, barbershop, beauty shop, Restaurants, Kennels, Auto Repair, antique dealer, Retail sales on the premises, or loading of ammunition.

Updates the definition of Home Occupation to reflect new standards.

Proposed Zoning Text Amendment

Additions are Underlined
Deletions are Strikethrough

Kennel: Any ~~Structure or premises on place where~~ which four (4) or more dogs, cats and/or other ~~household pets~~ animals ~~over four (4) months of age~~ are kept for boarding, breeding, ~~selling~~, grooming, or training, for compensation, excluding any otherwise conforming or lawfully nonconforming agricultural use., ~~however, any Structure or premises on which such animals are kept solely for Retail sale. A Kennel may not be a Home Occupation.~~

Revises definition of Kennel to provide clarity and improve enforceability.

Short-Term Rental Unit: A Dwelling Unit ~~in a Building originally used or designed to be used as an abode or home of a person, family, or household in either a portion of a single family house, or an individual Dwelling Unit in a two-family Dwelling, Townhouse, or multi-family Building having no more than 6 Dwelling Units, or Accessory Dwelling Unit~~ which ~~Short-Term Rental Unit~~ is rented wholly or partially for a period of less than thirty (30) continuous days occupancy for a fee; specifically excluding however a “hotel” as defined in TCA section 68-14-302 or a “bed and breakfast establishment” or a “bed and breakfast homestay” as those terms are defined in TCA section 68-14-502, all as contemplated in TSA section 13-7-602. A Hotel, Extended Stay Hotel, Motel, Bed and Breakfast, or Inn is not a Short-Term Rental Unit.

Tobacco, Vape, and Cannabinoid Retailers: A retail sales operation that

- (1) Devotes at least fifty-one percent of its floor area to the display, sale, distribution, delivery, offering, furnishing, or marketing of products intended for recreational/non-prescription use including but not limited to cigarettes, e-cigarettes, smokeless tobacco, pipe tobacco, vapes, products made from cannabinoid derivative plants (e.g CBD or THC products), or other nicotine or cannabinoid delivery devices, components, products, liquid nicotine or cannabinoids, or liquid nicotine or cannabinoid containers; or

*Definition based on proportion of space
OR proportion of sales*

Proposed Zoning Text Amendment

Additions are Underlined
Deletions are Strikethrough

- (2) Earns at least fifty-one percent of gross sales from sale
distribution, delivery, or marketing of products intended for
recreational/non-prescription use including but not limited to
cigarettes, e-cigarettes, smokeless tobacco, pipe tobacco, vapes,
products made from cannabinoid derivative plants (e.g CBD or
THC products), or other nicotine or cannabinoid delivery devices,
components, products, liquid nicotine or cannabinoids, or liquid
nicotine or cannabinoid containers.

Q4 Zoning Text Amendment Limited Use Standards

Project #:	24-0475	Location:	N/A
Applicant:	Kevin C. McCarthy, AICP	Case Type(s):	Text Amendment
Staff Planner:	Kevin C. McCarthy, AICP	Proposed Use:	N/A

SUMMARY

The applicant, the Zoning Administrator, requests to amend the text of Ordinance 4400, the zoning ordinance for the City of Columbia. This is the fifth of five rounds of zoning text amendments staff has presented to the Planning Commission between December 2023 and December 2024. These changes will implement Connect Columbia, better align zoning regulations with community preferences, and calibrate the standards based on “lessons learned” during the first two years administering the Ordinance. This round of proposed amendments is detailed in the attached track changes documents. Specifically the proposal relates to the limited used standards in Article 4 as well as related definition and procedural references in Articles 9 and 8.

- The Planning Commission is a **recommending body** for zoning text amendments. The City Council is the decision-making authority.
- The staff comments section details the proposed changes, which are provided in the agenda packet in ~~strikethrough~~ and underlines.
- The specific limited uses impacted by this amendment include: Home Occupations; Bars, Taverns, and Nightclubs; retailers of CBD, Vape, and Tobacco; and Short Term Rentals.
- Planning Commission may recommend adoption of the proposed text, modify the proposal, or decline the request.
- Templates are provided at the end of the report to assist the Planning Commission in crafting properly formatted motions.

CONSISTENCY WITH CONNECT COLUMBIA

The ongoing current process of reviewing and updating the Zoning Ordinance and other regulating documents is part of the implementation of Connect Columbia, the City's comprehensive plan.

REVIEW PROCESS

Section **8.5.18** of the Zoning Ordinance directs the Planning Commission to review and make a recommendation on all proposed changes to the text of the Ordinance. The Planning Commission is the recommending body for text amendments under **§ 8.3.3.B.2** of the Zoning Ordinance.

Section **8.5.18.C** of the Zoning Ordinance requires that Planning Commission determine that the proposed changes are consistent with the comprehensive plan.

8.5.18.G of the Zoning Ordinance establishes the review criteria for approval of all changes to the text of the Ordinance:

- a. The extent to which the proposed Zoning Ordinance Amendment is consistent with the remainder of this Ordinance, including, specifically, any purpose and intent statements;*
- b. The extent to which the proposed Zoning Ordinance Amendment represents a new idea not considered in this Ordinance, or represents a revision necessitated by changing circumstances over time;*
- c. Whether or not the proposed Zoning Ordinance Amendment corrects an error in this Ordinance; and*
- d. Whether or not the proposed Zoning Ordinance Amendment revises this Ordinance to comply with state or federal statutes or case law.*

The criteria for City Council action on a Zoning Ordinance Amendment at § 8.5.18.J.4 are identical to the criteria for Planning Commission review at 8.5.18.G.3.

