CITY OF COLUMBIA
TENNESSEE

AGENDA

The Columbia Planning Commission Development Review Committee will meet on Tuesday, April 8, 2025 at 10:00 AM in Conference Room A, basement level, City Hall, to consider the following:

I. Items For Review

1. Request from Keith Durham of Edwards Oil Company for Preliminary PUD Master Plan recommendation that consists of site reconstruction at 2577 Nashville Highway, being Tax Map 42 Parcel 7.

2. Request from Cindy Sims for Site Development Plan revision approval of *The Crossings* multifamily development at 225 Tara Court, located at Tax Map 75 Parcel 34 off West Burt Drive and Columbia Rock Road.

3. Request from Michael Sandifer for a Preliminary PUD Master Plan recommendation for the construction of a telecommunications tower on the site of Christ Our Savior Church at 2494 Nashville Highway, being Tax Map 51 Parcel 7.01.

4. Request from Jansen Dakin for Final Plat approval with surety of Honey Farm Crossing Lot 1 located at 2240 Nashville Highway, being a portion of Tax Map 51 Parcel 58.

5. Request from Davide Tocci for Final Plat approval with surety of Bear Creek Overlook Phase 3 off Merkel Road, being a portion of Tax Map 72 Parcel 53.

6. Request from Curt Harakas for Final Plat approval with surety of Bullock Street Townhomes subdivision at 600 and 602 Bullock Street, being Tax Map 89M Group A Parcels 20 and 20.01.

7. Request from M2 Group, LLC for Final Plat approval with surety of Idlewild Subdivision Section 3 off Hiwassee Drive, being Tax Map 89 Parcels 23.01 and 23.02.

8. Request from Louis Sloyan for Annexation with a Plan of Services and Rezoning to CD-3 (Neighborhood Character District) off Lasea Road, being Tax Map 73 Parcel 17.02.

9. Request from Abigail Overstreet for Final Plat approval with surety of Hampshire Pike Steadfast Mixed Use development located off Hampshire Pike and Avely Ridge Way at Tax Map 89 Parcel 41.15.

II. Items for Additional Review

1. Request from Owen Hosay for Final Plat approval with surety of Marlon's Creek Subdivision Phase 1A at Tax Map 73 Parcel 15, being a portion of 1686 Lasea Road.

2. Request from Owen Hosay for Final Plat approval with surety of Marlon's Creek Subdivision Phase 1B at Tax Map 73 Parcel 15, being a portion of 1686 Lasea Road.

3. Request from Wilson & Associates for Final Plat approval with surety for Hillcrest Village Subdivision at Tax Map 113 Parcels 80.51 and 80.53 off Pulaski Highway and Peaceful Valley Drive.

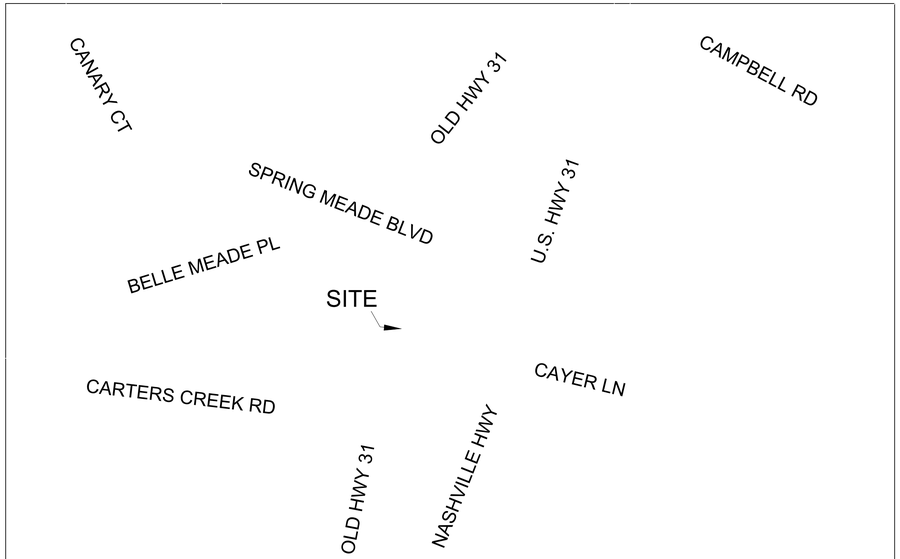
4. Request from Jacob Vincent for Final Plat approval with surety of Bear Springs Subdivision Phase 1B at Tax Map 92 Parcel 12.05 off Bear Creek Pike and Octavia Way.

DRAWING INDEX

SHEET NO.	TITLE
C-1.0	COVER SHEET
C-2.0	SITE PLAN
C-3.0	UTILITY
C-4.0	GRADING AND DRAINAGE
C-4.1	SPOT ELEVATION
C-4.2	PRE-EROSION
C-4.3	INTERMEDIATE EROSION
C-4.4	FINAL STABILIZATION
C-5.0	DETAILS 1
C-5.1	DETAILS 2
C-5.2	DETAILS 3

QUIKMART STORE #34
2577 NASHVILLE HWY
COLUMBIA, TN

SITE DEVELOPMENT PLANS
JANUARY 20, 2025
REVISED:



VICINITY MAP

NTS

TDEC TNR#

SITE DATA TABLE

SITE DATA

DEVELOPMENT:	QUIKMART STORE #4
ADDRESS:	2577 NASHVILLE HWY
CITY:	COLUMBIA
COUNTY:	MAURY
STATE:	TENNESSEE
SUBDIVISION:	TRACT 1 RECORD BOOK 1637, PAGE 638 TAX MAP 042, PARCEL 007.00 THIRD CIVIL DISTRICT MAURY COUNTY , TN
ACREAGE OF SITE:	TOTAL: 2.74 +/- ACRES

ZONING CLASSIFICATION

JURISDICTION:	CITY OF COLUMBIA
ZONING:	PUD-CE
CURRENT USE:	VEHICLE SERVICE
PROPOSED USE:	VEHICLE SERVICE
MIN. LOT AREA (SQ. FT.)	NR
MAX. LOT COVERAGE	100%
MAX. BUILDING HEIGHT	25'
MINIMUM SETBACK REQUIREMENT	FRONT: 100' SIDE: 10' REAR: 20'

BUILDING AREA

SQUARE FOOTAGE:	EDWARDS OIL (6,000 @ 1 STORY)
BUILDING HEIGHT:	?

PARKING SUMMARY

REQUIRED PARKING (PLANNED DEVELOPMENT)

VEHICLE SERVICE= (1 PER 500 S.F)
REQUIRED PARKING = 6,000 S.F/ 500 S.F.= 12 SPCS

PROPOSED PARKING	33 TOTAL
STANDARD PARKING	31 SPACES
ACCESSIBLE PARKING	2 SPACES

GREEN SPACE CALCULATION (25% MIN. REQ'D PER LOT)

REQUIRED= 0.26 AC
PROVIDED= 0.61 AC +/- OR 59.2%

ENGINEER

MB CIVIL ENGINEERING LLC.
759 TIMBER RIDGE ROAD
LEXINGTON, TN 38351
PHONE: (731) 265-6827
CONTACT: ADAM LEDSINGER
EMAIL: adam@mbcivil.net

OWNER/DEVELOPER

EDWARDS REAL ESTATE LLC
105 HELTON DRIVE
LAWRENCEBURG, TN 38464
EMAIL:

REVIEW SET
NOT FOR
CONSTRUCTION

MB CIVIL ENGINEERING, LLC
759 TIMBER RIDGE DR. LEXINGTON, TN 38351

LEGEND

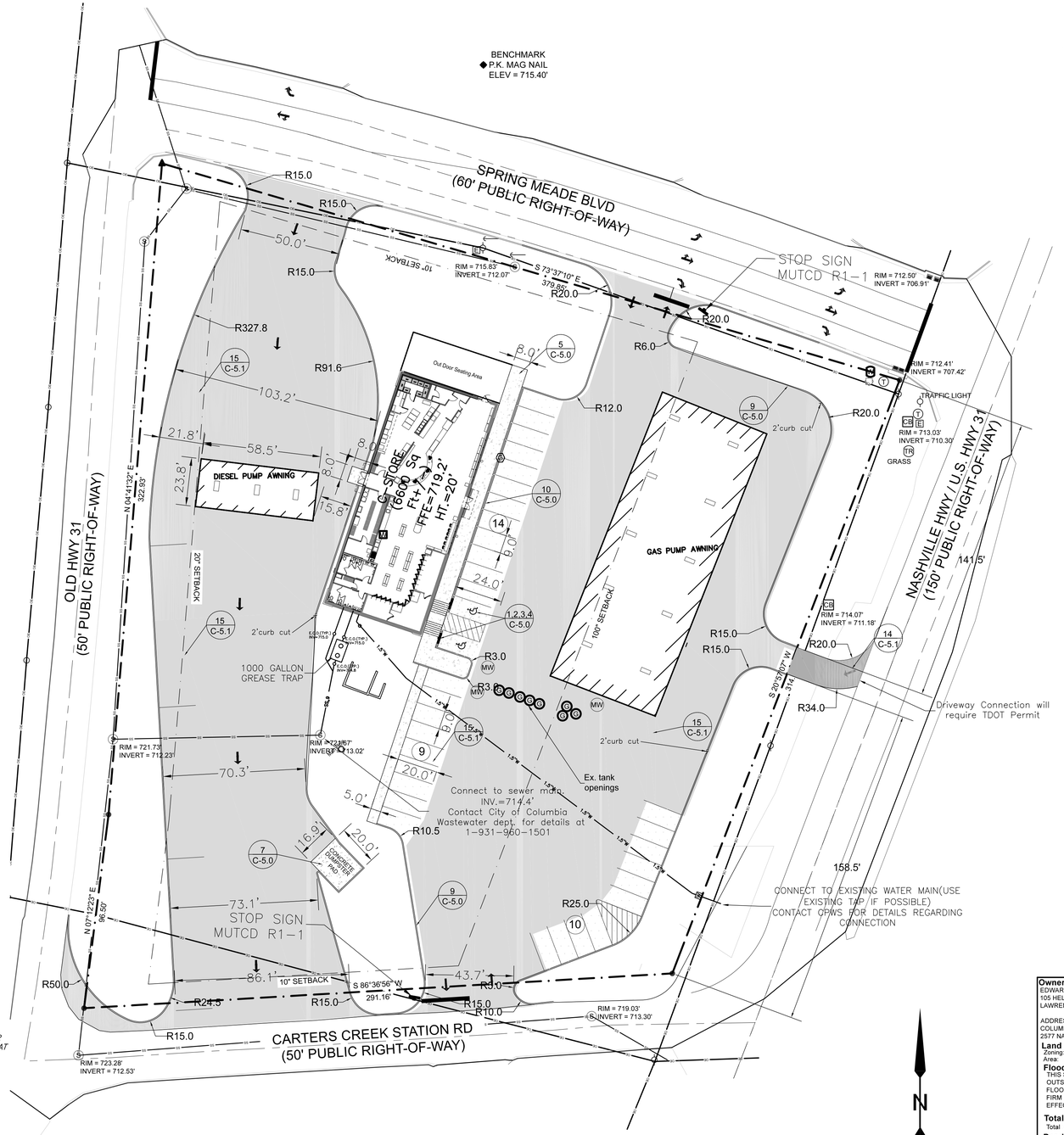
- PROPERTY LINE
- CENTERLINE OF ROAD
- OE — OVERHEAD UTILITY LINE
- SS — SEWER LINE
- (S) SEWER MANHOLE
- FIRE HYDRANT
- (MW) MONITORING WELL
- (W) WATER METER
- (W) WATER VALVE
- (E) ELECTRIC METER
- (TR) ELECTRIC TRANSFORMER
- (T) TRAFFIC SIGNAL VAULT
- (G) GAS METER
- (G) FUEL TANK LIDS
- CB CATCH BASIN
- LIGHT POLE
- UTILITY POLE
- 1/2-INCH REBAR FOUND
- UNMARKED POINT

GENERAL CONSTRUCTION NOTES

1. *PROPERTY LINES SHALL BE FIELD VERIFIED PRIOR TO CONSTRUCTION. GRADING, CLEARING AND THE ERECTION OR REMOVAL OF FENCES ALONG PROPERTY LINES SHALL BE FULLY COORDINATED WITH ADJACENT PROPERTY OWNERS BEFORE BEGINNING CONSTRUCTION.*
2. *VERIFY SITE CONDITIONS PRIOR TO CONSTRUCTION. NOTIFY THE CITY CONSTRUCTION INSPECTION OFFICE & ENGINEER OF ANY VARIATIONS PRIOR TO COMMENCEMENT OF WORK.*
3. *CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES.*
4. *THE CONTRACTOR SHALL INSTALL AND MAINTAIN ALL EROSION CONTROL MEASURES PRIOR TO INITIATING CONSTRUCTION. SEE SPECIFIC NOTES, DRAWINGS, & DETAILS FOR MEASURES REQUIRED.*
5. *IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSURE THAT ALL REQUIRED PERMITS HAVE BEEN OBTAINED PRIOR TO BEGINNING ANY CONSTRUCTION.*
6. *ANY EXISTING ASPHALT PAVEMENT, PRIVACY FENCES AND WALLS, CONCRETE CURBS, OR SIDEWALKS DAMAGED AS A RESULT OF CONSTRUCTION ACTIVITY SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.*
7. *CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF ANY TRENCH STABILIZATION REQUIRED BY OSHA CONSTRUCTION STANDARD FOR EXCAVATIONS, 29 CFR PART 1926, SUBPART P.*
8. *THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION RELATED SURVEYING, INCLUDING ALL LAYOUT AND GRADE STAKING. THE CONTRACTOR WILL ALSO BE RESPONSIBLE FOR GEOTECHNICAL TESTING.*
9. *THE CONTRACTOR SHALL NOTIFY THE CITY A MINIMUM OF 24 HOURS PRIOR TO BEGINNING CONSTRUCTION.*
10. *ALL FILL SOILS SHALL BE COMPACTED TO A MINIMUM OF 95% PROCTOR DENSITY (ASTM D-98) WITHIN 3% OF OPTIMUM MOISTURE CONTENT IN LIFTS NOT TO EXCEED EIGHT (8) INCHES OF COMPACTED THICKNESS.*
11. *ALL NEWLY CUT OR FILLED AREAS, LACKING ADEQUATE VEGETATION, SHALL BE SEEDED, MULCHED FERTILIZED AND OR SODDEN AS REQUIRED TO EFFECTIVELY CONTROL SOIL EROSION.*
12. *THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE APPROXIMATE AND NOT NECESSARILY ALL OF SAME. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE UTILITY COMPANIES WHICH MAINTAIN A UTILITY LINE WITHIN THE BOUNDARIES OF THE PROJECT PRIOR TO THE INITIATION OF ANY CONSTRUCTION ON THE PROJECT OR IN THE STREETS BORDERING THE PROJECT. THE CONTRACTOR SHALL ALSO ASSUME FULL RESPONSIBILITY FOR DAMAGE TO ANY UTILITIES ENCOUNTERED WITHIN CONSTRUCTION PERIMETERS, WHETHER SHOWN ON THE CONSTRUCTION PLANS OR NOT, DURING WORK ON THE PROJECT. FOR SITE LOCATION OF EXISTING UTILITIES CALL TN ONE CALL AT 811.*
13. *ALL GRADING WORK SHALL BE PERFORMED IN SUCH A MANNER THAT ADJACENT PROPERTIES ARE NOT DAMAGED OR ADVERSELY AFFECTED.*
14. *EXISTING SITE CONDITIONS AND TOPOGRAPHY SHOWN ON THIS PLAN ARE TAKEN FROM A FIELD RUN TOPOGRAPHIC SURVEY FROM LI SMITH AND ASSOC.*

Bullet Legend	
14 / C2.0	Detail #14 Sheet C2.0

THE SITE AS SHOWN ON THESE CONSTRUCTION DRAWINGS IS INTENDED TO ACHIEVE SPECIFIC ENGINEERING DESIGN CRITERIA AND OBJECTIVES. IT IS THE SOLE RESPONSIBILITY OF THE OWNER/DEVELOPER TO ENSURE THAT THE CONSTRUCTION OF THE SITE SHOWN ON THESE CONSTRUCTION DRAWINGS IS IN TOTAL ACCORDANCE WITH THE DESIGN AS NOTED, DESCRIBED, AND ILLUSTRATED. THE ENGINEER ASSUMES NO RESPONSIBILITY IN THE ASSURANCE THAT THE SITE IS CONSTRUCTED IN ACCORDANCE WITH THE CONSTRUCTION PLANS.



LIGHT DUTY PAVEMENT

HEAVY DUTY PAVEMENT

TDOT PAVEMENT

N

BEARING BASIS:
TENNESSEE STATE PLANE
COORDINATE SYSTEM -
NAD 1983

0' 30' 60' 90'

MASTER SITE PLAN
SCALE 1"=30'

SITE DRAINAGE NOTE: THIS SITE WILL NOT INCREASE THE DRAINAGE FROM PRE DEVELOPMENT RATES TO POST DEVELOPMENT ONTO TDOT R.O.W.

PAVEMENT MARKING NOTE: ALL PAVEMENT MARKINGS ON TDOT ROW SHALL BE THERMOPLASTIC.

MUTCD R1-1 STOP SIGN

Owner/Developer Info:
EDWARDS REAL ESTATE LLC
105 HELTON DRIVE
LAWRENCEBURG, TN 383464

ADDRESS:
COLUMBIA, TN
2577 NASHVILLE HWY

Land Data:
Zoning:PUD-CE
Area: 2.74 AC +/-

Floodplain Note:
THIS SITE LIES WITHIN ZONE X, AREAS OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN, AS INDICATED ON FEMA NFIP FIRM MAP NUMBER 47119C0180E BEARING AN EFFECTIVE DATE OF APRIL 16, 2007.

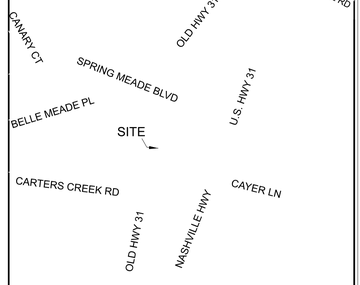
Total Floor Area:
Total 6,000 S.F.

Deed Reference:
RECORD BOOK 1637, PAGE 638
TAX MAP 042, PARCEL 007.00
THIRD CIVIL DISTRICT
MAURY COUNTY, TN

Yard Requirements:
Front: 100'
Side: 10'
Rear: 20'

Intended Use:
VEHICLE SERVICE

Parking:
REQUIRED FOR VEHICLE SERVICE
1 SPACE FOR 500 S.F.
TOTAL SPACES REQUIRED: 12
TOTAL SPACES PROVIDED: 33 (2 HANDICAP)



VICINITY MAP

REVIEW SET
NOT FOR CONSTRUCTION

LEDSINGER ADAM M. No. 112557 REGISTERED ENGINEER STATE OF TENNESSEE

SEAL

MB CIVIL ENGINEERING, LLC
P.O. BOX 601 759 TIMBER RIDGE DR. LEXINGTON, TN 38351
VOICE:731-265-6827 adam@mbcivil.net

PROJECT

QUICKMART STORE #34
2577 NASHVILLE HWY
COLUMBIA, TN

REVISION DATES

DATE
JANUARY 20, 2025

SHEET
C-2.0 OF 11

JOB No.
22008

GENERAL UTILITY NOTES

1. *EXISTING UTILITY LINES SHOWN ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LINE LOCATIONS PRIOR TO BEGINNING CONSTRUCTION.*

2. *THE CONTRACTOR WILL PROVIDE ALL NECESSARY PROTECTIVE MEASURES TO SAFEGAURD EXISTING UTILITIES FROM DAMAGE DURING CONSTRUCTION OF THIS PROJECT. IN THE EVENT THAT SPECIAL EQUIPMENT IS REQUIRED TO WORK OVER AND AROUND THE UTILITIES, THE CONTRACTOR WILL BE REQUIRED TO FURNISH SUCH EQUIPMENT. THE COST OF PROTECTING UTILITIES FROM DAMAGE AND FURNISHING SPECIAL EQUIPMENT WILL BE INCLUDED IN THE PRICE BID FOR OTHER ITEMS OF CONSTRUCTION.*

3. *THE CONTRACTOR SHALL NOTIFY EACH INDIVIDUAL UTILITY OWNER OF HIS PLAN OF OPERATION IN THE AREA OF THE UTILITIES, PRIOR TO COMMENCING WORK, THE CONTRACTOR SHALL CONTACT THE UTILITY OWNERS AND REQUEST THEM TO PROPERLY LOCATE THEIR RESPECTIVE UTILITY ON THE GROUND. THIS NOTIFICATION SHALL BE GIVEN AT LEAST (3) BUSINESS DAYS PRIOR TO COMMENCEMENT OF OPERATIONS AROUND THE UTILITY.*

4. *THE CONTRACTOR SHALL COORDINATE INSTALLATION OF UTILITIES IN SUCH MANNER AS TO AVOID CONFLICTS AND ASSURE PROPER DEPTHS ARE ACHIEVED AS WELL AS COORDINATING WITH THE REGULATORY AGENCY AS TO LOCATION AND SCHEDULING OF TIE-INS/CONNECTIONS TO THEIR FACILITIES.*

5. *ALL UNDERGROUND UTILITIES (WATER, SEWER, STORM SEWER, ELECTRICAL CONDUIT, IRRIGATION SLEEVES, AND ANY OTHER MISCELLANEOUS), SHALL BE IN-PLACE PRIOR TO THE PLACEMENT OF BASE COURSE MATERIAL.*

6. *LOCATION OF SITE UTILITIES SHALL BE VERIFIED WITH PROPER UTILITY COMPANY PROVIDING SERVICE.*

7. *UTILITY CONTRACTOR WILL BE RESPONSIBLE FOR ALL TAP AND TIE ON FEES REQUIRED, AS WELL AS COST OF UNDERGROUND SERVICE CONNECTIONS TO THE LOTS.*

8. *THE CONTRACTOR SHALL PROVIDE A SUITABLE OFFICE NEAR THE SITE FOR HIS USE AND AT WHICH COPIES OF THE SPECIFICATIONS AND DRAWINGS SHALL BE KEPT. THE CONTRACTOR SHALL ALSO DESIGNATE TO THE OWNER A PERSON TO BE NOTIFIED IN CASE OF EMERGENCIES OTHER THAN DURING WORKING HOURS AND ON HOLIDAYS AND WEEKENDS.*

9. *STREETS SHALL BE GRADED TO SUBGRADE BEFORE WATER LINES AND SANITARY SEWERS ARE INSTALLED.*

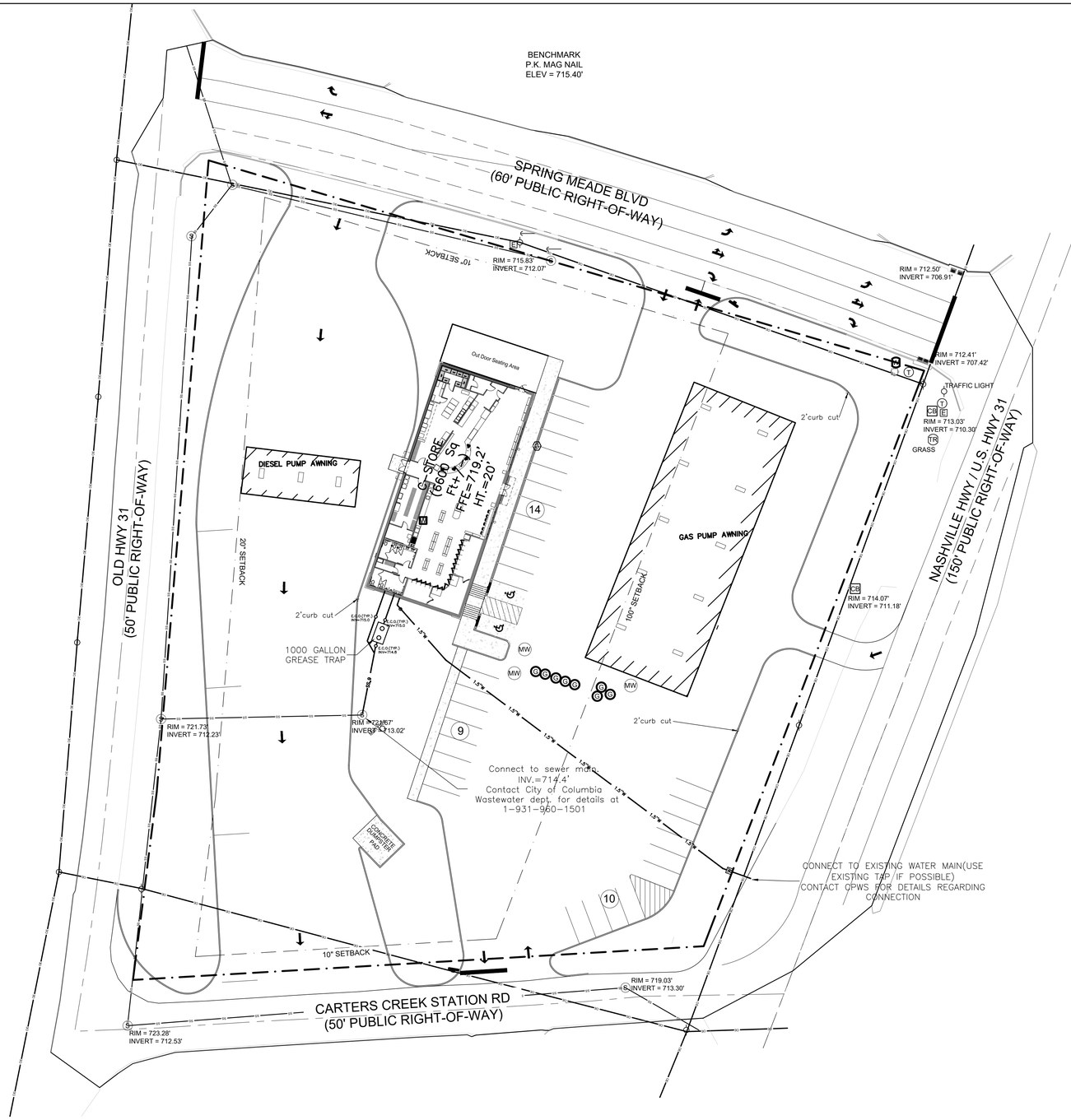
10. *THE OWNER/DEVELOPER FOR BUDGET PURPOSES, SHOULD CHECK WITH THE LOCAI UTILITY DEPARTMENT FOR CONNECTION FEES WHICH MAY BE SUBSTANTIAL.*

11. *CONTRACTORS FOR WATER AND SEWER WORK MUST BE APPROVED BY THE CITY UTILITY DEPARTMENT.*

12. *IN TENNESSEE IT IS A REQUIREMENT PER THAT ANYONE WHO ENGAGES IN EXCAVATION MUST NOTIFY ALL KNOW UTILITY OWNERS, NO LESS THAN THREE NOR MORE THAN TEN WORKING DAYS , PRIOR TO THEIR INTENDED EXCAVATION. A LIST OF THESE UTILITY OWNERS MAY BE OBTAINED FROM THE COUNTY REGISTER OF DEEDS. THOSE UTILITY OWNERS WHO PARTICIPATE IN THE TENNESSEE ONE CALL SYSTEM CAN BE NOTIFIED TOLL FREE AT 811.*

REDUCED PRESSURE BACKFLOW PREVENTER NOTES:

1. The reduced pressure backflow prevention device will be located inside the building in the mechanical room. For the Starbucks building



Bullet Legend

14 / C2.0 — Detail #14, Sheet C2.0

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BEARING BASIS:
TENNESSEE STATE PLANE
COORDINATE SYSTEM -
NAD 1983

0' 30' 60' 90'

MASTER UTILITY PLAN

SCALE 1"=30'

REVIEW SET
NOT FOR CONSTRUCTION

SEAL

MBCIVIL ENGINEERING, LLC
P.O. BOX 601 759 TIMBER RIDGE DR. LEXINGTON, TN 38351
VOICE:731-265-6827 mbarn@mbcivil.net

PROJECT

QUICKMART STORE #34
2577 NASHVILLE HWY
COLUMBIA, TN

REVISION DATES

DATE
JANUARY 20, 2025

SHEET
C-3.0 OF 11

JOB No.
22008

GRADING AND DRAINAGE NOTES

1. THE SITE WORK CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL UNDERGROUND UTILITIES (WATER, SANITARY SEWER, STORM SEWER, ELECTRICAL CONDUIT, IRRIGATION SLEEVES, AND ANY OTHER MISCELLANEOUS UNDERGROUND UTILITIES, DEVICES, OR STRUCTURES), SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF THE BASE COURSE MATERIAL.
2. THE CONTRACTOR SHALL CUT EXISTING PAVEMENT AS NECESSARY TO ASSURE SMOOTH FIT AND CONTINUOUS GRADE.
3. THE CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING STORM SEWER STRUCTURES, PIPES AND ALL UTILITIES PRIOR TO CONSTRUCTION.
4. CLEARING AND GRUBBING LIMITS SHALL INCLUDE ALL AREAS DISTURBED BY GRADING OPERATION
5. ANY GRADED OR DISTURBED AREAS SHALL HAVE 4 INCHES OF TOPSOIL, SEED, MULCH, FERTILIZER AND WATER APPLIED UNTIL A HEALTHY STAND OF GRASS IS OBTAINED. THE RESTORATION SHALL CLOSELY FOLLOW CONSTRUCTION.
6. THE EXISTING SOIL MATERIAL HEREON MAY BE DISTURBED BY CUTTING OR FILLING OPERATIONS PERFORMED DURING OR BEFORE DEVELOPMENT. THEREFORE, THE BUILDER OR DEVELOPER OF ANY PROPOSED STRUCTURE SHALL INVESTIGATE THE CURRENT CONDITIONS AND CONSULT WITH A GEOTECHNICAL EXPERT OR OTHER QUALIFIED PERSON AS HE DEEMS APPROPRIATE TO ASSURE HIMSELF THAT THE DESIGN OF THE PROPOSED FOUNDATION IS ADEQUATE.
7. A SEPARATE R.O.W. PERMIT ISSUED BY THE CITY AND TDOT WILL BE REQUIRED FOR EXCAVATION AND CONSTRUCTION IN THE PUBLIC R.O.W.
8. HANDICAP PARKING SPACES AND ACCESSIBLE ROUTES SHALL BE CONSTRUCTED AND SLOPED IN ACCORDANCE WITH ALL PROVISIONS OF THE A.D.A.
9. IN TENNESSEE IT IS A REQUIREMENT PER THAT ANYONE WHO ENGAGES IN EXCAVATION MUST NOTIFY ALL KNOW UTILITY OWNERS, NO LESS THAN THREE NOR MORE THAN TEN WORKING DAYS , PRIOR TO THEIR INTENDED EXCAVATION. A LIST OF THESE UTILITY OWNERS MAY BE OBTAINED FROM THE COUNTY REGISTER OF DEEDS. THOSE UTILITY OWNERS WHO PARTICIPATE IN THE TENNESSEE ONE CALL SYSTEM CAN BE NOTIFIED TOLL FREE AT 811.

GENERAL EROSION CONTROL NOTES

1. ALL NEWLY CUT OR FILL AREAS LACKING ADEQUATE VEGETATION SHALL BE FERTILIZED, MULCHED, AND SEEDED, AND /OR SODDEN TO EFFECTIVELY CONTROL SOIL EROSION.
2. A SPECIFIC INDIVIDUAL SHALL BE DESIGNATED TO BE RESPONSIBLE FOR EROSION AND SEDIMENT CONTROLS ON EACH PROJECT SITE.
3. A COPY OF THE EROSION CONTROL PLAN MUST BE AVAILABLE ON SITE FOR THE DWPC INSPECTOR ON REQUEST. SEE SUGGESTED LOCATION ON PLAN.
4. EROSION AND SEDIMENT CONTROL MEASURES MUST BE IN PLACE AND FUNCTIONAL BEFORE ANY EARTH MOVING OPERATION BEGINS, AND MUST BE CONSTRUCTED AND MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD. TEMPORARY MEASURES MAY BE REPLACED AT THE END OF THE WORK DAY, OR PRIOR TO RAINFALL EVENTS.
5. ALL CONTROL MEASURES SHALL BE CHECKED TWICE WEEKLY NO LESS THAN 72 HOURS APART AND SHALL MAINTAIN 50% OF ITS DESIGN CAPACITY AT ALL TIMES.
6. ALL EXCAVATING AND CLEARING SHALL BE COORDINATED TO PREVENT ANY SURFACE FROM REMAINING UNCOVERED FOR MORE THAN 14 DAYS, GRAVEL SHALL NOT BE CONSIDERED AS COVER.
7. ALL AREAS USED TO TEMPORARILY STORE TOPSOIL OR OTHER ERODABLE MATERIAL SHALL BE PROTECTED FROM EROSION ACCORDING TO THE DETAIL ON THIS PLAN. IF THESE AREAS ARE TO REMAIN IN PLACE FOR LONGER THAN 14 DAYS THEY SHOULD BE SEEDED AND MULCHED TO ESTABLISH GOOD GROUND COVER.
8. ALL DITCHES ON THE PROJECT SHOULD BE STABILIZED WITH SEED AND MULCH OR EROSION CONTROL MATTING AS SOON AS FINAL GRADING OPERATIONS HAVE CEASED.
9. AREAS OF DISTURBED SOILS MUST BE STABILIZED WITHIN 7 DAYS IF SLOPE IS 35% OR GREATER

EROSION CONTROL NOTES

1. THE SITE CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING AND MAINTAINING SUITABLE EROSION AND SEDIMENT CONTROL DEVICES ON-SITE DURING CONSTRUCTION AS REQUIRED TO PREVENT SILT FROM LEAVING SITE. SILT WILL NOT BE ALLOWED BEYOND CONSTRUCTION LIMITS.
2. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING EXCESS SILT FROM SITE AND ASSURING PLAN ALIGNMENT AND GRADE IN ALL DITCHES AT THE COMPLETION OF CONSTRUCTION.
3. THE CONTRACTOR IS RESPONSIBLE FOR CLEANING OUT ALL STORM DRAINAGE STRUCTURES, INCLUDING FLUMES, PIPES, ETC., PRIOR TO COMPLETION OF THIS PROJECT.
4. EROSION CONTROL SHALL BE PROVIDED FOR ALL CUT AND FILL OPERATIONS WITHIN THE LIMITS OF THE CONSTRUCTION SITE, THOUGHOUT THE CONSTRUCTION PERIOD TO PROVIDE THE SITE WITH THE MAXIMUM PROTECTION FROM EROSION AT ALL TIMES.
5. EROSION CONTROL MEASURES ARE TO BE INSTALLED PRIOR TO ANY GRADING ON-SITE AND ARE TO BE MAINTAINED IN PLACE UNTIL STABILIZATION OF ERODABLE SOILS HAS BEEN ACCOMPLISHED.

Bullet Legend	
14 / C2.0	Detail #14 Sheet C2.0

Grading and Erosion Control Legend	
Existing Contour	345
Proposed Contour	345
Storm Structure	
Proposed Storm	STM STM
Inlet Protection	
Structure/Pipe ID	#1 Ⓐ
Silt Fence	SF SF
Wire backed silt fence	SFB SFB
EX. SPOT ELEV.	×479.6
PROP. SPOT ELEV.	+74.8 BC35.2=Bottom Curb TC35.3=top curb
SEDIMENT TUBE	

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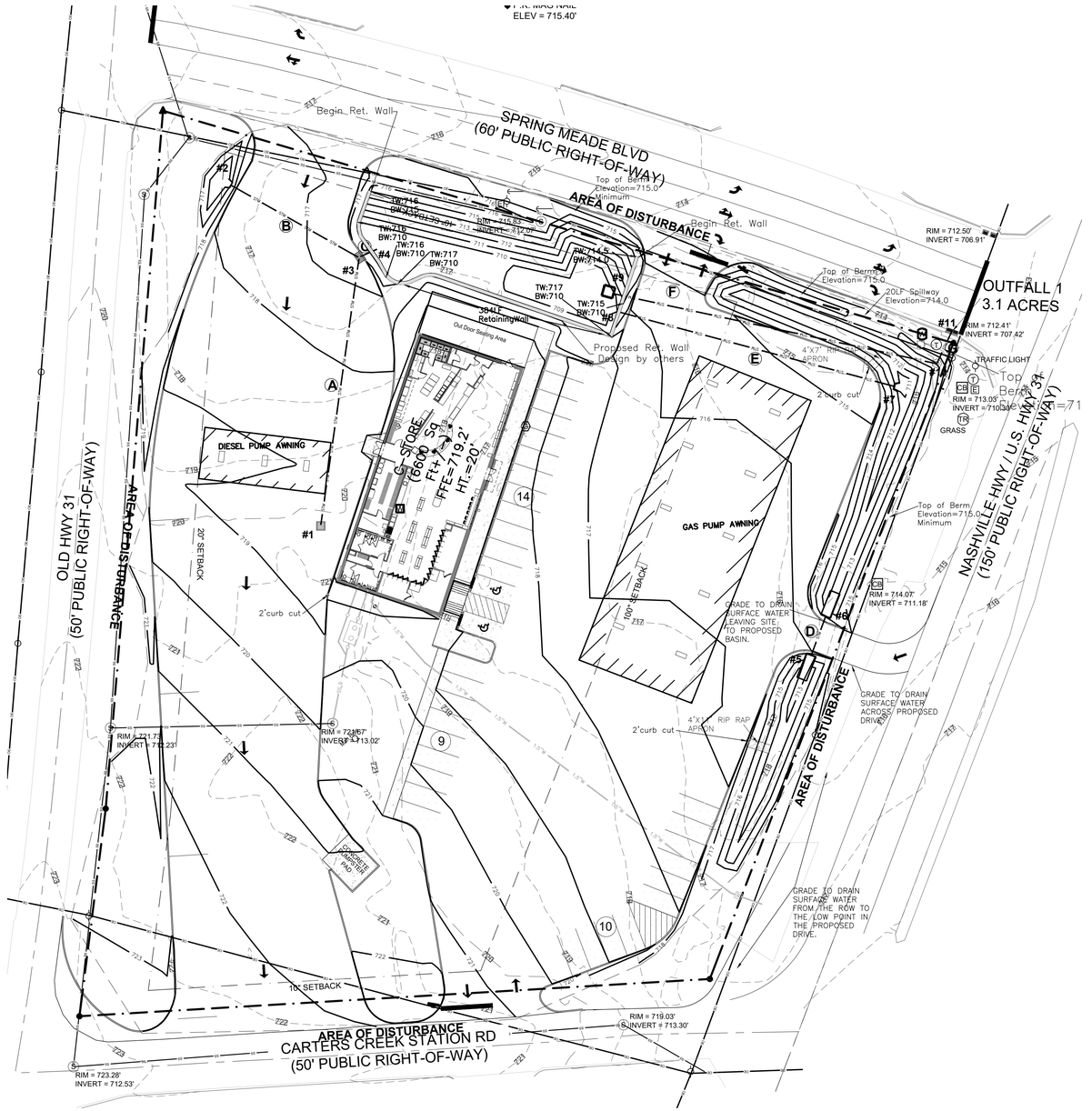
UNDERGROUND UTILITY NOTE: PRIOR TO ORDERING MATERIALS FOR STORM WATER INSTALLATION, THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES (WATER AND ELECTRIC) THAT MIGHT INTERFERE WITH THE INSTALLATION OF THE SITE STORMWATER FEATURES AND NOTIFY THE ENGINEER IF ANY CONFLICTS EXIST.



PIPE TABLE					
PIPE	SIZE/TYPE	INV. (IN)	INV. (OUT)	SLOPE %	LENGTH (FT)
A	15 " HP	715.20	713.40	1.45%	124
B	15 " HP	715.00	713.40	2.39%	67
C	18 " HP	710.00	709.80	2.86%	7
D	18 " RCP	712.70	712.50	1.00%	20
E	18 " HP	710.90	708.80	1.59%	132
F	18" RCP	708.50	707.60	0.59%	152
G	18 " HP	707.60	707.50	0.67%	15

DRAINAGE STRUCTURE TABLE						
STR #	T.O.C.	INV. (IN)	INV. (OUT)	DESCRIPTION	STRUCTURE NUMBER	CASTING NUMBER
1	718.2	----------	715.2	DROP GRATE	TDOT #42 Grate	JBS 4200
2	----------	715	----------	HEADWALL	VIEW DETAIL	VIEW DETAIL
3	716.4	713.4	710	CURB INLET	TDOT #12 INLET	JBS 3123
4	----------	----------	709.8	No Structure		
5	----------	712.7	----------	TDOT HW	D-PE-18A	VIEW DETAIL
6	----------	----------	712.50	TDOT HW	D-PE-18A	VIEW DETAIL
7	----------	710.90	----------	HEADWALL	VIEW DETAIL	VIEW DETAIL
8	----------	----------	708.80	No Structure		
9	712.67	708.5	708.50	Outlet Structure	VIEW DETAIL	VIEW DETAIL
10	715	707.6	707.6	Manhole	D-MH-2	VIEW DETAIL
11	----------	707.5	----------	Existing structure		VIEW DETAIL

AREA OF DISTURBANCE= 1.12 AC+/-
EX. IMPERVIOUS AREA= 0AC+/-
PROP. IMPERVIOUS= 0.83AC +/-

N

BEARING BASIS:
TENNESSEE STATE PLANE
COORDINATE SYSTEM –
NAD 1983

0' 30' 60' 90'

GRADING AND DRAINAGE PLAN

SCALE 1"=30'

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VOICE: 731-265-6827 mbcivil.net TENNESSEE CA# 8410

REVIEW SET
NOT FOR CONSTRUCTION

SEAL

PROJECT
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2577 NASHVILLE HWY
COLUMBIA, TN

REVISION DATES

DATE
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SHEET C-4.0 OF 11

JOB No.
22008

GRADING AND DRAINAGE NOTES

1. THE SITE WORK CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL UNDERGROUND UTILITIES (WATER, SANITARY SEWER, STORM SEWER, ELECTRICAL CONDUIT, IRRIGATION SLEEVES, AND ANY OTHER MISCELLANEOUS UNDERGROUND UTILITIES, DEVICES, OR STRUCTURES), SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF THE BASE COURSE MATERIAL.

2. THE CONTRACTOR SHALL CUT EXISTING PAVEMENT AS NECESSARY TO ASSURE SMOOTH FIT AND CONTINUOUS GRADE.

3. THE CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING STORM SEWER STRUCTURES, PIPES AND ALL UTILITIES PRIOR TO CONSTRUCTION.

4. CLEARING AND GRUBBING LIMITS SHALL INCLUDE ALL AREAS DISTURBED BY GRADING OPERATION

5. ANY GRADED OR DISTURBED AREAS SHALL HAVE 4 INCHES OF TOPSOIL, SEED, MULCH, FERTILIZER AND WATER APPLIED UNTIL A HEALTHY STAND OF GRASS IS OBTAINED. THE RESTORATION SHALL CLOSELY FOLLOW CONSTRUCTION.

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14 / C2.0	Detail #14 Sheet C2.0

Grading and Erosion Control Legend	
Existing Contour	345
Proposed Contour	345
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Proposed Storm	STM STM
Inlet Protection	
Structure/Pipe ID	#1 Ⓐ
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Wire backed silt fence	SFB SFB
EX. SPOT ELEV.	×479.6
PROP. SPOT ELEV.	+74.8 BC35.2=Bottom Curb TC35.3=top curb
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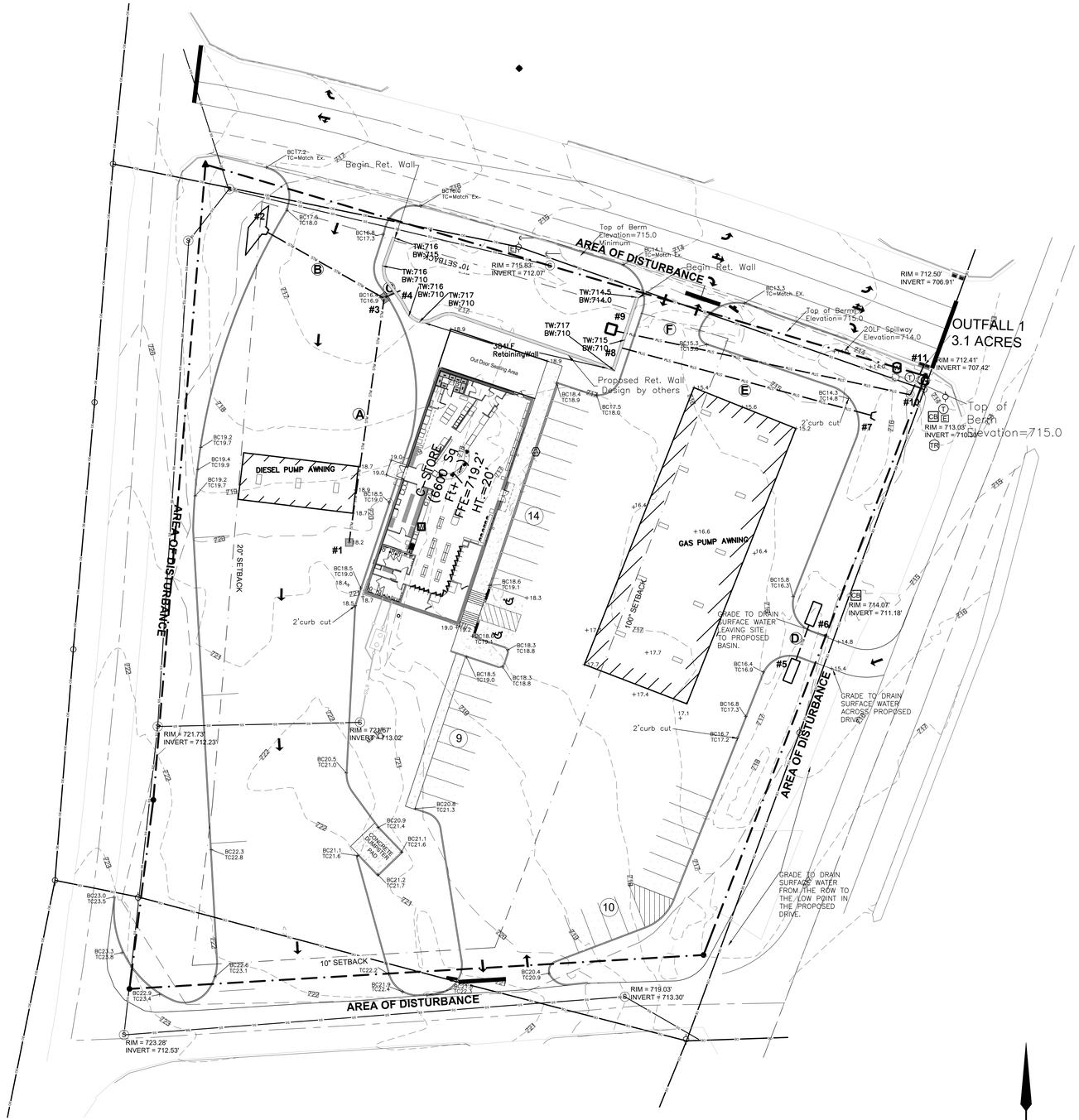

AREA OF DISTURBANCE= 1.68 AC+/-
EX. IMPERVIOUS AREA= 1.64 AC+/-
PROP. IMPERVIOUS= 1.11AC +/-

N

0' 30' 60' 90'

LOT 1 SPOT ELEVATION PLAN

SCALE 1"=30'

REVIEW SET
NOT FOR CONSTRUCTION

SEAL

MBCIVIL ENGINEERING, LLC
P.O. BOX 601 759 TIMBER RIDGE DR. LEXINGTON, TN 38351
VOICE: 731-265-6827 mbarn@mbcivil.net TENNESSEE CA# 8410

PROJECT

QUICKMART STORE #34
2577 NASHVILLE HWY
COLUMBIA, TN

REVISION DATES

DATE
JANUARY 20, 2025

SHEET
C-4.1 OF 11

JOB No.
22008

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EPSC PHASING

1. INSTALL CONSTRUCTION ENTRANCE/EXIT.
2. INSTALL SILT FENCE @ DOWNSLOPE AREAS.
3. MUST BE INSTALLED AND INSPECTED PRIOR TO ISSUANCE OF GRADING PERMIT.
4. COMMENCE GRADING OPERATIONS.

PROPOSED DRAINAGE EASEMENT DESCRIPTION

DESCRIPTION OF PROPOSED DRAINAGE EASEMENT ACROSS CLARK PROPERTY(RB 1086, PG 1783) ON GRACE COVE IN MEDINA, TN

THE FOLLOWING DESCRIPTION IS OF A PROPOSED DRAINAGE EASEMENT ACROSS THE CLARK PROPERTY AS RECORDED IN RECORD BOOK 1086 AT PAGE 1783 IN THE REGISTER'S OFFICE OF GIBSON COUNTY , TENNESSEE. THE PROPERTY ACROSS WHICH THE EASEMENT RUNS IS LOCATED ON GRACE COVE IN MEDINA, GIBSON COUNTY, TENNESSEE, AND IS MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A FOUND IRON PIN ON THE NORTH RIGHT OF WAY OF GRACE COVE(30 FEET FROM THE CENTER) AT THE SOUTHWEST CORNER OF LOT 8 OF THE MEDINA COMMERCIAL DEVELOPMENT(PLAT CAB D, SLIDE 39) AND BEING THE SOUTHEAST CORNER OF CLARK AS RECORDED IN RECORD BOOK 1086 AT PAGE 1783.

THENCE FROM THE POINT OF BEGINNING AND WITH THE NORTH RIGHT OF WAY OF GRACE COVE, A RECORD BEARING(REFERENCED TO THE PLAT CAB D, SLIDE 39) OF NORTH 85 DEGREES 48 MINUTES 05 SECONDS WEST A DISTANCE OF 66.10 FEET; THENCE LEAVING SAID ROAD ACROSS CLARK PROPERTY(RB 1086, PG 1783), NORTH 50 DEGREES 07 MINUTES 15 SECONDS EAST A DISTANCE OF 71.73 FEET; THENCE WITH A CURVE TURNING TO THE LEFT WITH AN ARC LENGTH OF 12.02 FEET, WITH A RADIUS OF 15.00 FEET, WITH A CHORD BEARING OF NORTH 27 DEGREES 09 MINUTES 35 SECONDS EAST, WITH A CHORD LENGTH OF 11.70 FEET; THENCE NORTH 04 DEGREES 11 MINUTES 55 SECONDS EAST A DISTANCE OF 173.77 FEET TO THE NORTH LINE OF CLARK; THENCE SOUTH 85 DEGREES 59 MINUTES 38 SECONDS EAST A DISTANCE OF 10.00 FEET TO THE NORTHWEST CORNER OF LOT 8 OF THE MEDINA COMMERCIAL DEVELOPMENT; THENCE WITH THE WEST LINE OF LOT 8 , SOUTH 04 DEGREES 11 MINUTES 55 SECONDS WEST A DISTANCE OF 234.48 FEET TO THE POINT OF BEGINNING, HAVING AN AREA OF 3874 SQUARE FEET OR 0.089 ACRES.

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Proposed Contour	345
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Proposed Storm	STM — STM
Inlet Protection	
Structure/Pipe ID	#1 Ⓐ
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EX. SPOT ELEV.	×479.6
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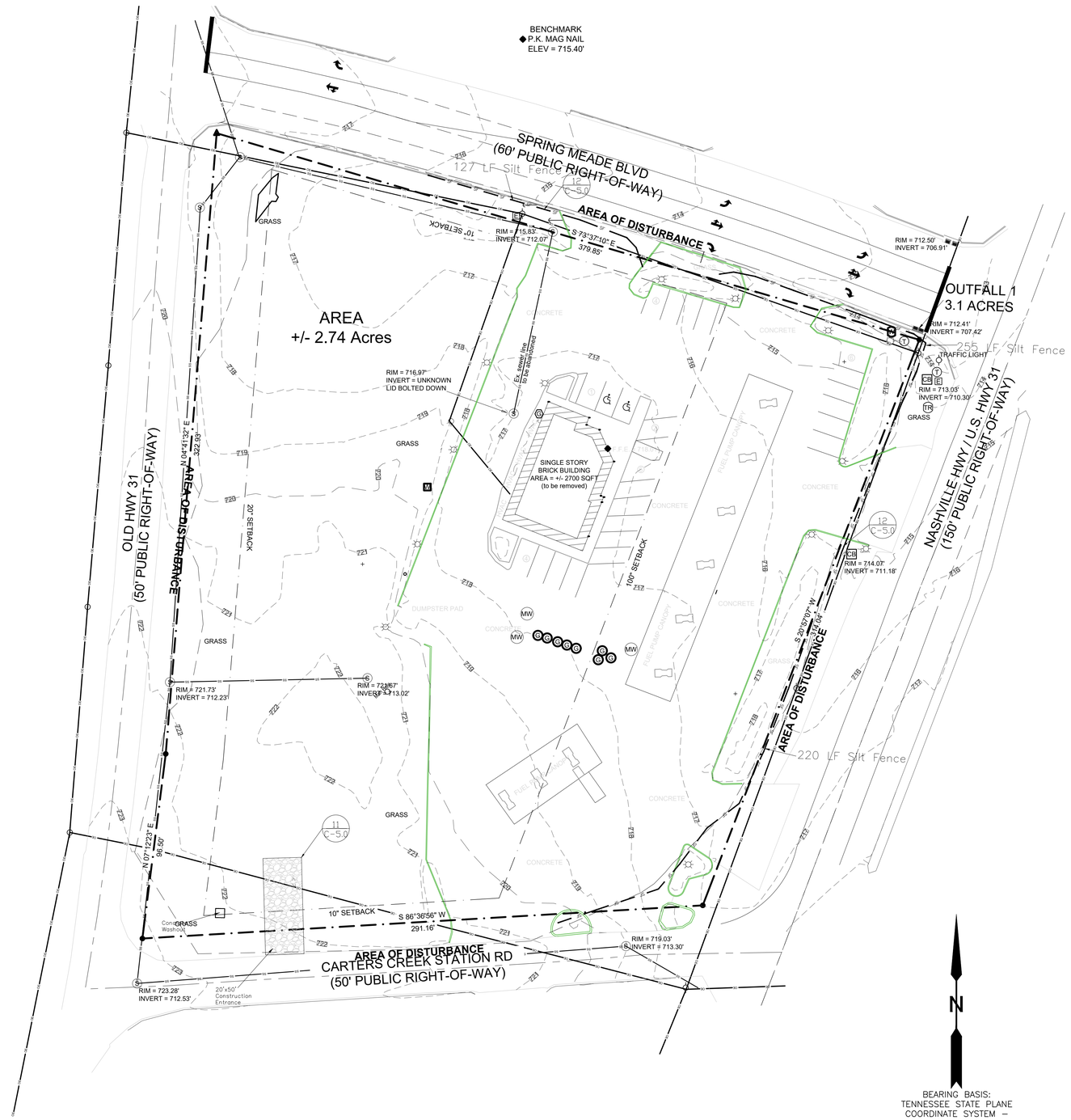

AREA OF DISTURBANCE= 1.12 AC+/-
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BEARING BASIS:
TENNESSEE STATE PLANE
COORDINATE SYSTEM –
NAD 1983

0' 30' 60' 90'

PRELIMINARY EROSION CONTROL

SCALE 1"=30'

REVIEW SET
NOT FOR
CONSTRUCTION

SEAL

MBCIVIL ENGINEERING, LLC
P.O. BOX 601 759 TIMBER RIDGE DR. LEXINGTON, TN 38351
VOICE 731-365-8827 adam@mbcivil.net TENNESSEE C# 6410

PROJECT

QUICKMART STORE #34
2577 NASHVILLE HWY
COLUMBIA, TN

REVISION DATES

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JANUARY 20, 2025

SHEET
C-4.2 OF 10

JOB No.
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N

BEARING BASIS:
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COORDINATE SYSTEM –
NAD 1983

0' 30' 60' 90'

INTERMEDIATE EROSION PLAN

SCALE 1"=30'

REVIEW SET
NOT FOR CONSTRUCTION

ADAM T. LEDSINGER
REGISTERED ENGINEER
No. 120,143
STATE OF TENNESSEE

SEAL

MBCIVIL ENGINEERING, LLC
P.O. BOX 601 759 TIMBER RIDGE DR LEXINGTON, TN 38351
VOICE: 731-265-6827 adam@mbcivil.net TENNESSEE CA# 8410

PROJECT

QUICKMART STORE #34
2577 NASHVILLE HWY
COLUMBIA, TN

REVISION DATES

DATE
JANUARY 20, 2025

SHEET
C-4.3 OF 10

JOB No.
22008

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3. THE CONTRACTOR IS RESPONSIBLE FOR CLEANING OUT ALL STORM DRAINAGE STRUCTURES, INCLUDING FLUMES, PIPES, ETC., PRIOR TO COMPLETION OF THIS PROJECT.

4. EROSION CONTROL SHALL BE PROVIDED FOR ALL CUT AND FILL OPERATIONS WITHIN THE LIMITS OF THE CONSTRUCTION SITE, THOUGHOUT THE CONSTRUCTION PERIOD TO PROVIDE THE SITE WITH THE MAXIMUM PROTECTION FROM EROSION AT ALL TIMES.

5. EROSION CONTROL MEASURES ARE TO BE INSTALLED PRIOR TO ANY GRADING ON-SITE AND ARE TO BE MAINTAINED IN PLACE UNTIL STABILIZATION OF ERODABLE SOILS HAS BEEN ACCOMPLISHED.

Grading and Erosion Control Legend	
Existing Contour	345
Proposed Contour	345
Storm Structure	
Proposed Storm	STM STM
Inlet Protection	
Structure/Pipe ID	#1 Ⓐ
Silt Fence	SF SF
Wire backed silt fence	SFB SFB
EX. SPOT ELEV.	×479.6
PROP. SPOT ELEV.	+74.8 BC35.2=Bottom Curb TC35.3=top curb
SEDIMENT TUBE	

Bullet Legend	
14 / C2.0	Detail #14 Sheet C2.0

THE SITE AS SHOWN ON THESE CONSTRUCTION DRAWINGS IS INTENDED TO ACHIEVE SPECIFIC ENGINEERING DESIGN CRITERIA AND OBJECTIVES. IT IS THE SOLE RESPONSIBLITY OF THE OWNER/DEVELOPER TO ENSURE THAT THE CONSTRUCTION OF THE SITE SHOWN ON THESE CONSTRUCTION DRAWINGS IS IN TOTAL ACCORDANCE WITH THE DESIGN AS NOTED, DESCRIBED, AND ILLUSTRATED. THE ENGINEER ASSUMES NO RESPONSIBILITY IN THE ASSURANCE THAT THE SITE IS CONSTRUCTED IN ACCORDANCE WITH THE CONSTRUCTION PLANS.

AREA TO BE SEEDED AND MULCHED OR SOD

AREA OF DISTURBANCE= 1.12 AC+/-
EX. IMPERVIOUS AREA= 0AC+/-
PROP. IMPERVIOUS= 0.83AC +/-

N

BEARING BASIS:
TENNESSEE STATE PLANE
COORDINATE SYSTEM -
NAD 1983

0' 30' 60' 90'

Phase II EPSC/Final stablization

SCALE 1"=30'

REVIEW SET
NOT FOR CONSTRUCTION

ADAM LEDSINGER
REGISTERED ENGINEER
No. 121
STATE OF TENNESSEE

SEAL

MBCIVIL ENGINEERING, LLC
P.O. BOX 601 759 TIMBER RIDGE DR LEXINGTON, TN 38351
VOICE:731-265-6827 adam@mbcivil.net TENNESSEE CA# 8410

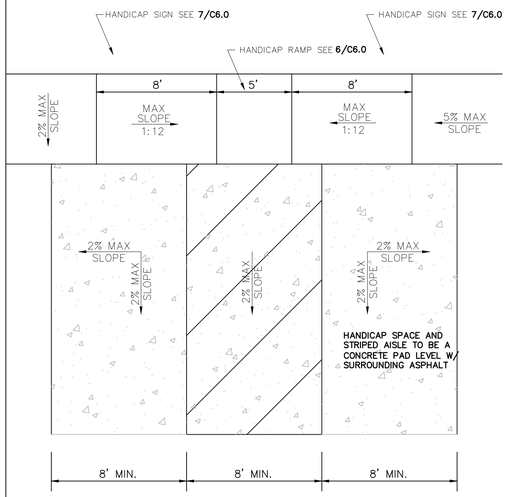
PROJECT
QUICKMART STORE #34
2577 NASHVILLE HWY
COLUMBIA, TN

REVISION DATES

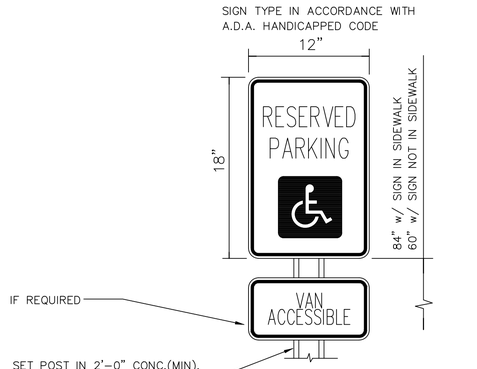
DATE
JANUARY 20, 2025

SHEET
C-4.4
OF
10

JOB No.
22008



1 HANDICAP PARKING SPACE DETAIL
N.T.S.



2 HANDICAP SIGN DETAIL
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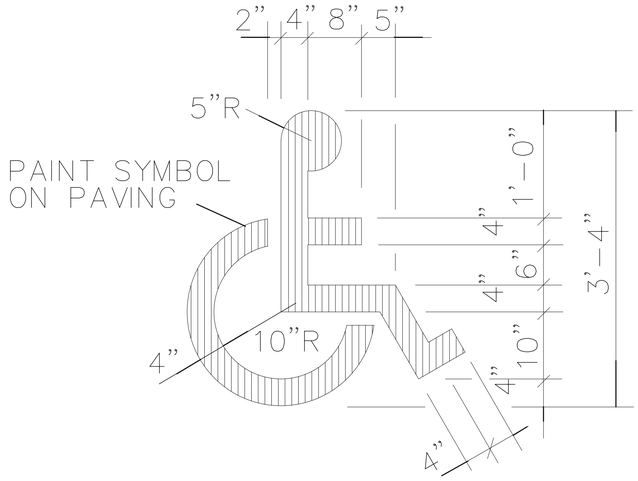
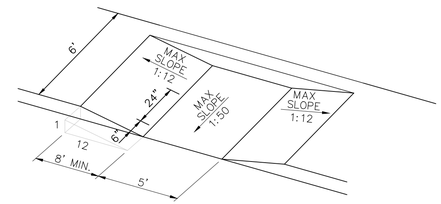
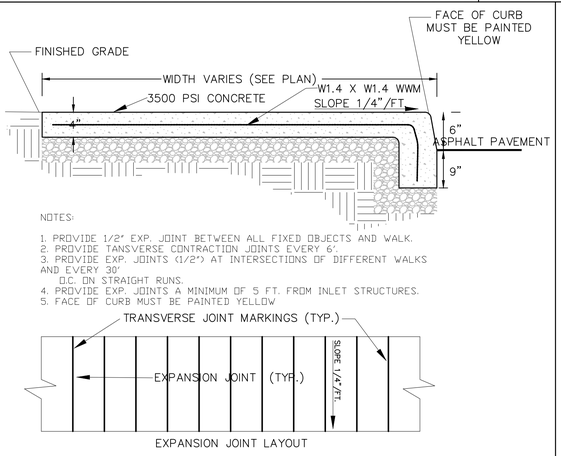


3 HANDICAP PARKING SYMBOL
N.T.S.

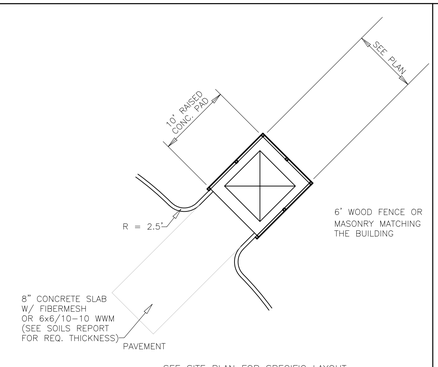


4 HANDICAP RAMP DETAIL
N.T.S.

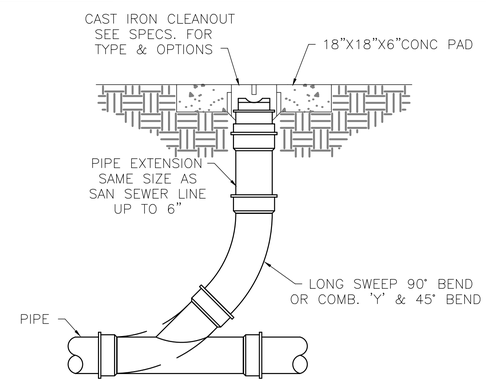


5 CONCRETE SIDEWALK WITH TURNDOWN CURB
N.T.S.

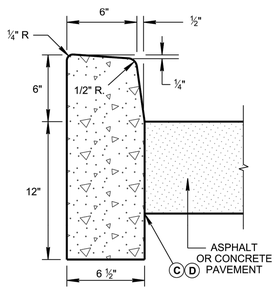
6 R1-1 STOP SIGN MUTCD
N.T.S.



7 SCREENED DUMPSTER PAD DETAIL
N.T.S

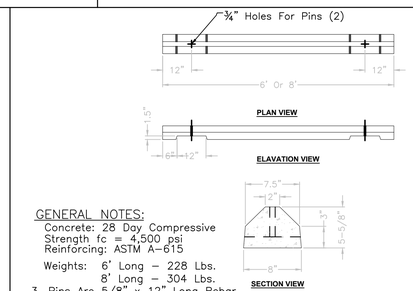


8 EXTERIOR CLEANOUT DETAIL
N.T.S.

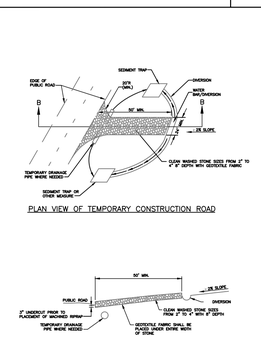


6" DETACHED CONCRETE CURB

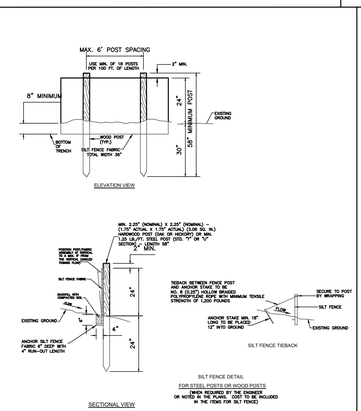
9 6" EXTRUDED CURB DETAIL
N.T.S.



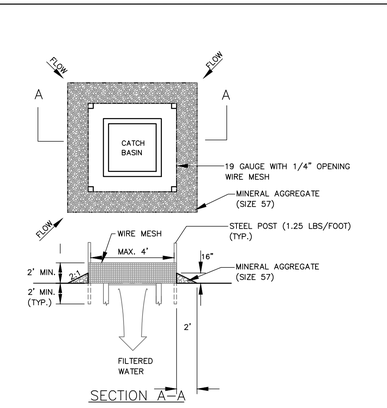
10 CONCRETE WHEEL STOP W/DRAIN SLOTS
N.T.S.



11 CONSTRUCTION ENTRANCE/EXIT
N.T.S



12 SILT FENCE
N.T.S



13 Hardware Cloth and Gravel Inlet Protection
N.T.S

DETAILS
NO SCALE

ADAM T. LEDSINGER
REGISTERED ENGINEER
AGRICULTURE
CIVIL
No. 115205
STATE OF TENNESSEE
SEAL

MBCIVIL ENGINEERING, LLC
759 TIMBER RIDGE DR. LEXINGTON, TN 38351
VOICE:731-265-6827 adam@mbcivil.net

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SHEET
C-5.0
OF
11

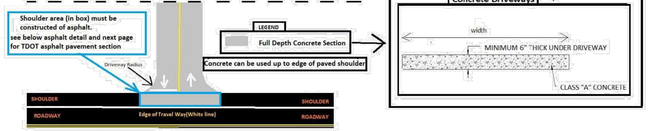
JOB No.
22008

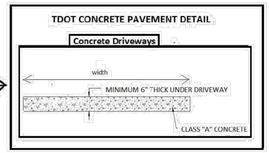
TO ENGINEERS DESIGNING PLANS: PLEASE SHADE AREA ON PLANS WHERE THE FULL DEPTH PAVEMENT SECTION IS LOCATED. PLEASE INCUDE APPROPRIATE TDOT PAVEMENT DETAIL ON ALL DRIVEWAY PLANS (SEE BELOW)

PLEASE NOTE ON CURB AND GUTTER SECTIONS, THE SHOULDER OF THE ROADWAY IS TYPICALLY FULL DEPTH PAVEMENT, SO REINFORCEMENT OF THE SHOULDER IS NOT NECESSARY. PLEASE USE TDOT STANDARD DRAWING RP-D-15 or RP-D-16 WHEN CONSTRUCTING DRIVEWAYS IN CURB AND GUTTER SECTIONS. A FULL DEPTH TDOT PAVEMENT SECTION MUST BE USED FROM THE CURB TO EITHER THE BACK OF THE DITCH LINE, THE RIGHT-OF-WAY LINE, OR TEN FEET (10') FROM THE OUTER EDGE OF THE SHOULDER OR CURB LINE, WHICHEVER IS THE GREATEST.

CONCRETE DRIVEWAY IN SHOULDER SECTION

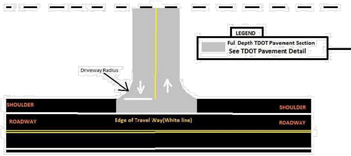
A full depth TDOT pavement section must be used on commercial driveways and shall extend from the edge of the travel lane (white line) to either the back of the ditch line, the right-of-way line, or ten feet (10') from the outer edge of the shoulder or curb line, whichever is the greatest.

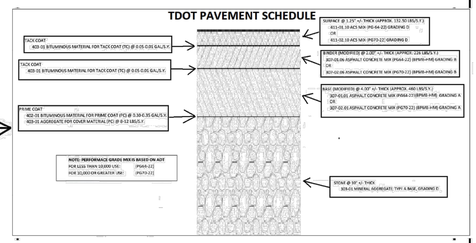




ASPHALT DRIVEWAY IN SHOULDER SECTION

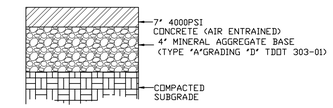
A full depth TDOT pavement section must be used on commercial driveways and shall extend from the edge of the travel lane (white line) to either the back of the ditch line, the right-of-way line, or ten feet (10') from the outer edge of the shoulder or curb line, whichever is the greatest.



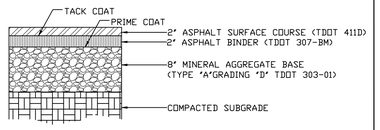


Enlarged Pavement Schedule included on next page

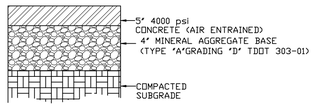
14 TDOT ROW PAVING SECTION
N.T.S.



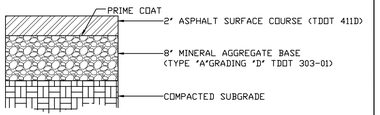
CONCRETE SECTION
HEAVY DUTY PAVEMENT-B



HEAVY DUTY PAVEMENT-B
DETAIL 3B

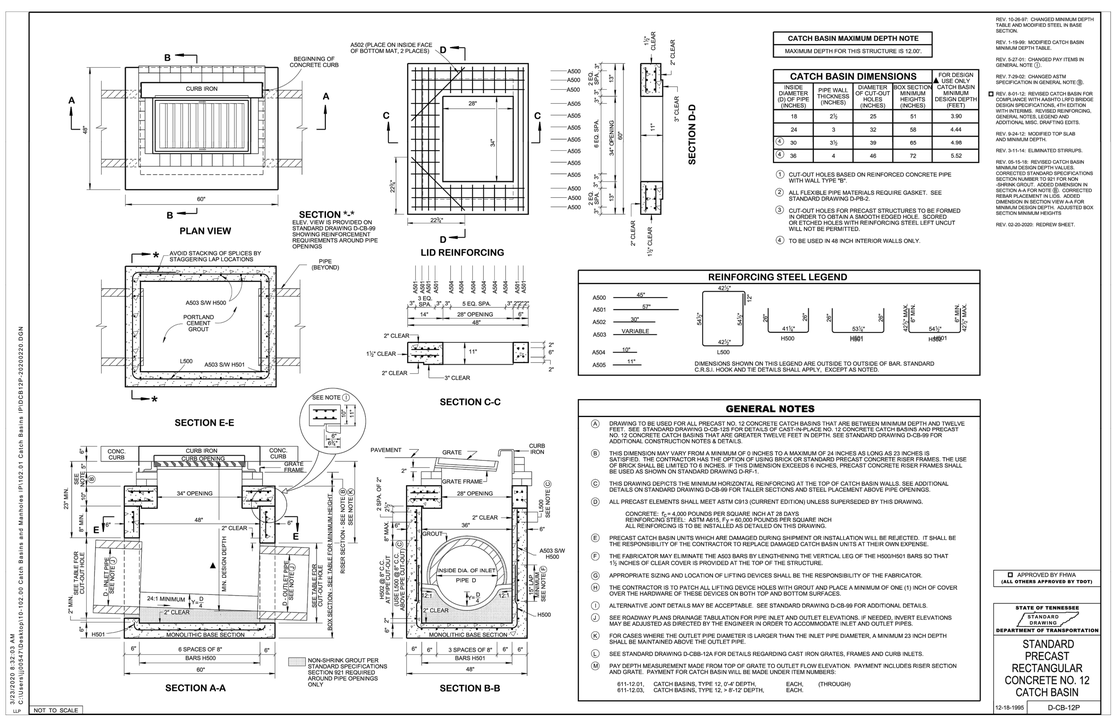


CONCRETE SECTION
LIGHT DUTY PAVEMENT-3A



LIGHT DUTY PAVEMENT-3A
DETAIL 3A

15 TYPICAL PAVEMENT SECTIONS



CATCH BASIN MAXIMUM DEPTH NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 12.00'.

CATCH BASIN DIMENSIONS

	INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	▲ FOR DESIGN USE ONLY. CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
	18	2½	25	51	3.90
	24	3	32	58	4.44
4	30	3½	39	65	4.98
4	36	4	46	72	5.52

1. CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE
2. ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.
3. CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.
4. TO BE USED IN 48 INCH INTERIOR WALLS ONLY.

REINFORCING STEEL LEGEND

A500	45°
A501	67½°
A502	90°
A503	VARIABLE
A504	10°
A505	11°

L500 H500 H501 H502

DIMENSIONS SHOWN ON THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

GENERAL NOTES

A. DRAWING TO BE USED FOR ALL PRECAST NO. 12 CONCRETE CATCH BASINS THAT ARE BETWEEN MINIMUM DEPTH AND TWELVE FEET. SEE STANDARD DRAWING D-CB-12S FOR DETAILS OF CAST-IN-PLACE NO. 12 CONCRETE CATCH BASINS AND PRECAST NO. 12 CONCRETE CATCH BASINS THAT ARE GREATER THAN TWELVE FEET IN DEPTH. SEE STANDARD DRAWING D-CB-09 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

B. THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 23 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 COURSES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

C. THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-09 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

D. ALL PRECAST ELEMENTS SHALL MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.
CONCRETE: F_c= 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

E. PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT THEIR OWN EXPENSE.

F. THE FABRICATOR MAY ELIMINATE THE A503 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500/H501 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

G. APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

H. THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

I. ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-09 FOR ADDITIONAL DETAILS.

J. SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

K. FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 23 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

L. SEE STANDARD DRAWING D-CBB-12A FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURBS INLETS.

M. PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT INCLUDES RISER SECTION AND GRATE. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS:

611-12.01, CATCH BASINS, TYPE 12, 0'-4' DEPTH, EACH, (THROUGH)
611-12.03, CATCH BASINS, TYPE 12, > 8'-12' DEPTH, EACH.

REV. 10-26-97 - CHANGED MINIMUM DEPTH TABLE AND MODIFIED STEEL IN BASE SECTION.

REV. 1-15-99: MODIFIED CATCH BASIN MINIMUM DEPTH TABLE.

REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE Ⓘ

REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE Ⓔ.

▣ REV. 5-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

REV. 8-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.

REV. 3-11-14: ELIMINATED STIRRUPS.

REV. 05-15-19: REVISED CATCH BASIN MINIMUM DESIGN DEPTH VALUES, CORRECTED STANDARD SPECIFICATIONS REFERENCE TO 921 SECTION 921 (SHRINK GROUT. ADDED DIMENSION IN SECTION A-A FOR NOTE Ⓔ. CORRECTED REBAR PLACEMENT IN LOD. ADDED DIMENSION IN SECTION VIEW A-A FOR NOTE Ⓕ. REVISED TABLE. ADJUSTED BOX SECTION MINIMUM HEIGHTS.

REV. 02-20-2020: REDREW SHEET.

▣ APPROVED BY FHWA (ALL OTHERS APPROVED BY TDOT)

STATE OF TENNESSEE STANDARD DRAWING DEPARTMENT OF TRANSPORTATION

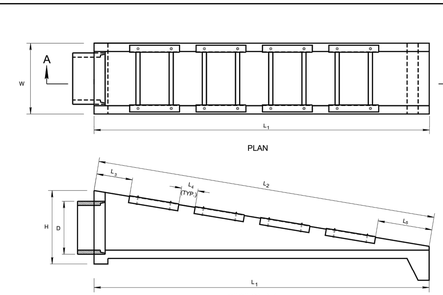
STANDARD PRECAST RECTANGULAR CONCRETE NO. 12 CATCH BASIN

12-18-1995 D-CB-12P

3/23/2020 8:32:01 AM C:\Users\jjb5547\Desktop\15-102.20 Catch Basins and Manholes\P1\02.01 Catch Basins (P)D(CB12P-22D0220.DGN LLP

NOT TO SCALE

16 D-CB-12P
N.T.S.



NOTE:
BOLTS SHALL NOT EXTEND MORE THAN ½" ABOVE TOP OF NUTS.

ALTERNATE ANCHORS FOR STRUCTURAL STEEL GRATES

CERTIFICATION:
DEFLECTION TYPE-IV ANCHORS OR CAST-IN THREADED INSERTS MAY BE UTILIZED IN LIEU OF CAST-IN HEADED ANCHOR BOLTS PROVIDED THAT THE CONTRACTOR FURNISHES CERTIFIED ANCHOR PULL OUT DATA FROM AN INDEPENDENT TESTING LABORATORY USING CLASS "A" CONCRETE AS PRESCRIBED BY TENNESSEE HIGHWAY SPECIFICATIONS. THE REQUIRED ULTIMATE LOAD FOR ¾" DIAMETER ANCHORS IS 10,000 POUNDS.

DIMENSIONS AND QUANTITIES FOR ONE ENDWALL

SIDE DRAIN DIA. (D)	CONCRETE ENDWALL DIMENSIONS						GRATE PLACEMENT DIMENSIONS		STRUCTURAL STEEL GRATE DIMENSIONS AND QUANTITY		STRUCT STEEL
	H	W	L_1	L_2	L_3	L_4	L_5		WG	NO. REQ'D.	LB.
15"	SEE STD. DWG. D-PE-15A				2'-2"	1'-0"	2'-1½"		2'-6"	2	172
18"	SEE STD. DWG. D-PE-18A				10½"	1'-0"	1'-0"		2'-8"	3	269
24"	SEE STD. DWG. D-PE-24A				2'-2"	1'-0"	3'-2½"		3'-3"	3	296
30"	SEE STD. DWG. D-PE-30A				2'-2"	1'-0"	3'-3½"		3'-10"	4	694
36"	SEE STD. DWG. D-PE-36A				2'-2"	1'-0"	2'-6½"		4'-6"	5	975
42"	SEE STD. DWG. D-PE-42A				2'-2"	1'-0"	1'-10½"		5'-0"	6	1,300
48"	SEE STD. DWG. D-PE-48A				2'-2"	1'-0"	1'-5"		5'-3"	7	1,669

GENERAL NOTES

A. DRAWING TO BE USED FOR ALL 15" THRU 48" SIDE DRAIN CONCRETE ENDWALLS.
REFER THE FOLLOWING STANDARD DRAWINGS FOR CONSTRUCTION DIMENSIONS.
15" ENDWALL - SEE D-PE-15A & D-PE-15B WITH 6:1 WINGWALL SLOPE
18" ENDWALL - SEE D-PE-18A & D-PE-18B WITH 6:1 WINGWALL SLOPE
24" ENDWALL - SEE D-PE-24A & D-PE-24B WITH 6:1 WINGWALL SLOPE
30" ENDWALL - SEE D-PE-30A & D-PE-30B WITH 6:1 WINGWALL SLOPE
36" ENDWALL - SEE D-PE-36A & D-PE-36B WITH 6:1 WINGWALL SLOPE
42" ENDWALL - SEE D-PE-42A & D-PE-42B WITH 6:1 WINGWALL SLOPE
48" ENDWALL - SEE D-PE-48A & D-PE-48B WITH 6:1 WINGWALL SLOPE

B. SIDE DRAIN CONCRETE ENDWALL REQUIRES STEEL PIPE GRATES SHOWN ON THIS DRAWING. THE CONTRACTOR SHALL OMIT THE CONCRETE BLOCKOUTS (4" x 7") AS SHOWN ON STANDARD DRAWING D-PE-99 SECTION D-D THRU WINGWALL AND SUBSTITUTE THE FOLLOWING REINFORCING BARS:
30" ENDWALL - SUBSTITUTE A465 & A466 BY EXTENDING A464 TO 19'-5"
36" ENDWALL - SUBSTITUTE A464 & A465 BY EXTENDING A463 TO 23'-0"
42" ENDWALL - SUBSTITUTE A463 (2 BARS), A466 & A467 BY EXTENDING A464 TO 26'-0"
48" ENDWALL - SUBSTITUTE A465 (2 BARS), A466 & A467 BY EXTENDING A464 TO 29'-7"

C. THE MATERIALS, WELDING AND PAINTING FOR STRUCTURAL STEEL GRATE SHALL CONFORM TO THE FOLLOWING SPECIFICATIONS:
1. ANGLES: ASTM A36
2. STEEL PIPE: ASTM A53 GRADE B, STANDARD WEIGHT (SW) OR ASTM A500 GRADE B AND SHALL BE GALVANIZED FOR 15" THRU 24" DIAMETER CULVERT. ASTM A53 GRADE B, DOUBLE EXTRA STRONG WEIGHT (XXS) - FOR 30" THRU 48" DIAMETER PIPE CULVERT.
3. WELDING: AASHTO/AWS D1.5M/D1.5 BRIDGE WELDING CODE (LATEST EDITION)
4. ALL STEEL GRATES SHALL BE GALVANIZED.
5. PIPES ARE TO BE VENTED PER GALVANIZATION REQUIREMENTS. HOLE SIZE AND LOCATIONS WILL BE DETERMINED BY GALVANIZER DURING THE APPLICATION.
THE MATERIAL AND GALVANIZING FOR BOLTS, NUTS AND WASHERS SHALL CONFORM TO THE FOLLOWING SPECIFICATIONS:
1. BOLTS, NUTS AND WASHERS: ASTM F1554 GRADE 36
2. GALVANIZING: ASTM A153

D. THE COST OF FURNISHING BOLTS, NUTS AND WASHERS, INCLUDING ALL MATERIALS, LABOR AND INCIDENTALS NECESSARY TO COMPLETE THE INSTALLATION, SHALL BE INCLUDED IN THE PRICE BID FOR STRUCTURAL STEEL.

E. PAYMENT WILL BE MADE UNDER ITEM NUMBERS:

611-07.30	15IN ENDWALL (SIDE DRAIN)	EACH
611-07.31	18IN ENDWALL (SIDE DRAIN)	EACH
611-07.32	24IN ENDWALL (SIDE DRAIN)	EACH
611-07.33	30IN ENDWALL (SIDE DRAIN)	EACH
611-07.34	36IN ENDWALL (SIDE DRAIN)	EACH
611-07.35	42IN ENDWALL (SIDE DRAIN)	EACH
611-07.36	48IN ENDWALL (SIDE DRAIN)	EACH

F. THE CONTRACTOR MAY ELECT TO SUBSTITUTE AN APPROVED ALTERNATIVE DESIGN

G. DIMENSIONAL AND REINFORCING TOLERANCES WILL BE AS SHOWN IN STANDARD OPERATING PROCEDURE (SOP) 5-3.

▣ REV. 7-10-12: REVISED ALTERNATE ANCHORS FOR STRUCTURAL STEEL GRATES NOTE.
▣ REV. 1-10-13: CHANGED REQUIREMENT FOR GRATE ON ALL ENDWALLS.
▣ REV. 6-14-13: REVISED NOTE Ⓒ, ADDED NOTES Ⓕ AND Ⓖ.
▣ REV. 3-18-17: REVISED GENERAL NOTES. ADDED FOOTNOTE TO TABLE.
▣ REV. 06-28-19: RENAMED AND REDREW SHEET.
▣ REV. 10-18-20: REVISED SLOT DIMENSION, ADDED ANCHOR BOLT DETAIL AND REVISED 18" PIPE GRATE PLACEMENT DIMENSIONS.
▣ REV. 05-04-21: REVISED GENERAL NOTES Ⓒ (1) AND Ⓔ.
▣ REV. 10-29-21: ADDED GENERAL NOTE Ⓖ.

▣ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED

STATE OF TENNESSEE STANDARD DRAWING DEPARTMENT OF TRANSPORTATION

TYPE "SAFETY" SIDE DRAIN ENDWALL WITH STEEL PIPE GRATE, FOR 15" THRU 48" PIPES, 6:1 SLOPE

03-01-2012 D-SEW-1A

10/28/2021 8:08:53 AM P:\Dan\Drive\DESIGN STANDARDS\Standard Drawings Library\Standard Roadway Drawings - CURRENT\1-Progress\15-101.00 Pipe Culverts and Endwalls (P)101.03 Safety Side Drain Endwalls (P)SEWA-22

NOT TO SCALE

17 D-SEW-1A
N.T.S.

DETAILS
NO SCALE

ADAM T. LEDSINGER
REGISTERED ENGINEER
AGRICULTURE
CIVIL
COMPUTED
No. 111355
STATE OF TENNESSEE
11-25-25
SEAL

MB CIVIL ENGINEERING, LLC
759 TIMBER RIDGE DR. LEXINGTON, TN 38351
VOICE:731-265-8827 adam@mbcivil.net

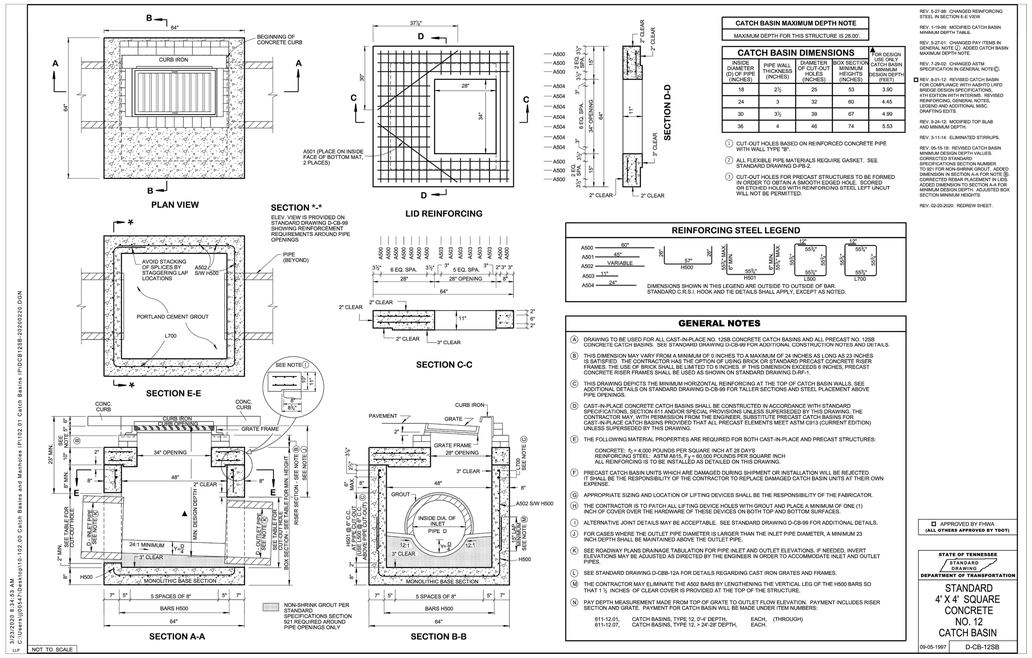
PROJECT
QUICKMART STORE #34
2577 NASHVILLE HWY
COLUMBIA, TN

REVISION DATES

DATE
JANUARY 20, 2025

SHEET
C-5.1
OF
11

JOB No.
22008



18 D-CB-12SB
N.T.S.

CATCH BASIN MAXIMUM DEPTH NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 28.00'.

CATCH BASIN DIMENSIONS

INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	▲ FOR DESIGN USE ONLY CATCH BASIN MAXIMUM DESIGN DEPTH (FEET)
18	2½	25	53	3.90
24	3	32	60	4.65
30	3½	39	67	4.99
36	4	46	74	5.53

① CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

② ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

③ CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED ON ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

REINFORCING STEEL LEGEND

A500 — 60°
A501 — VARIABLE
A502 — 18"
A503 — 11"
A504 — 84"

DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

GENERAL NOTES

Ⓐ DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 12SB CONCRETE CATCH BASINS AND ALL PRECAST NO. 12SB CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES AND DETAILS.

Ⓑ THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 23 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THIS USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

Ⓒ THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

Ⓓ CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY, WITH PERMISSION FROM THE ENGINEER, SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

Ⓔ THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:
CONCRETE: f_c= 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

Ⓕ PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT THEIR OWN EXPENSE.

Ⓖ APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

Ⓗ THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

Ⓘ ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

Ⓙ FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 23 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

Ⓚ SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

Ⓛ SEE STANDARD DRAWING D-CBB-12A FOR DETAILS REGARDING CAST IRON GRATES AND FRAMES.

Ⓜ THE CONTRACTOR MAY ELIMINATE THE A502 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

Ⓝ PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT INCLUDES RISER SECTION AND GRATE. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS:

611-12.01, CATCH BASINS, TYPE 12, 0'-4' DEPTH, EACH, (THROUGH)
611-12.07, CATCH BASINS, TYPE 12, > 24'-28' DEPTH, EACH.

REV. 5-27-98: CHANGED REINFORCING STEEL IN SECTION E-E VIEW.

REV. 1-19-99: MODIFIED CATCH BASIN MINIMUM DEPTH TABLE.

REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE Ⓝ. ADDED CATCH BASIN MAXIMUM DEPTH NOTE.

REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE Ⓔ.

☐ REV. 8-21-12: REVISED CATCH BASIN MINIMUM DESIGN DEPTH VALUES, ADDED BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.

REV. 3-11-14: ELIMINATED STIRRUPS.

REV. 05-15-18: REVISED CATCH BASIN MINIMUM DESIGN DEPTH VALUES, CORRECTED STANDARD SPECIFICATIONS SECTION NUMBER TO 601 FOR NON -SHRINK GROUT. ADDED DIMENSION IN SECTION A-A FOR NOTE Ⓚ. CORRECTED REBAR PLACEMENT IN LIDS. ADDED DIMENSION TO SECTION A-A FOR MINIMUM DESIGN DEPTH. ADJUSTED BOX SECTION MINIMUM HEIGHTS.

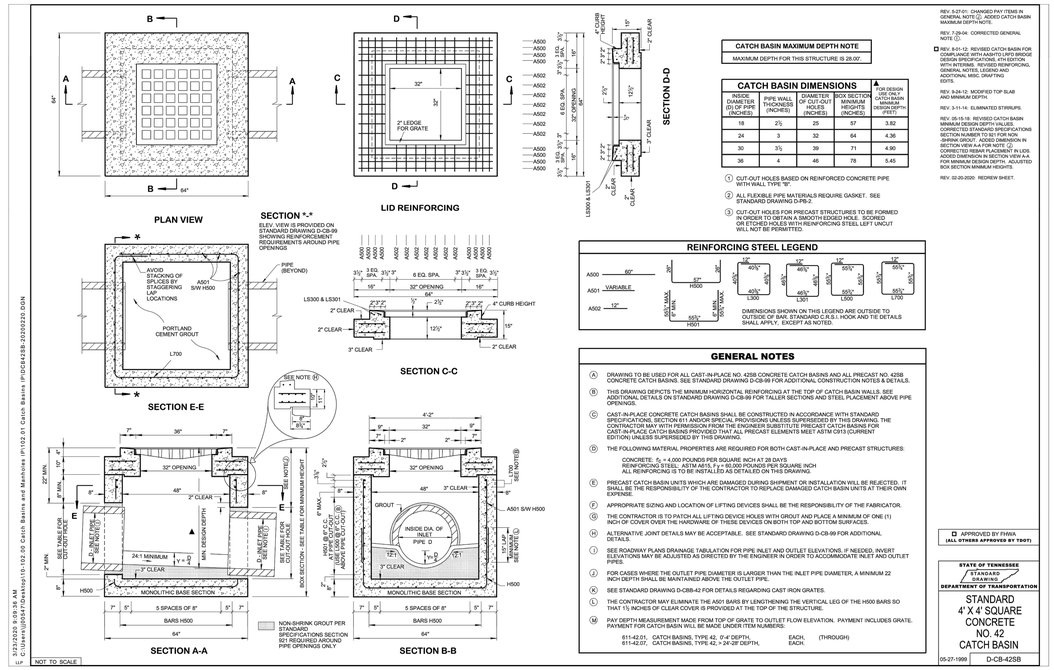
REV. 02-20-2020: REDRAW SHEET.

☐ APPROVED BY FHWA (ALL OTHERS APPROVED BY TDOT)

STATE OF TENNESSEE STANDARD DRAWING
DEPARTMENT OF TRANSPORTATION

STANDARD 4' X 4' SQUARE CONCRETE NO. 12 CATCH BASIN

09-05-1997 D-CB-12SB



19 D-CB-425B
N.T.S.

CATCH BASIN MAXIMUM DEPTH NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 28.00'.

CATCH BASIN DIMENSIONS

INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	▲ FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	57	3.82
24	3	32	64	4.36
30	3½	39	71	4.90
36	4	46	78	5.45

① CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

② ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

③ CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED ON ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

REINFORCING STEEL LEGEND

A500 — 60°
A501 — VARIABLE
A502 — 18"

DIMENSIONS SHOWN ON THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

GENERAL NOTES

Ⓐ DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 42SB CONCRETE CATCH BASINS AND ALL PRECAST NO. 42SB CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

Ⓑ THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

Ⓒ CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

Ⓓ THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:
CONCRETE: f_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

Ⓔ PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT THEIR OWN EXPENSE.

Ⓕ APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

Ⓖ THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

Ⓗ ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

Ⓘ SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

Ⓙ FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 22 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

Ⓚ SEE STANDARD DRAWING D-CBB-42 FOR DETAILS REGARDING CAST IRON GRATES.

Ⓛ THE CONTRACTOR MAY ELIMINATE THE A501 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

Ⓜ PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT INCLUDES GRATE. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS:

611-42.01, CATCH BASINS, TYPE 42, 0'-4' DEPTH, EACH, (THROUGH)
611-42.07, CATCH BASINS, TYPE 42, > 24'-28' DEPTH, EACH.

REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE Ⓜ. ADDED CATCH BASIN MAXIMUM DEPTH NOTE.

REV. 7-29-02: CORRECTED GENERAL NOTE Ⓘ.

☐ REV. 8-21-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.

REV. 3-11-14: ELIMINATED STIRRUPS.

REV. 05-15-18: REVISED CATCH BASIN MINIMUM DESIGN DEPTH VALUES, CORRECTED STANDARD SPECIFICATIONS SECTION NUMBER TO 601 FOR NON -SHRINK GROUT. ADDED DIMENSION IN SECTION A-A FOR NOTE Ⓚ. CORRECTED REBAR PLACEMENT IN LIDS. ADDED DIMENSION TO SECTION A-A FOR MINIMUM DESIGN DEPTH. ADJUSTED BOX SECTION MINIMUM HEIGHTS.

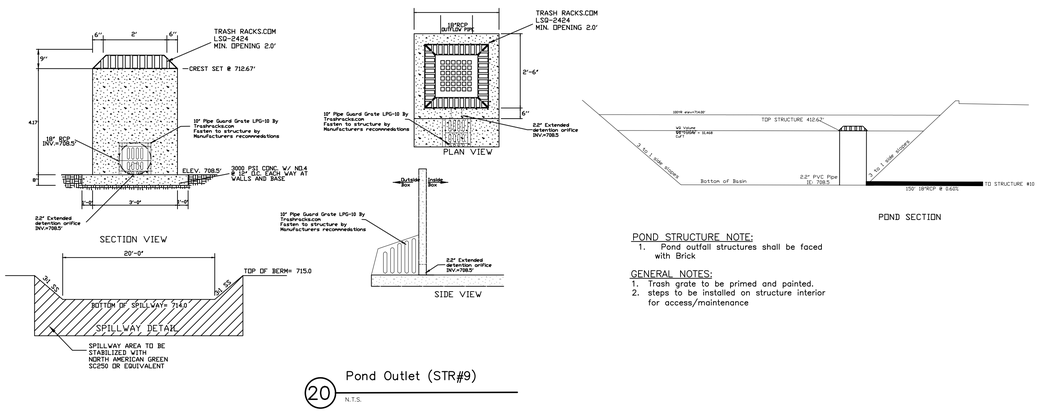
REV. 02-20-2020: REDRAW SHEET.

☐ APPROVED BY FHWA (ALL OTHERS APPROVED BY TDOT)

STATE OF TENNESSEE STANDARD DRAWING
DEPARTMENT OF TRANSPORTATION

STANDARD 4' X 4' SQUARE CONCRETE NO. 42 CATCH BASIN

05-27-1999 D-CB-42SB



POND STRUCTURE NOTE:
1. Pond outfall structures shall be faced with Brick

GENERAL NOTES:
1. Trash grate to be primed and painted.
2. steps to be installed on structure interior for access/maintenance

20 Pond Outlet (STR#9)
N.T.S.

DETAILS
NO SCALE

ADAM LEBSINGER
REGISTERED ENGINEER
AGRICULTURAL
COMMERCIAL
No. 121101
STATE OF TENNESSEE
SEAL

CIVIL ENGINEERING, LLC
759 TIMBER RIDGE DR. LEXINGTON, TN 38351
VOICE: 731-265-8827 adam@mbcivil.net

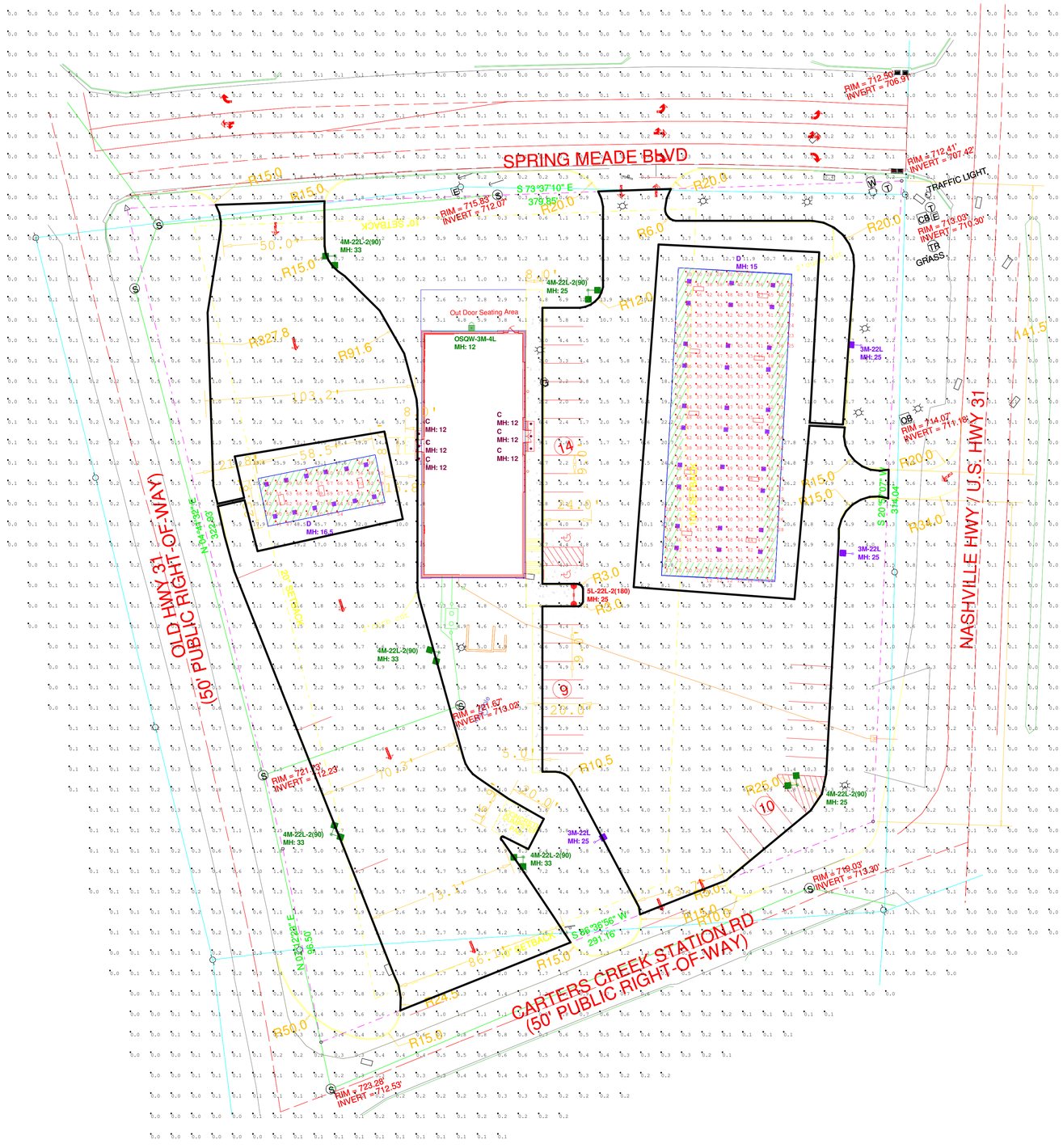
PROJECT
QUICKMART STORE #34
2577 NASHVILLE HWY
COLUMBIA, TN

REVISION DATES

DATE
JANUARY 20, 2025

SHEET C-5.2 OF 11

JOB No.
22008



Luminaire Schedule

Symbol	Qty	Label	Arrangement	LMF	Lum. Lumens	Lum. Watts	Part Number
	1	OSQW-3M-4L	Single	1.000	4020	27	OSQW-C-4L-40K7-3M-UL-WM-__
	6	C	SINGLE	1.000	N.A.	19	CDR6-ALS-9ACK-10V5-WH-UNV (High, 4000K CCT)
	42	D	SINGLE	1.000	13750	86	CPY250-C-13L-57K7-F-UL-DM-WH
	3	3M-22L	SINGLE	1.000	20900	131	OSQL-C-22L-57K7-3M-UL-NM-__ w/OSQ-ML-C-DA-__
	6	4M-22L-2(90)	2 @ 90°	1.000	20900	131	OSQL-C-22L-57K7-4M-UL-NM-__ w/OSQ-ML-C-DA-__
	1	5L-22L-2(180)	2 @ 180°	1.000	22000	131	OSQL-C-22L-57K7-5L-UL-NM-__ w/OSQ-ML-C-DA-__

Calculation Summary (Footcandles calculated using LMF: 1.00)

Label	Units	Avg	Max	Min	Avg/Min	Max/Min
All Calc Points	Fc	2.06	48.5	0.0	N.A.	N.A.
Diesel	Fc	56.39	69	35	1.61	1.97
Gas Canopy	Fc	38.98	52	12	3.25	4.33
Paved Parking	Fc	4.17	13.9	1.0	4.17	13.90
Truckside Parking	Fc	4.01	18.4	1.0	4.01	18.40

Fixture Mounting Height: 25' AFG (22' Pole + 3.0' Base)

Fixture Mounting Height: 33' AFG (30' Pole + 3.0' Base)

Pole Schedule
(3) SSS-4-11-22-CW-BS-1D-C-__ (22' X 4" X 11ga STEEL SQUARE POLE, Single)
(1) SSS-4-11-22-CW-BS-2D18-C-__ (22' X 4" X 11ga STEEL SQUARE POLE, 2@180°)
(2) SSS-4-11-22-CW-BS-2D90-C-__ (22' X 4" X 11ga STEEL SQUARE POLE, 2@90°)
(4) SSS-4-11-30-CW-BS-2D90-C-__ (30' X 4" X 11ga STEEL SQUARE POLE, 2@90°)

Proposed poles meet 120MPH sustained winds.

Additional Equipment:
(17) OSQ-ML-C-DA-__ - (Direct Arm Mount - OSQ)

***** CUSTOMER TO VERIFY ORDERING INFORMATION AND CATALOGUE NUMBER PRIOR TO PLACING ORDER *****

CREE LIGHTING

9201 Washington Ave, Racine, WI 53406 - (800) 236-6800
https://www.creelighting.com - Email: applications@creelighting.com

Illumination results shown on this lighting design are based on project parameters provided to Cree Lighting used inconjunction with luminaire test procedures conducted under laboratory conditions. Actual project conditions differing from these design parameters may affect field results. The customer is responsible for verifying dimensional accuracy along with compliance with any applicable electrical, lighting,or energy code.

Project Name: Quickmart #34 - 2577 Nashville Hwy Columbia, TN 38401 - EXT

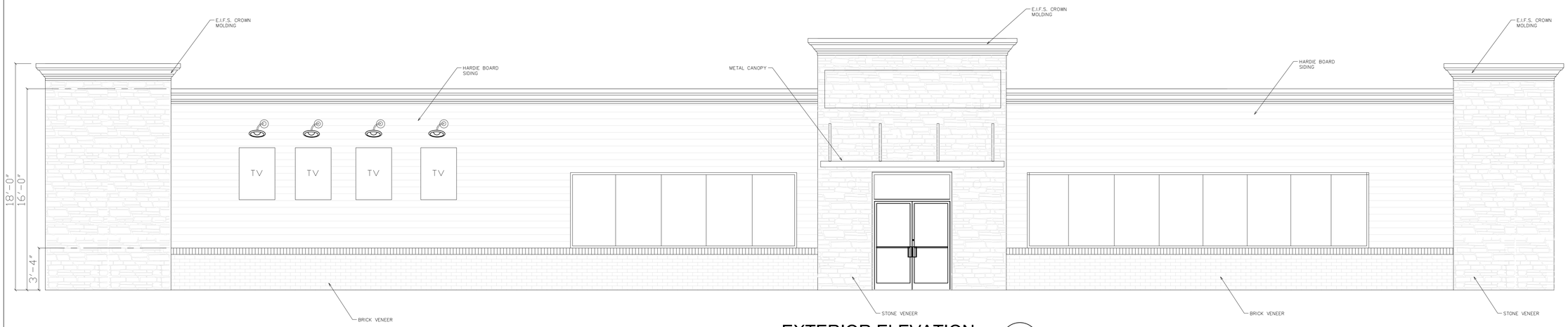
CASE #: 00636815 | Footcandles calculated at grade | Filename: PAC250120COTNCWR1.AGI

Layout By:
Collin Witherow

Date:1/21/2025

Scale 1" = 30'

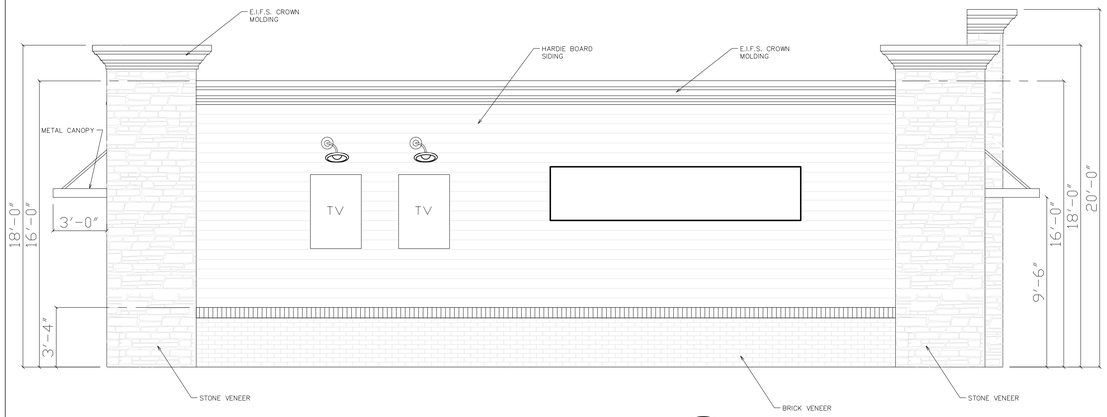
0 50 100



EXTERIOR ELEVATION

SCALE: 1/4"= 1'-0"

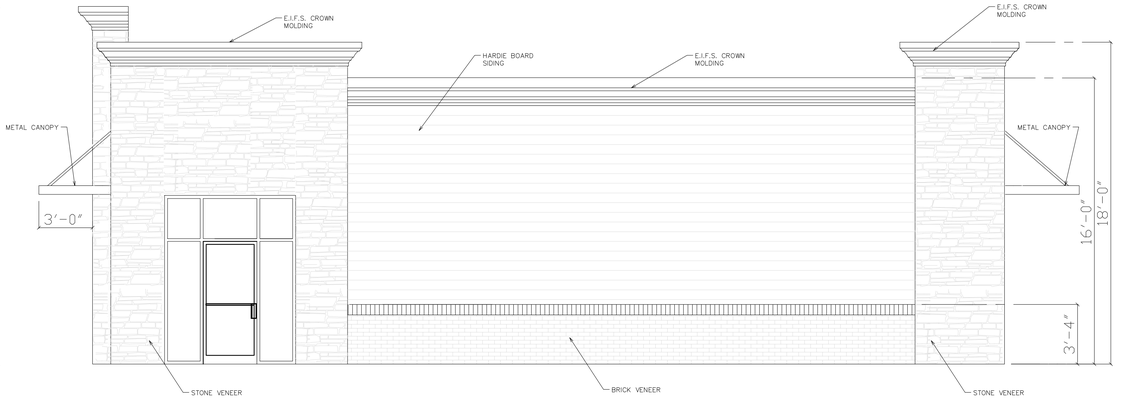
1 / A-005



EXTERIOR ELEVATION

SCALE: 1/4"= 1'-0"

2 / A-005



EXTERIOR ELEVATION

SCALE: 1/4"= 1'-0"

3 / A-005

EXTERIOR ELEVATION

SCALE: 1/4"= 1'-0"

4 / A-005

EDWARD'S OIL

COLUMBIA, TENNESSEE

CLIENT CONTACT:
BRADLEY HAYES | 1820 STEGALL RD | LEXINGTON, TN 38351
731-234-5402 | BRADLEY@HAYESANDSONSCONSTRUCTION.COM

ARCHITECTURE | MERIDIAN

nashville, tennessee
e: office@meridiantn.com
t: 615.390.7216
www.meridiantn.com

09/12/2022

REVISIONS:

DELTA	DESCRIPTION	DATE

DATE OF ISSUE:	09.12.2022
MA PROJECT NO:	0336-22
PROJECT PHASE:	CD
DRAWN BY:	TH

EXTERIOR ELEVATIONS

A-005

© 2018

COLUMBIA, TENNESSEE
EDWARD'S OIL

CONSULTANT INFO

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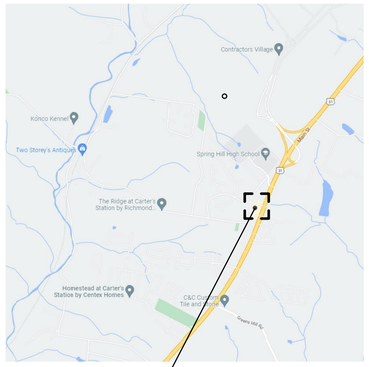
Jackson, Tennessee 38305
Jeremy Scallion, PE
jeremy@scallionstructural.com
(731) 217-1614

MEP Company

DF&H Services, PLLC
P.O. Box 120371
Nashville, Tennessee 37212
Angela Buckner, PE / Chris Buckner, PE
Angela@dfhservices.com / Chris@dfhservices.com
(615) 390-6131

VICINITY MAP



SHEET INDEX

general

SHEET #	DESCRIPTION	ORIG. ISSUE	REV. DELTA #	REV. DATE
G-001	TITLE SHEET	09/12/2022		
G-002	LIFE SAFETY PLAN	09/12/2022		
G-003	ADA DETAILS	09/12/2022		
G-004	ADA DETAILS	09/12/2022		

structure

SHEET #	DESCRIPTION	ORIG. ISSUE	REV. DELTA #	REV. DATE
S-1.1	GENERAL NOTES	09/28/2022		
S-1.2	TYPICAL DETAILS	09/28/2022		
S-2.0	FOUNDATION PLAN	09/28/2022		
S-3.0	FRAMING PLAN	09/28/2022		
S-4.0	FRAMING SECTIONS	09/28/2022		

architectural

SHEET #	DESCRIPTION	ORIG. ISSUE	REV. DELTA #	REV. DATE
A-001	FLOOR PLAN AND NOTES	09/12/2022		
A-002	SCHEDULES AND DETAILS	09/12/2022		
A-003	REFLECTED CEILING PLAN	09/12/2022		
A-004	ROOF PLAN	09/12/2022		
A-005	EXTERIOR ELEVATIONS	09/12/2022		
A-006	BUILDING AND WALL SECTIONS	09/12/2022		

mechanical

SHEET #	DESCRIPTION	ORIG. ISSUE	REV. DELTA #	REV. DATE
M-0.1	HVAC LEGENDS AND SCHEDULES	09/12/2022		
M-0.2	HVAC LEGENDS AND SCHEDULES	09/12/2022		
M-2.1	HVAC NEW CONSTRUCTION PLAN	09/12/2022		
M-3.1	HVAC DETAILS	09/12/2022		
M-3.2	HVAC DETAILS	09/12/2022		
M-3.3	HVAC DETAILS	09/12/2022		
M-3.4	HVAC DETAILS	09/12/2022		
M-3.5	HVAC DETAILS	09/12/2022		
M-3.6	HVAC DETAILS	09/12/2022		
M-3.7	HVAC DETAILS	09/12/2022		
M-3.8	HVAC DETAILS	09/12/2022		
M-3.9	HVAC DETAILS	09/12/2022		
M-3.10	HVAC DETAILS	09/12/2022		
M-3.11	HVAC DETAILS	09/12/2022		
M-3.12	HVAC DETAILS	09/12/2022		
M-3.13	HVAC DETAILS	09/12/2022		
M-4.1	HVAC SPECIFICATIONS	09/12/2022		

plumbing

SHEET #	DESCRIPTION	ORIG. ISSUE	REV. DELTA #	REV. DATE
P-0.1	PLUMBING LEGENDS AND SCHEDULES	09/12/2022		
P-2.1	PLUMBING NEW CONSTRUCTION PLAN	09/12/2022		
P-3.1	PLUMBING DETAILS	09/12/2022		
P-4.1	PLUMBING SPECIFICATIONS	09/12/2022		
P-5.1	PLUMBING DETAILS & SPECIFICATIONS	09/12/2022		
P-5.2	PLUMBING RISERS	09/12/2022		
PU-2.1	PLUMBING UNDERGROUND NEW CONSTRUCTION PLAN	09/12/2022		

electrical

SHEET #	DESCRIPTION	ORIG. ISSUE	REV. DELTA #	REV. DATE
E-0.1	ELECTRICAL SPECIFICATIONS	09/12/2022		
E-0.2	ELECTRICAL LEGEND	09/12/2022		
E-2.1	ELECTRICAL LIGHTING PLAN	09/12/2022		
E-2.2	ELECTRICAL POWER PLAN	09/12/2022		
E-2.3	ELECTRICAL HVAC POWER PLAN	09/12/2022		
E-3.1	ELECTRICAL RISER DIAGRAM	09/12/2022		
E-4.1	ELECTRICAL SCHEDULES	09/12/2022		

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09/12/2022

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REVISIONS:

DELTA	DESCRIPTION	DATE

DATE OF ISSUE: 09.12.2022

MA PROJECT NO: 0336-22

PROJECT PHASE: CD

DRAWN BY: TH

TITLE SHEET

G-001

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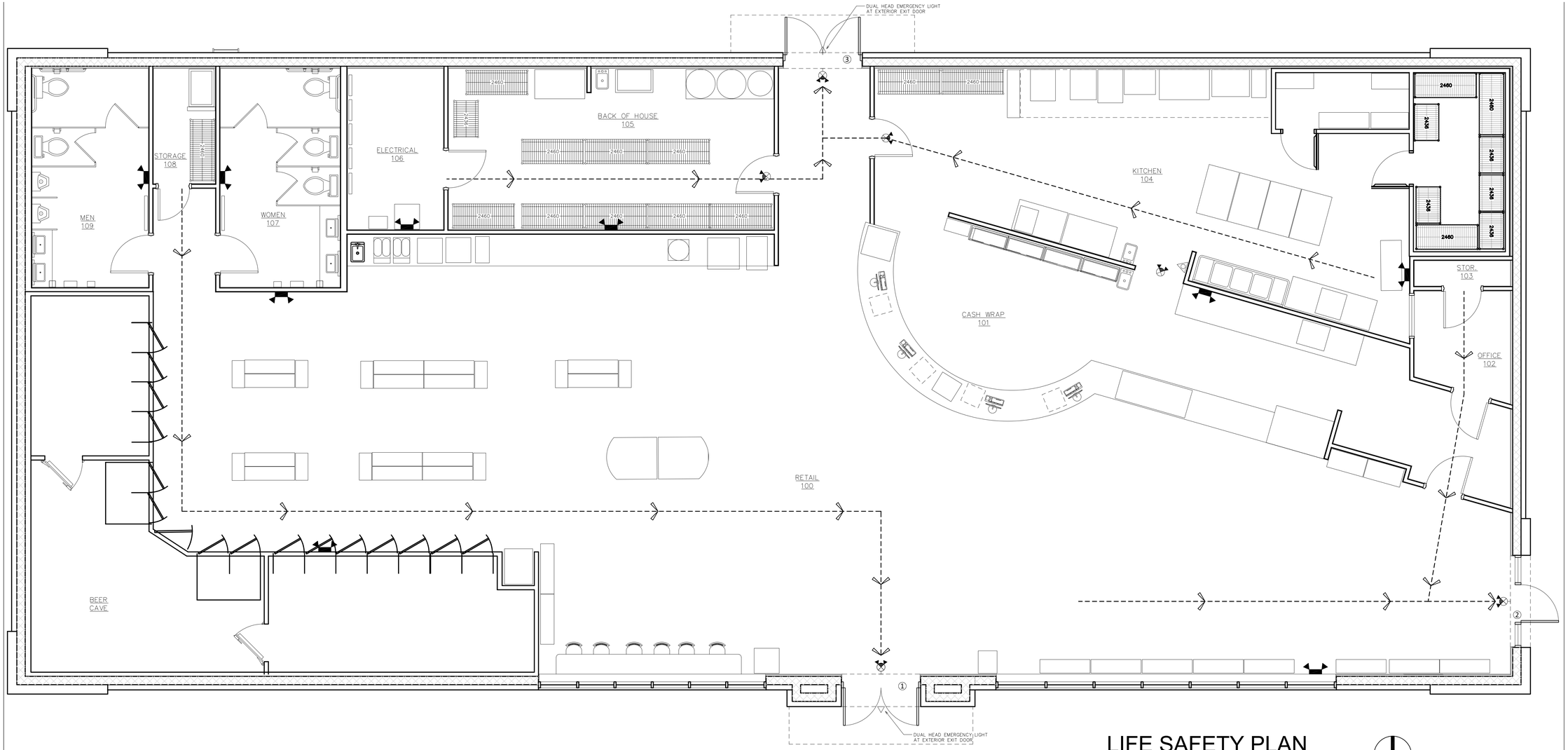
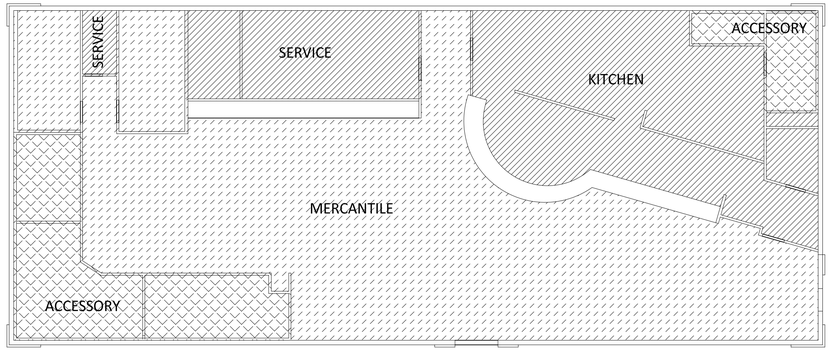


LIFE SAFETY PLAN

SCALE: 1/4" = 1'-0"

PLAN NORTH



OCCUPANCY PLAN

NOT TO SCALE

MERCANTILE: 3,325sf/60sf GROSS _____56 PERSONS

SERVICE (KITCHEN): 1,658sf/200sf GROSS___9 PERSONS

ACCESSORY SPACE: 793sf/300sf GROSS_____3 PERSONS

CODE AND EGRESS INFORMATION

OCCUPANCY CLASSIFICATION - BUSINESS
USE - CONVENIENCE STORE

CONSTRUCTION TYPE: VB UNPROTECTED, UNSPRINKLED

ALLOWABLE HEIGHT: 40ft
ACTUAL HEIGHT: 20ft

ALLOWABLE NUMBER OF STORIES: 2
ACTUAL NUMBER OF STORIES: 1

ALLOWABLE AREA: 9,000sf
ACTUAL FLOOR AREA = 5,776sf

TOTAL OCCUPANCY: 68 PERSONS (SEE OCCUPANCY PLAN)

EGRESS WIDTH REQUIRED:
23 @ .2" PER PERSON = 4.6"

EGRESS WIDTH PROVIDED:
EXIT 1 - 66" CLEAR OPENING
EXIT 2- 33" CLEAR OPENING
EXIT 3 - 66" CLEAR OPENING

MAX. TRAVEL DISTANCE TO EXIT (FEET)
GROUP B, UNSPRINKLED - 200FT.
ACTUAL - 96' MAX

MIN. CORRIDOR WIDTH (INCHES)
ALLOWED - 44"
ACTUAL - 45"

APPLICABLE CODES

ACCESSIBLE AND USABLE BUILDING AND FACILITIES (2009 ICC A117.1)
INTERNATIONAL BUILDING CODE (2018)
INTERNATIONAL ENERGY CONSERVATION CODE (2018)
INTERNATIONAL FIRE CODE (2018)
INTERNATIONAL FUEL GAS CODE (2018)
INTERNATIONAL MECHANICAL CODE (2018)
INTERNATIONAL PLUMBING CODE (2018)
INTERNATIONAL RESIDENTIAL CODE (2018)
NATIONAL ELECTRIC CODE (2018)

LIFE SAFETY PLAN LEGEND

	PATH OF EGRESS
①	EXIT NUMBER
	EMERGENCY LIGHT
	EXIT SIGN
	DIRECTIONAL EXIT SIGN
RL	REMOTE SEC. LIGHT
	FIRE EXTINGUISHER

FIRE EXTINGUISHER:

LARSEN MANUFACTURING COMPANY:
MODEL MP-10, 10-POUND,
UL RATED 4A-80B:C
MULTI-PURPOSE DRY CHEMICAL

FIRE EXTINGUISHER CABINET:

LARSEN MANUFACTURING COMPANY:
ARCHITECTURAL SERIES NO: 2409-6R SEMI-RECESSED

GENERAL NOTES:

1. OCCUPANCY LOAD IS BASED ON 2015 IBC TABLE 1004.5

2. EXIT WIDTH PROVIDED BY 3'-0" WIDE DOOR IS BASED ON A 33" CLEAR OPENING

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LIFE SAFETY PLAN

G-002

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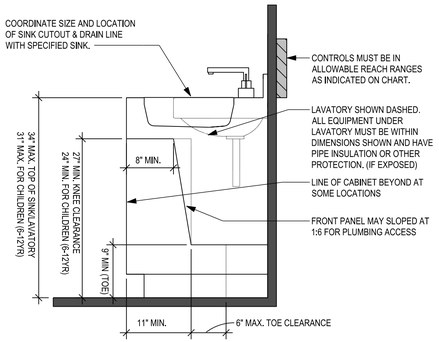
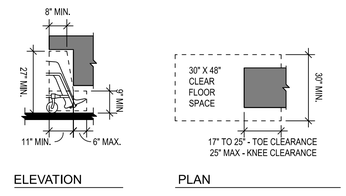


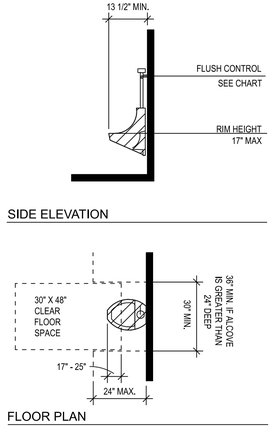
GENERAL NOTES:

1. A PARALLEL APPROACH CAN BE PROVIDED TO LAVATORIES AND SINKS USED PRIMARILY BY CHILDREN 5 YEARS AND YOUNGER
2. DIP OF THE OVERFLOW SHALL NOT BE CONSIDERED IN DETERMINING KNEE AND TOE CLEARANCES.
3. METERED FAUCETS SHALL REMAIN OPEN FOR 10 SECONDS MINIMUM.

ACCESSIBLE SINK AND LAVATORY



ACCESSIBLE TOE & KNEE CLEARANCE



ACCESSIBLE URINAL

* FOR CHILDREN'S REACHES SEE CHART THIS SHEET.

ACCESSIBLE REACH RANGES

MOUNTING CHART

DESCRIPTION & LOCATION	ACCESSIBLE DIMENSIONS		STANDARD (NON ADA)
	CHILDREN (AGES 5 TO 12)	ADULT	
FORWARD AND SIDE REACH RANGES	18" TO 40"	15" TO 48"	------
WATER CLOSET CENTERLINE TO WALL	15"	17"	PER PLAN
TOILET SEAT HEIGHT	15"	18"	16"
TOILET & SHOWER STALL GRAB BAR HEIGHTS	25"	34"	------
TOP OF TOILET PAPER DISPENSER HEIGHT	2" BELOW GRAB BAR IF MTD BELOW. 12" TO BOTTOM IF MTD ABOVE	2" BELOW GRAB BAR IF MTD BELOW. 12" TO BOTTOM IF MTD ABOVE	18"
FLUSH CONTROL HEIGHT FOR WATER CLOSET POSITION FLUSH VALVE TO WIDE SIDE OF STALL OR ROOM	2" MIN. BELOW GRAB BAR	2" MIN. BELOW GRAB BAR	48"
DRINKING FOUNTAIN & WATER COOLER SPOUT HEIGHT	36" MAX ACCESSIBLE AND 42" STANDING	36" MAX ACCESSIBLE AND 42" STANDING	42"
FLUSH CONTROL HEIGHT FOR URINAL POSITION FLUSH VALVE TO WIDE SIDE OF STALL OR ROOM	38"	44"	46"
FEMININE NAPKIN DISPENSER CONTROL LOCATION	42"	46" OR 48" MAX. SEE ACCESSIBLE REACH RANGES	46"
MIRRORS MOUNTED ABOVE COUNTER TOPS OR SINKS HEIGHTS ARE TO REFLECTING SURFACE	76" AFF TO TOP EDGE 40" MAX BOTTOM EDGE	76" AFF TO TOP EDGE 40" MAX BOTTOM EDGE	76" AFF TO TOP EDGE 40" BOTTOM EDGE
FREE STANDING MIRRORS HEIGHTS ARE TO REFLECTING SURFACE	76" AFF TO TOP EDGE 35" MAX TO BOTTOM EDGE	76" AFF TO TOP EDGE 35" MAX TO BOTTOM EDGE	76" AFF TO TOP EDGE 35" BOTTOM EDGE
LAVATORY AND SINK RIM HEIGHT	31" MAX	34" MAX	36"
PAPER TOWEL DISPENSER CONTROL HEIGHT	38"	46" OR 48" MAX. SEE ACCESSIBLE REACH RANGES	48"
SOAP DISPENSER CONTROL HEIGHT	38"	46" OR 48" MAX. SEE ACCESSIBLE REACH RANGES	48"
SOAP DISH	38"		48"
FEMININE NAPKIN DISPOSAL MTD. ON "BACK" HEIGHT TO TOP OF DISPOSAL UNIT	2" MIN. BELOW GRAB BAR	2" MIN. BELOW GRAB BAR	32"
TOWEL BAR	25"	34"	48"
LIGHT SWITCHES, THERMOSTATS, WALL MOUNTED COMMUNICATION AND FIRE ALARM PULL DEVICES. HEIGHT TO CENTER OF CONTROL.	38"	46" OR 48" MAX. SEE ACCESSIBLE REACH RANGES	48"
ELECTRICAL OUTLETS, TELEPHONE OUTLETS, & DATA RECEPTACLES. HEIGHT TO CENTER OF OUTLET OR RECEPTACLE.	18"	18"	18"
TOP OF STAIR AND RAMP HANDRAILS HEIGHT IS ABOVE STAIR NOSING OR RAMP SURFACE	------	36"	36"
CENTER OF DEDICATION PLAQUE	------	------	60"
FIRE EXTINGUISHER CABINET. HEIGHT TO DOOR HANDLE	------	42"	42"
DOOR HARDWARE — DOOR LEVER	39"	41"	41"
DOOR HARDWARE — DOOR PULL	39"	41"	41"
DOOR HARDWARE — PANIC BAR	39"	41"	41"
CENTER LINE (48" MAX., 10" MIN.) — THE CENTER LINE OF DOOR HARDWARE MAY VARY BETWEEN WOOD DOOR WITH SIDE LIGHT AND ALUMINUM STORE FRONT DOORS. COORDINATE WITH PLANS AND HARDWARE MANUFACTURER			
TOP OF TRAY SLIDES	28" MIN.	34" MAX	36"
TRAY RETURN COUNTER	30"	34" MAX	36"
HEIGHT OF WORK SURFACES	------	34" MAX	30"
HEIGHT OF TABLES AND COUNTERS	------	30" MAX	30"

1. ON PLUMBING FIXTURES THERE IS A RANGE OF +/- 1".
2. CHILDREN AGES 5 THRU 12 REPRESENTS PRIMARY USER GROUP AS ELEMENTARY STUDENTS. MIDDLE SCHOOL IS CONSIDERED ADULT.
3. COORDINATE MOUNTING HEIGHTS WITH ACCESSIBLE REACH RANGES.

ACCESSIBILITY GENERAL NOTES

A. Accessible entrances to the building shall be identified by the international symbol of accessibility.

B. Exits that are located adjacent to accessible areas & within 6' of adjacent ground level shall be accessible.

C. Accessible ramps over 1:20 (5%) slope as required by ICC/ANSI A117.1 shall have handrails and no slopes that exceed 1:12 (8.3%), UNO.

D. The surface of all ramps, floors, stairs and ground surfaces shall be of slip resistant materials/textures, and not exceed 1:50 (2%) cross-slope.

E. An accessible route of travel (3 ft. wide min.) must be provided to all portions of the building and between the building and the public way.

F. Thresholds must be 1/2" in height or less, and be beveled over 1/4" height.

G. All accessible parking spaces shall have a slope not exceeding 1:50 (2%).

H. All accessible parking spaces shall be outlined on all four sides, have a contrasting color and the international wheelchair symbol on the ground within the space.

I. All accessible parking spaces shall have a sign (min. 5 ft. above finish grade in front of the space) which includes the international symbol of accessibility and applicable municipal language.

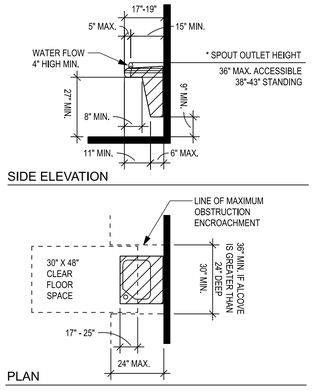
J. Signs designating permanent rooms and spaces shall meet accessibility requirements.

K. All alarms shall meet accessibility requirements.

L. Accessible route shall be without steps or changes in level greater than 1/2" without an approved ramp.

M. Accessible routes shall serve as exit access or connect to areas of rescue assistance.

N. No item shall protrude more than 4" from the surface of a wall along an accessible way, above 27" and below 80" AFF.



- PROVIDE A MIN. OF ONE ACCESSIBLE & ONE STANDING DRINKING FOUNTAIN PER PROJECT

GENERAL DRINKING FOUNTAIN NOTES:

1. A PARALLEL APPROACH SHALL BE PERMITTED AT UNITS FOR CHILDREN'S USE WHERE THE SPOUT IS 30" MAX A.F.F. AND IS 3 1/2" MAX FROM THE FRONT EDGE OF THE UNIT.
2. WHERE MORE THAN 2 DRINKING FOUNTAINS ARE PROVIDED 50 MUST COMPLY WITH 602.1-602.6 (ACCESSIBLE) AND 50% COMPLY WITH 602.7 (STANDING) HEIGHTS, 211.3

ACCESSIBLE DRINKING FOUNTAIN

EDWARD'S OIL

COLUMBIA, TENNESSEE

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ADA DETAILS

G-003

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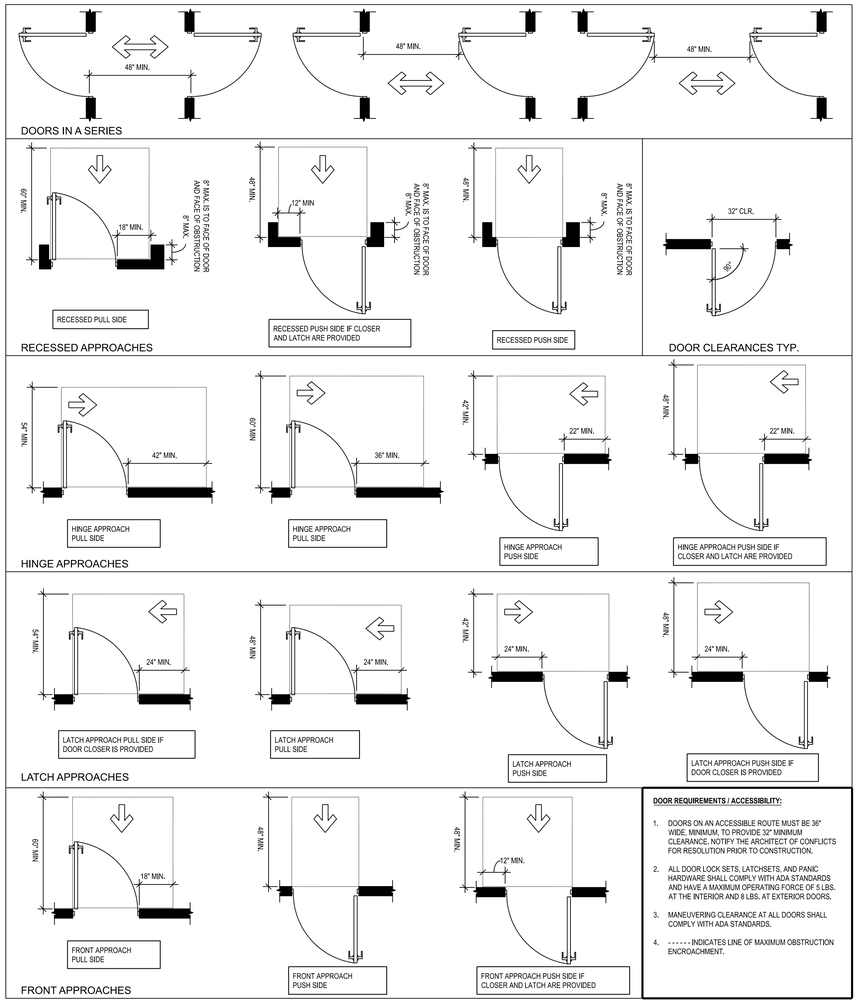
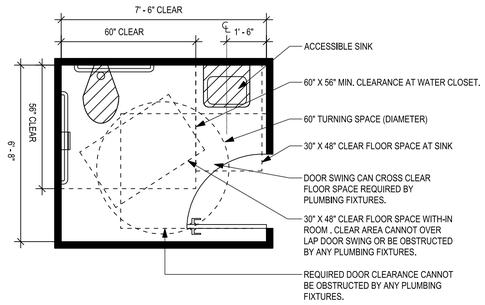
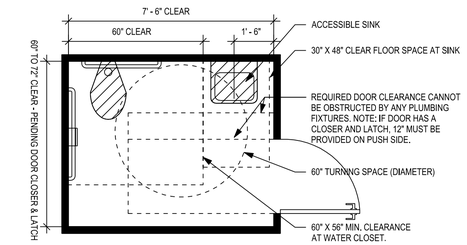


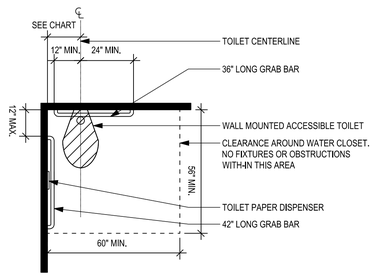
ACCESSIBLE DOOR DIAGRAMS



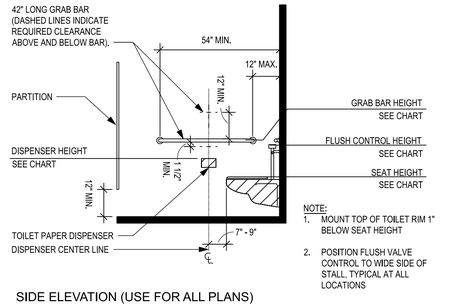
TOILET ROOM (INWARD SWINGING DOOR)



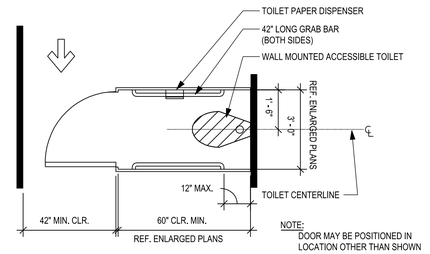
FLOOR PLAN - SINGLE OCCUPANCY (OUTWARD SWINGING DOOR)



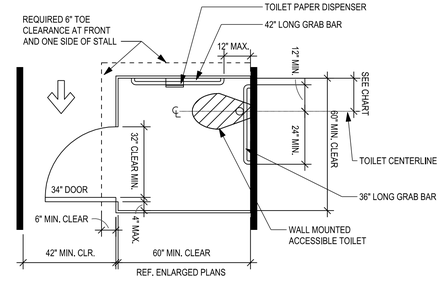
FLOOR PLAN - SINGLE OCCUPANCY



SIDE ELEVATION (USE FOR ALL PLANS)



FLOOR PLAN - AMBULATORY STALL



NOTE: DOOR MAY BE POSITIONED IN LOCATION OTHER THAN SHOWN RE: FLOOR PLAN FOR LOCATION

FLOOR PLAN - PARTITION STALL

GENERAL WATER CLOSET NOTES:

1. REQUIRED CLEAR FLOOR SPACES, CLEARANCE AT FIXTURES, AND TURNING SPACE SHALL BE PERMITTED TO OVERLAP
2. DOORS SHALL NOT SWING INTO THE CLEAR FLOOR SPACE OR CLEARANCE REQUIRED FOR ANY FIXTURE EXCEPT IN A TOILET ROOM FOR INDIVIDUAL USE WHERE THE 30"X48" CLEAR FLOOR SPACE IS PROVIDED BEYOND THE ARC OF THE DOOR SWING.
3. DOORS SHALL BE PERMITTED TO SWING INTO THE REQUIRED TURNING SPACE.
4. ALL DOORS MUST COMPLY WITH THEIR CLEAR FLOOR SPACE REQUIREMENTS.
5. IF THE TOTAL NUMBER OF TOILET FIXTURES (INCLUDING URINALS) IN A RESTROOM IS EQUAL TO 6 OR MORE, THEN AN AMBULATORY STALL IS REQUIRED.
6. DIMENSIONS SHOWN FROM WALL ARE ASSUMED TO BE CLEAR DIMENSIONS. CONTRACTOR TO ALLOW FOR FINISH MATERIAL.

ACCESSIBLE WATER CLOSETS

EDWARD'S OIL

COLUMBIA, TENNESSEE

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ADA DETAILS

G-004

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Abbreviations

AFF	Above Finished Floor
Approx	Approximate(ly)
Arch	Architectural
Bldg	Building
BTM	Bottom
Brg	Bearing
CL	Centerline
Clr	Clear or Clearance
CMU	Concrete Masonry Unit
Col	Column
Conc	Concrete
Conn	Connection
Const	Construction
Cont	Continuous
Dia, Ø	Diameter
Dim	Dimension
Dwg	Drawing
Ea	Each
EF	Each Face
Elec	Electrical
Elev	Elevation
Embed	Embedment
Eq	Equal
EW	Each Way
Exist	Existing
Exp	Expansion
Ext	Exterior
Fnd	Foundation
FFE	Finished Floor Elevation
FP	Full Penetration
FS	Far Side
Ftg	Footing
Ga	Gage or Gauge
Horiz	Horizontal
Int	Interior
K	Kips(1000 LBS.)
KSI	Kips per Square Inch
LB, #	Pound
LL	Live Load
LLH	Long Leg Horizontal
LLV	Long Leg Vertical
Long	Longitudinal
Manuf	Manufacturer
Max	Maximum
Mech	Mechanical
Mid	Middle
Min	Minimum
Misc	Miscellaneous
N/A	Not Applicable
NS	Near Side
NTS	Not to Scale
o.c.	On Center
Opp	Opposite
Perp	Perpendicular
PL	Plate
PEMB	Pre-engineered Metal Building
Prelim	Preliminary
Proj	Projection
PSF	Pounds per Square Foot
PSI	Pounds per Square Inch
Reinf	Reinforcing(-ed, -ment)
Req'd	Required
Rev	Revision
RW	Retaining Wall
Sched	Schedule(d)
Sect	Section
Sim	Similar
Spec	Specifications(s)
Sym	Symmetrical
T	Top, Tension
T/, T.O.	Top of
T/Conc	Top of Concrete
T/Ftg	Top of Footing
T/Slab	Top of Slab
T&B	Top & Bottom
Temp	Temperature
Thk	Thickness
TOS	Top of Steel
TOW	Top of Wall
Trnv	Transverse
Typ	Typical
UNO	Unless Noted Otherwise
Vert	Vertical
w/	With
w/o	Without
W.W.F.	Welded Wire Fabric

Design Criteria

Building Code
-2018 International Building Code (IBC)

Roof Loads:
-Live Load .....20 psf
-Dead Load.....20 psf

Ground Snow Load: Pg = 10 psf

Wind Load Per ASCE 7-16 (IBC 2018):
-Ultimate Wind Speed .....105 mph
-Risk Category.....II
-Wind Exposure.....B

Seismic loads Per ASCE 7-16 (IBC 2018):
-Risk Category.....II
-Spectral Response Coefficients ....S_S = 0.297; S_{DS} = 0.310
.....S_1 =0.144; S_{D1} = 0.222
-Soil Site Class.....D
-Seismic Design Category.....D
-Response modification factor.....5.0
-System overstrength factor.....2.5
- Deflection amplification factor.....3.5
-Seismic force resisiting system.....Special Reinforced Masonry Shear Walls
-Design base shear.....V= CsW
-Analysis procedure.....Equivalent Lateral Force

Shallow Foundations

1. Foundations are designed based upon assumed soil bearing capacities as stated below.

2. Allowable soil bearing pressures used in design: Spread footings =1800 psf /Continuous footing = 1800 psf

3. Footing excavations shall be observed and tested by an experienced geotechnical engineer prior to steel or concrete placement in order to assess that the foundation materials are consistent with above stated assumed soil bearing capacities.

4. In the event that the soils test results are disapproved, footing excavations shall be undercut (under the direction of the soils engineer) until soils of adequate bearding capacity are encountered. Backfill under footings shall consist of concrete f'c = 2500 psi @ 28 days placed up to the proposed bottom of footing elevation.

5. Footings shall bear on undisturbed residual soils or compacted fill, maximum desnist of 98% ASTM D-698.

6. Footing elevations shown on the plans are for estimating purposes only. Actual footing elevations shall be determined by the contractor at the site and shall be a minimum of 12" below finished grade.

7. All water shall be removed from foundation excavations prior to placing of concrete. If bottoms of trenches become softened due to water before footings are cast, the contractor, at his own expense, shall excavate the softened material and replace with concrete.

8. All pipes (water lines, sewer lines, etc.) And conduits running through walls / slabs shall be protected with ½" expansion material.

9. Continuous footing perpendicular to pipe runs shall be either lowered to allow pipes to pass through above such footings or have concrete jacket if pipes are low enough to be placed below such footings. Footings parallel to pipe runs shall be lowered to avoid surcharge onto the trench excavations.

General Notes

1. No provision of any referenced standard specification, manual or code (whether or not specifically incorporated by reference in the contract documents) shall be effective to change the duties and responsibilities of the owner, contractor, architect, engineer, supplier, or any of the consultants, agents, or employees from those set forth in the contract documents, nor shall it be effective to assign to the structural engineer of record (S.E.R.) or any of the S.E.R.'s consultants, agents, or employees any duty or authority to supervise or direct the furnishing or performance of the work or any duty or authority to undertake responsibilities contrary to the provisions of the contract documents.

2. Reference to standard specifications (concerning structural design) of any technical society, organization, or association or to codes of local or state authorities, shall mean the latest standard codes, specification or tentative specification adopted at the date of taking bids, unless specifically stated otherwise.

3. In the event contract documents conflict with the code of practice or specifications of ACI, PCI, AISC, AISI, SJI or other standards, contact structural engineer for clarification.

4. Notes and specific details on the drawings shall take precedence over general structural notes and typical details. Contact the architect / engineer for a determination of intent before proceeding with related work if there is any discrepancy or question regarding which note to follow.

5. Material, workmanship, and design shall conform to the referenced building code.

6. The contractor shall verify the dimensions, elevations and site conditions before starting work. The architect / engineer shall be notified of any discrepancy.

7. The design, adequacy, and safety of erection bracing, shoring, temporary supports, etc. is the sole responsibility of the contractor.

8. The contractor shall coordinate the architectural, mechanical, electrical, plumbing and civil works with the structural contract documents. The architect / engineer shall be notified of any discrepancies or omissions.

9. The contractor shall notify, in writing, the engineer of conditions encountered in the field that are contradictory to those shown on the contract documents.

10. For dimensions not shown on the structural drawings see the architectural drawings.

Concrete

1. All phases of work pertaining to the concrete construction shall conform to the "Building Code Requirements for Structural Concrete" (ACI 318), latest edition with modifications as noted in the drawings or specifications.

2. Concrete mixes shall be designed by a qualified testing laboratory and approved by the structural engineer.

3. All exposed corners or edges of columns, piers, walls, etc., shall be formed with a 3/4" chamfer unless noted otherwise on structural or architectural drawings.

4. All reinforcing bars, anchor bolts and other concrete inserts shall be well secured in position prior to placing concrete.

5. Provide sleeves for plumbing and electrical openings in concrete before placing concrete. Do not cut any reinforcing that may conflict. Coring is not permitted except as shown. Notify the structural engineer in advance of conditions not shown on the drawings.

6. Conduit or pipe size (o.d.) shall not exceed 30% of the slab thickness and shall be placed between the top and bottom reinforcing unless specifically detailed otherwise. Concentrations of conduits or pipes shall be avoided except where detailed openings are provided.

7. Curing compounds on concrete that is to receive special finish shall be approved by the manufacturer before use.

8. Roughen surface of horizontal or nearly horizontal construction joints so that the aggregate shall be exposed uniformly, leaving no laitance, loosed particles or damaged concrete.

9. Locate joints not indicated to least impair strength and appearance of the structure. Locate horizontal joints in concrete only where they normally occur or where indicated. Locate vertical joints in middle third of spans of slabs, beams, or girders unless a beam intersects a girder at middle location, in which case offset joints in girders twice the width of the beam.

10. Once formwork has been removed from concrete retaining walls, brace walls thoroughly before placing soil against wall and keep bracing in place for a minimum of 7 days after earthwork is complete.

Schedule of Concrete Strengths

Use (Location)	28 Day Strength	Aggregate Size (Max.)	Cement/CY (Min.)	W/C ratio (Max.)	Slump (Max.)	Air Entrainment
Slab-on-grade (Interior)	f'c=3,000 psi	1"	480#	.62	4-1/2"	None
Exposed Concrete	f'c=4,000 psi	1"	560#	.54	4-1/2"	4%-6%
Footings	f'c=3,000 psi	1"	480#	.62	4-1/2"	None

1. All aggregate shall be Limestone
2. All cement shall be Portland Cement Type 1

Reinforcing

1. Reinforcing shall be detailed and placed in conformance with ACI Detailing Manual.

2. Reinforcing bars shall conform to the requirements of ASTM A615 Grade 60 except all reinforcing in concrete moment frames and shear walls and all welded reinforcement shall conform to ASTM A706 Grade 60.

3. Welded wire fabric shall conform to ASTM A185.

4. Minimum lap of welded wire fabric shall be 6" or one full mesh + 2", whichever is greater.

5. Dowels between footings and walls shall be the grade, size and spacing or number as the vertical reinforcing, respectively.

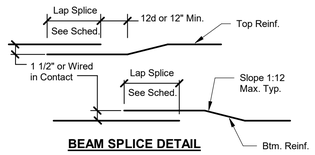
6. Reinforcing steel in all concrete walls and footings shall be continuous around corners.

7. Provide (2) #5 extra reinforcing bars around all side of openings in concrete, unless noted otherwise on the plans. Extend bars 2'-0" beyond each edge of opening.

8. Minimum clear coverage of concrete over reinforcement shall be:
   a. Concrete cast against and permanently exposed to earth .....3"
   b. Concrete exposed to earth or weather:
      i. No. 6 through no. 18 bar.....2"
      ii. No. 5 bar, w31 or d31 wire or smaller.....1-1/2"
   c. Concrete not exposed to weather or in contact with ground:
      i. Slabs walls and joists no. 14 & no. 18.....1-1/2"
      ii. Slabs walls and joists no. 11 & smaller.....3/4"
      iii.Beams, columns: ties and primary reinforcing.....1-1/2"

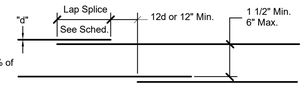
LAP SPLICE LENGTH SCHEDULE

Bar Size	f'c = 3000 PSI	f'c = 4000 PSI
#3	22"	19"
#4	29"	25"
#5	36"	31"
#6	43"	38"
#7	63"	54"
#8	72"	62"



BEAM SPLICE DETAIL

Notes:
1. Fy = 60 ksi
2. Splice lengths are for normal weight concrete.
3. All splices shall be staggered as shown. If more than 50% of the reinforcing is lap spliced within the required lap splice length, the lap splice length shall be increased by 33%.
4. Lap lengths specifically detailed in drawings shall govern in lieu of schedule.
5. Smaller bar required lap length shall be used when splicing with a larger bar.



SLAB SPLICE DETAIL

Masonry

1. Concrete masonry units for load bearing walls shall have a minimum compressive strength of f'm = 1500 psi.
   a. Hollow units: ASTM C90
   b. Solid units: ASTM C145

2. Concrete masonry units shall be laid with type M or S mortar.

3. Grout for reinforced masonry: ASTM C476 (2000 psi)

4. Reinforcement:
   a. Horizontal joints: standard dur-o-wall or equivalent truss or tri-rod reinforcement at 16"o.c. unless noted otherwise
   b. Vertical and horizontal reinforcement: ASTM A615, Grade 60

5. Construction of all concrete masonry shall conform to the latest edition of ACI-530.

6. Grout solid all cells containing reinforcing and all cells below grade.

7. Control joints: spacing shall not exceed 30'-0" or 3 times the wall height whichever is lesser, unless noted otherwise.

8. Grout all beam and joist pockets solid after installation of beams and joists.

9. Minimum lap of reinforcing steel shall be 50 bar diameters for typical reinforcing and 50 bar diameters for all jamb bars shown on wall elevations or 2'-0" minimum.

10. Maximum height of grout pour shall be 4'-0".

11. Provide 1/4" clearance from inside face of block masonry cells and minimum of one bar diameter, but not less than 3/4" clear distance between parallel bars.

12. All vertical reinforcing steel shall be positioned and held in place by means of wire spacers.

Structural Steel

1. Structural steel shall conform to ASTM A572, Grade 50 unless noted otherwise. Pipe columns shall conform to ASTM A53 type E or S Grade B. Tubes shall conform to ASTM A500 Grade B.

2. Design, fabrication, and erection shall be in accordance with aisc specification for the design, fabrication, and erection of structural steel buildings.

3. Structural steel shall be detailed in accordance with standard practices of AISC
   a. Connections: AISC Manual standard connections, unless noted.
   b. High-strength bolts: ASTM A325 bearing type N installed in accordance with "specification for structural joints Using ASTM A325 or A490 Bolts", research council on riveted and bolted structural joints.

4. All welds must be made in accordance with the American Welding Society Code D-1.1.

5. Field and shop connections shall be welded as shown on drawings or bolted with high strength bolts, unless noted otherwise.

6. See architectural drawings for angles, clips, bars, plates, and other items attached to structural members, and for chamfers on concrete walls, beams, etc.

7. Provide temporary bracing as required to maintain alignment and security of structures during construction.

8. Do no cutting, drilling or modifying of structural members without the approval of the engineer.

9. The manufacturer's name, brand or trademark (mill identification marks) shall be shown in raised letters at intervals along the length. (ASTM A6/A6M 96-97, paragraph 12.2) note: small shapes with the greatest cross-sectional dimension not greater.

METAL DECKING

1. Provide design, fabrication, and erection of metal deck conforming to the Steel Deck Institute's "Code of Recommended Standard Practice and Basic Design Specifications".

2. Form roof deck from steel sheets conforming to ASTM A611 or A653 or higher specifications with minimum yield strength of 33 ksi.

3. Attach sheets to steel support members as indicated and in accordance with the manufacturer's instructions for installation. When deck is scheduled to be exposed, de-slag, clean and touched up welds with a zinc-rich primer.

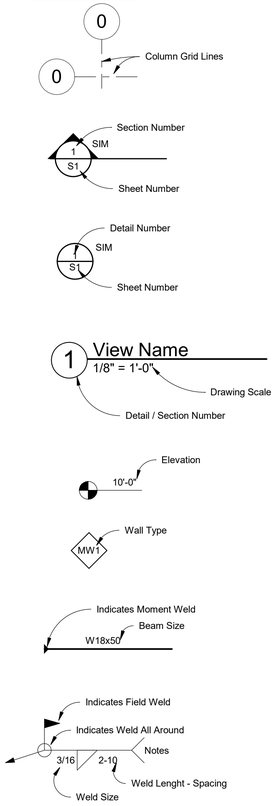
4. Lap roof ends minimum of 2 inches when fastening deck to support members provide welding materials installation procedures to prevent burning of holes in deck.

5. Metal deck fabricator to furnish shop drawings for structural engineer's review prior to fabrication. Shop drawings shall include welding procedure, side lap connections, testing programs for welding, coating material and erection sequence.

6. All decking shall be galvanized.

7. Deck shall have the following minimum section properties.
   A. Roof Deck - Type 3.0N:
   - 20 gauge: I_n = 1.079 in⁴; I_p=0.848 in³; S_p = 0.501 in³; S_n = 0.552 in³

Legend / Symbols



DRAWING LIST	
Sheet No:	**Sheet Name**
S1.1	General Notes
S1.2	Typical Details
S2.0	Foundation Plan
S3.0	Framing Plan
S4.0	Framing Sections

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09/28/2022

REVISIONS:

DELTA	DESCRIPTION	DATE

DATE OF ISSUE:	9/28/22
MA PROJECT NO:	SSE #: 22-081
PROJECT PHASE:	CD
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General Notes

S1.1

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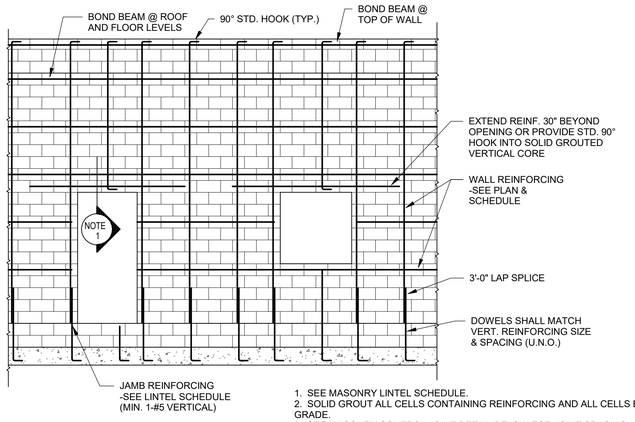
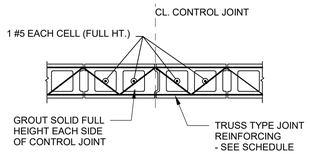


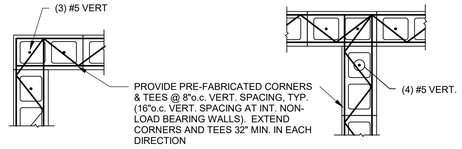
TYPICAL WALL ELEVATION

1. SEE MASONRY LINTEL SCHEDULE.
2. SOLID GROUT ALL CELLS CONTAINING REINFORCING AND ALL CELLS BELOW GRADE.
3. SEE MASONRY CONTROL JOINT DETAIL BELOW FOR JOINT SPACING.
4. HORIZONTAL REINFORCING SHALL BE CONTINUOUS THROUGH CONTROL JOINTS AT ROOF AND FLOOR LEVELS AND AT LINTEL LOCATIONS.
5. REINFORCING SHALL BE CENTERED IN WALL U.N.O.
6. SEE MASONRY COL. SCHEDULE FOR MASONRY COLUMN DETAILS.
7. ALL CELLS OF MASONRY COLUMNS ARE TO BE GROUTED SOLID WIITH 3000 psi NON-SHRINK GROUT (MIN.).
8. COLUMNS ARE TO BE CONSTRUCTED INTEGRALLY WITH THE WALL WHICH THEY ARE A PART OF.



NOTES:
1. SPACE @ 30'-0"o.c. (MAX.)

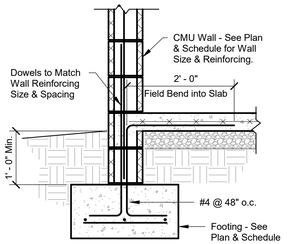
MASONRY CONTROL JOINT



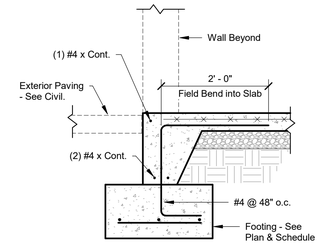
TYP. CORNER DETAIL

TYP. DETAIL @ INTERSECTING WALLS

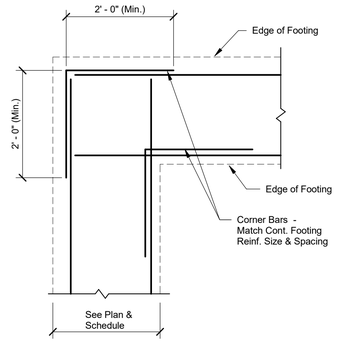
1 Typical Masonry Wall
1/4" = 1'-0"



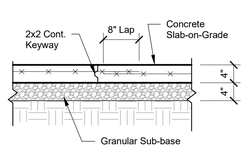
2 Section @ Exterior
3/4" = 1'-0"



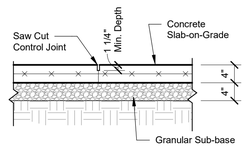
3 Section @ Opening
3/4" = 1'-0"



4 Typ. Cont. Corner Footing Detail
3/4" = 1'-0"



CONSTRUCTION JOINT



CONTROL JOINT

NOTES:
1. Maximum spacing of control joints shall be 15'-0"o.c. (U.N.O.).
2. Locate control joints as specified on architectural drawings (when applicable).
3. Provide 10 MIL Vapor Barier below slab (U.N.O.)

5 Slab-on-Grade Details
3/4" = 1'-0"

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Typical Details

S1.2

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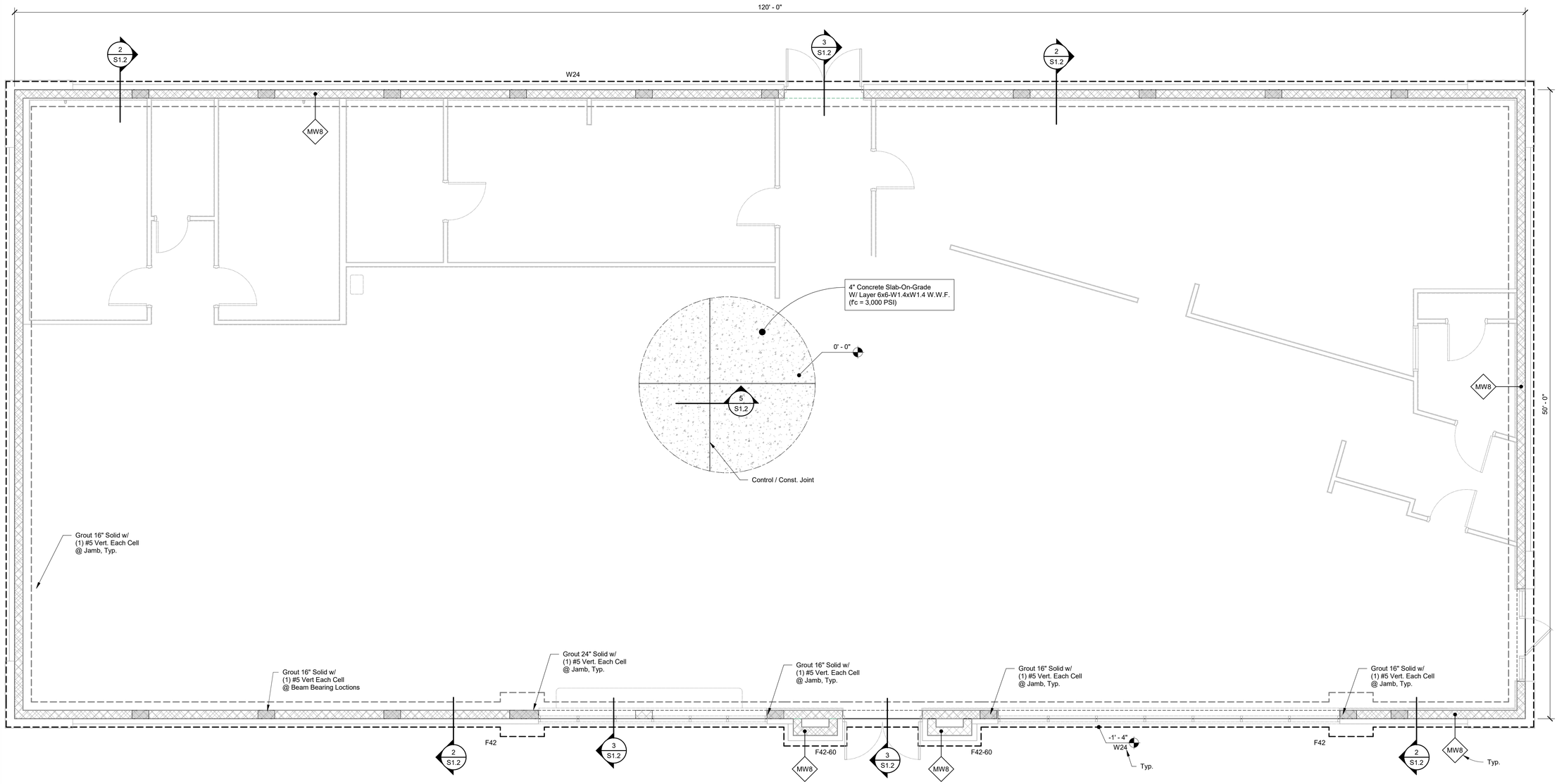

1 Foundation Plan
1/4" = 1'-0"

Notes:
1. See S1.1 for General Notes.
2. See S1.2 for Typical Masonry Wall Elevation, Typical Details.

MASONRY WALL SCHEDULE

Type	Width	Material	Reinforcing		
			Horizontal	Vertical	Joint Reinforcing
MW8	8"	f'm = 1500psi	#5 @ 48"o.c.	#5 @ 32"o.c.	Std. Dur-o-wall @ 16"o.c.

CONTINUOUS WALL FOOTING SCHEDULE

Type	Dimensions		Reinforcing	
	Width	Depth	Longitudinal	Transverse
W24	2' - 0"	1' - 0"	(3) #4 x Cont.	#4 x 1'-6" @ 60"o.c.

FOOTING SCHEDULE

Type	Dimensions			Reinforcing	
	Length	Width	Depth	Longitudinal	Transverse
F42	3' - 6"	3' - 6"	1' - 0"	(4) #5	(4) #5
F42-60	5' - 0"	3' - 6"	1' - 0"	(4) #5	(5) #5

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Foundation Plan

S2.0

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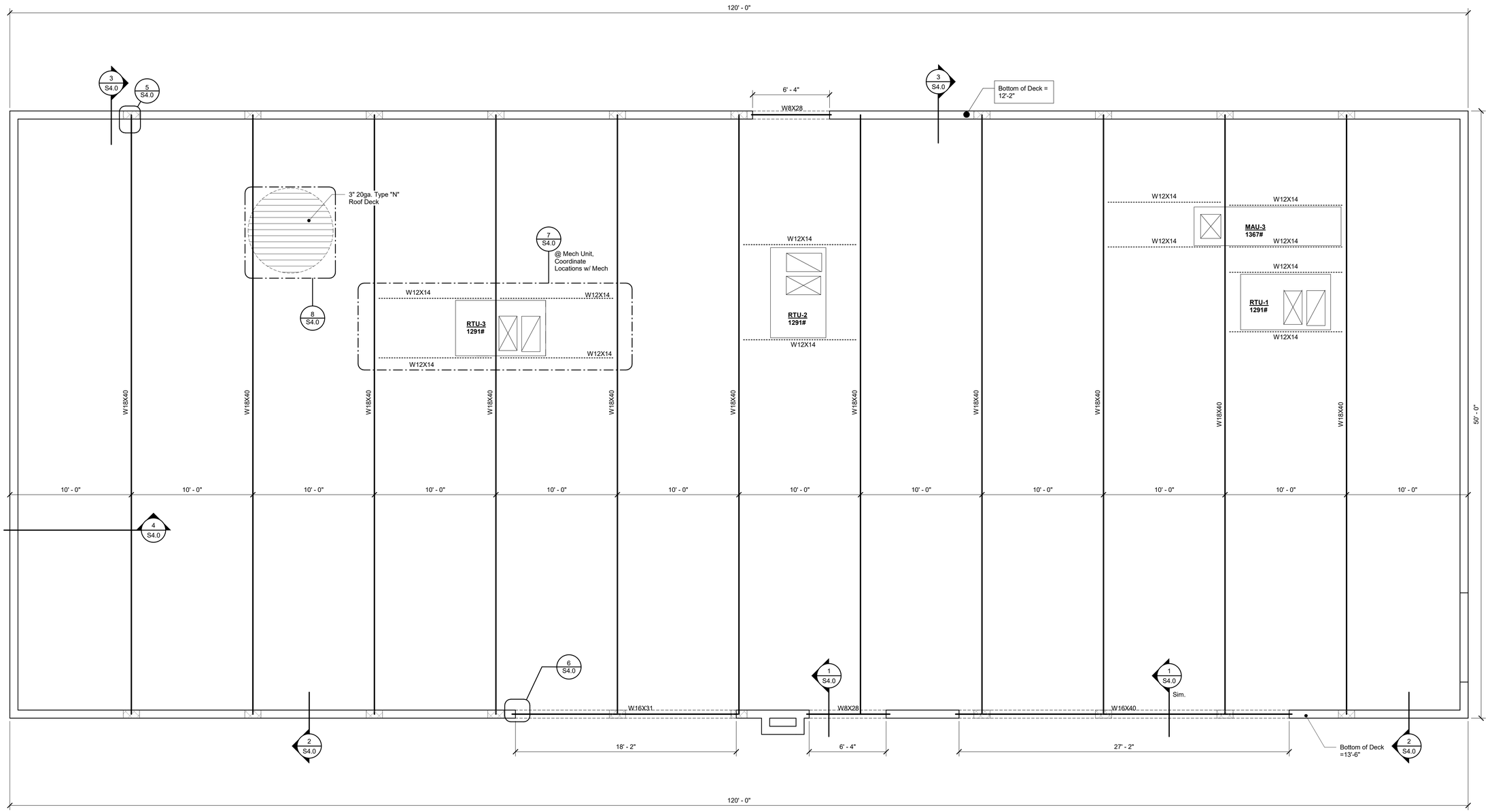

1 Roof Framing
1/4" = 1'-0"

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Framing Plan

S3.0

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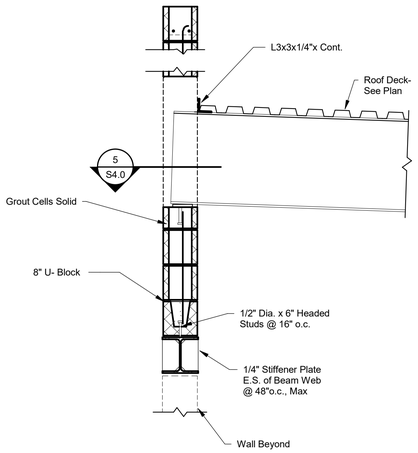
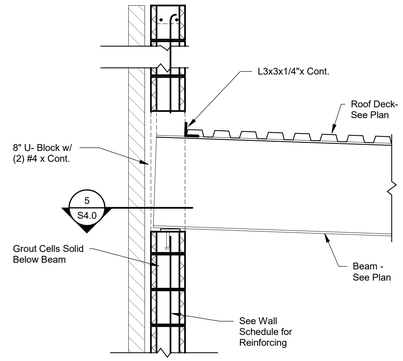
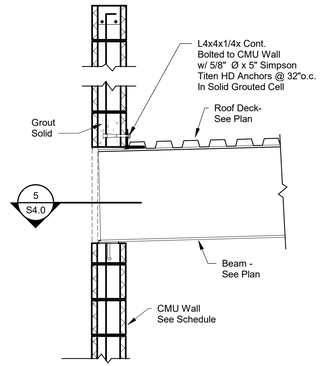


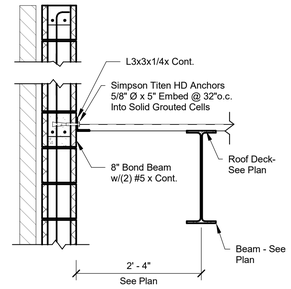
1 Section @ Storefront
3/4" = 1'-0"



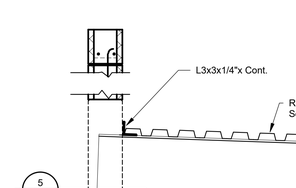
2 Roof Section @ Front
3/4" = 1'-0"



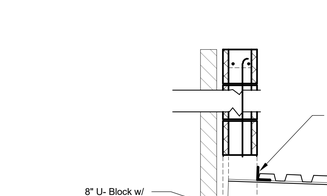
3 Roof Section @ Exterior Wall
3/4" = 1'-0"



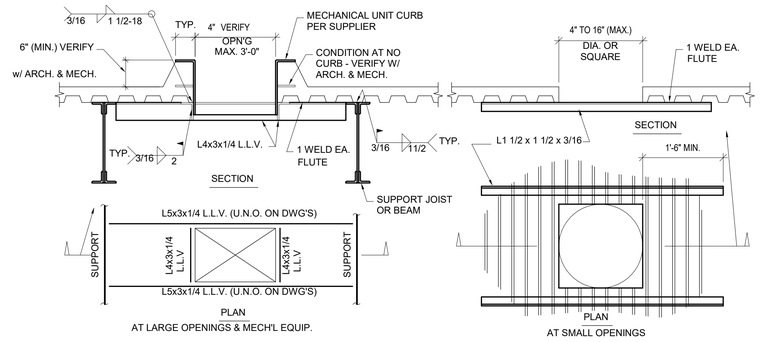
4 Section @ Roof - Parallel to Beam
3/4" = 1'-0"



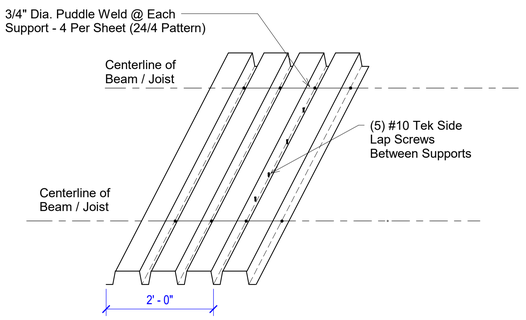
5 Beam Bearing Detail
3/4" = 1'-0"



6 Beam Bearing Detail
3/4" = 1'-0"



7 RTU and Roof Opening Detail
3/4" = 1'-0"



Notes:
1. Weld Deck Edge to Supports With 3/4" Dia. Puddle Weld @ 12"o.c.
2. Lap Deck 2" Minimum.

8 Roof Deck Attachment Detail
3/4" = 1'-0"

9/28/2022 3:08:45 PM MERIDIAN ARCHITECTURE SSE #: 22-081 / Edwards Oil - S4.0- Framing Sections

Edwards Oil
COLUMBIA, TENNESSEE

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No. 104890
09/28/2022

REVISIONS:

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Framing Sections

S4.0

Scallion Structural Engineering
SSE#:22-081
401 Redfield Dr.
Jackson, TN 38305
731.217.1614
jeremy@scallionstructural.com

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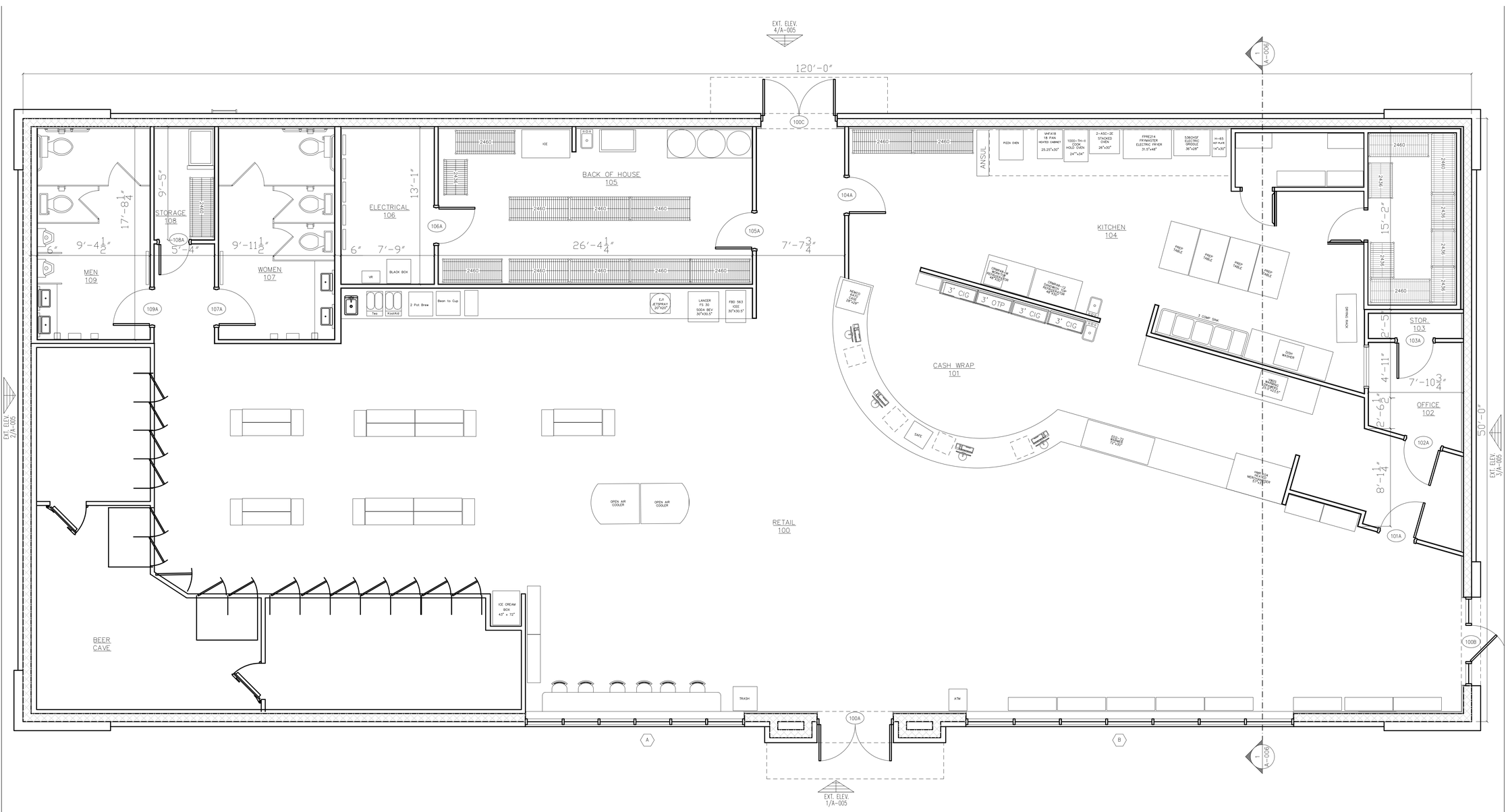

FLOOR PLAN

SCALE: 1/4" = 1'-0"

PLAN NORTH

NOTE:
WALK-IN COOLER MUST COMPLY WITH EACH OF THE ELEVEN ENUMERATED ITEMS IN SECTION C403.10.1 OF THE ENERGY CODE.

EDWARD'S OIL

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FLOOR PLAN AND NOTES

A-001

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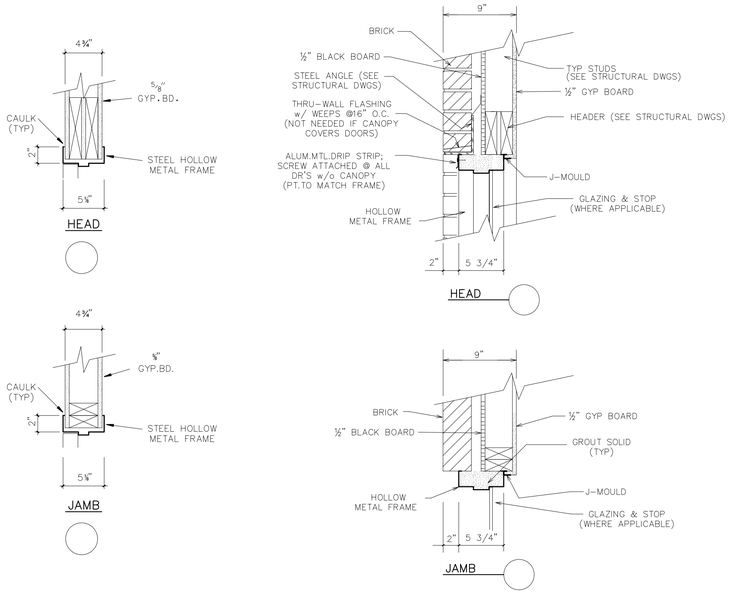
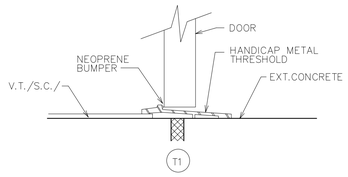


HEAD AND JAMB DETAILS

NOT TO SCALE

NOTE:

TOILET ROOM SIGNAGE SHALL BE LOCATED A MINIMUM OF 48" ABOVE THE FINISHED FLOOR TO THE BASELINE OF THE LOWEST CHARACTERS AND A MAXIMUM OF 60 INCHES ABOVE THE FINISHED FLOOR TO THE BASELINE OF THE HIGHEST CHARACTER.



THRESHOLD TYPES

NOT TO SCALE

DOOR SCHEDULE

NO.	RM.NAME	DOOR SIZE	DOOR MAT'L	DOOR TYPE	DOOR RAT'G	FRAME MAT'L	FRAME TYPE	FRAME DETAIL HEAD	FRAME DETAIL JAMB	FRAME RAT'G	THRES.	NOTES
100A	RETAIL	PR. 3'-0"x7'-0"	AL	FG	---	AL	F2	H2	J2	---	T1	PANIC HARDWARE
100B	RETAIL	3'-0"x7'-0"	AL	FG	---	AL	F3	H2	J2	---	T1	PANIC HARDWARE
100C	RETAIL	PR. 3'-0"x7'-0"	AL	FG	---	AL	F2	H2	J2	---	T1	PANIC HARDWARE
101A	CASH WRAP	3'-0"x7'-0"x 1 3/4"	WD	F	---	HM	F1	H1	J1	---	---	
102A	OFFICE	3'-0"x7'-0"x 1 3/4"	WD	F	---	HM	F1	H1	J1	---	---	
103A	STORAGE	3'-0"x7'-0"x 1 3/4"	WD	F	---	HM	F1	H1	J1	---	---	
104A	KITCHEN	3'-0"x7'-0"x 1 3/4"	WD	F	---	HM	F1	H1	J1	---	---	
105A	BACK OF HOUSE	3'-0"x7'-0"x 1 3/4"	WD	F	---	HM	F1	H1	J1	---	---	
106A	ELECTRICAL	3'-0"x7'-0"x 1 3/4"	WD	F	---	HM	F1	H1	J1	---	---	
107A	WOMEN	3'-0"x7'-0"x 1 3/4"	WD	F	---	HM	F1	H1	J1	---	---	
108A	STORAGE	2'-6"x7'-0"x 1 3/4"	WD	FS	---	HM	F4	H1	J1	---	---	
109A	MEN	3'-0"x7'-0"x 1 3/4"	WD	F	---	HM	F1	H1	J1	---	---	

NOTE:

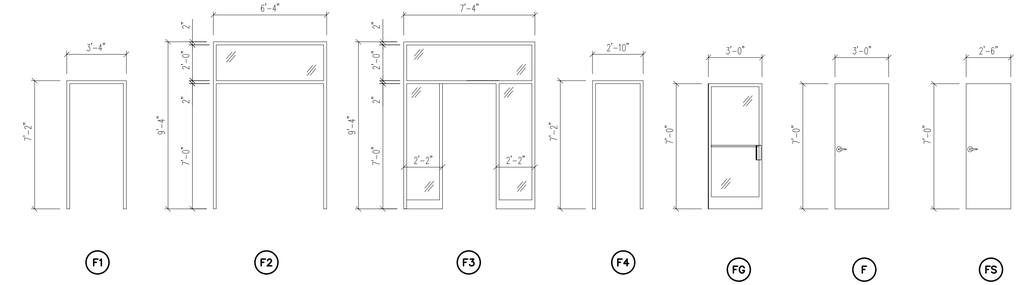
DOOR HARDWARE SHALL COMPLY WITH ADA GUIDELINES. HANDLE, PULLS, LATCHES, LOCKS AND OTHER OPERATING DEVICES ON ACCESSIBLE DOORS SHALL HAVE A SHAPE THAT IS EASY TO GRASP WITH ONE HAND AND DOES NOT REQUIRE TIGHT GRASPING, TIGHT PINCHING OR TWISTING OF THE WRIST TO OPERATE. LEVER- OPERATED MECHANISMS, PUSH- TYPE MECHANISMS, AND U- SHAPED HANDLES ARE ACCEPTABLE DESIGNS. WHEN SLIDING DOORS ARE FULLY OPEN, OPERATING HARDWARE SHALL BE EXPOSED AND USABLE FROM BOTH SIDES. HARDWARE REQUIRED FOR ACCESSIBLE DOOR PASSAGE SHALL BE MOUNTED NO HIGHER THAN 48 INCHES ABOVE FINISHED FLOOR.

ROOM FINISH SCHEDULE

ARCHITECTURAL No.	DESIGNATION	FLOOR	BASE	WALLS	CLG. MAT'L	CLG. HEIGHT
100	RETAIL	TILE	RB	PAINTED GYP.	EXPOSED	---
101	CASH WRAP	V.C.T.	RB	PAINTED GYP.	EXPOSED	---
102	OFFICE	V.C.T.	RB	PAINTED GYP.	A.T.	8'-8"
103	STORAGE	V.C.T.	RB	PAINTED GYP.	A.T.	8'-8"
104	KITCHEN	TILE	RB	PAINTED GYP.	A.T.	9'-4"
105	BACK OF HOUSE	SEALED CONC.	RB	PAINTED GYP.	A.T.	9'-4"
106	ELECTRICAL	SEALED CONC.	RB	PAINTED GYP.	A.T.	9'-4"
107	MEN	TILE	RB	TILE	A.T.	9'-4"
108	STORAGE	V.C.T.	RB	PAINTED GYP.	A.T.	8'-8"
109	WOMEN	TILE	RB	TILE	A.T.	9'-4"

NOTE:

1. KITCHEN TO HAVE STAINLESS STEEL BEHIND 3-COMP SINK AND VENT HOOD
2. SALES AREA TO BE EXPOSED DECKING & BAR JOISTS AND PAINTED BLACK.
3. RESTROOM WALLS TO BE TILED
4. FLOORS IN KITCHEN TO BE ABRASIVE TILE
5. SALES FLOOR TO BE CERAMIC TILE



FRAME AND DOOR TYPES

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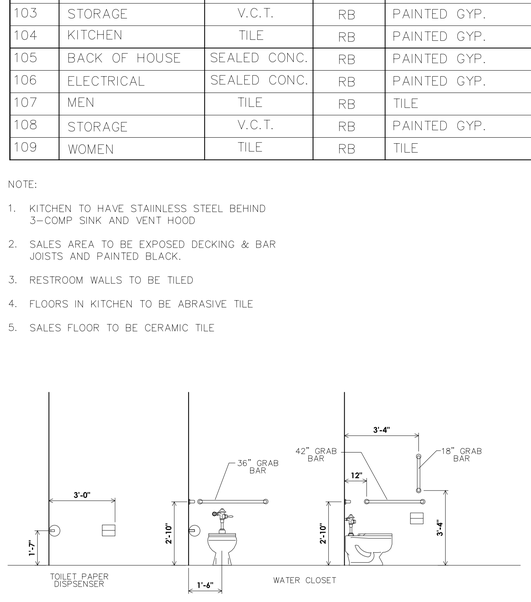
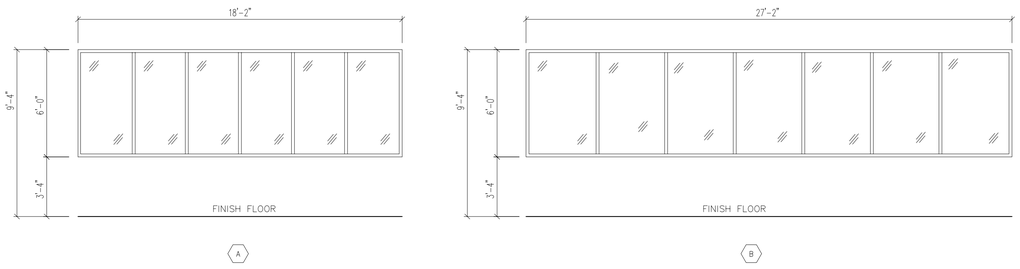


TYPICAL MOUNTING HEIGHTS

NOT TO SCALE



ALUMINUM STOREFRONT AND WINDOW ELEVATIONS

NOT TO SCALE

EDWARD'S OIL

COLUMBIA, TENNESSEE

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SCHEDULES AND DETAILS

A-002

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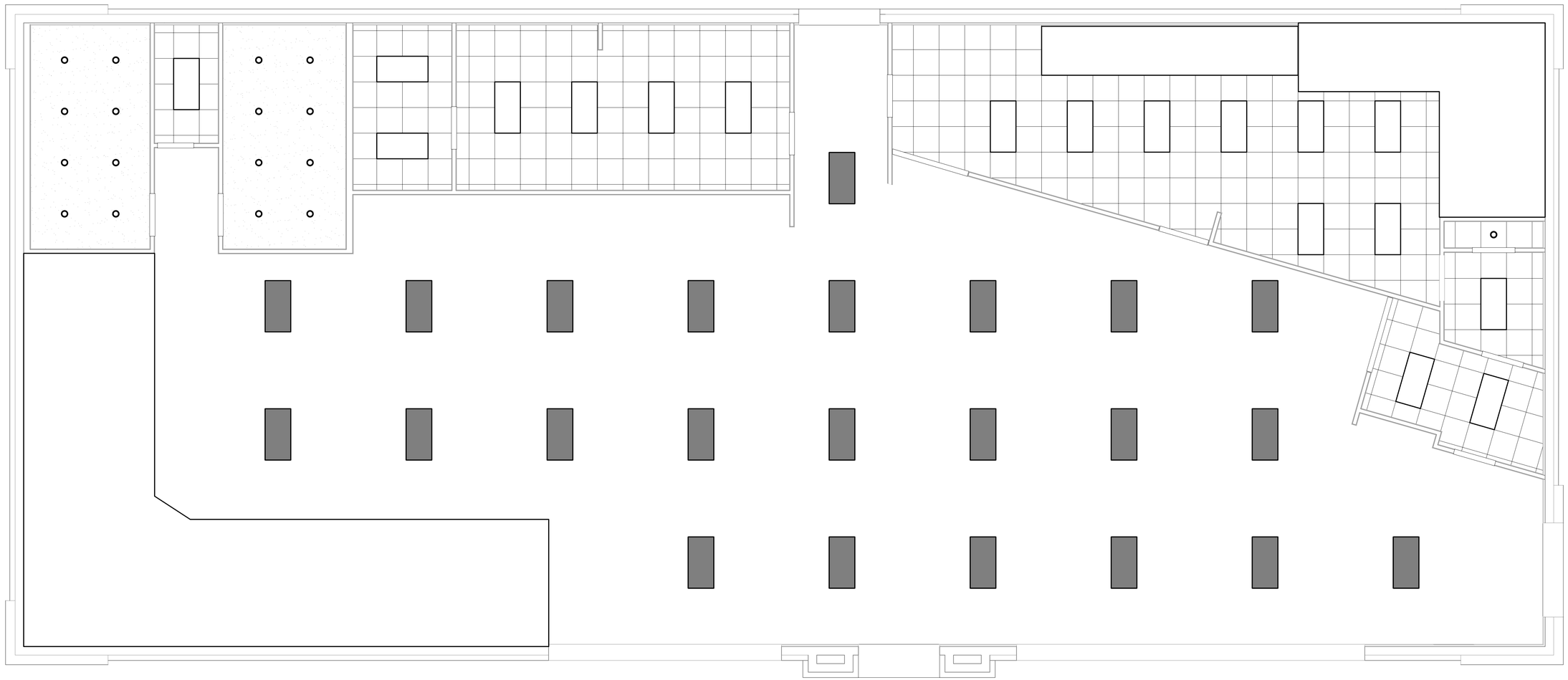

R.C.P. LEGEND	
	2 x 4 LIGHTING FIXTURE
	RECESSED CAN LIGHT
	HI-BAY LIGHTING FIXTURE
	ILLUMINATED EXIT LIGHT
	EMERGENCY LIGHTING
	ACOUSTICAL TILE - 2x2 SMOOTH (NON-TEGULAR) CEILING TILE THROUGHOUT

LIGHTING NOTES:

1. 2'x2' WASHABLE LAY-IN CEILING TILE IN KITCHEN AREA WITH 6" INSULATION ABOVE.
2. RESTROOMS TO HAVE SHEETROCK CEILING WITH 6" INSULATION ABOVE
3. LIGHTS IN SALES AREA TO BE HI-BAY.
4. LIGHTS IN OFFICE, KITCHEN AND STORAGE ROOM TO HAVE DAYLIGHT BULBS
5. RESTROOM TO HAVE OCCUPANCY SENSOR
6. RESTROOM LIGHTING TO BE 6" CAN LIGHTS.