COMMENTARY FROM PROFESSIONAL PLANNING STAFF

The City Council adopted the current ordinance on July 14, 2022. The Zoning Ordinance implements the City's comprehensive plan, Connect Columbia. On November 8, 2023, the Planning Commission recommended adoption of a five-year update of the framework, land use, and transportation elements of Connect Columbia. The framework element of the plan directs planning staff to initiate revisions to the ordinance in order to bring it into consistency with changes to the future land use plan. It further directs staff to engage residents and property owners to solicit suggestions for further changes to the ordinance. As mentioned above, this is

the final round of zoning text amendments staff plans to present to the Planning Commission between December 2023 and December 2024.

The proposal includes the following changes:

- Home Occupations
 - Distinguishes between “Major” and “Minor” home occupations;
 - Creates a process to allow major home occupations as a conditional use approved by the Board of Zoning Appeals;
 - Continues to permit minor home occupations administratively; and
 - Modifies definition of Home Occupation and Kennels.
- Bars, Taverns & Nightclubs
 - Removes 500 ft exclusion from residential property;
 - Adds exclusions around schools and parks;
 - Prohibits the use on lots and building sites next to residentially zoned property; and
 - Requires a 50 ft separation from property in single-family use regardless of zoning.
- Vape, Tobacco & Cannabinoid Retailers
 - Creates a use category for Vape, Tobacco & Cannabinoid Retailers;
 - Creates a definition for Vape, Tobacco & Cannabinoid Retailers;
 - Imposes a 500 ft separation requirement;
 - Imposes a 500 ft exclusion around schools, parks, and religious facilities; and
 - Requires 50 ft separation from residentially zoned property.
- Short Term Rental
 - Removes requirement that all Short-Term Rentals be accessory uses in owner-occupied dwellings;
 - Modifies the definition of Accessory Dwelling Unit (ADU) to allow the use of ADUs as short-term rentals;
 - Creates an administrative review and permitting process;

- Removes prohibition on short-term rentals in single-family character districts and allows them as a conditional use approved by the Board of Zoning Appeals;
- Allows short-term rentals by administrative approval in mixed use character districts and special districts;
- Requires a local point of contact for each permitted short-term rental; and
- Removes onerous parking requirements for short-term rentals.

Planning staff will present detailed commentary at the December 4, 2024 meeting of the Planning Commission. The proposal

The Planning Commission may recommend approval of the proposed text amendments, direct staff to prepare an alternative text amendment, or decline to act on the proposed changes.

SAMPLE MOTIONS

Approve:

Move to find, based on the analysis provided by city staff, that the criteria listed in section **8.5.18** of the City of Columbia Zoning Ordinance have been satisfied and recommend approval of the proposed text amendments **[may be subject to modifications proposed by the Planning Commission]**.

Deny:

Move to recommend denial of the requested text amendment having found, based on the analysis provided by city staff, that the criteria listed in section **8.5.18** of the City of Columbia Zoning Ordinance are not satisfied *[list specific reasons for denial and provide direction to staff]*.

Defer:

Move to find that there is insufficient information to decide, defer the matter to the next regularly scheduled meeting of the Planning Commission, and direct staff to provide: *[list additional information]* for review at a future meeting.



CITY OF COLUMBIA TENNESSEE
CITY COUNCIL
STAFF REPORT

STAFF REPORT CONTACT INFORMATION

Thad H. Jablonski, Assistant City Manager/CFO, tjablonski@columbiatn.gov, (931) 560-1559

AGENDA ITEM TITLE: 2ND CONSIDERATION OF ORDINANCE NO. 4540 AS AMENDED – AN ORDINANCE TO AMEND THE FISCAL YEAR 2024-2025 BUDGET ORDINANCE NO. 4503, AS AMENDED, PROVIDING FOR REVISIONS TO THE GENERAL, CAPITAL PROJECTS, GRANTS AND WASTEWATER FUNDS

RECOMMENDATION: Approve Ordinance No. 4540 as amended on second consideration.

INFORMATION: The proposed ordinance is the third amendment to the FY 2025 Appropriation Ordinance, impacting the Capital Projects, Grants, Wastewater and General Fund Departments.

Within this budget amendment, the following items are included:

- Rebudget/transfer \$4,377,973.21 from General to Capital Projects,
- Budget transfer/expenses for Cap Projects totaling \$4,377,973.21,
- Budget Army Core flood mapping study at \$142,500 and Intersection Study at Country Club/Union totaling \$5,500.
- Budget FY 2024 funds due for JAG grant to closeout totaling \$1,915.22,
- Budget Anonymous Donations totaling \$2,245.95 and \$812.19 and Office of Emergency Management incident funding totaling \$648.43,
- Budget capital projects including \$4.3 million for Muletown Rec acquisition, Public Works Building improvements totaling \$69,723.21 and tourism computer equipment totaling \$8,250,
- Reclassify Tourism Enhancement Grant project funds totaling \$75,000,
- Budget \$865,156.88 for 2024 G.O. Bonds interest related to new debt issued for the new WWTP project.

Included on second consideration, the following items are:

- Budget transfers to capital projects and grants totaling \$830,139 and \$123,175 respectively,
- Budget funds received from sales of seized weapons totaling \$21,152,
- Budget Training Reserves totaling \$400 in Fire,
- Budget Mid-State Classic even budget from ticket sales and sponsorships totaling \$45,000,
- Budget funds to reline sewer line at Station No. 4 (\$55,989), CO #1 for parking garage renovations (\$2,250), a tanker fire truck (\$468,100) and additional amount needed for mast arm replacements (\$303,800),
- Budget project budget for downtown improvement grant totaling \$300,000,
- Budget \$115,875 for Hazzard Mitigation Grant to replace Radio Tower,
- Budget additional project expenses for Ducker River Pump Station (\$813,000) and Bear Creek Pump Station (\$4,595,300)
- Budget funds for Wastewater portion of ESRI ArcGIS software expense totaling \$19,850.

A detailed schedule of items included within this budget amendment is attached. This amendment increases the City's total budget for FY 2025 by \$17,481,255 to \$223,934,133.

ATTACHMENTS: Staff Report, Ordinance No. 4540, Supporting Documents, Budget Summary.

ORDINANCE NO. 4540 (AS AMENDED)

AN ORDINANCE TO AMEND THE FISCAL YEAR 2024-2025 BUDGET ORDINANCE
NO. 4503, AS AMENDED, PROVIDING FOR REVISIONS TO THE GENERAL,
CAPITAL PROJECTS, GRANTS AND WASTEWATER FUNDS

BE IT ORDAINED BY THE CITY OF COLUMBIA, TENNESSEE:

Section 1: That Ordinance No. 4503, as amended, the same being the
Appropriation Ordinance for the City of Columbia for the Fiscal Year July 1, 2024 through
June 30, 2025, be amended. That the total budget appropriation for the fiscal year be
increased from \$206,452,877 to \$223,934,133, an increase of \$17,481,255.

Section 2: That the budget appropriations shall be revised as follows:

General Government total of \$19,195,730 be amended to \$24,675,017, an increase of
\$5,479,287.

Police total of \$11,615,750 be amended to \$11,636,902, an increase of \$21,152.

Fire total of \$9,438,913 be amended to \$9,443,019, an increase of \$4,107.

Parks total of \$3,813,358 be amended to \$3,858,358, an increase of \$45,000.

Capital Projects total of \$17,539,827 be amended to \$22,747,940, an increase of
\$5,208,112.

Grants total of \$11,689,053 be amended to \$12,119,343, an increase of \$430,290.

Wastewater total of \$113,831,134 be amended to \$120,124,441, an increase of
\$6,293,307.

ALL OTHER APPROPRIATIONS REMAIN THE SAME.

Section 3: This ordinance is enacted pursuant to and in compliance and conformity
with Article 9, Section 9 of the Charter of the City of Columbia, with Notice of Public Hearing

published on the 16th day of February, 2025, and it shall be executed and construed consistent with said charter and laws of the State of Tennessee.

Section 4: That all ordinances or parts of ordinances in conflict herewith are hereby repealed.

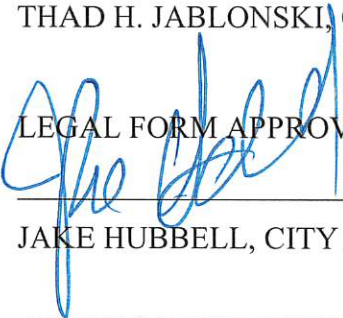
PASSED AND ADOPTED BY THE CITY COUNCIL OF THE CITY OF COLUMBIA, TENNESSEE, THIS THE ____ DAY OF MARCH, 2025.

CHARLES (CHAZ) M. MOLDER, MAYOR

ATTEST:

THAD H. JABLONSKI, CITY RECORDER

LEGAL FORM APPROVED:



JAKE HUBBELL, CITY ATTORNEY

APPROVED FOR FIRST CONSIDERATION:

ANTHONY R. MASSEY, CITY MANAGER

Passed on 1st Consideration: _____

Passed on 2nd Consideration: _____

Summary of Appropriation Amendment #3
2nd Consideration - March 13th (3/13/25)

General Government

Budget Army Core flood mapping study	142,500.00
Intersection Study at Country Club/Union	5,500.00
Budget transfer to Capital Projects	4,377,973.21
Total General Government	\$ 4,525,973.21

Fire

Budget Anonymous Donation	2,245.95
Budget Anonymous Donation	812.19
OEM Incident Number 0202407-3237	648.43
Total Fire	\$ 3,706.57

TOTAL GENERAL FUND \$ 4,529,679.78

Capital Projects

Funds for Muletown Rec acquisition	4,300,000.00
Public Works Building Expansion - Rack Storage	14,223.21
Public Works Building Expansion - Magnetic door lock installation	6,300.00
Public Works Building Expansion - Rental Equipment	12,200.00
Public Works Building Expansion - Automated Gate and fence relocation	7,000.00
Public Works Building Expansion - Spray Foam	30,000.00
Computer for Marketing Dept.	8,250.00
Total Capital Projects	\$ 4,377,973.21

Grants

Reclass \$75,000 to Parks for Blueway design from Tourism	75,000.00
Reclass \$75,000 from Tourism to Parks for Blueway design	(75,000.00)
Budget FY 2024 funds due for JAG grant to closeout	1,915.22
THSO Grant - Training Props Needed for Medical Training	12,500.00
Total Grants	\$ 14,415.22

Wastewater (Sewer) Fund

2024 GO Sewer Bond interest payment	865,156.88
Total Wastewater (Sewer) Fund	\$ 865,156.88

Total Increase - All Funds (First Consideration) \$ 9,787,225.09

General Government

Budget transfer to Capital Projects for projects	830,139.00
Budget transfer to Grants for projects	123,175.00
Total General Government	\$ 953,314.00

Police

Budget funds received from sales of seized weapons	21,152.00
Total Police	\$ 21,152.00

Fire

Budget Training Reserves	400.00
Total Fire	400.00

Parks

Establish budget for Mid-State Classic	45,000.00
Total Parks	\$ 45,000.00

TOTAL GENERAL FUND \$ 1,019,866.00

Capital Projects

Reline Sewer Line a Station No. 4	55,989.00
Parking Garage Rehabilitation CO #1	2,250.00
2025 Fire Master Retail Tanker	468,100.00
Budget difference for downtown Mast Arms	303,800.00
Total Capital Projects	\$ 830,139.00