GENERAL NOTES:

1. SEE ELECTRICAL SHEETS FOR ADDITIONAL FIXTURES AND FIXTURE TYPES
2. COORDINATE LIGHTING FIXTURES WITH MECHANICAL DIFFUSERS (SEE M-1)
3. SEE FINISH SCHEDULE ON A-002 FOR CEILING HEIGHTS

REFLECTED CEILING PLAN

SCALE: 1/4" = 1'-0"

PLAN NORTH

EDWARD'S OIL

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DAVID A. BROWN — REGISTERED ARCHITECT — STATE OF TENNESSEE

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REFLECTED CEILING PLAN

A-003

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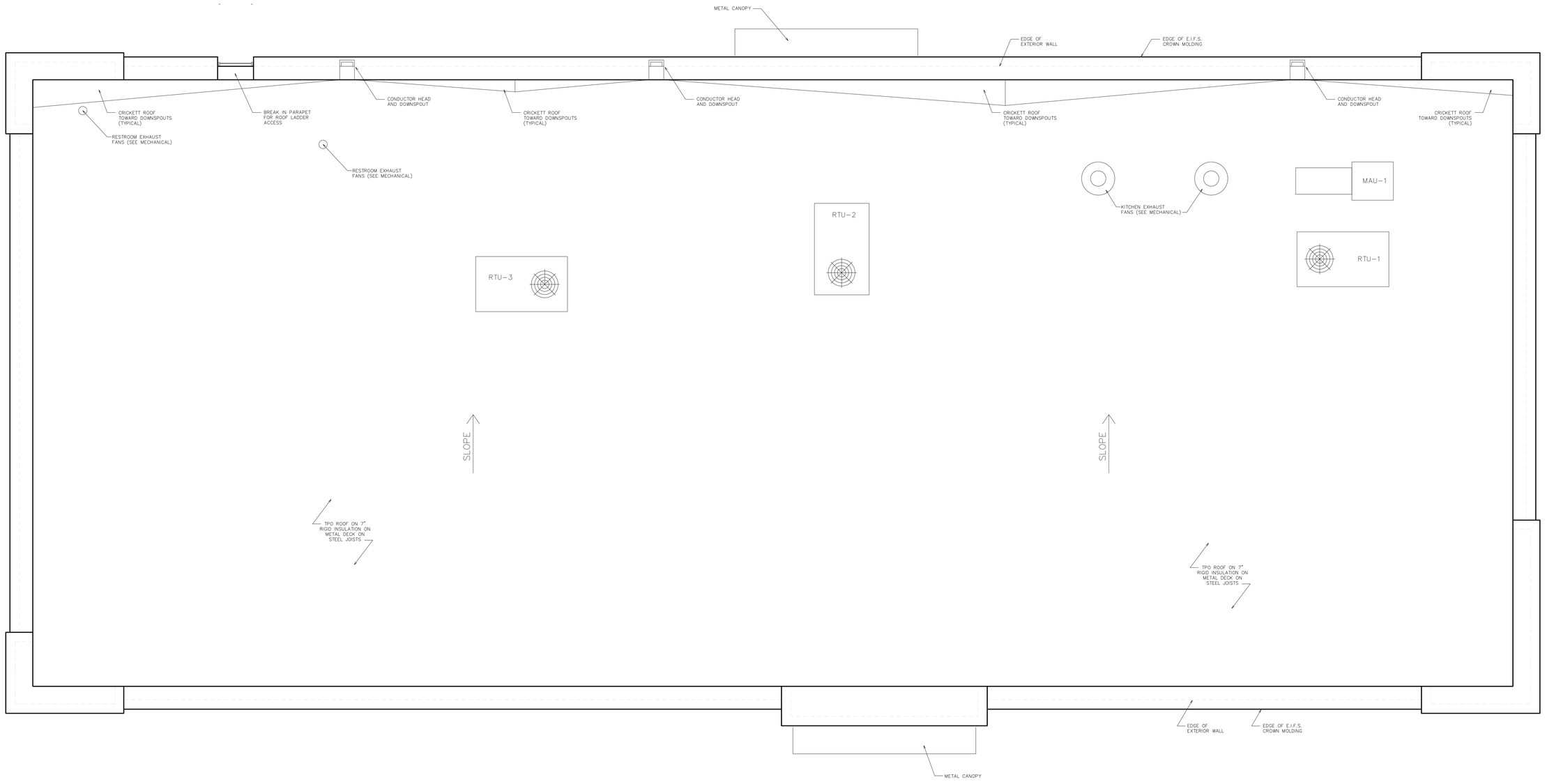

ROOF PLAN

SCALE: 1/4" = 1'-0"

PLAN NORTH

EDWARD'S OIL

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ROOF PLAN

A-004

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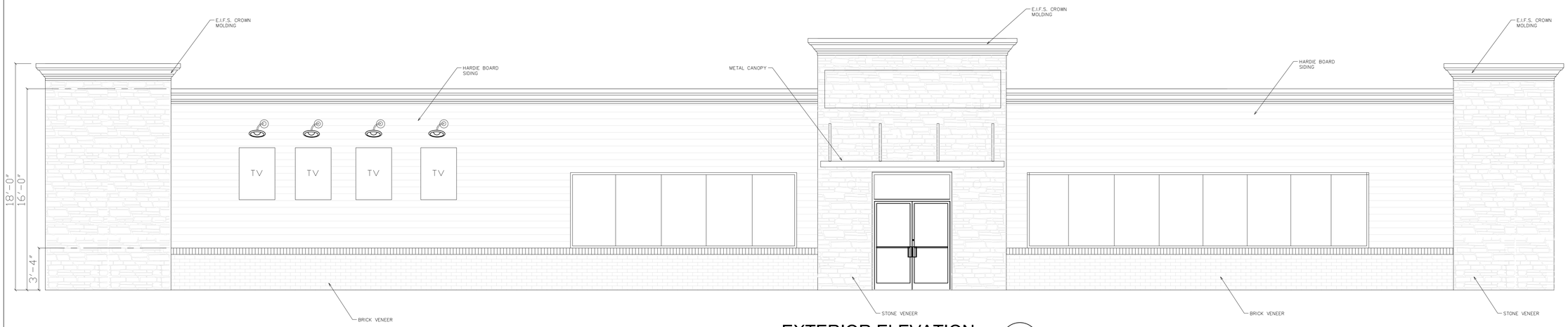
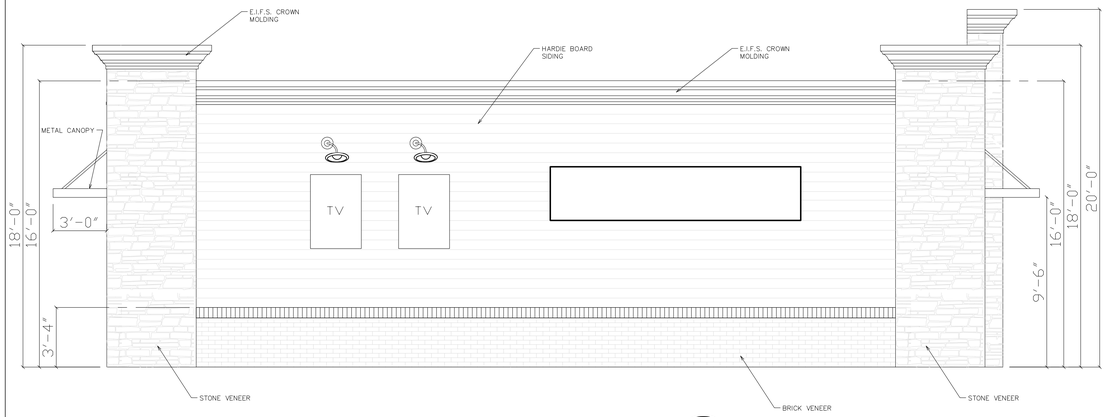


EXTERIOR ELEVATION

SCALE: 1/4"= 1'-0"

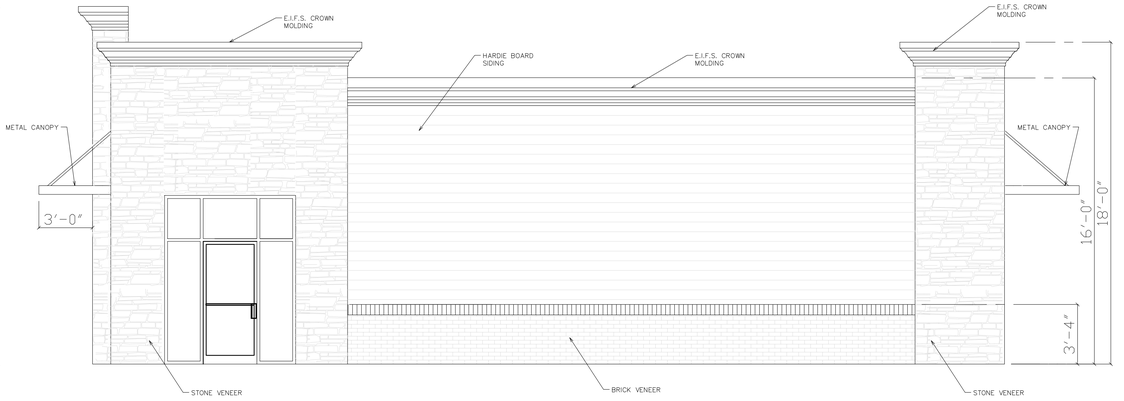
1 A-005



EXTERIOR ELEVATION

SCALE: 1/4"= 1'-0"

2 A-005



EXTERIOR ELEVATION

SCALE: 1/4"= 1'-0"

3 A-005

EXTERIOR ELEVATION

SCALE: 1/4"= 1'-0"

4 A-005

EDWARD'S OIL

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EXTERIOR ELEVATIONS

A-005

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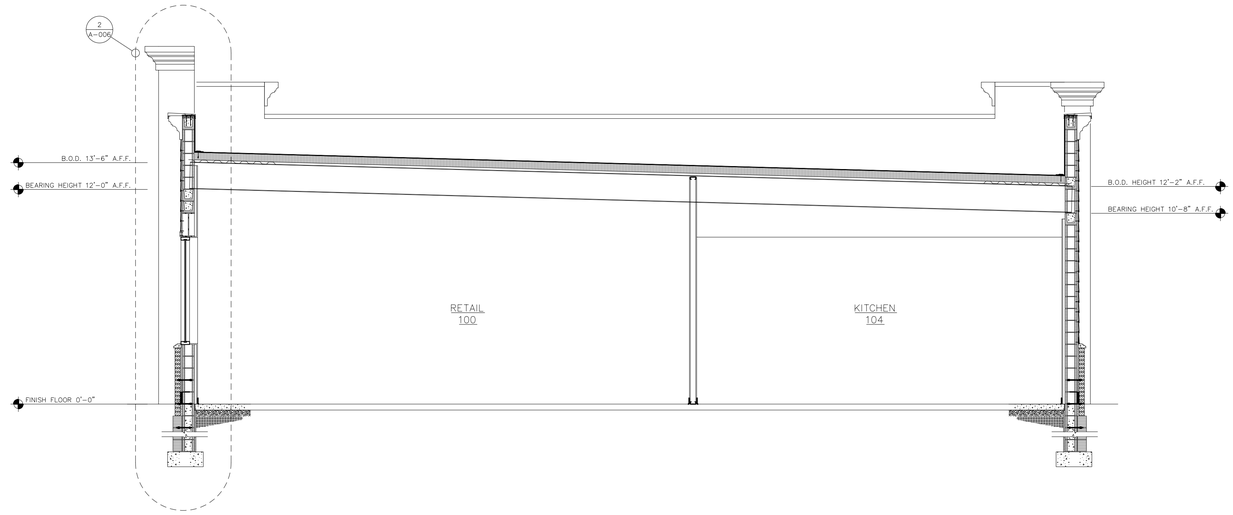


BUILDING SECTION

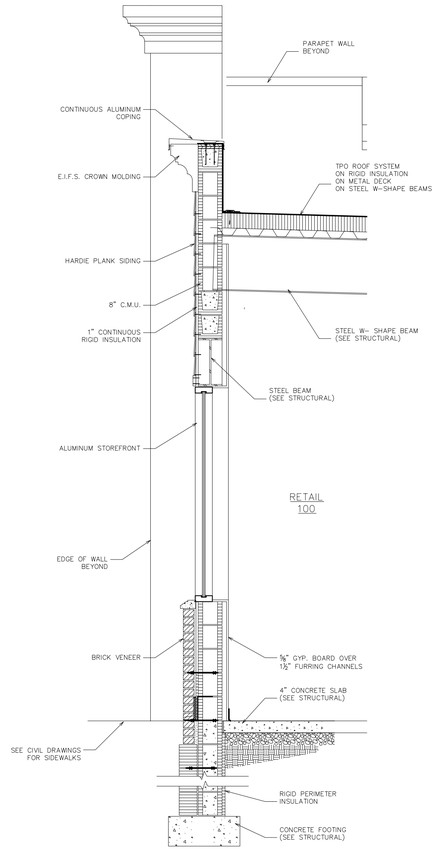
SCALE: 1/4"= 1'-0"

1
A-006

INSULATION SCHEDULE:

LOCATION	INSULATION TYPE
INTERIOR WALLS	N/A
EXTERIOR WALLS	R19, RIGID INSULATION
ROOF	R30, 7" RIGID INSULATION
SLAB	R10, RIGID PERIMETER INSULATION, VERTICAL

VALUES BASED ON 2018 IECC



WALL SECTION

SCALE: 1/2"= 1'-0"

2
A-006

EDWARD'S OIL

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BUILDING AND WALL SECTIONS

A-006

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DIFFUSER, REGISTER, & GRILLE SCHEDULE

SIZES ARE BY SCHEDULES UNLESS NOTED OTHERWISE. DIFFUSERS ARE 4-WAY BELOW UNLESS NOTED AS 3-WAY (3W) OR 2-WAY (2W), GO TO NEXT LARGER NECK SIZE FOR 2-WAY OR 3-WAY DIFFUSERS.

UNLESS NOTED OTHERWISE, ALL DIFFUSERS IN THE SAME SPACE SHALL BE THE SAME FACE SIZE, REGARDLESS OF CFM, USING LARGEST SIZE FROM TABLE BELOW. ALL DIFFUSERS IN THE SAME CORRIDOR SHALL BE THE SAME FACE SIZE.

RETURN AND EXHAUST GRILLES ARE BASED ON 450 FPM & 72% FREE AREA (BASED ON 1/2" EGG-CRATE GRILLES).

✳ = BRANCH DUCT AND OPTIONAL BRANCH DUCT SIZES ARE BY THIS SCHEDULE UNLESS OTHERWISE SPECIFICALLY NOTED ON FLOOR PLANS.

USE RETURN/EXHAUST REGISTER AND DIFFUSER WITH O.B.D. IN DRYWALL (INACCESSIBLE) CEILINGS.

USE RETURN/EXHAUST GRILLES AND DIFFUSERS WITHOUT O.B.D. IN LAY-IN OR ACCESSIBLE CEILINGS.

INSTALL M.B.D. IN BRANCH DUCTS. INSTALL SPIN-IN FITTINGS (WITHOUT SCOOPS) WITH M.B.D. IN ALL OPTIONAL BRANCH DUCTS. SEE BRANCH DUCT CONNECTION DETAILS FOR SPECIFIC REQUIREMENTS.

CEILING DIFFUSERS

CFM RANGE	FACE SIZE	NECK SIZE	BRANCH DUCT SIZE ✳	OPTIONAL BRANCH DUCT SIZE
0-150	12"x12"	6"ø	8"x6"	8"ø
155-240	24"x24"	8"ø	12"x6"	10"ø
245-360	24"x24"	10"ø	12"x8"	10"ø
365-460	24"x24"	12"ø	14"x8"	12"ø
465-600	24"x24"	12"ø	16"x8"	12"ø
605-720	24"x24"	14"ø	16"x10"	14"ø

SIDEWALL DIFFUSERS

CFM RANGE	FACE SIZE	NECK SIZE	BRANCH DUCT SIZE ✳	OPTIONAL BRANCH DUCT SIZE
0-75			6"x6"	8"ø
80-150			8"x6"	10"ø
155-200			10"x6"	10"ø
205-250			12"x6"	12"ø
255-300			14"x6"	14"ø

RETURN / EXHAUST REGISTERS & GRILLES

CFM RANGE	FACE SIZE	NECK SIZE	BRANCH DUCT SIZE ✳	OPTIONAL BRANCH DUCT SIZE
0-90	6"x6"		8"x6"	6"ø
95-140	8"x8"		10"x6"	8"ø
145-190	10"x10"		12"x6"	10"ø
195-275	12"x12"		14"x6"	10"ø
280-475	18"x12"		14"x8"	12"ø
480-725	18"x18"		20"x8"	14"ø
730-900	24"x18"		20"x10"	
905-1250	24"x24"		26"x10"	
1255-2000	36"x24"		26"x14"	
2005-2800	48"x24"		26"x18"	

DX/GAS UNIT SCHEDULE

GENERAL NOTES:

(1) EXTERNAL STATIC PRESSURE INCLUDES ALL LOSSES IN DUCT SYSTEM

(2) HIGH EFFICIENCY MOTOR

E.P. - EMEREGENCY POWER

UNIT ACCESSORIES:

1 - DUPLEX RECEPTACLE

2 - HOT GAS REHEAT

3 - 100% ECONOMIZER WITH BAROMETRIC RELIEF

4 - PROVIDE WITH 7-DAY PROGRAMMABLE T'STAT WITH LCD DISPLAY & AUTO CHANGEOVER.

5 -2-POSITION OUTSIDE AIR DAMPER

6 - 2" THROWAWAY 30% PRE FILTERS AND FRAME

7 - PROVIDE CURB ADAPTER KIT. FIELD VERIFY EXISTING CURB FOR PROPER ADAPTER KIT.

8 - 12" TALL ROOF CURB BY MANUFACTURER

9 - SPRING ISOLATION RAIL

10 - UNIT STARTERS , CONTROLS, DAMPERS, & ACCESSORIES FACTORY INSTALLED BY A/C UNIT MFG

11 - INDIVIDUAL ELEC. CONNECTIONS FOR EACH FAN AND CONDENSING UNIT

12 - DUAL POINT ELEC. CONNECTIONS FOR UNIT, EMERGENCY POWER FOR SUPPLY AND RETURN FANS ONLY

STARTER ACCESSORIES:

A - FACTORY MOUNTED COMBINATION MAG-X-LINE

B - FACTORY MOUNTED AUTO TRANSFORMER

C - FACTORY MOUNTED VARIABLE FREQUENCY DRIVE (VFD) WITH LINE REACTOR & DISCONNECT

D - HAND-OFF-AUTO SWITCH, 120 VOLT CONTROL TRANSFORMER, & PILOT LIGHT

IDENTIFICATION	RTU-1	RTU-2	RTU-3
AREA SERVED	KITCHEN	RETAIL	RETAIL
MANUFACTURER	TRANE	TRANE	TRANE
MODEL NO.	YSC092	YSC092	YSC092
TONS	7.5	7.5	7.5
OPERATING WEIGHT (LBS)	1291#	1291#	1291#
UNIT ACCESSORIES	1,2,3,4,6,10	1,2,3,4,6,10	1,2,3,4,6,10
SUPPLY FAN			
CFM	2600	2500	2520
EXT. S.P. (1)	.8"	.8"	.8"
TOTAL S.P.	SEE MFG	SEE MFG	SEE MFG
H.P. (2)	1	1	1
OUTSIDE AIR			
MINIMUM	300	300	300
MAXIMUM	2600	2500	2520
COOLING COIL			
DEHUM CFM	2600	2500	2520
MAX. FV	500	500	500
EDB/EWB (°F)	77.8/65.4	77.8/65.4	77.8/65.4
LDB/LWB (°F)	55/54	55/54	55/54
CAPACITY (MBH)	85	85	85
HEATING			
MIN. HTG CAPACITY (MBH)	85	85	85
HTG INPUT/OUTPUT	120/100	120/100	120/100
HEATER EAT/LAT	60/90	60/90	60/90
ELECTRICAL			
V/ø/Hz	208-3	208-3	208-3
UNIT MCA/MOCP	39/50	39/50	39/50
STARTER TYPE	BY MFG	BY MFG	BY MFG
DISCONNECT TYPE	BY MFG	BY MFG	BY MFG
ACCESSORIES			
REMARKS			

ROOFTOP EQUIPMENT NOTES

1. ALL ROOF MOUNTED EQUIPMENT TO BE MOUNTED ON EXISTING ROOF CURB.
2. COORDINATE LOCATION OF EXHAUST RISERS THRU ROOF TO MAINTAIN A MINIMUM OF 10'-0" FROM ANY FRESH AIR INTAKE. DUE TO LIMITED SITE INVESTIGATION FIELD COORDINATION IS REQUIRED BEFORE INSTALLING CURBS
3. ROUTE CONDENSATE PIPE TO NEAREST DOWNSPOUT.
4. COORDINATE SUPPLY AND RETURN DUCT ROOF PENETRATIONS WITH STRUCTURAL.

HVAC LEGEND

PIPING		DUCTWORK	
D	DRAIN LINE		SUPPLY DUCTWORK
RS	REFRIGERANT SUCTION		RETURN OR EXHAUST DUCTWORK
RL	REFRIGERANT LIQUID	FD	FIRE DAMPER
V	EQUIPMENT VENT	SD	SMOKE DAMPER
	BALL VALVE	F/SD	COMBINATION FIRE & SMOKE DAMPER
	GATE VALVE	240	SUPPLY DIFFUSER & AIR QUANTITY (INDICATES 4-WAY BLOW)
	GLOBE VALVE	150 3W (2W)	SUPPLY DIFFUSER & AIR QUANTITY INDICATES 3-WAY BLOW (2-WAY BLOW)
	BUTTERFLY VALVE	140R	RETURN AIR GRILLE & AIR QUANTITY
	CONTROL VALVE	150E	EXHAUST AIR GRILLE & AIR QUANTITY
	STRAINER WITH HOSE END DRAIN CONNECTION		REDUCER/TRANSITION
	STRAINER AND BLOWDOWN VALVE	T	THERMOSTAT (ADJUSTABLE)
	PLUG COCK (BALANCING VALVE)	Tc	THERMOSTAT (CONCEALED / KEY OPER.)
	UNION	R	RISE IN DUCTWORK
	COMPANION FLANGE	D	DROP IN DUCT
	CHECK VALVE		CONICAL TEE
	GAUGE & GAUGE COCK		BELLMOUTH CONNECTION
	THERMOMETER		DUCT WITH INTERNAL SOUND LINER
A.F.F.	ABOVE FINISHED FLOOR		SQUARE ELBOW WITH TURNING VANES
A.F.R.	ABOVE FINISHED ROOF	M.B.D.	MANUAL BALANCE DAMPER
A.D.	ACCESS DOOR	50	INDICATES 3/4" DOOR UNDERCUT. DIRECTION & QUAN .OF ROOM AIR PRESS.
		50	INDICATES DIRECTION & QUANTITY OF ROOM AIR PRESSURIZATION.
		SD	DUCT MOUNTED SMOKE DETECTOR
		SP	DUCT MOUNTED STATIC PRESSURE CONTROLLER

FAN SCHEDULE

GENERAL NOTES:

(1) HIGH EFFICIENCY MOTOR

ABBREVIATIONS:

C.T. - CONTROL TRANSFORMER

R.I.S. - RUBBER IN SHEAR

UNIT ACCESSORIES:

1 - UL 762 LISTED

2 - PROVIDE WITH GRAVITY DAMPER AND SCREENED OUTLET

3 - PROVIDE WITH GAS HEAT 175 IN/161 OUT

4 - PRE-WIRED DISCONNECT SWITCH

5 - PROVIDE WALL SWITCH

6 - MANUFACTURER'S ROOF CURB

STARTER ACCESSORIES:

A - MANUAL MOTOR STARTER

IDENTIFICATION	EF-1		KEF-1 (FURNISHED)	KEF-2 (FURNISHED)			MAU-1 (FURNISHED)
SYSTEM	TOILET		KH-1	KH-2			KH-1 & KH-2
TYPE	CABINET CEILING FAN WITH INTEGRAL GRILLE		UPBLAST	UPBLAST			TEMPERED MAKEUP AIR UNIT
MANUFACTURER	COOK		CAPTIVEAIRE	CAPTIVEAIRE			CAPTIVEAIRE
MODEL NO.	GC-188		DU180HFA	DU180HFA			A2-D.250-20D-MPU
CFM	200		1600	1800			2720
S.P.	.5		1.25	1.25			.5
MAX. SONES	5		11.32	11.81			10
ROOF OPENING	N/A		SEE MFG	SEE MFG			SEE MFG
UNIT WEIGHT (LBS)	15#		194#	194#			1367#
FAN ACCESSORIES	2,4,6		1,4,6	1,4,6			2,3,4,6
MOTOR (1)							
MIN. H.P.	⅛		1.5	1.5			1.5
RPM	1360		1067	1086			1236
VOLTAGE	120-1		208-3	208-3			208-3
STARTER							
LOCATION	AT UNIT		AT UNIT	AT UNIT			AT UNIT
TYPE	BY MFG		BY MFG	BY MFG			BY MFG
DISCONNECT TYPE	MCP		MCP	MCP			MCP
ACCESSORIES	A		B	B			B
REMARKS	FAN TO BE CONTROLLED BY TIME CLOCK		FAN TO BE INTERLOCKED WITH KH-1	FAN TO BE INTERLOCKED WITH KH-2			FAN TO BE INTERLOCKED WITH KH-1 & KH-2

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PROJECT PHASE: CD

DRAWN BY: DF&H SERVICES

HVAC LEGENDS AND SCHEDULES

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GENERAL NOTES

1. DUCTWORK DIMENSIONS ARE INSIDE CLEAR.
2. (T) INDICATES THERMOSTAT.
3. (Tc) INDICATES THERMOSTAT WITH LOCKING COVER.
4. REFER TO SCHEDULE SHEET FOR DIFFUSER AND GRILLE SCHEDULE.
5. SPACES WITH DRYWALL CEILINGS SHALL HAVE FLANGE TYPE CEILING OUTLETS.
6. ALL DIFFUSERS IN SAME SPACE SHALL HAVE THE SAME FACE SIZE USING LARGEST SIZE REQUIRED FROM DIFFUSER AND GRILLE SCHEDULE.
7. IF NO SIZE IS SHOWN FOR DUCT SERVING DIFFUSER OR GRILLE, USE SIZE SHOWN ON DIFFUSER AND GRILLE SCHEDULE.
8. AIR INTAKES THRU ROOF SHALL BE A MINIMUM 10 FEET FROM EXHAUST FAN OUTLETS AND PLUMBING VENTS.
9. PROVIDE ACCESS PANELS IN AREAS WITH DRYWALL CEILING FOR ACCESS TO VALVES, BALANCING DAMPERS, FIRE, SMOKE AND/OR COMBINATION DAMPERS, REHEAT COILS, ETC..
10. REFER TO OTHER DISCIPLINES DRAWINGS FOR COORDINATION WITH THIS DRAWING.
11. SEAL ALL WALL, ROOF AND FLOOR PENETRATIONS AIR TIGHT AT PIPE, DUCTWORK AND CONDUIT PENETRATIONS.
12. REFER TO HVAC DETAILS FOR ADDITIONAL REQUIREMENTS ON EQUIPMENT.
13. EQUIPMENT SIZES AND SERVICE SPACE REQUIREMENTS MAY VARY BETWEEN DIFFERENT MANUFACTURERS. CONSULT THE MANUFACTURER SUBMITTED AND APPROVED, AND COORDINATE WITH THESE DOCUMENTS.
14. REFER TO EQUIPMENT SCHEDULES FOR BRANCH PIPE SIZES TO INDIVIDUAL EQUIPMENT.
15. PROVIDE MANUAL BALANCING DAMPERS IN EACH BRANCH RUN OUT TO SUPPLY DIFFUSERS, RETURN AND EXHAUST GRILLES.
16. CONTRACTOR SHALL VERIFY CLEARANCE REQUIREMENTS AND INDICATE ROUTING OF NEW DUCTWORK BEFORE FABRICATION BEGINS AS RISES AND DROPS MAY BE NECESSARY DUE TO FIELD CONDITIONS.
17. COORDINATE DUCT ROUTING SO AS NOT TO INTERFERE WITH TRUSS SPACE ACCESS DOORS.
18. MOUNT ALL TEMPERATURE SENSORS 54" ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED. PROVIDE LOCKING PLASTIC COVERS FOR ALL SENSORS.
19. FLEX DUCT IS TO BE INSTALLED WITHOUT SHARP BENDS OR CRIMPS. FLEX IS TO BE PERMANENTLY FASTENED TO ANY SHEET METAL FITTINGS.
20. DRAWINGS ARE DIAGRAMMATIC AND DO NOT RELEASE THE CONTRACTOR FROM THE RESPONSIBILITY OF INSTALLING THE HVAC SYSTEM PER LOCAL CODE AND IN EXCELLENT WORKING CONDITION.
21. GENERAL CONTRACTOR SHALL PROVIDE FRAME OPENINGS FOR ROOF TOP UNITS IN ACCORDANCE WITH MECHANICAL CONTRACTORS SPECIFICATIONS.
22. APPROVED EQUAL MANUFACTURER'S EQUIPMENT MAY BE USED. VERIFY ELECTRICAL LOADS AND COORDINATE WITH ELECTRICAL CONTRACTOR.
23. CONTRACTOR SHALL SUBMIT (7) COPIES OF SUBMITTALS. ALL INFORMAITON DIFFERENT FROM DRAWINGS AND SPECIFICAITONS SHALL BE HIGHLIGHTED AND BROUGHT TO ATTENTION OF REVIEWER.
24. ALL SMOKE DETECTORS ARE INSTALLED AND FURNISHED BY ELECTRICAL CONTRACTOR.
25. PROVIDE A FLEXIBLE CONNECTION AT THE INTAKE AND DISCHARGE OF ALL MOTOR DRIVEN EQUIPMENT.
26. ALL FLEXIBLE DUCTWORK SHALL HAVE A MAXIMUM LENGTH OF SIX (6) FEET AND A MINIMUM RADIUS OF 90 DEGREES.

CONTROLS

AIR HANDLER FANS SHALL RUN CONTINUOUSLY DURING OCCUPIED HOURS TO MAINTAIN PRESSURIZATION AND REQUIRED AIR CHANGES.

OCCUPIED HOURS TO BE DETERMINED BY PROGRAMMABLE T'STAT

ROOFTOP UNIT COMPRESSOR AND GAS HEAT OPERATION SHALL BE CONTROLLED BY PROGRAMMABLE T'STAT WITH AUTOMATIC HEAT/COOL SWITCHING

UPON DETECTION OF SMOKE BY DUCT MOUNTED SMOKE DETECTOR, AIR HANDLERS AND INTERLOCKED EXHAUST FANS SHALL SHUT DOWN.

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HVAC LEGEND

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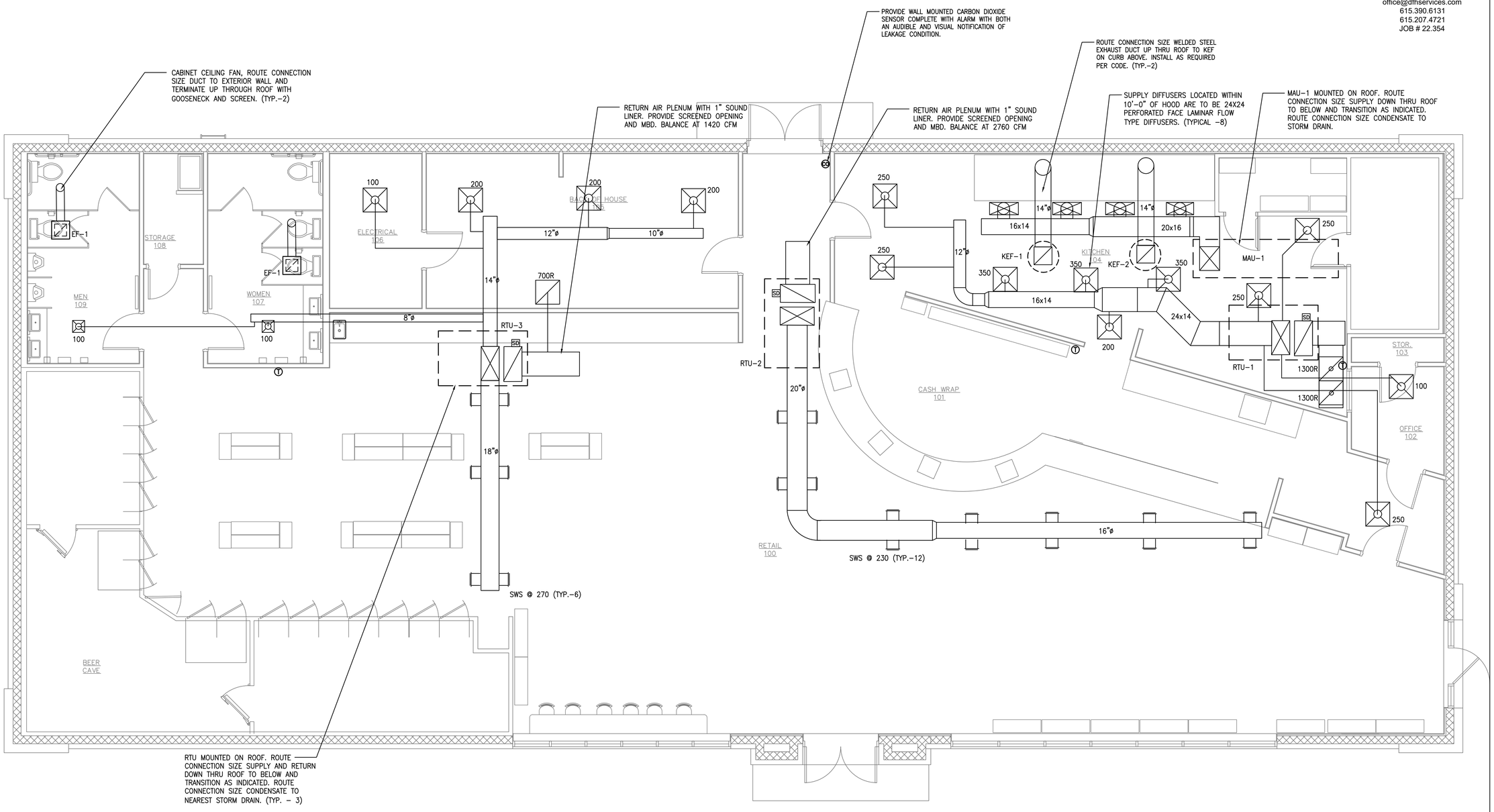

HVAC NEW CONSTRUCTION PLAN

SCALE: 1/4" = 1'-0"

PLAN NORTH

EDWARD'S OIL

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HVAC NEW CONSTRUCTION PLAN

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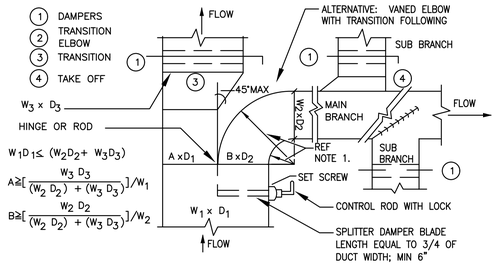
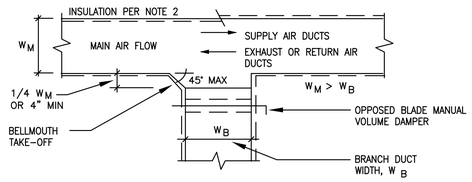
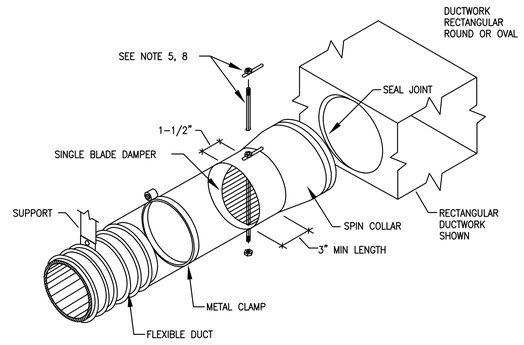




NOTES:

1. R_1 & R_2 ARE RESPECTIVELY 1.75 AND 0.75 OF THE GREATER OF B OR W .
2. SUPPLY DUCT TO BE EXTERNALLY INSULATED. EXHAUST AND RETURN AIR DUCTS INSULATE PER SPECIFICATION.

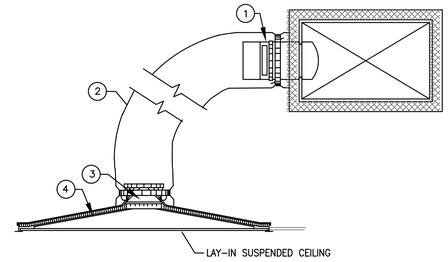
DUCT MAIN AND BRANCH TAKE OFFS



NOTES:

1. SUPPORT AS REQUIRED.
2. BAND FLEX TO COLLAR ½" MINIMUM FROM OUTBOARD END OF COLLAR,
3. INSTALL SPIN COLLAR DAMPER IN OPEN POSITION; FINAL ADJUSTMENT BY T&B CONTRACTOR.
4. PULL FLEXIBLE DUCTWORK INSULATION UP TO END OF SPIN COLLAR AT EDGE OF RECTANGULAR DUCTWORK; SEAL VAPOR BARRIER WITH GRAY TAPE TO PREVENT MOISTURE MIGRATION.
5. PROVIDE EXTENSION RODS TO ACCOMMODATE INSULATION, PULL TO EDGE OF DUCTWORK AS REQUIRED AND SEAL TO EFFECT VAPOR BARRIER.
6. POP RIVET OR SHEET METAL SCREWS, MINIMUM 3 EACH AT 120° INTERVALS, CONNECTING STOVEPIPE TO COLLAR. ENSURE RIVETS OR SCREWS DO NOT INTERFERE WITH DAMPER.
7. TAPE AND SEAL ALL JOINTS TO PREVENT LEAKAGE.
8. INSTALL LOCKING QUADRANT AND HANDLE ON BOTTOM OF DUCT FOR EASY SERVICE (SHOWN ON TOP FOR EASE OF ILLUSTRATION ONLY).

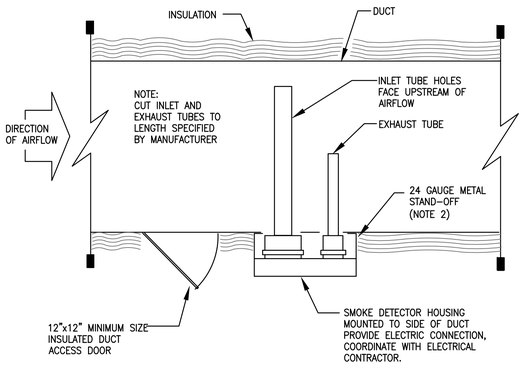
SPIN COLLAR FLEXIBLE DUCT CONNECTOR WITH DAMPER



NOTES:

1. SPIN COLLAR TYPE CONNECTOR, EXTERNALLY INSULATED, WITH VOLUME DAMPER AND DAMPER LOCK.
2. GALVANIZED SHEET METAL DUCT AS REQUIRED. INSTALLED, PERMANENTLY SEALED AND SUPPORTED FROM STRUCTURE
3. ROUND TO SQUARE ADAPTER AS REQUIRED.
4. LAY-IN-TYPE CEILING DIFFUSER WITH VOLUME DAMPER
5. 1-90° TURN ALLOWED.
6. SUPPORT SPACING AS SPECIFIED.

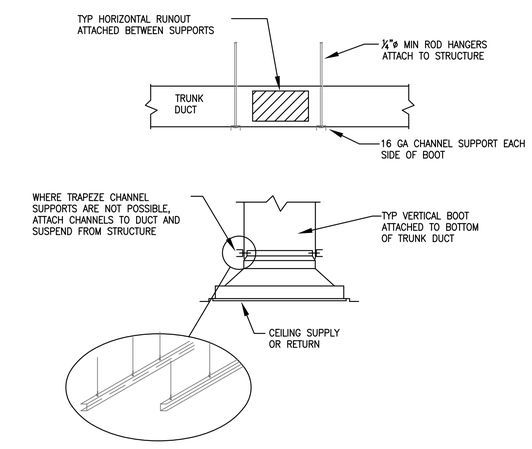
LAY-IN AND SLOT TYPE CEILING DIFFUSERS



NOTES:

1. DETAIL SHOWS GENERAL INSTALLATION METHODS. REFER TO INDIVIDUAL MANUFACTURER FOR THEIR SPECIFIC INSTALLATION AND LOCATION INSTRUCTIONS.
2. STAND-OFF BRACKET. PROVIDE INSULATION BETWEEN BRACKET AND DUCT. BRACKET NOT REQUIRED ON NON-INSULATED DUCT.

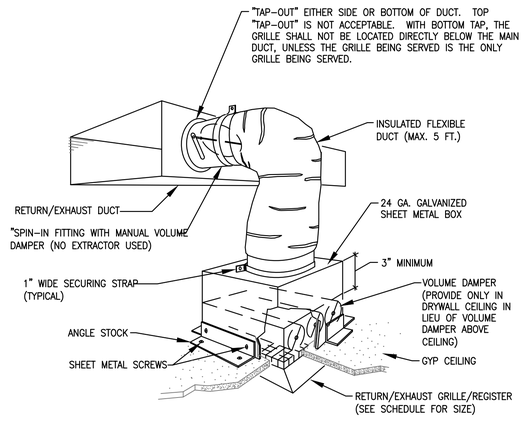
DUCT MOUNTED SMOKE DETECTOR



NOTE:

1. ON CONDITIONED SUPPLY AIR OUTLETS, EXTEND INSULATION DOWN AND COVER BACK OF DIFFUSERS. SEAL TO PROVIDE A TOTAL MOISTURE BARRIER.

DUCT SUPPORT AT AND ABOVE CEILING SUPPLY OR RETURN



LOW PRESSURE DUCTWORK CONNECTION TO EXHAUST GRILLE

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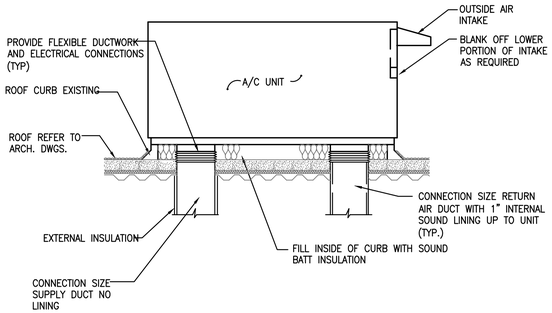
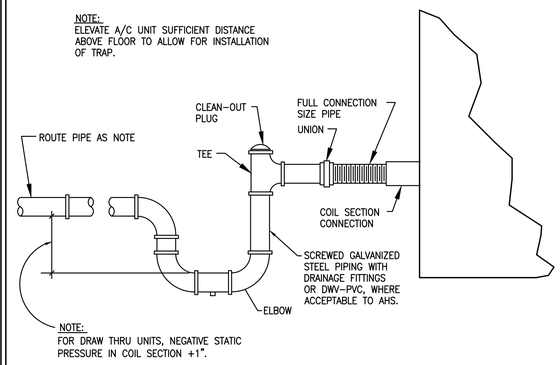


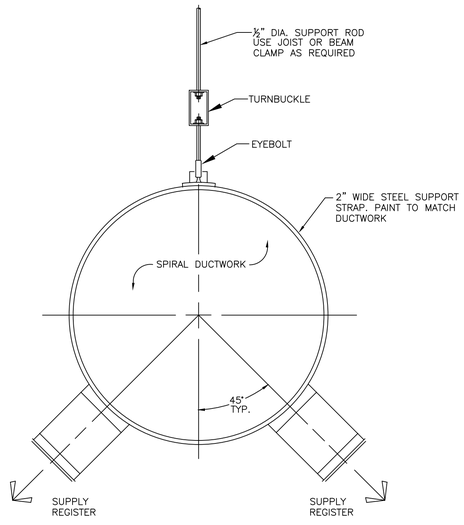
NOTE:

1. PIPE CONDENSATE FROM UNIT USING CONNECTION SIZE (3" MIN.) TO NEAREST DRAIN. PROVIDE "P" TRAP AT UNIT. SEE MOISTURE CONDENSATE DRAIN DETAIL.

ROOFTOP A/C UNIT

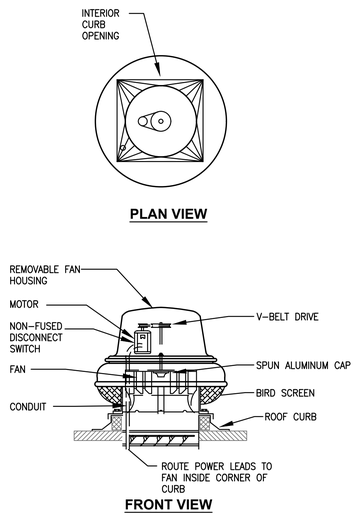


COOLING COIL CONDENSATE DRAIN



EXPOSED DUCT SUPPLY REGISTER

CAD ID: 09M202 NOT TO SCALE



NOTES:

1. PROVIDE MANUAL RESET FIRE-STAT AS REQUIRED.
2. BELT DRIVEN EXHAUSTER SHOWN. DETAIL IS SIMILAR FOR DIRECT DRIVE EXHAUSTER.
3. PROVIDE BACKDRAFT DAMPER AS REQUIRED.
4. CURB AND FAN FROM SAME MANUFACTURER.
5. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL BRACING AND TIE-DOWN REQUIREMENTS.

POWER ROOF EXHAUSTER (P.R.E.)

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HOOD INFORMATION – JOB#5602109

HOOD NO	TAG	MODEL	MANUFACTURER	LENGTH	MAX COOKING TEMP	TYPE	APPLIANCE DUTY	DESIGN CFM/FT	TOTAL EXH CFM	EXHAUST PLENUM RISER(S)							TOTAL SUPPLY CFM	HOOD CONSTRUCTION	HOOD CONFIG	
										WIDTH	LENG	HEIGHT	DIA	CFM	VEL	SP			END TO END	ROW
1	KH1 (LEFT)	6030 ND-2-PSP-F	CAPTIVEAIRE	8' 0"	600 DEG	I	HEAVY	200	1600			4"	14"	1600	1497	-0.551"	1280	430 SS WHERE EXPOSED	LEFT	ALONE
2	KH2 (RIGHT)	6030 ND-2-PSP-F	CAPTIVEAIRE	9' 0"	600 DEG	I	HEAVY	200	1800			4"	14"	1800	1684	-0.666"	1440	430 SS WHERE EXPOSED	RIGHT	ALONE

HOOD INFORMATION

HOOD NO	TAG	FILTER(S)					LIGHT(S)			UTILITY CABINET(S)					FIRE SYSTEM PIPING	HOOD HANGING WEIGHT
		TYPE	QTY	HEIGHT	LENGTH	EFFICIENCY @ 7 MICRONS	QTY	TYPE	WIRE GUARD	LOCATION	SIZE	FIRE SYSTEM TYPE	FIRE SYSTEM SIZE	ELECTRICAL MODEL #	SWITCHES QUANTITY		
1	KH1 (LEFT)	CAPTRATE SOLO FILTER	5	20"	16"	85% SEE FILTER SPEC	3	L55 SERIES E26	NO							YES	505 LBS
2	KH2 (RIGHT)	CAPTRATE SOLO FILTER	6	20"	16"	85% SEE FILTER SPEC	3	L55 SERIES E26	NO	RIGHT	12"x60"x30"	TANK FS	4.0/4.0/4.0	DCV-2111	1 LIGHT 1 FAN	YES	1080 LBS

HOOD OPTIONS

HOOD NO	TAG	OPTION
1	KH1 (LEFT)	FIELD WRAPPER 18.00" HIGH FRONT.
		BACKSPLASH 128.00" HIGH X 217.00" LONG 430 SS VERTICAL.
		LEFT SIDESPLASH 128.00" HIGH X 100.00" LONG 430 SS VERTICAL.
		LEFT END STANDOFF (FINISHED) 1" WIDE 60" LONG INSULATED.
		BACKSPLASH - INSIDE CORNER 80.00" HIGH X 2.00" LEG LENGTH 430 SS VERTICAL.
		BACKSPLASH - OUTSIDE CORNER 128.00" HIGH X 2.00" LEG LENGTH 430 SS VERTICAL.
		INSULATION FOR BACK OF HOOD.
		RISER SENSOR INSTALL 3IN DBL.
		LEFT WALL AS END PANEL.
2	KH2 (RIGHT)	FIELD WRAPPER 18.00" HIGH FRONT, RIGHT.
		INSULATION FOR BACK OF HOOD.
		RISER SENSOR INSTALL 3IN DBL.
		RIGHT VERTICAL END PANEL 27" TOP WIDTH, 21" BOTTOM WIDTH, 80" HIGH INSULATED 430 SS.

PERFORATED SUPPLY PLENUM(S)

HOOD NO	TAG	POS	LENGTH	WIDTH	HEIGHT	TYPE	RISER(S)				
							WIDTH	LENG	DIA	CFM	SP
1	KH1 (LEFT)	Front	97"	14"	12"	MUA	10"	28"		640	0.188"
						MUA	10"	28"		640	0.188"
2	KH2 (RIGHT)	Front	120"	14"	12"	MUA	12"	28"		720	0.168"
						MUA	12"	28"		720	0.168"

SYSTEM DESIGN VERIFICATION (SDV)

IF ORDERED, CAS SERVICE WILL PERFORM A SYSTEM DESIGN VERIFICATION (SDV) ONCE ALL EQUIPMENT HAS HAD A COMPLETE START UP PER THE OPERATION AND INSTALLATION MANUAL. TYPICALLY, THE SDV WILL BE PERFORMED AFTER ALL INSPECTIONS ARE COMPLETE.

ANY FIELD RELATED DISCREPANCIES THAT ARE DISCOVERED DURING THE SDV WILL BE BROUGHT TO THE ATTENTION OF THE GENERAL CONTRACTOR AND CORRESPONDING TRADES ON SITE. THESE ISSUES WILL BE DOCUMENTED AND FORWARDED TO THE APPROPRIATE SALES OFFICE. IF CAS SERVICE HAS TO RESOLVE A DISCREPANCY THAT IS A FIELD ISSUE, THE GENERAL CONTRACTOR WILL BE NOTIFIED AND BILLED FOR THE WORK. SHOULD A RETURN TRIP BE REQUIRED DUE TO ANY FIELD RELATED DISCREPANCY THAT CANNOT BE RESOLVED DURING THE SDV, THERE WILL BE ADDITIONAL TRIP CHARGES.

DURING THE SDV, CAS SERVICE WILL ADDRESS ANY DISCREPANCY THAT IS THE FAULT OF THE MANUFACTURER. SHOULD A RETURN TRIP BE REQUIRED, THE GENERAL CONTRACTOR AND APPROPRIATE SALES OFFICE WILL BE NOTIFIED. THERE WILL BE NO ADDITIONAL CHARGES FOR MANUFACTURER DISCREPANCIES.

CAPTIVE-AIRE HOODS ARE BUILT IN COMPLIANCE WITH

Intertek

NFPA #96
UL 710 & ULC710 STANDARDS
E.T.L. LISTED 3054804-001

CUSTOMER APPROVAL TO MANUFACTURE:

Approved as Noted ☐
Approved with NO Exception Taken ☐
Revise and Resubmit ☐
SIGNATURE _____
Your Title _____ Date _____

FOR QUESTIONS, CALL THE
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Darrin Richardson
PHONE: (615) 599-8300
EMAIL: reg44@captiveaire.com

SPECIFICATION: CAPTRATE GREASE-STOP SOLO FILTER

THE CAPTRATE GREASE-STOP SOLO FILTER IS A SINGLE-STAGE FILTER FEATURING A UNIQUE S-BAFFLE DESIGN IN CONJUNCTION WITH A SLOTTED REAR BAFFLE DESIGN, TO DELIVER EXCEPTIONAL FILTRATION EFFICIENCY.

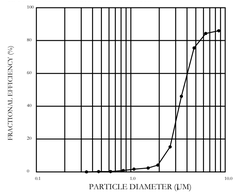
FILTER IS STAINLESS STEEL CONSTRUCTION, AND SIZED TO FIT INTO STANDARD 2-INCH DEEP HOOD CHANNEL(S).

UNITS SHALL INCLUDE STAINLESS STEEL HANDLES AND A FASTENING DEVICE TO SECURE THE TWO COMPONENTS WHEN ASSEMBLED.

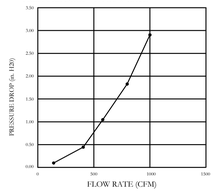
GREASE EXTRACTION EFFICIENCY PERFORMANCE SHALL REMOVE AT LEAST 75% OF GREASE PARTICLES FIVE MICRONS IN SIZE, AND 85% GREASE PARTICLES SEVEN MICRONS IN SIZE AND LARGER, WITH A CORRESPONDING PRESSURE DROP NOT TO EXCEED 1.0 INCHES OF WATER GAUGE.

THE CAPTRATE GREASE-STOP SOLO WAS TESTED TO ASTM STANDARD ASTM F2519-05. MANUFACTURER APPROVED FOR USE IN SOLID FUEL APPLICATIONS AS A SPARK ARRESTER.

EFFICIENCY VS. PARTICLE DIAMETER



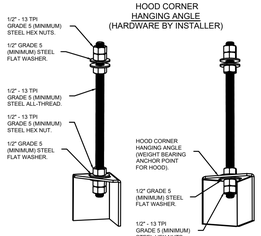
PRESSURE DROP VS. FLOW RATE



CAPTRATE FILTERS ARE BUILT IN COMPLIANCE WITH:.
NFPA #96.
NSF STANDARD #2.
UL STANDARD #1046.
INT. MECH. CODE (IMC).
ULC-S649.

BUILT IN ACCORDANCE WITH NFPA No. 96

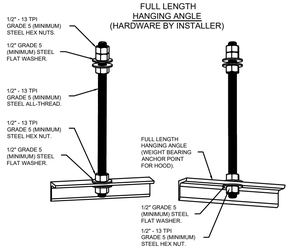
HOOD CORNER HANGING ANGLE (HARDWARE BY INSTALLER)



ASSEMBLY INSTRUCTIONS

HANGING ANGLE MUST BE SUPPORTED WITH 1/2" - 13 TPI GRADE 5 (MINIMUM) ALL-THREAD, SANDWICH HANGING ANGLES AND CEILING ANCHOR POINTS WITH 1/2" GRADE 5 (MINIMUM) STEEL FLAT WASHERS AND 1/2" - 13 TPI GRADE 5 (MINIMUM) HEX NUTS AS SHOWN. MUST USE DOUBLED HEX NUT CONFIGURATION BENEATH HOOD HANGING ANGLES AND ABOVE CEILING ANCHORS. MAINTAIN 1/4" OF EXPOSED THREADS BENEATH BOTTOM HEX NUT. TORQUE ALL HEX NUTS TO 57 FT-LBS.

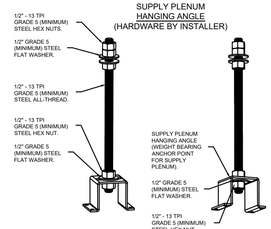
FULL LENGTH HANGING ANGLE (HARDWARE BY INSTALLER)



ASSEMBLY INSTRUCTIONS

HANGING ANGLE MUST BE SUPPORTED WITH 1/2" - 13 TPI GRADE 5 (MINIMUM) ALL-THREAD. SANDWICH HANGING ANGLES AND CEILING ANCHOR POINTS WITH 1/2" GRADE 5 (MINIMUM) STEEL FLAT WASHERS AND 1/2" - 13 TPI GRADE 5 (MINIMUM) HEX NUTS AS SHOWN. MUST USE DOUBLED HEX NUT CONFIGURATION ABOVE CEILING ANCHORS. SINGLE HEX NUT BENEATH HANGING ANGLE IS ACCEPTABLE FOR FULL LENGTH HANGING ANGLES. MAINTAIN 1/4" OF EXPOSED THREADS BENEATH BOTTOM HEX NUT. TORQUE ALL HEX NUTS TO 57 FT-LBS.

SUPPLY PLENUM HANGING ANGLE (HARDWARE BY INSTALLER)



ASSEMBLY INSTRUCTIONS

HANGING ANGLE MUST BE SUPPORTED WITH 1/2" - 13 TPI GRADE 5 (MINIMUM) ALL-THREAD. SANDWICH HANGING ANGLES AND CEILING ANCHOR POINTS WITH 1/2" GRADE 5 (MINIMUM) STEEL FLAT WASHERS AND 1/2" - 13 TPI GRADE 5 (MINIMUM) HEX NUTS AS SHOWN. MUST USE DOUBLED HEX NUT CONFIGURATION ABOVE CEILING ANCHORS. SINGLE HEX NUT BENEATH HANGING ANGLE IS ACCEPTABLE FOR PSP HANGING ANGLES. MAINTAIN 1/4" OF EXPOSED THREADS BENEATH BOTTOM HEX NUT. TORQUE ALL HEX NUTS TO 57 FT-LBS.

GREASE DUCT SPECIFICATIONS:
PROVIDE GREASE DUCT EQUAL TO CAPTIVEAIRE SYSTEMS MODEL "DW" ROUND 20 GAUGE 430 STAINLESS STEEL DUCTWORK. MODEL "DW" IS LISTED TO UL-1978 AND IS INSTALLED USING "V" CLAMP LOCKING CONNECTIONS SEALED WITH 3M FIRE BARRIER 2000 PLUS. MODEL "DW" DOES NOT REQUIRE WELDING PROVIDING IT HAS BEEN INSTALLED PER THE MANUFACTURES INSTALLATION GUIDE.
PROVIDE RATED ACCESS DOORS AT EVERY CHANGE IN DIRECTION AND EVERY 12' ON CENTER. PER MANUFACTURES LISTING MODEL "DW" HORIZONTAL RUNS LESS THAN 75 FT. CAN BE SLOPED 1/16" PER 12", HORIZONTAL RUNS MORE THAN 75 FT. CAN BE SLOPED 3/16" PER 12".
DUCT SHOULD BE SLOPED AS MUCH AS POSSIBLE TO REDUCE THE CHANCE OF GREASE ACCUMULATION IN HORIZONTAL RUNS.

IF THE DUCT IS WITHIN 18 INCHES OF COMBUSTIBLE MATERIAL, PROVIDE UL-2221 LISTED DOUBLE WALL GREASE DUCT EQUAL TO CAPTIVEAIRE SYSTEMS MODEL "DW- 2R, 3R, OR 3Z" ROUND 20 GAUGE 430 STAINLESS INNER DUCT INSULATED WITH A 24 GAUGE 430 STAINLESS OUTER SHELL.

FOR REFERENCE ONLY

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REVISIONS:

DELTA	DESCRIPTION	DATE

DATE OF ISSUE: 09.12.2022
MA PROJECT NO: 0336-22
PROJECT PHASE: CD
DRAWN BY: DF&H SERVICES

HVAC DETAILS

M-3.3

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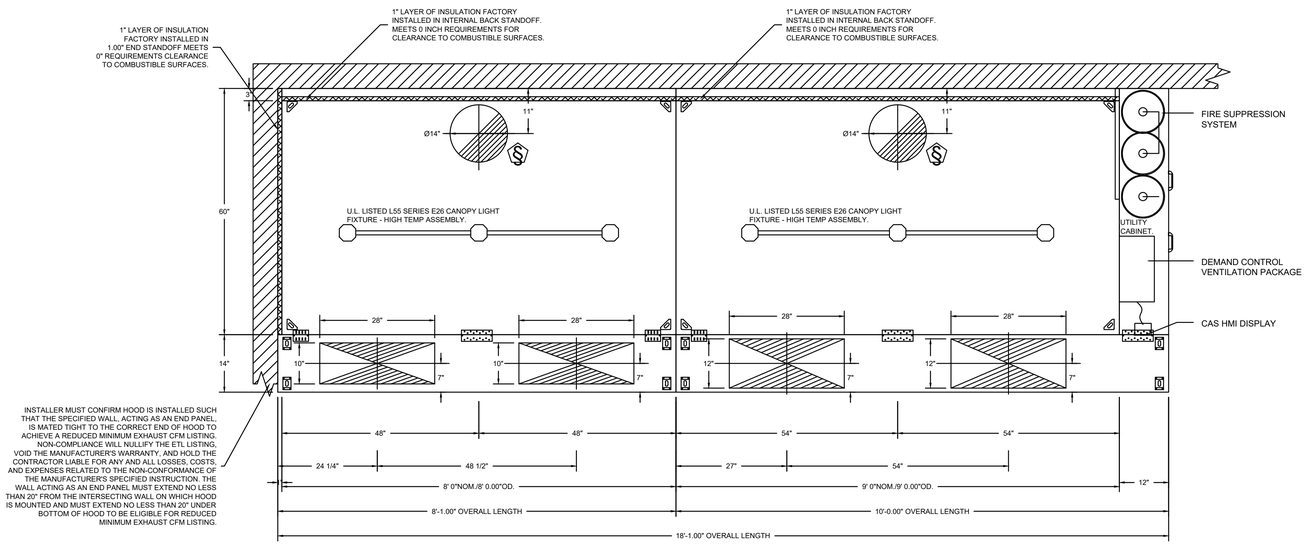


PLAN VIEW – HOOD #1 (KH1 (LEFT))
8' 0.00" LONG 6030ND-2-PSP-F

PLAN VIEW – HOOD #2 (KH2 (RIGHT))
9' 0.00" LONG 6030ND-2-PSP-F

VERIFY CEILING HEIGHT

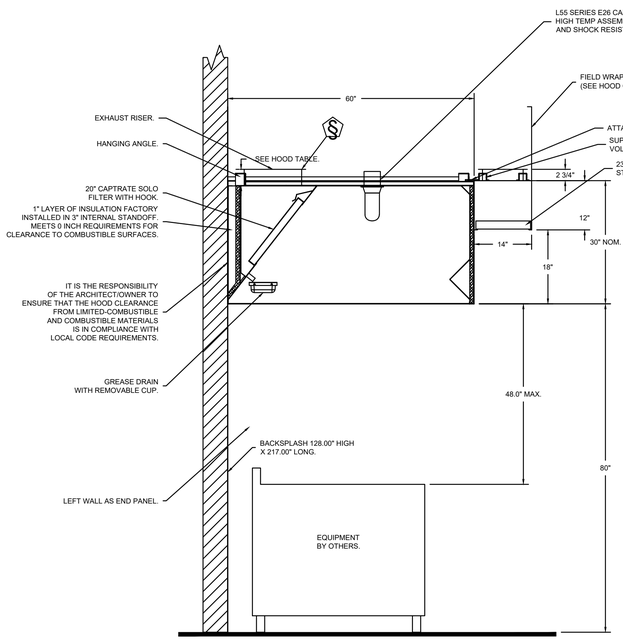
___' - ___"

HEIGHT REQUIRED TO VERIFY THAT HOOD FITS SPACE AND TO SIZE THE ENCLOSURE PANELS

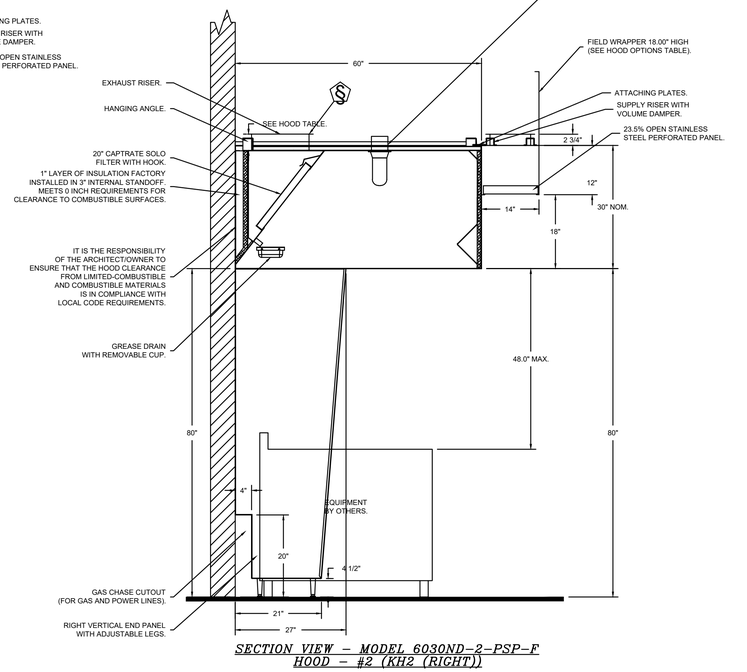
HVAC DISTRIBUTION NOTE

IT IS RECOMMENDED NOT TO INSTALL HIGH VELOCITY DIFFUSERS OR HVAC RETURNS WITHIN TEN (10) FEET OF THE EXHAUST HOOD. PERFORATED DIFFUSERS ARE RECOMMENDED.

CAPTIVEAIRE SYSTEMS RECOMMENDS THE USE OF LISTED, PRE-FABRICATED ROUND GREASE EXHAUST DUCT TO REDUCE STATIC PRESSURE IN THE SYSTEM, MINIMIZE INSTALLATION AND INSPECTION TIMES, AND ENSURE DUCT IS LIQUID TIGHT



SECTION VIEW – MODEL 6030ND-2-PSP-F
HOOD – #1 (KH1 (LEFT))



SECTION VIEW – MODEL 6030ND-2-PSP-F
HOOD – #2 (KH2 (RIGHT))

CAPTIVE-AIRE HOODS ARE BUILT IN COMPLIANCE WITH

BUILT IN ACCORDANCE WITH NFPA No. 96

Intertek

NFPA #96
UL 710 & ULC710 STANDARDS
E.T.L. LISTED 3054804-001

CUSTOMER APPROVAL TO MANUFACTURE:

Approved as Noted ☐
Approved with NO Exception Taken ☐
Revise and Resubmit ☐
SIGNATURE _____
Your Title _____ Date _____

FOR QUESTIONS, CALL THE
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Darrin Richardson
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EMAIL: reg4@captiveaire.com

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REVISIONS:

DELTA	DESCRIPTION	DATE

DATE OF ISSUE:	09.12.2022
MA PROJECT NO:	0336-22
PROJECT PHASE:	CD
DRAWN BY:	DF&H SERVICES

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SECTION 23 38 13 13

SPECIFICATIONS
TAG: Commercial Kitchen Ventilation Hoods, Listed Commercial Kitchen Hoods

PART 1 - GENERAL

1.1 SUMMARY

A. The ND2 series is a Type I, wall canopy hood for use over 600°F cooking surface temperatures. The aerodynamic design includes a mechanical baffle and performance enhancing lip for exceptional capture and containment.

B. The hood shall have the size, shape, and performance specified on drawings.

1.2 SUBMITTALS

A. The manufacturer assumes no liability for the use or results of use from this document. Specifications are to be reviewed by the engineer to confirm the project's requirements and meet Federal, State, and Local codes and regulations.

B. As the manufacturer continues product development, it reserves the right to change design and specifications without notice.

C. The manufacturer shall supply complete computer generated submittal drawings, including hood section view(s) and hood plan view(s). These drawings must be available to the engineer, architect, and owner for their use in construction, operation, and maintenance.

1.3 QUALITY ASSURANCE

A. This hood is ETL-listed to standard UL710, ULC710, and ULC-S646 when installed in accordance with these installation instructions and National Fire Protection Association Standard "NFPA 96, Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations."

B. Built-in compliance with NSF/ANSI Standard 2.

C. The hood shall be ETL Listed as:

1. "Exhaust Hood Without Exhaust Damper."
2. ETL Sanitation Listed and built in accordance with NFPA 96.
3. The ETL label shall list temperature rating(s) and minimum CFM/ft rating(s).

1.4 WARRANTY

A. All units shall be provided with the following standard warranty:

1. This equipment is warranted to be free from defects in materials and workmanship, under normal use and service, for a period of 2-years from date of shipment.

B. The manufacturer shall not be liable for incidental and consequential losses and damages potentially attributable to malfunctioning equipment. Should any part of the equipment prove to be defective in material or workmanship within the 2-year warranty period, upon examination by the manufacturer, such part will be repaired or replaced by manufacturer at no charge. The buyer shall pay all labor costs incurred in connection with such repair or replacement. Equipment shall not be returned without manufacturer's prior authorization, and all returned equipment shall be shipped by the buyer, freight prepaid to a destination determined by the manufacturer.

C. Refer to Manufacturer's Operation, Installation, and Maintenance (OIM) Manual for detailed descriptions of what is/is not covered and contact information for warranty claims.

PART 2 - PRODUCTS

2.1 GENERAL

A. Construction shall be dependent on the structural application to minimize distortion and other defects. All seams, joints, and penetrations of the hood enclosure to the lower outermost perimeter, which directs and captures grease-laden vapor and exhaust gases, shall have a liquid-tight continuous external weld in accordance with NFPA 96.

B. Duct sizes, CFM, and static pressure requirements shall be as shown on drawings. Static pressure requirements shall be precise and accurate; air velocity and volume information shall be accurate within 1-ft increments along the length of the ventilator.

2.2 CONSTRUCTION

A. Construction shall be type 430 stainless steel.

B. Double wall insulated front to eliminate condensation and increase rigidity on wide sizes. The insulation shall have a flexural modulus of 475 EI, meet UL 181 requirements and be in accordance with NFPA 90A and 90B.

C. Hood shall be equipped with a minimum of four connections for hanger rods. Hood lengths greater than 12' will have added hangers.

D. Exhaust duct collar to be 4" high with flange.

E. The grease drain system shall be an enclosed integral part of the hood back and have slopes with an exposed, removable 1/2 grease cup to facilitate cleaning.

F. An integral baffle to direct grease laden vapors toward the exhaust filter bank.

G. Hood shall be furnished with UL classified filters, supplied in size and quantity as required by ventilator.

H. All seams shall be welded and have stainless steel on exposed surfaces.

2.3 LIGHTING

A. L55 Series canopy light fixture, includes clear thermal and shock resistant globe.

2.4 FILTERS

A. Stainless Steel Captrate Solo filter with hook, ETL Listed. Particulate capture efficiency: 85% efficient at 9 microns, 76% efficient at 5 microns.

2.5 OPTIONS

A. Fire Suppression System: UL 300 fire suppression system.

B. Optional perforated supply plenum shall provide make-up air discharged below the cooking equipment.

1. Perforated diffuser plates shall be included in the design to provide even air distribution.
2. Unexposed surfaces shall be constructed of aluminized steel. Plenum shall be insulated to prevent condensation.
3. Perforated Supply Plenum (PSP)

C. Hood Mounted Utility Cabinet - Cabinet can store listed fire suppression system, listed components, pre-wired electrical controls.

2.6 ACCESSORIES

A. End Panel(s) maximize hood performance and eliminate the effects of cross drafts in the kitchen. Units constructed of stainless steel and sized according to hood width and cooking equipment. Exposed edges hemmed for safety and rigidity. Selected panels:

1. Vertical End Panel
2. Wall as End Panel

B. Splash panel(s) selected:

1. Backsplash
2. Backsplash - Inside Corner
3. Backsplash - Outside Corner
4. Left Sidesplash

C. Standoff(s) selected:

1. Left End Standoff

D. Wrapper(s) may be installed from the factory or field installed. Wrapper(s) selected:

1. Wrapper

E. Miscellaneous option(s) selected:

1. Insulation for Back of Hood – Backside of hood is fully insulated.
2. Riser Sensor Install – Sensor set-up for 3" thick double wall duct.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions under which the system is installed. Do not proceed with work until unsatisfactory conditions have been corrected in a manner acceptable to Installer.

3.2 INSTALLATION

A. Install in accordance with manufacturer's instructions, drawings, written specifications, manufacturer's installation manual, and all applicable building codes.

CUSTOMER APPROVAL TO MANUFACTURE:

Approved as Noted ☐
Approved with NO Exception Taken ☐
Revise and Resubmit ☐
SIGNATURE _____
Your Title _____ Date _____ _____

FOR QUESTIONS, CALL THE
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FIRE SYSTEM INFORMATION – JOB#5602109

FIRE SYSTEM NO	TAG	TYPE	SIZE	FLOW POINTS	INSTALLATION	
					SYSTEM	LOCATION ON HOOD
1	KH1/KH2 FS	TANK FS	4.0/4.0/4.0	41	FIRE CABINET RIGHT	RIGHT, HOOD 2

FIRE SYSTEM PARTS LIST KEY

FIRE SYSTEM NO	TAG	KEY NUMBER - PART DESCRIPTION	QTY BY FACTORY	QTY BY DIST
1	KH1/KH2 FS	0 - 0 - TANK FIRE SUPPRESSION POST-DISCHARGE PROCEDURE UTILITY CABINET LABEL SHEET.	1	0
		0 - 0 - TANK FIRE SUPPRESSION MAINTENANCE GUIDE UTILITY CABINET LABEL SHEET.	1	0
		0 - 0 - 12-F28021-32144-OT-360 DUCT FIRE THERMOSTAT WITH 12 FOOT WIRE LEADS. NO, CLOSE ON TEMP RISE AT 360°F.	2	0
		0 - 0 - 361091 3/8" BRASS PLUG.	3	0
		0 - 0 - 79425 3/8" NPT FEMALE TO 1/2" MALE PROPRESS ADAPTER.	3	0
		0 - 0 - 87-120042-001 SECONDARY ACTUATOR VALVE (SVA) - SINGLE ACTUATOR, REQUIRES PRIMARY RELEASE ACTUATOR, TANK FIRE SUPPRESSION.	2	0
		0 - 0 - 87-120045-001 HOSE, SECONDARY ACTUATOR HOSE, 7.5" BRAIDED STAINLESS STEEL, TANK FIRE SUPPRESSION.	2	0
		0 - 0 - 87-300001-001 TANK - PRESSURIZED TANK USED FOR TANK FIRE SUPPRESSION.	3	0
		0 - 0 - 87-300030-001 PRIMARY ACTUATOR KIT (PAK) - ACTUATOR AND RELEASE SOLENOID ASSEMBLY, ONE NEEDED PER FIRE SYSTEM, SUPERVISED, TANK FIRE SUPPRESSION.	1	0
		0 - 0 - 87-300152-001 HARDWARE, SVA BOLTS, TANK FIRE SUPPRESSION.	12	0
		0 - 0 - 9055455PC PRO PRESS 1/2 PRESS X PRESS 90 ELBOW LD.	9	0
		0 - 0 - 9097200PC PRO PRESS PC611 1/2 PRESS TEE LD.	8	0
		0 - 0 - 98694A115 HARDWARE, DATANKLOCK LOCKING BRACKET SQUARE NUTS 5/16" ZINC, TANK FIRE SUPPRESSION.	6	0
		0 - 0 - A0034332 JUNCTION BOX FOR MANUAL PULL STATION. 1.5" DEEP BACK BOX, RED COLOR.	1	0
		0 - 0 - BI145 3/8" BLACK IRON 90 ELL.	4	0
		0 - 0 - DATANKLOCK DISCHARGE ADAPTER TANK LOCKING PLATE FOR FIRE SYSTEM TANK INSTALLATION IN UTILITY CABINETS, TANK FIRE SUPPRESSION.	3	0
		0 - 0 - SLPCON-03FT SUPERVISED LOOP CONNECTION KIT. CONTAINS THE PARTS NEEDED TO CONNECT THE SUPERVISED LOOP BETWEEN END TO END HOODS WITH LESS THAN A 2' GAP. KIT CONTAINS 5 FEET OF BLACK MG WIRE, 5 FEET OF TAN MG WIRE, 3 FEET OF FLEXIBLE CONDUIT, AND TWO 7/8" CONNECTORS.	2	0
		0 - 0 - SLPCON-50FT SUPERVISED LOOP CONNECTION KIT. CONTAINS THE PARTS NEEDED TO CONNECT THE SUPERVISED LOOP BETWEEN HOODS WITH UP TO 48' GAP. KIT CONTAINS 52 FEET OF BLACK MG WIRE, 52 FEET OF TAN MG WIRE, 50 FEET OF FLEXIBLE CONDUIT, AND TWO 7/8" CONNECTORS.	1	0
		0 - 0 - TANK STRAP TANK STRAP - USED FOR TANK FIRE SUPPRESSION.	9	0
		0 - 0 - TFS-UCTANKBRACKET TANK BRACKET FOR FIRE SYSTEM TANK INSTALLATION IN UTILITY CABINETS, TANK FIRE SUPPRESSION.	3	0
		0 - 0 - WK-283952-000 DISCHARGE ADAPTER, TANK FIRE SUPPRESSION.	3	0
		16 - 16 - 79210 1/2" X 3/8" NPT MALE ADAPTER, VIEGA.	9	0
		16 - 16 - OL-F NOZZLE - TANK PROTECTION APPLIANCE COVERAGE NOZZLE (INCLUDES METAL BLOW OFF CAP, LANYARD, USED WITH CHROME-PLATED PIPE)- 4 FLOW POINTS.	9	0
		26 - 26 - QSA-3/8 QUIK SEAL - 3/8" (UL).	9	0
		34 - 34 - A0034331 24VDC SINGLE ACTION MANUAL ACTUATION DEVICE (PUSH/PULL STATION) WITH PROTECTIVE COVER, ONE (1) NORMALLY OPEN CONTACT. RED COLOR.	1	0

JOB NO 5602109 | MODEL NUMBER DCV-2111 | JOB NAME Quik Mart • Columbia | DRAWN BY | DATE 8/2/2022 | SCHEMATIC TYPE INSTALL | DWG NO ECP #1-3

DESCRIPTION OF OPERATION:
Fire System #1 Tank FS – a 4/4/4 (.84/.84/.84 GPM) Fifty Foot-based Fire Protection System equipped with Electronic Detector utilizing CORE board as a Listed Release Mechanism. Installed in Hood Utility Cabinet with integral hood prewire panel.

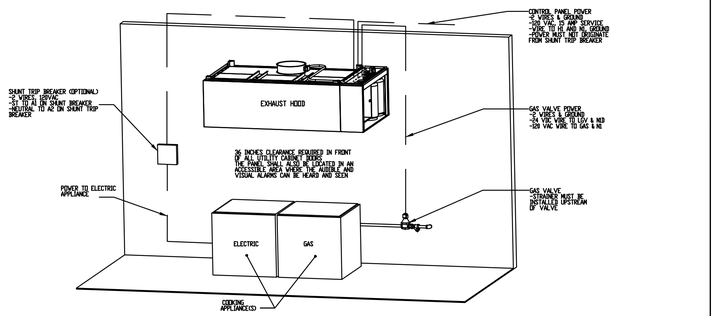
TANK PROTECTION ELECTRICAL DETAIL

02/10/2021 Rev. 2

FS-1: MASTER

ELECTRICIAN
1. WIRE MAIN CONTROL PANEL PER INCLUDED SCHEMATIC
2. WIRE SHUNT TRIP PER INCLUDED SCHEMATIC
3. WIRE GAS VALVE PER INCLUDED SCHEMATIC
4. WIRE APPLIANCE KILL SWITCH, IF EQUIPPED (OPTIONAL)
5. WIRE GAS VALVE

ELECTRICAL CONTRACTOR REQUIREMENT					
ITEM	CONNECTION IN PANEL	CONNECTION IN DEVICE	VOLTAGE	AMPERAGE	COMMENTS
SHUNT TRIP BREAKER (OPTIONAL)	ST & NI	BREAKER COIL OR S AND	120 VAC	< 4 AMPS	ST TO AI ON SHUNT BREAKER COIL, AND NEUTRAL TO AZ ON SHUNT TRIP BREAKER COIL
CONTROL PANEL POWER	HI & NI + GROUND	CIRCUIT BREAKER	120 VAC	15 AMPS	CONTROL PANEL POWER MUST NOT BE RUN THROUGH SHUNT TRIP BREAKER
UDS APPLIANCE KILL SWITCH (OPTIONAL)	KTS & NI	KTS & NI	120 VAC	< 4 AMPS	KILL SWITCH TERMINALS MUST BE IN SERIES WITH OTHER KILL SWITCHES
REMOTE 120VAC ANSUL AUTOMAN (OPTIONAL)	AUL, AUZ	SOLENOID	120 VAC	< 6 AMPS	120V TO AUL, AUZ TO ANSUL ELECTRIC AUTOMAN, ANSUL SOLENOID TO NEUTRAL
GAS VALVE	LGV & NIS OF 24 VDC GAS & NI OF 120 VAC	RES/RES/GREEN	24 VDC OR 120 VAC	< 10 AMPS	IF 24 VDC – 2 WIRES & GROUND, RED TO RES, LGV TO RES, AND GREEN TO GROUND IF 120 VAC – 2 WIRES & GROUND GAS 10 RED, NI TO RES, AND GREEN TO GROUND



NOTE: SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS

JOB NO 5602109 | MODEL NUMBER DCV-2111 | JOB NAME Quik Mart • Columbia | DRAWN BY | DATE 8/2/2022 | SCHEMATIC TYPE INSTALL | DWG NO ECP #1-4

DESCRIPTION OF OPERATION:
Fire System #1 Tank FS – a 4/4/4 (.84/.84/.84 GPM) Fifty Foot-based Fire Protection System equipped with Electronic Detector utilizing CORE board as a Listed Release Mechanism. Installed in Hood Utility Cabinet with integral hood prewire panel.

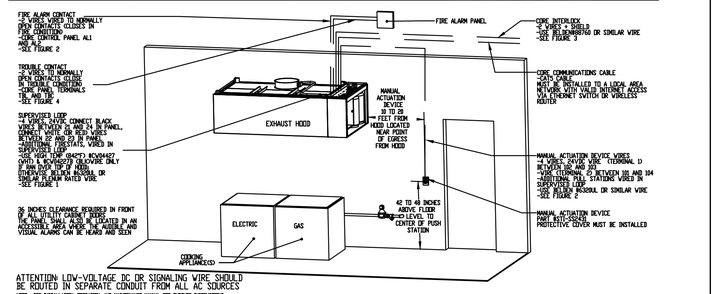
TANK PROTECTION LOW-VOLTAGE DETAIL

02/10/2021 Rev. 2

FS-1: MASTER

ALARM CONTRACTOR:
1. WIRE MANUAL ACTUATION DEVICE(S), REMOTE FIRESTAT(S), CORE INTERLOCK(S), FIRE SENSOR(S) AND FIRE ALARM CONTACTS
2. COMPLETE CONFIGURATION OF SYSTEM
3. VERIFY FINAL FIRE SYSTEM TEST

ALARM CONTRACTOR REQUIREMENT					
ITEM	CONNECTION IN PANEL	CONNECTION ON DEVICE	VOLTAGE	AMPERAGE	COMMENTS
MANUAL ACTUATION DEVICE(S)	101 AND 104 102 AND 103	1 & 2	24 VDC	< 10 AMPS	WIRE MANUAL ACTUATION DEVICE TERMINAL 1 BETWEEN CORE PANEL TERMINALS 102 AND 103 WIRE MANUAL ACTUATION DEVICE TERMINAL 2 BETWEEN CORE PANEL TERMINALS 101 AND 104 JUMPER 101 TO 104 AND 102 TO 103 IF NO MANUAL ACTUATION DEVICE IS INSTALLED
MANUAL ACTUATION DEVICE COVER	N/A	N/A	N/A	N/A	MANUAL ACTUATION DEVICE COVER MUST BE INSTALLED 1 SUNCAST MEDIUM LOCK COVER EXTENSION STI-C0010
REMOTE FIRESTAT SENSOR(S)	S1 AND S4 S2 AND S3	BLACK AND WHITE	24 VDC	< 10 AMPS	WIRE FIRE SENSOR WIRES BETWEEN CORE PANEL TERMINALS 2F AND 2P FOR 135 DEGREE FIXED TEMP SENSOR (P/N 84427) OR 190 DEGREE FIXED TEMP SENSOR (P/N 84428) MOUNTED VERTICALLY ON THE UNDERSIDE OF THE HOOD CANOPY, OR MOUNTED HORIZONTALLY ON THE SIDE OF THE HOOD CANOPY NO MORE THAN 6 INCHES FROM THE UNDERSIDE OF THE HOOD CANOPY IF NEED TO CONNECT BELOW HOODS, USE SIMILAR FLEXIBLE RATED WIRE, SEE FIGURE 1
FIRE ALARM CONTACT	AL1, AL2	VARIES	30V MAX (AC/DC)	UP TO 1 AMP	FIRE ALARM RELAY CONTACTS FOR BUILDING FIRE ALARM LOCATED IN THE CORE ELECTRICAL CONTROL PANEL
CORE INTERLOCK(S)	ILA, ILB, ILC	ILA, ILB, ILC	RS-485 COMMUNICATIONS SIGNAL		CORE SYSTEM #1 ILA, TO CORE SYSTEM #2 ILA, CORE SYSTEM #1 ILB, TO CORE SYSTEM #2 ILB, CORE SYSTEM #1 ILC, TO CORE SYSTEM #2 ILC USE BELDEN 9842P OR SIMILAR WIRE
TROUBLE CONTACT	TBC, TBL, TCK	VARIES	MAX 120 VAC	UP TO 6 AMPS	WIRE TO TBL & TBC NORMALLY OPEN CONTACT, CLOSES IN TROUBLE CONDITION
CORE COMMUNICATIONS CABLE	RJ-45 Jack	INTERNET CONNECTION	SIGNAL	CL0 AMPS	TYPICAL CONNECTION CAT5 CABLE TO LOCAL AREA NETWORK VIA ETHERNET SWITCH OR WIRELESS ROUTER WITH VALID INTERNET CONNECTION



ATTENTION: LOW-VOLTAGE DC OR SIGNALING WIRE SHOULD BE ROUTED IN SEPARATE CONDUIT FROM ALL AC SOURCES

NOTE: SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS

CUSTOMER APPROVAL TO MANUFACTURE:

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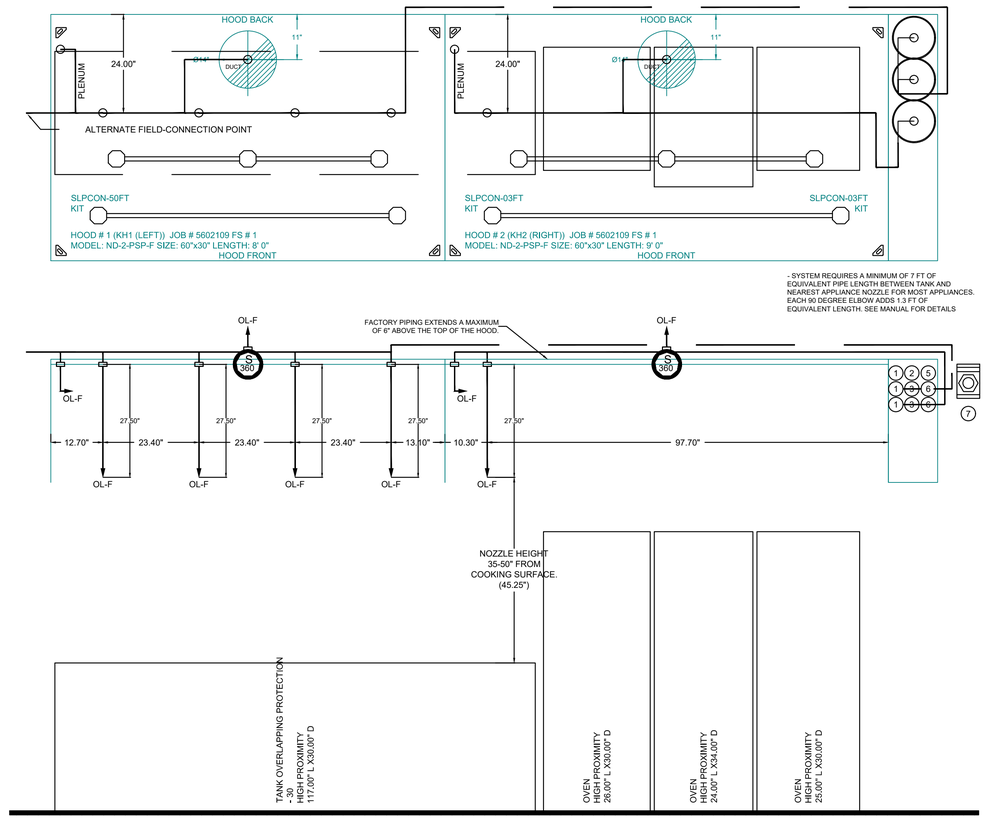

INCLUDES: FIELD INSTALLATION AND HOOKUP DURING NORMAL BUSINESS HOURS BY CERTIFIED INSTALLERS ONLY IN THE LOCATION NOTED ABOVE, TWO SITE VISITS ONLY (ONE VISIT TO SET PULL STATION & SYSTEM HOOKUP AND ONE VISIT FOR ONE TEST; ADDITIONAL VISITS WILL RESULT IN ADDITIONAL CHARGES), ONE MECHANICAL OR ELECTRICAL GAS VALVE PER SYSTEM AT A MAXIMUM SIZE OF 2", PERMIT, AND SYSTEM TEST.
EXCLUDES: UNION LABOR & PREVAILING WAGE (LABOR & WAGES WILL BE ADDED IF APPLICABLE), GAS VALVE INSTALLATION, ELECTRICAL HOOKUP AND CONNECTIONS, HANGING OF FIRE CABINET, SHUNT TRIP, HANDHELD EXTINGUISHER(S), ON-SITE RE-PIPING DUE TO EQUIPMENT LAYOUT CHANGES.

JOB #: 5602109.
JOB NAME: QUIK MART - COLUMBIA.

SYSTEM SIZE: TANK-SP-3 TOTAL FP REQUIRED: 41.
HOOD # 1 8' 0.00" LONG x 60" WIDE x 30" HIGH.
RISER # 1 SIZE: 14" DIA.
HOOD # 1 METAL BLOW-OFF CAPS INCLUDED.
HOOD # 2 9' 0.00" LONG x 60" WIDE x 30" HIGH.
RISER # 1 SIZE: 14" DIA.
HOOD # 2 METAL BLOW-OFF CAPS INCLUDED.

NOTES
- FIELD PIPE DROPS AS SHOWN
  PIPING, ELBOWS, TEES, AND NOZZLES SUPPLIED BY CAS.
- FIELD INSTALLED DROP: FACTORY WILL PROVIDE QTY 2 60IN LONG PIECES OF CHROME PLATED PIPING SHIPPED LOOSE TO BE FIELD-INSTALLED.
- SHIP LOOSE DROP: FACTORY WILL PROVIDE THE EXACT CHROME PIPE LENGTH NEEDED SHIPPED LOOSE TO BE FIELD-INSTALLED.
- RELOCATE NOZZLES IF FLOW PATTERN IS BLOCKED BY SHELVING, SALAMANDERS, ETC.
- OVERLAPPING COVERAGE SHALL NOT BE USED ON ANY APPLIANCE WITH AN OBSTRUCTION.
- IF APPLICABLE, EXTENDED PRE-PIPED DROPS ARE SHIPPED LOOSE.
- FACTORY PIPING EXTENDS A MAXIMUM OF 6" ABOVE THE TOP OF THE HOOD.

- APPLIANCE DIMENSIONS LISTED REPRESENT THE COOKING SURFACE SIZE, NOT THE OVERALL APPLIANCE SIZE.

- THIS FIRE SYSTEM COMPLIES WITH U.L. 300 REQUIREMENTS.

- OL-F NOZZLE PART NUMBER REPLACES 3070-3/8H-10-SS

- HEAVY-DUTY APPLIANCES (RATED 600°F) WILL REQUIRE AN ADDITIONAL DOWNSTREAM FIRESTAT IN THE EVENT THAT THE DUCTWORK CONTAINS ANY HORIZONTAL RUNS OVER 25 FT IN LENGTH.
- MEDIUM TO LIGHT-DUTY APPLIANCES (RATED 450°F) WILL NOT REQUIRE ANY ADDITIONAL DOWNSTREAM DETECTION.

LEGEND – FIRE CABINET TANK SYSTEM

1	4 GALLON TANK.
2	PRIMARY ACTUATOR RELEASE.
3	SECONDARY ACTUATOR RELEASE.
4	PRESSURE SUPERVISION SWITCH.
5	PRIMARY HOSE ASSEMBLY.
6	SECONDARY HOSE ASSEMBLY.
7	REMOTE MANUAL ACTUATION DEVICE.

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SECTION 21 23 00
WET- CHEMICAL FIRE-EXTINGUISHING SYSTEMS
TAG: TANK Fire Suppression

PART 1 - GENERAL

1.1 SUMMARY

A. TANK Fire Suppression is a pre-engineered, stored-pressure wet chemical solution extinguishing system.

1.2 SUBMITTALS

A. The manufacturer assumes no liability for the use or results of use from this document. Specifications are to be reviewed by the engineer to confirm the requirements of the project and meet Federal, State, and Local codes.

B. As the manufacturer continues product development, it reserves the right to change design and specifications without notice.

1.3 QUALITY ASSURANCE

A. TANK Fire Suppression System shall be UL & ULC listed in accordance with UL300, UL1254, ULCORD-C1254.6.

B. Microprocessor-based control board shall be ETL Listed to UL Standard 864 and CAN/ ULC-S527-11.

C. TANK Fire Suppression System intended for installation and for use in accordance with the National Fire Protection Association Standards:

1. Wet Chemical Extinguishing Systems, NFPA 17A
2. National Electrical Code, NFPA 70
3. National Fire Alarm & Signaling Code, NFPA 72

D. New York City and FDNY approved under COA# 5870.

E. California State Fire Marshal (CFSM), Listing No. 7085-2199:0502.

1.4 WARRANTY

A. All units shall be provided with the following standard warranties:

1. TANK Fire Suppression System is warranted to be free from defects in materials and workmanship, under normal use and service, for a period of 60-months from date of shipment.

B. Warranty does not cover consumable products such as batteries and nitrogen.

C. The manufacturer shall not be liable for incidental and consequential losses and damages potentially attributable to malfunctioning equipment. Should any part of the equipment prove to be defective in material or workmanship within the 60-month warranty period, upon examination by the manufacturer, such part will be repaired or replaced by manufacturer at no charge. The buyer shall pay all labor costs incurred in connection with such repair or replacement. Equipment shall not be returned without manufacturer's prior authorization, and all returned equipment shall be shipped by the buyer, freight prepaid to a destination determined by the manufacturer.

D. Refer to Manufacturer's Operation, Installation, and Maintenance (OIM) Manual for detailed descriptions of what is/is not covered and contact information for warranty claims.

PART 2 - PRODUCTS

2.1 GENERAL

A. A pre-engineered, fixed pipe, automatic wet chemical agent fire suppression system for protection of all hazard areas associated with cooking operations, including exhaust hoods, plenums, ductwork, and cooking appliances.

2.2 COMPONENTS

A. Exhaust hood fire system components to be factory installed.

B. Cylinder and Valve Assembly

1. The cylinders shall have a tin-nickel alloy plated brass valve with pressure gauge.
2. Wet chemical agent shall be contained in one or more stored pressure DOT/TC rated steel cylinder and valve assemblies.
3. Each cylinder is factory-filled with liquid fire suppressant and pressurized to 200 PSIG at 70°F.

C. Distribution Nozzles

1. Nozzles shall be located to protect the exhaust ducts, plenums, and all cooking appliances requiring protection.
2. All nozzles shall be equipped with a metal blow off cap. The cap prevents contamination from entering the pipe network and is designed to pop-off upon system discharge, allowing agent to flow to the protected hazard area.
3. All nozzles shall incorporate a stamped part number to easily identify nozzle type.

D. Distribution System

1. The distribution system shall consist of Copper, Schedule 40 black iron, chrome-plated or stainless-steel pipe and fittings. All exposed piping and fittings must be chrome-plated or stainless steel.
2. Fittings shall be minimum class 150. Galvanized fittings shall not be used.

E. Suppression System

1. The system control equipment shall be capable of all functions associated with automatically and manually discharging the wet chemical agent from all cylinder and valve assemblies, including automatic shutdown of the heat source or fuel and electrical power to all protected areas upon system discharge.
2. Liquid Fire Suppressant shall be Aqueous Potassium Carbonate (APC).
3. All mechanical components of the actuator kit shall be enclosed.
4. The actuator kit shall be capable of automatic or manual activation means.
5. Supervisory Pressure Switch added to monitor operating system pressure.
6. For manual activation, an electrically operated manual release shall be used to actuate the system manually.
7. For automatic activation, the system will be activated by a Firestat (heat) detector.

F. Electrical

1. Electrical Division to provide shunt trip breakers at main power panel, or disconnects, as designated by the Electrical Engineer; interconnection provided at hood control panel for the signal to shut down all electricity in and under the exhaust hood. Shunt trips/disconnects to accomplish shut off of electricity in the event of fire system activation by others.
2. Printed circuit board with microprocessor-based controller that provides all the necessary monitoring, timing, and supervision functions required for the reliable operation of the fire system.
3. Independent supervised loops incorporate redundancy and fault detection.
4. Real-time cloud-based monitoring connection provided with system by ownership.
5. Primary power supply, with battery backup for power loss.
6. All wiring must be in accordance to NFPA 70 and the Authority Having Jurisdiction (AHJ).
7. Electric gas valve provided for equipment below exhaust hood. Coordinate size and installation with Plumbing Division.
8. All wiring is to be in accordance with the applicable manufacturer's instructions for the fire alarm control panel, gas shut-off valve, manual reset relay, and contractor supplied shut-off devices.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions under which the system is installed. Do not proceed with work until unsatisfactory conditions have been corrected in manner acceptable to Installer.

3.2 APPLICATION

A. Wet chemical-based fire suppression system for use in commercial kitchens. It can be mounted in the integral cabinet located at the end of the hood or offered as a wall mount package.

3.3 INSTALLATION

A. As part of this item, provide wall mounted type K handheld portable fire extinguisher, placard, and mounting bracket as required in the immediate vicinity of each cooking area, per NFPA-96 and NFPA-10. Additional fire extinguishers as required in the kitchen area are to be specified by the Architect and provided by the General Contractor.

B. Install in accordance with manufacturer's instructions, drawings, written specifications, manufacturer's installation manual, and all applicable building codes.

C. Six-month and twelve-month inspections, servicing, and replacement of components as per NFPA 96 to be provided by the General Contractor or Owner.

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EXHAUST FAN INFORMATION – JOB#5602109

FAN UNIT NO	TAG	QTY	FAN UNIT MODEL #	MANUFACTURER	CFM	ESP	RPM	MOTOR ENCL	HP	BHP	PHASE	VOLT	FLA	DISCHARGE VELOCITY	WEIGHT (LBS)	SONES
1	KEF1 (HOOD 1)	1	DU180HFA	CAPTIVEAIRE	1600	1.250	1067	ODP,PREMIUM	1.500	0.7450	3	208	6.6	370 FPM	194	11.3296597513764
2	KEF2 (HOOD 2)	1	DU180HFA	CAPTIVEAIRE	1800	1.250	1086	ODP,PREMIUM	1.500	0.8080	3	208	6.6	416 FPM	194	11.8110676394006

CONDENSER DETAILS

FAN UNIT NO	TAG	FAN UNIT MODEL #	CONDENSER NO	TONNAGE	VOLTAGE	PHASE	FREQUENCY	MCA	RLA	MAX FUSE SIZE	MIN WIRE SIZE	SEER
3	MAU1	A2-D.250-20D-MPU	1	5	208-230	3 PHASE	60 HZ	21.4 AMPS	17.4 AMPS	30 AMPS	10 AWG	14

MUA FAN INFORMATION – JOB#5602109

FAN UNIT NO	TAG	QTY	FAN UNIT MODEL #	BLOWER	HOUSING	MIN CFM	DESIGN CFM	ESP	RPM	MOTOR ENCL	HP	BHP	PHASE	VOLT	FLA	MCA	MOCP	WEIGHT (LBS)	SONES
3	MAU1	1	A2-D.250-20D-MPU	20MF-2-MOD	A2-D.250	2000	2720	0.500	1236	ODP,PREMIUM	1.500	1.0230	3	208	6.6	8.3A	15A	1367	10

COILS – JOB#5602109

FAN UNIT NO	TAG	COIL TYPE	DESIGN CFM	COOLING											HEATING									
				ENTERING DB TEMP	ENTERING WB TEMP	LEAVING DB TEMP	LEAVING WB TEMP	ENTERING FLUID TEMP	LEAVING FLUID TEMP	FLUID FLOW RATE	PERCENT GLYCOL	TOTAL CAPACITY	SENSIBLE CAPACITY	LATENT CAPACITY	ENTERING DB TEMP	LEAVING DB TEMP	ENTERING FLUID TEMP	LEAVING FLUID TEMP	FLUID FLOW RATE	PERCENT GLYCOL	STEAM PRESSURE	TOTAL CAPACITY	SENSIBLE CAPACITY
3	MAU1	DX	2720	92.0°F	75.0°F	78.8°F	69.4°F	---	---	---	---	56.9 MBH	36.9 MBH	20.0 MBH	---	---	---	---	---	---	---	---	---	---

GAS FIRED MAKE-UP AIR UNIT(S)

FAN UNIT NO	TAG	INPUT BTUs	OUTPUT BTUs	TEMP RISE	REQUIRED INPUT GAS PRESSURE	GAS TYPE	BURNER EFFICIENCY(%)
3	MAU1	175512	161471	57°F	7 IN. W.C. - 14 IN. W.C.	NATURAL	92

FAN SOUND DATA

FAN UNIT NO	TAG	MOTOR	SOUND DATA			OCTAVE BAND SOUND DATA								
			LWA	SONES @ 5 FT	DBA @ 5 FT	DISTANCE (FT)	63 HZ	125 HZ	250 HZ	500 HZ	1 KHZ	2 KHZ	4 KHZ	8 KHZ
1	KEF1 (HOOD 1)	EXHAUST	74.5	11.3296597513764	63	5	73.2	80.3	79.6	69.9	66.2	64	58.3	52.4
2	KEF2 (HOOD 2)	EXHAUST	75.1	11.8110676394006	63.6	5	73.3	79.8	80.6	70.5	66.4	64.2	58.6	52.8
3	MAU1	SUPPLY	72.7	10	61.2	5	69.3	76.9	71.8	70.3	66.7	64.1	61.1	57.6

FAN OPTIONS

FAN UNIT NO	TAG	QTY	DESCRIPTION
1	KEF1 (HOOD 1)	1	GREASE BOX
		1	EXHAUST FAN HEAT BAFFLE
		1	FAN BASE CERAMIC SEAL - INSTALLED AT PLANT - FOR GREASE DUCTS
		1	UNIT MOUNTED VFD FOR USE WITH ECPM03
		1	VFD MOUNTING BRACKET FOR DU/DR 180 - 200
		1	2 YEAR PARTS WARRANTY
2	KEF2 (HOOD 2)	1	GREASE BOX
		1	EXHAUST FAN HEAT BAFFLE
		1	FAN BASE CERAMIC SEAL - INSTALLED AT PLANT - FOR GREASE DUCTS
		1	UNIT MOUNTED VFD FOR USE WITH ECPM03
		1	VFD MOUNTING BRACKET FOR DU/DR 180 - 200
		1	2 YEAR PARTS WARRANTY
3	MAU1	1	INLET PRESSURE GAUGE, 0-35"
		1	MANIFOLD PRESSURE GAUGE, -5 TO 15" WC
		1	LOW FIRE START
		1	SHIP LOOSE GAS STRAINER 1"
		1	AC INTERLOCK RELAY - 24VAC COIL
		1	MOTORIZED BACKDRAFT DAMPER FOR A2-D HOUSING - MEETS AMCA CLASS 1A RATING
		1	COOLING THERMOSTAT AND RELAY (NOT REQUIRED FOR EVAP)
		1	5 TON SINGLE CIRCUIT MODULAR PACKAGED COOLING OPTION FOR SIZE 2 DF/EH MUA (2,000 TO 3,000 CFM), 208V/230V, 3 PHASE. COOLING THERMOSTAT OR PROGRAMMABLE STAT REQUIRED FOR PROPER OPERATION
		1	DOWNTURN PLENUM FOR SIZE 2 DX COIL MODULE
		1	CONDENSING UNIT LOCKING CAPS FOR SINGLE CONDENSER UNITS
		1	SEPARATE 120V WIRING PACKAGE (REQUIRED AND USED ONLY FOR DCV OR PREWIRE WITH VFD) - THREE PHASE ONLY
		1	SIZE 2 DIRECT FIRED HEATER LOW CFM PROFILE PACKAGE - USED ON HEATERS UNDER 2500 CFM
		1	2 YEAR PARTS WARRANTY

FAN ACCESSORIES

FAN UNIT NO	TAG	EXHAUST			SUPPLY			
		GREASE CUP	GRAVITY DAMPER	WALL MOUNT	SIDE DISCHARGE	GRAVITY DAMPER	MOTORIZED DAMPER	WALL MOUNT
1	KEF1 (HOOD 1)	YES						
2	KEF2 (HOOD 2)	YES						
3	MAU1						YES	

CURB ASSEMBLIES

NO	ON FAN	TAG	WEIGHT	ITEM	SIZE
1	# 1	KEF1 (HOOD 1)	34 LBS	CURB	26.500"W X 26.500"L X 26.000"H 0.250:12.000 PITCH ALONG LENGTH, RIGHT VENTED HINGED.
2	# 2	KEF2 (HOOD 2)	34 LBS	CURB	26.500"W X 26.500"L X 26.000"H 0.250:12.000 PITCH ALONG LENGTH, RIGHT VENTED HINGED.
3	# 3	MAU1	172 LBS	CURB	31.000"W X 145.000"L X 20.000"H 1.000:12.000 PITCH ALONG WIDTH, RIGHT INSULATED.

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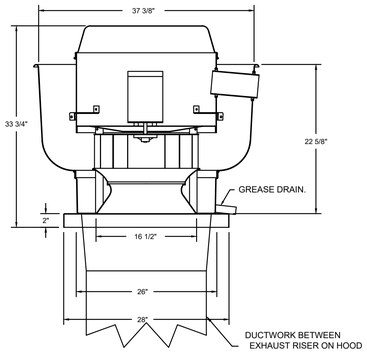
FANS #1 (KEF1 (HOOD 1)), #2 (KEF2 (HOOD 2)) - DU180HFA EXHAUST FAN



FEATURES:

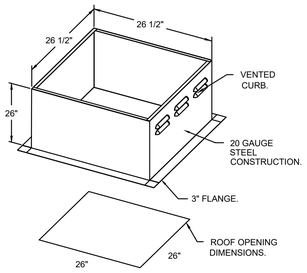
- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS).
- ROOF MOUNTED FANS.
- RESTAURANT MODEL.
- UL705 AND UL762 AND ULC-S645
- VARIABLE SPEED CONTROL.
- INTERNAL WIRING.
- THERMAL OVERLOAD PROTECTION (SINGLE PHASE).
- HIGH HEAT OPERATION 300°F (149°C).
- GREASE CLASSIFICATION TESTING.
- NEMA 3R SAFETY DISCONNECT SWITCH.

NORMAL TEMPERATURE TEST
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING AIR AT 300°F (149°C) UNTIL ALL FAN PARTS HAVE REACHED THERMAL EQUILIBRIUM, AND WITHOUT ANY DETERIORATING EFFECTS TO THE FAN WHICH WOULD CAUSE UNSAFE OPERATION.

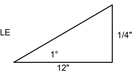
ABNORMAL FLARE-UP TEST
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING BURNING GREASE VAPORS AT 600°F (316°C) FOR A PERIOD OF 15 MINUTES WITHOUT THE FAN BECOMING DAMAGED TO ANY EXTENT THAT COULD CAUSE AN UNSAFE CONDITION.

OPTIONS

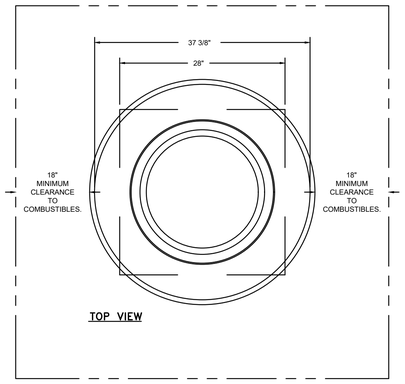
GREASE BOX.
EXHAUST FAN HEAT BAFFLE.
FAN BASE CERAMIC SEAL - INSTALLED AT PLANT - FOR GREASE DUCTS.
UNIT MOUNTED VFD FOR USE WITH ECPM03. VFD MOUNTING BRACKET FOR DU/DR 180 - 200.
2 YEAR PARTS WARRANTY.



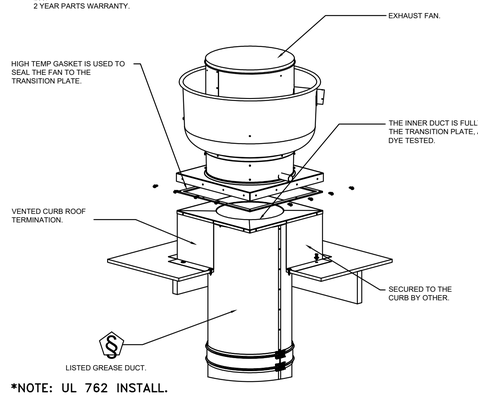
PITCHED CURBS ARE AVAILABLE FOR PITCHED ROOFS.



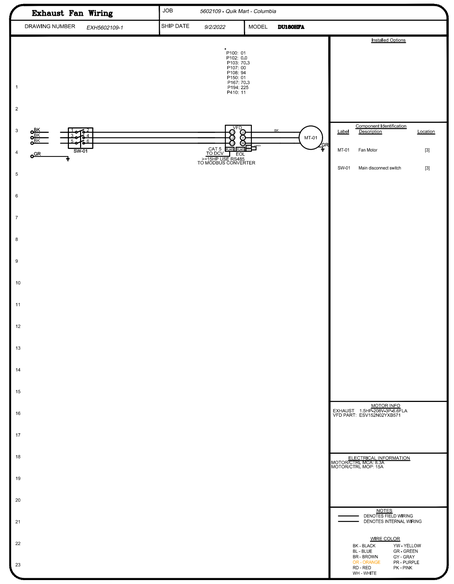
SPECIFY PITCH:
EXAMPLE: 7/12 PITCH = 30° SLOPE.

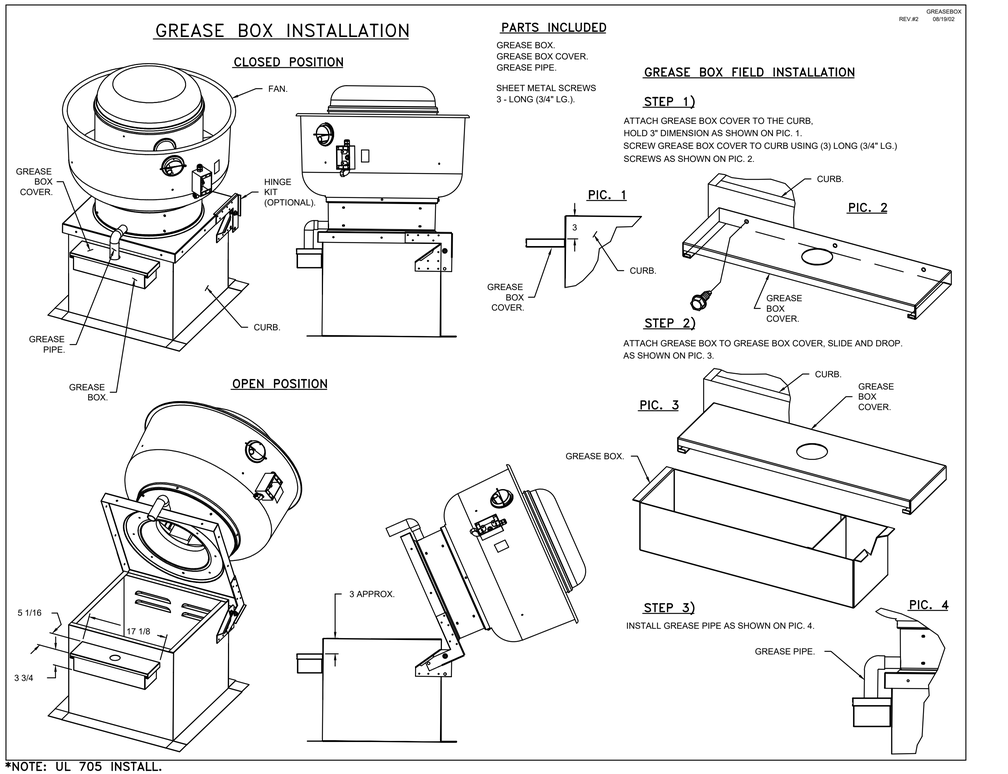


TOP VIEW



*NOTE: UL 762 INSTALL.





*NOTE: UL 705 INSTALL.

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REVISIONS:

DELTA	DESCRIPTION	DATE

DATE OF ISSUE:	09.12.2022
MA PROJECT NO:	0336-22
PROJECT PHASE:	CD
DRAWN BY:	DF&H SERVICES

M-3.10

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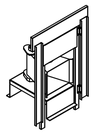
FAN #3 A2-D 250-20D-MPU - HEATER (MAU1)
1. DIRECT GAS FIRED HEATED MAKE UP AIR UNIT WITH 20" MIXED FLOW DIRECT DRIVE FAN.
2. INTAKE HOOD WITH EZ FILTERS.
3. DOWN DISCHARGE - AIR FLOW RIGHT -> LEFT.
4. GAS PRESSURE GAUGE, 0-35", 2.5" DIAMETER, 1/4" THREAD SIZE.
5. GAS PRESSURE GAUGE, -5 TO +15 INCHES WC, 2.5" DIAMETER, 1/4" THREAD SIZE.
6. LOW FIRE START. ALLOWS THE BURNER CIRCUIT TO ENERGIZE WHEN THE MODULATION CONTROL IS IN A LOW FIRE POSITION.
7. SHIP LOOSE GAS STRAINER. TO BE INSTALLED UPSTREAM OF UNIT CONNECTION. 1" CONNECTION.
8. COOLING INTERLOCK RELAY. 24VAC COIL. 120V CONTACTS. LOCKS OUT BURNER CIRCUIT WHEN AC IS ENERGIZED.
9. MOTORIZED BACK DRAFT DAMPER 22.75" X 24" FOR SIZE 2 STANDARD & MODULAR HEATER UNITS W/EXTENDED SHAFT, STANDARD GALVANIZED CONSTRUCTION, 3/4" REAR FLANGE, LOW LEAKAGE, LF120S ACTUATOR INCLUDED.
10. DX COOLING INTAKE AIR THERMOSTAT AND RELAYS MOUNTED IN UNIT - SET POINT FOR THERMOSTAT SHOULD BE 85°F.
11. 5 TON. SINGLE CIRCUIT MODULAR PACKAGED COOLING OPTION FOR SIZE 2 DF/EH MODULAR PACKAGED UNIT. INCLUDES CONDENSER, DX COIL, FILTER/DRYER KIT, THERMAL EXPANSION VALVE, R410A REFRIGERANT, AND REFRIGERANT PIPING. (2,000 TO 3,000 CFM) WHEN ORDERED WITH OPPOSITE AIRFLOW CONDENSERS ACCESS AND COIL PIPING WILL REMAIN IN STANDARD POSITION. DRAIN AND SLEDS WILL MOVE TO THE OPPOSITE SIDE. ANY OTHER CHANGE WILL REQUIRE CLI. CONDENSERS REQUIRE SEPARATE 208V, 3 PHASE POWER SUPPLY UNLESS ORDERED WITH SINGLE POINT CONNECTION. COIL = 3EZ1001R.
12. DOWNTURN PLENUM FOR SIZE 2 COOLING COIL MODULE - REQUIRED FOR DOWN DISCHARGE COOLING COIL APPLICATIONS.
13. LOCKING CAPS FOR SINGLE CONDENSER UNITS. CONSISTS OF 2 LOCKING CAPS, PART# NCP-4, AND 1 KEY, PART# NC-KEY.
14. SEPARATE 120VAC WIRING PACKAGE FOR MAKE-UP AIR UNITS. OPTION MUST BE SELECTED WHEN MOUNTING VFD IN PREWIRE PANEL OR WITH DCV PACKAGE. PROVIDES SEPARATE 120VAC INPUT TO SUPPLY FAN. THIS 120V SIGNAL MUST BE RUN BY ELECTRICIAN FROM DCV TO MUA SWITCH.
15. PROFILE PLATE CONFIGURATION FOR SIZE 2 DIRECT FIRED UNIT FOR LOW CFM APPLICATIONS.
16. HINGED DOUBLE WALL INSULATED DOOR ASSEMBLY (BURNER/BLOWER/MPU SECTION).
17. 2 YEAR PARTS WARRANTY

*NOTE: SUPPLY DUCT MUST BE INSTALLED TO MEET SMACNA STANDARDS. A MINIMUM STRAIGHT DUCT LENGTH MUST BE MAINTAINED DOWNSTREAM OF UNIT DISCHARGE AS OUTLINED IN AMCA PUBLICATION 201. WHEN USING RECTANGULAR DUCTWORK, ELBOWS MUST BE RADIUS THROAT, RADIUS BACK WITH TURNING VANES. FLEXIBLE DUCTWORK AND SQUARE THROAT/SQUARE BACK ELBOWS SHOULD NOT BE USED. ANY TRANSITION AND/OR TURNS IN THE DUCTWORK WILL CAUSE SYSTEM EFFECT. SYSTEM EFFECT WILL DRASTICALLY INCREASE STATIC PRESSURE AND REDUCE AIRFLOW. DO NOT RELY ON UNIT TO SUPPORT DUCT IN ANY WAY. FAILURE TO PROPERLY SIZE DUCTWORK MAY CAUSE SYSTEM EFFECTS AND REDUCE PERFORMANCE OF THE EQUIPMENT. SUGGESTED STRAIGHT DUCT SIZE IS 20" x 20".



DIRECT FIRED (DF) PROFILE PLATE ASSEMBLY

DIRECT FIRED PROFILE PLATE SPECIFICATIONS:
DESCRIPTION:
DIRECT FIRED BURNERS SHALL HAVE PATENTED (US PATENT NO.: US6629623B2), SELF-ADJUSTING PROFILE PLATES DESIGNED TO ENSURE PROPER AIR VELOCITY AND PRESSURE DROP ACROSS THE BURNER. PROFILE PLATES SHALL ALLOW BURNERS TO ACHIEVE CLEAN COMBUSTION BY LIMITING BY-PRODUCT LEVELS TO A MAXIMUM OF 5PPM OF CARBON MONOXIDE (CO), AND 5 5PPM OF NITROGEN DIOXIDE (NO2). DIRECT FIRED UNITS SHALL BE CONFIGURED WITH THE BLOWER MOUNTED DOWNSTREAM OF THE BURNER. THIS ARRANGEMENT WILL ENSURE A CONSISTENT AIRFLOW, REGARDLESS OF INLET AIR TEMPERATURE.

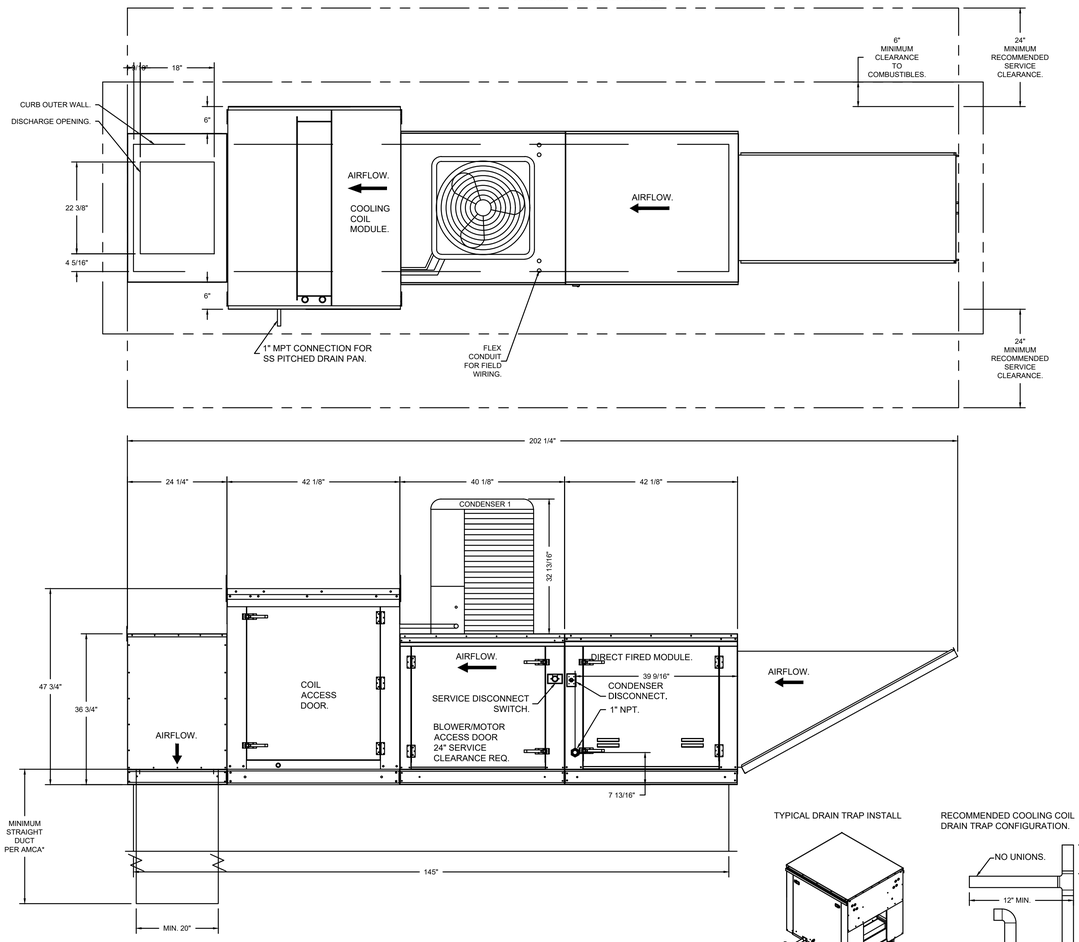
APPLICATION:
SPRING-LOADED BURNER PROFILE PLATES ARE ENGINEERED TO AUTOMATICALLY REACT TO THE MOMENTUM OF A FRESH AIR STREAM, WITHOUT THE NEED FOR ANY MOTORS OR ACTUATORS TO MECHANICALLY ADJUST THEM. WITH THIS FEATURE, ALL OF UNITS ARE DESIGNED FOR DEMAND CONTROL VENTILATION (DCV) REQUIREMENTS.

CERTIFICATIONS:
ALL PROFILE PLATE ASSEMBLIES SHALL BE INCLUDED IN THE DF UNIT'S ETL LISTING AND COMPLY WITH COMBINED SAFETY STANDARDS ANSI Z83.4 AND CSA 3.7 (NON-RECIRCULATING DF HEATERS) AND ANSI Z83.18 (RECIRCULATING DF HEATERS).

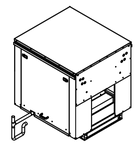
GENERAL CONSTRUCTION:
-PROFILE PLATES SHALL BE FORMED FROM G90 GALVANIZED STEEL.
-PROFILE PLATES SHALL VARY IN SIZE PER UNIT.
-PROFILE PLATES SHALL BE MOUNTED ALONG THE SAME PLANE AS THE DISCHARGE OF THE BURNER.
-DESIGN SHALL INCORPORATE PROPERLY TORQUED, PERMANENTLY MOUNTED SPRING HINGES.
-SPRING HINGES SHALL BE MADE FROM PLATED STEEL.

SUPPLY SIDE HEATER INFORMATION:

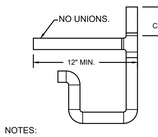
WINTER TEMPERATURE = 18°F. TEMP. RISE = 57°F.
BTUs CALCULATED OFF ACTUAL AIR DENSITY.
OUTPUT BTUs AT ALTITUDE OF 0.0 FT. = 165635.
INPUT BTUs AT ALTITUDE OF 0.0 FT. = 180039.
OUTPUT BTUs AT ALTITUDE OF 703 FT. = 161471.
INPUT BTUs AT ALTITUDE OF 703 FT. = 175512.



TYPICAL DRAIN TRAP INSTALL



RECOMMENDED COOLING COIL DRAIN TRAP CONFIGURATION.



NOTES:
1) 1" DIAMETER PVC PIPE ONLY.
2) USE ONLY LOW PROFILE COUPLINGS.
3) ADD CLEAN OUT AS SHOWN.

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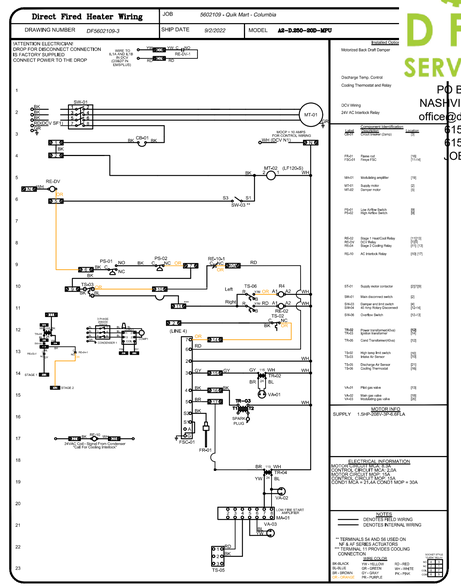

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DRAWN BY: DF&H SERVICES

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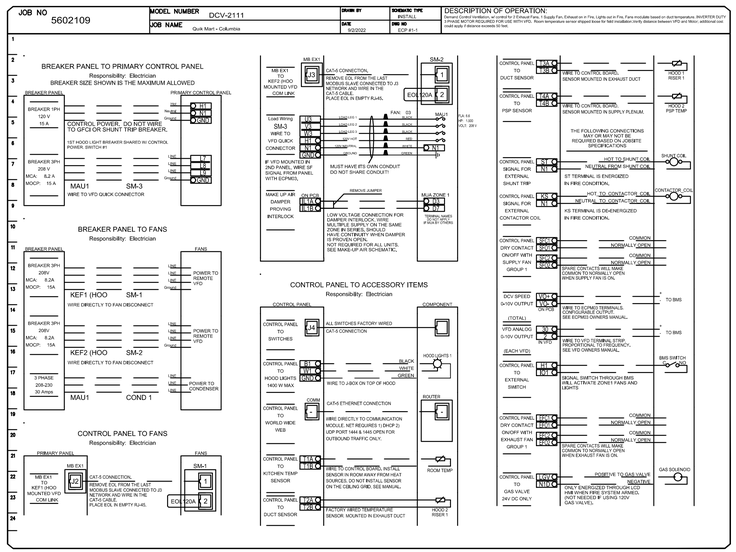
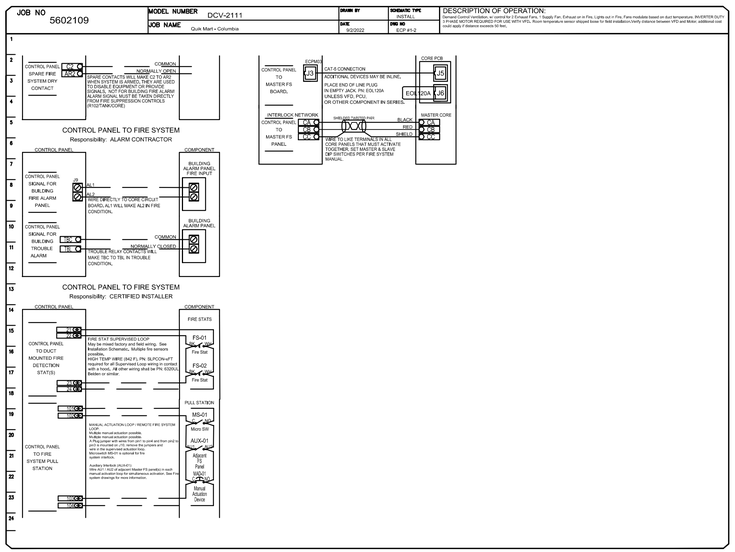
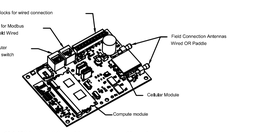
ELECTRICAL PACKAGE – JOB#5602109

NO	TAG	PACKAGE #	LOCATION	SWITCHES		OPTION
				LOCATION	QUANTITY	
1	DCV1	DCV-2111	UTILITY CABINET RIGHT	04 - UTILITY CABINET RIGHT	1 LIGHT	SMART CONTROLS DCV
				HOOD # 2	1 FAN	

FANS CONTROLLED					
FAN TAG	TYPE	ϕ	HP	VOLT	FLA
KEF1 (HOOD 1)	EXHAUST	3	1.500	208	6.6
KEF2 (HOOD 2)	EXHAUST	3	1.500	208	6.6
MAU1	SUPPLY	3	1.500	208	6.6







CASlink Monitor and Control

- *Hood control panel to support communications to cloud-based Building Management System.*
- *Hood Control Panel to allow cloud-based Building Management System to monitor real time parameters outlined as MONITOR in the points list.*
- *Hood Control Panel to allow cloud-based Building Management System to control parameters outlined as CONTROL in the points list.*
- *Hood Control Panel to allow cloud-based Building Management System to implement SYSTEM ECONOMIZER control strategies for fully integrated Building Management.*

MONITORING AND CONTROL POINTS LIST

DCV Packages	***Function***
Room Temperature	***MONITOR***
Duct Temperature(s)	***MONITOR***
MUA Discharge Temperature	***MONITOR***
Kitchen RTU Discharge Temperature	***MONITOR***
Fan Speed	***MONITOR***
Fan Amperage	***MONITOR***
Fan Power	***MONITOR***
VFD Faults	***MONITOR***
Controller Faults	***MONITOR***
Fan Faults	***MONITOR***
Fan Status	***MONITOR***
PCU Faults	***MONITOR***
PCU Filter Clog Percentages	***MONITOR***
Fire Condition.	***MONITOR***
CORE Fire System.	***MONITOR***
Building Pressures	***MONITOR***
Prep Time Button.	***MONITOR & CONTROL***
Fans Button	***MONITOR & CONTROL***
Lights Button.	***MONITOR & CONTROL***
Wash Button	***MONITOR & CONTROL***

SC Packages	***Function***
Room Temperature(s)	***MONITOR***
Duct Temperature(s)	***MONITOR***
MUA Discharge Temperature	***MONITOR***
Kitchen RTU Discharge Temperature	***MONITOR***
Controller Faults	***MONITOR***
Fan Faults	***MONITOR***
Fan Status	***MONITOR***
PCU Faults	***MONITOR***
PCU Filter Clog Percentages	***MONITOR***
Fire Condition.	***MONITOR***
CORE Fire System.	***MONITOR***
Building Pressures	***MONITOR***
Fans Button(s)	***MONITOR & CONTROL***
Lights Button(s)	***MONITOR & CONTROL***
Wash Button	***MONITOR & CONTROL***

DEMAND CONTROL VENTILATION HOOD CONTROL PANEL SPECIFICATIONS:

- CONTROLS SHALL BE LISTED BY ETL (UL 508A) AND SHALL COMPLY WITH DEMAND VENTILATION SYSTEM TURNDOWN REQUIREMENTS OUTLINED IN IECC 403.2.8 (2015).
- THE CONTROL ENCLOSURE SHALL BE NEMA 1 RATED AND LISTED FOR INSTALLATION INSIDE OF THE EXHAUST HOOD UTILITY CABINET. THE CONTROL ENCLOSURE MAY BE CONSTRUCTED OF STAINLESS STEEL OR PAINTED STEEL.
- TEMPERATURE PROBE(S) LOCATED IN THE EXHAUST DUCT RISER(S) SHALL BE CONSTRUCTED OF STAINLESS STEEL.
- A DIGITAL CONTROLLER SHALL BE PROVIDED TO ACTIVATE THE HOOD EXHAUST FANS DYNAMICALLY BASED ON A FIXED DIFFERENTIAL BETWEEN THE AMBIENT AND DUCT TEMPERATURES SENSORS. THIS FUNCTION SHALL MEET THE REQUIREMENTS OF IMC 507.1.1.
- A DIGITAL CONTROLLER SHALL PROVIDE ADJUSTABLE HYSTERESIS SETTINGS TO PREVENT CYCLING OF THE FANS AFTER THE COOKING APPLIANCES HAVE BEEN TURNED OFF AND/OR THE HEAT IN THE EXHAUST SYSTEM IS REDUCED.
- A DIGITAL CONTROLLER SHALL PROVIDE AN ADJUSTABLE MINIMUM FAN RUN-TIME SETTING TO PREVENT FAN CYCLING.
- VARIABLE FREQUENCY DRIVES (VFDS) SHALL BE PROVIDED FOR FANS AS REQUIRED. THE DIGITAL CONTROLLER SHALL MODULATE THE VFDS BETWEEN A MINIMUM SETPOINT AND A MAXIMUM SETPOINT ON DEMAND. THE DUCT TEMPERATURE SENSOR INPUT(S) TO THE DIGITAL CONTROLLER SHALL BE USED TO CALCULATE THE SPEED REFERENCE SIGNAL.
- THE VFD SPEED RANGE OF OPERATION SHALL BE FROM 0% TO 100% FOR THE SYSTEM, WITH THE ACTUAL MINIMUM SPEED SET AS REQUIRED TO MEET MINIMUM VENTILATION REQUIREMENTS.
- AN INTERNAL ALGORITHM TO THE DIGITAL CONTROLLER SHALL MODULATE SUPPLY FAN VFD SPEED PROPORTIONAL TO ALL EXHAUST FANS THAT ARE LOCATED IN THE SAME FAN GROUP AS THE SUPPLY FAN.
- THE SYSTEM SHALL OPERATE IN PREP MODE DURING LIGHT COOKING LOAD OR COOL DOWN MODE WHEN SUFFICIENT HEAT REMAINS UNDERNEATH THE HOOD SYSTEM AFTER COOKING OPERATIONS HAVE COMPLETED. OPERATION DURING EITHER OF THESE PERIODS WILL DISABLE THE SUPPLY FANS AND PROVIDE AN EXHAUST FAN SPEED THAT IS EQUAL TO THE MINIMUM VENTILATION REQUIREMENT.
- A DIGITAL CONTROLLER SHALL DISABLE THE SUPPLY FAN(S), ACTIVATE THE EXHAUST FAN(S), ACTIVATE THE APPLIANCE SHUNT TRIP, AND DISABLE AN ELECTRIC GAS VALVE AUTOMATICALLY WHEN FIRE CONDITION IS DETECTED ON A COVERED HOOD.
- A DIGITAL CONTROLLER SHALL ALLOW FOR EXTERNAL BMS FAN CONTROL VIA DRY CONTACT (EXTERNAL CONTROL SHALL NOT OVERRIDE FAN OPERATION LOGIC AS REQUIRED BY CODE).
- AN LCD INTERFACE SHALL BE PROVIDED WITH THE FOLLOWING FEATURES:
  A. ON/OFF PUSH BUTTON FAN & LIGHT SWITCH ACTIVATION.
  B. INTEGRATED GAS VALVE RESET FOR ELECTRONIC GAS VALVES (NO RESET RELAY REQUIRED).
  C. VFD FAULT DISPLAY WITH AUDIBLE & VISUAL ALARM NOTIFICATION.
  D. DUCT TEMPERATURE SENSOR FAILURE DETECTION WITH AUDIBLE & VISUAL ALARM NOTIFICATION.
  E. MIS-WIRED DUCT TEMPERATURE SENSOR DETECTION WITH AUDIBLE & VISUAL ALARM NOTIFICATION.
  F. A SINGLE LOW VOLTAGE CAT-5 RJ45 WIRING CONNECTION.
  G. AN ENERGY SAVINGS INDICATOR THAT UTILIZES MEASURED KWH FROM THE VFDS.

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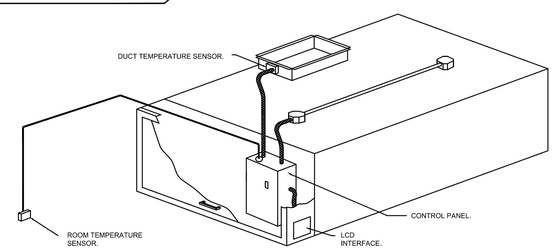

TYPICAL HOOD CONTROL PANEL INSTALLATION

SEQUENCE OF OPERATIONS:

THE HOOD CONTROL PANEL IS CAPABLE OF OPERATING IN ONE OR MORE OF THE FOLLOWING STATES AT ANY GIVEN TIME:

- AUTOMATIC: THE SYSTEM OPERATES BASED ON THE DIFFERENTIAL BETWEEN ROOM TEMPERATURE AND THE TEMPERATURE AT THE HOOD CAVITY OR EXHAUST DUCT COLLAR. FANS ACTIVATE AT A CONFIGURABLE TEMPERATURE DIFFERENTIAL THRESHOLD. DEPENDING ON THE JOB CONFIGURATION EACH FAN ZONE CAN BE CONFIGURED AS STATIC OR DYNAMIC. THESE TERMS REFER TO WHETHER A VARIABLE MOTOR (SUCH AS EC MOTORS OR VFD DRIVEN MOTORS) MODULATE WITH TEMPERATURE. IF THE PANEL IS EQUIPPED WITH VARIABLE SPEED FANS AND THE ZONE IS DEFINED AS "DYNAMIC", THESE WILL MODULATE WITHIN A USER-DEFINED RANGE BASED ON THE TEMPERATURE DIFFERENTIAL. PANELS EQUIPPED WITH VARIABLE SPEED FANS AND A FAN ZONE DEFINED AS "STATIC", FANS WILL RUN AT A SET SPEED CALCULATED FOR THE DRIVE. DEMAND CONTROL VENTILATION SYSTEMS ARE CAPABLE OF MODULATING EXHAUST AND MAKE UP AIR FAN SPEEDS PER THE REQUIREMENTS OUTLINED IN IECC 403.2.8.
- MANUAL: THE SYSTEM OPERATES BASED ON HUMAN INPUT FROM AN HMI.
- SCHEDULE: A WEEKLY SCHEDULE CAN BE SET TO RUN FANS FOR A SPECIFIED PERIOD THROUGHOUT THE DAY. THERE ARE THREE OCCUPIED TIMES PER DAY TO ALLOW FOR THE USER TO SET UP A TIME THAT IS SUITABLE TO THEIR NEEDS. ANY TIME THAT IS WITHIN THE DEFINED OCCUPIED TIME, THE SYSTEM WILL RUN AT MODULATION MODE AND FOLLOW THE FAN PROCEDURE ALGORITHM BASED ON TEMPERATURE DURING THIS TIME. DURING UNOCCUPIED TIME, THE SYSTEM WILL HAVE AN EXTRA OFFSET TO PREVENT UNINTENDED ACTIVATION OF THE SYSTEM DURING A TIME WHERE THE SYSTEM IS NOT BEING OCCUPIED.
- OTHER: THE SYSTEM OPERATES BASED ON THE INPUT FROM AN EXTERNAL SOURCE (DDC, BMS OR HARD-WIRED INTERLOCK).
- FIRE: UPON ACTIVATION OF THE HOOD FIRE SUPPRESSION SYSTEM, THE EXHAUST FAN WILL COME ON OR CONTINUE TO TO RUN, THE HOOD MAKEUP AIR WILL SHUTDOWN, AND A SIGNAL WILL BE SENT FOR ACTIVATING THE SHUNT TRIP BREAKER PROVIDED BY THE ELECTRICIAN. FUEL GAS WILL SHUT OFF VIA A MECHANICAL/ELECTRICAL GAS VALVE ACTUATED BY THE HOOD FIRE SUPPRESSION SYSTEM.

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REVISIONS:

DELTA	DESCRIPTION	DATE

DATE OF ISSUE: 09.12.2022
MA PROJECT NO: 0336-22
PROJECT PHASE: CD
DRAWN BY: DF&H SERVICES

M-3.12

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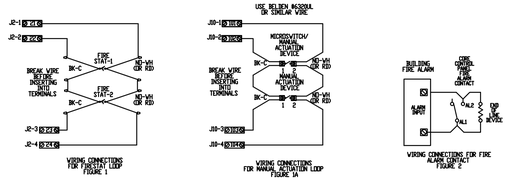
JOB NO	MODEL NUMBER	DRAWN BY	SCHEMATIC TYPE
5602109	DCV-2111	MJH	
JOB NAME		DATE	DWG NO
	Quick Mart - Columbia	8/4/2022	ECP #1-4

DESCRIPTION OF OPERATION:
Fire System #1 TANK FD – 6JAN-04-2 (803-HX)-FD), Tank-based Fire Protection System equipped with Electronic Detection utilizing CORE board as a Listed Release Mechanism. Installed in Hood (Utility Cabinet with integral hood powers panel)

TANK PROTECTION LOW-VOLTAGE FIGURES

02/18/2021 Rev. 17

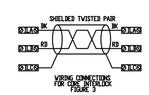
FS-1: MASTER



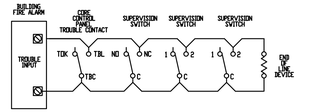
VIRING CONNECTIONS FOR FIRESTAT LOOP FIGURE 1

VIRING CONNECTIONS FOR MANUAL ACTUATION LOOP FIGURE 1A

VIRING CONNECTIONS FOR FIRE ALARM CONTACT FIGURE 2



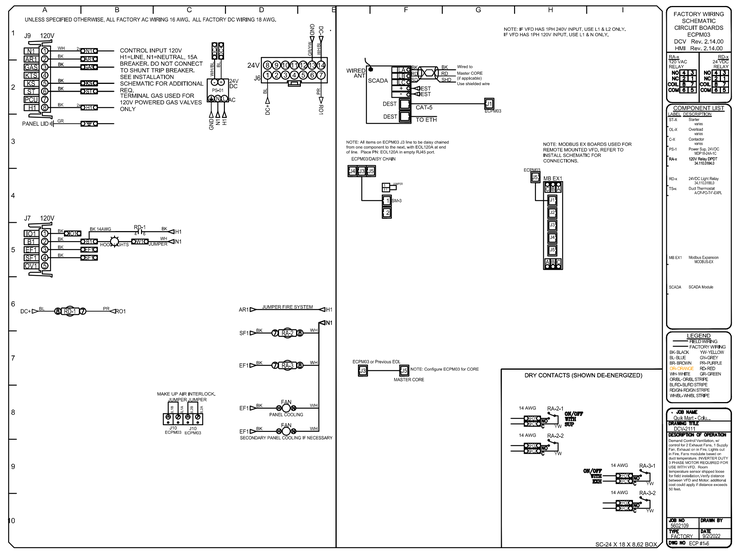
VIRING CONNECTIONS FOR CORE INTERLOCK FIGURE 3



VIRING CONNECTIONS FOR TROUBLE CONTACT FIGURE 4

ATTENTION: LOW-VOLTAGE DC OR SIGNALING WIRE SHOULD BE ROUTED IN SEPARATE CONDUIT FROM ALL AC SOURCES

NOTE: SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS



SG-24 X 18 X 8.62 BOX

FACTORY WIRING SCHEMATIC CIRCUIT BOARDS ECPM03
DCV Rev. 2.14.00
HMI Rev. 2.14.00

RJA-1 VFD CONTACTS
RJA-2 VFD CONTACTS
RJA-3 VFD CONTACTS

COMPONENT LIST

LABEL	DESCRIPTION
MAU-01	MANUAL ACTIVATION UNIT
PCB-1	CORE PCB PCBCORE-MPP
PSM-2	CORE POWER SUPPLY PSM2-40W
WS-1	Water Solenoid valve
LT-05	24V Red In/G Light 120VAC/DC
LA-01	Surf Level Sensor 423010
AA-01	Audible Alarm SOUNDLAMP-B
FB-01	Prime/Feed Switch 2BA42
SW-06	TDC/CWM Switch 2BA42
SP-1	Surfactant Pump 80DR/HP
SV-1	24v DC Gas Valve 2BA42
FS-01	Duct Fire Sensor 135 Deg F
LT-05	24V Red In/G LIGHT PILOT
RS-01	Remote PullPull-Activation Station
PWS-01	24VDC Power Supply 24VDC 16W POWER
RO-XX	24VDC Relay SCJ-PCJ-24VDC
PS	Pressure Switch DWC-PRESSURE

LEGEND
FACTORY WIRING
FIELD WIRING
BK-BLACK, BL-BLUE, BR-BROWN, WH-WHITE, ORBL-ORBL STRPE, BLRD-BLRD STRPE, RDGN-RDGN STRPE, WHBL-WHBL STRPE
YW-YELLOW, GN-GREY, PR-PURPLE, RD-RED, GR-GREEN

JOB NAME
Quick Mart - Columbia
SCHEMATIC
DCV2111
DESCRIPTION OF OPERATION
Demand Control Ventilation, as quoted for 2 Exhaust Fans, 1 Supply Fan, Exhaust on in Fire. Lights on in Fire. Fans modulate based on CO. 1 PHASE MOTOR REQUIRED FOR 1 PHASE POWER
Ambient/duct sensor shipped loose for field installation Verify distance between VFD and motor/sensor (use cost study if distance exceeds 50 feet.

JOB NO	DRAWN BY
5602109	MJH
TYPE	DATE
LAYOUT	8/4/2022
DWG NO	ECP #1-7

FACTORY WIRING SCHEMATIC CIRCUIT BOARDS ECPM03
DCV Rev. 2.10.00 HMI Rev. 2.10.00

RJA-1 VFD CONTACTS
RJA-2 VFD CONTACTS
RJA-3 VFD CONTACTS

COMPONENT LIST

LABEL	DESCRIPTION
ST-A	Starter valve
CA	Contactor valve
SMA	VFD valve
LR-X	Line/Load Reactor valve

LEGEND
FACTORY WIRING
FIELD WIRING
BK-BLACK, BL-BLUE, BR-BROWN, WH-WHITE, ORBL-ORBL STRPE, BLRD-BLRD STRPE, RDGN-RDGN STRPE, WHBL-WHBL STRPE
YW-YELLOW, GN-GREY, PR-PURPLE, RD-RED, GR-GREEN

JOB NAME
Quick Mart - Columbia
SCHEMATIC
DCV2111
DESCRIPTION OF OPERATION
Demand Control Ventilation, as quoted for 2 Exhaust Fans, 1 Supply Fan. Exhaust on in Fire. Lights on in Fire. Fans modulate based on CO. 1 PHASE MOTOR REQUIRED FOR 1 PHASE POWER
Ambient/duct sensor shipped loose for field installation Verify distance between VFD and motor/sensor (use cost study if distance exceeds 50 feet.

JOB NO	DRAWN BY
5602109	MJH
TYPE	DATE
LAYOUT	8/4/2022
DWG NO	ECP #1-7

DRY CONTACTS (SHOWN DE-ENGERGIZED)

RD-2/3-1 TROUBLE RELAY. Contact terminals TBC & TBL will close when a trouble condition occurs. terminals TBC & TDK make if the system is off.

RD-1/5-1 COOKING EQUIPMENT DISABLE RELAY. For UDS Kill Switch, wire EXC and EXS terminals to like terminals in UDS panel.

RD-1/7-1 FIRE SYSTEM DRY CONTACTS. Dry contacts will make C2 to WC2 when system is armed.

RD-1/8-1 INTERLOCK FOR AUTOMAN ACTIVATION. Used for activating 120V automan or adjacent Master CORE panels during active Fire Condition

FACTORY WIRING SCHEMATIC CORE FIRE PROTECTION

RJA-1 VFD CONTACTS
RJA-2 VFD CONTACTS
RJA-3 VFD CONTACTS

COMPONENT LIST

LABEL	DESCRIPTION
MAU-01	MANUAL ACTIVATION UNIT
PCB-1	CORE PCB PCBCORE-MPP
PSM-2	CORE POWER SUPPLY PSM2-40W
WS-1	Water Solenoid valve
LT-05	24V Red In/G Light 120VAC/DC
LA-01	Surf Level Sensor 423010
AA-01	Audible Alarm SOUNDLAMP-B
FB-01	Prime/Feed Switch 2BA42
SW-06	TDC/CWM Switch 2BA42
SP-1	Surfactant Pump 80DR/HP
SV-1	24v DC Gas Valve 2BA42
FS-01	Duct Fire Sensor 135 Deg F
LT-05	24V Red In/G LIGHT PILOT
RS-01	Remote PullPull-Activation Station
PWS-01	24VDC Power Supply 24VDC 16W POWER
RO-XX	24VDC Relay SCJ-PCJ-24VDC
PS	Pressure Switch DWC-PRESSURE

LEGEND
FACTORY WIRING
FIELD WIRING
BK-BLACK, BL-BLUE, BR-BROWN, WH-WHITE, ORBL-ORBL STRPE, BLRD-BLRD STRPE, RDGN-RDGN STRPE, WHBL-WHBL STRPE
YW-YELLOW, GN-GREY, PR-PURPLE, RD-RED, GR-GREEN

JOB NAME
Quick Mart - Columbia
SCHEMATIC
DCV2111
DESCRIPTION OF OPERATION
Fire System #1 TANK FD – 6JAN-04-2 (803-HX)-FD), Tank-based Fire Protection System equipped with Electronic Detection utilizing CORE board as a Listed Release Mechanism. Installed in Hood (Utility Cabinet with integral hood powers panel)

JOB NO	DRAWN BY
5602109	MJH
TYPE	DATE
LAYOUT	8/4/2022
DWG NO	ECP #1-4

CUSTOMER APPROVAL TO MANUFACTURE:

Approved as Noted ☐
Approved with NO Exception Taken ☐
Revise and Resubmit ☐
SIGNATURE _____
Your Title _____ Date _____ _____

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Darrin Richardson
PHONE: (615) 599-8300
EMAIL: reg44@captivaire.com

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EDWARD'S OIL

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REVISIONS:

DELTA	DESCRIPTION	DATE

DATE OF ISSUE: 09.12.2022
MA PROJECT NO: 0336-22
PROJECT PHASE: CD
DRAWN BY: DF&H SERVICES

M-3.13

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MECHANICAL SPECIFICATIONS:

GENERAL CONDITIONS:

1. FURNISH ALL MATERIALS, LABOR, TOOLS AND INCIDENTALS TO COMPLETE IN EVERY DETAIL AND LEAVE IN WORKING ORDER ALL ITEMS CALLED FOR HEREIN OR SHOWN ON THE ACCOMPANYING DRAWINGS.

2. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A COMPLETE OPERATIONAL HEATING, VENTILATING, AND COOLING SYSTEM WHICH MEETS ALL GOVERNING CODES AND IN ACCORDANCE WITH THE DESIGN DRAWINGS.

3. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE INTERNATIONAL MECHANICAL CODE, NFPA REQUIREMENTS, AND ALL LOCAL CODES.

4. THE CONTRACTOR SHALL PAY FOR ALL FEES, PERMITS, AND CHARGES AS REQUIRED ACHIEVING THE INSTALLATION.

5. MECHANICAL WORK SHALL BE GUARANTEED FOR ONE YEAR FROM DATE OF FINAL ACCEPTANCE.

6. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS. DRAWINGS SHALL NOT BE SCALED.

7. REFER TO ARCHITECTURAL REQUIREMENTS FOR THE NECESSITY OF SUBMITTALS. SUBMITTALS ARE NOT REQUIRED UNLESS REQUIRED BY THE ARCHITECT. IF SUBMITTALS ARE REQUIRED SUBMIT IN ELECTRONIC FORMAT (HARD COPIES WILL NOT BE REVIEWED) THE FOLLOWING SECTIONS/EQUIPMENT FOR REVIEW : HVAC EQUIPMENT, AIR DISTRIBUTION, AND DEVICES.

8. PROVIDE ACCESS DOORS IN DUCTS, WALLS, AND CEILINGS AS REQUIRED TO ACCESS DAMPERS, VALVES, AND OTHER ENCLOSED ITEMS. COORDINATE LOCATION OF ALL DOORS WITH GENERAL CONTRACTOR.

9. NOTE THAT SOME SYSTEMS USE CEILINGS AND EQUIPMENT ROOMS AS RETURN AIR PLENUMS. CONTRACTOR SHALL COORDINATE TO ENSURE THAT ALL MATERIALS WITHIN THE PLENUMS ARE FULLY NONCOMBUSTIBLE AND/OR RATED FOR PLENUM SERVICE.

10. IF HVAC EQUIPMENT IS USED FOR TEMPORARY HEATING, ETC., THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR CLEANING FILTERS, COILS, ETC. FINAL PERMANENT CONNECTIONS OF SERVICES TO UNITS SHALL BE COMPLETE PRIOR TO ANY START-UP OF EQUIPMENT.

11. WHERE PIPES, DUCTS, ETC., ARE TO PASS THROUGH WALLS, FLOORS, ETC. SLEEVES SHALL BE PROVIDED PRIOR TO WALL CONSTRUCTION. SLEEVES SHALL BE OF EQUAL OR GREATER GAUGE METAL THAN PIPES OR DUCTS PASSING THROUGH. WHERE SLEEVES PENETRATE EXTERIOR SURFACES, VOIDS SHALL BE SEALED WATER TIGHT. WHERE SLEEVES PASS THROUGH RATED PARTITIONS, SLEEVE PACKING SHALL BE OF U.L. LISTED FIRE SAFE TYPE MATERIAL.

12. CONTRACTOR SHALL SUBMIT (3) SETS OF INSTRUCTION BOOKS, INCLUDING INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS, PAMPHLETS OR BROCHURES AND ALL EQUIPMENT WARRANTIES OBTAINED FROM EACH MANUFACTURER OF EQUIPMENT.

COORDINATION REQUIREMENTS:

1. THE CONTRACTOR IS REQUIRED TO VISIT THE SITE AND BECOME FAMILIAR WITH EXISTING CONDITIONS PRIOR TO SUBMITTING A BID.

2. THE DRAWINGS MAY NOT SHOW ALL EXISTING ITEMS OR CONDITIONS. CONTRACTOR SHALL NOT RECEIVE EXTRA PAYMENT FOR REQUIREMENTS WHICH CAN BE INFERRED THROUGH OBSERVATION OF EXISTING CONDITIONS AT THE SITE. IN THE EVENT CONCEALED CONDITIONS ARE ENCOUNTERED WHICH MAY VARY SIGNIFICANTLY FROM THOSE INDICATED ON THE DRAWINGS, NOTIFY THE DESIGNER BEFORE PROCEEDING WITH WORK.

3. CONTRACTOR SHALL FIELD VERIFY BY MEASUREMENT THE EXACT LOCATION OF EQUIPMENT, DUCTWORK, PIPING, STRUCTURE, AND OTHER CONDITIONS WHICH WILL AFFECT INSTALLATION. CONTRACTOR SHALL LOCATE EQUIPMENT AND ROUTE DUCTWORK AND PIPING TO AVOID CONFLICTS AND INTERFERENCES WITH EXISTING FIELD CONDITIONS.

4. PRIOR TO ANY INSTALLATION, CLOSELY COORDINATE ALL MECHANICAL WORK WITH PLUMBING, FIRE PROTECTION, ELECTRICAL, ARCHITECTURAL, AND STRUCTURAL WORK. CONTRACTOR TO ENSURE ALL EQUIPMENTS AND SERVICES WILL FIT IN AVAILABLE SPACES ALLOWING CEILING HEIGHTS INDICATED ON ARCHITECTURAL PLANS. INSTALL EQUIPMENT SO AS TO PROVIDE CLEARANCES SHOWN ON DRAWINGS AND AS RECOMMENDED BY MANUFACTURER FOR AIRFLOW, SERVICE, MAINTENANCE, AND FILTER REMOVAL AS APPLICABLE.

5. COORDINATE DUCT, PIPING, AND EQUIPMENT LOCATIONS WITH ELECTRICAL PANEL LOCATIONS. DO NOT PASS ANY MECHANICAL OR PLUMBING ITEMS DIRECTLY OVER ELECTRICAL PANELS. SEE ELECTRICAL DRAWINGS FOR EXACT PANEL LOCATIONS.

6. CEILING DIFFUSER AND REGISTER LOCATIONS ARE APPROXIMATE ONLY. EXACT LOCATIONS TO BE DETERMINED BY ARCHITECTURAL REFLECTED CEILING PLANS. MANY DUCTS AND PIPES ARE ROUTED ABOVE FURRED DOWN/LOWERED CEILINGS. CLOSELY COORDINATE DUCT AND PIPE ROUTING WITH ARCHITECTURAL REFLECTED CEILING PLANS. COORDINATE SIDEWALL REGISTER MOUNTING HEIGHTS AND LOCATIONS WITH ARCHITECTURAL CEILING HEIGHTS.

7. ALL CUTTING AND PATCHING SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR. ALL PATCHING SHALL RESTORE EACH DAMAGED SURFACE TO ITS ORIGINAL FINISH.

8. ALL EXPOSED DUCTWORK, PIPING, AND EQUIPMENT IN FINISHED SPACES TO BE INSTALLED AS HIGH AS POSSIBLE ABOVE FINISHED FLOOR.

HEATING AND COOLING EQUIPMENT:

1. FURNISH AND INSTALL ELECTRIC COOLING/GAS HEATING UNITS BY TRANE, CARRIER, LENNOX, OR APPROVED EQUAL AS SHOWN ON DRAWINGS.

2. UNIT SHALL BE FACTORY ASSEMBLED, TESTED, AND HAVE COMPLETE R-410A CHARGE, READY TO OPERATE. ALL TUBING JOINTS SHALL BE BRAZED. COIL SHALL BE MINIMUM OF 3-ROWS DEEP.

3. FAN SHALL BE STATICALLY AND DYNAMICALLY BALANCED, DOUBLE INLET, FORWARD CURVE BLOWER CAPABLE OF DELIVERING DESIGN CFM. FAN SHALL BE QUIET IN OPERATION AND INTERNALLY ISOLATED FOR VIBRATION.

4. EQUIPMENT SHALL BE COMPLETELY FACTORY WIRED WITH ALL CONTROL AND PROTECTIVE DEVICES. ALL EQUIPMENT 2000 CFM AND GREATER SHALL HAVE SMOKE DETECTOR AND CONTROLS FOR SMOKE DETECTION SHUT-DOWN. FIRE-STATS SHALL BE INCLUDED ON ALL OTHER UNITS AS REQUIRED BY CODE.

5. FILTERS SHALL BE 1" THROWAWAY TYPE, FARR 30/30 OR EQUAL. A CLEAN SET OF REPLACEMENT FILTERS SHALL BE PROVIDED BY CONTRACTOR UPON START-UP OF EQUIPMENT

6. SYSTEM SHALL BE COMPLETE WITH 24/7 PROGRAMMABLE THERMOSTATS, WHITE RODGERS COMFORT SET 90 OR APPROVED EQUAL.

7. ACCESSORIES SHALL INCLUDE TIME DELAY RELAYS TO PREVENT COMPRESSOR SHORT CYCLING, MALFUNCTION SWITCH, FIRE-STAT CUT-OUTS, LOW PRESSURE SWITCH, HIGH PRESSURE CUT-OUT.

FANS:

1. FANS SHALL BE EQUAL TO THE MAKE AND MODEL SHOWN INDICATED AND SHALL BE LOCATED AS SHOWN ON DRAWINGS. FANS SHALL BE NUTONE, LOREN COOK, PENN, ACME, BROAN, OR GREENHECK.

DUCTWORK:

1. ALL AIR DISTRIBUTION SYSTEM(S) SHALL BE TESTED AND BALANCED IN ACCORDANCE WITH A.A.B.C. REQUIREMENTS TO WITHIN FIVE PERCENT (5%) OF A CERTIFIED AIR BALANCE REPORT SHALL BE GIVEN TO THE ARCHITECT PRIOR TO PROJECT CLOSEOUT.

2. BALANCE AND ADJUSTING MUST OCCUR PRIOR TO INSTALLATION OF "HARD" CEILINGS IN ORDER TO ACCESS BRANCH FITTING DAMPERS. SEE ARCHITECTURAL REFLECTED CEILING PLANS FOR CEILING TYPES.

3. ALL LOW-PRESSURE DUCTWORK SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH THE 1985 SMACNA HVAC DUCT CONSTRUCTION MANUAL FOR 2" W.G. STATIC PRESSURE AND CLASS "C" SEALS. DUCTWORK SHALL BE CONSTRUCTED OF GALVANIZED SHEET METAL. SEAL ALL TRANSVERSE JOINTS WITH DUCT SEALANT, HARDCAST #P301.

4. SUPPORT ALL DUCTWORK WITH SUITABLE SHEARED STRIPS OF GALVANIZED METAL OF 1" X 1/8" STEEL BAND IRON HANGERS ON EACH SIDE OF DUCT. SPACE HANGERS MAXIMUM 8 FEET ALONG DUCT AND SECURE HANGERS TO STRUCTURE AS REQUIRED.

5. ALL DUCT DIMENSIONS SHOWN ON DRAWINGS ARE INSIDE CLEAR. ALLOWANCE MUST BE MADE IN SHEET METAL SIZE WHERE DUCT LINER IS SPECIFIED.

6. ALL SUPPLY AND OUTSIDE AIR DUCT TO BE EXTERNALLY INSULATED WITH 2" THICK, 1 LB. DENSITY, FLEXIBLE, FACTORY-REINFORCED GLASS FIBER BLANKET WITH FOIL-FACED VAPOR BARRIER JACKET. SEAL ALL SEAMS, RIPS, TEARS, STAPLES, ETC., IN VAPOR BARRIER WITH VAPOR BARRIER MASTIC EMBEDDED WITH FIBERGLASS MESH CLOTH. PRESSURE SENSITIVE TAPE NOT ALLOWED.

7. ALL RETURN DUCT TO BE INTERNALLY INSULATED WITH 1" THICK, 1-1/2 LB DENSITY, NEOPRENE-COATED FIBERGLASS MATT-FACED FLEXIBLE DUCT LINER. ALLOWANCES MUST BE MADE IN DUCT SIZES TO ACCOMMODATE LINER.

8. FLEXIBLE DUCTWORK SHALL BE EQUIVALENT TO WIREMOLD TYPE WGC, 1" THICK FIBERGLASS INSULATION AND VAPOR BARRIER. NO FLEXIBLE DUCT SHALL PASS THROUGH ANY WALL, FIRE RATED OR OTHERWISE. NO FLEXIBLE DUCT SHALL BE EXPOSED. FLEXIBLE DUCT LENGTHS SHALL NOT EXCEED 6'-0" AT EACH LOW PRESSURE DUCT CONNECTION AND 3'-0" AT EACH VAV TERMINAL BOX CONNECTION.

9. LOW--PRESSURE DUCT RUNOUTS TO DIFFUSERS AND REGISTERS TO BE AS SCHEDULED UNLESS OTHERWISE INDICATED ON PLANS. CONTRACTOR TO PROVIDE A TRANSITION AT NECK OF EACH TERMINAL DEVICE.

10. WHERE BRANCH TAPS OCCUR, PROVIDE INDIVIDUAL SPIN-IN FITTING WITH MANUAL-VOLUME DAMPERS FOR BALANCING. DO NOT USE TYPE WITH AIR SCOOP/EXTRACTOR. ADDITIONALLY, PROVIDE OPPOSED-BLADE VOLUME DAMPERS AT EACH AIR TERMIAL DEVISE.

11. PROVIDE CANVAS, FLAME RETARDANT DUCT CONNECTORS AT ALL CONNECTIONS OF FANS TO DUCTWORK.

12. INTERNALLY LINE ALL EXPOSED SUPPLY DUCT WITH 1" THICK DUCT LINER. REMAINDER OF DUCTWORK TO BE EXTERNALLY INSULATED PER SPECIFICATIONS.

MECHANICAL SPECIFICATIONS:

AIR DEVICES:

1. SQUARE CEILING DIFFUSERS SHALL BE EQUAL TO TITUS "TDC". DIFFUSERS TO BE COMPLETE WITH OPPOSED-BLADE VOLUME DAMPER, FLUSH-MOUNT FRAME, AND FINISH TO BE BAKED-ON, OFF WHITE ENAMEL. EXAMINE ARCHITECTURAL PLANS TO DETERMINE ACTUAL CEILING TYPES TO BE USED.

2. RETURN/EXHAUST AIR REGISTER SHALL BE EQUAL TO TITUS "50-F-5". REGISTER TO BE COMPLETE WITH OPPOSED-BLADE VOLUME DAMPER, FLUSH-MOUNT FRAME, AND FINISH TO BE BAKED-ON, OFF WHITE ENAMEL. EXAMINE ARCHITECTURAL PLANS TO DETERMINE ACTUAL CEILING TYPES TO BE USED.

3. CEILING RETURN FILTER GRILLES TO BE TITUS MODEL 3FL OR EQUAL WITH ½" X ½" EGGCRATE FACE AND DESIGNED FOR 1" DISPOSABLE FILTERS (WHERE NOTED ON PLANS). SEE PLANS FOR SIZES REQUIRED.

4. WALL-MOUNTED TRANSFER GRILLES TO BE TITUS MODEL 3FL OR EQUAL WITH ¾" SPACING AND 45 DEGREE FIXED DEFLECTION. GRILLE TO BE OFF-WHITE

5. SIDEWALL SUPPLY REGISTER DENOTED "SWS," TO BE TITUS MODEL 272RL5 REGISTER OR EQUAL. GRILLES TO BE COMPLETE WITH ¾" SPACED, DOUBLE-DEFLECTION AIRFOIL BLADES, OPPOSED-BLADE VOLUME DAMPER, ¾" BORDER, AND OFF-WHITE FINISH.

6. SIDEWALL RETURN/EXHAUST REGISTERS, DENOTED "SWR" OR "SWE", TO BE TITUS MODEL 23RL5 REGISTER OR EQUAL. REGISTER TO BE COMPLETE WITH 45 DEGREE FIXED BLADES RUNNING PARALLEL TO THE FLOOR, OPPOSED-BLADE VOLUME CONTROL, ¾" BORDER, AND OFF-WHITE FINISH.

7. LOUVERS SHALL BE EXTRUDED ALUMINUM TYPE WITH FIXED DRAINABLE BLADE CONSTRUCTION. FRAME AND BLADES TO BE MINIMUM 0.081" THICK AND 4" 6" DEEP WITH EQUAL BLADE SPACING. PROVIDE ½" MESH ALUMINUM SCREEN WITH REMOVABLE FRAME ON INTERIOR OF LOUVER. LOUVER FINISH TO BE STANDARD NATURAL MILL.

8. FIRE DAMPERS TO BE TYPE "B" UNLESS OTHERWISE NOTED. INSTALLATION TO BE IN STRICT ACCORDANCE WITH MANUFACTURER'S U.L. LISTED INSTALLATION INSTRUCTIONS AND SMACNA FIRE DAMPER GUIDE.

9. COORDINATE LOCATION AND PROVIDE DUCT ACCESS DOORS FOR ACCESS TO ALL FIRE DAMPERS. DUCT ACCESS DOORS MAY BE OMITTED WHERE TYPE "A" FIRE DAMPERS ARE ACCESSIBLE THROUGH SIDEWALL REGISTER FACE. ENSURE DUCT ACCESS DOORS AND DAMPERS ARE ACCESSIBLE THROUGH CEILINGS AND WALLS. LOCATE DUCT ACCESS DOORS ABOVE SPACES WITH LAY-IN CEILINGS OR EXPOSED CEILINGS WHERE POSSIBLE. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR CEILING TYPES.

PIPING:

1. ALL MOISTURE CONDENSATE DRAIN (MCD) LINES SHALL BE INSULATED WITH ½" ARMAFLEX AP TYPE INSULATION RATED FOR COPPER WITH 50-50 SOLDER JOINTS OR SCHEDULE 40 GALVANIZED STEEL INDOORS AND SCHEDULE 40 PVC OUTDOORS. ALL FITTING SHALL BE DRAINAGE PATTERN TYPE. SLOPE PIPING MINIMUM 1/8" PER FOOT TOWARD DRAIN. PROVIDE LINE SIZE CLEANOUTS AT P-TRAP AND SPACED MAXIMUM 50'-0" ON CENTER. SEE PLUMBING DRAWINGS FOR EXACT LOCATION OF FLOOR DRAINS, HUB DRAINS, AND SINK P-TRAP CONNECTIONS FOR MCD DISCHARGE.

2. PROVIDE REFRIGERANT LINES INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS. REFRIGERANT LINES SHALL BE "ACR" SUCTION COPPER TUBING USING SILVER SOLDER AT JOINTS. INSULATE LINES WITH ½" THICK ARMAFLEX AP INSULATION. ALL EXPOSED INSULATION SHALL BE PAINTED WITH TWO COATS OF VINYL LACQUER PAINT WRAPPED WITH 0.016" THICK ALUMINUM JACKET FOR PROTECTION. AS AN OPTION, THE CONTRACTOR MAY USE MANUFACTURER SUPPLIED PRECHARGED REFRIGERANT LINE SETS.

3. PATCH ALL RATED FLOOR AND RATED WALL PENETRATIONS WITH U.L. APPROVED ASSEMBLIES IN ACCORDANCE WITH INTERNATIONAL BUILDING CODE REQUIREMENTS.

SPECIALTIES:

1. PIPE CURBS SHALL BE CUSTOM CURB MODEL CPBA-1, 12" HIGH MINIMUM, OR EQUAL. ROOF CURBS FOR INTAKE OR EXHAUST SHALL BE CUSTOM CURB MODEL CRC-1, 12" HIGH MINIMUM, OR EQUAL. COORDINATE ACTUAL CURB HEIGHT WITH ACTUAL ROOF SYSTEM REQUIREMENTS.

2. FLUES ROUTED OUT OF MECHANICAL ROOM ARE REQUIRED TO BE ENCLOSED IN 2-HOUR CONSTRUCTION. CORRDINATE ENCLOSURE REQUIREMENT WITH OTHER TRADES TO AVOID CONFLICT.

3. UNDERCUT DOORS ¾" TO TOILETS, JANITOR CLOSETS, ETC., WHERE EXHAUSTING OF SPACE IS INDICATED ON DRAWINGS.

4. PROVIDE A MINIMUM 10'-0" SEPARATION BETWEEN ANY FRESH AIR INTAKE AND ANY MECHANICAL EXHAUST, GAS VENT, PLUMBING VENT, OR OTHER VENT OUTLETS.

5. ALL KITCHEN HOOD AND DISHWASHER HOOD EXHAUST DUCT SHALL BE INSTALLED TO SLOPE BACK TO HOOD A MINIMUM 1" PER FOOT WITHOUT DIPS OR TRAPS PER NFPA REQUIREMENTS. WHERE ADEQUATE CLEARANCES TO COMBUSTIBLES IS NOT PROVIDED FOR KITCHEN HOOD EXHAUST SUCT, WRAP DUCT WITH RATED ENCLOSURE EQUIVALENT TO PABCO SUPER FIRETEMP RATED GREASE DUCT ENCLOSURE. PROTECT BOARD WITH TWO LAYERS OF INSULATION COATING EQUIVALENT TO FOSTER 30-76.

6. U.L. LISTED, ONE-HOUR RATED DOOR GRILLES TO BE VENTILOUVRE FD264 BY AIROLITE, LOUVERS AND DAMPERS MODEL 1900-A, OR EQUAL. GRILLE TO HAVE INVERTED "V" BLADES AND 135 DEGREE FUSIBLE LINK. COORDINATE SIZE REQUIREMENTS WITH DOOR MANUFACTURER.

7. PAINT CHILLERS, ROOF FANS AND GRAVITY HOODS, GAS VENTS, BRICK VENTS, ETC., TO MATCH SURROUNDING SURFACES IN ACCORDANCE WITH ARCHITECTS INSTRUCTIONS.

CONTROLS:

1. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION OF ALL LOW VOLTAGE CONTROL WIRING AND CONDUIT REQUIRED TO OPERATE THE HVAC EQUIPMENT AS SPECIFIED HEREIN. WIRING SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF NEC. EQUIPMENT STARTERS AND DISCONNECTS SHALL BE FURNISHED UNDER THIS DIVISION FOR INSTALLATION BY DIVISION 16 CONTRACTOR. POWER WIRING SHALL BE INSTALLED BY DIVISON 16 CONTRACTOR.

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COMcheck Software Version 4.1.5.5

Mechanical Compliance Certificate

Project Information

Energy Code:	2018 IECC
Project Title:	Edward's Oil
Location:	Columbia, Tennessee
Climate Zone:	4a
Project Type:	New Construction

Construction Site: Columbia, TN

Owner/Agent:

Designer/Contractor: Angela Buckner, DFH Services, Nashville, TN

Additional Efficiency Package(s)

Credits: 1.0 Required 0.0 Proposed

Mechanical Systems List

Quantity	System Type & Description
3	HVAC System 1 (Single Zone): Heating: 1 each - Central Furnace, Gas, Capacity = 85 kBtu/h Proposed Efficiency = 80.00% Et, Required Efficiency: 80.00 % Et or 80% AFUE Cooling: 1 each - Single Package DX Unit, Capacity = 85 kBtu/h, Air-Cooled Condenser, Air Economizer Proposed Efficiency = 11.00 EER, Required Efficiency: 11.00 EER + 12.6 IEER Fan System: None
1	Water Heater 1: Gas Storage Water Heater, Capacity: 52 gallons, Input Rating: 75 kBtu/h w/ Circulation Pump No minimum efficiency requirement applies

Mechanical Compliance Statement

Compliance Statement: The proposed mechanical design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 2018 IECC requirements in COM*check* Version 4.1.5.5 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Angela Buckner — Name - Title
Angela Buckner — Signature
08/09/2022 — Date

Project Title: Edward's Oil
Data filename: Z:\Shared\2022 Project Folder\22-354 Edward's Oil Quick Mart Columbia - MEP - Meridian\Mechanical\COMMM.cck
Report date: 08/09/22
Page 1 of 10

EDWARD'S OIL
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REVISIONS:

DELTA	DESCRIPTION	DATE

DATE OF ISSUE:	09.12.2022
MA PROJECT NO:	0336-22
PROJECT PHASE:	CD
DRAWN BY:	DF&H SERVICES

HVAC SPECIFICATIONS

M-4.1

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GENERAL PLUMBING NOTES

1. ALL FIXTURES, EQUIPMENT AND PIPING SHALL COMPLY WITH INTERNATIONAL PLUMBING CODE, NFPA, STATE AND LOCAL CODES.
2. PLUMBING CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS AND INSPECTION CERTIFICATES.
3. OMISSIONS OR MISDESCRIPTION OF DETAILS OF WORK WHICH ARE EVIDENTLY NECESSARY TO CARRY OUT THE INTENT OF THE DRAWINGS, OR WHICH ARE CUSTOMARILY PERFORMED, SHALL NOT RELIEVE THE CONTRACTOR FROM PERFORMING SUCH OMISSIONS AND DETAILS OF WORK, BUT THEY SHALL BE PERFORMED AS IF FULLY AND CORRECTLY SET FORTH AND DESCRIBED.
4. PORTIONS OF WALLS AND ARCHITECTURAL FEATURES MAY HAVE BEEN OMITTED FROM THIS PLAN FOR CLARITY OF MECHANICAL FEATURES. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF FIXTURES, AND DIMENSIONS.
5. VERIFY FIELD DIMENSIONS. COORDINATE WORK WITH ALL OTHER TRADES TO AVOID SPACING AND ROUTING INTERFERENCES.
6. REFER TO SITE PLAN FOR ROUTING OF GAS, WATER, SEWER, AND STORM DRAIN PIPING.
7. FIELD VERIFY THE LOCATION AND ELEVATION OF SITE UTILITIES PRIOR TO START OF CONSTRUCTION.
8. LAY OUT PIPING BASICALLY AS SHOWN. MAJOR CHANGES IN LAYOUT MAY BE MADE ONLY WITH WRITTEN CONSENT OF ARCHITECT OR ENGINEER.
9. PROVIDE ELECTRICAL CONTRACTOR WITH EXACT WIRING REQUIREMENTS. IF ELECTRICAL REQUIREMENTS VARY FROM THOSE INDICATED ON PLANS, PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ASSOCIATED ADDITIONAL COSTS.
10. SANITARY PIPING SHALL BE RUN BENEATH THE SLAB. PIPING ABOVE CEILING SHALL BE INSTALLED TIGHT TO STRUCTURAL MEMBERS, OR WITHIN THE BAR JOIST WEBBING.
11. POTABLE WATER PIPING SHALL BE INSTALLED ABOVE THE CEILING. CLEARANCE ABOVE CEILING IS MINIMAL. LAYOUT OF HVAC DUCTWORK SHALL HAVE PRIORITY OVER OTHER TRADES. COORDINATE CAREFULLY WITH GENERAL CONTRACTOR PRIOR TO LAYING OUT WORK. IF REQUIRED, WATER AND VENT PIPING SHALL BE INSTALLED WITHIN THE JOIST WEBBING.
12. ALL COMPONENTS USED IN PLENUM SPACES MUST BE CONSTRUCTED OF NON-COMBUSTIBLE MATERIAL.
13. PLUMBING FIXTURES SHALL BE EQUAL TO FIXTURES SCHEDULED.
14. COLOR OF FIXTURES AND TRIM SHALL BE AS SELECTED BY ARCHITECT.
15. FIXTURES INDICATED AS BARRIER-FREE SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES ACT (ADA).
16. WATER PIPES SHALL HAVE STOPS AT EACH FIXTURE CONNECTION.
17. ALL WATER LINES, BOTH HOT AND COLD, SHALL BE AS FOLLOWS:
    A. LINES BELOW GRADE SHALL BE TYPE "K" SOFT COPPER (UNLESS OTHERWISE NOTED).
    B. LINES ABOVE GRADE SHALL BE TYPE "L" SOFT COPPER (UNLESS OTHERWISE NOTED).
    C. FITTINGS SHALL BE OF HARD DRAWN COPPER OF ASTM SPEC B-88.
    D. ALL JOINTING SHALL BE WITH LEAD-FREE SILVER SOLDER.
18. ALL WATER PIPING ABOVE GRADE, 1-1/4" AND SMALLER SHALL BE INSULATED WITH 1/2" THICK FIBERGLASS WITH A MINIMUM 'R' VALUE OF 3.6.
19. ALL WATER PIPING ABOVE GRADE, 1-1/2" AND LARGER SHALL BE INSULATED WITH 1" THICK FIBERGLASS WITH A MINIMUM 'R' VALUE OF 3.6.
20. PROVIDE SHUTOFF VALVES AT ALL MAIN BRANCH LINES FOR ISOLATION.
21. WALL HYDRANTS SHALL BE MOUNTED 18" ABOVE FINISHED GRADE.
22. INSTALL SHOCK ABSORBERS ON ALL FLUSH VALVE FIXTURES AND QUICK-CLOSING INLET VALVES. ENSURE THAT ACCESS PANELS ARE INSTALLED FOR ALL SHOCK ABSORBERS.
23. ALL WASTE AND VENT PIPING SHALL BE SCHEDULE 40 PVC CONFORMING TO ASTM D-1785. PIPING 2" AND SMALLER SHALL BE LAID OUT AT 1/4" PER FOOT GRADE. PIPING 3" AND LARGER SHALL BE LAID OUT AT 1/8" PER FOOT GRADE.
24. ALL WASTE PIPING BELOW GRADE SHALL BE CAST IRON PIPING, HUB AND SPIGOT CONNECTIONS: ASTM A 74 SERVICE WEIGHT CAST IRON SOIL PIPE AND FITTINGS, COATED INSIDE AND OUT. PROVIDE ASTM C 564 RUBBER GASKET, WITH DIMENSIONS REQUIRED FOR PIPE CLASS, FOR EACH HUB.
25. ALL WASTE AND VENT PIPING ABOVE GRADE SHALL BE CAST IRON PIPING, NO-HUB CONNECTIONS: ASTM A 888 OR CISPI STANDARD 301. COUPLINGS SHALL CONFORM TO ASTM C 1277, AND SHALL CONSIST OF AN ASSEMBLY OF METAL HOUSING, CORROSION-RESISTANT FASTENERS, AND ASTM C 564 RUBBER SLEEVE OR GASKET WITH INTEGRAL, CENTER PIPE STOP.
26. ALL GREASE WASTE PIPING SHALL BE SCHEDULE 40 PVC CONFORMING TO ASTM D-1785. ALL PIPING SHALL BE LAID OUT AT 1/4" PER FOOT GRADE.
27. ALL WASTE PIPING 2" AND SMALLER SHALL BE LAID OUT AT 1/4" PER FOOT GRADE. PIPING 3" AND LARGER SHALL BE LAID OUT AT 1/8" PER FOOT GRADE. ALL GREASE WASTE PIPING SHALL BE LAID OUT AT 1/4" PER FOOT GRADE.
28. ALL VENT PIPING WITHIN PLENUM OR AIR-HANDLING SPACES SHALL BE COPPER OR CAST IRON, AND SHALL BE LABELED AS "VENT".
29. ALL VENTS SHALL BE A MINIMUM OF 10'-0" AWAY FROM FRESH AIR INTAKES AND OPERABLE WINDOWS.
30. VENT PIPING SHALL BE LAID OUT SUCH THAT ALL ROOF PENETRATIONS SHALL BE ON BACK SIDE OF ROOF. PAINT EXPOSED VENT PIPING TO MATCH ROOF.
31. COORDINATE ROOF PENETRATIONS WITH ROOFING CONTRACTOR. ENSURE THAT WARRANTY REQUIREMENTS OF ROOFING MANUFACTURER ARE SATISFIED.
32. GAS PIPING SHALL BE BLACK STEEL. GAS PIPING TO BE INSTALLED BELOW GRADE SHALL BE MILL WRAPPED FOR DIRECT BURIAL.
33. FIT ALL PIPES PASSING THROUGH MASONRY AND JOB CAST CONCRETE WITH SLEEVES. CAULK SPACE BETWEEN PIPE AND SLEEVE.
34. ALL WATER LINES SHALL BE CAPPED AND TESTED AT 100 PSI FOR 24 HOURS. ALL WASTE PIPING SHALL BE TESTED WITH A 10'WATER COLUMN FOR A 2 HR PERIOD WITH NO CHANGE IN LEVEL.
35. DISINFECTION OF POTABLE WATER SYSTEM - NEW OR REPAIRED SYSTEMS SHALL BE PURGED OF DELETERIOUS MATTER AND DISINFECTED PRIOR TO UTILIZATION. THE METHOD TO BE FOLLOWED SHALL BE THAT PRESCRIBED BY THE HEALTH AUTHORITY OR WATER PURVEYOR HAVING JURISDICTION. IN THE ABSENCE OF A PRESCRIBED METHOD, THE PROCEDURE DESCRIBED IN EITHER AWWA C651 OR AWWA C652, OR AS DESCRIBED IN SECTION 610 OF THE INTERNATIONAL PLUMBING CODE.
36. MATERIALS, EQUIPMENT, AND INSTALLATION SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR FROM DATE OF ACCEPTANCE. DEFECTS WHICH APPEAR DURING THIS PERIOD SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
37. WHEN MAKING FINAL CONNECTIONS TO EQUIPMENT AND PLUMBING FIXTURES, CONTRACTOR SHALL FURNISH CUTOFFS, TRAPS, STOPS, FAUCETS, ELBOWS, VACUUM BREAKERS, INSULATION, ETC.
38. ENSURE THAT ALL PENETRATIONS OF FIRE WALLS ARE PROPERLY FIRESTOPPED.
39. ALL PENETRATIONS THROUGH WALLS AND FLOORS SHALL BE SLEEVED, PATCHED, OR FIRE PROOFED AS REQUIRED. IN EXPOSED AREAS, PATCHING SHALL MATCH FINISH. SEE ARCHITECTURAL DRAWINGS.
40. ALL OVERFLOW SHALL BE INSULATED WITH JACKETED PIPE INSULATION. ALL HORIZONTAL RAINWATER PIPING FROM ROOF DRAINS SHALL BE INSULATED WITH JACKETED PIPE INSULATION.
41. ALL FLOOR SINKS AND/OR FLOOR DRAINS IN THE KITCHEN AREA NOT GOING TO GREASE WASTE SHALL BE PROVIDED WITH 1" DAM AROUND IT TO PREVENT IT FROM BEING AN AREA DRAIN.
42. PLUMBING DRAWINGS MUST BE CAREFULLY COORDINATED WITH FOOD SERVICE DRAWINGS. REFER TO FOOD SERVICE DRAWINGS FOR EQUIPMENT LEGENDS, ROUGH-IN DIMENSIONS, INDIRECT WASTE REQUIREMENTS, AND OTHER SPECIFIC EQUIPMENT REQUIREMENTS.
43. FOOD SERVICE EQUIPMENT TO BE PROVIDED BY FOOD SERVICE CONTRACTOR AND INSTALLED BY PLUMBING CONTRACTOR UNLESS OTHERWISE INDICATED. PROVIDE ALL MATERIAL AND LABOR AS REQUIRED FOR COMPLETE INSTALLATION OF FOOD SERVICE EQUIPMENT, INCLUDING WATER, WASTE AND GAS CONNECTIONS, THE EXTENSION OF INDIRECT WASTE PIPING, AND THE INSTALLATION OF ANY PLUMBING COMPONENTS SHIPPED LOOSE. PROVIDE STOPS OR VALVES AT ALL EQUIPMENT CONNECTIONS.
44. REFER TO ARCHITECTURAL REQUIREMENTS FOR THE NECESSITY OF SUBMITTALS. SUBMITTALS ARE NOT REQUIRED UNLESS REQUIRED BY THE ARCHITECT. IF SUBMITTALS ARE REQUIRED PLEASE SUBMIT IN ELECTRONIC FORMAT (HARDCOPIES WILL NOT BE REVIEWED) THE FOLLOWING SECTIONS/EQUIPMENT FOR REVIEW : PLUMBING FIXTURES.

PLUMBING GENERAL NOTES

PLUMBING

PLUMBING ACCEPTABLE MANUFACTURERS

a. Fixtures: Kohler, American Standard, Toto, Zurn.
b. Brass Trim: McGuire Engineered Brass Company, Brasscraft, Zurn.
c. Roof drains, floor drains, floor sinks, hydrants, carriers and p-traps: Jay R. Smith, Zurn, Wade Josam, Mifab.
d. Flush valves: Toto, Sloan, Zurn.
e. Toilet Seats: Olsmite, Beneke, Bemis, Church, Centoco.
f. Faucets: T & S Brass and Bronze Works, Delta Commercial, Chicago Faucet Company, Kohler, Zurn, Symmons, Toto.
g. Stainless steel sinks: Elkay, Just, Kohler.
h. Shower valves (thermostatic and/or pressure balancing type) : Symmons, Leonard, Powers, Lawler.
i. Shower stalls: Lasco Bathware, Aqua Bath, Aquarius, Watermark, Florestone.
j. Pre-fabricated insulation on water lines and p-trap under barrier free lavatories and sinks: Brocar Products, Inc., Trap Wrap Truebro, Inc., McGuire Pro-wrap.
k. Thermostatic mixing valves: Symmons, Holly, Lawler, Powers, Leonard.
l. Emergency equipment: Encon, Haws, Guardian, Western, Lab Enterprises.
m. Garbage disposers: In-sinkerator, Whirlaway.
n. Electric water coolers: Elkay, Haws, Halsey, Taylor, Oasis.
o. Combination toilet/lavatory fixtures: Acorn, Bradley, Willoughy Industries.
p. Ice maker connection boxes: Acorn, Guy Gray, Sioux Chief.
q. Washing machine connection boxes: Acorn, Guy Gray, Sioux Chief.
r. Service Sinks: Stern Williams, Fiat, Zurn.