Grants

Hazzard Mitigation Grant - Radio Tower	115,875.00
Budget Downtown Improvement Grant funds	300,000.00
Total Grants	\$ 415,875.00

Wastewater (Sewer) Fund

WW Duck River Pump Station - Contract \$1,713,000	813,000.00
WW Bear Creek Pump Station - Contract \$5,272,800	4,595,300.00
ESRI invoice - WW portion	19,850.00
Total Wastewater (Sewer) Fund	\$ 5,428,150.00

Total Increase - All Funds (Second Consideration)	\$ 7,694,030.00
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Total Increase - All Funds (First and Second Consideration)	\$ 17,481,255.09
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CITY OF COLUMBIA
FY 2025 APPROPRIATION AMENDMENT #3
Second Consideration 3/13/25

1) Budget transfer to capital projects

Increase Revenues

11037110 \$ 4,369,723.21 Prior Year Revenue

Decrease Expenditures

11041950-OC800 \$ 8,250.00 General Govt - Tourism - Reserves

Increase Expenditures

11041900-OC766 \$ 4,377,973.21 General Govt - Transfer to Cap Proj

2) Budget transfer and expenses for Capital Projects

Increase Revenues

31137940 \$ 4,377,973.21 Transfer From General Fund

Increase Expenditures

31144480-OC920 \$ 4,300,000.00 Capital - Columbia Aquatics & Recreation Complex - Buildings
31143110-OC920 \$ 14,223.21 Capital - Public Works - Buildings
31143110-OC920 \$ 6,300.00 Capital - Public Works - Buildings
31143110-OC920 \$ 12,200.00 Capital - Public Works - Buildings
31143110-OC920 \$ 7,000.00 Capital - Public Works - Buildings
31143110-OC920 \$ 30,000.00 Capital - Public Works - Buildings
31141950-OC948 \$ 8,250.00 Capital - Tourism - Computers
 \$ 4,377,973.21 Total

3) Budget funds for General Government

Increase Revenues

11037110 \$ 148,000.00 Prior Year Revenue

Increase Expenditures

11041900-OC290 \$ 142,500.00 General Government - Misc. - Other Services
11041900-OC250 \$ 5,500.00 General Government - Misc. - Professional Services

4) Budget funds for FY 2024 JAG Grant expenses

Increase Revenues

322-33203 \$ 1,915.22 2021 JAG Grant

Increase Expenditures

32242140-OC320	\$	1,915.22	Grant - 2021 JAG Grant - Operating Supplies
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5) Budget fire donations and OEM funds recovered**Increase Revenues**

11036720	\$	3,058.14	Donations
11034225	\$	648.43	Fire & EMA Services Char
	\$	3,706.57	Total

Increase Expenditures

11042220-OC321	\$	2,245.95	Fire - Suppression - Controlled Asset
11042220-OC320	\$	812.19	Fire - Suppression -Operating
11042260-OC800	\$	648.43	Fire - Emergency Management - Reserves
	\$	3,706.57	Total

6) Budget THSO Grant project expenditures**Increase Revenues**

322-33208	\$	12,500.00	Highway Safety Grant
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Increase Expenditures

32242147-OC320	\$	12,500.00	Grant - Police - Highway Safety - Operating Supplies
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7) Reclassify expenditures related to Blueway grant project**Decrease Expenditures**

32241950-OC937	\$	75,000.00	Grants - Tourism - Tourism Enhancement Grant
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Increase Expenditures

32244410-OC920	\$	75,000.00	Grants - Parks - Tourism Enhancement Grant
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8) Budget Wastewater 2024 Bond interest payment**Increase Revenues**

41237110	\$	865,156.88	Prior Year Revenue
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Increase Expenditures

41252227-OC631	\$	865,156.88	Wastewater - 2024 GO Bonds Interest
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9) Establish budget for Mid-State Classic**Increase Revenues**

110-37110	\$	24,000.00	Prior Year Revenue (PY sponsorships)
110-34752		21,000.00	Mid State Classic-Ticket Sales
	\$	45,000.00	Total

Increase Expenditures

110-44490-OC290	\$	18,000.00	Mid State Classic-Other Services & Charges
110-44490-OC320		20,000.00	Mid State Classic-Operating Supplies
110-44490-OC530		7,000.00	Mid State Classic-Rentals
	\$	45,000.00	Total

10) Budget Downtown Improvement Grant**Increase Revenues**

322-33456	\$	200,000.00	Downtown Improvement Grant
322-37640		100,000.00	Transfer from General
	\$	300,000.00	Total

Increase Expenditures

322-41960-OC912	\$	300,000.00	Grants-MainStreet - Site Development
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11) Budget transfer to capital projects**Increase Revenues**

11037110	\$	830,139.00	Prior Year Revenue
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Increase Expenditures

11041900-OC766	\$	830,139.00	General Govt - Transfer to Cap Proj
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12) Budget funds for Seized Weapons**Increase Revenues**

110-36301	\$	21,152.00	Sale of Seized Weapons
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Increase Expenditures

110-42141-OC320	\$	21,152.00	Police - Seized Weapons - Operating Supplies
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13) Budget funds for training reserves**Increase Revenues**

110-34226	\$	400.00	Sale of Seized Weapons
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Increase Expenditures

11042240-OC800	\$	400.00	Fire - Training - Reserves
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14) Budget transfer and expenses for Capital Projects

Increase Revenues

31137940	\$	830,139.00	Transfer From General Fund
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Increase Expenditures

31142210-OC920	\$	55,989.00	Capital -Fire Admin - Building
311-41850-OC936	\$	2,250.00	Capital -Gen Govt - Parking
31142220-OC941	\$	468,100.00	Capital -Fire - Vehicles
311-43160-OC931	\$	303,800.00	Capital - Streets - Traffic - Roads, Street, And Parking Lots
	\$	830,139.00	Total

15) Budget transfer to Grants Fund

Increase Revenues

11037110	\$	123,175.00	Prior Year Revenue
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Increase Expenditures

11041900-OC768	\$	123,175.00	General Govt - Transfer to Grants
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16) Budget ESRI invoice - WW portion

Increase Revenues

41237110	\$	19,850.00	Prior Year Revenue
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Increase Expenditures

41252213-OC255	\$	19,850.00	Wastewater - Treatment Plant - Software
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17) Budget Hazzard Mitigation Grant

Increase Revenues

322-33457	\$	92,700.00	Hazzard Mitigation Grant
322-37640		23,175.00	Transfer from General
	\$	115,875.00	Total

Increase Expenditures

322-42220-OC945	\$	115,875.00	Grants-Fire Suppression- Communications
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18) Budget remaining project expenses for pump station projects

For Duck River and Bear Creek Pump Station construction

Increase Revenues

41237110	\$	1,816,474.00	Prior Year Revenue
41233152	\$	3,591,826.00	State Water Infrastructure Grant ARPA
	\$	5,408,300.00	Total

Increase Expenditures

41252212-OC931	\$	813,000.00	Wastewater - Pump Stations - Duck River
41252212-OC932	\$	4,595,300.00	Wastewater - Pump Stations - Bear Creek
	\$	5,408,300.00	Total

FY 2025 Budget Summary - AA#3

3/13/2025						
		SERVICES &		CAPITAL	DEBT	AA#3
Departments	PERSONNEL	SUPPLIES	TRANSFERS	OUTLAY	SERVICE	FY 2025
City Council	\$99,124	\$376,900	\$0	\$0	\$0	\$476,024
Legal Services	\$63,863	\$217,100	\$0	\$0	\$0	\$280,963
Management Info Systems	\$391,664	\$395,455	\$0	\$0	\$0	\$787,119
City Manager	\$540,785	\$301,888	\$0	\$0	\$0	\$842,673
Finance & City Recorder	\$1,139,889	\$60,398	\$0	\$0	\$0	\$1,200,287
Human Resources	\$302,056	\$33,988	\$0	\$0	\$0	\$336,044
General City Admin	\$1,646,479	\$6,365,785	\$16,662,752	\$0	\$0	\$24,675,017
Police	\$9,875,522	\$1,761,380	\$0	\$0	\$0	\$11,636,902
Fire	\$8,657,295	\$785,725	\$0	\$0	\$0	\$9,443,019
Streets & Maintenance	\$3,464,871	\$755,973	\$0	\$0	\$0	\$4,220,844
Development Services	\$2,239,950	\$427,020	\$0	\$0	\$0	\$2,666,970
Parks & Recreation	\$2,893,120	\$965,238	\$0	\$0	\$0	\$3,858,358
Total General Fund	\$31,314,618	\$12,446,850	\$16,662,752	\$0	\$0	\$60,424,220
State Street Aid Fund	\$0	\$2,107,885	\$0	\$209,271	\$0	\$2,317,156
N&V Chief's Fund	\$0	\$140,000	\$0	\$0	\$0	\$140,000
Street & Transportation Fund	\$0	\$80,000	\$0	\$0	\$0	\$80,000
Drug Fund	\$0	\$81,053	\$40,000	\$58,305	\$0	\$179,358
Solid Waste (Sanitation) Fund	\$1,925,173	\$2,383,346	\$76,063	\$0	\$0	\$4,384,582
Debt Service Fund	\$0	\$0	\$0	\$0	\$1,417,094	\$1,417,094
Capital Projects Fund	\$0	\$500,000	\$895,063	\$21,352,877	\$0	\$22,747,940
Grants Fund	\$533,736	\$1,269,531	\$0	\$10,316,076	\$0	\$12,119,343
Wastewater (Sewer) Fund	\$4,156,208	\$6,012,011	\$0	\$104,930,706	\$5,025,516	\$120,124,441
Grand Total	\$37,929,735	\$25,020,676	\$17,673,878	\$136,867,235	\$6,442,610	\$223,934,133



CITY OF COLUMBIA TENNESSEE
CITY COUNCIL
STAFF REPORT

STAFF REPORT CONTACT INFORMATION

Paul Keltner, AICP, Development Services Director pkeltner@columbiatn.gov 931-560-1560

AGENDA ITEM TITLE: 2ND CONSIDERATION ON ORDINANCE 4541 - AN ORDINANCE AMENDING ORDINANCE NO. 4400, THE SAME BEING THE ZONING ORDINANCE OF THE CITY OF COLUMBIA, TENNESSEE BY AMENDING STANDARDS FOR SHORT TERM RENTAL USE WITHIN ARTICLE 4 AND ARTICLE 9 - CITYWIDE, MORE ATTRACTIVE, LIVABLE CITY.

RECOMMENDATION: Defer Ordinance No. 4541.

INFORMATION: The Department of Development Services is requesting to amend the Article 4 of Zoning Ordinance 4400. The proposed amendments include Uses, Limitations and Standards regarding Short Term Rentals. The Planning Commission recommended approval of this request with a vote of 6-0 at their December 4, 2024 meeting with the conditions from the Planning Commission recommending:

- Modification of the Planning Fee Schedule for Short Rentals requiring Conditional Use Approval with the Board of Zoning Appeals to be \$300 with staff approval of Short-Term Rentals being \$150.