PLUMBING FIXTURES

P-5 WATER CLOSET - TANK TYPE - BARRIER FREE
a. Fixture: Toto #CST744S. Drake tank type water closet, 1.6 gallon per flush.
b. Seat: Toto #SC534 white open front seat with check hinge.
c. Trim: McGuire #H-2165 supply stop.

P-6 WATER CLOSET - TANK TYPE
a. Fixture: Toto #CST744S Drake tank type water closet, 1.6 gallon per flush.
b. Seat: Toto #SC534 white open front seat with check hinge.
c. Trim: McGuire #H-2165 supply stop.

P-7 URINAL - WALL HUNG - BARRIER FREE
a. Fixture: Toto #UT447E washout type urinal, 0.5 gallon per flush.
b. Valve: Toto #TMU1LN12#CP flush valve, 0.5 gallon per flush.
c. Mounting: 17" A.F.F. to rim.
d. Carrier: Mifab #MC-31 fixture carrier.

P-8 URINAL - WALL HUNG
a. Fixture: Toto #UT447 washout type urinal, 0.5 gallon per flush.
b. Valve: Toto #TMU1LN12#CP flush valve, 0.5 gallon per flush.
c. Mounting: 21" A.F.F. to rim.
d. Carrier: Mifab #MC-31 fixture carrier.

P-9 LAVATORY - WALL HUNG - BARRIER FREE
a. Fixture: Toto #LT307.4 wall hung lavatory with 4" centers.
b. Faucet: Symmons #S-20-0 single lever faucet
c. Trim: McGuire #155WC grid drain with 1-1/4" tailpiece offset for wheelchair use. McGuire #8872 1-1/4" P-trap, McGuire #H-2165 supply stops.
d. Mounting: 34" A.F.F. to basin rim.
e. Pre-fabricated insulation on water lines and P-trap under barrier free lavatories and sinks: Brocar Products, Inc. Trap Wrap, TruBro, Inc. Handi Lav-Guard, or McGuire Pro-Wrap.
f. Thermostatic Mixing Valve: Apollo #MVD-LF (34D Series) tempering water valve to be located beneath lavatory.
g. Carrier: Mifab #MC-41 fixture carrier.

P-10 LAVATORY - WALL HUNG
a. Fixture: Toto #LT307.4 wall hung lavatory with 4" centers.
b. Faucet: Symmons #S-20-0 single lever faucet
c. Trim: McGuire #155A grid drain with 1-1/4" tailpiece, McGuire #8872 1-1/4" P-trap, McGuire #H-2165 supply stops.
d. Mounting: 31" A.F.F. to basin rim.
e. Thermostatic Mixing Valve: Apollo #MVD-LF (34D Series) tempering water valve to be located beneath lavatory.
f. Carrier: Mifab #MC-41 fixture carrier.

P-11 LAVATORY - DROP IN - BARRIER FREE
a. Fixture: Toto #LT501.4 self-rimming lavatory with 4" centers.
b. Faucet: Symmons #S-20-0 single lever faucet
c. Trim: McGuire #155A grid drain with 1-1/4" tailpiece, McGuire #8872 1-1/4" P-trap, McGuire #H-2165 supply stops.
d. Mounting: 31" A.F.F. to basin rim.
e. Thermostatic Mixing Valve: Apollo #MVD-LF (34D Series) tempering water valve to be located beneath lavatory.

P-21 FLOOR DRAIN - REGULAR
a. Fixture: Mifab #F1000-C-5-MG floor drain with sediment bucket and trap sealer.

P-23 FLOOR DRAIN - KITCHEN
a. Fixture: Mifab #F1000-C-5-11-MG floor drain white acid resistant porcelain enamel coated interior and sediment bucket and trap sealer.

P-24 FLOOR SINK - KITCHEN 1/2 GRATE
a. Fixture: Mifab #FS-1520-FL-5-150 floor sink with white acid resistant porcelain enamel coated interior, sediment bucket, and 1/2 grate.

P-29 WALL HYDRANT - COLD WATER - NON-FREEZE
a. Fixture: Mifab #WHY-20 non-freeze hydrant with vacuum breaker. Finish to be selected by architect/owner.
b. Mounting: 18" A.F.G.

P-42 SINK - S.S. - (ROUGH-IN ONLY) - SINGLE COMPARTMENT
a. Fixture: Stainless steel sink, strainers, tailpieces and faucet by others, Contractor installed.
b. Trim: McGuire #8912 1-1/2" P-trap, McGuire #H-2165 supply stops.
c. Thermostatic Mixing Valve: Apollo #MVD-LF (34D Series) tempering water valve to be located beneath sink.

P-43 SINK (ROUGH-IN ONLY) - 3 COMPARTMENT
a. Fixture: Stainless steel sink, strainers, tailpieces, and faucets by others, Contractor installed.
b. Trim: McGuire #8904 - 2" p-trap (3 reqd), #H-2165 supply stops (2 reqd)

EXECUTION

FIXTURE CONNECTIONS

A. Connect to plumbing fixtures and equipment provided under this schedule, specifications, architectural drawings, and manufacturer's shop drawings. Provide rough-in connections as shown on drawings.
B. Use schedule and details on drawings or manufacturer's shop drawings for connection sizes to fixtures.
C. Provide separate p-trap for each fixture, floor drain, and piece of equipment.
D. Provide outlet devices which limit the flow of hot water to lavatories and sinks to a minimum of 0.5 GPM, sized as recommended by manufacturer and as required under ASHRAE Standard 90-75, paragraph 7.7.2 or local or state energy codes.
E. Install lavatories and sinks with a minimum of 4" clearance on each side from a wall or partition.
F. Install temperature limiting devices that comply with IPC 607.1.1 and 607.1.2 requirements.
G. Install water closets with a minimum of 15" clearance from the centerline of the bowl to each side from a wall, partition, divider, or another fixture. Barrier free water closet shall have a minimum of 18" clearance.
H. Water closets shall be a minimum of 21" clearance in front of the bowl.
I. Coordinate dimensions required for minimum clearances with other trades.
J. Caulk around joists of fixtures on wall or floor, and fixtures backed up to wall.
K. Mount fixtures rigid to walls as shown on drawings or details.
L. Connect wall urinals to waste piping with red brass nipples.
M. Install a dropped ear "L", mounted on treated wood backing for rigid support for all shower heads.
N. Install flush valves on wide side of water closet as required for ADA accessibility.
O. Where automatic electronic flushing devices and faucets are specified, coordinate installation with electrical contractor.

TESTING AND CLEANING
A. Inspect and test work to insure that it is installed in accordance with drawings and specification and is functioning as designed. Test procedures and pressures per local and state codes.
B. Correct all deficiencies found and retest.

PLUMBING FIXTURE SPECIFICATION

FIXTURE CONNECTION SCHEDULE

IDENTITY	FIXTURE		C.W.	H.W.	WASTE
P-5	WATER CLOSET	TANK TYPE - BARRIER FREE	1/2"	---	4"
P-6	WATER CLOSET	TANK TYPE	1/2"	---	4"
P-7	URINAL	WALL HUNG - BARRIER FREE	3/4"	---	2"
P-8	URINAL	WALL HUNG		---	2"
P-9	LAVATORY	WALL HUNG - BARRIER FREE	1/2"	1/2"	1 1/4"
P-11	LAVATORY	DROP IN - BARRIER FREE	1/2"	1/2"	1 1/4"
P-21	FLOOR DRAIN	REGULAR	---	---	AS SHOWN
P-23	FLOOR SINK	FULL GRATE	---	---	AS SHOWN
P-24	FLOOR SINK	HALF GRATE	---	---	AS SHOWN
P-42	SINK	ROUGH-IN ONLY - SINGLE COMPARTMENT	1/2"	1/2"	1 1/2"
P-43	SINK	ROUGH-IN ONLY - THREE COMPARTMENT	1/2"	1/2"(140')	2"

PLUMBING LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
———	COLD WATER		BALL VALVE
———	HOT WATER		CHECK VALVE
———	HOT WATER RECIRCULATION		UNION IN PIPE
———	WASTE LINE		EXTERIOR CLEANOUT
———	VENT PIPE	P-1,ETC	FIXTURE IDENTIFICATION
——F——	FIRE LINE OR MAIN		CONNECTION TO EXISTING
——G——	GAS LINE OR MAIN		CAP ON LINE
——GW——	GREASE WASTE		PIPE TURNED UP
——RWL——	RAIN WATER LEADER		PIPE TURNED DOWN
——SW——	STORM WATER		BALANCING VALVE
	CLEANOUT (ABOVE CEILING)		GAS COCK
——MV——	MEDICAL VACUUM		
——O2——	OXYGEN		
——N2O——	NITROUS OXIDE		

PLUMBING ABBREVIATIONS

C.W	COLD WATER	E.C.O.	EXTERIOR CLEANOUT
H.W.	HOT WATER	R.D.	ROOF DRAIN
H.W.R.	HOT WATER RECIRC	F.D.	FLOOR DRAIN
V.T.R.	VENT THRU ROOF	A.F.F.	ABOVE FINISHED FLOOR
W	WASTE	A.F.G.	ABOVE FINISHED GRADE
R.W.L.	RAIN WATER LEADER	W.C.O.	WALL CLEANOUT
S.W.	STORM WATER	S.S.	SANITARY SEWER
G.W.	GREASE WASTE	C.O.	CLEANOUT
H.W.R.P.	HOT WATER RECIRC PUMP	F.SP.	FIRE STANDPIPE

ELECTRIC WATER HEATER SCHEDULE

SYSTEM	TYPE	NO. REQ'D	MFGR.	MODEL NO.	EWT	LWT	STORAGE CAPACITY	FLOW RECOVERY	TANK SIZE	REMARKS
DOMESTIC (EWH-1)	ELEC	1	AO SMITH	DRE-52-12	50	120	52	50	22X60	12 KW 208/1/60

PUMP SCHEDULE

SYSTEM	TYPE	MANUFACTURER	MODEL NO.	G.P.M.	HEAD FT.	PUMP SUCTION F.T.	PUMP DISCHARGE F.T.	H.P.	VOLTAGE	REMARKS
HOT WATER RECIRC. (HWRP-1)	INLINE	ARMSTRONG	50B	10	12	---	---	---	120/1	0.95 AMPS

NOTE: PROVIDE WITH AQUASTAT AND TIMER

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REVISIONS:

DELTA	DESCRIPTION	DATE

DATE OF ISSUE: 09.12.2022
MA PROJECT NO: 0336-22
PROJECT PHASE: CD
DRAWN BY: DF&H SERVICES

PLUMBING LEGENDS AND SCHEDULES

P-0.1

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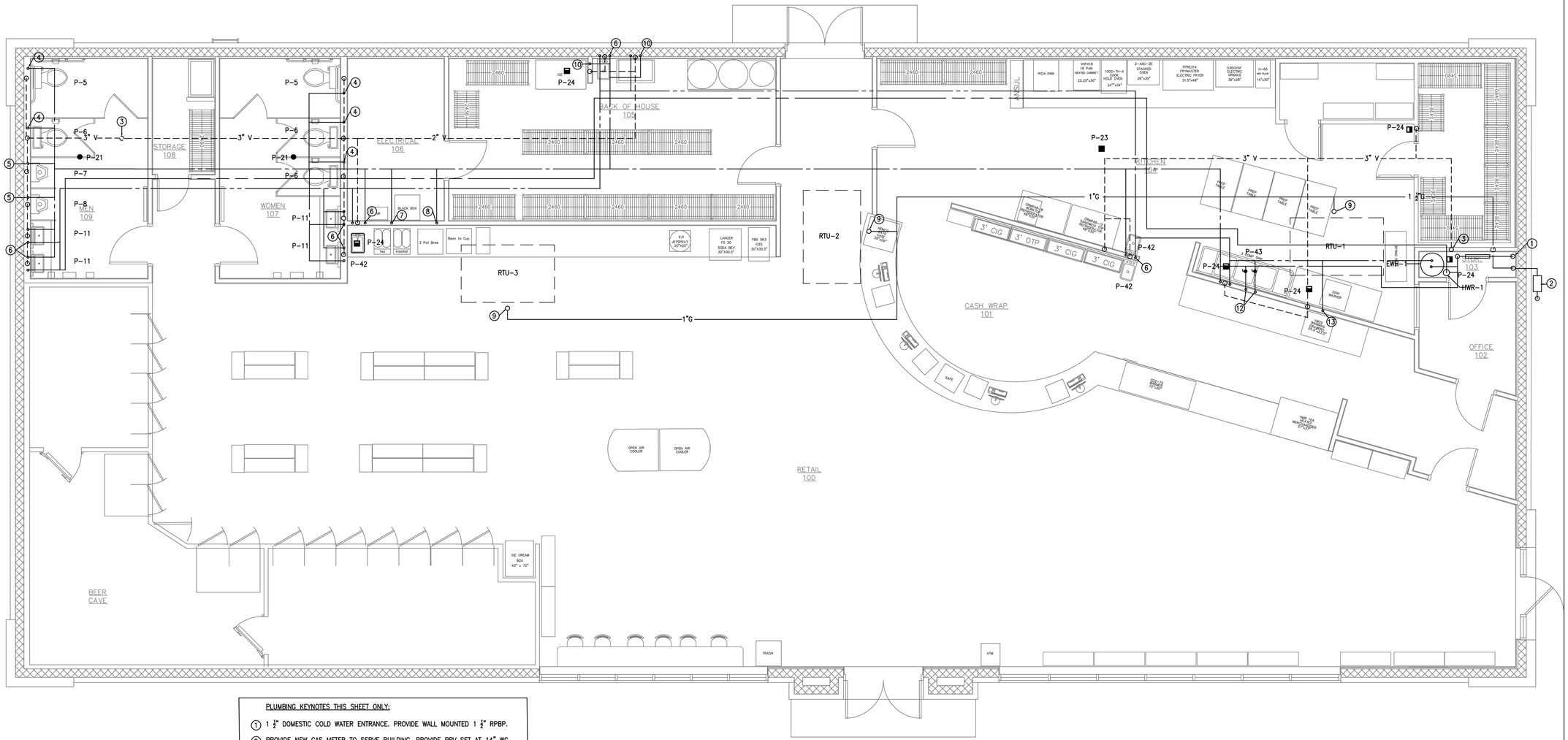

PLUMBING KEYNOTES THIS SHEET ONLY:

1. 1 ½" DOMESTIC COLD WATER ENTRANCE. PROVIDE WALL MOUNTED 1 ½" RPBP.
2. PROVIDE NEW GAS METER TO SERVE BUILDING. PROVIDE PRV SET AT 14" WC TO SERVE MECHANICAL EQUIPMENT ON ROOF.
3. 3" VENT UP THRU ROOF.
4. 1/2" CW DOWN IN WALL STUB OUT TO WATER CLOSET.
5. 1/2" CW DOWN IN WALL STUB OUT TO URINAL.
6. 1/2" CW & HW DOWN IN WALL STUB OUT TO SINK.
7. 1/2" CW DOWN IN WALL STUB OUT TO BEVERAGE DISPENSER.
8. 1/2" CW DOWN IN WALL STUB OUT TO COFFEE BREWER.
9. ROUTE 1" GAS LINE TO GAS GENERATORS RTU-1,2,&3.
10. 1/2" CW & HW DOWN IN WALL TO MOP SINK.
11. 1/2" CW DOWN IN WALL STUB OUT TO ICE MAKER WITH BIN.
12. 1/2" CW & HW DOWN IN WALL STUB OUT TO 3 COMPARTMENT SINK.
13. 1/2" HW DOWN IN WALL STUB OUT DISHWASHER.

PLUMBING PLAN

SCALE: 1/4" = 1'-0"

PLAN NORTH

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DELTA	DESCRIPTION	DATE

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PLUMBING PLAN

P-2.1

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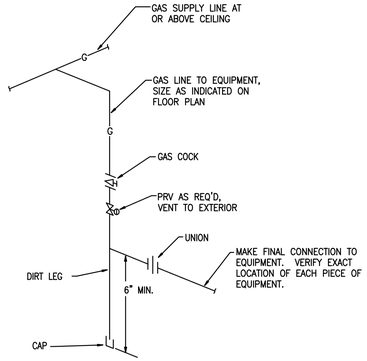
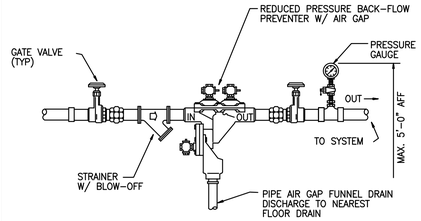
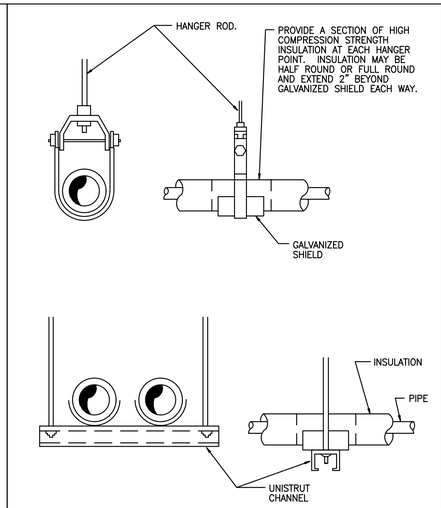


TYPICAL GAS CONNECTION | 4

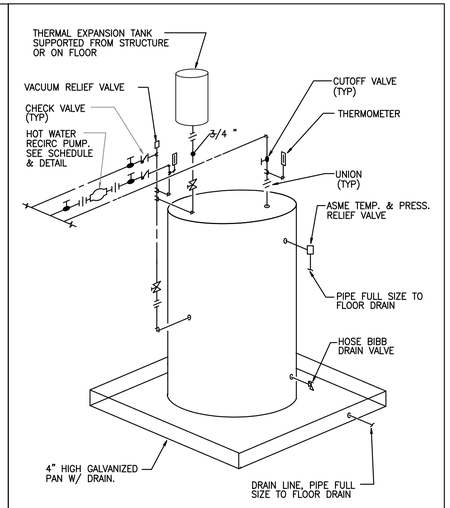


NOTE:
1. SEE FLOOR PLAN FOR SIZE OF R.P.B.P. & PIPE.

BACKFLOW PREVENTER | 3



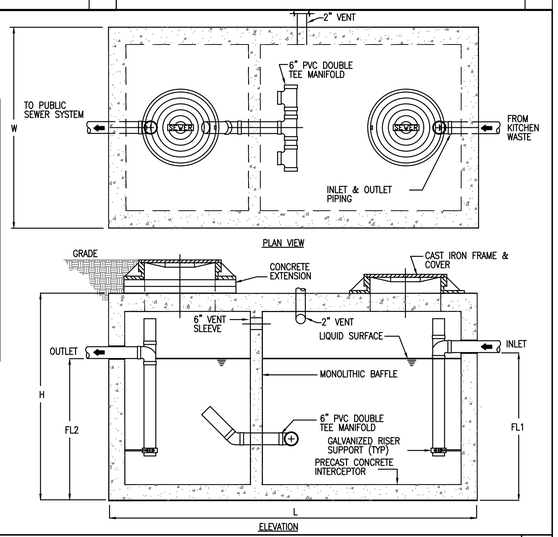
WATER PIPING HANGER | 2



ELECTRIC WATER HEATER | 1

GREASE INTERCEPTOR SCHEDULE						
MODEL NO.	CAPACITY USGal	LENGTH L	WIDTH W	HEIGHT H	INLET FL1	OUTLET FL2
GT-500	500	7'-10"	4'-4"	4'-6"	3'-3"	3'-0"
GT-750	750	7'-10"	4'-4"	6'-0"	4'-5"	4'-2"
GT-1000	1,000	8'-8"	5'-0"	6'-0"	4'-9"	4'-6"
GT-1500	1,500	9'-2"	5'-8"	7'-0"	5'-9"	5'-6"
GT-2000	2,000	13'-0"	7'-0"	6'-0"	4'-9"	4'-6"
GT-2500	2,500	13'-0"	7'-0"	7'-0"	5'-9"	5'-6"
GT-3000	3,000	13'-0"	7'-0"	8'-0"	6'-9"	6'-6"
GT-3500	3,500	13'-0"	7'-0"	8'-6"	7'-6"	7'-3"
GT-4000	4,000	13'-0"	7'-0"	9'-6"	8'-6"	8'-3"
GT-5000	5,000	16'-0"	8'-6"	8'-0"	6'-9"	6'-6"
GT-6000	6,000	16'-0"	8'-6"	9'-0"	7'-9"	7'-6"
GT-7000	7,000	18'-0"	9'-0"	9'-2"	7'-11"	7'-8"
GT-8000	8,000	18'-0"	9'-0"	10'-0"	8'-9"	8'-6"
GT-9000	9,000	18'-0"	9'-0"	10'-10"	9'-7"	9'-4"
GT-10000	10,000	18'-0"	9'-0"	12'-0"	10'-9"	10'-6"

PROVIDE PARKS EQUIPMENT CO.
MODEL NO. GT-1000
OR APPROVED EQUAL



GREASE INTERCEPTOR | 6

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REVISIONS:

DELTA	DESCRIPTION	DATE

DATE OF ISSUE:	09.12.2022
MA PROJECT NO:	0336-22
PROJECT PHASE:	CD
DRAWN BY:	DF&H SERVICES

PLUMBING DETAILS

P-3.1

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SECTION 224000 - PLUMBING FIXTURES
PART 1 - GENERAL
1.01 WORK INCLUDED
A. Comply with provisions of Section //CSI //MF95 15051//MF04 22 05 00//END_CSI:
B. Provide plumbing fixtures, trim and related items such as supplies, traps, drains, cleanouts, water closet flanges, bolts, seats and covers, fixture supports and other accessory items.
C. Coordinate fixture requirements by reviewing architectural, structural, and equipment drawings. Install fixtures in accordance with Contract Drawings and manufacturer's rough-in drawings.
1.02 RELATED WORK
A. Section //CSI //MF95 15414//MF04 22 13 19//END_CSI: Sanitary Waste Piping Specialties
B. Section //CSI //MF95 15410//MF04 22 11 16//END_CSI: Domestic Water Piping
1.03 CODES AND STANDARDS
A. Perform work in accordance with applicable codes and standards enforced by local authorities.
B. All barrier free fixtures shall be installed in accordance with the Americans with Disabilities Act (ADA) Rules and Regulations.
1.04 SUBMITTALS
A. Submit manufacturer's product data for review.
PART 2 - PRODUCTS
2.01 ACCEPTABLE MANUFACTURERS
A. Fixtures: Kohler, American Standard, Toto, Gerber, Zurn, Sloan.
B. Brass Trim: McGuire, Engineered Brass Company, Kohler, Cambridge Brass, ProFLo.
C. Hydrant, floor drains, shock absorbers, carriers and p-traps: Jay R. Smith, Zurn, Wade, Josam, Watts, MIFAB.
D. Flush valves: Flush valves: //OPT_AR //CHO_S Sloan-Sloan-DFB, Zurn Z-6000AV//CHO_N Sloan Regal, Zurn Z6000-PL//END_OPT with low force handles for ADA compliance.
E. Toilet seats: Olsmite, Beneke, Bemis, Church, Kohler.
F. Faucets: T&S Brass, Delta HDF, Water Saver, Chicago Faucet Company, Kohler, Zurn, Symmons, Moen.
G. Stainless steel sinks: Elkay, Just, Kohler.
J. Pre-fabricated insulation on water lines and p-trap under lavatory drains, and sinks:
1) Trap Wrap TrueBro, Inc., HandiLav-Guard McGuire Pro-wrap, Plumberex-Handishield.
2.02 MATERIALS
A. Wall hung lavatories: Furnish complete with wall mounting brackets.
B. Countertop sinks: Furnished complete with mounting rings where required.
C. Fixture color: White unless specified otherwise.
D. Faucets and flush valves: Provide either integral or attached supply stops with nipples.
E. Clamping device: Provide for drains installed in slabs above grade.
F. Caulking: General Electric silicon sanitary sealant or equal.

SECTION 221316 - SANITARY WASTE AND VENT PIPING
PART 1 - GENERAL
A. RELATED WORK
B. Section 22 05 00: Common Work Results for Plumbing
1.01 SUBMITTALS
A. Submit product data for review on piping and fittings. Submittal data shall include:
1. Manufacturer of pipe.
2. Tests or listing by recognized testing laboratory that certifies material composition is in accordance with ANSI/ASTM requirements.
3. Product data for pipe and fittings to be used on each piping system.
PART 2 - PRODUCTS
2.01 PVC PIPE AND FITTINGS
A. Polyvinyl chloride sewer pipe and fittings (4" to 15" diameters) shall be as manufactured by H and W Industries or equal.
B. PVC pipe, fittings, cement, and joint cleaner for entire project shall be supplied by a single manufacturer.
C. PVC schedule 40, Type I, DWV, ASTM D-2665, 1120, 160 PSI at 73 degrees F. Solvent cement shall meet ASTM No. D-2564 for (PVC-DWV) plastic and pipe fittings. If permitted by governing code authority, may be used for:
1. Air handling unit condensate drains above grade only if room is not used as return air plenum.
2. Inside gravity, under floor slab sanitary and storm waste drainage systems, with waste temperatures below 140 degrees F.
3. Condensate drains from rooftop units shall be UV resistant where exposed.
D. PVC schedule 40, Type-PSM, Sewer Pipe, ASTM D-3034 with SDR as gasketed slip type joints. Provide coupling with a rubber ring seal for use in each manhole entry to ensure a surface for adherence of concrete to manhole wall. If permitted by governing code authority, may be used for:
1. Outside gravity, underground sanitary sewer drainage piping, from 5'0" outside the building to the connections point to local municipality.
E. Fittings:
1. Permanently identify each fitting in accordance with MSS-SP-2241, and with manufacturer's trademark.
2. Include certification with submittal data that fittings and flanges meet applicable requirements.
PART 3 - EXECUTION
3.01 INSTALLATION
A. PVC Joints:
1. Make joints in accordance with cement manufacturer's printed instructions.

SECTION 221319 - SANITARY WASTE PIPING SPECIALTIES
PART 1 - GENERAL
1.01 WORK INCLUDED
A. This section includes requirements for:
1. Cleanouts
1.02 RELATED WORK
A. Section 22 05 00: Common Work Results for Plumbing
PART 2 - PRODUCTS
2.01 ACCEPTABLE MANUFACTURERS
A. Acceptable manufacturers are indicated in subsequent paragraphs.
2.02 CLEANOUTS
A. Acceptable manufacturers:
1. Jay R. Smith (Jay R. Smith model numbers are used below)
2. Josam
3. Wade
4. Zurn

SECTION 221116 - DOMESTIC WATER PIPING
PART 1 - GENERAL
1.01 WORK INCLUDED
A. Piping and pipe fittings for domestic cold, hot and recirculating water piping
1.02 SUBMITTALS
A. Submit product data for review on piping and fittings. Submittal data shall include:
1. Manufacturer of pipe.
2. Tests or listings by recognized testing laboratory that certifies material composition is in accordance with ANSI/ASTM requirements.
3. Product data for pipe and fittings to be used on each piping system.
4. Solder and brazing product data and installation procedures for copper pipe.
PART 2 - PRODUCTS
2.01 COPPER PIPE
A. Conform to ASTM B-88 specification for wrought seamless copper.
B. Type L hard for:
1. Domestic cold water piping
2. Domestic hot water
3. Domestic hot water recirculating piping
C. Use Type K, rolled, soft for: Piping installed under floor slabs.
2.02 COPPER PIPE FITTINGS
A. Sweat type, wrought copper, ASTM B62, with dimensions conforming to ANSI B16.22 and sweep patterns for copper tubing.
B. Mechanical Couplings: Roll groove rigid type by Victaulic, Gruvlok or Anvil.
C. Dielectric Connections:
1. Provide at junction of copper pipe and equipment with steel piping systems.
2. Central, Dielectric insulating unions, and insulating flange unions, as manufactured by Central Plastic Company, or CTS Fabrication USA (1-1/2" thru 8").
3. Provide copper solder joint to plated female iron pipe for sizes 1/2" through 2".
4. Provide insulating flange unions, malleable female iron pipe thread to copper solder joint flange unions for sizes 2-1/2" through 4".
5. Brass fittings and valves may not be used for dielectric union locations.
D. Unions: Brass ground joint, 250 lb. working pressure.
E. Nipples: Brass.

2.03 PVC PIPE AND FITTINGS
A. Polyvinyl chloride sewer pipe and fittings (4" to 12" diameters) shall be as manufactured by Charlotte or equal. Fittings (14" to 24" diameter) shall be manufactured by Freedom Plastics, Inc.
B. PVC pipe, fittings, cement, and joint cleaner for entire project shall be supplied by a single manufacturer.
C. PVC schedule 40, type 1, DWV, ASTM D-2665, 1120, 160 PSI at 73 degrees F. Solvent cement shall meet ASTM No. D-2564 for (PVC-DWV) plastic and pipe fittings. If permitted by governing code authority, may be used for:
1. Air conditioning unit condensate drains above grade only if room is not used as return air plenum
2. Gravity, non-pressure systems, under floor slab, including sanitary system with waste temperatures below 140 degrees F. and storm waste drainage systems.
3. Do not install PVC piping in return air plenums, equipment rooms or any space used as return air plenums unless specifically approved in writing by the Authority Having Jurisdiction, Owner's Representative and Architect.
D. PVC schedule 40, Type-PSM, Sewer Pipe, ASTM D-3034 with SDR as gasketed slip type joints. Provide coupling with a rubber ring seal for use in each manhole entry to ensure a surface for adherence of concrete to manhole wall. If permitted by governing code authority, may be used for:
1. Outside gravity, underground sanitary sewer drainage piping, from 5'-0" outside the building to the connections point to local municipality
E. Fittings:
1 Permanently identify each fitting in accordance with MSS-SP-2241, and with manufacturer's trademark

2. Include certification with submittal data that fittings and flanges meet applicable req

2.04 COMPRESSION COPPER FITTINGS
A. ViegaProPress, wrought copper, ASTM B88, with dimensions conforming to ANSI B16.22 or B16.18.
The Elastomeric seal is made of non-toxic synthetic rubber that meets the requirements of ASTM D2000 and performance criteria of IAPMO PS 117. Sealing elements shall be EPDM. Fitting to have smart connect feature. Teeth type fitting of any type shall not be used.

2.05 PEX (CROSS-LINKED POLYETHYLENE) PIPE AND FITTINGS

A. PEX Piping:
1. Manufactured in accordance with ASTM F876 and F877
2. Type PEX-a, for:
a. Domestic cold water piping
b. Domestic hot water
c. Domestic hot water recirculating piping
B. PEX Fittings:
1. Fittings:
a. Fitting assembly shall be manufactured from material listed in paragraph 5.1 of ASTM F1960
b. Fittings shall be installed inside expanded piping. Fitting ID shall match tubing ID
c. Stainless steel or metal clamp rings shall not be used for any connection
2. Manifolds:
a. Type L copper body with UNS 3600 series brass ASTM F1960 outlet connections
b. Engineered Plastic (EP) body with ASTM F1960 outlet connections
3. Accessories:
a. Angle stops and straight stops that are compatible with PEX tubing shall be supplied by the PEX tubing manufacturer
b. Bend supports designed for maintaining tight radius bends shall be by the PEX tubing manufacturer
C. PEX Firestops:
1. Through penetration firestop
a. Ensure compliance of one and two-hour rated through penetration assemblies in accordance with ASTM E814
b. A list of firestop manufacturers that list PEX tubing with their firestop systems is available from the PEX tubing manufacturer. Fire rated assembly listings in accordance with ANSI/UL 263

3.03 PEX PLUMBING SYSTEM

A. Install PEX Plumbing System in accordance with the tubing manufacturer's recommendations and as indicted in the installation handbook.
B. Do not install PEX tubing within 6 inches (152 mm) of gas appliance vents or within 12 inches (305 mm) of any recessed light fixtures.
C. Do not solder within 18 inches (457 mm) of PEX tubing in the same waterline. Make sweat connections prior to making PEX connections.
D. Do not expose PEX tubing to direct sunlight for more than 30 days.
E. Ensure that no glues, solvents, sealants or chemicals come in contact with the tubing without prior permission from the tubing manufacturer.
F. PEX tubing passing through metal studs shall use grommets or sleeves at the penetrations.
G. Protect PEX tubing with sleeves where abrasion may occur.
H. Use strike protectors where PEX tubing penetrates a stud or joist and has the potential for being struck with a screw or nail.

I. Tubing manufacturer supplied bend supports shall be used where bends are less than six times the outside pipe diameter.

J. Tubing shall be supported to structural members using support methods required by local plumbing codes and the installation handbook.
K. Pressurize PEX Plumbing System with air in accordance with applicable codes or in the absence of applicable codes to a pressure of 25 psi (173 kPa) above normal working pressure of the system.
L. Comply with safety precautions when pressure testing, including use of compressed air, where applicable. Water shall not be used to pressurize the system if ambient air temperature has the possibility of dropping working pressure shall be in accordance with the pipe and fitting manufacturer's specifications.

INSTALLATION
A. Clean inside of pipe before installation. Keep installed piping clean, and protect ends from foreign matter by capping or plugging them.
B. Install pipe so that it does not interfere with opening of doors or apparatus, access to equipment, or to electrical equipment.
C. Do not install pipes in such a way that they will apply torque to pumps. After pumps have been installed and pumps have been operated, recheck and realign pumps if necessary.
D. Run pipes in straight lines and square with building. Install risers plumb. Make offsets only where indicated and where necessary.
E. Install branch connections using separate tee or lateral fittings for each branch. Do not combine branches into "bullhead tee" arrangement.
F. Do not install water pipes in electric rooms, tele/data rooms, transformer rooms, audio/visual rooms or water equipment rooms. Fire protection piping runouts serving only these rooms shall be installed in these rooms.
G. Do not install piping above electrical equipment such as starters, variable frequency drives, motor control centers, or disconnects. Maintain code required clearance above, below and to sides of electrical equipment.
H. Provide flanges or unions throughout the pipe systems at all equipment. Make provisions for servicing and removal of equipment without dismantling piping.
I. Piping Expansion:

1. Install piping to allow thermal expansion and contraction without injury to piping, equipment or structure.
a. Use loops or expansion joints where necessary and where detailed
b. Provide pipe guides
J. Branch Lines:
1. Where possible branch lines shall come off top of mains to prevent sediment, welding slag, or pipe deburrs from entering the branch lines and causing valve leakage or failure.
3.02 PIPE JOINTING
A. Preparing Pipe Ends:
1. Machine cut pipe ends square
2. Ream pipe ends, after cutting, to full diameter
B.Soldered and Brazed Joints:
1. Make Type L copper pipe joints with suitable flux and 95/5, lead free solder.
2. Make Type K copper pipe joints with silver (BAg series) brazing filler material with flux or copper-phos (BCup series) brazing filler material without flux per the recommendations of the Copper Development Association.
3. Domestic cold and hot water piping 4" and larger shall be brazed. Copper to copper joints shall be brazed using a copper-phosphorus or copper-phosphorus-silver brazing filler metal (BCup Series) without flux. Dissimilar metals such as copper and bronze or brass shall be brazed using an appropriate flux with a silver (BAg Series) brazing filler A. metal.
B. Bracing Joints:
1. Provide braces and bridle rods as required to reinforce joints.
2. If mechanical couplings are used, then prepare pipe ends and make joints in accordance with pipe coupling manufacturer's printed instructions.
3. Where large pipes underground are subject to shock because of sudden changes in liquid flow rate, provide concrete "kicker" blocks at joints, fittings, and changes of pipe direction. Provide "kicker" blocks in accordance with applicable pipe industry trade or research organization recommendations.
3.03 ESCUTCHEONS
A. Provide chrome plated escutcheons where uninsulated pipes penetrate walls or ceilings of finished spaces.
3.06 VALVE ACCESS
A. Locate ceiling/wall access panels at shut-off and control valves for proper access and operation. Furnish and install access doors in accordance with Section 22 05 00 and other Divisions as applicable.
3.07 TESTING
A. Before piping is concealed or insulated, recheck it for leaks.
B. Rework or replace defective and leaking joints, and joints which are otherwise unsatisfactory. Preening, caulking, and doping are not permitted.

SECTION 220523 - VALVES FOR PLUMBING PIPING
PART 1 - GENERAL
1.01 RELATED WORK
A. Section 22 11 16: Domestic Water Piping
1.02 QUALITY ASSURANCE
A. Boiler valves: ASME Boiler Code Specifications.
B. Valve bodies, shells, and seats: Factory tested.
C. Bronze body valves:
1. Materials for pressure containing parts: ASTM B-62 (less than 200 psi), B-61 (200 psi and above)
2. Design, workmanship, testing: MSS-SP-80
D.Valve stems: ASTM BS84-78, Class 13C (cast silicon brass), ASTM B-371-79, Alloy A (rolled silicon brass), or other material equally resistant to dezincification.
E. Pressure castings: Free of impregnating materials.
F. Valve name or trademark and working pressure stamped or cast into body.
G. Standard for 200 PSI and 300 PSI valves with metallic seats: ASTM B61-76.

1.03 SUBMITTALS
A. Submit product data for review.
PART 2 - PRODUCTS
2.01 ACCEPTABLE MANUFACTURERS
A. Bronze body valves: Nibco, Stockham, Milwaukee, Dezurik, or Kennedy
B. Ball valves: Nibco, Apollo, Watts, Milwaukee, Jamesbury or Hammond
2.02 MATERIALS
A. Nibco Figure numbers are indicated below unless noted otherwise:
B. Check Valves:
1. Domestic Water:
a. 2" and less, Figure T-433, or S-433, threaded or solder, Class 150
b. 2-1/2" and up: Bronze body, cap, and disc, flanged, Class 150
C. Ball Valves
1. Domestic Water
a. 2" and less, Figure T585-70 or S-585-70, 2-piece, full port, 600 psi, WOG, TFE seats
b. 2-1/2" and up, Watts G4000-FDA-200 psi, Class 125 meeting MSS-SP-72-92 or equal

PART 3 - EXECUTION
3.01 INSTALLATION
A. Furnish and install valves in each piping connection at each piece of plumbing equipment to allow equipment to be isolated from piping systems.
B. Furnish and install valves in all piping systems to isolate each floor or main section of the building. Install sufficient number of valves to minimize the portion of the system which must be shut down for service or maintenance purposes.
C. Furnish and install valves above each group of plumbing fixtures.
D. Install valves in water piping systems so ordinary maintenance work can be performed on the equipment that the valves isolate, without having to drain the system beyond the valve.
E. Locate valves so as to be easily accessible by maintenance personnel.

SECTION 22 11 19 - DOMESTIC WATER PIPING SPECIALTIES

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. This section includes requirements for:
1. Backflow preventers.
2. Shock arrestors.
3. Domestic water service connection.
4. Inline automatic flow controller.
5. Thermometers and pressure gauges.

1.2 RELATED REQUIREMENTS

A. Section 22 05 00 - Common Work Results For Plumbing
B. Section 22 05 23 - Valves For Plumbing Piping
C. Section 22 07 00 - Plumbing Insulation

1.3 QUALITY ASSURANCE

A. Lead Free: All wetted surface of pipe, fittings and fixtures in potable water systems shall have a weighted average lead content equal to or less than 0.25% per the Safe Drinking Water Act (Section 1417) as amended January 4, 2011.
B. NSF Compliance: NSF/ANSI 61 and/or NSF/ANSI 372 for valve materials for potable-water service. Valves for domestic water must be 3rd Party Certified.

1.4 SUBMITTALS

A. Submit product data for review in accordance with the requirements of Division 01.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Acceptable manufacturers are indicated in subsequent paragraphs.

2.2 BACKFLOW PREVENTERS

A. Acceptable manufacturers:
1. Beeco
2. Apollo
3. Febco
4. Cla-Val
5. Ames
6. Watts
7. Wilkins Regulator Company

B. Provide completely automatic unit, fitted with tight closing shut-off valves and test cocks at each end.
C. Construct such that all parts are replaceable without removing unit from line.
D. Total pressure drop through complete backflow preventer does not exceed 12 PSI at rated flow.
E. Provide per local requirements and dimensions as detailed on drawings.
F. Backflow preventers shall meet the following standards: (Apollo Figure numbers are used for reference.)
1. Atmospheric vacuum breaker - Apollo 38-200 series, ASSE 1001-2008
2. Hose-connected vacuum breakers - Apollo 4ALF series, ASSE 1011-2004
3. Back siphonage vacuum breakers - Apollo 4A-500-04F, ASSE 1056-2013
4. Reduced pressure principle backflow preventers - Apollo 4ALF-200 Series, ASSE 1013-2011
5. Double check valve assembly - Apollo 4ALF-100 Series, ASSE 1015-2011
6. Pressure type vacuum breaker - ASSE-1020-2004

2.3 SHOCK ARRESTORS

A. Acceptable manufacturers:
1. Josam
2. Wade
3. Jay R. Smith
4. Precision Products
5. Zurn
6. Sioux Chief
B. Arrestor shall be piston type, polycarbonate with two EPDM O-rings, lubricated with FDA-approved Dow Corning #111 silicone compound in Type L or K copper body, suitable for 200 psig minimum pressure at 200 degrees F.
C. Arrestor shall be ANSI/ASSE 1010 Certified and be maintenance free with no access panel required.

2.4 THERMOMETERS AND PRESSURE GAUGES

A. Acceptable manufacturers: Trerice, Winters, Dwyer or approved equal.
B. Thermometers shall have a 9" aluminum case with 3.5" or 6" stem, fully adjustable, organic filled (non-mercury), +/- 1% accuracy, lead free brass or stainless steel thermowell, dual scale, 30 degrees F to 200 degrees F range.
C. Pressure gauges shall have a 4" white aluminum dial with type 304 SS case, lead free brass socket, glycerin filled with accuracy of +/- 1.5 % of full scale to 150 degrees F; dry type to 200 degrees F. Install with lead free gauge cock.

2.5 MANUAL FLOW BALANCING VALVE

A. Acceptable Manufacturers: Nibco, Armstrong 'CBV'; Taco; Tour & Anderson.
B. Provide globe style valve, calibrated, lead free, brass or stainless steel body and disk, with provisions for connecting a portable differential pressure meter for flow measurement and balance. Nibco T-1810-LF or S-1810-LF or equal. Provide meter connections with built-in check valves.

SECTION 220529 - HANGERS FOR PLUMBING PIPING
PART 1 - GENERAL
1.01 RELATED WORK
A. Section 22 11 16: Domestic Water Piping
B. Section 22 13 16: Sanitary Waste and Vent Piping
C. Section 22 07 00: Plumbing Insulation
1.02 SUBMITTALS
A. RT 2 - PRODUCTS
2.01 ACCEPTABLE MANUFACTURERS
A. Anvil, Carpenter and Patterson, Fee and Mason, B-Line, Viking, Reliable, and Michigan. Anvil numbers are used for reference.
2.02 HANGERS
A. Anvil Figure #260 MSS Type 1, clevis hangers for:
1. Non-insulated steel and galvanized piping 2" through 24" diameter
2. Non-insulated cast iron pipe
B. Anvil Figure #260 clevis hangers with Figure 167, MSS Type 40 galvanized insulation protection shields (sized for supporting insulation having a compressive strength of 4 psi). Support piping on outside of insulation. Size hangers so that pipe insulation passes through them without interruption.
1. Domestic hot water piping above 160 degrees F. 4" diameter and less
2. All other insulated piping
C. Anvil Figure CT-69, MSS Type 10 with adjustable wrought tubing ring hanger, copper plated for:
1. Non-insulated copper tubing with no longitudinal movement
D. Anvil Powerstrut Trapeze Hangers: Where three or more lines of pipe run parallel, support them with trapeze hangers.
2.05 CLAMPS
A. C-Clamps: Anvil Figure #92, MSS Type 23.
1. Use these for attaching hangers to steel beams. Do not weld hanger rods to structural steel members.
B. Malleable Beam Clamps: Anvil Figure #218, MSS Type 30. Use these for attaching hangers to bar joists.
PART 3 - EXECUTION
3.01 PIPE HANGERS
A. Support pipes on specified hangers so that equipment, pumps, and fittings do not bear weight or stresses from vibration and swaying of pipe. Support pipe risers at regular intervals in pipe shafts at least once at each floor level or a maximum of 12'-0" apart. Do not use perforated metal, strap iron, or band iron. Do not make offsets in hangers.
B. Maximum allowable spacing of pipe hangers is listed below. Space hangers and brackets at closer intervals where necessary to maintain levels, slopes, and drainage, or to prevent sagging or swaying of pipe.
C. COPPER PIPE - Water
1. 1/4" to 1-1/4" - 5'0" O.C.
2. 2" to 2-1/2" - 8'0" O.C.
3. 3" and above - 10'0" O.C.
D. SCH. 40 PVC PIPE
1. 4" and above 6' O.C.

C. Provide integral pointer to register degree of valve opening with tamper proof locking memory feature.
D. Provide valve with drain connection.
E. Construct valve with integral sleeves to prevent leakage around rotating element.
F. Construct valve for 125 psi working pressure at 260 degrees F.
G. Provide preformed polyurethane insulation for easy access to valve without disturbing field applied adjacent insulation.
H. Provide valve with engraved tag attached indicating design flow, pressure, and flow characteristic of station.

PART 3 - EXECUTION

3.1 INSTALLATION AND TESTING

A. Backflow Preventers:
1. Pipe relief through fixed air gap and discharge to sewer.
2. Install adjacent to wall and/or floor utilizing stand-off brackets, angle frame, and/or concrete piers.
3. Test unit for leaks and pressure drop. Clean and/or replace soiled strainer media.
4. Provide dual parallel reduced pressure backflow preventers on the main domestic water entrance to the facility.
5. Provide a reduced pressure backflow preventer on the domestic hot and cold water lines feeding the laboratory and morgue.
6. Provide a reduced pressure backflow preventer on the domestic cold water serving carbonators at soda machines.
7. Provide backflow prevention vacuum breaker on any water line feeding any piece of equipment which could cause back siphonage such as mechanical equipment, trap primer lines, etc.
8. Provide a double check valve backflow preventer on the fire main service to the building.
B. Shock Arrestors:
1. Install shock arrestors at each quick closing valve, solenoid type valve, and flush valve. Size shock arrestors in accordance with manufacturer's instructions.
2. Install shock arrestors within five feet of valve, provide wall access panel as required.
3. Test and certify shock arrestors by Plumbing and Drainage Institute in accordance with ANSI/ASSE 1010.

END OF SECTION

SECTION 210500
COMMON WORK RESULTS FOR FIRE SUPPRESSION
SECTION INCLUDES
1.01
A. COMMON WORK RESULTS FOR REQUIREMENTS SPECIFICALLY APPLICABLE TO DIVISION 21.
B. REQUIREMENTS OF DIVISION 01 SPECIFICATIONS, GENERAL PROVISIONS OF THE CONTRACT AND GENERAL AND SUPPLEMENTARY CONDITIONS APPLY TO THIS DIVISION.
1.02
REFERENCES
A. ANSI: AMERICAN NATIONAL STANDARDS INSTITUTE.
B. ASME: AMERICAN SOCIETY FOR MECHANICAL ENGINEERS.
C. ASTM: AMERICAN SOCIETY FOR TESTING AND MATERIALS.
D. AWWA: AMERICAN WATER WORKS ASSOCIATION.
E. FM: FACTORY MUTUAL
F. IRI: INDUSTRIAL RISK INSURERS
G. MSS: MANUFACTURER'S STANDARDIZATION SOCIETY OF THE VALVE AND FITTING INDUSTRY.
H. NEMA: NATIONAL ELECTRICAL MANUFACTURERS' ASSOCIATION.
I. NFPA: NATIONAL FIRE PROTECTION ASSOCIATION.
J. UL: UNDERWRITERS' LABORATORIES, INC.
1.03
SUBMITTALS
A. SUBMIT UNDER PROVISIONS OF DIVISION 01.
B. INCLUDE PRODUCTS AS SPECIFIED IN THE INDIVIDUAL SECTIONS OF DIVISION 21.
C. SUBMIT SHOP DRAWING AND PRODUCT DATA GROUPED TO INCLUDE COMPLETE SUBMITTALS OF RELATED SYSTEMS, PRODUCTS, AND ACCESSORIES IN A SINGLE SUBMITTAL.
D. PREPARE SHOP DRAWINGS COMPLETELY INDEPENDENT OF THE ENGINEER OF RECORD'S CADD FILES. SHOULD THE CONTRACTOR OR VENDOR WISH TO USE THE ENGINEER OF RECORD'S CADD FILES AS THE BASIS FOR DEVELOPING THEIR SHOP DRAWINGS, A RELEASE FORM, OBTAINABLE FROM THE ENGINEER OR ARCHITECT, MUST BE SIGNED AND A NOMINAL CHARGE OF $30.00 PER SHEET MUST BE MADE PAYABLE TO THE ENGINEERING FIRM TO COVER THE COST OF PREPARING THE DRAWINGS FOR USE BY OTHERS.
E. SUBMIT COPIES OF SHOP DRAWINGS IN ACCORDANCE WITH DIVISION 01, INCLUDING:
1. FIRE PROTECTION SYSTEMS
2.ASSIST IN THE PREPARATION OF COORDINATED ROOM LAYOUTS AS SPECIFIED IN SECTION 23 05 00.
F. BROCHURES: SUBMIT MANUFACTURER'S PRODUCT DATA AND BROCHURES INCLUDING:
1. COMPLETE DESCRIPTIONS
2. ILLUSTRATIONS
3. RATING DATA, ACCESSORIES, DIMENSIONAL DATA, AND APPLICABLE OPTIONS AND FEATURES MARKED FOR THE SPECIFIC ITEMS SCHEDULED ON DRAWINGS AND SPECIFIED HEREIN
4. CAPACITIES STATED IN THE TERMS SPECIFIED
5. PERFORMANCE CURVES FOR FIRE PUMPS AND JOCKEY PUMPS.
1.04
REGULATORY REQUIREMENTS
A. PERFORM WORK SPECIFIED IN DIVISION 21, IN ACCORDANCE WITH STANDARDS LISTED BELOW OF THE LATEST APPLICABLE EDITION ADOPTED BY THE AUTHORITY HAVING JURISDICTION. WHERE THESE SPECIFICATIONS ARE MORE STRINGENT, THEY SHALL TAKE PRECEDENCE. IN CASE OF CONFLICT, OBTAIN A DECISION FROM THE ARCHITECT.
1. NFPA 13: SPRINKLER SYSTEM INSTALLATION.
2. NFPA 99: HEALTHCARE FACILITIES.
3. NFPA 101: LIFE SAFETY CODE.
4. ANSI HANDICAPPED CODE-A117.1
5. U.L: FIRE RESISTANCE INDEX
6. ASTM E814-88: STANDARD TEST METHOD FOR FIRE TESTS OF THROUGH-PENETRATION FIRESTOPS.
7. IBC: INTERNATIONAL BUILDING CODE, WITH MECHANICAL AND PLUMBING CODES.

8. SPECIAL REGULATIONS, SUPPLEMENT, AND AMENDMENTS OF THE STATE AND/OR LOCAL AUTHORITIES HAVING JURISDICTION.
1.05 PROJECT/SITE CONDITIONS
A. LAYOUTS INDICATED ON DRAWINGS ARE DIAGRAMMATICAL AND INTENDED TO SHOW RELATIVE POSITIONS AND ARRANGEMENT OF PIPING AND EQUIPMENT. COORDINATE WORK WITH OTHER TRADES AND WITH MEASUREMENTS OBTAINED AT THE JOB SITE, AS APPLICABLE, PRIOR TO INSTALLATION. GENERALLY, INSTALL WORK IN LOCATIONS SHOWN ON DRAWINGS. PROVIDE NECESSARY, RISES, DROPS, AND OFFSETS TO FIT IN THE AVAILABLE SPACE UNLESS PREVENTED BY PROJECT CONDITIONS.
B. IF PREVENTED BY PROJECT CONDITIONS, PREPARE DRAWINGS SHOWING PROPOSED REARRANGEMENT OF WORK, INCLUDING CHANGES TO WORK SPECIFIED IN OTHER SECTIONS. OBTAIN PERMISSION OF ARCHITECT BEFORE PROCEEDING.
C. PLACE ANCHORS, SLEEVES, AND SUPPORTS PRIOR TO POURING CONCRETE OR INSTALLATION OF MASONRY WORK.
D. CAUSE AS LITTLE INTERFERENCE OR INTERRUPTION OF EXISTING UTILITIES AND SERVICES AS POSSIBLE. SCHEDULE WORK WHICH WILL CAUSE INTERFERENCE OR INTERRUPTION IN ADVANCE WITH OWNER AND ALL AFFECTED TRADES.
E. DETERMINE SIZES AND VERIFY LOCATIONS OF EXISTING UTILITIES ON OR NEAR SITE.
F. KEEP ROADS CLEAR OF MATERIALS AND DEBRIS.
G. VISIT SITE AND BE INFORMED OF CONDITIONS UNDER WHICH WORK MUST BE PERFORMED.
H. LOCATE EQUIPMENT REQUIRING PERIODIC SERVICING SO THAT IT IS READILY ACCESSIBLE. PROVIDE MEANS OF SERVICE ACCESS, FOLLOWING APPROPRIATE MANUFACTURER'S RECOMMENDED SERVICE CLEARANCE SPACE OR, AS APPLICABLE, MEANS OF ACCESS USING WALL OR CEILING ACCESS DOORS.
I. INSTALL PIPING TO LEAVE SUFFICIENT SPACE FOR AHJ INSPECTION OF RATED WALL CONSTRUCTION.

FEES AND PERMITS
1.06
A. OBTAIN AND PAY FOR ALL NECESSARY PERMITS AND INSPECTION FEES REQUIRED TO PERFORM DIVISION 21 WORK.

COORDINATION DRAWINGS
1.07
A. PRIOR TO COMMENCEMENT OF INSTALLATION, ASSIST IN PREPARATION OF COORDINATION DRAWINGS FOR WORK UNDER THIS DIVISION, AS SPECIFIED IN DIVISION 01. FULLY COOPERATE WITH PERSONS COORDINATING AND PERFORMING WORK UNDER OTHER DIVISIONS.
B. DRAWINGS SHALL NOT BE FORMALLY SUBMITTED BUT SHALL BE KEPT ON SITE FOR REFERENCE. NOTIFY ARCHITECT OF CONFLICTS THAT CANNOT BE RESOLVED.
1.08
COMPLETENESS OF WORK
A. THE CONTRACT DOCUMENTS DEPICT FIRE SUPPRESSION SYSTEMS WHICH ARE INTENDED TO BE COMPLETE AND FUNCTIONING SYSTEMS. ALL PRODUCTS, MATERIALS, AND LABOR NECESSARY TO RENDER A FULLY FUNCTIONAL SYSTEM TO FULFILL THE DESIGN INTENT SHOWN ON THE DOCUMENTS SHALL BE PROVIDED BY THE CONTRACTOR.
B. CATALOG NUMBERS REFERENCED THROUGHOUT THE DIVISION 21 DRAWINGS AND SPECIFICATIONS ARE INTENDED TO CONVEY A GENERAL UNDERSTANDING OF THE TYPE AND QUALITY OF THE PRODUCT REQUIRED. WHERE WRITTEN DESCRIPTIONS DIFFER FROM INFORMATION CONVEYED BY A CATALOG NUMBER, THE WRITTEN DESCRIPTION SHALL GOVERN. NO EXTRA SHALL BE ALLOWED BECAUSE A CATALOG NUMBER IS FOUND TO BE INCOMPLETE OR OBSOLETE.
1.09 REFERENCE STANDARDS AND DEFINITIONS
A. COMPLY WITH PROVISIONS OF DIVISION 01.

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PLUMBING SPECIFICATIONS

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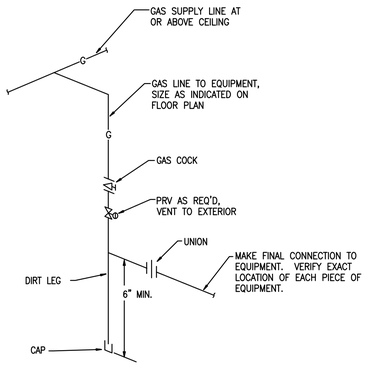
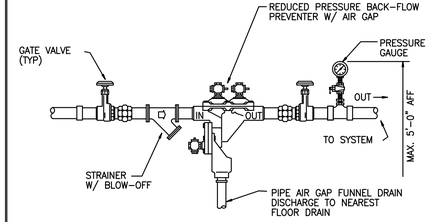
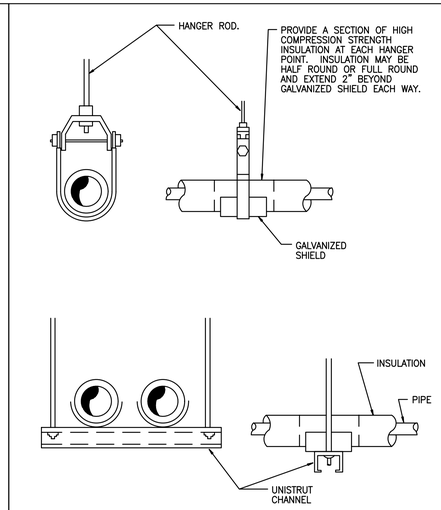


TYPICAL GAS CONNECTION | 4

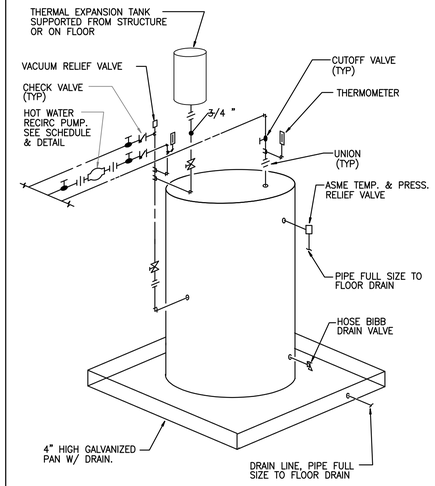


NOTE:
1. SEE FLOOR PLAN FOR SIZE OF R.P.B.P. & PIPE.

BACKFLOW PREVENTER | 3



WATER PIPING HANGER | 2



ELECTRIC WATER HEATER | 1

PLUMBING SPECIFICATIONS

PLUMBING SCOPE OF WORK

PLUMBING WORK INCLUDES:

PLUMBING AND INSULATION, FIRE PROTECTION AND MEDICAL GAS PIPING.

THE PLUMBING WORK INSTALLATION SHALL COMPLY WITH STATE AND LOCAL HEALTH DEPARTMENTS, ENVIRONMENTAL PROTECTION AGENCY, AND BUILDING CODES, INCLUDING PLUMBING CODES, AND WITH STATE AND LOCAL ORDINANCES.

EQUIPMENT SHALL BE U.L. LISTED AND LABELED AS REQUIRED IN SPECIFIC EQUIPMENT SPECIFICATION SECTIONS. INSTALLATION WORK SHALL COMPLY WITH U.L. STANDARDS, WHERE APPLICABLE.

ARRANGE FOR, PAY FEES FOR, AND ACCOMPLISH THE WORK REQUIRED TO PASS TESTS REQUIRED BY THE AUTHORITIES HAVING JURISDICTION. OBTAIN CERTIFICATES OF COMPLIANCE FROM SAID AUTHORITIES AND TRANSMIT TO THE ARCHITECT.

SUBMIT TO THE ARCHITECT FOR REVIEW, 7 COPIES OF CERTIFIED SHOP DRAWINGS AND EQUIPMENT BROCHURES ON MATERIAL FURNISHED UNDER THIS DIVISION.

PLUMBING WORK SHALL BE GUARANTEED AGAINST FAULTY MATERIAL OR WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE.

PIPING FOR PLUMBING SYSTEMS

A. BUTT WELDED, ELECTRIC RESISTANCE WELDER OR SEAMLESS BLACK STEEL PIPE, SCHEDULE 40 FOR PIPING 10" AND SMALLER. (NOTE: PIPING 2-1/8" AND SMALLER ARE OUTSIDE DIMENSIONS.)

1) FIRE PROTECTION SYSTEM PIPING

B. STANDARD WEIGHT GALVANIZED PIPE FOR:

1) WASTE, VENT, AND DRAIN PIPING (1-1/2" AND SMALLER)

C. STEEL PIPE FITTINGS:

1) FITTING 2-1/2" AND LARGER: CARBON STEEL, BUTT WELDED FITTINGS, ASTM A234-WPB, ANSI B16.9, AND B16.28.
2) FITTINGS 2" AND SMALLER: THREADED, STANDARD CAST IRON.
3) GALVANIZED STEEL PIPE FITTINGS: SAME AS ABOVE, EXCEPT GALVANIZED. PROVIDE DRAINAGE PATTERN TYPE FITTINGS FOR WASTE, VENT, AND DRAIN PIPING.
4) FLANGES: CARBON STEEL, ASTM A105 AND ANSI B16.5.
5) UNIONS: CAST IRON WITH BRONZE TO IRON GROUND JOINT RATED AT 150 LBS.
6) BOLTING MATERIALS: SAME FINISHED CARBON STEEL BOLTS AND HEX NUTS.
7) THREAD LUBRICANT: CRANE "FORMULA 425", OR EQUAL.

COPPER PIPING

(NOTE: PIPING DIMENSIONS SHOWN ON DRAWINGS AS 2-1/8" AND SMALLER ARE OUTSIDE DIMENSIONS.)

A) TYPE "L" HARD DRAWN SEAMLESS FOR:

1) DOMESTIC HOT AND COLD WATER PIPING

B) COPPER PIPE FITTINGS:

1) SWEAT TYPE, WROUGHT COPPER, ASTM B62, WITH DIMENSIONS CONFORMING TO ANSI B16.22 AND SWEEPING PATTERNS FOR COPPER TUBING.

2) DIELECTRIC CONNECTIONS: CENTRAL, DIELECTRIC INSULATING UNIONS, AND INSULATING FLANGE UNIONS, AS MANUFACTURED BY CENTRAL PLASTIC COMPANY.

3) UNIONS AND NIPPLES: BRASS

CAST IRON SOIL AND VENT PIPE

A) STANDARD WEIGHT PIPE WITH DRAINAGE FITTINGS FOR:

1) WASTE, VENT, AND DRAINAGE PIPE (2" AND LARGER)

B) JOINTS IN CAST IRON PIPE:

1) ABOVE GRADE: NO-HUB USING STAINLESS COUPLINGS.

MISCELLANEOUS PIPE ACCESSORIES

1) FLOOR AND WALL SLEEVES - SEE SLEEVES SECTION

2) ESCUTCHEONS - CHROME PIPE ESCUTCHEONS CHROME PIPE ESCUTCHEONS, SLIP-ON OR SPLIT TYPE WHERE PIPE PASSING THROUGH FINISHED WALL MAY BE VISIBLE.

3) PIPE SADDLES SHALL BE 18 GAUGE SHEET METAL OR GALVANIZED INSTALLED TO PROTECT INSULATION.

PIPE HANGERS

DIELECTRIC UNIONS SHALL BE USED WHEREVER DISSIMILAR METALS SUBJECT TO GALVANIC ACTIVITY ARE JOINED TOGETHER SUCH AS EQUIPMENT CONNECTIONS BETWEEN COPPER PIPE AND STEEL PIPE.

PIPE HANGERS SHALL BE ADJUSTABLE STEEL HANGERS, GRINNEL, FEE AND MASON, OR EQUAL. HANGERS SHALL BE ADJUSTABLE RING GRINNEL FIGURE 97 FOR UNDER 4" SIZE.
HANGERS FOR COPPER LINES 2" AND SMALLER SHALL BE ADJUSTABLE COPPER PLATED TYPE CT BY GRINNEL, FEE AND MASON, OR EQUAL.

HANGERS ON DOMESTIC COLD WATER PIPING AND OTHER INSULATED PIPING LARGER THAN 1" SHALL BE SIZED TO FIT OVER INSULATION, USING HEAVY GAUGE GALVANIZED SADDLES TO PROTECT THE COVERING. PIPING, WHERE INSULATION SPECIFIED IS SOFT AND WILL NOT SUPPORT PIPE WITHOUT CRUSHING, SHALL BE SUPPORTED BY SECTIONS OF RIGID INSULATION LAID IN THE INSULATION SADDLE. THE CONTRACTOR MUST PROVIDE DIELECTRIC ISOLATION BETWEEN PIPING AND THE HANGERS WHERE THEY ARE OF DISSIMILAR METALS.

SLEEVES

PROVIDE AND INSTALL SLEEVES FOR PIPING INSTALLED AT FLOORS AND RATED WALLS AND/OR PARTITIONS AS SPECIFIED HEREIN.

1) PROVIDE SCHEDULE 40 BLACK STEEL FOR SLEEVES.

2) ENSURE SLEEVES ARE PROVIDED AT RATED PARTITIONS, RATED WALLS, AND FLOORS IN ACCORDANCE WITH RATED FIRE SEPARATION REQUIREMENTS OF ARCHITECTURAL DRAWINGS.

3) ALL INSULATED PIPING PASSING THROUGH FIRE AND/OR SMOKE RATED PARTITIONS SHALL BE SLEEVED, AND VOID SPACE BETWEEN PIPE AND SLEEVE SHALL HAVE FIRE SAFING AND BE SEALED.

PLUMBING SYSTEMS INSULATION

INSULATION MATERIALS SHALL BE FIRE RESISTIVE WITH A FLAME SPREAD RATING NOT OVER 25 WITHOUT EVIDENCE OF CONTINUED PROGRESSIVE COMBUSTION, AND WITH A SMOKE DEVELOPED RATING NOT HIGHER THAN 50. PIPE INSULATION SHALL BE MOLDED PIPE COVERING TYPE.

PLUMBING FIXTURES

PART 1 GENERAL

1.01 WORK INCLUDED

A. Provide plumbing fixtures, trim and related items such as supplies, traps, drains, cleanouts, fixture supports and other accessory items.

B. Coordinate fixture requirements by reviewing architectural and equipment drawings. Install fixtures in accordance with Contract Drawings and manufacturer's rough-in drawings.

1.02 CODES AND STANDARDS

A. Perform work in accordance with applicable codes and standards enforced by local authorities.

1.03 SUBMITTALS

A. Submit manufacturer's product data for review.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Brass: Chicago, T&S, and Speakman.

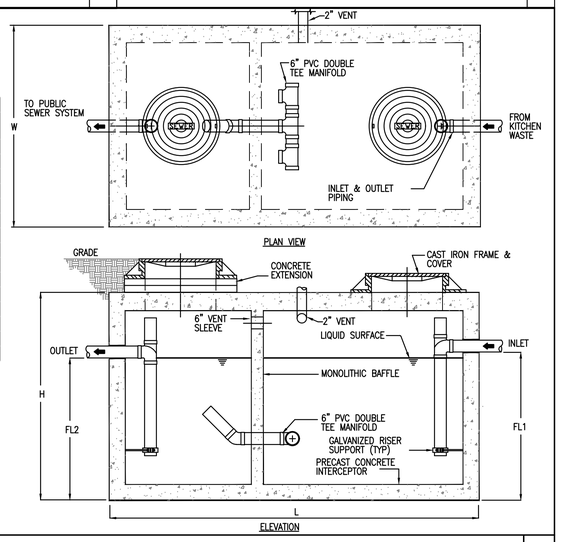
B. Carriers and p-traps: Jay R. Smith, Zurn, Wade.

D. Flow control devices: Dole Flow Controls Company.

E. Provide fixtures and trim as a complete unit as required in the individual "P" numbers listed on plans.

GREASE INTERCEPTOR SCHEDULE						
MODEL NO.	CAPACITY USGal	LENGTH L	WIDTH W	HEIGHT H	INLET FL1	OUTLET FL2
GT-500	500	7'-10"	4'-4"	4'-6"	3'-3"	3'-0"
GT-750	750	7'-10"	4'-4"	6'-0"	4'-5"	4'-2"
GT-1000	1,000	8'-8"	5'-0"	6'-0"	4'-9"	4'-6"
GT-1500	1,500	9'-2"	5'-8"	7'-0"	5'-9"	5'-6"
GT-2000	2,000	13'-0"	7'-0"	6'-0"	4'-9"	4'-6"
GT-2500	2,500	13'-0"	7'-0"	7'-0"	5'-9"	5'-6"
GT-3000	3,000	13'-0"	7'-0"	8'-0"	6'-9"	6'-6"
GT-3500	3,500	13'-0"	7'-0"	8'-6"	7'-6"	7'-3"
GT-4000	4,000	13'-0"	7'-0"	9'-6"	8'-6"	8'-3"
GT-5000	5,000	16'-0"	8'-6"	8'-0"	6'-9"	6'-6"
GT-6000	6,000	16'-0"	8'-6"	9'-0"	7'-9"	7'-6"
GT-7000	7,000	18'-0"	9'-0"	9'-2"	7'-11"	7'-8"
GT-8000	8,000	18'-0"	9'-0"	10'-0"	8'-9"	8'-6"
GT-9000	9,000	18'-0"	9'-0"	10'-10"	9'-7"	9'-4"
GT-10000	10,000	18'-0"	9'-0"	12'-0"	10'-9"	10'-6"

PROVIDE PARKS EQUIPMENT CO.
MODEL NO. _GT-1000_____
OR APPROVED EQUAL



GREASE INTERCEPTOR | 6

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PLUMBING DETAILS & SPECIFICATIONS

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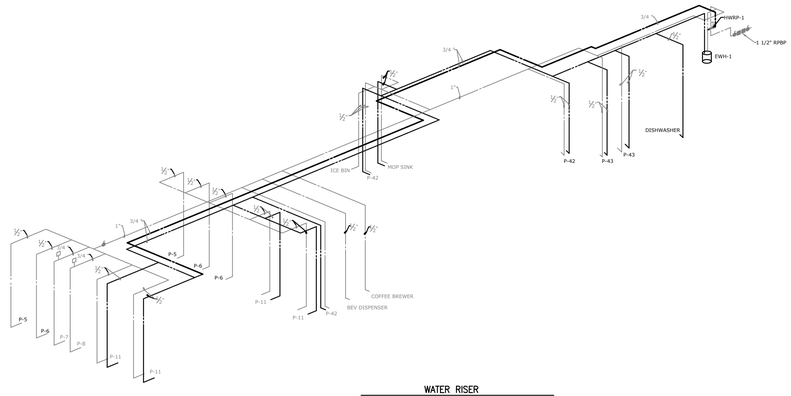
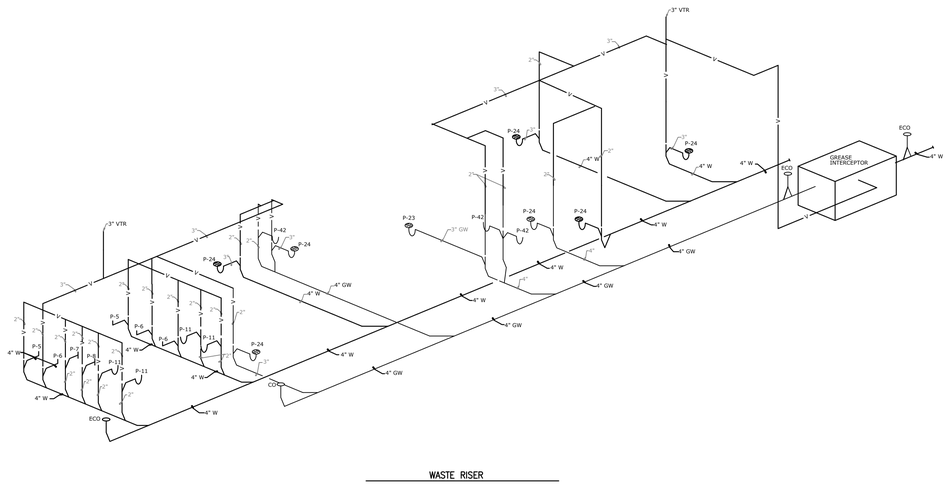


WATER RISER



WASTE RISER

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PAMELA ALSUP REGISTERED ARCHITECT AGRICULTURE No. 10632 STATE OF TENNESSEE 09.12.2022

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PLUMBING RISERS

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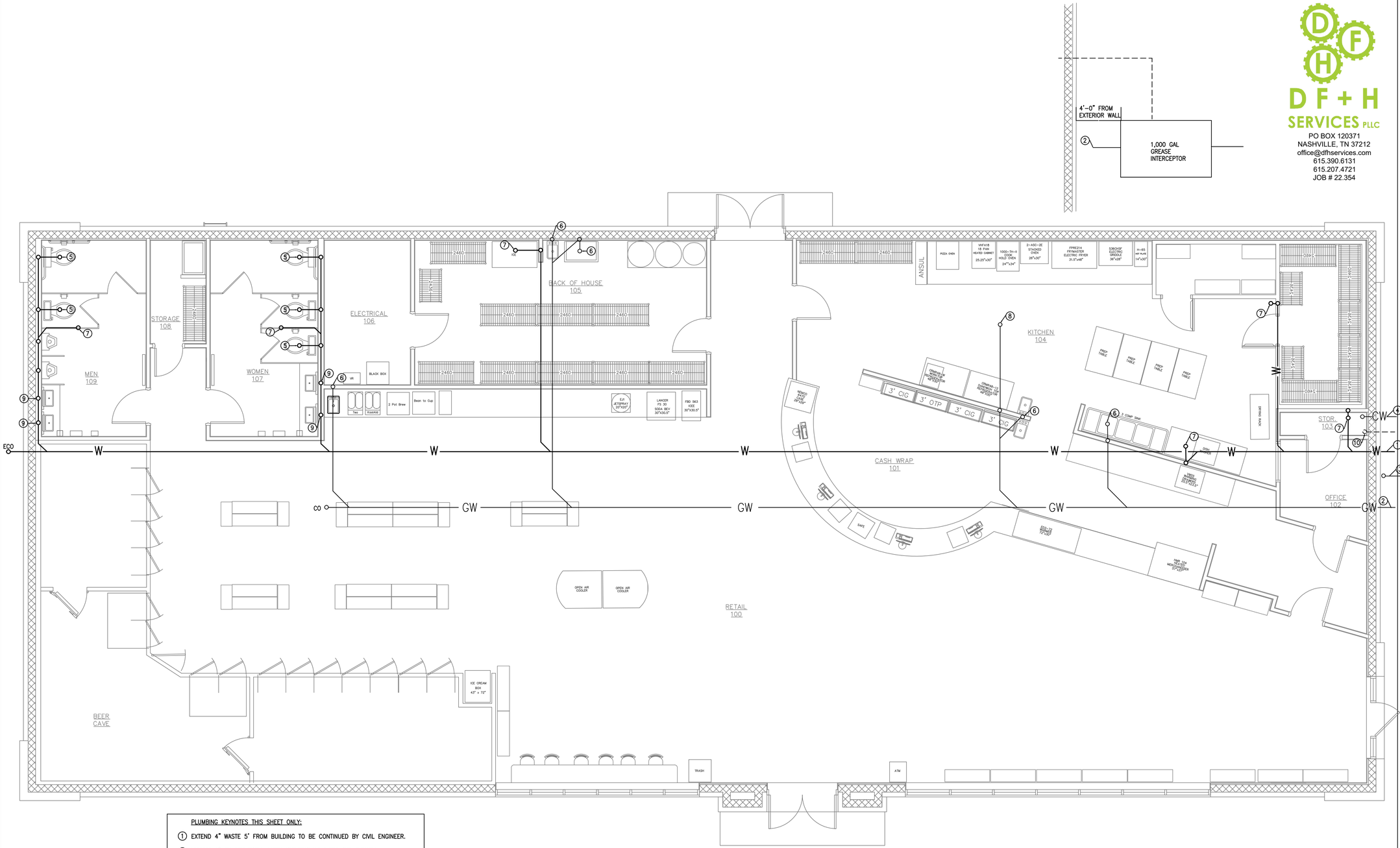

PLUMBING KEYNOTES THIS SHEET ONLY:

1. EXTEND 4" WASTE 5' FROM BUILDING TO BE CONTINUED BY CIVIL ENGINEER.
2. EXTEND 4" GREASE WASTE FROM BUILDING TO 1,000 GAL GREASE INTERCEPTOR. EXTEND 4" WASTE 5' FROM THE OUTLET SIDE TO BE CONTINUED BY CIVIL ENGINEER.
3. PROVIDE NEW GAS SERVICE TO BUILDING COORDINATE WITH LOCAL GAS COMPANY.
4. EXTEND 1 ½" DOMESTIC WATER LINE 5' FROM BUILDING TO BE CONTINUED BY CIVIL ENGINEER.
5. 4" WASTE UP TO WATER CLOSET.
6. 3" GREASE WASTE UP TO FLOOR SINK.
7. 3" WASTE UP TO FLOOR DRAIN.
8. 4" GREASE WASTE UP TO FLOOR SINK.
9. 2" WASTE UP TO SINK.
10. 2"VENT UP.

PLUMBING UNDERGROUND PLAN

SCALE: 1/4" = 1'-0"

PLAN NORTH

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PLUMBING UNDERGROUND

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Division 16 - Electrical

Basic Requirements and Materials

Work will be in conformance with the International Building code (with Standard Building Code annotations), as well as the latest edition of the National Electrical Code (NFPA 70), National Fire Protective Association codes and regulations (including Life Safety Code), Fire Protection Rules and Regulations of the State Fire Marshall and all state and local building codes and ordinances. Obtain permits and secure inspections required for execution of work indicated by these drawings and specs. If the local authority utilizes a previous code rather than the latest edition, use the locally enforced vintage of code in lieu of the latest edition.

Furnish all necessary materials and labor to install a complete and fully operable electrical system as indicated on the drawings and in these specifications Install and provide electrical connections for, equipment furnished by others.

Prior to submitting a bid, contractor shall visit the site & ascertain all existing conditions. Make such adjustments in work as required by actual conditions to be encountered. No subsequent allowance will be made after bid for any misunderstandings of existing conditions, including utility connections, & or integration of work with existing systems.. This shall include the relocation of all existing to remain devices mounted above ceiling requiring access by code - contractor shall include all costs associated with relocating devices to accessible areas or providing access doors as required. Use of access doors shall be pre approved by architect.

Secure and pay for all permits and fees necessary for the installation of the work.

Coordinate installation of electrical service with local utility. Provide duct banks, weather-heads, conduit, conductors, meter centers, and other materials and services that may be required.

Coordinate installation of telephone service with local telephone company.

Coordinate installation of cable television service with local cable company

All equipment shall be new and bear the UL label.

The drawings are diagrammatic. The routing of branch circuits and exact locations of outlets are subject to building conditions.

The plans and specifications, supplemented by the codes, shall be considered as jointly governing the installation of the electrical systems. Any work or materials indicated in either plans or specifications shall be considered as being required by both.

Installation of electrical work shall be under the supervision of a competent, licensed electrician.

Following completion of the electrical work, a certificate of approval shall be secured from the local code enforcement authority.

Electrical equipment such as switchboards, panelboards, industrial control panels, meter socket enclosures and motor control centers in other than dwelling units that are likely to require examination, adjustment, servicing or maintenance while energized must be field-marked to warn qualified persons of the danger associated with an arc flash from short circuits or ground faults. The field-marking must be clearly visible to qualified persons before they examine, adjust, service or perform maintenance on the equipment.

Submittals

Refer to architectural requirements of submittals. Submittals are not required unless required by architect. If required submit in electronic format (hard copies will not be accepted) The following sections/equipment for review: Main distribution gear & panelboards, meter center, lighting fixtures, lighting control systems & fire alarm system.

Contractor and/or vendor shall identify or list within the submittals any & all exceptions & deviations taken with the specifications & drawings. Failure to identify exceptions does not alleviate the contrator/vendor from providing the specified features, options or functions required by specifications & documents.

Raceway and Conduit Systems

The types of materials to be employed in the wiring systems are subject to building conditions and governing codes. The contractor is permitted to employ any of the materials listed in the spec or drawings, under conditions permitted by codes, with exceptions as noted in this spec and on the drawings. A complete conduit system with associated couplings, connectors, and fittings will be provided for power distribution system, branch lighting and receptacle circuits, lighting control, and fire alarm system (if applicable). A raceway system shall also be provided for portions of audio, distributed TV, etc., which is routed concealed in walls, or above inaccessible ceilings by providing a 3/4" conduit routed from device box to above accessible ceiling space. Unless stated otherwise, or is not possible due to field conditions, all wiring shall be run concealed and devices shall be mounted flush in walls and ceilings.

Electrical Metallic Tubing (EMT) shall be used for conduits that are concealed in walls, installed above suspended ceilings, installed exposed above 6 feet (utility spaces).

Intermediate Metal Conduits (IMC) shall be used for feeders, conduits installed in wet or hazardous areas, or installed exposed - below 6 feet (utility spaces).

Rigid Steel Conduit (RSC) shall be used for conduits exposed to mechanical damage.

Poly Vinyl Chloride (PVC) shall be used for underground service entrance conduits for power and telephone and for exterior branch circuits or circuits concealed within concrete slabs.

Metal clad (MC cable) is allowed where permitted by NEC.

EMT, IMC, and Rigid conduit shall be hot dipped, galvanized, or electro galvanized steel as manufactured by Allied, General Electric, Republic, Triangle or Wheatland. Associated couplings, connectors and fittings shall be steel as manufactured by Raco or equivalent. PVC conduit shall be Schedule 40, 90' C rated as manufactured by Carlon.

Flexible metal conduit shall be used for termination at equipment subject to motion and vibration. Length shall not exceed six feet.

Minimum conduit size shall be 1/2" for power branch circuits 3/4" for low voltage system's circuits concealed within concrete slabs, & 3/4" for mechanical and plumbing equipment connections.

Surface metal raceway as manufactured by Wiremold (G-3000 and G-4000 series) may be provided where multiple outlet assemblies are required.

Conductors - 600 Volts and Below

Conductors shall be 98% conductivity copper with 600-volt insulation. Use of Aluminum conductors is not allowed without prior approval by Architect and Engineer of Record. Conductors shall be type THHN or THWN. The minimum conductor size shall be #12 AWG for power wiring.

Factory color-coded conductors shall be used to indicate phase and voltagE. A legend explaining the color code shall be installed in each panelboard. Colored electrical tape is permissible if factory color-coded wire is not available. Conductors shall be as manufactured by American Insulated Wire, General Cable, Okonite, Rome or Southwire.

Outlet Boxes

Each fixture, switch, receptacle, and other wiring/system device shall require a galvanized outlet box of appropriate size and depth for its particular location and use. As a minimum:

Non-metallic boxes may be used in wood construction as permitted by NEC 334 with prior approval from Project Architect and Electrical Engineer of Record.

4" square x 1-1/2" deep w/square cut plaster ring:
switches, receptacles, in dry wall partitions.

2-1/2" x 3-3/4" masonry type:
Switches and receptacles in concrete block walls. Use round edge plaster rings only if block wall is to be plastered.

4-11/16" x 2" deep:
Outlets in block walls. Use round edge plaster ring if block wall is to be plastered, otherwise square cut device corners.

4" octagonal x 1-1/2":
Ceiling Outlet Boxes

Cover plate shall be provided for all outlet boxes. Blank plates shall be provided for boxes left for future use.

Associated panel & circuit number shall be permanently identified on front of each device cover plate.

When applicable, outlet boxes shall be spot painted so they can be readily identified as a component of an emergency circuit: Life Safety/Emergency Power (Yellow), Fire Alarm (Red). For projects that have an open "blacked" out-structure, spot paint the inside cover of junction box in lieu of outside cover.

Acceptable manufacturers are National, Appleton, Raco, General Electric and Steel City.

Pull and Junction boxes

For interior work, boxes shall be galvanized sheet metal with screw covers.

For exterior work, boxes shall be galvanized sheet metal with bolted covers and full gaskets to form a rain tight assembly equal to Keystone 19000 and 37900 series. Heavy-duty sidewall junction boxes with fully gasketed, watertight covers, equal to Quazite type PC will be provided for exterior work in graded areas.

Boxes shall be sized according to number of conductors or type of use as outlined in the NEC. Minimum junction box size shall be 4" square and 2-1/2" deep.

Pull and junction boxes will be spot painted similar to outlet boxes. Covers will be permanently marked identifying panel & circuit numbers of circuits contained therein.

Panelboards (NEW)

Panelboards shall be provided to serve loads as required as well as providing a minimum of 10% breaker capacity. Panelboards shall be by Eaton/C-H, G.E., or Square D., Siemen's:

120/208 V, 3 phase 4-wire branch circuit panelboard: Pow-R-Line 1A

Circuit breakers serving HVAC equipment & other cyclical equipment (except 120V fractional horsepower) shall be HACR type.

Bus bars for panelboards shall be copper or aluminum. Circuit breakers shall be selected to accommodate available fault current ratings at associated bus. Provide an accurate, legible directory at each panelboard (new or existing being re-used). Provide breakers indicated on panel schedules as well as any other breakers required by the project. Fill available spares/spaces with 20/1 breakers.

Wiring Devices

Wiring devices, including switches, receptacles, and other miscellaneous devices shall be specification grade by Leviton, Arrow Hart, Hubbell, or Pass and Seymour, and shall be equal to:

Leviton 1221 series - 20A switches
Leviton 89781 series - CATV outlet
Leviton 278 series - 30A, 4-wire, 250v Dryer receptacle
Leviton 5362 series - 20A receptacles
Leviton 6899 series - 20A Ground-Fault receptacle
Dimmers (stand alone) - Per light fixture manufacturer recommendations
Oven Receptacle shall be 250v, 3-wire, black, amperage as required for unit

Generally, switches and general purpose receptacles will be 20A. In other areas device rating will be determined by circuit load. Where a circuit serves a single receptacle, that device will match the over-current protection of the branch circuit.

Floor boxes, where required, will be equal to Steel City 640 series with flush mounted brass or aluminum covers.

Poke thru's, where required, will be equal to Legrand RC4 series with flush mounted brass or aluminum covers. For poke thru's requiring a 3-gang device or larger, device shall be equal to Legrand Evolution series.

Device Plates

Associated panel & circuit number shall be permanently identified on front of each device cover plate.

Device plates shall be provided for all switches, receptacles and miscellaneous devices and shall be as offered by the device manufacturer.

Unless directed otherwise by Architectural plans or owner, device plates shall be white, nylon, standard size and by same manufacturer as device installed.

Safety Switches

A safety switch shall be provided for each piece of equipment, which is not provided with an integral disconnecting means. Switches shall be horsepower rated-general duty (for 208V applications) and heavy duty (for 480V applications), and shall be as manufactured by Eaton/ Cutler-Hammer or equal. Provide service entrance type where utilized in this manner.

Supporting Devices

A system of supporting devices and hangers shall be provided for conduit systems, electrical equipment, fixtures, outlet boxes, junction boxes, etc.

Conduits shall be secured within 3 feet of each outlet box and at intervals not to exceed NEC requirements (10 feet for most metallic products).

Acceptable manufacturers are Erico Products, Inc., Steel City, Minerallac and Rayco Fasteners.

Grounding

The entire system of raceways and equipment shall be grounded in accordance with Article 250 of the NEC.

Distribution panel will be bonded to incoming main water line, building steel, and to a tri-pod grounding rod system. Feeder circuits shall require a separate green grounding conductor to be routed with circuit conductors within the conduit. Branch circuits shall have a separate green grounding conductor from panel ground bus to device.

Ground conductors will be provided for the telephone system - #4 (service entrance terminal boards) and #6 AWG (remote terminal boards). Each shall be terminated at a terminal block "Cooper B-Line SBTGB" on the plywood backboard. Ground conductors shall originate at the panelboard that provides power to the telephone system.

Motor Starters

Motor starters shall be provided for equipment as required (see Mechanical schedules) and will be mounted in motor control centers, NEMA/general purpose enclosures, or NEMA 3R wet location enclosures as dictated by the specific application.

Design shall be NEMA standard; UL listed as manufactured by Eaton/Cutler-Hammer. Each starter shall be equipped with a hand-off-auto selector switch, control power transformer, pilot lights, motor circuit protector, push button station, and auxiliary contacts.

Interior Lighting and Lamps

General lighting shall be non-proprietary & shall be designed to provide desired lighting levels while meeting aesthetic goals and operating cost criteria. Acceptable manufacturers for light fixtures are denoted on lighting fixture schedule. Lamps shall be by Osram/Sylvania, G.E., or Phillips. Drivers shall be by Advance, MagnaTek, Motorola, or Valmont.

Exit signage throughout the facility will be accomplished using LED type, die cast aluminum units placed to comply with NFPA 101 (life safety code).

All fixture colors & finishes shall be approved by owner prior to ordering.

Recessed lighting fixtures installed in rated ceilings must be listed for use in a rated ceiling assemly or fixture must be enclosed as required to maintain ceiling rating.

Recessed lighting fixtures installed in ceilings with insulation must be I.C. rated.

Lighting Control System

Provide wall and ceiling mounted occupancy sensors,dimmers or dual level switching as shown and as required to comply with I.E.C.C..

Telephone/Data and CATV systems

Provide 2-gang box with cover plate for each outlet. Stub a 3/4" conduit from box to space above accessible ceiling. Provide duplex receptacle adjacent to all CATV outlets and connect to nearest available receptacle branch circuit if not indicated otherwise on the drawings. Coordinate exact scope for telephone and CATV with owner. Coordinate installation of telephone service and cable TV services with local utility companies. Install RG6 coax cable from each cable TV outlet to the building cable TV entrance. Telephone cable shall be UTP Category 6. CATV shall be RG6 Coaxial cable.

All low voltage cable shall be rated for use in return air plenums.

GENERAL ELECTRICAL NOTES

1. At completion of work, electrical system shall be in complete working order. Perform testing in presence of owner's representative. Furnish instruments, devices and equipment necessary to perform tests. All equipment and devices shall be UL Listed. Installation shall conform to UL standards where applicable.
2. The electrical drawings are diagrammatic only and should not used to measured or scale the installation requirements. The routing of branch circuits and exact locations of devices are subject to building and site specific conditions.
3. Contractor shall maintain 2 sets of red-lined "As-Built" documents at the site that reflects the true installed conditions of the project.
4. If required by drawings, coordinate installation of new electrical service with electric utility company. Provide metercenters, weatherheads, meter bases, and other items as required.
5. Verify electrical requirements for all equipment prior to rough in. Provide circuits and fuses sized in accordance with manufacturers' recommendations.
6. Maintain code required working clearance at all electrical panels, disconnect switches and starters. There shall be no equipment, piping or duct work installed in or above the working clearances.
7. Install electrical boxes located on opposite sides of rated walls such that they are separated by a horizontal distance of 24 inches minimum. Where the 24 inch horizontal distance separation cannot be maintained due to receptacle spacing requirements, provided UL listed non-metallic boxes manufactured by Carlon Electrical products made of polyvinyl chloride and bearing a 2 hour rating. Install fire-stop inturnescent electrical box gasket as manufactured as an intumescent thermoplastic device for use as a fire stop in electrical boxes. Must easily install inside the back of an electrical box, seal off the opening to prevent the spread of flames, include a pre-die cut ground screw opening to ensure metal to metal ground accessibility for future access. Volume of fire stop gasket shall not exceed 3.0 cubic inches which must include the void created if gasket will not sit flush to back of the junction box due to the raised nipple for grounding location. Device must be listed for use with plastic or metal faceplates in both 1 hr. and 2 hr. U-300, U-400 and U-411 wall assemblies. Gaskets must be designed to fit easily into the electrical boxes with out effecting NEC Box ratings and provided with an adhesive strip on the device to hold the gasket in place in back of electrical box. Gasket must have passed ASTM-814-10 testing for rated enclosures by an accredited NRTL. As manufactured by FireBlok or equal.
8. Provide disconnect switch for any hardwired equipment not supplied with disconnecting means.
9. See mechanical plans for exact locations and control requirements for mechanical equipment.
10. Connect exit lights and emergency lights with integral battery in exterior passages/stairs to local lighting circuit ahead of photocells switch such that they are constantly 'on' and will automatically convert to battery operation upon loss of normal power.
11. For projects requiring a fire alarm system, no wiring is shown. Locate devices as indicated and connect to perform as described in fire alarm system specification. The fire alarm contractor is required to submit a complete set of fire alarm drawings to the Fire Marshall and/or building Codes department showing all device locations, interconnection wiring, battery calculations, etc. Each set of plans to be signed dated and sealed by a registered professional engineer of the State.
12. All HVAC air handling units (new and existing) 2000cfm and larger and/or serve the building egress path shall be provided with duct mounted smoke detectors, If detectors are existing, contractor shall test and inspect for proper operation and replace if required. Coordinate installation with division 15 prior to rough-in. For projects requiring duct detectors where no fire alarm system is present, contractor shall provide 120V. standalone duct detectors. Detectors shall be equal to Model #D4-120 with ART52-A05 Remote Test/Reset Switch with Sounder/Flasher Unit. Locate remote switch as directed by owner or tenant.
13. Smoke Detectors shall not be installed within 3 ft of the tip of ceiling fan blades or HVAC supply diffusers
14. All receptacles on dedicated circuits shall be rated no less than circuit overcurrent device.
15. Fire stop around all penetrations of rated floors, ceilings, and walls. Refer to architectural drawings for additional details.
16. All light fixtures shall be as specified or as directed by the owner/architect. All fixtures that do not have a fixture type are to be chosen by the owner through an allowance. Electrical contractor shall provide outlet boxes as required.
17. Electrical contractor to confirm exact mounted method and location for all light fixtures prior to beginning rough-in and shall provide all necessary hardware.
18. Where multiple switches are shown mounted together, provide under a single faceplate.
19. The entire electrical installation shall be in compliance with any local ordinance in addition to the national electrical code being enforced. The electrical contractor shall obtain a copy of any ordinances and shall adjust the installation shown on these drawings as necessary to comply with the code that is the most stringent (local code ordinance or National Electrical Code -NEC).
20. AutoCad files for any portion of the electrical drawings may be obtained at a cost of $200.per cad file. This cost is intended to cover the man-hours only involved with preparing & delivering the Autocad files.

ABBREVIATIONS

ABBREVIATION	MEANING
AFF	ABOVE FINISHED FLOOR
GFI	GROUND FAULT INTERRUPTER
WP	WEATHER PROOF
TV	TELEVISION CONNECTION - COORDINATE MOUNTING HEIGHT W/ARCHITECT
FPMR	FUSE PER MANUFACTURERS RECOMMENDATIONS
FV	FIELD VERIFY, LOCATE PER OWNER
E	EXISTING TO REMAIN
ER	EXISTING TO BE RELOCATED
R	EXISTING RELOCATED
EX	EXISTING TO BE REMOVED
U.O.N.	UNLESS OTHERWISE NOTED

Fire Alarm systems (new)

Fire alarm system shall be non-proprietary by Silent Knight, Fire-Lite, or approved equal. Proprietary systems will not be accepted. System shall include an integral annunciator, digital communicator, and shall be an addressable system with Class B wiring. Provide automatic notification to a 24 hour monitoring station for any alarm or trouble conditions via GSM and/or cellular radio. Honeywell IPGSM-4G, Tel Guard TG-7FS or approval equal.

For indoor located FACP's provide a standard Fire Alarm System smoke detector above the FACP.

Provide an addressable fire alarm system relay for input to each building music/paging system, each building sound system and for T.V. audio output to auto-mute these systems on any fire alarm system alarm condition. Mount relays as directed by sound system installer. connect relays to nearest local fire alarm system device alarm circuit.

Operation of any manual or automatic fire alarm initiation device shall:
A. Activate all alarm notification devices.
B. Automatically notify monitoring station of "Fire".

Any circuit open, short or ground shall sound "Trouble" alarm at fire alarm control panel.

Operation of any sprinkler tamper switch shall sound "Supervisory" alarm at fire alarm control panel.

For each HVAC unit, including those that do no have a duct mounted smoke detector, provide a set of dry contacts to the unit to allow shunting of unit upon activation of any fire alarm initiating device. Activation of a duct mounted smoke detector shall cause a building supervisory as well as shutdown of the HVAC unit.

Provide a remote test/reset switch with sounder/flasher unit for each duct mounted smoke detector mounted on wall or ceiling near detector as directed by owner/tenant.

Fire alarm system control panel shall be connected to a dedicated 120 volt power circuit and include an integral battery system for emergency power.

Provide magnetic door holder complete with matching door plate on doors located in building smoke walls. Door holders shall be wall or floor mounted as required by door configuration. Voltage shall be as required by fire alarm system. Holders shall be wired & connected to fire alarm system & shall release & close doors upon any building fire alarm condition. Provide ceiling mounted smoke detectors on both sides of the doors mounted with 5'-0" of doors.

Provide fire alarm system interconnection to all building egress doors that are electrically locked via building security system. Locking mechanism shall be deactivated & doors shall be unlocked & allowed to close any upon building fire alarm condition.

The fire alarm system supplier shall prepare engineered plans, stamped by a registered professional Engineer in the State. Submit product data and stamped plans to local and state codes. The submittal shall include (but not limited to) the following:

1. Fire alarm equipment and devices (and associated Legend of symbols)
2. Fire alarm system wiring diagrams, interconnections, and general product information
3. Battery calculations

AutoCAD files may be obtained for use in producing the above information at a cost of $200.00 per cad file. This cost is intended to cover man-hours only involved with preparing & delivering the AutoCAD files.

Provide devices in accordance with the approved plans submitted to state and local codes by the Fire Alarm System Engineer or Record.

Fire alarm system shall utilize Class B wiring and include an integral battery capable of operating system for 24 hours in standby and 5 minutes in alarm.

Fire alarm equipment shall meet all requirements of ADA.

Provide non-coded, non-break glass, dual action type, manual fire alarm stations in red, semi-flush mounted enclosure. Provide weatherproof covers for devices located in breezeways or on the exterior of the building..

Provide photoelectric spot type smoke detectors.

Provide surface mounted, weatherproof style horn/light device with integral xenon strobe with tri-level multi-candela rating.

Install ceiling mounted smoke detectors at locations indicated on approved fire alarm plans. Smoke detectors shall be installed in accordance with their rated coverage.

Fire alarm signaling devices shall, when wall mounted, be located 6'-8" above floor.

Fire alarm manual pull stations shall be mounted with top at 4'-0" above floor.

Final connections at control panel and testing of complete system shall be by a factory-trained technician. Test entire system including all devices and features.

Refer to civil and mechanical plans for quantity and location of monitored items such as P.I.V., flow and tamper switches, underground gate valves, and duct mounted smoke detectors. Provide power for electronic supervision of these devices as needed.

Spacing of visible appliances shall be in accordance with Figure 7.5.4.1.1 and either Table 7.5.4.1.1(a) or Table 7.5.4.1.1(b) of NFPA 72. More than (2) visible notification appliances in the same room or adjacent space within the field of view must flash in synchronization.

Audible and visual appliances shall be located and mounted per NFPA 72 [72-7.4.6.1 Visual/72-7.4.6.2 Audible].

Strobe Candela Ratings and Spacing shall be as follows:

Area:	Rating:
20x20 or less	1 @ 15cd
30x30 or less	1 @ 30cd
40x40 or less	1 @ 60cd
50x50 or less	2 @ 60cd on opposite walls
70x70 or less	2 @ 110cd on opposite walls
80x80 or less	4 @ 60cd one on each wall
100x100 or less	4 @ 110cd one on each wall
Hallways	1 @ 75cd no more than 50' apart

Audible Device D/B ratings shall be as follows:
85 D/B or 15 D/B above ambient conditions.

Provide supervisory signal - initiating devices as applicable according to NFPA 72 5.13.

SHEET INDEX

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E-2.3	ELECTRICAL HVAC POWER PLAN
E-3.1	ELECTRICAL RISER DIAGRAM
E-4.1	ELECTRICAL SCHEDULES

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REVISIONS:

DELTA	DESCRIPTION	DATE

DATE OF ISSUE:	09.12.2022
MA PROJECT NO:	0336-22
PROJECT PHASE:	CD
DRAWN BY:	DF&H SERVICES

ELECTRICAL SPECIFICATIONS

E-0.1

EQUIPMENT SCHEDULE

ID	DESCRIPTION	ELECTRICAL						CONNECTION				GAS	REMARKS	ID
		QTY	VOLT	PH	AMP	HP	KW	MOCP	DIREC	PLUG	TYPE			
K-1	H-65 HOT PLATE	1	208	1	21	-	-	30	X	-	-	-	NOTE 1	K-1
K-2	536CHSF ELECTRIC GRIDDLE	1	208	3	25	-	-	30	X	-	-	-	NOTE 1	K-2
K-3	FPRE214 ELECTRIC GRIDDLE	1	208	3	39	-	-	50	X	-	-	-	NOTE 1	K-3
K-4	2-ASC-2E STACKED OVEN	1	208	3	14	-	-	20	X	-	-	-	NOTE 1	K-4
K-5	1000-TH-II COOK HOLD OVEN	1	120	1	17	-	-	30	-	X	-	-	-	K-5
K-6	VHFA18 HEATED CABINET	1	120	1	-	-	2	30	-	X	-	-	-	K-6
K-7	DP2 PIZZA BAKE OVEN	1	208	3	14	-	-	20	-	X	NEMA 6-30P	-	-	K-7
K-8	HOOD CONTROL	1	120	1	2					X			NOTE 1	K-8
K-12	CRMR48-W	1	115	1	2.2	-	-	20	-	X	NEMA 5-20R	-	-	K-12
K-13	CRMR48-12	1	115	1	2.2	-	-	20	-	X	NEMA 5-20R	-	-	K-13
K-14	VMS2 WARMING DRAWERS	1	120	1	8	-	-	20	-	X	NEMA 5-20R	-	-	K-14
K-15	HMR 104	1	208	3	20	-	-	20	-	X	NEMA L21-20R	-	-	K-15
K-16	SANDWHICH PREP	1	115	1	5.4	-	-	20	-	X	NEMA 5-20R	-	-	K-16
K-17	DISHWASHER	1	208	3	60	-	-	60	X	-	DISC. 60/3/3R	-	-	K-17
K-18	ED2-72 FOOD WARMER	1	208	3	20	-	-	20	-	-	-	-	NOTE 1	K-18
K-19	FBD 563 ICEE	1	245	1	20	-	-	20	-	X	NEMA L6-20R	-		K-19
K-20	LANCER FS 30	1	120	1	8	-	-	20	-	X	NEMA 5-20R	-	-	K-20
K-21	ICE MACHINE	1	208	3	4	-	-	20	X	-	-	-	NOTE 1	K-21
K-22	EJ1 JETSPRAY	1	115	1	8	-	-	20	-	X	NEMA 5-20R	-	-	K-22
K-23	NEMCO 6470	1	120	1	14.5	-	-	20	-	X	NEMA 5-20R	-	-	K-23
K-24	COFFEE BREWER	1	120	1	18.1	-	-	30	-	X	NEMA 5-30R	-	-	K-24
K-25	TEA BREWER	1	120	1	14	-	-	20	-	X	NEMA 5-20R	-	-	K-25
K-26	CAPPICHINO	1	120	1	15	-	-	20	-	X	NEMA 5-20R	-	-	K-26
K-27	PIZZA DOUGH PRESS	1	120	1	9.8	-	-	20	-	X	NEMA 5-20R	-	-	K-27
K-28	LPRSS4 OPEN AIR	1	120	1	16	-	-	20	-	X	NEMA 5-20R	-	-	K-28
K-29	ECSS405C OPEN AIR	1	120	1	15	-	-	20	-	X	NEMA 5-20R	-	-	K-29
K-30	WALK IN COOLER	4	-	-	-	-	-	-	-	-	-	-	NOTE 1	K-30
K-31	WALK IN FREEZER	1											NOTE 1	K-31
K-32	KOOL AID	1	115	1	3.1			15		X	NEMA 5-15P			K-32
K-33	ICE CREAM BOX	1	120	1	2	-	-	-	-	-	NEMA 5-20R	-	-	K-33

NOTES

1. CONTRACTOR TO VERIFY ELECTRICAL CONNECTION REQUIRMENETS WITH EQUIPMENT PURCHASED PRIOR TO ORDERING

COMcheck Software Version 4.1.5.5

Interior Lighting Compliance Certificate

Project Information

Energy Code: 2018 IECC
Project Title:
Project Type: New Construction

Construction Site:
1801 West End Avenue
Nashville, TN 37203

Owner/Agent:

Designer/Contractor:

Additional Efficiency Package(s)

Credits: 1.0 Required 1.0 Proposed
Reduced Lighting Power, 1.0 credit

Allowed Interior Lighting Power

A Area Category	B Floor Area (ft2)	C Allowed Watts / ft2	D Allowed Watts (B X C)
1-Office	1490	0.71	1059
		Total Allowed Watts =	1059

Proposed Interior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
1-Office				
LED 1: F1&F1E: DOWNLIGHT: Other:	1	37	15	555
LED 2: F2: PENDANT: Other:	1	3	30	90
LED 3: F3: Other:	1	2	20	40
			Total Proposed Watts =	685

Interior Lighting PASSES: Design 35% better than code

Interior Lighting Compliance Statement

Compliance Statement: The proposed interior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2018 IECC requirements in COMcheck Version 4.1.5.5 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

CHRIS BUCKNER — Name - Title
Signature
9.12.22 — Date

Project Title:
Report date: 09/09/22
Data filename: Z:\Shared\2022 Project Folder\22.436 1801 West End Tenant Lounge - MEP - DWC\Electrical\Untitled.cck
Page 1 of 6

BRANCH CIRCUIT CONDUCTOR SCHEDULE

CONDUCTORS SHALL BE COPPER – ALUMINUM CONDUCTORS MAY ONLY BE USED WITH PRIOR WRITTEN APPROVAL BY ENGINEER OF RECORD. CONDUCTORS / CONDUITS SHALL BE SIZED ACCORDING TO THE FOLLOWING CHART UNLESS OTHERWISE NOTED.

CIRCUIT BREAKER	CU PHASE WIRE (AWG)	AL PHASE WIRE (AWG)	CU GROUND WIRE (AWG)	AL GROUND WIRE (AWG)	CU CONDUIT SIZE	AL CONDUIT SIZE
15	#12	–	#12	–	3/4"	3/4"
20	#12	–	#12	–	3/4"	3/4"
30	#10	–	#10	–	3/4"	3/4"
40	#8	–	#10	–	1"	1"
50	#8	–	#10	–	1"	1"
60	#6	#4	#10	#8	1"	1 1/4"
70	#6	#4	#8	#6	1"	1 1/4"
80	#4	#2	#8	#6	1 1/4"	1 1/4"
90	#4	#2	#8	#6	1 1/4"	1 1/4"
100	#3	#1	#8	#6	1 1/4"	1 1/2"
125	#1	#2/0	#6	#4	1 1/2"	2"
150	#1/0	#3/0	#6	#4	2"	2"
175	#2/0	#4/0	#6	#4	2"	2 1/2"
200	#3/0	#250	#6	#4	2"	2 1/2"
225	#4/0	#300	#4	#2	2 1/2"	3"
250	#250	#400	#4	#2	3"	3"
400	#500	#750	#3	#1	3 1/2"	4"
500	(2)#250	(2)#350	#2	#1/0	3"	3"

NOTES:

1. NEUTRAL CONDUCTOR (IF REQUIRED) SHALL BE THE SAME SIZE AS PHASE CONDUCTORS.
2. ALL LIGHTING CIRCUITS SHALL UTILIZE #10 AWG WIRE FOR VOLTAGE DROPS.
3. ALL HVAC OR OTHER CYCLICAL EQUIPMENT SHALL UTILIZE HACR TYPE CIRCUIT BREAKERS.
4. CONTRACTOR TO PROVIDE QUANTITY OF CONDUCTORS AS NECESSARY TO POWER LOADS.
5. CONDUIT SIZES BASES ON FOUR CONDUCTORS MAXIMUM. CONTRACTOR SHALL FOLLOW NEC GUIDELINES FOR DERATING AMPACITIES AND CONDUIT SIZES FOR ALL COMBINED CIRCUITS/HOMERUNS.
6. FOR ANY SIZE BREAKER NOT SHOWN ABOVE (EXAMPLE 25), USE THE CONDUIT AND WIRE SIZES FOR THE NEXT HIGHEST BREAKER INDICATED (EXAMPLE 30).

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION	MTG. HT.
	CONDUIT CONCEALED	
	HOMERUN CONDUIT (QUANTITY OF ARROWS DETERMINES NUMBER OF CIRCUITS)	
	EXPOSED CONDUIT	
	SURFACE OR RECESSED LED FIXTURE (TYPE DETERMINES MOUNTING) OTHER SYMBOLS MAYBE USED & ARE IDENTIFIED BY THE FIXTURE TAG ADJACENT TO FIXTURE	
	SURFACE OR RECESSED LED FIXTURE WITH BATTERY PACK (TYPE DETERMINES MOUNTING) OTHER SYMBOLS MAYBE USED & ARE IDENTIFIED BY THE FIXTURE TAG ADJACENT TO FIXT.	
	WALL MOUNTED LIGHT OTHER SYMBOLS MAYBE USED & ARE IDENTIFIED BY THE FIXTURE TAG ADJACENT TO FIXT.	
	EXIT LIGHT WITH INTEGRAL BATTERY BACK-UP	
	BATTERY PACK FIXTURE	
	COMBINATION EMERGENCY LIGHT AND EXIT SIGN	
(#)	NOTE REFERENCE – REFER TO NOTE INDICATED	
$	SINGLE POLE SWITCH – IVORY TOGGLE	46" AFF
$3	THREE WAY SWITCH – IVORY TOGGLE	46" AFF
$OC	WALL MOUNTED OCCUPANCY SENSOR	46" AFF
$OC	ACUITY – WSX-PDT-D-VLP-WH – OCCUPANCY SENSOR	46" AFF
$D	ACUITY – NPODM-DX-WH – DIMMER	46" AFF
(DS)	ACUITY NCM-PDT-10-ADCX –AUTO DIMMING DAYLIGHT SENSOR	CEILING
PP16	ACUITY – NPP16-D – POWER PACK	CEILING
$OC2	WALL MOUNTED DUAL RELAY OCCUPANCY SENSOR WATTSTOPPER DSW-302 OR EQUAL	46" AFF
$D	WALL MOUNTED SLIDE DIMMER (2000 WATT)	46" AFF
$DOC	WALL MOUNTED DIMMER/OCCUPANCY SENSOR COMBO COORDINATE MODEL WITH LAMP TYPE	46" AFF
ST	SINGLE POLE TOGGLE MOTOR DISCONNECT WITH THERMAL OVERLOAD	
$$	DUAL LEVEL SWITCHING–50% OF LAMPS IN EACH FIXTURE ON OPPOSING SWITCHES	46" AFF
D	J-BOX FOR BASE FEED TO PROVIDE PHONE/ DATA TO EACH CUBICAL. CONTRACTOR TO COORDINATE EXACT LOCATIONS AND REQUIREMENTS WITH TENANT.	
	TELEPHONE OUTLET AND PLATE	18" AFF
K	DATA OUTLET AND PLATE	18" AFF
	FLOOR MOUNTED TELEPHONE OUTLET	FLOOR
	FLOOR MOUNTED DATA OUTLET	FLOOR
	FLOOR MOUNTED COMBINATION DATA/TELEPHONE OUTLET	FLOOR
	COMBINATION DATA/TELEPHONE OUTLET AND PLATE	18" AFF
FACP	FIRE ALARM CONTROL PANEL	
F	FIRE ALARM MANUAL PULL STATION	46" AFF
F	FIRE ALARM VISUAL STATION – LIGHT ONLY SEE FIRE ALARM SPEC. FOR CANDELA RATING	80" AFF
F	FIRE ALARM AUDIBLE AND VISUAL (COMBO) SEE FIRE ALARM SPEC. FOR db RATING	80" AFF
F	FIRE ALARM HORN DEVICE SEE FIRE ALARM SPEC. FOR db RATING	80" AFF
D	SMOKE DETECTOR	CEILING
DH	FIRE ALARM SYSTEM MAGNETIC DOOR HOLDER	WALL
DS	DUCT SMOKE DETECTOR – SUPPLY (PROVIDE BY DIV. 16, INSTALL BY DIV. 15)	CEILING
DR	DUCT SMOKE DETECTOR – RETURN (PROVIDE BY DIV. 16, INSTALL BY DIV. 15)	CEILING
FS	SPRINKLR SYSTEM FLOW SWITCH	
TS	RETURNSPRINKLER SYSTEM TAMPER SWITCH	
	120V. ISOLATED GROUND RECEPTACLE	18" AFF
	120V. DUPLEX RECEPTACLE	18" AFF
	120V. DUPLEX RECEPTACLE – SPECIAL MOUNTING HEIGHT	ABOVE COUNTER
	120V. QUADPLEX RECEPTACLE	18" AFF
	120V. QUADPLEX RECEPTACLE – SPECIAL MOUNTING HEIGHT	ABOVE COUNTER
	250V. 2-POLE SINGLE RECEPTACLE, AMPERAGE AS NOTED	18" AFF
	120V. DUPLEX GFI RECEPTACLE	18" AFF
	120V. DUPLEX GFI RECEPTACLE – SPECIAL MOUNTING HEIGHT	ABOVE COUNTER
	120V. FLOOR MOUNTED DUPLEX RECEPTACLE	FLOOR
J	J-BOX FOR BASE FEED TO PROVIDE POWER TO EACH CUBICAL. CONTRACTOR TO COORDINATE EXACT LOCATIONS AND REQUIREMENTS WITH TENANT.	
J	JUNCTION BOX	
	FUSED DISCONNECT SPECIFY AMP/POLE	
	NON-FUSED DISCONNECT SPECIFY AMP/POLE	
	COMBINATION STARTER – SPECIFY NEMA SIZE	
OS	OCCUPANCY SENSOR – LEVITON MUL-TECH OSC20-MOW	CEILING
TV	TELEVISION CONNECTION BOX	COORDINATE MOUNTING HEIGHT W/ARCHITECT
BPI	BASE POWER FEED – WALL MOUNTED JUNCTION BOX FOR POWER & VOICE/DATA CONNECTION TO PRE-WIRED FURNITURE. INCLUDE CONNECTION WHIPS AS REQUIRED	

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ELECTRICAL LEGEND

E-0.2

NOTES:

1. INSTALL LIGHTS PROVIDED WITH COOLERS
2. PROVIDE SWITCHES UNDER COUNTER. VERIFY LOCATION WITH OWNER. SEE E3.1 FOR DETAILS.

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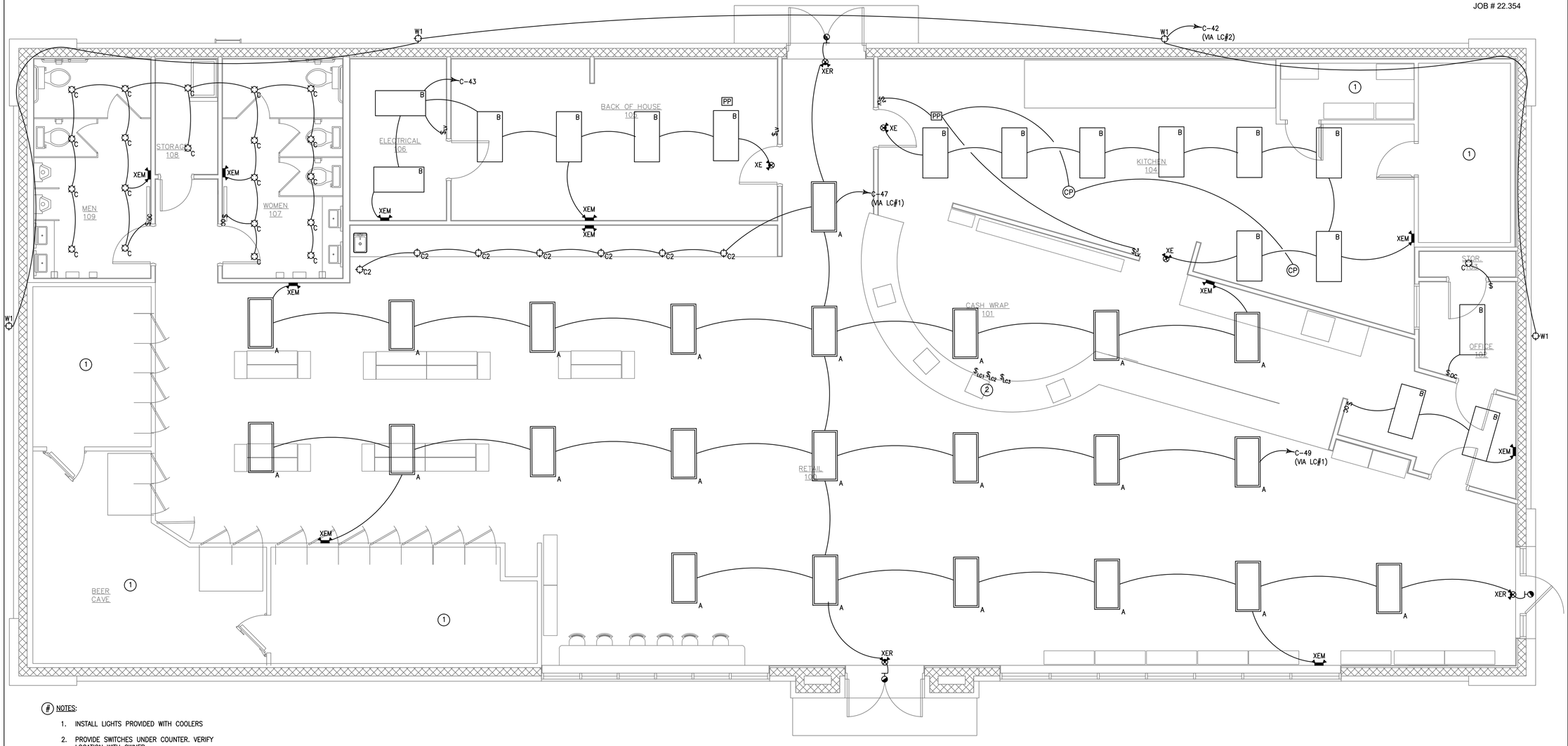

NOTES:

1. INSTALL LIGHTS PROVIDED WITH COOLERS
2. PROVIDE SWITCHES UNDER COUNTER. VERIFY LOCATION WITH OWNER

LIGHTING FIXTURE SCHEDULE

TYPE	MANUF.	MODEL	ELECTRICAL		LAMPS				MOUNTING		COMMENTS
			WATTS/FIXT.	VOLT	COLOR(K)	DELIVERED LUMENS(LM)	TYPE	DIMMABLE	TYPE	LOCATION	
A	NICOR	HBL-20-110W-UNV-50K	110	120	5000	14400	LED	NO	SURFACE	INTERIOR	HIGH BAY LIGHT FIXTURE
B	LITHONIA	EPANL 2X4 4000LM 80CRI 2T MVOLT	39	120	3500	4000	LED	NO	SURFACE	INTERIOR	2X4 LED FLAT PANEL
C	LITHOINIA	LDN6 35/15 LQ6AR LSS MVOLT GZ10	21	120	3500	1500	LED	NO	RECESSED	INTERIOR	6" LED RECESSED DOWNLIGHT
C1	OWNER SELECTED CONTRACTOR PROVIDED		50	120	TBD	TBD	LED	NO	TBD	EXTERIOR	CANOPY LIGHT FIXTURE
C2	LITHONIA	LDN6 35/15 LQ6AR LSS MVOLT GZ10 FCM	21	120	3500	1500	LED	NO	PENDANT	INTERIOR	6" LED CYLINDER DOWNLGIHT
S1	SPRING LIGHTING	ALM 195 T3 G2 5K	300	120	5000	39300	LED	NO	POLE	EXTERIOR	LED SITE LIGHT
W1	OWNER SELECTED CONTRACTOR PROVIDED		15	120	TBD	TBD	LED	NO	WALL	EXTERIOR	EXTERIOR LED WALL LIGHT
W2	OWNER SELECTED CONTRACTOR PROVIDED		15	120	TBD	TBD	LED	NO	WALL	EXTERIOR	DECORATIVEE
W3	OWNER SELECTED CONTRACTOR PROVIDED		15	120	TBD	TBD	LED	NO	WALL	EXTERIOR	FLOOD LIGHT FIXTURE
XE	LITHONIA	LHQM LED R HO SD	-	UNIV	-	-	UNIV	-	UNIV	INTERIOR	COMBO EXIT/EGRESS LIGHT WITH BATTERY BACKUP
XEM	LITHONIA	EM6L UVOLT LTP	-	UNIV	-	-	UNIV	-	UNIV	INTERIOR	EGRESS LIGHT WITH BATTERY BACKUP
XER	LITHONIA	LHQM LED R HO SD ELA T QWP L0309 SD	-	UNIV	-	-	UNIV	-	UNIV	EXTERIOR	COMBO EXIT/EGRESS LIGHT WITH BATTERY BACKUP AND REMOTE OUTDOOR HEAD

ELECTRICAL LIGHTING PLAN

SCALE: 1/4" = 1'-0"

PLAN NORTH

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ELECTRICAL LIGHTING PLAN

E-2.1

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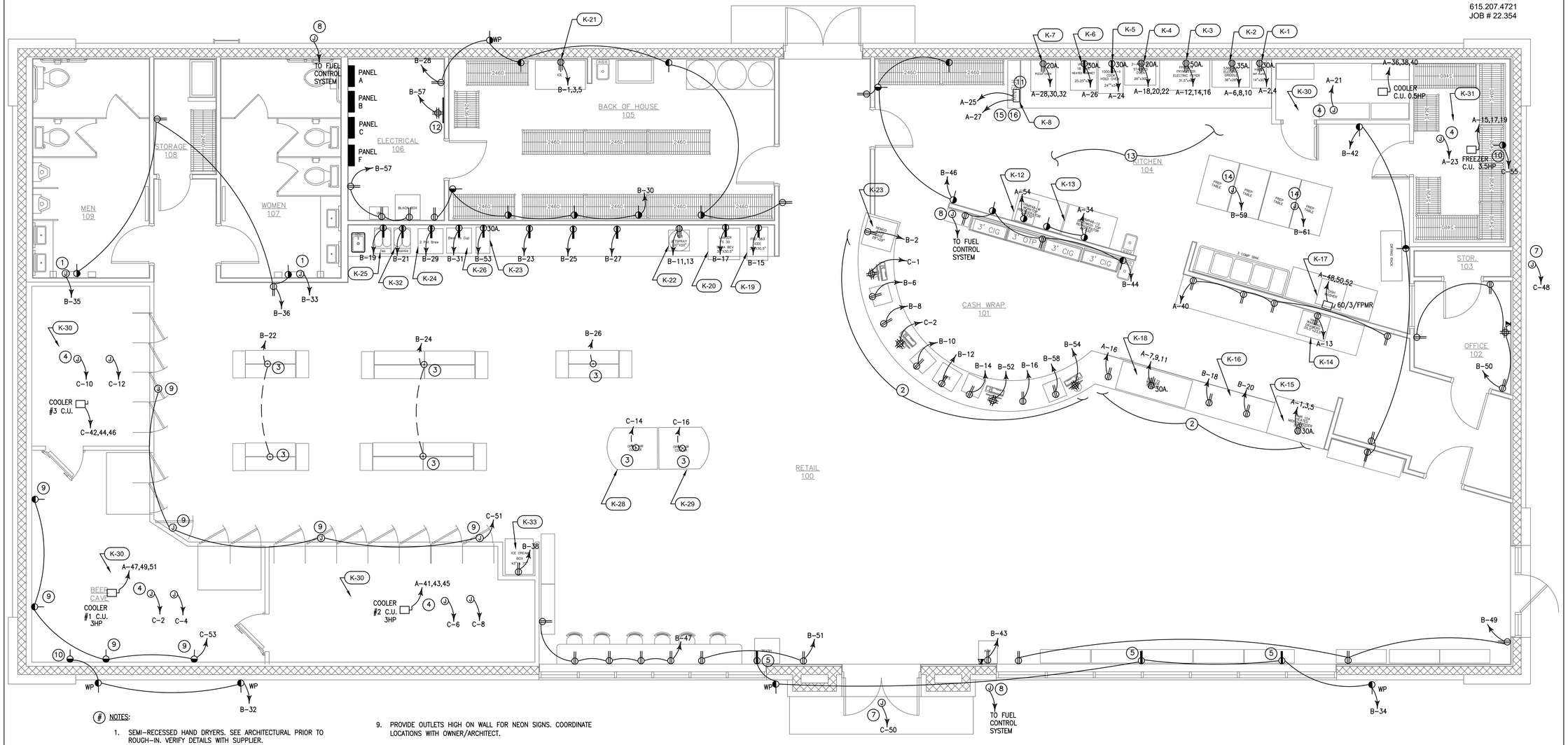

ELECTRICAL POWER PLAN

SCALE: 1/4" = 1'-0"

PLAN NORTH

(#) NOTES:

1. SEMI-RECESSED HAND DRYERS. SEE ARCHITECTURAL PRIOR TO ROUGH-IN. VERIFY DETAILS WITH SUPPLIER.
2. OUTLETS MOUNTED IN CABINETS. SEE ARCHITECTURAL DRAWINGS.
3. VERIFY EXACT LOCATION WITH ARCHITECT.
4. PROVIDE 120V,20A CIRCUIT(S) FOR COOLER LIGHTS,DOOR LIGHTS, EVAPORATOR FANS AND DOOR HEATERS. COORDINATE ALL DETAILS WITH EQUIPMENT INSTALLER.
5. INSTALL ABOVE WINDOW TO MEET NEC REQUIREMENTS FOR SHOW WINDOWS.
6. PROVIDE POWER TO TV AND OWNER PROVIDED LIGHT. PROVIDE DATA ROUGH-IN. SEE ARCHITECTURAL FOR EXACT LOCATIONS AND HEIGHTS.
7. COORDINATE BUILDING SIGN LOCATION AND ALL DETAILS WITH OWNER AND SUPPLIER,
8. PROVIDE A FLUSH OUTLET BOX WITH 3/4"C. TO FUEL CONTROL SYSTEM FOR FUEL SYSTEM E-STOP DEVICES BY PETROLEUM CONTRACTOR, VERIFY LOCATION WITH OWNER AND LOCAL FIRE OFFICIAL.
9. PROVIDE OUTLETS HIGH ON WALL FOR NEON SIGNS. COORDINATE LOCATIONS WITH OWNER/ARCHITECT.
10. PROVIDE OUTLET FOR HEAT TAPE. COORDINATE DETAILS WITH REFRIGERATION CONTRACTOR.
11. PRE-WIRED HOOD CONTROL PANEL. COORDINATE DETAILS WITH SUPPLIER
12. TELEPHONE BOARD: 3/4"X2'X6" PLYWOOD
13. VERIFY EXACT ELECTRICAL REQUIREMENTS WITH KITCHEN EQUIPMENT SUPPLIER PRIOR TO ROUGH-IN OR ORDERING GEAR.
14. PROVIDE POWER FROM CEILING. COORDINATE DETAILS WITH OWNER.
15. CONNECTION FOR HOOD CONTROL PANEL AND FIRE SUPPRESSION SYSTEM. PROVIDE ALL NECESSARY ELECTRICAL COMPONENTS, CIRCUITS,ETC. AS INDICATED ON DIV 15 DRAWINGS AND HOOD MANUFACTURERS DRAWINGS.
16. SEE DIV.15 DRAWINGS AND HOOD MANUFACTURERS DRAWINGS FOR HOOD REQUIREMENTS. SUPPLY/EXHAUST FANS, FIRE SUPPRESSION SYSTEM AND ALL HOOD COMPONENTS. PROVIDE CIRCUITS MATERIALS AND INTERLOCKS REQUIRED BY ELECTRICAL AS INDICATED ON DRAWINGS. COORDINATE FINAL SCOPE WITH OWNER, GENERAL CONTRACTOR AND DIV.15 PRIOR TO ROUGH-IN.

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ELECTRICAL POWER PLAN

E-2.2

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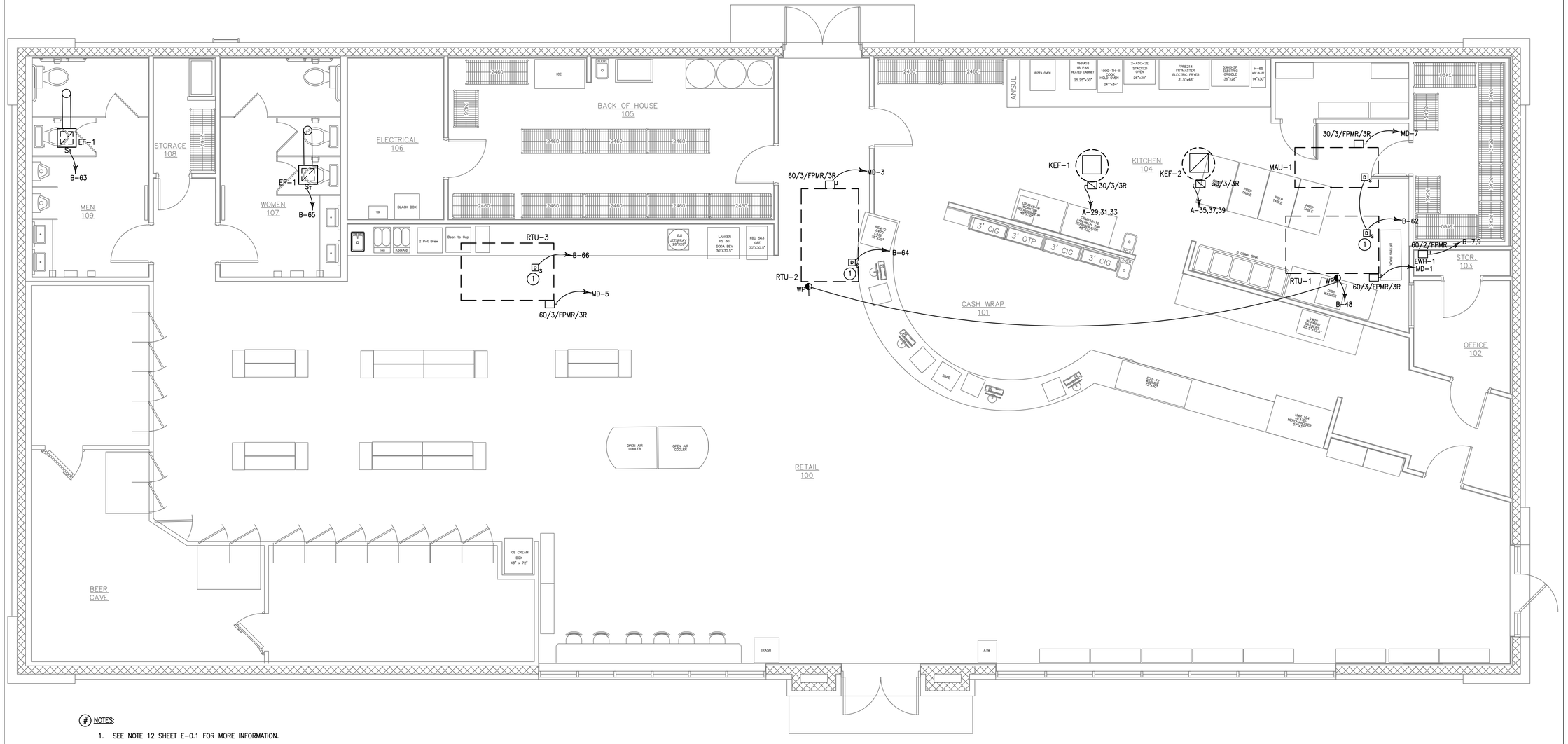

(#) NOTES:

1. SEE NOTE 12 SHEET E-0.1 FOR MORE INFORMATION.

HVAC POWER PLAN

SCALE: 1/4" = 1'-0"

PLAN NORTH

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ELECTRICAL HVAC POWER PLAN

E-2.3

COPPER FEEDER SCHEDULE (AWG)

NUMBER	CONDUCTORS THHW	SERVICE CONDUCTOR GROUND (AWG)	CONDUIT	CONDUIT WITHOUT NEUTRAL
THREE PHASE FEEDERS				
30	4#10, 1#10G	X	3/4"	1/2"
40	4#8, 1#10G	X	1"	1"
60	4#6, 1#10G	8	1-1/4"	1"
80	4#4, 1#8G	8	1-1/4"	1-1/4"
100	4#3, 1#8G	8	1-1/4"	1-1/4"
115	4#2, 1#6G	6	1-1/2"	1-1/4"
125	#4#1, 1#6G	6	2"	1 1/2"
150	4#1/0, 1#6G	6	2"	1 1/2"
175	4#2/0, 1#6G	4	2"	2"
200	4#3/0, 1#6G	4	2-1/2"	2"
225	4#4/0, 1#4G	2	2-1/2"	2"
250	4#250MCM, 1#4G	2	3"	2-1/2"
285	4#300MCM, 1#4G	2	3"	2-1/2"
300	4#350MCM, 1#4G	2	3"	3"
350	4#400MCM, 1#3G	1/0	3"	3"
400	4#500MCM, 1#3G	1/0	3 1/2"	3"
420	4#600MCM, 1#2G	1/0	4"	3 1/2"
450	4#750MCM, 1#2G	1/0	4"	3-1/2"
460	(2 SETS)4#4/0, 1#2G	1/0	2-1/2" EA	2" EA
500	(2 SETS)4#250MCM, 1#2G	1/0	3" EA	2-1/2" EA
600	(2 SETS)4#350MCM, 1#1G	2/0	3" EA	3" EA
800	(2 SETS)4#500MCM, 1#1/0G	2/0	3-1/2" EA	3" EA
820	(2 SETS)4#600MCM, 1#2/0G	2/0	4" EA	3-1/2" EA
1000	(3 SETS)4#400MCM, 1#2/0G	3/0	3-1/2" EA	3" EA
1200	(4 SETS)4#350MCM, 1#3/0G	3/0	3" EA	3" EA
1600	(4 SETS)4#600MCM, 1#4/0G	4/0	4" EA	3-1/2" EA
2000	(6 SETS)4#400MCM, 1#250G	250	3" EA	3" EA
SERVICE ENTRANCE FEEDERS				
200-S	4#3/0	-	2-1/2"	-
300-S	4#350MCM	-	3"	-
400-S	4#500MCM	-	3 1/2"	-
600-S	(2 SETS)4#350MCM	-	2-1/2" EA	-
800-S	(2 SETS)4#500MCM	-	3-1/2" EA	-
1000-S	(3 SETS)4#400MCM	-	3-1/2" EA	-
1200-S	(4 SETS)4#350MCM	-	3" EA	-
1600-S	(4 SETS)4#600MCM	-	4" EA	-
2000-S	(6 SETS)4#400MCM	-	3" EA	-
2500-S	(7 SETS)4#500MCM	-	3" EA	-

NOTES:

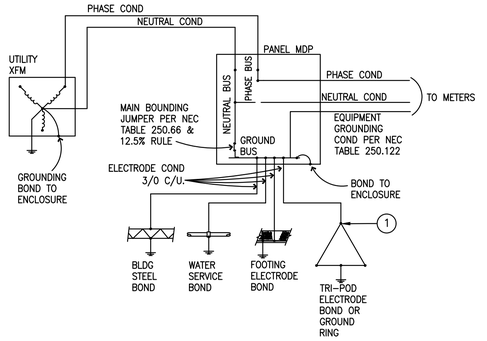
1. WHERE FEEDER SIZE IS SHOWN WITH A SUBSCRIPT "N" THE NEUTRAL CONDUCTOR SHALL BE DELETED FROM THE CONDUCTORS SHOWN IN THE FEEDER SCHEDULE.

ALUMINUM FEEDER SCHEDULE (AWG)

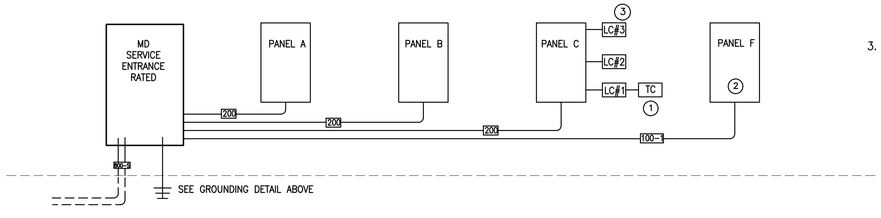
NUMBER	CONDUCTORS THHW	SERVICE CONDUCTOR GROUND (AWG)	CONDUIT	CONDUIT WITHOUT NEUTRAL
THREE PHASE FEEDERS				
30	-	-	-	-
40	-	-	-	-
60	4#4, 1#8G	6	1-1/4"	1"
80	4#2, 1#6G	6	1-1/4"	1-1/4"
100	4#1, 1#6G	6	1-1/2"	1-1/4"
115	4#1/0, 1#4G	4	2"	1-1/2"
125	#4#2/0, 1#4G	4	2"	2"
150	4#3/0, 1#4G	4	2"	2"
175	4#3/0, 1#4G	2	2"	2"
200	4#250, 1#4G	2	2-1/2"	2-1/2"
225	4#300, 1#2G	1/0	3"	2-1/2"
250	4#400MCM, 1#2G	1/0	3"	3"
285	4#500MCM, 1#2G	1/0	3-1/2"	3"
300	4#500MCM, 1#1G	1/0	3"	3"
350	4#600MCM, 1#1G	3/0	4"	3-1/2"
400	4#750MCM, 1#1G	3/0	4"	4"
420	(2 SETS)4#250MCM, 1#1/0G	3/0	2-1/2" EA	2-1/2" EA
450	(2 SETS)4#300MCM, 1#3/0G	3/0	3" EA	2-1/2" EA
460	(2 SETS)4#300MCM, 1#3/0G	3/0	3" EA	2-1/2" EA
500	(2 SETS)4#350MCM, 1#3/0G	3/0	3" EA	3" EA
600	(2 SETS)4#500MCM, 1#4/0G	4/0	3-1/2" EA	3" EA
800	(2 SETS)4#750MCM, 1#4/0G	4/0	4" EA	4" EA
820	(3 SETS)4#300MCM, 1#4/0G	4/0	3" EA	2-1/2" EA
1000	(3 SETS)4#600MCM, 1#250G	250	4" EA	2-1/2" EA
1200	(4 SETS)4#500MCM, 1#250G	250	3-1/2" EA	3" EA
1600	(5 SETS)4#600MCM, 1#350G	250	3-1/2" EA	3" EA
2000	(8 SETS)4#400MCM, 1#400G	250	3" EA	2-1/2" EA
SERVICE ENTRANCE FEEDERS				
200-S	4#250MCM	-	2-1/2"	-
300-S	4#500MCM	-	3"	-
400-S	4#750MCM	-	4"	-
600-S	(2 SETS)4#500MCM	-	3-1/2" EA	-
800-S	(2 SETS)4#750MCM	-	4" EA	-
1000-S	(3 SETS)4#750MCM	-	4" EA	-
1200-S	(4 SETS)4#500MCM	-	3-1/2" EA	-
1600-S	(5 SETS)4#600MCM	-	4" EA	-
2000-S	(8 SETS)4#400MCM	-	3" EA	-
2500-S	(7 SETS)4#750MCM	-	4" EA	-

(#) NOTES

1. CONNECTIONS SHALL BE MADE USING AN IRREVERSIBLE CLAMP OR CADWELDED.
2. ALL CONNECTIONS SHALL BE MADE EXTERNAL TO ENCLOSURES.



BUILDING SERVICE GROUNDING DETAIL
NOT TO SCALE



1 ELECTRICAL RISER DIAGRAM
SCALE: N.T.S.

(#) NOTES:

1. ASTRONOMICAL TIME CLOCK– TORK #EWZ201. PROGRAMMED TO TURN LIGHTS ON AT SUNSET AND OFF AT SUNRISE.
2. PANEL F IS 200A., 208/120.,1P WITH FORTY TWO 20/1 CIRCUIT BREAKERS TO BE USED FOR FUTURE SITE WORK. INCLUDE INSULATED AND ISOLATED GROUND BAR.
3. MECHANICALLY HELD LIGHTING CONTACTOR (TYPICAL 3 PLACES). SWITCHES LOCATED UNDER COUNTER IN SALES AREA. COORDINATE LOCATION AND ALL DETAILS WITH OWNER.

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ELECTRICAL RISER DIAGRAM

E-3.1

Panel	PANEL 'MD'				**OC Type**		CKT.BKR.				**Voltage L-L**		208		
Device	MOLDED CASE				**Enclosure**		NEMA 3R (NOTE 1)				**Voltage L-N**		120		
Mounting	SURFACE				**Mains**		800/3, MCB				**Amperage**		800		
Served By	METER CENTER				**Feed Thru Lugs:**		-				**AIC or Avail Fault**		42K		

Ckt No.	Description	CODE	Load	Remarks	CB	Pole	PH	PH	Pole	CB	Remarks	Load	CODE	Description	Ckt No.
1	RTU-1	9	4680	-	50	3	A	A	3	200	-	32980	7	PANEL 'A'	2
-	-	9	4680	-	-	-	B	B	-	-	-	31080	7	-	-
-	-	9	4680	-	-	-	C	C	-	-	-	31380	7	-	-
3	RTU-2	9	4680	-	50	3	A	A	3	200	-	6680	7	PANEL 'C'	4
-	-	9	4680	-	-	-	B	B	-	-	-	5000	7	-	-
-	-	9	4680	-	-	-	C	C	-	-	-	5200	7	-	-
5	RTU-3	9	4680	-	50	3	A	A	3	200	-	16200	7	PANEL 'B'	6
-	-	9	4680	-	-	-	B	B	-	-	-	16000	7	-	-
-	-	9	4680	-	-	-	C	C	-	-	-	13000	7	-	-
7	MAU-1	9	430	-	15	3	A	A	2	200	-	-	-	FUTURE PANEL 'F'	8
-	-	9	430	-	-	-	B	B	-	-	-	-	-	-	-
-	-	9	430	-	-	-	C	C	1	20	-	-	-	SPARE	-
9	PROVISION	9		-	60	3	A	A	3	100	-	-	-	PROVISION	10
-	-	9		-	-	-	B	B	-	-	-	-	-	-	-
-	-	9		-	-	-	C	C	-	-	-	-	-	-	-

Phase A	70330 VA		NOTES:
Phase B	66550 VA		1. SERVICE ENTRANCE RATED.
Phase C	64050 VA		
Total kVa=	200.9 Demand kVa	160.7	
Total Amps	557.7 Demand Amps	446.2	

Panel	PANEL 'A'				**OC Type**		CKT.BKR.				**Voltage L-L**		208		
Device	MOLDED CASE				**Enclosure**		NEMA 1				**Voltage L-N**		120		
Mounting	SURFACE				**Mains**		M.L.O.				**Amperage**		200		
Served By	PANEL 'MD'				**Feed Thru Lugs:**		-				**AIC or Avail Fault**		18K		

Ckt No.	Description	CODE	Load	Remarks	CB	Pole	PH	PH	Pole	CB	Remarks	Load	CODE	Description	Ckt No.
1	Merchandiser	6	2400	-	30	3	A	A	2	30	-	2200	6	Hot Plate (Via Kitchen Contactor)	2
3	-	6	2400	-	-	-	B	B	-	-	-	2200	6	-	4
5	-	6	2400	-	-	-	C	C	3	35	-	3000	6	Electric Griddle (Via Kitchen Conta	6
7	Food Warmer	6	2400	-	30	3	A	A	-	-	-	3000	6	-	8
9	-	6	2400	-	-	-	B	B	-	-	-	3000	6	-	10
11	-	6	2400	-	-	-	C	C	3	50	-	4700	6	Electric Fryer (Via Kitchen Contac	12
13	Warming Drawers	6	1000	-	20	1	A	A	-	-	-	4700	6	-	14
15	Kitchen Freezer Condensing Unit	6	1600	-	20	3	B	B	-	-	-	4700	6	-	16
17	-	6	1600	-	-	-	C	C	3	20	-	1700	6	Stacked Oven (Via Kitchen Contac	18
19	-	6	1600	-	-	-	A	A	-	-	-	1700	6	-	20
21	Kitchen Freezer Lights & Door Hea	6	500	-	20	1	B	B	-	-	-	1700	6	-	22
23	Kitchen Cooler Lights/Door/heaterl	6	500	-	20	1	C	C	1	30	-	2000	6	Hold Oven (Via Kitchen Contactor)	24
25	Hood Control Power	6	100	-	20	1	A	A	1	30	-	2000	6	Heated Cabinet (Via Kitchen Conta	26
27	Hood Lights	6	200	-	20	1	B	B	3	20	-	1700	6	Pizza Oven (Via Kitchen Contacto	28
29	Hood Exhaust Fans KH-1	10	720	-	30	3	C	C	-	-	-	1700	6	-	30
31	-	10	720	-	-	-	A	A	-	-	-	1700	6	-	32
33	-	10	720	-	-	-	B	B	1	20	-	500	6	Work Top & Sandwich Top	34
35	Hood Supply Fans KH-2	10	720	-	30	3	C	C	3	15	-	400	6	Kitchen Cooler Condensing Unit	36
37	-	10	720	-	-	-	A	A	-	-	-	400	6	-	38
39	-	10	720	-	-	-	B	B	-	-	-	400	6	-	40
41	Store Cooler #2 Condensing Unit	6	1320	-	30	3	C	C	3	15	-	900	6	Store Cooler #3 Condensing Unit	42
43	-	6	1320	-	-	-	A	A	-	-	-	900	6	-	44
45	-	6	1320	-	-	-	B	B	-	-	-	900	6	-	46
47	Store Beer Cooler Condensing Uni	6	1320	-	30	3	C	C	3	60	-	4800	6	Dishwasher	48
49		6	1320	-	-	-	A	A	-	-	-	4800	6	-	50
51	-	6	1320	-	-	-	B	B	-	-	-	4800	6	-	52
53	Spare	-	-	-	20	1	C	C	1	20	-	1200	6	Recept - Pizza Dough Press	54
55	Spare	-	-	-	20	1	A	A	1	20	-	-	-	Spare	56
57	Space	-	-	-	-	-	B	B	1	20	-	-	-	Spare	58
59	Space	-	-	-	-	-	C	C	-	-	-	-	-	Space	60
61	Space	-	-	-	-	-	A	A	-	-	-	-	-	Space	62
63	Space	-	-	-	-	-	B	B	-	-	-	-	-	Space	64
65	Space	-	-	-	-	-	C	C	-	-	-	-	-	Space	66
67	Space	-	-	-	-	-	A	A	-	-	-	-	-	Space	68
69	Space	-	-	-	-	-	B	B	-	-	-	-	-	Space	70
71	Space	-	-	-	-	-	C	C	-	-	-	-	-	Space	72

Phase A	32980 VA		NOTES:
Phase B	31080 VA		
Phase C	31380 VA		
Total kVa=	95.4 Demand kVa	63.5	
Total Amps	264.9 Demand Amps	176.4	

Panel	PANEL 'B'				**OC Type**		CKT.BKR.				**Voltage L-L**		208		
Device	MOLDED CASE				**Enclosure**		NEMA 1				**Voltage L-N**		120		
Mounting	SURFACE				**Mains**		M.L.O.				**Amperage**		200		
Served By	PANEL 'MD'				**Feed Thru Lugs:**		-				**AIC or Avail Fault**		18K		

Ckt No.	Description	CODE	Load	Remarks	CB	Pole	PH	PH	Pole	CB	Remarks	Load	CODE	Description	Ckt No.
1	Equip.	6	500	-	15	3	A	A	1	20	-	1800	6	Hot Food Case	2
3	-	6	500	-	-	-	B	B	1	20	-	200	3	Recept - Cash Counter	4
5	-	6	500		-	-	C	C	1	20		200	3	Recept - Cash Counter	6
7	EWH-1	2	6000	-	50	2	A	A	1	20	-	200	3	Recept - Cash Counter	8
9	-	2	6000	-	-	-	B	B	1	20	-	200	3	Recept - Cash Counter	10
11	Icee	6	1700	-	30	2	C	C	1	20		200	3	Recept - Cash Counter	12
13	-	6	1700	-	-	-	A	A	1	20	-	200	3	Recept - Cash Counter	14
15	Recept - Beverage Counter	6	200	-	20	1	B	B	1	20	-	200	3	Recept - Cash Counter	16
17	Recept - Beverage Counter	6	200	-	20	1	C	C	1	20		200	3	Recept - Cash Counter	18
19	Recept - Beverage Counter	6	200	-	20	1	A	A	1	20	-	200	3	Recept - Cash Counter	20
21	Recept - Beverage Counter	6	200	-	20	1	B	B	1	20	-	400	3	Recept - Floor	22
23	Recept - Beverage Counter	6	200		20	1	C	C	1	20		400	3	Recept - Floor	24
25	Recept - Beverage Counter	6	200	-	20	1	A	A	1	20	-	200	3	Recept - Floor	26
27	Recept - Beverage Counter	6	200	-	20	1	B	B	1	20	-	900	3	Recept - Work Room, Elec, Exteri	28
29	Recept - Beverage Counter	6	200		20	1	C	C	1	20		900	3	Recept - Work Room, Elec	30
31	Recept - Beverage Counter	6	200	-	20	1	A	A	1	20	-	400	3	Recept - Building Front	32
33	Hand Dryer	4	1900	-	20	1	B	B	1	20	-	400	3	Recept - Building Front	34
35	Hand Dryer	4	1900		20	1	C	C	1	20		600	3	Recept - Restrooms	36
37	Spare	-	-	-	30	2	A	A	1	20	-	600	3	Recept - Ice Cream Box	38
39	Spare	-	-	-	-	-	B	B	1	20	-	800	3	Recept - Sales	40
41	Spare	-	-	-	20	1	C	C	1	20		600	3	Recept - Sales	42
43	Recept - ATM	5	400	-	20	1	A	A	1	20	-	800	3	Recept - Kitchen, Sales	44
45	Recept - Store Show Windows	3	600	-	20	1	B	B	1	20	-	900	3	Recept - kitchen Sales	46
47	Recept - Front Counter	3	1100		20	1	C	C	1	20		400	3	Recept - Roof Top Units	48
49	Recept - Store	3	600	-	20	1	A	A	1	20	-	900	3	Recept - Office	50
51	Recept - Store	3	400	-	20	1	B	B	1	20	-	900	3	Recept POS	52
53	Coffee Brewer	6	2000	Note 1	30	1	C	C	1	20	-	900	3	Recept POS	54
55	Recept - TBB	3	400	-	20	1	A	A	1	20	-	400	3	Recept- Sales	56
57	Recept - Elettrical	3	500	-	20	1	B	B	1	20	-	-	-	Spare	58
59	Recept - Kitchen Ceiling	3	200	Note 1	20	1	C	C	1	20	-	-	-	Spare	60
61	Recept - Kitchen Ceiling	3	200	Note 1	20	1	A	A	1	20	-	100	5	Duct Detector	62
63	EF-1	10	500	-	20	1	B	B	1	20	-	100	5	Duct Detector	64
65	EF-1	10	500	-	20	1	C	C	1	20	-	100	5	Duct Detector	66
67	Space	-	-	-	20	-	A	A	1	20	-	-	-	Spare	68
69	Space	-	-	-	20	-	B	B	1	20	-	-	-	Spare	70
71	Space	-	-	-	20	-	C	C	1	20	-	-	-	Spare	72

Phase A	16200 VA		NOTES:
Phase B	16000 VA		1. PROVIDE GFCI BREAKER.
Phase C	13000 VA		
Total kVa=	45.2 Demand kVa	35.4	
Total Amps	125.5 Demand Amps	98.2	

Panel	PANEL 'C'				**OC Type**		CKT.BKR.				**Voltage L-L**		208		
Device	MOLDED CASE				**Enclosure**		NEMA 1				**Voltage L-N**		120		
Mounting	SURFACE				**Mains**		M.L.O.				**Amperage**		200		
Served By	PANEL 'MD'				**Feed Thru Lugs:**		-				**AIC or Avail Fault**		18K		

Ckt No.	Description	CODE	Load	Remarks	CB	Pole	PH	PH	Pole	CB	Remarks	Load	CODE	Description	Ckt No.
1	Cash Recept	3	500	-	20	1	A	A	1	20	-	1000	6	Beer Cooler 120V Loads	2
3	Cash Recept	3	500	-	20	1	B	B	1	20	-	1000	6	Beer Cooler 120v Loads	4
5	Spare	-	-	-	20	1	C	C	1	20	-	1000	6	Cooler #2 120v Loads	6
7	Spare	-	-	-	20	1	A	A	1	20	-	1000	6	Cooler #2 120v Loads	8
9	spare	-	-	-	20	1	B	B	1	20	-	1000	6	Cooler #3 120v Loads	10
11	Spare	-	-	-	20	1	C	C	1	20	-	1000	6	Cooler #3 120v Loads	12
13	Spare	-	-	-	20	1	A	A	1	20	-	1500	3	Recept - Floor	14
15	Spare	-	-	-	20	1	B	B	1	20	-	1500	3	Recept - Floor	16
17	Spare	-	-	-	20	1	C	C	1	20	-	300	1	Spare	18
19	Spare	-	-	-	20	2	A	A	1	20	-	300	1	-	20
21	-	-	-	-	-	-	B	B	1	20	-	200	1	Spare	22
23	Spare	-	-	-	20	2	C	C	1	20	-	200	1	-	24
25	-	-	-	-	-	-	A	A	1	20	-	-	-	Spare	26
27	Spare	-	-	-	20	2	B	B	1	20	-	-	-	-	28
29	-	-	-	-	-	-	C	C	2	20	-	-	-	Spare	30
31	Spare	-	-	-	20	2	A	A	-	-	-	-	-	-	32
33	-	-	-	-	-	-	B	B	2	20	-	-	-	Spare	34
35	Spare	-	-	-	20	2	C	C	-	-	-	-	-	-	36
37	-	-	-	-	-	-	A	A	1	20	-	-	-	Spare	38
39	Spare	-	-	-	20	2	B	B	1	20	-	-	-	Spare	40
41	-	-	-	-	-	-	C	C	1	20	-	-	-	Spare	42
43	Kitchen/Work/Restroom Lights	1	1100	-	20	1	A	A	1	20	-	-	-	-	44
45	Spare	-	-	-	20	1	B	B	1	20	-	-	-	Spare	46
47	Sales Lights (Via LC#1)	1	1100	-	20	1	C	C	1	20	-	1000	1	Store Sign (Via LC#2)	48
49	Sales Lights (Via LC#1)	1	100	-	20	1	A	A	1	20	-	1000	1	Store Sign (Via LC#2)	50
51	Cooler Sign Recept (Via LC#1)	1	400	-	20	1	B	B	1	20	-	400	1	Store Sign (Via LC#2)	52
53	Cooler Sign Recept (Via LC#1)	1	400	-	20	1	C	C	1	20	-	200	1	Store Sign (Via LC#2)	54
55	Unit Recept	3	180	-	20	1	A	A	1	20	-	-	-	Spare	56
57	Spare	-	-	-	20	1	B	B	1	20	-	-	-	Spare	58
59	Space	-	-	-	-	-	C	C	1	20	-	-	-	Spare	60
61	Space	-	-	-	-	-	A	A	1	20	-	-	-	Spare	62
63	Space	-	-	-	-	-	B	B	1	20	-	-	-	Spare	64
65	Space	-	-	-	-	-	C	C	1	20	-	-	-	Spare	66
67	Space	-	-	-	-	-	A	A	1	20	-	-	-	Spare	68
69	Space	-	-	-	-	-	B	B	1	20	-	-	-	Spare	70
71	Space	-	-	-	-	-	C	C	1	20	-	-	-	Spare	72

Phase A	6680 VA		NOTES:
Phase B	5000 VA		
Phase C	5200 VA		
Total kVa=	16.9 Demand kVa	16.5	
Total Amps	46.9 Demand Amps	45.7	

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REVISIONS:

DELTA	DESCRIPTION	DATE

DATE OF ISSUE: 09.12.2022

MA PROJECT NO: 0336-22

PROJECT PHASE: CD

DRAWN BY: DF&H SERVICES

ELECTRICAL SCHEDULES

E-4.1

COLUMBIA, TENNESSEE
EDWARD'S OIL

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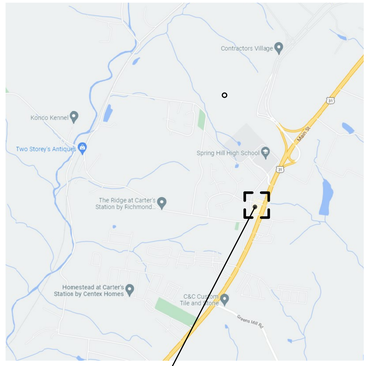
VICINITY MAP



SHEET INDEX

general

SHEET #	DESCRIPTION	ORIG. ISSUE	REV. DELTA #	REV. DATE
G-001	TITLE SHEET	09/12/2022		
G-002	LIFE SAFETY PLAN	09/12/2022		
G-003	ADA DETAILS	09/12/2022		
G-004	ADA DETAILS	09/12/2022		

structure

SHEET #	DESCRIPTION	ORIG. ISSUE	REV. DELTA #	REV. DATE
S-1.1	GENERAL NOTES	09/28/2022		
S-1.2	TYPICAL DETAILS	09/28/2022		
S-2.0	FOUNDATION PLAN	09/28/2022		
S-3.0	FRAMING PLAN	09/28/2022		
S-4.0	FRAMING SECTIONS	09/28/2022		

architectural

SHEET #	DESCRIPTION	ORIG. ISSUE	REV. DELTA #	REV. DATE
A-001	FLOOR PLAN AND NOTES	09/12/2022		
A-002	SCHEDULES AND DETAILS	09/12/2022		
A-003	REFLECTED CEILING PLAN	09/12/2022		
A-004	ROOF PLAN	09/12/2022		
A-005	EXTERIOR ELEVATIONS	09/12/2022		
A-006	BUILDING AND WALL SECTIONS	09/12/2022		

mechanical

SHEET #	DESCRIPTION	ORIG. ISSUE	REV. DELTA #	REV. DATE
M-0.1	HVAC LEGENDS AND SCHEDULES	09/12/2022		
M-0.2	HVAC LEGENDS AND SCHEDULES	09/12/2022		
M-2.1	HVAC NEW CONSTRUCTION PLAN	09/12/2022		
M-3.1	HVAC DETAILS	09/12/2022		
M-3.2	HVAC DETAILS	09/12/2022		
M-3.3	HVAC DETAILS	09/12/2022		
M-3.4	HVAC DETAILS	09/12/2022		
M-3.5	HVAC DETAILS	09/12/2022		
M-3.6	HVAC DETAILS	09/12/2022		
M-3.7	HVAC DETAILS	09/12/2022		
M-3.8	HVAC DETAILS	09/12/2022		
M-3.9	HVAC DETAILS	09/12/2022		
M-3.10	HVAC DETAILS	09/12/2022		
M-3.11	HVAC DETAILS	09/12/2022		
M-3.12	HVAC DETAILS	09/12/2022		
M-3.13	HVAC DETAILS	09/12/2022		
M-4.1	HVAC SPECIFICATIONS	09/12/2022		

plumbing

SHEET #	DESCRIPTION	ORIG. ISSUE	REV. DELTA #	REV. DATE
P-0.1	PLUMBING LEGENDS AND SCHEDULES	09/12/2022		
P-2.1	PLUMBING NEW CONSTRUCTION PLAN	09/12/2022		
P-3.1	PLUMBING DETAILS	09/12/2022		
P-4.1	PLUMBING SPECIFICATIONS	09/12/2022		
P-5.1	PLUMBING DETAILS & SPECIFICATIONS	09/12/2022		
P-5.2	PLUMBING RISERS	09/12/2022		
PU-2.1	PLUMBING UNDERGROUND NEW CONSTRUCTION PLAN	09/12/2022		

electrical

SHEET #	DESCRIPTION	ORIG. ISSUE	REV. DELTA #	REV. DATE
E-0.1	ELECTRICAL SPECIFICATIONS	09/12/2022		
E-0.2	ELECTRICAL LEGEND	09/12/2022		
E-2.1	ELECTRICAL LIGHTING PLAN	09/12/2022		
E-2.2	ELECTRICAL POWER PLAN	09/12/2022		
E-2.3	ELECTRICAL HVAC POWER PLAN	09/12/2022		
E-3.1	ELECTRICAL RISER DIAGRAM	09/12/2022		
E-4.1	ELECTRICAL SCHEDULES	09/12/2022		

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REVISIONS:

DELTA	DESCRIPTION	DATE

DATE OF ISSUE: 09.12.2022
MA PROJECT NO: 0336-22
PROJECT PHASE: CD
DRAWN BY: TH

TITLE SHEET

G-001

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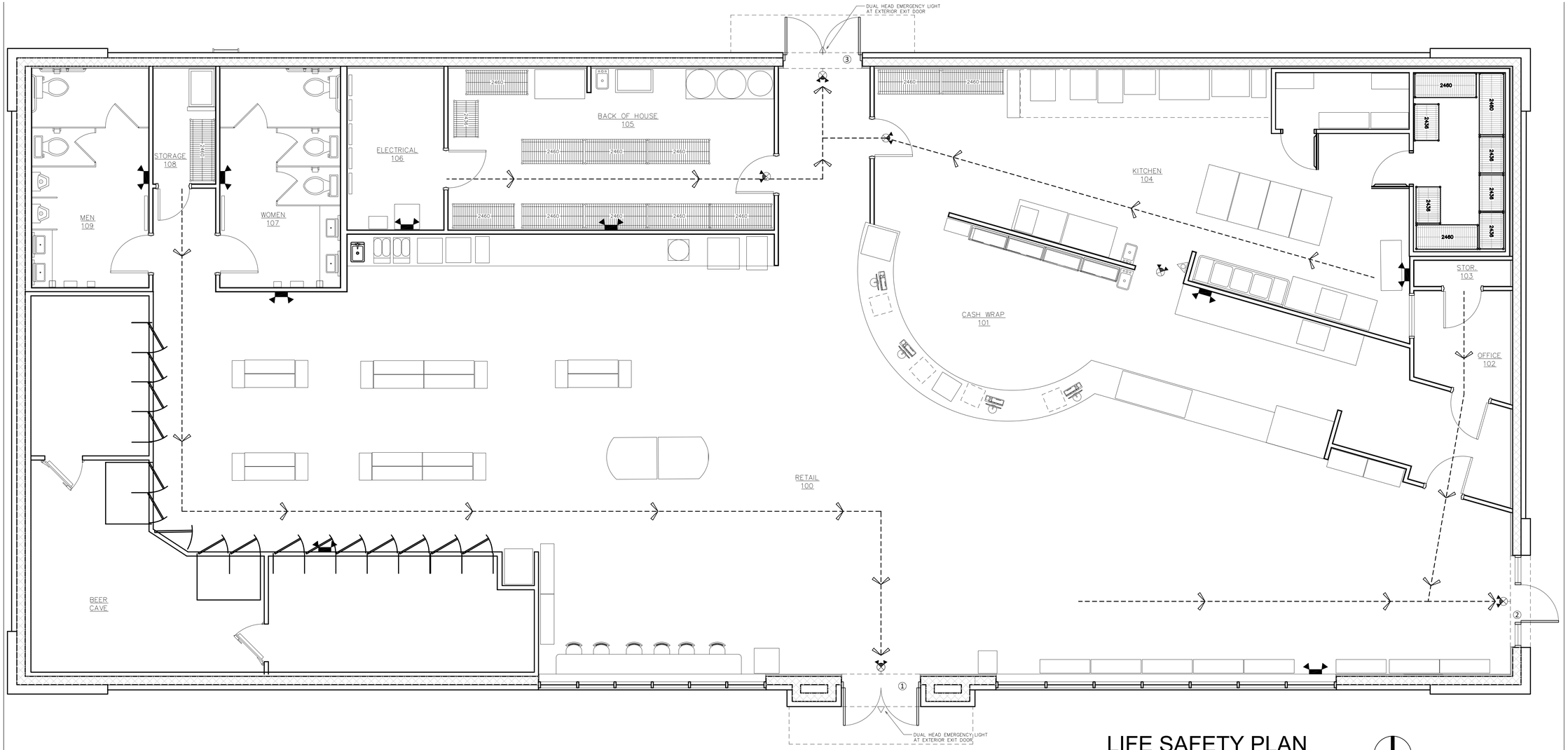
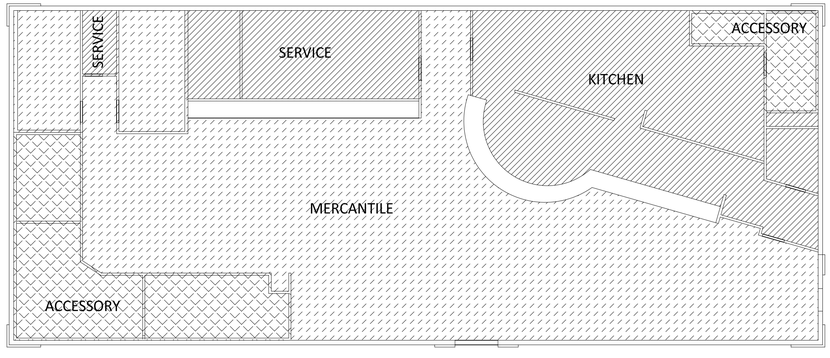


LIFE SAFETY PLAN

SCALE: 1/4" = 1'-0"

PLAN NORTH



OCCUPANCY PLAN

NOT TO SCALE

MERCANTILE: 3,325sf/60sf GROSS _____56 PERSONS

SERVICE (KITCHEN): 1,658sf/200sf GROSS___9 PERSONS

ACCESSORY SPACE: 793sf/300sf GROSS_____3 PERSONS

CODE AND EGRESS INFORMATION

OCCUPANCY CLASSIFICATION - BUSINESS
USE - CONVENIENCE STORE

CONSTRUCTION TYPE: VB UNPROTECTED, UNSPRINKLED

ALLOWABLE HEIGHT: 40ft
ACTUAL HEIGHT: 20ft

ALLOWABLE NUMBER OF STORIES: 2
ACTUAL NUMBER OF STORIES: 1

ALLOWABLE AREA: 9,000sf
ACTUAL FLOOR AREA = 5,776sf

TOTAL OCCUPANCY: 68 PERSONS (SEE OCCUPANCY PLAN)

EGRESS WIDTH REQUIRED:
23 @ .2" PER PERSON = 4.6"

EGRESS WIDTH PROVIDED:
EXIT 1 - 66" CLEAR OPENING
EXIT 2- 33" CLEAR OPENING
EXIT 3 - 66" CLEAR OPENING

MAX. TRAVEL DISTANCE TO EXIT (FEET)
GROUP B, UNSPRINKLED - 200FT.
ACTUAL - 96' MAX

MIN. CORRIDOR WIDTH (INCHES)
ALLOWED - 44"
ACTUAL - 45"

APPLICABLE CODES

ACCESSIBLE AND USABLE BUILDING AND FACILITIES (2009 ICC A117.1)
INTERNATIONAL BUILDING CODE (2018)
INTERNATIONAL ENERGY CONSERVATION CODE (2018)
INTERNATIONAL FIRE CODE (2018)
INTERNATIONAL FUEL GAS CODE (2018)
INTERNATIONAL MECHANICAL CODE (2018)
INTERNATIONAL PLUMBING CODE (2018)
INTERNATIONAL RESIDENTIAL CODE (2018)
NATIONAL ELECTRIC CODE (2018)

LIFE SAFETY PLAN LEGEND

	PATH OF EGRESS
①	EXIT NUMBER
	EMERGENCY LIGHT
	EXIT SIGN
	DIRECTIONAL EXIT SIGN
RL	REMOTE SEC. LIGHT
	FIRE EXTINGUISHER

FIRE EXTINGUISHER:

LARSEN MANUFACTURING COMPANY:
MODEL MP-10, 10-POUND,
UL RATED 4A-80B:C
MULTI-PURPOSE DRY CHEMICAL

FIRE EXTINGUISHER CABINET:

LARSEN MANUFACTURING COMPANY:
ARCHITECTURAL SERIES NO: 2409-6R SEMI-RECESSED

GENERAL NOTES:

1. OCCUPANCY LOAD IS BASED ON 2015 IBC TABLE 1004.5

2. EXIT WIDTH PROVIDED BY 3'-0" WIDE DOOR IS BASED ON A 33" CLEAR OPENING

EDWARD'S OIL

COLUMBIA, TENNESSEE

CLIENT CONTACT:
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09/12/2022

REVISIONS:

DELTA	DESCRIPTION	DATE

DATE OF ISSUE:	09.12.2022
MA PROJECT NO:	0336-22
PROJECT PHASE:	CD
DRAWN BY:	TH

LIFE SAFETY PLAN

G-002

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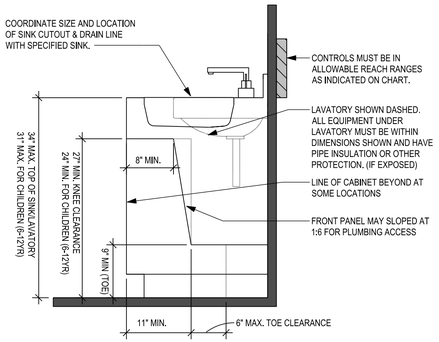
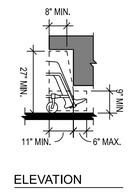


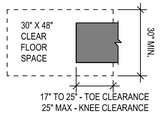
GENERAL NOTES:

1. A PARALLEL APPROACH CAN BE PROVIDED TO LAVATORIES AND SINKS USED PRIMARILY BY CHILDREN 5 YEARS AND YOUNGER
2. DIP OF THE OVERFLOW SHALL NOT BE CONSIDERED IN DETERMINING KNEE AND TOE CLEARANCES.
3. METERED FAUCETS SHALL REMAIN OPEN FOR 10 SECONDS MINIMUM.

ACCESSIBLE SINK AND LAVATORY

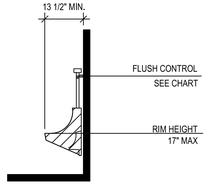


ELEVATION

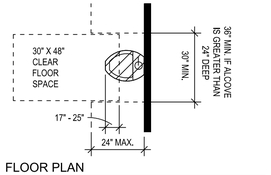


PLAN

ACCESSIBLE TOE & KNEE CLEARANCE



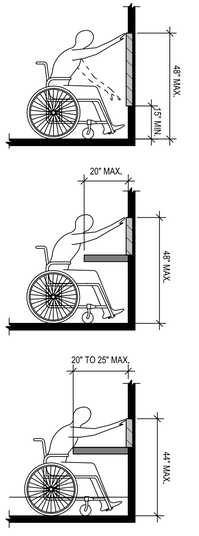
SIDE ELEVATION



FLOOR PLAN

ACCESSIBLE URINAL

SIDE REACH



FORWARD REACH

* FOR CHILDREN'S REACHES SEE CHART THIS SHEET.

ACCESSIBLE REACH RANGES

MOUNTING CHART

DESCRIPTION & LOCATION	ACCESSIBLE DIMENSIONS		STANDARD (NON ADA)
	CHILDREN (AGES 5 TO 12)	ADULT	
FORWARD AND SIDE REACH RANGES	18" TO 40"	15" TO 48"	------
WATER CLOSET CENTERLINE TO WALL	15"	17"	PER PLAN
TOILET SEAT HEIGHT	15"	18"	16"
TOILET & SHOWER STALL GRAB BAR HEIGHTS	25"	34"	------
TOP OF TOILET PAPER DISPENSER HEIGHT	2" BELOW GRAB BAR IF MTD BELOW. 12" TO BOTTOM IF MTD ABOVE	2" BELOW GRAB BAR IF MTD BELOW. 12" TO BOTTOM IF MTD ABOVE	18"
FLUSH CONTROL HEIGHT FOR WATER CLOSET POSITION FLUSH VALVE TO WIDE SIDE OF STALL OR ROOM	2" MIN. BELOW GRAB BAR	2" MIN. BELOW GRAB BAR	48"
DRINKING FOUNTAIN & WATER COOLER SPOUT HEIGHT	36" MAX ACCESSIBLE AND 42" STANDING	36" MAX ACCESSIBLE AND 42" STANDING	42"
FLUSH CONTROL HEIGHT FOR URINAL POSITION FLUSH VALVE TO WIDE SIDE OF STALL OR ROOM	38"	44"	46"
FEMININE NAPKIN DISPENSER CONTROL LOCATION	42"	46" OR 48" MAX. SEE ACCESSIBLE REACH RANGES	46"
MIRRORS MOUNTED ABOVE COUNTER TOPS OR SINKS HEIGHTS ARE TO REFLECTING SURFACE	76" AFF TO TOP EDGE 40" MAX BOTTOM EDGE	76" AFF TO TOP EDGE 40" MAX BOTTOM EDGE	76" AFF TO TOP EDGE 40" BOTTOM EDGE
FREE STANDING MIRRORS HEIGHTS ARE TO REFLECTING SURFACE	76" AFF TO TOP EDGE 35" MAX TO BOTTOM EDGE	76" AFF TO TOP EDGE 35" MAX TO BOTTOM EDGE	76" AFF TO TOP EDGE 35" BOTTOM EDGE
LAVATORY AND SINK RIM HEIGHT	31" MAX	34" MAX	36"
PAPER TOWEL DISPENSER CONTROL HEIGHT	38"	46" OR 48" MAX. SEE ACCESSIBLE REACH RANGES	48"
SOAP DISPENSER CONTROL HEIGHT	38"	46" OR 48" MAX. SEE ACCESSIBLE REACH RANGES	48"
SOAP DISH	38"		48"
FEMININE NAPKIN DISPOSAL MTD. ON "BACK" HEIGHT TO TOP OF DISPOSAL UNIT	2" MIN. BELOW GRAB BAR	2" MIN. BELOW GRAB BAR	32"
TOWEL BAR	25"	34"	48"
LIGHT SWITCHES, THERMOSTATS, WALL MOUNTED COMMUNICATION AND FIRE ALARM PULL DEVICES. HEIGHT TO CENTER OF CONTROL.	38"	46" OR 48" MAX. SEE ACCESSIBLE REACH RANGES	48"
ELECTRICAL OUTLETS, TELEPHONE OUTLETS, & DATA RECEPTACLES. HEIGHT TO CENTER OF OUTLET OR RECEPTACLE.	18"	18"	18"
TOP OF STAIR AND RAMP HANDRAILS HEIGHT IS ABOVE STAIR NOSING OR RAMP SURFACE	------	36"	36"
CENTER OF DEDICATION PLAQUE	------	------	60"
FIRE EXTINGUISHER CABINET. HEIGHT TO DOOR HANDLE	------	42"	42"
DOOR HARDWARE — DOOR LEVER	39"	41"	41"
DOOR HARDWARE — DOOR PULL	39"	41"	41"
DOOR HARDWARE — PANIC BAR	39"	41"	41"
CENTER LINE (48" MAX., 10" MIN.) — THE CENTER LINE OF DOOR HARDWARE MAY VARY BETWEEN WOOD DOOR WITH SIDE LIGHT AND ALUMINUM STORE FRONT DOORS. COORDINATE WITH PLANS AND HARDWARE MANUFACTURER			
TOP OF TRAY SLIDES	28" MIN.	34" MAX	36"
TRAY RETURN COUNTER	30"	34" MAX	36"
HEIGHT OF WORK SURFACES	------	34" MAX	30"
HEIGHT OF TABLES AND COUNTERS	------	30" MAX	30"

1. ON PLUMBING FIXTURES THERE IS A RANGE OF +/- 1".
2. CHILDREN AGES 5 THRU 12 REPRESENTS PRIMARY USER GROUP AS ELEMENTARY STUDENTS. MIDDLE SCHOOL IS CONSIDERED ADULT.
3. COORDINATE MOUNTING HEIGHTS WITH ACCESSIBLE REACH RANGES.

ACCESSIBILITY GENERAL NOTES

A. Accessible entrances to the building shall be identified by the international symbol of accessibility.

B. Exits that are located adjacent to accessible areas & within 6' of adjacent ground level shall be accessible.

C. Accessible ramps over 1:20 (5%) slope as required by ICC/ANSI A117.1 shall have handrails and no slopes that exceed 1:12 (8.3%), UNO.

D. The surface of all ramps, floors, stairs and ground surfaces shall be of slip resistant materials/textures, and not exceed 1:50 (2%) cross-slope.

E. An accessible route of travel (3 ft. wide min.) must be provided to all portions of the building and between the building and the public way.

F. Thresholds must be 1/2" in height or less, and be beveled over 1/4" height.

G. All accessible parking spaces shall have a slope not exceeding 1:50 (2%).

H. All accessible parking spaces shall be outlined on all four sides, have a contrasting color and the international wheelchair symbol on the ground within the space.

I. All accessible parking spaces shall have a sign (min. 5 ft. above finish grade in front of the space) which includes the international symbol of accessibility and applicable municipal language.

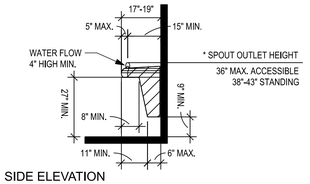
J. Signs designating permanent rooms and spaces shall meet accessibility requirements.

K. All alarms shall meet accessibility requirements.

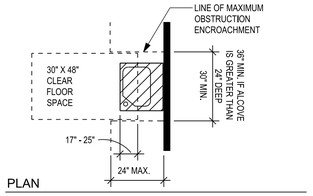
L. Accessible route shall be without steps or changes in level greater than 1/2" without an approved ramp.

M. Accessible routes shall serve as exit access or connect to areas of rescue assistance.

N. No item shall protrude more than 4" from the surface of a wall along an accessible way, above 27" and below 80" AFF.



SIDE ELEVATION



PLAN

- PROVIDE A MIN. OF ONE ACCESSIBLE & ONE STANDING DRINKING FOUNTAIN PER PROJECT

GENERAL DRINKING FOUNTAIN NOTES:

1. A PARALLEL APPROACH SHALL BE PERMITTED AT UNITS FOR CHILDREN'S USE WHERE THE SPOUT IS 30" MAX A.F.F. AND IS 3 1/2" MAX FROM THE FRONT EDGE OF THE UNIT.
2. WHERE MORE THAN 2 DRINKING FOUNTAINS ARE PROVIDED 50 MUST COMPLY WITH 602.1-602.6 (ACCESSIBLE) AND 50% COMPLY WITH 602.7 (STANDING) HEIGHTS, 211.3

ACCESSIBLE DRINKING FOUNTAIN

EDWARD'S OIL

COLUMBIA, TENNESSEE

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ADA DETAILS

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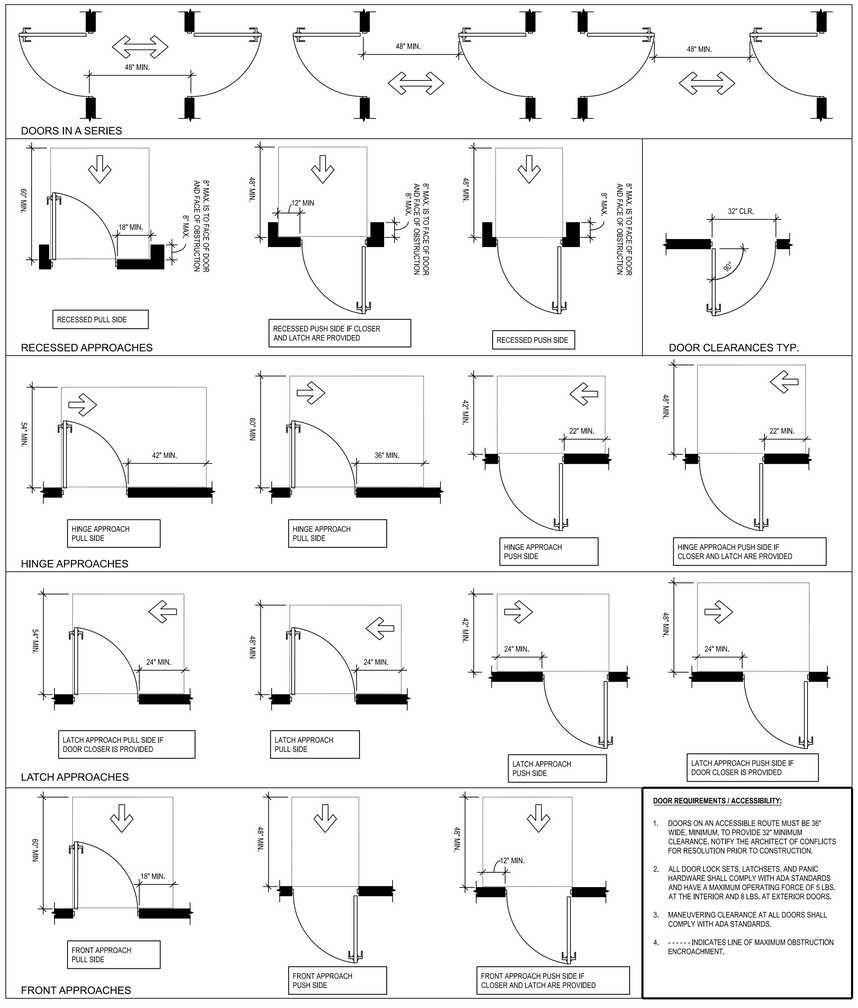
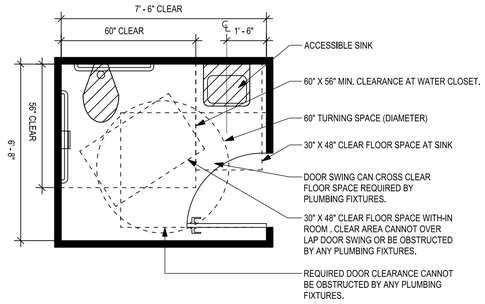
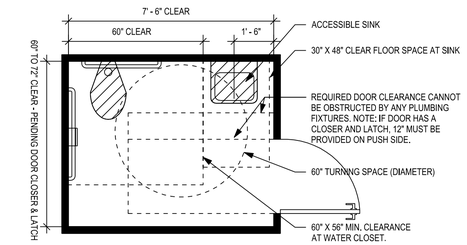


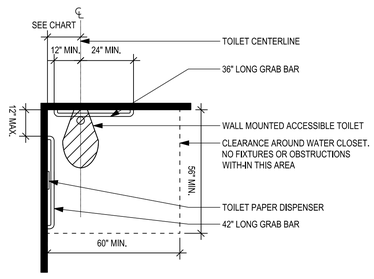
ACCESSIBLE DOOR DIAGRAMS



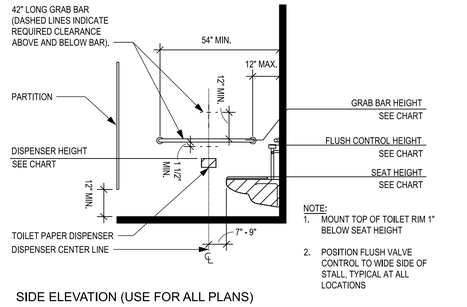
TOILET ROOM (INWARD SWINGING DOOR)



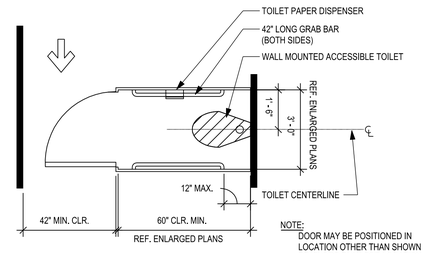
FLOOR PLAN - SINGLE OCCUPANCY (OUTWARD SWINGING DOOR)



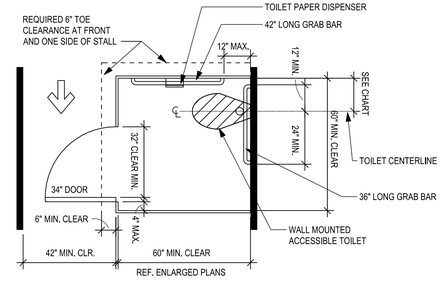
FLOOR PLAN - SINGLE OCCUPANCY



SIDE ELEVATION (USE FOR ALL PLANS)



FLOOR PLAN - AMBULATORY STALL



NOTE: DOOR MAY BE POSITIONED IN LOCATION OTHER THAN SHOWN RE: FLOOR PLAN FOR LOCATION

FLOOR PLAN - PARTITION STALL

GENERAL WATER CLOSET NOTES:

1. REQUIRED CLEAR FLOOR SPACES, CLEARANCE AT FIXTURES, AND TURNING SPACE SHALL BE PERMITTED TO OVERLAP
2. DOORS SHALL NOT SWING INTO THE CLEAR FLOOR SPACE OR CLEARANCE REQUIRED FOR ANY FIXTURE EXCEPT IN A TOILET ROOM FOR INDIVIDUAL USE WHERE THE 30"X48" CLEAR FLOOR SPACE IS PROVIDED BEYOND THE ARC OF THE DOOR SWING.
3. DOORS SHALL BE PERMITTED TO SWING INTO THE REQUIRED TURNING SPACE.
4. ALL DOORS MUST COMPLY WITH THEIR CLEAR FLOOR SPACE REQUIREMENTS.
5. IF THE TOTAL NUMBER OF TOILET FIXTURES (INCLUDING URINALS) IN A RESTROOM IS EQUAL TO 6 OR MORE, THEN AN AMBULATORY STALL IS REQUIRED.
6. DIMENSIONS SHOWN FROM WALL ARE ASSUMED TO BE CLEAR DIMENSIONS. CONTRACTOR TO ALLOW FOR FINISH MATERIAL.

ACCESSIBLE WATER CLOSETS

EDWARD'S OIL

COLUMBIA, TENNESSEE

CLIENT CONTACT:
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ADA DETAILS

G-004

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Abbreviations

AFF	Above Finished Floor
Approx	Approximate(ly)
Arch	Architectural
Bldg	Building
BTM	Bottom
Brg	Bearing
CL	Centerline
Clr	Clear or Clearance
CMU	Concrete Masonry Unit
Col	Column
Conc	Concrete
Conn	Connection
Const	Construction
Cont	Continuous
Dia, Ø	Diameter
Dim	Dimension
Dwg	Drawing
Ea	Each
EF	Each Face
Elec	Electrical
Elev	Elevation
Embed	Embedment
Eq	Equal
EW	Each Way
Exist	Existing
Exp	Expansion
Ext	Exterior
Fnd	Foundation
FFE	Finished Floor Elevation
FP	Full Penetration
FS	Far Side
Ftg	Footing
Ga	Gage or Gauge
Horiz	Horizontal
Int	Interior
K	Kips(1000 LBS.)
KSI	Kips per Square Inch
LB, #	Pound
LL	Live Load
LLH	Long Leg Horizontal
LLV	Long Leg Vertical
Long	Longitudinal
Manuf	Manufacturer
Max	Maximum
Mech	Mechanical
Mid	Middle
Min	Minimum
Misc	Miscellaneous
N/A	Not Applicable
NS	Near Side
NTS	Not to Scale
o.c.	On Center
Opp	Opposite
Perp	Perpendicular
PL	Plate
PEMB	Pre-engineered Metal Building
Prelim	Preliminary
Proj	Projection
PSF	Pounds per Square Foot
PSI	Pounds per Square Inch
Reinf	Reinforcing(-ed, -ment)
Req'd	Required
Rev	Revision
RW	Retaining Wall
Sched	Schedule(d)
Sect	Section
Sim	Similar
Spec	Specifications(s)
Sym	Symmetrical
T	Top, Tension
T/, T.O.	Top of
T/Conc	Top of Concrete
T/Ftg	Top of Footing
T/Slab	Top of Slab
T&B	Top & Bottom
Temp	Temperature
Thk	Thickness
TOS	Top of Steel
TOW	Top of Wall
Trnv	Transverse
Typ	Typical
UNO	Unless Noted Otherwise
Vert	Vertical
w/	With
w/o	Without
W.W.F.	Welded Wire Fabric

Design Criteria

Building Code
-2018 International Building Code (IBC)

Roof Loads:
-Live Load .....20 psf
-Dead Load.....20 psf

Ground Snow Load: Pg = 10 psf

Wind Load Per ASCE 7-16 (IBC 2018):
-Ultimate Wind Speed .....105 mph
-Risk Category.....II
-Wind Exposure.....B

Seismic loads Per ASCE 7-16 (IBC 2018):
-Risk Category.....II
-Spectral Response Coefficients ....S_S = 0.297; S_{DS} = 0.310
.....S_1 =0.144; S_{D1} = 0.222
-Soil Site Class.....D
-Seismic Design Category.....D
-Response modification factor.....5.0
-System overstrength factor.....2.5
- Deflection amplification factor.....3.5
-Seismic force resisiting system.....Special Reinforced Masonry Shear Walls
-Design base shear.....V= CsW
-Analysis procedure.....Equivalent Lateral Force

Shallow Foundations

1. Foundations are designed based upon assumed soil bearing capacities as stated below.

2. Allowable soil bearing pressures used in design: Spread footings =1800 psf /Continuous footing = 1800 psf

3. Footing excavations shall be observed and tested by an experienced geotechnical engineer prior to steel or concrete placement in order to assess that the foundation materials are consistent with above stated assumed soil bearing capacities.

4. In the event that the soils test results are disapproved, footing excavations shall be undercut (under the direction of the soils engineer) until soils of adequate bearding capacity are encountered. Backfill under footings shall consist of concrete f'c = 2500 psi @ 28 days placed up to the proposed bottom of footing elevation.

5. Footings shall bear on undisturbed residual soils or compacted fill, maximum desnist of 98% ASTM D-698.

6. Footing elevations shown on the plans are for estimating purposes only. Actual footing elevations shall be determined by the contractor at the site and shall be a minimum of 12" below finished grade.

7. All water shall be removed from foundation excavations prior to placing of concrete. If bottoms of trenches become softened due to water before footings are cast, the contractor, at his own expense, shall excavate the softened material and replace with concrete.

8. All pipes (water lines, sewer lines, etc.) And conduits running through walls / slabs shall be protected with ½" expansion material.

9. Continuous footing perpendicular to pipe runs shall be either lowered to allow pipes to pass through above such footings or have concrete jacket if pipes are low enough to be placed below such footings. Footings parallel to pipe runs shall be lowered to avoid surcharge onto the trench excavations.

General Notes

1. No provision of any referenced standard specification, manual or code (whether or not specifically incorporated by reference in the contract documents) shall be effective to change the duties and responsibilities of the owner, contractor, architect, engineer, supplier, or any of the consultants, agents, or employees from those set forth in the contract documents, nor shall it be effective to assign to the structural engineer of record (S.E.R.) or any of the S.E.R.'s consultants, agents, or employees any duty or authority to supervise or direct the furnishing or performance of the work or any duty or authority to undertake responsibilities contrary to the provisions of the contract documents.

2. Reference to standard specifications (concerning structural design) of any technical society, organization, or association or to codes of local or state authorities, shall mean the latest standard codes, specification or tentative specification adopted at the date of taking bids, unless specifically stated otherwise.

3. In the event contract documents conflict with the code of practice or specifications of ACI, PCI, AISC, AISI, SJI or other standards, contact structural engineer for clarification.

4. Notes and specific details on the drawings shall take precedence over general structural notes and typical details. Contact the architect / engineer for a determination of intent before proceeding with related work if there is any discrepancy or question regarding which note to follow.

5. Material, workmanship, and design shall conform to the referenced building code.

6. The contractor shall verify the dimensions, elevations and site conditions before starting work. The architect / engineer shall be notified of any discrepancy.

7. The design, adequacy, and safety of erection bracing, shoring, temporary supports, etc. is the sole responsibility of the contractor.

8. The contractor shall coordinate the architectural, mechanical, electrical, plumbing and civil works with the structural contract documents. The architect / engineer shall be notified of any discrepancies or omissions.

9. The contractor shall notify, in writing, the engineer of conditions encountered in the field that are contradictory to those shown on the contract documents.

10. For dimensions not shown on the structural drawings see the architectural drawings.

Concrete

1. All phases of work pertaining to the concrete construction shall conform to the "Building Code Requirements for Structural Concrete" (ACI 318), latest edition with modifications as noted in the drawings or specifications.

2. Concrete mixes shall be designed by a qualified testing laboratory and approved by the structural engineer.

3. All exposed corners or edges of columns, piers, walls, etc., shall be formed with a 3/4" chamfer unless noted otherwise on structural or architectural drawings.

4. All reinforcing bars, anchor bolts and other concrete inserts shall be well secured in position prior to placing concrete.

5. Provide sleeves for plumbing and electrical openings in concrete before placing concrete. Do not cut any reinforcing that may conflict. Coring is not permitted except as shown. Notify the structural engineer in advance of conditions not shown on the drawings.

6. Conduit or pipe size (o.d.) shall not exceed 30% of the slab thickness and shall be placed between the top and bottom reinforcing unless specifically detailed otherwise. Concentrations of conduits or pipes shall be avoided except where detailed openings are provided.

7. Curing compounds on concrete that is to receive special finish shall be approved by the manufacturer before use.

8. Roughen surface of horizontal or nearly horizontal construction joints so that the aggregate shall be exposed uniformly, leaving no laitance, loosed particles or damaged concrete.

9. Locate joints not indicated to least impair strength and appearance of the structure. Locate horizontal joints in concrete only where they normally occur or where indicated. Locate vertical joints in middle third of spans of slabs, beams, or girders unless a beam intersects a girder at middle location, in which case offset joints in girders twice the width of the beam.

10. Once formwork has been removed from concrete retaining walls, brace walls thoroughly before placing soil against wall and keep bracing in place for a minimum of 7 days after earthwork is complete.

Schedule of Concrete Strengths

Use (Location)	28 Day Strength	Aggregate Size (Max.)	Cement/CY (Min.)	W/C ratio (Max.)	Slump (Max.)	Air Entrainment
Slab-on-grade (Interior)	f'c=3,000 psi	1"	480#	.62	4-1/2"	None
Exposed Concrete	f'c=4,000 psi	1"	560#	.54	4-1/2"	4%-6%
Footings	f'c=3,000 psi	1"	480#	.62	4-1/2"	None

1. All aggregate shall be Limestone
2. All cement shall be Portland Cement Type 1

Reinforcing

1. Reinforcing shall be detailed and placed in conformance with ACI Detailing Manual.

2. Reinforcing bars shall conform to the requirements of ASTM A615 Grade 60 except all reinforcing in concrete moment frames and shear walls and all welded reinforcement shall conform to ASTM A706 Grade 60.

3. Welded wire fabric shall conform to ASTM A185.

4. Minimum lap of welded wire fabric shall be 6" or one full mesh + 2", whichever is greater.

5. Dowels between footings and walls shall be the grade, size and spacing or number as the vertical reinforcing, respectively.

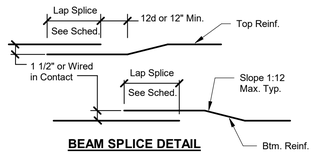
6. Reinforcing steel in all concrete walls and footings shall be continuous around corners.

7. Provide (2) #5 extra reinforcing bars around all side of openings in concrete, unless noted otherwise on the plans. Extend bars 2'-0" beyond each edge of opening.

8. Minimum clear coverage of concrete over reinforcement shall be:
   a. Concrete cast against and permanently exposed to earth .....3"
   b. Concrete exposed to earth or weather:
      i. No. 6 through no. 18 bar.....2"
      ii. No. 5 bar, w31 or d31 wire or smaller.....1-1/2"
   c. Concrete not exposed to weather or in contact with ground:
      i. Slabs walls and joists no. 14 & no. 18.....1-1/2"
      ii. Slabs walls and joists no. 11 & smaller.....3/4"
      iii.Beams, columns: ties and primary reinforcing.....1-1/2"

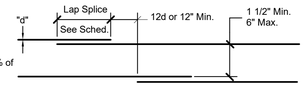
LAP SPLICE LENGTH SCHEDULE

Bar Size	f'c = 3000 PSI	f'c = 4000 PSI
#3	22"	19"
#4	29"	25"
#5	36"	31"
#6	43"	38"
#7	63"	54"
#8	72"	62"



BEAM SPLICE DETAIL

Notes:
1. Fy = 60 ksi
2. Splice lengths are for normal weight concrete.
3. All splices shall be staggered as shown. If more than 50% of the reinforcing is lap spliced within the required lap splice length, the lap splice length shall be increased by 33%.
4. Lap lengths specifically detailed in drawings shall govern in lieu of schedule.
5. Smaller bar required lap length shall be used when splicing with a larger bar.



SLAB SPLICE DETAIL

Masonry

1. Concrete masonry units for load bearing walls shall have a minimum compressive strength of f'm = 1500 psi.
   a. Hollow units: ASTM C90
   b. Solid units: ASTM C145

2. Concrete masonry units shall be laid with type M or S mortar.

3. Grout for reinforced masonry: ASTM C476 (2000 psi)

4. Reinforcement:
   a. Horizontal joints: standard dur-o-wall or equivalent truss or tri-rod reinforcement at 16"o.c. unless noted otherwise
   b. Vertical and horizontal reinforcement: ASTM A615, Grade 60

5. Construction of all concrete masonry shall conform to the latest edition of ACI-530.

6. Grout solid all cells containing reinforcing and all cells below grade.

7. Control joints: spacing shall not exceed 30'-0" or 3 times the wall height whichever is lesser, unless noted otherwise.

8. Grout all beam and joist pockets solid after installation of beams and joists.

9. Minimum lap of reinforcing steel shall be 50 bar diameters for typical reinforcing and 50 bar diameters for all jamb bars shown on wall elevations or 2'-0" minimum.

10. Maximum height of grout pour shall be 4'-0".

11. Provide 1/4" clearance from inside face of block masonry cells and minimum of one bar diameter, but not less than 3/4" clear distance between parallel bars.

12. All vertical reinforcing steel shall be positioned and held in place by means of wire spacers.

Structural Steel

1. Structural steel shall conform to ASTM A572, Grade 50 unless noted otherwise. Pipe columns shall conform to ASTM A53 type E or S Grade B. Tubes shall conform to ASTM A500 Grade B.

2. Design, fabrication, and erection shall be in accordance with aisc specification for the design, fabrication, and erection of structural steel buildings.

3. Structural steel shall be detailed in accordance with standard practices of AISC
   a. Connections: AISC Manual standard connections, unless noted.
   b. High-strength bolts: ASTM A325 bearing type N installed in accordance with "specification for structural joints Using ASTM A325 or A490 Bolts", research council on riveted and bolted structural joints.

4. All welds must be made in accordance with the American Welding Society Code D-1.1.

5. Field and shop connections shall be welded as shown on drawings or bolted with high strength bolts, unless noted otherwise.

6. See architectural drawings for angles, clips, bars, plates, and other items attached to structural members, and for chamfers on concrete walls, beams, etc.

7. Provide temporary bracing as required to maintain alignment and security of structures during construction.

8. Do no cutting, drilling or modifying of structural members without the approval of the engineer.

9. The manufacturer's name, brand or trademark (mill identification marks) shall be shown in raised letters at intervals along the length. (ASTM A6/A6M 96-97, paragraph 12.2) note: small shapes with the greatest cross-sectional dimension not greater.

METAL DECKING

1. Provide design, fabrication, and erection of metal deck conforming to the Steel Deck Institute's "Code of Recommended Standard Practice and Basic Design Specifications".

2. Form roof deck from steel sheets conforming to ASTM A611 or A653 or higher specifications with minimum yield strength of 33 ksi.

3. Attach sheets to steel support members as indicated and in accordance with the manufacturer's instructions for installation. When deck is scheduled to be exposed, de-slag, clean and touched up welds with a zinc-rich primer.

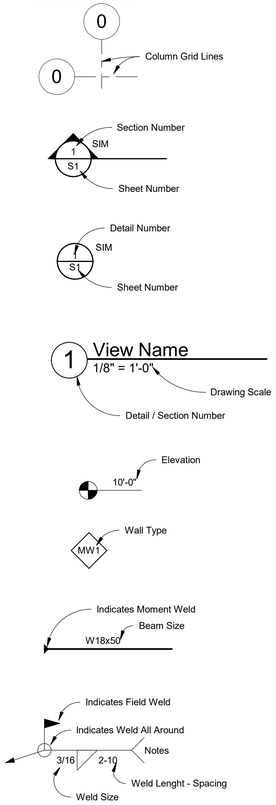
4. Lap roof ends minimum of 2 inches when fastening deck to support members provide welding materials installation procedures to prevent burning of holes in deck.

5. Metal deck fabricator to furnish shop drawings for structural engineer's review prior to fabrication. Shop drawings shall include welding procedure, side lap connections, testing programs for welding, coating material and erection sequence.

6. All decking shall be galvanized.

7. Deck shall have the following minimum section properties.
   A. Roof Deck - Type 3.0N:
   - 20 gauge: I_n = 1.079 in⁴; I_p=0.848 in³; S_p = 0.501 in³; S_n = 0.552 in³

Legend / Symbols



DRAWING LIST	
Sheet No:	**Sheet Name**
S1.1	General Notes
S1.2	Typical Details
S2.0	Foundation Plan
S3.0	Framing Plan
S4.0	Framing Sections

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General Notes

S1.1

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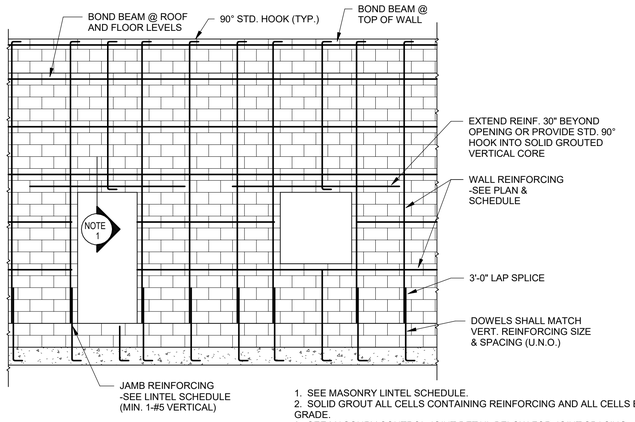
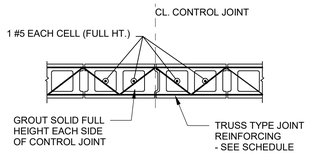


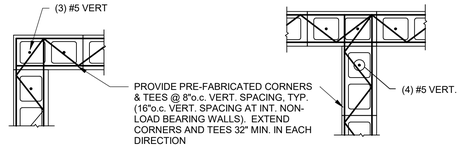
TYPICAL WALL ELEVATION

1. SEE MASONRY LINTEL SCHEDULE.
2. SOLID GROUT ALL CELLS CONTAINING REINFORCING AND ALL CELLS BELOW GRADE.
3. SEE MASONRY CONTROL JOINT DETAIL BELOW FOR JOINT SPACING.
4. HORIZONTAL REINFORCING SHALL BE CONTINUOUS THROUGH CONTROL JOINTS AT ROOF AND FLOOR LEVELS AND AT LINTEL LOCATIONS.
5. REINFORCING SHALL BE CENTERED IN WALL U.N.O.
6. SEE MASONRY COL. SCHEDULE FOR MASONRY COLUMN DETAILS.
7. ALL CELLS OF MASONRY COLUMNS ARE TO BE GROUTED SOLID WIITH 3000 psi NON-SHRINK GROUT (MIN.).
8. COLUMNS ARE TO BE CONSTRUCTED INTEGRALLY WITH THE WALL WHICH THEY ARE A PART OF.



NOTES:
1. SPACE @ 30'-0"o.c. (MAX.)

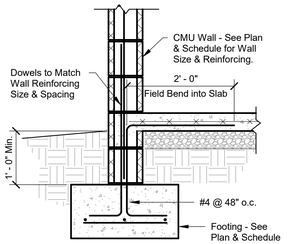
MASONRY CONTROL JOINT



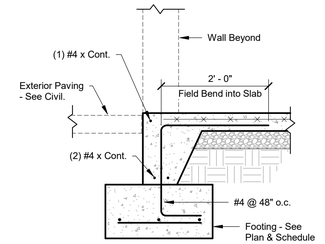
TYP. CORNER DETAIL

TYP. DETAIL @ INTERSECTING WALLS

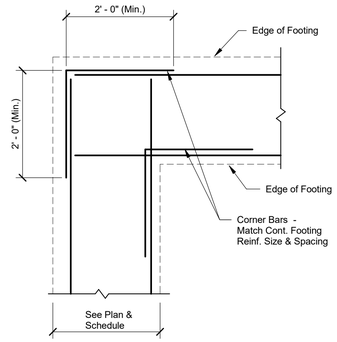
1 Typical Masonry Wall
1/4" = 1'-0"



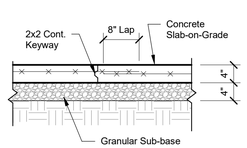
2 Section @ Exterior
3/4" = 1'-0"



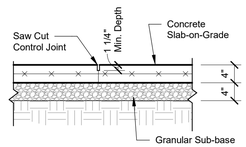
3 Section @ Opening
3/4" = 1'-0"



4 Typ. Cont. Corner Footing Detail
3/4" = 1'-0"



CONSTRUCTION JOINT



CONTROL JOINT

NOTES:
1. Maximum spacing of control joints shall be 15'-0"o.c. (U.N.O.).
2. Locate control joints as specified on architectural drawings (when applicable).
3. Provide 10 MIL Vapor Barier below slab (U.N.O.)

5 Slab-on-Grade Details
3/4" = 1'-0"

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Typical Details

S1.2

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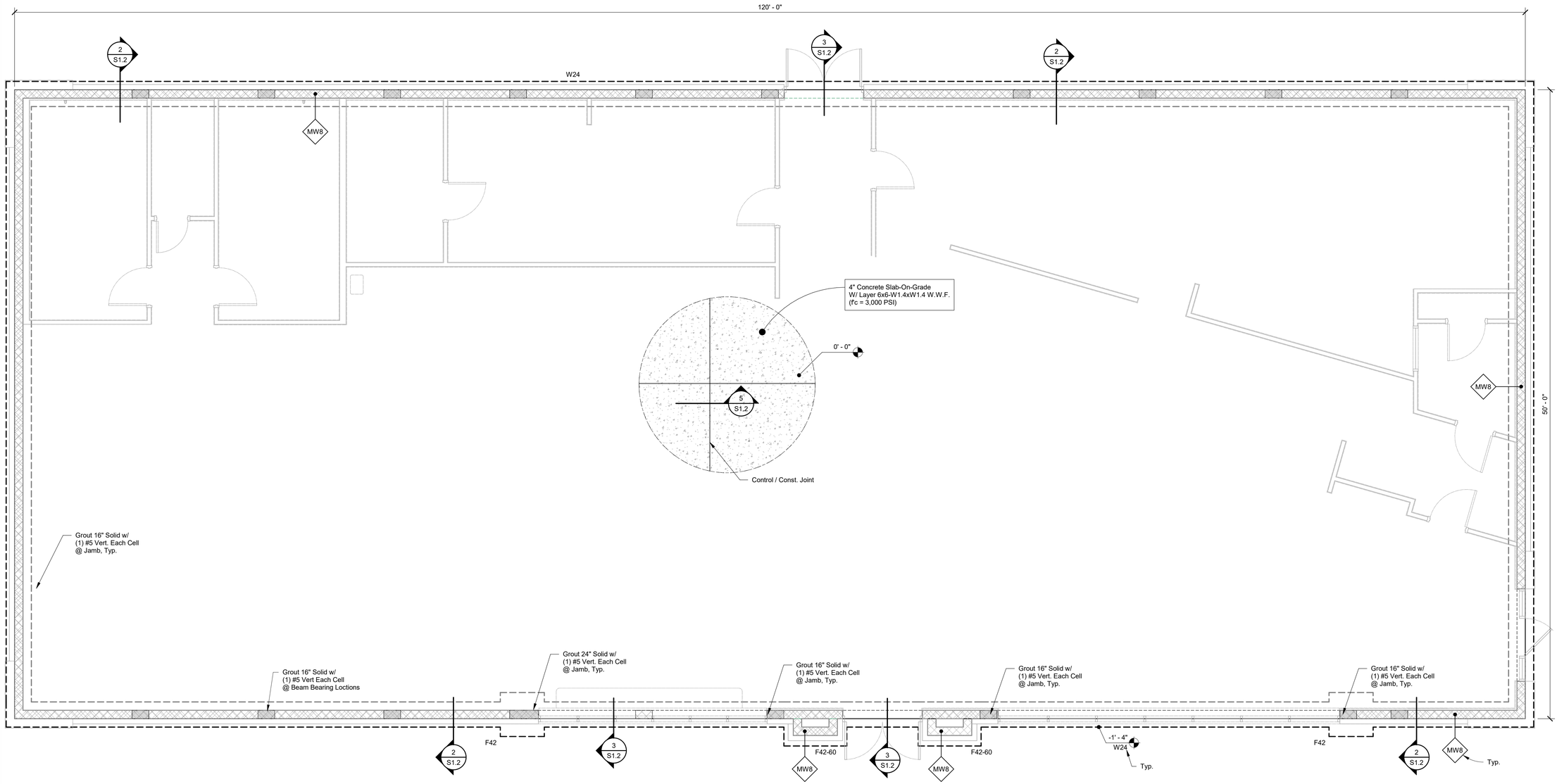

1 Foundation Plan
1/4" = 1'-0"

Notes:
1. See S1.1 for General Notes.
2. See S1.2 for Typical Masonry Wall Elevation, Typical Details.

MASONRY WALL SCHEDULE

Type	Width	Material	Reinforcing		
			Horizontal	Vertical	Joint Reinforcing
MW8	8"	f'm = 1500psi	#5 @ 48"o.c.	#5 @ 32"o.c.	Std. Dur-o-wall @ 16"o.c.

CONTINUOUS WALL FOOTING SCHEDULE

Type	Dimensions		Reinforcing	
	Width	Depth	Longitudinal	Transverse
W24	2' - 0"	1' - 0"	(3) #4 x Cont.	#4 x 1'-6" @ 60"o.c.

FOOTING SCHEDULE

Type	Dimensions			Reinforcing	
	Length	Width	Depth	Longitudinal	Transverse
F42	3' - 6"	3' - 6"	1' - 0"	(4) #5	(4) #5
F42-60	5' - 0"	3' - 6"	1' - 0"	(4) #5	(5) #5

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Foundation Plan

S2.0

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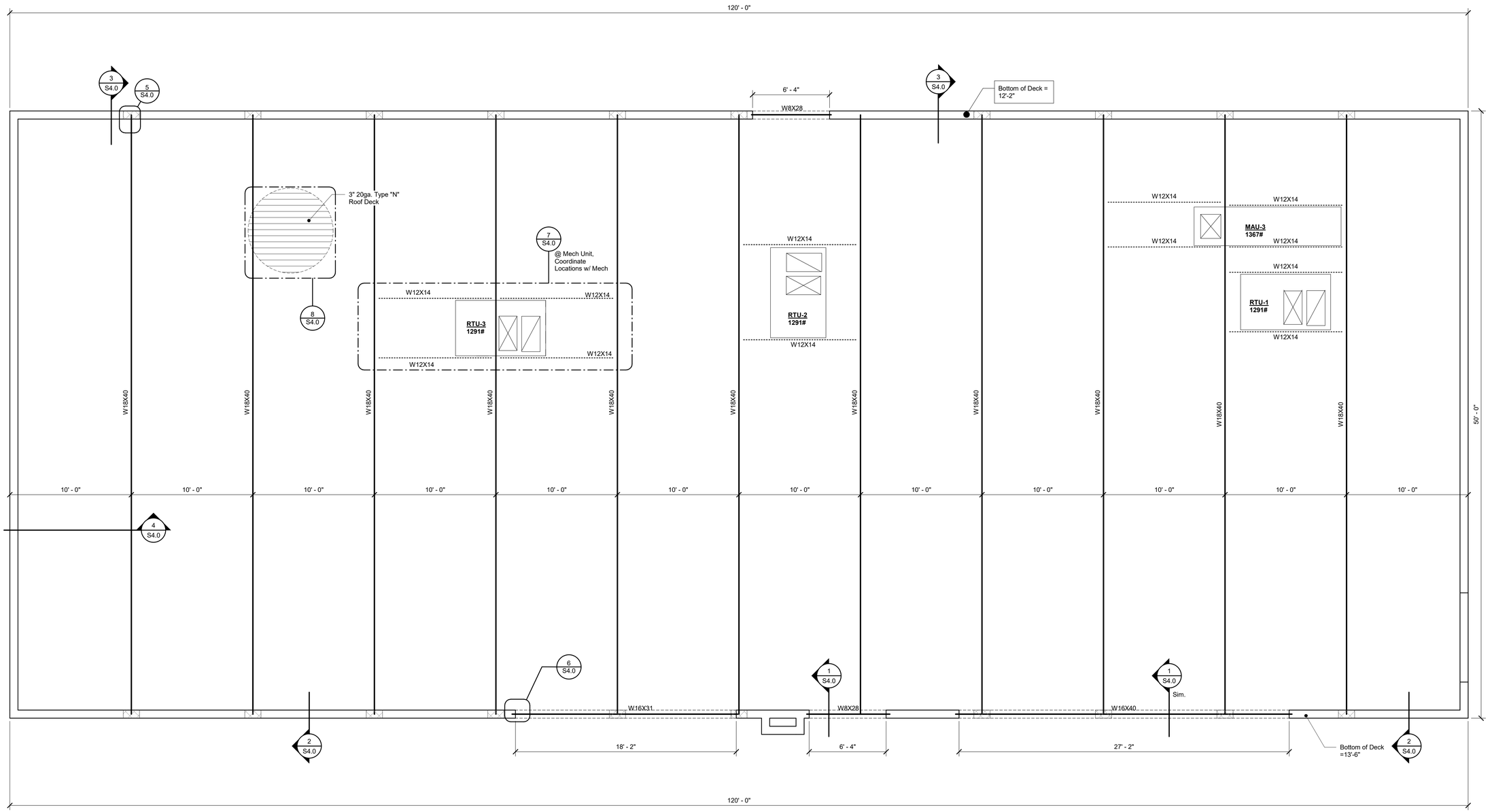

1 Roof Framing
1/4" = 1'-0"

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Framing Plan

S3.0

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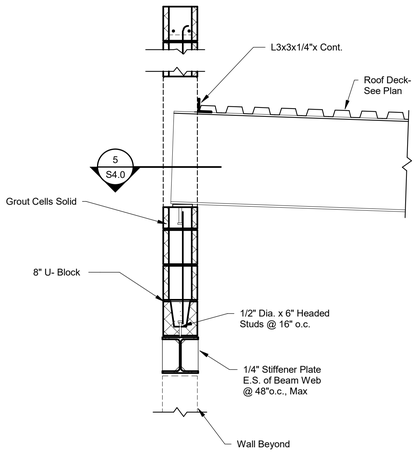
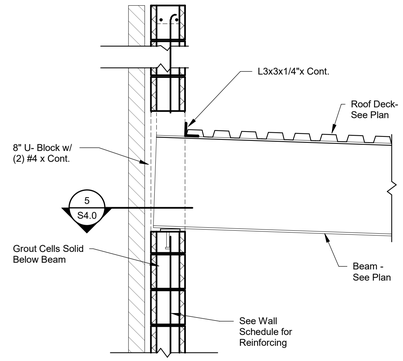
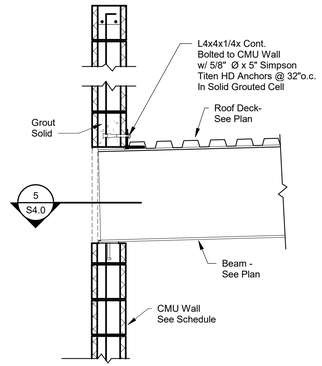


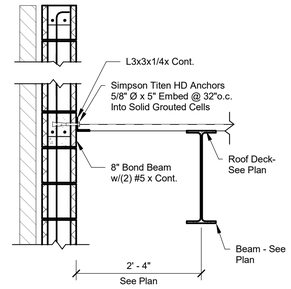
1 Section @ Storefront
3/4" = 1'-0"



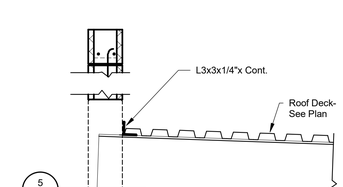
2 Roof Section @ Front
3/4" = 1'-0"



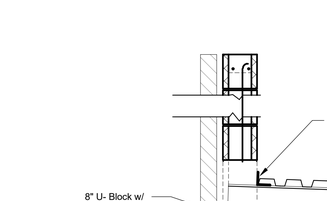
3 Roof Section @ Exterior Wall
3/4" = 1'-0"



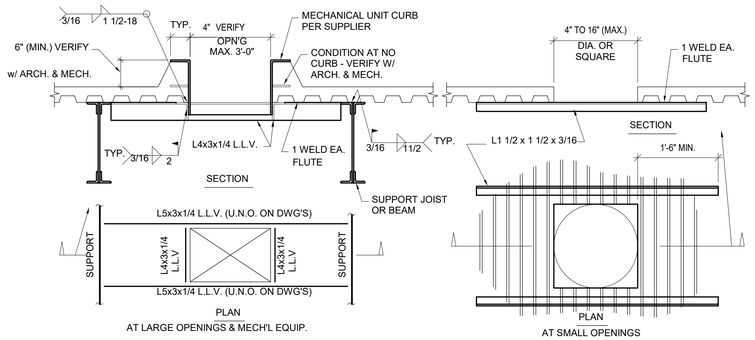
4 Section @ Roof - Parallel to Beam
3/4" = 1'-0"



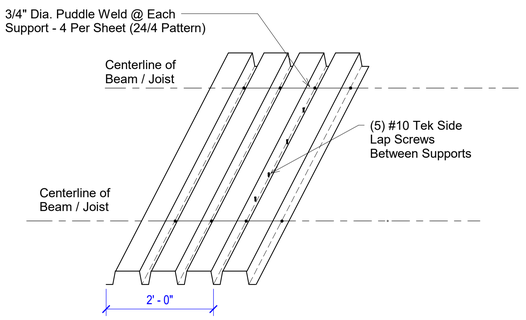
5 Beam Bearing Detail
3/4" = 1'-0"



6 Beam Bearing Detail
3/4" = 1'-0"



7 RTU and Roof Opening Detail
3/4" = 1'-0"



Notes:
1. Weld Deck Edge to Supports With 3/4" Dia. Puddle Weld @ 12"o.c.
2. Lap Deck 2" Minimum.

8 Roof Deck Attachment Detail
3/4" = 1'-0"

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Framing Sections

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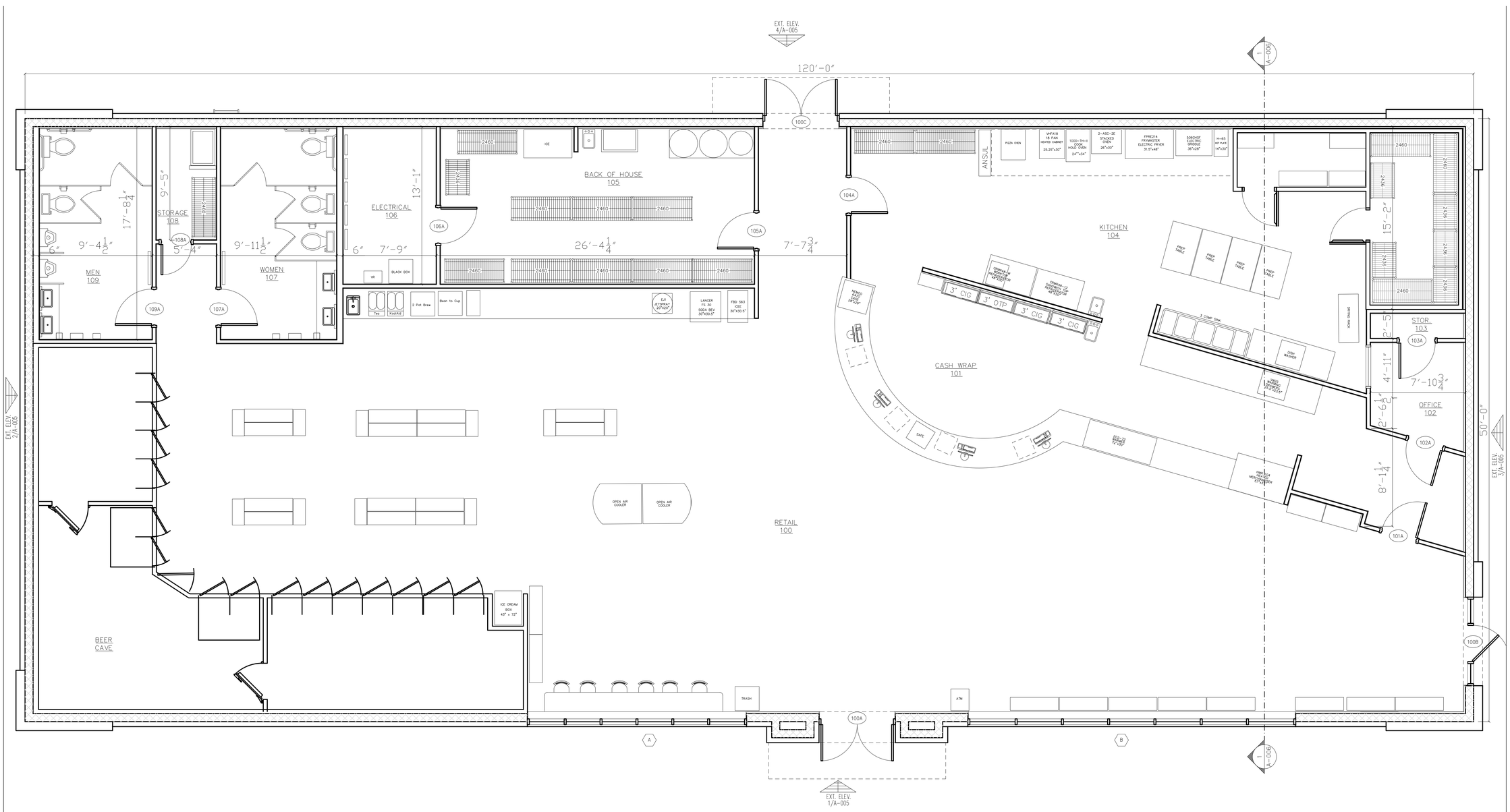

FLOOR PLAN

SCALE: 1/4" = 1'-0"

PLAN NORTH

NOTE:
WALK-IN COOLER MUST COMPLY WITH EACH OF THE ELEVEN ENUMERATED ITEMS IN SECTION C403.10.1 OF THE ENERGY CODE.

EDWARD'S OIL

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FLOOR PLAN AND NOTES

A-001

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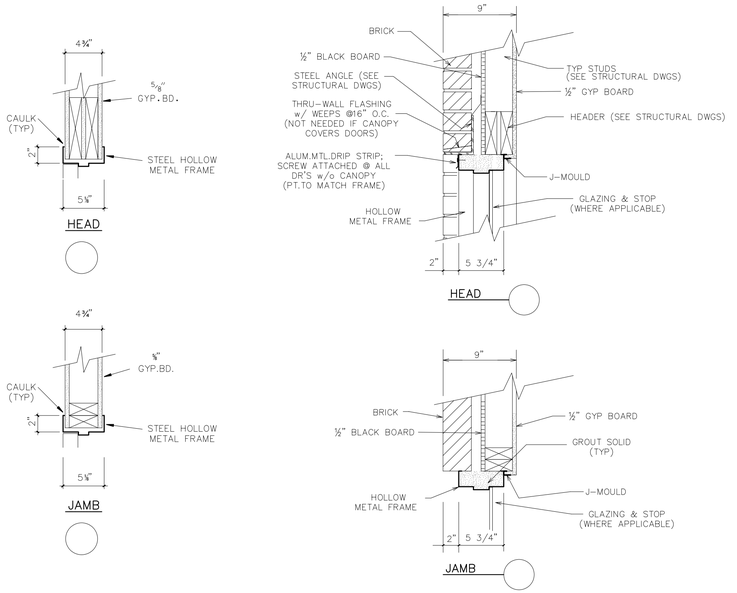
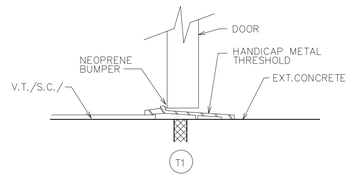


HEAD AND JAMB DETAILS

NOT TO SCALE

NOTE:

TOILET ROOM SIGNAGE SHALL BE LOCATED A MINIMUM OF 48" ABOVE THE FINISHED FLOOR TO THE BASELINE OF THE LOWEST CHARACTERS AND A MAXIMUM OF 60 INCHES ABOVE THE FINISHED FLOOR TO THE BASELINE OF THE HIGHEST CHARACTER.



THRESHOLD TYPES

NOT TO SCALE

DOOR SCHEDULE

NO.	RM.NAME	DOOR SIZE	DOOR MAT'L	DOOR TYPE	DOOR RAT'G	FRAME MAT'L	FRAME TYPE	FRAME DETAIL HEAD	FRAME DETAIL JAMB	FRAME RAT'G	THRES.	NOTES
100A	RETAIL	PR. 3'-0"x7'-0"	AL	FG	---	AL	F2	H2	J2	---	T1	PANIC HARDWARE
100B	RETAIL	3'-0"x7'-0"	AL	FG	---	AL	F3	H2	J2	---	T1	PANIC HARDWARE
100C	RETAIL	PR. 3'-0"x7'-0"	AL	FG	---	AL	F2	H2	J2	---	T1	PANIC HARDWARE
101A	CASH WRAP	3'-0"x7'-0"x 1 3/4"	WD	F	---	HM	F1	H1	J1	---	---	
102A	OFFICE	3'-0"x7'-0"x 1 3/4"	WD	F	---	HM	F1	H1	J1	---	---	
103A	STORAGE	3'-0"x7'-0"x 1 3/4"	WD	F	---	HM	F1	H1	J1	---	---	
104A	KITCHEN	3'-0"x7'-0"x 1 3/4"	WD	F	---	HM	F1	H1	J1	---	---	
105A	BACK OF HOUSE	3'-0"x7'-0"x 1 3/4"	WD	F	---	HM	F1	H1	J1	---	---	
106A	ELECTRICAL	3'-0"x7'-0"x 1 3/4"	WD	F	---	HM	F1	H1	J1	---	---	
107A	WOMEN	3'-0"x7'-0"x 1 3/4"	WD	F	---	HM	F1	H1	J1	---	---	
108A	STORAGE	2'-6"x7'-0"x 1 3/4"	WD	FS	---	HM	F4	H1	J1	---	---	
109A	MEN	3'-0"x7'-0"x 1 3/4"	WD	F	---	HM	F1	H1	J1	---	---	

NOTE:

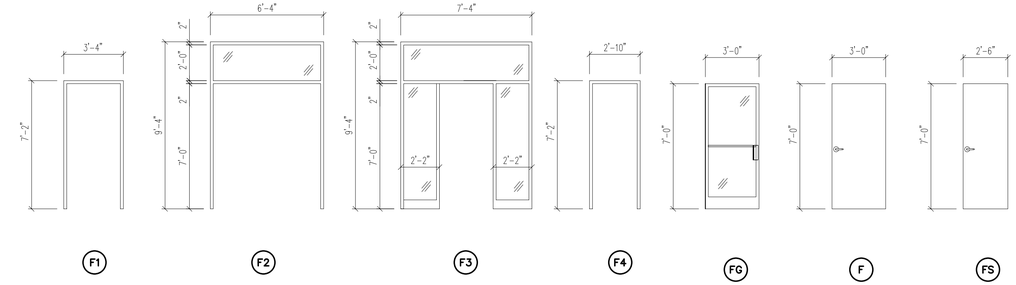
DOOR HARDWARE SHALL COMPLY WITH ADA GUIDELINES. HANDLE, PULLS, LATCHES, LOCKS AND OTHER OPERATING DEVICES ON ACCESSIBLE DOORS SHALL HAVE A SHAPE THAT IS EASY TO GRASP WITH ONE HAND AND DOES NOT REQUIRE TIGHT GRASPING, TIGHT PINCHING OR TWISTING OF THE WRIST TO OPERATE. LEVER- OPERATED MECHANISMS, PUSH- TYPE MECHANISMS, AND U- SHAPED HANDLES ARE ACCEPTABLE DESIGNS. WHEN SLIDING DOORS ARE FULLY OPEN, OPERATING HARDWARE SHALL BE EXPOSED AND USABLE FROM BOTH SIDES. HARDWARE REQUIRED FOR ACCESSIBLE DOOR PASSAGE SHALL BE MOUNTED NO HIGHER THAN 48 INCHES ABOVE FINISHED FLOOR.

ROOM FINISH SCHEDULE

ARCHITECTURAL No.	DESIGNATION	FLOOR	BASE	WALLS	CLG. MAT'L	CLG. HEIGHT
100	RETAIL	TILE	RB	PAINTED GYP.	EXPOSED	---
101	CASH WRAP	V.C.T.	RB	PAINTED GYP.	EXPOSED	---
102	OFFICE	V.C.T.	RB	PAINTED GYP.	A.T.	8'-8"
103	STORAGE	V.C.T.	RB	PAINTED GYP.	A.T.	8'-8"
104	KITCHEN	TILE	RB	PAINTED GYP.	A.T.	9'-4"
105	BACK OF HOUSE	SEALED CONC.	RB	PAINTED GYP.	A.T.	9'-4"
106	ELECTRICAL	SEALED CONC.	RB	PAINTED GYP.	A.T.	9'-4"
107	MEN	TILE	RB	TILE	A.T.	9'-4"
108	STORAGE	V.C.T.	RB	PAINTED GYP.	A.T.	8'-8"
109	WOMEN	TILE	RB	TILE	A.T.	9'-4"

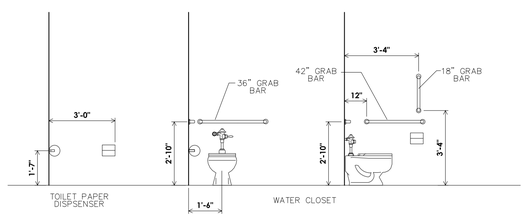
NOTE:

1. KITCHEN TO HAVE STAINLESS STEEL BEHIND 3-COMP SINK AND VENT HOOD
2. SALES AREA TO BE EXPOSED DECKING & BAR JOISTS AND PAINTED BLACK.
3. RESTROOM WALLS TO BE TILED
4. FLOORS IN KITCHEN TO BE ABRASIVE TILE
5. SALES FLOOR TO BE CERAMIC TILE



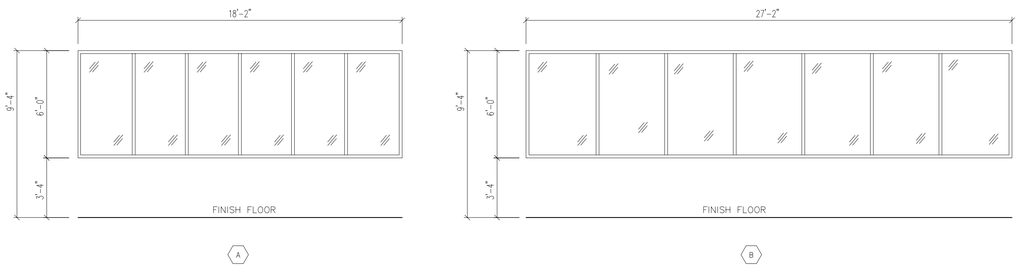
FRAME AND DOOR TYPES

NOT TO SCALE



TYPICAL MOUNTING HEIGHTS

NOT TO SCALE



ALUMINUM STOREFRONT AND WINDOW ELEVATIONS

NOT TO SCALE

EDWARD'S OIL
COLUMBIA, TENNESSEE

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SCHEDULES AND DETAILS

A-002

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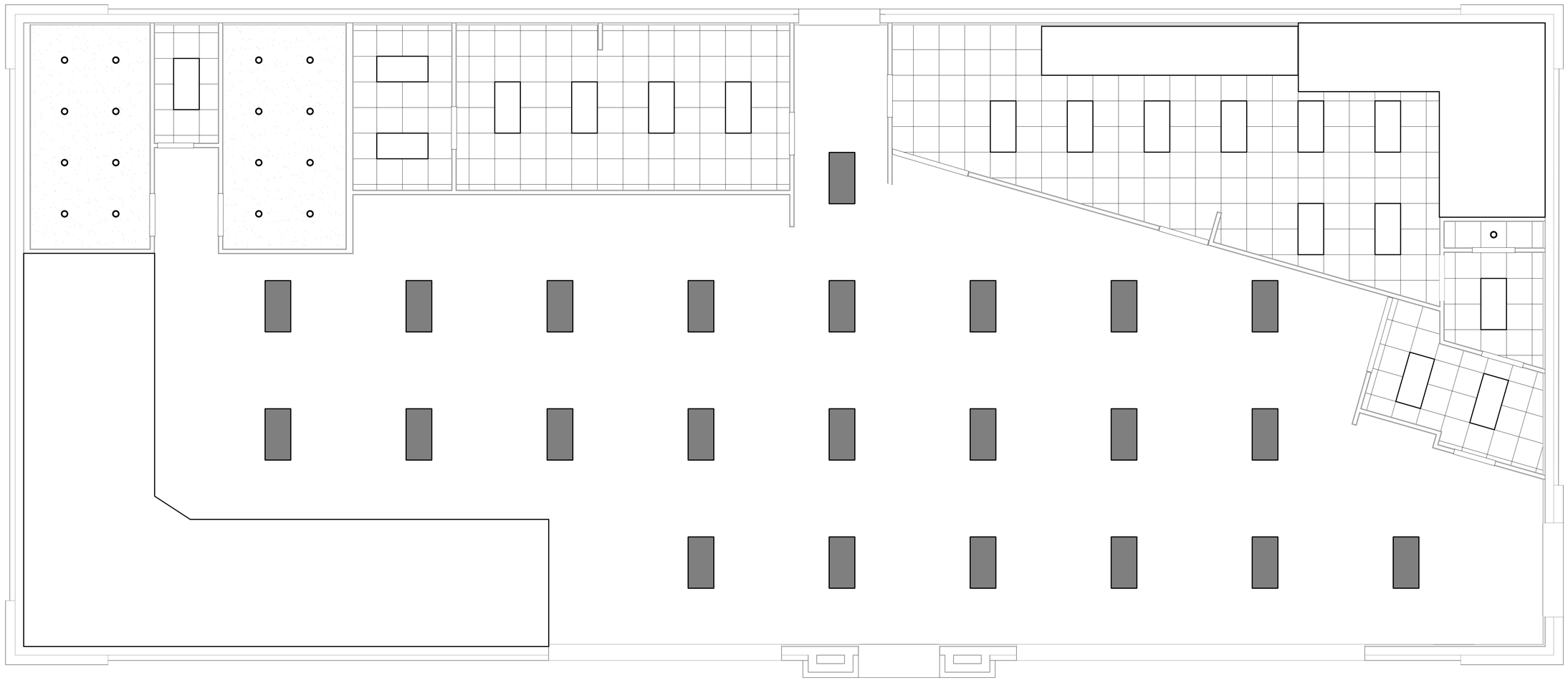

R.C.P. LEGEND

- 2 x 4 LIGHTING FIXTURE
- RECESSED CAN LIGHT
- HI-BAY LIGHTING FIXTURE
- ILLUMINATED EXIT LIGHT
- EMERGENCY LIGHTING
- ACOUSTICAL TILE - 2x2 SMOOTH (NON-TEGULAR) CEILING TILE THROUGHOUT

LIGHTING NOTES:

1. 2'x2' WASHABLE LAY-IN CEILING TILE IN KITCHEN AREA WITH 6" INSULATION ABOVE.
2. RESTROOMS TO HAVE SHEETROCK CEILING WITH 6" INSULATION ABOVE
3. LIGHTS IN SALES AREA TO BE HI-BAY.
4. LIGHTS IN OFFICE, KITCHEN AND STORAGE ROOM TO HAVE DAYLIGHT BULBS
5. RESTROOM TO HAVE OCCUPANCY SENSOR
6. RESTROOM LIGHTING TO BE 6" CAN LIGHTS.

GENERAL NOTES:

1. SEE ELECTRICAL SHEETS FOR ADDITIONAL FIXTURES AND FIXTURE TYPES
2. COORDINATE LIGHTING FIXTURES WITH MECHANICAL DIFFUSERS (SEE M-1)
3. SEE FINISH SCHEDULE ON A-002 FOR CEILING HEIGHTS

REFLECTED CEILING PLAN

SCALE: 1/4" = 1'-0"

PLAN NORTH

EDWARD'S OIL

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David A. Brown

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REFLECTED CEILING PLAN

A-003

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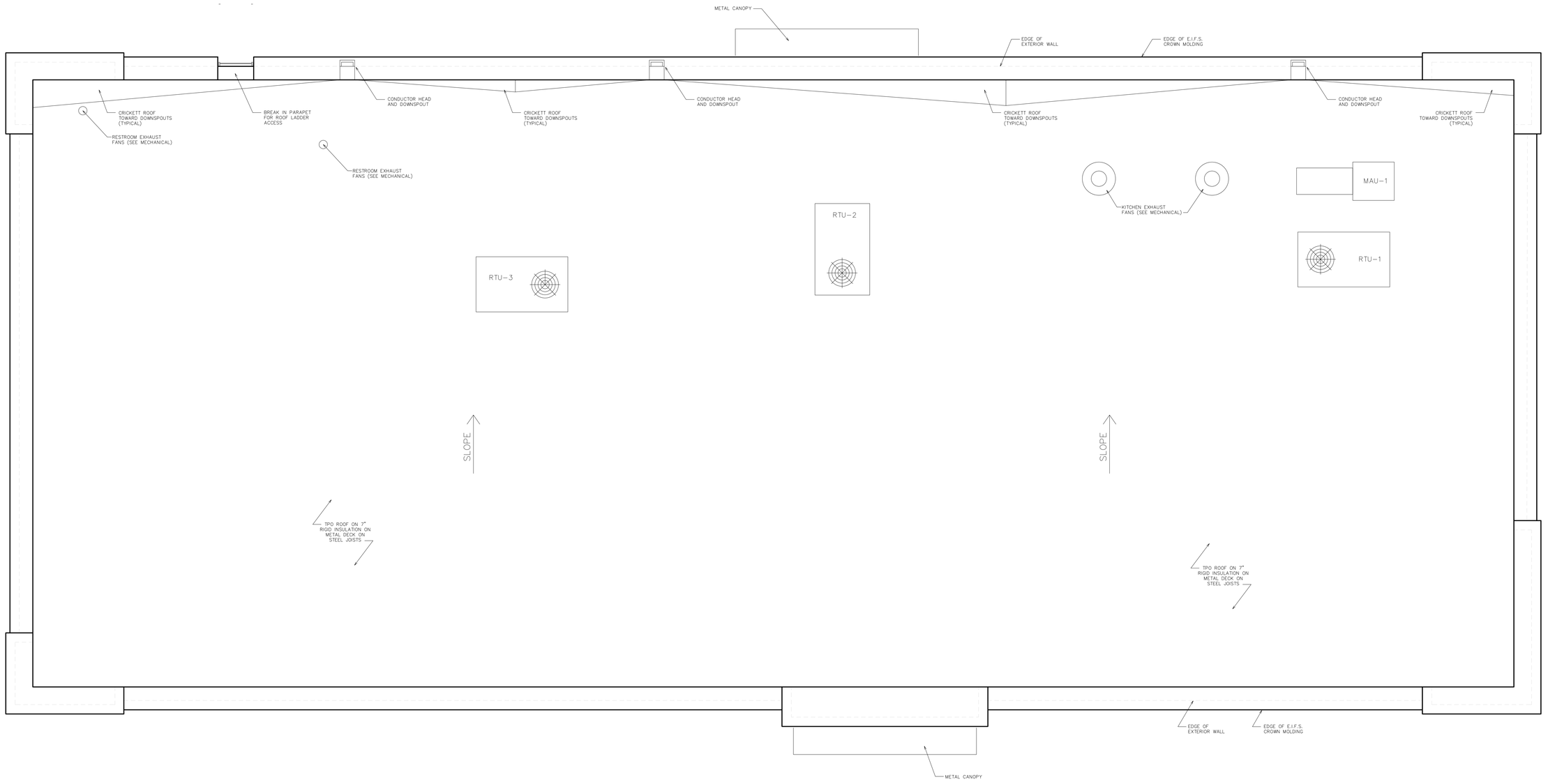

ROOF PLAN

SCALE: 1/4" = 1'-0"

PLAN NORTH

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ROOF PLAN

A-004

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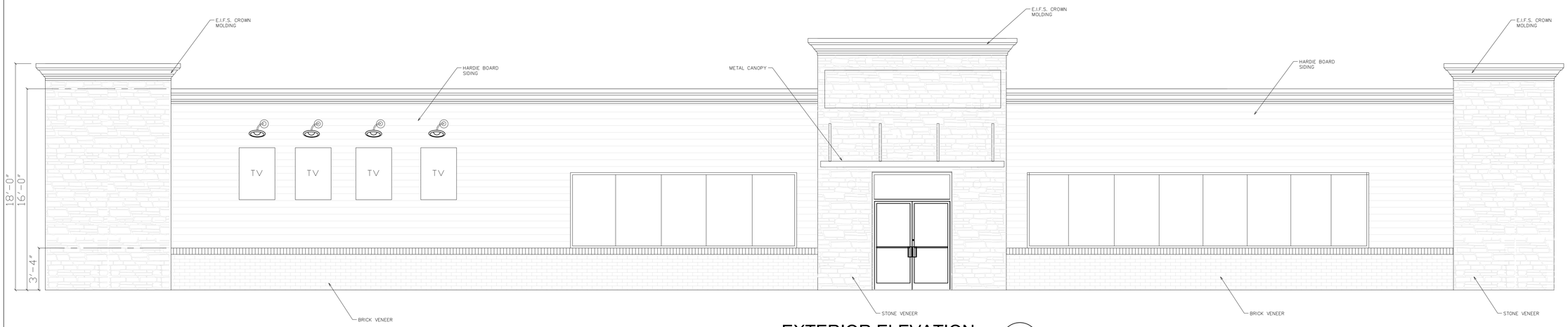
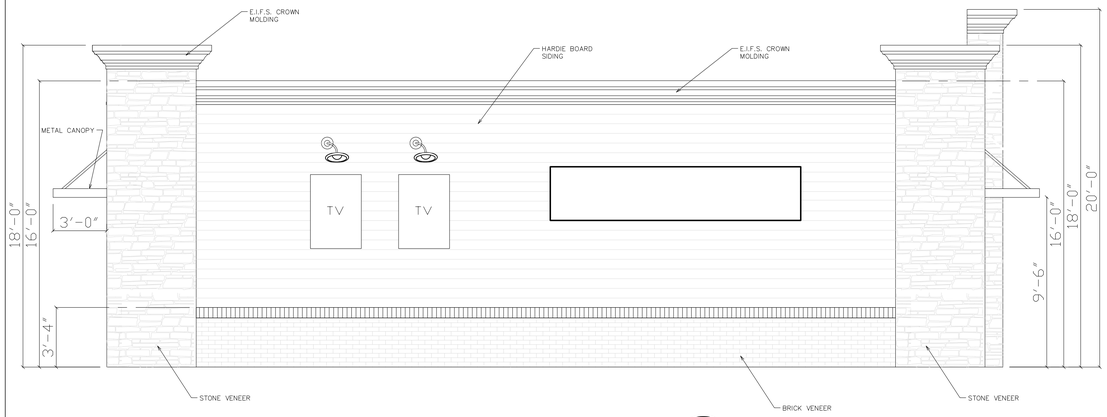


EXTERIOR ELEVATION

SCALE: 1/4"= 1'-0"

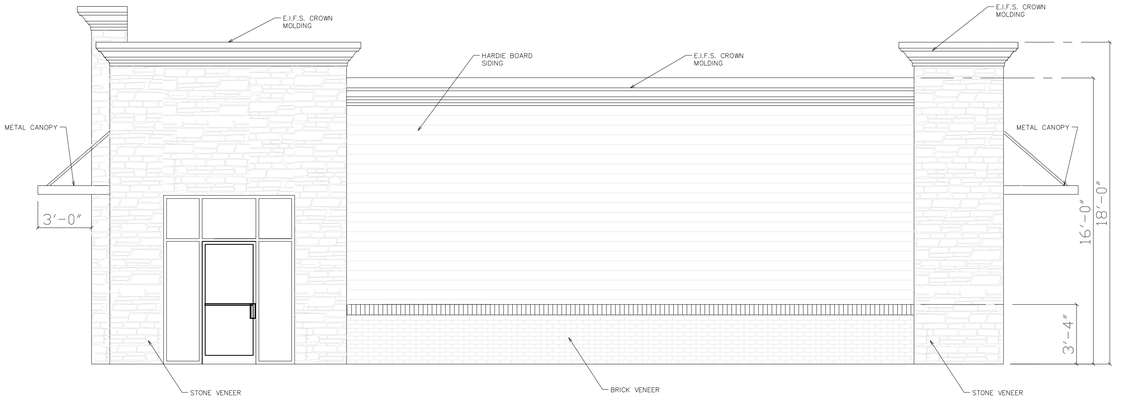
1 / A-005



EXTERIOR ELEVATION

SCALE: 1/4"= 1'-0"

2 / A-005



EXTERIOR ELEVATION

SCALE: 1/4"= 1'-0"

3 / A-005

EXTERIOR ELEVATION

SCALE: 1/4"= 1'-0"

4 / A-005

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EXTERIOR ELEVATIONS

A-005

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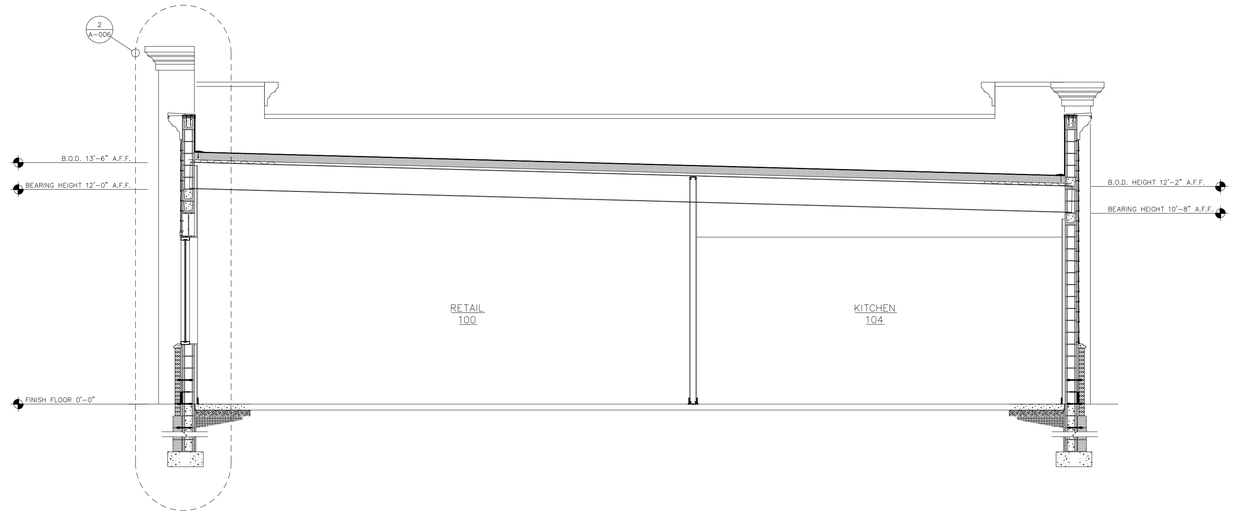


BUILDING SECTION

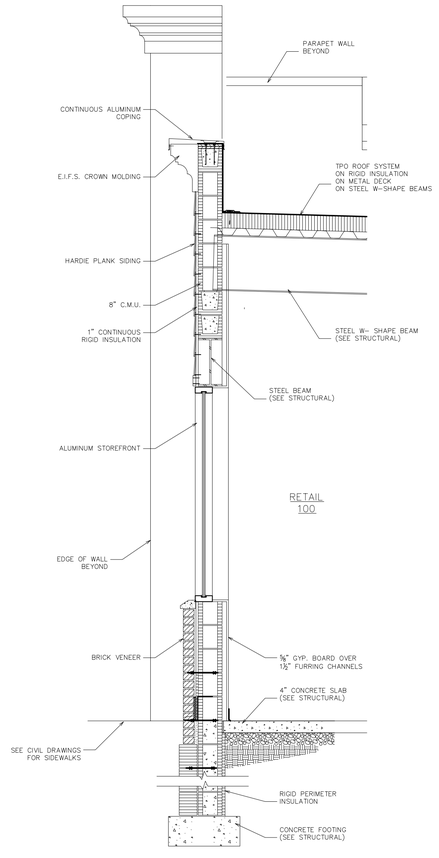
SCALE: 1/4"= 1'-0"

1
A-006

INSULATION SCHEDULE:

LOCATION	INSULATION TYPE
INTERIOR WALLS	N/A
EXTERIOR WALLS	R19, RIGID INSULATION
ROOF	R30, 7" RIGID INSULATION
SLAB	R10, RIGID PERIMETER INSULATION, VERTICAL

VALUES BASED ON 2018 IECC



WALL SECTION

SCALE: 1/2"= 1'-0"

2
A-006

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BUILDING AND WALL SECTIONS

A-006

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DIFFUSER, REGISTER, & GRILLE SCHEDULE

SIZES ARE BY SCHEDULES UNLESS NOTED OTHERWISE. DIFFUSERS ARE 4-WAY BELOW UNLESS NOTED AS 3-WAY (3W) OR 2-WAY (2W), GO TO NEXT LARGER NECK SIZE FOR 2-WAY OR 3-WAY DIFFUSERS.

UNLESS NOTED OTHERWISE, ALL DIFFUSERS IN THE SAME SPACE SHALL BE THE SAME FACE SIZE, REGARDLESS OF CFM, USING LARGEST SIZE FROM TABLE BELOW. ALL DIFFUSERS IN THE SAME CORRIDOR SHALL BE THE SAME FACE SIZE.

RETURN AND EXHAUST GRILLES ARE BASED ON 450 FPM & 72% FREE AREA (BASED ON 1/2" EGG-CRATE GRILLES).

✳ = BRANCH DUCT AND OPTIONAL BRANCH DUCT SIZES ARE BY THIS SCHEDULE UNLESS OTHERWISE SPECIFICALLY NOTED ON FLOOR PLANS.

USE RETURN/EXHAUST REGISTER AND DIFFUSER WITH O.B.D. IN DRYWALL (INACCESSIBLE) CEILINGS.

USE RETURN/EXHAUST GRILLES AND DIFFUSERS WITHOUT O.B.D. IN LAY-IN OR ACCESSIBLE CEILINGS.

INSTALL M.B.D. IN BRANCH DUCTS. INSTALL SPIN-IN FITTINGS (WITHOUT SCOOPS) WITH M.B.D. IN ALL OPTIONAL BRANCH DUCTS. SEE BRANCH DUCT CONNECTION DETAILS FOR SPECIFIC REQUIREMENTS.

CEILING DIFFUSERS

CFM RANGE	FACE SIZE	NECK SIZE	BRANCH DUCT SIZE ✳	OPTIONAL BRANCH DUCT SIZE
0-150	12"x12"	6"ø	8"x6"	8"ø
155-240	24"x24"	8"ø	12"x6"	10"ø
245-360	24"x24"	10"ø	12"x8"	10"ø
365-460	24"x24"	12"ø	14"x8"	12"ø
465-600	24"x24"	12"ø	16"x8"	12"ø
605-720	24"x24"	14"ø	16"x10"	14"ø

SIDEWALL DIFFUSERS

CFM RANGE	FACE SIZE	NECK SIZE	BRANCH DUCT SIZE ✳	OPTIONAL BRANCH DUCT SIZE
0-75			6"x6"	8"ø
80-150			8"x6"	10"ø
155-200			10"x6"	10"ø
205-250			12"x6"	12"ø
255-300			14"x6"	14"ø

RETURN / EXHAUST REGISTERS & GRILLES

CFM RANGE	FACE SIZE	NECK SIZE	BRANCH DUCT SIZE ✳	OPTIONAL BRANCH DUCT SIZE
0-90	6"x6"		8"x6"	6"ø
95-140	8"x8"		10"x6"	8"ø
145-190	10"x10"		12"x6"	10"ø
195-275	12"x12"		14"x6"	10"ø
280-475	18"x12"		14"x8"	12"ø
480-725	18"x18"		20"x8"	14"ø
730-900	24"x18"		20"x10"	
905-1250	24"x24"		26"x10"	
1255-2000	36"x24"		26"x14"	
2005-2800	48"x24"		26"x18"	

DX/GAS UNIT SCHEDULE

GENERAL NOTES:

(1) EXTERNAL STATIC PRESSURE INCLUDES ALL LOSSES IN DUCT SYSTEM

(2) HIGH EFFICIENCY MOTOR

E.P. - EMEREGENCY POWER

UNIT ACCESSORIES:

1 - DUPLEX RECEPTACLE

2 - HOT GAS REHEAT

3 - 100% ECONOMIZER WITH BAROMETRIC RELIEF

4 - PROVIDE WITH 7-DAY PROGRAMMABLE T'STAT WITH LCD DISPLAY & AUTO CHANGEOVER.

5 -2-POSITION OUTSIDE AIR DAMPER

6 - 2" THROWAWAY 30% PRE FILTERS AND FRAME

7 - PROVIDE CURB ADAPTER KIT. FIELD VERIFY EXISTING CURB FOR PROPER ADAPTER KIT.

8 - 12" TALL ROOF CURB BY MANUFACTURER

9 - SPRING ISOLATION RAIL

10 - UNIT STARTERS , CONTROLS, DAMPERS, & ACCESSORIES FACTORY INSTALLED BY A/C UNIT MFG

11 - INDIVIDUAL ELEC. CONNECTIONS FOR EACH FAN AND CONDENSING UNIT

12 - DUAL POINT ELEC. CONNECTIONS FOR UNIT, EMERGENCY POWER FOR SUPPLY AND RETURN FANS ONLY

STARTER ACCESSORIES:

A - FACTORY MOUNTED COMBINATION MAG-X-LINE

B - FACTORY MOUNTED AUTO TRANSFORMER

C - FACTORY MOUNTED VARIABLE FREQUENCY DRIVE (VFD) WITH LINE REACTOR & DISCONNECT

D - HAND-OFF-AUTO SWITCH, 120 VOLT CONTROL TRANSFORMER, & PILOT LIGHT

IDENTIFICATION	RTU-1	RTU-2	RTU-3
AREA SERVED	KITCHEN	RETAIL	RETAIL
MANUFACTURER	TRANE	TRANE	TRANE
MODEL NO.	YSC092	YSC092	YSC092
TONS	7.5	7.5	7.5
OPERATING WEIGHT (LBS)	1291#	1291#	1291#
UNIT ACCESSORIES	1,2,3,4,6,10	1,2,3,4,6,10	1,2,3,4,6,10
SUPPLY FAN			
CFM	2600	2500	2520
EXT. S.P. (1)	.8"	.8"	.8"
TOTAL S.P.	SEE MFG	SEE MFG	SEE MFG
H.P. (2)	1	1	1
OUTSIDE AIR			
MINIMUM	300	300	300
MAXIMUM	2600	2500	2520
COOLING COIL			
DEHUM CFM	2600	2500	2520
MAX. FV	500	500	500
EDB/EWB (°F)	77.8/65.4	77.8/65.4	77.8/65.4
LDB/LWB (°F)	55/54	55/54	55/54
CAPACITY (MBH)	85	85	85
HEATING			
MIN. HTG CAPACITY (MBH)	85	85	85
HTG INPUT/OUTPUT	120/100	120/100	120/100
HEATER EAT/LAT	60/90	60/90	60/90
ELECTRICAL			
V/ø/Hz	208-3	208-3	208-3
UNIT MCA/MOCP	39/50	39/50	39/50
STARTER TYPE	BY MFG	BY MFG	BY MFG
DISCONNECT TYPE	BY MFG	BY MFG	BY MFG
ACCESSORIES			
REMARKS			

ROOFTOP EQUIPMENT NOTES

1. ALL ROOF MOUNTED EQUIPMENT TO BE MOUNTED ON EXISTING ROOF CURB.
2. COORDINATE LOCATION OF EXHAUST RISERS THRU ROOF TO MAINTAIN A MINIMUM OF 10'-0" FROM ANY FRESH AIR INTAKE. DUE TO LIMITED SITE INVESTIGATION FIELD COORDINATION IS REQUIRED BEFORE INSTALLING CURBS
3. ROUTE CONDENSATE PIPE TO NEAREST DOWNSPOUT.
4. COORDINATE SUPPLY AND RETURN DUCT ROOF PENETRATIONS WITH STRUCTURAL.

HVAC LEGEND

PIPING		DUCTWORK	
D	DRAIN LINE		SUPPLY DUCTWORK
RS	REFRIGERANT SUCTION		RETURN OR EXHAUST DUCTWORK
RL	REFRIGERANT LIQUID	FD	FIRE DAMPER
V	EQUIPMENT VENT	SD	SMOKE DAMPER
	BALL VALVE	F/SD	COMBINATION FIRE & SMOKE DAMPER
	GATE VALVE	240	SUPPLY DIFFUSER & AIR QUANTITY (INDICATES 4-WAY BLOW)
	GLOBE VALVE	150 3W (2W)	SUPPLY DIFFUSER & AIR QUANTITY INDICATES 3-WAY BLOW (2-WAY BLOW)
	BUTTERFLY VALVE	140R	RETURN AIR GRILLE & AIR QUANTITY
	CONTROL VALVE	150E	EXHAUST AIR GRILLE & AIR QUANTITY
	STRAINER WITH HOSE END DRAIN CONNECTION		REDUCER/TRANSITION
	STRAINER AND BLOWDOWN VALVE	T	THERMOSTAT (ADJUSTABLE)
	PLUG COCK (BALANCING VALVE)	Tc	THERMOSTAT (CONCEALED / KEY OPER.)
	UNION	R	RISE IN DUCTWORK
	COMPANION FLANGE	D	DROP IN DUCT
	CHECK VALVE		CONICAL TEE
	GAUGE & GAUGE COCK		BELLMOUTH CONNECTION
	THERMOMETER		DUCT WITH INTERNAL SOUND LINER
A.F.F.	ABOVE FINISHED FLOOR		SQUARE ELBOW WITH TURNING VANES
A.F.R.	ABOVE FINISHED ROOF	M.B.D.	MANUAL BALANCE DAMPER
A.D.	ACCESS DOOR	50	INDICATES 3/4" DOOR UNDERCUT. DIRECTION & QUAN .OF ROOM AIR PRESS.
		50	INDICATES DIRECTION & QUANTITY OF ROOM AIR PRESSURIZATION.
		SD	DUCT MOUNTED SMOKE DETECTOR
		SP	DUCT MOUNTED STATIC PRESSURE CONTROLLER

FAN SCHEDULE

GENERAL NOTES:

(1) HIGH EFFICIENCY MOTOR

ABBREVIATIONS:

C.T. - CONTROL TRANSFORMER

R.I.S. - RUBBER IN SHEAR

UNIT ACCESSORIES:

1 - UL 762 LISTED

2 - PROVIDE WITH GRAVITY DAMPER AND SCREENED OUTLET

3 - PROVIDE WITH GAS HEAT 175 IN/161 OUT

4 - PRE-WIRED DISCONNECT SWITCH

5 - PROVIDE WALL SWITCH

6 - MANUFACTURER'S ROOF CURB

STARTER ACCESSORIES:

A - MANUAL MOTOR STARTER

IDENTIFICATION	EF-1		KEF-1 (FURNISHED)	KEF-2 (FURNISHED)			MAU-1 (FURNISHED)
SYSTEM	TOILET		KH-1	KH-2			KH-1 & KH-2
TYPE	CABINET CEILING FAN WITH INTEGRAL GRILLE		UPBLAST	UPBLAST			TEMPERED MAKEUP AIR UNIT
MANUFACTURER	COOK		CAPTIVEAIRE	CAPTIVEAIRE			CAPTIVEAIRE
MODEL NO.	GC-188		DU180HFA	DU180HFA			A2-D.250-20D-MPU
CFM	200		1600	1800			2720
S.P.	.5		1.25	1.25			.5
MAX. SONES	5		11.32	11.81			10
ROOF OPENING	N/A		SEE MFG	SEE MFG			SEE MFG
UNIT WEIGHT (LBS)	15#		194#	194#			1367#
FAN ACCESSORIES	2,4,6		1,4,6	1,4,6			2,3,4,6
MOTOR (1)							
MIN. H.P.	⅛		1.5	1.5			1.5
RPM	1360		1067	1086			1236
VOLTAGE	120-1		208-3	208-3			208-3
STARTER							
LOCATION	AT UNIT		AT UNIT	AT UNIT			AT UNIT
TYPE	BY MFG		BY MFG	BY MFG			BY MFG
DISCONNECT TYPE	MCP		MCP	MCP			MCP
ACCESSORIES	A		B	B			B
REMARKS	FAN TO BE CONTROLLED BY TIME CLOCK		FAN TO BE INTERLOCKED WITH KH-1	FAN TO BE INTERLOCKED WITH KH-2			FAN TO BE INTERLOCKED WITH KH-1 & KH-2

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HVAC LEGENDS AND SCHEDULES

M-0.1

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GENERAL NOTES

1. DUCTWORK DIMENSIONS ARE INSIDE CLEAR.
2. (T) INDICATES THERMOSTAT.
3. (Tc) INDICATES THERMOSTAT WITH LOCKING COVER.
4. REFER TO SCHEDULE SHEET FOR DIFFUSER AND GRILLE SCHEDULE.
5. SPACES WITH DRYWALL CEILINGS SHALL HAVE FLANGE TYPE CEILING OUTLETS.
6. ALL DIFFUSERS IN SAME SPACE SHALL HAVE THE SAME FACE SIZE USING LARGEST SIZE REQUIRED FROM DIFFUSER AND GRILLE SCHEDULE.
7. IF NO SIZE IS SHOWN FOR DUCT SERVING DIFFUSER OR GRILLE, USE SIZE SHOWN ON DIFFUSER AND GRILLE SCHEDULE.
8. AIR INTAKES THRU ROOF SHALL BE A MINIMUM 10 FEET FROM EXHAUST FAN OUTLETS AND PLUMBING VENTS.
9. PROVIDE ACCESS PANELS IN AREAS WITH DRYWALL CEILING FOR ACCESS TO VALVES, BALANCING DAMPERS, FIRE, SMOKE AND/OR COMBINATION DAMPERS, REHEAT COILS, ETC..
10. REFER TO OTHER DISCIPLINES DRAWINGS FOR COORDINATION WITH THIS DRAWING.
11. SEAL ALL WALL, ROOF AND FLOOR PENETRATIONS AIR TIGHT AT PIPE, DUCTWORK AND CONDUIT PENETRATIONS.
12. REFER TO HVAC DETAILS FOR ADDITIONAL REQUIREMENTS ON EQUIPMENT.
13. EQUIPMENT SIZES AND SERVICE SPACE REQUIREMENTS MAY VARY BETWEEN DIFFERENT MANUFACTURERS. CONSULT THE MANUFACTURER SUBMITTED AND APPROVED, AND COORDINATE WITH THESE DOCUMENTS.
14. REFER TO EQUIPMENT SCHEDULES FOR BRANCH PIPE SIZES TO INDIVIDUAL EQUIPMENT.
15. PROVIDE MANUAL BALANCING DAMPERS IN EACH BRANCH RUN OUT TO SUPPLY DIFFUSERS, RETURN AND EXHAUST GRILLES.
16. CONTRACTOR SHALL VERIFY CLEARANCE REQUIREMENTS AND INDICATE ROUTING OF NEW DUCTWORK BEFORE FABRICATION BEGINS AS RISES AND DROPS MAY BE NECESSARY DUE TO FIELD CONDITIONS.
17. COORDINATE DUCT ROUTING SO AS NOT TO INTERFERE WITH TRUSS SPACE ACCESS DOORS.
18. MOUNT ALL TEMPERATURE SENSORS 54" ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED. PROVIDE LOCKING PLASTIC COVERS FOR ALL SENSORS.
19. FLEX DUCT IS TO BE INSTALLED WITHOUT SHARP BENDS OR CRIMPS. FLEX IS TO BE PERMANENTLY FASTENED TO ANY SHEET METAL FITTINGS.
20. DRAWINGS ARE DIAGRAMMATIC AND DO NOT RELEASE THE CONTRACTOR FROM THE RESPONSIBILITY OF INSTALLING THE HVAC SYSTEM PER LOCAL CODE AND IN EXCELLENT WORKING CONDITION.
21. GENERAL CONTRACTOR SHALL PROVIDE FRAME OPENINGS FOR ROOF TOP UNITS IN ACCORDANCE WITH MECHANICAL CONTRACTORS SPECIFICATIONS.
22. APPROVED EQUAL MANUFACTURER'S EQUIPMENT MAY BE USED. VERIFY ELECTRICAL LOADS AND COORDINATE WITH ELECTRICAL CONTRACTOR.
23. CONTRACTOR SHALL SUBMIT (7) COPIES OF SUBMITTALS. ALL INFORMAITON DIFFERENT FROM DRAWINGS AND SPECIFICAITONS SHALL BE HIGHLIGHTED AND BROUGHT TO ATTENTION OF REVIEWER.
24. ALL SMOKE DETECTORS ARE INSTALLED AND FURNISHED BY ELECTRICAL CONTRACTOR.
25. PROVIDE A FLEXIBLE CONNECTION AT THE INTAKE AND DISCHARGE OF ALL MOTOR DRIVEN EQUIPMENT.
26. ALL FLEXIBLE DUCTWORK SHALL HAVE A MAXIMUM LENGTH OF SIX (6) FEET AND A MINIMUM RADIUS OF 90 DEGREES.

CONTROLS

AIR HANDLER FANS SHALL RUN CONTINUOUSLY DURING OCCUPIED HOURS TO MAINTAIN PRESSURIZATION AND REQUIRED AIR CHANGES.

OCCUPIED HOURS TO BE DETERMINED BY PROGRAMMABLE T'STAT

ROOFTOP UNIT COMPRESSOR AND GAS HEAT OPERATION SHALL BE CONTROLLED BY PROGRAMMABLE T'STAT WITH AUTOMATIC HEAT/COOL SWITCHING

UPON DETECTION OF SMOKE BY DUCT MOUNTED SMOKE DETECTOR, AIR HANDLERS AND INTERLOCKED EXHAUST FANS SHALL SHUT DOWN.

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EDWARD'S OIL

COLUMBIA, TENNESSEE

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REVISIONS:

DELTA	DESCRIPTION	DATE

DATE OF ISSUE:	09.12.2022
MA PROJECT NO:	0336-22
PROJECT PHASE:	CD
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HVAC LEGEND

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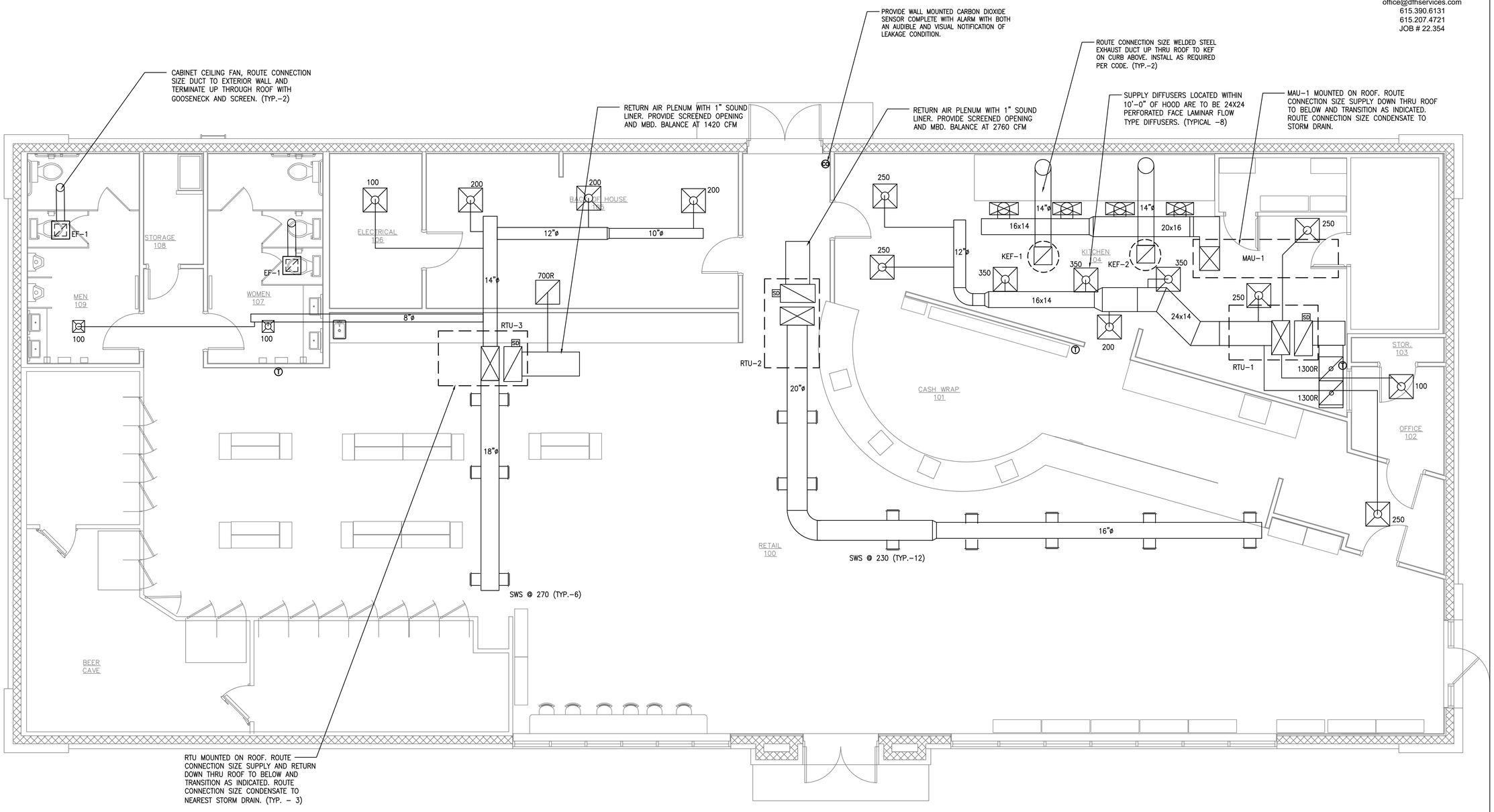

HVAC NEW CONSTRUCTION PLAN

SCALE: 1/4" = 1'-0"

PLAN NORTH

EDWARD'S OIL

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HVAC NEW CONSTRUCTION PLAN

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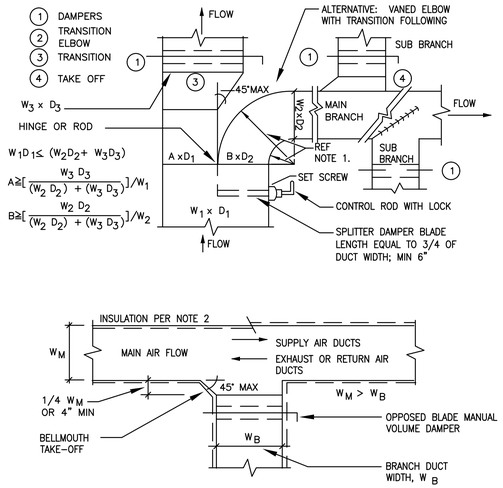
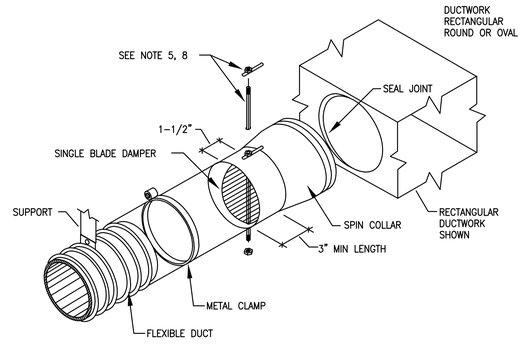


NOTES:

1. R_1 & R_2 ARE RESPECTIVELY 1.75 AND 0.75 OF THE GREATER OF B OR W .
2. SUPPLY DUCT TO BE EXTERNALLY INSULATED. EXHAUST AND RETURN AIR DUCTS INSULATE PER SPECIFICATION.

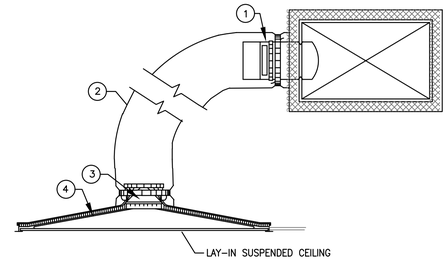
DUCT MAIN AND BRANCH TAKE OFFS



NOTES:

1. SUPPORT AS REQUIRED.
2. BAND FLEX TO COLLAR ½" MINIMUM FROM OUTBOARD END OF COLLAR,
3. INSTALL SPIN COLLAR DAMPER IN OPEN POSITION; FINAL ADJUSTMENT BY T&B CONTRACTOR.
4. PULL FLEXIBLE DUCTWORK INSULATION UP TO END OF SPIN COLLAR AT EDGE OF RECTANGULAR DUCTWORK; SEAL VAPOR BARRIER WITH GRAY TAPE TO PREVENT MOISTURE MIGRATION.
5. PROVIDE EXTENSION RODS TO ACCOMMODATE INSULATION, PULL TO EDGE OF DUCTWORK AS REQUIRED AND SEAL TO EFFECT VAPOR BARRIER.
6. POP RIVET OR SHEET METAL SCREWS, MINIMUM 3 EACH AT 120° INTERVALS, CONNECTING STOVEPIPE TO COLLAR. ENSURE RIVETS OR SCREWS DO NOT INTERFERE WITH DAMPER.
7. TAPE AND SEAL ALL JOINTS TO PREVENT LEAKAGE.
8. INSTALL LOCKING QUADRANT AND HANDLE ON BOTTOM OF DUCT FOR EASY SERVICE (SHOWN ON TOP FOR EASE OF ILLUSTRATION ONLY).

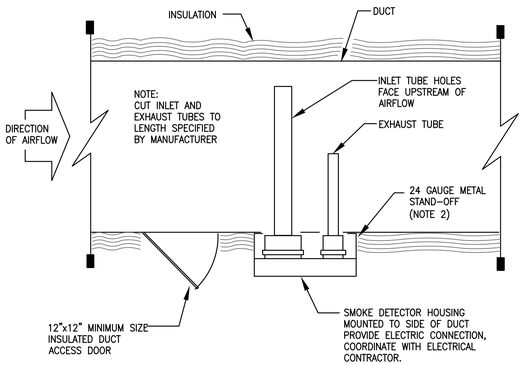
SPIN COLLAR FLEXIBLE DUCT CONNECTOR WITH DAMPER



NOTES:

1. SPIN COLLAR TYPE CONNECTOR, EXTERNALLY INSULATED, WITH VOLUME DAMPER AND DAMPER LOCK.
2. GALVANIZED SHEET METAL DUCT AS REQUIRED. INSTALLED, PERMANENTLY SEALED AND SUPPORTED FROM STRUCTURE
3. ROUND TO SQUARE ADAPTER AS REQUIRED.
4. LAY-IN-TYPE CEILING DIFFUSER WITH VOLUME DAMPER
5. 1-90° TURN ALLOWED.
6. SUPPORT SPACING AS SPECIFIED.

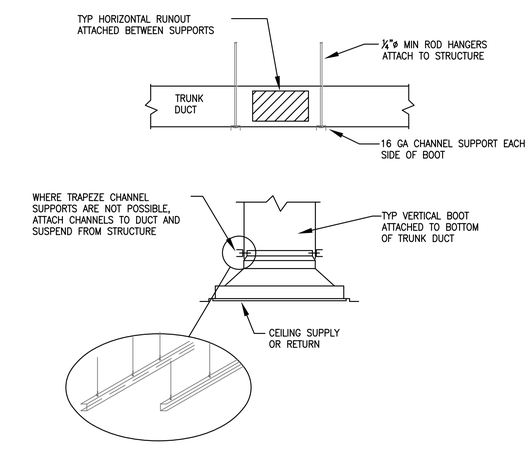
LAY-IN AND SLOT TYPE CEILING DIFFUSERS



NOTES:

1. DETAIL SHOWS GENERAL INSTALLATION METHODS. REFER TO INDIVIDUAL MANUFACTURER FOR THEIR SPECIFIC INSTALLATION AND LOCATION INSTRUCTIONS.
2. STAND-OFF BRACKET. PROVIDE INSULATION BETWEEN BRACKET AND DUCT. BRACKET NOT REQUIRED ON NON-INSULATED DUCT.

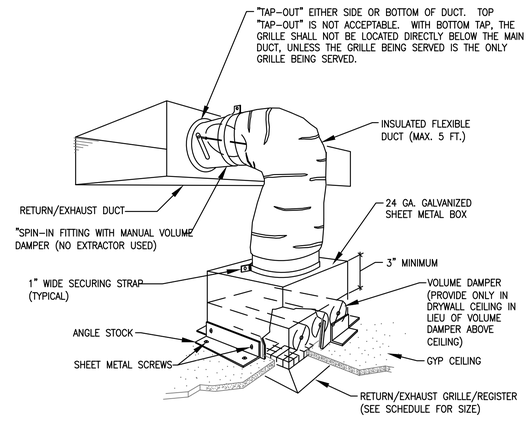
DUCT MOUNTED SMOKE DETECTOR



NOTE:

1. ON CONDITIONED SUPPLY AIR OUTLETS, EXTEND INSULATION DOWN AND COVER BACK OF DIFFUSERS. SEAL TO PROVIDE A TOTAL MOISTURE BARRIER.

DUCT SUPPORT AT AND ABOVE CEILING SUPPLY OR RETURN



LOW PRESSURE DUCTWORK CONNECTION TO EXHAUST GRILLE

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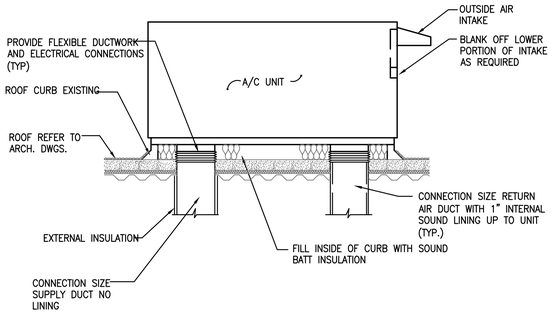
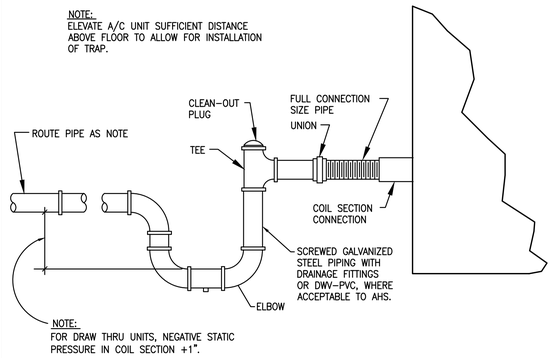


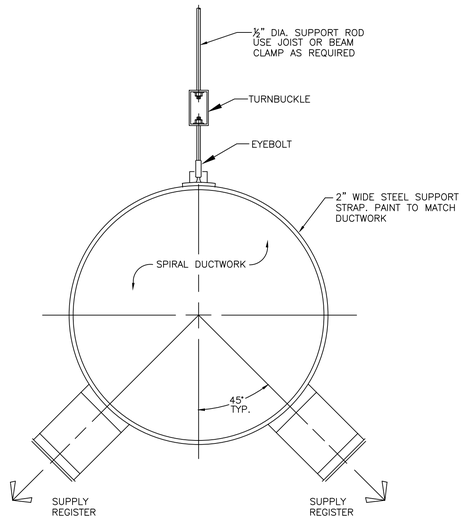
NOTE:

1. PIPE CONDENSATE FROM UNIT USING CONNECTION SIZE (3' MIN.) TO NEAREST DRAIN. PROVIDE "P" TRAP AT UNIT. SEE MOISTURE CONDENSATE DRAIN DETAIL.

ROOFTOP A/C UNIT

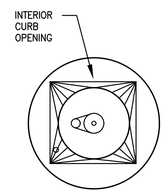


COOLING COIL CONDENSATE DRAIN

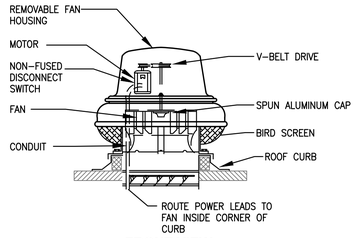


EXPOSED DUCT SUPPLY REGISTER

CAD ID: 09M202 NOT TO SCALE



PLAN VIEW



FRONT VIEW

NOTES:

1. PROVIDE MANUAL RESET FIRE-STAT AS REQUIRED.
2. BELT DRIVEN EXHAUSTER SHOWN. DETAIL IS SIMILAR FOR DIRECT DRIVE EXHAUSTER.
3. PROVIDE BACKDRAFT DAMPER AS REQUIRED.
4. CURB AND FAN FROM SAME MANUFACTURER.
5. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL BRACING AND TIE-DOWN REQUIREMENTS.

POWER ROOF EXHAUSTER (P.R.E.)

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EMAIL: reg44@captiveaire.com

HOOD INFORMATION – JOB#5602109

HOOD NO	TAG	MODEL	MANUFACTURER	LENGTH	MAX COOKING TEMP	TYPE	APPLIANCE DUTY	DESIGN CFM/FT	TOTAL EXH CFM	EXHAUST PLENUM RISER(S)							TOTAL SUPPLY CFM	HOOD CONSTRUCTION	HOOD CONFIG	
										WIDTH	LENG	HEIGHT	DIA	CFM	VEL	SP			END TO END	ROW
1	KH1 (LEFT)	6030 ND-2-PSP-F	CAPTIVEAIRE	8' 0"	600 DEG	I	HEAVY	200	1600			4"	14"	1600	1497	-0.551"	1280	430 SS WHERE EXPOSED	LEFT	ALONE
2	KH2 (RIGHT)	6030 ND-2-PSP-F	CAPTIVEAIRE	9' 0"	600 DEG	I	HEAVY	200	1800			4"	14"	1800	1684	-0.666"	1440	430 SS WHERE EXPOSED	RIGHT	ALONE

HOOD INFORMATION

HOOD NO	TAG	FILTER(S)					LIGHT(S)			UTILITY CABINET(S)					FIRE SYSTEM PIPING	HOOD HANGING WEIGHT
		TYPE	QTY	HEIGHT	LENGTH	EFFICIENCY @ 7 MICRONS	QTY	TYPE	WIRE GUARD	LOCATION	SIZE	FIRE SYSTEM TYPE	FIRE SYSTEM SIZE	ELECTRICAL MODEL #	SWITCHES QUANTITY		
1	KH1 (LEFT)	CAPTRATE SOLO FILTER	5	20"	16"	85% SEE FILTER SPEC	3	L55 SERIES E26	NO							YES	505 LBS
2	KH2 (RIGHT)	CAPTRATE SOLO FILTER	6	20"	16"	85% SEE FILTER SPEC	3	L55 SERIES E26	NO	RIGHT	12"x60"x30"	TANK FS	4.0/4.0/4.0	DCV-2111	1 LIGHT 1 FAN	YES	1080 LBS

HOOD OPTIONS

HOOD NO	TAG	OPTION
1	KH1 (LEFT)	FIELD WRAPPER 18.00" HIGH FRONT.
		BACKSPLASH 128.00" HIGH X 217.00" LONG 430 SS VERTICAL.
		LEFT SIDESPLASH 128.00" HIGH X 100.00" LONG 430 SS VERTICAL.
		LEFT END STANDOFF (FINISHED) 1" WIDE 60" LONG INSULATED.
		BACKSPLASH - INSIDE CORNER 80.00" HIGH X 2.00" LEG LENGTH 430 SS VERTICAL.
		BACKSPLASH - OUTSIDE CORNER 128.00" HIGH X 2.00" LEG LENGTH 430 SS VERTICAL.
		INSULATION FOR BACK OF HOOD.
		RISER SENSOR INSTALL 3IN DBL.
		LEFT WALL AS END PANEL.
2	KH2 (RIGHT)	FIELD WRAPPER 18.00" HIGH FRONT, RIGHT.
		INSULATION FOR BACK OF HOOD.
		RISER SENSOR INSTALL 3IN DBL.
		RIGHT VERTICAL END PANEL 27" TOP WIDTH, 21" BOTTOM WIDTH, 80" HIGH INSULATED 430 SS.

PERFORATED SUPPLY PLENUM(S)

HOOD NO	TAG	POS	LENGTH	WIDTH	HEIGHT	TYPE	RISER(S)				
							WIDTH	LENG	DIA	CFM	SP
1	KH1 (LEFT)	Front	97"	14"	12"	MUA	10"	28"		640	0.188"
						MUA	10"	28"		640	0.188"
2	KH2 (RIGHT)	Front	120"	14"	12"	MUA	12"	28"		720	0.168"
						MUA	12"	28"		720	0.168"

SYSTEM DESIGN VERIFICATION (SDV)

IF ORDERED, CAS SERVICE WILL PERFORM A SYSTEM DESIGN VERIFICATION (SDV) ONCE ALL EQUIPMENT HAS HAD A COMPLETE START UP PER THE OPERATION AND INSTALLATION MANUAL. TYPICALLY, THE SDV WILL BE PERFORMED AFTER ALL INSPECTIONS ARE COMPLETE.

ANY FIELD RELATED DISCREPANCIES THAT ARE DISCOVERED DURING THE SDV WILL BE BROUGHT TO THE ATTENTION OF THE GENERAL CONTRACTOR AND CORRESPONDING TRADES ON SITE. THESE ISSUES WILL BE DOCUMENTED AND FORWARDED TO THE APPROPRIATE SALES OFFICE. IF CAS SERVICE HAS TO RESOLVE A DISCREPANCY THAT IS A FIELD ISSUE, THE GENERAL CONTRACTOR WILL BE NOTIFIED AND BILLED FOR THE WORK. SHOULD A RETURN TRIP BE REQUIRED DUE TO ANY FIELD RELATED DISCREPANCY THAT CANNOT BE RESOLVED DURING THE SDV, THERE WILL BE ADDITIONAL TRIP CHARGES.

DURING THE SDV, CAS SERVICE WILL ADDRESS ANY DISCREPANCY THAT IS THE FAULT OF THE MANUFACTURER. SHOULD A RETURN TRIP BE REQUIRED, THE GENERAL CONTRACTOR AND APPROPRIATE SALES OFFICE WILL BE NOTIFIED. THERE WILL BE NO ADDITIONAL CHARGES FOR MANUFACTURER DISCREPANCIES.

CAPTIVE-AIRE HOODS ARE BUILT IN COMPLIANCE WITH

Intertek

NFPA #96
UL 710 & ULC710 STANDARDS
E.T.L. LISTED 3054804-001

CUSTOMER APPROVAL TO MANUFACTURE:

Approved as Noted ☐
Approved with NO Exception Taken ☐
Revise and Resubmit ☐
SIGNATURE _____
Your Title _____ Date _____

FOR QUESTIONS, CALL THE
Nashville Office
Darrin Richardson
PHONE: (615) 599-8300
EMAIL: reg44@captiveaire.com

SPECIFICATION: CAPTRATE GREASE-STOP SOLO FILTER

THE CAPTRATE GREASE-STOP SOLO FILTER IS A SINGLE-STAGE FILTER FEATURING A UNIQUE S-BAFFLE DESIGN IN CONJUNCTION WITH A SLOTTED REAR BAFFLE DESIGN, TO DELIVER EXCEPTIONAL FILTRATION EFFICIENCY.

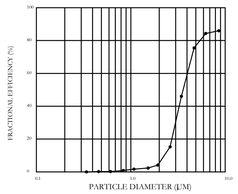
FILTER IS STAINLESS STEEL CONSTRUCTION, AND SIZED TO FIT INTO STANDARD 2-INCH DEEP HOOD CHANNEL(S).

UNITS SHALL INCLUDE STAINLESS STEEL HANDLES AND A FASTENING DEVICE TO SECURE THE TWO COMPONENTS WHEN ASSEMBLED.

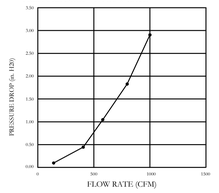
GREASE EXTRACTION EFFICIENCY PERFORMANCE SHALL REMOVE AT LEAST 75% OF GREASE PARTICLES FIVE MICRONS IN SIZE, AND 85% GREASE PARTICLES SEVEN MICRONS IN SIZE AND LARGER, WITH A CORRESPONDING PRESSURE DROP NOT TO EXCEED 1.0 INCHES OF WATER GAUGE.

THE CAPTRATE GREASE-STOP SOLO WAS TESTED TO ASTM STANDARD ASTM F2519-05. MANUFACTURER APPROVED FOR USE IN SOLID FUEL APPLICATIONS AS A SPARK ARRESTER.

EFFICIENCY VS. PARTICLE DIAMETER



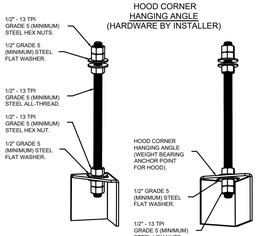
PRESSURE DROP VS. FLOW RATE



CAPTRATE FILTERS ARE BUILT IN COMPLIANCE WITH:.
NFPA #96.
NSF STANDARD #2.
UL STANDARD #1046.
INT. MECH. CODE (IMC).
ULC-S649.

BUILT IN ACCORDANCE WITH NFPA No. 96

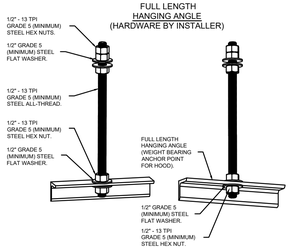
HOOD CORNER HANGING ANGLE (HARDWARE BY INSTALLER)



ASSEMBLY INSTRUCTIONS

HANGING ANGLE MUST BE SUPPORTED WITH 1/2" - 13 TPI GRADE 5 (MINIMUM) ALL-THREAD, SANDWICH HANGING ANGLES AND CEILING ANCHOR POINTS WITH 1/2" GRADE 5 (MINIMUM) STEEL FLAT WASHERS AND 1/2" - 13 TPI GRADE 5 (MINIMUM) HEX NUTS AS SHOWN. MUST USE DOUBLED HEX NUT CONFIGURATION BENEATH HOOD HANGING ANGLES AND ABOVE CEILING ANCHORS. MAINTAIN 1/4" OF EXPOSED THREADS BENEATH BOTTOM HEX NUT. TORQUE ALL HEX NUTS TO 57 FT-LBS.

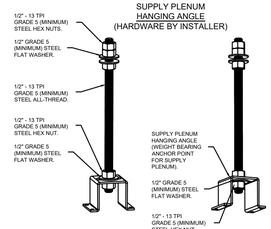
FULL LENGTH HANGING ANGLE (HARDWARE BY INSTALLER)



ASSEMBLY INSTRUCTIONS

HANGING ANGLE MUST BE SUPPORTED WITH 1/2" - 13 TPI GRADE 5 (MINIMUM) ALL-THREAD. SANDWICH HANGING ANGLES AND CEILING ANCHOR POINTS WITH 1/2" GRADE 5 (MINIMUM) STEEL FLAT WASHERS AND 1/2" - 13 TPI GRADE 5 (MINIMUM) HEX NUTS AS SHOWN. MUST USE DOUBLED HEX NUT CONFIGURATION ABOVE CEILING ANCHORS. SINGLE HEX NUT BENEATH HANGING ANGLE IS ACCEPTABLE FOR FULL LENGTH HANGING ANGLES. MAINTAIN 1/4" OF EXPOSED THREADS BENEATH BOTTOM HEX NUT. TORQUE ALL HEX NUTS TO 57 FT-LBS.

SUPPLY PLENUM HANGING ANGLE (HARDWARE BY INSTALLER)



ASSEMBLY INSTRUCTIONS

HANGING ANGLE MUST BE SUPPORTED WITH 1/2" - 13 TPI GRADE 5 (MINIMUM) ALL-THREAD. SANDWICH HANGING ANGLES AND CEILING ANCHOR POINTS WITH 1/2" GRADE 5 (MINIMUM) STEEL FLAT WASHERS AND 1/2" - 13 TPI GRADE 5 (MINIMUM) HEX NUTS AS SHOWN. MUST USE DOUBLED HEX NUT CONFIGURATION ABOVE CEILING ANCHORS. SINGLE HEX NUT BENEATH HANGING ANGLE IS ACCEPTABLE FOR PSP HANGING ANGLES. MAINTAIN 1/4" OF EXPOSED THREADS BENEATH BOTTOM HEX NUT. TORQUE ALL HEX NUTS TO 57 FT-LBS.

GREASE DUCT SPECIFICATIONS:
PROVIDE GREASE DUCT EQUAL TO CAPTIVEAIRE SYSTEMS MODEL "DW" ROUND 20 GAUGE 430 STAINLESS STEEL DUCTWORK. MODEL "DW" IS LISTED TO UL-1978 AND IS INSTALLED USING "V" CLAMP LOCKING CONNECTIONS SEALED WITH 3M FIRE BARRIER 2000 PLUS. MODEL "DW" DOES NOT REQUIRE WELDING PROVIDING IT HAS BEEN INSTALLED PER THE MANUFACTURES INSTALLATION GUIDE.
PROVIDE RATED ACCESS DOORS AT EVERY CHANGE IN DIRECTION AND EVERY 12' ON CENTER. PER MANUFACTURES LISTING MODEL "DW" HORIZONTAL RUNS LESS THAN 75 FT. CAN BE SLOPED 1/16" PER 12", HORIZONTAL RUNS MORE THAN 75 FT. CAN BE SLOPED 3/16" PER 12".
DUCT SHOULD BE SLOPED AS MUCH AS POSSIBLE TO REDUCE THE CHANCE OF GREASE ACCUMULATION IN HORIZONTAL RUNS.

IF THE DUCT IS WITHIN 18 INCHES OF COMBUSTIBLE MATERIAL, PROVIDE UL-2221 LISTED DOUBLE WALL GREASE DUCT EQUAL TO CAPTIVEAIRE SYSTEMS MODEL "DW- 2R, 3R, OR 3Z" ROUND 20 GAUGE 430 STAINLESS INNER DUCT INSULATED WITH A 24 GAUGE 430 STAINLESS OUTER SHELL.

FOR REFERENCE ONLY

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REVISIONS:

DELTA	DESCRIPTION	DATE

DATE OF ISSUE:	09.12.2022
MA PROJECT NO:	0336-22
PROJECT PHASE:	CD
DRAWN BY:	DF&H SERVICES

HVAC DETAILS

M-3.3

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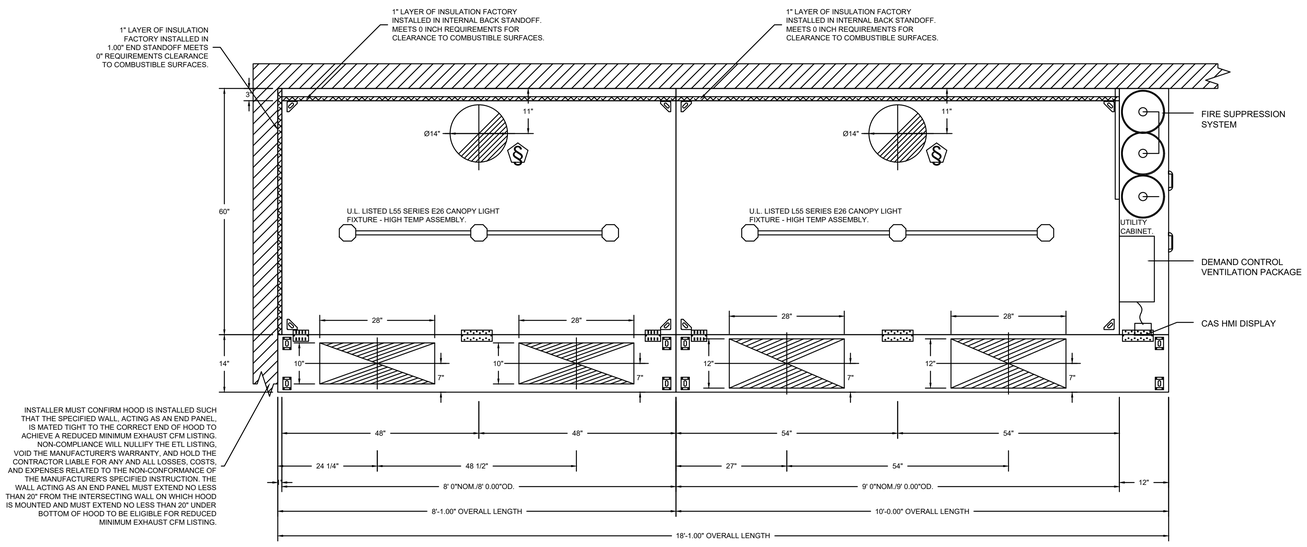


PLAN VIEW – HOOD #1 (KH1 (LEFT))
8' 0.00" LONG 6030ND-2-PSP-F

PLAN VIEW – HOOD #2 (KH2 (RIGHT))
9' 0.00" LONG 6030ND-2-PSP-F

VERIFY CEILING HEIGHT

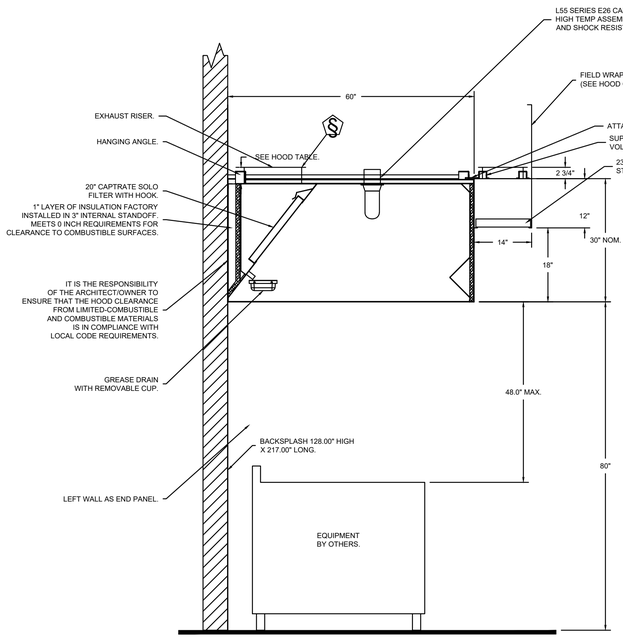
___' - ___"

HEIGHT REQUIRED TO VERIFY THAT HOOD FITS SPACE AND TO SIZE THE ENCLOSURE PANELS

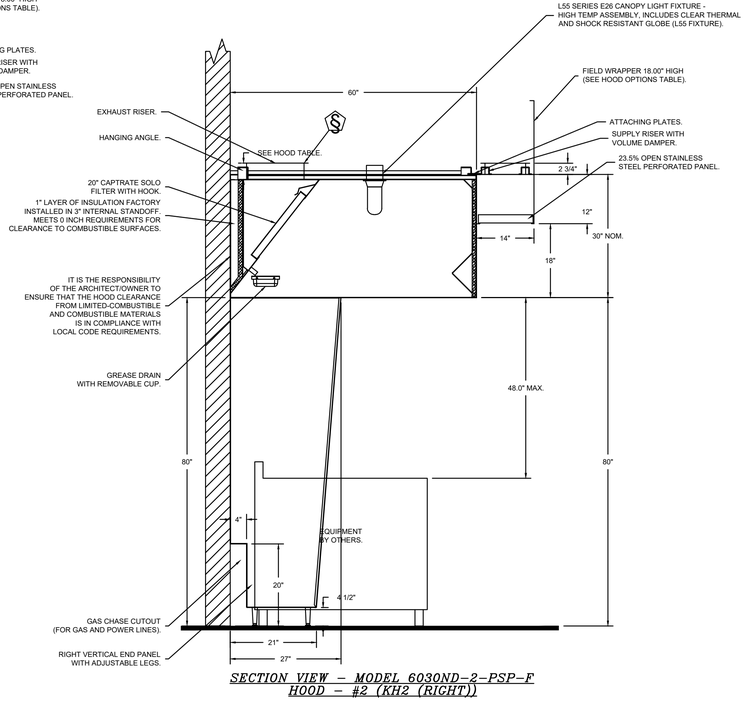
HVAC DISTRIBUTION NOTE

IT IS RECOMMENDED NOT TO INSTALL HIGH VELOCITY DIFFUSERS OR HVAC RETURNS WITHIN TEN (10) FEET OF THE EXHAUST HOOD. PERFORATED DIFFUSERS ARE RECOMMENDED.

CAPTIVEAIRE SYSTEMS RECOMMENDS THE USE OF LISTED, PRE-FABRICATED ROUND GREASE EXHAUST DUCT TO REDUCE STATIC PRESSURE IN THE SYSTEM, MINIMIZE INSTALLATION AND INSPECTION TIMES, AND ENSURE DUCT IS LIQUID TIGHT



SECTION VIEW – MODEL 6030ND-2-PSP-F
HOOD – #1 (KH1 (LEFT))



SECTION VIEW – MODEL 6030ND-2-PSP-F
HOOD – #2 (KH2 (RIGHT))

CAPTIVE-AIRE HOODS ARE BUILT IN COMPLIANCE WITH

BUILT IN ACCORDANCE WITH NFPA No. 96

Intertek

NFPA #96
UL 710 & ULC710 STANDARDS
E.T.L. LISTED 3054804-001

CUSTOMER APPROVAL TO MANUFACTURE:

Approved as Noted ☐
Approved with NO Exception Taken ☐
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SECTION 23 38 13 13

SPECIFICATIONS
TAG: Commercial Kitchen Ventilation Hoods, Listed Commercial Kitchen Hoods

PART 1 - GENERAL

1.1 SUMMARY

A. The ND2 series is a Type I, wall canopy hood for use over 600°F cooking surface temperatures. The aerodynamic design includes a mechanical baffle and performance enhancing lip for exceptional capture and containment.

B. The hood shall have the size, shape, and performance specified on drawings.

1.2 SUBMITTALS

A. The manufacturer assumes no liability for the use or results of use from this document. Specifications are to be reviewed by the engineer to confirm the project's requirements and meet Federal, State, and Local codes and regulations.

B. As the manufacturer continues product development, it reserves the right to change design and specifications without notice.

C. The manufacturer shall supply complete computer generated submittal drawings, including hood section view(s) and hood plan view(s). These drawings must be available to the engineer, architect, and owner for their use in construction, operation, and maintenance.

1.3 QUALITY ASSURANCE

A. This hood is ETL-listed to standard UL710, ULC710, and ULC-S646 when installed in accordance with these installation instructions and National Fire Protection Association Standard "NFPA 96, Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations."

B. Built-in compliance with NSF/ANSI Standard 2.

C. The hood shall be ETL Listed as:

1. "Exhaust Hood Without Exhaust Damper."
2. ETL Sanitation Listed and built in accordance with NFPA 96.
3. The ETL label shall list temperature rating(s) and minimum CFM/ft rating(s).

1.4 WARRANTY

A. All units shall be provided with the following standard warranty:

1. This equipment is warranted to be free from defects in materials and workmanship, under normal use and service, for a period of 2-years from date of shipment.

B. The manufacturer shall not be liable for incidental and consequential losses and damages potentially attributable to malfunctioning equipment. Should any part of the equipment prove to be defective in material or workmanship within the 2-year warranty period, upon examination by the manufacturer, such part will be repaired or replaced by manufacturer at no charge. The buyer shall pay all labor costs incurred in connection with such repair or replacement. Equipment shall not be returned without manufacturer's prior authorization, and all returned equipment shall be shipped by the buyer, freight prepaid to a destination determined by the manufacturer.

C. Refer to Manufacturer's Operation, Installation, and Maintenance (OIM) Manual for detailed descriptions of what is/is not covered and contact information for warranty claims.

PART 2 - PRODUCTS

2.1 GENERAL

A. Construction shall be dependent on the structural application to minimize distortion and other defects. All seams, joints, and penetrations of the hood enclosure to the lower outermost perimeter, which directs and captures grease-laden vapor and exhaust gases, shall have a liquid-tight continuous external weld in accordance with NFPA 96.

B. Duct sizes, CFM, and static pressure requirements shall be as shown on drawings. Static pressure requirements shall be precise and accurate; air velocity and volume information shall be accurate within 1-ft increments along the length of the ventilator.

2.2 CONSTRUCTION

A. Construction shall be type 430 stainless steel.

B. Double wall insulated front to eliminate condensation and increase rigidity on wide sizes. The insulation shall have a flexural modulus of 475 EI, meet UL 181 requirements and be in accordance with NFPA 90A and 90B.

C. Hood shall be equipped with a minimum of four connections for hanger rods. Hood lengths greater than 12' will have added hangers.

D. Exhaust duct collar to be 4" high with flange.

E. The grease drain system shall be an enclosed integral part of the hood back and have slopes with an exposed, removable 1/2 grease cup to facilitate cleaning.

F. An integral baffle to direct grease laden vapors toward the exhaust filter bank.

G. Hood shall be furnished with UL classified filters, supplied in size and quantity as required by ventilator.

H. All seams shall be welded and have stainless steel on exposed surfaces.

2.3 LIGHTING

A. L55 Series canopy light fixture, includes clear thermal and shock resistant globe.

2.4 FILTERS

A. Stainless Steel Captrate Solo filter with hook, ETL Listed. Particulate capture efficiency: 85% efficient at 9 microns, 76% efficient at 5 microns.

2.5 OPTIONS

A. Fire Suppression System: UL 300 fire suppression system.

B. Optional perforated supply plenum shall provide make-up air discharged below the cooking equipment.

1. Perforated diffuser plates shall be included in the design to provide even air distribution.
2. Unexposed surfaces shall be constructed of aluminized steel. Plenum shall be insulated to prevent condensation.
3. Perforated Supply Plenum (PSP)

C. Hood Mounted Utility Cabinet - Cabinet can store listed fire suppression system, listed components, pre-wired electrical controls.

2.6 ACCESSORIES

A. End Panel(s) maximize hood performance and eliminate the effects of cross drafts in the kitchen. Units constructed of stainless steel and sized according to hood width and cooking equipment. Exposed edges hemmed for safety and rigidity. Selected panels:

1. Vertical End Panel
2. Wall as End Panel

B. Splash panel(s) selected:

1. Backsplash
2. Backsplash - Inside Corner
3. Backsplash - Outside Corner
4. Left Sidesplash

C. Standoff(s) selected:

1. Left End Standoff

D. Wrapper(s) may be installed from the factory or field installed. Wrapper(s) selected:

1. Wrapper

E. Miscellaneous option(s) selected:

1. Insulation for Back of Hood – Backside of hood is fully insulated.
2. Riser Sensor Install – Sensor set-up for 3" thick double wall duct.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions under which the system is installed. Do not proceed with work until unsatisfactory conditions have been corrected in a manner acceptable to Installer.

3.2 INSTALLATION

A. Install in accordance with manufacturer's instructions, drawings, written specifications, manufacturer's installation manual, and all applicable building codes.

CUSTOMER APPROVAL TO MANUFACTURE:

Approved as Noted ☐
Approved with NO Exception Taken ☐
Revise and Resubmit ☐
SIGNATURE _____
Your Title _____ Date _____ _____

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FIRE SYSTEM INFORMATION – JOB#5602109

FIRE SYSTEM NO	TAG	TYPE	SIZE	FLOW POINTS	INSTALLATION	
					SYSTEM	LOCATION ON HOOD
1	KH1/KH2 FS	TANK FS	4.0/4.0/4.0	41	FIRE CABINET RIGHT	RIGHT, HOOD 2

FIRE SYSTEM PARTS LIST KEY

FIRE SYSTEM NO	TAG	KEY NUMBER - PART DESCRIPTION	QTY BY FACTORY	QTY BY DIST
1	KH1/KH2 FS	0 - 0 - TANK FIRE SUPPRESSION POST-DISCHARGE PROCEDURE UTILITY CABINET LABEL SHEET.	1	0
		0 - 0 - TANK FIRE SUPPRESSION MAINTENANCE GUIDE UTILITY CABINET LABEL SHEET.	1	0
		0 - 0 - 12-F28021-32144-OT-360 DUCT FIRE THERMOSTAT WITH 12 FOOT WIRE LEADS. NO, CLOSE ON TEMP RISE AT 360°F.	2	0
		0 - 0 - 361091 3/8" BRASS PLUG.	3	0
		0 - 0 - 79425 3/8" NPT FEMALE TO 1/2" MALE PROPRESS ADAPTER.	3	0
		0 - 0 - 87-120042-001 SECONDARY ACTUATOR VALVE (SVA) - SINGLE ACTUATOR, REQUIRES PRIMARY RELEASE ACTUATOR, TANK FIRE SUPPRESSION.	2	0
		0 - 0 - 87-120045-001 HOSE, SECONDARY ACTUATOR HOSE, 7.5" BRAIDED STAINLESS STEEL, TANK FIRE SUPPRESSION.	2	0
		0 - 0 - 87-300001-001 TANK - PRESSURIZED TANK USED FOR TANK FIRE SUPPRESSION.	3	0
		0 - 0 - 87-300030-001 PRIMARY ACTUATOR KIT (PAK) - ACTUATOR AND RELEASE SOLENOID ASSEMBLY, ONE NEEDED PER FIRE SYSTEM, SUPERVISED, TANK FIRE SUPPRESSION.	1	0
		0 - 0 - 87-300152-001 HARDWARE, SVA BOLTS, TANK FIRE SUPPRESSION.	12	0
		0 - 0 - 9055455PC PRO PRESS 1/2 PRESS X PRESS 90 ELBOW LD.	9	0
		0 - 0 - 9097200PC PRO PRESS PC611 1/2 PRESS TEE LD.	8	0
		0 - 0 - 98694A115 HARDWARE, DATANKLOCK LOCKING BRACKET SQUARE NUTS 5/16" ZINC, TANK FIRE SUPPRESSION.	6	0
		0 - 0 - A0034332 JUNCTION BOX FOR MANUAL PULL STATION. 1.5" DEEP BACK BOX, RED COLOR.	1	0
		0 - 0 - BI145 3/8" BLACK IRON 90 ELL.	4	0
		0 - 0 - DATANKLOCK DISCHARGE ADAPTER TANK LOCKING PLATE FOR FIRE SYSTEM TANK INSTALLATION IN UTILITY CABINETS, TANK FIRE SUPPRESSION.	3	0
		0 - 0 - SLPCON-03FT SUPERVISED LOOP CONNECTION KIT. CONTAINS THE PARTS NEEDED TO CONNECT THE SUPERVISED LOOP BETWEEN END TO END HOODS WITH LESS THAN A 2' GAP. KIT CONTAINS 5 FEET OF BLACK MG WIRE, 5 FEET OF TAN MG WIRE, 3 FEET OF FLEXIBLE CONDUIT, AND TWO 7/8" CONNECTORS.	2	0
		0 - 0 - SLPCON-50FT SUPERVISED LOOP CONNECTION KIT. CONTAINS THE PARTS NEEDED TO CONNECT THE SUPERVISED LOOP BETWEEN HOODS WITH UP TO 48' GAP. KIT CONTAINS 52 FEET OF BLACK MG WIRE, 52 FEET OF TAN MG WIRE, 50 FEET OF FLEXIBLE CONDUIT, AND TWO 7/8" CONNECTORS.	1	0
		0 - 0 - TANK STRAP TANK STRAP - USED FOR TANK FIRE SUPPRESSION.	9	0
		0 - 0 - TFS-UCTANKBRACKET TANK BRACKET FOR FIRE SYSTEM TANK INSTALLATION IN UTILITY CABINETS, TANK FIRE SUPPRESSION.	3	0
		0 - 0 - WK-283952-000 DISCHARGE ADAPTER, TANK FIRE SUPPRESSION.	3	0
		16 - 16 - 79210 1/2" X 3/8" NPT MALE ADAPTER, VIEGA.	9	0
		16 - 16 - OL-F NOZZLE - TANK PROTECTION APPLIANCE COVERAGE NOZZLE (INCLUDES METAL BLOW OFF CAP, LANYARD, USED WITH CHROME-PLATED PIPE)- 4 FLOW POINTS.	9	0
		26 - 26 - QSA-3/8 QUIK SEAL - 3/8" (UL).	9	0
		34 - 34 - A0034331 24VDC SINGLE ACTION MANUAL ACTUATION DEVICE (PUSH/PULL STATION) WITH PROTECTIVE COVER, ONE (1) NORMALLY OPEN CONTACT. RED COLOR.	1	0

JOB NO 5602109 | MODEL NUMBER DCV-2111 | JOB NAME Quik Mart • Columbia | DRAWN BY | DATE 8/2/2022 | SCHEMATIC TYPE INSTALL | DWG NO ECP #1-3

DESCRIPTION OF OPERATION:
Fire System #1 Tank FS – is an 4.0-4.0-4.0(41HW) City Fed Ansul Fire Protection System equipped with Electronic Detector utilizing CORE board as a Listed Release Mechanism. Installed in Hood Utility Cabinet with integral hood prewire panel.

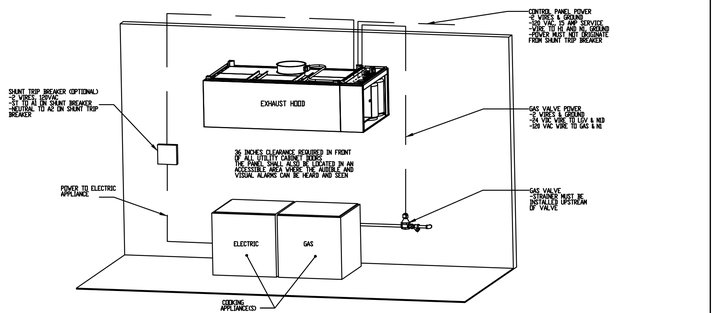
TANK PROTECTION ELECTRICAL DETAIL

02/10/2021 Rev. 2

FS-1: MASTER

ELECTRICIAN
1. WIRE MAIN CONTROL PANEL PER INCLUDED SCHEMATIC
2. WIRE SHUNT TRIP PER INCLUDED SCHEMATIC
3. WIRE GAS VALVE PER INCLUDED SCHEMATIC
4. WIRE APPLIANCE KILL SWITCH, IF EQUIPPED (OPTIONAL)
5. WIRE GAS VALVE

ELECTRICAL CONTRACTOR REQUIREMENT					
ITEM	CONNECTION IN PANEL	CONNECTION IN DEVICE	VOLTAGE	AMPERAGE	COMMENTS
SHUNT TRIP BREAKER (OPTIONAL)	ST & NI	BREAKER COIL OR & AD	120 VAC	< 4 AMPS	ST TO AI ON SHUNT BREAKER COIL, AND NEUTRAL TO AZ ON SHUNT TRIP BREAKER COIL
CONTROL PANEL POWER	HI & NI + GROUND	CIRCUIT BREAKER	120 VAC	15 AMPS	CONTROL PANEL POWER MUST NOT BE RUN THROUGH SHUNT TRIP BREAKER
LOS APPLIANCE KILL SWITCH (OPTIONAL)	KTS & NI	KTS & NI	120 VAC	< 4 AMPS	KILL SWITCH TERMINALS MUST BE IN SERIES WITH OTHER KILL SWITCHES
REMOTE 120VAC ANSUL AUTOMAN (OPTIONAL)	AUL, AUZ	SOLENOID	120 VAC	< 6 AMPS	120V TO AUL, AUZ TO ANSUL ELECTRIC AUTOMAN, ANSUL SOLENOID TO NEUTRAL
GAS VALVE	LGV & NIS OF 24 V'RO GAS & NI OF 120 VAC	RES/RES/GREEN	24 VDC OR 120 VAC	< 10 AMPS	IF 24 VAC – 2 WIRES & GROUND, RED TO RES, LGV TO RES, AND GREEN TO GROUND IF 120 VAC – 2 WIRES & GROUND GAS 10 RED, NI TO RES, AND GREEN TO GROUND



NOTE: SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS

JOB NO 5602109 | MODEL NUMBER DCV-2111 | JOB NAME Quik Mart • Columbia | DRAWN BY | DATE 8/2/2022 | SCHEMATIC TYPE INSTALL | DWG NO ECP #1-4

DESCRIPTION OF OPERATION:
Fire System #1 Tank FS – is an 4.0-4.0-4.0(41HW) City Fed Ansul Fire Protection System equipped with Electronic Detector utilizing CORE board as a Listed Release Mechanism. Installed in Hood Utility Cabinet with integral hood prewire panel.

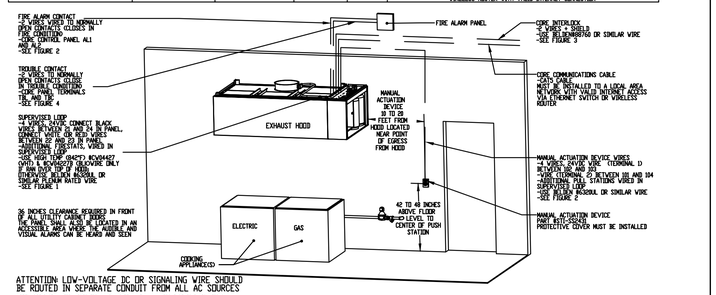
TANK PROTECTION LOW-VOLTAGE DETAIL

02/10/2021 Rev. 2

FS-1: MASTER

ALARM CONTRACTOR:
1. WIRE MANUAL ACTUATION DEVICE(S), REMOTE FIRESTAT(S), CORE INTERLOCK(S), FIRE SENSOR(S) AND FIRE ALARM CONTACTS
2. COMPLETE CORE PROGRAM BY SYSTEM
3. VERIFY FINAL FIRE SYSTEM TEST

ALARM CONTRACTOR REQUIREMENT					
ITEM	CONNECTION IN PANEL	CONNECTION ON DEVICE	VOLTAGE	AMPERAGE	COMMENTS
MANUAL ACTUATION DEVICE(S)	101 AND 104 102 AND 103	1 & 2	24 VDC	< 10 AMPS	WIRE MANUAL ACTUATION DEVICE TERMINAL 1 BETWEEN CORE PANEL TERMINALS 102 AND 103 WIRE MANUAL ACTUATION DEVICE TERMINAL 2 BETWEEN CORE PANEL TERMINALS 101 AND 104 JUMPER 101 TO 104 AND 102 TO 103 IF NO MANUAL ACTUATION DEVICE IS INSTALLED
MANUAL ACTUATION DEVICE COVER	N/A	N/A	N/A	N/A	MANUAL ACTUATION DEVICE COVER MUST BE INSTALLED 1 SUNCAST WEATHER LOCK COVER EXTENSION, STI-C0010
REMOTE FIRESTAT SENSOR(S)	S1 AND S4 S2 AND S3	BLACK AND WHITE	24 VDC	< 10 AMPS	WIRE FIRE SENSOR WIRES BETWEEN CORE PANEL TERMINALS 2F AND 2P FOR FIRE SENSOR WIRES BETWEEN CORE PANEL TERMINALS 2F AND 2P HIGH TEMP (84427) SENSOR(S) QUANTITY AS REQUIRED BY LOCAL AHJ, ONLY 1 SHALL BE MOUNTED DIRECTLY OVER TOP OF HOOD, SUBSEQUENT SENSORS MUST BE MOUNTED ON HOOD VERT. SURFACE. IF HOOD DIMENSIONS BELOW 96X30X18, OR SIMILAR FLOOR RATED WIRE, USE FIGURE 1
FIRE ALARM CONTACT	AL1, AL2	VARIES	30V MAX (AC/DC)	UP TO 1 AMP	FIRE ALARM RELAY CONTACTS FOR BUILDING FIRE ALARM LOCATED IN THE CORE ELECTRICAL CONTROL PANEL
CORE INTERLOCK(S)	ILA, ILB, ILC	ILA, ILB, ILC	RS-485 COMMUNICATIONS SIGNAL		CORE SYSTEM (1) ILA, TO CORE SYSTEM (2) ILA, CORE SYSTEM (1) ILB, TO CORE SYSTEM (2) ILB, CORE SYSTEM (1) ILC, TO CORE SYSTEM (2) ILC USE BELDEN 9842P OR SIMILAR WIRE
TROUBLE CONTACT	TBC, TBL, TCK	VARIES	MAX 120 VAC	UP TO 6 AMPS	WIRE TO TBL & TBC NORMALLY OPEN CONTACT, CLOSES IN TROUBLE CONDITION
CORE COMMUNICATIONS CABLE	RJ-45 Jack	INTERNET CONNECTION	SIGNAL	CL0 AMPS	TYPICAL CONNECTION CAT5 CABLE TO LOCAL AREA NETWORK VIA ETHERNET SWITCH OR WIRELESS ROUTER WITH VALID INTERNET CONNECTION



ATTENTION: LOW-VOLTAGE DC OR SIGNALING WIRE SHOULD BE ROUTED IN SEPARATE CONDUIT FROM ALL AC SOURCES

NOTE: SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS

CUSTOMER APPROVAL TO MANUFACTURE:

Approved as Noted ☐

Approved with NO Exception Taken ☐

Revise and Resubmit ☐

SIGNATURE _____

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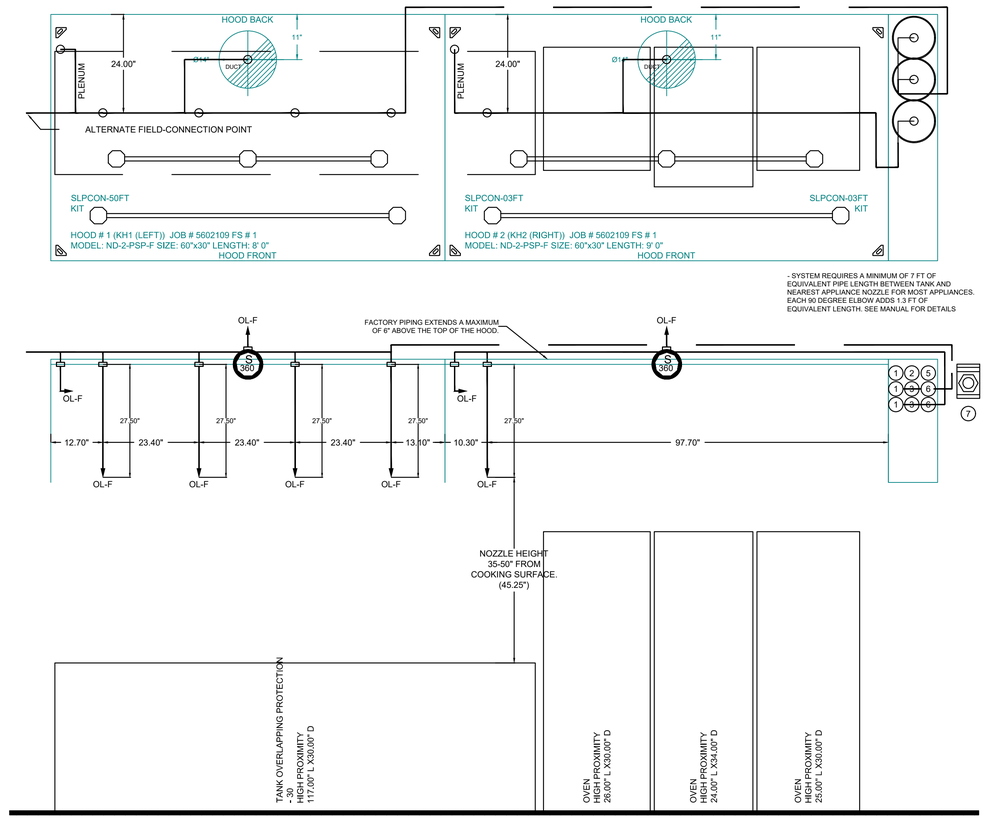

INCLUDES: FIELD INSTALLATION AND HOOKUP DURING NORMAL BUSINESS HOURS BY CERTIFIED INSTALLERS ONLY IN THE LOCATION NOTED ABOVE, TWO SITE VISITS ONLY (ONE VISIT TO SET PULL STATION & SYSTEM HOOKUP AND ONE VISIT FOR ONE TEST; ADDITIONAL VISITS WILL RESULT IN ADDITIONAL CHARGES), ONE MECHANICAL OR ELECTRICAL GAS VALVE PER SYSTEM AT A MAXIMUM SIZE OF 2", PERMIT, AND SYSTEM TEST.
EXCLUDES: UNION LABOR & PREVAILING WAGE (LABOR & WAGES WILL BE ADDED IF APPLICABLE), GAS VALVE INSTALLATION, ELECTRICAL HOOKUP AND CONNECTIONS, HANGING OF FIRE CABINET, SHUNT TRIP, HANDHELD EXTINGUISHER(S), ON-SITE RE-PIPING DUE TO EQUIPMENT LAYOUT CHANGES.

JOB #: 5602109.
JOB NAME: QUIK MART - COLUMBIA.

SYSTEM SIZE: TANK-SP-3 TOTAL FP REQUIRED: 41.
HOOD # 1 8' 0.00" LONG x 60" WIDE x 30" HIGH.
RISER # 1 SIZE: 14" DIA.
HOOD # 1 METAL BLOW-OFF CAPS INCLUDED.
HOOD # 2 9' 0.00" LONG x 60" WIDE x 30" HIGH.
RISER # 1 SIZE: 14" DIA.
HOOD # 2 METAL BLOW-OFF CAPS INCLUDED.

NOTES
- FIELD PIPE DROPS AS SHOWN
  PIPING, ELBOWS, TEES, AND NOZZLES SUPPLIED BY CAS.
- FIELD INSTALLED DROP: FACTORY WILL PROVIDE QTY 2 60IN LONG PIECES OF CHROME PLATED PIPING SHIPPED LOOSE TO BE FIELD-INSTALLED.
- SHIP LOOSE DROP: FACTORY WILL PROVIDE THE EXACT CHROME PIPE LENGTH NEEDED SHIPPED LOOSE TO BE FIELD-INSTALLED.
- RELOCATE NOZZLES IF FLOW PATTERN IS BLOCKED BY SHELVING, SALAMANDERS, ETC.
- OVERLAPPING COVERAGE SHALL NOT BE USED ON ANY APPLIANCE WITH AN OBSTRUCTION.
- IF APPLICABLE, EXTENDED PRE-PIPED DROPS ARE SHIPPED LOOSE.
- FACTORY PIPING EXTENDS A MAXIMUM OF 6" ABOVE THE TOP OF THE HOOD.

- APPLIANCE DIMENSIONS LISTED REPRESENT THE COOKING SURFACE SIZE, NOT THE OVERALL APPLIANCE SIZE.

- THIS FIRE SYSTEM COMPLIES WITH U.L. 300 REQUIREMENTS.

- OL-F NOZZLE PART NUMBER REPLACES 3070-3/8H-10-SS

- HEAVY-DUTY APPLIANCES (RATED 600°F) WILL REQUIRE AN ADDITIONAL DOWNSTREAM FIRESTAT IN THE EVENT THAT THE DUCTWORK CONTAINS ANY HORIZONTAL RUNS OVER 25 FT IN LENGTH.
- MEDIUM TO LIGHT-DUTY APPLIANCES (RATED 450°F) WILL NOT REQUIRE ANY ADDITIONAL DOWNSTREAM DETECTION.

LEGEND – FIRE CABINET TANK SYSTEM

1	4 GALLON TANK.
2	PRIMARY ACTUATOR RELEASE.
3	SECONDARY ACTUATOR RELEASE.
4	PRESSURE SUPERVISION SWITCH.
5	PRIMARY HOSE ASSEMBLY.
6	SECONDARY HOSE ASSEMBLY.
7	REMOTE MANUAL ACTUATION DEVICE.

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SECTION 21 23 00
WET- CHEMICAL FIRE-EXTINGUISHING SYSTEMS
TAG: TANK Fire Suppression

PART 1 - GENERAL

1.1 SUMMARY

A. TANK Fire Suppression is a pre-engineered, stored-pressure wet chemical solution extinguishing system.

1.2 SUBMITTALS

A. The manufacturer assumes no liability for the use or results of use from this document. Specifications are to be reviewed by the engineer to confirm the requirements of the project and meet Federal, State, and Local codes.

B. As the manufacturer continues product development, it reserves the right to change design and specifications without notice.

1.3 QUALITY ASSURANCE

A. TANK Fire Suppression System shall be UL & ULC listed in accordance with UL300, UL1254, ULCORD-C1254.6.

B. Microprocessor-based control board shall be ETL Listed to UL Standard 864 and CAN/ ULC-S527-11.

C. TANK Fire Suppression System intended for installation and for use in accordance with the National Fire Protection Association Standards:

1. Wet Chemical Extinguishing Systems, NFPA 17A
2. National Electrical Code, NFPA 70
3. National Fire Alarm & Signaling Code, NFPA 72

D. New York City and FDNY approved under COA# 5870.

E. California State Fire Marshal (CFSM), Listing No. 7085-2199:0502.

1.4 WARRANTY

A. All units shall be provided with the following standard warranties:

1. TANK Fire Suppression System is warranted to be free from defects in materials and workmanship, under normal use and service, for a period of 60-months from date of shipment.

B. Warranty does not cover consumable products such as batteries and nitrogen.

C. The manufacturer shall not be liable for incidental and consequential losses and damages potentially attributable to malfunctioning equipment. Should any part of the equipment prove to be defective in material or workmanship within the 60-month warranty period, upon examination by the manufacturer, such part will be repaired or replaced by manufacturer at no charge. The buyer shall pay all labor costs incurred in connection with such repair or replacement. Equipment shall not be returned without manufacturer's prior authorization, and all returned equipment shall be shipped by the buyer, freight prepaid to a destination determined by the manufacturer.

D. Refer to Manufacturer's Operation, Installation, and Maintenance (OIM) Manual for detailed descriptions of what is/is not covered and contact information for warranty claims.

PART 2 - PRODUCTS

2.1 GENERAL

A. A pre-engineered, fixed pipe, automatic wet chemical agent fire suppression system for protection of all hazard areas associated with cooking operations, including exhaust hoods, plenums, ductwork, and cooking appliances.

2.2 COMPONENTS

A. Exhaust hood fire system components to be factory installed.

B. Cylinder and Valve Assembly

1. The cylinders shall have a tin-nickel alloy plated brass valve with pressure gauge.
2. Wet chemical agent shall be contained in one or more stored pressure DOT/TC rated steel cylinder and valve assemblies.
3. Each cylinder is factory-filled with liquid fire suppressant and pressurized to 200 PSIG at 70°F.

C. Distribution Nozzles

1. Nozzles shall be located to protect the exhaust ducts, plenums, and all cooking appliances requiring protection.
2. All nozzles shall be equipped with a metal blow off cap. The cap prevents contamination from entering the pipe network and is designed to pop-off upon system discharge, allowing agent to flow to the protected hazard area.
3. All nozzles shall incorporate a stamped part number to easily identify nozzle type.

D. Distribution System

1. The distribution system shall consist of Copper, Schedule 40 black iron, chrome-plated or stainless-steel pipe and fittings. All exposed piping and fittings must be chrome-plated or stainless steel.
2. Fittings shall be minimum class 150. Galvanized fittings shall not be used.

E. Suppression System

1. The system control equipment shall be capable of all functions associated with automatically and manually discharging the wet chemical agent from all cylinder and valve assemblies, including automatic shutdown of the heat source or fuel and electrical power to all protected areas upon system discharge.
2. Liquid Fire Suppressant shall be Aqueous Potassium Carbonate (APC).
3. All mechanical components of the actuator kit shall be enclosed.
4. The actuator kit shall be capable of automatic or manual activation means.
5. Supervisory Pressure Switch added to monitor operating system pressure.
6. For manual activation, an electrically operated manual release shall be used to actuate the system manually.
7. For automatic activation, the system will be activated by a Firestat (heat) detector.

F. Electrical

1. Electrical Division to provide shunt trip breakers at main power panel, or disconnects, as designated by the Electrical Engineer; interconnection provided at hood control panel for the signal to shut down all electricity in and under the exhaust hood. Shunt trips/disconnects to accomplish shut off of electricity in the event of fire system activation by others.
2. Printed circuit board with microprocessor-based controller that provides all the necessary monitoring, timing, and supervision functions required for the reliable operation of the fire system.
3. Independent supervised loops incorporate redundancy and fault detection.
4. Real-time cloud-based monitoring connection provided with system by ownership.
5. Primary power supply, with battery backup for power loss.
6. All wiring must be in accordance to NFPA 70 and the Authority Having Jurisdiction (AHJ).
7. Electric gas valve provided for equipment below exhaust hood. Coordinate size and installation with Plumbing Division.
8. All wiring is to be in accordance with the applicable manufacturer's instructions for the fire alarm control panel, gas shut-off valve, manual reset relay, and contractor supplied shut-off devices.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions under which the system is installed. Do not proceed with work until unsatisfactory conditions have been corrected in manner acceptable to Installer.

3.2 APPLICATION

A. Wet chemical-based fire suppression system for use in commercial kitchens. It can be mounted in the integral cabinet located at the end of the hood or offered as a wall mount package.

3.3 INSTALLATION

A. As part of this item, provide wall mounted type K handheld portable fire extinguisher, placard, and mounting bracket as required in the immediate vicinity of each cooking area, per NFPA-96 and NFPA-10. Additional fire extinguishers as required in the kitchen area are to be specified by the Architect and provided by the General Contractor.

B. Install in accordance with manufacturer's instructions, drawings, written specifications, manufacturer's installation manual, and all applicable building codes.

C. Six-month and twelve-month inspections, servicing, and replacement of components as per NFPA 96 to be provided by the General Contractor or Owner.

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EXHAUST FAN INFORMATION – JOB#5602109

FAN UNIT NO	TAG	QTY	FAN UNIT MODEL #	MANUFACTURER	CFM	ESP	RPM	MOTOR ENCL	HP	BHP	PHASE	VOLT	FLA	DISCHARGE VELOCITY	WEIGHT (LBS)	SONES
1	KEF1 (HOOD 1)	1	DU180HFA	CAPTIVEAIRE	1600	1.250	1067	ODP,PREMIUM	1.500	0.7450	3	208	6.6	370 FPM	194	11.3296597513764
2	KEF2 (HOOD 2)	1	DU180HFA	CAPTIVEAIRE	1800	1.250	1086	ODP,PREMIUM	1.500	0.8080	3	208	6.6	416 FPM	194	11.8110676394006

CONDENSER DETAILS

FAN UNIT NO	TAG	FAN UNIT MODEL #	CONDENSER NO	TONNAGE	VOLTAGE	PHASE	FREQUENCY	MCA	RLA	MAX FUSE SIZE	MIN WIRE SIZE	SEER
3	MAU1	A2-D.250-20D-MPU	1	5	208-230	3 PHASE	60 HZ	21.4 AMPS	17.4 AMPS	30 AMPS	10 AWG	14

MUA FAN INFORMATION – JOB#5602109

FAN UNIT NO	TAG	QTY	FAN UNIT MODEL #	BLOWER	HOUSING	MIN CFM	DESIGN CFM	ESP	RPM	MOTOR ENCL	HP	BHP	PHASE	VOLT	FLA	MCA	MOCP	WEIGHT (LBS)	SONES
3	MAU1	1	A2-D.250-20D-MPU	20MF-2-MOD	A2-D.250	2000	2720	0.500	1236	ODP,PREMIUM	1.500	1.0230	3	208	6.6	8.3A	15A	1367	10

COILS – JOB#5602109

FAN UNIT NO	TAG	COIL TYPE	DESIGN CFM	COOLING										HEATING									
				ENTERING DB TEMP	ENTERING WB TEMP	LEAVING DB TEMP	LEAVING WB TEMP	ENTERING FLUID TEMP	LEAVING FLUID TEMP	FLUID FLOW RATE	PERCENT GLYCOL	TOTAL CAPACITY	SENSIBLE CAPACITY	LATENT CAPACITY	ENTERING DB TEMP	LEAVING DB TEMP	ENTERING FLUID TEMP	LEAVING FLUID TEMP	FLUID FLOW RATE	PERCENT GLYCOL	STEAM PRESSURE	TOTAL CAPACITY	SENSIBLE CAPACITY
3	MAU1	DX	2720	92.0°F	75.0°F	78.8°F	69.4°F	---	---	---	---	56.9 MBH	36.9 MBH	20.0 MBH	---	---	---	---	---	---	---	---	---

GAS FIRED MAKE-UP AIR UNIT(S)

FAN UNIT NO	TAG	INPUT BTUs	OUTPUT BTUs	TEMP RISE	REQUIRED INPUT GAS PRESSURE	GAS TYPE	BURNER EFFICIENCY(%)
3	MAU1	175512	161471	57°F	7 IN. W.C. - 14 IN. W.C.	NATURAL	92

FAN SOUND DATA

FAN UNIT NO	TAG	MOTOR	SOUND DATA			OCTAVE BAND SOUND DATA								
			LWA	SONES @ 5 FT	DBA @ 5 FT	DISTANCE (FT)	63 HZ	125 HZ	250 HZ	500 HZ	1 KHZ	2 KHZ	4 KHZ	8 KHZ
1	KEF1 (HOOD 1)	EXHAUST	74.5	11.3296597513764	63	5	73.2	80.3	79.6	69.9	66.2	64	58.3	52.4
2	KEF2 (HOOD 2)	EXHAUST	75.1	11.8110676394006	63.6	5	73.3	79.8	80.6	70.5	66.4	64.2	58.6	52.8
3	MAU1	SUPPLY	72.7	10	61.2	5	69.3	76.9	71.8	70.3	66.7	64.1	61.1	57.6

FAN OPTIONS

FAN UNIT NO	TAG	QTY	DESCRIPTION
1	KEF1 (HOOD 1)	1	GREASE BOX
		1	EXHAUST FAN HEAT BAFFLE
		1	FAN BASE CERAMIC SEAL - INSTALLED AT PLANT - FOR GREASE DUCTS
		1	UNIT MOUNTED VFD FOR USE WITH ECPM03
		1	VFD MOUNTING BRACKET FOR DU/DR 180 - 200
		1	2 YEAR PARTS WARRANTY
2	KEF2 (HOOD 2)	1	GREASE BOX
		1	EXHAUST FAN HEAT BAFFLE
		1	FAN BASE CERAMIC SEAL - INSTALLED AT PLANT - FOR GREASE DUCTS
		1	UNIT MOUNTED VFD FOR USE WITH ECPM03
		1	VFD MOUNTING BRACKET FOR DU/DR 180 - 200
		1	2 YEAR PARTS WARRANTY
3	MAU1	1	INLET PRESSURE GAUGE, 0-35"
		1	MANIFOLD PRESSURE GAUGE, -5 TO 15" WC
		1	LOW FIRE START
		1	SHIP LOOSE GAS STRAINER 1"
		1	AC INTERLOCK RELAY - 24VAC COIL
		1	MOTORIZED BACKDRAFT DAMPER FOR A2-D HOUSING - MEETS AMCA CLASS 1A RATING
		1	COOLING THERMOSTAT AND RELAY (NOT REQUIRED FOR EVAP)
		1	5 TON SINGLE CIRCUIT MODULAR PACKAGED COOLING OPTION FOR SIZE 2 DF/EH MUA (2,000 TO 3,000 CFM), 208V/230V, 3 PHASE. COOLING THERMOSTAT OR PROGRAMMABLE STAT REQUIRED FOR PROPER OPERATION
		1	DOWNTURN PLENUM FOR SIZE 2 DX COIL MODULE
		1	CONDENSING UNIT LOCKING CAPS FOR SINGLE CONDENSER UNITS
		1	SEPARATE 120V WIRING PACKAGE (REQUIRED AND USED ONLY FOR DCV OR PREWIRE WITH VFD) - THREE PHASE ONLY
		1	SIZE 2 DIRECT FIRED HEATER LOW CFM PROFILE PACKAGE - USED ON HEATERS UNDER 2500 CFM
		1	2 YEAR PARTS WARRANTY

FAN ACCESSORIES

FAN UNIT NO	TAG	EXHAUST			SUPPLY			
		GREASE CUP	GRAVITY DAMPER	WALL MOUNT	SIDE DISCHARGE	GRAVITY DAMPER	MOTORIZED DAMPER	WALL MOUNT
1	KEF1 (HOOD 1)	YES						
2	KEF2 (HOOD 2)	YES						
3	MAU1						YES	

CURB ASSEMBLIES

NO	ON FAN	TAG	WEIGHT	ITEM	SIZE
1	# 1	KEF1 (HOOD 1)	34 LBS	CURB	26.500"W X 26.500"L X 26.000"H 0.250:12.000 PITCH ALONG LENGTH, RIGHT VENTED HINGED.
2	# 2	KEF2 (HOOD 2)	34 LBS	CURB	26.500"W X 26.500"L X 26.000"H 0.250:12.000 PITCH ALONG LENGTH, RIGHT VENTED HINGED.
3	# 3	MAU1	172 LBS	CURB	31.000"W X 145.000"L X 20.000"H 1.000:12.000 PITCH ALONG WIDTH, RIGHT INSULATED.

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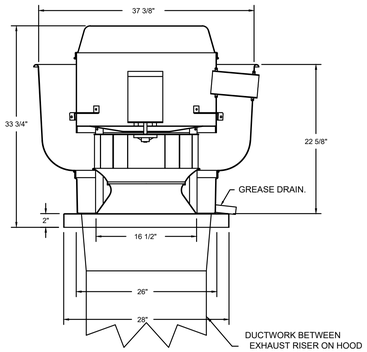
FANS #1 (KEF1 (HOOD 1)), #2 (KEF2 (HOOD 2)) - DU180HFA EXHAUST FAN



FEATURES:

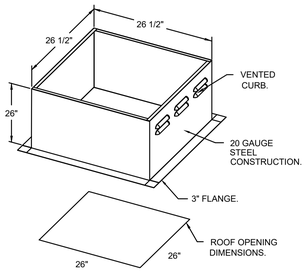
- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS).
- ROOF MOUNTED FANS.
- RESTAURANT MODEL.
- UL705 AND UL762 AND ULC-S645
- VARIABLE SPEED CONTROL.
- INTERNAL WIRING.
- THERMAL OVERLOAD PROTECTION (SINGLE PHASE).
- HIGH HEAT OPERATION 300°F (149°C).
- GREASE CLASSIFICATION TESTING.
- NEMA 3R SAFETY DISCONNECT SWITCH.

NORMAL TEMPERATURE TEST
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING AIR AT 300°F (149°C) UNTIL ALL FAN PARTS HAVE REACHED THERMAL EQUILIBRIUM, AND WITHOUT ANY DETERIORATING EFFECTS TO THE FAN WHICH WOULD CAUSE UNSAFE OPERATION.

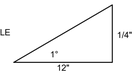
ABNORMAL FLARE-UP TEST
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING BURNING GREASE VAPORS AT 600°F (316°C) FOR A PERIOD OF 15 MINUTES WITHOUT THE FAN BECOMING DAMAGED TO ANY EXTENT THAT COULD CAUSE AN UNSAFE CONDITION.

OPTIONS

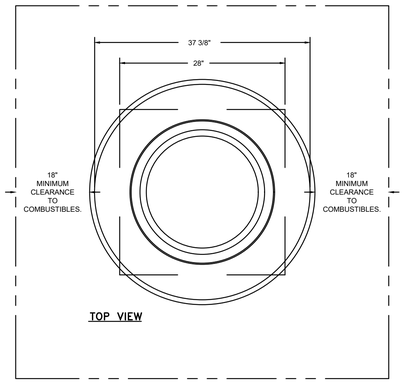
GREASE BOX.
EXHAUST FAN HEAT BAFFLE.
FAN BASE CERAMIC SEAL - INSTALLED AT PLANT - FOR GREASE DUCTS.
UNIT MOUNTED VFD FOR USE WITH ECPM03. VFD MOUNTING BRACKET FOR DU/DR 180 - 200.
2 YEAR PARTS WARRANTY.



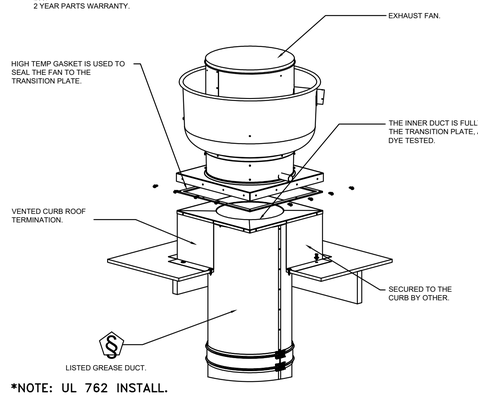
PITCHED CURBS ARE AVAILABLE FOR PITCHED ROOFS.



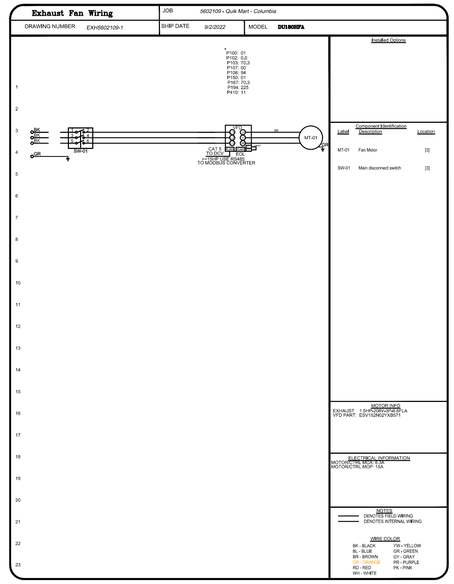
SPECIFY PITCH:
EXAMPLE: 7/12 PITCH = 30° SLOPE.

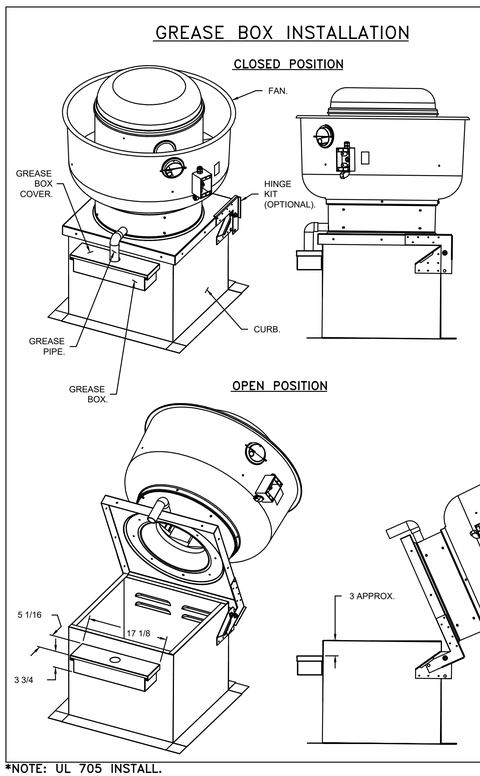


TOP VIEW



*NOTE: UL 762 INSTALL.





*NOTE: UL 705 INSTALL.

GREASEBOX
REV.#2 08/19/02

PARTS INCLUDED

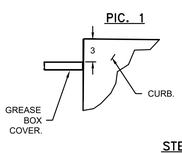
GREASE BOX.
GREASE BOX COVER.
GREASE PIPE.

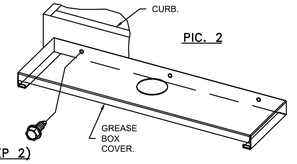
SHEET METAL SCREWS
3 - LONG (3/4" LG.).

GREASE BOX FIELD INSTALLATION

STEP 1)

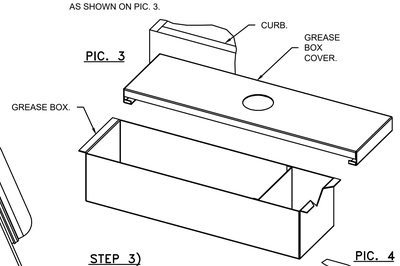
ATTACH GREASE BOX COVER TO THE CURB, HOLD 3" DIMENSION AS SHOWN ON PIC. 1. SCREW GREASE BOX COVER TO CURB USING (3) LONG (3/4" LG.) SCREWS AS SHOWN ON PIC. 2.





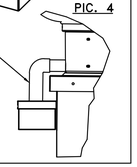
STEP 2)

ATTACH GREASE BOX TO GREASE BOX COVER, SLIDE AND DROP. AS SHOWN ON PIC. 3.



STEP 3)

INSTALL GREASE PIPE AS SHOWN ON PIC. 4.



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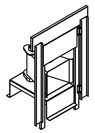
FAN #3 A2-D 250-20D-MPU - HEATER (MAU1)
1. DIRECT GAS FIRED HEATED MAKE UP AIR UNIT WITH 20" MIXED FLOW DIRECT DRIVE FAN.
2. INTAKE HOOD WITH EZ FILTERS.
3. DOWN DISCHARGE - AIR FLOW RIGHT -> LEFT.
4. GAS PRESSURE GAUGE, 0-35", 2.5" DIAMETER, 1/4" THREAD SIZE.
5. GAS PRESSURE GAUGE, -5 TO +15 INCHES WC, 2.5" DIAMETER, 1/4" THREAD SIZE.
6. LOW FIRE START. ALLOWS THE BURNER CIRCUIT TO ENERGIZE WHEN THE MODULATION CONTROL IS IN A LOW FIRE POSITION.
7. SHIP LOOSE GAS STRAINER. TO BE INSTALLED UPSTREAM OF UNIT CONNECTION. 1" CONNECTION.
8. COOLING INTERLOCK RELAY. 24VAC COIL. 120V CONTACTS. LOCKS OUT BURNER CIRCUIT WHEN AC IS ENERGIZED.
9. MOTORIZED BACK DRAFT DAMPER 22.75" X 24" FOR SIZE 2 STANDARD & MODULAR HEATER UNITS W/EXTENDED SHAFT, STANDARD GALVANIZED CONSTRUCTION, 3/4" REAR FLANGE, LOW LEAKAGE, LF120S ACTUATOR INCLUDED.
10. DX COOLING INTAKE AIR THERMOSTAT AND RELAYS MOUNTED IN UNIT - SET POINT FOR THERMOSTAT SHOULD BE 85°F.
11. 5 TON. SINGLE CIRCUIT MODULAR PACKAGED COOLING OPTION FOR SIZE 2 DF/EH MODULAR PACKAGED UNIT. INCLUDES CONDENSER, DX COIL, FILTER/DRYER KIT, THERMAL EXPANSION VALVE, R410A REFRIGERANT, AND REFRIGERANT PIPING. (2,000 TO 3,000 CFM) WHEN ORDERED WITH OPPOSITE AIRFLOW CONDENSERS ACCESS AND COIL PIPING WILL REMAIN IN STANDARD POSITION. DRAIN AND SLEDS WILL MOVE TO THE OPPOSITE SIDE. ANY OTHER CHANGE WILL REQUIRE CLI. CONDENSERS REQUIRE SEPARATE 208V, 3 PHASE POWER SUPPLY UNLESS ORDERED WITH SINGLE POINT CONNECTION. COIL = 3EZ1001R.
12. DOWNTURN PLENUM FOR SIZE 2 COOLING COIL MODULE - REQUIRED FOR DOWN DISCHARGE COOLING COIL APPLICATIONS.
13. LOCKING CAPS FOR SINGLE CONDENSER UNITS. CONSISTS OF 2 LOCKING CAPS, PART# NCP-4, AND 1 KEY, PART# NC-KEY.
14. SEPARATE 120VAC WIRING PACKAGE FOR MAKE-UP AIR UNITS. OPTION MUST BE SELECTED WHEN MOUNTING VFD IN PREWIRE PANEL OR WITH DCV PACKAGE. PROVIDES SEPARATE 120VAC INPUT TO SUPPLY FAN. THIS 120V SIGNAL MUST BE RUN BY ELECTRICIAN FROM DCV TO MUA SWITCH.
15. PROFILE PLATE CONFIGURATION FOR SIZE 2 DIRECT FIRED UNIT FOR LOW CFM APPLICATIONS.
16. HINGED DOUBLE WALL INSULATED DOOR ASSEMBLY (BURNER/BLOWER/MPU SECTION).
17. 2 YEAR PARTS WARRANTY

*NOTE: SUPPLY DUCT MUST BE INSTALLED TO MEET SMACNA STANDARDS. A MINIMUM STRAIGHT DUCT LENGTH MUST BE MAINTAINED DOWNSTREAM OF UNIT DISCHARGE AS OUTLINED IN AMCA PUBLICATION 201. WHEN USING RECTANGULAR DUCTWORK, ELBOWS MUST BE RADIUS THROAT, RADIUS BACK WITH TURNING VANES. FLEXIBLE DUCTWORK AND SQUARE THROAT/SQUARE BACK ELBOWS SHOULD NOT BE USED. ANY TRANSITION AND/OR TURNS IN THE DUCTWORK WILL CAUSE SYSTEM EFFECT. SYSTEM EFFECT WILL DRASTICALLY INCREASE STATIC PRESSURE AND REDUCE AIRFLOW. DO NOT RELY ON UNIT TO SUPPORT DUCT IN ANY WAY. FAILURE TO PROPERLY SIZE DUCTWORK MAY CAUSE SYSTEM EFFECTS AND REDUCE PERFORMANCE OF THE EQUIPMENT. SUGGESTED STRAIGHT DUCT SIZE IS 20" x 20".



DIRECT FIRED (DF) PROFILE PLATE ASSEMBLY

DIRECT FIRED PROFILE PLATE SPECIFICATIONS:
DESCRIPTION:
DIRECT FIRED BURNERS SHALL HAVE PATENTED (US PATENT NO.: US6629623B2), SELF-ADJUSTING PROFILE PLATES DESIGNED TO ENSURE PROPER AIR VELOCITY AND PRESSURE DROP ACROSS THE BURNER. PROFILE PLATES SHALL ALLOW BURNERS TO ACHIEVE CLEAN COMBUSTION BY LIMITING BY-PRODUCT LEVELS TO A MAXIMUM OF 5PPM OF CARBON MONOXIDE (CO), AND 5 5PPM OF NITROGEN DIOXIDE (NO2). DIRECT FIRED UNITS SHALL BE CONFIGURED WITH THE BLOWER MOUNTED DOWNSTREAM OF THE BURNER. THIS ARRANGEMENT WILL ENSURE A CONSISTENT AIRFLOW, REGARDLESS OF INLET AIR TEMPERATURE.

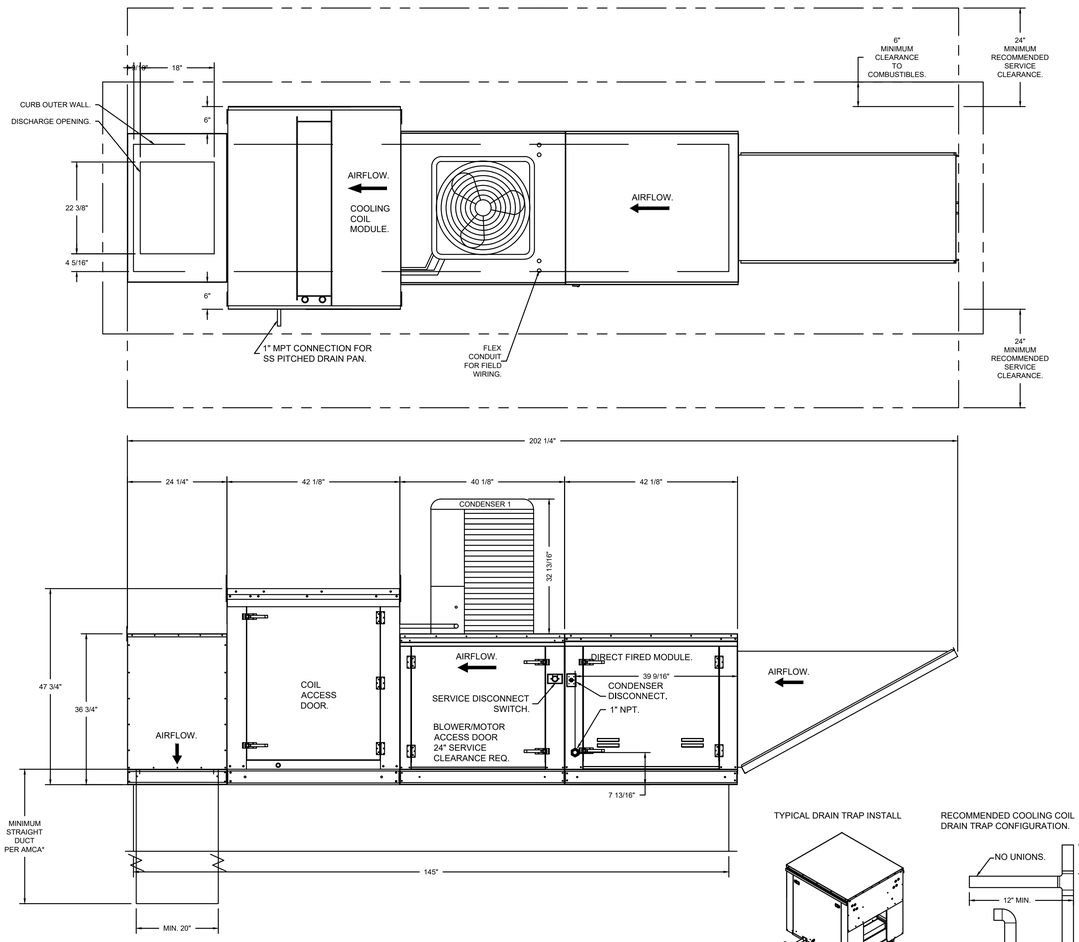
APPLICATION:
SPRING-LOADED BURNER PROFILE PLATES ARE ENGINEERED TO AUTOMATICALLY REACT TO THE MOMENTUM OF A FRESH AIR STREAM, WITHOUT THE NEED FOR ANY MOTORS OR ACTUATORS TO MECHANICALLY ADJUST THEM. WITH THIS FEATURE, ALL OF UNITS ARE DESIGNED FOR DEMAND CONTROL VENTILATION (DCV) REQUIREMENTS.

CERTIFICATIONS:
ALL PROFILE PLATE ASSEMBLIES SHALL BE INCLUDED IN THE DF UNIT'S ETL LISTING AND COMPLY WITH COMBINED SAFETY STANDARDS ANSI Z83.4 AND CSA 3.7 (NON-RECIRCULATING DF HEATERS) AND ANSI Z83.18 (RECIRCULATING DF HEATERS).

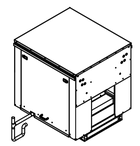
GENERAL CONSTRUCTION:
-PROFILE PLATES SHALL BE FORMED FROM G90 GALVANIZED STEEL.
-PROFILE PLATES SHALL VARY IN SIZE PER UNIT.
-PROFILE PLATES SHALL BE MOUNTED ALONG THE SAME PLANE AS THE DISCHARGE OF THE BURNER.
-DESIGN SHALL INCORPORATE PROPERLY TORQUED, PERMANENTLY MOUNTED SPRING HINGES.
-SPRING HINGES SHALL BE MADE FROM PLATED STEEL.

SUPPLY SIDE HEATER INFORMATION:

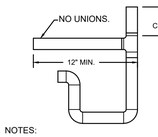
WINTER TEMPERATURE = 18°F. TEMP. RISE = 57°F.
BTUs CALCULATED OFF ACTUAL AIR DENSITY.
OUTPUT BTUs AT ALTITUDE OF 0.0 FT. = 165635.
INPUT BTUs AT ALTITUDE OF 0.0 FT. = 180039.
OUTPUT BTUs AT ALTITUDE OF 703 FT. = 161471.
INPUT BTUs AT ALTITUDE OF 703 FT. = 175512.



TYPICAL DRAIN TRAP INSTALL



RECOMMENDED COOLING COIL DRAIN TRAP CONFIGURATION.



NOTES:
1) 1" DIAMETER PVC PIPE ONLY.
2) USE ONLY LOW PROFILE COUPLINGS.
3) ADD CLEAN OUT AS SHOWN.

CUSTOMER APPROVAL TO MANUFACTURE:

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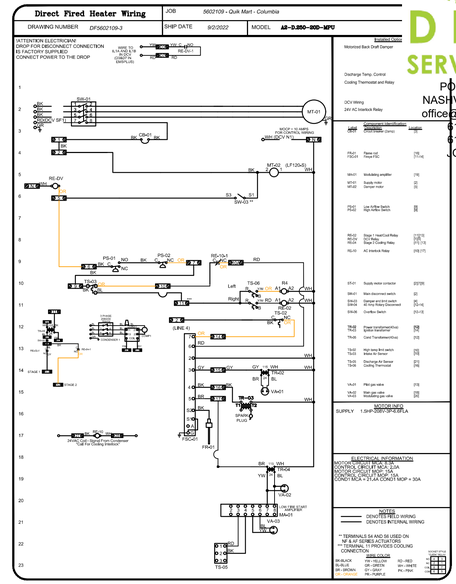

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REVISIONS:

DELTA	DESCRIPTION	DATE

DATE OF ISSUE: 09.12.2022
MA PROJECT NO: 0336-22
PROJECT PHASE: CD
DRAWN BY: DF&H SERVICES

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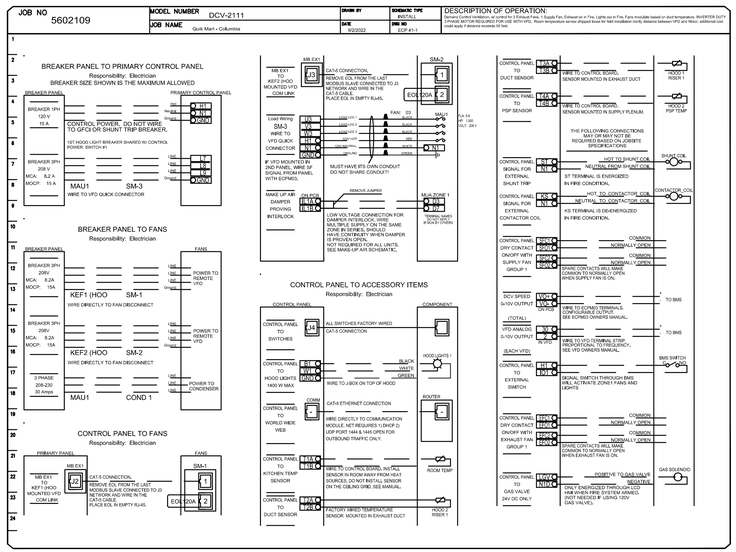
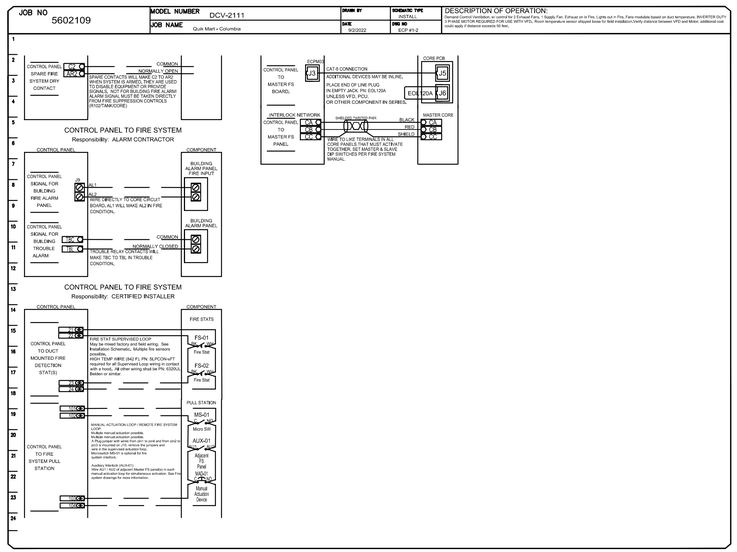
ELECTRICAL PACKAGE – JOB#5602109

NO	TAG	PACKAGE #	LOCATION	SWITCHES		OPTION
				LOCATION	QUANTITY	
1	DCV1	DCV-2111	UTILITY CABINET RIGHT	04 - UTILITY CABINET RIGHT	1 LIGHT	SMART CONTROLS DCV
				HOOD # 2	1 FAN	

FANS CONTROLLED					
FAN TAG	TYPE	ϕ	HP	VOLT	FLA
KEF1 (HOOD 1)	EXHAUST	3	1.500	208	6.6
KEF2 (HOOD 2)	EXHAUST	3	1.500	208	6.6
MAU1	SUPPLY	3	1.500	208	6.6





DEMAND CONTROL VENTILATION HOOD CONTROL PANEL SPECIFICATIONS:

- CONTROLS SHALL BE LISTED BY ETL (UL 508A) AND SHALL COMPLY WITH DEMAND VENTILATION SYSTEM TURNDOWN REQUIREMENTS OUTLINED IN IECC 403.2.8 (2015).
- THE CONTROL ENCLOSURE SHALL BE NEMA 1 RATED AND LISTED FOR INSTALLATION INSIDE OF THE EXHAUST HOOD UTILITY CABINET. THE CONTROL ENCLOSURE MAY BE CONSTRUCTED OF STAINLESS STEEL OR PAINTED STEEL.
- TEMPERATURE PROBE(S) LOCATED IN THE EXHAUST DUCT RISER(S) SHALL BE CONSTRUCTED OF STAINLESS STEEL.
- A DIGITAL CONTROLLER SHALL BE PROVIDED TO ACTIVATE THE HOOD EXHAUST FANS DYNAMICALLY BASED ON A FIXED DIFFERENTIAL BETWEEN THE AMBIENT AND DUCT TEMPERATURES SENSORS. THIS FUNCTION SHALL MEET THE REQUIREMENTS OF IMC 507.1.1.
- A DIGITAL CONTROLLER SHALL PROVIDE ADJUSTABLE HYSTERESIS SETTINGS TO PREVENT CYCLING OF THE FANS AFTER THE COOKING APPLIANCES HAVE BEEN TURNED OFF AND/OR THE HEAT IN THE EXHAUST SYSTEM IS REDUCED.
- A DIGITAL CONTROLLER SHALL PROVIDE AN ADJUSTABLE MINIMUM FAN RUN-TIME SETTING TO PREVENT FAN CYCLING.
- VARIABLE FREQUENCY DRIVES (VFDS) SHALL BE PROVIDED FOR FANS AS REQUIRED. THE DIGITAL CONTROLLER SHALL MODULATE THE VFDS BETWEEN A MINIMUM SETPOINT AND A MAXIMUM SETPOINT ON DEMAND. THE DUCT TEMPERATURE SENSOR INPUT(S) TO THE DIGITAL CONTROLLER SHALL BE USED TO CALCULATE THE SPEED REFERENCE SIGNAL.
- THE VFD SPEED RANGE OF OPERATION SHALL BE FROM 0% TO 100% FOR THE SYSTEM, WITH THE ACTUAL MINIMUM SPEED SET AS REQUIRED TO MEET MINIMUM VENTILATION REQUIREMENTS.
- AN INTERNAL ALGORITHM TO THE DIGITAL CONTROLLER SHALL MODULATE SUPPLY FAN VFD SPEED PROPORTIONAL TO ALL EXHAUST FANS THAT ARE LOCATED IN THE SAME FAN GROUP AS THE SUPPLY FAN.
- THE SYSTEM SHALL OPERATE IN PREP MODE DURING LIGHT COOKING LOAD OR COOL DOWN MODE WHEN SUFFICIENT HEAT REMAINS UNDERNEATH THE HOOD SYSTEM AFTER COOKING OPERATIONS HAVE COMPLETED. OPERATION DURING EITHER OF THESE PERIODS WILL DISABLE THE SUPPLY FANS AND PROVIDE AN EXHAUST FAN SPEED THAT IS EQUAL TO THE MINIMUM VENTILATION REQUIREMENT.
- A DIGITAL CONTROLLER SHALL DISABLE THE SUPPLY FAN(S), ACTIVATE THE EXHAUST FAN(S), ACTIVATE THE APPLIANCE SHUNT TRIP, AND DISABLE AN ELECTRIC GAS VALVE AUTOMATICALLY WHEN FIRE CONDITION IS DETECTED ON A COVERED HOOD.
- A DIGITAL CONTROLLER SHALL ALLOW FOR EXTERNAL BMS FAN CONTROL VIA DRY CONTACT (EXTERNAL CONTROL SHALL NOT OVERRIDE FAN OPERATION LOGIC AS REQUIRED BY CODE).
- AN LCD INTERFACE SHALL BE PROVIDED WITH THE FOLLOWING FEATURES:
  A. ON/OFF PUSH BUTTON FAN & LIGHT SWITCH ACTIVATION.
  B. INTEGRATED GAS VALVE RESET FOR ELECTRONIC GAS VALVES (NO RESET RELAY REQUIRED).
  C. VFD FAULT DISPLAY WITH AUDIBLE & VISUAL ALARM NOTIFICATION.
  D. DUCT TEMPERATURE SENSOR FAILURE DETECTION WITH AUDIBLE & VISUAL ALARM NOTIFICATION.
  E. MIS-WIRED DUCT TEMPERATURE SENSOR DETECTION WITH AUDIBLE & VISUAL ALARM NOTIFICATION.
  F. A SINGLE LOW VOLTAGE CAT-5 RJ45 WIRING CONNECTION.
  G. AN ENERGY SAVINGS INDICATOR THAT UTILIZES MEASURED KWH FROM THE VFDS.

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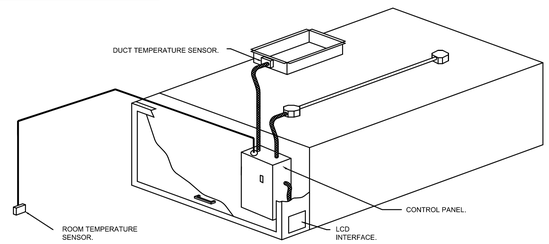

TYPICAL HOOD CONTROL PANEL INSTALLATION

SEQUENCE OF OPERATIONS:

THE HOOD CONTROL PANEL IS CAPABLE OF OPERATING IN ONE OR MORE OF THE FOLLOWING STATES AT ANY GIVEN TIME:

- AUTOMATIC: THE SYSTEM OPERATES BASED ON THE DIFFERENTIAL BETWEEN ROOM TEMPERATURE AND THE TEMPERATURE AT THE HOOD CAVITY OR EXHAUST DUCT COLLAR. FANS ACTIVATE AT A CONFIGURABLE TEMPERATURE DIFFERENTIAL THRESHOLD. DEPENDING ON THE JOB CONFIGURATION EACH FAN ZONE CAN BE CONFIGURED AS STATIC OR DYNAMIC. THESE TERMS REFER TO WHETHER A VARIABLE MOTOR (SUCH AS EC MOTORS OR VFD DRIVEN MOTORS) MODULATE WITH TEMPERATURE. IF THE PANEL IS EQUIPPED WITH VARIABLE SPEED FANS AND THE ZONE IS DEFINED AS "DYNAMIC", THESE WILL MODULATE WITHIN A USER-DEFINED RANGE BASED ON THE TEMPERATURE DIFFERENTIAL. PANELS EQUIPPED WITH VARIABLE SPEED FANS AND A FAN ZONE DEFINED AS "STATIC", FANS WILL RUN AT A SET SPEED CALCULATED FOR THE DRIVE. DEMAND CONTROL VENTILATION SYSTEMS ARE CAPABLE OF MODULATING EXHAUST AND MAKE UP AIR FAN SPEEDS PER THE REQUIREMENTS OUTLINED IN IECC 403.2.8.
- MANUAL: THE SYSTEM OPERATES BASED ON HUMAN INPUT FROM AN HMI.
- SCHEDULE: A WEEKLY SCHEDULE CAN BE SET TO RUN FANS FOR A SPECIFIED PERIOD THROUGHOUT THE DAY. THERE ARE THREE OCCUPIED TIMES PER DAY TO ALLOW FOR THE USER TO SET UP A TIME THAT IS SUITABLE TO THEIR NEEDS. ANY TIME THAT IS WITHIN THE DEFINED OCCUPIED TIME, THE SYSTEM WILL RUN AT MODULATION MODE AND FOLLOW THE FAN PROCEDURE ALGORITHM BASED ON TEMPERATURE DURING THIS TIME. DURING UNOCCUPIED TIME, THE SYSTEM WILL HAVE AN EXTRA OFFSET TO PREVENT UNINTENDED ACTIVATION OF THE SYSTEM DURING A TIME WHERE THE SYSTEM IS NOT BEING OCCUPIED.
- OTHER: THE SYSTEM OPERATES BASED ON THE INPUT FROM AN EXTERNAL SOURCE (DDC, BMS OR HARD-WIRED INTERLOCK).
- FIRE: UPON ACTIVATION OF THE HOOD FIRE SUPPRESSION SYSTEM, THE EXHAUST FAN WILL COME ON OR CONTINUE TO TO RUN, THE HOOD MAKEUP AIR WILL SHUTDOWN, AND A SIGNAL WILL BE SENT FOR ACTIVATING THE SHUNT TRIP BREAKER PROVIDED BY THE ELECTRICIAN. FUEL GAS WILL SHUT OFF VIA A MECHANICAL/ELECTRICAL GAS VALVE ACTUATED BY THE HOOD FIRE SUPPRESSION SYSTEM.

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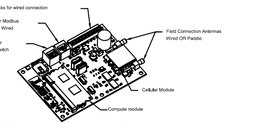

CASlink Monitor and Control

- *Hood control panel to support communications to cloud-based Building Management System.*
- *Hood Control Panel to allow cloud-based Building Management System to monitor real time parameters outlined as MONITOR in the points list.*
- *Hood Control Panel to allow cloud-based Building Management System to control parameters outlined as CONTROL in the points list.*
- *Hood Control Panel to allow cloud-based Building Management System to implement SYSTEM ECONOMIZER control strategies for fully integrated Building Management.*

MONITORING AND CONTROL POINTS LIST

DCV Packages	Function
Room Temperature	MONITOR
Duct Temperature(s)	MONITOR
MUA Discharge Temperature	MONITOR
Kitchen RTU Discharge Temperature	MONITOR
Fan Speed	MONITOR
Fan Amperage	MONITOR
Fan Power	MONITOR
VFD Faults	MONITOR
Controller Faults	MONITOR
Fan Faults	MONITOR
Fan Status	MONITOR
PCU Faults	MONITOR
PCU Filter Clog Percentages	MONITOR
Fire Condition.	MONITOR
CORE Fire System.	MONITOR
Building Pressures	MONITOR
Prep Time Button.	MONITOR & CONTROL
Fans Button	MONITOR & CONTROL
Lights Button.	MONITOR & CONTROL
Wash Button	MONITOR & CONTROL

SC Packages	Function
Room Temperature(s)	MONITOR
Duct Temperature(s)	MONITOR
MUA Discharge Temperature	MONITOR
Kitchen RTU Discharge Temperature	MONITOR
Controller Faults	MONITOR
Fan Faults	MONITOR
Fan Status	MONITOR
PCU Faults	MONITOR
PCU Filter Clog Percentages	MONITOR
Fire Condition.	MONITOR
CORE Fire System.	MONITOR
Building Pressures	MONITOR
Fans Button(s)	MONITOR & CONTROL
Lights Button(s)	MONITOR & CONTROL
Wash Button	MONITOR & CONTROL

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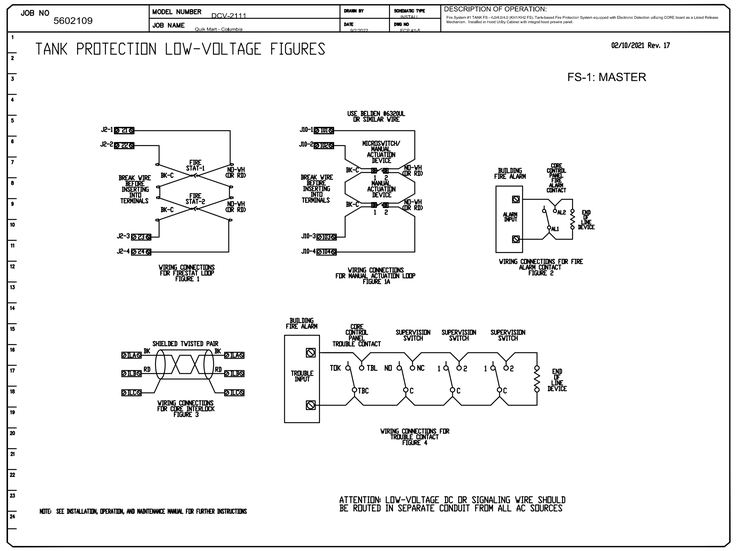

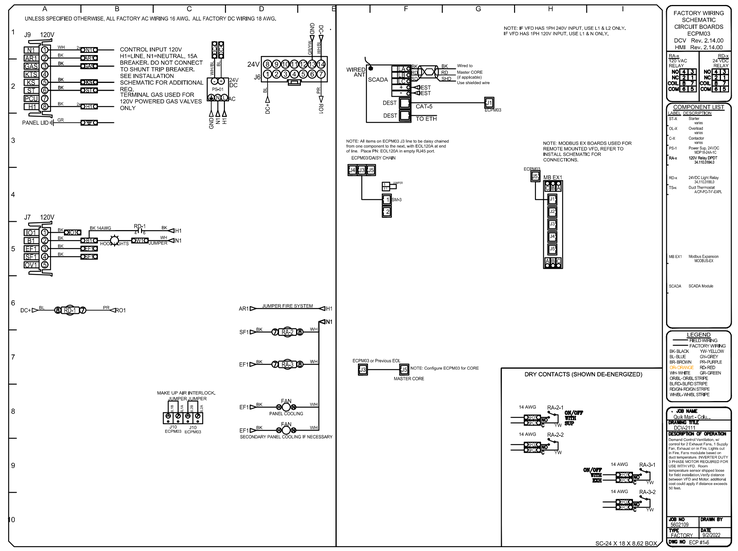

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MECHANICAL SPECIFICATIONS:

GENERAL CONDITIONS:

1. FURNISH ALL MATERIALS, LABOR, TOOLS AND INCIDENTALS TO COMPLETE IN EVERY DETAIL AND LEAVE IN WORKING ORDER ALL ITEMS CALLED FOR HEREIN OR SHOWN ON THE ACCOMPANYING DRAWINGS.

2. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A COMPLETE OPERATIONAL HEATING, VENTILATING, AND COOLING SYSTEM WHICH MEETS ALL GOVERNING CODES AND IN ACCORDANCE WITH THE DESIGN DRAWINGS.

3. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE INTERNATIONAL MECHANICAL CODE, NFPA REQUIREMENTS, AND ALL LOCAL CODES.

4. THE CONTRACTOR SHALL PAY FOR ALL FEES, PERMITS, AND CHARGES AS REQUIRED ACHIEVING THE INSTALLATION.

5. MECHANICAL WORK SHALL BE GUARANTEED FOR ONE YEAR FROM DATE OF FINAL ACCEPTANCE.

6. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS. DRAWINGS SHALL NOT BE SCALED.