City Council took this matter into consideration on January 9, 2025 and referred the item back to Planning Commission for further review and recommendation at the February 12, 2025 meeting.

Planning Commission reviewed the request on February 12, 2025 and recommended the removal of the limited use standard (PL) of owner occupied in the currently allowed zoning districts for Short Term Rental Use. This allows the use in the CD-4, 4C, 5 and 5C districts. The accessory use table was left as originally recommended to council with the majority of districts allowing the use outright and/or through the conditional use process. This recommendation was approved by a vote of six to zero.

CERTIFICATION: N/A

ATTACHMENTS: Staff Report, Ordinance No. 4541, DS Staff Report.

**AN ORDINANCE AMENDING ORDINANCE NO. 4400, THE SAME BEING
THE ZONING ORDINANCE OF THE CITY OF COLUMBIA, TENNESSEE BY
AMENDING STANDARDS FOR SHORT TERM RENTAL USE WITHIN
ARTICLE 4 AND ARTICLE 9**

WHEREAS, Section §13-7-201 of the Tennessee Code Annotated empowers the city to enact a zoning ordinance and to provide for its administration, enforcement, and amendment; and

WHEREAS, the City Council deems it necessary for the purpose of promoting the health, safety, morals and general welfare of the city to enact such an ordinance; and

WHEREAS, the City Council, pursuant to the provisions of Section §13-4-101 of the Tennessee Code Annotated has appointed a Planning Commission to recommend the appropriate regulations to be enforced therein; and

WHEREAS, on the 4th day of December 2024, and on the 12th day of February 2025, the Planning Commission reviewed and recommended specific changes in accordance to Section 8.5.18, to the Zoning Ordinance regarding Short Term Rental use within Article 4 and Article 9.

WHEREAS, the text within Zoning Ordinance 4400 Article 4.3.9.E.6.kk is being repealed and replaced with the following language:

“Short-Term Rental Units shall be permitted in accordance with the applicable Use Table, subject to the following:

(1) Permit Required

(a) No dwelling unit, accessory dwelling unit, or portion thereof shall be offered for rent as a Short-Term Rental unless the Zoning Administrator has first issued a short-term rental permit to the owner.

(b) Where the **Building, Lot and Building Site Principal Uses Table** identifies the principal use of a dwelling as a Short-Term Rental as permitted subject to limited use standards (PL), a Short-Term Rental may be established upon approval of a Short-Term Rental permit by the Zoning Administrator. The Zoning Administrator shall establish a process for review and issuance of permits for Short Term Rentals.

(c) Where the **Building, Lot and Building Site Accessory Uses Table** identifies accessory use of a dwelling, portion of a dwelling, or an accessory dwelling unit as permitted subject to limited use standards (PL), a Short-Term Rental may be established upon approval of a Short-Term Rental permit by the Zoning Administrator. Accessory Use identifies a dwelling as a Short-Term Rental as a Conditional Use (CU), a Short-Term Rental may be established only

upon approval by the Board of Zoning Appeals. Such approval shall follow the process established at Section 8.5.16. The Zoning Administrator shall review such Short-Term Rental requests and recommend appropriate conditions of approval to the Board of Zoning Appeals. The Zoning Administrator shall issue a Short-Term Rental Permit only upon approval by the Board. The permit shall be subject to any unique conditions imposed by the Board. Conditional Use approval shall expire one year from date of issuance of the subsequent permit. The Board may authorize the Zoning Administrator to extend this time and renew the associated Short-Term Rental Permit, provided the operator adheres to all conditions of approval.

(d) If the Zoning Administrator denies a request for a Short-Term Rental permit, or revokes a previously issued permit, the applicant may appeal the decision to the Board of Zoning Appeals.

(e) A Short-Term Rental Permit shall expire one year from the date of issuance. Failure to renew the permit shall constitute a cessation of the Short-Term Rental and immediate change of use to Household Living.

(f) A Short-Term Rental Permit is granted to a specific operator for a specific dwelling unit or portion thereof and may not be sold or otherwise transferred. Changes in the ownership will result in revocation of the Short-Term Rental permit. A new Short-Term Rental Permit is required when the dwelling unit is sold or conveyed.

(2) Short Term Rental Local Point of Contact Designation

(a) The owner of a short-Term Rental shall designate a permanent local point of contact for each short-term rental property.

(b) If the owner is a natural person, the owner may serve as the local point of contact. Alternatively, the owner may designate another natural person over the age of eighteen as the short-term rental point of contact.

(c) Where Short-Term Rental is the principal use of a dwelling, the name and telephone number of the local point of contact shall be conspicuously posted where it can be seen by guests and law enforcement.

(d) The short-term rental local point of contact must be available to be contacted by the City at all times

(e) Failure of the local contact person to be available at all times for contact by the City constitutes an instance of non-compliance which may result in revocation of the Short-Term Rental permit

(f) When the local point of contact is notified by phone or email that the guests at a short-term rental are violating City ordinances or policies, the local contact person shall communicate with the owner, and the owner shall immediately commence remedial action and cause the violation to cease.

(3) Short-Term Rental operators shall provide a parking plan demonstrating sufficient parking for guests.

(a) Where Short-Term Rental is the principal use of the dwelling, the minimum number of parking spaces shall be equivalent to that required by **Table 4.3.12.B-1 Vehicular Parking Requirements** for a Single-Family Detached Dwelling.

(b) Where Short-Term Rental is the accessory use of dwelling, portion of the dwelling, or accessory dwelling unit, the minimum number of parking spaces shall be equivalent to that required by **Table 4.3.12.B-1 Vehicular Parking Requirements** for the principal use, plus one.

(4) Events are not permitted in conjunction with a short-term rental use. Examples of events include, but are not limited to, weddings, receptions, anniversaries, private parties, banquets, and business seminars.

(5) External alterations or site improvements that change the residential character of the Lot or Building Site upon which a Short-Term Rental is located are prohibited.

(6) Short-Term Rental properties must meet all applicable requirements of the state and local building, fire safety, and property maintenance codes.

(7) Short-Term Rental operators and their guests shall comply with the laws of the state of Tennessee and all ordinances of the City of Columbia.

(8) The Zoning Administrator may revoke a Short-Term rental permit for violations of these standards, violation of any City of Columbia Ordinances, or failure to adhere to conditions of approval imposed by the Board of Zoning Appeals."

WHEREAS, Zoning Ordinance 4400 Table 4.3.9.A-2 Building, Lot and Building Site Accessory Use shall be amended to reflect the following allowance of conditional use (CU), Permitted Limited (PL) and Not Permitted (NP):

ACCESSORY USE	CD-2	CD-3 L	CD-3	CD-4	CD-4C	CD-5	CD - 5C	SD-MHP	SD-INT	SD-LI	SD-HI	PUD - R	PUD-MU	CV
Short-Term Rental Unit	CU	CU	CU	PL	PL	PL	PL	PL	PL	PL	NP	CU	CU	NP

WHEREAS, Zoning Ordinance 4400 Table 4.3.9.A-1 Building, Lot and Building Site Principal Use shall be amended to reflect the following allowance of conditional use (CU), Permitted Limited (PL) and Not Permitted (NP):

PRINCIPAL USE	CD-2	CD-3 L	CD-3	CD-4	CD-4C	CD-5	CD - 5C	SD-MHP	SD-INT	SD-LI	SD-HI	PUD - R	PUD-MU	CV
Short-Term Rental Unit	NP	NP	NP	PL	PL	PL	PL	NP	NP	NP	NP	NP	NP	NP

WHEREAS, Zoning Ordinance 4400 Table 4.3.12.B-1 Vehicular Parking Requirements for the Principal Use “Short-Term Rental Unit” shall be removed.

WHEREAS, Zoning Ordinance 4400 Article 4.3.9.E.6.a Accessory Dwelling the following language shall be removed: “An Accessory Dwelling Unit may not be used for Transient accommodations or as a Short-Term Rental Unit.”

WHEREAS, Zoning Ordinance 4400 Article 9.3 Definitions the term Short-Term Rental Unit shall be repealed and replaced with the following language:

“Short-Term Rental Unit: A Dwelling Unit or Accessory Dwelling Unit which is rented wholly or partially for a period of less than thirty (30) continuous days occupancy for a fee; specifically excluding however a “hotel” as defined in TSA section 68-14-302 or a “bed and breakfast establishment” or a “bed and breakfast homestay” as those terms are defined in TSA section 68-14-502, all as contemplated in TSA section 13-7-602. A Hotel, Extended Stay Hotel, Motel, Bed and Breakfast, or Inn is not a Short-Term Rental Unit.”

WHEREAS, said recommendations are being considered after a public hearing held on the 13th day of February, 2025, notice of which was published in the Daily Herald of Columbia fifteen (15) days or more prior to said meeting; and

NOW, THEREFORE, BE IT ORDAINED BY THE CITY OF COLUMBIA:

Section 1: That Ordinance number 4400, the same being the Zoning Ordinance of the City of Columbia, Tennessee is hereby amended being incorporated herein by reference;

Section 2: That pursuant to Section 8.5.18.J.4, the City Council makes the following specific findings:

- a. The proposed Zoning Ordinance Amendment is consistent with the remainder of this Ordinance, including, specifically, any purpose and intent statements;
- b. The proposed Zoning Ordinance Amendment does not represent a new idea not considered in this Ordinance, but does represent a revision necessitated by changing circumstances over time;
- c. The proposed Zoning Ordinance Amendment does not correct an error in this Ordinance; and
- d. The proposed Zoning Ordinance Amendment is not a revision of this Ordinance for the purpose of complying with state or federal statutes or case law.

Section 3: That ordinances or parts of ordinances in conflict herewith are hereby repealed

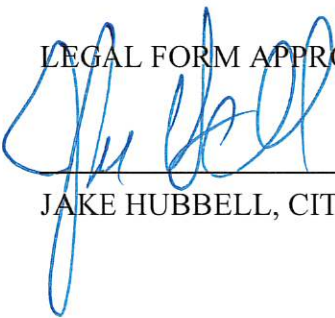
PASSED AND ADOPTED BY THE CITY COUNCIL OF THE CITY OF
COLUMBIA, TENNESSEE, this the 13th day of March, 2025.

CHARLES (CHAZ) M. MOLDER, MAYOR

ATTEST:

THAD H. JABLONSKI, CITY RECORDER

LEGAL FORM APPROVED:



JAKE HUBBELL, CITY ATTORNEY

APPROVED FOR FIRST CONSIDERATION:

ANTHONY R. MASSEY – CITY MANAGER

Passed on 1st consideration _____

Passed on 2nd consideration: _____

Q4 Zoning Text Amendment Limited Use Standards

Project #:	24-0475	Location:	N/A
Applicant:	Kevin C. McCarthy, AICP	Case Type(s):	Text Amendment
Staff Planner:	Kevin C. McCarthy, AICP	Proposed Use:	N/A

SUMMARY

The applicant, the Zoning Administrator, requests to amend the text of Ordinance 4400, the zoning ordinance for the City of Columbia. This is the fifth of five rounds of zoning text amendments staff has presented to the Planning Commission between December 2023 and December 2024. These changes will implement Connect Columbia, better align zoning regulations with community preferences, and calibrate the standards based on “lessons learned” during the first two years administering the Ordinance. This round of proposed amendments is detailed in the attached track changes documents. Specifically the proposal relates to the limited used standards in Article 4 as well as related definition and procedural references in Articles 9 and 8.