7. REFER TO ARCHITECTURAL REQUIREMENTS FOR THE NECESSITY OF SUBMITTALS. SUBMITTALS ARE NOT REQUIRED UNLESS REQUIRED BY THE ARCHITECT. IF SUBMITTALS ARE REQUIRED SUBMIT IN ELECTRONIC FORMAT (HARD COPIES WILL NOT BE REVIEWED) THE FOLLOWING SECTIONS/EQUIPMENT FOR REVIEW : HVAC EQUIPMENT, AIR DISTRIBUTION, AND DEVICES.

8. PROVIDE ACCESS DOORS IN DUCTS, WALLS, AND CEILINGS AS REQUIRED TO ACCESS DAMPERS, VALVES, AND OTHER ENCLOSED ITEMS. COORDINATE LOCATION OF ALL DOORS WITH GENERAL CONTRACTOR.

9. NOTE THAT SOME SYSTEMS USE CEILINGS AND EQUIPMENT ROOMS AS RETURN AIR PLENUMS. CONTRACTOR SHALL COORDINATE TO ENSURE THAT ALL MATERIALS WITHIN THE PLENUMS ARE FULLY NONCOMBUSTIBLE AND/OR RATED FOR PLENUM SERVICE.

10. IF HVAC EQUIPMENT IS USED FOR TEMPORARY HEATING, ETC., THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR CLEANING FILTERS, COILS, ETC. FINAL PERMANENT CONNECTIONS OF SERVICES TO UNITS SHALL BE COMPLETE PRIOR TO ANY START-UP OF EQUIPMENT.

11. WHERE PIPES, DUCTS, ETC., ARE TO PASS THROUGH WALLS, FLOORS, ETC. SLEEVES SHALL BE PROVIDED PRIOR TO WALL CONSTRUCTION. SLEEVES SHALL BE OF EQUAL OR GREATER GAUGE METAL THAN PIPES OR DUCTS PASSING THROUGH. WHERE SLEEVES PENETRATE EXTERIOR SURFACES, VOIDS SHALL BE SEALED WATER TIGHT. WHERE SLEEVES PASS THROUGH RATED PARTITIONS, SLEEVE PACKING SHALL BE OF U.L. LISTED FIRE SAFE TYPE MATERIAL.

12. CONTRACTOR SHALL SUBMIT (3) SETS OF INSTRUCTION BOOKS, INCLUDING INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS, PAMPHLETS OR BROCHURES AND ALL EQUIPMENT WARRANTIES OBTAINED FROM EACH MANUFACTURER OF EQUIPMENT.

COORDINATION REQUIREMENTS:

1. THE CONTRACTOR IS REQUIRED TO VISIT THE SITE AND BECOME FAMILIAR WITH EXISTING CONDITIONS PRIOR TO SUBMITTING A BID.

2. THE DRAWINGS MAY NOT SHOW ALL EXISTING ITEMS OR CONDITIONS. CONTRACTOR SHALL NOT RECEIVE EXTRA PAYMENT FOR REQUIREMENTS WHICH CAN BE INFERRED THROUGH OBSERVATION OF EXISTING CONDITIONS AT THE SITE. IN THE EVENT CONCEALED CONDITIONS ARE ENCOUNTERED WHICH MAY VARY SIGNIFICANTLY FROM THOSE INDICATED ON THE DRAWINGS, NOTIFY THE DESIGNER BEFORE PROCEEDING WITH WORK.

3. CONTRACTOR SHALL FIELD VERIFY BY MEASUREMENT THE EXACT LOCATION OF EQUIPMENT, DUCTWORK, PIPING, STRUCTURE, AND OTHER CONDITIONS WHICH WILL AFFECT INSTALLATION. CONTRACTOR SHALL LOCATE EQUIPMENT AND ROUTE DUCTWORK AND PIPING TO AVOID CONFLICTS AND INTERFERENCES WITH EXISTING FIELD CONDITIONS.

4. PRIOR TO ANY INSTALLATION, CLOSELY COORDINATE ALL MECHANICAL WORK WITH PLUMBING, FIRE PROTECTION, ELECTRICAL, ARCHITECTURAL, AND STRUCTURAL WORK. CONTRACTOR TO ENSURE ALL EQUIPMENTS AND SERVICES WILL FIT IN AVAILABLE SPACES ALLOWING CEILING HEIGHTS INDICATED ON ARCHITECTURAL PLANS. INSTALL EQUIPMENT SO AS TO PROVIDE CLEARANCES SHOWN ON DRAWINGS AND AS RECOMMENDED BY MANUFACTURER FOR AIRFLOW, SERVICE, MAINTENANCE, AND FILTER REMOVAL AS APPLICABLE.

5. COORDINATE DUCT, PIPING, AND EQUIPMENT LOCATIONS WITH ELECTRICAL PANEL LOCATIONS. DO NOT PASS ANY MECHANICAL OR PLUMBING ITEMS DIRECTLY OVER ELECTRICAL PANELS. SEE ELECTRICAL DRAWINGS FOR EXACT PANEL LOCATIONS.

6. CEILING DIFFUSER AND REGISTER LOCATIONS ARE APPROXIMATE ONLY. EXACT LOCATIONS TO BE DETERMINED BY ARCHITECTURAL REFLECTED CEILING PLANS. MANY DUCTS AND PIPES ARE ROUTED ABOVE FURRED DOWN/LOWERED CEILINGS. CLOSELY COORDINATE DUCT AND PIPE ROUTING WITH ARCHITECTURAL REFLECTED CEILING PLANS. COORDINATE SIDEWALL REGISTER MOUNTING HEIGHTS AND LOCATIONS WITH ARCHITECTURAL CEILING HEIGHTS.

7. ALL CUTTING AND PATCHING SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR. ALL PATCHING SHALL RESTORE EACH DAMAGED SURFACE TO ITS ORIGINAL FINISH.

8. ALL EXPOSED DUCTWORK, PIPING, AND EQUIPMENT IN FINISHED SPACES TO BE INSTALLED AS HIGH AS POSSIBLE ABOVE FINISHED FLOOR.

HEATING AND COOLING EQUIPMENT:

1. FURNISH AND INSTALL ELECTRIC COOLING/GAS HEATING UNITS BY TRANE, CARRIER, LENNOX, OR APPROVED EQUAL AS SHOWN ON DRAWINGS.

2. UNIT SHALL BE FACTORY ASSEMBLED, TESTED, AND HAVE COMPLETE R-410A CHARGE, READY TO OPERATE. ALL TUBING JOINTS SHALL BE BRAZED. COIL SHALL BE MINIMUM OF 3-ROWS DEEP.

3. FAN SHALL BE STATICALLY AND DYNAMICALLY BALANCED, DOUBLE INLET, FORWARD CURVE BLOWER CAPABLE OF DELIVERING DESIGN CFM. FAN SHALL BE QUIET IN OPERATION AND INTERNALLY ISOLATED FOR VIBRATION.

4. EQUIPMENT SHALL BE COMPLETELY FACTORY WIRED WITH ALL CONTROL AND PROTECTIVE DEVICES. ALL EQUIPMENT 2000 CFM AND GREATER SHALL HAVE SMOKE DETECTOR AND CONTROLS FOR SMOKE DETECTION SHUT-DOWN. FIRE-STATS SHALL BE INCLUDED ON ALL OTHER UNITS AS REQUIRED BY CODE.

5. FILTERS SHALL BE 1" THROWAWAY TYPE, FARR 30/30 OR EQUAL. A CLEAN SET OF REPLACEMENT FILTERS SHALL BE PROVIDED BY CONTRACTOR UPON START-UP OF EQUIPMENT

6. SYSTEM SHALL BE COMPLETE WITH 24/7 PROGRAMMABLE THERMOSTATS, WHITE RODGERS COMFORT SET 90 OR APPROVED EQUAL.

7. ACCESSORIES SHALL INCLUDE TIME DELAY RELAYS TO PREVENT COMPRESSOR SHORT CYCLING, MALFUNCTION SWITCH, FIRE-STAT CUT-OUTS, LOW PRESSURE SWITCH, HIGH PRESSURE CUT-OUT.

FANS:

1. FANS SHALL BE EQUAL TO THE MAKE AND MODEL SHOWN INDICATED AND SHALL BE LOCATED AS SHOWN ON DRAWINGS. FANS SHALL BE NUTONE, LOREN COOK, PENN, ACME, BROAN, OR GREENHECK.

DUCTWORK:

1. ALL AIR DISTRIBUTION SYSTEM(S) SHALL BE TESTED AND BALANCED IN ACCORDANCE WITH A.A.B.C. REQUIREMENTS TO WITHIN FIVE PERCENT (5%) OF A CERTIFIED AIR BALANCE REPORT SHALL BE GIVEN TO THE ARCHITECT PRIOR TO PROJECT CLOSEOUT.

2. BALANCE AND ADJUSTING MUST OCCUR PRIOR TO INSTALLATION OF "HARD" CEILINGS IN ORDER TO ACCESS BRANCH FITTING DAMPERS. SEE ARCHITECTURAL REFLECTED CEILING PLANS FOR CEILING TYPES.

3. ALL LOW-PRESSURE DUCTWORK SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH THE 1985 SMACNA HVAC DUCT CONSTRUCTION MANUAL FOR 2" W.G. STATIC PRESSURE AND CLASS "C" SEALS. DUCTWORK SHALL BE CONSTRUCTED OF GALVANIZED SHEET METAL. SEAL ALL TRANSVERSE JOINTS WITH DUCT SEALANT, HARDCAST #P301.

4. SUPPORT ALL DUCTWORK WITH SUITABLE SHEARED STRIPS OF GALVANIZED METAL OF 1" X 1/8" STEEL BAND IRON HANGERS ON EACH SIDE OF DUCT. SPACE HANGERS MAXIMUM 8 FEET ALONG DUCT AND SECURE HANGERS TO STRUCTURE AS REQUIRED.

5. ALL DUCT DIMENSIONS SHOWN ON DRAWINGS ARE INSIDE CLEAR. ALLOWANCE MUST BE MADE IN SHEET METAL SIZE WHERE DUCT LINER IS SPECIFIED.

6. ALL SUPPLY AND OUTSIDE AIR DUCT TO BE EXTERNALLY INSULATED WITH 2" THICK, 1 LB. DENSITY, FLEXIBLE, FACTORY-REINFORCED GLASS FIBER BLANKET WITH FOIL-FACED VAPOR BARRIER JACKET. SEAL ALL SEAMS, RIPS, TEARS, STAPLES, ETC., IN VAPOR BARRIER WITH VAPOR BARRIER MASTIC EMBEDDED WITH FIBERGLASS MESH CLOTH. PRESSURE SENSITIVE TAPE NOT ALLOWED.

7. ALL RETURN DUCT TO BE INTERNALLY INSULATED WITH 1" THICK, 1-1/2 LB DENSITY, NEOPRENE-COATED FIBERGLASS MATT-FACED FLEXIBLE DUCT LINER. ALLOWANCES MUST BE MADE IN DUCT SIZES TO ACCOMMODATE LINER.

8. FLEXIBLE DUCTWORK SHALL BE EQUIVALENT TO WIREMOLD TYPE WGC, 1" THICK FIBERGLASS INSULATION AND VAPOR BARRIER. NO FLEXIBLE DUCT SHALL PASS THROUGH ANY WALL, FIRE RATED OR OTHERWISE. NO FLEXIBLE DUCT SHALL BE EXPOSED. FLEXIBLE DUCT LENGTHS SHALL NOT EXCEED 6'-0" AT EACH LOW PRESSURE DUCT CONNECTION AND 3'-0" AT EACH VAV TERMINAL BOX CONNECTION.

9. LOW--PRESSURE DUCT RUNOUTS TO DIFFUSERS AND REGISTERS TO BE AS SCHEDULED UNLESS OTHERWISE INDICATED ON PLANS. CONTRACTOR TO PROVIDE A TRANSITION AT NECK OF EACH TERMINAL DEVICE.

10. WHERE BRANCH TAPS OCCUR, PROVIDE INDIVIDUAL SPIN-IN FITTING WITH MANUAL-VOLUME DAMPERS FOR BALANCING. DO NOT USE TYPE WITH AIR SCOOP/EXTRACTOR. ADDITIONALLY, PROVIDE OPPOSED-BLADE VOLUME DAMPERS AT EACH AIR TERMIAL DEVISE.

11. PROVIDE CANVAS, FLAME RETARDANT DUCT CONNECTORS AT ALL CONNECTIONS OF FANS TO DUCTWORK.

12. INTERNALLY LINE ALL EXPOSED SUPPLY DUCT WITH 1" THICK DUCT LINER. REMAINDER OF DUCTWORK TO BE EXTERNALLY INSULATED PER SPECIFICATIONS.

MECHANICAL SPECIFICATIONS:

AIR DEVICES:

1. SQUARE CEILING DIFFUSERS SHALL BE EQUAL TO TITUS "TDC". DIFFUSERS TO BE COMPLETE WITH OPPOSED-BLADE VOLUME DAMPER, FLUSH-MOUNT FRAME, AND FINISH TO BE BAKED-ON, OFF WHITE ENAMEL. EXAMINE ARCHITECTURAL PLANS TO DETERMINE ACTUAL CEILING TYPES TO BE USED.

2. RETURN/EXHAUST AIR REGISTER SHALL BE EQUAL TO TITUS "50-F-5". REGISTER TO BE COMPLETE WITH OPPOSED-BLADE VOLUME DAMPER, FLUSH-MOUNT FRAME, AND FINISH TO BE BAKED-ON, OFF WHITE ENAMEL. EXAMINE ARCHITECTURAL PLANS TO DETERMINE ACTUAL CEILING TYPES TO BE USED.

3. CEILING RETURN FILTER GRILLES TO BE TITUS MODEL 3FL OR EQUAL WITH ½" X ½" EGGCRATE FACE AND DESIGNED FOR 1" DISPOSABLE FILTERS (WHERE NOTED ON PLANS). SEE PLANS FOR SIZES REQUIRED.

4. WALL-MOUNTED TRANSFER GRILLES TO BE TITUS MODEL 3FL OR EQUAL WITH ¾" SPACING AND 45 DEGREE FIXED DEFLECTION. GRILLE TO BE OFF-WHITE

5. SIDEWALL SUPPLY REGISTER DENOTED "SWS," TO BE TITUS MODEL 272RL5 REGISTER OR EQUAL. GRILLES TO BE COMPLETE WITH ¾" SPACED, DOUBLE-DEFLECTION AIRFOIL BLADES, OPPOSED-BLADE VOLUME DAMPER, ¾" BORDER, AND OFF-WHITE FINISH.

6. SIDEWALL RETURN/EXHAUST REGISTERS, DENOTED "SWR" OR "SWE", TO BE TITUS MODEL 23RL5 REGISTER OR EQUAL. REGISTER TO BE COMPLETE WITH 45 DEGREE FIXED BLADES RUNNING PARALLEL TO THE FLOOR, OPPOSED-BLADE VOLUME CONTROL, ¾" BORDER, AND OFF-WHITE FINISH.

7. LOUVERS SHALL BE EXTRUDED ALUMINUM TYPE WITH FIXED DRAINABLE BLADE CONSTRUCTION. FRAME AND BLADES TO BE MINIMUM 0.081" THICK AND 4" 6" DEEP WITH EQUAL BLADE SPACING. PROVIDE ½" MESH ALUMINUM SCREEN WITH REMOVABLE FRAME ON INTERIOR OF LOUVER. LOUVER FINISH TO BE STANDARD NATURAL MILL.

8. FIRE DAMPERS TO BE TYPE "B" UNLESS OTHERWISE NOTED. INSTALLATION TO BE IN STRICT ACCORDANCE WITH MANUFACTURER'S U.L. LISTED INSTALLATION INSTRUCTIONS AND SMACNA FIRE DAMPER GUIDE.

9. COORDINATE LOCATION AND PROVIDE DUCT ACCESS DOORS FOR ACCESS TO ALL FIRE DAMPERS. DUCT ACCESS DOORS MAY BE OMITTED WHERE TYPE "A" FIRE DAMPERS ARE ACCESSIBLE THROUGH SIDEWALL REGISTER FACE. ENSURE DUCT ACCESS DOORS AND DAMPERS ARE ACCESSIBLE THROUGH CEILINGS AND WALLS. LOCATE DUCT ACCESS DOORS ABOVE SPACES WITH LAY-IN CEILINGS OR EXPOSED CEILINGS WHERE POSSIBLE. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR CEILING TYPES.

PIPING:

1. ALL MOISTURE CONDENSATE DRAIN (MCD) LINES SHALL BE INSULATED WITH ½" ARMAFLEX AP TYPE INSULATION RATED FOR COPPER WITH 50-50 SOLDER JOINTS OR SCHEDULE 40 GALVANIZED STEEL INDOORS AND SCHEDULE 40 PVC OUTDOORS. ALL FITTING SHALL BE DRAINAGE PATTERN TYPE. SLOPE PIPING MINIMUM 1/8" PER FOOT TOWARD DRAIN. PROVIDE LINE SIZE CLEANOUTS AT P-TRAP AND SPACED MAXIMUM 50'-0" ON CENTER. SEE PLUMBING DRAWINGS FOR EXACT LOCATION OF FLOOR DRAINS, HUB DRAINS, AND SINK P-TRAP CONNECTIONS FOR MCD DISCHARGE.

2. PROVIDE REFRIGERANT LINES INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS. REFRIGERANT LINES SHALL BE "ACR" SUCTION COPPER TUBING USING SILVER SOLDER AT JOINTS. INSULATE LINES WITH ½" THICK ARMAFLEX AP INSULATION. ALL EXPOSED INSULATION SHALL BE PAINTED WITH TWO COATS OF VINYL LACQUER PAINT WRAPPED WITH 0.016" THICK ALUMINUM JACKET FOR PROTECTION. AS AN OPTION, THE CONTRACTOR MAY USE MANUFACTURER SUPPLIED PRECHARGED REFRIGERANT LINE SETS.

3. PATCH ALL RATED FLOOR AND RATED WALL PENETRATIONS WITH U.L. APPROVED ASSEMBLIES IN ACCORDANCE WITH INTERNATIONAL BUILDING CODE REQUIREMENTS.

SPECIALTIES:

1. PIPE CURBS SHALL BE CUSTOM CURB MODEL CPBA-1, 12" HIGH MINIMUM, OR EQUAL. ROOF CURBS FOR INTAKE OR EXHAUST SHALL BE CUSTOM CURB MODEL CRC-1, 12" HIGH MINIMUM, OR EQUAL. COORDINATE ACTUAL CURB HEIGHT WITH ACTUAL ROOF SYSTEM REQUIREMENTS.

2. FLUES ROUTED OUT OF MECHANICAL ROOM ARE REQUIRED TO BE ENCLOSED IN 2-HOUR CONSTRUCTION. CORRDINATE ENCLOSURE REQUIREMENT WITH OTHER TRADES TO AVOID CONFLICT.

3. UNDERCUT DOORS ¾" TO TOILETS, JANITOR CLOSETS, ETC., WHERE EXHAUSTING OF SPACE IS INDICATED ON DRAWINGS.

4. PROVIDE A MINIMUM 10'-0" SEPARATION BETWEEN ANY FRESH AIR INTAKE AND ANY MECHANICAL EXHAUST, GAS VENT, PLUMBING VENT, OR OTHER VENT OUTLETS.

5. ALL KITCHEN HOOD AND DISHWASHER HOOD EXHAUST DUCT SHALL BE INSTALLED TO SLOPE BACK TO HOOD A MINIMUM 1" PER FOOT WITHOUT DIPS OR TRAPS PER NFPA REQUIREMENTS. WHERE ADEQUATE CLEARANCES TO COMBUSTIBLES IS NOT PROVIDED FOR KITCHEN HOOD EXHAUST SUCT, WRAP DUCT WITH RATED ENCLOSURE EQUIVALENT TO PABCO SUPER FIRETEMP RATED GREASE DUCT ENCLOSURE. PROTECT BOARD WITH TWO LAYERS OF INSULATION COATING EQUIVALENT TO FOSTER 30-76.

6. U.L. LISTED, ONE-HOUR RATED DOOR GRILLES TO BE VENTILOUVRE FD264 BY AIROLITE, LOUVERS AND DAMPERS MODEL 1900-A, OR EQUAL. GRILLE TO HAVE INVERTED "V" BLADES AND 135 DEGREE FUSIBLE LINK. COORDINATE SIZE REQUIREMENTS WITH DOOR MANUFACTURER.

7. PAINT CHILLERS, ROOF FANS AND GRAVITY HOODS, GAS VENTS, BRICK VENTS, ETC., TO MATCH SURROUNDING SURFACES IN ACCORDANCE WITH ARCHITECTS INSTRUCTIONS.

CONTROLS:

1. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION OF ALL LOW VOLTAGE CONTROL WIRING AND CONDUIT REQUIRED TO OPERATE THE HVAC EQUIPMENT AS SPECIFIED HEREIN. WIRING SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF NEC. EQUIPMENT STARTERS AND DISCONNECTS SHALL BE FURNISHED UNDER THIS DIVISION FOR INSTALLATION BY DIVISION 16 CONTRACTOR. POWER WIRING SHALL BE INSTALLED BY DIVISON 16 CONTRACTOR.

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Mechanical Compliance Certificate

Project Information

Energy Code:	2018 IECC
Project Title:	Edward's Oil
Location:	Columbia, Tennessee
Climate Zone:	4a
Project Type:	New Construction

Construction Site: Columbia, TN

Owner/Agent:

Designer/Contractor: Angela Buckner, DFH Services, Nashville, TN

Additional Efficiency Package(s)

Credits: 1.0 Required 0.0 Proposed

Mechanical Systems List

Quantity	System Type & Description
3	HVAC System 1 (Single Zone): Heating: 1 each - Central Furnace, Gas, Capacity = 85 kBtu/h Proposed Efficiency = 80.00% Et, Required Efficiency: 80.00 % Et or 80% AFUE Cooling: 1 each - Single Package DX Unit, Capacity = 85 kBtu/h, Air-Cooled Condenser, Air Economizer Proposed Efficiency = 11.00 EER, Required Efficiency: 11.00 EER + 12.6 IEER Fan System: None
1	Water Heater 1: Gas Storage Water Heater, Capacity: 52 gallons, Input Rating: 75 kBtu/h w/ Circulation Pump No minimum efficiency requirement applies

Mechanical Compliance Statement

Compliance Statement: The proposed mechanical design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 2018 IECC requirements in COM*check* Version 4.1.5.5 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Angela Buckner — Name - Title
Angela Buckner — Signature
08/09/2022 — Date

Project Title: Edward's Oil
Data filename: Z:\Shared\2022 Project Folder\22-354 Edward's Oil Quick Mart Columbia - MEP - Meridian\Mechanical\COMMM.cck
Report date: 08/09/22
Page 1 of 10

EDWARD'S OIL
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REVISIONS:

DELTA	DESCRIPTION	DATE

DATE OF ISSUE:	09.12.2022
MA PROJECT NO:	0336-22
PROJECT PHASE:	CD
DRAWN BY:	DF&H SERVICES

HVAC SPECIFICATIONS

M-4.1

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GENERAL PLUMBING NOTES

1. ALL FIXTURES, EQUIPMENT AND PIPING SHALL COMPLY WITH INTERNATIONAL PLUMBING CODE, NFPA, STATE AND LOCAL CODES.
2. PLUMBING CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS AND INSPECTION CERTIFICATES.
3. OMISSIONS OR MISDESCRIPTION OF DETAILS OF WORK WHICH ARE EVIDENTLY NECESSARY TO CARRY OUT THE INTENT OF THE DRAWINGS, OR WHICH ARE CUSTOMARILY PERFORMED, SHALL NOT RELIEVE THE CONTRACTOR FROM PERFORMING SUCH OMISSIONS AND DETAILS OF WORK, BUT THEY SHALL BE PERFORMED AS IF FULLY AND CORRECTLY SET FORTH AND DESCRIBED.
4. PORTIONS OF WALLS AND ARCHITECTURAL FEATURES MAY HAVE BEEN OMITTED FROM THIS PLAN FOR CLARITY OF MECHANICAL FEATURES. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF FIXTURES, AND DIMENSIONS.
5. VERIFY FIELD DIMENSIONS. COORDINATE WORK WITH ALL OTHER TRADES TO AVOID SPACING AND ROUTING INTERFERENCES.
6. REFER TO SITE PLAN FOR ROUTING OF GAS, WATER, SEWER, AND STORM DRAIN PIPING.
7. FIELD VERIFY THE LOCATION AND ELEVATION OF SITE UTILITIES PRIOR TO START OF CONSTRUCTION.
8. LAY OUT PIPING BASICALLY AS SHOWN. MAJOR CHANGES IN LAYOUT MAY BE MADE ONLY WITH WRITTEN CONSENT OF ARCHITECT OR ENGINEER.
9. PROVIDE ELECTRICAL CONTRACTOR WITH EXACT WIRING REQUIREMENTS. IF ELECTRICAL REQUIREMENTS VARY FROM THOSE INDICATED ON PLANS, PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ASSOCIATED ADDITIONAL COSTS.
10. SANITARY PIPING SHALL BE RUN BENEATH THE SLAB. PIPING ABOVE CEILING SHALL BE INSTALLED TIGHT TO STRUCTURAL MEMBERS, OR WITHIN THE BAR JOIST WEBBING.
11. POTABLE WATER PIPING SHALL BE INSTALLED ABOVE THE CEILING. CLEARANCE ABOVE CEILING IS MINIMAL. LAYOUT OF HVAC DUCTWORK SHALL HAVE PRIORITY OVER OTHER TRADES. COORDINATE CAREFULLY WITH GENERAL CONTRACTOR PRIOR TO LAYING OUT WORK. IF REQUIRED, WATER AND VENT PIPING SHALL BE INSTALLED WITHIN THE JOIST WEBBING.
12. ALL COMPONENTS USED IN PLENUM SPACES MUST BE CONSTRUCTED OF NON-COMBUSTIBLE MATERIAL.
13. PLUMBING FIXTURES SHALL BE EQUAL TO FIXTURES SCHEDULED.
14. COLOR OF FIXTURES AND TRIM SHALL BE AS SELECTED BY ARCHITECT.
15. FIXTURES INDICATED AS BARRIER-FREE SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES ACT (ADA).
16. WATER PIPES SHALL HAVE STOPS AT EACH FIXTURE CONNECTION.
17. ALL WATER LINES, BOTH HOT AND COLD, SHALL BE AS FOLLOWS:
    A. LINES BELOW GRADE SHALL BE TYPE "K" SOFT COPPER (UNLESS OTHERWISE NOTED).
    B. LINES ABOVE GRADE SHALL BE TYPE "L" SOFT COPPER (UNLESS OTHERWISE NOTED).
    C. FITTINGS SHALL BE OF HARD DRAWN COPPER OF ASTM SPEC B-88.
    D. ALL JOINTING SHALL BE WITH LEAD-FREE SILVER SOLDER.
18. ALL WATER PIPING ABOVE GRADE, 1-1/4" AND SMALLER SHALL BE INSULATED WITH 1/2" THICK FIBERGLASS WITH A MINIMUM 'R' VALUE OF 3.6.
19. ALL WATER PIPING ABOVE GRADE, 1-1/2" AND LARGER SHALL BE INSULATED WITH 1" THICK FIBERGLASS WITH A MINIMUM 'R' VALUE OF 3.6.
20. PROVIDE SHUTOFF VALVES AT ALL MAIN BRANCH LINES FOR ISOLATION.
21. WALL HYDRANTS SHALL BE MOUNTED 18" ABOVE FINISHED GRADE.
22. INSTALL SHOCK ABSORBERS ON ALL FLUSH VALVE FIXTURES AND QUICK-CLOSING INLET VALVES. ENSURE THAT ACCESS PANELS ARE INSTALLED FOR ALL SHOCK ABSORBERS.
23. ALL WASTE AND VENT PIPING SHALL BE SCHEDULE 40 PVC CONFORMING TO ASTM D-1785. PIPING 2" AND SMALLER SHALL BE LAID OUT AT 1/4" PER FOOT GRADE. PIPING 3" AND LARGER SHALL BE LAID OUT AT 1/8" PER FOOT GRADE.
24. ALL WASTE PIPING BELOW GRADE SHALL BE CAST IRON PIPING, HUB AND SPIGOT CONNECTIONS: ASTM A 74 SERVICE WEIGHT CAST IRON SOIL PIPE AND FITTINGS, COATED INSIDE AND OUT. PROVIDE ASTM C 564 RUBBER GASKET, WITH DIMENSIONS REQUIRED FOR PIPE CLASS, FOR EACH HUB.
25. ALL WASTE AND VENT PIPING ABOVE GRADE SHALL BE CAST IRON PIPING, NO-HUB CONNECTIONS: ASTM A 888 OR CISPI STANDARD 301. COUPLINGS SHALL CONFORM TO ASTM C 1277, AND SHALL CONSIST OF AN ASSEMBLY OF METAL HOUSING, CORROSION-RESISTANT FASTENERS, AND ASTM C 564 RUBBER SLEEVE OR GASKET WITH INTEGRAL, CENTER PIPE STOP.
26. ALL GREASE WASTE PIPING SHALL BE SCHEDULE 40 PVC CONFORMING TO ASTM D-1785. ALL PIPING SHALL BE LAID OUT AT 1/4" PER FOOT GRADE.
27. ALL WASTE PIPING 2" AND SMALLER SHALL BE LAID OUT AT 1/4" PER FOOT GRADE. PIPING 3" AND LARGER SHALL BE LAID OUT AT 1/8" PER FOOT GRADE. ALL GREASE WASTE PIPING SHALL BE LAID OUT AT 1/4" PER FOOT GRADE.
28. ALL VENT PIPING WITHIN PLENUM OR AIR-HANDLING SPACES SHALL BE COPPER OR CAST IRON, AND SHALL BE LABELED AS "VENT".
29. ALL VENTS SHALL BE A MINIMUM OF 10'-0" AWAY FROM FRESH AIR INTAKES AND OPERABLE WINDOWS.
30. VENT PIPING SHALL BE LAID OUT SUCH THAT ALL ROOF PENETRATIONS SHALL BE ON BACK SIDE OF ROOF. PAINT EXPOSED VENT PIPING TO MATCH ROOF.
31. COORDINATE ROOF PENETRATIONS WITH ROOFING CONTRACTOR. ENSURE THAT WARRANTY REQUIREMENTS OF ROOFING MANUFACTURER ARE SATISFIED.
32. GAS PIPING SHALL BE BLACK STEEL. GAS PIPING TO BE INSTALLED BELOW GRADE SHALL BE MILL WRAPPED FOR DIRECT BURIAL.
33. FIT ALL PIPES PASSING THROUGH MASONRY AND JOB CAST CONCRETE WITH SLEEVES. CAULK SPACE BETWEEN PIPE AND SLEEVE.
34. ALL WATER LINES SHALL BE CAPPED AND TESTED AT 100 PSI FOR 24 HOURS. ALL WASTE PIPING SHALL BE TESTED WITH A 10'WATER COLUMN FOR A 2 HR PERIOD WITH NO CHANGE IN LEVEL.
35. DISINFECTION OF POTABLE WATER SYSTEM - NEW OR REPAIRED SYSTEMS SHALL BE PURGED OF DELETERIOUS MATTER AND DISINFECTED PRIOR TO UTILIZATION. THE METHOD TO BE FOLLOWED SHALL BE THAT PRESCRIBED BY THE HEALTH AUTHORITY OR WATER PURVEYOR HAVING JURISDICTION. IN THE ABSENCE OF A PRESCRIBED METHOD, THE PROCEDURE DESCRIBED IN EITHER AWWA C651 OR AWWA C652, OR AS DESCRIBED IN SECTION 610 OF THE INTERNATIONAL PLUMBING CODE.
36. MATERIALS, EQUIPMENT, AND INSTALLATION SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR FROM DATE OF ACCEPTANCE. DEFECTS WHICH APPEAR DURING THIS PERIOD SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
37. WHEN MAKING FINAL CONNECTIONS TO EQUIPMENT AND PLUMBING FIXTURES, CONTRACTOR SHALL FURNISH CUTOFFS, TRAPS, STOPS, FAUCETS, ELBOWS, VACUUM BREAKERS, INSULATION, ETC.
38. ENSURE THAT ALL PENETRATIONS OF FIRE WALLS ARE PROPERLY FIRESTOPPED.
39. ALL PENETRATIONS THROUGH WALLS AND FLOORS SHALL BE SLEEVED, PATCHED, OR FIRE PROOFED AS REQUIRED. IN EXPOSED AREAS, PATCHING SHALL MATCH FINISH. SEE ARCHITECTURAL DRAWINGS.
40. ALL OVERFLOW SHALL BE INSULATED WITH JACKETED PIPE INSULATION. ALL HORIZONTAL RAINWATER PIPING FROM ROOF DRAINS SHALL BE INSULATED WITH JACKETED PIPE INSULATION.
41. ALL FLOOR SINKS AND/OR FLOOR DRAINS IN THE KITCHEN AREA NOT GOING TO GREASE WASTE SHALL BE PROVIDED WITH 1" DAM AROUND IT TO PREVENT IT FROM BEING AN AREA DRAIN.
42. PLUMBING DRAWINGS MUST BE CAREFULLY COORDINATED WITH FOOD SERVICE DRAWINGS. REFER TO FOOD SERVICE DRAWINGS FOR EQUIPMENT LEGENDS, ROUGH-IN DIMENSIONS, INDIRECT WASTE REQUIREMENTS, AND OTHER SPECIFIC EQUIPMENT REQUIREMENTS.
43. FOOD SERVICE EQUIPMENT TO BE PROVIDED BY FOOD SERVICE CONTRACTOR AND INSTALLED BY PLUMBING CONTRACTOR UNLESS OTHERWISE INDICATED. PROVIDE ALL MATERIAL AND LABOR AS REQUIRED FOR COMPLETE INSTALLATION OF FOOD SERVICE EQUIPMENT, INCLUDING WATER, WASTE AND GAS CONNECTIONS, THE EXTENSION OF INDIRECT WASTE PIPING, AND THE INSTALLATION OF ANY PLUMBING COMPONENTS SHIPPED LOOSE. PROVIDE STOPS OR VALVES AT ALL EQUIPMENT CONNECTIONS.
44. REFER TO ARCHITECTURAL REQUIREMENTS FOR THE NECESSITY OF SUBMITTALS. SUBMITTALS ARE NOT REQUIRED UNLESS REQUIRED BY THE ARCHITECT. IF SUBMITTALS ARE REQUIRED PLEASE SUBMIT IN ELECTRONIC FORMAT (HARDCOPIES WILL NOT BE REVIEWED) THE FOLLOWING SECTIONS/EQUIPMENT FOR REVIEW : PLUMBING FIXTURES.

PLUMBING GENERAL NOTES

PLUMBING

PLUMBING ACCEPTABLE MANUFACTURERS

a. Fixtures: Kohler, American Standard, Toto, Zurn.
b. Brass Trim: McGuire Engineered Brass Company, Brasscraft, Zurn.
c. Roof drains, floor drains, floor sinks, hydrants, carriers and p-traps: Jay R. Smith, Zurn, Wade Josam, Mifab.
d. Flush valves: Toto, Sloan, Zurn.
e. Toilet Seats: Olsmite, Beneke, Bemis, Church, Centoco.
f. Faucets: T & S Brass and Bronze Works, Delta Commercial, Chicago Faucet Company, Kohler, Zurn, Symmons, Toto.
g. Stainless steel sinks: Elkay, Just, Kohler.
h. Shower valves (thermostatic and/or pressure balancing type) : Symmons, Leonard, Powers, Lawler.
i. Shower stalls: Lasco Bathware, Aqua Bath, Aquarius, Watermark, Florestone.
j. Pre-fabricated insulation on water lines and p-trap under barrier free lavatories and sinks: Brocar Products, Inc., Trap Wrap Truebro, Inc., McGuire Pro-wrap.
k. Thermostatic mixing valves: Symmons, Holly, Lawler, Powers, Leonard.
l. Emergency equipment: Encon, Haws, Guardian, Western, Lab Enterprises.
m. Garbage disposers: In-sinkerator, Whirlaway.
n. Electric water coolers: Elkay, Haws, Halsey, Taylor, Oasis.
o. Combination toilet/lavatory fixtures: Acorn, Bradley, Willoughy Industries.
p. Ice maker connection boxes: Acorn, Guy Gray, Sioux Chief.
q. Washing machine connection boxes: Acorn, Guy Gray, Sioux Chief.
r. Service Sinks: Stern Williams, Fiat, Zurn.

PLUMBING FIXTURES

P-5 WATER CLOSET - TANK TYPE - BARRIER FREE
a. Fixture: Toto #CST744S. Drake tank type water closet, 1.6 gallon per flush.
b. Seat: Toto #SC534 white open front seat with check hinge.
c. Trim: McGuire #H-2165 supply stop.

P-6 WATER CLOSET - TANK TYPE
a. Fixture: Toto #CST744S Drake tank type water closet, 1.6 gallon per flush.
b. Seat: Toto #SC534 white open front seat with check hinge.
c. Trim: McGuire #H-2165 supply stop.

P-7 URINAL - WALL HUNG - BARRIER FREE
a. Fixture: Toto #UT447E washout type urinal, 0.5 gallon per flush.
b. Valve: Toto #TMU1LN12#CP flush valve, 0.5 gallon per flush.
c. Mounting: 17" A.F.F. to rim.
d. Carrier: Mifab #MC-31 fixture carrier.

P-8 URINAL - WALL HUNG
a. Fixture: Toto #UT447 washout type urinal, 0.5 gallon per flush.
b. Valve: Toto #TMU1LN12#CP flush valve, 0.5 gallon per flush.
c. Mounting: 21" A.F.F. to rim.
d. Carrier: Mifab #MC-31 fixture carrier.

P-9 LAVATORY - WALL HUNG - BARRIER FREE
a. Fixture: Toto #LT307.4 wall hung lavatory with 4" centers.
b. Faucet: Symmons #S-20-0 single lever faucet
c. Trim: McGuire #155WC grid drain with 1-1/4" tailpiece offset for wheelchair use. McGuire #8872 1-1/4" P-trap, McGuire #H-2165 supply stops.
d. Mounting: 34" A.F.F. to basin rim.
e. Pre-fabricated insulation on water lines and P-trap under barrier free lavatories and sinks: Brocar Products, Inc. Trap Wrap, TruBro, Inc. Handi Lav-Guard, or McGuire Pro-Wrap.
f. Thermostatic Mixing Valve: Apollo #MVD-LF (34D Series) tempering water valve to be located beneath lavatory.
g. Carrier: Mifab #MC-41 fixture carrier.

P-10 LAVATORY - WALL HUNG
a. Fixture: Toto #LT307.4 wall hung lavatory with 4" centers.
b. Faucet: Symmons #S-20-0 single lever faucet
c. Trim: McGuire #155A grid drain with 1-1/4" tailpiece, McGuire #8872 1-1/4" P-trap, McGuire #H-2165 supply stops.
d. Mounting: 31" A.F.F. to basin rim.
e. Thermostatic Mixing Valve: Apollo #MVD-LF (34D Series) tempering water valve to be located beneath lavatory.
f. Carrier: Mifab #MC-41 fixture carrier.

P-11 LAVATORY - DROP IN - BARRIER FREE
a. Fixture: Toto #LT501.4 self-rimming lavatory with 4" centers.
b. Faucet: Symmons #S-20-0 single lever faucet
c. Trim: McGuire #155A grid drain with 1-1/4" tailpiece, McGuire #8872 1-1/4" P-trap, McGuire #H-2165 supply stops.
d. Mounting: 31" A.F.F. to basin rim.
e. Thermostatic Mixing Valve: Apollo #MVD-LF (34D Series) tempering water valve to be located beneath lavatory.

P-21 FLOOR DRAIN - REGULAR
a. Fixture: Mifab #F1000-C-5-MG floor drain with sediment bucket and trap sealer.

P-23 FLOOR DRAIN - KITCHEN
a. Fixture: Mifab #F1000-C-5-11-MG floor drain white acid resistant porcelain enamel coated interior and sediment bucket and trap sealer.

P-24 FLOOR SINK - KITCHEN 1/2 GRATE
a. Fixture: Mifab #FS-1520-FL-5-150 floor sink with white acid resistant porcelain enamel coated interior, sediment bucket, and 1/2 grate.

P-29 WALL HYDRANT - COLD WATER - NON-FREEZE
a. Fixture: Mifab #WHY-20 non-freeze hydrant with vacuum breaker. Finish to be selected by architect/owner.
b. Mounting: 18" A.F.G.

P-42 SINK - S.S. - (ROUGH-IN ONLY) - SINGLE COMPARTMENT
a. Fixture: Stainless steel sink, strainers, tailpieces, and faucets by others, Contractor installed.
b. Trim: McGuire #8912 1-1/2" P-trap, McGuire #H-2165 supply stops.
c. Thermostatic Mixing Valve: Apollo #MVD-LF (34D Series) tempering water valve to be located beneath sink.

P-43 SINK (ROUGH-IN ONLY) - 3 COMPARTMENT
a. Fixture: Stainless steel sink, strainers, tailpieces, and faucets by others, Contractor installed.
b. Trim: McGuire #8904 - 2" p-trap (3 reqd), #H-2165 supply stops (2 reqd)

EXECUTION

FIXTURE CONNECTIONS

A. Connect to plumbing fixtures and equipment provided under this schedule, specifications, architectural drawings, and manufacturer's shop drawings. Provide rough-in connections as shown on drawings.
B. Use schedule and details on drawings or manufacturer's shop drawings for connection sizes to fixtures.
C. Provide separate p-trap for each fixture, floor drain, and piece of equipment.
D. Provide outlet devices which limit the flow of hot water to lavatories and sinks to a minimum of 0.5 GPM, sized as recommended by manufacturer and as required under ASHRAE Standard 90-75, paragraph 7.7.2 or local or state energy codes.
E. Install lavatories and sinks with a minimum of 4" clearance on each side from a wall or partition.
F. Install temperature limiting devices that comply with IPC 607.1.1 and 607.1.2 requirements.
G. Install water closets with a minimum of 15" clearance from the centerline of the bowl to each side from a wall, partition, divider, or another fixture. Barrier free water closet shall have a minimum of 18" clearance.
H. Water closets shall be a minimum of 21" clearance in front of the bowl.
I. Coordinate dimensions required for minimum clearances with other trades.
J. Caulk around joists of fixtures on wall or floor, and fixtures backed up to wall.
K. Mount fixtures rigid to walls as shown on drawings or details.
L. Connect wall urinals to waste piping with red brass nipples.
M. Install a dropped ear "L", mounted on treated wood backing for rigid support for all shower heads.
N. Install flush valves on wide side of water closet as required for ADA accessibility.
O. Where automatic electronic flushing devices and faucets are specified, coordinate installation with electrical contractor.

TESTING AND CLEANING
A. Inspect and test work to insure that it is installed in accordance with drawings and specification and is functioning as designed. Test procedures and pressures per local and state codes.
B. Correct all deficiencies found and retest.

PLUMBING FIXTURE SPECIFICATION

FIXTURE CONNECTION SCHEDULE

IDENTITY	FIXTURE		C.W.	H.W.	WASTE
P-5	WATER CLOSET	TANK TYPE - BARRIER FREE	1/2"	---	4"
P-6	WATER CLOSET	TANK TYPE	1/2"	---	4"
P-7	URINAL	WALL HUNG - BARRIER FREE	3/4"	---	2"
P-8	URINAL	WALL HUNG		---	2"
P-9	LAVATORY	WALL HUNG - BARRIER FREE	1/2"	1/2"	1 1/4"
P-11	LAVATORY	DROP IN - BARRIER FREE	1/2"	1/2"	1 1/4"
P-21	FLOOR DRAIN	REGULAR	---	---	AS SHOWN
P-23	FLOOR SINK	FULL GRATE	---	---	AS SHOWN
P-24	FLOOR SINK	HALF GRATE	---	---	AS SHOWN
P-42	SINK	ROUGH-IN ONLY - SINGLE COMPARTMENT	1/2"	1/2"	1 1/2"
P-43	SINK	ROUGH-IN ONLY - THREE COMPARTMENT	1/2"	1/2"(140°)	2"

PLUMBING LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
———	COLD WATER		BALL VALVE
———	HOT WATER		CHECK VALVE
———	HOT WATER RECIRCULATION		UNION IN PIPE
———	WASTE LINE		EXTERIOR CLEANOUT
———	VENT PIPE	P-1,ETC	FIXTURE IDENTIFICATION
——F———	FIRE LINE OR MAIN		CONNECTION TO EXISTING
——G———	GAS LINE OR MAIN		CAP ON LINE
——GW———	GREASE WASTE		PIPE TURNED UP
——RWL———	RAIN WATER LEADER		PIPE TURNED DOWN
——SW———	STORM WATER		BALANCING VALVE
	CLEANOUT (ABOVE CEILING)		GAS COCK
——MV———	MEDICAL VACUUM		
——O2———	OXYGEN		
——N2O———	NITROUS OXIDE		

PLUMBING ABBREVIATIONS

C.W	COLD WATER	E.C.O.	EXTERIOR CLEANOUT
H.W.	HOT WATER	R.D.	ROOF DRAIN
H.W.R.	HOT WATER RECIRC	F.D.	FLOOR DRAIN
V.T.R.	VENT THRU ROOF	A.F.F.	ABOVE FINISHED FLOOR
W	WASTE	A.F.G.	ABOVE FINISHED GRADE
R.W.L.	RAIN WATER LEADER	W.C.O.	WALL CLEANOUT
S.W.	STORM WATER	S.S.	SANITARY SEWER
G.W.	GREASE WASTE	C.O.	CLEANOUT
H.W.R.P.	HOT WATER RECIRC PUMP	F.SP.	FIRE STANDPIPE

ELECTRIC WATER HEATER SCHEDULE

SYSTEM	TYPE	NO. REQ'D	MFGR.	MODEL NO.	EWT	LWT	STORAGE CAPACITY	FLOW RECOVERY	TANK SIZE	REMARKS
DOMESTIC (EWH-1)	ELEC	1	AO SMITH	DRE-52-12	50	120	52	50	22X60	12 KW 208/1/60

PUMP SCHEDULE

SYSTEM	TYPE	MANUFACTURER	MODEL NO.	G.P.M.	HEAD FT.	PUMP SUCTION F.T.	PUMP DISCHARGE F.T.	H.P.	VOLTAGE	REMARKS
HOT WATER RECIRC. (HWRP-1)	INLINE	ARMSTRONG	50B	10	12	--	--	--	120/1	0.95 AMPS

NOTE: PROVIDE WITH AQUASTAT AND TIMER

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REVISIONS:

DELTA	DESCRIPTION	DATE

DATE OF ISSUE: 09.12.2022
MA PROJECT NO: 0336-22
PROJECT PHASE: CD
DRAWN BY: DF&H SERVICES

PLUMBING LEGENDS AND SCHEDULES

P-0.1

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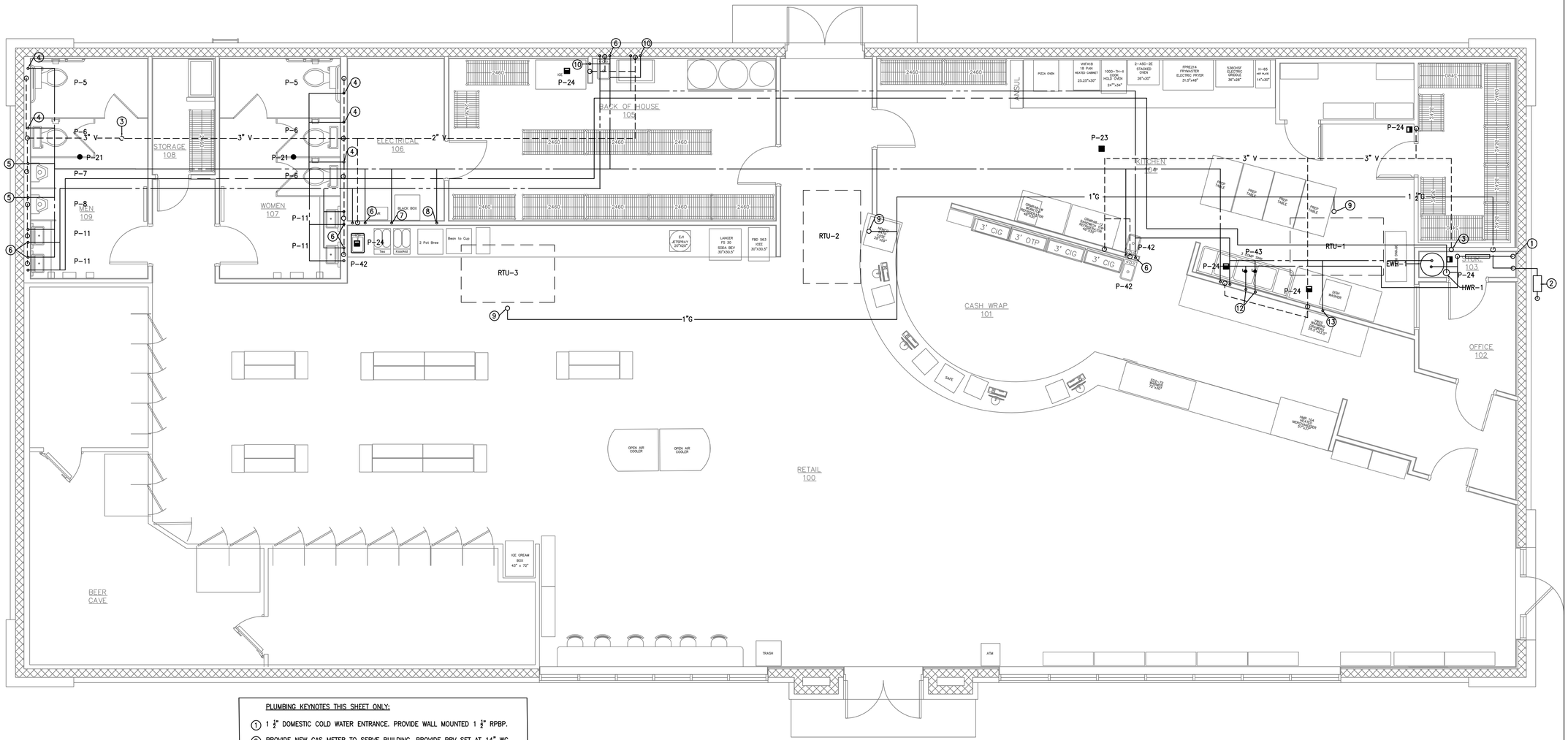

PLUMBING KEYNOTES THIS SHEET ONLY:

1. 1 ½" DOMESTIC COLD WATER ENTRANCE. PROVIDE WALL MOUNTED 1 ½" RPBP.
2. PROVIDE NEW GAS METER TO SERVE BUILDING. PROVIDE PRV SET AT 14" WC TO SERVE MECHANICAL EQUIPMENT ON ROOF.
3. 3" VENT UP THRU ROOF.
4. 1/2" CW DOWN IN WALL STUB OUT TO WATER CLOSET.
5. 1/2" CW DOWN IN WALL STUB OUT TO URINAL.
6. 1/2" CW & HW DOWN IN WALL STUB OUT TO SINK.
7. 1/2" CW DOWN IN WALL STUB OUT TO BEVERAGE DISPENSER.
8. 1/2" CW DOWN IN WALL STUB OUT TO COFFEE BREWER.
9. ROUTE 1" GAS LINE TO GAS GENERATORS RTU-1,2,&3.
10. 1/2" CW & HW DOWN IN WALL TO MOP SINK.
11. 1/2" CW DOWN IN WALL STUB OUT TO ICE MAKER WITH BIN.
12. 1/2" CW & HW DOWN IN WALL STUB OUT TO 3 COMPARTMENT SINK.
13. 1/2" HW DOWN IN WALL STUB OUT DISHWASHER.

PLUMBING PLAN

SCALE: 1/4" = 1'-0"

PLAN NORTH

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REVISIONS:

DELTA	DESCRIPTION	DATE

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PLUMBING PLAN

P-2.1

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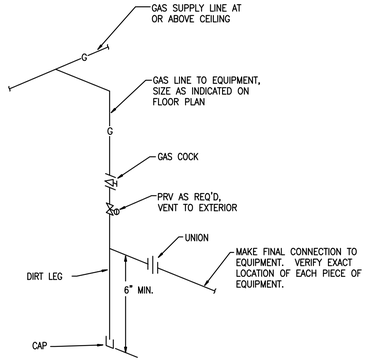
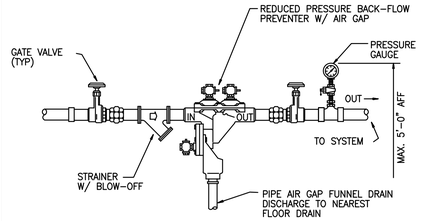
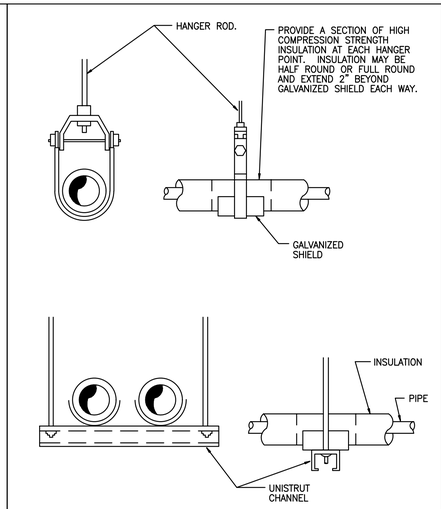


TYPICAL GAS CONNECTION | 4

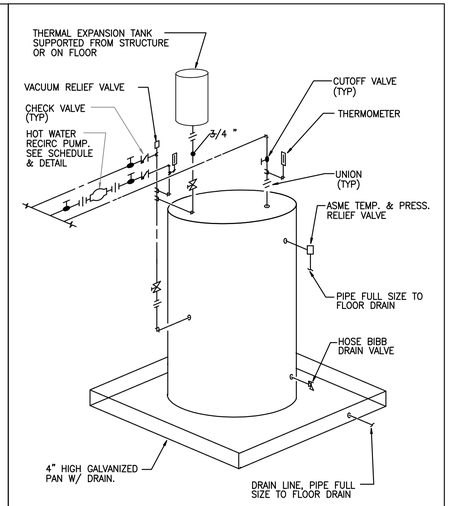


NOTE:
1. SEE FLOOR PLAN FOR SIZE OF R.P.B.P. & PIPE.

BACKFLOW PREVENTER | 3



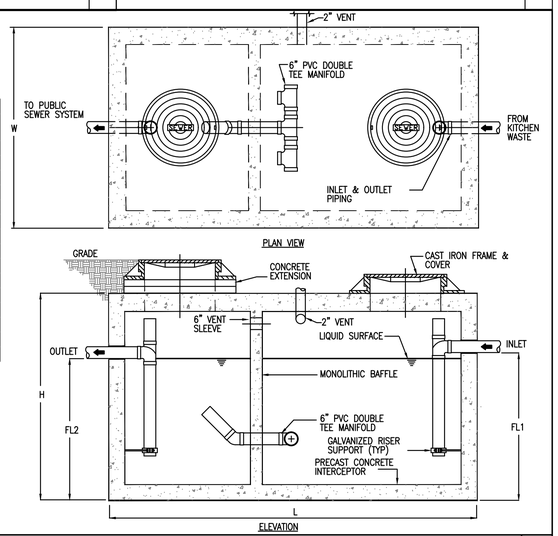
WATER PIPING HANGER | 2



ELECTRIC WATER HEATER | 1

GREASE INTERCEPTOR SCHEDULE						
MODEL NO.	CAPACITY USGal	LENGTH L	WIDTH W	HEIGHT H	INLET FL1	OUTLET FL2
GT-500	500	7'-10"	4'-4"	4'-6"	3'-3"	3'-0"
GT-750	750	7'-10"	4'-4"	6'-0"	4'-5"	4'-2"
GT-1000	1,000	8'-8"	5'-0"	6'-0"	4'-9"	4'-6"
GT-1500	1,500	9'-2"	5'-8"	7'-0"	5'-9"	5'-6"
GT-2000	2,000	13'-0"	7'-0"	6'-0"	4'-9"	4'-6"
GT-2500	2,500	13'-0"	7'-0"	7'-0"	5'-9"	5'-6"
GT-3000	3,000	13'-0"	7'-0"	8'-0"	6'-9"	6'-6"
GT-3500	3,500	13'-0"	7'-0"	8'-6"	7'-6"	7'-3"
GT-4000	4,000	13'-0"	7'-0"	9'-6"	8'-6"	8'-3"
GT-5000	5,000	16'-0"	8'-6"	8'-0"	6'-9"	6'-6"
GT-6000	6,000	16'-0"	8'-6"	9'-0"	7'-9"	7'-6"
GT-7000	7,000	18'-0"	9'-0"	9'-2"	7'-11"	7'-8"
GT-8000	8,000	18'-0"	9'-0"	10'-0"	8'-9"	8'-6"
GT-9000	9,000	18'-0"	9'-0"	10'-10"	9'-7"	9'-4"
GT-10000	10,000	18'-0"	9'-0"	12'-0"	10'-9"	10'-6"

PROVIDE PARKS EQUIPMENT CO.
MODEL NO. GT-1000
OR APPROVED EQUAL



GREASE INTERCEPTOR | 6

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REVISIONS:

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DRAWN BY:	DF&H SERVICES

PLUMBING DETAILS

P-3.1

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SECTION 224000 - PLUMBING FIXTURES
PART 1 - GENERAL
1.01 WORK INCLUDED
A. Comply with provisions of Section //CSI //MF95 15051//MF04 22 05 00//END_CSI:
B. Provide plumbing fixtures, trim and related items such as supplies, traps, drains, cleanouts, water closet flanges, bolts, seats and covers, fixture supports and other accessory items.
C. Coordinate fixture requirements by reviewing architectural, structural, and equipment drawings. Install fixtures in accordance with Contract Drawings and manufacturer's rough-in drawings.
1.02 RELATED WORK
A. Section //CSI //MF95 15414//MF04 22 13 19//END_CSI: Sanitary Waste Piping Specialties
B. Section //CSI //MF95 15410//MF04 22 11 16//END_CSI: Domestic Water Piping
1.03 CODES AND STANDARDS
A. Perform work in accordance with applicable codes and standards enforced by local authorities.
B. All barrier free fixtures shall be installed in accordance with the Americans with Disabilities Act (ADA) Rules and Regulations.
1.04 SUBMITTALS
A. Submit manufacturer's product data for review.
PART 2 - PRODUCTS
2.01 ACCEPTABLE MANUFACTURERS
A. Fixtures: Kohler, American Standard, Toto, Gerber, Zurn, Sloan.
B. Brass Trim: McGuire, Engineered Brass Company, Kohler, Cambridge Brass, ProFLo.
C. Hydrant, floor drains, shock absorbers, carriers and p-traps: Jay R. Smith, Zurn, Wade, Josam, Watts, MIFAB.
D. Flush valves: Flush valves: //OPT_AR //CHO_S Sloan-Sloan-DFB, Zurn Z-6000AV//CHO_N Sloan Regal, Zurn Z6000-PL//END_OPT with low force handles for ADA compliance.
E. Toilet seats: Olsmite, Beneke, Bemis, Church, Kohler.
F. Faucets: T&S Brass, Delta HDF, Water Saver, Chicago Faucet Company, Kohler, Zurn, Symmons, Moen.
G. Stainless steel sinks: Elkay, Just, Kohler.
J. Pre-fabricated insulation on water lines and p-trap under lavatory drains, and sinks:
1) Trap Wrap TrueBro, Inc., HandiLav-Guard McGuire Pro-wrap, Plumberex-Handishield.
2.02 MATERIALS
A. Wall hung lavatories: Furnish complete with wall mounting brackets.
B. Countertop sinks: Furnished complete with mounting rings where required.
C. Fixture color: White unless specified otherwise.
D. Faucets and flush valves: Provide either integral or attached supply stops with nipples.
E. Clamping device: Provide for drains installed in slabs above grade.
F. Caulking: General Electric silicon sanitary sealant or equal.

SECTION 221316 - SANITARY WASTE AND VENT PIPING
PART 1 - GENERAL
A. RELATED WORK
B. Section 22 05 00: Common Work Results for Plumbing
1.01 SUBMITTALS
A. Submit product data for review on piping and fittings. Submittal data shall include:
1. Manufacturer of pipe.
2. Tests or listing by recognized testing laboratory that certifies material composition is in accordance with ANSI/ASTM requirements.
3. Product data for pipe and fittings to be used on each piping system.
PART 2 - PRODUCTS
2.01 PVC PIPE AND FITTINGS
A. Polyvinyl chloride sewer pipe and fittings (4" to 15" diameters) shall be as manufactured by H and W Industries or equal.
B. PVC pipe, fittings, cement, and joint cleaner for entire project shall be supplied by a single manufacturer.
C. PVC schedule 40, Type I, DWV, ASTM D-2665, 1120, 160 PSI at 73 degrees F. Solvent cement shall meet ASTM No. D-2564 for (PVC-DWV) plastic and pipe fittings. If permitted by governing code authority, may be used for:
1. Air handling unit condensate drains above grade only if room is not used as return air plenum.
2. Inside gravity, under floor slab sanitary and storm waste drainage systems, with waste temperatures below 140 degrees F.
3. Condensate drains from rooftop units shall be UV resistant where exposed.
D. PVC schedule 40, Type-PSM, Sewer Pipe, ASTM D-3034 with SDR as gasketed slip type joints. Provide coupling with a rubber ring seal for use in each manhole entry to ensure a surface for adherence of concrete to manhole wall. If permitted by governing code authority, may be used for:
1. Outside gravity, underground sanitary sewer drainage piping, from 5'0" outside the building to the connections point to local municipality.
E. Fittings:
1. Permanently identify each fitting in accordance with MSS-SP-2241, and with manufacturer's trademark.
2. Include certification with submittal data that fittings and flanges meet applicable requirements.
PART 3 - EXECUTION
3.01 INSTALLATION
A. PVC Joints:
1. Make joints in accordance with cement manufacturer's printed instructions.

SECTION 221319 - SANITARY WASTE PIPING SPECIALTIES
PART 1 - GENERAL
1.01 WORK INCLUDED
A. This section includes requirements for:
1. Cleanouts
1.02 RELATED WORK
A. Section 22 05 00: Common Work Results for Plumbing
PART 2 - PRODUCTS
2.01 ACCEPTABLE MANUFACTURERS
A. Acceptable manufacturers are indicated in subsequent paragraphs.
2.02 CLEANOUTS
A. Acceptable manufacturers:
1. Jay R. Smith (Jay R. Smith model numbers are used below)
2. Josam
3. Wade
4. Zurn

SECTION 221116 - DOMESTIC WATER PIPING
PART 1 - GENERAL
1.01 WORK INCLUDED
A. Piping and pipe fittings for domestic cold, hot and recirculating water piping
1.02 SUBMITTALS
A. Submit product data for review on piping and fittings. Submittal data shall include:
1. Manufacturer of pipe.
2. Tests or listings by recognized testing laboratory that certifies material composition is in accordance with ANSI/ASTM requirements.
3. Product data for pipe and fittings to be used on each piping system.
4. Solder and brazing product data and installation procedures for copper pipe.
PART 2 - PRODUCTS
2.01 COPPER PIPE
A. Conform to ASTM B-88 specification for wrought seamless copper.
B. Type L hard for:
1. Domestic cold water piping
2. Domestic hot water
3. Domestic hot water recirculating piping
C. Use Type K, rolled, soft for: Piping installed under floor slabs.
2.02 COPPER PIPE FITTINGS
A. Sweat type, wrought copper, ASTM B62, with dimensions conforming to ANSI B16.22 and sweep patterns for copper tubing.
B. Mechanical Couplings: Roll groove rigid type by Victaulic, Gruvlok or Anvil.
C. Dielectric Connections:
1. Provide at junction of copper pipe and equipment with steel piping systems.
2. Central, Dielectric insulating unions, and insulating flange unions, as manufactured by Central Plastic Company, or CTS Fabrication USA (1-1/2" thru 8").
3. Provide copper solder joint to plated female iron pipe for sizes 1/2" through 2".
4. Provide insulating flange unions, malleable female iron pipe thread to copper solder joint flange unions for sizes 2-1/2" through 4".
5. Brass fittings and valves may not be used for dielectric union locations.
D. Unions: Brass ground joint, 250 lb. working pressure.
E. Nipples: Brass.

2.03 PVC PIPE AND FITTINGS
A. Polyvinyl chloride sewer pipe and fittings (4" to 12" diameters) shall be as manufactured by Charlotte or equal. Fittings (14" to 24" diameter) shall be manufactured by Freedom Plastics, Inc.
B. PVC pipe, fittings, cement, and joint cleaner for entire project shall be supplied by a single manufacturer.
C. PVC schedule 40, type 1, DWV, ASTM D-2665, 1120, 160 PSI at 73 degrees F. Solvent cement shall meet ASTM No. D-2564 for (PVC-DWV) plastic and pipe fittings. If permitted by governing code authority, may be used for:
1. Air conditioning unit condensate drains above grade only if room is not used as return air plenum
2. Gravity, non-pressure systems, under floor slab, including sanitary system with waste temperatures below 140 degrees F. and storm waste drainage systems.
3. Do not install PVC piping in return air plenums, equipment rooms or any space used as return air plenums unless specifically approved in writing by the Authority Having Jurisdiction, Owner's Representative and Architect.
D. PVC schedule 40, Type-PSM, Sewer Pipe, ASTM D-3034 with SDR as gasketed slip type joints. Provide coupling with a rubber ring seal for use in each manhole entry to ensure a surface for adherence of concrete to manhole wall. If permitted by governing code authority, may be used for:
1. Outside gravity, underground sanitary sewer drainage piping, from 5'-0" outside the building to the connections point to local municipality
E. Fittings:
1 Permanently identify each fitting in accordance with MSS-SP-2241, and with manufacturer's trademark

2. Include certification with submittal data that fittings and flanges meet applicable req

2.04 COMPRESSION COPPER FITTINGS
A. ViegaProPress, wrought copper, ASTM B88, with dimensions conforming to ANSI B16.22 or B16.18.
The Elastomeric seal is made of non-toxic synthetic rubber that meets the requirements of ASTM D2000 and performance criteria of IAPMO PS 117. Sealing elements shall be EPDM. Fitting to have smart connect feature. Teeth type fitting of any type shall not be used.

2.05 PEX (CROSS-LINKED POLYETHYLENE) PIPE AND FITTINGS

A. PEX Piping:
1. Manufactured in accordance with ASTM F876 and F877
2. Type PEX-a, for:
a. Domestic cold water piping
b. Domestic hot water
c. Domestic hot water recirculating piping
B. PEX Fittings:
1. Fittings:
a. Fitting assembly shall be manufactured from material listed in paragraph 5.1 of ASTM F1960
b. Fittings shall be installed inside expanded piping. Fitting ID shall match tubing ID
c. Stainless steel or metal clamp rings shall not be used for any connection
2. Manifolds:
a. Type L copper body with UNS 3600 series brass ASTM F1960 outlet connections
b. Engineered Plastic (EP) body with ASTM F1960 outlet connections
3. Accessories:
a. Angle stops and straight stops that are compatible with PEX tubing shall be supplied by the PEX tubing manufacturer
b. Bend supports designed for maintaining tight radius bends shall be by the PEX tubing manufacturer
C. PEX Firestops:
1. Through penetration firestop
a. Ensure compliance of one and two-hour rated through penetration assemblies in accordance with ASTM E814
b. A list of firestop manufacturers that list PEX tubing with their firestop systems is available from the PEX tubing manufacturer. Fire rated assembly listings in accordance with ANSI/UL 263

3.03 PEX PLUMBING SYSTEM

A. Install PEX Plumbing System in accordance with the tubing manufacturer's recommendations and as indicted in the installation handbook.
B. Do not install PEX tubing within 6 inches (152 mm) of gas appliance vents or within 12 inches (305 mm) of any recessed light fixtures.
C. Do not solder within 18 inches (457 mm) of PEX tubing in the same waterline. Make sweat connections prior to making PEX connections.
D. Do not expose PEX tubing to direct sunlight for more than 30 days.
E. Ensure that no glues, solvents, sealants or chemicals come in contact with the tubing without prior permission from the tubing manufacturer.
F. PEX tubing passing through metal studs shall use grommets or sleeves at the penetrations.
G. Protect PEX tubing with sleeves where abrasion may occur.
H. Use strike protectors where PEX tubing penetrates a stud or joist and has the potential for being struck with a screw or nail.

I. Tubing manufacturer supplied bend supports shall be used where bends are less than six times the outside pipe diameter.

J. Tubing shall be supported to structural members using support methods required by local plumbing codes and the installation handbook.
K. Pressurize PEX Plumbing System with air in accordance with applicable codes or in the absence of applicable codes to a pressure of 25 psi (173 kPa) above normal working pressure of the system.
L. Comply with safety precautions when pressure testing, including use of compressed air, where applicable. Water shall not be used to pressurize the system if ambient air temperature has the possibility of dropping working pressure shall be in accordance with the pipe and fitting manufacturer's specifications.

INSTALLATION
A. Clean inside of pipe before installation. Keep installed piping clean, and protect ends from foreign matter by capping or plugging them.
B. Install pipe so that it does not interfere with opening of doors or apparatus, access to equipment, or to electrical equipment.
C. Do not install pipes in such a way that they will apply torque to pumps. After pumps have been installed and pumps have been operated, recheck and realign pumps if necessary.
D. Run pipes in straight lines and square with building. Install risers plumb. Make offsets only where indicated and where necessary.
E. Install branch connections using separate tee or lateral fittings for each branch. Do not combine branches into "bullhead tee" arrangement.
F. Do not install water pipes in electric rooms, tele/data rooms, transformer rooms, audio/visual rooms or water equipment rooms. Fire protection piping runouts serving only these rooms shall be installed in these rooms.
G. Do not install piping above electrical equipment such as starters, variable frequency drives, motor control centers, or disconnects. Maintain code required clearance above, below and to sides of electrical equipment.
H. Provide flanges or unions throughout the pipe systems at all equipment. Make provisions for servicing and removal of equipment without dismantling piping.
I. Piping Expansion:

1. Install piping to allow thermal expansion and contraction without injury to piping, equipment or structure.
a. Use loops or expansion joints where necessary and where detailed
b. Provide pipe guides
J. Branch Lines:
1. Where possible branch lines shall come off top of mains to prevent sediment, welding slag, or pipe deburrs from entering the branch lines and causing valve leakage or failure.
3.02 PIPE JOINTING
A. Preparing Pipe Ends:
1. Machine cut pipe ends square
2. Ream pipe ends, after cutting, to full diameter
B.Soldered and Brazed Joints:
1. Make Type L copper pipe joints with suitable flux and 95/5, lead free solder.
2. Make Type K copper pipe joints with silver (BAg series) brazing filler material with flux or copper-phos (BCup series) brazing filler material without flux per the recommendations of the Copper Development Association.
3. Domestic cold and hot water piping 4" and larger shall be brazed. Copper to copper joints shall be brazed using a copper-phosphorus or copper-phosphorus-silver brazing filler metal (BCup Series) without flux. Dissimilar metals such as copper and bronze or brass shall be brazed using an appropriate flux with a silver (BAg Series) brazing filler A. metal.
B. Bracing Joints:
1. Provide braces and bridle rods as required to reinforce joints.
2. If mechanical couplings are used, then prepare pipe ends and make joints in accordance with pipe coupling manufacturer's printed instructions.
3. Where large pipes underground are subject to shock because of sudden changes in liquid flow rate, provide concrete "kicker" blocks at joints, fittings, and changes of pipe direction. Provide "kicker" blocks in accordance with applicable pipe industry trade or research organization recommendations.
3.03 ESCUTCHEONS
A. Provide chrome plated escutcheons where uninsulated pipes penetrate walls or ceilings of finished spaces.
3.06 VALVE ACCESS
A. Locate ceiling/wall access panels at shut-off and control valves for proper access and operation. Furnish and install access doors in accordance with Section 22 05 00 and other Divisions as applicable.
3.07 TESTING
A. Before piping is concealed or insulated, recheck it for leaks.
B. Rework or replace defective and leaking joints, and joints which are otherwise unsatisfactory. Preening, caulking, and doping are not permitted.

SECTION 220523 - VALVES FOR PLUMBING PIPING
PART 1 - GENERAL
1.01 RELATED WORK
A. Section 22 11 16: Domestic Water Piping
1.02 QUALITY ASSURANCE
A. Boiler valves: ASME Boiler Code Specifications.
B. Valve bodies, shells, and seats: Factory tested.
C. Bronze body valves:
1. Materials for pressure containing parts: ASTM B-62 (less than 200 psi), B-61 (200 psi and above)
2. Design, workmanship, testing: MSS-SP-80
D.Valve stems: ASTM BS84-78, Class 13C (cast silicon brass), ASTM B-371-79, Alloy A (rolled silicon brass), or other material equally resistant to dezincification.
E. Pressure castings: Free of impregnating materials.
F. Valve name or trademark and working pressure stamped or cast into body.
G. Standard for 200 PSI and 300 PSI valves with metallic seats: ASTM B61-76.

1.03 SUBMITTALS
A. Submit product data for review.
PART 2 - PRODUCTS
2.01 ACCEPTABLE MANUFACTURERS
A. Bronze body valves: Nibco, Stockham, Milwaukee, Dezurik, or Kennedy
B. Ball valves: Nibco, Apollo, Watts, Milwaukee, Jamesbury or Hammond
2.02 MATERIALS
A. Nibco Figure numbers are indicated below unless noted otherwise:
B. Check Valves:
1. Domestic Water:
a. 2" and less, Figure T-433, or S-433, threaded or solder, Class 150
b. 2-1/2" and up: Bronze body, cap, and disc, flanged, Class 150
C. Ball Valves
1. Domestic Water
a. 2" and less, Figure T585-70 or S-585-70, 2-piece, full port, 600 psi, WOG, TFE seats
b. 2-1/2" and up, Watts G4000-FDA-200 psi, Class 125 meeting MSS-SP-72-92 or equal

PART 3 - EXECUTION
3.01 INSTALLATION
A. Furnish and install valves in each piping connection at each piece of plumbing equipment to allow equipment to be isolated from piping systems.
B. Furnish and install valves in all piping systems to isolate each floor or main section of the building. Install sufficient number of valves to minimize the portion of the system which must be shut down for service or maintenance purposes.
C. Furnish and install valves above each group of plumbing fixtures.
D. Install valves in water piping systems so ordinary maintenance work can be performed on the equipment that the valves isolate, without having to drain the system beyond the valve.
E. Locate valves so as to be easily accessible by maintenance personnel.

SECTION 22 11 19 - DOMESTIC WATER PIPING SPECIALTIES

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. This section includes requirements for:
1. Backflow preventers.
2. Shock arrestors.
3. Domestic water service connection.
4. Inline automatic flow controller.
5. Thermometers and pressure gauges.

1.2 RELATED REQUIREMENTS

A. Section 22 05 00 - Common Work Results For Plumbing
B. Section 22 05 23 - Valves For Plumbing Piping
C. Section 22 07 00 - Plumbing Insulation

1.3 QUALITY ASSURANCE

A. Lead Free: All wetted surface of pipe, fittings and fixtures in potable water systems shall have a weighted average lead content equal to or less than 0.25% per the Safe Drinking Water Act (Section 1417) as amended January 4, 2011.
B. NSF Compliance: NSF/ANSI 61 and/or NSF/ANSI 372 for valve materials for potable-water service. Valves for domestic water must be 3rd Party Certified.

1.4 SUBMITTALS

A. Submit product data for review in accordance with the requirements of Division 01.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Acceptable manufacturers are indicated in subsequent paragraphs.

2.2 BACKFLOW PREVENTERS

A. Acceptable manufacturers:
1. Beeco
2. Apollo
3. Febco
4. Cla-Val
5. Ames
6. Watts
7. Wilkins Regulator Company

B. Provide completely automatic unit, fitted with tight closing shut-off valves and test cocks at each end.
C. Construct such that all parts are replaceable without removing unit from line.
D. Total pressure drop through complete backflow preventer does not exceed 12 PSI at rated flow.
E. Provide per local requirements and dimensions as detailed on drawings.
F. Backflow preventers shall meet the following standards: (Apollo Figure numbers are used for reference.)
1. Atmospheric vacuum breaker - Apollo 38-200 series, ASSE 1001-2008
2. Hose-connected vacuum breakers - Apollo 4ALF series, ASSE 1011-2004
3. Back siphonage vacuum breakers - Apollo 4A-500-04F, ASSE 1056-2013
4. Reduced pressure principle backflow preventers - Apollo 4ALF-200 Series, ASSE 1013-2011
5. Double check valve assembly - Apollo 4ALF-100 Series, ASSE 1015-2011
6. Pressure type vacuum breaker - ASSE-1020-2004

2.3 SHOCK ARRESTORS

A. Acceptable manufacturers:
1. Josam
2. Wade
3. Jay R. Smith
4. Precision Products
5. Zurn
6. Sioux Chief

B. Arrestor shall be piston type, polycarbonate with two EPDM O-rings, lubricated with FDA-approved Dow Corning #111 silicone compound in Type L or K copper body, suitable for 200 psig minimum pressure at 200 degrees F.
C. Arrestor shall be ANSI/ASSE 1010 Certified and be maintenance free with no access panel required.

2.4 THERMOMETERS AND PRESSURE GAUGES

A. Acceptable manufacturers: Trerice, Winters, Dwyer or approved equal.
B. Thermometers shall have a 9" aluminum case with 3.5" or 6" stem, fully adjustable, organic filled (non-mercury), +/- 1% accuracy, lead free brass or stainless steel thermowell, dual scale, 30 degrees F to 200 degrees F range.
C. Pressure gauges shall have a 4" white aluminum dial with type 304 SS case, lead free brass socket, glycerin filled with accuracy of +/- 1.5 % of full scale to 150 degrees F; dry type to 200 degrees F. Install with lead free gauge cock.

2.5 MANUAL FLOW BALANCING VALVE

A. Acceptable Manufacturers: Nibco, Armstrong 'CBV'; Taco; Tour & Anderson.
B. Provide globe style valve, calibrated, lead free, brass or stainless steel body and disk, with provisions for connecting a portable differential pressure meter for flow measurement and balance. Nibco T-1810-LF or S-1810-LF or equal. Provide meter connections with built-in check valves.

SECTION 220529 - HANGERS FOR PLUMBING PIPING
PART 1 - GENERAL
1.01 RELATED WORK
A. Section 22 11 16: Domestic Water Piping
B. Section 22 13 16: Sanitary Waste and Vent Piping
C. Section 22 07 00: Plumbing Insulation
1.02 SUBMITTALS
A. RT 2 - PRODUCTS
2.01 ACCEPTABLE MANUFACTURERS
A. Anvil, Carpenter and Patterson, Fee and Mason, B-Line, Viking, Reliable, and Michigan. Anvil numbers are used for reference.
2.02 HANGERS
A. Anvil Figure #260 MSS Type 1, clevis hangers for:
1. Non-insulated steel and galvanized piping 2" through 24" diameter
2. Non-insulated cast iron pipe
B. Anvil Figure #260 clevis hangers with Figure 167, MSS Type 40 galvanized insulation protection shields (sized for supporting insulation having a compressive strength of 4 psi). Support piping on outside of insulation. Size hangers so that pipe insulation passes through them without interruption.
1. Domestic hot water piping above 160 degrees F. 4" diameter and less
2. All other insulated piping
C. Anvil Figure CT-69, MSS Type 10 with adjustable wrought tubing ring hanger, copper plated for:
1. Non-insulated copper tubing with no longitudinal movement
D. Anvil Powerstrut Trapeze Hangers: Where three or more lines of pipe run parallel, support them with trapeze hangers.
2.05 CLAMPS
A. C-Clamps: Anvil Figure #92, MSS Type 23.
1. Use these for attaching hangers to steel beams. Do not weld hanger rods to structural steel members.
B. Malleable Beam Clamps: Anvil Figure #218, MSS Type 30. Use these for attaching hangers to bar joists.
PART 3 - EXECUTION
3.01 PIPE HANGERS
A. Support pipes on specified hangers so that equipment, pumps, and fittings do not bear weight or stresses from vibration and swaying of pipe. Support pipe risers at regular intervals in pipe shafts at least once at each floor level or a maximum of 12'-0" apart. Do not use perforated metal, strap iron, or band iron. Do not make offsets in hangers.
B. Maximum allowable spacing of pipe hangers is listed below. Space hangers and brackets at closer intervals where necessary to maintain levels, slopes, and drainage, or to prevent sagging or swaying of pipe.
C. COPPER PIPE - Water
1. 1/4" to 1-1/4" - 5'0" O.C.
2. 2" to 2-1/2" - 8'0" O.C.
3. 3" and above - 10'0" O.C.
D. SCH. 40 PVC PIPE
1. 4" and above 6' O.C.

C. Provide integral pointer to register degree of valve opening with tamper proof locking memory feature.
D. Provide valve with drain connection.
E. Construct valve with integral sleeves to prevent leakage around rotating element.
F. Construct valve for 125 psi working pressure at 260 degrees F.
G. Provide preformed polyurethane insulation for easy access to valve without disturbing field applied adjacent insulation.
H. Provide valve with engraved tag attached indicating design flow, pressure, and flow characteristic of station.

PART 3 - EXECUTION

3.1 INSTALLATION AND TESTING

A. Backflow Preventers:
1. Pipe relief through fixed air gap and discharge to sewer.
2. Install adjacent to wall and/or floor utilizing stand-off brackets, angle frame, and/or concrete piers.
3. Test unit for leaks and pressure drop. Clean and/or replace soiled strainer media.
4. Provide dual parallel reduced pressure backflow preventers on the main domestic water entrance to the facility.
5. Provide a reduced pressure backflow preventer on the domestic hot and cold water lines feeding the laboratory and morgue.
6. Provide a reduced pressure backflow preventer on the domestic cold water serving carbonators at soda machines.
7. Provide backflow prevention vacuum breaker on any water line feeding any piece of equipment which could cause back siphonage such as mechanical equipment, trap primer lines, etc.
8. Provide a double check valve backflow preventer on the fire main service to the building.

B. Shock Arrestors:
1. Install shock arrestors at each quick closing valve, solenoid type valve, and flush valve. Size shock arrestors in accordance with manufacturer's instructions.
2. Install shock arrestors within five feet of valve, provide wall access panel as required.
3. Test and certify shock arrestors by Plumbing and Drainage Institute in accordance with ANSI/ASSE 1010.

END OF SECTION

SECTION 210500
COMMON WORK RESULTS FOR FIRE SUPPRESSION
SECTION INCLUDES
1.01
A. COMMON WORK RESULTS FOR REQUIREMENTS SPECIFICALLY APPLICABLE TO DIVISION 21.
B. REQUIREMENTS OF DIVISION 01 SPECIFICATIONS, GENERAL PROVISIONS OF THE CONTRACT AND GENERAL AND SUPPLEMENTARY CONDITIONS APPLY TO THIS DIVISION.
1.02
REFERENCES
A. ANSI: AMERICAN NATIONAL STANDARDS INSTITUTE.
B. ASME: AMERICAN SOCIETY FOR MECHANICAL ENGINEERS.
C. ASTM: AMERICAN SOCIETY FOR TESTING AND MATERIALS.
D. AWWA: AMERICAN WATER WORKS ASSOCIATION.
E. FM: FACTORY MUTUAL
F. IRI: INDUSTRIAL RISK INSURERS
G. MSS: MANUFACTURER'S STANDARDIZATION SOCIETY OF THE VALVE AND FITTING INDUSTRY.
H. NEMA: NATIONAL ELECTRICAL MANUFACTURERS' ASSOCIATION.
I. NFPA: NATIONAL FIRE PROTECTION ASSOCIATION.
J. UL: UNDERWRITERS' LABORATORIES, INC.
1.03
SUBMITTALS
A. SUBMIT UNDER PROVISIONS OF DIVISION 01.
B. INCLUDE PRODUCTS AS SPECIFIED IN THE INDIVIDUAL SECTIONS OF DIVISION 21.
C. SUBMIT SHOP DRAWING AND PRODUCT DATA GROUPED TO INCLUDE COMPLETE SUBMITTALS OF RELATED SYSTEMS, PRODUCTS, AND ACCESSORIES IN A SINGLE SUBMITTAL.
D. PREPARE SHOP DRAWINGS COMPLETELY INDEPENDENT OF THE ENGINEER OF RECORD'S CADD FILES. SHOULD THE CONTRACTOR OR VENDOR WISH TO USE THE ENGINEER OF RECORD'S CADD FILES AS THE BASIS FOR DEVELOPING THEIR SHOP DRAWINGS, A RELEASE FORM, OBTAINABLE FROM THE ENGINEER OR ARCHITECT, MUST BE SIGNED AND A NOMINAL CHARGE OF $30.00 PER SHEET MUST BE MADE PAYABLE TO THE ENGINEERING FIRM TO COVER THE COST OF PREPARING THE DRAWINGS FOR USE BY OTHERS.
E. SUBMIT COPIES OF SHOP DRAWINGS IN ACCORDANCE WITH DIVISION 01, INCLUDING:
1. FIRE PROTECTION SYSTEMS
2.ASSIST IN THE PREPARATION OF COORDINATED ROOM LAYOUTS AS SPECIFIED IN SECTION 23 05 00.
F. BROCHURES: SUBMIT MANUFACTURER'S PRODUCT DATA AND BROCHURES INCLUDING:
1. COMPLETE DESCRIPTIONS
2. ILLUSTRATIONS
3. RATING DATA, ACCESSORIES, DIMENSIONAL DATA, AND APPLICABLE OPTIONS AND FEATURES MARKED FOR THE SPECIFIC ITEMS SCHEDULED ON DRAWINGS AND SPECIFIED HEREIN
4. CAPACITIES STATED IN THE TERMS SPECIFIED
5. PERFORMANCE CURVES FOR FIRE PUMPS AND JOCKEY PUMPS.
1.04
REGULATORY REQUIREMENTS
A. PERFORM WORK SPECIFIED IN DIVISION 21, IN ACCORDANCE WITH STANDARDS LISTED BELOW OF THE LATEST APPLICABLE EDITION ADOPTED BY THE AUTHORITY HAVING JURISDICTION. WHERE THESE SPECIFICATIONS ARE MORE STRINGENT, THEY SHALL TAKE PRECEDENCE. IN CASE OF CONFLICT, OBTAIN A DECISION FROM THE ARCHITECT.
1. NFPA 13: SPRINKLER SYSTEM INSTALLATION.
2. NFPA 99: HEALTHCARE FACILITIES.
3. NFPA 101: LIFE SAFETY CODE.
4. ANSI HANDICAPPED CODE-A117.1
5. U.L: FIRE RESISTANCE INDEX
6. ASTM E814-88: STANDARD TEST METHOD FOR FIRE TESTS OF THROUGH-PENETRATION FIRESTOPS.
7. IBC: INTERNATIONAL BUILDING CODE, WITH MECHANICAL AND PLUMBING CODES.

8. SPECIAL REGULATIONS, SUPPLEMENT, AND AMENDMENTS OF THE STATE AND/OR LOCAL AUTHORITIES HAVING JURISDICTION.
1.05 PROJECT/SITE CONDITIONS
A. LAYOUTS INDICATED ON DRAWINGS ARE DIAGRAMMATICAL AND INTENDED TO SHOW RELATIVE POSITIONS AND ARRANGEMENT OF PIPING AND EQUIPMENT. COORDINATE WORK WITH OTHER TRADES AND WITH MEASUREMENTS OBTAINED AT THE JOB SITE, AS APPLICABLE, PRIOR TO INSTALLATION. GENERALLY, INSTALL WORK IN LOCATIONS SHOWN ON DRAWINGS. PROVIDE NECESSARY, RISES, DROPS, AND OFFSETS TO FIT IN THE AVAILABLE SPACE UNLESS PREVENTED BY PROJECT CONDITIONS.
B. IF PREVENTED BY PROJECT CONDITIONS, PREPARE DRAWINGS SHOWING PROPOSED REARRANGEMENT OF WORK, INCLUDING CHANGES TO WORK SPECIFIED IN OTHER SECTIONS. OBTAIN PERMISSION OF ARCHITECT BEFORE PROCEEDING.
C. PLACE ANCHORS, SLEEVES, AND SUPPORTS PRIOR TO POURING CONCRETE OR INSTALLATION OF MASONRY WORK.
D. CAUSE AS LITTLE INTERFERENCE OR INTERRUPTION OF EXISTING UTILITIES AND SERVICES AS POSSIBLE. SCHEDULE WORK WHICH WILL CAUSE INTERFERENCE OR INTERRUPTION IN ADVANCE WITH OWNER AND ALL AFFECTED TRADES.
E. DETERMINE SIZES AND VERIFY LOCATIONS OF EXISTING UTILITIES ON OR NEAR SITE.
F. KEEP ROADS CLEAR OF MATERIALS AND DEBRIS.
G. VISIT SITE AND BE INFORMED OF CONDITIONS UNDER WHICH WORK MUST BE PERFORMED.
H. LOCATE EQUIPMENT REQUIRING PERIODIC SERVICING SO THAT IT IS READILY ACCESSIBLE. PROVIDE MEANS OF SERVICE ACCESS, FOLLOWING APPROPRIATE MANUFACTURER'S RECOMMENDED SERVICE CLEARANCE SPACE OR, AS APPLICABLE, MEANS OF ACCESS USING WALL OR CEILING ACCESS DOORS.
I. INSTALL PIPING TO LEAVE SUFFICIENT SPACE FOR AHJ INSPECTION OF RATED WALL CONSTRUCTION.

FEES AND PERMITS
1.06
A. OBTAIN AND PAY FOR ALL NECESSARY PERMITS AND INSPECTION FEES REQUIRED TO PERFORM DIVISION 21 WORK.

COORDINATION DRAWINGS
1.07
A. PRIOR TO COMMENCEMENT OF INSTALLATION, ASSIST IN PREPARATION OF COORDINATION DRAWINGS FOR WORK UNDER THIS DIVISION, AS SPECIFIED IN DIVISION 01. FULLY COOPERATE WITH PERSONS COORDINATING AND PERFORMING WORK UNDER OTHER DIVISIONS.
B. DRAWINGS SHALL NOT BE FORMALLY SUBMITTED BUT SHALL BE KEPT ON SITE FOR REFERENCE. NOTIFY ARCHITECT OF CONFLICTS THAT CANNOT BE RESOLVED.
1.08
COMPLETENESS OF WORK
A. THE CONTRACT DOCUMENTS DEPICT FIRE SUPPRESSION SYSTEMS WHICH ARE INTENDED TO BE COMPLETE AND FUNCTIONING SYSTEMS. ALL PRODUCTS, MATERIALS, AND LABOR NECESSARY TO RENDER A FULLY FUNCTIONAL SYSTEM TO FULFILL THE DESIGN INTENT SHOWN ON THE DOCUMENTS SHALL BE PROVIDED BY THE CONTRACTOR.
B. CATALOG NUMBERS REFERENCED THROUGHOUT THE DIVISION 21 DRAWINGS AND SPECIFICATIONS ARE INTENDED TO CONVEY A GENERAL UNDERSTANDING OF THE TYPE AND QUALITY OF THE PRODUCT REQUIRED. WHERE WRITTEN DESCRIPTIONS DIFFER FROM INFORMATION CONVEYED BY A CATALOG NUMBER, THE WRITTEN DESCRIPTION SHALL GOVERN. NO EXTRA SHALL BE ALLOWED BECAUSE A CATALOG NUMBER IS FOUND TO BE INCOMPLETE OR OBSOLETE.
1.09 REFERENCE STANDARDS AND DEFINITIONS
A. COMPLY WITH PROVISIONS OF DIVISION 01.

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REVISIONS:

DELTA	DESCRIPTION	DATE

DATE OF ISSUE:	09.12.2022
MA PROJECT NO:	0336-22
PROJECT PHASE:	CD
DRAWN BY:	DF&H SERVICES

PLUMBING SPECIFICATIONS

P-4.1

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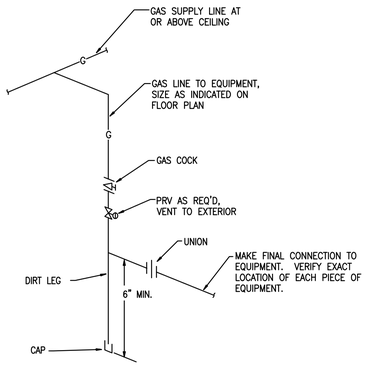
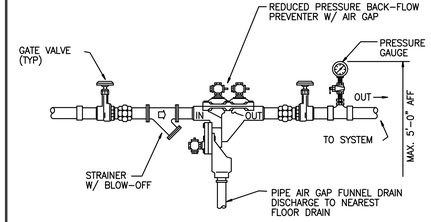
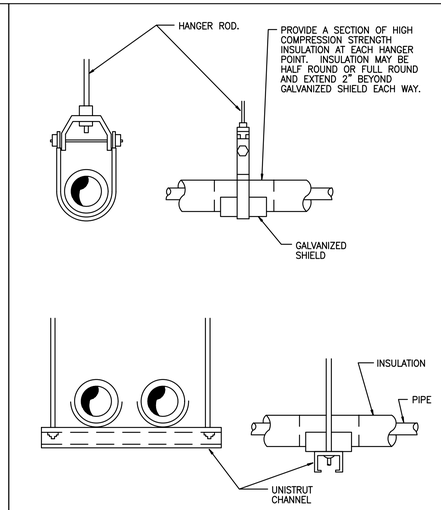


TYPICAL GAS CONNECTION | 4

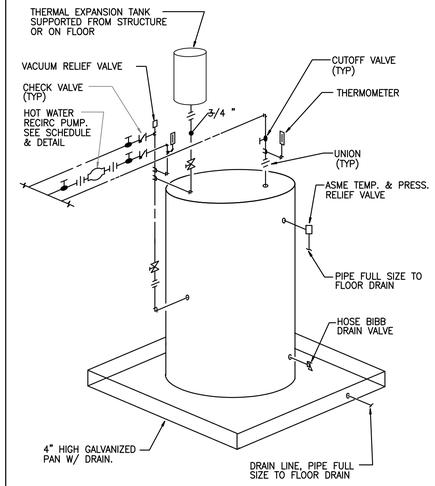


NOTE:
1. SEE FLOOR PLAN FOR SIZE OF R.P.B.P. & PIPE.

BACKFLOW PREVENTER | 3



WATER PIPING HANGER | 2



ELECTRIC WATER HEATER | 1

PLUMBING SPECIFICATIONS

PLUMBING SCOPE OF WORK

PLUMBING WORK INCLUDES:

PLUMBING AND INSULATION, FIRE PROTECTION AND MEDICAL GAS PIPING.

THE PLUMBING WORK INSTALLATION SHALL COMPLY WITH STATE AND LOCAL HEALTH DEPARTMENTS, ENVIRONMENTAL PROTECTION AGENCY, AND BUILDING CODES, INCLUDING PLUMBING CODES, AND WITH STATE AND LOCAL ORDINANCES.

EQUIPMENT SHALL BE U.L. LISTED AND LABELED AS REQUIRED IN SPECIFIC EQUIPMENT SPECIFICATION SECTIONS. INSTALLATION WORK SHALL COMPLY WITH U.L. STANDARDS, WHERE APPLICABLE.

ARRANGE FOR, PAY FEES FOR, AND ACCOMPLISH THE WORK REQUIRED TO PASS TESTS REQUIRED BY THE AUTHORITIES HAVING JURISDICTION. OBTAIN CERTIFICATES OF COMPLIANCE FROM SAID AUTHORITIES AND TRANSMIT TO THE ARCHITECT.

SUBMIT TO THE ARCHITECT FOR REVIEW, 7 COPIES OF CERTIFIED SHOP DRAWINGS AND EQUIPMENT BROCHURES ON MATERIAL FURNISHED UNDER THIS DIVISION.

PLUMBING WORK SHALL BE GUARANTEED AGAINST FAULTY MATERIAL OR WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE.

PIPING FOR PLUMBING SYSTEMS

A. BUTT WELDED, ELECTRIC RESISTANCE WELDER OR SEAMLESS BLACK STEEL PIPE, SCHEDULE 40 FOR PIPING 10" AND SMALLER. (NOTE: PIPING 2-1/8" AND SMALLER ARE OUTSIDE DIMENSIONS.)

1) FIRE PROTECTION SYSTEM PIPING

B. STANDARD WEIGHT GALVANIZED PIPE FOR:

1) WASTE, VENT, AND DRAIN PIPING (1-1/2" AND SMALLER)

C. STEEL PIPE FITTINGS:

1) FITTING 2-1/2" AND LARGER: CARBON STEEL, BUTT WELDED FITTINGS, ASTM A234-WPB, ANSI B16.9, AND B16.28.
2) FITTINGS 2" AND SMALLER: THREADED, STANDARD CAST IRON.
3) GALVANIZED STEEL PIPE FITTINGS: SAME AS ABOVE, EXCEPT GALVANIZED. PROVIDE DRAINAGE PATTERN TYPE FITTINGS FOR WASTE, VENT, AND DRAIN PIPING.
4) FLANGES: CARBON STEEL, ASTM A105 AND ANSI B16.5.
5) UNIONS: CAST IRON WITH BRONZE TO IRON GROUND JOINT RATED AT 150 LBS.
6) BOLTING MATERIALS: SAME FINISHED CARBON STEEL BOLTS AND HEX NUTS.
7) THREAD LUBRICANT: CRANE "FORMULA 425", OR EQUAL.

COPPER PIPING

(NOTE: PIPING DIMENSIONS SHOWN ON DRAWINGS AS 2-1/8" AND SMALLER ARE OUTSIDE DIMENSIONS.)

A) TYPE "L" HARD DRAWN SEAMLESS FOR:

1) DOMESTIC HOT AND COLD WATER PIPING

B) COPPER PIPE FITTINGS:

1) SWEAT TYPE, WROUGHT COPPER, ASTM B62, WITH DIMENSIONS CONFORMING TO ANSI B16.22 AND SWEEPING PATTERNS FOR COPPER TUBING.
2) DIELECTRIC CONNECTIONS: CENTRAL, DIELECTRIC INSULATING UNIONS, AND INSULATING FLANGE UNIONS, AS MANUFACTURED BY CENTRAL PLASTIC COMPANY.
3) UNIONS AND NIPPLES: BRASS

CAST IRON SOIL AND VENT PIPE

A) STANDARD WEIGHT PIPE WITH DRAINAGE FITTINGS FOR:

1) WASTE, VENT, AND DRAINAGE PIPE (2" AND LARGER)

B) JOINTS IN CAST IRON PIPE:

1) ABOVE GRADE: NO-HUB USING STAINLESS COUPLINGS.

MISCELLANEOUS PIPE ACCESSORIES

1) FLOOR AND WALL SLEEVES - SEE SLEEVES SECTION
2) ESCUTCHEONS - CHROME PIPE ESCUTCHEONS CHROME PIPE ESCUTCHEONS, SLIP-ON OR SPLIT TYPE WHERE PIPE PASSING THROUGH FINISHED WALL MAY BE VISIBLE.
3) PIPE SADDLES SHALL BE 18 GAUGE SHEET METAL OR GALVANIZED INSTALLED TO PROTECT INSULATION.

PIPE HANGERS

DIELECTRIC UNIONS SHALL BE USED WHEREVER DISSIMILAR METALS SUBJECT TO GALVANIC ACTIVITY ARE JOINED TOGETHER SUCH AS EQUIPMENT CONNECTIONS BETWEEN COPPER PIPE AND STEEL PIPE.

PIPE HANGERS SHALL BE ADJUSTABLE STEEL HANGERS, GRINNEL, FEE AND MASON, OR EQUAL. HANGERS SHALL BE ADJUSTABLE RING GRINNEL FIGURE 97 FOR UNDER 4" SIZE.
HANGERS FOR COPPER LINES 2" AND SMALLER SHALL BE ADJUSTABLE COPPER PLATED TYPE CT BY GRINNEL, FEE AND MASON, OR EQUAL.

HANGERS ON DOMESTIC COLD WATER PIPING AND OTHER INSULATED PIPING LARGER THAN 1" SHALL BE SIZED TO FIT OVER INSULATION, USING HEAVY GAUGE GALVANIZED SADDLES TO PROTECT THE COVERING. PIPING, WHERE INSULATION SPECIFIED IS SOFT AND WILL NOT SUPPORT PIPE WITHOUT CRUSHING, SHALL BE SUPPORTED BY SECTIONS OF RIGID INSULATION LAID IN THE INSULATION SADDLE. THE CONTRACTOR MUST PROVIDE DIELECTRIC ISOLATION BETWEEN PIPING AND THE HANGERS WHERE THEY ARE OF DISSIMILAR METALS.

SLEEVES

PROVIDE AND INSTALL SLEEVES FOR PIPING INSTALLED AT FLOORS AND RATED WALLS AND/OR PARTITIONS AS SPECIFIED HEREIN.

1) PROVIDE SCHEDULE 40 BLACK STEEL FOR SLEEVES.
2) ENSURE SLEEVES ARE PROVIDED AT RATED PARTITIONS, RATED WALLS, AND FLOORS IN ACCORDANCE WITH RATED FIRE SEPARATION REQUIREMENTS OF ARCHITECTURAL DRAWINGS.
3) ALL INSULATED PIPING PASSING THROUGH FIRE AND/OR SMOKE RATED PARTITIONS SHALL BE SLEEVED, AND VOID SPACE BETWEEN PIPE AND SLEEVE SHALL HAVE FIRE SAFING AND BE SEALED.

PLUMBING SYSTEMS INSULATION

INSULATION MATERIALS SHALL BE FIRE RESISTIVE WITH A FLAME SPREAD RATING NOT OVER 25 WITHOUT EVIDENCE OF CONTINUED PROGRESSIVE COMBUSTION, AND WITH A SMOKE DEVELOPED RATING NOT HIGHER THAN 50. PIPE INSULATION SHALL BE MOLDED PIPE COVERING TYPE.

PLUMBING FIXTURES

PART 1 GENERAL

1.01 WORK INCLUDED

A. Provide plumbing fixtures, trim and related items such as supplies, traps, drains, cleanouts, fixture supports and other accessory items.

B. Coordinate fixture requirements by reviewing architectural and equipment drawings. Install fixtures in accordance with Contract Drawings and manufacturer's rough-in drawings.

1.02 CODES AND STANDARDS

A. Perform work in accordance with applicable codes and standards enforced by local authorities.

1.03 SUBMITTALS

A. Submit manufacturer's product data for review.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Brass: Chicago, T&S, and Speakman.

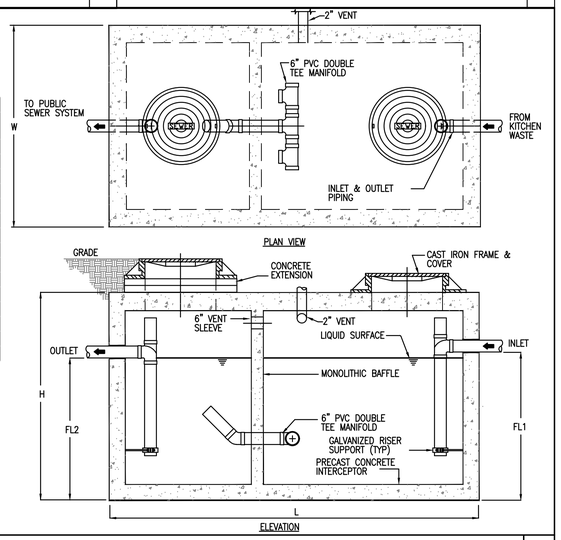
B. Carriers and p-traps: Jay R. Smith, Zurn, Wade.

D. Flow control devices: Dole Flow Controls Company.

E. Provide fixtures and trim as a complete unit as required in the individual "P" numbers listed on plans.

GREASE INTERCEPTOR SCHEDULE						
MODEL NO.	CAPACITY USGal	LENGTH L	WIDTH W	HEIGHT H	INLET FL1	OUTLET FL2
GT-500	500	7'-10"	4'-4"	4'-6"	3'-3"	3'-0"
GT-750	750	7'-10"	4'-4"	6'-0"	4'-5"	4'-2"
GT-1000	1,000	8'-8"	5'-0"	6'-0"	4'-9"	4'-6"
GT-1500	1,500	9'-2"	5'-8"	7'-0"	5'-9"	5'-6"
GT-2000	2,000	13'-0"	7'-0"	6'-0"	4'-9"	4'-6"
GT-2500	2,500	13'-0"	7'-0"	7'-0"	5'-9"	5'-6"
GT-3000	3,000	13'-0"	7'-0"	8'-0"	6'-9"	6'-6"
GT-3500	3,500	13'-0"	7'-0"	8'-6"	7'-6"	7'-3"
GT-4000	4,000	13'-0"	7'-0"	9'-6"	8'-6"	8'-3"
GT-5000	5,000	16'-0"	8'-6"	8'-0"	6'-9"	6'-6"
GT-6000	6,000	16'-0"	8'-6"	9'-0"	7'-9"	7'-6"
GT-7000	7,000	18'-0"	9'-0"	9'-2"	7'-11"	7'-8"
GT-8000	8,000	18'-0"	9'-0"	10'-0"	8'-9"	8'-6"
GT-9000	9,000	18'-0"	9'-0"	10'-10"	9'-7"	9'-4"
GT-10000	10,000	18'-0"	9'-0"	12'-0"	10'-9"	10'-6"

PROVIDE PARKS EQUIPMENT CO.
MODEL NO. _GT-1000_____
OR APPROVED EQUAL



GREASE INTERCEPTOR | 6

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REVISIONS:

DELTA	DESCRIPTION	DATE

DATE OF ISSUE: 09.12.2022
MA PROJECT NO: 0336-22
PROJECT PHASE: CD
DRAWN BY: DF&H SERVICES

PLUMBING DETAILS & SPECIFICATIONS
P-5.1

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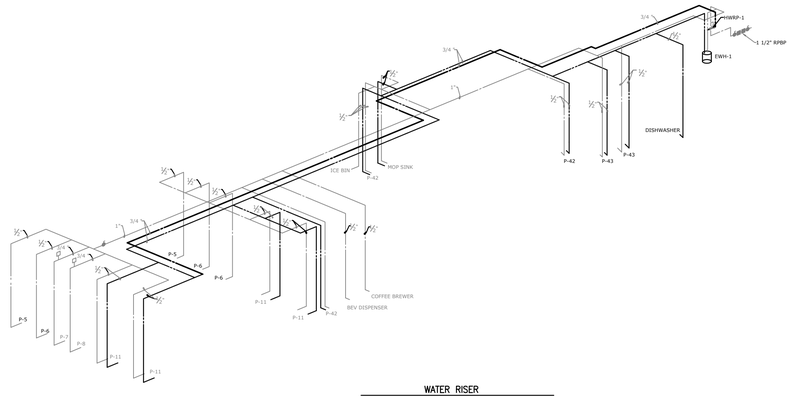
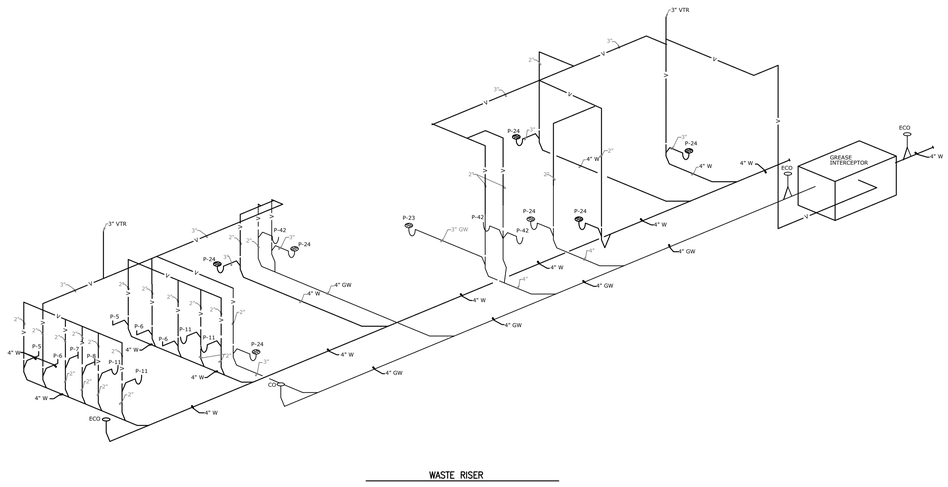


WATER RISER



WASTE RISER

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REVISIONS:

DELTA	DESCRIPTION	DATE

DATE OF ISSUE:	09.12.2022
MA PROJECT NO:	0336-22
PROJECT PHASE:	CD
DRAWN BY:	DF&H SERVICES

PLUMBING RISERS

P-5.1

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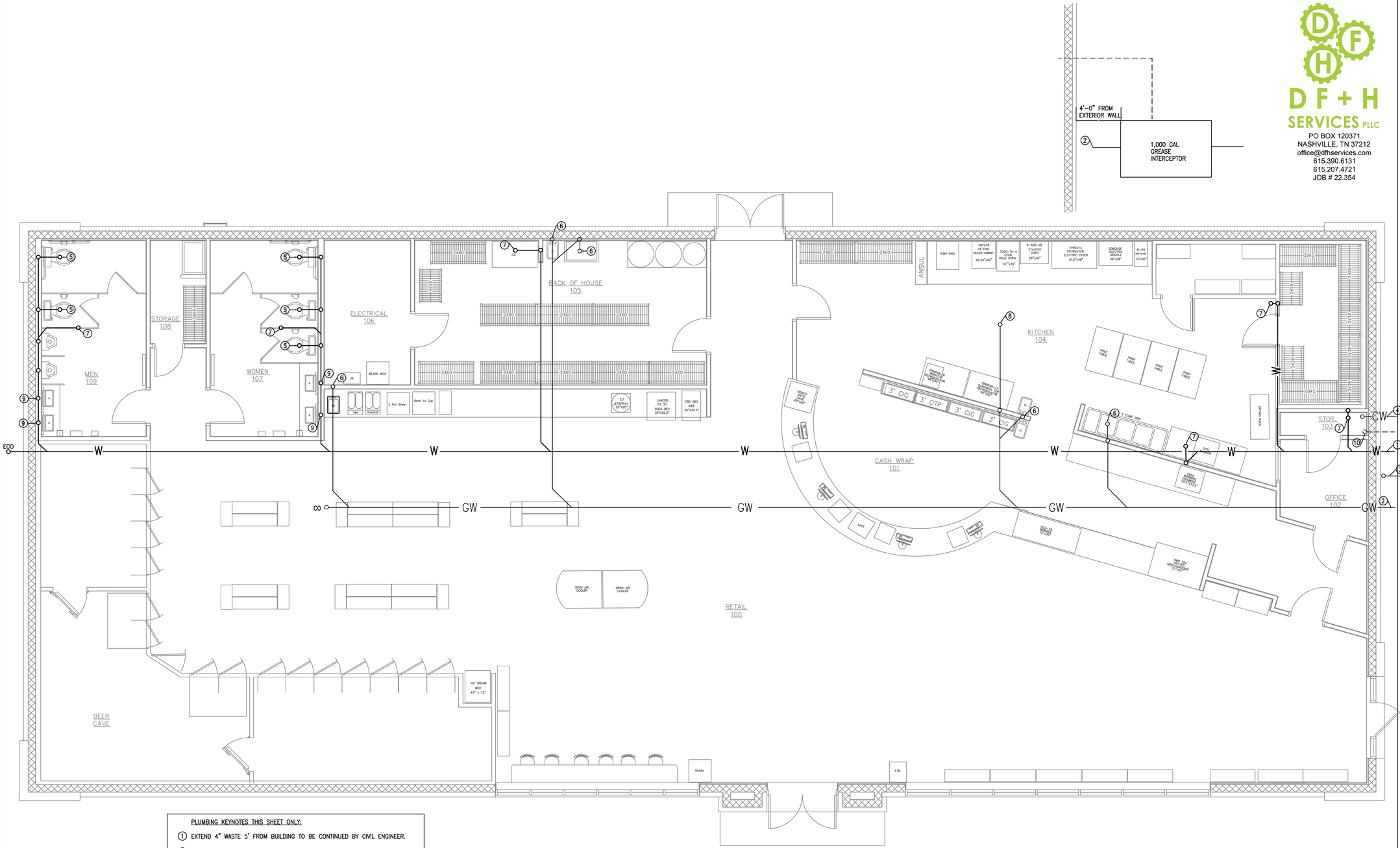

PLUMBING KEYNOTES THIS SHEET ONLY:

1. EXTEND 4" WASTE 5' FROM BUILDING TO BE CONTINUED BY CIVIL ENGINEER.
2. EXTEND 4" GREASE WASTE FROM BUILDING TO 1,000 GAL GREASE INTERCEPTOR. EXTEND 4" WASTE 5' FROM THE OUTLET SIDE TO BE CONTINUED BY CIVIL ENGINEER.
3. PROVIDE NEW GAS SERVICE TO BUILDING COORDINATE WITH LOCAL GAS COMPANY.
4. EXTEND 1 ½" DOMESTIC WATER LINE 5' FROM BUILDING TO BE CONTINUED BY CIVIL ENGINEER.
5. 4" WASTE UP TO WATER CLOSET.
6. 3" GREASE WASTE UP TO FLOOR SINK.
7. 3" WASTE UP TO FLOOR DRAIN.
8. 4" GREASE WASTE UP TO FLOOR SINK.
9. 2" WASTE UP TO SINK.
10. 2"VENT UP.

PLUMBING UNDERGROUND PLAN

SCALE: 1/4" = 1'-0"

PLAN NORTH

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REVISIONS:

DELTA	DESCRIPTION	DATE

DATE OF ISSUE:	09.12.2022
MA PROJECT NO:	0336-22
PROJECT PHASE:	CD
DRAWN BY:	DF&H SERVICES

PLUMBING UNDERGROUND

PU-2.1

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Division 16 - Electrical

Basic Requirements and Materials

Work will be in conformance with the International Building code (with Standard Building Code annotations), as well as the latest edition of the National Electrical Code (NFPA 70), National Fire Protective Association codes and regulations (including Life Safety Code), Fire Protection Rules and Regulations of the State Fire Marshall and all state and local building codes and ordinances. Obtain permits and secure inspections required for execution of work indicated by these drawings and specs. If the local authority utilizes a previous code rather than the latest edition, use the locally enforced vintage of code in lieu of the latest edition.

Furnish all necessary materials and labor to install a complete and fully operable electrical system as indicated on the drawings and in these specifications Install and provide electrical connections for, equipment furnished by others.

Prior to submitting a bid, contractor shall visit the site & ascertain all existing conditions. Make such adjustments in work as required by actual conditions to be encountered. No subsequent allowance will be made after bid for any misunderstandings of existing conditions, including utility connections, & or integration of work with existing systems.. This shall include the relocation of all existing to remain devices mounted above ceiling requiring access by code - contractor shall include all costs associated with relocating devices to accessible areas or providing access doors as required. Use of access doors shall be pre approved by architect.

Secure and pay for all permits and fees necessary for the installation of the work.

Coordinate installation of electrical service with local utility. Provide duct banks, weather-heads, conduit, conductors, meter centers, and other materials and services that may be required.

Coordinate installation of telephone service with local telephone company.

Coordinate installation of cable television service with local cable company

All equipment shall be new and bear the UL label.

The drawings are diagrammatic. The routing of branch circuits and exact locations of outlets are subject to building conditions.

The plans and specifications, supplemented by the codes, shall be considered as jointly governing the installation of the electrical systems. Any work or materials indicated in either plans or specifications shall be considered as being required by both.

Installation of electrical work shall be under the supervision of a competent, licensed electrician.

Following completion of the electrical work, a certificate of approval shall be secured from the local code enforcement authority.

Electrical equipment such as switchboards, panelboards, industrial control panels, meter socket enclosures and motor control centers in other than dwelling units that are likely to require examination, adjustment, servicing or maintenance while energized must be field-marked to warn qualified persons of the danger associated with an arc flash from short circuits or ground faults. The field-marking must be clearly visible to qualified persons before they examine, adjust, service or perform maintenance on the equipment.

Submittals

Refer to architectural requirements of submittals. Submittals are not required unless required by architect. If required submit in electronic format (hard copies will not be accepted) The following sections/equipment for review: Main distribution gear & panelboards, meter center, lighting fixtures, lighting control systems & fire alarm system.

Contractor and/or vendor shall identify or list within the submittals any & all exceptions & deviations taken with the specifications & drawings. Failure to identify exceptions does not alleviate the contrator/vendor from providing the specified features, options or functions required by specifications & documents.

Raceway and Conduit Systems

The types of materials to be employed in the wiring systems are subject to building conditions and governing codes. The contractor is permitted to employ any of the materials listed in the spec or drawings, under conditions permitted by codes, with exceptions as noted in this spec and on the drawings. A complete conduit system with associated couplings, connectors, and fittings will be provided for power distribution system, branch lighting and receptacle circuits, lighting control, and fire alarm system (if applicable). A raceway system shall also be provided for portions of audio, distributed TV, etc., which is routed concealed in walls, or above inaccessible ceilings by providing a 3/4" conduit routed from device box to above accessible ceiling space. Unless stated otherwise, or is not possible due to field conditions, all wiring shall be run concealed and devices shall be mounted flush in walls and ceilings.

Electrical Metallic Tubing (EMT) shall be used for conduits that are concealed in walls, installed above suspended ceilings, installed exposed above 6 feet (utility spaces).

Intermediate Metal Conduits (IMC) shall be used for feeders, conduits installed in wet or hazardous areas, or installed exposed - below 6 feet (utility spaces).

Rigid Steel Conduit (RSC) shall be used for conduits exposed to mechanical damage.

Poly Vinyl Chloride (PVC) shall be used for underground service entrance conduits for power and telephone and for exterior branch circuits or circuits concealed within concrete slabs.

Metal clad (MC cable) is allowed where permitted by NEC.

EMT, IMC, and Rigid conduit shall be hot dipped, galvanized, or electro galvanized steel as manufactured by Allied, General Electric, Republic, Triangle or Wheatland. Associated couplings, connectors and fittings shall be steel as manufactured by Raco or equivalent. PVC conduit shall be Schedule 40, 90' C rated as manufactured by Carlon.

Flexible metal conduit shall be used for termination at equipment subject to motion and vibration. Length shall not exceed six feet.

Minimum conduit size shall be 1/2" for power branch circuits 3/4" for low voltage system's circuits concealed within concrete slabs, & 3/4" for mechanical and plumbing equipment connections.

Surface metal raceway as manufactured by Wiremold (G-3000 and G-4000 series) may be provided where multiple outlet assemblies are required.

Conductors - 600 Volts and Below

Conductors shall be 98% conductivity copper with 600-volt insulation. Use of Aluminum conductors is not allowed without prior approval by Architect and Engineer of Record. Conductors shall be type THHN or THWN. The minimum conductor size shall be #12 AWG for power wiring.

Factory color-coded conductors shall be used to indicate phase and voltagE. A legend explaining the color code shall be installed in each panelboard. Colored electrical tape is permissible if factory color-coded wire is not available. Conductors shall be as manufactured by American Insulated Wire, General Cable, Okonite, Rome or Southwire.

Outlet Boxes

Each fixture, switch, receptacle, and other wiring/system device shall require a galvanized outlet box of appropriate size and depth for its particular location and use. As a minimum:

Non-metallic boxes may be used in wood construction as permitted by NEC 334 with prior approval from Project Architect and Electrical Engineer of Record.

4" square x 1-1/2" deep w/square cut plaster ring:
switches, receptacles, in dry wall partitions.

2-1/2" x 3-3/4" masonry type:
Switches and receptacles in concrete block walls. Use round edge plaster rings only if block wall is to be plastered.

4-11/16" x 2" deep:
Outlets in block walls. Use round edge plaster ring if block wall is to be plastered, otherwise square cut device corners.

4" octagonal x 1-1/2":
Ceiling Outlet Boxes

Cover plate shall be provided for all outlet boxes. Blank plates shall be provided for boxes left for future use.

Associated panel & circuit number shall be permanently identified on front of each device cover plate.

When applicable, outlet boxes shall be spot painted so they can be readily identified as a component of an emergency circuit: Life Safety/Emergency Power (Yellow), Fire Alarm (Red). For projects that have an open "blacked" out-structure, spot paint the inside cover of junction box in lieu of outside cover.

Acceptable manufacturers are National, Appleton, Raco, General Electric and Steel City.

Pull and Junction boxes

For interior work, boxes shall be galvanized sheet metal with screw covers.

For exterior work, boxes shall be galvanized sheet metal with bolted covers and full gaskets to form a rain tight assembly equal to Keystone 19000 and 37900 series. Heavy-duty sidewall junction boxes with fully gasketed, watertight covers, equal to Quazite type PC will be provided for exterior work in graded areas.

Boxes shall be sized according to number of conductors or type of use as outlined in the NEC. Minimum junction box size shall be 4" square and 2-1/2" deep.

Pull and junction boxes will be spot painted similar to outlet boxes. Covers will be permanently marked identifying panel & circuit numbers of circuits contained therein.

Panelboards (NEW)

Panelboards shall be provided to serve loads as required as well as providing a minimum of 10% breaker capacity. Panelboards shall be by Eaton/C-H, G.E., or Square D., Siemen's:

120/208 V, 3 phase 4-wire branch circuit panelboard: Pow-R-Line 1A

Circuit breakers serving HVAC equipment & other cyclical equipment (except 120V fractional horsepower) shall be HACR type.

Bus bars for panelboards shall be copper or aluminum. Circuit breakers shall be selected to accommodate available fault current ratings at associated bus. Provide an accurate, legible directory at each panelboard (new or existing being re-used). Provide breakers indicated on panel schedules as well as any other breakers required by the project. Fill available spares/spaces with 20/1 breakers.

Wiring Devices

Wiring devices, including switches, receptacles, and other miscellaneous devices shall be specification grade by Leviton, Arrow Hart, Hubbell, or Pass and Seymour, and shall be equal to:

Leviton 1221 series - 20A switches
Leviton 89781 series - CATV outlet
Leviton 278 series - 30A, 4-wire, 250v Dryer receptacle
Leviton 5362 series - 20A receptacles
Leviton 6899 series - 20A Ground-Fault receptacle
Dimmers (stand alone) - Per light fixture manufacturer recommendations
Oven Receptacle shall be 250v, 3-wire, black, amperage as required for unit

Generally, switches and general purpose receptacles will be 20A. In other areas device rating will be determined by circuit load. Where a circuit serves a single receptacle, that device will match the over-current protection of the branch circuit.

Floor boxes, where required, will be equal to Steel City 640 series with flush mounted brass or aluminum covers.

Poke thru's, where required, will be equal to Legrand RC4 series with flush mounted brass or aluminum covers. For poke thru's requiring a 3-gang device or larger, device shall be equal to Legrand Evolution series.

Device Plates

Associated panel & circuit number shall be permanently identified on front of each device cover plate.

Device plates shall be provided for all switches, receptacles and miscellaneous devices and shall be as offered by the device manufacturer.

Unless directed otherwise by Architectural plans or owner, device plates shall be white, nylon, standard size and by same manufacturer as device installed.

Safety Switches

A safety switch shall be provided for each piece of equipment, which is not provided with an integral disconnecting means. Switches shall be horsepower rated-general duty (for 208V applications) and heavy duty (for 480V applications), and shall be as manufactured by Eaton/ Cutler-Hammer or equal. Provide service entrance type where utilized in this manner.

Supporting Devices

A system of supporting devices and hangers shall be provided for conduit systems, electrical equipment, fixtures, outlet boxes, junction boxes, etc.

Conduits shall be secured within 3 feet of each outlet box and at intervals not to exceed NEC requirements (10 feet for most metallic products).

Acceptable manufacturers are Erico Products, Inc., Steel City, Minerallac and Rayco Fasteners.

Grounding

The entire system of raceways and equipment shall be grounded in accordance with Article 250 of the NEC.

Distribution panel will be bonded to incoming main water line, building steel, and to a tri-pod grounding rod system. Feeder circuits shall require a separate green grounding conductor to be routed with circuit conductors within the conduit. Branch circuits shall have a separate green grounding conductor from panel ground bus to device.

Ground conductors will be provided for the telephone system - #4 (service entrance terminal boards) and #6 AWG (remote terminal boards). Each shall be terminated at a terminal block "Cooper B-Line SBTGB" on the plywood backboard. Ground conductors shall originate at the panelboard that provides power to the telephone system.

Motor Starters

Motor starters shall be provided for equipment as required (see Mechanical schedules) and will be mounted in motor control centers, NEMA/general purpose enclosures, or NEMA 3R wet location enclosures as dictated by the specific application.

Design shall be NEMA standard; UL listed as manufactured by Eaton/Cutler-Hammer. Each starter shall be equipped with a hand-off-auto selector switch, control power transformer, pilot lights, motor circuit protector, push button station, and auxiliary contacts.

Interior Lighting and Lamps

General lighting shall be non-proprietary & shall be designed to provide desired lighting levels while meeting aesthetic goals and operating cost criteria. Acceptable manufacturers for light fixtures are denoted on lighting fixture schedule. Lamps shall be by Osram/Sylvania, G.E., or Phillips. Drivers shall be by Advance, MagnaTek, Motorola, or Valmont.

Exit signage throughout the facility will be accomplished using LED type, die cast aluminum units placed to comply with NFPA 101 (life safety code).

All fixture colors & finishes shall be approved by owner prior to ordering.

Recessed lighting fixtures installed in rated ceilings must be listed for use in a rated ceiling assemly or fixture must be enclosed as required to maintain ceiling rating.

Recessed lighting fixtures installed in ceilings with insulation must be I.C. rated.

Lighting Control System

Provide wall and ceiling mounted occupancy sensors,dimmers or dual level switching as shown and as required to comply with I.E.C.C..

Telephone/Data and CATV systems

Provide 2-gang box with cover plate for each outlet. Stub a 3/4" conduit from box to space above accessible ceiling. Provide duplex receptacle adjacent to all CATV outlets and connect to nearest available receptacle branch circuit if not indicated otherwise on the drawings. Coordinate exact scope for telephone and CATV with owner. Coordinate installation of telephone service and cable TV services with local utility companies. Install RG6 coax cable from each cable TV outlet to the building cable TV entrance. Telephone cable shall be UTP Category 6. CATV shall be RG6 Coaxial cable.

All low voltage cable shall be rated for use in return air plenums.

GENERAL ELECTRICAL NOTES

1. At completion of work, electrical system shall be in complete working order. Perform testing in presence of owner's representative. Furnish instruments, devices and equipment necessary to perform tests. All equipment and devices shall be UL Listed. Installation shall conform to UL standards where applicable.
2. The electrical drawings are diagrammatic only and should not used to measured or scale the installation requirements. The routing of branch circuits and exact locations of devices are subject to building and site specific conditions.
3. Contractor shall maintain 2 sets of red-lined "As-Built" documents at the site that reflects the true installed conditions of the project.
4. If required by drawings, coordinate installation of new electrical service with electric utility company. Provide metercenters, weatherheads, meter bases, and other items as required.
5. Verify electrical requirements for all equipment prior to rough in. Provide circuits and fuses sized in accordance with manufacturers' recommendations.
6. Maintain code required working clearance at all electrical panels, disconnect switches and starters. There shall be no equipment, piping or duct work installed in or above the working clearances.
7. Install electrical boxes located on opposite sides of rated walls such that they are separated by a horizontal distance of 24 inches minimum. Where the 24 inch horizontal distance separation cannot be maintained due to receptacle spacing requirements, provided UL listed non-metallic boxes manufactured by Carlon Electrical products made of polyvinyl chloride and bearing a 2 hour rating. Install fire-stop inturnescent electrical box gasket as manufactured as an intumescent thermoplastic device for use as a fire stop in electrical boxes. Must easily install inside the back of an electrical box, seal off the opening to prevent the spread of flames, include a pre-die cut ground screw opening to ensure metal to metal ground accessibility for future access. Volume of fire stop gasket shall not exceed 3.0 cubic inches which must include the void created if gasket will not sit flush to back of the junction box due to the raised nipple for grounding location. Device must be listed for use with plastic or metal faceplates in both 1 hr. and 2 hr. U-300, U-400 and U-411 wall assemblies. Gaskets must be designed to fit easily into the electrical boxes with out effecting NEC Box ratings and provided with an adhesive strip on the device to hold the gasket in place in back of electrical box. Gasket must have passed ASTM-814-10 testing for rated enclosures by an accredited NRTL. As manufactured by FireBlok or equal.
8. Provide disconnect switch for any hardwired equipment not supplied with disconnecting means.
9. See mechanical plans for exact locations and control requirements for mechanical equipment.
10. Connect exit lights and emergency lights with integral battery in exterior passages/stairs to local lighting circuit ahead of photocells switch such that they are constantly 'on' and will automatically convert to battery operation upon loss of normal power.
11. For projects requiring a fire alarm system, no wiring is shown. Locate devices as indicated and connect to perform as described in fire alarm system specification. The fire alarm contractor is required to submit a complete set of fire alarm drawings to the Fire Marshall and/or building Codes department showing all device locations, interconnection wiring, battery calculations, etc. Each set of plans to be signed dated and sealed by a registered professional engineer of the State.
12. All HVAC air handling units (new and existing) 2000cfm and larger and/or serve the building egress path shall be provided with duct mounted smoke detectors, If detectors are existing, contractor shall test and inspect for proper operation and replace if required. Coordinate installation with division 15 prior to rough-in. For projects requiring duct detectors where no fire alarm system is present, contractor shall provide 120V. standalone duct detectors. Detectors shall be equal to Model #D4-120 with ART52-A05 Remote Test/Reset Switch with Sounder/Flasher Unit. Locate remote switch as directed by owner or tenant.
13. Smoke Detectors shall not be installed within 3 ft of the tip of ceiling fan blades or HVAC supply diffusers
14. All receptacles on dedicated circuits shall be rated no less than circuit overcurrent device.
15. Fire stop around all penetrations of rated floors, ceilings, and walls. Refer to architectural drawings for additional details.
16. All light fixtures shall be as specified or as directed by the owner/architect. All fixtures that do not have a fixture type are to be chosen by the owner through an allowance. Electrical contractor shall provide outlet boxes as required.
17. Electrical contractor to confirm exact mounted method and location for all light fixtures prior to beginning rough-in and shall provide all necessary hardware.
18. Where multiple switches are shown mounted together, provide under a single faceplate.
19. The entire electrical installation shall be in compliance with any local ordinance in addition to the national electrical code being enforced. The electrical contractor shall obtain a copy of any ordinances and shall adjust the installation shown on these drawings as necessary to comply with the code that is the most stringent (local code ordinance or National Electrical Code -NEC).
20. AutoCad files for any portion of the electrical drawings may be obtained at a cost of $200.per cad file. This cost is intended to cover the man-hours only involved with preparing & delivering the Autocad files.

ABBREVIATIONS

ABBREVIATION	MEANING
AFF	ABOVE FINISHED FLOOR
GFI	GROUND FAULT INTERRUPTER
WP	WEATHER PROOF
TV	TELEVISION CONNECTION - COORDINATE MOUNTING HEIGHT W/ARCHITECT
FPMR	FUSE PER MANUFACTURERS RECOMMENDATIONS
FV	FIELD VERIFY, LOCATE PER OWNER
E	EXISTING TO REMAIN
ER	EXISTING TO BE RELOCATED
R	EXISTING RELOCATED
EX	EXISTING TO BE REMOVED
U.O.N.	UNLESS OTHERWISE NOTED

Fire Alarm systems (new)

Fire alarm system shall be non-proprietary by Silent Knight, Fire-Lite, or approved equal. Proprietary systems will not be accepted. System shall include an integral annunciator, digital communicator, and shall be an addressable system with Class B wiring. Provide automatic notification to a 24 hour monitoring station for any alarm or trouble conditions via GSM and/or cellular radio. Honeywell IPGSM-4G, Tel Guard TG-7FS or approval equal.

For indoor located FACP's provide a standard Fire Alarm System smoke detector above the FACP.

Provide an addressable fire alarm system relay for input to each building music/paging system, each building sound system and for T.V. audio output to auto-mute these systems on any fire alarm system alarm condition. Mount relays as directed by sound system installer. connect relays to nearest local fire alarm system device alarm circuit.

Operation of any manual or automatic fire alarm initiation device shall:
A. Activate all alarm notification devices.
B. Automatically notify monitoring station of "Fire".

Any circuit open, short or ground shall sound "Trouble" alarm at fire alarm control panel.

Operation of any sprinkler tamper switch shall sound "Supervisory" alarm at fire alarm control panel.

For each HVAC unit, including those that do no have a duct mounted smoke detector, provide a set of dry contacts to the unit to allow shunting of unit upon activation of any fire alarm initiating device. Activation of a duct mounted smoke detector shall cause a building supervisory as well as shutdown of the HVAC unit.

Provide a remote test/reset switch with sounder/flasher unit for each duct mounted smoke detector mounted on wall or ceiling near detector as directed by owner/tenant.

Fire alarm system control panel shall be connected to a dedicated 120 volt power circuit and include an integral battery system for emergency power.

Provide magnetic door holder complete with matching door plate on doors located in building smoke walls. Door holders shall be wall or floor mounted as required by door configuration. Voltage shall be as required by fire alarm system. Holders shall be wired & connected to fire alarm system & shall release & close doors upon any building fire alarm condition. Provide ceiling mounted smoke detectors on both sides of the doors mounted with 5'-0" of doors.

Provide fire alarm system interconnection to all building egress doors that are electrically locked via building security system. Locking mechanism shall be deactivated & doors shall be unlocked & allowed to close any upon building fire alarm condition.

The fire alarm system supplier shall prepare engineered plans, stamped by a registered professional Engineer in the State. Submit product data and stamped plans to local and state codes. The submittal shall include (but not limited to) the following:

1. Fire alarm equipment and devices (and associated Legend of symbols)
2. Fire alarm system wiring diagrams, interconnections, and general product information
3. Battery calculations

AutoCAD files may be obtained for use in producing the above information at a cost of $200.00 per cad file. This cost is intended to cover man-hours only involved with preparing & delivering the AutoCAD files.

Provide devices in accordance with the approved plans submitted to state and local codes by the Fire Alarm System Engineer or Record.

Fire alarm system shall utilize Class B wiring and include an integral battery capable of operating system for 24 hours in standby and 5 minutes in alarm.

Fire alarm equipment shall meet all requirements of ADA.

Provide non-coded, non-break glass, dual action type, manual fire alarm stations in red, semi-flush mounted enclosure. Provide weatherproof covers for devices located in breezeways or on the exterior of the building..

Provide photoelectric spot type smoke detectors.

Provide surface mounted, weatherproof style horn/light device with integral xenon strobe with tri-level multi-candela rating.

Install ceiling mounted smoke detectors at locations indicated on approved fire alarm plans. Smoke detectors shall be installed in accordance with their rated coverage.

Fire alarm signaling devices shall, when wall mounted, be located 6'-8" above floor.

Fire alarm manual pull stations shall be mounted with top at 4'-0" above floor.

Final connections at control panel and testing of complete system shall be by a factory-trained technician. Test entire system including all devices and features.

Refer to civil and mechanical plans for quantity and location of monitored items such as P.I.V., flow and tamper switches, underground gate valves, and duct mounted smoke detectors. Provide power for electronic supervision of these devices as needed.

Spacing of visible appliances shall be in accordance with Figure 7.5.4.1.1 and either Table 7.5.4.1.1(a) or Table 7.5.4.1.1(b) of NFPA 72. More than (2) visible notification appliances in the same room or adjacent space within the field of view must flash in synchronization.

Audible and visual appliances shall be located and mounted per NFPA 72 [72-7.4.6.1 Visual/72-7.4.6.2 Audible].

Strobe Candela Ratings and Spacing shall be as follows:

Area:	Rating:
20x20 or less	1 @ 15cd
30x30 or less	1 @ 30cd
40x40 or less	1 @ 60cd
50x50 or less	2 @ 60cd on opposite walls
70x70 or less	2 @ 110cd on opposite walls
80x80 or less	4 @ 60cd one on each wall
100x100 or less	4 @ 110cd one on each wall
Hallways	1 @ 75cd no more than 50' apart

Audible Device D/B ratings shall be as follows:
85 D/B or 15 D/B above ambient conditions.

Provide supervisory signal - initiating devices as applicable according to NFPA 72 5.13.

SHEET INDEX

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REVISIONS:

DELTA	DESCRIPTION	DATE

DATE OF ISSUE:	09.12.2022
MA PROJECT NO:	0336-22
PROJECT PHASE:	CD
DRAWN BY:	DF&H SERVICES

ELECTRICAL SPECIFICATIONS

E-0.1

EQUIPMENT SCHEDULE

ID	DESCRIPTION	ELECTRICAL						CONNECTION				GAS	REMARKS	ID
		QTY	VOLT	PH	AMP	HP	KW	MOCP	DIREC	PLUG	TYPE			
K-1	H-65 HOT PLATE	1	208	1	21	-	-	30	X	-	-	-	NOTE 1	K-1
K-2	536CHSF ELECTRIC GRIDDLE	1	208	3	25	-	-	30	X	-	-	-	NOTE 1	K-2
K-3	FPRE214 ELECTRIC GRIDDLE	1	208	3	39	-	-	50	X	-	-	-	NOTE 1	K-3
K-4	2-ASC-2E STACKED OVEN	1	208	3	14	-	-	20	X	-	-	-	NOTE 1	K-4
K-5	1000-TH-II COOK HOLD OVEN	1	120	1	17	-	-	30	-	X	-	-	-	K-5
K-6	VHFA18 HEATED CABINET	1	120	1	-	-	2	30	-	X	-	-	-	K-6
K-7	DP2 PIZZA BAKE OVEN	1	208	3	14	-	-	20	-	X	NEMA 6-30P	-	-	K-7
K-8	HOOD CONTROL	1	120	1	2					X			NOTE 1	K-8
K-12	CRMR48-W	1	115	1	2.2	-	-	20	-	X	NEMA 5-20R	-	-	K-12
K-13	CRMR48-12	1	115	1	2.2	-	-	20	-	X	NEMA 5-20R	-	-	K-13
K-14	VMS2 WARMING DRAWERS	1	120	1	8	-	-	20	-	X	NEMA 5-20R	-	-	K-14
K-15	HMR 104	1	208	3	20	-	-	20	-	X	NEMA L21-20R	-	-	K-15
K-16	SANDWHICH PREP	1	115	1	5.4	-	-	20	-	X	NEMA 5-20R	-	-	K-16
K-17	DISHWASHER	1	208	3	60	-	-	60	X	-	DISC. 60/3/3R	-	-	K-17
K-18	ED2-72 FOOD WARMER	1	208	3	20	-	-	20	-	-	-	-	NOTE 1	K-18
K-19	FBD 563 ICEE	1	245	1	20	-	-	20	-	X	NEMA L6-20R	-		K-19
K-20	LANCER FS 30	1	120	1	8	-	-	20	-	X	NEMA 5-20R	-	-	K-20
K-21	ICE MACHINE	1	208	3	4	-	-	20	X	-	-	-	NOTE 1	K-21
K-22	EJ1 JETSPRAY	1	115	1	8	-	-	20	-	X	NEMA 5-20R	-	-	K-22
K-23	NEMCO 6470	1	120	1	14.5	-	-	20	-	X	NEMA 5-20R	-	-	K-23
K-24	COFFEE BREWER	1	120	1	18.1	-	-	30	-	X	NEMA 5-30R	-	-	K-24
K-25	TEA BREWER	1	120	1	14	-	-	20	-	X	NEMA 5-20R	-	-	K-25
K-26	CAPPICHINO	1	120	1	15	-	-	20	-	X	NEMA 5-20R	-	-	K-26
K-27	PIZZA DOUGH PRESS	1	120	1	9.8	-	-	20	-	X	NEMA 5-20R	-	-	K-27
K-28	LPRSS4 OPEN AIR	1	120	1	16	-	-	20	-	X	NEMA 5-20R	-	-	K-28
K-29	ECSS405C OPEN AIR	1	120	1	15	-	-	20	-	X	NEMA 5-20R	-	-	K-29
K-30	WALK IN COOLER	4	-	-	-	-	-	-	-	-	-	-	NOTE 1	K-30
K-31	WALK IN FREEZER	1											NOTE 1	K-31
K-32	KOOL AID	1	115	1	3.1			15		X	NEMA 5-15P			K-32
K-33	ICE CREAM BOX	1	120	1	2	-	-	-	-	-	NEMA 5-20R	-	-	K-33

NOTES

1. CONTRACTOR TO VERIFY ELECTRICAL CONNECTION REQUIRMENETS WITH EQUIPMENT PURCHASED PRIOR TO ORDERING

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION	MTG. HT.
	CONDUIT CONCEALED	
	HOMERUN CONDUIT (QUANTITY OF ARROWS DETERMINES NUMBER OF CIRCUITS)	
	EXPOSED CONDUIT	
	SURFACE OR RECESSED LED FIXTURE (TYPE DETERMINES MOUNTING) OTHER SYMBOLS MAYBE USED & ARE IDENTIFIED BY THE FIXTURE TAG ADJACENT TO FIXTURE	
	SURFACE OR RECESSED LED FIXTURE WITH BATTERY PACK (TYPE DETERMINES MOUNTING) OTHER SYMBOLS MAYBE USED & ARE IDENTIFIED BY THE FIXTURE TAG ADJACENT TO FIXT.	
	WALL MOUNTED LIGHT OTHER SYMBOLS MAYBE USED & ARE IDENTIFIED BY THE FIXTURE TAG ADJACENT TO FIXT.	
	EXIT LIGHT WITH INTEGRAL BATTERY BACK-UP	
	BATTERY PACK FIXTURE	
	COMBINATION EMERGENCY LIGHT AND EXIT SIGN	
(#)	NOTE REFERENCE - REFER TO NOTE INDICATED	
$	SINGLE POLE SWITCH - IVORY TOGGLE	46" AFF
$3	THREE WAY SWITCH - IVORY TOGGLE	46" AFF
$OC	WALL MOUNTED OCCUPANCY SENSOR	46" AFF
$OC	ACUITY - WSX-PDT-D-VLP-WH - OCCUPANCY SENSOR	46" AFF
$D	ACUITY - NPODM-DX-WH - DIMMER	46" AFF
(DS)	ACUITY NCM-PDT-10-ADCX -AUTO DIMMING DAYLIGHT SENSOR	CEILING
PP16	ACUITY - NPP16-D - POWER PACK	CEILING
$OC2	WALL MOUNTED DUAL RELAY OCCUPANCY SENSOR WATTSTOPPER DSW-302 OR EQUAL	46" AFF
$D	WALL MOUNTED SLIDE DIMMER (2000 WATT)	46" AFF
$DOC	WALL MOUNTED DIMMER/OCCUPANCY SENSOR COMBO COORDINATE MODEL WITH LAMP TYPE	46" AFF
ST	SINGLE POLE TOGGLE MOTOR DISCONNECT WITH THERMAL OVERLOAD	
$$	DUAL LEVEL SWITCHING-50% OF LAMPS IN EACH FIXTURE ON OPPOSING SWITCHES	46" AFF
D	J-BOX FOR BASE FEED TO PROVIDE PHONE/ DATA TO EACH CUBICAL. CONTRACTOR TO COORDINATE EXACT LOCATIONS AND REQUIREMENTS WITH TENANT.	
	TELEPHONE OUTLET AND PLATE	18" AFF
K	DATA OUTLET AND PLATE	18" AFF
	FLOOR MOUNTED TELEPHONE OUTLET	FLOOR
	FLOOR MOUNTED DATA OUTLET	FLOOR
	FLOOR MOUNTED COMBINATION DATA/TELEPHONE OUTLET	FLOOR
	COMBINATION DATA/TELEPHONE OUTLET AND PLATE	18" AFF
FACP	FIRE ALARM CONTROL PANEL	
F	FIRE ALARM MANUAL PULL STATION	46" AFF
F	FIRE ALARM VISUAL STATION - LIGHT ONLY SEE FIRE ALARM SPEC. FOR CANDELA RATING	80" AFF
F	FIRE ALARM AUDIBLE AND VISUAL (COMBO) SEE FIRE ALARM SPEC. FOR db RATING	80" AFF
F	FIRE ALARM HORN DEVICE SEE FIRE ALARM SPEC. FOR db RATING	80" AFF
D	SMOKE DETECTOR	CEILING
DH	FIRE ALARM SYSTEM MAGNETIC DOOR HOLDER	WALL
DS	DUCT SMOKE DETECTOR - SUPPLY (PROVIDE BY DIV. 16, INSTALL BY DIV. 15)	CEILING
DR	DUCT SMOKE DETECTOR - RETURN (PROVIDE BY DIV. 16, INSTALL BY DIV. 15)	CEILING
FS	SPRINKLR SYSTEM FLOW SWITCH	
TS	RETURNSPRINKLER SYSTEM TAMPER SWITCH	
	120V. ISOLATED GROUND RECEPTACLE	18" AFF
	120V. DUPLEX RECEPTACLE	18" AFF
	120V. DUPLEX RECEPTACLE - SPECIAL MOUNTING HEIGHT	ABOVE COUNTER
	120V. QUADPLEX RECEPTACLE	18" AFF
	120V. QUADPLEX RECEPTACLE - SPECIAL MOUNTING HEIGHT	ABOVE COUNTER
	250V. 2-POLE SINGLE RECEPTACLE, AMPERAGE AS NOTED	18" AFF
	120V. DUPLEX GFI RECEPTACLE	18" AFF
	120V. DUPLEX GFI RECEPTACLE - SPECIAL MOUNTING HEIGHT	ABOVE COUNTER
	120V. FLOOR MOUNTED DUPLEX RECEPTACLE	FLOOR
J	J-BOX FOR BASE FEED TO PROVIDE POWER TO EACH CUBICAL. CONTRACTOR TO COORDINATE EXACT LOCATIONS AND REQUIREMENTS WITH TENANT.	
J	JUNCTION BOX	
	FUSED DISCONNECT SPECIFY AMP/POLE	
	NON-FUSED DISCONNECT SPECIFY AMP/POLE	
	COMBINATION STARTER - SPECIFY NEMA SIZE	
OS	OCCUPANCY SENSOR - LEVITON MUL-TECH OSC20-MOW	CEILING
TV	TELEVISION CONNECTION BOX	COORDINATE MOUNTING HEIGHT W/ARCHITECT
BPI	BASE POWER FEED - WALL MOUNTED JUNCTION BOX FOR POWER & VOICE/DATA CONNECTION TO PRE-WIRED FURNITURE. INCLUDE CONNECTION WHIPS AS REQUIRED	

BRANCH CIRCUIT CONDUCTOR SCHEDULE

CONDUCTORS SHALL BE COPPER - ALUMINUM CONDUCTORS MAY ONLY BE USED WITH PRIOR WRITTEN APPROVAL BY ENGINEER OF RECORD. CONDUCTORS / CONDUITS SHALL BE SIZED ACCORDING TO THE FOLLOWING CHART UNLESS OTHERWISE NOTED.

CIRCUIT BREAKER	CU PHASE WIRE (AWG)	AL PHASE WIRE (AWG)	CU GROUND WIRE (AWG)	AL GROUND WIRE (AWG)	CU CONDUIT SIZE	AL CONDUIT SIZE
15	#12	-	#12	-	3/4"	3/4"
20	#12	-	#12	-	3/4"	3/4"
30	#10	-	#10	-	3/4"	3/4"
40	#8	-	#10	-	1"	1"
50	#8	-	#10	-	1"	1"
60	#6	#4	#10	#8	1"	1 1/4"
70	#6	#4	#8	#6	1"	1 1/4"
80	#4	#2	#8	#6	1 1/4"	1 1/4"
90	#4	#2	#8	#6	1 1/4"	1 1/4"
100	#3	#1	#8	#6	1 1/4"	1 1/2"
125	#1	#2/0	#6	#4	1 1/2"	2"
150	#1/0	#3/0	#6	#4	2"	2"
175	#2/0	#4/0	#6	#4	2"	2 1/2"
200	#3/0	#250	#6	#4	2"	2 1/2"
225	#4/0	#300	#4	#2	2 1/2"	3"
250	#250	#400	#4	#2	3"	3"
400	#500	#750	#3	#1	3 1/2"	4"
500	(2)#250	(2)#350	#2	#1/0	3"	3"

NOTES:

1. NEUTRAL CONDUCTOR (IF REQUIRED) SHALL BE THE SAME SIZE AS PHASE CONDUCTORS.
2. ALL LIGHTING CIRCUITS SHALL UTILIZE #10 AWG WIRE FOR VOLTAGE DROPS.
3. ALL HVAC OR OTHER CYCLICAL EQUIPMENT SHALL UTILIZE HACR TYPE CIRCUIT BREAKERS.
4. CONTRACTOR TO PROVIDE QUANTITY OF CONDUCTORS AS NECESSARY TO POWER LOADS.
5. CONDUIT SIZES BASES ON FOUR CONDUCTORS MAXIMUM. CONTRACTOR SHALL FOLLOW NEC GUIDELINES FOR DERATING AMPACITIES AND CONDUIT SIZES FOR ALL COMBINED CIRCUITS/HOMERUNS.
6. FOR ANY SIZE BREAKER NOT SHOWN ABOVE (EXAMPLE 25), USE THE CONDUIT AND WIRE SIZES FOR THE NEXT HIGHEST BREAKER INDICATED (EXAMPLE 30).

COMcheck Software Version 4.1.5.5

Interior Lighting Compliance Certificate

Project Information

Energy Code: 2018 IECC
Project Title:
Project Type: New Construction

Construction Site: 1801 West End Avenue, Nashville, TN 37203
Owner/Agent:
Designer/Contractor:

Additional Efficiency Package(s)

Credits: 1.0 Required 1.0 Proposed
Reduced Lighting Power, 1.0 credit

Allowed Interior Lighting Power

A Area Category	B Floor Area (ft2)	C Allowed Watts / ft2	D Allowed Watts (B X C)
1-Office	1490	0.71	1059
		Total Allowed Watts =	1059

Proposed Interior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
1-Office				
LED 1: F1&F1E: DOWNLIGHT: Other:	1	37	15	555
LED 2: F2: PENDANT: Other:	1	3	30	90
LED 3: F3: Other:	1	2	20	40
			Total Proposed Watts =	685

Interior Lighting PASSES: Design 35% better than code

Interior Lighting Compliance Statement

Compliance Statement: The proposed interior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2018 IECC requirements in COMcheck Version 4.1.5.5 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

CHRIS BUCKNER — Name - Title
Signature
9.12.22 — Date

Project Title:
Report date: 09/09/22
Data filename: Z:\Shared\2022 Project Folder\22.436 1801 West End Tenant Lounge - MEP - DWC\Electrical\Untitled.cck
Page 1 of 6

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CHRISTOPHER E. BUCKNER — REGISTERED ENGINEER — No. 104177 — STATE OF TENNESSEE — 9/12/22

REVISIONS:

DELTA	DESCRIPTION	DATE

DATE OF ISSUE: 09.12.2022
MA PROJECT NO: 0336-22
PROJECT PHASE: CD
DRAWN BY: DF&H SERVICES

ELECTRICAL LEGEND

E-0.2

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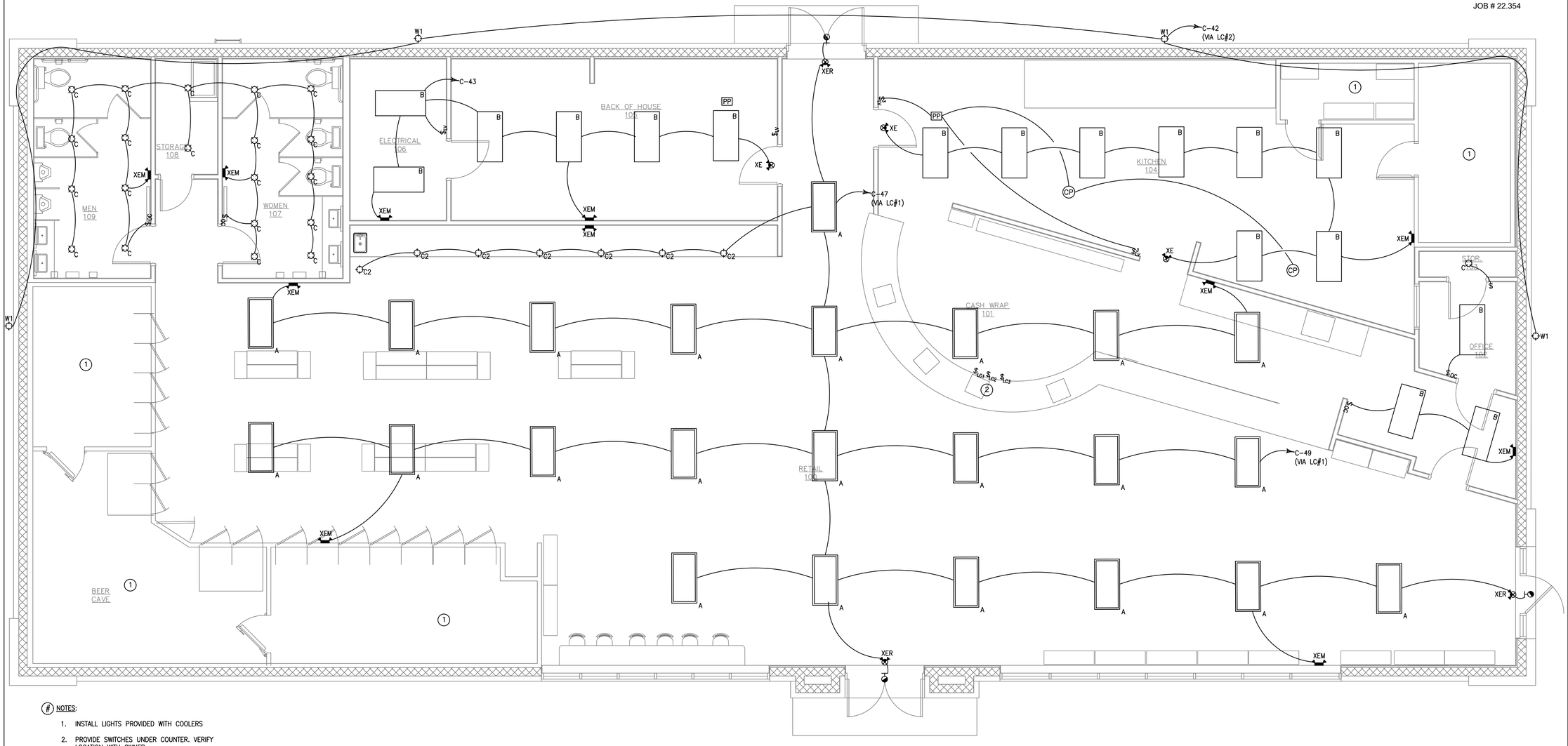
(#) NOTES:

1. INSTALL LIGHTS PROVIDED WITH COOLERS
2. PROVIDE SWITCHES UNDER COUNTER. VERIFY LOCATION WITH OWNER. SEE E3.1 FOR DETAILS.



(#) NOTES:

1. INSTALL LIGHTS PROVIDED WITH COOLERS
2. PROVIDE SWITCHES UNDER COUNTER. VERIFY LOCATION WITH OWNER

LIGHTING FIXTURE SCHEDULE

TYPE	MANUF.	MODEL	ELECTRICAL		LAMPS				MOUNTING		COMMENTS
			WATTS/FIXT.	VOLT	COLOR(K)	DELIVERED LUMENS(LM)	TYPE	DIMMABLE	TYPE	LOCATION	
A	NICOR	HBL-20-110W-UNV-50K	110	120	5000	14400	LED	NO	SURFACE	INTERIOR	HIGH BAY LIGHT FIXTURE
B	LITHONIA	EPANL 2X4 4000LM 80CRI 2T MVOLT	39	120	3500	4000	LED	NO	SURFACE	INTERIOR	2X4 LED FLAT PANEL
C	LITHOINIA	LDN6 35/15 LQ6AR LSS MVOLT GZ10	21	120	3500	1500	LED	NO	RECESSED	INTERIOR	6" LED RECESSED DOWNLIGHT
C1	OWNER SELECTED CONTRACTOR PROVIDED		50	120	TBD	TBD	LED	NO	TBD	EXTERIOR	CANOPY LIGHT FIXTURE
C2	LITHONIA	LDN6 35/15 LQ6AR LSS MVOLT GZ10 FCM	21	120	3500	1500	LED	NO	PENDANT	INTERIOR	6" LED CYLINDER DOWNLGIHT
S1	SPIRING LIGHTING	ALM 195 T3 G2 5K	300	120	5000	39300	LED	NO	POLE	EXTERIOR	LED SITE LIGHT
W1	OWNER SELECTED CONTRACTOR PROVIDED		15	120	TBD	TBD	LED	NO	WALL	EXTERIOR	EXTERIOR LED WALL LIGHT
W2	OWNER SELECTED CONTRACTOR PROVIDED		15	120	TBD	TBD	LED	NO	WALL	EXTERIOR	DECORATIVEE
W3	OWNER SELECTED CONTRACTOR PROVIDED		15	120	TBD	TBD	LED	NO	WALL	EXTERIOR	FLOOD LIGHT FIXTURE
XE	LITHONIA	LHQM LED R HO SD	-	UNIV	-	-	UNIV	-	UNIV	INTERIOR	COMBO EXIT/EGRESS LIGHT WITH BATTERY BACKUP
XEM	LITHONIA	EM6L UVOLT LTP	-	UNIV	-	-	UNIV	-	UNIV	INTERIOR	EGRESS LIGHT WITH BATTERY BACKUP
XER	LITHONIA	LHQM LED R HO SD ELA T QWP L0309 SD	-	UNIV	-	-	UNIV	-	UNIV	EXTERIOR	COMBO EXIT/EGRESS LIGHT WITH BATTERY BACKUP AND REMOTE OUTDOOR HEAD

ELECTRICAL LIGHTING PLAN

SCALE: 1/4" = 1'-0"

PLAN NORTH

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REVISIONS:

DELTA	DESCRIPTION	DATE

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ELECTRICAL LIGHTING PLAN

E-2.1

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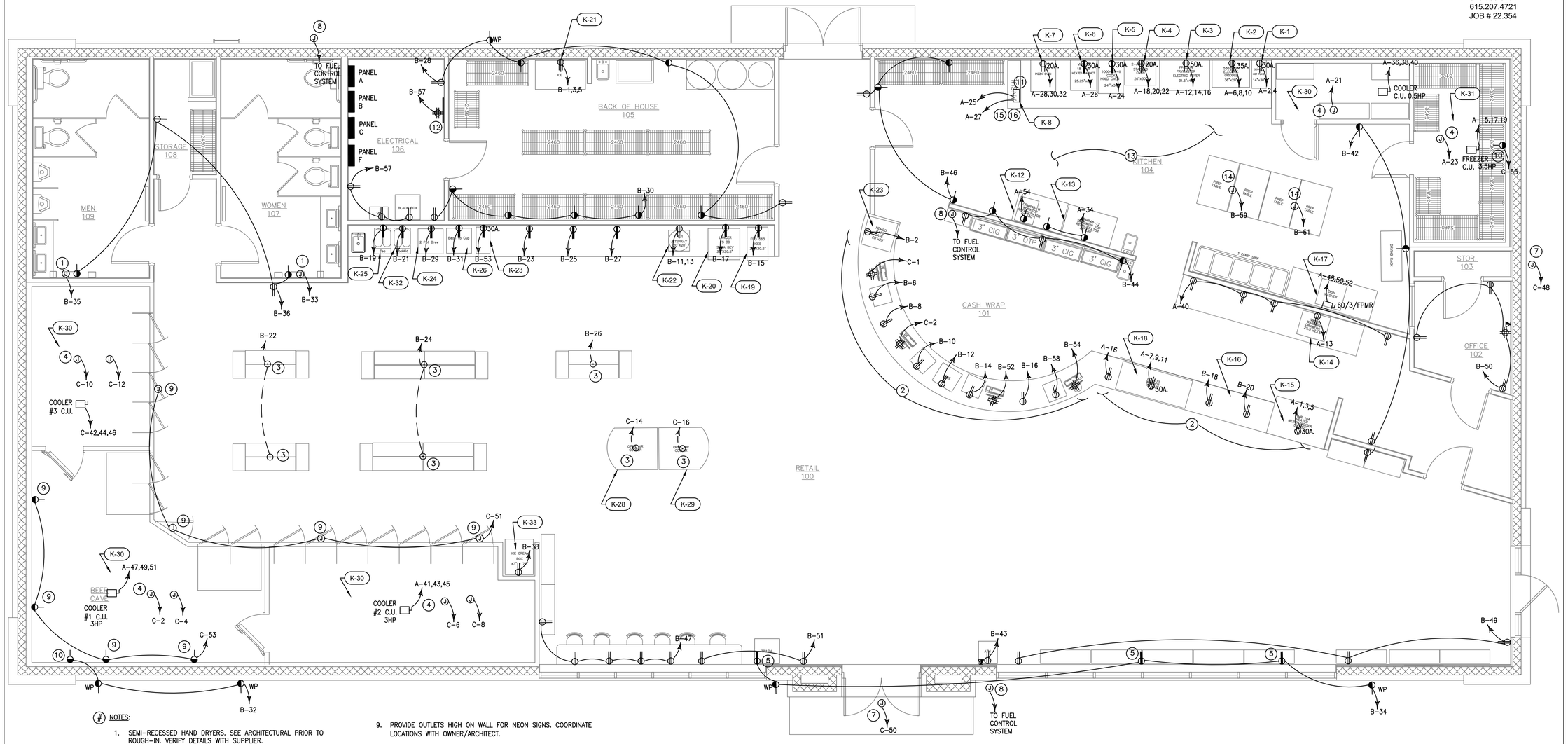

ELECTRICAL POWER PLAN

SCALE: 1/4" = 1'-0"

PLAN NORTH

(#) NOTES:

1. SEMI-RECESSED HAND DRYERS. SEE ARCHITECTURAL PRIOR TO ROUGH-IN. VERIFY DETAILS WITH SUPPLIER.
2. OUTLETS MOUNTED IN CABINETS. SEE ARCHITECTURAL DRAWINGS.
3. VERIFY EXACT LOCATION WITH ARCHITECT.
4. PROVIDE 120V,20A CIRCUIT(S) FOR COOLER LIGHTS,DOOR LIGHTS, EVAPORATOR FANS AND DOOR HEATERS. COORDINATE ALL DETAILS WITH EQUIPMENT INSTALLER.
5. INSTALL ABOVE WINDOW TO MEET NEC REQUIREMENTS FOR SHOW WINDOWS.
6. PROVIDE POWER TO TV AND OWNER PROVIDED LIGHT. PROVIDE DATA ROUGH-IN. SEE ARCHITECTURAL FOR EXACT LOCATIONS AND HEIGHTS.
7. COORDINATE BUILDING SIGN LOCATION AND ALL DETAILS WITH OWNER AND SUPPLIER,
8. PROVIDE A FLUSH OUTLET BOX WITH 3/4"C. TO FUEL CONTROL SYSTEM FOR FUEL SYSTEM E-STOP DEVICES BY PETROLEUM CONTRACTOR, VERIFY LOCATION WITH OWNER AND LOCAL FIRE OFFICIAL.
9. PROVIDE OUTLETS HIGH ON WALL FOR NEON SIGNS. COORDINATE LOCATIONS WITH OWNER/ARCHITECT.
10. PROVIDE OUTLET FOR HEAT TAPE. COORDINATE DETAILS WITH REFRIGERATION CONTRACTOR.
11. PRE-WIRED HOOD CONTROL PANEL. COORDINATE DETAILS WITH SUPPLIER
12. TELEPHONE BOARD: 3/4"X2'X6" PLYWOOD
13. VERIFY EXACT ELECTRICAL REQUIREMENTS WITH KITCHEN EQUIPMENT SUPPLIER PRIOR TO ROUGH-IN OR ORDERING GEAR.
14. PROVIDE POWER FROM CEILING. COORDINATE DETAILS WITH OWNER.
15. CONNECTION FOR HOOD CONTROL PANEL AND FIRE SUPPRESSION SYSTEM. PROVIDE ALL NECESSARY ELECTRICAL COMPONENTS, CIRCUITS,ETC. AS INDICATED ON DIV 15 DRAWINGS AND HOOD MANUFACTURERS DRAWINGS.
16. SEE DIV.15 DRAWINGS AND HOOD MANUFACTURERS DRAWINGS FOR HOOD REQUIREMENTS. SUPPLY/EXHAUST FANS, FIRE SUPPRESSION SYSTEM AND ALL HOOD COMPONENTS. PROVIDE CIRCUITS MATERIALS AND INTERLOCKS REQUIRED BY ELECTRICAL AS INDICATED ON DRAWINGS. COORDINATE FINAL SCOPE WITH OWNER, GENERAL CONTRACTOR AND DIV.15 PRIOR TO ROUGH-IN.

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9/12/22

REVISIONS:

DELTA	DESCRIPTION	DATE

DATE OF ISSUE:	09.12.2022
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ELECTRICAL POWER PLAN

E-2.2

D F + H
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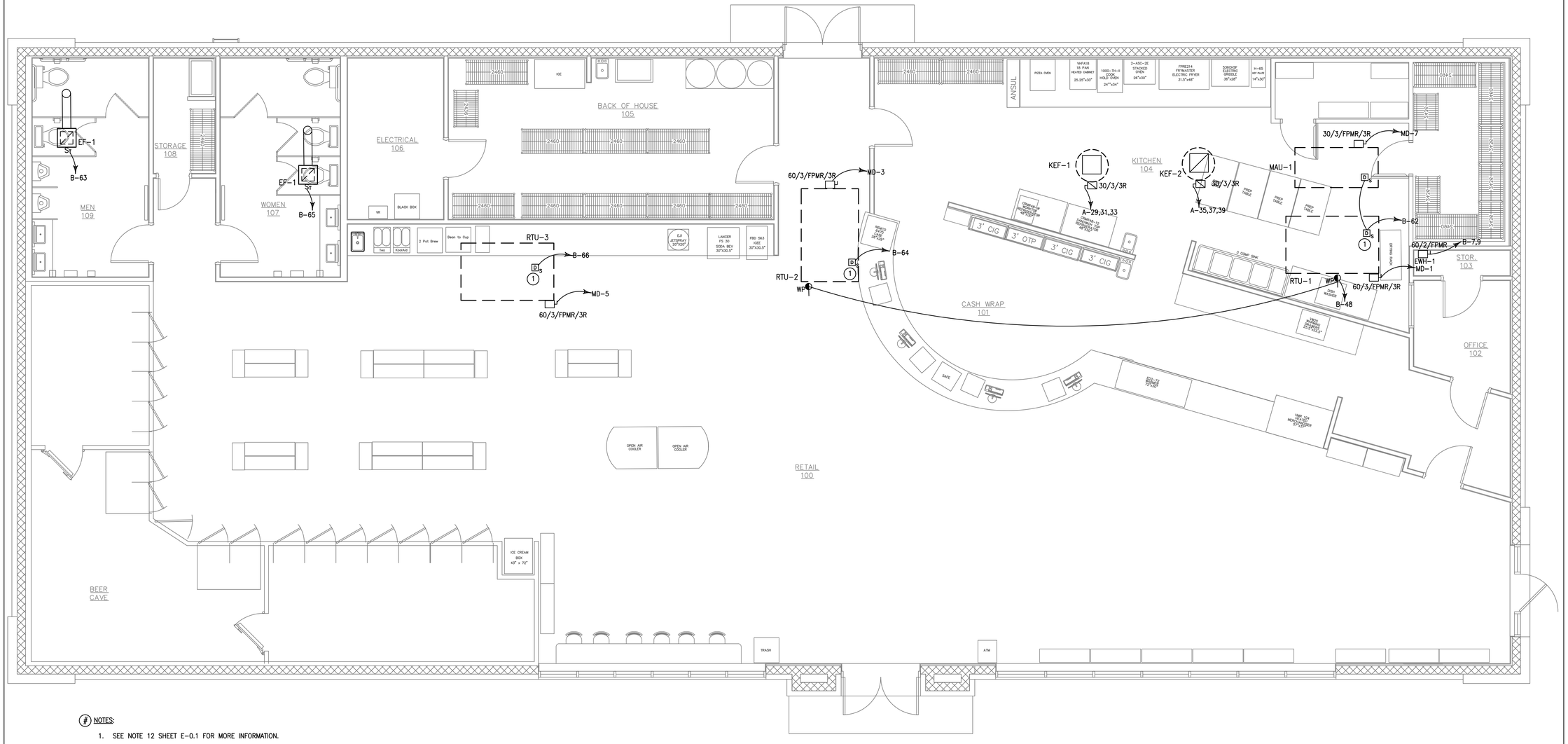

NOTES:

1. SEE NOTE 12 SHEET E-0.1 FOR MORE INFORMATION.

HVAC POWER PLAN

SCALE: 1/4" = 1'-0"

PLAN NORTH

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ELECTRICAL HVAC POWER PLAN

E-2.3

COPPER FEEDER SCHEDULE (AWG)

NUMBER	CONDUCTORS THHW	SERVICE CONDUCTOR GROUND (AWG)	CONDUIT	CONDUIT WITHOUT NEUTRAL
THREE PHASE FEEDERS				
30	4#10, 1#10G	X	3/4"	1/2"
40	4#8, 1#10G	X	1"	1"
60	4#6, 1#10G	8	1-1/4"	1"
80	4#4, 1#8G	8	1-1/4"	1-1/4"
100	4#3, 1#8G	8	1-1/4"	1-1/4"
115	4#2, 1#6G	6	1-1/2"	1-1/4"
125	#4#1, 1#6G	6	2"	1 1/2"
150	4#1/0, 1#6G	6	2"	1 1/2"
175	4#2/0, 1#6G	4	2"	2"
200	4#3/0, 1#6G	4	2-1/2"	2"
225	4#4/0, 1#4G	2	2-1/2"	2"
250	4#250MCM, 1#4G	2	3"	2-1/2"
285	4#300MCM, 1#4G	2	3"	2-1/2"
300	4#350MCM, 1#4G	2	3"	3"
350	4#400MCM, 1#3G	1/0	3"	3"
400	4#500MCM, 1#3G	1/0	3 1/2"	3"
420	4#600MCM, 1#2G	1/0	4"	3 1/2"
450	4#750MCM, 1#2G	1/0	4"	3-1/2"
460	(2 SETS)4#4/0, 1#2G	1/0	2-1/2" EA	2" EA
500	(2 SETS)4#250MCM, 1#2G	1/0	3" EA	2-1/2" EA
600	(2 SETS)4#350MCM, 1#1G	2/0	3" EA	3" EA
800	(2 SETS)4#500MCM, 1#1/0G	2/0	3-1/2" EA	3" EA
820	(2 SETS)4#600MCM, 1#2/0G	2/0	4" EA	3-1/2" EA
1000	(3 SETS)4#400MCM, 1#2/0G	3/0	3-1/2" EA	3" EA
1200	(4 SETS)4#350MCM, 1#3/0G	3/0	3" EA	3" EA
1600	(4 SETS)4#600MCM, 1#4/0G	4/0	4" EA	3-1/2" EA
2000	(6 SETS)4#400MCM, 1#250G	250	3" EA	3" EA
SERVICE ENTRANCE FEEDERS				
200-S	4#3/0	-	2-1/2"	-
300-S	4#350MCM	-	3"	-
400-S	4#500MCM	-	3 1/2"	-
600-S	(2 SETS)4#350MCM	-	2-1/2" EA	-
800-S	(2 SETS)4#500MCM	-	3-1/2" EA	-
1000-S	(3 SETS)4#400MCM	-	3-1/2" EA	-
1200-S	(4 SETS)4#350MCM	-	3" EA	-
1600-S	(4 SETS)4#600MCM	-	4" EA	-
2000-S	(6 SETS)4#400MCM	-	3" EA	-
2500-S	(7 SETS)4#500MCM	-	3" EA	-

NOTES:

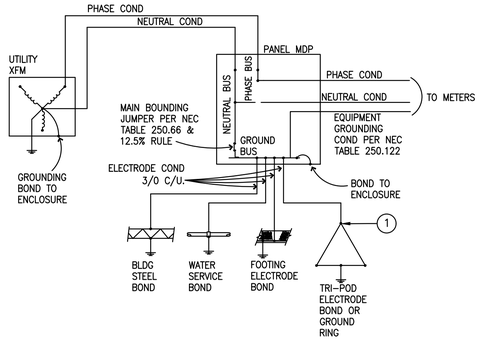
1. WHERE FEEDER SIZE IS SHOWN WITH A SUBSCRIPT "N" THE NEUTRAL CONDUCTOR SHALL BE DELETED FROM THE CONDUCTORS SHOWN IN THE FEEDER SCHEDULE.

ALUMINUM FEEDER SCHEDULE (AWG)

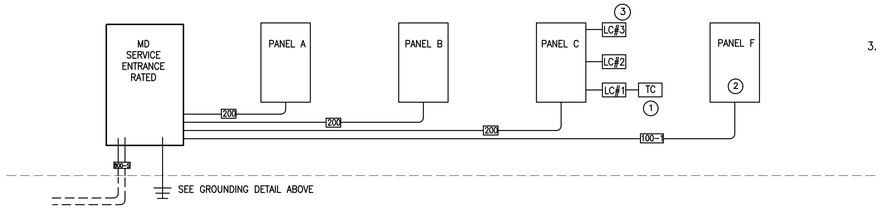
NUMBER	CONDUCTORS THHW	SERVICE CONDUCTOR GROUND (AWG)	CONDUIT	CONDUIT WITHOUT NEUTRAL
THREE PHASE FEEDERS				
30	-	-	-	-
40	-	-	-	-
60	4#4, 1#8G	6	1-1/4"	1"
80	4#2, 1#6G	6	1-1/4"	1-1/4"
100	4#1, 1#6G	6	1-1/2"	1-1/4"
115	4#1/0, 1#4G	4	2"	1-1/2"
125	#4#2/0, 1#4G	4	2"	2"
150	4#3/0, 1#4G	4	2"	2"
175	4#3/0, 1#4G	2	2"	2"
200	4#250, 1#4G	2	2-1/2"	2-1/2"
225	4#300, 1#2G	1/0	3"	2-1/2"
250	4#400MCM, 1#2G	1/0	3"	3"
285	4#500MCM, 1#2G	1/0	3-1/2"	3"
300	4#500MCM, 1#1G	1/0	3"	3"
350	4#600MCM, 1#1G	3/0	4"	3-1/2"
400	4#750MCM, 1#1G	3/0	4"	4"
420	(2 SETS)4#250MCM, 1#1/0G	3/0	2-1/2" EA	2-1/2" EA
450	(2 SETS)4#300MCM, 1#3/0G	3/0	3" EA	2-1/2" EA
460	(2 SETS)4#300MCM, 1#3/0G	3/0	3" EA	2-1/2" EA
500	(2 SETS)4#350MCM, 1#3/0G	3/0	3" EA	3" EA
600	(2 SETS)4#500MCM, 1#4/0G	4/0	3-1/2" EA	3" EA
800	(2 SETS)4#750MCM, 1#4/0G	4/0	4" EA	4" EA
820	(3 SETS)4#300MCM, 1#4/0G	4/0	3" EA	2-1/2" EA
1000	(3 SETS)4#600MCM, 1#250G	250	4" EA	2-1/2" EA
1200	(4 SETS)4#500MCM, 1#250G	250	3-1/2" EA	3" EA
1600	(5 SETS)4#600MCM, 1#350G	250	3-1/2" EA	3" EA
2000	(8 SETS)4#400MCM, 1#400G	250	3" EA	2-1/2" EA
SERVICE ENTRANCE FEEDERS				
200-S	4#250MCM	-	2-1/2"	-
300-S	4#500MCM	-	3"	-
400-S	4#750MCM	-	4"	-
600-S	(2 SETS)4#500MCM	-	3-1/2" EA	-
800-S	(2 SETS)4#750MCM	-	4" EA	-
1000-S	(3 SETS)4#750MCM	-	4" EA	-
1200-S	(4 SETS)4#500MCM	-	3-1/2" EA	-
1600-S	(5 SETS)4#600MCM	-	4" EA	-
2000-S	(8 SETS)4#400MCM	-	3" EA	-
2500-S	(7 SETS)4#750MCM	-	4" EA	-

(#) NOTES

1. CONNECTIONS SHALL BE MADE USING AN IRREVERSIBLE CLAMP OR CADWELDED.
2. ALL CONNECTIONS SHALL BE MADE EXTERNAL TO ENCLOSURES.



BUILDING SERVICE GROUNDING DETAIL
NOT TO SCALE



1 ELECTRICAL RISER DIAGRAM
SCALE: N.T.S.

(#) NOTES:

1. ASTRONOMICAL TIME CLOCK– TORK #EWZ201. PROGRAMMED TO TURN LIGHTS ON AT SUNSET AND OFF AT SUNRISE.
2. PANEL F IS 200A., 208/120.,1P WITH FORTY TWO 20/1 CIRCUIT BREAKERS TO BE USED FOR FUTURE SITE WORK. INCLUDE INSULATED AND ISOLATED GROUND BAR.
3. MECHANICALLY HELD LIGHTING CONTACTOR (TYPICAL 3 PLACES). SWITCHES LOCATED UNDER COUNTER IN SALES AREA. COORDINATE LOCATION AND ALL DETAILS WITH OWNER.

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CHRISTOPHER E. BUCKNER — REGISTERED ARCHITECT — No. 104177 — STATE OF TENNESSEE — 9/12/22

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ELECTRICAL RISER DIAGRAM

E-3.1

Panel	PANEL 'MD'				**OC Type**		CKT.BKR.				**Voltage L-L**		208		
Device	MOLDED CASE				**Enclosure**		NEMA 3R (NOTE 1)				**Voltage L-N**		120		
Mounting	SURFACE				**Mains**		800/3, MCB				**Amperage**		800		
Served By	METER CENTER				**Feed Thru Lugs:**		-				**AIC or Avail Fault**		42K		

Ckt No.	Description	CODE	Load	Remarks	CB	Pole	PH	PH	Pole	CB	Remarks	Load	CODE	Description	Ckt No.
1	RTU-1	9	4680	-	50	3	A	A	3	200	-	32980	7	PANEL 'A'	2
-	-	9	4680	-	-	-	B	B	-	-	-	31080	7	-	-
-	-	9	4680	-	-	-	C	C	-	-	-	31380	7	-	-
3	RTU-2	9	4680	-	50	3	A	A	3	200	-	6680	7	PANEL 'C'	4
-	-	9	4680	-	-	-	B	B	-	-	-	5000	7	-	-
-	-	9	4680	-	-	-	C	C	-	-	-	5200	7	-	-
5	RTU-3	9	4680	-	50	3	A	A	3	200	-	16200	7	PANEL 'B'	6
-	-	9	4680	-	-	-	B	B	-	-	-	16000	7	-	-
-	-	9	4680	-	-	-	C	C	-	-	-	13000	7	-	-
7	MAU-1	9	430	-	15	3	A	A	2	200	-	-	-	FUTURE PANEL 'F'	8
-	-	9	430	-	-	-	B	B	-	-	-	-	-	-	-
-	-	9	430	-	-	-	C	C	1	20	-	-	-	SPARE	-
9	PROVISION	9		-	60	3	A	A	3	100	-	-	-	PROVISION	10
-	-	9		-	-	-	B	B	-	-	-	-	-	-	-
-	-	9		-	-	-	C	C	-	-	-	-	-	-	-

Phase A	70330 VA	NOTES:	
Phase B	66550 VA	1. SERVICE ENTRANCE RATED.	
Phase C	64050 VA		
Total kVa=	200.9 Demand kVa	160.7	
Total Amps	557.7 Demand Amps	446.2	

Panel	PANEL 'A'				**OC Type**		CKT.BKR.				**Voltage L-L**		208		
Device	MOLDED CASE				**Enclosure**		NEMA 1				**Voltage L-N**		120		
Mounting	SURFACE				**Mains**		M.L.O.				**Amperage**		200		
Served By	PANEL 'MD'				**Feed Thru Lugs:**		-				**AIC or Avail Fault**		18K		

Ckt No.	Description	CODE	Load	Remarks	CB	Pole	PH	PH	Pole	CB	Remarks	Load	CODE	Description	Ckt No.
1	Merchandiser	6	2400	-	30	3	A	A	2	30	-	2200	6	Hot Plate (Via Kitchen Contactor)	2
3	-	6	2400	-	-	-	B	B	-	-	-	2200	6	-	4
5	-	6	2400	-	-	-	C	C	3	35	-	3000	6	Electric Griddle (Via Kitchen Conta	6
7	Food Warmer	6	2400	-	30	3	A	A	-	-	-	3000	6	-	8
9	-	6	2400	-	-	-	B	B	-	-	-	3000	6	-	10
11	-	6	2400	-	-	-	C	C	3	50	-	4700	6	Electric Fryer (Via Kitchen Contac	12
13	Warming Drawers	6	1000	-	20	1	A	A	-	-	-	4700	6	-	14
15	Kitchen Freezer Condensing Unit	6	1600	-	20	3	B	B	-	-	-	4700	6	-	16
17	-	6	1600	-	-	-	C	C	3	20	-	1700	6	Stacked Oven (Via Kitchen Contac	18
19	-	6	1600	-	-	-	A	A	-	-	-	1700	6	-	20
21	Kitchen Freezer Lights & Door Hea	6	500	-	20	1	B	B	-	-	-	1700	6	-	22
23	Kitchen Cooler Lights/Door/heaterl	6	500	-	20	1	C	C	1	30	-	2000	6	Hold Oven (Via Kitchen Contactor)	24
25	Hood Control Power	6	100	-	20	1	A	A	1	30	-	2000	6	Heated Cabinet (Via Kitchen Conta	26
27	Hood Lights	6	200	-	20	1	B	B	3	20	-	1700	6	Pizza Oven (Via Kitchen Contacto	28
29	Hood Exhaust Fans KH-1	10	720	-	30	3	C	C	-	-	-	1700	6	-	30
31	-	10	720	-	-	-	A	A	-	-	-	1700	6	-	32
33	-	10	720	-	-	-	B	B	1	20	-	500	6	Work Top & Sandwich Top	34
35	Hood Supply Fans KH-2	10	720	-	30	3	C	C	3	15	-	400	6	Kitchen Cooler Condensing Unit	36
37	-	10	720	-	-	-	A	A	-	-	-	400	6	-	38
39	-	10	720	-	-	-	B	B	-	-	-	400	6	-	40
41	Store Cooler #2 Condensing Unit	6	1320	-	30	3	C	C	3	15	-	900	6	Store Cooler #3 Condensing Unit	42
43	-	6	1320	-	-	-	A	A	-	-	-	900	6	-	44
45	-	6	1320	-	-	-	B	B	-	-	-	900	6	-	46
47	Store Beer Cooler Condensing Uni	6	1320	-	30	3	C	C	3	60	-	4800	6	Dishwasher	48
49		6	1320	-	-	-	A	A	-	-	-	4800	6	-	50
51	-	6	1320	-	-	-	B	B	-	-	-	4800	6	-	52
53	Spare	-	-	-	20	1	C	C	1	20	-	1200	6	Recept - Pizza Dough Press	54
55	Spare	-	-	-	20	1	A	A	1	20	-	-	-	Spare	56
57	Space	-	-	-	-	-	B	B	1	20	-	-	-	Spare	58
59	Space	-	-	-	-	-	C	C	-	-	-	-	-	Space	60
61	Space	-	-	-	-	-	A	A	-	-	-	-	-	Space	62
63	Space	-	-	-	-	-	B	B	-	-	-	-	-	Space	64
65	Space	-	-	-	-	-	C	C	-	-	-	-	-	Space	66
67	Space	-	-	-	-	-	A	A	-	-	-	-	-	Space	68
69	Space	-	-	-	-	-	B	B	-	-	-	-	-	Space	70
71	Space	-	-	-	-	-	C	C	-	-	-	-	-	Space	72

Phase A	32980 VA	NOTES:	
Phase B	31080 VA		
Phase C	31380 VA		
Total kVa=	95.4 Demand kVa	63.5	
Total Amps	264.9 Demand Amps	176.4	

Panel	PANEL 'B'				**OC Type**		CKT.BKR.				**Voltage L-L**		208		
Device	MOLDED CASE				**Enclosure**		NEMA 1				**Voltage L-N**		120		
Mounting	SURFACE				**Mains**		M.L.O.				**Amperage**		200		
Served By	PANEL 'MD'				**Feed Thru Lugs:**		-				**AIC or Avail Fault**		18K		

Ckt No.	Description	CODE	Load	Remarks	CB	Pole	PH	PH	Pole	CB	Remarks	Load	CODE	Description	Ckt No.
1	Equip.	6	500	-	15	3	A	A	1	20	-	1800	6	Hot Food Case	2
3	-	6	500	-	-	-	B	B	1	20	-	200	3	Recept - Cash Counter	4
5	-	6	500		-	-	C	C	1	20		200	3	Recept - Cash Counter	6
7	EWH-1	2	6000	-	50	2	A	A	1	20	-	200	3	Recept - Cash Counter	8
9	-	2	6000	-	-	-	B	B	1	20	-	200	3	Recept - Cash Counter	10
11	Icee	6	1700	-	30	2	C	C	1	20		200	3	Recept - Cash Counter	12
13	-	6	1700	-	-	-	A	A	1	20	-	200	3	Recept - Cash Counter	14
15	Recept - Beverage Counter	6	200	-	20	1	B	B	1	20	-	200	3	Recept - Cash Counter	16
17	Recept - Beverage Counter	6	200	-	20	1	C	C	1	20		200	3	Recept - Cash Counter	18
19	Recept - Beverage Counter	6	200	-	20	1	A	A	1	20	-	200	3	Recept - Cash Counter	20
21	Recept - Beverage Counter	6	200	-	20	1	B	B	1	20	-	400	3	Recept - Floor	22
23	Recept - Beverage Counter	6	200		20	1	C	C	1	20		400	3	Recept - Floor	24
25	Recept - Beverage Counter	6	200	-	20	1	A	A	1	20	-	200	3	Recept - Floor	26
27	Recept - Beverage Counter	6	200	-	20	1	B	B	1	20	-	900	3	Recept - Work Room, Elec, Exteri	28
29	Recept - Beverage Counter	6	200		20	1	C	C	1	20		900	3	Recept - Work Room, Elec	30
31	Recept - Beverage Counter	6	200	-	20	1	A	A	1	20	-	400	3	Recept - Building Front	32
33	Hand Dryer	4	1900	-	20	1	B	B	1	20	-	400	3	Recept - Building Front	34
35	Hand Dryer	4	1900		20	1	C	C	1	20		600	3	Recept - Restrooms	36
37	Spare	-	-	-	30	2	A	A	1	20	-	600	3	Recept - Ice Cream Box	38
39	Spare	-	-	-	-	-	B	B	1	20	-	800	3	Recept - Sales	40
41	Spare	-	-	-	20	1	C	C	1	20		600	3	Recept - Sales	42
43	Recept - ATM	5	400	-	20	1	A	A	1	20	-	800	3	Recept - Kitchen, Sales	44
45	Recept - Store Show Windows	3	600	-	20	1	B	B	1	20	-	900	3	Recept - kitchen Sales	46
47	Recept - Front Counter	3	1100		20	1	C	C	1	20		400	3	Recept - Roof Top Units	48
49	Recept - Store	3	600	-	20	1	A	A	1	20	-	900	3	Recept - Office	50
51	Recept - Store	3	400	-	20	1	B	B	1	20	-	900	3	Recept POS	52
53	Coffee Brewer	6	2000	Note 1	30	1	C	C	1	20	-	900	3	Recept POS	54
55	Recept - TBB	3	400	-	20	1	A	A	1	20	-	400	3	Recept- Sales	56
57	Recept - Elettrical	3	500	-	20	1	B	B	1	20	-	-	-	Spare	58
59	Recept - Kitchen Ceiling	3	200	Note 1	20	1	C	C	1	20	-	-	-	Spare	60
61	Recept - Kitchen Ceiling	3	200	Note 1	20	1	A	A	1	20	-	100	5	Duct Detector	62
63	EF-1	10	500	-	20	1	B	B	1	20	-	100	5	Duct Detector	64
65	EF-1	10	500	-	20	1	C	C	1	20	-	100	5	Duct Detector	66
67	Space	-	-	-	20	-	A	A	1	20	-	-	-	Spare	68
69	Space	-	-	-	20	-	B	B	1	20	-	-	-	Spare	70
71	Space	-	-	-	20	-	C	C	1	20	-	-	-	Spare	72

Phase A	16200 VA	NOTES:	
Phase B	16000 VA	1. PROVIDE GFCI BREAKER.	
Phase C	13000 VA		
Total kVa=	45.2 Demand kVa	35.4	
Total Amps	125.5 Demand Amps	98.2	

Panel	PANEL 'C'				**OC Type**		CKT.BKR.				**Voltage L-L**		208		
Device	MOLDED CASE				**Enclosure**		NEMA 1				**Voltage L-N**		120		
Mounting	SURFACE				**Mains**		M.L.O.				**Amperage**		200		
Served By	PANEL 'MD'				**Feed Thru Lugs:**		-				**AIC or Avail Fault**		18K		

Ckt No.	Description	CODE	Load	Remarks	CB	Pole	PH	PH	Pole	CB	Remarks	Load	CODE	Description	Ckt No.
1	Cash Recept	3	500	-	20	1	A	A	1	20	-	1000	6	Beer Cooler 120V Loads	2
3	Cash Recept	3	500	-	20	1	B	B	1	20	-	1000	6	Beer Cooler 120v Loads	4
5	Spare	-	-	-	20	1	C	C	1	20	-	1000	6	Cooler #2 120v Loads	6
7	Spare	-	-	-	20	1	A	A	1	20	-	1000	6	Cooler #2 120v Loads	8
9	spare	-	-	-	20	1	B	B	1	20	-	1000	6	Cooler #3 120v Loads	10
11	Spare	-	-	-	20	1	C	C	1	20	-	1000	6	Cooler #3 120v Loads	12
13	Spare	-	-	-	20	1	A	A	1	20	-	1500	3	Recept - Floor	14
15	Spare	-	-	-	20	1	B	B	1	20	-	1500	3	Recept - Floor	16
17	Spare	-	-	-	20	1	C	C	1	20	-	300	1	Spare	18
19	Spare	-	-	-	20	2	A	A	1	20	-	300	1	-	20
21	-	-	-	-	-	-	B	B	1	20	-	200	1	Spare	22
23	Spare	-	-	-	20	2	C	C	1	20	-	200	1	-	24
25	-	-	-	-	-	-	A	A	1	20	-	-	-	Spare	26
27	Spare	-	-	-	20	2	B	B	1	20	-	-	-	-	28
29	-	-	-	-	-	-	C	C	2	20	-	-	-	Spare	30
31	Spare	-	-	-	20	2	A	A	-	-	-	-	-	-	32
33	-	-	-	-	-	-	B	B	2	20	-	-	-	Spare	34
35	Spare	-	-	-	20	2	C	C	-	-	-	-	-	-	36
37	-	-	-	-	-	-	A	A	1	20	-	-	-	Spare	38
39	Spare	-	-	-	20	2	B	B	1	20	-	-	-	Spare	40
41	-	-	-	-	-	-	C	C	1	20	-	-	-	Spare	42
43	Kitchen/Work/Restroom Lights	1	1100	-	20	1	A	A	1	20	-	-	-	-	44
45	Spare	-	-	-	20	1	B	B	1	20	-	-	-	Spare	46
47	Sales Lights (Via LC#1)	1	1100	-	20	1	C	C	1	20	-	1000	1	Store Sign (Via LC#2)	48
49	Sales Lights (Via LC#1)	1	100	-	20	1	A	A	1	20	-	1000	1	Store Sign (Via LC#2)	50
51	Cooler Sign Recept (Via LC#1)	1	400	-	20	1	B	B	1	20	-	400	1	Store Sign (Via LC#2)	52
53	Cooler Sign Recept (Via LC#1)	1	400	-	20	1	C	C	1	20	-	200	1	Store Sign (Via LC#2)	54
55	Unit Recept	3	180	-	20	1	A	A	1	20	-	-	-	Spare	56
57	Spare	-	-	-	20	1	B	B	1	20	-	-	-	Spare	58
59	Space	-	-	-	-	-	C	C	1	20	-	-	-	Spare	60
61	Space	-	-	-	-	-	A	A	1	20	-	-	-	Spare	62
63	Space	-	-	-	-	-	B	B	1	20	-	-	-	Spare	64
65	Space	-	-	-	-	-	C	C	1	20	-	-	-	Spare	66
67	Space	-	-	-	-	-	A	A	1	20	-	-	-	Spare	68
69	Space	-	-	-	-	-	B	B	1	20	-	-	-	Spare	70
71	Space	-	-	-	-	-	C	C	1	20	-	-	-	Spare	72

Phase A	6680 VA	NOTES:	
Phase B	5000 VA		
Phase C	5200 VA		
Total kVa=	16.9 Demand kVa	16.5	
Total Amps	46.9 Demand Amps	45.7	

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REVISIONS:

DELTA	DESCRIPTION	DATE

DATE OF ISSUE: 09.12.2022
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PROJECT PHASE: CD
DRAWN BY: DF&H SERVICES

ELECTRICAL SCHEDULES

E-4.1

TRAFFIC IMPACT STUDY

QUIK MART #34
NASHVILLE HIGHWAY
COLUMBIA, TENNESSEE

PREPARED ON BEHALF OF:

QUIK MART CONVENIENCE STORES

PREPARED BY:

RG PHILLIPS CONSULTING
TRAFFIC ENGINEERING & TRANSPORTATION PLANNING

DECEMBER 2024

TRAFFIC IMPACT STUDY

QUIK MART #34 – NASHVILLE HIGHWAY
COLUMBIA, TENNESSEE

12/15/24

PREPARED BY:

RG Phillips Consulting, LLC

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RGPHILLIPS CONSULTING
TRAFFIC ENGINEERING & TRANSPORTATION PLANNING

Traffic Impact Study

Quik Mart #34 – Nashville Highway
Columbia, Tennessee

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Introduction and Scope

The purpose of this traffic study is to assess the traffic impacts associated with the proposed redevelopment of the Quik Mart #34 site in Columbia, Tennessee. The site currently has a 2,800-S.F. convenience store with 12 vehicle fueling positions and three diesel fueling positions. The redevelopment proposes a 6,600-S.F. convenience store with 20 vehicle fueling positions (LUC 945) and three diesel fueling positions (LUC 944).