- The Planning Commission is a **recommending body** for zoning text amendments. The City Council is the decision-making authority.
- The staff comments section details the proposed changes, which are provided in the agenda packet in ~~striketrough~~ and underlines.
- The specific limited uses impacted by this amendment include: Home Occupations; Bars, Taverns, and Nightclubs; retailers of CBD, Vape, and Tobacco; and Short Term Rentals.
- Planning Commission may recommend adoption of the proposed text, modify the proposal, or decline the request.
- Templates are provided at the end of the report to assist the Planning Commission in crafting properly formatted motions.

CONSISTENCY WITH CONNECT COLUMBIA

The ongoing current process of reviewing and updating the Zoning Ordinance and other regulating documents is part of the implementation of Connect Columbia, the City's comprehensive plan.

REVIEW PROCESS

Section **8.5.18** of the Zoning Ordinance directs the Planning Commission to review and make a recommendation on all proposed changes to the text of the Ordinance. The Planning Commission is the recommending body for text amendments under **§ 8.3.3.B.2** of the Zoning Ordinance.

Section **8.5.18.C** of the Zoning Ordinance requires that Planning Commission determine that the proposed changes are consistent with the comprehensive plan.

8.5.18.G of the Zoning Ordinance establishes the review criteria for approval of all changes to the text of the Ordinance:

- a. The extent to which the proposed Zoning Ordinance Amendment is consistent with the remainder of this Ordinance, including, specifically, any purpose and intent statements;*
- b. The extent to which the proposed Zoning Ordinance Amendment represents a new idea not considered in this Ordinance, or represents a revision necessitated by changing circumstances over time;*
- c. Whether or not the proposed Zoning Ordinance Amendment corrects an error in this Ordinance; and*
- d. Whether or not the proposed Zoning Ordinance Amendment revises this Ordinance to comply with state or federal statutes or case law.*

The criteria for City Council action on a Zoning Ordinance Amendment at § 8.5.18.J.4 are identical to the criteria for Planning Commission review at 8.5.18.G.3.

COMMENTARY FROM PROFESSIONAL PLANNING STAFF

The City Council adopted the current ordinance on July 14, 2022. The Zoning Ordinance implements the City's comprehensive plan, Connect Columbia. On November 8, 2023, the Planning Commission recommended adoption of a five-year update of the framework, land use, and transportation elements of Connect Columbia. The framework element of the plan directs planning staff to initiate revisions to the ordinance in order to bring it into consistency with changes to the future land use plan. It further directs staff to engage residents and property owners to solicit suggestions for further changes to the ordinance. As mentioned above, this is

the final round of zoning text amendments staff plans to present to the Planning Commission between December 2023 and December 2024.

The proposal includes the following changes:

- Home Occupations
 - Distinguishes between “Major” and “Minor” home occupations;
 - Creates a process to allow major home occupations as a conditional use approved by the Board of Zoning Appeals;
 - Continues to permit minor home occupations administratively; and
 - Modifies definition of Home Occupation and Kennels.
- Bars, Taverns & Nightclubs
 - Removes 500 ft exclusion from residential property;
 - Adds exclusions around schools and parks;
 - Prohibits the use on lots and building sites next to residentially zoned property; and
 - Requires a 50 ft separation from property in single-family use regardless of zoning.
- Vape, Tobacco & Cannabinoid Retailers
 - Creates a use category for Vape, Tobacco & Cannabinoid Retailers;
 - Creates a definition for Vape, Tobacco & Cannabinoid Retailers;
 - Imposes a 500 ft separation requirement;
 - Imposes a 500 ft exclusion around schools, parks, and religious facilities; and
 - Requires 50 ft separation from residentially zoned property.
- Short Term Rental
 - Removes requirement that all Short-Term Rentals be accessory uses in owner-occupied dwellings;
 - Modifies the definition of Accessory Dwelling Unit (ADU) to allow the use of ADUs as short-term rentals;
 - Creates an administrative review and permitting process;



- Removes prohibition on short-term rentals in single-family character districts and allows them as a conditional use approved by the Board of Zoning Appeals;
- Allows short-term rentals by administrative approval in mixed use character districts and special districts;
- Requires a local point of contact for each permitted short-term rental; and
- Removes onerous parking requirements for short-term rentals.

Planning staff will present detailed commentary at the December 4, 2024 meeting of the Planning Commission. The proposal

The Planning Commission may recommend approval of the proposed text amendments, direct staff to prepare an alternative text amendment, or decline to act on the proposed changes.

SAMPLE MOTIONS

Approve:

Move to find, based on the analysis provided by city staff, that the criteria listed in section **8.5.18** of the City of Columbia Zoning Ordinance have been satisfied and recommend approval of the proposed text amendments **[may be subject to modifications proposed by the Planning Commission]**.

Deny:

Move to recommend denial of the requested text amendment having found, based on the analysis provided by city staff, that the criteria listed in section **8.5.18** of the City of Columbia Zoning Ordinance are not satisfied *[list specific reasons for denial and provide direction to staff]*.

Defer:

Move to find that there is insufficient information to decide, defer the matter to the next regularly scheduled meeting of the Planning Commission, and direct staff to provide: *[list additional information]* for review at a future meeting.