Based on scoping discussions with City of Columbia staff, this study includes the following intersections:

- #1 – Nashville Hwy (US 31) & Spring Meade Blvd / Beasley's Yard Driveway
- #2 – Nashville Hwy (US 31) & Existing North Quik Mart (Right-Only) Driveway
- #3 – Nashville Hwy (US 31) & Proposed Quik Mart Right-Only Driveway
- #4 – Nashville Hwy (US 31) & Existing South Quik Mart Driveway
- #5 – Nashville Hwy (US 31) & Carters Creek Station Rd / Cayer Lane
- #6 – Carters Creek Station Rd & Existing East Quik Mart Driveway
- #7 – Carters Creek Station Rd & Proposed East Quik Mart Driveway / TriStar Bank Driveway
- #8 – Carters Creek Station Rd & Proposed West Quik Mart Driveway
- #9 – Old Hwy 31 & Carters Creek Station Rd
- #10 – Old Hwy 31 & Spring Meade Blvd
- #11 – Spring Meade Blvd & Proposed West Quik Mart Driveway / Animal Care Center Driveway
- #12 – Spring Meade Blvd & Existing West Quik Mart Driveway
- #13 – Spring Meade Blvd & Proposed East Quik Mart Driveway / West Marathon Driveway
- #14 – Spring Meade Blvd & Existing East Quik Mart Driveway / East Marathon Driveway

This report identifies potential traffic impacts to the surrounding roadway network based on the proposed development. Three scenarios were considered for analysis, as follows:

- Existing Traffic Conditions (2024)
- Background Traffic Conditions (2025)
- Projected Traffic Conditions at Horizon Year (2025)

2024 Existing Traffic Conditions

Traffic counts were conducted at locations #1 and #5 from 7:00 AM to 9:00 AM and from 2:00 PM to 6:00 PM. At each of these intersections, the AM peak hour occurred from 7:15 AM to 8:15 AM, and the PM peak hour occurred from 2:30 PM to 3:30 PM. Counts were therefore collected during these identified peak hours at the remaining intersections in the scope of the study.

2025 Background Traffic Conditions

The 2024 existing traffic volumes were increased by 3.0% for one year to obtain the 2025 background traffic conditions. Additionally, three offsite developments (Carters Station North

residential development, Greens Mill residential development, and McClure Farms mixed-use development) were identified and included as part of the 2025 background traffic conditions.

2025 Projected Traffic Conditions

Trips expected to be generated by the proposed development were determined from ITE's *Trip Generation, 11th Edition.* These generated volumes were added to the background traffic volumes to determine the 2025 projected traffic conditions. Pass-by reduction factors were included for the convenience store and vehicle fueling pumps in the trip generation calculations.

Consideration of Offsite Improvements

Left turn lane evaluations were performed for the following locations, based on the 2025 projected traffic conditions:

- #5 – Nashville Hwy (US 31) & Carters Creek Station Rd / Cayer Lane
- #7 – Carters Creek Station Rd & Proposed East Quik Mart Driveway / TriStar Bank Driveway
- #9 – Old Hwy 31 & Carters Creek Station Rd
- #11 – Spring Meade Blvd & Proposed West Quik Mart Driveway / Animal Care Center Driveway
- #13 – Spring Meade Blvd & Proposed East Quik Mart Driveway / West Marathon Driveway

Based on the results of these evaluations, a left turn lane is warranted for the northbound approach at intersection #5. A westbound left turn lane is also warranted at intersection #13. However, given lack of available right-of-way on Spring Meade Boulevard, the installation of this westbound left turn lane is not recommended.

Conclusions and Recommendations

Based on the analyses presented in this study, the traffic generated by the proposed Quik Mart #34 can be accommodated by the surrounding roadway infrastructure with the following offsite improvements:

1. Widen Nashville Highway to provide a northbound left turn lane with 100' of storage at Carters Creek Station Road.
2. Close existing east driveway on Carters Creek Station Road.
3. Close existing driveways on Nashville Highway and provide one centralized right-only access.
4. Close existing driveways on Spring Meade Boulevard and provide one centralized full access driveway.
5. Provide pavement markings and signs on site plan to indicate one-way flow for the diesel fueling area.

1. INTRODUCTION

The purpose of this traffic impact study is to assess the traffic impacts associated with the proposed redevelopment of Quik Mart #34, located on Nashville Highway in Columbia, Tennessee, and to identify if any offsite access or traffic control improvements will be required to address those impacts.

As mentioned above, the project site is located in Columbia, Tennessee, on a parcel of land bordered on the east by Nashville Highway (US 31), on the south by Carters Creek Station Road, on the west by Old Highway 31, and on the north by Spring Meade Boulevard. Of note, an existing Quik Mart development occupies this site; the proposed redevelopment of the site will increase the size of the existing convenience market, include an additional eight vehicle fueling positions, and consolidate the number of driveways that provide access to the site.

Figure 1 shows the proposed project site, along with the intersections that will be included as part of this study.

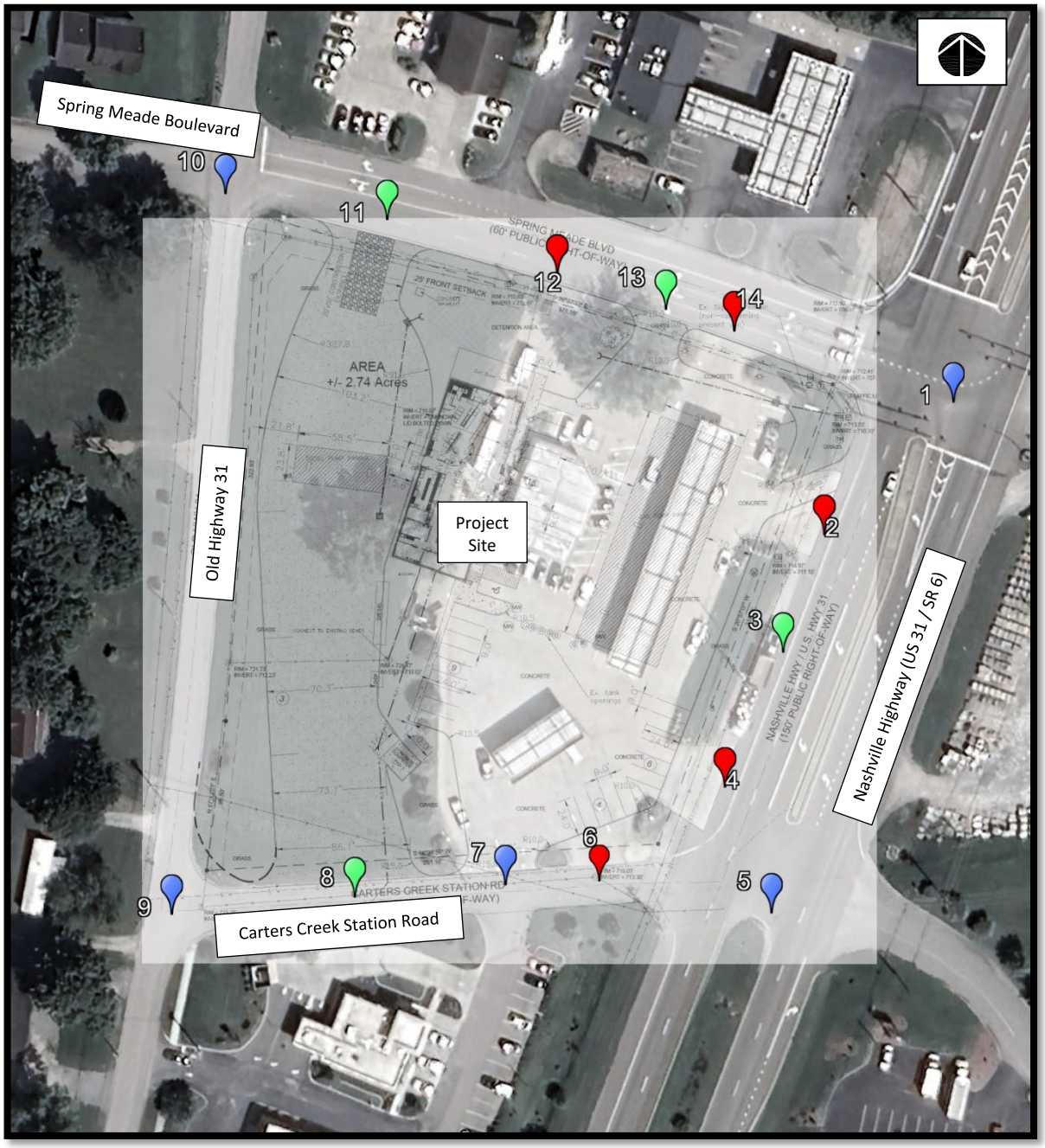

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Figure 1.
Project Location and
Study Intersections

2. PROJECT DESCRIPTION

As was noted in the introduction of this report, there is an existing Quik Mart fuel center and convenience market, Quik Mart #34, on the parcel of land under consideration for redevelopment. Currently, the Quik Mart includes a 2,800-S.F. convenience store, 12 vehicle fueling positions, and three diesel fueling positions. Existing access to the site is as follows:

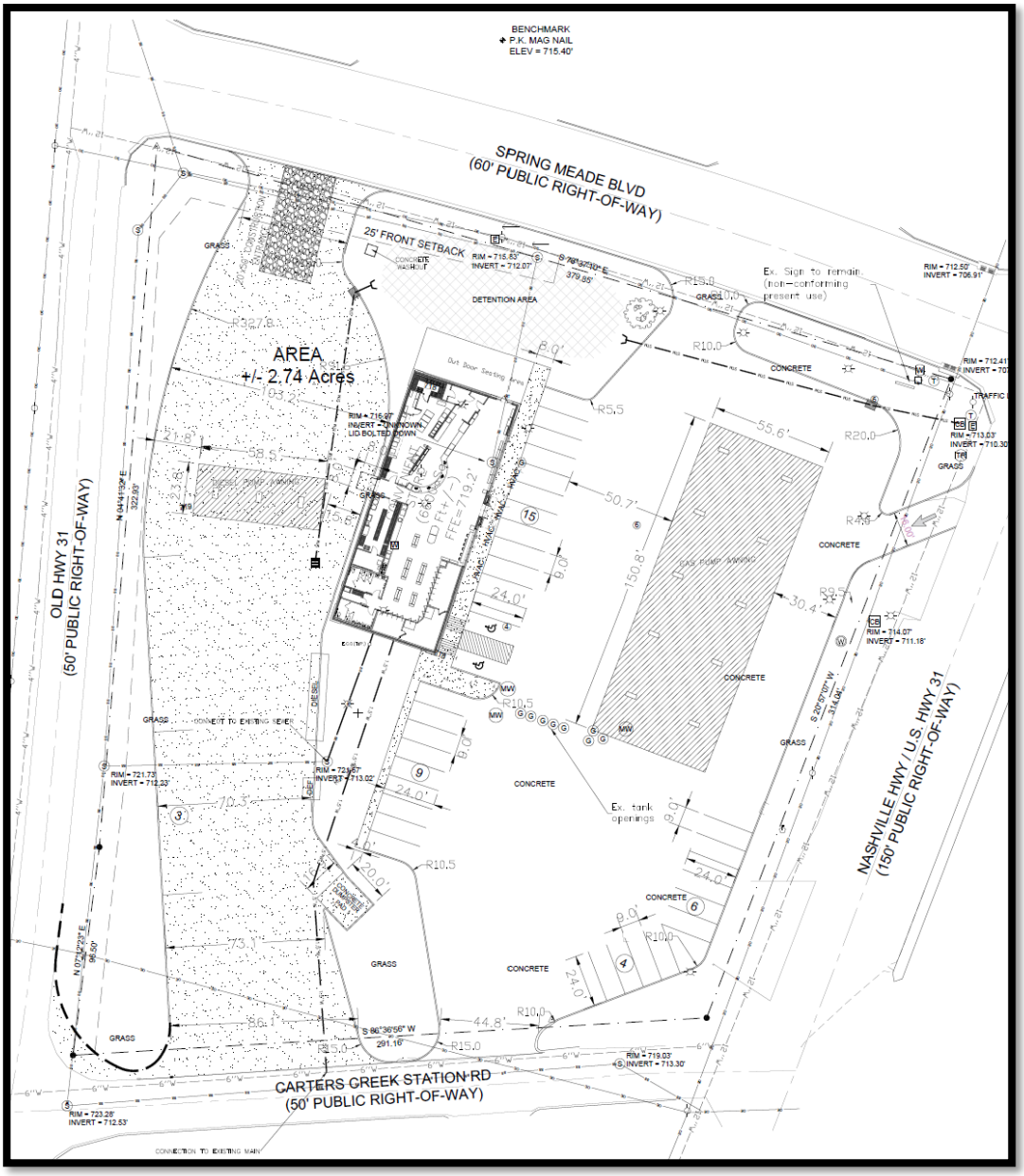
- North driveway on Nashville Highway: this driveway is located on a median-divided section of Nashville Highway and therefore operates as a right-in/right-out access.
- South driveway on Nashville Highway: this driveway technically aligns with the median on Nashville Highway, but there is enough frontage to the south of the median's end that motorists both enter the site at this intersection via northbound left turns and exit the site via eastbound left turns.
- East driveway on Carters Creek Station Road
- West driveway on Carters Creek Station Road
- West driveway on Spring Meade Boulevard
- East driveway on Spring Meade Boulevard

The current plan for redevelopment of this site was provided by MB Civil Engineering, LLC and is illustrated in Figure 2. This site plan proposes the construction of a 6,600-S.F. convenience store, 20 vehicle fueling positions, and three diesel fueling positions. Notably, though the number of diesel fueling positions will not change, the western half of the parcel, which is currently undeveloped, is planned to be utilized to provide access for the new diesel fueling positions. Updated access to the site is proposed as follows:

- Right-Only Driveway on Nashville Highway: the existing north and south accesses on Nashville Highway are planned to be closed.

- East driveway on Carters Creek Station Road: the current east driveway on Carters Creek Station Road is planned to be closed. The existing west driveway, opposite the TriStar Bank driveway, will become the new east access on Carters Creek Station Road.
- West driveway on Carters Creek Station Road: this new driveway is proposed to be an exit-only access for the diesel fueling positions.
- West driveway on Spring Meade Boulevard: the existing west driveway on Spring Meade Boulevard is planned to be closed, with a new access proposed to be constructed opposite the existing Animal Care Center driveway. This location will operate as an enter-only access for the diesel fueling positions.
- East driveway on Spring Meade Boulevard: the existing east driveway on Spring Meade Boulevard is planned to be closed and replaced by a driveway immediately to the west, opposite the existing Marathon west driveway.

The redevelopment is planned to be completed during 2025. Based on scoping discussions with City of Columbia staff, 2025 was selected as the year for background and projected traffic analysis.



MB Civil Engineering, LLC	**Figure 2.** **Site Development Plan**

Project Scope

This report identifies potential traffic impacts to the surrounding roadway network based on the proposed development. Three scenarios were considered for analysis, as follows:

- Existing Traffic Conditions (2024)
- Background Traffic Conditions (2025)
- Future Traffic Conditions at Project Buildout (2025)

Based on scoping discussions with City of Columbia staff, the following intersections were included for analysis in this traffic study:

- #1 – Nashville Hwy (US 31) & Spring Meade Blvd / Beasley's Yard Driveway
- #2 – Nashville Hwy (US 31) & Existing North Quik Mart (Right-Only) Driveway
- #3 – Nashville Hwy (US 31) & Proposed Quik Mart Right-Only Driveway
- #4 – Nashville Hwy (US 31) & Existing South Quik Mart Driveway
- #5 – Nashville Hwy (US 31) & Carters Creek Station Rd / Cayer Lane
- #6 – Carters Creek Station Rd & Existing East Quik Mart Driveway
- #7 – Carters Creek Station Rd & Proposed East Quik Mart Driveway / TriStar Bank Driveway
- #8 – Carters Creek Station Rd & Proposed West Quik Mart Driveway
- #9 – Old Hwy 31 & Carters Creek Station Rd
- #10 – Old Hwy 31 & Spring Meade Blvd
- #11 – Spring Meade Blvd & Proposed West Quik Mart Driveway / Animal Care Center Driveway
- #12 – Spring Meade Blvd & Existing West Quik Mart Driveway
- #13 – Spring Meade Blvd & Proposed East Quik Mart Driveway / West Marathon Driveway
- #14 – Spring Meade Blvd & Existing East Quik Mart Driveway / East Marathon Driveway

To simplify review of the traffic study, each intersection was assigned a reference number, as shown above. The traffic assignment and capacity analyses worksheets contained in this report refer to each intersection by both name and assigned intersection number.

3. 2024 EXISTING TRAFFIC CONDITIONS

Methodology

The traffic analyses performed in this report were conducted using *Synchro* software, which emulates the methodologies set forth in the *Highway Capacity Manual, 6th Edition,* for evaluation of signalized and unsignalized intersections.

The intersections considered in this study were evaluated in terms of level of service (LOS), which is a rating of traffic conditions for a given roadway or intersection. The descriptions for the various levels of service at both signalized and unsignalized intersections are shown in Table 1 and Table 2, respectively.

Table 1
Level of Service Criteria for Signalized Intersections

Level of Service	Description	Control Delay (Seconds)
A	Very low delay with minimal stops.	<10
B	Stable traffic flow, low delay, few traffic stops.	>10 to ≤20
C	Operations with stable flow, moderate delay.	>20 to ≤ 35
D	Noticeable delays, many stopped vehicles.	>35 and ≤ 55
E	Unstable flow, high delays and congestion.	>55 and ≤ 80
F	Unacceptable delay, excessive congestion.	>80

Table 2
Level of Service Criteria for Unsignalized Intersections

Level of Service	Description	Control Delay (Seconds)
A	Minimal or no delay	≤ 10
B	Minor traffic delay	>10 and ≤ 15
C	Average traffic delay	>15 and ≤ 25
D	Long traffic delay	>25 and ≤ 35
E	Very long traffic delay	>35 and ≤ 50
F	Extreme traffic delay	> 50

Roadway Network

The roadways in the vicinity of the site that will provide access to the redeveloped Quik Mart #34 are described as follows:

- *Nashville Highway (US 31 / SR 6)* is a four-lane, median-divided highway that is designated in TDOT's functional classification system as a principal arterial roadway. For the purposes of this study, Nashville Highway was designated as running north-south. The speed limit on Nashville Highway is posted at 55 mph just south of the site.

- *Spring Meade Boulevard* is a two-lane local roadway with a posted speed limit of 25 mph.

- *Carters Creek Station Road* is a two-lane local roadway that provides a connection between Nashville Highway and Old Highway 31. The speed limit on Carters Creek Road is posted at 35 mph.

- *Old Highway 31* is a two-lane local roadway with a posted speed limit of 25 mph.

Existing Traffic Operations

To provide data for the analysis, manual turning movement traffic counts were performed at the following locations:

- #1 – Nashville Hwy (US 31) & Spring Meade Blvd / Beasley's Yard Driveway
- #2 – Nashville Hwy (US 31) & Existing North Quik Mart (Right-Only) Driveway
- #3 – Nashville Hwy (US 31) & Proposed Quik Mart Right-Only Driveway
- #4 – Nashville Hwy (US 31) & Existing South Quik Mart Driveway
- #5 – Nashville Hwy (US 31) & Carters Creek Station Rd / Cayer Lane
- #6 – Carters Creek Station Rd & Existing East Quik Mart Driveway
- #7 – Carters Creek Station Rd & Proposed East Quik Mart Driveway / TriStar Bank Driveway
- #8 – Carters Creek Station Rd & Proposed West Quik Mart Driveway
- #9 – Old Hwy 31 & Carters Creek Station Rd
- #10 – Old Hwy 31 & Spring Meade Blvd
- #11 – Spring Meade Blvd & Proposed West Quik Mart Driveway / Animal Care Center Driveway
- #12 – Spring Meade Blvd & Existing West Quik Mart Driveway
- #13 – Spring Meade Blvd & Proposed East Quik Mart Driveway / West Marathon Driveway
- #14 – Spring Meade Blvd & Existing East Quik Mart Driveway / East Marathon Driveway

At the public street intersections #1, #5, and #10, the traffic counts were conducted on a weekday from 7:00 AM to 9:00 AM and from 2:00 PM to 6:00 PM. At both the signalized intersection of Nashville Highway and Spring Meade Boulevard and the intersection of Nashville Highway and Carters Creek Station Road, the AM peak hour occurred from 7:15 AM to 8:15 AM, and the PM peak hour occurred from 2:30 PM to 3:30 PM. Therefore, traffic counts were collected during these peak hours at the remaining intersections included in the scope of this traffic study.

The existing 2024 peak hour traffic volumes are illustrated in Figure 3, and the traffic count data utilized for this study are included in summary form in Appendix A. Traffic signal timing sheets for intersection #1, Nashville Highway and Spring Meade Boulevard, are also included in Appendix A.

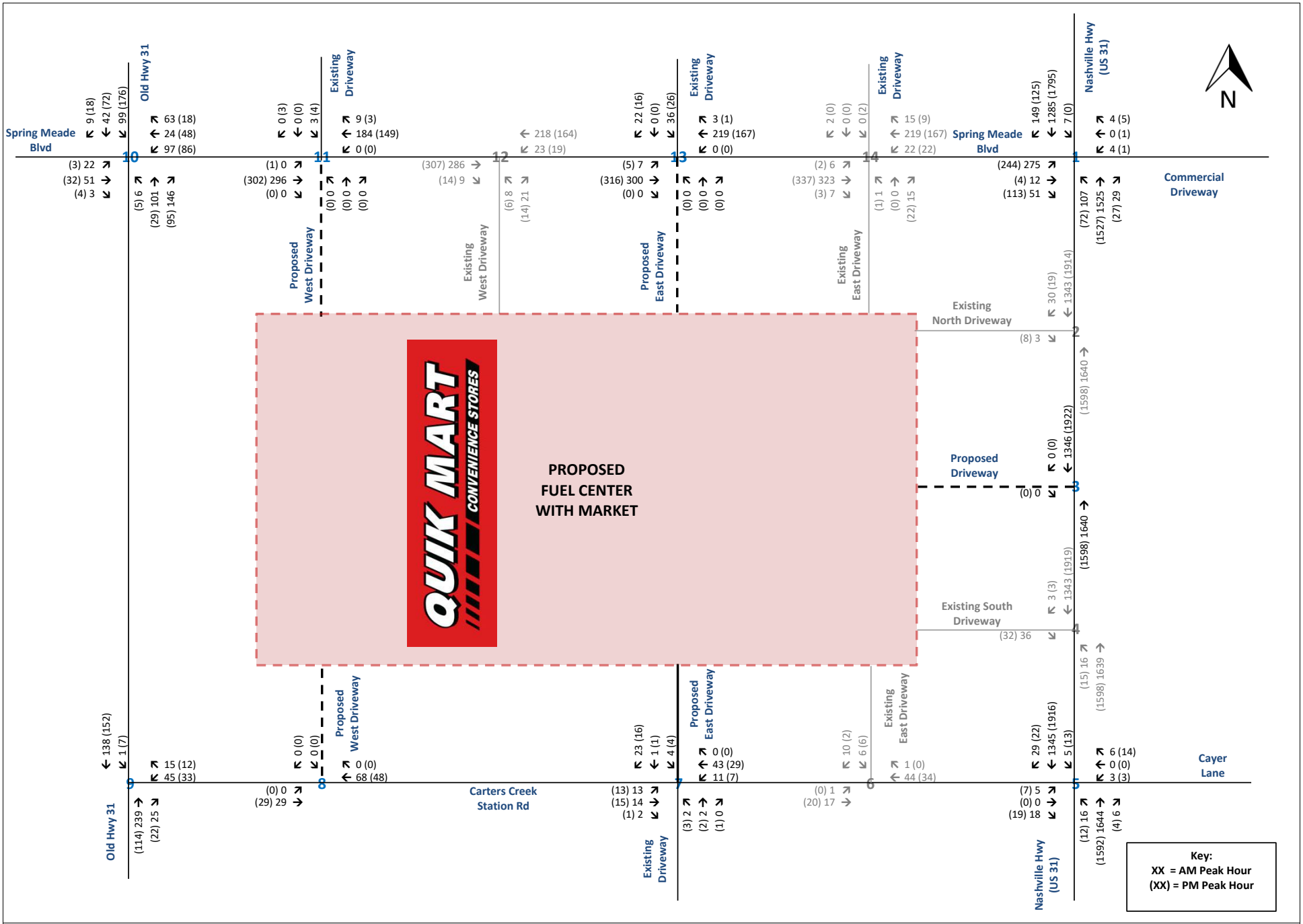


Figure 3.
Existing Traffic Volumes (2024)
Nashville Highway QuikMart
Columbia, Tennessee

2024 Existing Capacity Analyses

As previously described, the capacity analyses result in the determination of a Level of Service (LOS) for an intersection. The LOS is a concept used to describe how well an intersection or roadway operates. LOS A is the best, while LOS F is the worst.

The results of the capacity analyses for the 2024 existing conditions at the intersections studied are presented in Table 3. Of note, Table 3 does not include every intersection in the scope of this study; rather, it shows the levels of service for the existing intersections on public roadways and for intersections that include current driveway access to the existing Quik Mart.

As shown, the intersections contained in the study area presently operate at relatively good levels of service (LOS C or better) during both the AM and PM peak traffic hours, with the exception of intersection #5, Nashville Highway and Carters Creek Station Road / Cayer Lane. At this location, LOS D is indicated for the eastbound approach during the PM peak hour. For the westbound approach at this intersection, LOS E is indicated during the AM peak hour, and LOS D is indicated during the PM peak hour.

Appendix B contains the capacity analysis worksheets for the 2024 existing traffic conditions.

Table 3
2024 Existing Traffic Conditions Analyses – Peak Hour Levels of Service

Intersection			Level of Service / Delay (Seconds)	
#	**Description**	**Movement [(1)]**	**AM Peak Hour**	**PM Peak Hour**
1	Nashville Highway (US 31) & Spring Meade Boulevard / Beasley's Yard Driveway	Overall (Signalized)	C (22.0)	B (19.7)
2	Nashville Highway (US 31) & Existing North Quik Mart Driveway	Eastbound Right	B (11.9)	C (18.6)
4	Nashville Highway (US 31) & Existing South Quik Mart Driveway	Northbound Left	A (9.7)	B (14.2)
		Eastbound	B (12.5)	C (20.1)
5	Nashville Highway (US 31) & Carters Creek Station Road / Cayer Lane	Northbound Left	A (9.7)	B (14.1)
		Southbound Left	C (15.0)	B (14.6)
		Eastbound	C (20.1)	D (30.3)
		Westbound	E (46.5)	D (28.6)
6	Carters Creek Station Road & Existing East Quik Mart Driveway	Southbound	A (8.7)	A (8.8)
		Eastbound Left	A (7.3)	A (7.3)
7	Carters Creek Station Road & Proposed East Quik Mart Driveway / Bank Driveway	Northbound	A (9.9)	A (9.3)
		Southbound	A (8.9)	A (8.7)
		Eastbound Left	A (7.4)	A (7.3)
		Westbound Left	A (7.3)	A (7.3)
9	Old Highway 31 & Carters Creek Station Road	Southbound Left	A (7.9)	A (7.5)
		Westbound	B (12.2)	B (10.4)
10	Old Highway 31 & Spring Meade Boulevard	Overall (All-Way Stop)	B (13.3)	B (12.1)
12	Spring Meade Boulevard & Existing West Quik Mart Driveway	Northbound	B (10.6)	B (10.5)
		Westbound Left	A (8.0)	A (8.0)
14	Spring Meade Boulevard & Existing East Quik Mart Driveway / East Marathon Driveway	Northbound	B (10.2)	B (10.1)
		Southbound	A (9.9)	B (13.2)
		Eastbound Left	A (7.9)	A (7.7)
		Westbound Left	A (8.3)	A (8.3)

[(1)] For signalized locations and all-way stop control, the overall LOS and delay are listed for the intersection. For intersections with stop control on the minor approaches only, the LOS and delay are listed for movements that are required to stop or yield the right-of-way.

4. 2025 BACKGROUND TRAFFIC CONDITIONS

The 2025 background conditions analyses are presented to evaluate the traffic levels expected at the project buildout year due to growth. To determine the background traffic volumes, data from a nearby count station, #91, were obtained from TDOT. Based on historical ADT traffic counts at this count station, an average annual rate of 2.7% traffic growth was indicated in the vicinity of the project site over the last ten-year period. To be conservative, the 2024 existing traffic volumes were increased by 3.0% for the one-year buildout to obtain the 2025 background traffic volumes. The historical TDOT data from this count station are included in Appendix A.

In addition to historical traffic growth, the following approved offsite developments were identified for inclusion in the 2025 background traffic conditions:

- Carters Station North residential development
- Greens Mill residential development
- McClure Farms mixed-use development

The traffic impact studies performed for these developments were obtained from the City of Columbia. For the purposes of this study, it was assumed that approximately 15% of each development would be completed in the next year. Therefore, a 15% portion of the trip generation for each offsite development was included as part of the 2025 background traffic volumes. These volumes, which represent the traffic that could be expected to travel through the study area in 2025 even if the Quik Mart site is not redeveloped, are illustrated in Figure 4.

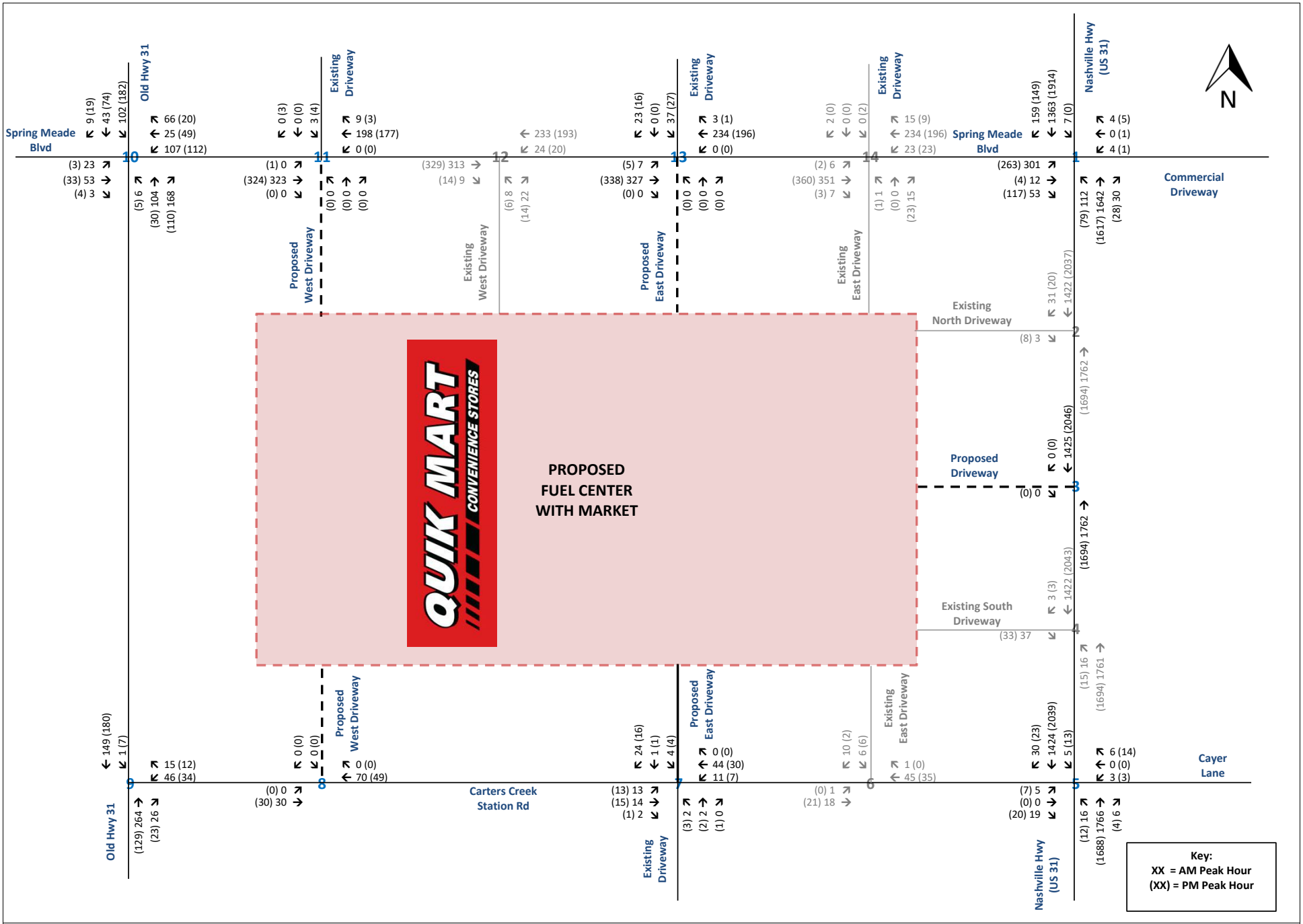


Figure 4.
Background Traffic Volumes (2025)
Nashville Highway QuikMart
Columbia, Tennessee

2025 Background Intersection Capacity Analyses

To determine the LOS of the intersections studied, capacity analyses were performed for the AM and PM peak hours of traffic for the 2025 background traffic conditions. The capacity calculations were performed in accordance with the methods outlined in the *Highway Capacity Manual*. As previously described, the capacity analyses result in the determination of a Level of Service (LOS) for an intersection. The LOS is a concept used to describe how well an intersection or roadway operates. LOS A is the best, while LOS F is the worst.

As previously described, the capacity analyses result in the determination of a Level of Service (LOS) for an intersection. The LOS is a concept used to describe how well an intersection or roadway operates. LOS A is the best, while LOS F is the worst.

As shown in Table 4, the intersections contained in the study area are expected to operate at relatively good levels of service (LOS C or better) during both the AM and PM peak traffic hours, with the exception of intersection #5, Nashville Highway (US 31) & Carters Creek Station Road / Cayer Lane. At this location, LOS E is indicated for the westbound approach during the AM peak hour. During the PM peak hour, a level of service is not defined for either the eastbound or westbound approaches.

Appendix B contains the capacity analysis worksheets for the 2025 background traffic conditions.

Table 4
2025 Background Traffic Conditions Analyses – Peak Hour Levels of Service

Intersection			Level of Service / Delay (Seconds)	
#	Description	Movement [1]	AM Peak Hour	PM Peak Hour
1	Nashville Highway (US 31) & Spring Meade Boulevard / Beasley's Yard Driveway	Overall (Signalized)	C (23.8)	C (21.5)
2	Nashville Highway (US 31) & Existing North Quik Mart Driveway	Eastbound Right	B (12.3)	C (21.4)
4	Nashville Highway (US 31) & Existing South Quik Mart Driveway	Northbound Left	A (9.9)	C (16.1)
		Eastbound	C (17.6)	C (23.7)
5	Nashville Highway (US 31) & Carters Creek Station Road / Cayer Lane	Northbound Left	A (9.9)	C (16.0)
		Southbound Left	C (16.3)	C (15.5)
		Eastbound	C (16.1)	+ [2]
		Westbound	E (35.1)	+ [2]
6	Carters Creek Station Road & Existing East Quik Mart Driveway	Southbound	A (8.7)	A (8.8)
		Eastbound Left	A (7.3)	A (7.3)
7	Carters Creek Station Road & Proposed East Quik Mart Driveway / Bank Driveway	Northbound	A (9.9)	A (9.3)
		Southbound	A (8.9)	A (8.7)
		Eastbound Left	A (7.4)	A (7.3)
		Westbound Left	A (7.3)	A (7.3)
9	Old Highway 31 & Carters Creek Station Road	Southbound Left	A (8.0)	A (7.6)
		Westbound	B (12.7)	B (10.8)
10	Old Highway 31 & Spring Meade Boulevard	Overall (All-Way Stop)	B (14.9)	B (13.2)
12	Spring Meade Boulevard & Existing West Quik Mart Driveway	Northbound	B (10.8)	B (10.8)
		Westbound Left	A (8.0)	A (8.1)
14	Spring Meade Boulevard & Existing East Quik Mart Driveway / East Marathon Driveway	Northbound	B (10.5)	B (10.2)
		Southbound	B (10.0)	B (14.0)
		Eastbound Left	A (7.9)	A (7.8)
		Westbound Left	A (8.4)	A (8.4)

[1] For signalized locations and all-way stop control, the overall LOS and delay are listed for the intersection. For intersections with stop control on the minor approaches only, the LOS and delay are listed for movements that are required to stop or yield the right-of-way.
[2] HCS computation not defined.

5. 2025 PROJECTED TRAFFIC CONDITIONS

To develop the 2025 projected traffic conditions, the trips expected to be generated by the proposed Quik Mart were determined. These trips were then assigned to the roadway network using directional traffic distributions.

Trip Generation

As mentioned in the project description, the proposed Quik Mart will include a 6,600-S.F. convenience store with 20 vehicle fueling positions and 3 diesel fueling positions.

Trips expected to be generated by the proposed development were calculated using data from *Trip Generation*, *11th Edition*, which is a publication of the Institute of Transportation Engineers (ITE). The results of the trip generation calculations are presented in Table 5. This table also includes the number of pass-by trip reductions assumed for the development.

- Existing Active Land Use – Instead of using trip generation calculations, the trips generated by the existing Quik Mart were subtracted from the roadway network for the projected traffic conditions. A worksheet illustrating this traffic reassignment is included in Appendix E.

- Pass-By Trips – Information contained in the *Trip Generation Handbook* indicates the pass-by capture rates are significant for retail land uses. For the convenience store with fuel pumps, the pass-by rates applied for the weekday, AM peak hour, and PM peak hour trip generations were 60%, 61.5%, and 58.2%, respectively. A pass-by reduction was not taken for the diesel fuel pumps.

Table 5
Trip Generation for the Proposed
Quik Mart Development

Description	ITE Land Use Code (LUC)	SIZE	Daily Trips	AM Peak Hour Trips		PM Peak Hour Trips	
				Enter	Exit	Enter	Exit
Convenience Market with Fuel Center (5.5k-10k S.F.)	945	20 Vehicle Fueling Positions	6,916	316	316	269	269
Diesel Fuel Pumps	944	3 Fueling Positions	516	15	15	21	21
Total New Generated Trips			**7,432**	**331**	**331**	**290**	**290**
Pass-By Trip Reduction [(1)]			(4,459)	(193)	(193)	(156)	(156)
Net New Trips Generated			**2,973**	**138**	**138**	**134**	**134**

[(1)] Pass-by reductions were based on *ITE Trip Generation, 11th Edition* for LUC 945 for AM and PM peak hours and were estimated for daily trip generation. The pass-by reduction rates utilized were 60% for daily trip generation, 61.5% for AM peak hour trip generation, and 58.2% for PM peak hour trip generation.

Additional information regarding the trip generation calculations for the site development included in this study is contained in Appendix C.

Trip Distribution

The trips that will be generated by the proposed project were assigned to the roadway network using trip distributions that are detailed in Appendix D. These directional distributions were based on the existing directional split of traffic, the access proposed for the site, and the population and employment centers in the area. Given the different land uses proposed for Quik Mart development, various trip distributions were determined. As an example, Figure 5 illustrates the primary trip distribution for the convenience market with fuel pumps, which is detailed as follows:

- 50% to / from the north on Nashville Highway
- 30% to / from the south on Nashville Highway
- 10% to / from the west on Spring Meade Boulevard
    - 5% to / from the north via Old Highway 31
- 10% to / from the west on Carters Creek Station Road

Additionally, Appendix D contains the following trip distribution sheets:

- Primary Trip Distributions
    - Convenience Market with Fuel Pumps
    - Diesel Fuel Pumps
- Pass-By Trip Distributions
    - Convenience Market with Fuel Pumps
- Offsite Trip Distributions
    - Carters Station North Residential Development
    - Greens Mill Residential Development
    - McClure Farms Mixed-Use Development

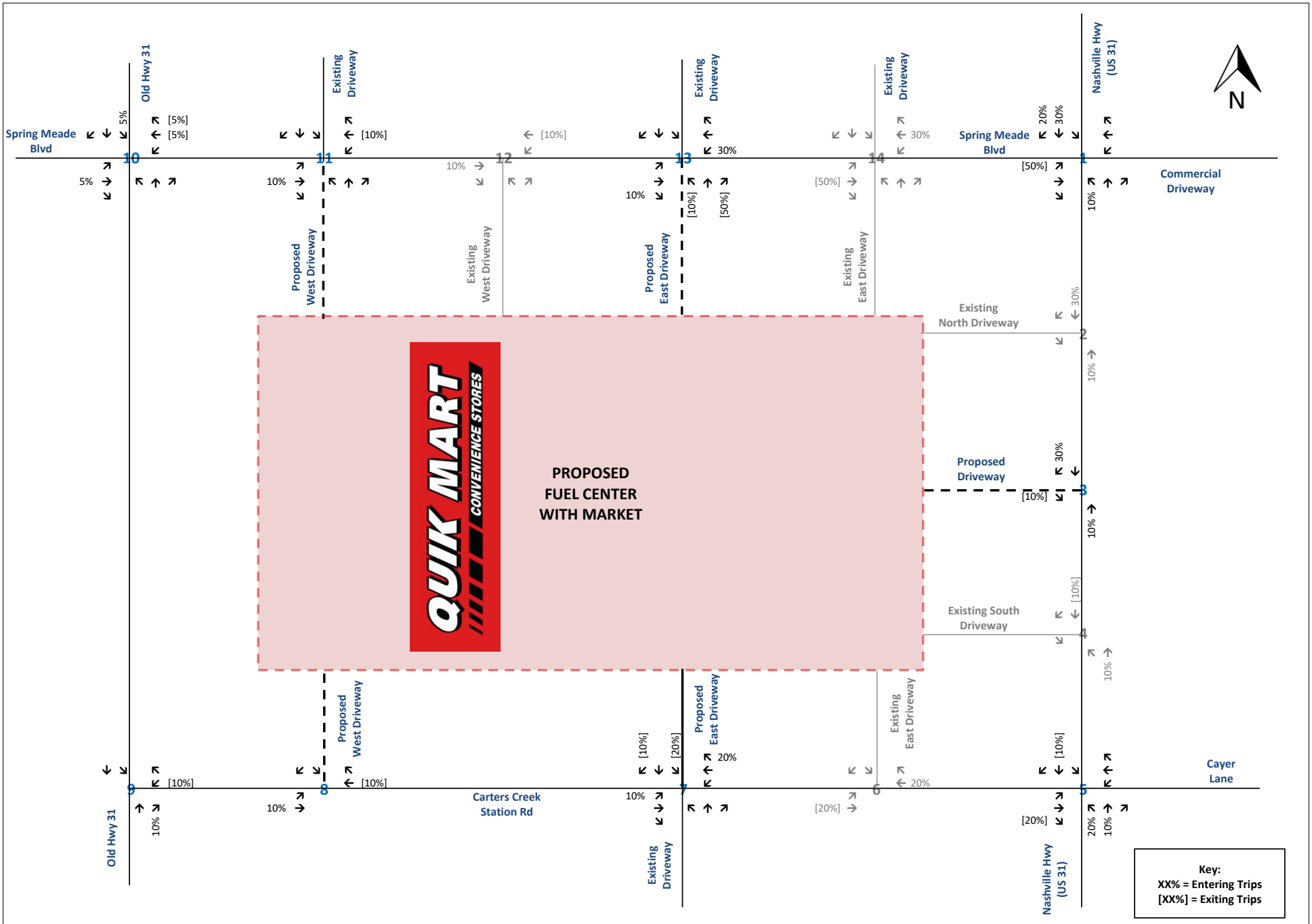


Figure 5.
Primary Trip Distribution - Convenience Store & Fuel Center
Nashville Highway QuikMart
Columbia, Tennessee

Traffic Assignment

The assignments of the total trips that will be generated by the proposed development are presented in Figure 6. Appendix E contains the traffic assignment figures utilized in developing the projected traffic volumes at buildout conditions. Traffic assignment information included in Appendix E is listed as follows:

- Existing Traffic Volumes (2024)
- Background Traffic Volumes (2025)
    - Historical Growth (3.0% for one year)
    - Offsite Traffic
        - Carters Station North Residential Development
        - Greens Mill Residential Development
        - McClure Farms Mixed-Use Development
    - Total Background Traffic (Historical Growth + Offsite)
- Site-Generated Traffic
    - Existing Traffic Reassignment
    - Primary Traffic Volumes
        - Convenience Market with Fuel pumps
        - Diesel Fuel Pumps
    - Total Primary Traffic Volumes
    - Pass-By Traffic Volumes
        - Convenience Market with Fuel Pumps
- Total Site-Generated Traffic Volumes
- Total Projected Traffic Volumes at Project Buildout (2025)

The site-generated traffic volumes, shown in Figure 6, were added to the total background peak hour traffic volumes in order to obtain the total projected traffic volumes for the intersections within the study area. Figure 7 presents the total projected AM and PM peak hour traffic volumes expected at project buildout in 2025.

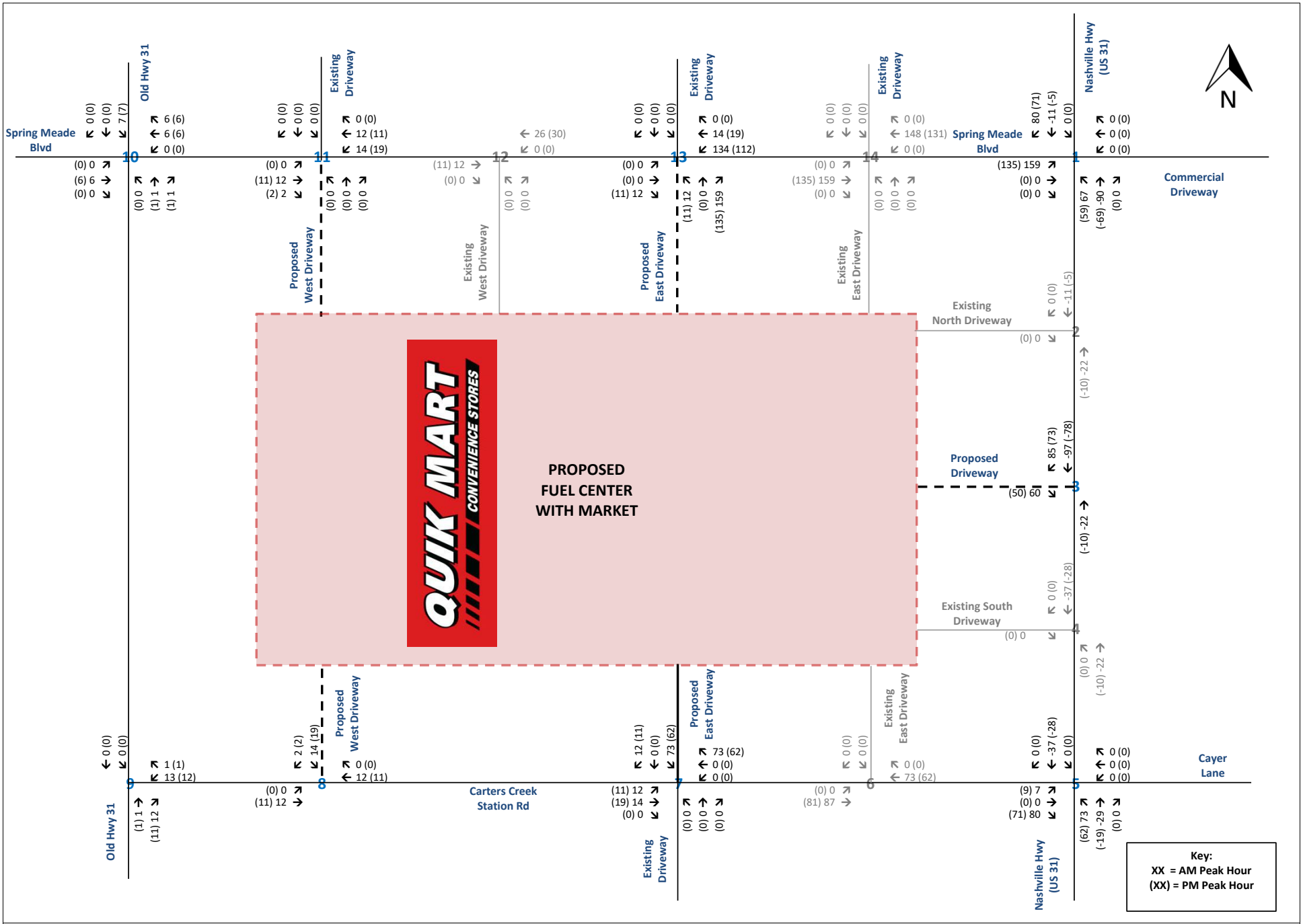


Figure 6.
Site Generated Traffic
Nashville Highway QuikMart
Columbia, Tennessee

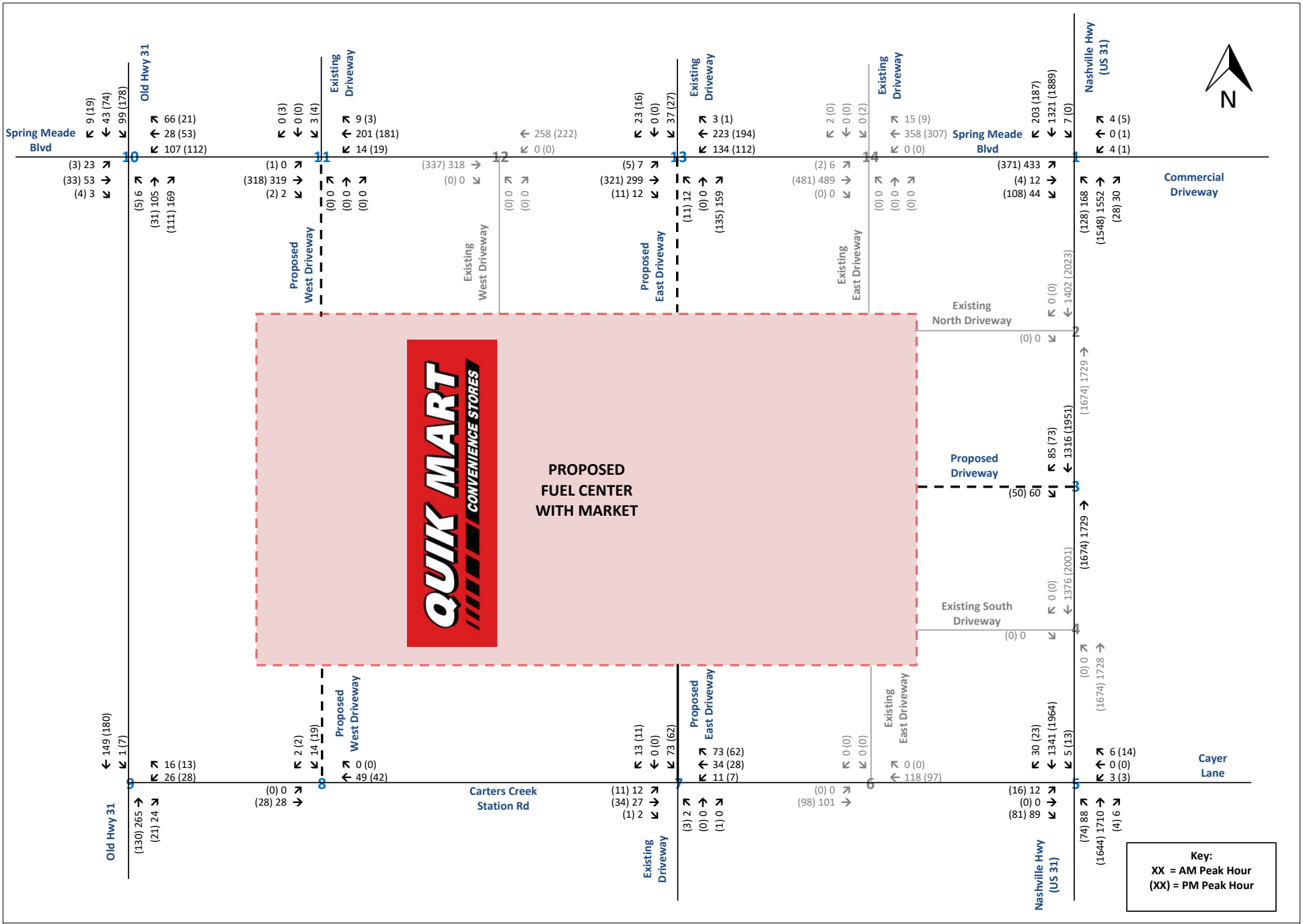


Figure 7.
Total Projected Traffic at Buildout (2025)
Nashville Highway QuikMart
Columbia, Tennessee

2025 Projected Intersection Capacity Analyses

Capacity analyses were performed in order to determine the impact of the project on the intersections included in the scope of the study. These capacity analyses were used to evaluate the need for roadway and traffic control improvements at the intersections studied.

The results of the capacity analyses for the 2025 projected traffic conditions at the intersections studied are presented in Table 6. As shown, the intersections included in this study are, for the most part, expected to operate at acceptable levels of service (LOS D or better) during the AM and PM peak hours of traffic. Again, the exception is intersection #5, Nashville Highway and Carters Creek Station Road / Cayer Lane, where levels of service are not defined during either peak hour for the eastbound or westbound approach. However, with the implementation of a northbound left turn lane on Nashville Highway at Carters Creek Station Road / Cayer Lane, the eastbound approach is expected to operate at LOS C during the AM peak hour and LOS E during the PM peak hour, and the westbound approach is expected to operate at LOS E during both peak hours. The results of left turn lane evaluations for the 2025 projected traffic conditions are discussed later in this report.

Appendix B contains the capacity analysis worksheets for the 2025 projected traffic conditions.

Table 6
2025 Projected Traffic Conditions Analyses – Peak Hour Levels of Service

Intersection			Level of Service / Delay (Seconds)	
#	Description	Movement [1]	AM Peak Hour	PM Peak Hour
1	Nashville Highway (US 31) & Spring Meade Boulevard / Beasley's Yard Driveway	Overall (Signalized)	C (30.9)	C (30.2)
3	Nashville Highway (US 31) & Proposed Quik Mart Driveway	Eastbound Right	B (12.8)	C (23.2)
5	Nashville Highway (US 31) & Carters Creek Station Road / Cayer Lane	Northbound Left	B (10.2)	C (17.1)
		Southbound Left	C (15.7)	C (15.1)
		Eastbound	+ [2]	+ [2]
		Westbound	+ [2]	+ [2]
5	Nashville Highway (US 31) & Carters Creek Station Road / Cayer Lane *With NB Left Turn Lane*	Northbound Left	B (10.2)	C (17.1)
		Southbound Left	C (15.7)	C (15.1)
		Eastbound	C (17.8)	E (43.3)
		Westbound	E (41.6)	E (37.1)
7	Carters Creek Station Road & Proposed East Quik Mart Driveway / Bank Driveway	Northbound	B (10.0)	A (9.3)
		Southbound	B (10.2)	A (9.7)
		Eastbound Left	A (7.5)	A (7.4)
		Westbound Left	A (7.3)	A (7.3)
8	Carters Creek Station Road & Proposed West Quik Mart Driveway	Southbound	A (9.1)	A (9.0)
9	Old Highway 31 & Carters Creek Station Road	Southbound Left	A (8.0)	A (7.6)
		Westbound	B (12.0)	B (10.6)
10	Old Highway 31 & Spring Meade Boulevard	Overall (All-Way Stop)	B (15.0)	B (13.2)
11	Spring Meade Boulevard & Proposed West Quik Mart Driveway / Animal Care Center Driveway	Southbound	B (13.3)	B (11.4)
		Eastbound Left	A (7.9)	A (7.8)
		Westbound Left	A (8.4)	A (8.3)
13	Spring Meade Boulevard & Proposed East Quik Mart Driveway / West Marathon Driveway	Northbound	B (14.2)	B (13.0)
		Southbound	D (27.9)	C (20.0)
		Eastbound Left	A (7.9)	A (7.8)
		Westbound Left	A (8.7)	A (8.6)

[1] For signalized locations and all-way stop control, the overall LOS and delay are listed for the intersection. For intersections with stop control on the minor approaches only, the LOS and delay are listed for movements that are required to stop or yield the right-of-way.
[2] HCS Computation not defined.

2025 Projected Traffic Conditions – Queueing Analyses

As part of the analyses for the 2025 projected traffic conditions in the vicinity of the project site, 95th percentile queues were evaluated for the intersections included in this study. The queue lengths are summarized in Table 7.

Table 7
95th Percentile Queues for 2025 Projected Traffic Conditions

Intersection			AM Peak Hour	PM Peak Hour
#	Description	Approach / Movement	95th % Queue (1)	95th % Queue (1)
1	Nashville Highway (US 31) & Spring Meade Boulevard / Beasley's Yard Driveway	Northbound Left	#271'	187'
		Northbound Through-Right	#818'	730'
		Southbound Left	24'	7'
		Southbound Through	671'	#1243'
		Southbound Right	62'	54'
		Eastbound Left	#320'	262'
		Eastbound Through	#323'	267'
		Eastbound Right	<25'	6'
		Westbound Approach	<25'	19'
3	Nashville Highway (US 31) & Proposed Quik Mart Driveway	Eastbound Approach	<25'	<25'
5	Nashville Highway (US 31) & Carters Creek Station Road / Cayer Lane *With NB Left Turn Lane*	Northbound Left	<25'	<25'
		Southbound Left	<25'	<25'
		Eastbound Approach	50'	75'
		Westbound Approach	<25'	<25'
7	Carters Creek Station Road & Proposed East Quik Mart Driveway / TriStar Bank Driveway	Northbound Approach	<25'	<25'
		Southbound Approach	<25'	<25'
		Eastbound Left	<25'	<25'
		Westbound Left	<25'	<25'
8	Carters Creek Station Road & Proposed West Quik Mart Driveway	Southbound Approach	<25'	<25'

(1) #: 95th percentile volume exceeds capacity; queue may be longer.

Table 7 (Continued)
95th Percentile Queues for 2025 Projected Traffic Conditions

Intersection			AM Peak Hour	PM Peak Hour
#	**Description**	**Approach / Movement (1)**	**95th % Queue (1)**	**95th % Queue (1)**
9	Old Highway 31 & Carters Creek Station Road	Southbound Left	<25’	<25’
		Westbound Approach	<25’	<25’
10	Old Highway 31 & Spring Meade Boulevard	Northbound Approach	125’	50’
		Southbound Approach	50’	100’
		Eastbound Approach	<25’	<25’
		Westbound Through-Left	50’	75’
		Westbound Right	<25’	<25’
11	Spring Meade Boulevard & Proposed West Quik Mart Driveway / Animal Care Center Driveway	Southbound	<25’	<25’
		Westbound Left	<25’	<25’
13	Spring Meade Boulevard & Proposed East Quik Mart Driveway / West Marathon Driveway	Northbound Approach	50’	50’
		Southbound Approach	50’	<25’
		Eastbound Left	<25’	<25’
		Westbound Left	<25’	<25’

(1) #: 95th percentile volume exceeds capacity; queue may be longer.

Consideration of Offsite Improvements – Left Turn Lane Warrants

The 2025 projected traffic conditions were compared to the criteria contained in *NCHRP 457* to evaluate the need for left turn lane improvements at the following locations:

- #5 – Nashville Highway (US 31) & Carters Creek Station Road / Cayer Lane
- #7 – Carters Creek Station Road & Proposed East Quik Mart Driveway / TriStar Bank Driveway (eastbound and westbound)
- #9 – Old Highway 31 & Carters Creek Station Road
- #11 – Spring Meade Boulevard & Proposed West Quik Mart Driveway / Animal Care Center Driveway (eastbound and westbound)
- #13 – Spring Meade Boulevard & Proposed East Quik Mart Driveway / West Marathon Driveway (eastbound and westbound)

For intersection #5, the traffic volumes were compared to criteria for a four-lane highway, while the traffic volumes were compared to criteria for two-lane roadways at intersections #7, #9, #11, and #13.

#5 – Nashville Highway (US 31) & Carters Creek Station Road / Cayer Lane

The results of the analyses show that the projected volumes meet the thresholds required for a northbound left turn lane on Nashville Highway at Carters Creek Station Road during both the AM and PM peak hours.

#7 – Carters Creek Station Road & Proposed East Quik Mart Driveway / TriStar Bank Driveway

The results of the analyses show that the projected volumes do not meet the thresholds required for the installation of an eastbound or westbound left turn lane at this location during either the AM peak hour or PM peak hour.

#9 – Old Highway 31 & Carters Creek Station Road

The results of the analyses show that the projected volumes do not meet the thresholds required for the installation of a southbound left turn lane at this location during either the AM peak hour or PM peak hour.

#11 – Spring Meade Boulevard & Proposed West Quik Mart Driveway / Animal Care Center Driveway

The results of the analyses show that the projected volumes do not meet the thresholds required for the installation of an eastbound or westbound left turn lane at this location during either the AM peak hour or PM peak hour.

#13 – Spring Meade Boulevard & Proposed East Quik Mart Driveway / West Marathon Driveway

The results of the analyses show that the projected volumes meet the thresholds required for the installation of a westbound left turn lane at this location during the AM and PM peak hours. However, there is an existing four-lane cross-section on Spring Meade Boulevard at this location, with one westbound lane and three eastbound lanes approaching the signal at Nashville Highway. To prioritize the storage capacity for eastbound traffic approaching the signal, it is not recommended that Spring Meade Boulevard be restriped to include a westbound left turn lane into the site. Furthermore, as shown in the image to the right, there is not sufficient right-of-way available to widen Spring Meade Boulevard at this location to provide an additional lane for westbound left-turning vehicles at the proposed east Quik Mart driveway.

Aerial image from TN Property Viewer

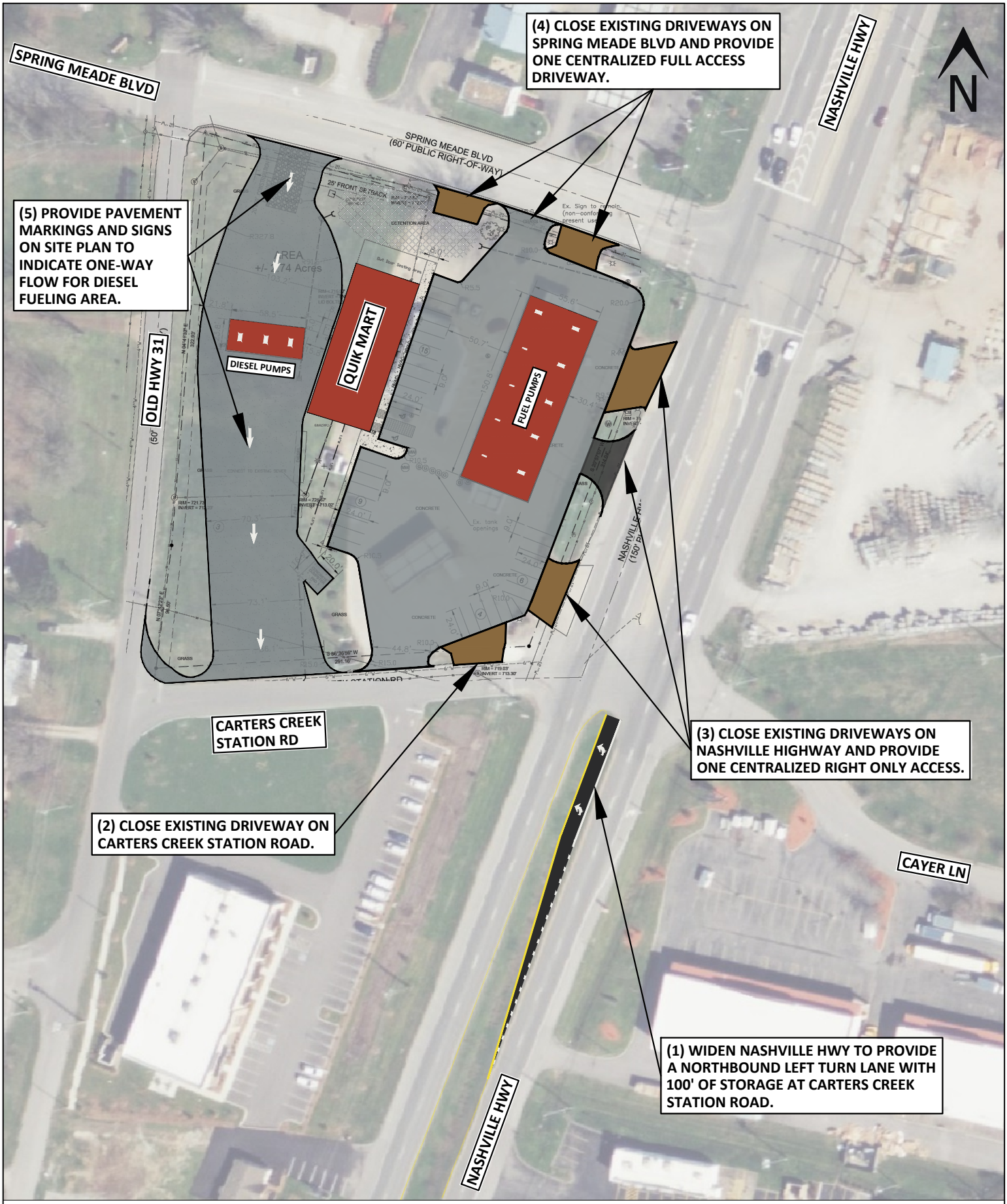
Copies of the left turn lane analyses sheets for the 2025 projected traffic conditions are included in Appendix F.

6. CONCLUSIONS AND RECOMMENDATIONS

The analyses presented in this study indicate that the traffic generated by the proposed redevelopment of the Quik Mart #34 site can be accommodated by the surrounding roadway infrastructure with the following offsite improvements, which are detailed in Figure 8:

1. Widen Nashville Highway to provide a northbound left turn lane with 100' of storage at Carters Creek Station Road.
2. Close existing east driveway on Carters Creek Station Road.
3. Close existing driveways on Nashville Highway and provide one centralized right-only access.
4. Close existing driveways on Spring Meade Boulevard and provide one centralized full access driveway.
5. Provide pavement markings and signs on site plan to indicate one-way flow for the diesel fueling area.

The implementation of the above improvements is expected to provide safe and efficient traffic operations in the vicinity of the proposed project site.



Traffic Impact Study for Quik Mart #34 (Columbia, TN)

RGPHILLIPS CONSULTING
TRAFFIC ENGINEERING & TRANSPORTATION PLANNING

Figure 8.
Study Recommendations

APPENDIX A

TRAFFIC DATA

INTERSECTION TURNING

MOVEMENT COUNTS

INTERSECTION VEHICULAR TURNING MOVEMENT COUNTS

LOCATION: #1 - Nashville Highway (US Highway 31) & Spring Meade Boulevard / Beasley's Yard Driveway
PROJECT: Nashville Highway Quik Mart #34
DATE: Tuesday, October 15, 2024

LOCATION	Northbound			Southbound			Eastbound			Westbound			
	Nashville Highway (US Highway 31)			Nashville Highway (US Highway 31)			Spring Meade Boulevard			Beasley's Yard Driveway			
TIME	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:15 AM - 7:30 AM	32	402	7	1	318	22	57	0	9	1	0	0	
7:30 AM - 7:45 AM	37	383	3	0	339	27	98	9	18	1	0	0	
7:45 AM - 8:00 AM	14	423	14	3	323	47	83	2	14	2	0	3	
8:00 AM - 8:15 AM	24	317	5	3	305	53	37	1	10	0	0	1	
2:30 PM - 2:45 PM	24	375	4	0	486	21	43	3	21	1	0	0	
2:45 PM - 3:00 PM	17	363	12	0	454	29	90	1	36	0	1	2	
3:00 PM - 3:15 PM	12	365	4	0	467	43	65	0	30	0	0	1	
3:15 PM - 3:30 PM	19	424	7	0	388	32	46	0	26	0	0	2	
AM Peak Hour (7:15 AM - 8:15 AM)	107	1,525	29	7	1,285	149	275	12	51	4	0	4	0.93
PM Peak Hour (2:30 PM - 3:30 PM)	72	1,527	27	0	1,795	125	244	4	113	1	1	5	0.97

INTERSECTION VEHICULAR TURNING MOVEMENT COUNTS

LOCATION: #2 - Nashville Highway (US Highway 31) & Existing North Quik Mart Driveway
PROJECT: Nashville Highway Quik Mart #34
DATE: Tuesday, October 15, 2024

LOCATION	Northbound			Southbound			Eastbound			Westbound			
	Nashville Highway (US Highway 31)			Nashville Highway (US Highway 31)			Existing North Quik Mart Driveway						
TIME	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:15 AM - 7:30 AM		439			332	7			0				
7:30 AM - 7:45 AM		416			354	8			1				
7:45 AM - 8:00 AM		440			335	9			1				
8:00 AM - 8:15 AM		345			322	6			1				
2:30 PM - 2:45 PM		394			517	3			1				
2:45 PM - 3:00 PM		382			484	4			2				
3:00 PM - 3:15 PM		377			501	7			2				
3:15 PM - 3:30 PM		445			412	5			3				
AM Peak Hour (7:15 AM - 8:15 AM)	0	1,640	0	0	1,343	30	0	0	3	0	0	0	0.96
PM Peak Hour (2:30 PM - 3:30 PM)	0	1,598	0	0	1,914	19	0	0	8	0	0	0	0.97

INTERSECTION VEHICULAR TURNING MOVEMENT COUNTS

LOCATION: #3 - Nashville Highway (US Highway 31) & Proposed Quik Mart Driveway
PROJECT: Nashville Highway Quik Mart #34
DATE: Tuesday, October 15, 2024

LOCATION	Northbound			Southbound			Eastbound			Westbound			
	Nashville Highway (US Highway 31)			Nashville Highway (US Highway 31)			Proposed Quik Mart Driveway						
TIME	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:15 AM - 7:30 AM		439			332								
7:30 AM - 7:45 AM		416			355								
7:45 AM - 8:00 AM		440			336								
8:00 AM - 8:15 AM		345			323								
2:30 PM - 2:45 PM		394			518								
2:45 PM - 3:00 PM		382			486								
3:00 PM - 3:15 PM		377			503								
3:15 PM - 3:30 PM		445			415								
AM Peak Hour (7:15 AM - 8:15 AM)	0	1,640	0	0	1,346	0	0	0	0	0	0	0	0.96
PM Peak Hour (2:30 PM - 3:30 PM)	0	1,598	0	0	1,922	0	0	0	0	0	0	0	0.96

INTERSECTION VEHICULAR TURNING MOVEMENT COUNTS

LOCATION: #4 - Nashville Highway (US Highway 31) & Existing South Quik Mart Driveway
PROJECT: Nashville Highway Quik Mart #34
DATE: Tuesday, October 15, 2024

LOCATION	Northbound			Southbound			Eastbound			Westbound			
	Nashville Highway (US Highway 31)			Nashville Highway (US Highway 31)			Existing South Quik Mart Driveway						
TIME	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:15 AM - 7:30 AM	4	439			332	0	0		13				
7:30 AM - 7:45 AM	6	415			355	0	1		7				
7:45 AM - 8:00 AM	4	440			336	0	0		6				
8:00 AM - 8:15 AM	2	345			320	3	0		10				
2:30 PM - 2:45 PM	5	394			518	0	0		6				
2:45 PM - 3:00 PM	5	382			486	0	0		8				
3:00 PM - 3:15 PM	1	377			501	2	0		9				
3:15 PM - 3:30 PM	4	445			414	1	0		9				
AM Peak Hour (7:15 AM - 8:15 AM)	16	1,639	0	0	1,343	3	1	0	36	0	0	0	0.96
PM Peak Hour (2:30 PM - 3:30 PM)	15	1,598	0	0	1,919	3	0	0	32	0	0	0	0.97

INTERSECTION VEHICULAR TURNING MOVEMENT COUNTS

LOCATION: #5 - Nashville Highway (US Highway 31) & Carters Creek Station Road / Cayer Lane
PROJECT: Nashville Highway Quik Mart #34
DATE: Tuesday, October 15, 2024

LOCATION	Northbound			Southbound			Eastbound			Westbound			
	Nashville Highway (US Highway 31)			Nashville Highway (US Highway 31)			Carters Creek Station Road			Cayer Lane			
TIME	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:15 AM - 7:30 AM	7	441	0	1	343	1	0	0	4	0	0	2	
7:30 AM - 7:45 AM	1	420	0	0	356	6	0	0	6	0	0	1	
7:45 AM - 8:00 AM	3	440	4	1	328	13	2	0	4	1	0	2	
8:00 AM - 8:15 AM	5	343	2	3	318	9	3	0	4	2	0	1	
2:30 PM - 2:45 PM	2	394	1	4	516	4	2	0	1	0	0	3	
2:45 PM - 3:00 PM	5	380	0	3	485	6	2	0	4	0	0	5	
3:00 PM - 3:15 PM	3	374	0	1	502	7	1	0	5	0	0	3	
3:15 PM - 3:30 PM	2	444	3	5	413	5	2	0	9	3	0	3	
AM Peak Hour (7:15 AM - 8:15 AM)	16	1,644	6	5	1,345	29	5	0	18	3	0	6	0.96
PM Peak Hour (2:30 PM - 3:30 PM)	12	1,592	4	13	1,916	22	7	0	19	3	0	14	0.97

INTERSECTION VEHICULAR TURNING MOVEMENT COUNTS

LOCATION: #6 - Carters Creek Station Road & Existing East Quik Mart Driveway
PROJECT: Nashville Highway Quik Mart #34
DATE: Tuesday, October 15, 2024

LOCATION	Northbound			Southbound			Eastbound			Westbound			
				Existing East Quik Mart Driveway			Carters Creek Station Road			Carters Creek Station Road			
TIME	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:15 AM - 7:30 AM				1		2	0	3			8	0	
7:30 AM - 7:45 AM				4		3	1	2			6	1	
7:45 AM - 8:00 AM				0		3	0	6			16	0	
8:00 AM - 8:15 AM				1		2	0	6			14	0	
2:30 PM - 2:45 PM				0		0	0	3			6	0	
2:45 PM - 3:00 PM				1		0	0	5			11	0	
3:00 PM - 3:15 PM				1		2	0	5			10	0	
3:15 PM - 3:30 PM				4		0	0	7			7	0	
AM Peak Hour (7:15 AM - 8:15 AM)	0	0	0	6	0	10	1	17	0	0	44	1	0.79
PM Peak Hour (2:30 PM - 3:30 PM)	0	0	0	6	0	2	0	20	0	0	34	0	0.86

INTERSECTION VEHICULAR TURNING MOVEMENT COUNTS

LOCATION: #7 - Carters Creek Station Road & Proposed East Quik Mart Driveway / TriStar Bank Driveway
PROJECT: Nashville Highway Quik Mart #34
DATE: Tuesday, October 15, 2024

LOCATION	Northbound			Southbound			Eastbound			Westbound			
	TriStar Bank Driveway			Proposed East Quik Mart Driveway			Carters Creek Station Road			Carters Creek Station Road			
TIME	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:15 AM - 7:30 AM	0	0	0	2	0	2	3	1	0	0	10	0	
7:30 AM - 7:45 AM	0	0	0	0	0	5	6	3	0	1	8	0	
7:45 AM - 8:00 AM	1	1	0	1	1	4	3	5	0	6	13	0	
8:00 AM - 8:15 AM	1	1	0	1	0	12	1	5	2	4	12	0	
2:30 PM - 2:45 PM	1	0	0	1	1	4	2	2	0	1	5	0	
2:45 PM - 3:00 PM	0	0	0	1	0	4	7	4	0	5	6	0	
3:00 PM - 3:15 PM	1	2	1	0	0	3	2	4	1	1	11	0	
3:15 PM - 3:30 PM	1	0	0	2	0	5	2	5	0	0	7	0	
AM Peak Hour (7:15 AM - 8:15 AM)	2	2	0	4	1	23	13	14	2	11	43	0	0.74
PM Peak Hour (2:30 PM - 3:30 PM)	3	2	1	4	1	16	13	15	1	7	29	0	0.85

INTERSECTION VEHICULAR TURNING MOVEMENT COUNTS

LOCATION: #8 - Carters Creek Station Road & Proposed West Quik Mart Driveway
PROJECT: Nashville Highway Quik Mart #34
DATE: Tuesday, October 15, 2024

LOCATION	Northbound			Southbound			Eastbound			Westbound			
				Proposed West Quik Mart Driveway			Carters Creek Station Road			Carters Creek Station Road			
TIME	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:15 AM - 7:30 AM								4			12		
7:30 AM - 7:45 AM								9			13		
7:45 AM - 8:00 AM								8			18		
8:00 AM - 8:15 AM								8			25		
2:30 PM - 2:45 PM								4			10		
2:45 PM - 3:00 PM								11			10		
3:00 PM - 3:15 PM								7			15		
3:15 PM - 3:30 PM								7			13		
AM Peak Hour (7:15 AM - 8:15 AM)	0	0	0	0	0	0	0	29	0	0	68	0	0.73
PM Peak Hour (2:30 PM - 3:30 PM)	0	0	0	0	0	0	0	29	0	0	48	0	0.88

INTERSECTION VEHICULAR TURNING MOVEMENT COUNTS

LOCATION: #9 - Old Highway 31 & Carters Creek Station Road
PROJECT: Nashville Highway Quik Mart #34
DATE: Tuesday, October 15, 2024

LOCATION	Northbound			Southbound			Eastbound			Westbound			
	Old Highway 31			Old Highway 31						Carters Creek Station Road			
TIME	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:15 AM - 7:30 AM		74	5	0	37					6		7	
7:30 AM - 7:45 AM		94	8	0	30					12		1	
7:45 AM - 8:00 AM		46	6	0	33					12		2	
8:00 AM - 8:15 AM		25	6	1	38					15		5	
2:30 PM - 2:45 PM		34	4	0	32					6		4	
2:45 PM - 3:00 PM		31	8	4	41					6		4	
3:00 PM - 3:15 PM		24	3	3	52					11		2	
3:15 PM - 3:30 PM		25	7	0	27					10		2	
AM Peak Hour (7:15 AM - 8:15 AM)	0	239	25	1	138	0	0	0	0	45	0	15	0.80
PM Peak Hour (2:30 PM - 3:30 PM)	0	114	22	7	152	0	0	0	0	33	0	12	0.89

INTERSECTION VEHICULAR TURNING MOVEMENT COUNTS

LOCATION: #10 - Old Highway 31 & Spring Meade Boulevard
PROJECT: Nashville Highway Quik Mart #34
DATE: Tuesday, October 15, 2024

LOCATION	Northbound			Southbound			Eastbound			Westbound			
	Old Highway 31			Old Highway 31			Spring Meade Boulevard			Spring Meade Boulevard			
TIME	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:15 AM - 7:30 AM	1	46	29	34	22	3	7	4	2	14	4	27	
7:30 AM - 7:45 AM	3	44	52	51	11	4	14	25	0	19	4	32	
7:45 AM - 8:00 AM	2	8	38	14	5	0	0	16	1	28	7	3	
8:00 AM - 8:15 AM	0	3	27	0	4	2	1	6	0	36	9	1	
2:30 PM - 2:45 PM	2	11	25	11	14	4	1	11	0	19	8	8	
2:45 PM - 3:00 PM	0	10	25	96	27	6	0	7	2	18	12	4	
3:00 PM - 3:15 PM	2	6	20	54	26	5	1	7	0	27	19	2	
3:15 PM - 3:30 PM	1	2	25	15	5	3	1	7	2	22	9	4	
AM Peak Hour (7:15 AM - 8:15 AM)	6	101	146	99	42	9	22	51	3	97	24	63	0.64
PM Peak Hour (2:30 PM - 3:30 PM)	5	29	95	176	72	18	3	32	4	86	48	18	0.71

INTERSECTION VEHICULAR TURNING MOVEMENT COUNTS

LOCATION: #11 - Spring Meade Boulevard & Animal Care Center Driveway / Proposed West Quik Mart Driveway
PROJECT: Nashville Highway Quik Mart #34
DATE: Tuesday, October 15, 2024

LOCATION	Northbound			Southbound			Eastbound			Westbound			
	Proposed West Quik Mart Driveway			Animal Care Center Driveway			Spring Meade Boulevard			Spring Meade Boulevard			
TIME	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:15 AM - 7:30 AM				1		0	0	67			45	1	
7:30 AM - 7:45 AM				0		0	0	128			55	2	
7:45 AM - 8:00 AM				2		0	0	68			38	2	
8:00 AM - 8:15 AM				0		0	0	33			46	4	
2:30 PM - 2:45 PM				1		0	0	47			35	0	
2:45 PM - 3:00 PM				0		1	1	127			33	1	
3:00 PM - 3:15 PM				0		1	0	81			47	2	
3:15 PM - 3:30 PM				3		1	0	47			34	0	
AM Peak Hour (7:15 AM - 8:15 AM)	0	0	0	3	0	0	0	296	0	0	184	9	0.66
PM Peak Hour (2:30 PM - 3:30 PM)	0	0	0	4	0	3	1	302	0	0	149	3	0.71

INTERSECTION VEHICULAR TURNING MOVEMENT COUNTS

LOCATION: #12 - Spring Meade Boulevard & Existing West Quik Mart Driveway
PROJECT: Nashville Highway Quik Mart #34
DATE: Tuesday, October 15, 2024

LOCATION	Northbound			Southbound			Eastbound			Westbound			
	Existing West Quik Mart Driveway						Spring Meade Boulevard			Spring Meade Boulevard			
TIME	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:15 AM - 7:30 AM	1		4					60	3	4	54		
7:30 AM - 7:45 AM	3		8					115	3	4	59		
7:45 AM - 8:00 AM	1		4					80	2	9	47		
8:00 AM - 8:15 AM	3		5					31	1	6	58		
2:30 PM - 2:45 PM	2		3					52	3	2	36		
2:45 PM - 3:00 PM	2		3					119	1	9	34		
3:00 PM - 3:15 PM	1		5					83	6	4	55		
3:15 PM - 3:30 PM	1		3					53	4	4	39		
AM Peak Hour (7:15 AM - 8:15 AM)	8	0	21	0	0	0	0	286	9	23	218	0	0.74
PM Peak Hour (2:30 PM - 3:30 PM)	6	0	14	0	0	0	0	307	14	19	164	0	0.78

INTERSECTION VEHICULAR TURNING MOVEMENT COUNTS

LOCATION: #13 - Spring Meade Boulevard & West Marathon Driveway / Proposed East Quik Mart Driveway
PROJECT: Nashville Highway Quik Mart #34
DATE: Tuesday, October 15, 2024

LOCATION	Northbound			Southbound			Eastbound			Westbound			
	Proposed East Quik Mart Driveway			West Marathon Driveway			Spring Meade Boulevard			Spring Meade Boulevard			
TIME	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:15 AM - 7:30 AM				6		7	2	62			51	0	
7:30 AM - 7:45 AM				8		9	2	121			54	0	
7:45 AM - 8:00 AM				12		1	2	82			55	0	
8:00 AM - 8:15 AM				10		5	1	35			59	3	
2:30 PM - 2:45 PM				6		1	2	53			37	0	
2:45 PM - 3:00 PM				6		5	1	121			38	0	
3:00 PM - 3:15 PM				7		5	2	86			54	0	
3:15 PM - 3:30 PM				7		5	0	56			38	1	
AM Peak Hour (7:15 AM - 8:15 AM)	0	0	0	36	0	22	7	300	0	0	219	3	0.76
PM Peak Hour (2:30 PM - 3:30 PM)	0	0	0	26	0	16	5	316	0	0	167	1	0.78

INTERSECTION VEHICULAR TURNING MOVEMENT COUNTS

LOCATION: #14 - Spring Meade Boulevard & East Marathon Driveway / Existing East Quik Mart Driveway
PROJECT: Nashville Highway Quik Mart #34
DATE: Tuesday, October 15, 2024

LOCATION	Northbound			Southbound			Eastbound			Westbound			
	Existing East Quik Mart Driveway			East Marathon Driveway			Spring Meade Boulevard			Spring Meade Boulevard			
TIME	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:15 AM - 7:30 AM	0	0	3	0	0	1	2	63	3	0	50	4	
7:30 AM - 7:45 AM	0	0	1	0	0	0	2	124	3	5	54	5	
7:45 AM - 8:00 AM	1	0	7	0	0	1	1	92	1	4	53	4	
8:00 AM - 8:15 AM	0	0	4	0	0	0	1	44	0	13	62	2	
2:30 PM - 2:45 PM	0	0	7	1	0	0	0	59	0	6	37	2	
2:45 PM - 3:00 PM	0	0	3	0	0	0	2	124	1	3	38	6	
3:00 PM - 3:15 PM	1	0	3	0	0	0	0	92	1	2	53	0	
3:15 PM - 3:30 PM	0	0	9	1	0	0	0	62	1	11	39	1	
AM Peak Hour (7:15 AM - 8:15 AM)	1	0	15	0	0	2	6	323	7	22	219	15	0.79
PM Peak Hour (2:30 PM - 3:30 PM)	1	0	22	2	0	0	2	337	3	22	167	9	0.80

QUALITY COUNTS

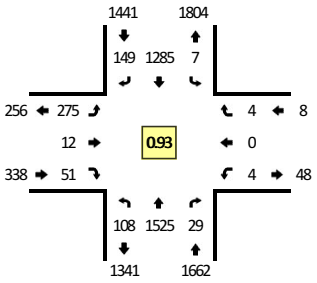
TMC REPORTS

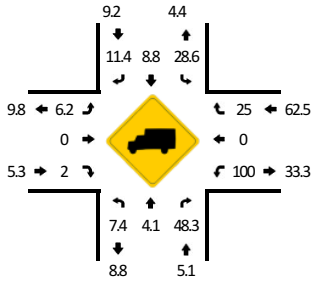
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

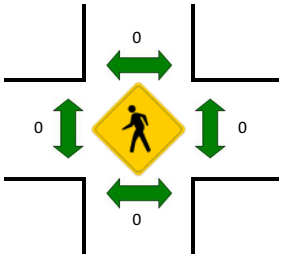
LOCATION: Nashville Hwy -- Spring Meade Blvd
CITY/STATE: Columbia, TN

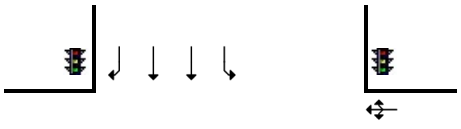
QC JOB #: 16778201
DATE: Tue, Oct 15 2024

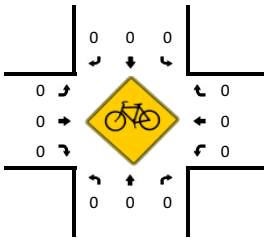
Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

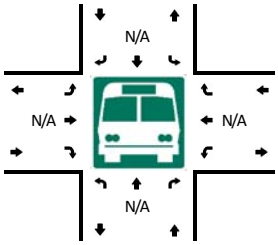


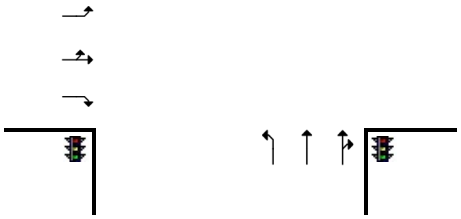


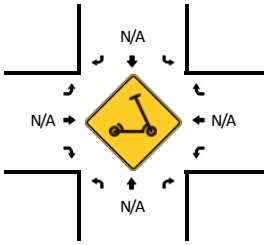












15-Min Count Period Beginning At	Nashville Hwy (Northbound)				Nashville Hwy (Southbound)				Spring Meade Blvd (Eastbound)				Spring Meade Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	17	402	13	0	0	239	24	0	36	0	14	0	1	0	3	0	749	
7:15 AM	32	402	7	0	1	318	22	0	57	0	9	0	1	0	0	0	849	
7:30 AM	37	383	3	1	0	339	27	0	98	9	18	0	1	0	0	0	916	
7:45 AM	14	423	14	0	3	323	47	0	83	2	14	0	2	0	3	0	928	3442
8:00 AM	24	317	5	0	3	305	53	0	37	1	10	0	0	0	1	0	756	3449
8:15 AM	8	309	3	0	1	245	24	0	35	0	20	0	1	0	2	0	648	3248
8:30 AM	10	344	3	0	0	248	22	0	30	1	13	0	0	0	2	0	673	3005
8:45 AM	11	352	8	0	0	229	25	1	27	0	13	0	0	1	2	0	669	2746

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	56	1692	56	0	12	1292	188	0	332	8	56	0	8	0	12	0	3712
Heavy Trucks	4	60	12		0	148	12		16	0	0		8	0	4		264
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 10/21/2024 9:41 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

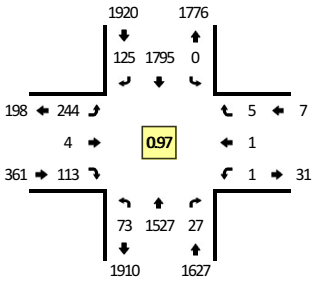
Type of peak hour being reported: Intersection Peak

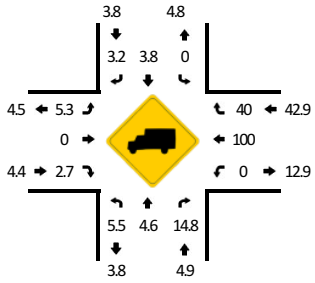
Method for determining peak hour: Total Entering Volume

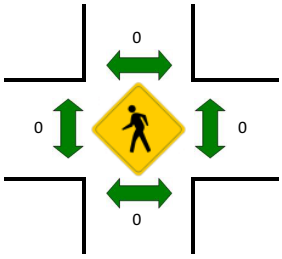
LOCATION: Nashville Hwy -- Spring Meade Blvd
CITY/STATE: Columbia, TN

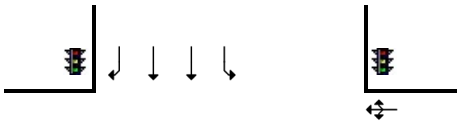
QC JOB #: 16778202
DATE: Tue, Oct 15 2024

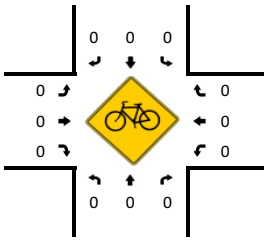
Peak-Hour: 2:30 PM -- 3:30 PM
Peak 15-Min: 2:45 PM -- 3:00 PM

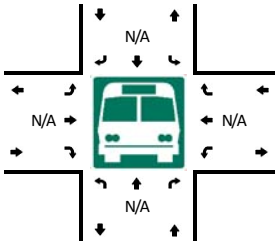


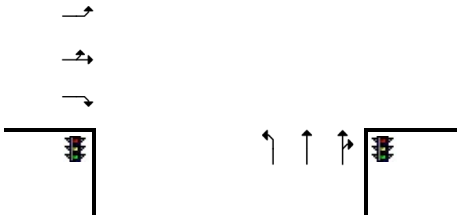


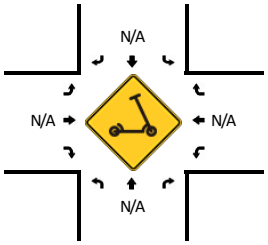












15-Min Count Period Beginning At	Nashville Hwy (Northbound)				Nashville Hwy (Southbound)				Spring Meade Blvd (Eastbound)				Spring Meade Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
2:00 PM	13	353	11	0	1	365	36	0	34	2	16	0	2	0	1	0	834	
2:15 PM	12	320	9	1	1	503	33	0	25	0	19	0	1	0	3	0	927	
2:30 PM	24	375	4	1	0	486	21	0	43	3	21	0	1	0	0	0	979	
2:45 PM	17	363	12	0	0	454	29	0	90	1	36	0	0	1	2	0	1005	3745
3:00 PM	12	365	4	0	0	467	43	0	65	0	30	0	0	0	1	0	987	3898
3:15 PM	19	424	7	0	0	388	32	0	46	0	26	0	0	0	2	0	944	3915
3:30 PM	16	419	7	0	1	433	31	0	23	0	13	0	0	0	2	0	945	3881
3:45 PM	21	416	5	0	0	347	33	0	43	1	12	0	3	0	3	0	884	3760
4:00 PM	10	356	4	0	0	442	47	1	41	1	16	0	0	0	3	0	921	3694
4:15 PM	13	391	4	0	1	427	25	1	41	0	17	0	0	0	2	0	922	3672
4:30 PM	15	418	6	0	0	416	39	1	30	0	14	0	1	0	1	0	941	3668
4:45 PM	18	380	5	0	1	416	36	0	55	3	20	0	0	0	2	0	936	3720
5:00 PM	11	361	4	0	0	455	41	0	46	1	26	0	2	1	4	0	952	3751
5:15 PM	20	418	3	0	1	460	36	0	37	0	19	0	0	0	3	0	997	3826
5:30 PM	12	352	15	1	0	432	42	0	25	1	16	0	0	0	2	0	898	3783
5:45 PM	12	317	2	0	0	411	38	0	39	0	17	0	1	0	1	0	838	3685

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	68	1452	48	0	0	1816	116	0	360	4	144	0	0	4	8	0	4020
Heavy Trucks	0	60	8		0	60	4		40	0	0		0	4	8		184
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

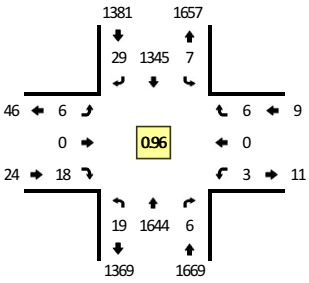
Report generated on 10/21/2024 9:41 AM

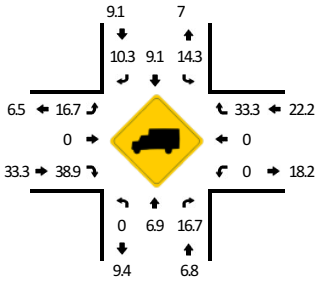
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

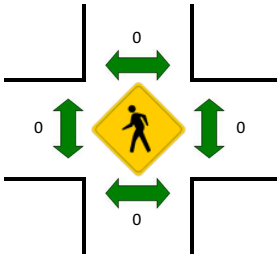
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

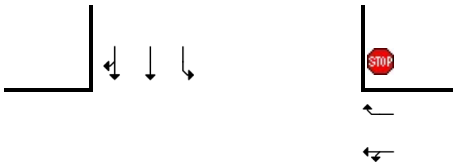
LOCATION: Nashville Hwy -- Carters Creek Station Rd | **QC JOB #:** 16778203
CITY/STATE: Columbia, TN | **DATE:** Tue, Oct 15 2024

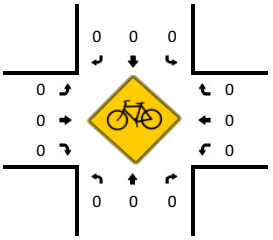
Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

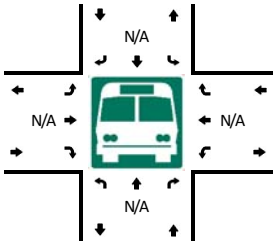


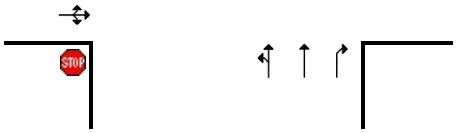


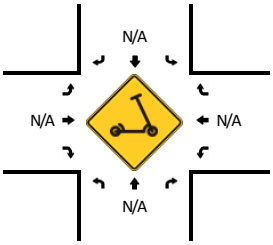












15-Min Count Period Beginning At	Nashville Hwy (Northbound)				Nashville Hwy (Southbound)				Carters Creek Station Rd (Eastbound)				Carters Creek Station Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	1	424	3	1	1	243	9	1	2	1	1	0	0	0	3	0	690	
7:15 AM	7	441	0	0	1	343	1	0	0	0	4	0	0	0	2	0	799	
7:30 AM	1	420	0	0	0	356	6	1	0	0	6	0	0	0	1	0	791	
7:45 AM	3	440	4	2	1	328	13	1	2	0	4	1	1	0	2	0	802	3082
8:00 AM	5	343	2	1	3	318	9	0	3	0	4	0	2	0	1	0	691	3083
8:15 AM	1	312	3	1	1	266	10	2	1	0	3	0	1	0	6	0	607	2891
8:30 AM	4	350	1	1	1	264	4	0	2	0	7	0	0	0	3	0	637	2737
8:45 AM	3	370	6	0	6	235	4	0	3	0	5	0	2	0	1	0	635	2570

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	12	1760	16	8	4	1312	52	4	8	0	16	4	4	0	8	0	3208
Heavy Trucks	0	136	4		0	156	4		0	0	0		0	0	0		300
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

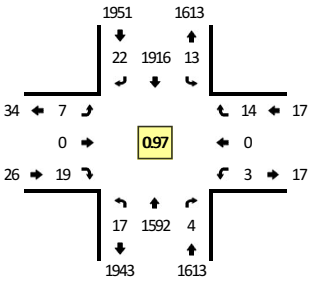
Report generated on 10/31/2024 3:33 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

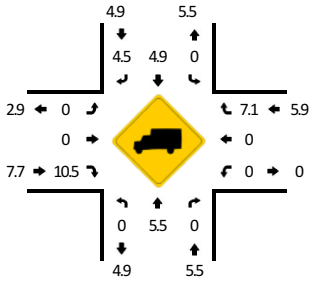
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

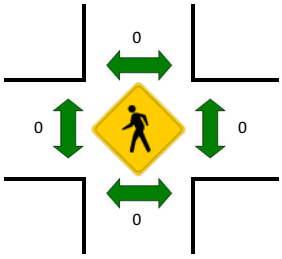
LOCATION: Nashville Hwy -- Carters Creek Station Rd
CITY/STATE: Columbia, TN

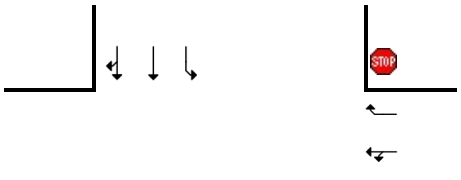
QC JOB #: 16778204
DATE: Tue, Oct 15 2024

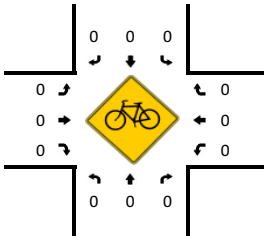
Peak-Hour: 2:30 PM -- 3:30 PM
Peak 15-Min: 2:30 PM -- 2:45 PM

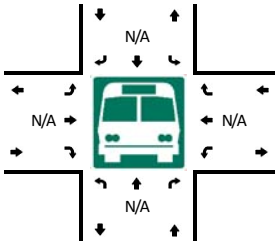


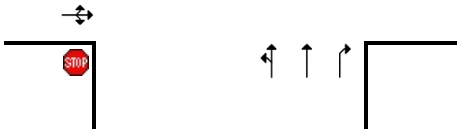


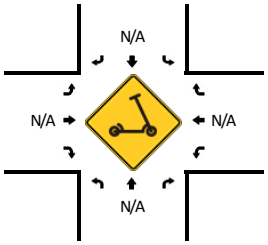












15-Min Count Period Beginning At	Nashville Hwy (Northbound)				Nashville Hwy (Southbound)				Carters Creek Station Rd (Eastbound)				Carters Creek Station Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
2:00 PM	3	366	1	2	4	380	9	0	1	0	6	0	3	0	6	0	781	
2:15 PM	1	342	3	3	3	516	7	0	0	1	4	0	2	0	2	0	884	
2:30 PM	2	394	1	2	4	516	4	0	2	0	1	0	0	0	3	0	929	
2:45 PM	5	380	0	1	3	485	6	0	2	0	4	0	0	0	5	0	891	3485
3:00 PM	3	374	0	2	1	502	7	0	1	0	5	0	0	0	3	0	898	3602
3:15 PM	2	444	3	0	5	413	5	0	2	0	9	0	3	0	3	0	889	3607
3:30 PM	1	432	2	0	1	451	10	0	2	0	1	0	2	0	3	0	905	3583
3:45 PM	3	434	4	2	1	359	6	0	1	0	5	0	2	0	5	0	822	3514
4:00 PM	2	357	1	2	8	458	5	0	0	0	7	0	1	0	5	0	846	3462
4:15 PM	5	397	3	4	11	440	8	0	4	1	5	0	1	1	6	0	886	3459
4:30 PM	6	438	2	2	7	425	7	0	1	0	11	0	0	1	3	0	903	3457
4:45 PM	2	387	1	5	2	437	7	0	1	0	5	0	3	0	6	0	856	3491
5:00 PM	1	372	5	1	8	483	4	0	2	0	6	0	3	0	4	0	889	3534
5:15 PM	3	431	3	2	3	467	5	0	0	0	6	0	3	0	14	0	937	3585
5:30 PM	5	358	5	1	4	454	4	1	0	1	9	0	3	0	4	0	849	3531
5:45 PM	4	320	2	4	4	429	3	0	2	0	7	0	3	0	3	0	781	3456

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	8	1576	4	8	16	2064	16	0	8	0	4	0	0	0	12	0	3716
Heavy Trucks	0	108	0		0	100	0		0	0	0		0	0	0		208
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 10/31/2024 3:33 PM

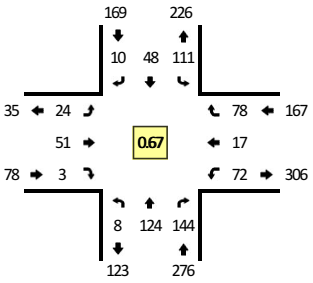
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

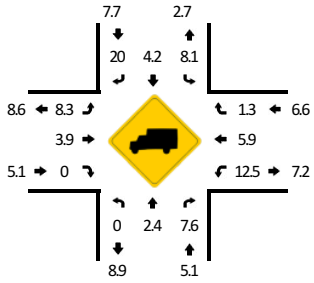
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

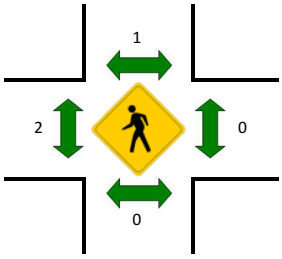
LOCATION: Old Hwy 31 N -- Spring Meade Blvd
CITY/STATE: Columbia, TN

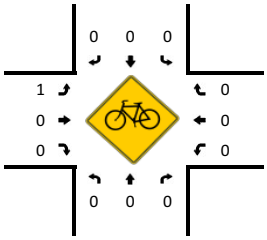
QC JOB #: 16778205
DATE: Tue, Oct 15 2024

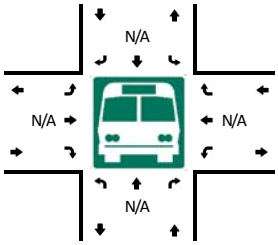
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

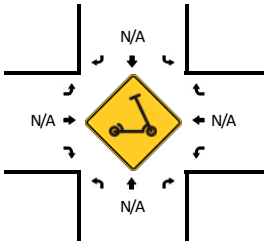












15-Min Count Period Beginning At	Old Hwy 31 N (Northbound)				Old Hwy 31 N (Southbound)				Spring Meade Blvd (Eastbound)				Spring Meade Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	2	26	25	0	12	10	3	0	3	6	0	0	11	2	16	0	116	
7:15 AM	1	46	29	0	34	22	3	0	7	4	2	0	14	4	27	0	193	
7:30 AM	3	44	52	0	51	11	4	0	14	25	0	0	19	4	32	0	259	
7:45 AM	2	8	38	0	14	5	0	0	0	16	1	0	28	7	3	0	122	690
8:00 AM	0	3	27	0	0	4	2	0	1	6	0	0	36	9	1	0	89	663
8:15 AM	3	2	23	0	5	2	0	0	0	11	0	0	14	9	3	0	72	542
8:30 AM	0	4	19	0	10	2	1	0	0	9	0	0	14	4	2	0	65	348
8:45 AM	1	1	17	0	1	1	0	0	1	5	0	0	13	3	5	0	48	274

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	12	176	208	0	204	44	16	0	56	100	0	0	76	16	128	0	1036
Heavy Trucks	0	4	4		0	0	0		0	8	0		8	0	0		24
Buses																	
Pedestrians		0				4				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 10/21/2024 9:41 AM

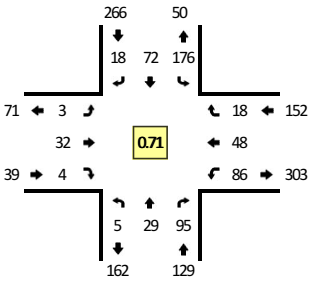
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

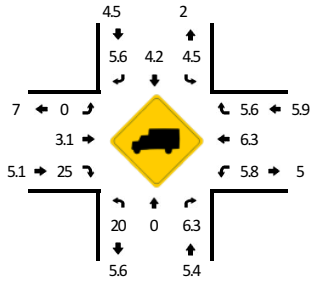
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

LOCATION: Old Hwy 31 N -- Spring Meade Blvd
CITY/STATE: Columbia, TN

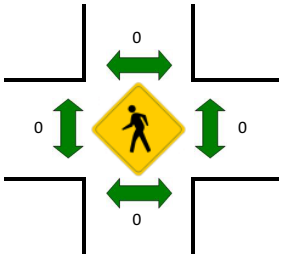
QC JOB #: 16778206
DATE: Tue, Oct 15 2024

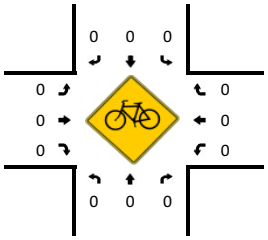
Peak-Hour: 2:30 PM -- 3:30 PM
Peak 15-Min: 2:45 PM -- 3:00 PM

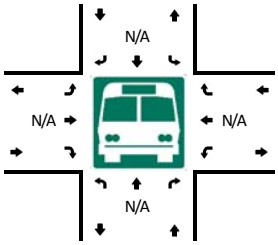


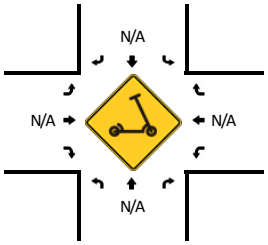


TRUE DATA TO IMPROVE MOBILITY









15-Min Count Period Beginning At	Old Hwy 31 N (Northbound)				Old Hwy 31 N (Southbound)				Spring Meade Blvd (Eastbound)				Spring Meade Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
2:00 PM	0	2	23	0	13	1	1	0	0	2	0	0	20	6	2	0	70	
2:15 PM	0	2	19	0	6	8	1	0	2	5	0	0	14	8	6	0	71	
2:30 PM	2	11	25	0	11	14	4	0	1	11	0	0	19	8	8	0	114	
2:45 PM	0	10	25	0	96	27	6	0	0	7	2	0	18	12	4	0	207	462
3:00 PM	2	6	20	0	54	26	5	0	1	7	0	0	27	19	2	0	169	561
3:15 PM	1	2	25	0	15	5	3	0	1	7	2	0	22	9	4	0	96	586
3:30 PM	0	1	15	0	10	7	0	0	0	0	0	0	20	11	3	0	67	539
3:45 PM	2	3	29	0	6	4	2	0	0	8	2	0	22	13	3	0	94	426
4:00 PM	0	5	29	0	14	8	1	0	1	5	1	0	26	10	1	0	101	358
4:15 PM	3	1	24	0	13	8	1	0	1	5	2	0	17	8	3	0	86	348
4:30 PM	5	2	26	0	7	2	3	0	0	6	1	0	19	10	5	0	86	367
4:45 PM	2	3	34	0	17	5	1	0	0	9	1	0	23	10	4	0	109	382
5:00 PM	0	1	30	0	11	3	3	0	1	11	1	0	23	18	2	0	104	385
5:15 PM	1	1	24	0	8	4	2	0	0	11	2	0	32	14	3	0	102	401
5:30 PM	2	1	14	0	3	1	1	0	1	4	1	0	20	8	0	0	56	371
5:45 PM	0	2	36	0	0	1	1	0	0	11	0	0	21	13	4	0	89	351

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	40	100	0	384	108	24	0	0	28	8	0	72	48	16	0	828
Heavy Trucks	0	0	8		28	0	0		0	4	4		0	4	0		48
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 10/21/2024 9:41 AM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

TDOT TRAFFIC DATA

TDOT Traffic Count Historical Data

Maury County Station #91 (Nashville Highway, South of Neapolis)

Average Annual Growth, 2013-2023: 2.7% Per Year

	ADT	Average Per Year
2023	39,227	
		8.3%
2022	36,227	
		0.9%
2021	35,920	
		2.5%
2020	35,050	
		-16.5%
2019	41,975	
		14.0%
2018	36,823	
		5.0%
2017	35,063	
		3.3%
2016	33,930	
		-2.7%
2015	34,875	
		1.9%
2014	34,235	
		10.5%
2013	30,975	

SIGNAL TIMING SHEETS

NASHVILLE HIGHWAY & SPRING MEADE BOULEVARD

SEPAC All Data Report

Intersection Name: Nashville Hwy & Spring Meade Blvd	Intersection Alias: Nashville Hwy & Spring Meade Blvd
IP Address: 10.112.2.9	Report Date/Time: 2024-12-11 13:37:34
Variant Name: Main	
Last Modified: 2024-10-13 03:30:27	

Access Data F-2-6

User Access Code	Admin Access Code	Connection Method	Revision	Address	IP Address	GPS Enabled	GPS Port
9999	0000	Direct IP	5.4.1 (MAY 2022)	001	10.112.2.9/27	False	8

Phase Initialization Data F-3-4

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	4	1	1	1	4	0	0	0	0	0	0	0	0	0	0

Phase Data : Bank 1		Phase #															
Vehicle		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
F-3-1-1	Min Green	5	25	7	5	5	25	10	15	-	-	-	-	-	-	-	-
	Passage	1.5	4.0	3.0	2.0	1.5	4.0	4.0	5.0	-	-	-	-	-	-	-	-
	Max 1	15	45	15	20	15	45	25	35	-	-	-	-	-	-	-	-
	Max 2	20	55	20	30	20	55	30	50	-	-	-	-	-	-	-	-
	Yellow	4.0	4.5	3.0	3.5	4.5	4.5	4.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
	Red	2.5	1.5	2.5	2.5	2.5	1.5	1.0	1.0	-	-	-	-	-	-	-	-
F-3-1-2	Dyn Max	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Dyn Step	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-3-1-3	Veh Recall	-	2	-	-	-	2	-	-	-	-	-	-	-	-	-	-
	Recall Delay	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-3-1-4	Green Delay	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Yellow Delay	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Bike Green	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Bike Passg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Density		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
F-3-2	Added Init	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Max Initial	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Time B4 Rdctn	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Cars B4 Rdctn	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Time to Rdce	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Min Gap	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrian		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
F-3-3-1	Walk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Ped Clr	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Alt Walk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Alt Ped Clr	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-3-3-2	Ped Recall	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Ped Recall Delay	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-3-3-3	Walk Offset Time	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Walk Offset Mode	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-3-3-4	Flash Walk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Ext Ped Clr	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Act Rest in Walk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Initial & NA		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
F-3-4	Initial	1	4	1	1	1	4	-	-	-	-	-	-	-	-	-	-
	NA Response	-	1	-	2	-	1	-	2	-	-	-	-	-	-	-	-
	Update Green	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Non-Lock & Misc		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
F-3-5	Non-Lock	True	-	True	True	True	-	-	-	-	-	-	-	-	-	-	-

14	Overlap B	Red	Overlap B	Yellow	Overlap B	Green	14
15	Phase Pedestrian 1	Dont Walk	Phase Pedestrian 1	Ped Clear	Phase Pedestrian 1	Walk	15
16	Overlap C	Red	Overlap C	Yellow	Overlap C	Green	16
17	Overlap D	Red	Overlap D	Yellow	Overlap D	Green	17
18	Phase Pedestrian 3	Dont Walk	Phase Pedestrian 3	Ped Clear	Phase Pedestrian 3	Walk	18
19	-	-	-	-	-	-	19
20	-	-	-	-	-	-	20
21	-	-	-	-	-	-	21
22	-	-	-	-	-	-	22
23	-	-	-	-	-	-	23
24	-	-	-	-	-	-	24
25	-	-	-	-	-	-	25
26	-	-	-	-	-	-	26
27	-	-	-	-	-	-	27
28	-	-	-	-	-	-	28
29	-	-	-	-	-	-	29
30	-	-	-	-	-	-	30
31	-	-	-	-	-	-	31
32	-	-	-	-	-	-	32

Coord Data F-5-1

Operation	Mode (Normal)	Maximum	Correction	Offset Mode	Force Mode	Yield Period	Max Dwell Time	Manual Control
Auto	Perm	Inhibit	Short Way	End Green	Cycle	0	0	1

Pattern Data F-5-3

Pattern		Phase #																Length (sec)			Overrides									
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Cycle	Split Length	Time Offset	Seq	Force Mode	Coord Mode	Coord Max	Corr. Mode	Coord Offset	Spc Func	R 2 Lag	R 3 Lag	R 4 Lag
110	Split Time	16	53	13	23	13	56	-	-	-	-	-	-	-	-	-	-	105	105	36	0-Def	0-Def	0-Def	0-Def	0-Def	0-Def	0-Def	0	0	0
	Phs Mode	0 Act	1 Crd	0 Act	0 Act	0 Act	1 Crd	0 Act	0 Act	0 Act	0 Act	0 Act	0 Act	0 Act	0 Act	0 Act	0 Act													
	Pri Reduc	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
	Pri Exten	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
120	Split Time	18	66	13	23	13	71	-	-	-	-	-	-	-	-	-	-	120	120	36	0-Def	0-Def	0-Def	0-Def	0-Def	0-Def	0-Def	0	0	0
	Phs Mode	0 Act	1 Crd	0 Act	0 Act	0 Act	1 Crd	0 Act	0 Act	0 Act	0 Act	0 Act	0 Act	0 Act	0 Act	0 Act	0 Act													
	Pri Reduc	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
	Pri Exten	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
130	Split Time	21	65	13	31	14	72	-	-	-	-	-	-	-	-	-	-	130	130	70	0-Def	0-Def	0-Def	0-Def	0-Def	0-Def	0-Def	0	0	0
	Phs Mode	0 Act	1 Crd	0 Act	0 Act	0 Act	1 Crd	0 Act	0 Act	0 Act	0 Act	0 Act	0 Act	0 Act	0 Act	0 Act	0 Act													
	Pri Reduc	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
	Pri Exten	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
131	Split Time	17	75	14	24	14	78	-	-	-	-	-	-	-	-	-	-	130	130	0	0-Def	0-Def	0-Def	0-Def	0-Def	0-Def	0-Def	0	0	0
	Phs Mode	0 Act	1 Crd	0 Act	0 Act	0 Act	1 Crd	0 Act	0 Act	0 Act	0 Act	0 Act	0 Act	0 Act	0 Act	0 Act	0 Act													
	Pri Reduc	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
	Pri Exten	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
140	Split Time	23	72	14	31	14	81	-	-	-	-	-	-	-	-	-	-	140	140	0	0-Def	0-Def	0-Def	0-Def	0-Def	0-Def	0-Def	0	0	0
	Phs Mode	0 Act	1 Crd	0 Act	0 Act	0 Act	1 Crd	0 Act	0 Act	0 Act	0 Act	0 Act	0 Act	0 Act	0 Act	0 Act	0 Act													
	Pri Reduc	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
	Pri Exten	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-													

TBC F-6-2

Cycle Zero	DST Type	TimeZoneDiff
00:00:00	0	-18000

Schedule F-6-3

Schedule	Plan	Day of Week							Month											Day of Mon																	
		Su	M	Tu	W	Th	F	Sa	J	F	M	A	M	J	J	A	S	O	N	D	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	1
1	1	X							X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2	2		X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
3	7							X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Day Plans F-6-4

Plan		Event #														
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Time	00 : 00	08 : 00	10 : 30	17 : 00	19 : 30	00 : 00	00 : 00	00 : 00	00 : 00	00 : 00	00 : 00	00 : 00	00 : 00	00 : 00	00 : 00
	Action	254	110	120	110	254	0	0	0	0	0	0	0	0	0	0

Plan		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
2	Time	00 : 00	05 : 00	08 : 30	14 : 00	16 : 15	18 : 15	19 : 45	00 : 00	00 : 00	00 : 00	00 : 00	00 : 00	00 : 00	00 : 00	00 : 00
	Action	254	130	120	140	131	120	254	0	0	0	0	0	0	0	0

Plan		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
7	Time	00 : 00	09 : 30	11 : 00	17 : 00	19 : 00	00 : 00	00 : 00	00 : 00	00 : 00	00 : 00	00 : 00	00 : 00	00 : 00	00 : 00	00 : 00
	Action	254	110	120	110	254	0	0	0	0	0	0	0	0	0	0

Actions F-6-5 : No data configured

Phase Function Map- F-6-9 : No data configured

Special Function Map F-6-0

Function	(*Global*)								Selector		(*Local*)					
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
SpecialFunction1	True	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SpecialFunction2	-	True	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SpecialFunction3	-	-	True	-	-	-	-	-	-	-	-	-	-	-	-	-
SpecialFunction4	-	-	-	True	-	-	-	-	-	-	-	-	-	-	-	-
SpecialFunction5	-	-	-	-	True	-	-	-	-	-	-	-	-	-	-	-
SpecialFunction6	-	-	-	-	-	True	-	-	-	-	-	-	-	-	-	-
SpecialFunction7	-	-	-	-	-	-	True	-	-	-	-	-	-	-	-	-
SpecialFunction8	-	-	-	-	-	-	-	True	-	-	-	-	-	-	-	-

TBC F-6-A

Entry Number	Begin Month	Begin Occurrences	Begin Day Of Week	Begin Day Of Month	Begin Seconds To Transition	End Month	End Occurrences	End Day Of Week	End Day Of Mont
1	14	2	1	1	7200	11	1	1	1
2	14	1	1	1	0	1	1	1	1

Preempt 1

Miscellaneous Data F-7-X-1

Det #	NonLock	Link	Delay (*sec*)	Extend (*sec*)	Duration (*sec*)	Max Call (*sec*)	Lockout (*sec*)	Gate Dly (*sec*)	Debounce (*sec*)	SR Mode	R2C
248	0-Off	0	0	0	0	0	0	0	0.0	0	0-Off

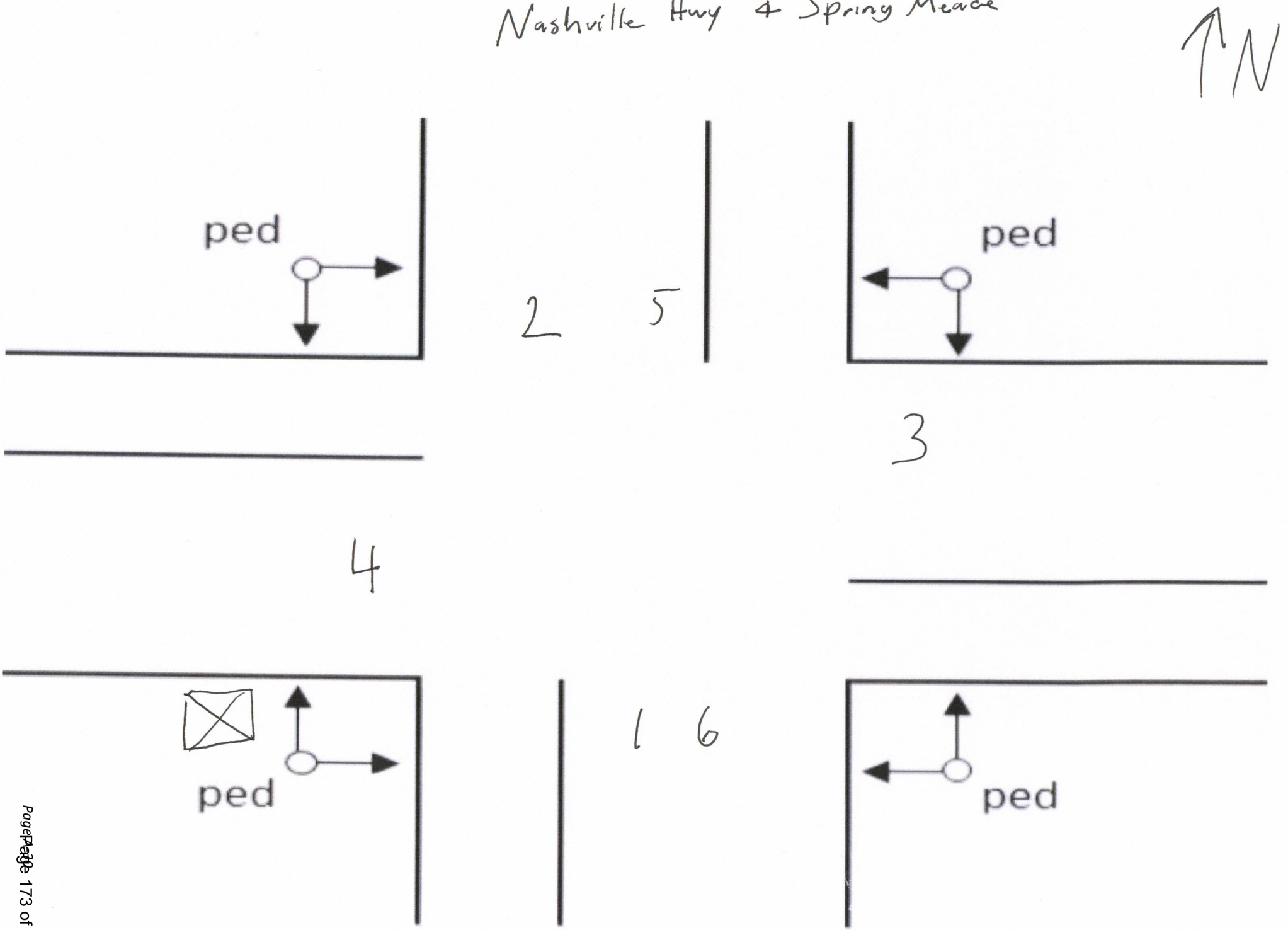
Interval Times F-7-X-2

Global			Selective Interval			Track Interval				Dwell	Return Interval		
Min Green	Min Walk	Ext Ped	Ped Cl	Yellow	Red	Green	Ped Clr	Yellow	Red	Green	Ped Clr	Yellow	Red
10	10	0-Default	8	40	20	8	40	20	10	10	8	40	20

Preempt Status

Vehicle Status		Phase #													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
F-7-X-1	Exit Ph	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Ped Call	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Nashville Hwy & Spring Meade



APPENDIX B

TRAFFIC ANALYSES

EXISTING TRAFFIC CONDITIONS (2024)

AM PEAK

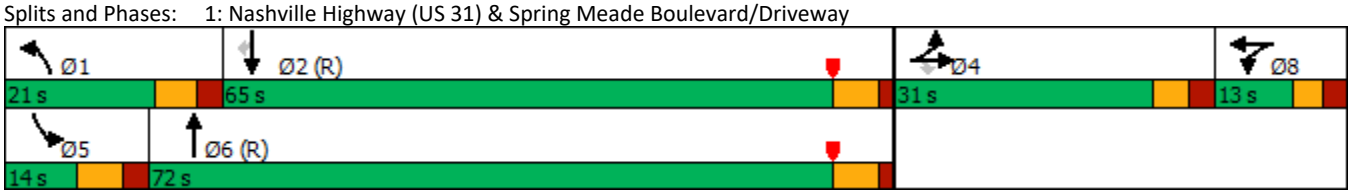
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	275	12	51	4	0	4	107	1525	29	7	1285	149
Future Volume (vph)	275	12	51	4	0	4	107	1525	29	7	1285	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		0	0		0	250		0	200		200
Storage Lanes	1		1	0		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt			0.850		0.932			0.997				0.850
Flt Protected	0.950	0.956			0.976		0.950			0.950		
Satd. Flow (prot)	1681	1692	1583	0	1694	0	1770	3529	0	1770	3539	1583
Flt Permitted	0.950	0.956			0.976		0.950			0.950		
Satd. Flow (perm)	1681	1692	1583	0	1694	0	1770	3529	0	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			185		189			2				185
Link Speed (mph)		25			30			55			30	
Link Distance (ft)		375			675			260			1000	
Travel Time (s)		10.2			15.3			3.2			22.7	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	296	13	55	4	0	4	115	1640	31	8	1382	160
Shared Lane Traffic (%)	48%											
Lane Group Flow (vph)	154	155	55	0	8	0	115	1671	0	8	1382	160
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1		1	1		1	1	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	50	50	50	20	50		50	50		50	50	50
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Size(ft)	50	50	50	20	50		50	50		50	50	50
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Turn Type	Split	NA	Perm	Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4		8	8		1	6		5	2	
Permitted Phases			4									2
Detector Phase	4	4	4	8	8		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	11.0	11.0	11.0	10.5	10.5		11.5	11.0		12.0	11.0	11.0
Total Split (s)	31.0	31.0	31.0	13.0	13.0		21.0	72.0		14.0	65.0	65.0
Total Split (%)	23.8%	23.8%	23.8%	10.0%	10.0%		16.2%	55.4%		10.8%	50.0%	50.0%
Maximum Green (s)	25.0	25.0	25.0	7.5	7.5		14.5	66.0		7.0	59.0	59.0
Yellow Time (s)	3.5	3.5	3.5	3.0	3.0		4.0	4.5		4.5	4.5	4.5
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5		2.5	1.5		2.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	0.0

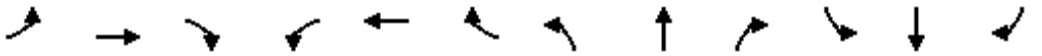
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)	6.0	6.0	6.0		5.5		6.5	6.0		7.0	6.0	6.0
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	C-Max		None	C-Max	C-Max
Act Effct Green (s)	17.3	17.3	17.3		5.5		13.4	95.6		6.2	78.6	78.6
Actuated g/C Ratio	0.13	0.13	0.13		0.04		0.10	0.74		0.05	0.60	0.60
v/c Ratio	0.69	0.69	0.15		0.03		0.64	0.64		0.10	0.65	0.16
Control Delay	68.9	68.8	0.8		0.3		71.1	13.1		61.1	20.8	2.0
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	68.9	68.8	0.8		0.3		71.1	13.1		61.1	20.8	2.0
LOS	E	E	A		A		E	B		E	C	A
Approach Delay		58.6			0.3			16.8			19.0	
Approach LOS		E			A			B			B	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 70 (54%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 21.8 Intersection LOS: C
Intersection Capacity Utilization 76.7% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 1: Nashville Highway (US 31) & Spring Meade Boulevard/Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	275	12	51	4	0	4	107	1525	29	7	1285	149
Future Volume (veh/h)	275	12	51	4	0	4	107	1525	29	7	1285	149
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	305	0	55	4	0	4	115	1640	31	8	1382	160
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	389	0	173	8	0	8	140	2437	46	17	2196	980
Arrive On Green	0.11	0.00	0.11	0.01	0.00	0.01	0.08	0.68	0.68	0.01	0.62	0.62
Sat Flow, veh/h	3563	0	1585	839	0	839	1781	3568	67	1781	3554	1585
Grp Volume(v), veh/h	305	0	55	8	0	0	115	815	856	8	1382	160
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1677	0	0	1781	1777	1858	1781	1777	1585
Q Serve(g_s), s	10.8	0.0	4.2	0.6	0.0	0.0	8.3	34.9	35.2	0.6	31.6	5.6
Cycle Q Clear(g_c), s	10.8	0.0	4.2	0.6	0.0	0.0	8.3	34.9	35.2	0.6	31.6	5.6
Prop In Lane	1.00		1.00	0.50		0.50	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	389	0	173	16	0	0	140	1214	1269	17	2196	980
V/C Ratio(X)	0.78	0.00	0.32	0.49	0.00	0.00	0.82	0.67	0.67	0.47	0.63	0.16
Avail Cap(c_a), veh/h	685	0	305	97	0	0	199	1214	1269	96	2196	980
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.4	0.0	53.4	64.1	0.0	0.0	59.0	12.1	12.1	64.0	15.5	10.5
Incr Delay (d2), s/veh	3.5	0.0	1.0	21.5	0.0	0.0	16.7	3.0	2.9	18.3	1.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	0.0	1.7	0.4	0.0	0.0	4.2	12.2	12.8	0.4	12.8	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.9	0.0	54.5	85.5	0.0	0.0	75.7	15.0	15.0	82.3	16.9	10.9
LnGrp LOS	E	A	D	F	A	A	E	B	B	F	B	B
Approach Vol, veh/h		360			8			1786			1550	
Approach Delay, s/veh		59.1			85.5			18.9			16.6	
Approach LOS		E			F			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	16.7	86.4		20.2	8.3	94.8		6.8				
Change Period (Y+Rc), s	6.5	6.0		6.0	7.0	6.0		5.5				
Max Green Setting (Gmax), s	14.5	59.0		25.0	7.0	66.0		7.5				
Max Q Clear Time (g_c+I1), s	10.3	33.6		12.8	2.6	37.2		2.6				
Green Ext Time (p_c), s	0.1	9.5		1.3	0.0	8.9		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	22.0
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	3	0	1640	1343	30
Future Vol, veh/h	0	3	0	1640	1343	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	3	0	1783	1460	33

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	747	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	*523	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %		1		-	-	-
Mov Cap-1 Maneuver	-	*523	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	523	-	-
HCM Lane V/C Ratio	-	0.006	-	-
HCM Control Delay (s)	-	11.9	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	2.8					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	36	16	1639	1343	3
Future Vol, veh/h	1	36	16	1639	1343	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	39	17	1782	1460	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2387	732	1463	0	-	0
Stage 1	1462	-	-	-	-	-
Stage 2	925	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	*38	*523	*782	-	-	-
Stage 1	*493	-	-	-	-	-
Stage 2	*347	-	-	-	-	-
Platoon blocked, %	1	1	1	-	-	-
Mov Cap-1 Maneuver	*0	*523	*782	-	-	-
Mov Cap-2 Maneuver	*0	-	-	-	-	-
Stage 1	*0	-	-	-	-	-
Stage 2	*347	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.5	4.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	* 782	-	523	-	-
HCM Lane V/C Ratio	0.022	-	0.077	-	-
HCM Control Delay (s)	9.7	4.8	12.5	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	1.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	0	18	3	0	6	16	1644	6	5	1345	29
Future Vol, veh/h	5	0	18	3	0	6	16	1644	6	5	1345	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	125	-	-	100	150	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	0	19	3	0	6	17	1713	6	5	1401	30

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2317	3179	716	2458	3188	857	1431	0	0	1719	0	0
Stage 1	1426	1426	-	1747	1747	-	-	-	-	-	-	-
Stage 2	891	1753	-	711	1441	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	*35	*4	*523	*21	*3	301	*782	-	-	364	-	-
Stage 1	*493	*432	-	*89	*138	-	-	-	-	-	-	-
Stage 2	*304	*138	-	*493	*432	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1		1	-	-		-	-
Mov Cap-1 Maneuver	*21	*2	*523	*12	*2	301	*782	-	-	364	-	-
Mov Cap-2 Maneuver	*94	*53	-	*39	*56	-	-	-	-	-	-	-
Stage 1	*252	*426	-	*45	*71	-	-	-	-	-	-	-
Stage 2	*152	*71	-	*469	*426	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	20.1	46.5	2.4	0.1
HCM LOS	C	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	* 782	-	-	263	39	301	364	-	-
HCM Lane V/C Ratio	0.021	-	-	0.091	0.08	0.021	0.014	-	-
HCM Control Delay (s)	9.7	2.3	-	20.1	105.2	17.2	15	-	-
HCM Lane LOS	A	A	-	C	F	C	C	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.2	0.1	0	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	17	44	1	6	10
Future Vol, veh/h	1	17	44	1	6	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	18	48	1	7	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	49	0	-	0	69	49
Stage 1	-	-	-	-	49	-
Stage 2	-	-	-	-	20	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1558	-	-	-	936	1020
Stage 1	-	-	-	-	973	-
Stage 2	-	-	-	-	1003	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1558	-	-	-	935	1020
Mov Cap-2 Maneuver	-	-	-	-	935	-
Stage 1	-	-	-	-	972	-
Stage 2	-	-	-	-	1003	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1558	-	-	-	986
HCM Lane V/C Ratio	0.001	-	-	-	0.018
HCM Control Delay (s)	7.3	0	-	-	8.7
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection												
Int Delay, s/veh	4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	14	2	11	43	0	2	2	0	4	1	23
Future Vol, veh/h	13	14	2	11	43	0	2	2	0	4	1	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	74	74	74	74	74	74	74	74	74	74	74	74
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	19	3	15	58	0	3	3	0	5	1	31

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	58	0	0	22	0	0	161	145	21	146	146	58
Stage 1	-	-	-	-	-	-	57	57	-	88	88	-
Stage 2	-	-	-	-	-	-	104	88	-	58	58	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1546	-	-	1593	-	-	804	746	1056	823	745	1008
Stage 1	-	-	-	-	-	-	955	847	-	920	822	-
Stage 2	-	-	-	-	-	-	902	822	-	954	847	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1546	-	-	1593	-	-	765	730	1056	807	729	1008
Mov Cap-2 Maneuver	-	-	-	-	-	-	765	730	-	807	729	-
Stage 1	-	-	-	-	-	-	944	837	-	909	814	-
Stage 2	-	-	-	-	-	-	864	814	-	940	837	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.3	1.5	9.9	8.9
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	747	1546	-	-	1593	-	-	807	992
HCM Lane V/C Ratio	0.007	0.011	-	-	0.009	-	-	0.007	0.033
HCM Control Delay (s)	9.9	7.4	0	-	7.3	0	-	9.5	8.8
HCM Lane LOS	A	A	A	-	A	A	-	A	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0	0.1

Intersection	
Int Delay, s/veh	1.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	45	15	239	25	1	138
Future Vol, veh/h	45	15	239	25	1	138
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	56	19	299	31	1	173

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	490	315	0	0	330	0
Stage 1	315	-	-	-	-	-
Stage 2	175	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	537	725	-	-	1229	-
Stage 1	740	-	-	-	-	-
Stage 2	855	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	536	725	-	-	1229	-
Mov Cap-2 Maneuver	536	-	-	-	-	-
Stage 1	740	-	-	-	-	-
Stage 2	854	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.2	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	573	1229	-
HCM Lane V/C Ratio	-	-	0.131	0.001	-
HCM Control Delay (s)	-	-	12.2	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0	-

Intersection	
Intersection Delay, s/veh	13.3
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	51	3	97	24	63	6	101	146	99	42	9
Future Vol, veh/h	22	51	3	97	24	63	6	101	146	99	42	9
Peak Hour Factor	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	34	80	5	152	38	98	9	158	228	155	66	14
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	1
HCM Control Delay	11.2	12.2	15.2	12.7
HCM LOS	B	B	C	B

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	2%	29%	80%	0%	66%
Vol Thru, %	40%	67%	20%	0%	28%
Vol Right, %	58%	4%	0%	100%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	253	76	121	63	150
LT Vol	6	22	97	0	99
Through Vol	101	51	24	0	42
RT Vol	146	3	0	63	9
Lane Flow Rate	395	119	189	98	234
Geometry Grp	2	5	7	7	2
Degree of Util (X)	0.575	0.211	0.361	0.158	0.385
Departure Headway (Hd)	5.237	6.402	6.882	5.761	5.907
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	684	557	520	619	605
Service Time	3.302	4.489	4.652	3.53	3.98
HCM Lane V/C Ratio	0.577	0.214	0.363	0.158	0.387
HCM Control Delay	15.2	11.2	13.5	9.6	12.7
HCM Lane LOS	C	B	B	A	B
HCM 95th-tile Q	3.7	0.8	1.6	0.6	1.8

Intersection						
Int Delay, s/veh	0.9					

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	286	9	23	218	8	21
Future Vol, veh/h	286	9	23	218	8	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	311	10	25	237	9	23

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	321	0	603	161
Stage 1	-	-	-	-	316	-
Stage 2	-	-	-	-	287	-
Critical Hdwy	-	-	4.13	-	6.63	6.93
Critical Hdwy Stg 1	-	-	-	-	5.83	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.219	-	3.519	3.319
Pot Cap-1 Maneuver	-	-	1237	-	446	856
Stage 1	-	-	-	-	713	-
Stage 2	-	-	-	-	761	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1237	-	436	856
Mov Cap-2 Maneuver	-	-	-	-	436	-
Stage 1	-	-	-	-	713	-
Stage 2	-	-	-	-	743	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	10.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	676	-	-	1237	-
HCM Lane V/C Ratio	0.047	-	-	0.02	-
HCM Control Delay (s)	10.6	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	323	7	22	219	15	1	0	15	0	0	2
Future Vol, veh/h	6	323	7	22	219	15	1	0	15	0	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	425	9	29	288	20	1	0	20	0	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	308	0	0	434	0	0	804	812	217	585	806	298
Stage 1	-	-	-	-	-	-	446	446	-	356	356	-
Stage 2	-	-	-	-	-	-	358	366	-	229	450	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.93	7.33	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	1251	-	-	1124	-	-	287	312	788	408	315	741
Stage 1	-	-	-	-	-	-	562	573	-	661	628	-
Stage 2	-	-	-	-	-	-	659	622	-	754	571	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1251	-	-	1124	-	-	278	300	788	386	303	741
Mov Cap-2 Maneuver	-	-	-	-	-	-	278	300	-	386	303	-
Stage 1	-	-	-	-	-	-	558	568	-	656	609	-
Stage 2	-	-	-	-	-	-	636	603	-	729	566	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.7	10.2	9.9
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	707	1251	-	-	1124	-	-	741
HCM Lane V/C Ratio	0.03	0.006	-	-	0.026	-	-	0.004
HCM Control Delay (s)	10.2	7.9	0	-	8.3	0	-	9.9
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0.1	-	-	0

EXISTING TRAFFIC CONDITIONS (2024)

PM PEAK

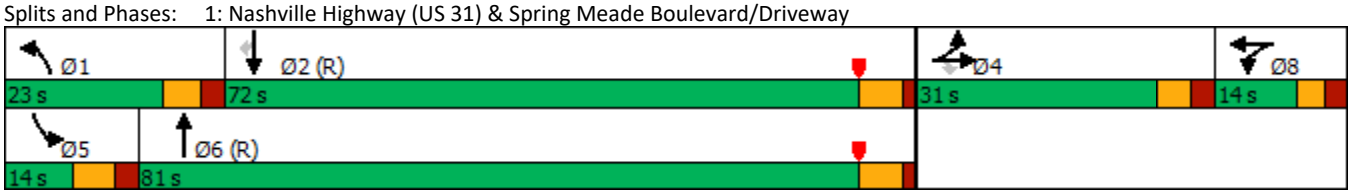
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	244	4	113	1	1	5	72	1527	27	0	1795	125
Future Volume (vph)	244	4	113	1	1	5	72	1527	27	0	1795	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		0	0		0	250		0	200		200
Storage Lanes	1		1	0		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt			0.850		0.904			0.997				0.850
Flt Protected	0.950	0.954			0.993		0.950					
Satd. Flow (prot)	1681	1688	1583	0	1672	0	1770	3529	0	1863	3539	1583
Flt Permitted	0.950	0.954			0.993		0.950					
Satd. Flow (perm)	1681	1688	1583	0	1672	0	1770	3529	0	1863	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			171		5			2				171
Link Speed (mph)		25			30			55			30	
Link Distance (ft)		375			675			260			1000	
Travel Time (s)		10.2			15.3			3.2			22.7	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	252	4	116	1	1	5	74	1574	28	0	1851	129
Shared Lane Traffic (%)	49%											
Lane Group Flow (vph)	129	127	116	0	7	0	74	1602	0	0	1851	129
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1		1	1		1	1	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	50	50	50	20	50		50	50		50	50	50
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Size(ft)	50	50	50	20	50		50	50		50	50	50
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Turn Type	Split	NA	Perm	Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4		8	8		1	6		5	2	
Permitted Phases			4									2
Detector Phase	4	4	4	8	8		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0		11.5	11.5		12.0	11.5	11.5
Total Split (s)	31.0	31.0	31.0	14.0	14.0		23.0	81.0		14.0	72.0	72.0
Total Split (%)	22.1%	22.1%	22.1%	10.0%	10.0%		16.4%	57.9%		10.0%	51.4%	51.4%
Maximum Green (s)	25.0	25.0	25.0	8.5	8.5		16.5	75.0		7.0	66.0	66.0
Yellow Time (s)	3.5	3.5	3.5	3.0	3.0		4.0	4.5		4.5	4.5	4.5
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5		2.5	1.5		2.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	0.0

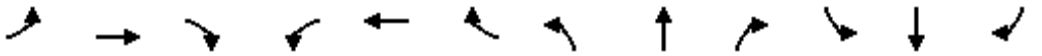
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)	6.0	6.0	6.0		5.5		6.5	6.0		7.0	6.0	6.0
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	C-Max		None	C-Max	C-Max
Act Effct Green (s)	16.2	16.2	16.2		6.0		11.2	109.3			94.3	94.3
Actuated g/C Ratio	0.12	0.12	0.12		0.04		0.08	0.78			0.67	0.67
v/c Ratio	0.66	0.65	0.35		0.09		0.52	0.58			0.78	0.11
Control Delay	74.9	74.0	4.1		45.1		74.5	8.5			21.7	1.1
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0			0.0	0.0
Total Delay	74.9	74.0	4.1		45.1		74.5	8.5			21.7	1.1
LOS	E	E	A		D		E	A			C	A
Approach Delay		52.5			45.1			11.4			20.3	
Approach LOS		D			D			B			C	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 19.6 Intersection LOS: B
Intersection Capacity Utilization 82.7% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 1: Nashville Highway (US 31) & Spring Meade Boulevard/Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	244	4	113	1	1	5	72	1527	27	0	1795	125
Future Volume (veh/h)	244	4	113	1	1	5	72	1527	27	0	1795	125
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	255	0	116	1	1	5	74	1574	28	0	1851	129
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	341	0	152	2	2	10	94	2753	49	1	2386	1064
Arrive On Green	0.10	0.00	0.10	0.01	0.01	0.01	0.05	0.77	0.77	0.00	0.67	0.67
Sat Flow, veh/h	3563	0	1585	235	235	1176	1781	3572	63	1781	3554	1585
Grp Volume(v), veh/h	255	0	116	7	0	0	74	782	820	0	1851	129
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1647	0	0	1781	1777	1859	1781	1777	1585
Q Serve(g_s), s	9.8	0.0	10.0	0.6	0.0	0.0	5.7	25.2	25.3	0.0	50.0	4.1
Cycle Q Clear(g_c), s	9.8	0.0	10.0	0.6	0.0	0.0	5.7	25.2	25.3	0.0	50.0	4.1
Prop In Lane	1.00		1.00	0.14		0.71	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	341	0	152	14	0	0	94	1369	1433	1	2386	1064
V/C Ratio(X)	0.75	0.00	0.76	0.50	0.00	0.00	0.79	0.57	0.57	0.00	0.78	0.12
Avail Cap(c_a), veh/h	636	0	283	100	0	0	210	1369	1433	89	2386	1064
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	61.6	0.0	61.7	69.1	0.0	0.0	65.5	6.6	6.6	0.0	15.8	8.2
Incr Delay (d2), s/veh	3.3	0.0	7.7	24.9	0.0	0.0	13.3	1.7	1.7	0.0	2.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	0.0	4.4	0.3	0.0	0.0	2.9	7.5	7.9	0.0	20.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.9	0.0	69.5	94.0	0.0	0.0	78.8	8.3	8.3	0.0	18.3	8.5
LnGrp LOS	E	A	E	F	A	A	E	A	A	A	B	A
Approach Vol, veh/h		371			7			1676			1980	
Approach Delay, s/veh		66.3			94.0			11.4			17.7	
Approach LOS		E			F			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.9	100.0		19.4	0.0	113.9		6.7				
Change Period (Y+Rc), s	6.5	6.0		6.0	7.0	6.0		5.5				
Max Green Setting (Gmax), s	16.5	66.0		25.0	7.0	75.0		8.5				
Max Q Clear Time (g_c+I1), s	7.7	52.0		12.0	0.0	27.3		2.6				
Green Ext Time (p_c), s	0.1	9.3		1.4	0.0	8.9		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		19.7
HCM 6th LOS		B

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	8	0	1598	1914	19
Future Vol, veh/h	0	8	0	1598	1914	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	9	0	1737	2080	21

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	1051	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	*273	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %		1		-	-	-
Mov Cap-1 Maneuver	-	*273	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.6	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	273	-	-
HCM Lane V/C Ratio	-	0.032	-	-
HCM Control Delay (s)	-	18.6	-	-
HCM Lane LOS	-	C	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	3.4					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	32	15	1598	1919	3
Future Vol, veh/h	0	32	15	1598	1919	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	35	16	1737	2086	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2989	1045	2089	0	-	0
Stage 1	2088	-	-	-	-	-
Stage 2	901	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	*3	*273	*408	-	-	-
Stage 1	*257	-	-	-	-	-
Stage 2	*357	-	-	-	-	-
Platoon blocked, %	1	1	1	-	-	-
Mov Cap-1 Maneuver	*0	*273	*408	-	-	-
Mov Cap-2 Maneuver	*0	-	-	-	-	-
Stage 1	*0	-	-	-	-	-
Stage 2	*357	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.1	7.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	* 408	-	273	-	-
HCM Lane V/C Ratio	0.04	-	0.127	-	-
HCM Control Delay (s)	14.2	7	20.1	-	-
HCM Lane LOS	B	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection

Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	0	19	3	0	14	12	1592	4	13	1916	22
Future Vol, veh/h	7	0	19	3	0	14	12	1592	4	13	1916	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	125	-	-	100	150	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	0	20	3	0	14	12	1641	4	13	1975	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2858	3682	999	2679	3689	821	1998	0	0	1645	0	0
Stage 1	2013	2013	-	1665	1665	-	-	-	-	-	-	-
Stage 2	845	1669	-	1014	2024	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	*~ 4	*0	*273	*14	*0	318	*408	-	-	389	-	-
Stage 1	*257	*225	-	*101	*152	-	-	-	-	-	-	-
Stage 2	*324	*151	-	*257	*225	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1		1	-	-		-	-
Mov Cap-1 Maneuver	*~ 3	*0	*273	*10	*0	318	*408	-	-	389	-	-
Mov Cap-2 Maneuver	*83	*56	-	*49	*61	-	-	-	-	-	-	-
Stage 1	*169	*218	-	*66	*100	-	-	-	-	-	-	-
Stage 2	*203	*99	-	*231	*218	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	30.3	28.6	2.5	0.1
HCM LOS	D	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	* 408	-	-	169	49	318	389	-	-
HCM Lane V/C Ratio	0.03	-	-	0.159	0.063	0.045	0.034	-	-
HCM Control Delay (s)	14.1	2.4	-	30.3	83.4	16.9	14.6	-	-
HCM Lane LOS	B	A	-	D	F	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	0.2	0.1	0.1	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	20	34	0	6	2
Future Vol, veh/h	1	20	34	0	6	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	22	37	0	7	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	37	0	-	0	61	37
Stage 1	-	-	-	-	37	-
Stage 2	-	-	-	-	24	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1574	-	-	-	945	1035
Stage 1	-	-	-	-	985	-
Stage 2	-	-	-	-	999	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1574	-	-	-	944	1035
Mov Cap-2 Maneuver	-	-	-	-	944	-
Stage 1	-	-	-	-	984	-
Stage 2	-	-	-	-	999	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	8.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1574	-	-	-	965
HCM Lane V/C Ratio	0.001	-	-	-	0.009
HCM Control Delay (s)	7.3	0	-	-	8.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection												
Int Delay, s/veh	4.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	15	1	7	29	0	3	2	1	4	1	16
Future Vol, veh/h	13	15	1	7	29	0	3	2	1	4	1	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	18	1	8	34	0	4	2	1	5	1	19

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	34	0	0	19	0	0	109	99	19	100	99	34
Stage 1	-	-	-	-	-	-	49	49	-	50	50	-
Stage 2	-	-	-	-	-	-	60	50	-	50	49	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1578	-	-	1597	-	-	870	791	1059	881	791	1039
Stage 1	-	-	-	-	-	-	964	854	-	963	853	-
Stage 2	-	-	-	-	-	-	951	853	-	963	854	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1578	-	-	1597	-	-	844	779	1059	868	779	1039
Mov Cap-2 Maneuver	-	-	-	-	-	-	844	779	-	868	779	-
Stage 1	-	-	-	-	-	-	954	845	-	953	849	-
Stage 2	-	-	-	-	-	-	928	849	-	950	845	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.3	1.4	9.3	8.7
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	849	1578	-	-	1597	-	-	868	1019
HCM Lane V/C Ratio	0.008	0.01	-	-	0.005	-	-	0.005	0.02
HCM Control Delay (s)	9.3	7.3	0	-	7.3	0	-	9.2	8.6
HCM Lane LOS	A	A	A	-	A	A	-	A	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0	0.1

Intersection	
Int Delay, s/veh	1.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	33	12	114	22	7	152
Future Vol, veh/h	33	12	114	22	7	152
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	37	13	128	25	8	171

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	328	141	0	0	153	0
Stage 1	141	-	-	-	-	-
Stage 2	187	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	666	907	-	-	1428	-
Stage 1	886	-	-	-	-	-
Stage 2	845	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	662	907	-	-	1428	-
Mov Cap-2 Maneuver	662	-	-	-	-	-
Stage 1	886	-	-	-	-	-
Stage 2	840	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.4	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	713	1428	-
HCM Lane V/C Ratio	-	-	0.071	0.006	-
HCM Control Delay (s)	-	-	10.4	7.5	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Intersection Delay, s/veh	12.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	32	4	86	48	18	5	29	95	176	72	18
Future Vol, veh/h	3	32	4	86	48	18	5	29	95	176	72	18
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	45	6	121	68	25	7	41	134	248	101	25
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	1
HCM Control Delay	9.5	11.8	9.5	13.9
HCM LOS	A	B	A	B

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	4%	8%	64%	0%	66%
Vol Thru, %	22%	82%	36%	0%	27%
Vol Right, %	74%	10%	0%	100%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	129	39	134	18	266
LT Vol	5	3	86	0	176
Through Vol	29	32	48	0	72
RT Vol	95	4	0	18	18
Lane Flow Rate	182	55	189	25	375
Geometry Grp	2	5	7	7	2
Degree of Util (X)	0.246	0.089	0.334	0.038	0.535
Departure Headway (Hd)	4.88	5.861	6.375	5.34	5.137
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	736	610	564	670	708
Service Time	2.913	3.905	4.109	3.073	3.137
HCM Lane V/C Ratio	0.247	0.09	0.335	0.037	0.53
HCM Control Delay	9.5	9.5	12.3	8.3	13.9
HCM Lane LOS	A	A	B	A	B
HCM 95th-tile Q	1	0.3	1.5	0.1	3.2

Intersection						
Int Delay, s/veh	0.7					

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	307	14	19	164	6	14
Future Vol, veh/h	307	14	19	164	6	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	334	15	21	178	7	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	349	0	562	175
Stage 1	-	-	-	-	342	-
Stage 2	-	-	-	-	220	-
Critical Hdwy	-	-	4.13	-	6.63	6.93
Critical Hdwy Stg 1	-	-	-	-	5.83	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.219	-	3.519	3.319
Pot Cap-1 Maneuver	-	-	1208	-	472	839
Stage 1	-	-	-	-	692	-
Stage 2	-	-	-	-	816	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1208	-	463	839
Mov Cap-2 Maneuver	-	-	-	-	463	-
Stage 1	-	-	-	-	692	-
Stage 2	-	-	-	-	800	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	10.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	675	-	-	1208	-
HCM Lane V/C Ratio	0.032	-	-	0.017	-
HCM Control Delay (s)	10.5	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Intersection												
Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	337	3	22	167	9	1	0	22	2	0	0
Future Vol, veh/h	2	337	3	22	167	9	1	0	22	2	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	432	4	28	214	12	1	0	28	3	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	226	0	0	436	0	0	716	722	218	498	718	220
Stage 1	-	-	-	-	-	-	440	440	-	276	276	-
Stage 2	-	-	-	-	-	-	276	282	-	222	442	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.93	7.33	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	1341	-	-	1122	-	-	331	352	787	469	354	819
Stage 1	-	-	-	-	-	-	567	577	-	730	681	-
Stage 2	-	-	-	-	-	-	730	677	-	761	576	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1341	-	-	1122	-	-	323	341	787	441	343	819
Mov Cap-2 Maneuver	-	-	-	-	-	-	323	341	-	441	343	-
Stage 1	-	-	-	-	-	-	565	575	-	728	661	-
Stage 2	-	-	-	-	-	-	709	657	-	732	574	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.9	10.1	13.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	741	1341	-	-	1122	-	-	441
HCM Lane V/C Ratio	0.04	0.002	-	-	0.025	-	-	0.006
HCM Control Delay (s)	10.1	7.7	0	-	8.3	0	-	13.2
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0.1	-	-	0

BACKGROUND TRAFFIC CONDITIONS (2025)

AM PEAK

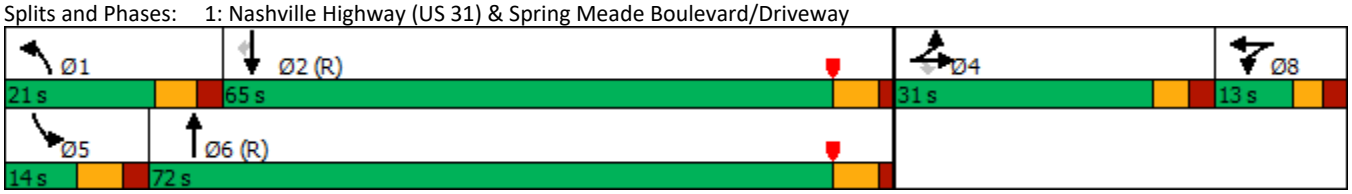
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	301	12	53	4	0	4	112	1642	30	7	1363	159
Future Volume (vph)	301	12	53	4	0	4	112	1642	30	7	1363	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		0	0		0	250		0	200		200
Storage Lanes	1		1	0		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt			0.850		0.932			0.997				0.850
Flt Protected	0.950	0.956			0.976		0.950			0.950		
Satd. Flow (prot)	1681	1692	1583	0	1694	0	1770	3529	0	1770	3539	1583
Flt Permitted	0.950	0.956			0.976		0.950			0.950		
Satd. Flow (perm)	1681	1692	1583	0	1694	0	1770	3529	0	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			185		189			2				185
Link Speed (mph)		25			30			55			30	
Link Distance (ft)		375			675			260			1000	
Travel Time (s)		10.2			15.3			3.2			22.7	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	324	13	57	4	0	4	120	1766	32	8	1466	171
Shared Lane Traffic (%)	48%											
Lane Group Flow (vph)	168	169	57	0	8	0	120	1798	0	8	1466	171
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1		1	1		1	1	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	50	50	50	20	50		50	50		50	50	50
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Size(ft)	50	50	50	20	50		50	50		50	50	50
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Turn Type	Split	NA	Perm	Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4		8	8		1	6		5	2	
Permitted Phases			4									2
Detector Phase	4	4	4	8	8		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	11.0	11.0	11.0	10.5	10.5		11.5	11.0		12.0	11.0	11.0
Total Split (s)	31.0	31.0	31.0	13.0	13.0		21.0	72.0		14.0	65.0	65.0
Total Split (%)	23.8%	23.8%	23.8%	10.0%	10.0%		16.2%	55.4%		10.8%	50.0%	50.0%
Maximum Green (s)	25.0	25.0	25.0	7.5	7.5		14.5	66.0		7.0	59.0	59.0
Yellow Time (s)	3.5	3.5	3.5	3.0	3.0		4.0	4.5		4.5	4.5	4.5
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5		2.5	1.5		2.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	0.0

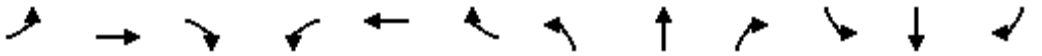
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)	6.0	6.0	6.0		5.5		6.5	6.0		7.0	6.0	6.0
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	C-Max		None	C-Max	C-Max
Act Effct Green (s)	18.2	18.2	18.2		5.5		13.5	94.7		6.2	77.6	77.6
Actuated g/C Ratio	0.14	0.14	0.14		0.04		0.10	0.73		0.05	0.60	0.60
v/c Ratio	0.71	0.71	0.15		0.03		0.66	0.70		0.10	0.69	0.17
Control Delay	69.4	69.3	0.8		0.3		72.4	14.7		61.1	22.5	2.4
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	69.4	69.3	0.8		0.3		72.4	14.7		61.1	22.5	2.4
LOS	E	E	A		A		E	B		E	C	A
Approach Delay		59.4			0.3			18.3			20.6	
Approach LOS		E			A			B			C	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 70 (54%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 23.3 Intersection LOS: C
Intersection Capacity Utilization 81.3% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 1: Nashville Highway (US 31) & Spring Meade Boulevard/Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	301	12	53	4	0	4	112	1642	30	7	1363	159
Future Volume (veh/h)	301	12	53	4	0	4	112	1642	30	7	1363	159
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	333	0	57	4	0	4	120	1766	32	8	1466	171
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	418	0	186	8	0	8	145	2410	44	17	2157	962
Arrive On Green	0.12	0.00	0.12	0.01	0.00	0.01	0.08	0.67	0.67	0.01	0.61	0.61
Sat Flow, veh/h	3563	0	1585	839	0	839	1781	3571	65	1781	3554	1585
Grp Volume(v), veh/h	333	0	57	8	0	0	120	877	921	8	1466	171
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1677	0	0	1781	1777	1859	1781	1777	1585
Q Serve(g_s), s	11.8	0.0	4.3	0.6	0.0	0.0	8.6	41.2	41.5	0.6	35.9	6.2
Cycle Q Clear(g_c), s	11.8	0.0	4.3	0.6	0.0	0.0	8.6	41.2	41.5	0.6	35.9	6.2
Prop In Lane	1.00		1.00	0.50		0.50	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	418	0	186	16	0	0	145	1199	1255	17	2157	962
V/C Ratio(X)	0.80	0.00	0.31	0.49	0.00	0.00	0.83	0.73	0.73	0.47	0.68	0.18
Avail Cap(c_a), veh/h	685	0	305	97	0	0	199	1199	1255	96	2157	962
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.9	0.0	52.5	64.1	0.0	0.0	58.8	13.6	13.6	64.0	17.1	11.3
Incr Delay (d2), s/veh	3.5	0.0	0.9	21.5	0.0	0.0	18.2	4.0	3.8	18.3	1.7	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	0.0	1.8	0.4	0.0	0.0	4.5	14.7	15.5	0.4	14.6	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.4	0.0	53.5	85.5	0.0	0.0	77.0	17.5	17.5	82.3	18.8	11.7
LnGrp LOS	E	A	D	F	A	A	E	B	B	F	B	B
Approach Vol, veh/h		390			8			1918			1645	
Approach Delay, s/veh		58.5			85.5			21.2			18.4	
Approach LOS		E			F			C			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	17.1	84.9		21.2	8.3	93.7		6.8				
Change Period (Y+Rc), s	6.5	6.0		6.0	7.0	6.0		5.5				
Max Green Setting (Gmax), s	14.5	59.0		25.0	7.0	66.0		7.5				
Max Q Clear Time (g_c+I1), s	10.6	37.9		13.8	2.6	43.5		2.6				
Green Ext Time (p_c), s	0.1	9.5		1.4	0.0	9.2		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	23.8
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	3	0	1762	1422	31
Future Vol, veh/h	0	3	0	1762	1422	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	3	0	1915	1546	34

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	790	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	*499	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %		1		-	-	-
Mov Cap-1 Maneuver	-	*499	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.3	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	499	-	-
HCM Lane V/C Ratio	-	0.007	-	-
HCM Control Delay (s)	-	12.3	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	0.3					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	37	16	1761	1422	3
Future Vol, veh/h	1	37	16	1761	1422	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	40	17	1914	1546	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2539	775	1549	0	-	0
Stage 1	1548	-	-	-	-	-
Stage 2	991	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	*24	*499	*746	-	-	-
Stage 1	*471	-	-	-	-	-
Stage 2	*320	-	-	-	-	-
Platoon blocked, %	1	1	1	-	-	-
Mov Cap-1 Maneuver	*24	*499	*746	-	-	-
Mov Cap-2 Maneuver	*24	-	-	-	-	-
Stage 1	*471	-	-	-	-	-
Stage 2	*320	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.6	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	* 746	-	328	-	-
HCM Lane V/C Ratio	0.023	-	0.126	-	-
HCM Control Delay (s)	9.9	0	17.6	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	0	19	3	0	6	16	1766	6	5	1424	30
Future Vol, veh/h	5	0	19	3	0	6	16	1766	6	5	1424	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	125	-	-	100	150	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	0	20	3	0	6	17	1840	6	5	1483	31

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2463	3389	757	2626	3398	920	1514	0	0	1846	0	0
Stage 1	1509	1509	-	1874	1874	-	-	-	-	-	-	-
Stage 2	954	1880	-	752	1524	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	*22	*2	*499	*12	*2	273	*746	-	-	325	-	-
Stage 1	*470	*412	-	*74	*120	-	-	-	-	-	-	-
Stage 2	*278	*119	-	*470	*412	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1		1	-	-		-	-
Mov Cap-1 Maneuver	*21	*2	*499	*11	*2	273	*746	-	-	325	-	-
Mov Cap-2 Maneuver	*164	*82	-	*60	*84	-	-	-	-	-	-	-
Stage 1	*470	*406	-	*74	*120	-	-	-	-	-	-	-
Stage 2	*272	*119	-	*445	*406	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.1	35.1	0.1	0.1
HCM LOS	C	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	* 746	-	-	350	60	273	325	-	-
HCM Lane V/C Ratio	0.022	-	-	0.071	0.052	0.023	0.016	-	-
HCM Control Delay (s)	9.9	0	-	16.1	68.3	18.5	16.3	-	-
HCM Lane LOS	A	A	-	C	F	C	C	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.2	0.1	0	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	18	45	1	6	10
Future Vol, veh/h	1	18	45	1	6	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	20	49	1	7	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	50	0	-	0	72	50
Stage 1	-	-	-	-	50	-
Stage 2	-	-	-	-	22	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1557	-	-	-	932	1018
Stage 1	-	-	-	-	972	-
Stage 2	-	-	-	-	1001	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1557	-	-	-	931	1018
Mov Cap-2 Maneuver	-	-	-	-	931	-
Stage 1	-	-	-	-	971	-
Stage 2	-	-	-	-	1001	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1557	-	-	-	984
HCM Lane V/C Ratio	0.001	-	-	-	0.018
HCM Control Delay (s)	7.3	0	-	-	8.7
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection												
Int Delay, s/veh	4.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	14	2	11	44	0	2	2	0	4	1	24
Future Vol, veh/h	13	14	2	11	44	0	2	2	0	4	1	24
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	74	74	74	74	74	74	74	74	74	74	74	74
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	19	3	15	59	0	3	3	0	5	1	32

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	59	0	0	22	0	0	163	146	21	147	147	59
Stage 1	-	-	-	-	-	-	57	57	-	89	89	-
Stage 2	-	-	-	-	-	-	106	89	-	58	58	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1545	-	-	1593	-	-	802	745	1056	821	744	1007
Stage 1	-	-	-	-	-	-	955	847	-	918	821	-
Stage 2	-	-	-	-	-	-	900	821	-	954	847	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1545	-	-	1593	-	-	762	729	1056	805	728	1007
Mov Cap-2 Maneuver	-	-	-	-	-	-	762	729	-	805	728	-
Stage 1	-	-	-	-	-	-	944	837	-	907	813	-
Stage 2	-	-	-	-	-	-	861	813	-	940	837	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.3	1.5	9.9	8.9
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	745	1545	-	-	1593	-	-	805	992
HCM Lane V/C Ratio	0.007	0.011	-	-	0.009	-	-	0.007	0.034
HCM Control Delay (s)	9.9	7.4	0	-	7.3	0	-	9.5	8.8
HCM Lane LOS	A	A	A	-	A	A	-	A	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0	0.1

Intersection	
Int Delay, s/veh	1.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	46	15	264	26	1	149
Future Vol, veh/h	46	15	264	26	1	149
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	58	19	330	33	1	186

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	535	347	0	0	363	0
Stage 1	347	-	-	-	-	-
Stage 2	188	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	506	696	-	-	1196	-
Stage 1	716	-	-	-	-	-
Stage 2	844	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	505	696	-	-	1196	-
Mov Cap-2 Maneuver	505	-	-	-	-	-
Stage 1	716	-	-	-	-	-
Stage 2	843	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.7	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	542	1196	-
HCM Lane V/C Ratio	-	-	0.141	0.001	-
HCM Control Delay (s)	-	-	12.7	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0	-

Intersection	
Intersection Delay, s/veh	14.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	23	53	3	107	25	66	6	104	168	102	43	9
Future Vol, veh/h	23	53	3	107	25	66	6	104	168	102	43	9
Peak Hour Factor	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	36	83	5	167	39	103	9	163	263	159	67	14
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	1
HCM Control Delay	11.8	13.1	17.9	13.6
HCM LOS	B	B	C	B

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	2%	29%	81%	0%	66%
Vol Thru, %	37%	67%	19%	0%	28%
Vol Right, %	60%	4%	0%	100%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	278	79	132	66	154
LT Vol	6	23	107	0	102
Through Vol	104	53	25	0	43
RT Vol	168	3	0	66	9
Lane Flow Rate	434	123	206	103	241
Geometry Grp	2	5	7	7	2
Degree of Util (X)	0.646	0.232	0.405	0.17	0.415
Departure Headway (Hd)	5.356	6.753	7.17	6.041	6.214
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	665	533	505	597	582
Service Time	3.454	4.768	4.87	3.741	4.214
HCM Lane V/C Ratio	0.653	0.231	0.408	0.173	0.414
HCM Control Delay	17.9	11.8	14.7	10	13.6
HCM Lane LOS	C	B	B	A	B
HCM 95th-tile Q	4.7	0.9	1.9	0.6	2

Intersection						
Int Delay, s/veh	0.9					

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	313	9	24	233	8	22
Future Vol, veh/h	313	9	24	233	8	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	340	10	26	253	9	24

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	350	0	650	175
Stage 1	-	-	-	-	345	-
Stage 2	-	-	-	-	305	-
Critical Hdwy	-	-	4.13	-	6.63	6.93
Critical Hdwy Stg 1	-	-	-	-	5.83	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.219	-	3.519	3.319
Pot Cap-1 Maneuver	-	-	1207	-	418	839
Stage 1	-	-	-	-	689	-
Stage 2	-	-	-	-	747	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1207	-	408	839
Mov Cap-2 Maneuver	-	-	-	-	408	-
Stage 1	-	-	-	-	689	-
Stage 2	-	-	-	-	728	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	10.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	655	-	-	1207	-
HCM Lane V/C Ratio	0.05	-	-	0.022	-
HCM Control Delay (s)	10.8	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	351	7	23	234	15	1	0	15	0	0	2
Future Vol, veh/h	6	351	7	23	234	15	1	0	15	0	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	462	9	30	308	20	1	0	20	0	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	328	0	0	471	0	0	863	871	236	625	865	318
Stage 1	-	-	-	-	-	-	483	483	-	378	378	-
Stage 2	-	-	-	-	-	-	380	388	-	247	487	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.93	7.33	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	1230	-	-	1089	-	-	261	289	766	383	291	722
Stage 1	-	-	-	-	-	-	534	552	-	643	614	-
Stage 2	-	-	-	-	-	-	641	608	-	736	550	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1230	-	-	1089	-	-	252	277	766	361	278	722
Mov Cap-2 Maneuver	-	-	-	-	-	-	252	277	-	361	278	-
Stage 1	-	-	-	-	-	-	529	547	-	637	593	-
Stage 2	-	-	-	-	-	-	617	587	-	711	545	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.7	10.5	10
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	679	1230	-	-	1089	-	-	722
HCM Lane V/C Ratio	0.031	0.006	-	-	0.028	-	-	0.004
HCM Control Delay (s)	10.5	7.9	0	-	8.4	0	-	10
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0.1	-	-	0

BACKGROUND TRAFFIC CONDITIONS (2025)

PM PEAK

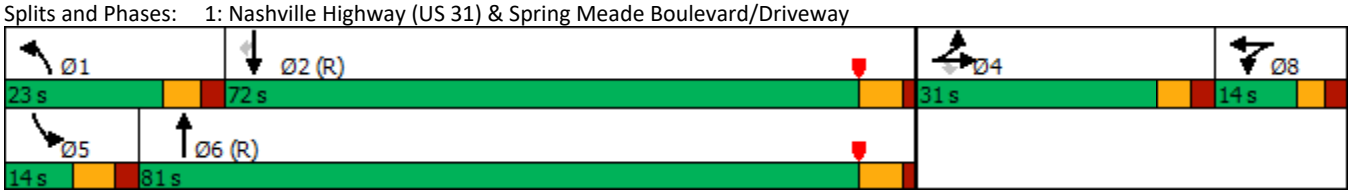
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	263	4	117	1	1	5	79	1617	28	0	1914	149
Future Volume (vph)	263	4	117	1	1	5	79	1617	28	0	1914	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		0	0		0	250		0	200		200
Storage Lanes	1		1	0		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt			0.850		0.904			0.997				0.850
Flt Protected	0.950	0.954			0.993		0.950					
Satd. Flow (prot)	1681	1688	1583	0	1672	0	1770	3529	0	1863	3539	1583
Flt Permitted	0.950	0.954			0.993		0.950					
Satd. Flow (perm)	1681	1688	1583	0	1672	0	1770	3529	0	1863	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			171		5			2				171
Link Speed (mph)		25			30			55			30	
Link Distance (ft)		375			675			260			1000	
Travel Time (s)		10.2			15.3			3.2			22.7	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	271	4	121	1	1	5	81	1667	29	0	1973	154
Shared Lane Traffic (%)	49%											
Lane Group Flow (vph)	138	137	121	0	7	0	81	1696	0	0	1973	154
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1		1	1		1	1	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	50	50	50	20	50		50	50		50	50	50
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Size(ft)	50	50	50	20	50		50	50		50	50	50
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Turn Type	Split	NA	Perm	Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4		8	8		1	6		5	2	
Permitted Phases			4									2
Detector Phase	4	4	4	8	8		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0		11.5	11.5		12.0	11.5	11.5
Total Split (s)	31.0	31.0	31.0	14.0	14.0		23.0	81.0		14.0	72.0	72.0
Total Split (%)	22.1%	22.1%	22.1%	10.0%	10.0%		16.4%	57.9%		10.0%	51.4%	51.4%
Maximum Green (s)	25.0	25.0	25.0	8.5	8.5		16.5	75.0		7.0	66.0	66.0
Yellow Time (s)	3.5	3.5	3.5	3.0	3.0		4.0	4.5		4.5	4.5	4.5
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5		2.5	1.5		2.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	0.0

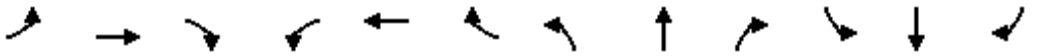
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)	6.0	6.0	6.0		5.5		6.5	6.0		7.0	6.0	6.0
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	C-Max		None	C-Max	C-Max
Act Effct Green (s)	16.9	16.9	16.9		6.0		11.7	108.6			90.3	90.3
Actuated g/C Ratio	0.12	0.12	0.12		0.04		0.08	0.78			0.64	0.64
v/c Ratio	0.68	0.67	0.35		0.09		0.55	0.62			0.86	0.14
Control Delay	75.0	74.4	4.6		45.1		74.6	9.4			26.6	2.0
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0			0.0	0.0
Total Delay	75.0	74.4	4.6		45.1		74.6	9.4			26.6	2.0
LOS	E	E	A		D		E	A			C	A
Approach Delay		53.3			45.1			12.4			24.9	
Approach LOS		D			D			B			C	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 22.4 Intersection LOS: C
Intersection Capacity Utilization 86.8% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 1: Nashville Highway (US 31) & Spring Meade Boulevard/Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	263	4	117	1	1	5	79	1617	28	0	1914	149
Future Volume (veh/h)	263	4	117	1	1	5	79	1617	28	0	1914	149
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	274	0	121	1	1	5	81	1667	29	0	1973	154
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	356	0	158	2	2	10	102	2739	48	1	2355	1050
Arrive On Green	0.10	0.00	0.10	0.01	0.01	0.01	0.06	0.77	0.77	0.00	0.66	0.66
Sat Flow, veh/h	3563	0	1585	235	235	1176	1781	3574	62	1781	3554	1585
Grp Volume(v), veh/h	274	0	121	7	0	0	81	827	869	0	1973	154
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1647	0	0	1781	1777	1859	1781	1777	1585
Q Serve(g_s), s	10.5	0.0	10.4	0.6	0.0	0.0	6.3	28.5	28.7	0.0	58.9	5.1
Cycle Q Clear(g_c), s	10.5	0.0	10.4	0.6	0.0	0.0	6.3	28.5	28.7	0.0	58.9	5.1
Prop In Lane	1.00		1.00	0.14		0.71	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	356	0	158	14	0	0	102	1362	1425	1	2355	1050
V/C Ratio(X)	0.77	0.00	0.76	0.50	0.00	0.00	0.79	0.61	0.61	0.00	0.84	0.15
Avail Cap(c_a), veh/h	636	0	283	100	0	0	210	1362	1425	89	2355	1050
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	61.4	0.0	61.4	69.1	0.0	0.0	65.2	7.1	7.2	0.0	17.9	8.8
Incr Delay (d2), s/veh	3.5	0.0	7.4	24.9	0.0	0.0	12.8	2.0	2.0	0.0	3.8	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	0.0	4.5	0.3	0.0	0.0	3.1	8.6	9.0	0.0	23.9	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.9	0.0	68.8	94.0	0.0	0.0	77.9	9.2	9.1	0.0	21.7	9.1
LnGrp LOS	E	A	E	F	A	A	E	A	A	A	C	A
Approach Vol, veh/h		395			7			1777			2127	
Approach Delay, s/veh		66.1			94.0			12.3			20.8	
Approach LOS		E			F			B			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.5	98.8		20.0	0.0	113.3		6.7				
Change Period (Y+Rc), s	6.5	6.0		6.0	7.0	6.0		5.5				
Max Green Setting (Gmax), s	16.5	66.0		25.0	7.0	75.0		8.5				
Max Q Clear Time (g_c+I1), s	8.3	60.9		12.5	0.0	30.7		2.6				
Green Ext Time (p_c), s	0.1	4.2		1.5	0.0	9.9		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		21.5
HCM 6th LOS		C

Notes

User approved volume balancing among the lanes for turning movement.

Intersection						
Int Delay, s/veh	0					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	8	0	1694	2037	20
Future Vol, veh/h	0	8	0	1694	2037	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	9	0	1841	2214	22

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	1118	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	*228	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %		1		-	-	-
Mov Cap-1 Maneuver	-	*228	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	21.4	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	228	-	-
HCM Lane V/C Ratio	-	0.038	-	-
HCM Control Delay (s)	-	21.4	-	-
HCM Lane LOS	-	C	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	0.3					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	33	15	1694	2043	3
Future Vol, veh/h	0	33	15	1694	2043	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	36	16	1841	2221	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	3176	1112	2224	0	-	0
Stage 1	2223	-	-	-	-	-
Stage 2	953	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	*1	*228	*341	-	-	-
Stage 1	*215	-	-	-	-	-
Stage 2	*335	-	-	-	-	-
Platoon blocked, %	1	1	1	-	-	-
Mov Cap-1 Maneuver	*1	*228	*341	-	-	-
Mov Cap-2 Maneuver	*1	-	-	-	-	-
Stage 1	*215	-	-	-	-	-
Stage 2	*335	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	23.7	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	* 341	-	228	-	-
HCM Lane V/C Ratio	0.048	-	0.157	-	-
HCM Control Delay (s)	16.1	0	23.7	-	-
HCM Lane LOS	C	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	0	20	3	0	14	12	1688	4	13	2039	23
Future Vol, veh/h	7	0	20	3	0	14	12	1688	4	13	2039	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	125	-	-	100	150	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	0	21	3	0	14	12	1740	4	13	2102	24

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	3034	3908	1063	2841	3916	870	2126	0	0	1744	0	0
Stage 1	2140	2140	-	1764	1764	-	-	-	-	-	-	-
Stage 2	894	1768	-	1077	2152	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	*~ 1	*0	*228	*5	*0	295	*341	-	-	356	-	-
Stage 1	*215	*188	-	*87	*136	-	-	-	-	-	-	-
Stage 2	*302	*135	-	*215	*188	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1		1	-	-		-	-
Mov Cap-1 Maneuver	-	*0	*228	-	*0	295	*341	-	-	356	-	-
Mov Cap-2 Maneuver	*~ -14	*~ -13	-	*53	*0	-	-	-	-	-	-	-
Stage 1	*215	*181	-	*87	*0	-	-	-	-	-	-	-
Stage 2	-	*0	-	*188	*181	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			7.9	0.1
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	* 341	-	-	-	-	295	356	-	-
HCM Lane V/C Ratio	0.036	-	-	-	-	0.049	0.038	-	-
HCM Control Delay (s)	16	7.9	-	-	-	17.8	15.5	-	-
HCM Lane LOS	C	A	-	-	-	C	C	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-	-	0.2	0.1	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	1.2					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	21	35	0	6	2
Future Vol, veh/h	1	21	35	0	6	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	23	38	0	7	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	38	0	-	0	63	38
Stage 1	-	-	-	-	38	-
Stage 2	-	-	-	-	25	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1572	-	-	-	943	1034
Stage 1	-	-	-	-	984	-
Stage 2	-	-	-	-	998	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1572	-	-	-	942	1034
Mov Cap-2 Maneuver	-	-	-	-	942	-
Stage 1	-	-	-	-	983	-
Stage 2	-	-	-	-	998	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	8.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1572	-	-	-	963
HCM Lane V/C Ratio	0.001	-	-	-	0.009
HCM Control Delay (s)	7.3	0	-	-	8.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection												
Int Delay, s/veh	4.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	15	1	7	30	0	3	2	1	4	1	16
Future Vol, veh/h	13	15	1	7	30	0	3	2	1	4	1	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	18	1	8	35	0	4	2	1	5	1	19

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	35	0	0	19	0	0	110	100	19	101	100	35
Stage 1	-	-	-	-	-	-	49	49	-	51	51	-
Stage 2	-	-	-	-	-	-	61	51	-	50	49	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1576	-	-	1597	-	-	868	790	1059	880	790	1038
Stage 1	-	-	-	-	-	-	964	854	-	962	852	-
Stage 2	-	-	-	-	-	-	950	852	-	963	854	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1576	-	-	1597	-	-	842	778	1059	867	778	1038
Mov Cap-2 Maneuver	-	-	-	-	-	-	842	778	-	867	778	-
Stage 1	-	-	-	-	-	-	954	845	-	952	848	-
Stage 2	-	-	-	-	-	-	927	848	-	950	845	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.3	1.4	9.3	8.7
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	848	1576	-	-	1597	-	-	867	1018
HCM Lane V/C Ratio	0.008	0.01	-	-	0.005	-	-	0.005	0.02
HCM Control Delay (s)	9.3	7.3	0	-	7.3	0	-	9.2	8.6
HCM Lane LOS	A	A	A	-	A	A	-	A	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0	0.1

Intersection	
Int Delay, s/veh	1.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	34	12	129	23	7	180
Future Vol, veh/h	34	12	129	23	7	180
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	13	145	26	8	202

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	376	158	0	0	171	0
Stage 1	158	-	-	-	-	-
Stage 2	218	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	625	887	-	-	1406	-
Stage 1	871	-	-	-	-	-
Stage 2	818	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	621	887	-	-	1406	-
Mov Cap-2 Maneuver	621	-	-	-	-	-
Stage 1	871	-	-	-	-	-
Stage 2	813	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.8	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	674	1406	-
HCM Lane V/C Ratio	-	-	0.077	0.006	-
HCM Control Delay (s)	-	-	10.8	7.6	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Intersection Delay, s/veh	13.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	33	4	112	49	20	5	30	110	182	74	19
Future Vol, veh/h	3	33	4	112	49	20	5	30	110	182	74	19
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	46	6	158	69	28	7	42	155	256	104	27
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	1
HCM Control Delay	9.8	13.2	10.2	15.3
HCM LOS	A	B	B	C

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	3%	7%	70%	0%	66%
Vol Thru, %	21%	82%	30%	0%	27%
Vol Right, %	76%	10%	0%	100%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	145	40	161	20	275
LT Vol	5	3	112	0	182
Through Vol	30	33	49	0	74
RT Vol	110	4	0	20	19
Lane Flow Rate	204	56	227	28	387
Geometry Grp	2	5	7	7	2
Degree of Util (X)	0.288	0.096	0.412	0.043	0.572
Departure Headway (Hd)	5.078	6.113	6.541	5.477	5.316
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	707	584	551	653	678
Service Time	3.123	4.17	4.283	3.219	3.353
HCM Lane V/C Ratio	0.289	0.096	0.412	0.043	0.571
HCM Control Delay	10.2	9.8	13.8	8.5	15.3
HCM Lane LOS	B	A	B	A	C
HCM 95th-tile Q	1.2	0.3	2	0.1	3.6

Intersection						
Int Delay, s/veh	0.7					

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	329	14	20	193	6	14
Future Vol, veh/h	329	14	20	193	6	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	358	15	22	210	7	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	373	0	620	187
Stage 1	-	-	-	-	366	-
Stage 2	-	-	-	-	254	-
Critical Hdwy	-	-	4.13	-	6.63	6.93
Critical Hdwy Stg 1	-	-	-	-	5.83	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.219	-	3.519	3.319
Pot Cap-1 Maneuver	-	-	1184	-	435	824
Stage 1	-	-	-	-	673	-
Stage 2	-	-	-	-	788	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1184	-	426	824
Mov Cap-2 Maneuver	-	-	-	-	426	-
Stage 1	-	-	-	-	673	-
Stage 2	-	-	-	-	771	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	10.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	644	-	-	1184	-
HCM Lane V/C Ratio	0.034	-	-	0.018	-
HCM Control Delay (s)	10.8	-	-	8.1	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	360	3	23	196	9	1	0	23	2	0	0
Future Vol, veh/h	2	360	3	23	196	9	1	0	23	2	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	462	4	29	251	12	1	0	29	3	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	263	0	0	466	0	0	785	791	233	552	787	257
Stage 1	-	-	-	-	-	-	470	470	-	315	315	-
Stage 2	-	-	-	-	-	-	315	321	-	237	472	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.93	7.33	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	1300	-	-	1094	-	-	296	321	770	430	323	781
Stage 1	-	-	-	-	-	-	544	559	-	695	655	-
Stage 2	-	-	-	-	-	-	695	651	-	746	558	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1300	-	-	1094	-	-	288	310	770	403	312	781
Mov Cap-2 Maneuver	-	-	-	-	-	-	288	310	-	403	312	-
Stage 1	-	-	-	-	-	-	542	557	-	693	635	-
Stage 2	-	-	-	-	-	-	673	631	-	715	556	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.8	10.2	14
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	720	1300	-	-	1094	-	-	403
HCM Lane V/C Ratio	0.043	0.002	-	-	0.027	-	-	0.006
HCM Control Delay (s)	10.2	7.8	0	-	8.4	0	-	14
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0.1	-	-	0

PROJECTED TRAFFIC CONDITIONS (2025)

AM PEAK

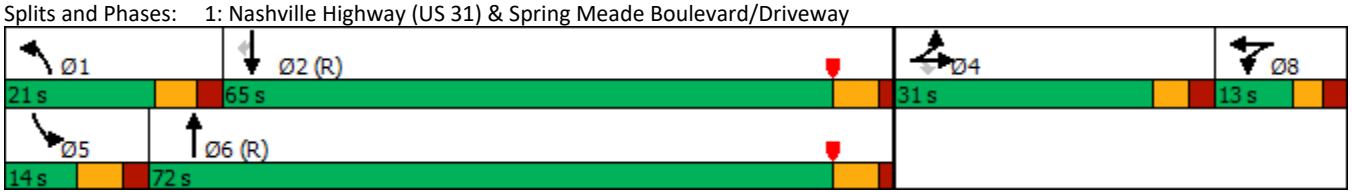
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	433	12	44	4	0	4	168	1552	30	7	1321	203
Future Volume (vph)	433	12	44	4	0	4	168	1552	30	7	1321	203
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		0	0		0	250		0	200		200
Storage Lanes	1		1	0		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt			0.850		0.932			0.997				0.850
Flt Protected	0.950	0.955			0.976		0.950			0.950		
Satd. Flow (prot)	1681	1690	1583	0	1694	0	1770	3529	0	1770	3539	1583
Flt Permitted	0.950	0.955			0.976		0.950			0.950		
Satd. Flow (perm)	1681	1690	1583	0	1694	0	1770	3529	0	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			185		189			2				185
Link Speed (mph)		25			30			55			30	
Link Distance (ft)		375			675			400			1000	
Travel Time (s)		10.2			15.3			5.0			22.7	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	466	13	47	4	0	4	181	1669	32	8	1420	218
Shared Lane Traffic (%)	49%											
Lane Group Flow (vph)	238	241	47	0	8	0	181	1701	0	8	1420	218
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1		1	1		1	1	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	50	50	50	20	50		50	50		50	50	50
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Size(ft)	50	50	50	20	50		50	50		50	50	50
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Turn Type	Split	NA	Perm	Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4		8	8		1	6		5	2	
Permitted Phases			4									2
Detector Phase	4	4	4	8	8		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	11.0	11.0	11.0	10.5	10.5		11.5	11.0		12.0	11.0	11.0
Total Split (s)	31.0	31.0	31.0	13.0	13.0		21.0	72.0		14.0	65.0	65.0
Total Split (%)	23.8%	23.8%	23.8%	10.0%	10.0%		16.2%	55.4%		10.8%	50.0%	50.0%
Maximum Green (s)	25.0	25.0	25.0	7.5	7.5		14.5	66.0		7.0	59.0	59.0
Yellow Time (s)	3.5	3.5	3.5	3.0	3.0		4.0	4.5		4.5	4.5	4.5
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5		2.5	1.5		2.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	0.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)	6.0	6.0	6.0		5.5		6.5	6.0		7.0	6.0	6.0
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	C-Max		None	C-Max	C-Max
Act Effct Green (s)	22.2	22.2	22.2		5.5		18.6	90.7		6.2	68.5	68.5
Actuated g/C Ratio	0.17	0.17	0.17		0.04		0.14	0.70		0.05	0.53	0.53
v/c Ratio	0.83	0.84	0.11		0.03		0.72	0.69		0.10	0.76	0.24
Control Delay	75.5	76.0	0.5		0.3		69.3	15.8		61.1	29.1	4.9
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	75.5	76.0	0.5		0.3		69.3	15.8		61.1	29.1	4.9
LOS	E	E	A		A		E	B		E	C	A
Approach Delay		69.0			0.3			21.0			26.1	
Approach LOS		E			A			C			C	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 70 (54%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 29.2 Intersection LOS: C
Intersection Capacity Utilization 82.8% ICU Level of Service E
Analysis Period (min) 15

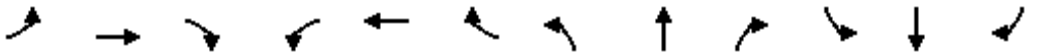
Splits and Phases: 1: Nashville Highway (US 31) & Spring Meade Boulevard/Driveway



Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	238	241	47	8	181	1701	8	1420	218
v/c Ratio	0.83	0.84	0.11	0.03	0.72	0.69	0.10	0.76	0.24
Control Delay	75.5	76.0	0.5	0.3	69.3	15.8	61.1	29.1	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.5	76.0	0.5	0.3	69.3	15.8	61.1	29.1	4.9
Queue Length 50th (ft)	202	205	0	0	145	360	7	495	13
Queue Length 95th (ft)	#320	#323	0	0	#271	#818	24	671	62
Internal Link Dist (ft)		295		595		320		920	
Turn Bay Length (ft)	300				250		200		200
Base Capacity (vph)	323	325	453	275	253	2464	96	1865	921
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.74	0.10	0.03	0.72	0.69	0.08	0.76	0.24

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	433	12	44	4	0	4	168	1552	30	7	1321	203
Future Volume (veh/h)	433	12	44	4	0	4	168	1552	30	7	1321	203
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	475	0	47	4	0	4	181	1669	32	8	1420	218
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	555	0	247	8	0	8	199	2270	43	17	1913	853
Arrive On Green	0.16	0.00	0.16	0.01	0.00	0.01	0.11	0.64	0.64	0.01	0.54	0.54
Sat Flow, veh/h	3563	0	1585	839	0	839	1781	3567	68	1781	3554	1585
Grp Volume(v), veh/h	475	0	47	8	0	0	181	830	871	8	1420	218
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1677	0	0	1781	1777	1858	1781	1777	1585
Q Serve(g_s), s	16.9	0.0	3.4	0.6	0.0	0.0	13.1	41.4	41.7	0.6	39.9	9.6
Cycle Q Clear(g_c), s	16.9	0.0	3.4	0.6	0.0	0.0	13.1	41.4	41.7	0.6	39.9	9.6
Prop In Lane	1.00		1.00	0.50		0.50	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	555	0	247	16	0	0	199	1131	1182	17	1913	853
V/C Ratio(X)	0.86	0.00	0.19	0.49	0.00	0.00	0.91	0.73	0.74	0.47	0.74	0.26
Avail Cap(c_a), veh/h	685	0	305	97	0	0	199	1131	1182	96	1913	853
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.4	0.0	47.7	64.1	0.0	0.0	57.1	16.1	16.2	64.0	23.1	16.1
Incr Delay (d2), s/veh	8.8	0.0	0.4	21.5	0.0	0.0	39.9	4.2	4.1	18.3	2.6	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	0.0	1.4	0.4	0.0	0.0	7.9	15.6	16.3	0.4	17.0	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.2	0.0	48.1	85.5	0.0	0.0	97.1	20.4	20.3	82.3	25.7	16.8
LnGrp LOS	E	A	D	F	A	A	F	C	C	F	C	B
Approach Vol, veh/h		522			8			1882			1646	
Approach Delay, s/veh		60.9			85.5			27.7			24.8	
Approach LOS		E			F			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	21.0	76.0		26.3	8.3	88.7		6.8				
Change Period (Y+Rc), s	6.5	6.0		6.0	7.0	6.0		5.5				
Max Green Setting (Gmax), s	14.5	59.0		25.0	7.0	66.0		7.5				
Max Q Clear Time (g_c+I1), s	15.1	41.9		18.9	2.6	43.7		2.6				
Green Ext Time (p_c), s	0.0	8.4		1.4	0.0	8.4		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	30.9
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Intersection						
Int Delay, s/veh	0.2					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	60	0	1729	1316	85
Future Vol, veh/h	0	60	0	1729	1316	85
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	63	0	1801	1371	89

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	730	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	*523	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %		1		-	-	-
Mov Cap-1 Maneuver	-	*523	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.8	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	523	-	-
HCM Lane V/C Ratio	-	0.12	-	-
HCM Control Delay (s)	-	12.8	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.4	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	2.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	0	89	3	0	6	88	1710	6	5	1341	30
Future Vol, veh/h	12	0	89	3	0	6	88	1710	6	5	1341	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	100	150	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	0	93	3	0	6	92	1781	6	5	1397	31

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2498	3394	714	2674	3403	891	1428	0	0	1787	0	0
Stage 1	1423	1423	-	1965	1965	-	-	-	-	-	-	-
Stage 2	1075	1971	-	709	1438	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	*18	*2	*523	*10	*2	285	*782	-	-	343	-	-
Stage 1	*493	*432	-	*65	*107	-	-	-	-	-	-	-
Stage 2	*234	*107	-	*493	*432	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1		1	-	-		-	-
Mov Cap-1 Maneuver	-	*0	*523	-	*0	285	*782	-	-	343	-	-
Mov Cap-2 Maneuver	*~ -6	*~ -5	-	*49	*0	-	-	-	-	-	-	-
Stage 1	*493	*426	-	*65	*0	-	-	-	-	-	-	-
Stage 2	-	*0	-	*400	*426	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			4.9	0.1
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	* 782	-	-	-	-	343	-	-
HCM Lane V/C Ratio	0.117	-	-	-	-	0.015	-	-
HCM Control Delay (s)	10.2	4.6	-	-	-	15.7	-	-
HCM Lane LOS	B	A	-	-	-	C	-	-
HCM 95th %tile Q(veh)	0.4	-	-	-	-	0	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	0	89	3	0	6	88	1710	6	5	1341	30
Future Vol, veh/h	12	0	89	3	0	6	88	1710	6	5	1341	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	125	100	-	100	150	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	0	93	3	0	6	92	1781	6	5	1397	31

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2498	3394	714	2674	3403	891	1428	0	0	1787	0	0
Stage 1	1423	1423	-	1965	1965	-	-	-	-	-	-	-
Stage 2	1075	1971	-	709	1438	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	*18	*2	*523	*10	*2	285	*782	-	-	343	-	-
Stage 1	*493	*432	-	*65	*107	-	-	-	-	-	-	-
Stage 2	*234	*107	-	*493	*432	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1		1	-	-		-	-
Mov Cap-1 Maneuver	*16	*2	*523	*7	*2	285	*782	-	-	343	-	-
Mov Cap-2 Maneuver	*130	*68	-	*46	*68	-	-	-	-	-	-	-
Stage 1	*435	*426	-	*57	*94	-	-	-	-	-	-	-
Stage 2	*202	*94	-	*400	*426	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.8	41.6	0.5	0.1
HCM LOS	C	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	* 782	-	-	385	46	285	343	-	-
HCM Lane V/C Ratio	0.117	-	-	0.273	0.068	0.022	0.015	-	-
HCM Control Delay (s)	10.2	-	-	17.8	88.9	17.9	15.7	-	-
HCM Lane LOS	B	-	-	C	F	C	C	-	-
HCM 95th %tile Q(veh)	0.4	-	-	1.1	0.2	0.1	0	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	4.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	27	2	11	34	73	2	0	0	73	0	13
Future Vol, veh/h	12	27	2	11	34	73	2	0	0	73	0	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	74	74	74	74	74	74	74	74	74	74	74	74
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	36	3	15	46	99	3	0	0	99	0	18

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	145	0	0	39	0	0	205	245	38	196	197	96
Stage 1	-	-	-	-	-	-	70	70	-	126	126	-
Stage 2	-	-	-	-	-	-	135	175	-	70	71	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1437	-	-	1571	-	-	753	657	1034	763	699	960
Stage 1	-	-	-	-	-	-	940	837	-	878	792	-
Stage 2	-	-	-	-	-	-	868	754	-	940	836	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1437	-	-	1571	-	-	727	643	1034	750	684	960
Mov Cap-2 Maneuver	-	-	-	-	-	-	727	643	-	750	684	-
Stage 1	-	-	-	-	-	-	930	828	-	868	783	-
Stage 2	-	-	-	-	-	-	843	746	-	930	827	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.2	0.7	10	10.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	727	1437	-	-	1571	-	-	750	960
HCM Lane V/C Ratio	0.004	0.011	-	-	0.009	-	-	0.132	0.018
HCM Control Delay (s)	10	7.5	0	-	7.3	0	-	10.5	8.8
HCM Lane LOS	B	A	A	-	A	A	-	B	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.5	0.1

Intersection						
Int Delay, s/veh	1.6					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↱	
Traffic Vol, veh/h	0	28	49	0	14	2
Future Vol, veh/h	0	28	49	0	14	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	73	73	73	73	73	73
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	38	67	0	19	3

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	105	67
Stage 1	-	-	-	-	67	-
Stage 2	-	-	-	-	38	-
Critical Hdwy	-	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	0	-	-	0	893	997
Stage 1	0	-	-	0	956	-
Stage 2	0	-	-	0	984	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	893	997
Mov Cap-2 Maneuver	-	-	-	-	893	-
Stage 1	-	-	-	-	956	-
Stage 2	-	-	-	-	984	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	905
HCM Lane V/C Ratio	-	-	0.024
HCM Control Delay (s)	-	-	9.1
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	0.1

Intersection						
Int Delay, s/veh	1.1					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	26	16	265	24	1	149
Future Vol, veh/h	26	16	265	24	1	149
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	20	331	30	1	186

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	534	346	0	0	361	0
Stage 1	346	-	-	-	-	-
Stage 2	188	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	507	697	-	-	1198	-
Stage 1	716	-	-	-	-	-
Stage 2	844	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	506	697	-	-	1198	-
Mov Cap-2 Maneuver	506	-	-	-	-	-
Stage 1	716	-	-	-	-	-
Stage 2	843	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	565	1198	-
HCM Lane V/C Ratio	-	-	0.093	0.001	-
HCM Control Delay (s)	-	-	12	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0	-

Intersection	
Intersection Delay, s/veh	15
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	23	53	3	107	28	66	6	105	169	99	43	9
Future Vol, veh/h	23	53	3	107	28	66	6	105	169	99	43	9
Peak Hour Factor	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	36	83	5	167	44	103	9	164	264	155	67	14
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	1
HCM Control Delay	11.8	13.2	18.1	13.5
HCM LOS	B	B	C	B

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	2%	29%	79%	0%	66%
Vol Thru, %	38%	67%	21%	0%	28%
Vol Right, %	60%	4%	0%	100%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	280	79	135	66	151
LT Vol	6	23	107	0	99
Through Vol	105	53	28	0	43
RT Vol	169	3	0	66	9
Lane Flow Rate	438	123	211	103	236
Geometry Grp	2	5	7	7	2
Degree of Util (X)	0.652	0.232	0.413	0.17	0.409
Departure Headway (Hd)	5.364	6.764	7.162	6.042	6.234
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	665	533	506	597	580
Service Time	3.461	4.778	4.862	3.742	4.234
HCM Lane V/C Ratio	0.659	0.231	0.417	0.173	0.407
HCM Control Delay	18.1	11.8	14.8	10	13.5
HCM Lane LOS	C	B	B	A	B
HCM 95th-tile Q	4.8	0.9	2	0.6	2

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	319	2	14	201	9	0	0	0	3	0	0
Future Vol, veh/h	1	319	2	14	201	9	0	0	0	3	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	66	66	66	66	66	66	66	66	66	66	66	66
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	483	3	21	305	14	0	0	0	5	0	0

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	319	0	0	486	0	0	600	844	312
Stage 1	-	-	-	-	-	-	354	354	-
Stage 2	-	-	-	-	-	-	246	490	-
Critical Hdwy	4.13	-	-	4.13	-	-	6.63	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	5.43	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.83	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319
Pot Cap-1 Maneuver	1239	-	-	1075	-	-	448	299	727
Stage 1	-	-	-	-	-	-	710	630	-
Stage 2	-	-	-	-	-	-	773	548	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1239	-	-	1075	-	-	436	0	727
Mov Cap-2 Maneuver	-	-	-	-	-	-	436	0	-
Stage 1	-	-	-	-	-	-	709	0	-
Stage 2	-	-	-	-	-	-	754	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0.5	13.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1239	-	-	1075	-	-	436
HCM Lane V/C Ratio	0.001	-	-	0.02	-	-	0.01
HCM Control Delay (s)	7.9	0	-	8.4	0	-	13.3
HCM Lane LOS	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	-	-	0.1	-	-	0

Intersection												
Int Delay, s/veh	5.9											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	299	12	134	223	3	12	0	159	37	0	23
Future Vol, veh/h	7	299	12	134	223	3	12	0	159	37	0	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	393	16	176	293	4	16	0	209	49	0	30

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	297	0	0	409	0	0	1081	1068	205	862	1074	295
Stage 1	-	-	-	-	-	-	419	419	-	647	647	-
Stage 2	-	-	-	-	-	-	662	649	-	215	427	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.93	7.33	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	1263	-	-	1148	-	-	183	221	802	262	219	744
Stage 1	-	-	-	-	-	-	583	589	-	459	466	-
Stage 2	-	-	-	-	-	-	450	465	-	768	584	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1263	-	-	1148	-	-	150	179	802	165	177	744
Mov Cap-2 Maneuver	-	-	-	-	-	-	150	179	-	165	177	-
Stage 1	-	-	-	-	-	-	578	584	-	455	380	-
Stage 2	-	-	-	-	-	-	352	379	-	563	579	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	3.2	14.2	27.9
HCM LOS			B	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	615	1263	-	-	1148	-	-	235
HCM Lane V/C Ratio	0.366	0.007	-	-	0.154	-	-	0.336
HCM Control Delay (s)	14.2	7.9	0	-	8.7	0	-	27.9
HCM Lane LOS	B	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	1.7	0	-	-	0.5	-	-	1.4

PROJECTED TRAFFIC CONDITIONS (2025)

PM PEAK

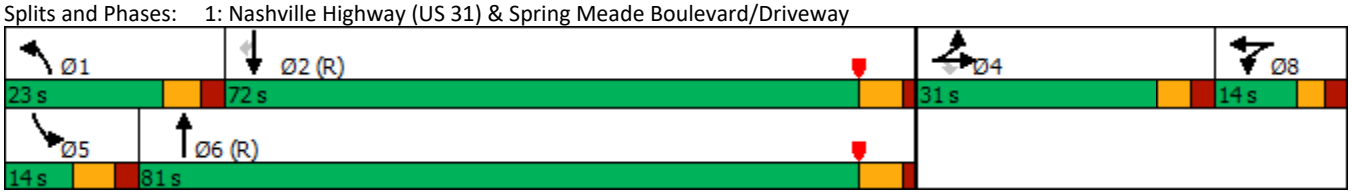
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	371	4	108	1	1	5	128	1548	28	1	1889	187
Future Volume (vph)	371	4	108	1	1	5	128	1548	28	1	1889	187
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		0	0		0	250		0	200		200
Storage Lanes	1		1	0		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt			0.850		0.904			0.997				0.850
Flt Protected	0.950	0.953			0.993		0.950			0.950		
Satd. Flow (prot)	1681	1686	1583	0	1672	0	1770	3529	0	1770	3539	1583
Flt Permitted	0.950	0.953			0.993		0.950			0.950		
Satd. Flow (perm)	1681	1686	1583	0	1672	0	1770	3529	0	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			171		5			2				171
Link Speed (mph)		25			30			55			30	
Link Distance (ft)		375			675			400			1000	
Travel Time (s)		10.2			15.3			5.0			22.7	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	382	4	111	1	1	5	132	1596	29	1	1947	193
Shared Lane Traffic (%)	50%											
Lane Group Flow (vph)	191	195	111	0	7	0	132	1625	0	1	1947	193
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1		1	1		1	1	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	50	50	50	20	50		50	50		50	50	50
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Size(ft)	50	50	50	20	50		50	50		50	50	50
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Turn Type	Split	NA	Perm	Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4		8	8		1	6		5	2	
Permitted Phases			4									2
Detector Phase	4	4	4	8	8		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0		11.5	11.5		12.0	11.5	11.5
Total Split (s)	31.0	31.0	31.0	14.0	14.0		23.0	81.0		14.0	72.0	72.0
Total Split (%)	22.1%	22.1%	22.1%	10.0%	10.0%		16.4%	57.9%		10.0%	51.4%	51.4%
Maximum Green (s)	25.0	25.0	25.0	8.5	8.5		16.5	75.0		7.0	66.0	66.0
Yellow Time (s)	3.5	3.5	3.5	3.0	3.0		4.0	4.5		4.5	4.5	4.5
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5		2.5	1.5		2.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	0.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)	6.0	6.0	6.0		5.5		6.5	6.0		7.0	6.0	6.0
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	C-Max		None	C-Max	C-Max
Act Effct Green (s)	20.8	20.8	20.8		6.0		15.0	102.1		5.7	83.2	83.2
Actuated g/C Ratio	0.15	0.15	0.15		0.04		0.11	0.73		0.04	0.59	0.59
v/c Ratio	0.77	0.78	0.29		0.09		0.70	0.63		0.01	0.93	0.19
Control Delay	76.9	78.1	2.6		45.1		79.2	13.4		65.0	35.5	4.0
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	76.9	78.1	2.6		45.1		79.2	13.4		65.0	35.5	4.0
LOS	E	E	A		D		E	B		E	D	A
Approach Delay		60.8			45.1			18.4			32.7	
Approach LOS		E			D			B			C	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 30.2 Intersection LOS: C
Intersection Capacity Utilization 91.8% ICU Level of Service F
Analysis Period (min) 15

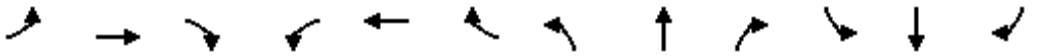
Splits and Phases: 1: Nashville Highway (US 31) & Spring Meade Boulevard/Driveway



Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	191	195	111	7	132	1625	1	1947	193
v/c Ratio	0.77	0.78	0.29	0.09	0.70	0.63	0.01	0.93	0.19
Control Delay	76.9	78.1	2.6	45.1	79.2	13.4	65.0	35.5	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.9	78.1	2.6	45.1	79.2	13.4	65.0	35.5	4.0
Queue Length 50th (ft)	177	181	0	2	117	301	1	785	8
Queue Length 95th (ft)	262	267	6	19	187	730	7	#1243	54
Internal Link Dist (ft)		295		595		320		920	
Turn Bay Length (ft)	300				250		200		200
Base Capacity (vph)	300	301	423	106	216	2574	88	2104	1010
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.65	0.26	0.07	0.61	0.63	0.01	0.93	0.19

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	371	4	108	1	1	5	128	1548	28	1	1889	187
Future Volume (veh/h)	371	4	108	1	1	5	128	1548	28	1	1889	187
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	385	0	111	1	1	5	132	1596	29	1	1947	193
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	466	0	207	2	2	10	156	2444	44	2	2138	953
Arrive On Green	0.13	0.00	0.13	0.01	0.01	0.01	0.09	0.68	0.68	0.00	0.60	0.60
Sat Flow, veh/h	3563	0	1585	235	235	1176	1781	3571	65	1781	3554	1585
Grp Volume(v), veh/h	385	0	111	7	0	0	132	793	832	1	1947	193
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1647	0	0	1781	1777	1859	1781	1777	1585
Q Serve(g_s), s	14.7	0.0	9.2	0.6	0.0	0.0	10.2	35.6	35.8	0.1	67.6	7.7
Cycle Q Clear(g_c), s	14.7	0.0	9.2	0.6	0.0	0.0	10.2	35.6	35.8	0.1	67.6	7.7
Prop In Lane	1.00		1.00	0.14		0.71	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	466	0	207	14	0	0	156	1216	1272	2	2138	953
V/C Ratio(X)	0.83	0.00	0.54	0.50	0.00	0.00	0.84	0.65	0.65	0.41	0.91	0.20
Avail Cap(c_a), veh/h	636	0	283	100	0	0	210	1216	1272	89	2138	953
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.3	0.0	56.9	69.1	0.0	0.0	62.9	12.6	12.6	69.8	24.6	12.7
Incr Delay (d2), s/veh	6.5	0.0	2.1	24.9	0.0	0.0	20.3	2.7	2.6	85.0	7.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	0.0	3.8	0.3	0.0	0.0	5.4	12.8	13.4	0.1	29.3	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.8	0.0	59.0	94.0	0.0	0.0	83.2	15.3	15.3	154.9	31.9	13.1
LnGrp LOS	E	A	E	F	A	A	F	B	B	F	C	B
Approach Vol, veh/h		496			7			1757			2141	
Approach Delay, s/veh		64.2			94.0			20.4			30.2	
Approach LOS		E			F			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	18.8	90.2		24.3	7.2	101.8		6.7				
Change Period (Y+Rc), s	6.5	6.0		6.0	7.0	6.0		5.5				
Max Green Setting (Gmax), s	16.5	66.0		25.0	7.0	75.0		8.5				
Max Q Clear Time (g_c+I1), s	12.2	69.6		16.7	2.1	37.8		2.6				
Green Ext Time (p_c), s	0.1	0.0		1.6	0.0	8.9		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		30.2	
HCM 6th LOS		C	

Notes

User approved volume balancing among the lanes for turning movement.

Intersection						
Int Delay, s/veh	0.3					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	50	0	1674	1951	73
Future Vol, veh/h	0	50	0	1674	1951	73
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	52	0	1744	2032	76

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	1054	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	*250	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %		1		-	-	-
Mov Cap-1 Maneuver	-	*250	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	23.2	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	250	-	-
HCM Lane V/C Ratio	-	0.208	-	-
HCM Control Delay (s)	-	23.2	-	-
HCM Lane LOS	-	C	-	-
HCM 95th %tile Q(veh)	-	0.8	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	0	81	3	0	14	74	1644	4	13	1964	23
Future Vol, veh/h	16	0	81	3	0	14	74	1644	4	13	1964	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	100	150	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	0	84	3	0	14	76	1695	4	13	2025	24

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	3063	3914	1025	2886	3922	848	2049	0	0	1699	0	0
Stage 1	2063	2063	-	1847	1847	-	-	-	-	-	-	-
Stage 2	1000	1851	-	1039	2075	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	*~ 1	*0	*250	*3	*0	305	*374	-	-	371	-	-
Stage 1	*236	*207	-	*77	*123	-	-	-	-	-	-	-
Stage 2	*261	*123	-	*236	*207	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1		1	-	-		-	-
Mov Cap-1 Maneuver	-	*0	*250	-	*0	305	*374	-	-	371	-	-
Mov Cap-2 Maneuver	*~ -13	*~ -13	-	*34	*0	-	-	-	-	-	-	-
Stage 1	*236	*200	-	*77	*0	-	-	-	-	-	-	-
Stage 2	-	*0	-	*152	*200	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			8.2	0.1
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	* 374	-	-	-	-	371	-	-
HCM Lane V/C Ratio	0.204	-	-	-	-	0.036	-	-
HCM Control Delay (s)	17.1	7.8	-	-	-	15.1	-	-
HCM Lane LOS	C	A	-	-	-	C	-	-
HCM 95th %tile Q(veh)	0.8	-	-	-	-	0.1	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	1.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	0	81	3	0	14	74	1644	4	13	1964	23
Future Vol, veh/h	16	0	81	3	0	14	74	1644	4	13	1964	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	125	100	-	100	150	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	0	84	3	0	14	76	1695	4	13	2025	24

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	3063	3914	1025	2886	3922	848	2049	0	0	1699	0	0
Stage 1	2063	2063	-	1847	1847	-	-	-	-	-	-	-
Stage 2	1000	1851	-	1039	2075	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	*~ 1	*0	*250	*3	*0	305	*374	-	-	371	-	-
Stage 1	*236	*207	-	*77	*123	-	-	-	-	-	-	-
Stage 2	*261	*123	-	*236	*207	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1		1	-	-		-	-
Mov Cap-1 Maneuver	*~ 1	*0	*250	*~ 2	*0	305	*374	-	-	371	-	-
Mov Cap-2 Maneuver	*86	*54	-	*32	*50	-	-	-	-	-	-	-
Stage 1	*188	*200	-	*61	*98	-	-	-	-	-	-	-
Stage 2	*198	*98	-	*152	*200	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	43.3	37.1	0.7	0.1
HCM LOS	E	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	* 374	-	-	190	32	305	371	-	-
HCM Lane V/C Ratio	0.204	-	-	0.526	0.097	0.047	0.036	-	-
HCM Control Delay (s)	17.1	-	-	43.3	129.2	17.4	15.1	-	-
HCM Lane LOS	C	-	-	E	F	C	C	-	-
HCM 95th %tile Q(veh)	0.8	-	-	2.7	0.3	0.1	0.1	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	34	1	7	28	62	3	0	1	62	0	11
Future Vol, veh/h	11	34	1	7	28	62	3	0	1	62	0	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	40	1	8	33	73	4	0	1	73	0	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	106	0	0	41	0	0	159	189	41	153	153	70
Stage 1	-	-	-	-	-	-	67	67	-	86	86	-
Stage 2	-	-	-	-	-	-	92	122	-	67	67	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1485	-	-	1568	-	-	807	706	1030	814	739	993
Stage 1	-	-	-	-	-	-	943	839	-	922	824	-
Stage 2	-	-	-	-	-	-	915	795	-	943	839	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1485	-	-	1568	-	-	788	696	1030	804	729	993
Mov Cap-2 Maneuver	-	-	-	-	-	-	788	696	-	804	729	-
Stage 1	-	-	-	-	-	-	935	831	-	914	820	-
Stage 2	-	-	-	-	-	-	899	791	-	933	831	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.8	0.5	9.3	9.7
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	837	1485	-	-	1568	-	-	804	993
HCM Lane V/C Ratio	0.006	0.009	-	-	0.005	-	-	0.091	0.013
HCM Control Delay (s)	9.3	7.4	0	-	7.3	0	-	9.9	8.7
HCM Lane LOS	A	A	A	-	A	A	-	A	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.3	0

Intersection						
Int Delay, s/veh	2.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		Y	
Traffic Vol, veh/h	0	28	42	0	19	2
Future Vol, veh/h	0	28	42	0	19	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	32	48	0	22	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	80	48
Stage 1	-	-	-	-	48	-
Stage 2	-	-	-	-	32	-
Critical Hdwy	-	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	0	-	-	0	922	1021
Stage 1	0	-	-	0	974	-
Stage 2	0	-	-	0	991	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	922	1021
Mov Cap-2 Maneuver	-	-	-	-	922	-
Stage 1	-	-	-	-	974	-
Stage 2	-	-	-	-	991	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	931
HCM Lane V/C Ratio	-	-	0.026
HCM Control Delay (s)	-	-	9
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	0.1

Intersection	
Int Delay, s/veh	1.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	28	13	130	21	7	180
Future Vol, veh/h	28	13	130	21	7	180
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	31	15	146	24	8	202

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	376	158	0	0	170	0
Stage 1	158	-	-	-	-	-
Stage 2	218	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	625	887	-	-	1407	-
Stage 1	871	-	-	-	-	-
Stage 2	818	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	621	887	-	-	1407	-
Mov Cap-2 Maneuver	621	-	-	-	-	-
Stage 1	871	-	-	-	-	-
Stage 2	813	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.6	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	686	1407	-
HCM Lane V/C Ratio	-	-	0.067	0.006	-
HCM Control Delay (s)	-	-	10.6	7.6	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Intersection Delay, s/veh	13.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	33	4	112	53	21	5	31	111	178	74	19
Future Vol, veh/h	3	33	4	112	53	21	5	31	111	178	74	19
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	46	6	158	75	30	7	44	156	251	104	27
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	1
HCM Control Delay	9.8	13.4	10.3	15.2
HCM LOS	A	B	B	C

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	3%	7%	68%	0%	66%
Vol Thru, %	21%	82%	32%	0%	27%
Vol Right, %	76%	10%	0%	100%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	147	40	165	21	271
LT Vol	5	3	112	0	178
Through Vol	31	33	53	0	74
RT Vol	111	4	0	21	19
Lane Flow Rate	207	56	232	30	382
Geometry Grp	2	5	7	7	2
Degree of Util (X)	0.293	0.096	0.422	0.045	0.566
Departure Headway (Hd)	5.096	6.126	6.532	5.476	5.339
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	704	583	551	653	676
Service Time	3.142	4.182	4.272	3.216	3.379
HCM Lane V/C Ratio	0.294	0.096	0.421	0.046	0.565
HCM Control Delay	10.3	9.8	14	8.5	15.2
HCM Lane LOS	B	A	B	A	C
HCM 95th-tile Q	1.2	0.3	2.1	0.1	3.6

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	318	2	19	181	3	0	0	0	4	0	3
Future Vol, veh/h	1	318	2	19	181	3	0	0	0	4	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	71	71	71	71	71	71	71	71	71
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	448	3	27	255	4	0	0	0	6	0	4

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	259	0	0	451	0	0	537	764	257
Stage 1	-	-	-	-	-	-	311	311	-
Stage 2	-	-	-	-	-	-	226	453	-
Critical Hdwy	4.13	-	-	4.13	-	-	6.63	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	5.43	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.83	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319
Pot Cap-1 Maneuver	1304	-	-	1108	-	-	489	333	781
Stage 1	-	-	-	-	-	-	742	658	-
Stage 2	-	-	-	-	-	-	791	569	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1304	-	-	1108	-	-	475	0	781
Mov Cap-2 Maneuver	-	-	-	-	-	-	475	0	-
Stage 1	-	-	-	-	-	-	741	0	-
Stage 2	-	-	-	-	-	-	769	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0.8	11.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1304	-	-	1108	-	-	571
HCM Lane V/C Ratio	0.001	-	-	0.024	-	-	0.017
HCM Control Delay (s)	7.8	0	-	8.3	0	-	11.4
HCM Lane LOS	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	-	-	0.1	-	-	0.1

Intersection												
Int Delay, s/veh	4.5											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	321	11	112	194	1	11	0	135	27	0	16
Future Vol, veh/h	5	321	11	112	194	1	11	0	135	27	0	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	412	14	144	249	1	14	0	173	35	0	21

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	250	0	0	426	0	0	979	969	213	756	976	250
Stage 1	-	-	-	-	-	-	431	431	-	538	538	-
Stage 2	-	-	-	-	-	-	548	538	-	218	438	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.93	7.33	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	1314	-	-	1132	-	-	217	253	793	310	250	788
Stage 1	-	-	-	-	-	-	574	582	-	526	521	-
Stage 2	-	-	-	-	-	-	520	521	-	765	578	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1314	-	-	1132	-	-	187	214	793	214	212	788
Mov Cap-2 Maneuver	-	-	-	-	-	-	187	214	-	214	212	-
Stage 1	-	-	-	-	-	-	571	579	-	523	444	-
Stage 2	-	-	-	-	-	-	432	444	-	594	575	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	3.2	13	20
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	637	1314	-	-	1132	-	-	294
HCM Lane V/C Ratio	0.294	0.005	-	-	0.127	-	-	0.188
HCM Control Delay (s)	13	7.8	0	-	8.6	0	-	20
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	1.2	0	-	-	0.4	-	-	0.7

APPENDIX C

TRIP GENERATION

PROJECT TRIP GENERATION SUMMARY

	Trip Generation			
	AM		PM	
Land Use	**Enter**	**Exit**	**Enter**	**Exit**
Convenience Store & Fuel Center	316	316	269	269
Diesel Fueling Pumps	15	15	21	21
Totals	**331**	**331**	**290**	**290**

	Primary - External Trips			
	AM		PM	
Land Use	**Enter**	**Exit**	**Enter**	**Exit**
Convenience Store & Fuel Center	123	123	113	113
Diesel Fueling Pumps	15	15	21	21
Total Primary Trips	**138**	**138**	**134**	**134**

Primary	
AM %	**PM %**
39%	42%
100%	100%

	Pass-By - External Trips			
	AM		PM	
Land Use	**Enter**	**Exit**	**Enter**	**Exit**
Convenience Store & Fuel Center	193	193	156	156
Diesel Fueling Pumps	0	0	0	0
Total Pass-By Trips	**193**	**193**	**156**	**156**

Pass-By	
AM %	**PM %**
61%	58%
0%	0%

Quik Mart Development #34
Trip Generation
AM Peak Hour

VEHICLE TRIPS BEFORE REDUCTION								
Land Use & Data Source	Location	Independent Variable	Size	Time Period	Method Rate/Equation	Entry Split%	Exit Split%	Total
945 - Convenience Store/Gas Station GFA (5.5-10k)	General Urban/Suburban	Vehicle Fueling Positions	20	AM Peak Hour	Average 31.60	316 50%	316 50%	632
944 - Gasoline/Service Station	General Urban/Suburban	Vehicle Fueling Positions	3	AM Peak Hour	Average 10.28	15 50%	15 50%	30

NEW VEHICLE TRIPS			
Land Use	New Vehicle Trips		
	Entry	Exit	Total
945 - Convenience Store/Gas Station - GFA (5.5-10k)	316	316	632
944 - Gasoline/Service Station	15	15	30

RESULTS			
Site Totals	Entry	Exit	Total
New Vehicle Trips	331	331	662

Data Source: Trip Generation Manual, 11th Ed

Quik Mart Development #34
Trip Generation
PM Peak Hour

VEHICLE TRIPS BEFORE REDUCTION								
Land Use & Data Source	Location	Independent Variable	Size	Time Period	Method Rate/Equation	Entry Split%	Exit Split%	Total
945 - Convenience Store/Gas Station GFA (5.5-10k)	General Urban/Suburban	Vehicle Fueling Positions	20	PM Peak Hour	Average 26.90	269 50%	269 50%	538
944 - Gasoline/Service Station	General Urban/Suburban	Vehicle Fueling Positions	3	PM Peak Hour	Average 13.91	21 50%	21 50%	42

NEW VEHICLE TRIPS			
Land Use	New Vehicle Trips		
	Entry	Exit	Total
945 - Convenience Store/Gas Station - GFA (5.5-10k)	269	269	538
944 - Gasoline/Service Station	21	21	42

RESULTS			
Site Totals	Entry	Exit	Total
New Vehicle Trips	290	290	580

Data Source: Trip Generation Manual, 11th Ed

Quik Mart Development #34
Trip Generation
Weekday

VEHICLE TRIPS BEFORE REDUCTION								
Land Use & Data Source	Location	Independent Variable	Size	Time Period	Method Rate/Equation	Entry Split%	Exit Split%	Total
945 - Convenience Store/Gas Station GFA (5.5-10k)	General Urban/Suburban	Vehicle Fueling Positions	20	Weekday	Average 345.75	3458 50%	3458 50%	6916
944 - Gasoline/Service Station	General Urban/Suburban	Vehicle Fueling Positions	3	Weekday	Average 172.01	258 50%	258 50%	516

NEW VEHICLE TRIPS			
Land Use	New Vehicle Trips		
	Entry	Exit	Total
945 - Convenience Store/Gas Station - GFA (5.5-10k)	3458	3458	6916
944 - Gasoline/Service Station	258	258	516

RESULTS			
Site Totals	Entry	Exit	Total
New Vehicle Trips	3716	3716	7432

Data Source: Trip Generation Manual, 11th Ed

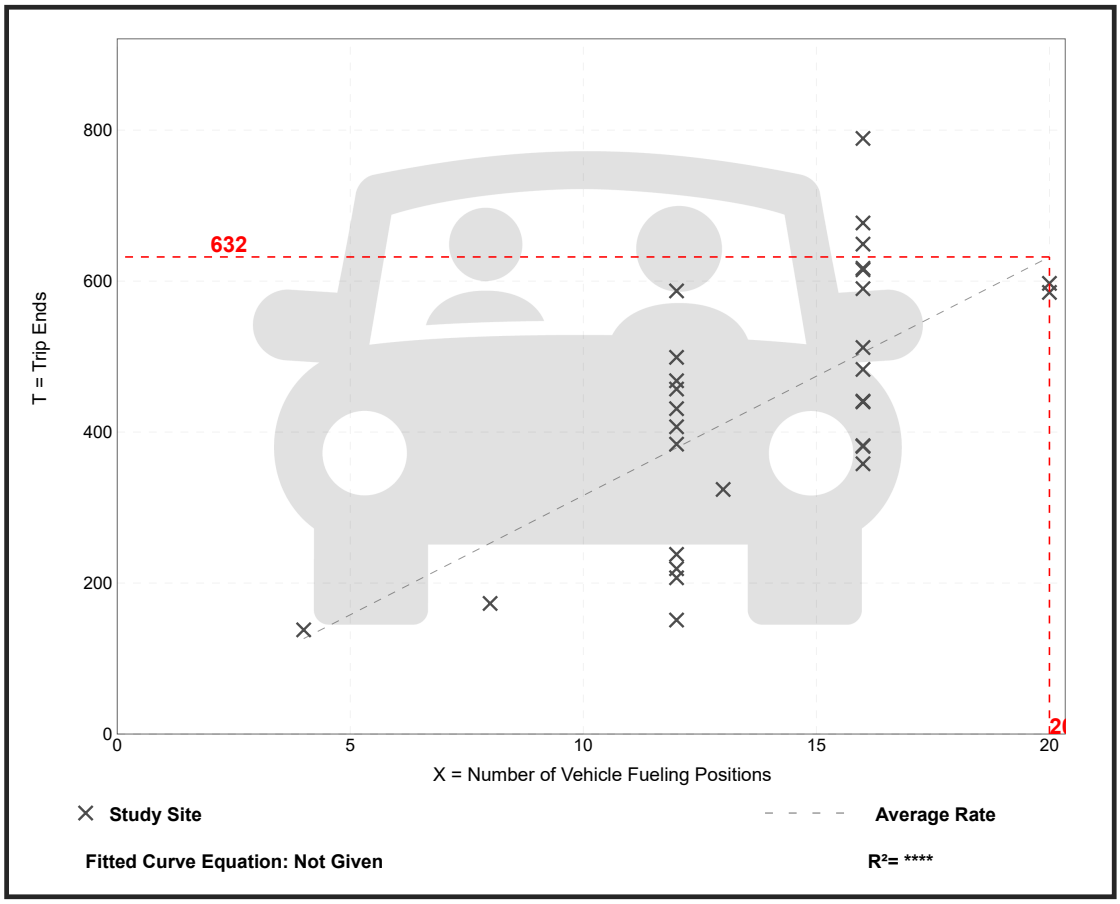
Convenience Store/Gas Station - GFA (5.5-10k)
(945)

Vehicle Trip Ends vs: **Vehicle Fueling Positions**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 29
Avg. Num. of Vehicle Fueling Positions: 14
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Vehicle Fueling Position

Average Rate	Range of Rates	Standard Deviation
31.60	12.58 - 49.31	9.10

Data Plot and Equation



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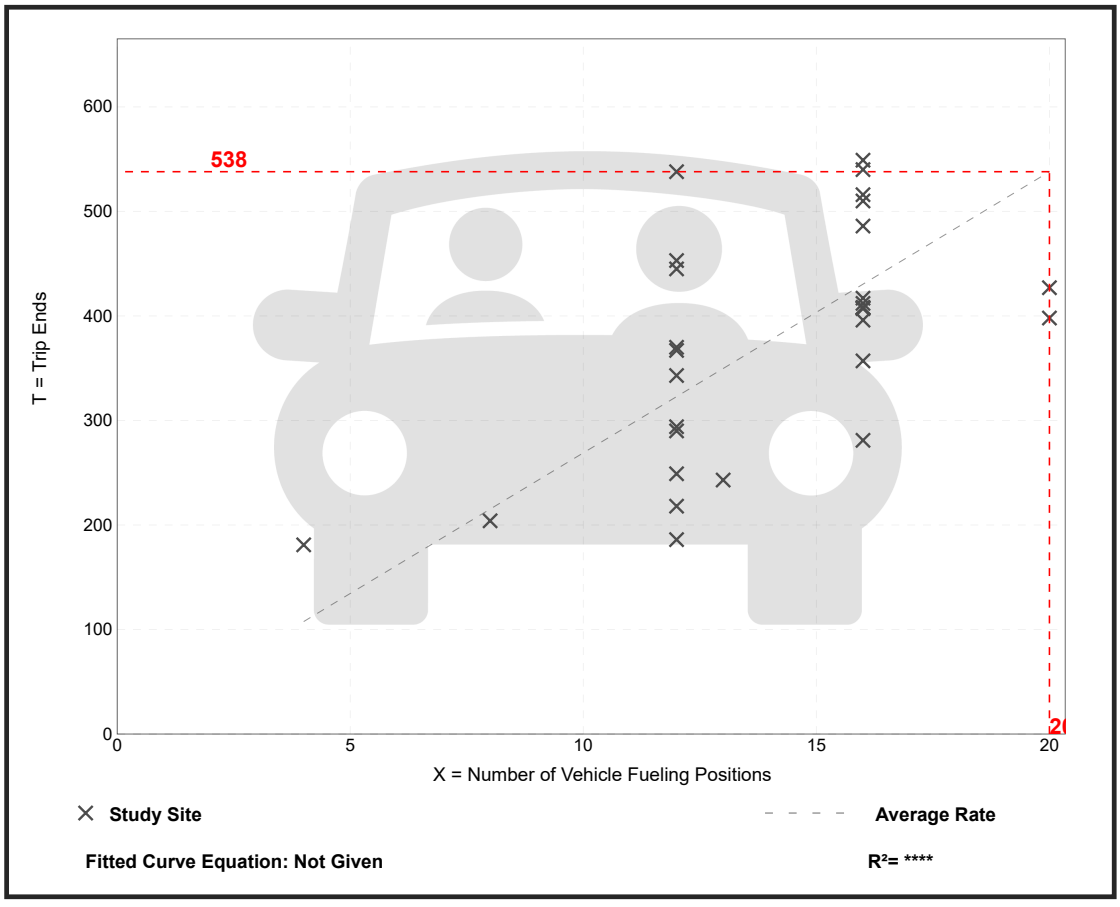
Convenience Store/Gas Station - GFA (5.5-10k)
(945)

Vehicle Trip Ends vs:	**Vehicle Fueling Positions**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	29
Avg. Num. of Vehicle Fueling Positions:	14
Directional Distribution:	50% entering, 50% exiting

Vehicle Trip Generation per Vehicle Fueling Position

Average Rate	Range of Rates	Standard Deviation
26.90	15.50 - 45.25	6.87

Data Plot and Equation



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Convenience Store/Gas Station - GFA (5.5-10k)
(945)

Vehicle Trip Ends vs: **Vehicle Fueling Positions**
On a: **Weekday**

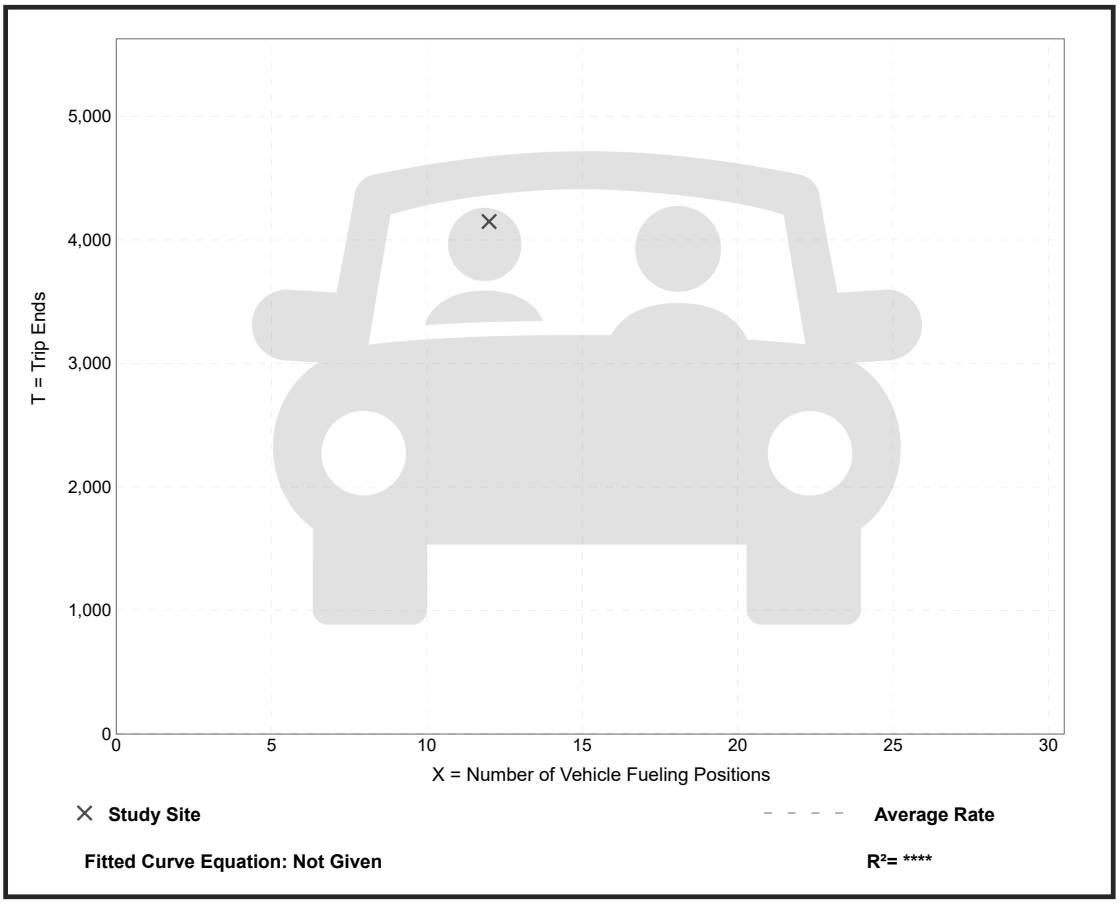
Setting/Location: **General Urban/Suburban**
Number of Studies: 1
Avg. Num. of Vehicle Fueling Positions: 12
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Vehicle Fueling Position

Average Rate	Range of Rates	Standard Deviation
345.75	345.75 - 345.75	*

Data Plot and Equation

Caution – Small Sample Size



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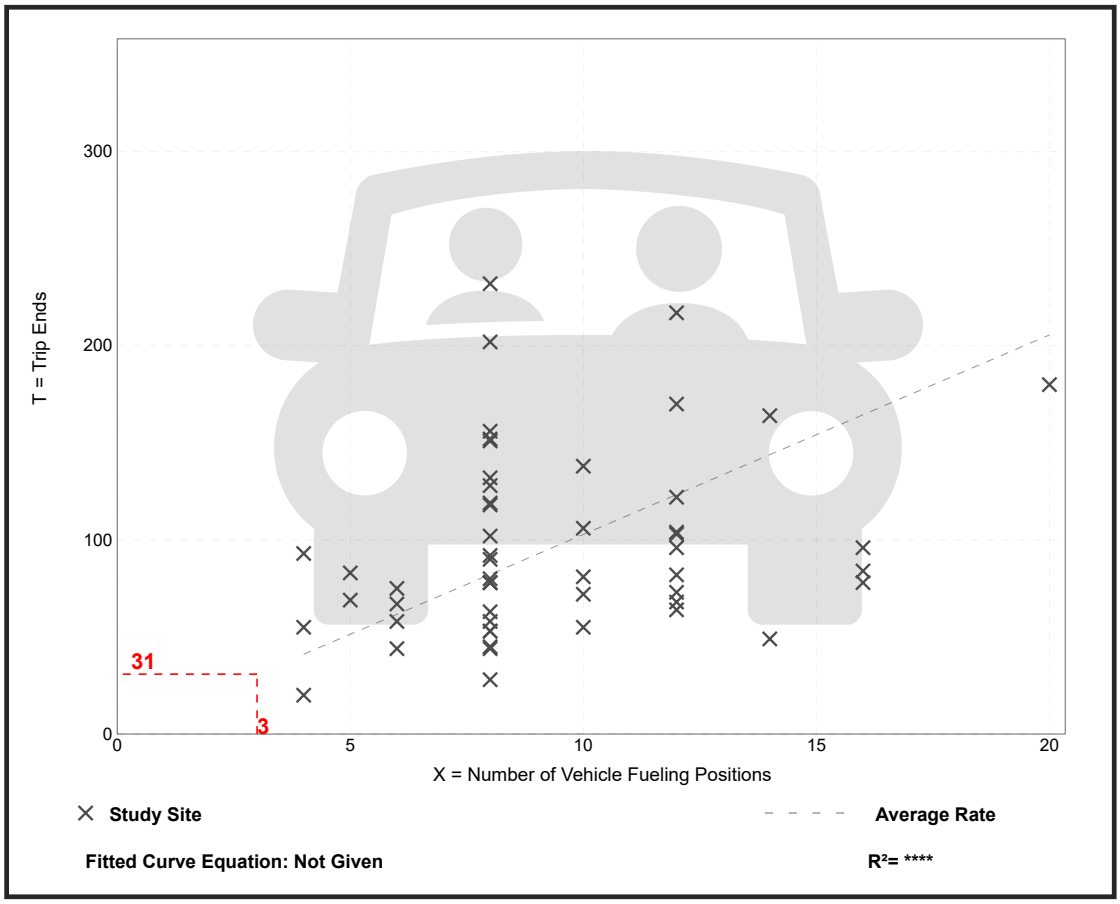
Gasoline/Service Station
(944)

Vehicle Trip Ends vs: **Vehicle Fueling Positions**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 53
Avg. Num. of Vehicle Fueling Positions: 9
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Vehicle Fueling Position

Average Rate	Range of Rates	Standard Deviation
10.28	3.50 - 29.00	5.36

Data Plot and Equation



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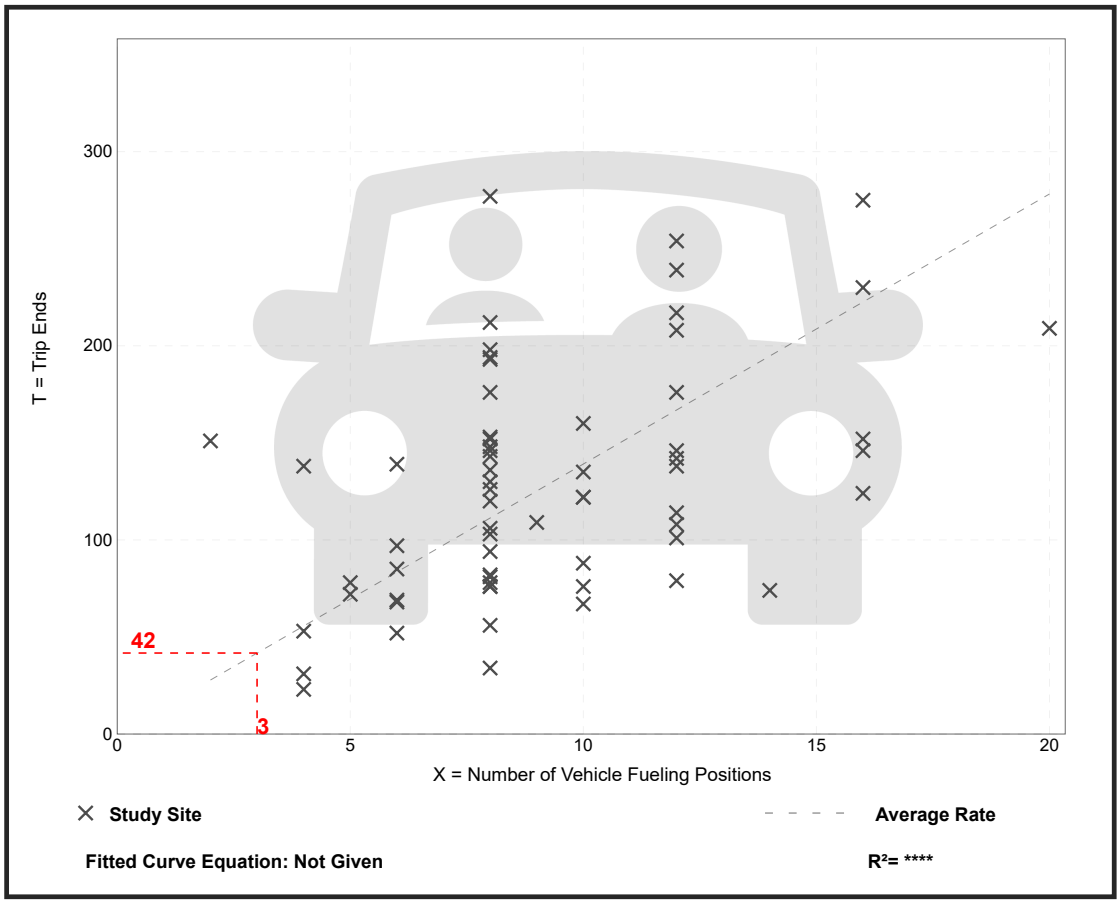
Gasoline/Service Station
(944)

Vehicle Trip Ends vs: **Vehicle Fueling Positions**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 65
Avg. Num. of Vehicle Fueling Positions: 9
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Vehicle Fueling Position

Average Rate	Range of Rates	Standard Deviation
13.91	4.25 - 75.50	6.93

Data Plot and Equation



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Gasoline/Service Station
(944)

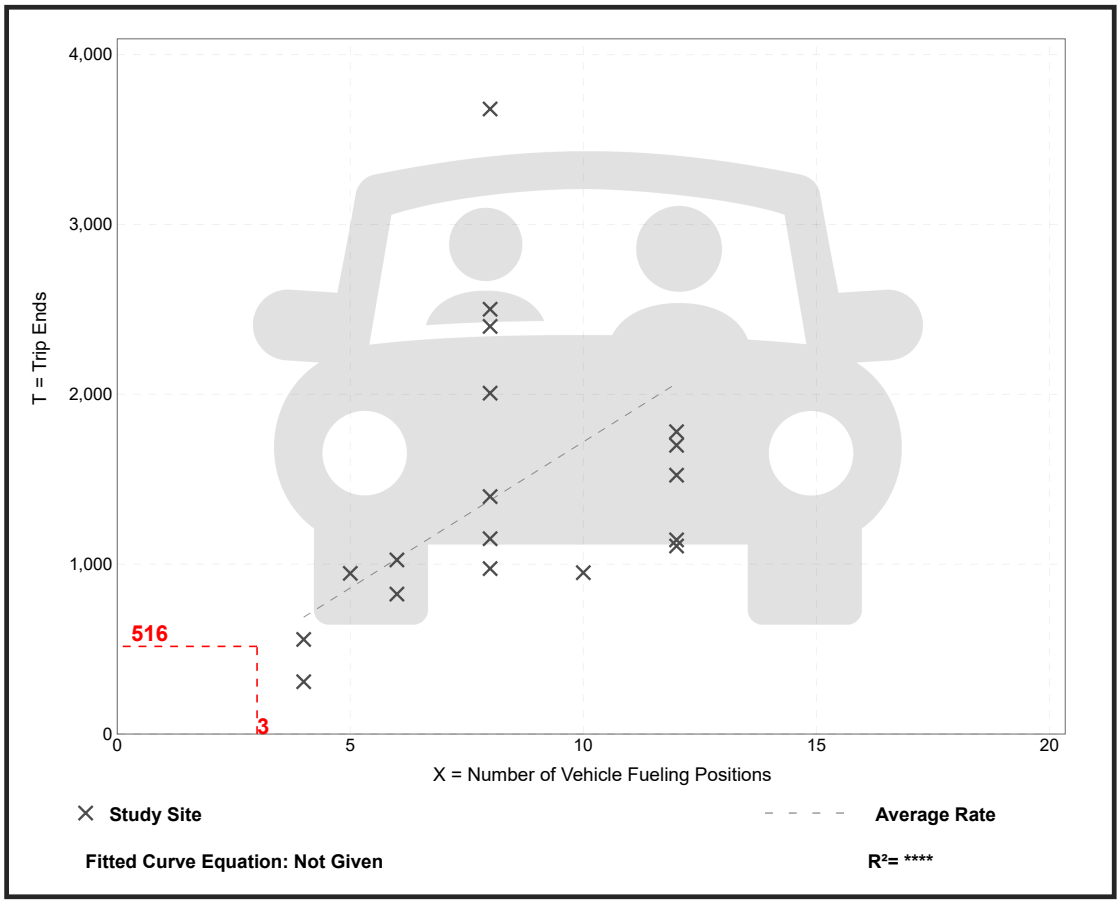
Vehicle Trip Ends vs: **Vehicle Fueling Positions**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 18
Avg. Num. of Vehicle Fueling Positions: 8
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Vehicle Fueling Position

Average Rate	Range of Rates	Standard Deviation
172.01	77.00 - 460.00	96.45

Data Plot and Equation



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Land Use: 945
Convenience Store/Gas Station

Description

A convenience store/gas station is a facility with a co-located convenience store and gas station. The convenience store sells grocery and other everyday items that a person may need or want as a matter of convenience. The gas station sells automotive fuels such as gasoline and diesel.

A convenience store/gas station is typically located along a major thoroughfare to optimize motorist convenience. Extended hours of operation (with many open 24 hours, 7 days a week) are common at these facilities.

The convenience store product mix typically includes pre-packaged grocery items, beverages, dairy products, snack foods, confectionary, tobacco products, over-the-counter drugs, and toiletries. A convenience store may sell alcohol, often limited to beer and wine. Coffee and pre-made sandwiches are also commonly sold at a convenience store. Made-to-order food orders are sometimes offered. Some stores offer limited seating.

The sites in this land use include both self-pump and attendant-pumped fueling positions and both pre-pay and post-pay operations.

Convenience store (Land Use 851), gasoline/service station (Land Use 944), and truck stop (Land Use 950) are related uses.

Land Use Subcategory

Multiple subcategories were added to this land use to allow for multi-variable evaluation of sites with single-variable data plots. All study sites are assigned to one of three subcategories, based on the number of vehicle fueling positions (VFP) at the site: between 2 and 8 VFP, between 9 and 15 VFP, and between 16 and 24 VFP. For each VFP range subcategory, data plots are presented with GFA as the independent variable for all time periods and trip types for which data are available. The use of both GFA and VFP (as the independent variable and land use subcategory, respectively) provides a significant improvement in the reliability of a trip generation estimate when compared to the single-variable data plots in prior editions of *Trip Generation Manual*.

Further, the study sites were also assigned to one of three other subcategories, based on the gross floor area (GFA) of the convenience store at the site: between 2,000 and 4,000 square feet, between 4,000 and 5,500 square feet, and between 5,500 and 10,000 square feet. For each GFA subcategory range, data plots are presented with VFP as the independent variable for all time periods and trip types for which data are available. The use of both VFP and GFA (as the independent variable and land use subcategory, respectively) provides a significant improvement in the reliability of a trip generation estimate when compared to the single-variable data plots in prior editions of *Trip Generation Manual*.

When analyzing the convenience store/gas station land use with each combination of GFA and VFP values as described above, the two sets of data plots will produce two estimates of site-generated trips. Both values can be considered when determining a site trip generation estimate.

Data plots are also provided for three additional independent variables: AM peak hour traffic on adjacent street, PM peak hour traffic on adjacent street, and employees. These independent variables are intended to be analyzed as single independent variables and do not have sub-categories associated with them. Within the data plots and within the ITETripGen web app, these plots are found under the land use subcategory "none."

Additional Data

ITE recognizes there are existing convenience store/gas station sites throughout North America that are larger than the sites presented in the data plots. However, the ITE database does not include any site with more than 24 VFP or any site with gross floor area greater than 10,000 square feet. Submission of trip generation data for larger sites is encouraged.

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (https://www.ite.org/technical-resources/topics/trip-and-parking-generation/).

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in Alberta (CAN), Arkansas, California, Connecticut, Delaware, Florida, Indiana, Iowa, Kentucky, Maryland, Massachusetts, Minnesota, Nevada, New Hampshire, New Jersey, Pennsylvania, Rhode Island, South Dakota, Texas, Utah, Vermont, Washington, and Wisconsin.

Source Numbers

221, 245, 274, 288, 300, 340, 350, 351, 352, 355, 359, 385, 440, 617, 718, 810, 813, 844, 850, 853, 864, 865, 867, 869, 882, 883, 888, 904, 926, 927, 936, 938, 954, 960, 962, 977, 1004, 1024, 1025, 1027, 1052

Land Use: 944
Gasoline/Service Station

Description

This land use includes gasoline/service stations where the primary business is the fueling of motor vehicles. The sites included generally have a small building (less than 2,000 gross square feet) that houses a cashier and limited space for motor vehicle maintenance supplies and general convenience products. A gasoline/service station may also have facilities for servicing and repairing motor vehicles. The gasoline/service station may also have a car wash. Convenience store/gas station (Land Use 945) and truck stop (Land Use 950) are related uses.

Additional Data

The independent variable—vehicle fueling positions—is defined as the maximum number of vehicles that can be fueled simultaneously. The sites in this land use include both self-pump and attendant-pumped fueling positions and both pre-pay and post-pay operations.

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (https://www.ite.org/technical-resources/topics/trip-and-parking-generation/).

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in Alberta (CAN), California, Florida, Kentucky, Maryland, Massachusetts, Minnesota, New Hampshire, New Jersey, Ontario (CAN), Oregon, South Dakota, Texas, and Washington.

Specialized Land Use Data

A 2006 study provided data on four private fuel facilities in Florida (source 721). These facilities provide self-fuel service for any motorist with a pre-established membership account. The site is not open to the general public. The trip generation characteristics of these sites differ from sites included in this land use; therefore, trip generation information for these sites is excluded from the data plots. The four sites have an average of nine vehicle fueling positions, with an average of 12 vehicle trips during the weekday, AM peak hour of adjacent traffic and 7 vehicle trips during the weekday, PM peak hour of adjacent street traffic.

Source Numbers

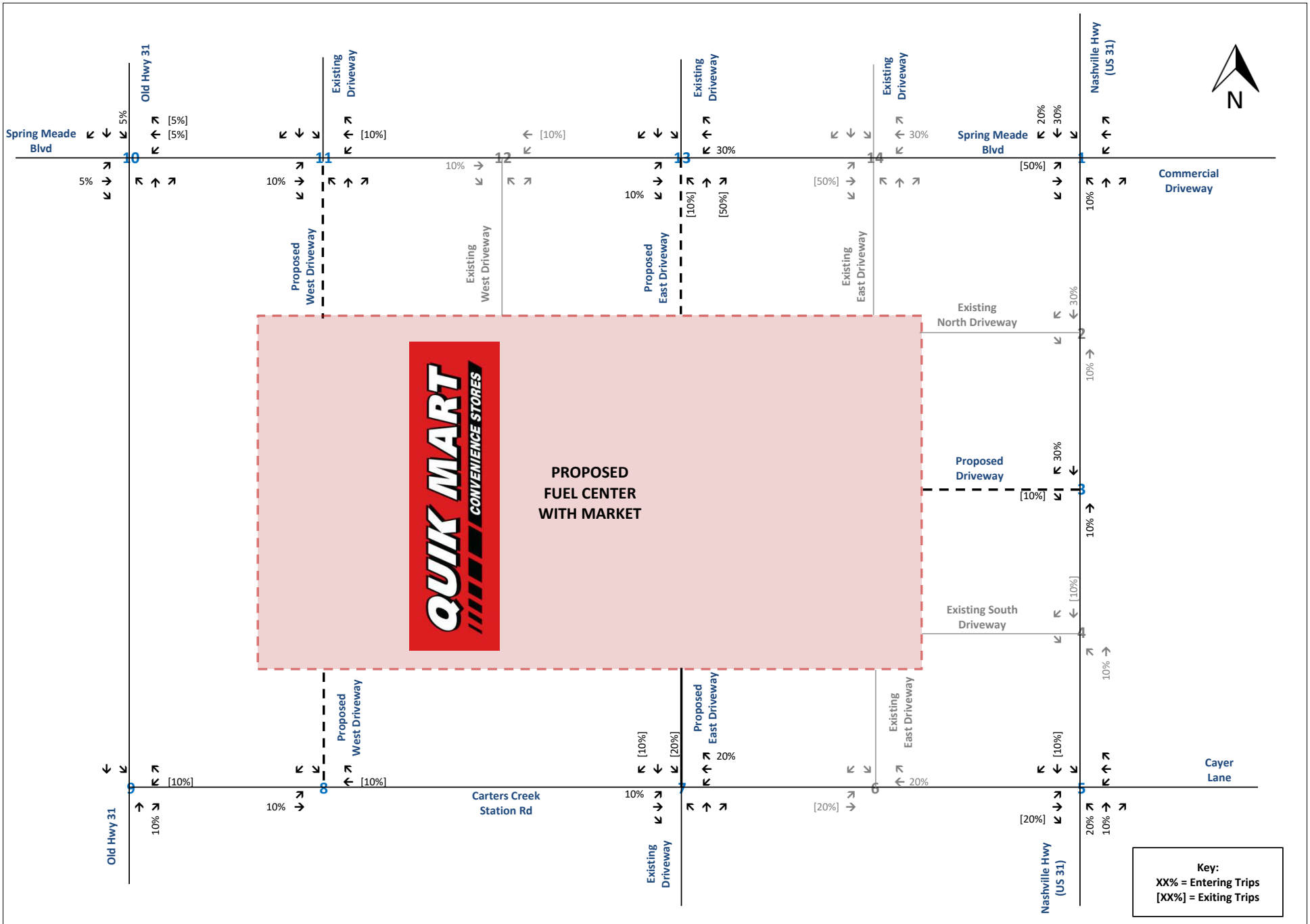
221, 274, 278, 288, 340, 350, 351, 355, 359, 366, 440, 583, 617, 618, 631, 721, 867, 882, 883, 888, 954, 977

APPENDIX D

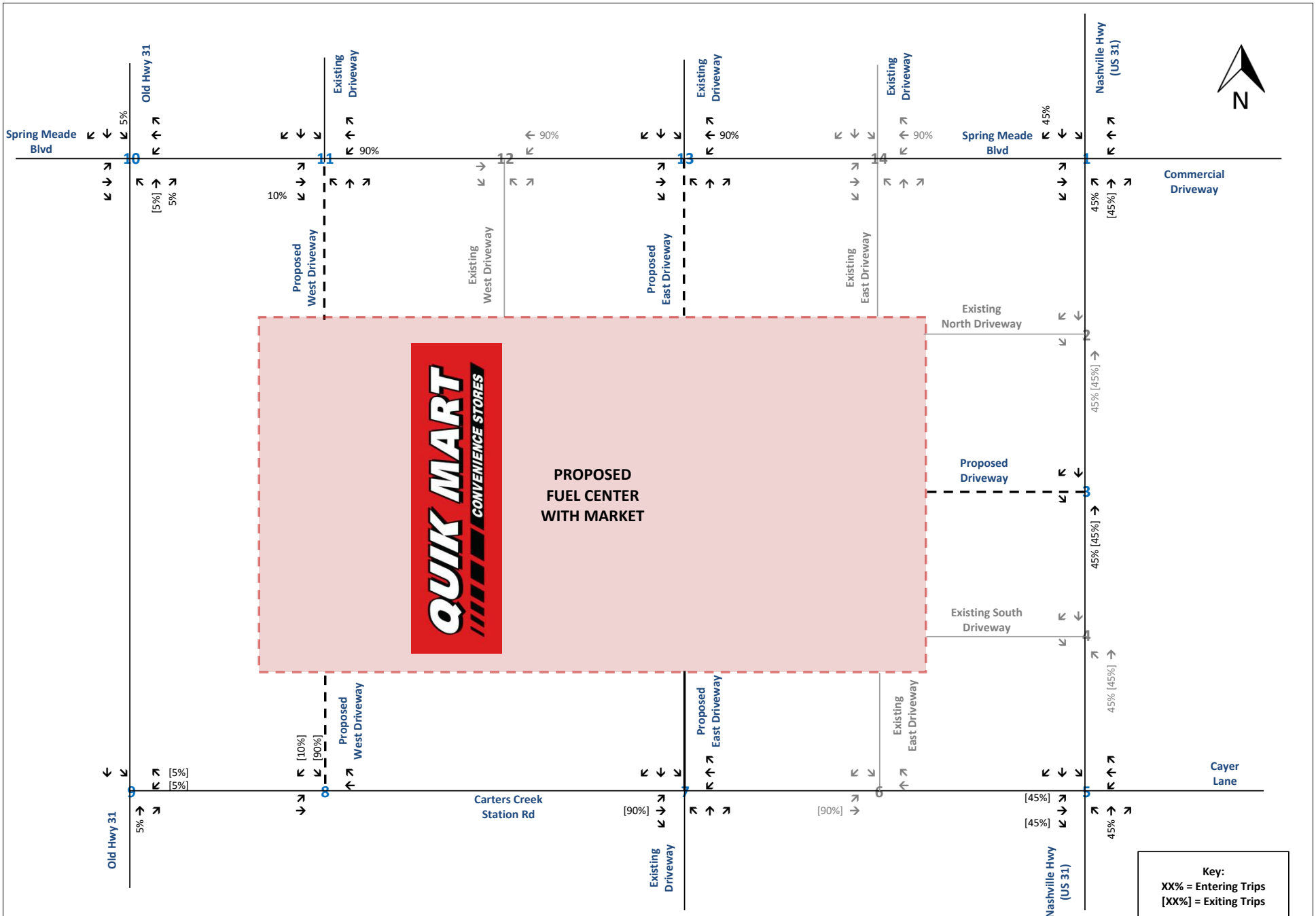
TRIP DISTRIBUTION

TRIP DISTRIBUTION

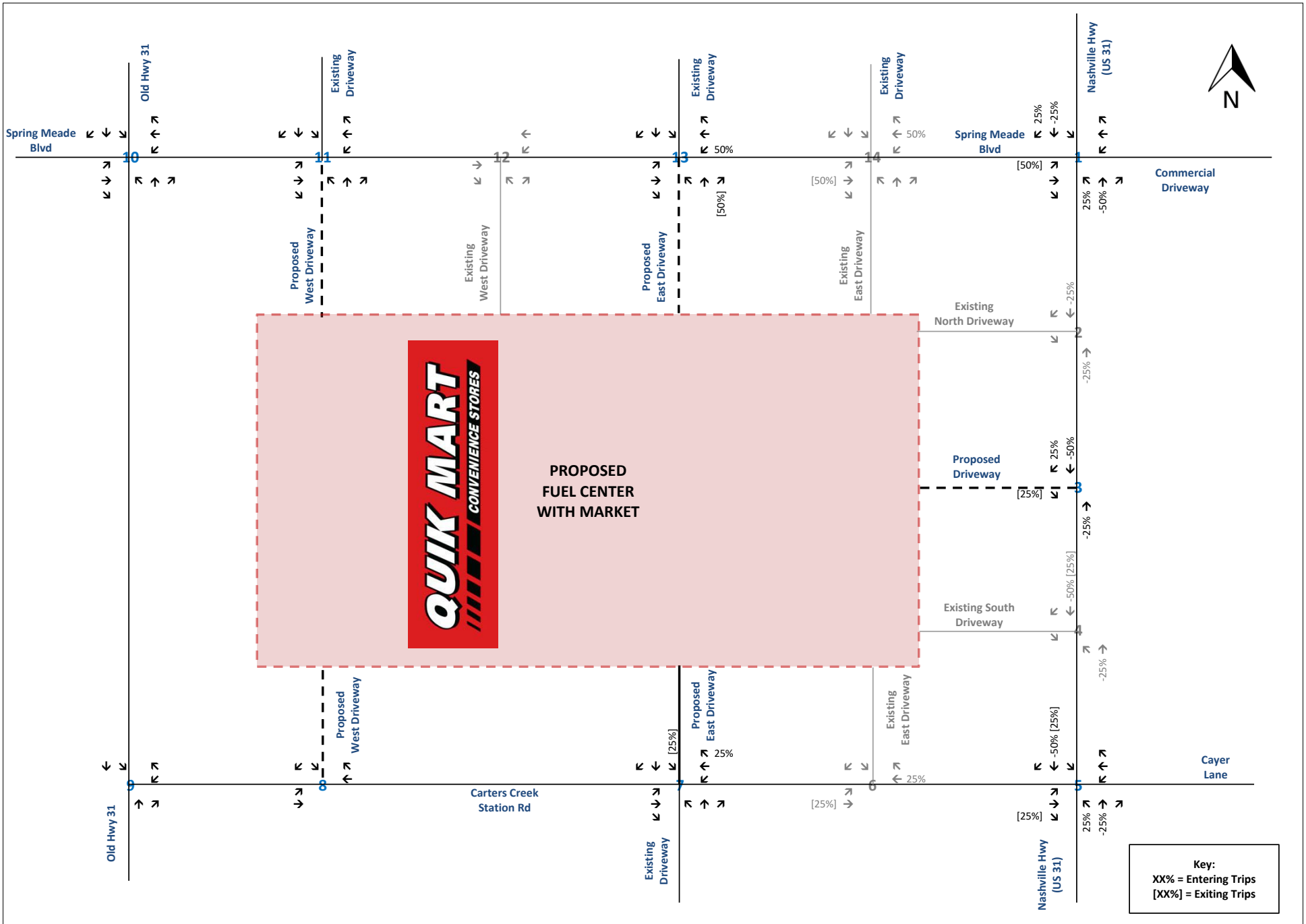
SITE DEVELOPMENT



Trip Distribution Worksheet
Primary Trip Distribution - Convenience Store & Fuel Center
Nashville Highway QuikMart
Columbia, Tennessee



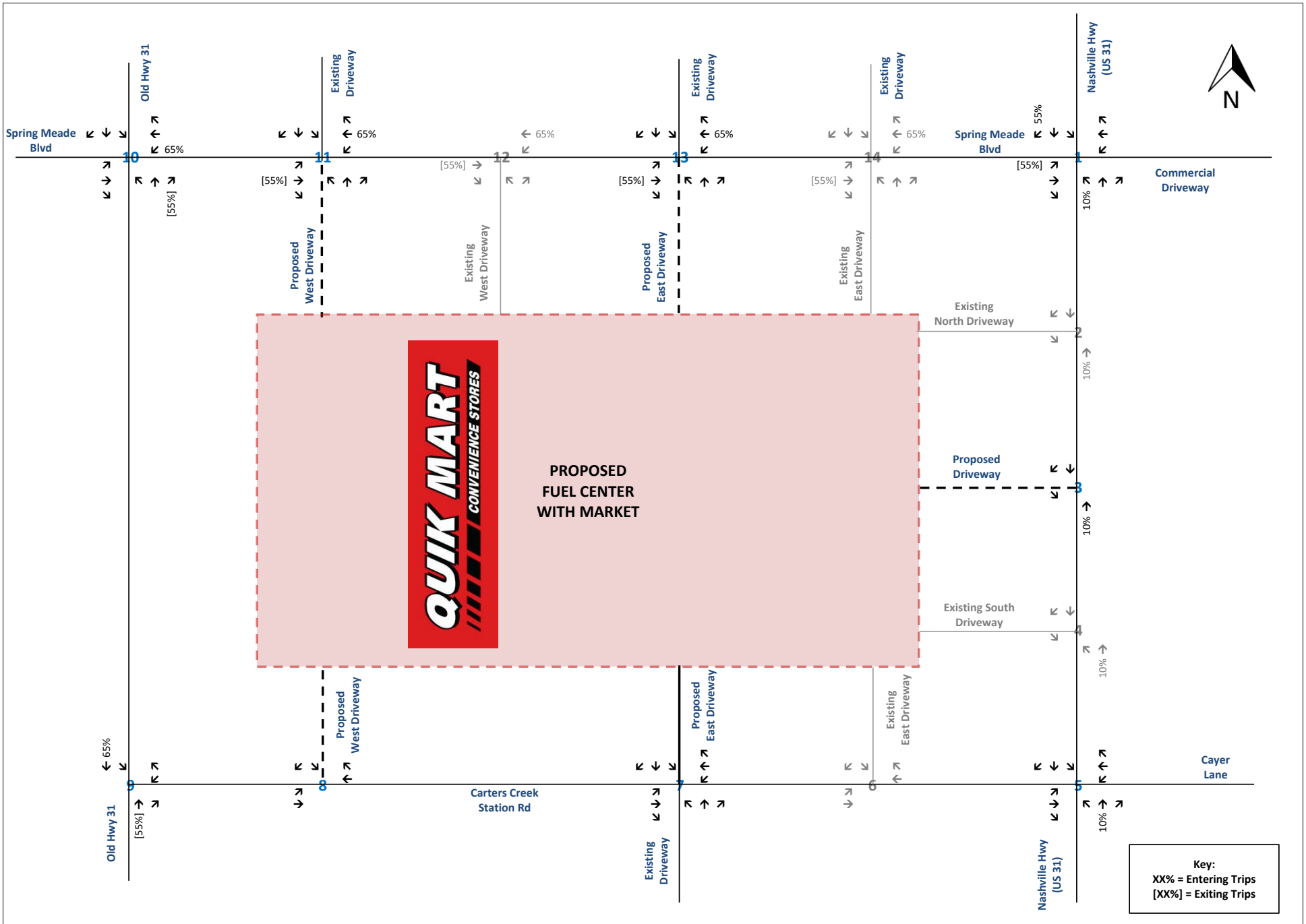
Trip Distribution Worksheet
Primary Trip Distribution - Diesel Fueling Pumps
Nashville Highway QuikMart
Columbia, Tennessee



Trip Distribution Worksheet
Pass-by Trip Distribution - Convenience Store & Fuel Center
Nashville Highway QuikMart
Columbia, Tennessee

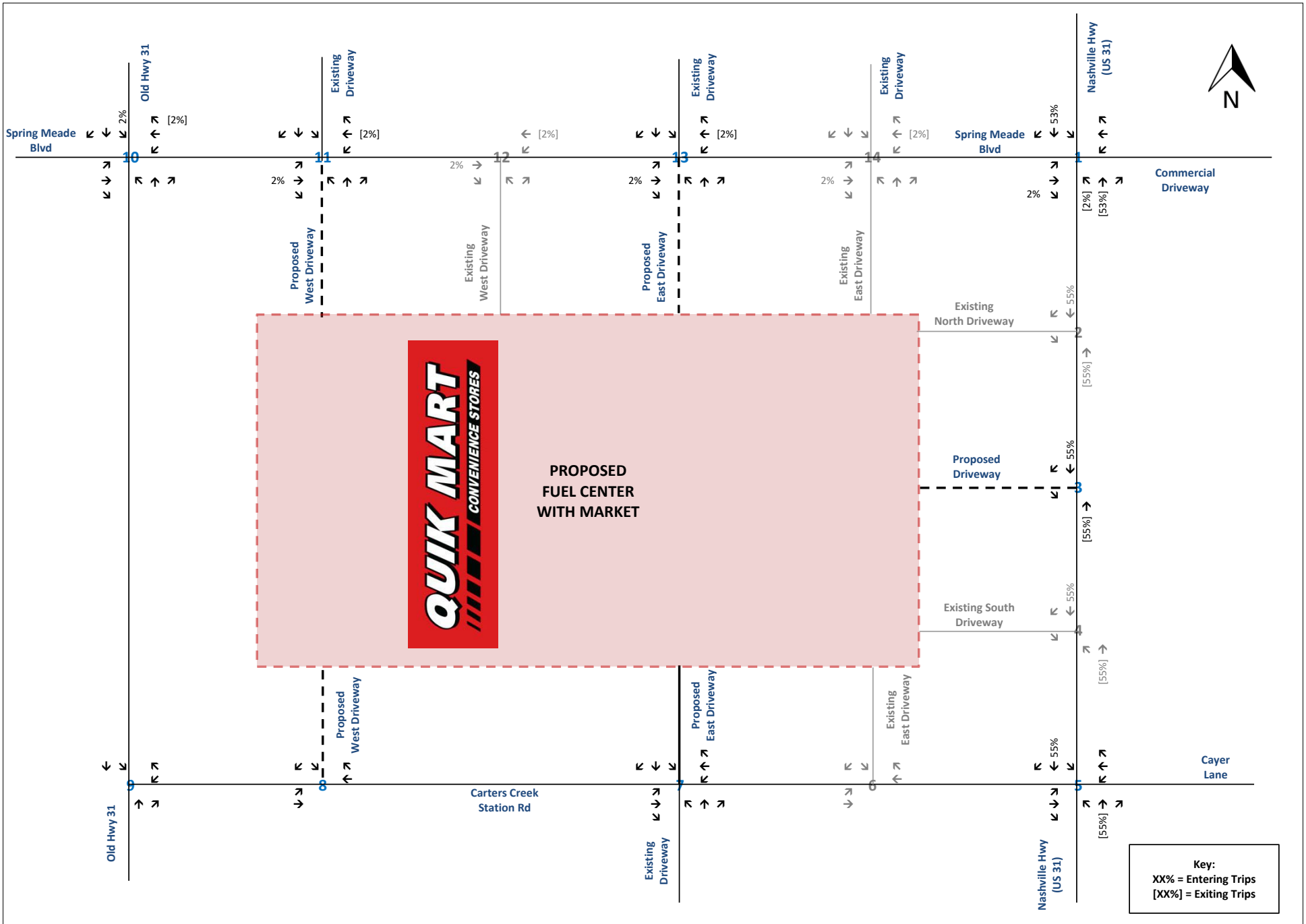
TRIP DISTRIBUTION

OFF-SITE DEVELOPMENT

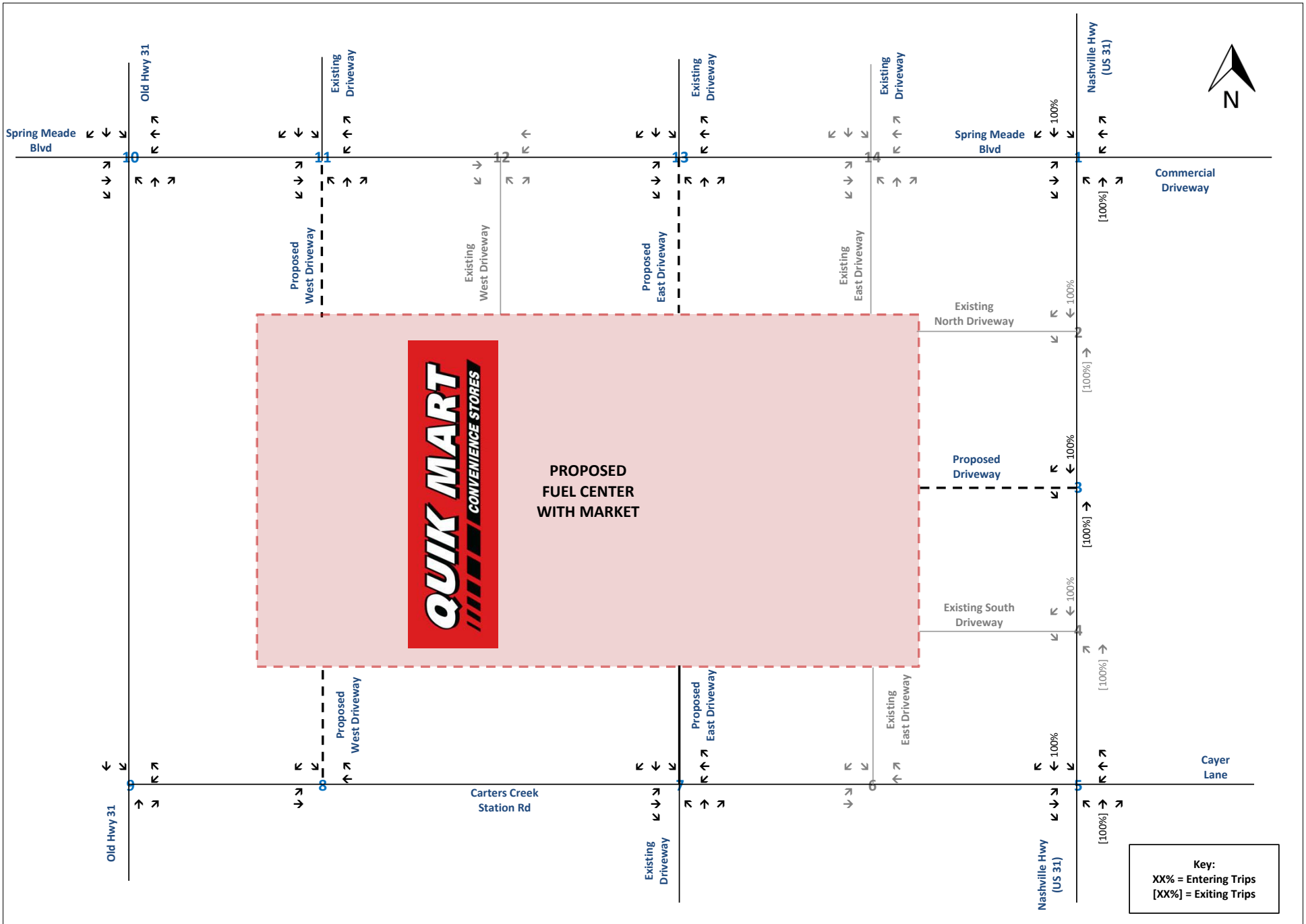


Trip Distribution Worksheet
Off-Site Trip Distribution - Carters Station North (Remaining 60%)
Nashville Highway QuikMart
Columbia, Tennessee

RGPHILLIPS CONSULTING
TRAFFIC ENGINEERING & TRANSPORTATION PLANNING



Trip Distribution Worksheet
Off-Site Trip Distribution - Greens Mill Development
Nashville Highway QuikMart
Columbia, Tennessee



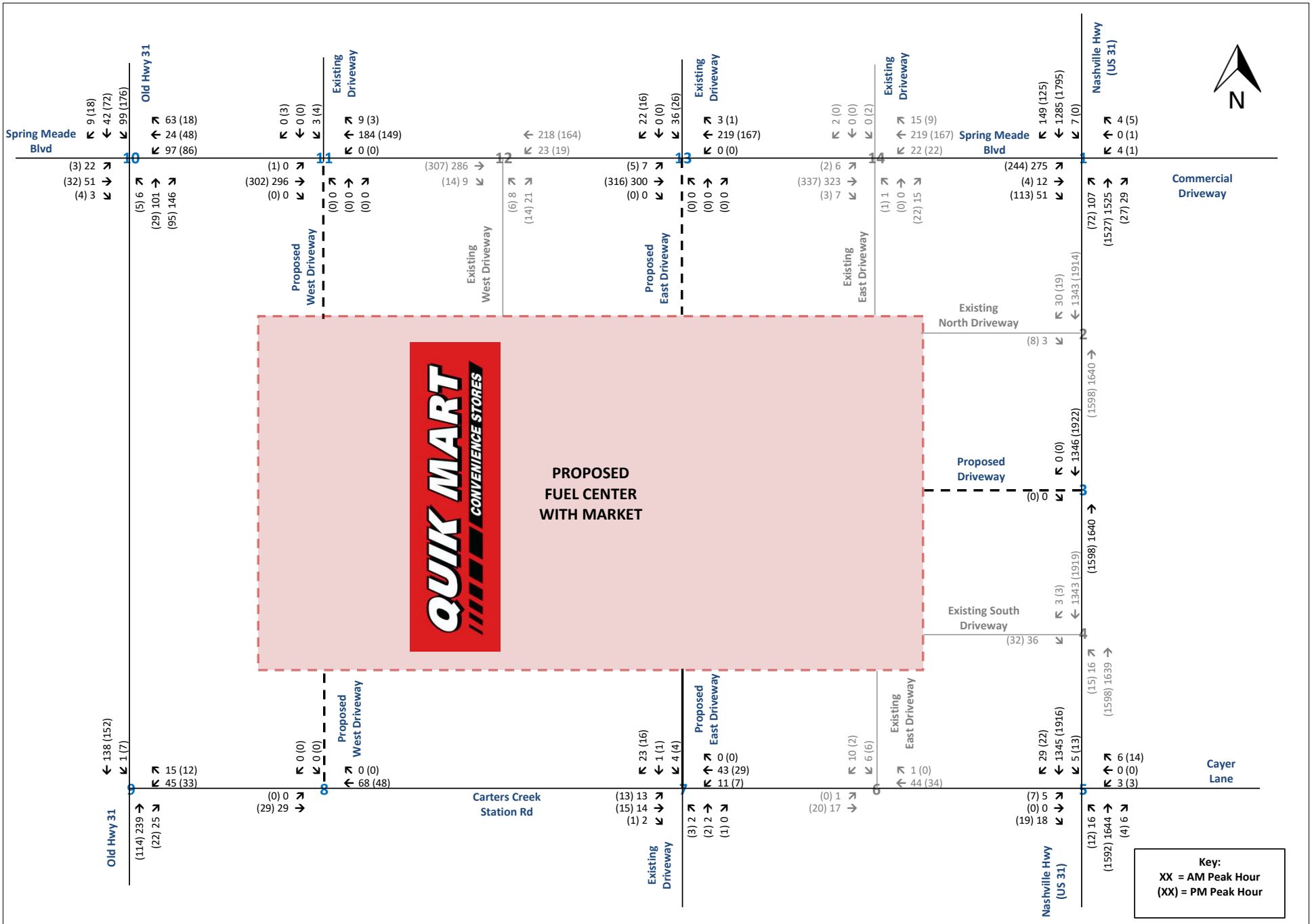
Trip Distribution Worksheet
Off-Site Trip Distribution - McClure Farms Development
Nashville Highway QuikMart
Columbia, Tennessee

APPENDIX E

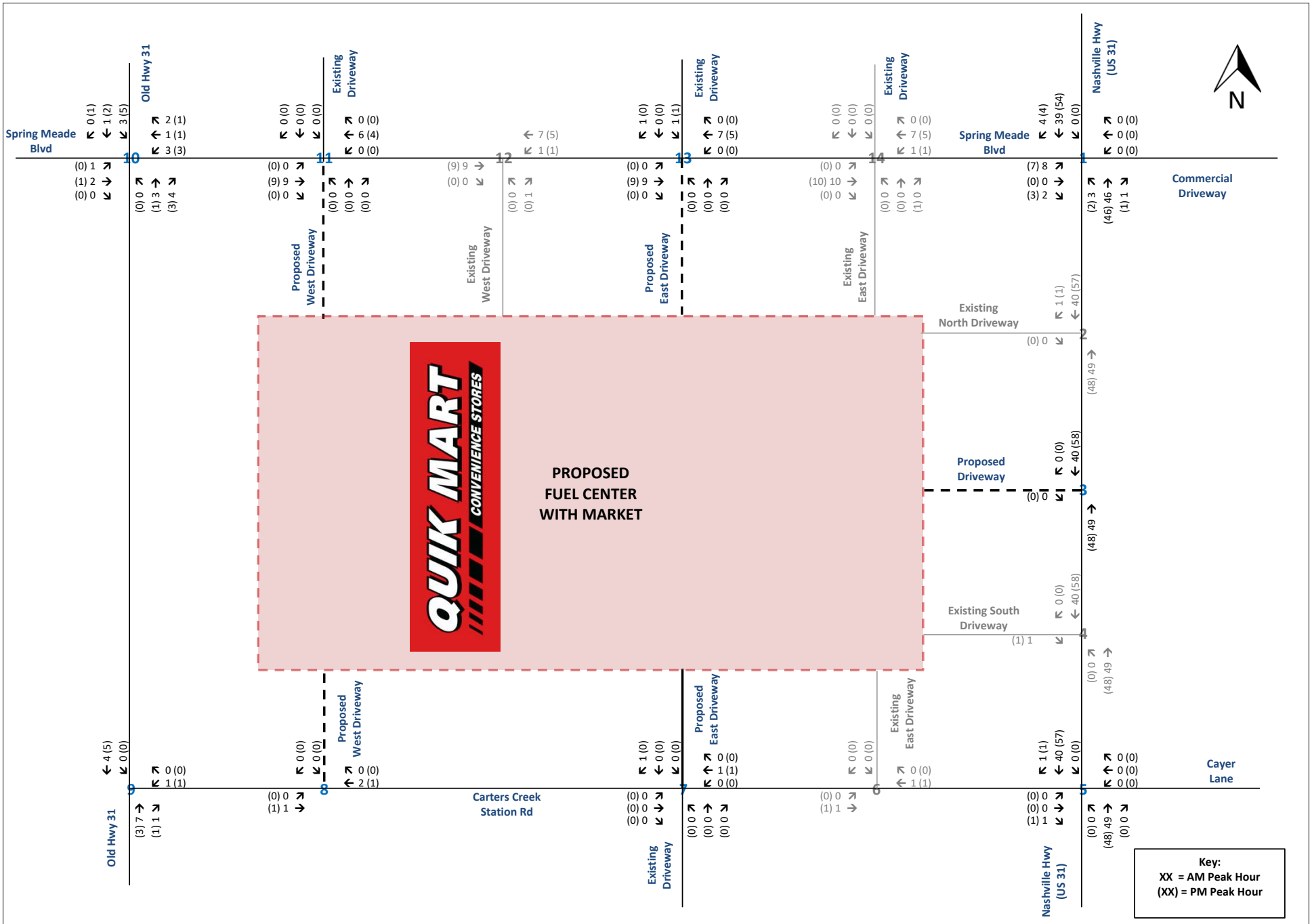
TRAFFIC ASSIGNMENT

TRAFFIC ASSIGNMENT WORKSHEETS

AM & PM PEAK HOURS

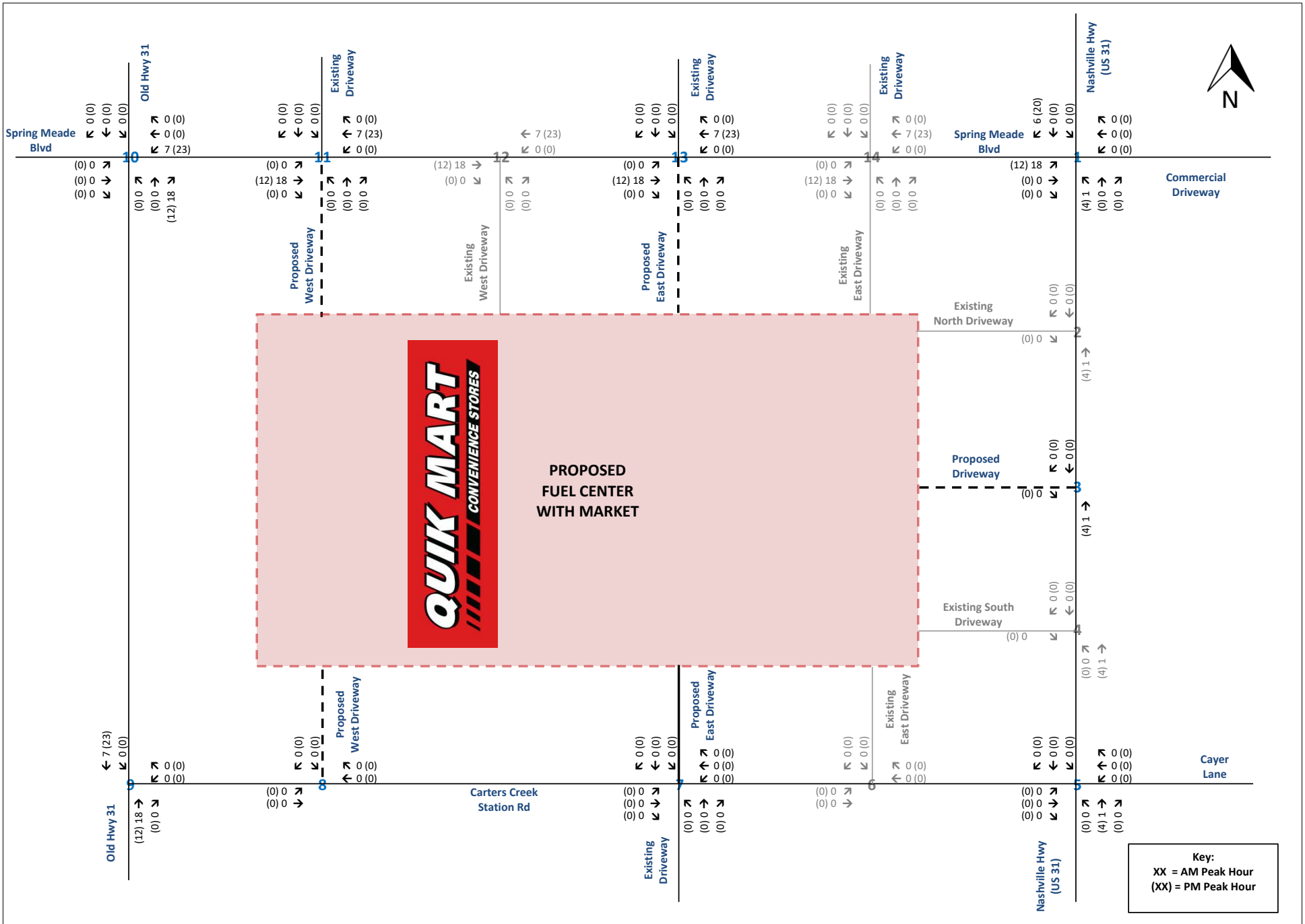


Traffic Assignment Worksheet
Existing Traffic Volumes (2024)
Nashville Highway QuikMart
Columbia, Tennessee



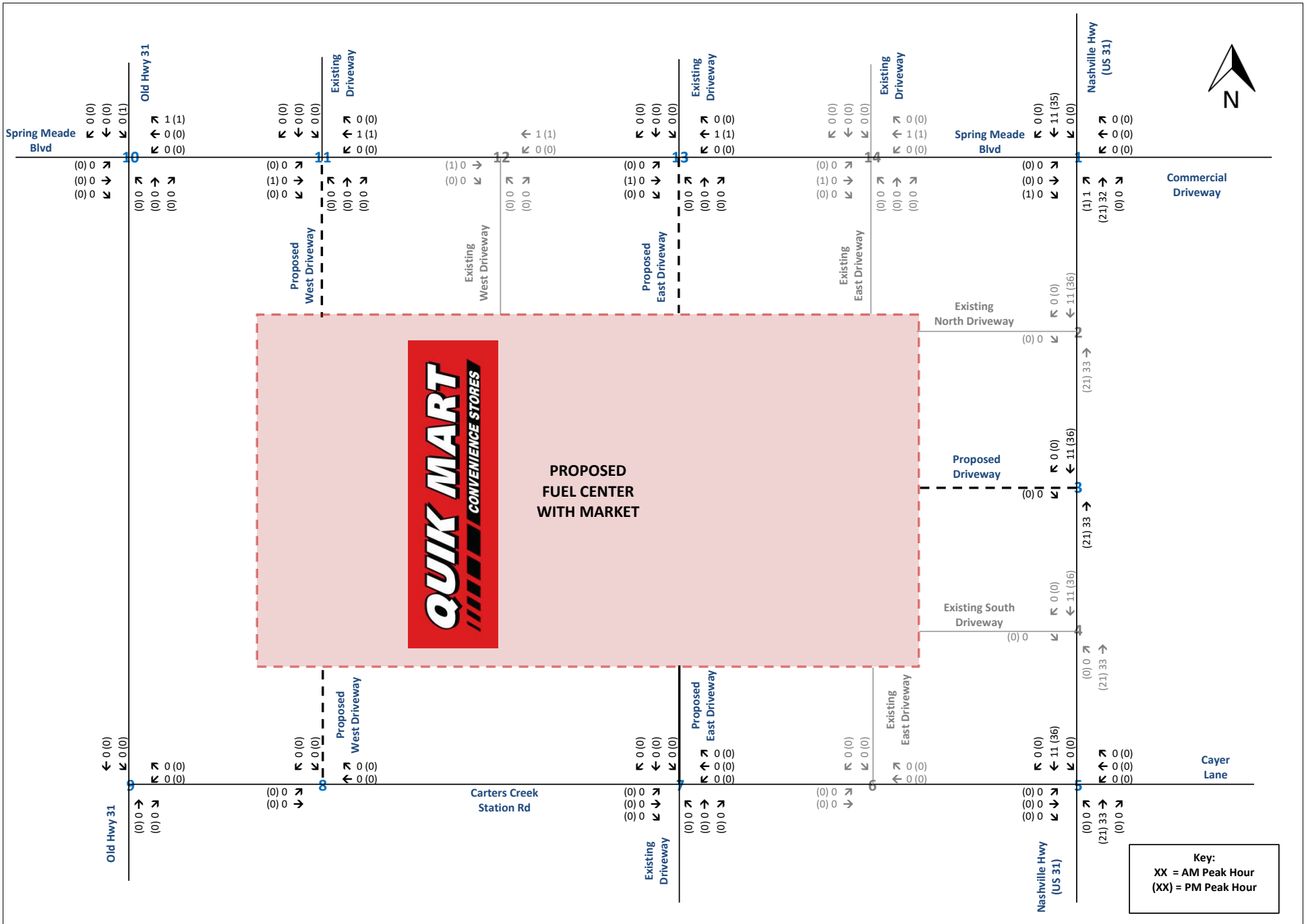
Traffic Assignment Worksheet
Background - Historical Growth Only (2025)
Nashville Highway QuikMart
Columbia, Tennessee

RGPHILLIPS CONSULTING
TRAFFIC ENGINEERING & TRANSPORTATION PLANNING



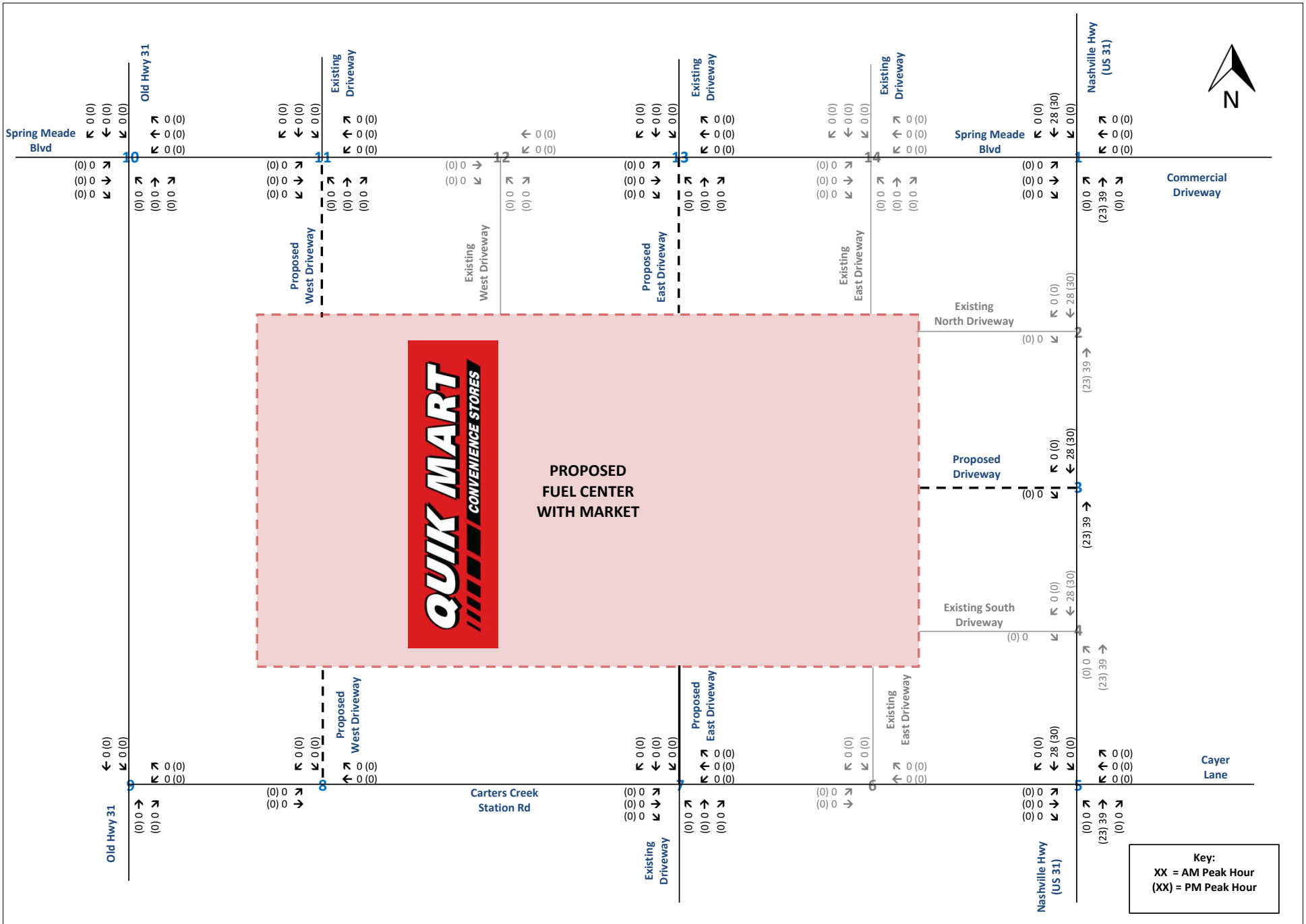
Traffic Assignment Worksheet
Off-Site Traffic Assignment - Carters Station North
Nashville Highway QuikMart
Columbia, Tennessee

RGPHILLIPS CONSULTING
TRAFFIC ENGINEERING & TRANSPORTATION PLANNING



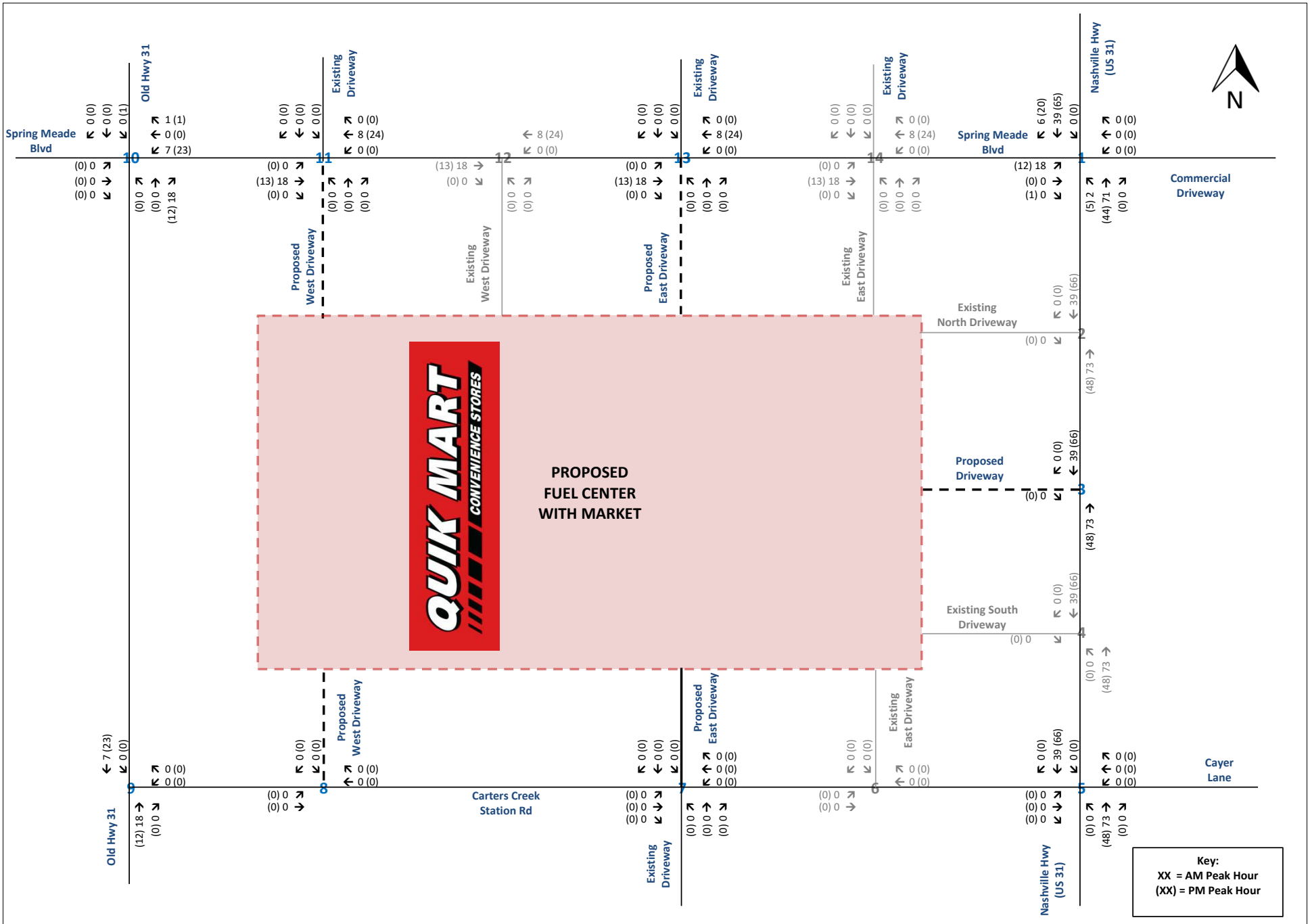
Traffic Assignment Worksheet
Off-Site Traffic Assignment - Greens Mill Development
Nashville Highway QuikMart
Columbia, Tennessee

RGPHILLIPS CONSULTING
TRAFFIC ENGINEERING & TRANSPORTATION PLANNING



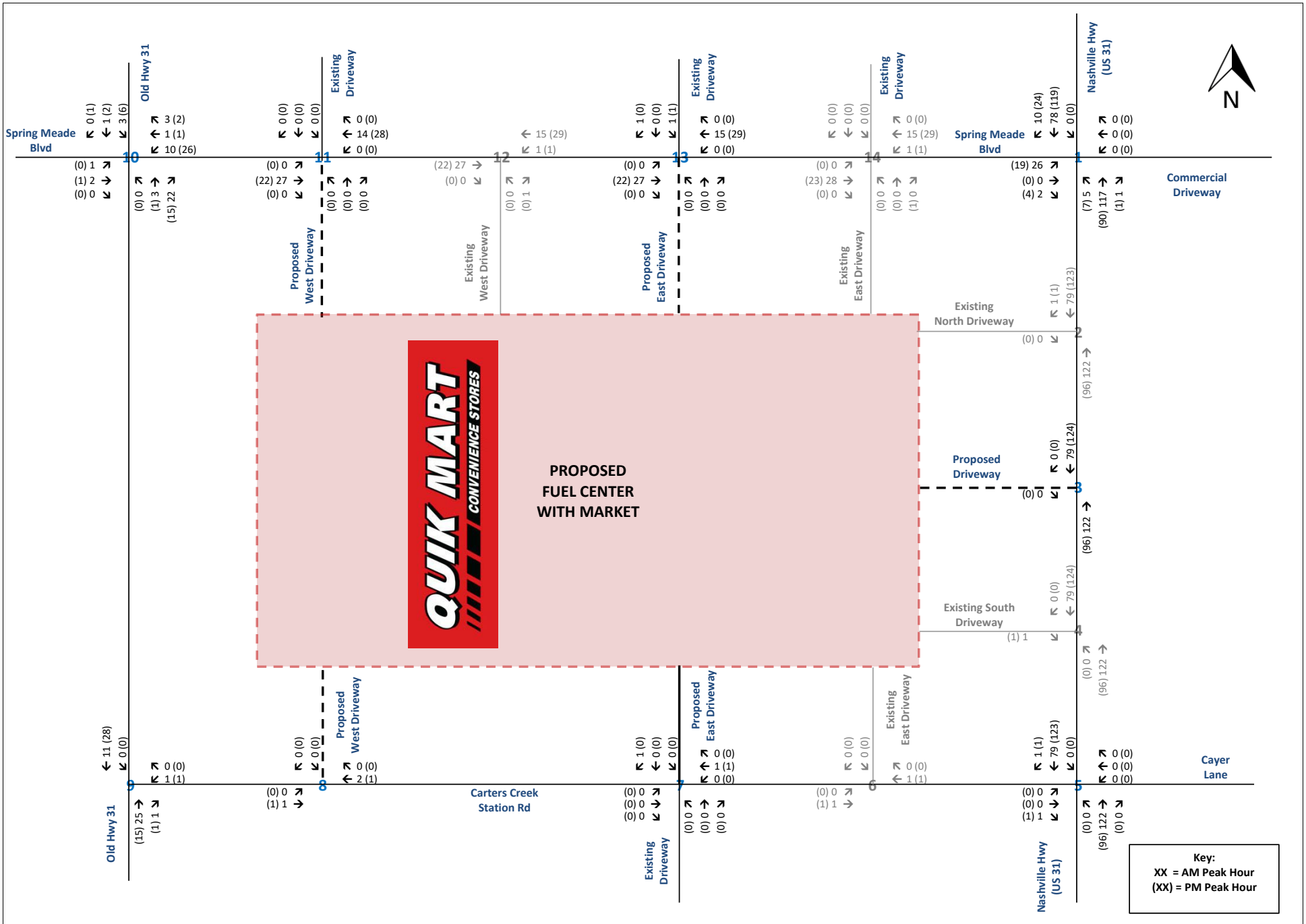
Traffic Assignment Worksheet
Off-Site Traffic Assignment - McClure Farms Development
Nashville Highway QuikMart
Columbia, Tennessee

RGPHILLIPS CONSULTING
TRAFFIC ENGINEERING & TRANSPORTATION PLANNING



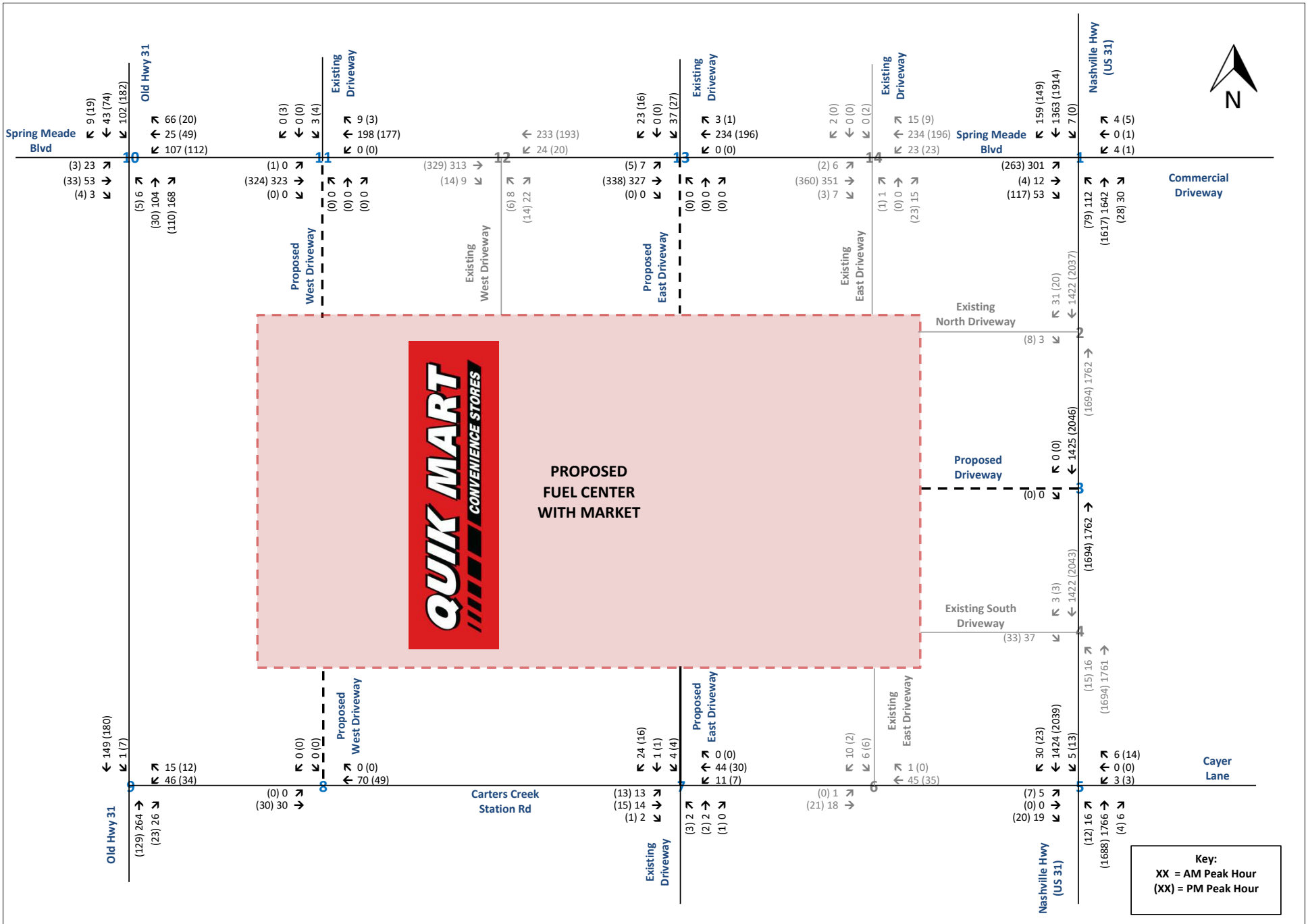
Traffic Assignment Worksheet
Background - Off-Site Development Only (2025)
Nashville Highway QuikMart
Columbia, Tennessee

RGPHILLIPS CONSULTING
TRAFFIC ENGINEERING & TRANSPORTATION PLANNING

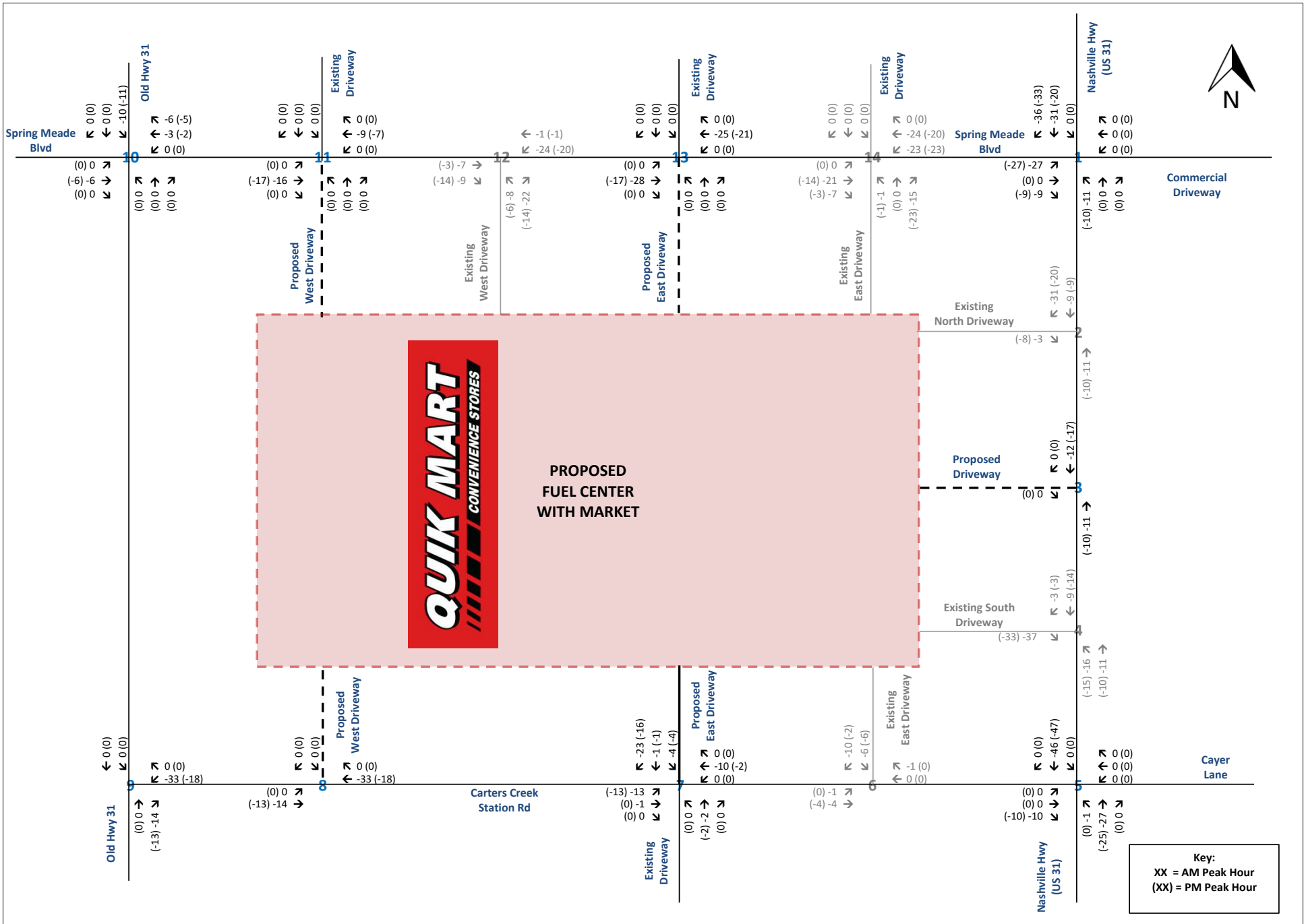


Traffic Assignment Worksheet
Background (Growth + Offsite)
Nashville Highway QuikMart
Columbia, Tennessee

RGPHILLIPS CONSULTING
TRAFFIC ENGINEERING & TRANSPORTATION PLANNING

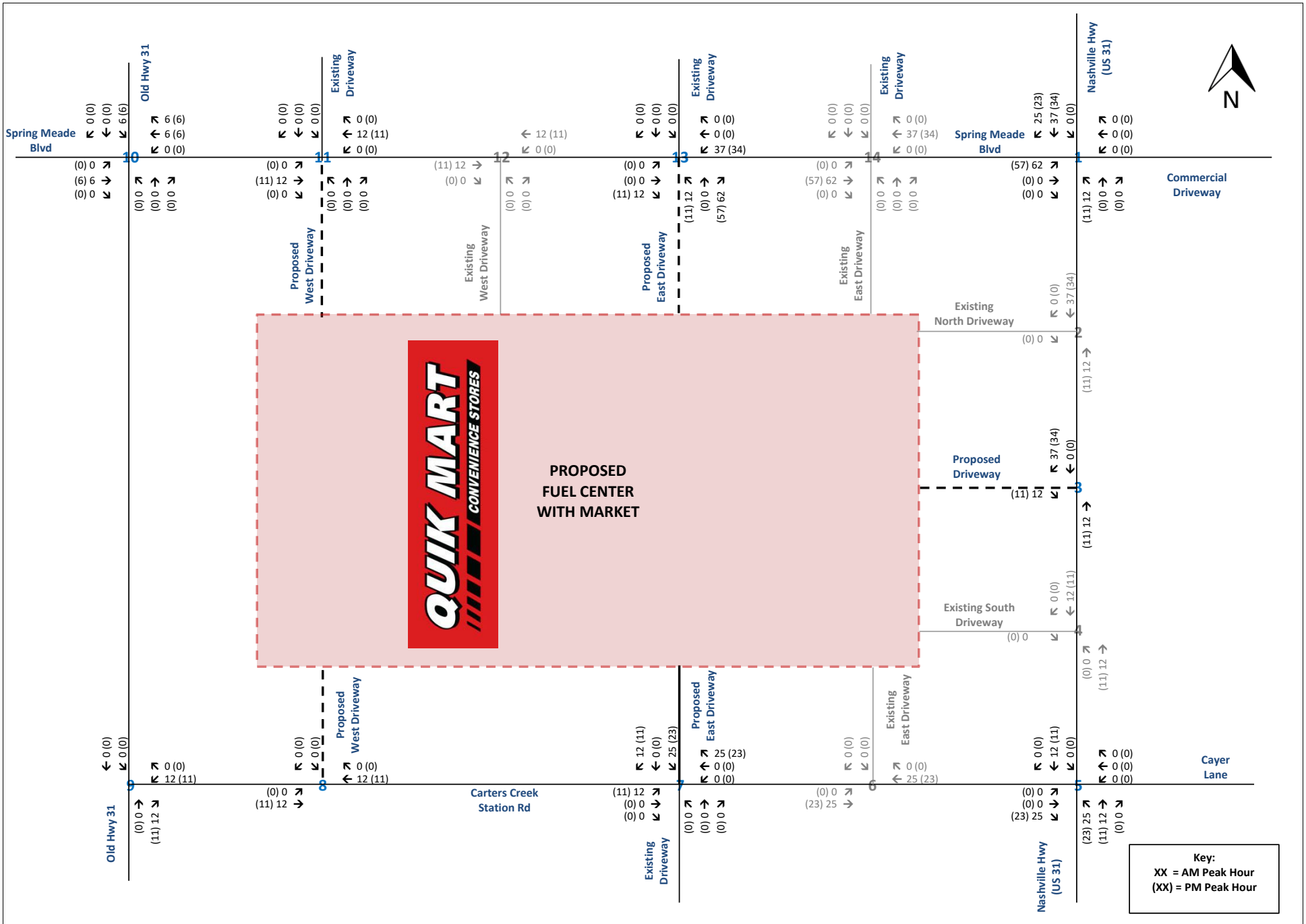


Traffic Assignment Worksheet
Background Traffic Volumes (2025)
Nashville Highway QuikMart
Columbia, Tennessee



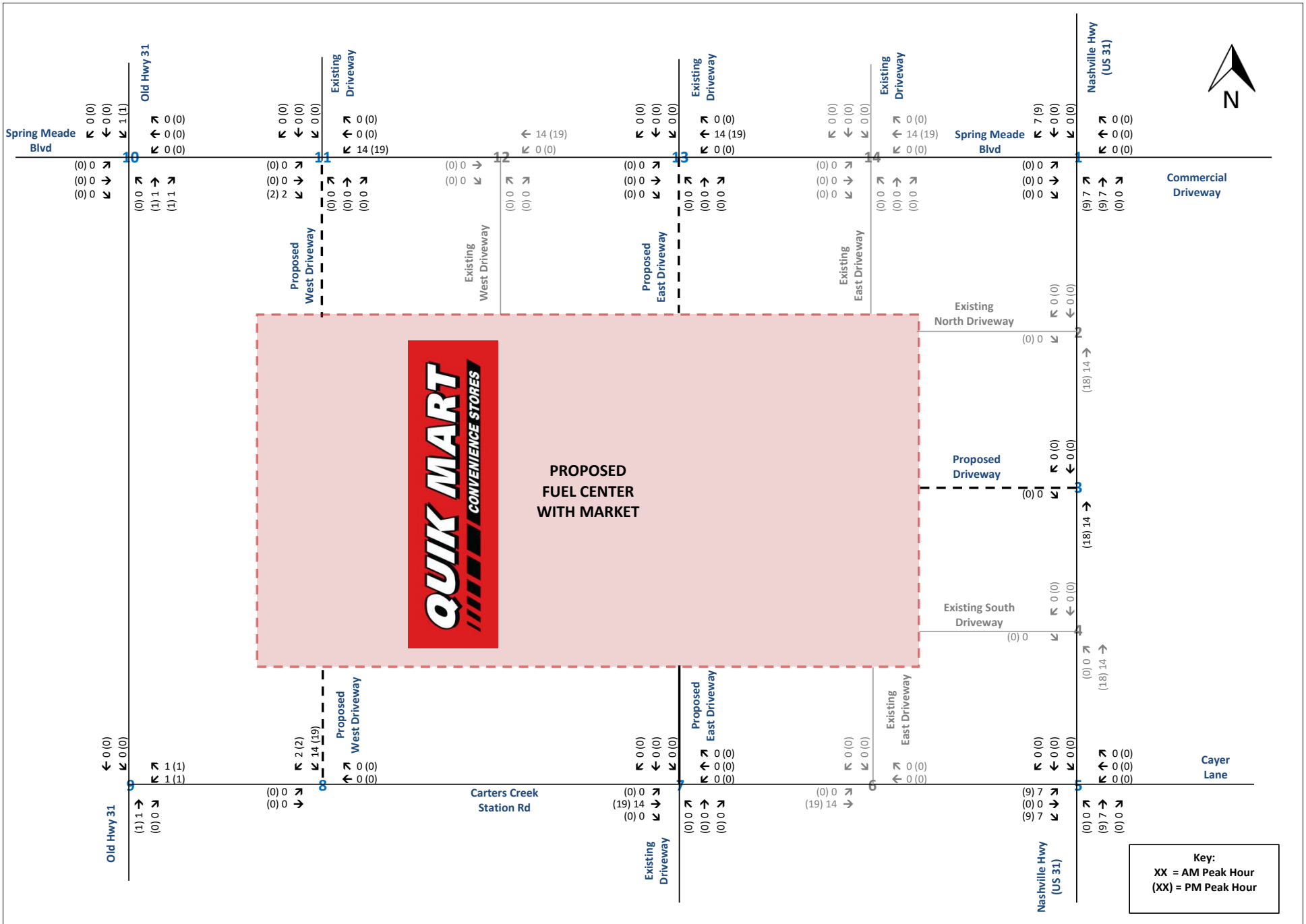
Traffic Assignment Worksheet
Existing Traffic Reassignment
Nashville Highway QuikMart
Columbia, Tennessee

RGPHILLIPS CONSULTING
TRAFFIC ENGINEERING & TRANSPORTATION PLANNING



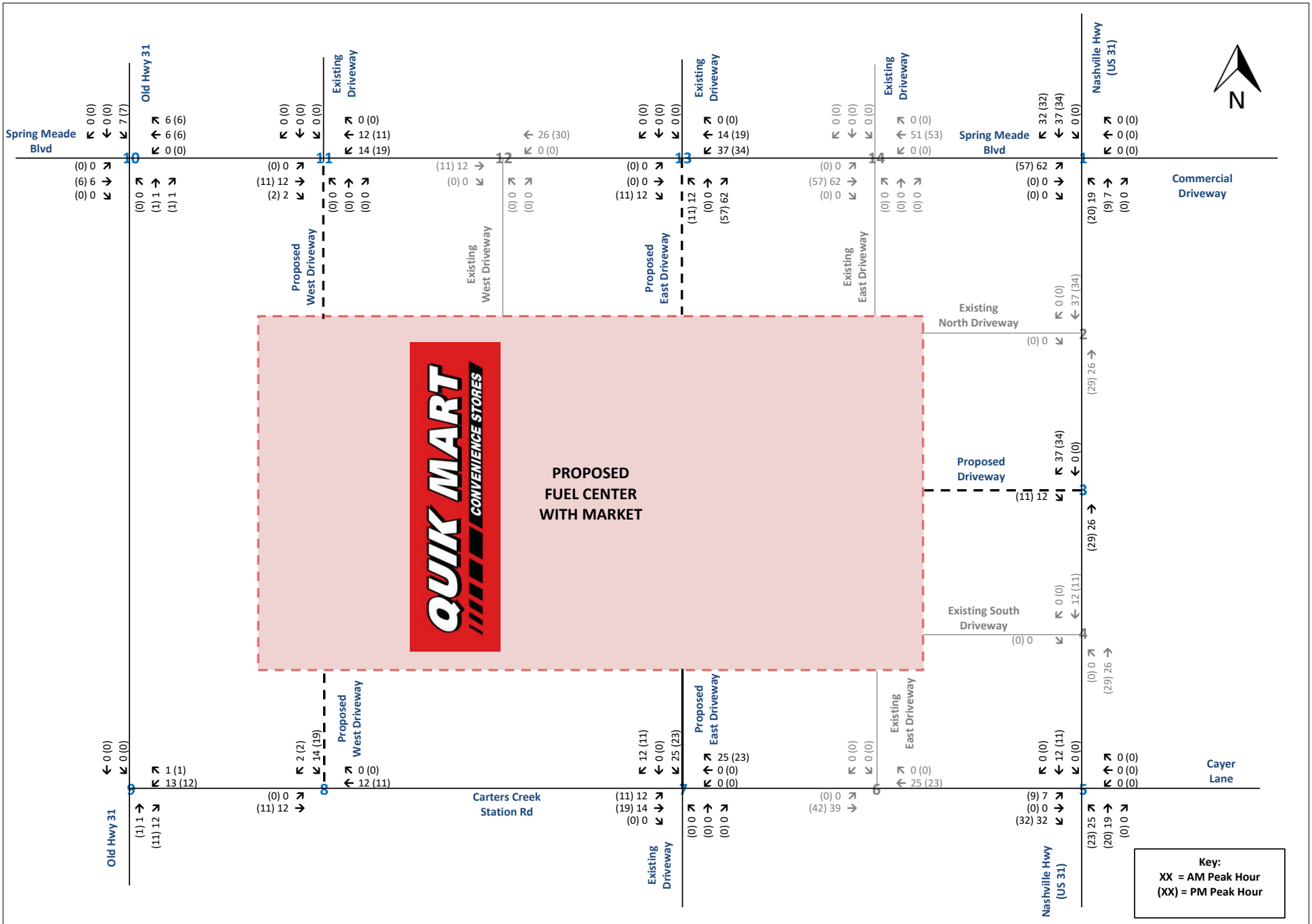
Traffic Assignment Worksheet
Primary Traffic Assignment - Convenience Store & Fuel Center
Nashville Highway QuikMart
Columbia, Tennessee

RGPHILLIPS CONSULTING
TRAFFIC ENGINEERING & TRANSPORTATION PLANNING



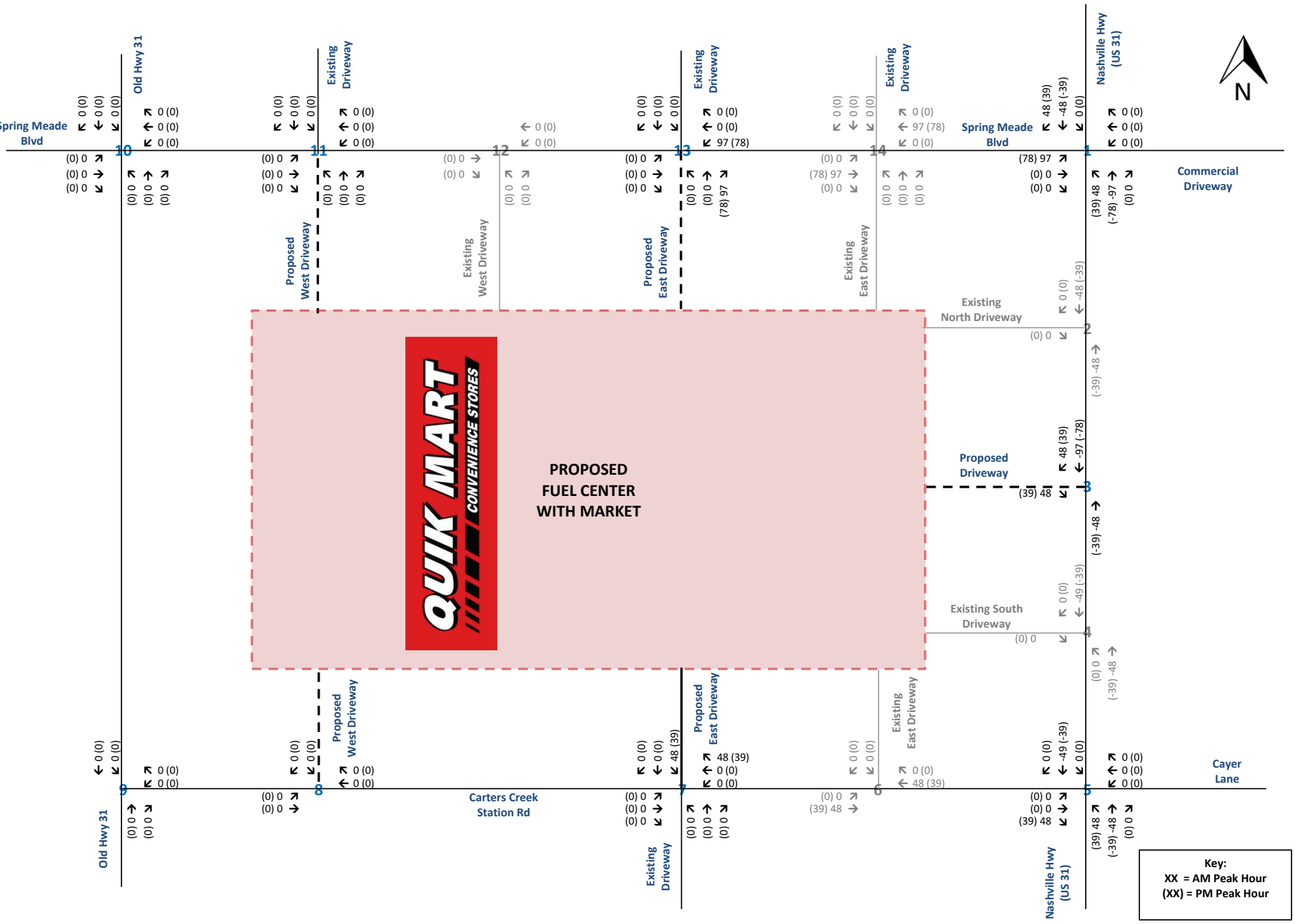
Traffic Assignment Worksheet
Primary Traffic Assignment - Diesel Fueling Pumps
Nashville Highway QuikMart
Columbia, Tennessee

RGPHILLIPS CONSULTING
TRAFFIC ENGINEERING & TRANSPORTATION PLANNING



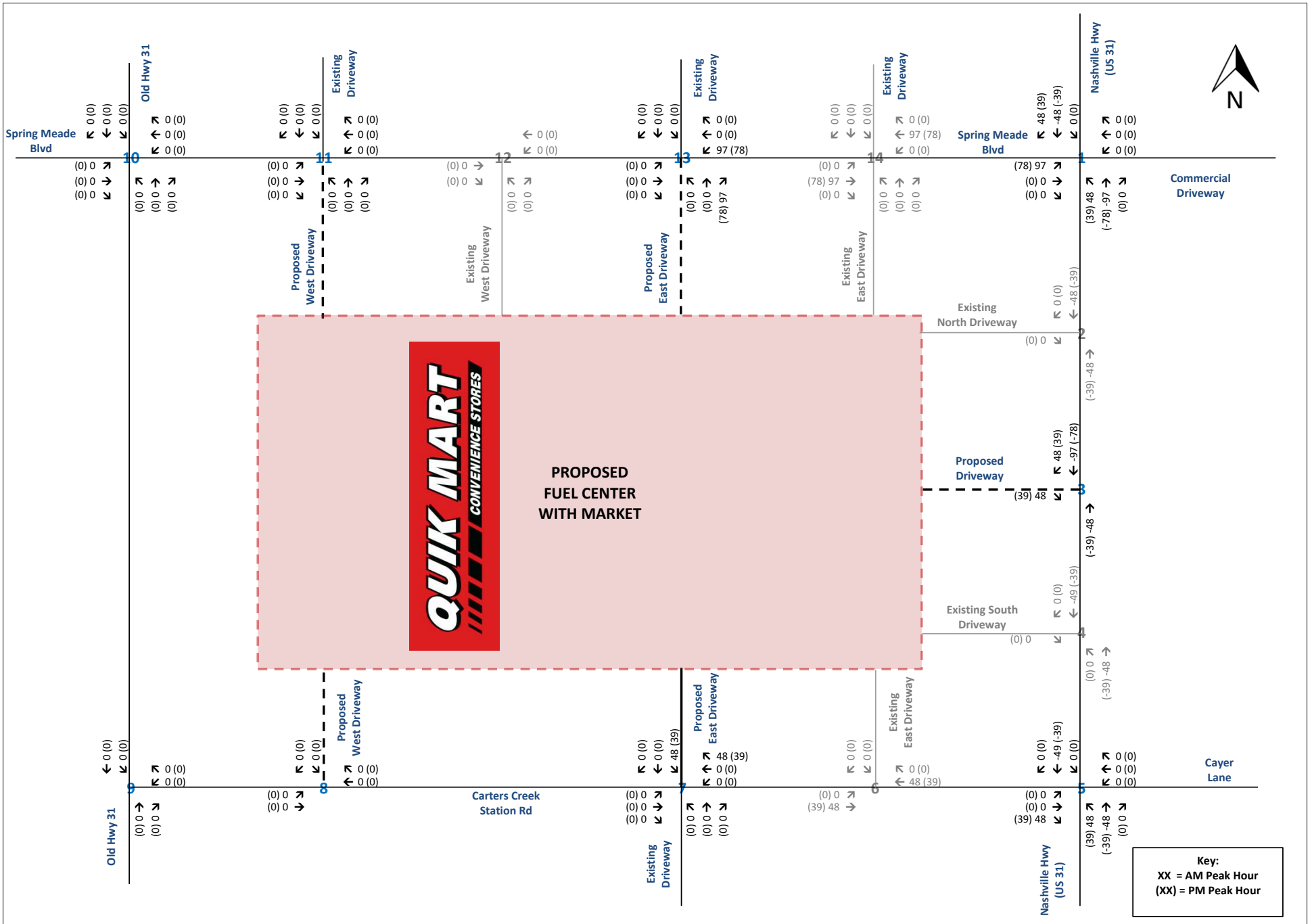
Traffic Assignment Worksheet
Total Primary Traffic Assignment
Nashville Highway QuikMart
Columbia, Tennessee

RGPHILLIPS CONSULTING
TRAFFIC ENGINEERING & TRANSPORTATION PLANNING



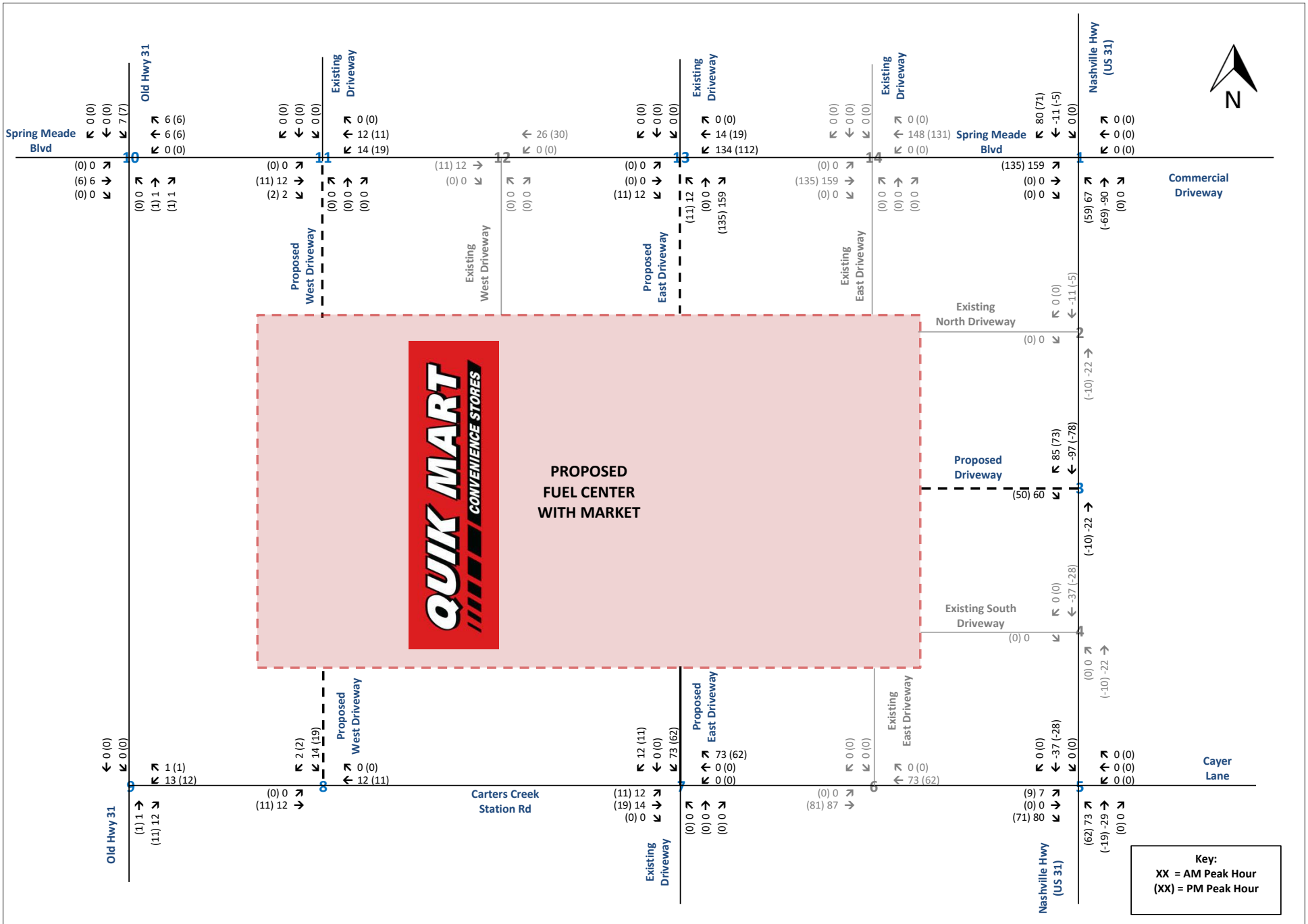
Traffic Assignment Worksheet
Pass-by Traffic Assignment - Convenience Store & Fuel Center
Nashville Highway QuikMart
Columbia, Tennessee

RGPHILLIPS CONSULTING
TRAFFIC ENGINEERING & TRANSPORTATION PLANNING



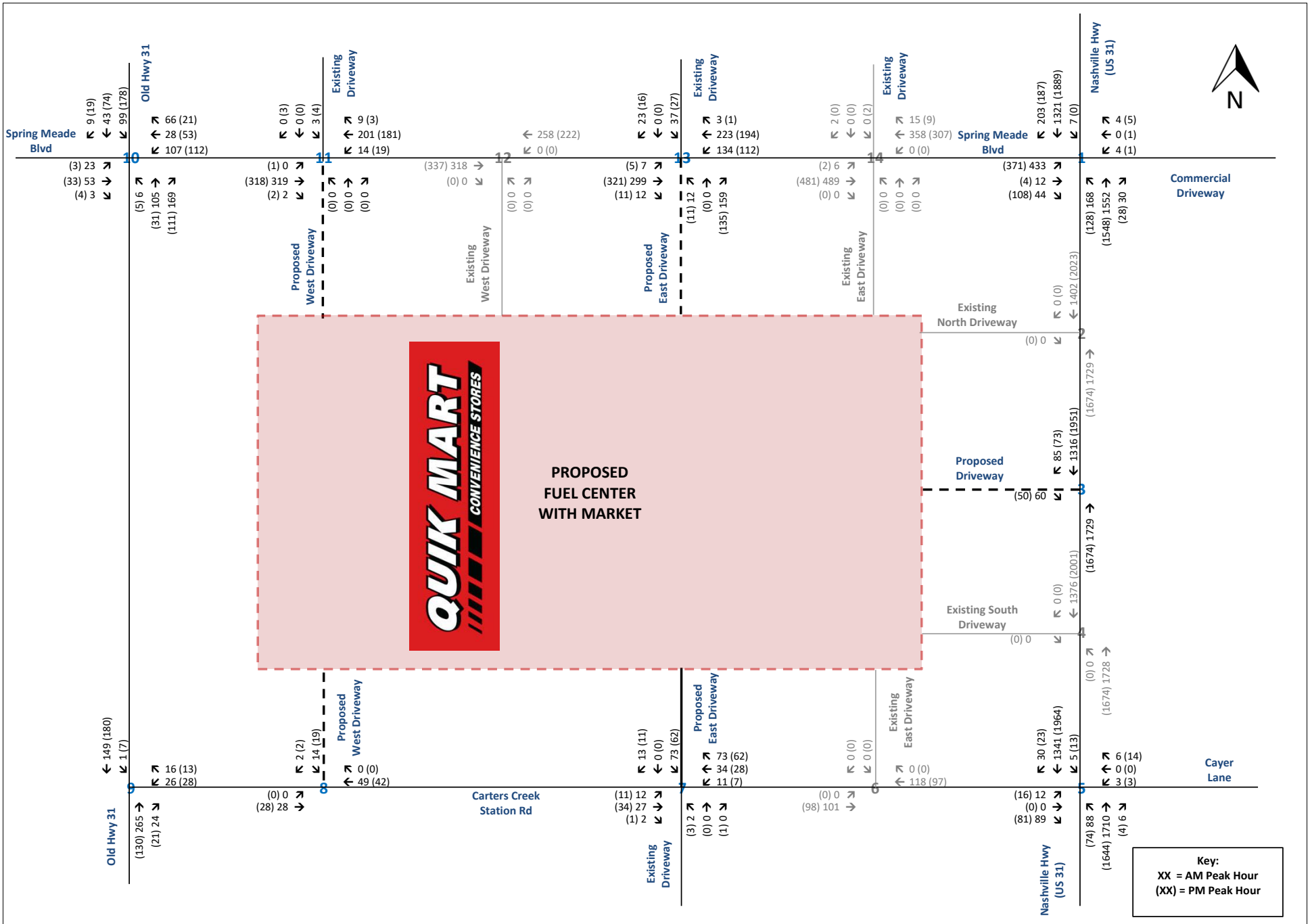
Traffic Assignment Worksheet
Total Passby Traffic Assignment
Nashville Highway QuikMart
Columbia, Tennessee

RGPHILLIPS CONSULTING
TRAFFIC ENGINEERING & TRANSPORTATION PLANNING



Traffic Assignment Worksheet
Site Generated Traffic
Nashville Highway QuikMart
Columbia, Tennessee

RGPHILLIPS CONSULTING
TRAFFIC ENGINEERING & TRANSPORTATION PLANNING

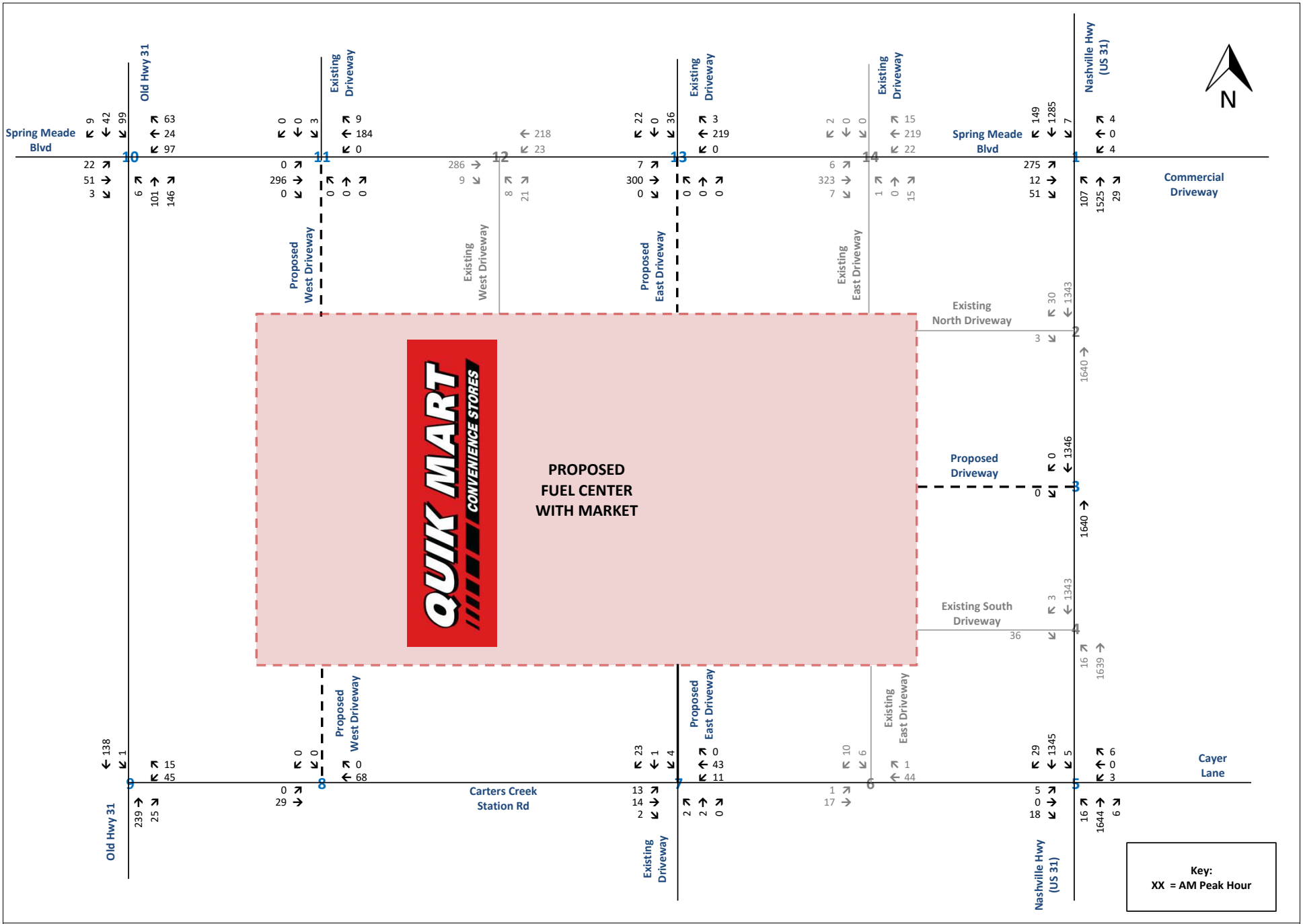


Traffic Assignment Worksheet
Total Projected Traffic at Buildout (2025)
Nashville Highway QuikMart
Columbia, Tennessee

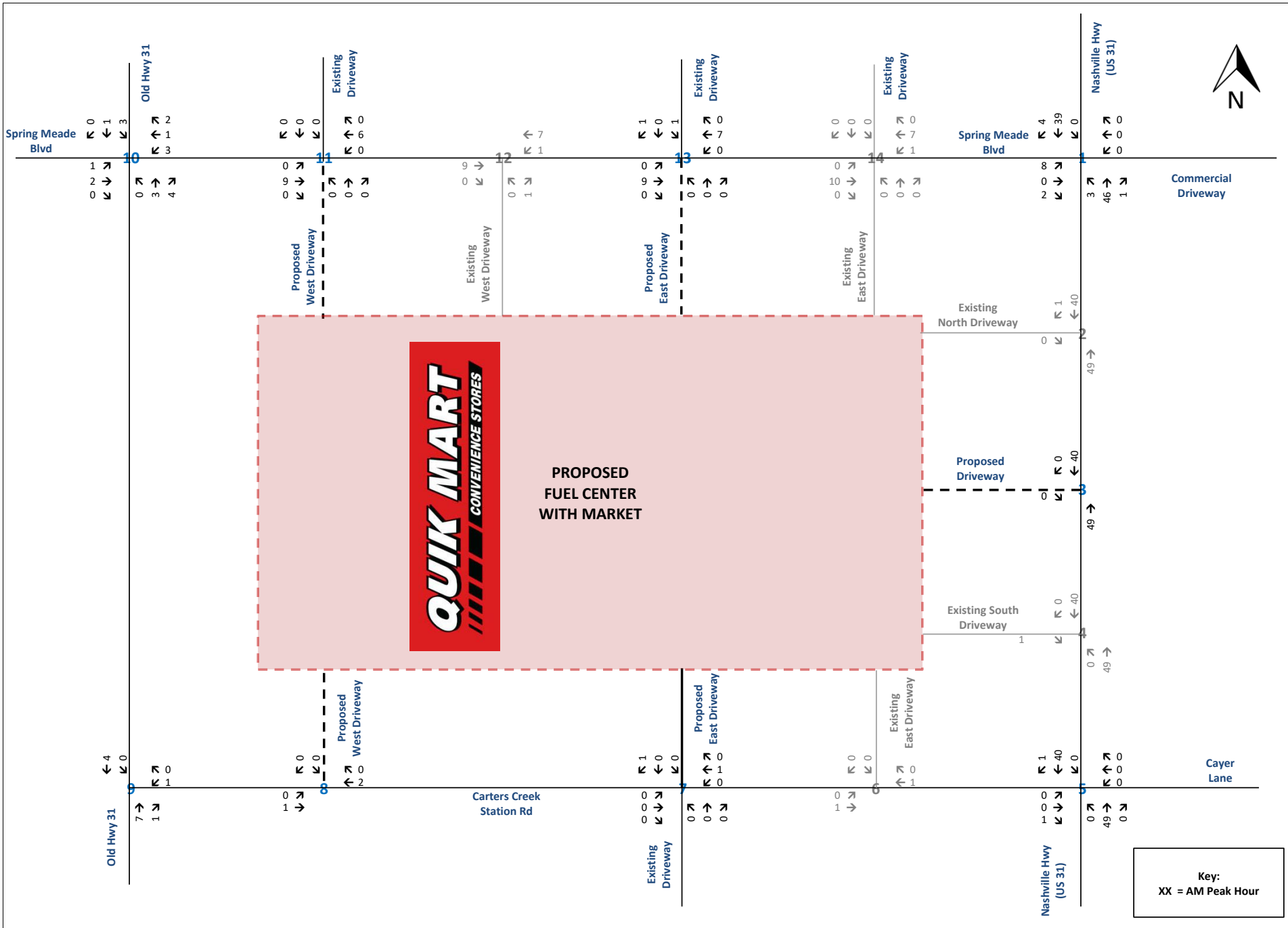
RGPHILLIPS CONSULTING
TRAFFIC ENGINEERING & TRANSPORTATION PLANNING

TRAFFIC ASSIGNMENT WORKSHEETS

AM PEAK HOUR

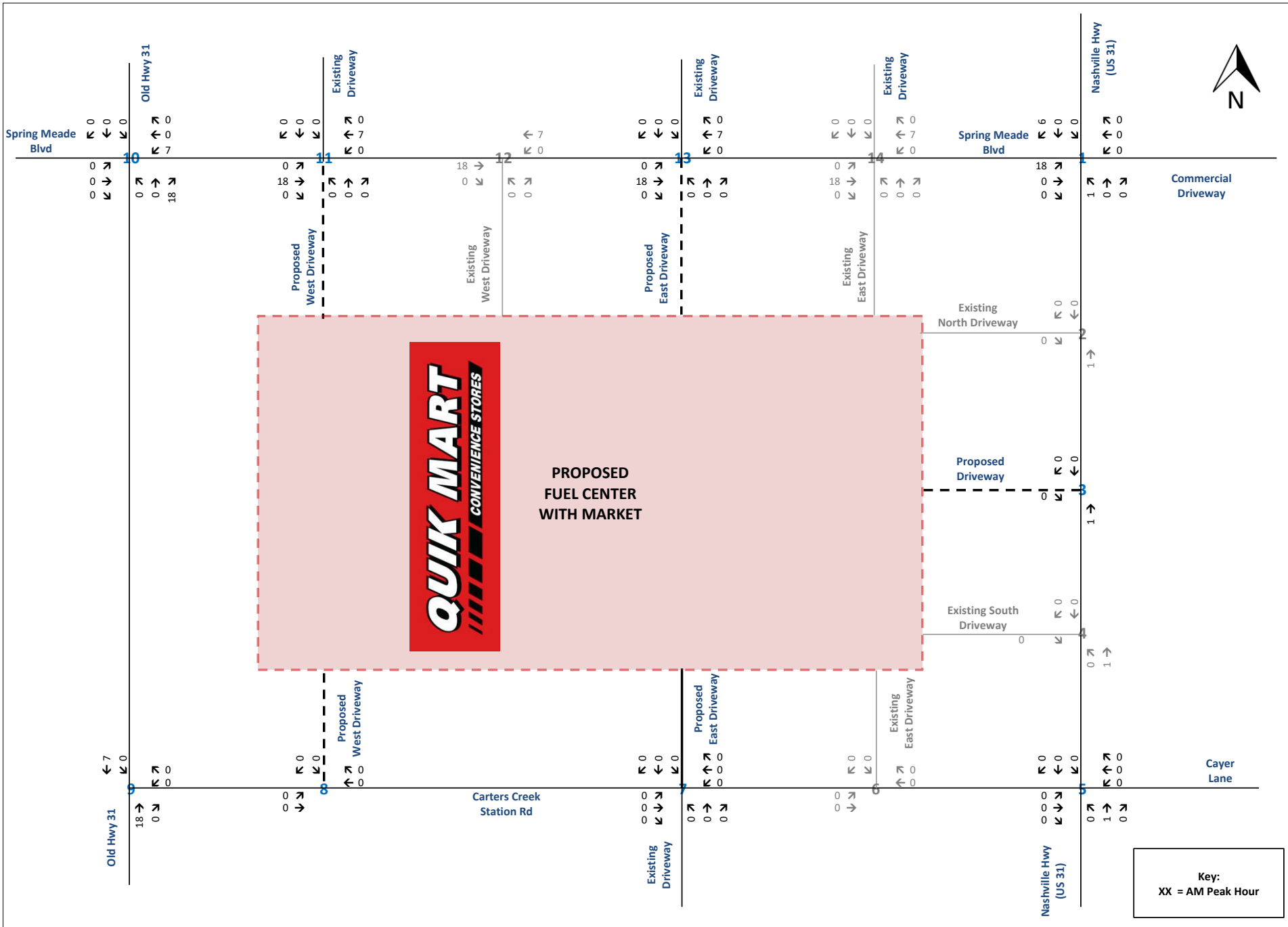


Traffic Assignment Worksheet
Existing Traffic Volumes (2024)
Nashville Highway QuikMart
Columbia, Tennessee



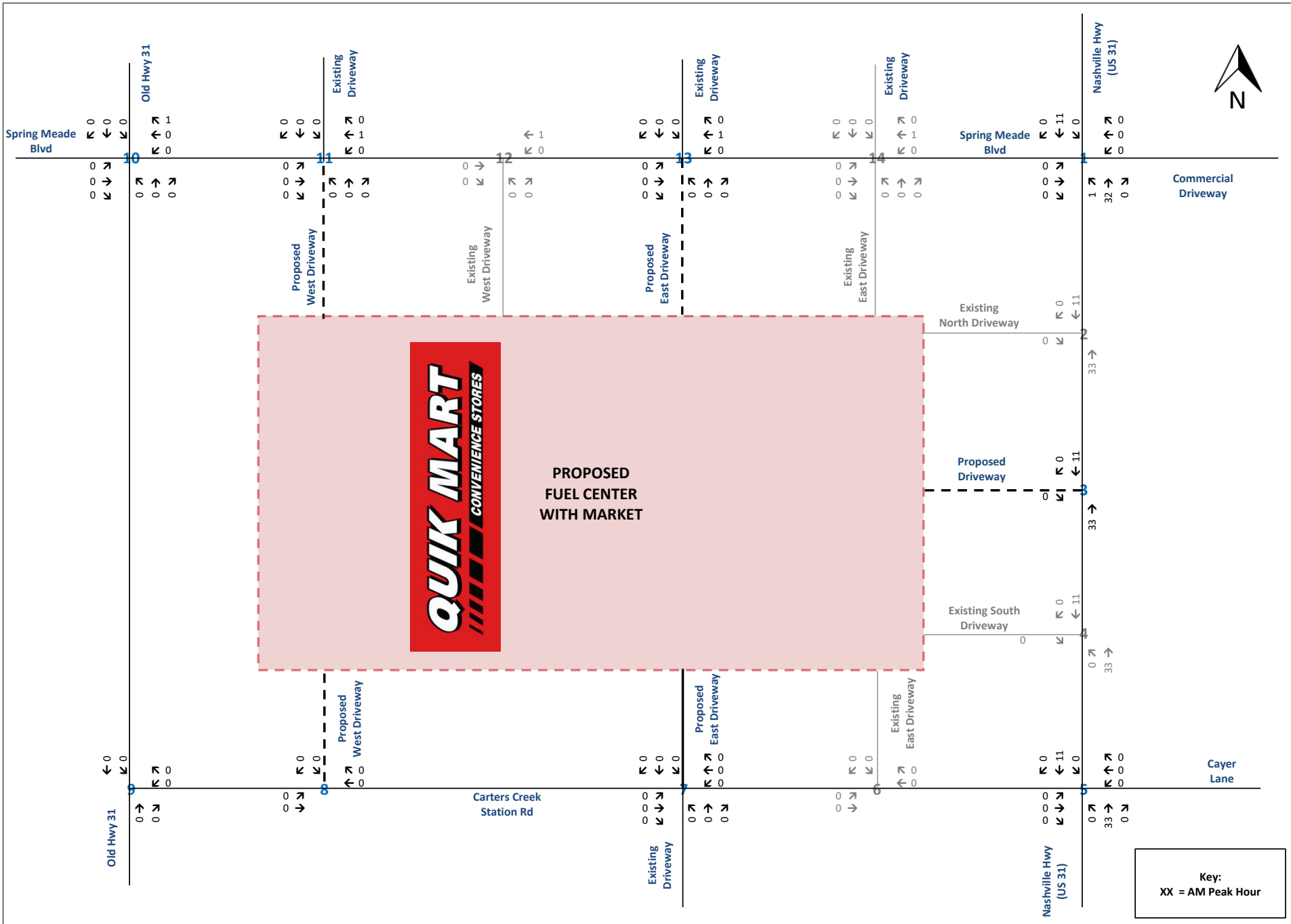
Traffic Assignment Worksheet
Background - Historical Growth Only (2025)
Nashville Highway QuikMart
Columbia, Tennessee

RGPHILLIPS CONSULTING
TRAFFIC ENGINEERING & TRANSPORTATION PLANNING



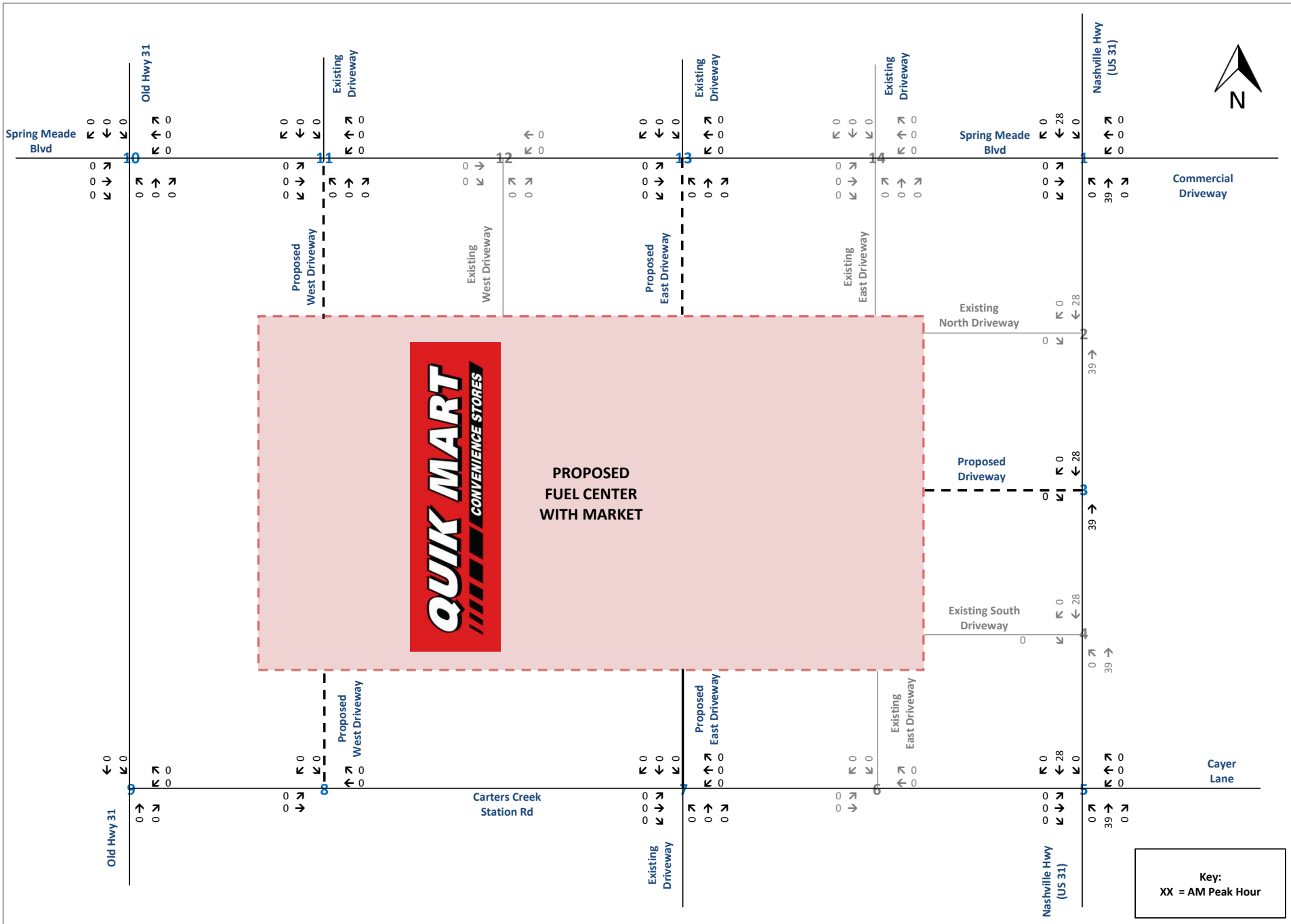
Traffic Assignment Worksheet
Off-Site Traffic Assignment - Carters Station North
Nashville Highway QuikMart
Columbia, Tennessee

RGPHILLIPS CONSULTING
TRAFFIC ENGINEERING & TRANSPORTATION PLANNING



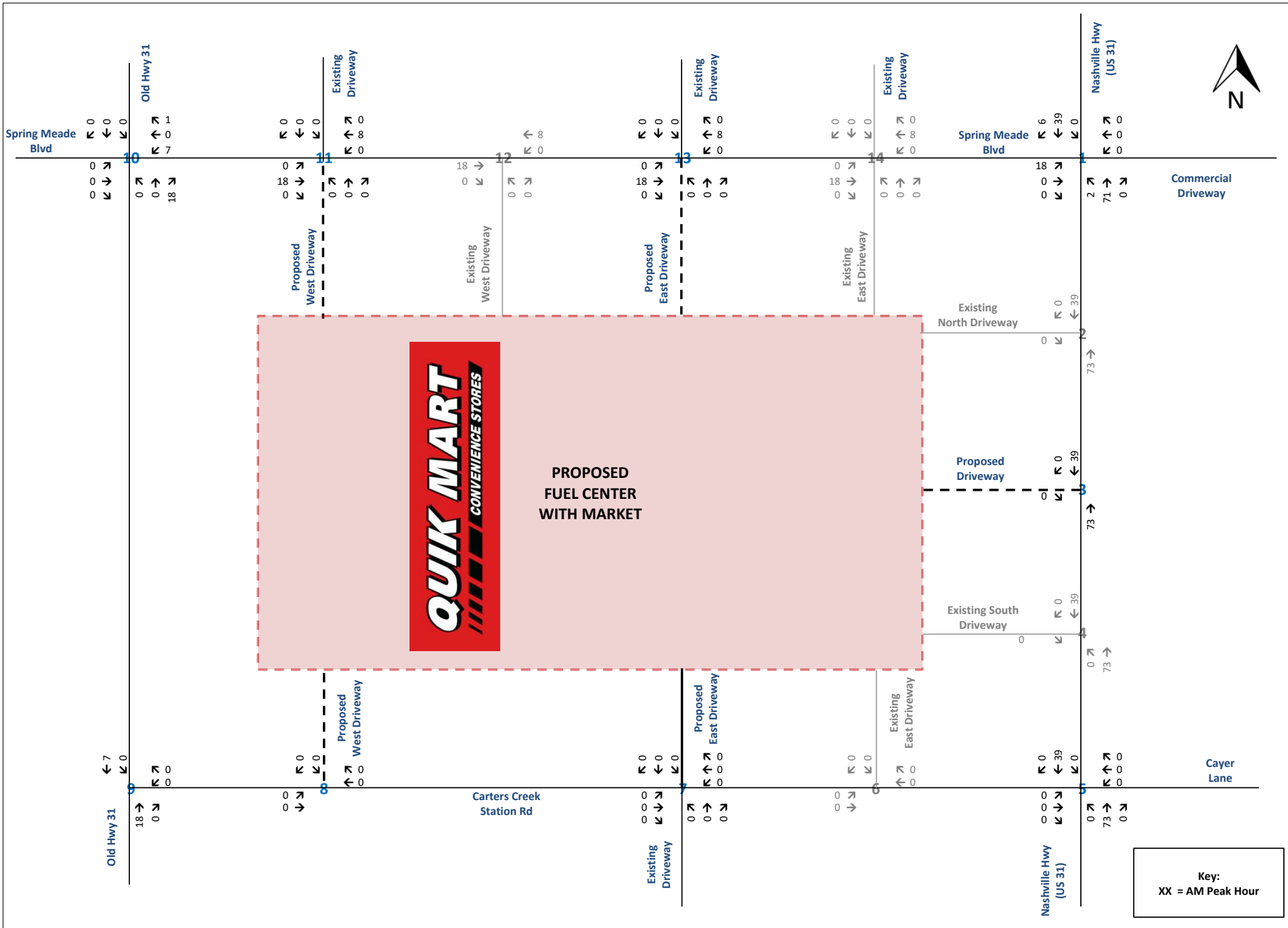
Traffic Assignment Worksheet
Off-Site Traffic Assignment - Greens Mill Development
Nashville Highway QuikMart
Columbia, Tennessee

RGPHILLIPS CONSULTING
TRAFFIC ENGINEERING & TRANSPORTATION PLANNING



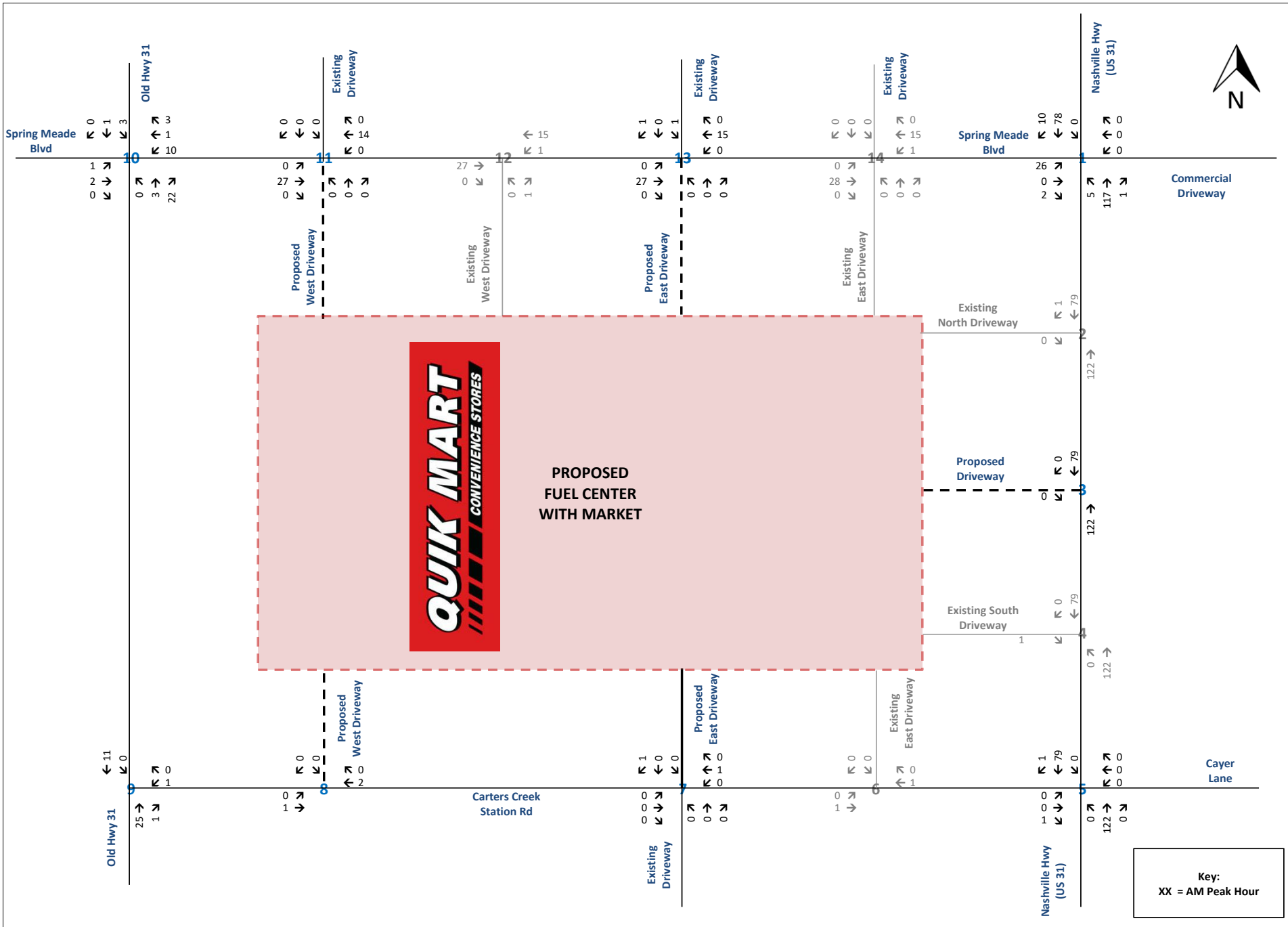
Traffic Assignment Worksheet
Off-Site Traffic Assignment - McClure Farms Development
Nashville Highway QuikMart
Columbia, Tennessee

RGPHILLIPS CONSULTING
TRAFFIC ENGINEERING & TRANSPORTATION PLANNING



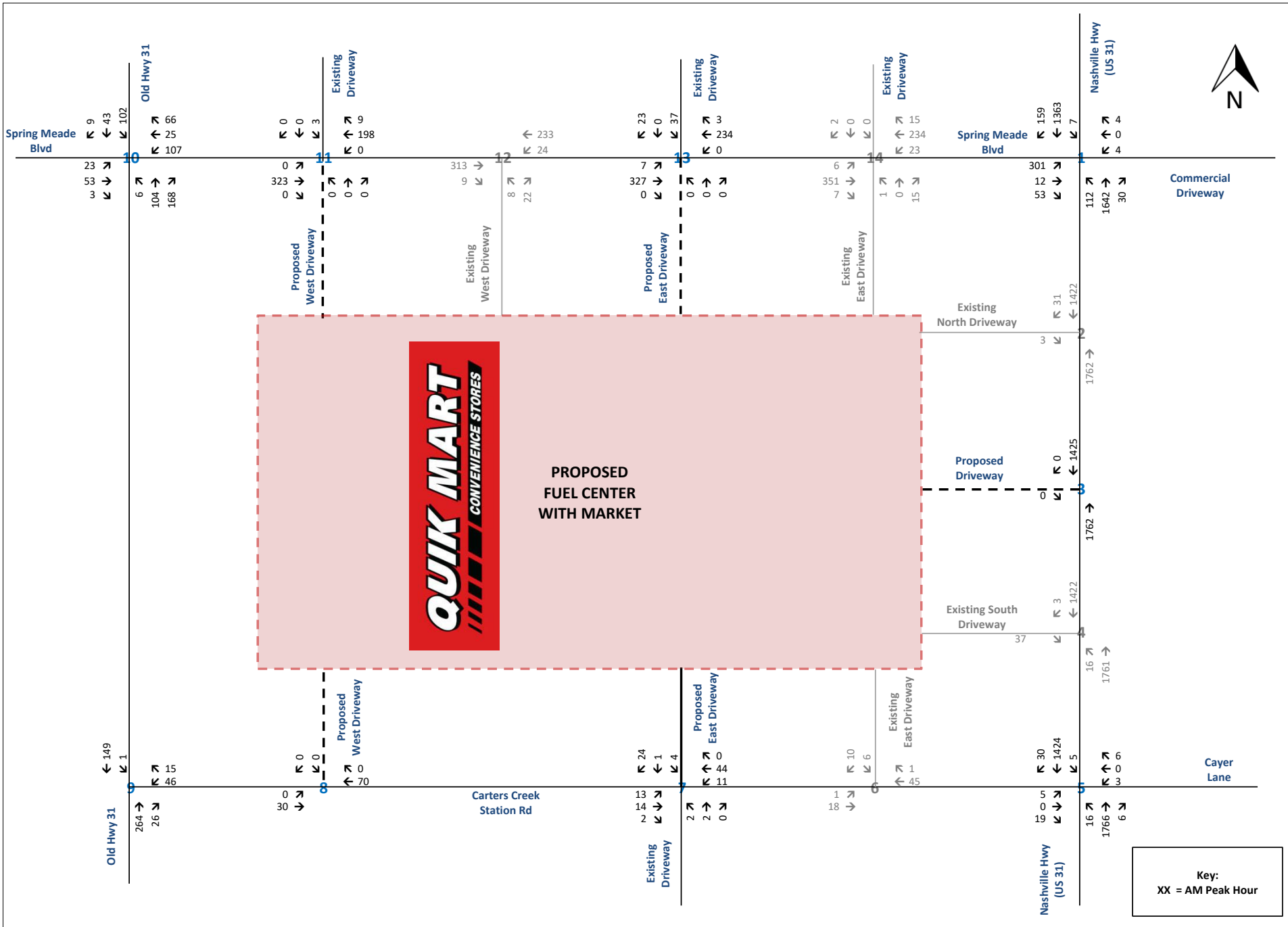
Traffic Assignment Worksheet
Background - Off-Site Development Only (2025)
Nashville Highway QuikMart
Columbia, Tennessee

RGPHILLIPS CONSULTING
TRAFFIC ENGINEERING & TRANSPORTATION PLANNING



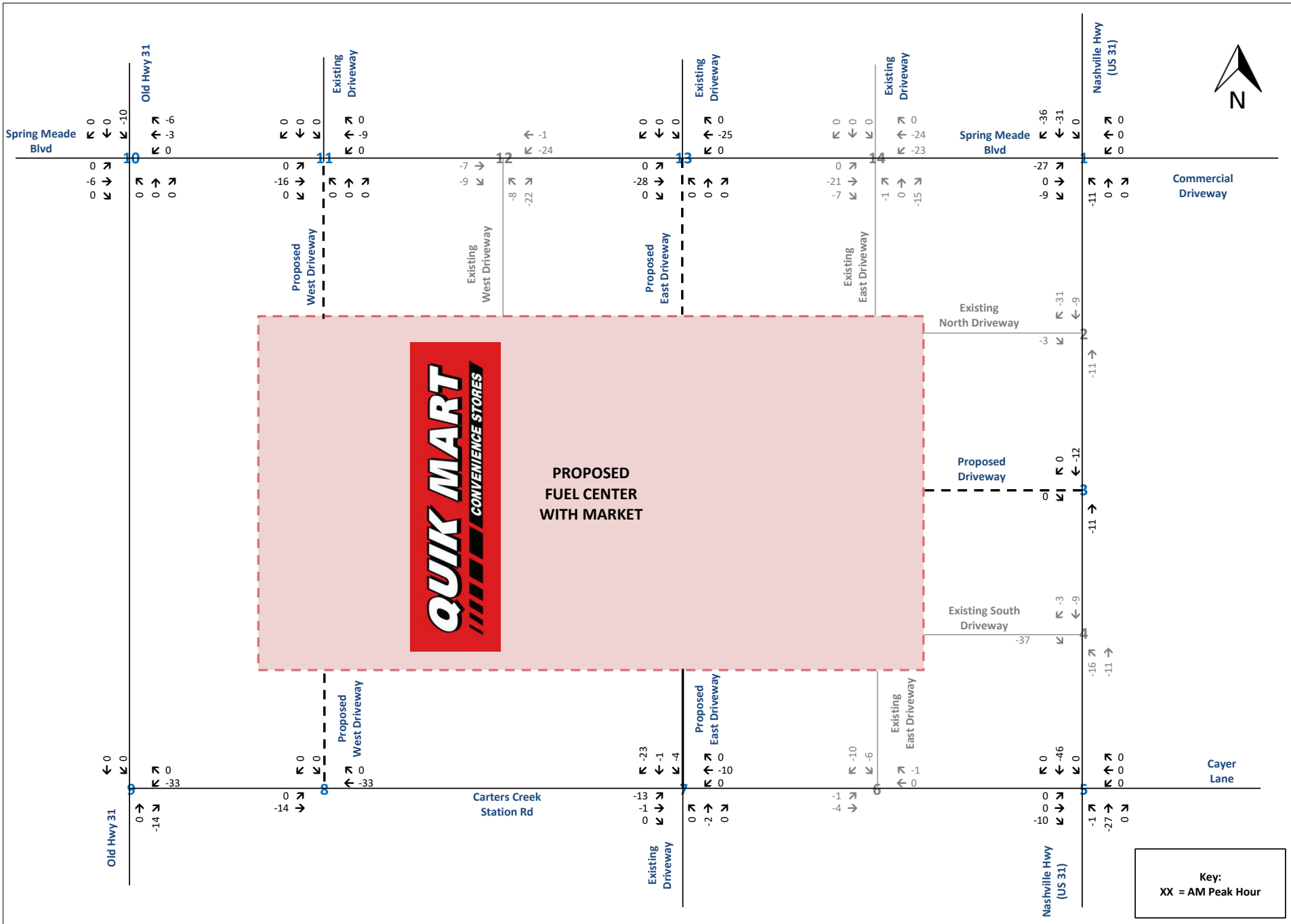
Traffic Assignment Worksheet
Background (Growth + Offsite)
Nashville Highway QuikMart
Columbia, Tennessee

RGPHILLIPS CONSULTING
TRAFFIC ENGINEERING & TRANSPORTATION PLANNING



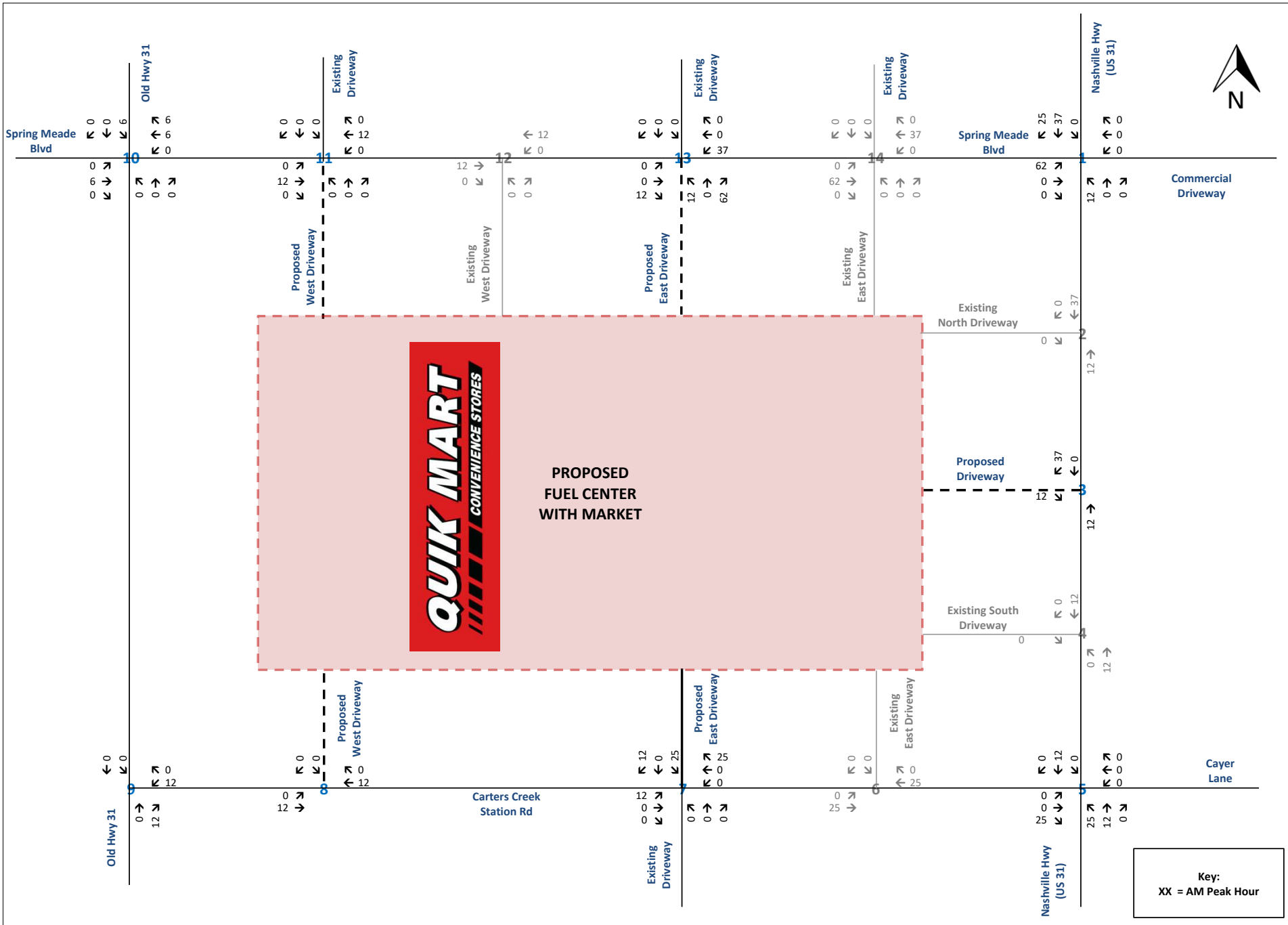
Traffic Assignment Worksheet
Background Traffic Volumes (2025)
Nashville Highway QuikMart
Columbia, Tennessee

RGPHILLIPS CONSULTING
TRAFFIC ENGINEERING & TRANSPORTATION PLANNING



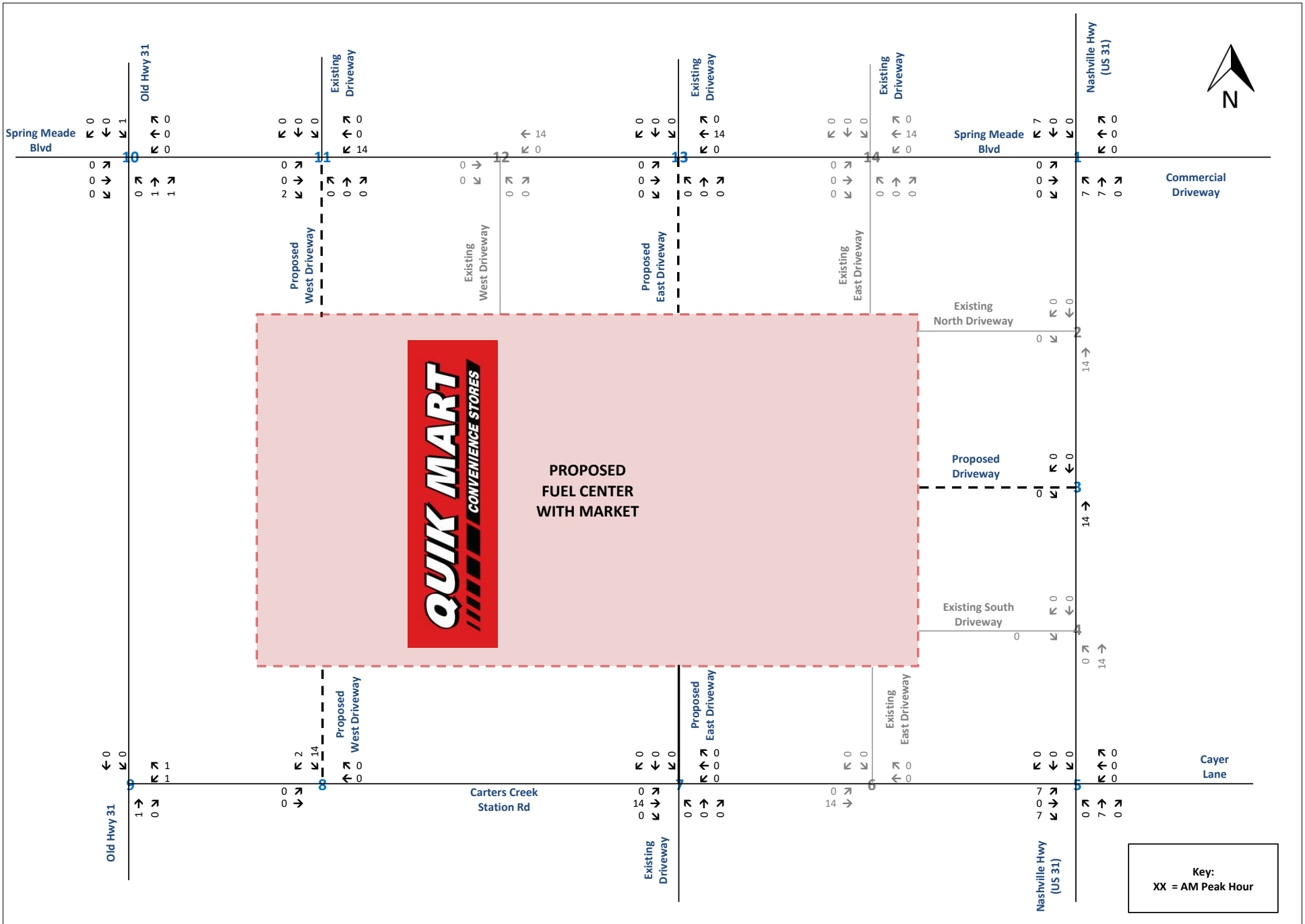
Traffic Assignment Worksheet
Existing Traffic Reassignment
Nashville Highway QuikMart
Columbia, Tennessee

RGPHILLIPS CONSULTING
TRAFFIC ENGINEERING & TRANSPORTATION PLANNING



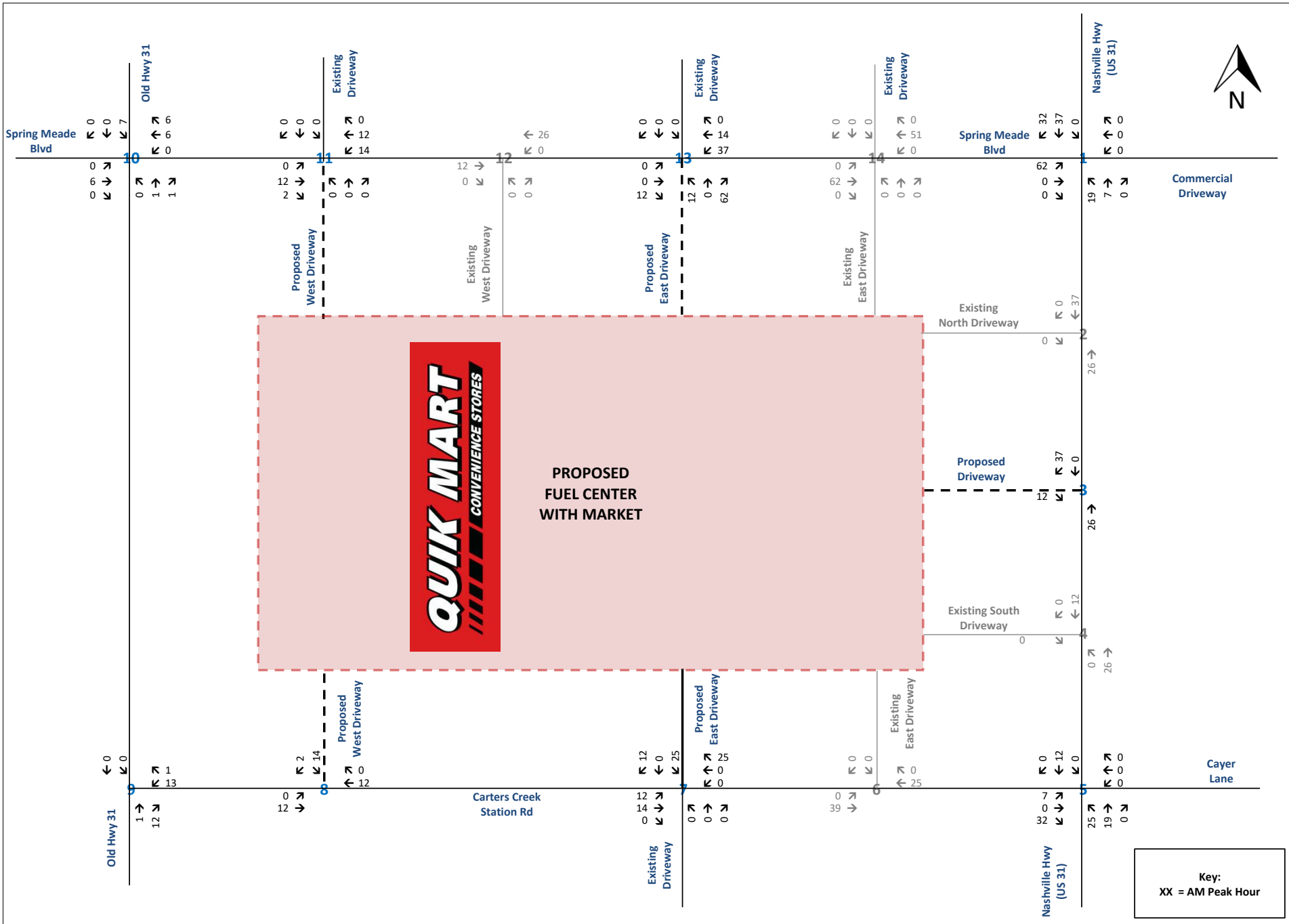
Traffic Assignment Worksheet
Primary Traffic Assignment - Convenience Store & Fuel Center
Nashville Highway QuikMart
Columbia, Tennessee

RGPHILLIPS CONSULTING
TRAFFIC ENGINEERING & TRANSPORTATION PLANNING



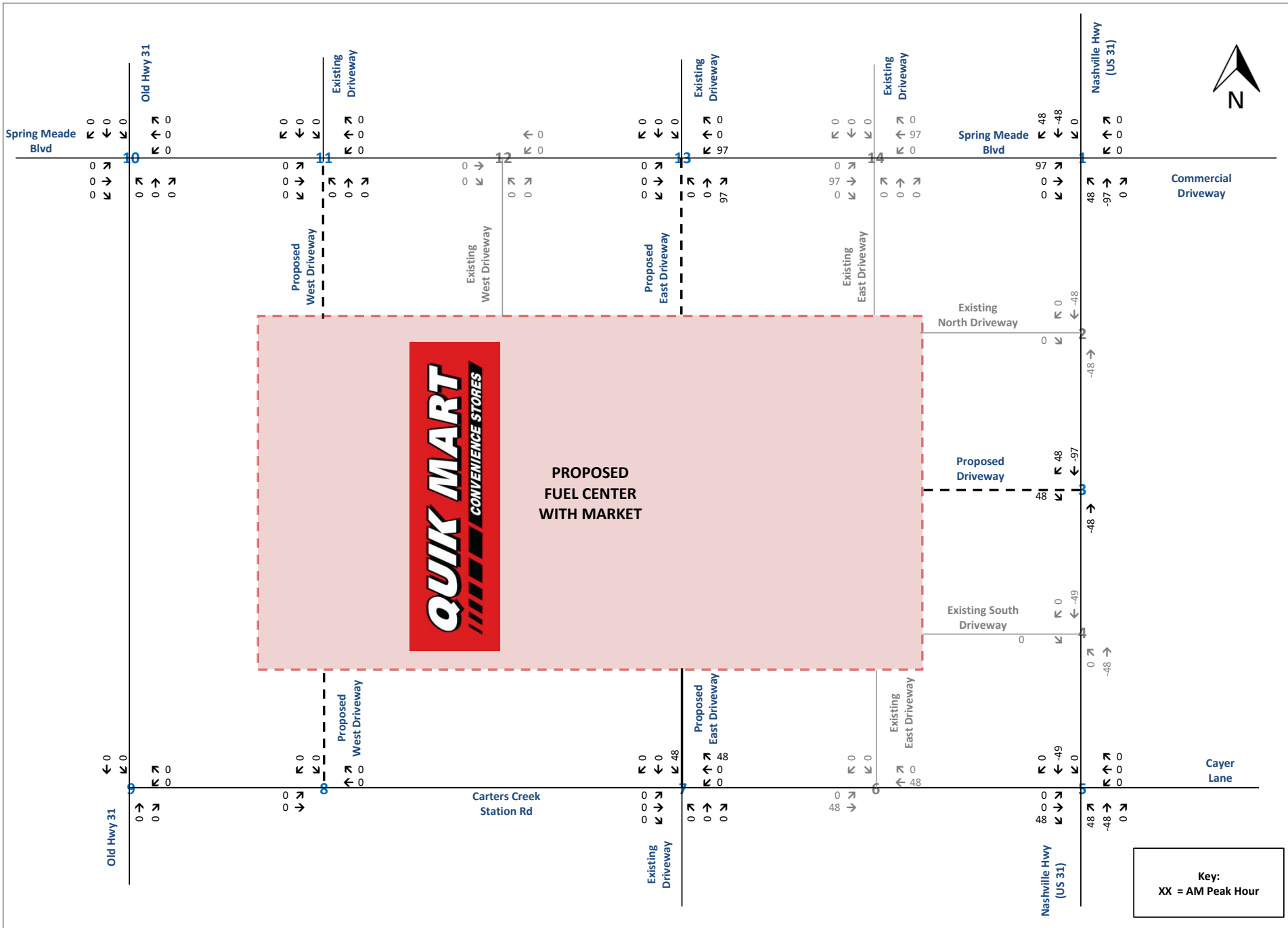
Traffic Assignment Worksheet
Primary Traffic Assignment - Diesel Fueling Pumps
Nashville Highway QuikMart
Columbia, Tennessee

RGPHILLIPS CONSULTING
TRAFFIC ENGINEERING & TRANSPORTATION PLANNING



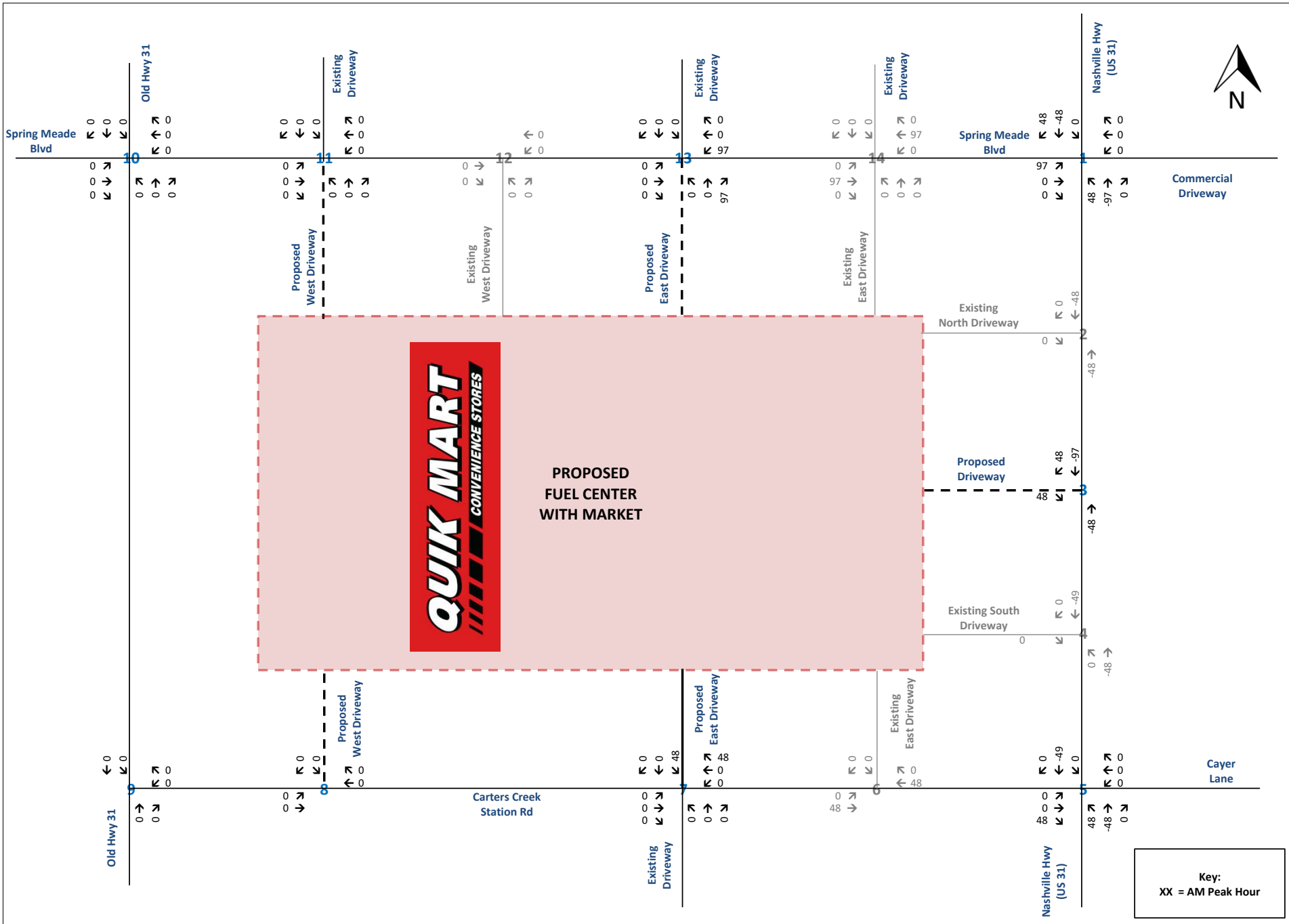
Traffic Assignment Worksheet
Total Primary Traffic Assignment
Nashville Highway QuikMart
Columbia, Tennessee

RGPHILLIPS CONSULTING
TRAFFIC ENGINEERING & TRANSPORTATION PLANNING



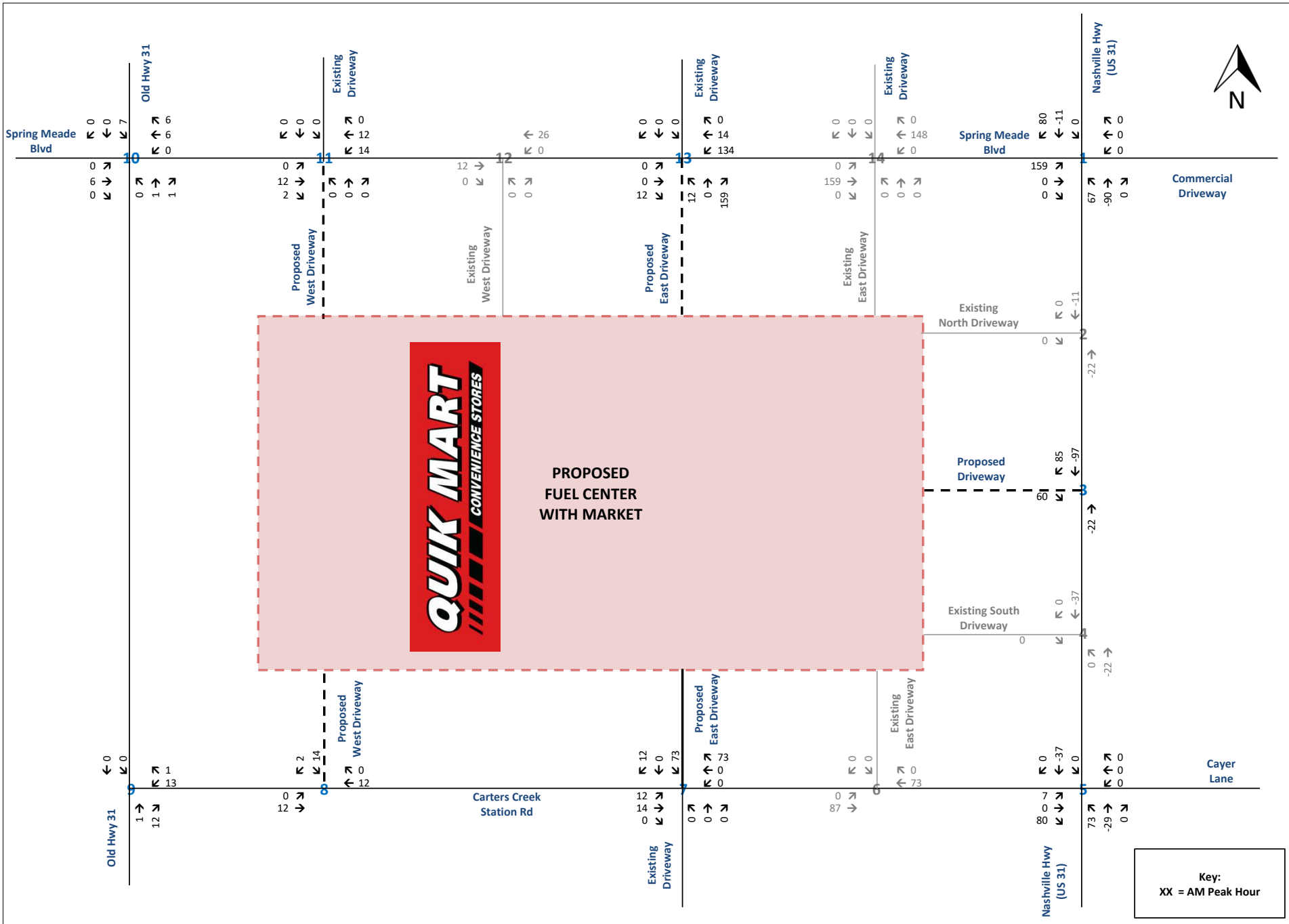
Traffic Assignment Worksheet
Pass-by Traffic Assignment - Convenience Store & Fuel Center
Nashville Highway QuikMart
Columbia, Tennessee

RGPHILLIPS CONSULTING
TRAFFIC ENGINEERING & TRANSPORTATION PLANNING



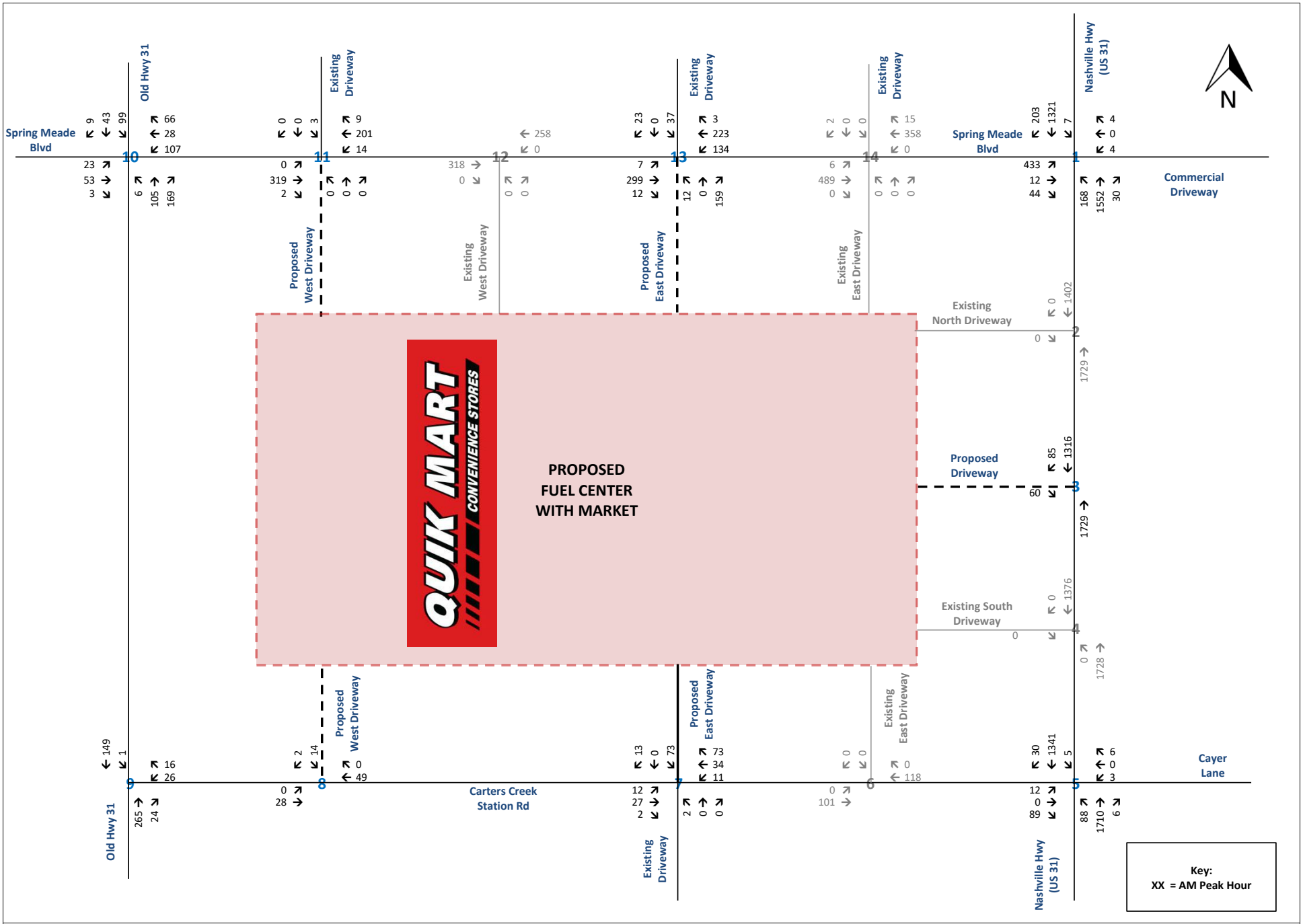
Traffic Assignment Worksheet
Total Passby Traffic Assignment
Nashville Highway QuikMart
Columbia, Tennessee

RGPHILLIPS CONSULTING
TRAFFIC ENGINEERING & TRANSPORTATION PLANNING



Traffic Assignment Worksheet
Site Generated Traffic
Nashville Highway QuikMart
Columbia, Tennessee

RGPHILLIPS CONSULTING
TRAFFIC ENGINEERING & TRANSPORTATION PLANNING

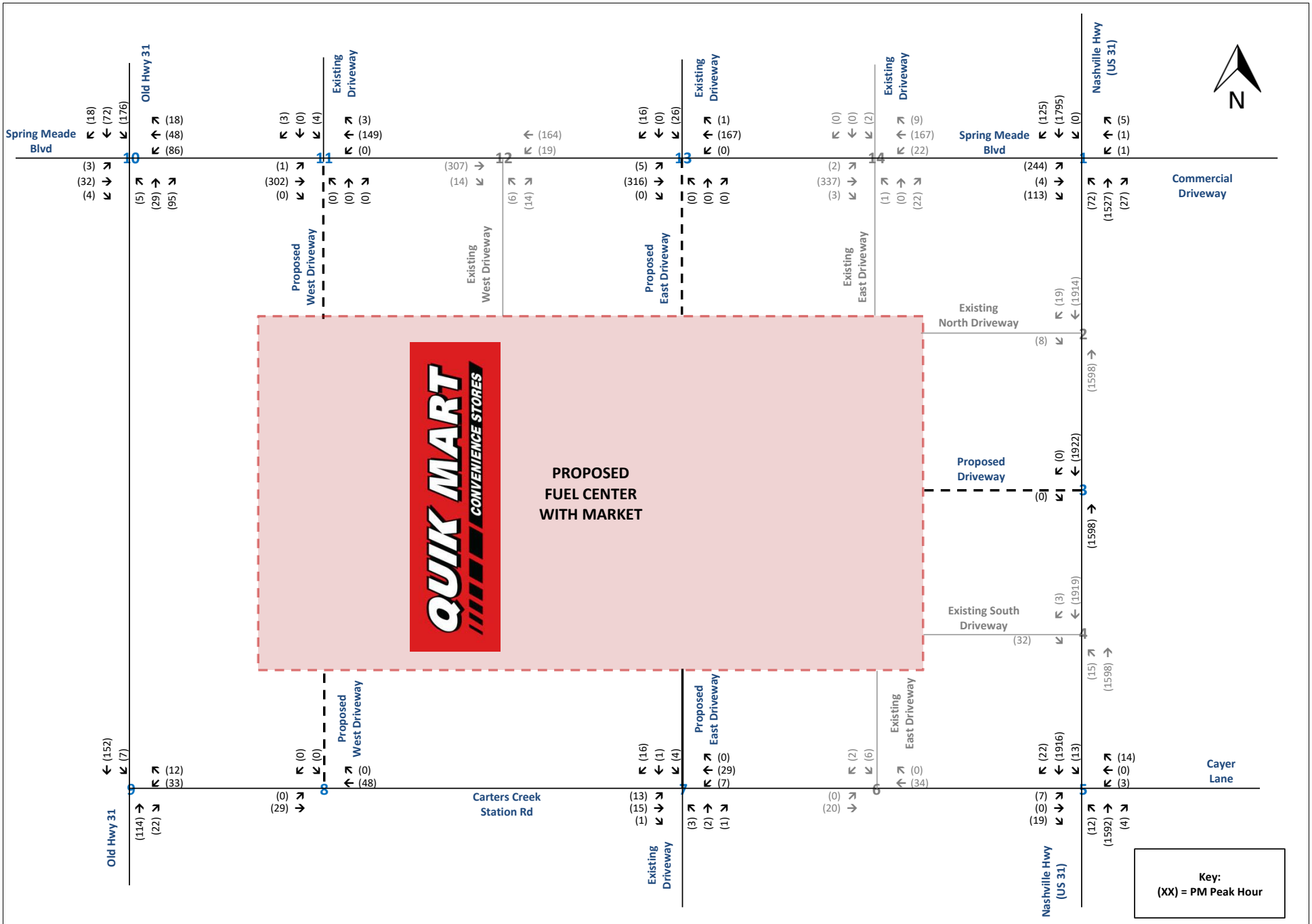


Traffic Assignment Worksheet
Total Projected Traffic at Buildout (2025)
Nashville Highway QuikMart
Columbia, Tennessee

RGPHILLIPS CONSULTING
TRAFFIC ENGINEERING & TRANSPORTATION PLANNING

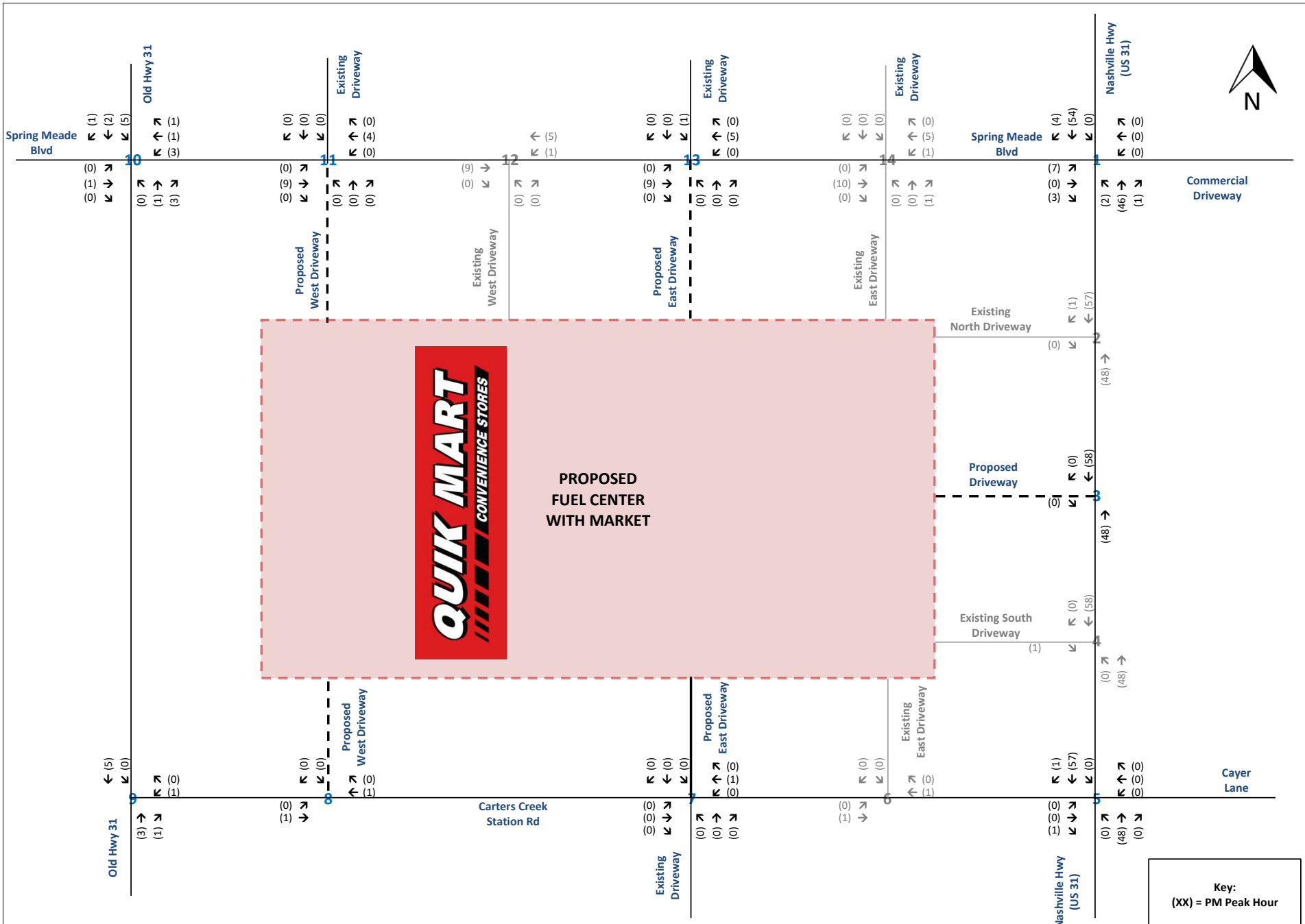
TRAFFIC ASSIGNMENT WORKSHEETS

PM PEAK HOUR



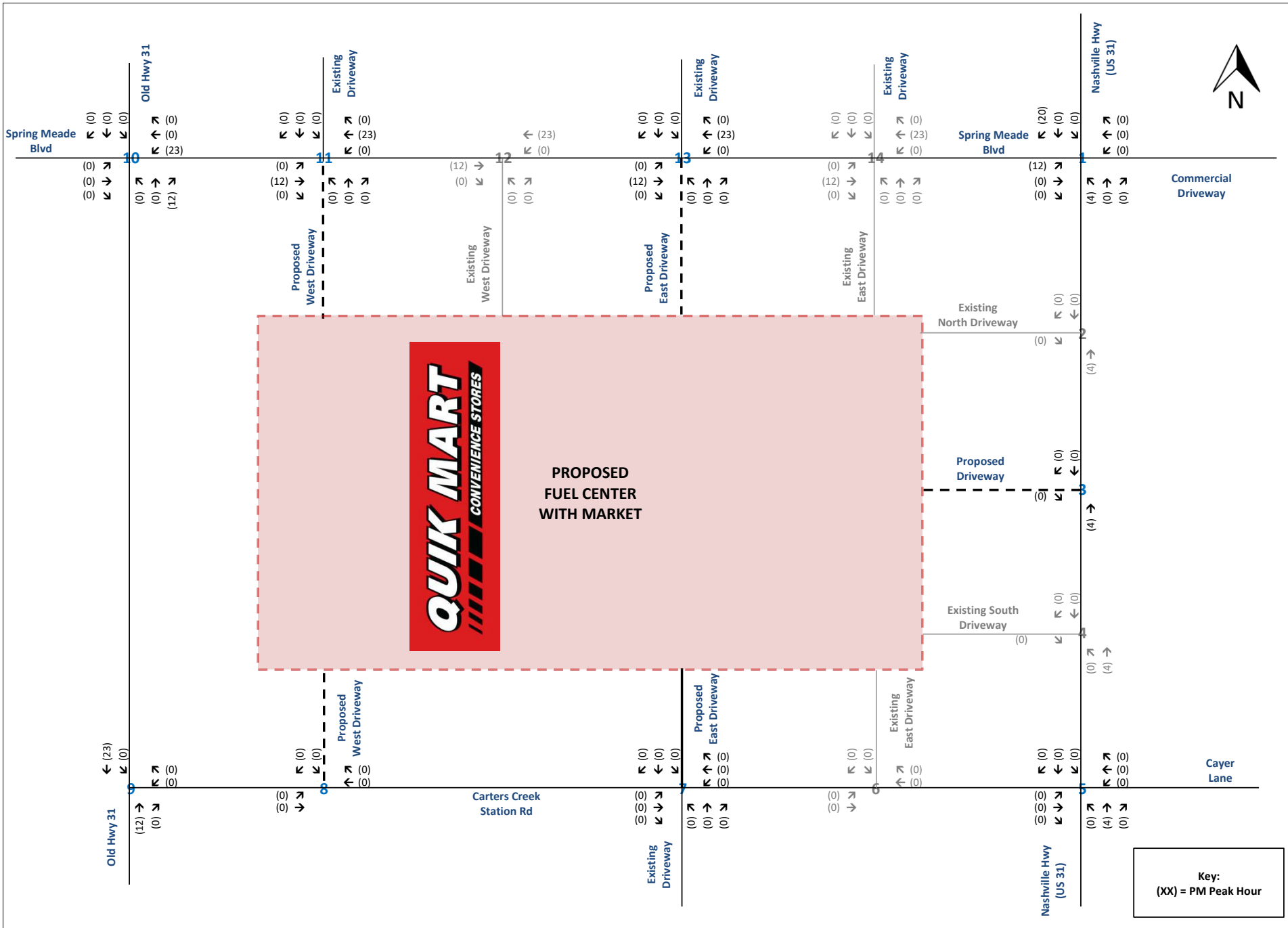
Traffic Assignment Worksheet
Existing Traffic Volumes (2024)
Nashville Highway QuikMart
Columbia, Tennessee

RGPHILLIPS CONSULTING
TRAFFIC ENGINEERING & TRANSPORTATION PLANNING



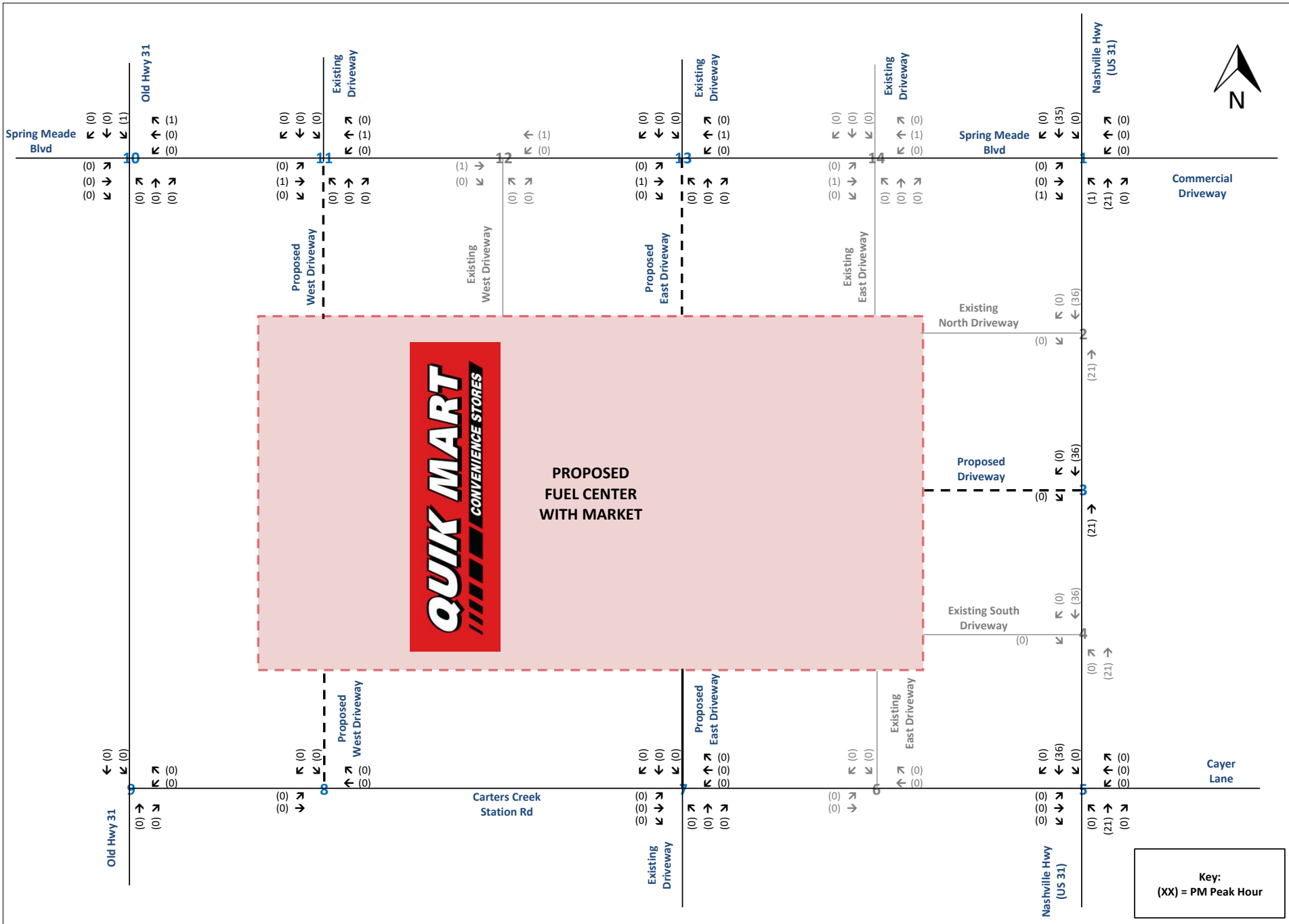
Traffic Assignment Worksheet
Background - Historical Growth Only (2025)
Nashville Highway QuikMart
Columbia, Tennessee

RGPHILLIPS CONSULTING
TRAFFIC ENGINEERING & TRANSPORTATION PLANNING



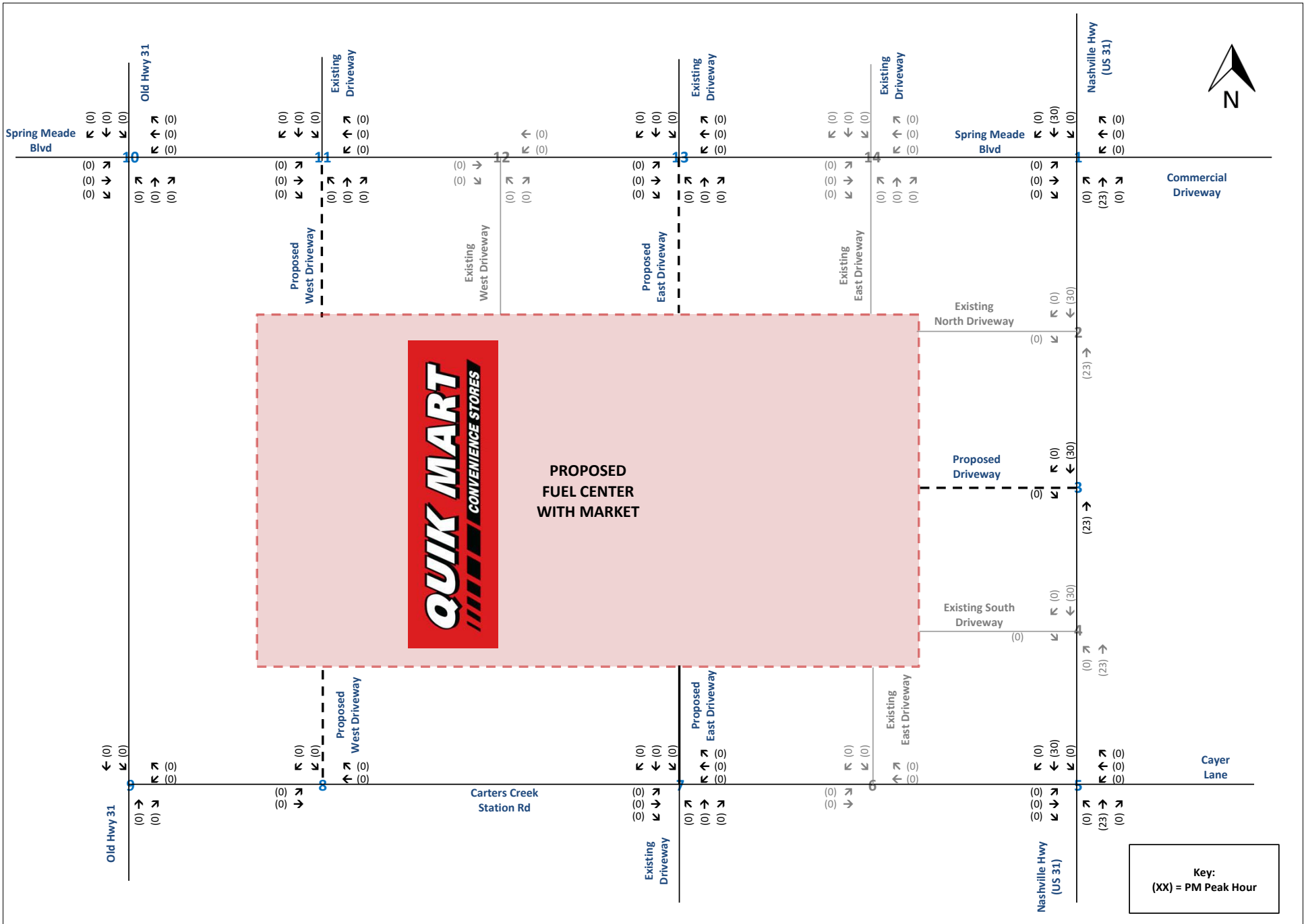
Traffic Assignment Worksheet
Off-Site Traffic Assignment - Carters Station North
Nashville Highway QuikMart
Columbia, Tennessee

RGPHILLIPS CONSULTING
TRAFFIC ENGINEERING & TRANSPORTATION PLANNING



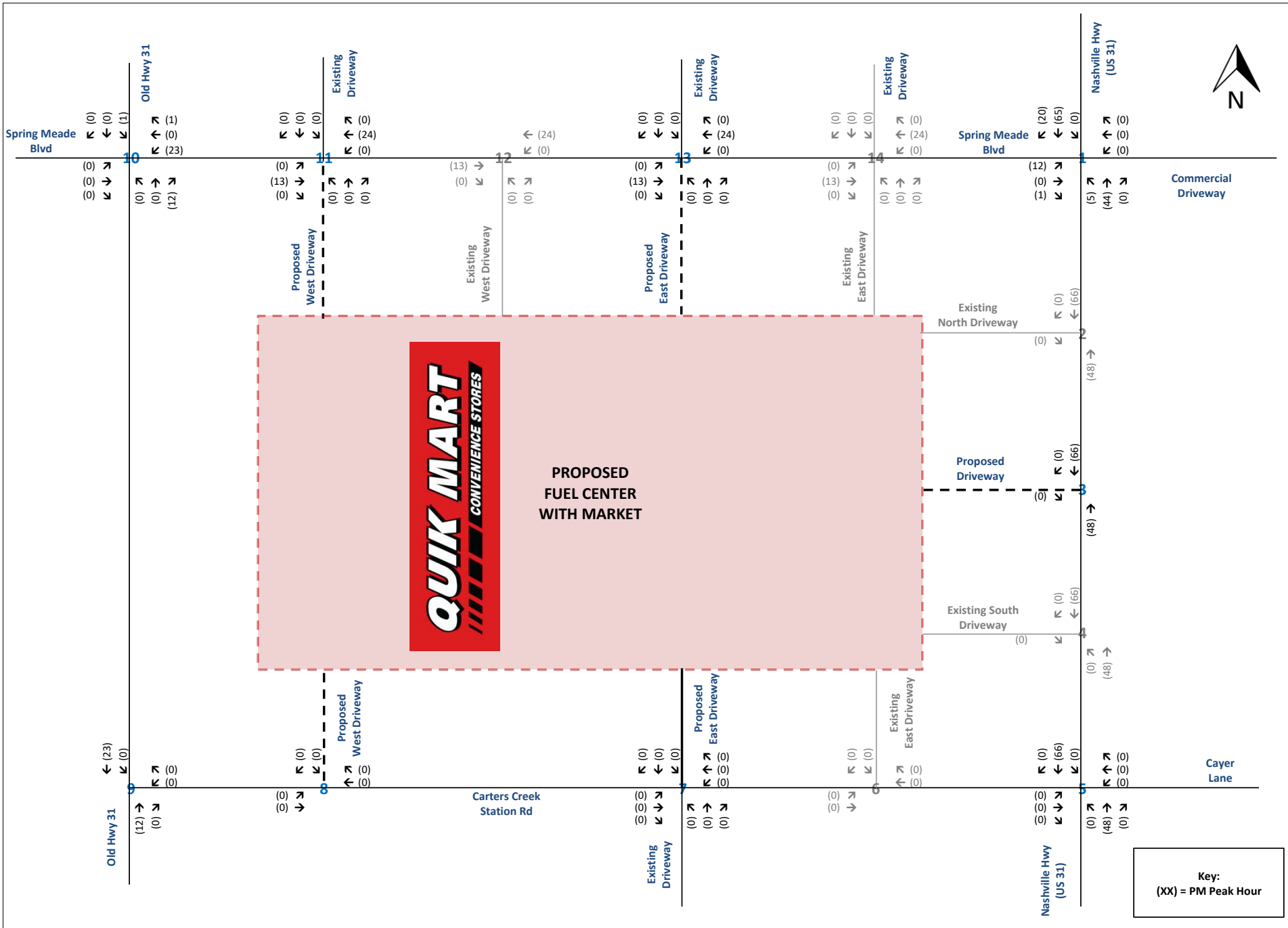
Traffic Assignment Worksheet
Off-Site Traffic Assignment - Greens Mill Development
Nashville Highway QuikMart
Columbia, Tennessee

RGPHILLIPS CONSULTING
TRAFFIC ENGINEERING & TRANSPORTATION PLANNING

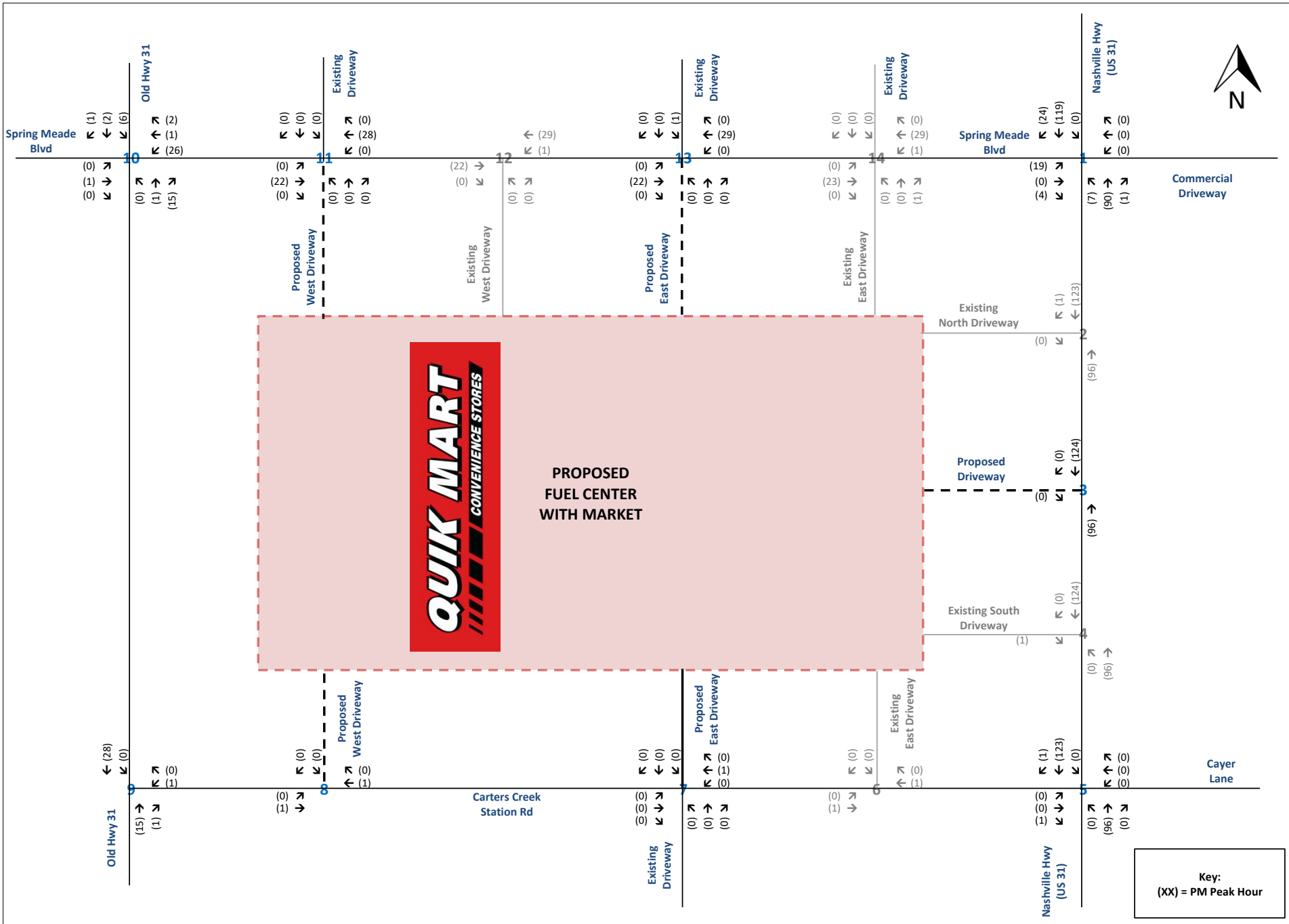


Traffic Assignment Worksheet
Off-Site Traffic Assignment - McClure Farms Development
Nashville Highway QuikMart
Columbia, Tennessee

RGPHILLIPS CONSULTING
TRAFFIC ENGINEERING & TRANSPORTATION PLANNING

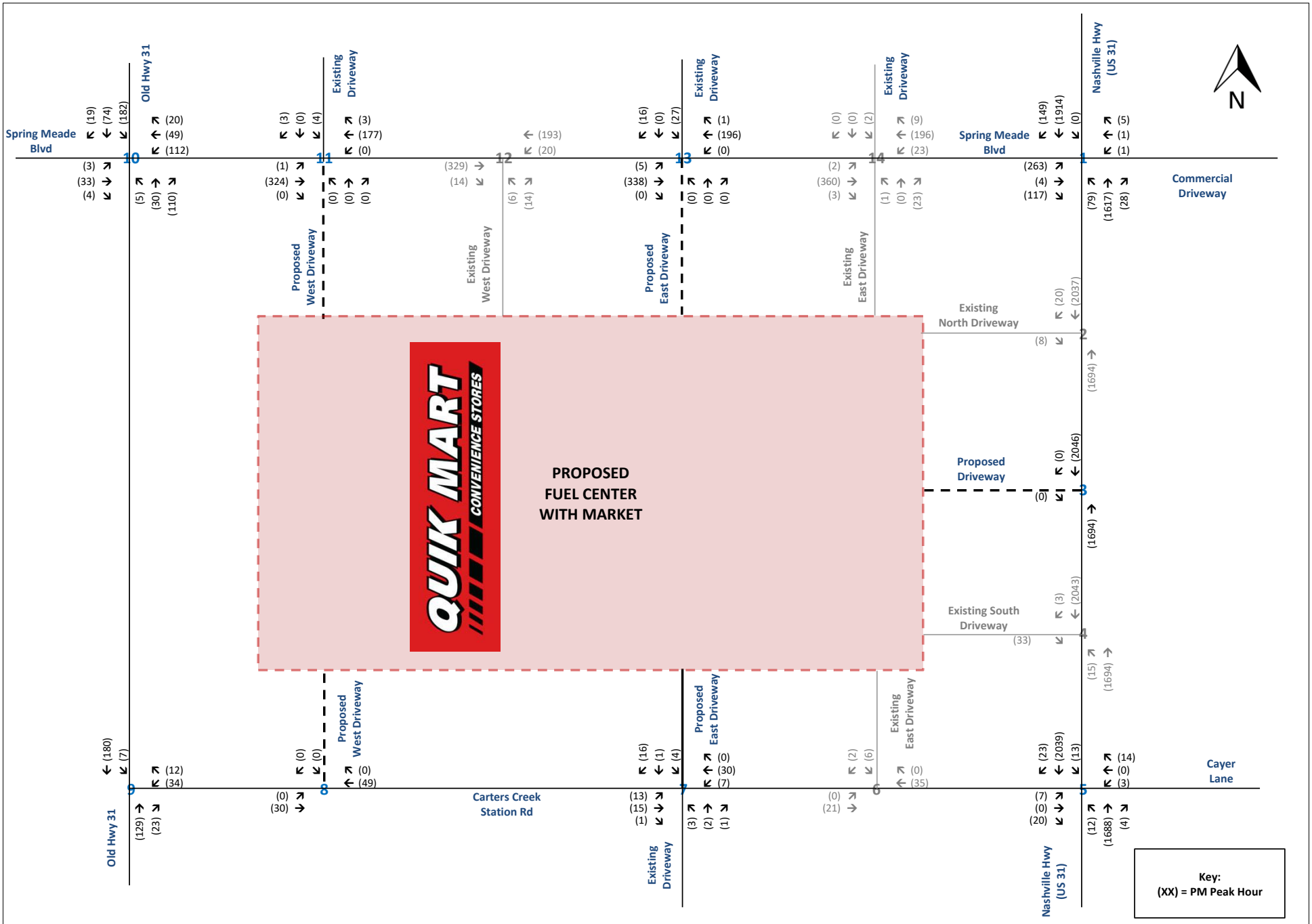


Traffic Assignment Worksheet
Background - Off-Site Development Only (2025)
Nashville Highway QuikMart
Columbia, Tennessee



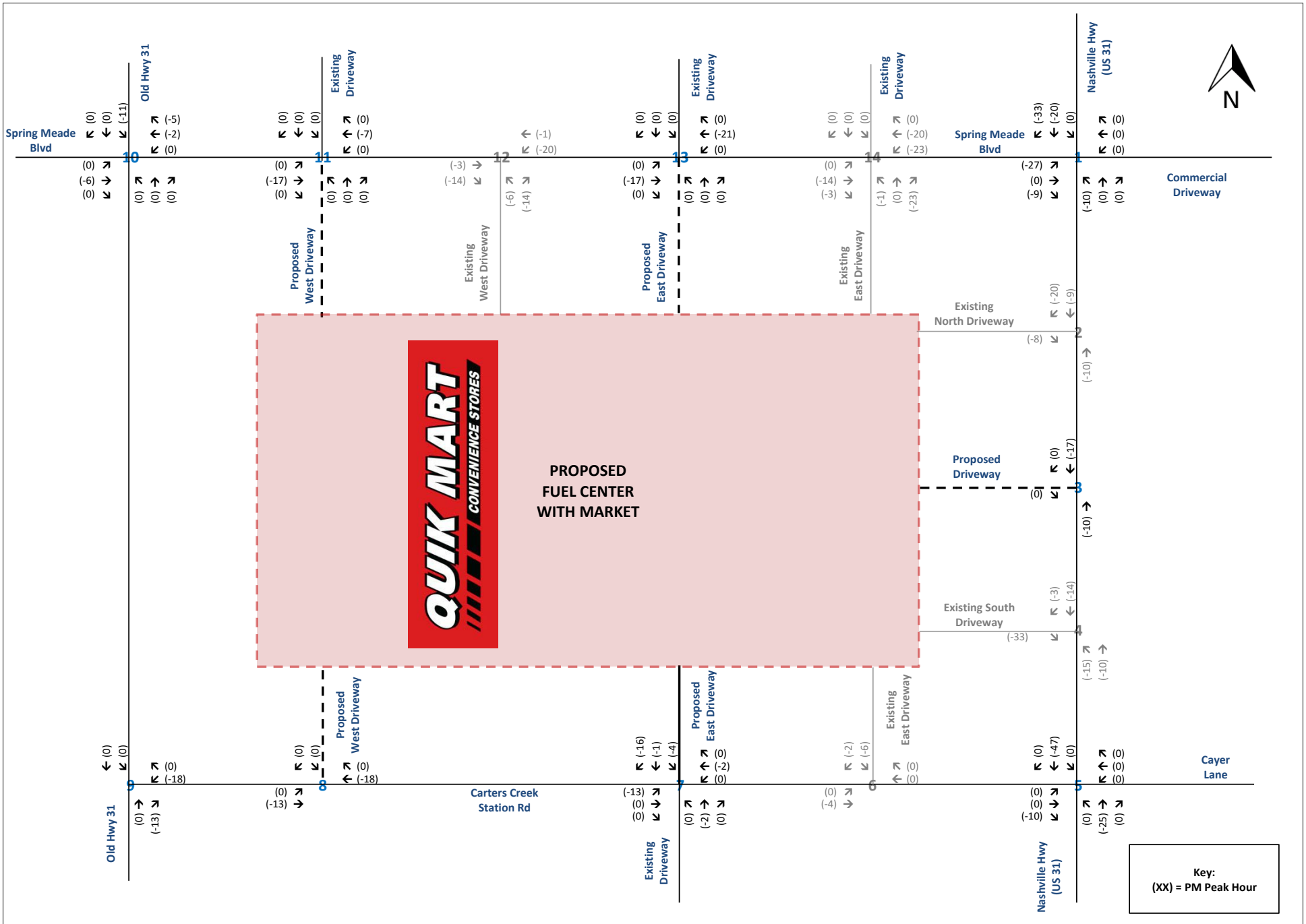
Traffic Assignment Worksheet
Background (Growth + Offsite)
Nashville Highway QuikMart
Columbia, Tennessee

RGPHILLIPS CONSULTING
TRAFFIC ENGINEERING & TRANSPORTATION PLANNING



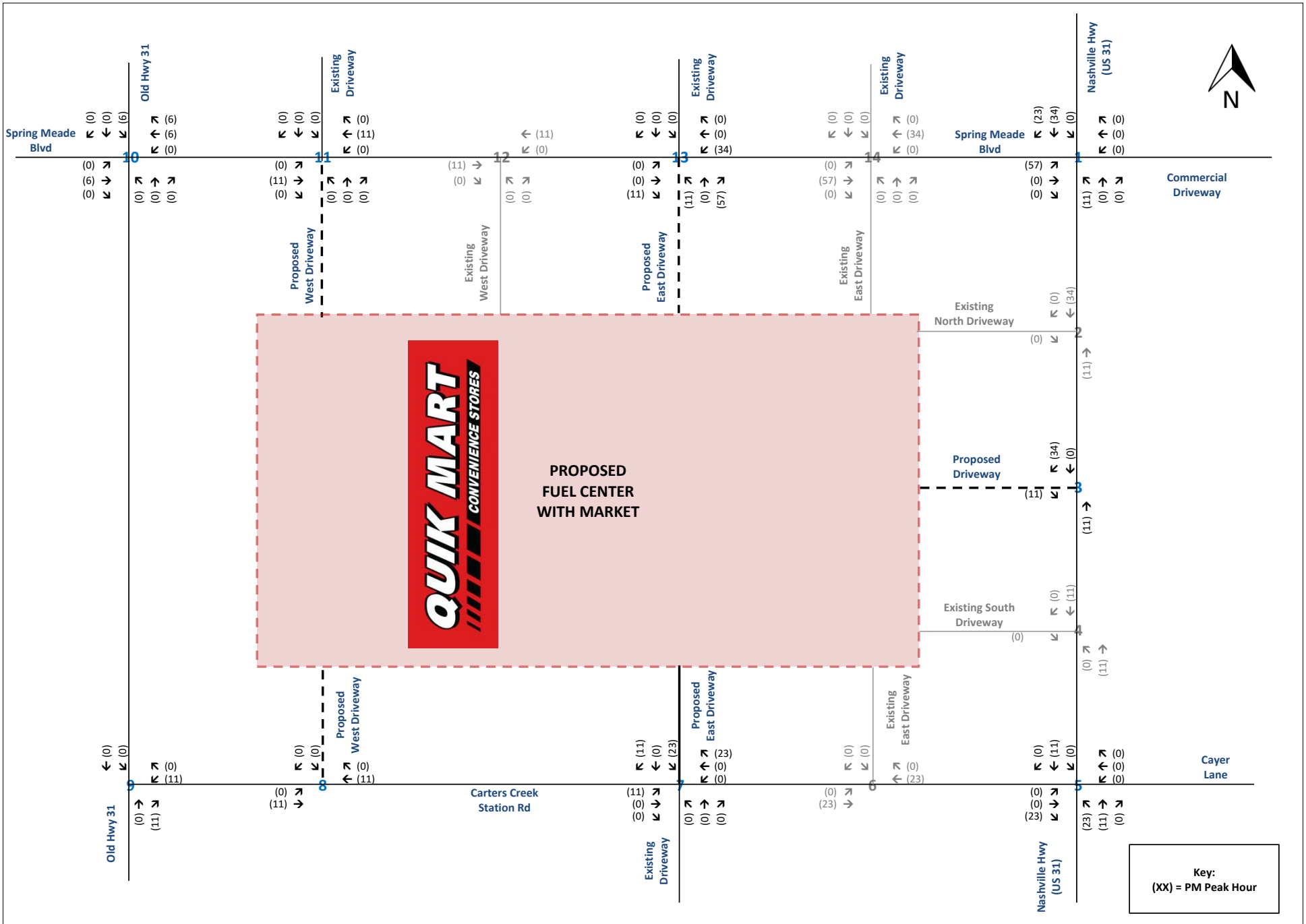
Traffic Assignment Worksheet
Background Traffic Volumes (2025)
Nashville Highway QuikMart
Columbia, Tennessee

RGPHILLIPS CONSULTING
TRAFFIC ENGINEERING & TRANSPORTATION PLANNING



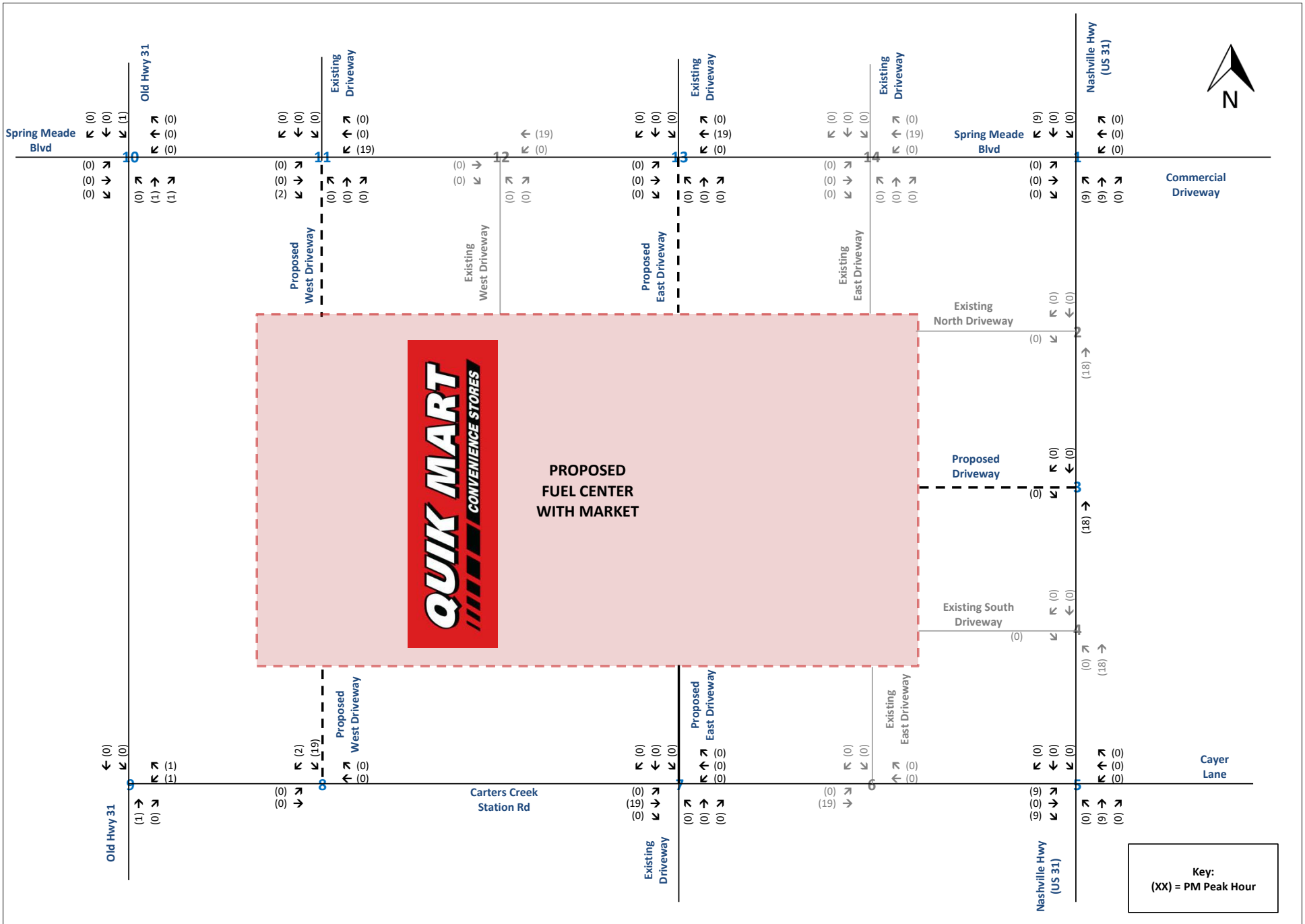
Traffic Assignment Worksheet
Existing Traffic Reassignment
Nashville Highway QuikMart
Columbia, Tennessee

RGPHILLIPS CONSULTING
TRAFFIC ENGINEERING & TRANSPORTATION PLANNING



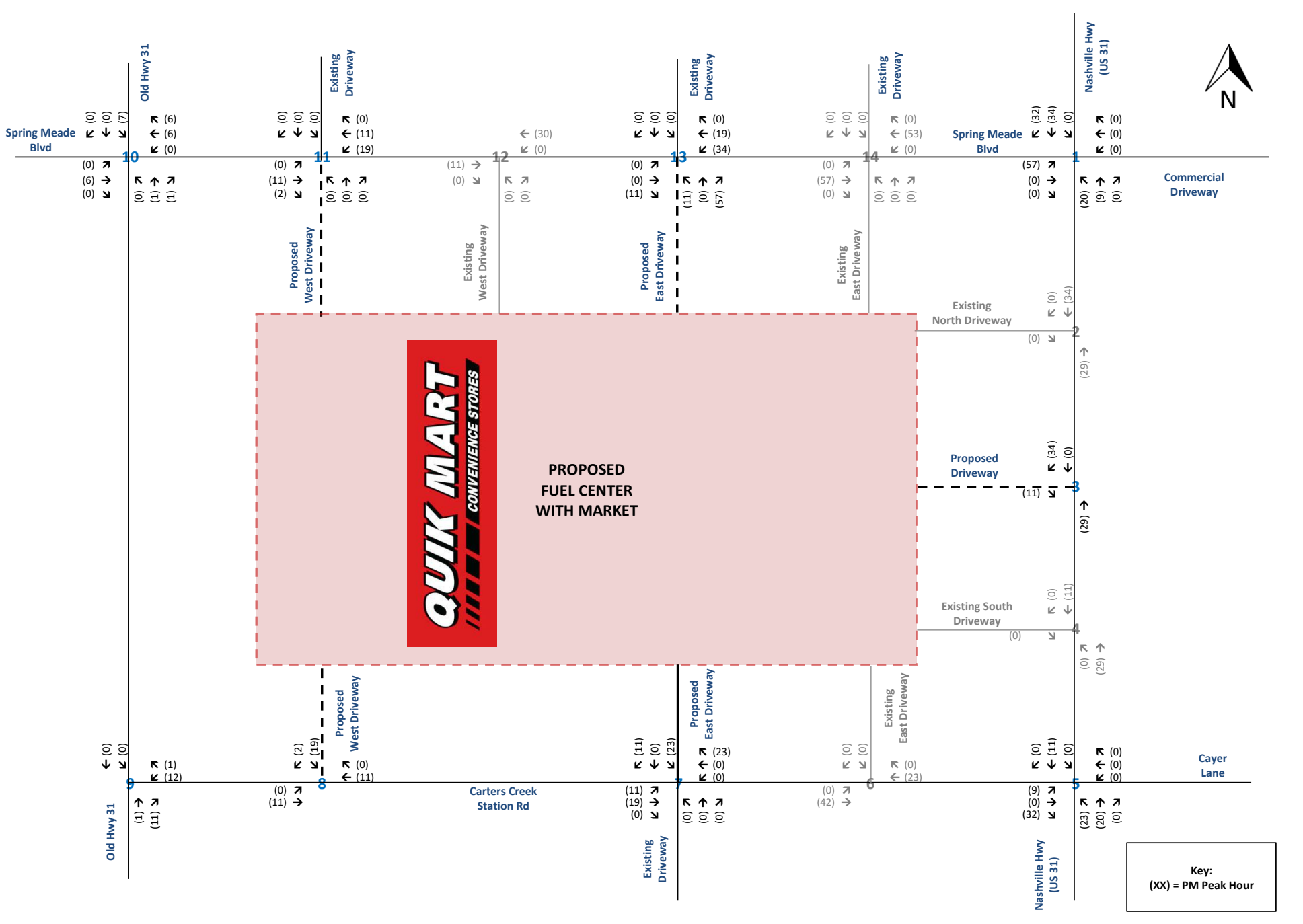
Traffic Assignment Worksheet
Primary Traffic Assignment - Convenience Store & Fuel Center
Nashville Highway QuikMart
Columbia, Tennessee

RGPHILLIPS CONSULTING
TRAFFIC ENGINEERING & TRANSPORTATION PLANNING



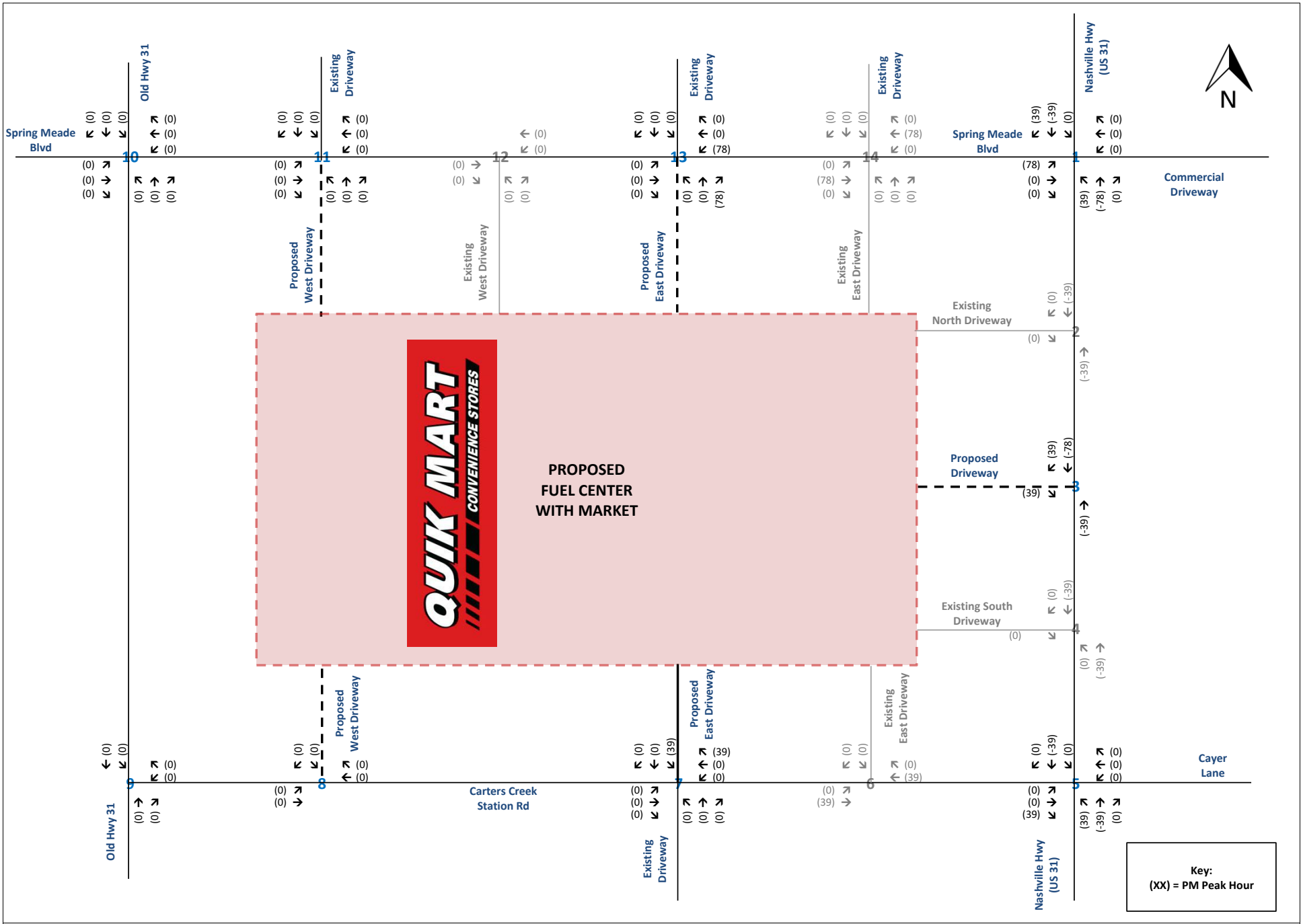
Traffic Assignment Worksheet
Primary Traffic Assignment - Diesel Fueling Pumps
Nashville Highway QuikMart
Columbia, Tennessee

RGPHILLIPS CONSULTING
TRAFFIC ENGINEERING & TRANSPORTATION PLANNING



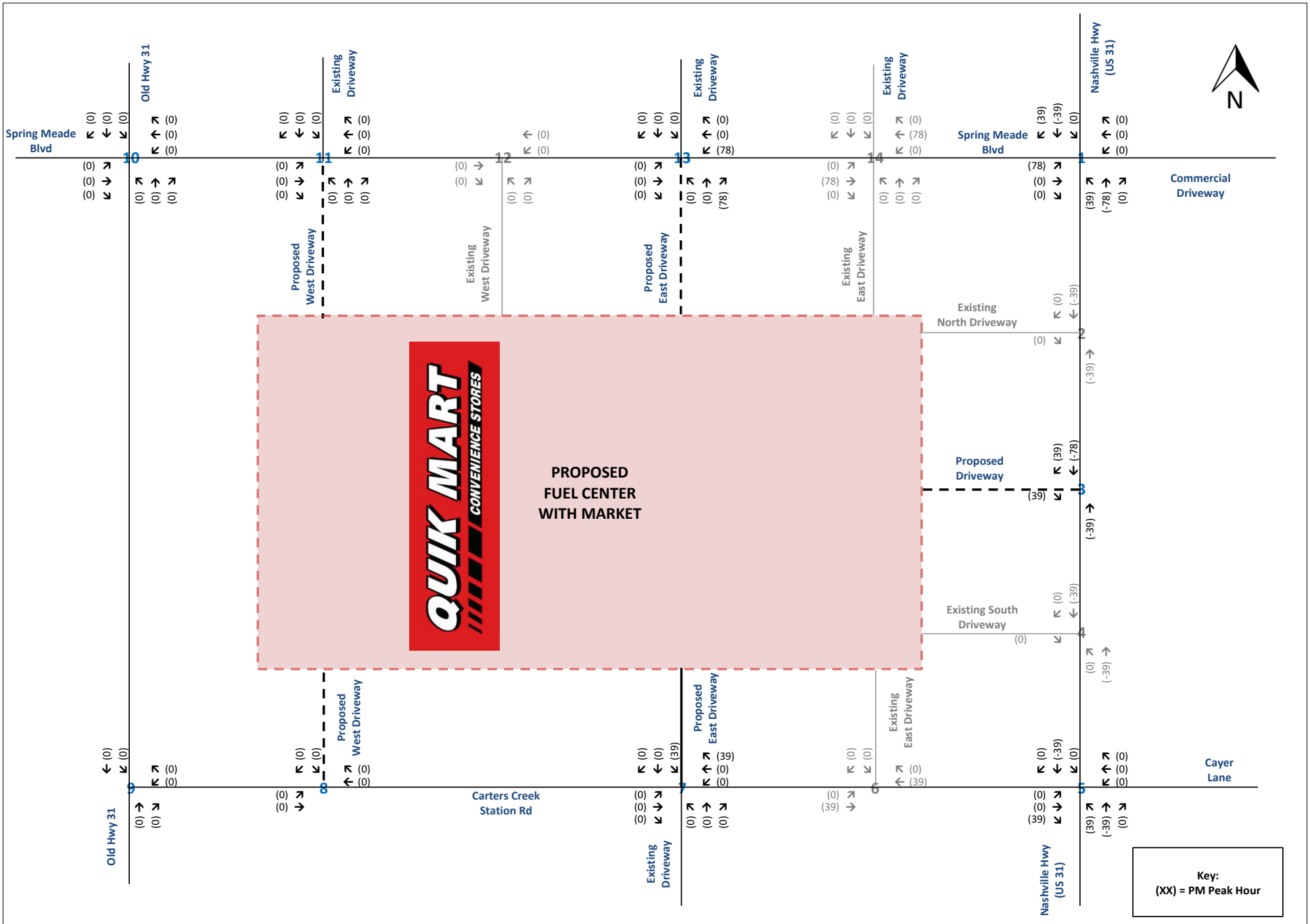
Traffic Assignment Worksheet
Total Primary Traffic Assignment
Nashville Highway QuikMart
Columbia, Tennessee

RGPHILLIPS CONSULTING
TRAFFIC ENGINEERING & TRANSPORTATION PLANNING



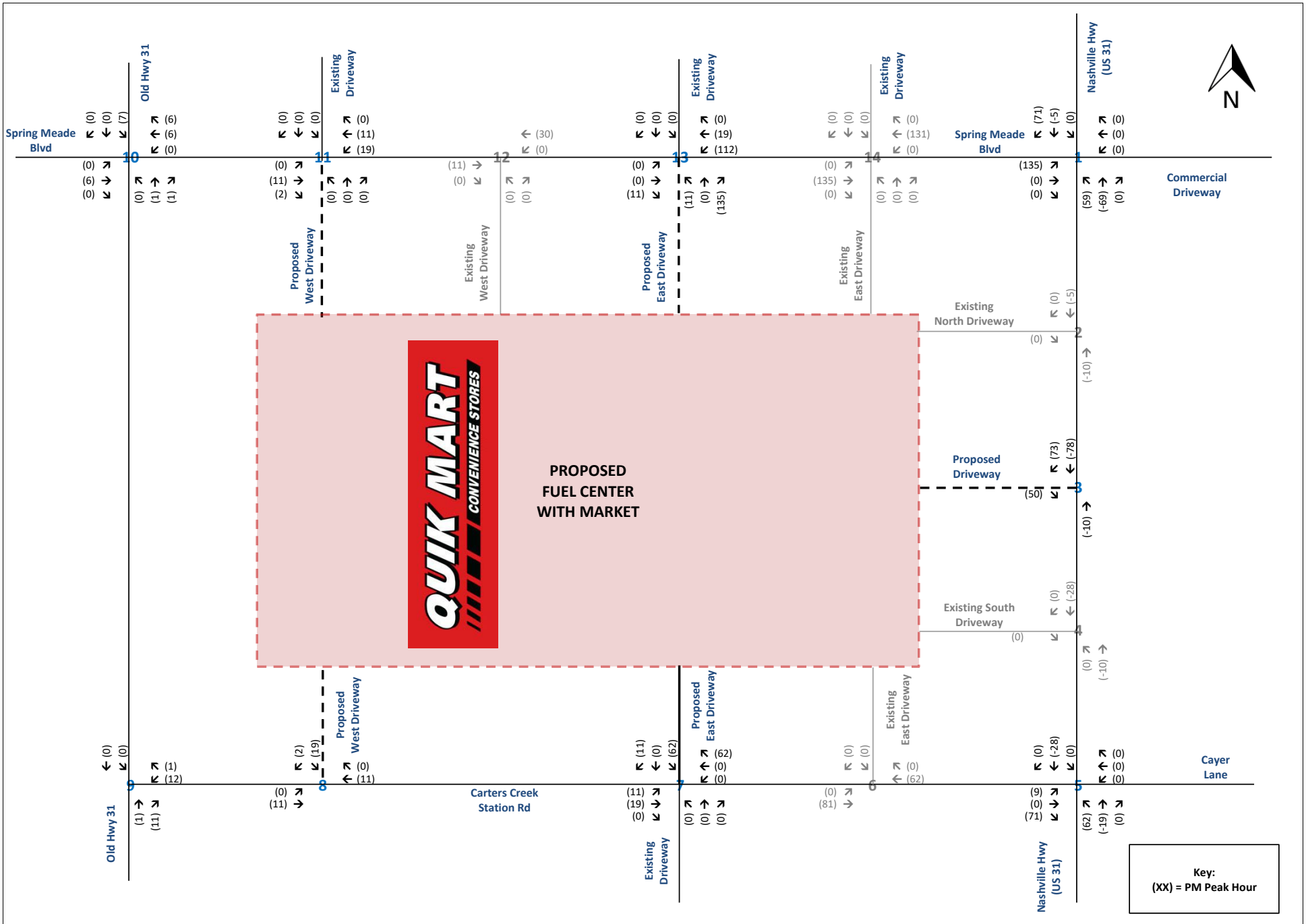
Traffic Assignment Worksheet
Pass-by Traffic Assignment - Convenience Store & Fuel Center
Nashville Highway QuikMart
Columbia, Tennessee

RGPHILLIPS CONSULTING
TRAFFIC ENGINEERING & TRANSPORTATION PLANNING



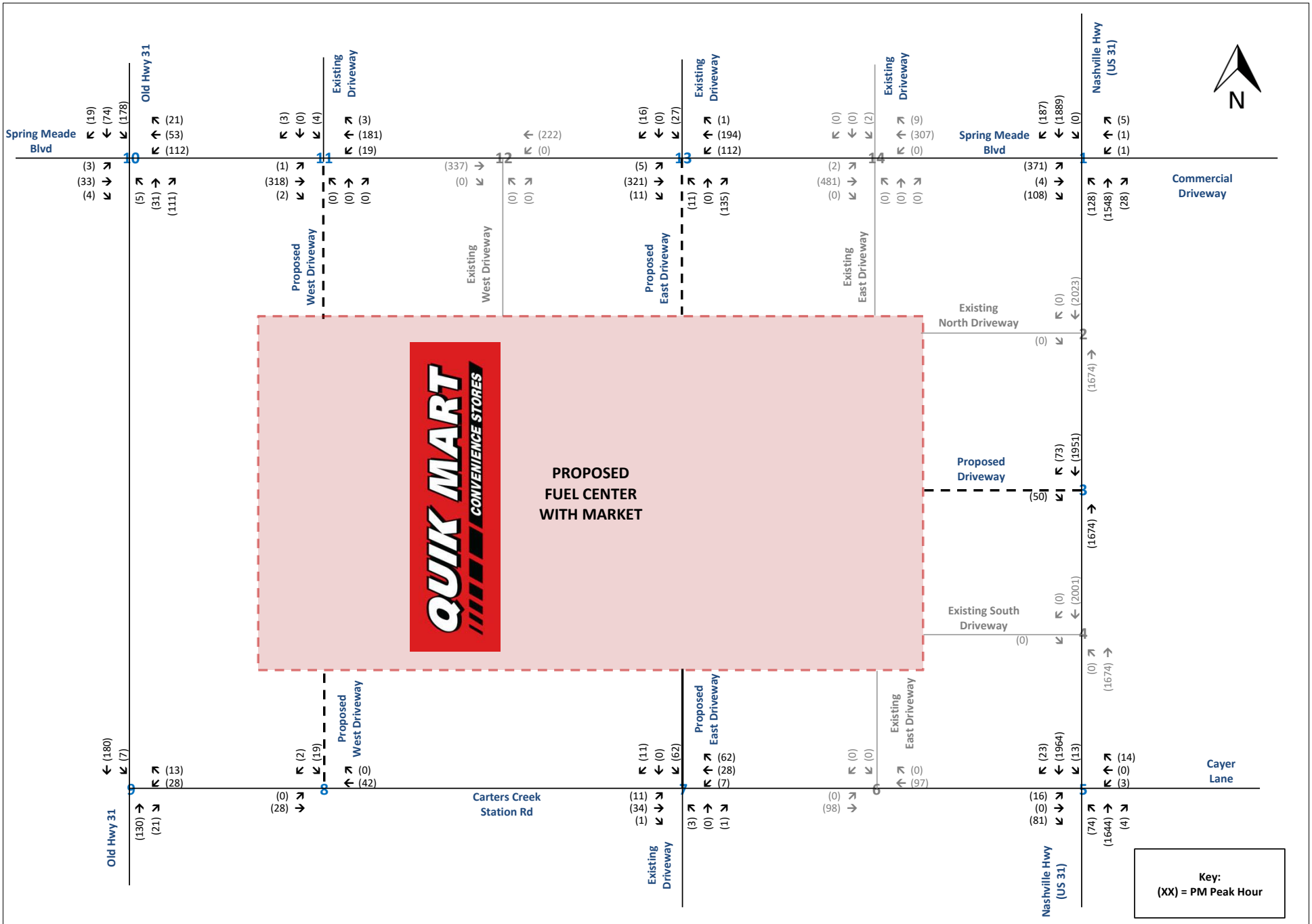
Traffic Assignment Worksheet
Total Passby Traffic Assignment
Nashville Highway QuikMart
Columbia, Tennessee

RGPHILLIPS CONSULTING
TRAFFIC ENGINEERING & TRANSPORTATION PLANNING



Traffic Assignment Worksheet
Site Generated Traffic
Nashville Highway QuikMart
Columbia, Tennessee

RGPHILLIPS CONSULTING
TRAFFIC ENGINEERING & TRANSPORTATION PLANNING



Traffic Assignment Worksheet
Total Projected Traffic at Buildout (2025)
Nashville Highway QuikMart
Columbia, Tennessee

APPENDIX F

TURN LANE

EVALUATIONS

LEFT TURN LANE

WARRANTS

LEFT TURN LANE EVALUATION

Based on NCHRP 457

PROJECT: **Nashville Highway Quik Mart #34**

LOCATION: **#5 - Nashville Highway & Carters Creek Station Road / Cayer Lane**

SECENARIO: **2025 Projected Traffic Volumes**

TIME PERIOD: **AM Peak Hour**

DIRECTION: **Northbound**

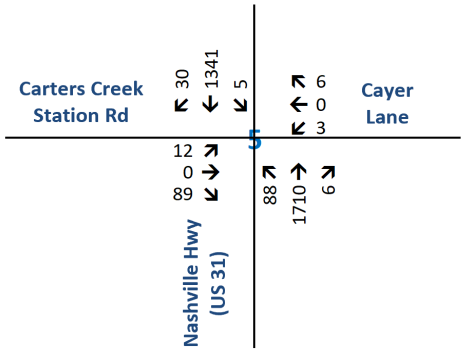


Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

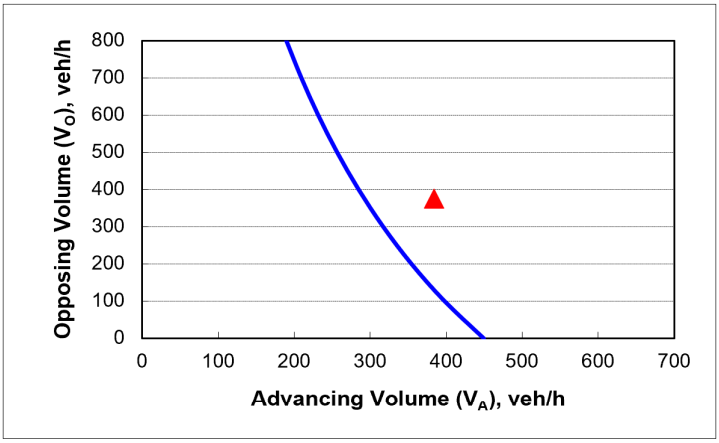
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	25
Percent of left-turns in advancing volume (V_A), %:	29%
Advancing volume (V_A), veh/h:	384
Opposing volume (V_O), veh/h:	375

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	292
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

LEFT TURN LANE EVALUATION

Based on NCHRP 457

PROJECT: **Nashville Highway Quik Mart #34**

LOCATION: **#5 - Nashville Highway & Carters Creek Station Road / Cayer Lane**

SECENARIO: **2025 Projected Traffic Volumes**

TIME PERIOD: **PM Peak Hour**

DIRECTION: **Northbound**

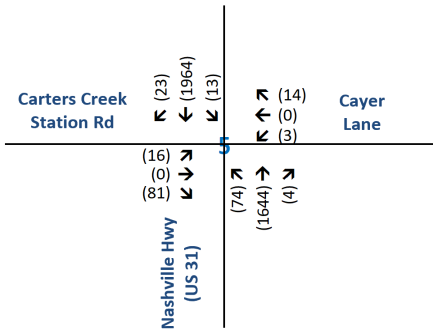


Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

4-lane roadway

INPUT

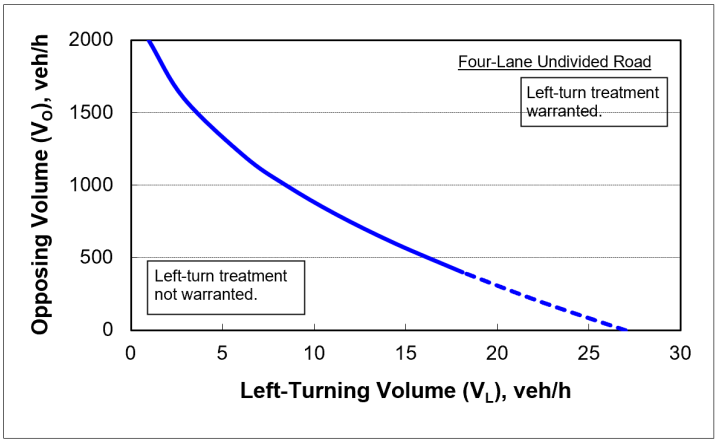
Variable	Value
Left-turning volume (V_L), veh/h:	74
Advancing volume (V_A), veh/h:	1722
Opposing volume (V_O), veh/h:	1987

OUTPUT

Variable	Message
Opposing volume (Vo) check:	O.K.
Combined volume (V_A and V_O) check:	O.K.
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment warranted.	

CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	4.0
Critical headway, s:	6.0



Note: When V_O < 400 veh/h (dashed line), a left-turn lane is not normally warranted unless the advancing volume (V_A) in the same direction as the left-turning traffic exceeds 400 veh/h (V_A > 400 veh/h).

LEFT TURN LANE EVALUATION

Based on NCHRP 457

PROJECT: **Nashville Highway Quik Mart #34**

LOCATION: **#7 - Carters Creek Station Road & Proposed East Quik Mart Driveway / Bank Driveway**

SECENARIO: **2025 Projected Traffic Volumes**

TIME PERIOD: **AM Peak Hour**

DIRECTION: **Eastbound**

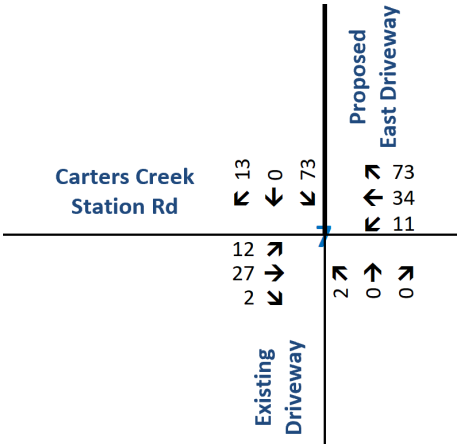


Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

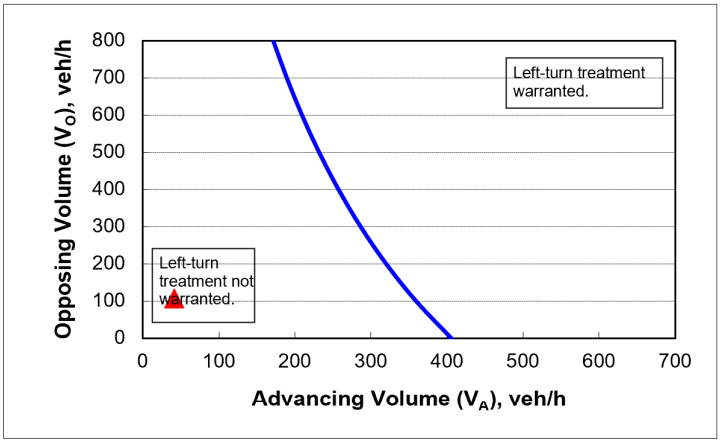
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	35
Percent of left-turns in advancing volume (V_A), %:	29%
Advancing volume (V_A), veh/h:	41
Opposing volume (V_O), veh/h:	107

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	356
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

LEFT TURN LANE EVALUATION

Based on NCHRP 457

PROJECT: **Nashville Highway Quik Mart #34**

LOCATION: **#7 - Carters Creek Station Road & Proposed East Quik Mart Driveway / Bank Driveway**

SECENARIO: **2025 Projected Traffic Volumes**

TIME PERIOD: **PM Peak Hour**

DIRECTION: **Eastbound**

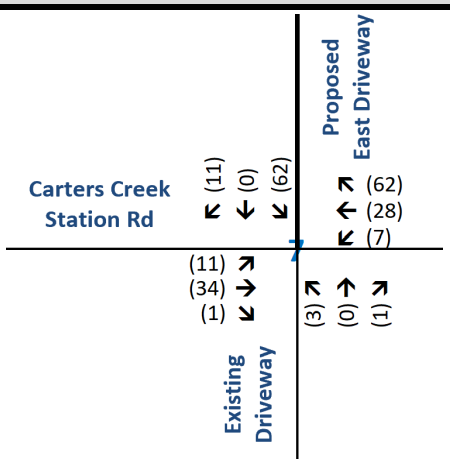


Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

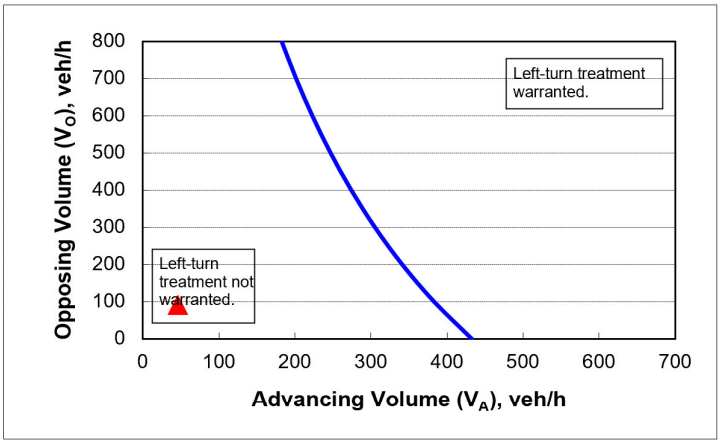
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	35
Percent of left-turns in advancing volume (V_A), %:	24%
Advancing volume (V_A), veh/h:	46
Opposing volume (V_O), veh/h:	90

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	388
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

LEFT TURN LANE EVALUATION

Based on NCHRP 457

PROJECT: **Nashville Highway Quik Mart #34**

LOCATION: **#7 - Carters Creek Station Road & Proposed East Quik Mart Driveway / Bank Driveway**

SECENARIO: **2025 Projected Traffic Volumes**

TIME PERIOD: **AM Peak Hour**

DIRECTION: **Westbound**

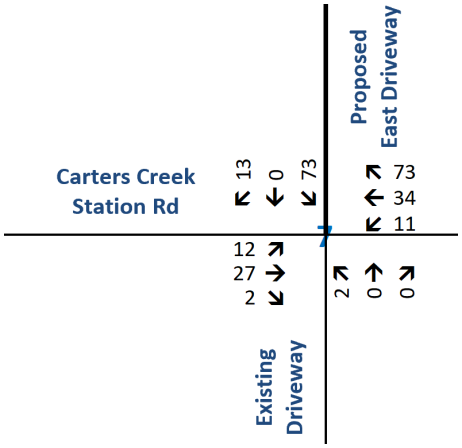


Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

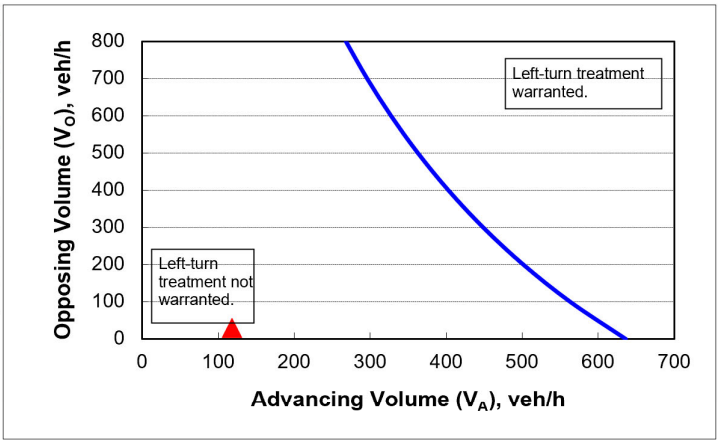
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	35
Percent of left-turns in advancing volume (V_A), %:	9%
Advancing volume (V_A), veh/h:	118
Opposing volume (V_O), veh/h:	29

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	613
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

LEFT TURN LANE EVALUATION

Based on NCHRP 457

PROJECT: **Nashville Highway Quik Mart #34**

LOCATION: **#7 - Carters Creek Station Road & Proposed East Quik Mart Driveway / Bank Driveway**

SECENARIO: **2025 Projected Traffic Volumes**

TIME PERIOD: **PM Peak Hour**

DIRECTION: **Westbound**

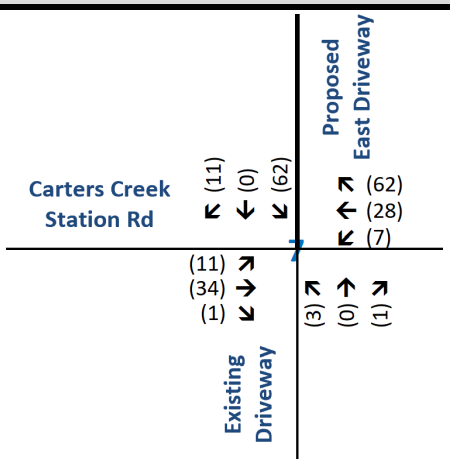


Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

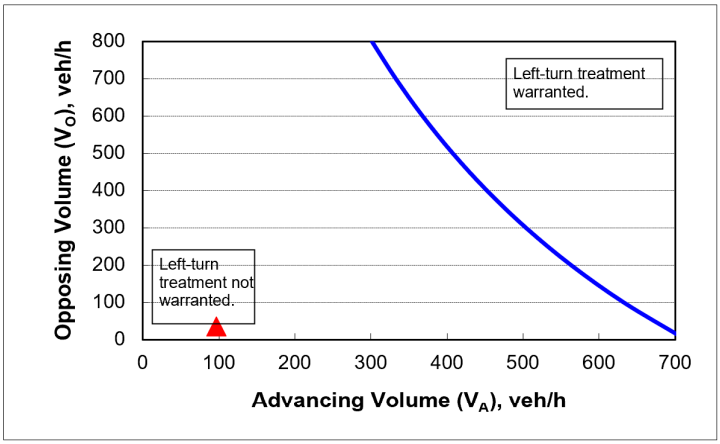
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	35
Percent of left-turns in advancing volume (V_A), %:	7%
Advancing volume (V_A), veh/h:	97
Opposing volume (V_O), veh/h:	35

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	684
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

LEFT TURN LANE EVALUATION

Based on NCHRP 457

PROJECT: **Nashville Highway Quik Mart #34**

LOCATION: **#9 - Old Highway 31 & Carters Creek Station Road**

SECENARIO: **2025 Projected Traffic Volumes**

TIME PERIOD: **AM Peak Hour**

DIRECTION: **Southbound**

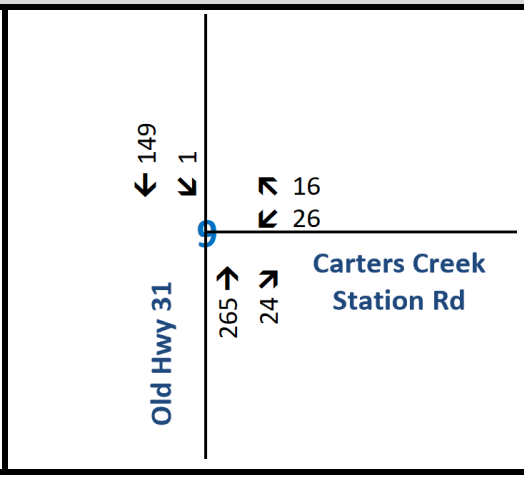


Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

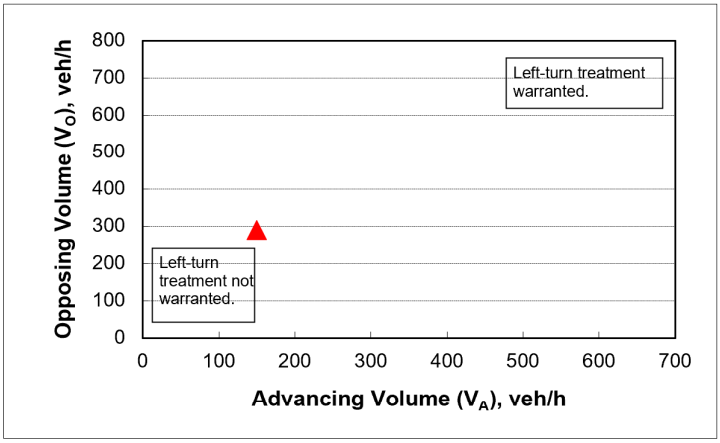
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	25
Percent of left-turns in advancing volume (V_A), %:	1%
Advancing volume (V_A), veh/h:	150
Opposing volume (V_O), veh/h:	289

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	1749
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

LEFT TURN LANE EVALUATION

Based on NCHRP 457

PROJECT: **Nashville Highway Quik Mart #34**

LOCATION: **#9 - Old Highway 31 & Carters Creek Station Road**

SECENARIO: **2025 Projected Traffic Volumes**

TIME PERIOD: **PM Peak Hour**

DIRECTION: **Southbound**

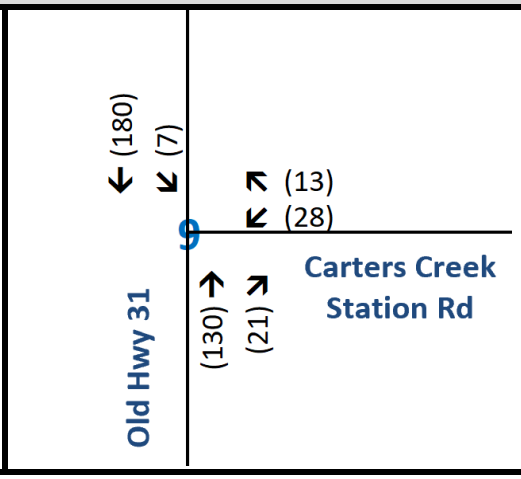


Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

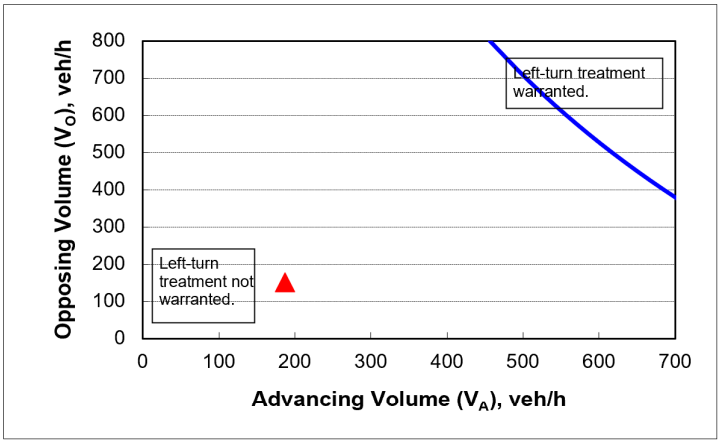
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	25
Percent of left-turns in advancing volume (V_A), %:	4%
Advancing volume (V_A), veh/h:	187
Opposing volume (V_O), veh/h:	151

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	902
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

LEFT TURN LANE EVALUATION

Based on NCHRP 457

PROJECT: **Nashville Highway Quik Mart #34**

LOCATION: **#11 - Spring Meade Boulevard & Proposed West Quik Mart Driveway**

SECENARIO: **2025 Projected Traffic Volumes**

TIME PERIOD: **AM Peak Hour**

DIRECTION: **Westbound**

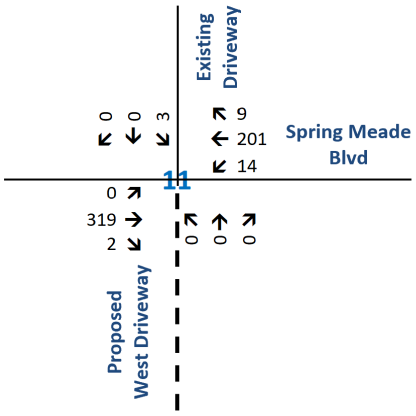


Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

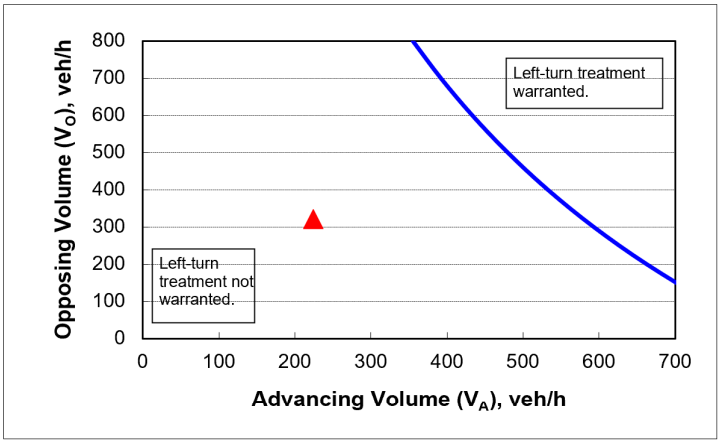
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	25
Percent of left-turns in advancing volume (V_A), %:	6%
Advancing volume (V_A), veh/h:	224
Opposing volume (V_O), veh/h:	321

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	580
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

LEFT TURN LANE EVALUATION

Based on NCHRP 457

PROJECT: **Nashville Highway Quik Mart #34**

LOCATION: **#11 - Spring Meade Boulevard & Proposed West Quik Mart Driveway**

SECENARIO: **2025 Projected Traffic Volumes**

TIME PERIOD: **PM Peak Hour**

DIRECTION: **Westbound**

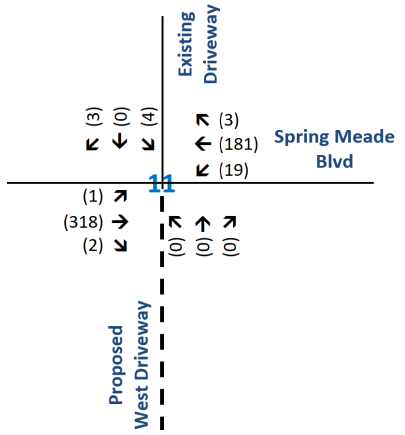


Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

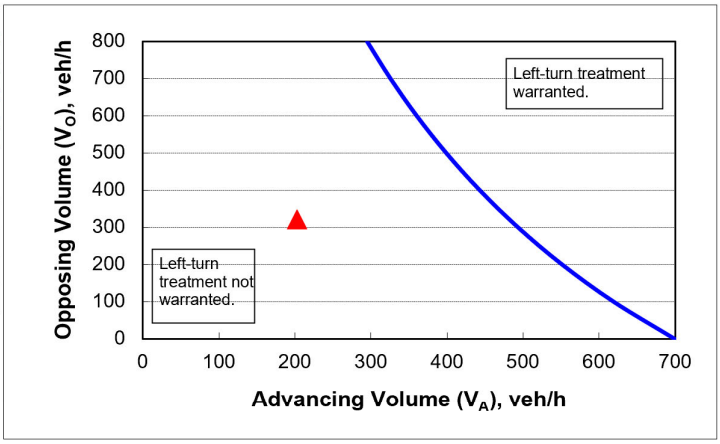
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	25
Percent of left-turns in advancing volume (V_A), %:	9%
Advancing volume (V_A), veh/h:	203
Opposing volume (V_O), veh/h:	320

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	483
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

LEFT TURN LANE EVALUATION

Based on NCHRP 457

PROJECT: **Nashville Highway Quik Mart #34**

LOCATION: **#11 - Spring Meade Boulevard & Proposed West Quik Mart Driveway**

SECENARIO: **2025 Projected Traffic Volumes**

TIME PERIOD: **AM Peak Hour**

DIRECTION: **Eastbound**

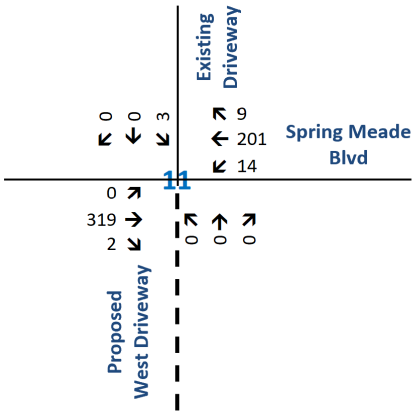


Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

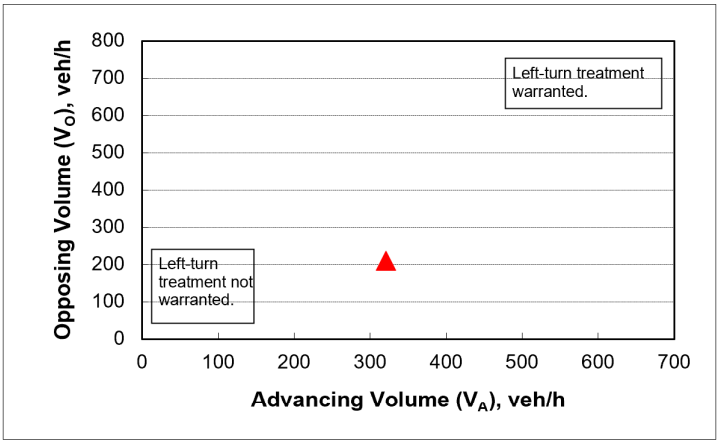
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	25
Percent of left-turns in advancing volume (V_A), %:	0%
Advancing volume (V_A), veh/h:	321
Opposing volume (V_O), veh/h:	210

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	15920
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

LEFT TURN LANE EVALUATION

Based on NCHRP 457

PROJECT: **Nashville Highway Quik Mart #34**

LOCATION: **#11 - Spring Meade Boulevard & Proposed West Quik Mart Driveway**

SECENARIO: **2025 Projected Traffic Volumes**

TIME PERIOD: **PM Peak Hour**

DIRECTION: **Eastbound**

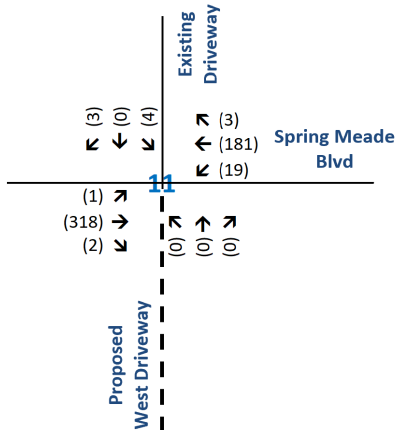


Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

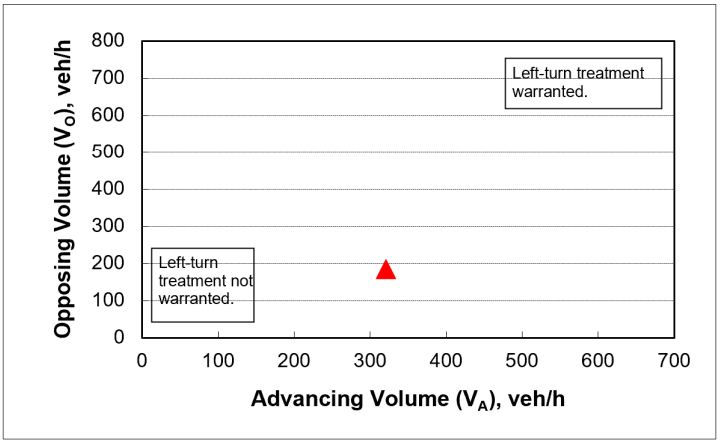
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	25
Percent of left-turns in advancing volume (V_A), %:	0%
Advancing volume (V_A), veh/h:	321
Opposing volume (V_O), veh/h:	184

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	2998
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

LEFT TURN LANE EVALUATION

Based on NCHRP 457

PROJECT: **Nashville Highway Quik Mart #34**

LOCATION: **#13 - Spring Meade Boulevard & Proposed East Quik Mart Driveway / West Marathon Driveway**

SECENARIO: **2025 Projected Traffic Volumes**

TIME PERIOD: **AM Peak Hour**

DIRECTION: **Westbound**

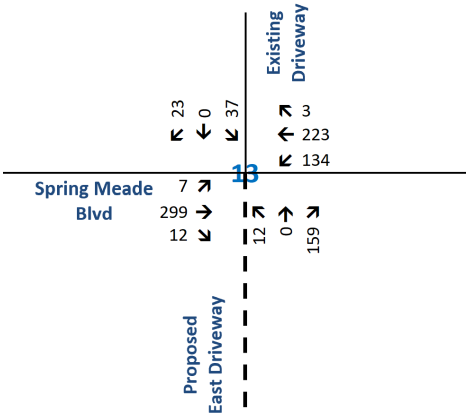


Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

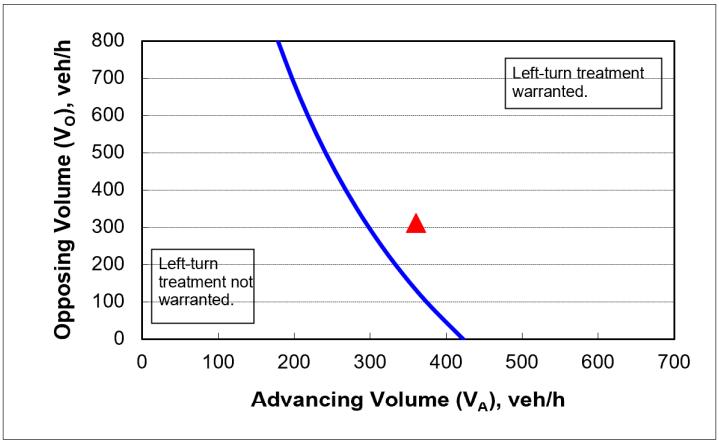
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	25
Percent of left-turns in advancing volume (V_A), %:	37%
Advancing volume (V_A), veh/h:	360
Opposing volume (V_O), veh/h:	311

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	295
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

LEFT TURN LANE EVALUATION

Based on NCHRP 457

PROJECT: **Nashville Highway Quik Mart #34**

LOCATION: **#13 - Spring Meade Boulevard & Proposed East Quik Mart Driveway / West Marathon Driveway**

SECENARIO: **2025 Projected Traffic Volumes**

TIME PERIOD: **PM Peak Hour**

DIRECTION: **Westbound**

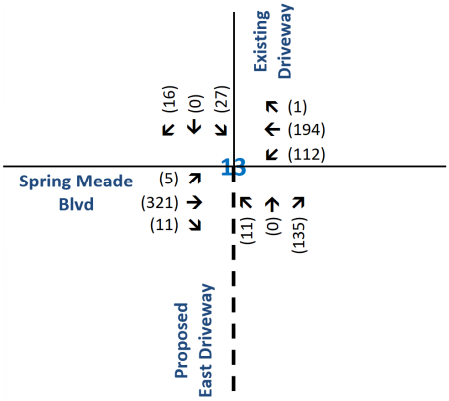


Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

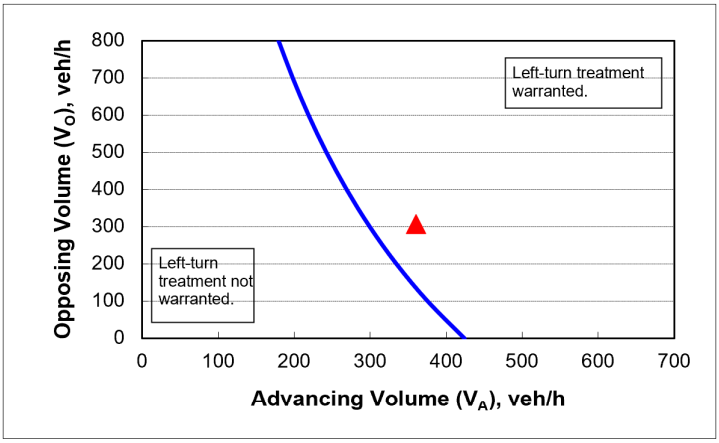
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	25
Percent of left-turns in advancing volume (V_A), %:	37%
Advancing volume (V_A), veh/h:	360
Opposing volume (V_O), veh/h:	307

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	297
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

LEFT TURN LANE EVALUATION

Based on NCHRP 457

PROJECT: **Nashville Highway Quik Mart #34**

LOCATION: **#13 - Spring Meade Boulevard & Proposed East Quik Mart Driveway / West Marathon Driveway**

SECENARIO: **2025 Projected Traffic Volumes**

TIME PERIOD: **AM Peak Hour**

DIRECTION: **Eastbound**

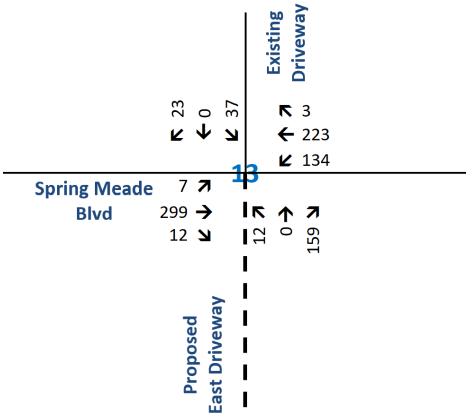


Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

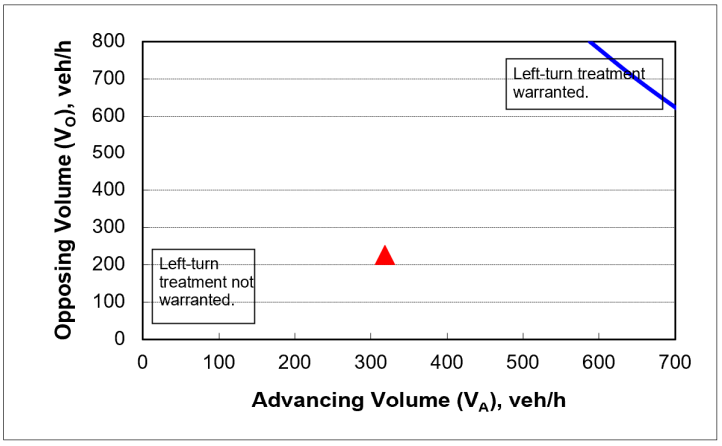
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	25
Percent of left-turns in advancing volume (V_A), %:	2%
Advancing volume (V_A), veh/h:	318
Opposing volume (V_O), veh/h:	226

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	1066
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

LEFT TURN LANE EVALUATION

Based on NCHRP 457

PROJECT: **Nashville Highway Quik Mart #34**

LOCATION: **#13 - Spring Meade Boulevard & Proposed East Quik Mart Driveway / West Marathon Driveway**

SECENARIO: **2025 Projected Traffic Volumes**

TIME PERIOD: **PM Peak Hour**

DIRECTION: **Eastbound**

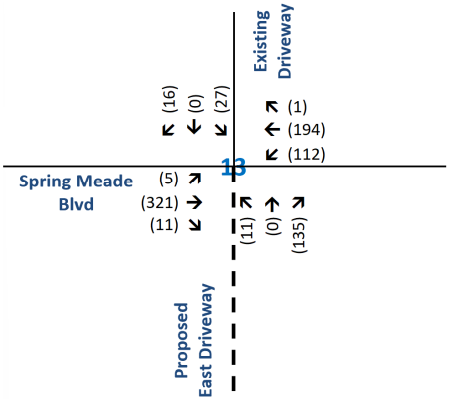


Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

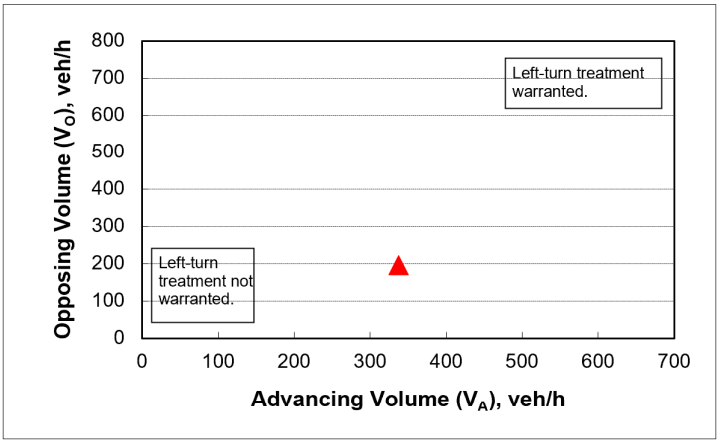
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	25
Percent of left-turns in advancing volume (V_A), %:	2%
Advancing volume (V_A), veh/h:	337
Opposing volume (V_O), veh/h:	195

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	1332
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

CPWS

January 13, 2025

Mr. Adam Ledsinger
MB Civil Engineering, LLC
759 Timber Ridge Drive
Lexington, TN 38351
Sent via email: ***Adam@mbcivil.net***

RE: **Water Availability Letter** Expires: 1/13/2026
Edwards Oil Columbia – Quick Mart
2577 Nashville Highway
Tax Map 042, Parcel 007.00
Columbia, Maury County, TN

Dear Mr. Morrow:

Columbia Power & Water Systems ("the Utility"/CPWS) is a municipal corporation authorized to provide water services in accordance with State law. CPWS has adopted rules, regulations, and standard operation procedures, prescribing the conditions under which CPWS will furnish water service. In addition, certain State laws delegate authority to the Tennessee Department of Environment and Conservation (TDEC), various Planning Commissions, and other authorities in Cities and Counties. These Cities and Counties have also adopted rules and regulations. Water service will be made available on a first-come, first-served basis, subject to the payment of all charges and fees imposed by CPWS and the approval of any and all required governmental agencies. Water service is subject to availability of all CPWS furnished equipment and materials appropriate for the development and provided the applicant complies with all rules and regulations of CPWS and conditions set out herein.

The proposed development is a new Quick-Mart building at an existing gas station/market site. CPWS has evaluated the projected water demands for the proposed development in the water system hydraulic model and is able to meet a fire-flow demand of 1,500 gpm while maintaining state standards for level of service and pressures in this portion of the distribution system. CPWS can provide water for the proposed development according to the following criteria and requirements:

- Separate fire, landscape irrigation, and domestic meters with backflow devices will be required to serve the proposed Project.
- Applicant will closely coordinate with CPWS during planning and design to establish proposed usage demands and expansion/improvements (if any) necessary to existing water service at site.

- Water Service Fees, Water Impact Fees, and Meter Costs will be determined as part of coordination with applicant on proposed use and/or demand changes.
- Any design and construction of proposed public water system extension or expansion will be the responsibility of the applicant.
- Upon Construction Drawing approval by CPWS, applicant may then pay Impact Fees and schedule the pre-construction meeting.
- Water meters will be ordered by CPWS once meter fees are paid by the Applicant.
- Applicants will be charged Impact Fees and Meter Fees in effect at time of payment. Please see CPWS website for schedule of impact fees and timing of planned fee escalations.
- No construction of water improvements may take place without a CPWS inspector present.

All of the above requirements up to and including the meter(s) are to be constructed and paid for by the Applicant and dedicated to CPWS once complete. No construction of water infrastructure shall be initiated until final construction plans have been approved by CPWS (including TDEC approval as necessary).

A typical Water Availability Letter will expire in one-hundred twenty (120) days unless vested by payment of water service fees and impact fees for the proposed project. However, this site already has a similar use and water service in place and this letter represents a planning-level document for use by the applicant during due-diligence and efforts with City planning and building. As such, **this Conditional Water Availability Letter will be valid for a period of one year**. After that time, the applicant will be required to submit a new application for water availability.

Please feel free to contact me at 931-388-4833 x7655 or Matt.Wheeler@cpws.com if you have questions or would like to discuss.

Sincerely,

Matthew J. Wheeler, P.E.
Vice President of Water Resources, CPWS

cc: Keith Durham, Edwards Real Estate
Bart Anderson, CPWS
Eric King, Inflo Design Group
File 24-075

Jonathan M. Edwards
Edwards Real Estate
Edwards Oil Company
South Tennessee Oil Company (dba: Quik Mart Convenience Stores)
105 Helton Drive
Lawrenceburg, TN 38464

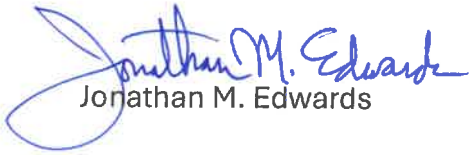
Planning Department
City of Columbia Tennessee
700 N. Garden Street
Columbia, TN 38401

RE: 2577 Nashville Hwy., Columbia, Tennessee

To whom it may concern,

Our intent for the parcel located at 2577 Nashville Highway is to expand our current operations of a Quik Mart Convenience Store with fuel. The expansion will consist of the raze and rebuilding of our currently operating convenience store, and fuel islands. All ownership parties with interests in our current and ongoing business concur with the plan to raze and rebuild as planned.

Sincerely,



Jonathan M. Edwards

Edwards Real Estate
Edwards Oil Company
South Tennessee Oil Company
105 Helton Drive
Lawrenceburg, TN 38464

(931)762-5531

jonathan@quikmart.com

CITY OF COLUMBIA TENNESSEE

DEVELOPMENT SERVICES
700 NORTH GARDEN STREET
COLUMBIA, TN 38401
PHONE: (931) 560-1560
FAX: (931) 560-1541

PLANNING COMMISSION
PROJECT DEVELOPMENT APPLICATION

SUBMITTAL REQUIREMENTS

Final Plat: * *1 hard copy of all materials for submittal + PDF copy on a USB flash drive (no multiple applications on one storage device)*
Fold hard copy submittals larger than 8½"x11"
All Others: * Please submit the Application online at City of Columbia | Permitting (onlama.com)

ADDRESS/LOCATION	2577 Nashville Highway, Columbia, TN 38401		
	TAX MAP: 042	GROUP:	PARCEL: 007.00
SUMMARY OF NATURE OF REQUEST AND WORK	Expand current operations of a convenience store with fuel through the modification of an existing PUD.		

DATE OF PRE-APPLICATION CONFERENCE	7/31/2024	*Pre-application meetings are scheduled for Wednesdays.*

SELECT REQUEST	SUBMITTALS SHALL INCLUDE BUT NOT LIMITED TO:
☐ Comprehensive Plan Amendment ☐ Annexation ☐ Rezoning ☐ Preliminary Plat ☐ Final Plat ☒ PUD Preliminary Master Plan ☐ PUD Final Site Plan ☐ Site Development Plan ☐ Other: **File naming nomenclature examples:* *Freedom Point Site Plan* *Freedom Point Master Plan* *Freedom Point Final Plat*	**Annexations:** ☐ Annexation Permission Form **Annexations/Rezoning/Plan Amendments:** ☐ Requested Zone Listed ☐ Statement of Compliance with Comprehensive Plan ☐ Concept Plan **Preliminary Plats/Site Development Plans:** ☐ Plans and/or Plats conforming to City standards with signed and completed check list **All Annexations/Rezoning/Preliminary Plats/Site Development Plans and PUDS:** ☒ Receipt of Payment for Pre-Application Meeting ☐ Written Legal Description copy ☒ Columbia Water System Availability Letter ☐ Columbia Waste Water Department Will Serve Letter

	Plats/PUDs: ❑ Project Name (include Sections & Phases) ❑ Total Number of Lots/Residential Units ❑ Square Footage of Non-Residential Floor Space ❑ Total acreage

Applications and all required submittals must be filed with the Department of Development Services prior to the established deadline. Both the applicant and property owner (if different from applicant) must sign the application. Any requests to defer or move the item to future meeting dates must be requested by the resubmittal date listed on the Planning Commission schedule.

APPLICANT

All communications go to the Applicant's email that is provided.

NAME	Keith Durham	PHONE	931-279-1720
ADDRESS	105 Helton Drive, Lawrenceburg, TN 38464	EMAIL	keith@quikmart.com

PROPERTY OWNER NAME	Jonathan M. Edwards	PHONE	931-762-5531 x1251
ADDRESS	105 Helton Drive, Lawrenceburg, TN 38464	EMAIL	jonathan@quikmart.com

If owner is not a natural person, documentation must be provided showing signing authority on behalf of the entity. If multiple persons are listed as owners in the records of the Maury County Assessor, all owners must sign or the signatory must provide documentation of authority to apply on behalf of record owner (i.e., Power of Attorney or notarized Letter of Authorization). In filling out this application, I attest that (1) I am familiar with the rules, regulations, and procedures of the City of Columbia & (2) all information contained herein is accurate & true to the best of my knowledge.

KEITH DURHAM — APPLICANT NAME

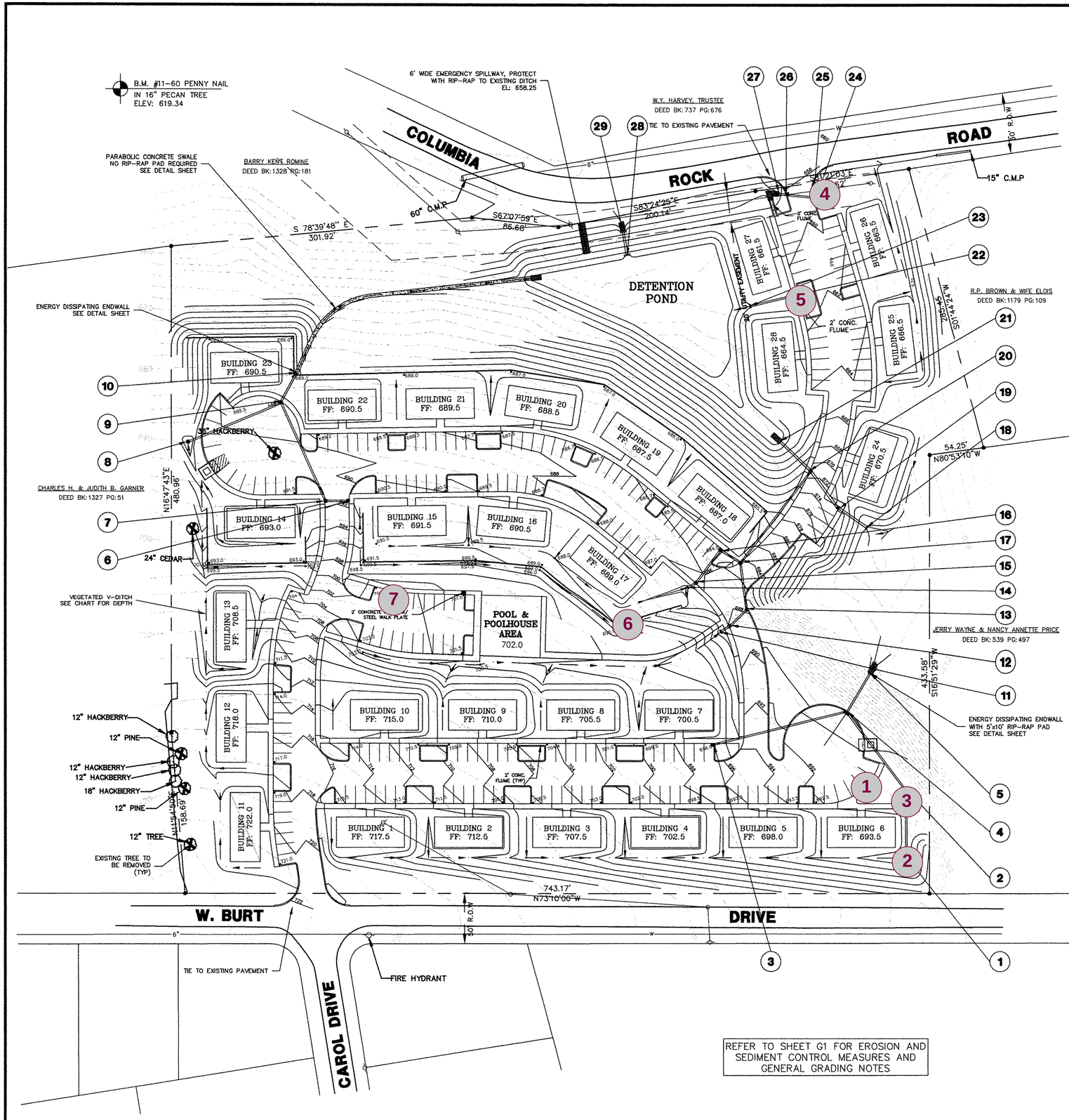
APPLICANT SIGNATURE

2/25/25 — DATE

Jonathan M. Edwards — PROPERTY OWNER NAME

PROPERTY OWNER SIGNATURE

2/28/25 — DATE



REFER TO SHEET G1 FOR EROSION AND SEDIMENT CONTROL MEASURES AND GENERAL GRADING NOTES

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

ALL OUTLETS TO HAVE 5'x10' RIP-RAP PAD UNLESS NOTED OTHERWISE

DITCH CHART

NO	TYPE	SIDE SLOPES	MINIMUM DEPTH	MINIMUM WIDTH	MINIMUM SLOPE	FLOW (CFS)	FLOW DEPTH	VELOCITY (FT/SEC)
D1	SODDED	3:1	1.00'	6.00'	1.00%	4.84	0.74'	2.95
D2	SODDED	3:1	0.75'	4.50'	1.00%	2.34	0.56'	2.46
D3	SODDED	3:1	0.75'	4.50'	1.00%	1.40	0.46'	2.17
D4	SODDED	3:1	0.75'	4.50'	1.00%	1.40	0.46'	2.17
D5	SODDED	3:1	0.75'	4.50'	1.00%	2.44	0.57'	2.49
D6	CONCRETE	3:1	1.25'	7.50'	1.00%	8.58	0.92'	3.41

STRUCTURE CHART

NO.	DESCRIPTION	ROAD NAME	DISTANCE	STATION	TOP OF CASTING	INVERT IN	INVERT OUT
1	DOUBLE AREA	ROAD "B"	83.5'R	6+06.9	690.00	–	687.00
2	SINGLE CURB	ROAD "B"	17.5'R	5+97.9	690.80	686.35	686.25
3	SINGLE CURB	ROAD "B"	30'R	4+08.5	696.00	–	693.00
4	DOUBLE CURB	ROAD "B"	60.9'R	5+42.8	688.80	685.30	685.20
5	ENDWALL	ROAD "B"	99.8'R	5+66	–	–	668.00
6	SINGLE CURB	ROAD "A"	12'R	3+93	691.70		688.70
7	SINGLE CURB	ROAD "A"	12'L	3+93	691.70	688.50	688.40
8	SINGLE AREA	ROAD "C"	24'R	7+61.5	687.50	–	684.50
9	SINGLE CURB	ROAD "C"	61.8'R	6+67.9	668.50	683.50	683.40
10	ENDWALL	ROAD "C"	79.2'R	6+56.9	–	–	680.00
11	HEADWALL	ROAD "C"	22.1'L	1+47.3	–	688.00	–
12	SINGLE CURB	ROAD "C"	12'L	1+48.8	690.40	687.40	687.30
13	SINGLE CURB	ROAD "C"	12'R	1+55.9	689.50	686.50	686.40
14	HEADWALL	ROAD "C"	12'L	2+11.2	–	684.00	–
15	SINGLE CURB	ROAD "C"	20.8'L	2+14.5	685.00	682.00	681.90
16	SINGLE CURB	ROAD "C"	30.3'R	2+15.4	684.50	681.50	681.40
17	SINGLE CURB	ROAD "D"	12'L	0+34.2	684.40	681.15	681.05
18	HEADWALL	ROAD "D"	64'R	1+32.8	–	–	661.50
19	SINGLE CURB	ROAD "D"	30'R	1+35.7	671.50	661.10	661.00
20	SINGLE CURB	ROAD "D"	12'L	1+55.8	671.10	660.50	660.40
21	ENDWALL	ROAD "D"	40'L	1+76.7	660.05	–	–
22	SINGLE AREA	ROAD "D"	30'L	3+47.5	660.80	–	657.80
23	ENDWALL	ROAD "D"	79'L	3+50.2	–	657.30	–
24	HEADWALL	ROAD "D"	20'R	4+41	657.50	–	–
25	SINGLE CURB	ROAD "D"	12'R	4+36.5	659.00	656.00	655.90
26	SINGLE CURB	ROAD "D"	12'L	4+45.9	658.80	655.65	655.55
27	ENDWALL	ROAD "D"	20'L	4+48.8	655.00	–	–
28	POND OUTLET	N/A	N/A	N/A	–	–	–
29	ENDWALL	N/A	N/A	N/A	–	–	–

PIPE SCHEDULE

FROM	TO	I.E. (IN)	I.E. (OUT)	GRADE (%)	SIZE (INCHES)	LENGTH (FEET)	TYPE	FLOW (cfs)	CAPACITY (cfs)
1	2	687.00	686.35	1.0	18	64	CPP	4.84	10.5
2	4	686.25	685.30	1.0	18	92	CPP	5.12	10.5
3	4	693.00	685.30	5.6	18	136	CPP	3.13	24.9
4	5	685.20	668.00	39.0	18	44	CPP	18.73	65.6
6	7	688.70	688.50	1.0	15	20	CPP	0.84	5.4
7	9	688.40	683.50	4.7	18	104	CPP	2.74	22.8
8	9	684.50	683.50	1.0	18	98	CPP	2.44	10.5
9	10	683.40	680.00	8.5	18	40	CPP	8.58	30.6
11	12	688.00	687.40	6.0	15	10	CPP	2.34	15.8
12	13	687.30	686.50	3.6	15	22	CPP	2.90	12.2
13	17	686.40	681.15	10.9	15	48	CPP	3.28	21.3
14	15	684.00	682.00	20.0	15	10	CPP	2.80	28.8
15	16	681.90	681.40	1.3	15	38	CPP	5.93	7.3
16	17	681.40	681.15	1.1	18	22	CPP	9.80	11.0
17	20	681.05	660.50	18.3	18	112	CPP	13.13	44.9
18	19	661.50	661.10	1.0	24	36	RCP	20.50	22.0
19	20	661.00	660.50	1.2	24	42	RCP	21.03	25.0
20	21	660.40	660.05	1.0	30	34	RCP	34.60	41.0
22	23	657.80	657.20	1.0	15	48	CPP	0.89	6.4
24	25	657.50	656.00	5.0	15	10	CPP	4.00	14.4
25	26	655.90	655.65	1.1	15	22	CPP	5.69	6.9
26	27	655.55	655.00	5.5	15	10	CPP	5.77	15.1
28	29	655.00	654.00	2.8	30	35	RCP	–	–

E. ROBERTS ALLEY & ASSOCIATES
CONSULTING ENGINEERS
230 WILSON PIKE CIRCLE BRENTWOOD, TENNESSEE 37027
PHONE: 615-373-1567 FAX 615-373-3697

E. ROBERTS Alley & Associates INCORPORATED

SITE DEVELOPMENT PLANS FOR

THE CROSSINGS

RESIDENTIAL SITE DEVELOPMENT

9th CIVIL DISTRICT
COLUMBIA, MAURY COUNTY, TENNESSEE

RYAN R. WORKMAN REGISTERED ENGINEER 2/16/2004 COMMERCE No. 105741 STATE OF TENNESSEE

DRAWN BY: RRW
CHECKED BY: GMC

NO.	REVISION	BY	DATE

GRADING AND DRAINAGE PLAN

G-2

DATE: FEB. 16, 2004
FILE: 2001-592

1. Cul-de-sac parking and sidewalk not built to plans

2. Missing storm grate

3. Missing storm grate

4. Broken Headwall

5. Missing lid

6. Greater than 3:1 slope and eroded

7. Parking lot not built to plans

P.O. Box 1961 ~ Columbia, Tennessee 38402-1961
931-840-0916 – Office
855-465-4652 – 24 hour Crisis, Information & Referral Line
http://centerofhopetn.org

Center of Hope, a non-profit serving victims of domestic violence, sexual assault, stalking and human trafficking in Maury Co, has been gifted the property at 225 Tara Court, Columbia, TN. from the estate of Marvel Properties. Center of Hope cannot accept this gift unless we are able to obtain a CO for the unit at 225 Tara Court. Our intention for this property is to sell it and use the funds to support our mission.

Center of Hope is requesting a revision to the previously approved site plan. We would like to amend the plan to exclude the requirement of landscaping, parking orientation, and fencing.

Specifically, we asked to exclude the requirement for the:

West Boundary internal landscape buffer;

North Boundary landscape buffer and perimeter fencing;

East Boundary landscape buffer and perimeter fencing;

Parking island landscaping;

Parking lot west of amenities area canopy tree plantings at either side of the entrance from Carol Dr.;

Cul-de-sac parking and sidewalk (1) on Site Development Plan;

Parking lot not built to plans (7) on Site Development Plan.

Thank you for your consideration.

CITY OF
COLUMBIA
TENNESSEE

DEVELOPMENT SERVICES
700 NORTH GARDEN STREET
COLUMBIA, TN 38401
PHONE: (931) 560-1560
FAX: (931) 560-1541

PLANNING COMMISSION
PROJECT DEVELOPMENT APPLICATION

SUBMITTAL REQUIREMENTS

Final Plat: * *1 hard copy of all materials for submittal + PDF copy on a USB flash drive (no multiple applications on one storage device)*
Fold hard copy submittals larger than 8½"x11"

All Others: * Please submit the Application online at City of Columbia | Permitting | onlama.com

ADDRESS/LOCATION	225 Tara Court Columbia TN 38401		
	TAX MAP:	GROUP:	PARCEL:
SUMMARY OF NATURE OF REQUEST AND WORK			

DATE OF PRE-APPLICATION CONFERENCE	2.26.25	*Pre-application meetings are scheduled for Wednesdays*

SELECT REQUEST	SUBMITTALS SHALL INCLUDE BUT NOT LIMITED TO:
☐ Comprehensive Plan Amendment ☐ Annexation ☐ Rezoning ☐ Preliminary Plat ☐ Final Plat ☐ PUD Preliminary Master Plan ☐ PUD Final Site Plan ☐ Site Development Plan ☒ Other: **File naming nomenclature examples* *Freedom Point Site Plan* *Freedom Point Master Plan* *Freedom Point Final Plat*	**Annexations:** ☐ Annexation Permission Form **Annexations/Rezoning/Plan Amendments:** ☐ Requested Zone Listed ☐ Statement of Compliance with Comprehensive Plan ☐ Concept Plan **Preliminary Plats/Site Development Plans:** ☐ Plans and/or Plats conforming to City standards with signed and completed check list **All Annexations/Rezoning/Preliminary Plats/Site Development Plans and PUDS:** ☐ Receipt of Payment for Pre-Application Meeting ☐ Written Legal Description copy ☐ Columbia Water System Availability Letter ☐ Columbia Waste Water Department Will Serve Letter

	Plats/PUDs: ☒ Project Name (include Sections & Phases) The Crossings ☐ Total Number of Lots/Residential Units ☐ Square Footage of Non-Residential Floor Space ☐ Total acreage

Applications and all required submittals must be filed with the Department of Development Services prior to the established deadline. Both the applicant and property owner (if different from applicant) must sign the application. Any requests to defer or move the item to future meeting dates must be requested by the resubmittal date listed on the Planning Commission schedule.

APPLICANT

All communications go to the Applicant's email that is provided

NAME	Cindy Sims	PHONE	931-840-0916
ADDRESS	PO Box 1961 Columbia	EMAIL	CSims@centerofhopetn.org

PROPERTY OWNER NAME	Marvel Properties, LLC	PHONE	901-481-0222
ADDRESS	PO Box 189, Millington, TN	EMAIL	Caresse.hyneman@gmail.com

If owner is not a natural person, documentation must be provided showing signing authority on behalf of the entity. If multiple persons are listed as owners in the records of the Maury County Assessor, all owners must sign or the signatory must provide documentation of authority to apply on behalf of record owner (i.e., Power of Attorney or notarized Letter of Authorization). In filling out this application, I attest that (1) I am familiar with the rules, regulations, and procedures of the City of Columbia & (2) all information contained herein is accurate & true to the best of my knowledge.

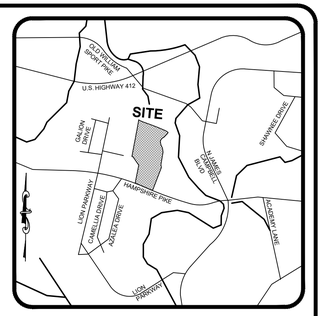
Center of Hope APPLICANT NAME	Cindy Sims APPLICANT SIGNATURE	3/17/25 DATE
Marvel Properties, LLC PROPERTY OWNER NAME	Caresse Hyneman PROPERTY OWNER SIGNATURE	3/17/25 DATE

LEGEND

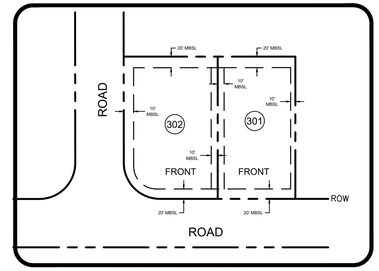
IRON PIN FOUND		FIRE HYDRANT		UTILITY POLE		PUBLIC UTIL. & DRAIN ESMT.	P.U.D.E.		BOUNDARY		
IRON PIN SET		SANITARY SEWER MH	SS	GUY ANCHOR		ADDRESSES	1234		CENTERLINE		
CONC. MON. FOUND		SANITARY SEWER CO	CO	COMMUNICATION BOX	C	HANDICAP SPACE			BUFFER		
CONC. MON. SET		AREA DRAIN		COMMUNICATION MH	C	SANITARY SEWER	8" SA	8" SA	WATER FEATURE		
CONTROL POINT FOUND		CURB INLET		GAS METER	G	WATER	4" W	4" W	TREE LINE		
CONTROL POINT SET		STORM MH	ST	GAS VALVE		UNDERGROUND ELEC	UGE	UGE	R.O.W.	RIGHT OF WAY	
BENCH MARK		ELECTRIC METER-BOX	E	EVERGREEN TREE		OVERHEAD ELEC	OHE	OHE	PVMT.	EDGE OF PAVEMENT	
WATER METER	W	ELECTRIC MH	E	SIDEWALK		GAS	4" G	4" G	PUDE	PUBLIC UTILITY AND DRAINAGE EASEMENT	
WATER VALVE		LIGHT POLE		MIN. BUILDING SETBACK	M.B.S.L	COMMUNICATIONS	COM	COM	G.I.E.	GREEN INFRASTRUCTURE EASEMENT	

HATCH LEGEND

ROW DEDICATION



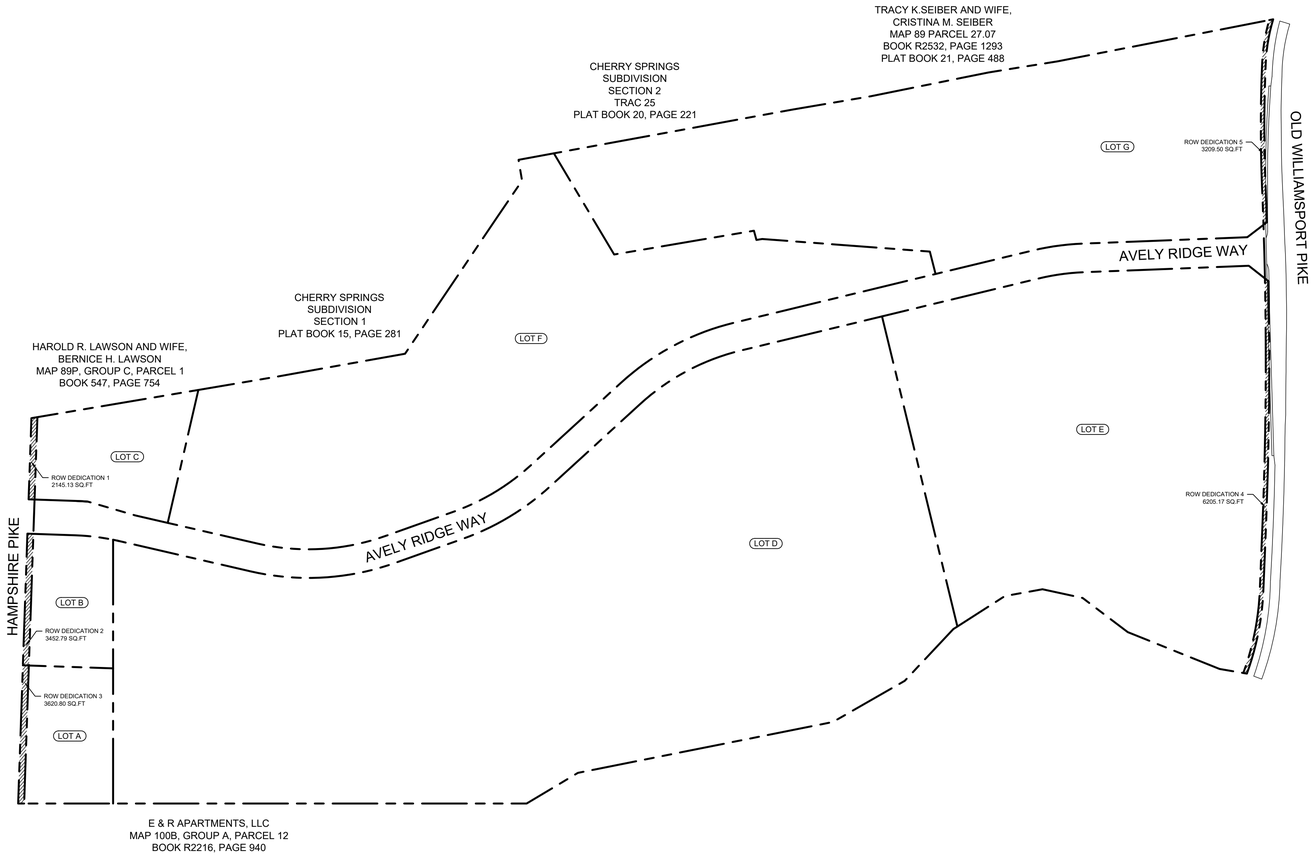
VICINITY MAP
NOT TO SCALE



TYPICAL LOT LAYOUT
N.T.S.

PLAT NOTES

1. THE PURPOSE OF THIS PLAT IS TO CREATE 7 LOTS AND DEDICATE RIGHT-OF-WAY.
2. SUBJECT PROPERTY IS PRESENTLY IDENTIFIED AS PARCEL 41.15, ON MAURY COUNTY TAX MAP 089. SAID PARCEL IS FURTHER IDENTIFIED AS THE PROPERTY DESCRIBED IN BOOK R2858, PAGE 105, REGISTERS OFFICE OF MAURY COUNTY, TENNESSEE.
3. THE PROPERTY SHOWN HEREON IS LOCATED WITHIN THE CITY OF COLUMBIA, MAURY COUNTY, TN. ALL MATTERS PERTAINING TO CONSTRUCTION, USE, LOCATION OF IMPROVEMENTS, SIGNAGE, PARKING, NOISE, VIBRATION, EMISSIONS, FIRE HAZARDS, RADIATION, ILLUMINATION, SETBACK PROVISIONS, ETC., ARE SUBJECT TO THE CITY OF COLUMBIA'S ZONING REGULATIONS AS INTERPRETED AND REGULATED BY THE DEPARTMENT OF DEVELOPMENT SERVICES.
4. EXISTING ZONING: CD-4
5. I HEREBY CERTIFY THAT THIS IS A CATEGORY IV SURVEY AND WAS CONDUCTED IN ACCORDANCE WITH RULE 0820-03.11 (GLOBAL POSITION SYSTEMS SURVEYS) ACCORDING TO THE CURRENT TENNESSEE MINIMUM STANDARDS OF PRACTICE AS PROMULGATED BY THE TENNESSEE STATE BOARD OF EXAMINERS FOR LAND SURVEYORS. THIS SURVEY WAS CONDUCTED WITH DUAL-FREQUENCY RTK GPS EQUIPMENT BASED ON THE TDOT CORPS NETWORK.
   a. POSITIONAL ACCURACY: 0.07'
   b. DATE OF SURVEY: 3/16/2023
   c. DATUM/EPOCH: TENNESSEE STATE PLANE (NAD83). OCCUPATIONS FOR CONTROL POINTS ARE 3 MINUTES EACH, SIDE SHOTS ARE 3 SECONDS.
   d. GEOID 3, ZONE 7 REVISED
6. NO COMBINED GRID FACTORS WERE USED.
7. BEARINGS SHOWN HEREON ARE BASED ON THE TENNESSEE STATE PLANE COORDINATE SYSTEM (NAD83). ELEVATIONS SHOWN HEREON ARE BASED ON NAVD88.
8. BY SCALED MAP LOCATION AND GRAPHIC PLOTTING ONLY, THIS PROPERTY LIES WITHIN ZONE "X" AS DESIGNATED ON CURRENT FEDERAL EMERGENCY MANAGEMENT AGENCY MAP NO. 47119C0280E, WITH AN EFFECTIVE DATE OF APRIL 16, 2007, WHICH MAKES UP A PART OF THE NATIONAL FLOOD INSURANCE PROGRAM. ZONE "X" IS AN AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN. ZONE "X" HAS TWO DESCRIPTIONS. PLEASE SEE FLOOD PLAIN MAP IF ZONE "X" IS SHADED. ***IF FIELD RUN CONTOURS ARE ESTABLISHED YOU MUST PLOT THE FLOOD LINE BASED ON BFE UNLESS THE PROPERTY IS IN ZONE A.
9. ALL CORNERS SHOWN ON THE FACE OF THE SURVEY WILL BE SET WITH 5/8 IRON ROD WITH CAP BEARING THIS SURVEYORS COMPANY NAME.
10. THE DEVELOPER ACKNOWLEDGES THAT ALL LOTS HAVE ADEQUATE BUILDING ENVELOPES AND NO VARIANCES WILL BE REQUIRED.
11. STORMWATER MAINTENANCE AGREEMENT RECORDED IN DEED BOOK ____, PAGES ____.
12. ALL STREETS AND ALLEYS ARE DESIGNATED AS PUBLIC RIGHT-OF-WAY; THE CITY OF COLUMBIA IS NOT RESPONSIBLE FOR THE REPLACEMENT OR REPAIR OF ANY PRIVATE STRUCTURES WITHIN PUBLIC EASEMENTS SHOULD THE STRUCTURES BE DISTURBED IN THE PROCESS OF THE CITY EXERCISING ITS EASEMENT RIGHTS.
13. STREETS, DRAINAGE EASEMENTS, STRUCTURES, AND CULVERTS SHALL BE MAINTAINED BY THE CITY OF COLUMBIA. DETENTION PONDS AND OUTLET STRUCTURES WITHIN PUBLIC DRAINAGE EASEMENTS ARE TO BE MAINTAINED BY THE HOMEOWNER'S ASSOCIATION.
14. OPEN SPACE AREAS, ROADWAY MEDIANS, BRICK PEDESTRIAN CROSSWALKS, BIKE PATHS, SIDEWALKS OUTSIDE OF RIGHT-OF-WAYS, TRAILS AND DETENTION FACILITIES SHALL BE MAINTAINED BY THE HOME OWNER'S ASSOCIATION AND SHALL BE PUBLIC UTILITY, DRAINAGE AND ACCESS EASEMENTS.
15. WITHIN NEW DEVELOPMENTS AND FOR OFF-SITE LINES CONSTRUCTED AS A RESULT OF, OR TO PROVIDE SERVICE TO, THE NEW DEVELOPMENT, ALL UTILITIES, (INCLUDING CABLE TELEVISION, ELECTRICAL, NATURAL GAS, SEWER, TELEPHONE AND WATER LINES) SHALL BE PLACED UNDERGROUND.
16. MAINTENANCE OF ALL STORMWATER MANAGEMENT FEATURES SHALL BE THE RESPONSIBILITY OF THE PROPERTY OWNER(S) OR HOA.
17. NO OBSTRUCTIONS OR ENCROACHMENTS WHICH IMPEDE THE FLOW OF STORMWATER SHALL BE PERMITTED WITHIN PUBLIC DRAINAGE EASEMENTS BETWEEN LOTS. THE CITY OF COLUMBIA IS NOT RESPONSIBLE FOR REPAIR OR REPLACEMENT OF ANY ENCROACHMENTS THAT ARE DAMAGED OR REMOVED IN THE COURSE OF MAINTENANCE ACTIVITY WITHIN EASEMENTS.
18. THE CITY OF COLUMBIA WATER MANAGEMENT DEPARTMENT HAS UNRESTRICTED ACCESS TO ITS DOMESTIC WATER, SANITARY SEWER, RECLAIM WATER LINES OR SYSTEM IMPROVEMENTS LOCATED WITHIN ITS EXCLUSIVE EASEMENTS WITHIN THE DEVELOPMENT. IN THE EVENT LANDSCAPING, FENCING, CONCRETE OR OTHER STRUCTURES ARE INSTALLED OR PLACED WITHIN A CITY OF COLUMBIA EASEMENT, THE CITY OF COLUMBIA SHALL HAVE THE RIGHT TO REMOVE SUCH ENCROACHMENTS WITHIN THE EASEMENT AS MAY BE NECESSARY FOR THE CITY OF COLUMBIA TO REPAIR, MAINTAIN OR REPLACE ITS INFRASTRUCTURE WHICH IS NOW OR IN THE FUTURE MAY BE LOCATED WITHIN THE EASEMENT WITHOUT OBTAINING ANY FURTHER PERMISSION FROM THE PROPERTY OWNER OR HOA. THE PROPERTY OWNER OR HOA SHALL BE RESPONSIBLE FOR REPAIRING AND/OR REPLACING ANY SUCH LANDSCAPING, FENCING, CONCRETE, OR OTHER STRUCTURES REMOVED OR DISTURBED BY THE CITY OF COLUMBIA IN COMMON OPEN SPACE LOTS AND IN AREAS OWNED BY THE PROPERTY OWNER OR HOA AT NO EXPENSE TO THE CITY OF COLUMBIA. INDIVIDUAL HOMEOWNERS SHALL BE RESPONSIBLE FOR STRUCTURES REMOVED OR DISTURBED BY THE CITY OF COLUMBIA WITHIN AN EASEMENT ON THE HOMEOWNER'S LOT AT THE HOMEOWNER'S EXPENSE.
19. PUBLIC UTILITY AND DRAINAGE EASEMENTS (PUDE) SHALL BE REQUIRED AND BE TEN (10) FEET IN WIDTH ON ALL PROPERTY LINES PARALLEL AND ABUTTING PUBLIC ROADS OR RIGHTS-OF-WAY, AND FIVE (5) FEET IN WIDTH ON ALL INTERIOR LOT LINES, EXCEPT FOR INTERIOR LOT LINES WITH A ZERO LOT LINE OR A COMMON WALL ALONG A LOT LINE.



Parcel Area Table		
Parcel #	Area (SF)	Area (AC)
LOT A	51984.83'	1.193
LOT B	47303.93'	1.086
LOT C	67509.15'	1.550
LOT D	1081843.00'	24.836
LOT E	526169.64'	12.079
LOT F	488245.92'	11.209
LOT G	479760.88'	11.014

ROW Dedication Area Table		
Parcel #	Area (SF)	Area (AC)
ROW Dedication 1	2145.13'	0.049
ROW Dedication 2	3452.79'	0.079
ROW Dedication 3	3620.80'	0.083
ROW Dedication 4	6205.17'	0.142
ROW Dedication 5	3209.50'	0.074

CERTIFICATE OF APPROVAL OF WATER SYSTEM

I HEREBY CERTIFY THAT THE WATER SYSTEM(S) OUTLINED OR INDICATED ON THIS FINAL SUBDIVISION PLAT HAS/HAVE 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.

NAME, TITLE, AGENCY OF AUTHORIZED APPROVING AGENT _____ DATE _____

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.

CITY ENGINEER _____ DATE _____
COLUMBIA, TENNESSEE

CERTIFICATE OF SURVEY ACCURACY

I (WE) HEREBY CERTIFY THAT TO THE BEST OF MY (OUR) KNOWLEDGE AND BELIEF THIS IS A TRUE AND ACCURATE SURVEY OF THE PROPERTY SHOWN HEREON; THAT THIS IS A CLASS "IV" LAND SURVEY AS DEFINED IN TITLE 62, CHAPTER 18, TENNESSEE CODE ANNOTATED, AND THAT THE RATIO OF PRECISION IS GREATER THAN OR EQUAL TO 1:10,000.

DATE _____

SEAN ALAN MCGOWAN, PE, PS, TENNESSEE RLS NO. 3516
WILSON & ASSOCIATES, P.C.
108 BEASLEY DRIVE, FRANKLIN, TN 37064
(615) 794-2176
SMCGOWAN@WILSONPC.COM

CERTIFICATE OF OWNERSHIP AND DEDICATION

I (WE) HEREBY CERTIFY THAT I AM (WE ARE) THE OWNER(S) OF THE PROPERTY SHOWN AND DESCRIBED HEREON AS EVIDENCED IN BOOK NUMBER R2858, PAGE 105, MAURY COUNTY REGISTERS OFFICE, AND THAT I (WE) HEREBY ADOPT THIS FINAL SUBDIVISION PLAT OF THE PROPERTY AS SHOWN HEREON AND DEDICATE ALL PUBLIC WAYS AND EASEMENTS AS NOTED WITH MY (OUR) FREE CONSENT.

OWNER _____ DATE _____

CERTIFICATE OF APPROVAL OF STREETS, DRAINAGE & UTILITIES

I HEREBY CERTIFY THAT THE STREETS, DRAINAGE, AND UTILITIES OUTLINED OR INDICATED ON THIS FINAL SUBDIVISION PLAT HAVE BEEN INSTALLED IN ACCORDANCE WITH CITY SPECIFICATIONS, OR A PERFORMANCE SURETY IN THE AMOUNT OF $_____ FOR STREETS AND DRAINAGE HAS BEEN POSTED WITH THE CITY OF COLUMBIA, TENNESSEE, TO ASSURE COMPLETION OF SUCH IMPROVEMENTS.

CITY ENGINEER _____ DATE _____
COLUMBIA, TENNESSEE

CERTIFICATE OF APPROVAL FOR SANITARY SEWER SYSTEM

I HEREBY CERTIFY THAT THE SANITARY SEWER SYSTEM OUTLINED OR INDICATED ON THIS FINAL SUBDIVISION PLAT HAS BEEN INSTALLED IN ACCORDANCE WITH THE CURRENT LOCAL AND STATE GOVERNMENT REQUIREMENTS, OR A SUFFICIENT BOND OR OTHER SURETY HAS BEEN FILED TO GUARANTEE SAID INSTALLATION.

DIRECTOR OF WASTEWATER DEPARTMENT _____ DATE _____
COLUMBIA, TENNESSEE

CERTIFICATE OF APPROVAL FOR RECORDING

I HEREBY CERTIFY THAT THE SUBDIVISION PLAT SHOWN HEREON HAS BEEN FOUND TO COMPLY WITH THE CITY OF COLUMBIA SUBDIVISION REGULATIONS, WITH THE EXCEPTION OF SUCH VARIANCES, IF ANY, AS NOTED IN THE MINUTES OF THE COLUMBIA MUNICIPAL PLANNING COMMISSION, AND THAT IT HAS BEEN APPROVED FOR RECORDING IN THE OFFICE OF THE MAURY COUNTY REGISTER OF DEEDS.

SECRETARY, PLANNING COMMISSION _____ DATE _____
COLUMBIA, TENNESSEE

CERTIFICATE OF APPROVAL OF SUBDIVISION NAME & STREET NAMES

SUBDIVISION NAME AND STREET NAMES APPROVED BY THE CITY ENGINEERING DEPARTMENT AND BY E-911 MAURY COUNTY.

MAURY COUNTY E911 _____ DATE _____

RECORDING STAMP HERE

IF YOU CAN READ THIS YOU ARE HOLDING AN UNRECORDED COPY

OWNER: HAMPSHIRE PIKE HOLDINGS LLC
18100 VON KARMAN AVENUE,SUITE 500
IRVINE,CA,92612
949-518-2191

ENGINEER: KIMLEY-HORN AND ASSOCIATES, INC.
10 LEA AVENUE, SUITE 400
NASHVILLE, TN 37210
615-564-2701
KELLEY FRANK@KIMLEY-HORN.COM

SURVEYOR: SEAN ALAN MCGOWAN, PE, PS
WILSON & ASSOCIATES, P.C.
108 BEASLEY DRIVE
FRANKLIN, TN 37064
(615) 794-2176
SMCGOWAN@WILSONPC.COM

SEAN ALAN MCGOWAN REGISTERED LAND SURVEYOR PE PS AGRICULTURE COMMERCE TENNESSEE NO. 3516

WILSON & ASSOCIATES, P.C. Engineering/Surveying/Environmental

150 0 75 150 300
GRAPHIC SCALE: 1" = 150'

HAMPSHIRE PIKE

FINAL SUBDIVISION PLAT

CITY OF COLUMBIA - MAURY COUNTY - TENNESSEE

TOTAL ACRES:	67.242	TOTAL NO. OF LOTS:	07
ACRES NEW RD/ST:	3.849 (ROW)	L.F. OF NEW RD/ST:	2749.5717
ACRES OPEN SPACE:	0.000	CIVIL DISTRICT:	3RD
DRAWN BY:	AS	CLOSURE ERROR:	SEE NOTE
SCALE:	1" = 150'	DATE:	03/17/2025

WA PROJECT NO. 21-1752 SHEET 1 OF 2

Curve Table					
Curve #	Length	Radius	Delta	Chord Direction	Chord Length
C1	93.65'	375.01'	14° 18' 31"	S62° 07' 47"E	93.41'
C2	91.57'	382.50'	13° 43' 01"	S62° 25' 32"E	91.35'
C3	263.09'	3067.97'	4° 54' 48"	S71° 44' 27"E	263.01'
C4	263.74'	3075.50'	4° 54' 48"	S71° 44' 27"E	263.66'
C5	70.30'	8500.11'	0° 28' 26"	S73° 57' 38"E	70.30'
C6	75.56'	8492.43'	0° 30' 35"	S73° 56' 33"E	75.56'
C7	112.41'	8492.43'	0° 45' 30"	S73° 18' 30"E	112.41'
C8	515.22'	8502.67'	3° 28' 19"	S71° 09' 06"E	515.14'
C9	520.87'	8492.43'	3° 30' 51"	S71° 10' 20"E	520.79'
C10	178.22'	575.00'	17° 45' 32"	S60° 32' 09"E	177.51'
C11	177.30'	567.50'	17° 54' 01"	S60° 27' 54"E	176.58'
C12	23.64'	542.26'	2° 29' 53"	N21° 26' 26"E	23.64'
C13	270.04'	480.00'	32° 14' 00"	N14° 45' 19"E	266.49'
C14	191.56'	480.00'	22° 51' 58"	N12° 47' 40"W	190.29'
C15	272.08'	540.00'	28° 52' 06"	N9° 47' 36"W	269.21'
C16	107.15'	540.00'	11° 22' 08"	N10° 19' 31"E	106.97'
C17	95.24'	480.00'	11° 22' 08"	S10° 19' 31"W	95.09'
C18	241.85'	480.00'	28° 52' 06"	S9° 47' 36"E	239.30'
C19	215.51'	540.00'	22° 51' 58"	S12° 47' 40"E	214.08'
C20	307.12'	540.00'	32° 35' 10"	S14° 55' 55"W	303.00'
C21	12.62'	480.00'	1° 30' 23"	S30° 28' 19"W	12.62'
C22	79.66'	480.00'	9° 30' 30"	S24° 57' 52"W	79.57'

HATCH LEGEND

ROW DEDICATION

DETENTION POND

TRACY K.SEIBER AND WIFE,
CRISTINA M. SEIBER
MAP 89 PARCEL 27.07
BOOK R2532, PAGE 1293
PLAT BOOK 21, PAGE 488

CHERRY SPRINGS
SUBDIVISION
SECTION 2
TRAC 25
PLAT BOOK 20, PAGE 221

CHERRY SPRINGS
SUBDIVISION
SECTION 1
PLAT BOOK 15, PAGE 281

HAROLD R. LAWSON AND WIFE,
BERNICE H. LAWSON
MAP 89P, GROUP C, PARCEL 1
BOOK 547, PAGE 754

E & R APARTMENTS, LLC
MAP 100B, GROUP A, PARCEL 12
BOOK R2216, PAGE 940

POB
N:470741.50
E:1649350.82

N7°50'56"E 509.44'
N8°36'08"E 165.39'
N6°48'18"E 251.83'
N9°05'30"E 147.07'
N7°12'33"E 451.72'
N7°26'30"E 246.86'
N8°34'35"E 297.19'
N22°32'38"E 352.32'
N37°45'08"W 346.68'
N8°05'09"E 155.25'
N8°07'29"E 119.25'
N8°39'04"E 507.51'
165.30'
342.21'
N69°47'21"W 170.32'
S69°47'23"E 172.88'
S58°46'30"E 286.06'
S85°24'55"E 669.08'
S69°24'54"E 133.40'
S69°24'54"E 133.40'
N69°47'23"W 276.22'
N69°47'23"W 276.22'
S20°10'59"W 176.65'
N71°45'33"W 553.00'
N69°47'23"W 289.87'
N69°47'23"W 289.46'
186.50'
716.88'
N18°14'27"E 903.38'
S18°14'43"W 149.98'
S12°37'01"E 125.08'
S6°57'14"W 545.10'
S11°34'10"E 173.63'
S28°34'01"E 148.88'
S40°07'42"W 207.42'

AVELY RIDGE WAY
(PUBLIC - MINOR LOCAL)

OLD WILLIAMSPORT PIKE

HAMPSHIRE PIKE

LOT A
LOT B
LOT C
LOT D
LOT E
LOT F
LOT G

POND
WATER QUALITY DETENTION POND
TOP OF BANK
BIGBY CREEK
RETAINING WALL
30' STREAM BUFFER
60' STREAM BUFFER
100' STREAM BUFFER

ROW DEDICATION 1
2145.13 SQ.FT

ROW DEDICATION 2
3452.79 SQ.FT

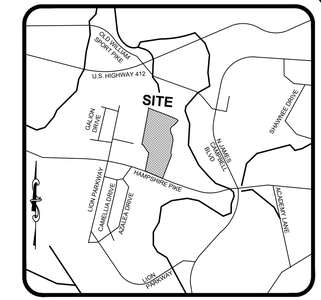
ROW DEDICATION 3
3620.80 SQ.FT

ROW DEDICATION 4
8205.17 SQ.FT

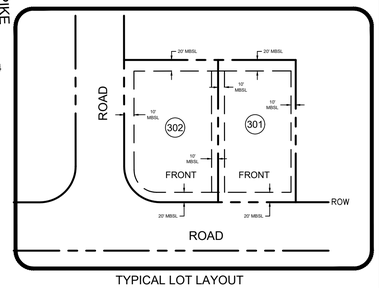
ROW DEDICATION 5
3209.50 SQ.FT

25' ACCESS EASEMENT

20' MBSL (TYP.)
10' MBSL (TYP.)



VICINITY MAP
NOT TO SCALE



TYPICAL LOT LAYOUT
N.T.S.

Parcel Line Table		
Line #	Length	Direction
L1	75.25'	N7°50'56"E
L2	8.44'	N7°12'30"E
L3	9.18'	S19°07'41"E
L4	9.66'	N56°21'44"E
L5	7.62'	S27°51'17"W
L6	50.44'	S27°52'28"W
L7	118.69'	S55°18'29"W
L8	86.07'	S30°29'38"W
L9	79.95'	S7°58'19"W
L10	118.35'	S14°22'49"E
L11	10.00'	S14°22'49"E
L12	12.51'	S18°17'07"W
L13	12.50'	S20°10'59"W
L14	12.50'	N20°12'37"E
L15	72.00'	N69°47'23"W
L16	12.50'	S20°12'37"W
L17	12.76'	N8°39'08"E
L18	89.26'	N37°28'50"W
L19	44.41'	N81°16'34"W
L20	88.09'	N20°12'37"E
L21	102.68'	N34°29'23"E

Parcel Line Table		
Line #	Length	Direction
L22	70.69'	N31°13'30"E
L23	135.00'	N31°13'30"E
L24	60.03'	N31°12'59"E
L25	151.47'	N1°21'41"W
L26	254.36'	N24°13'39"W
L27	434.74'	N4°38'28"E
L28	12.28'	N8°34'35"E
L29	20.09'	S86°45'59"E
L30	48.48'	S86°12'18"E
L31	207.91'	N4°38'28"E
L32	345.66'	N16°00'35"E
L33	42.70'	N19°07'41"W
L34	42.97'	S56°21'44"W
L35	346.49'	S16°00'35"W
L36	337.96'	S4°38'28"W
L37	304.68'	S4°38'28"W
L38	254.36'	S24°13'39"E
L39	151.47'	S1°21'41"E
L40	274.49'	S31°13'30"W
L41	8.61'	S31°13'30"W
L42	88.09'	S20°12'37"W

LEGEND

IRON PIN FOUND	FIRE HYDRANT	UTILITY POLE	PUBLIC UTIL. & DRAIN ESMT.	P.U.D.E.	BOUNDARY
IRON PIN SET	SANITARY SEWER MH	GUY ANCHOR	ADDRESSES	1234	CENTERLINE
CONC. MON. FOUND	SANITARY SEWER CO	COMMUNICATION BOX	HANDICAP SPACE		BUFFER
CONC. MON. SET	AREA DRAIN	COMMUNICATION MH	SANITARY SEWER	8" SA	8" SA	WATER FEATURE
CONTROL POINT FOUND	CURB INLET	GAS METER	WATER	4" W	4" W	TREE LINE
CONTROL POINT SET	STORM MH	GAS VALVE	UNDERGROUND ELEC	UGE	UGE	R.O.W.	RIGHT OF WAY
BENCH MARK	ELECTRIC METER-BOX	EVERGREEN TREE	OVERHEAD ELEC	OHE	OHE	PVMT.	EDGE OF PAVEMENT
WATER METER	ELECTRIC MH	SIDEWALK	GAS	4" G	4" G	PUDE	PUBLIC UTILITY AND DRAINAGE EASEMENT
WATER VALVE	LIGHT POLE	MIN. BUILDING SETBACK M.B.S.L	COMMUNICATIONS	COM	COM	G.I.E.	GREEN INFRASTRUCTURE EASEMENT

SEAN ALAN MCGOWAN
REGISTERED LAND SURVEYOR
AGRICULTURE
COMMERCE
TENNESSEE NO. 3515

WILSON & ASSOCIATES, P.C.
Engineering/Surveying/Environmental

100 0 50 100 200
GRAPHIC SCALE: 1" = 100'

HAMPSHIRE PIKE

RECORDING STAMP HERE

IF YOU CAN READ THIS YOU ARE HOLDING AN UNRECORDED COPY

FINAL SUBDIVISION PLAT

CITY OF COLUMBIA - MAURY COUNTY - TENNESSEE

TOTAL ACRES:	67.242	TOTAL NO. OF LOTS:	07
ACRES NEW RD/ST:	3.849 (ROW)	L.F. OF NEW RD/ST:	2749.5717
ACRES OPEN SPACE:	0.000	CIVIL DISTRICT:	3RD
DRAWN BY:	AS	CLOSURE ERROR:	SEE NOTE
SCALE:	1" = 100'	DATE:	03/17/2025

WA PROJECT NO. 21-1752 SHEET 2 OF 2

Appendix B: Subdivision Development Agreement

This DEVELOPMENT AGREEMENT is made and entered into on this

_____ day of _____, 20_____ ,
between THE CITY OF COLUMBIA, TENNESSEE, (hereinafter the "CITY"), and

_____, the DEVELOPER (hereinafter the "DEVELOPER") named on the Addendum to this Agreement attached hereto and by this reference made a part hereof (hereinafter the "ADDENDUM").

WITNESSETH:

WHEREAS, the DEVELOPER desires to develop the property described on the ADDENDUM (hereinafter the "PROJECT"); and,

WHEREAS, the Development Plan of the PROJECT has been approved by the Columbia Municipal Planning Commission (hereinafter the “CMPC”) on the

_____ day of _____, 20_____ ,
pursuant to Tennessee Code Annotated Title 13, Chapter 4, and the Subdivision Regulations of Columbia, Tennessee (hereinafter the "SUBDIVISION REGULATIONS”); and,

WHEREAS, the DEVELOPER is the owner of the PROJECT and has authority to engage in such development; and,

WHEREAS, the DEVELOPER desires to develop and improve said PROJECT; and,

WHEREAS, in order to provide for the health, safety, and welfare of future residents of the PROJECT, it will be necessary for certain improvements to the CITY'S utility systems, public infrastructure, and common areas to be constructed within and to serve the PROJECT including but not be limited to roads, bridges, sidewalks, pedestrian facilities, stormwater facilities, street signs, markings, signals, street lighting, recreation and park facilities, landscaping, and the like (hereinafter the “IMPROVEMENTS”); and,

WHEREAS, in order for the IMPROVEMENTS to be fully integrated with the utility systems and public infrastructure of the CITY and to function in a satisfactory manner, the DEVELOPER has agreed to construct, in accordance with the Subdivision Regulations and other rules, regulations, and ordinances of the CITY, the IMPROVEMENTS in said PROJECT and extend utilities to the PROJECT at their own cost; and,

WHEREAS, the CITY is willing to accept the dedication of the streets, utilities, and other improvements as determined in the Development Plan of the PROJECT, subject to the City of Columbia City Council approval by resolution, and subject to the applicant's compliance with all requirements in this agreement and applicable existing laws of the CITY of Columbia and the State of Tennessee,

NOW, THEREFORE, it is agreed and understood as follows:

B1 General Conditions

B1.1 Construction Costs

The DEVELOPER shall pay for all material and labor necessary to install and complete the roads, sidewalks, sewers, utilities, and other facilities in accordance with this agreement.

B1.2 City Ordinances, Rules and Regulations

All currently existing CITY ordinances, rules and regulations, and the Subdivision Regulations adopted by the CMPC are made a part of this agreement. In the event of a conflict between the terms of this agreement and a CITY ordinance, the ordinance shall prevail. In the event of a conflict between the terms of this agreement and the Subdivision Regulations, the Subdivision Regulations shall prevail. All work done under this agreement is to be performed in accordance with plans and specifications approved by the City and made a part, hereof.

B1.3 Fees

Review fees, inspection fees, and other amounts established by the CITY shall be paid prior to any review of the plans. If the DEVELOPER fails to install the facilities in accordance with the terms of this Agreement, no portion of the review fees, inspection fees, or other amounts paid to the CITY shall be refundable to the DEVELOPER.

B1.4 Inspection

The CITY shall have a continuous right to inspect the work and facilities to assure that the work and facilities are in accordance with the Subdivision Regulations, approved Construction Plans, and other rules, regulations, and ordinances of the CITY.

B1.5 Right of Entry

The CITY shall have the right, in case of breach of the Performance Agreement, to enter upon any property of the DEVELOPER and take all necessary actions to complete the work and obligations not completed.

B1.6 Easements

The DEVELOPER shall obtain and dedicate to the CITY or cause to be dedicated to the CITY, either by dedication on the plat or by easement deed, in either case in a form acceptable to the CITY, permanent easements of such widths as required by the CITY and noted on the Plans. The DEVELOPER further agrees to grant the necessary easements and rights-of-way across the DEVELOPER's properties without expense to the CITY and waive any claim for damages.

B1.7 Stormwater Maintenance Agreement

If the PROJECT includes any detention or retention ponds, common drainage ditches, water quality facilities, or stormwater facilities outside of the CITY rights-of-way, the DEVELOPER will submit a Stormwater Maintenance Agreement, to be filed with and recorded with the Final Plat.

B1.8 Attorney Fees and Other Expenses

The DEVELOPER shall pay all reasonable costs and expenses incurred by the CITY in enforcing or completing this agreement. The DEVELOPER shall pay all costs and expenses, including the CITY'S attorney fees, of any legal proceedings brought by the CITY against the DEVELOPER seeking remedies for the DEVELOPER'S failure to perform any of its obligations hereunder, whether or not any proceedings are prosecuted to judgment.

B1.9 Agreement Not Assignable

No third party shall obtain any benefits or rights under this agreement nor shall the rights or duties be assigned by either party.

B1.10 Revocation and Interpretation

This agreement shall bind the DEVELOPER when executed by the DEVELOPER and may not be revoked by the DEVELOPER without permission of the CITY, even if the agreement has not been executed by the CITY, or does not bind CITY, for other reasons. This agreement shall be interpreted in accordance with Tennessee law and may only be enforced in the Chancery Court or Circuit Court or Court of competent jurisdiction of Maury County, Tennessee, and Tennessee Appellate Courts.

B1.11 No Oral Agreement

This agreement may not be orally amended and supersedes all prior negotiations, commitments, or understandings.

B1.12 Separability

If any portion of this agreement is held to be unenforceable, the CITY shall have the right to determine whether the remainder of the agreement shall remain in effect, or whether the agreement shall be void and all rights of the DEVELOPER pursuant to this agreement terminated.

B 1.13 Transferability

The DEVELOPER agrees to not transfer the property on which this PROJECT is to be located without first providing the CITY with written notice. The transferee shall provide the CITY an Assumption Agreement of this Agreement, whereby the transferee agrees to perform the IMPROVEMENTS required under this agreement and to provide a performance surety. The DEVELOPER understands that if the DEVELOPER transfers said property without providing the notice of transfer and Assumption Agreement as required herein, they will be in breach of this agreement and in violation of the Subdivision Regulations.

B1.14 Indemnity

The DEVELOPER shall indemnify and hold the CITY harmless from all loss, costs, expenses, liability, money damages, penalties, or claims arising out of any work covered by this agreement, including any attorney fees incurred by the CITY in connection therewith. Inspection of the IMPROVEMENTS by an authorized representative of the CITY shall not constitute a waiver by the CITY of any defect or of any of the DEVELOPER'S obligations hereunder.

B1.15 Binding Effect

This agreement shall be binding upon the DEVELOPER and the DEVELEPOR's heirs, administrators, executors, assigns, and any other successors in interest.

B1.16 Entire Agreement

This document contains the entire agreement between the parties, and there are no collateral understandings or agreements between them. No variations or alterations of the terms of this agreement shall be binding upon either of the parties, unless the same be reduced to writing and made an amendment to this agreement.

B1.17 Headings

Paragraph titles and headings contained herein are inserted for convenience only and shall not be deemed a part of the agreement and in no way shall define, limit, extend, or describe the scope or intent of any provision, hereof.

B2 Performance Surety

At the time of execution of this agreement, the DEVELOPER shall provide the CITY a performance surety, in an amount determined by the City Engineer for the IMPROVEMENTS and other items specified by the Construction Plans, plats, and plans approved by the CMPC. This performance surety shall secure performance of all obligations of the DEVELOPER under this agreement. The performance surety shall meet all requirements established in Chapter 4: Performance Agreement of the Subdivision Regulations and secure full compliance with all terms and conditions of this agreement. The performance surety may be called for failure to comply with the provisions of this agreement in whole or in part according to the terms of the performance surety. The performance surety will not be released, except and until there has been full compliance with this agreement.

B3 Construction

B3.1 Construction Plans

The DEVELOPER shall submit to the CITY, Construction Plans describing in reasonable detail all utility systems, all storm water management systems, all street systems, pedestrian facilities, and all IMPROVEMENTS. The Construction Plans shall be designed according to the Engineering Standards and Specifications, all other codes and ordinances enforced by the City, and sound engineering judgment. The design of all utility systems shall follow the State of Tennessee and utility provider design criteria and specifications. In the event of a disagreement as to compliance with or interpretation of the Construction Plans and the CITY'S specifications, the decision of the CITY shall be final and binding on the DEVELOPER. The Construction Plans shall be prepared by a design professional licensed by the State of Tennessee to design all systems and shall bear the seal, signature, date, and license number of the professional preparing the Construction Plans.

B3.2 Commencement of Construction

Construction of IMPROVEMENTS may not begin until the following events have occurred:

A. The Preliminary Plat has been approved by the CMPC;
B. The Construction Plans are approved by the CITY;
C. The Tennessee Department of Environment and Conservation has approved the applicable portions of the Plans and has confirmed its approval to the CITY and/or DEVELOPER in writing;
D. The CITY shall have received an appropriately executed Development Agreement; and
E. The DEVELOPER shall give the CITY notice of commencement of construction, in writing at least one (1) working day prior to commencement.

B3.3 Site Grading

The DEVELOPER, hereby, agrees to construct all site grading to comply with the approved Construction Plans, including the approved Erosion Control Plan for the PROJECT and to comply with the Engineering Standards and Specifications, Stormwater Ordinance, and all other codes and ordinances enforced by the CITY.

B3.4 Storm Water Management Systems

The DEVELOPER shall be responsible for all storm water management work made necessary by the development of this PROJECT. It is understood and agreed that the CITY in its proprietary function is not and could not be expected to oversee, supervise, or direct the construction of all drainage improvements, and the excavation incident thereto. Neither is the CITY vested with the original design responsibility nor the means to formally survey elevations or the locations of improvements at every stage of the construction process. The CITY is vested with the right of periodic inspections, stop work order, and final approval as a measure of secondary or subsequent enforcement. The DEVELOPER has and shall retain the responsibility to properly anticipate, survey, design and construct the subdivision storm water improvements and give full assurance that same shall not adversely affect the flow or quality of surface water from or upon any property. In providing technical assistance, plan and design review, the CITY does not and shall not relieve or accept any liability from the DEVELOPER.

B3.5 Street Construction

The DEVELOPER, hereby, agrees to construct and improve the streets shown on the Construction Plans to comply with the CITY's specifications and to the satisfaction and approval of the City Engineer by grading, draining, subgrade preparation, base preparation, curbing, signage, striping, signalization, sidewalk installation, and paving with the required preparation, amounts, and types of material. The DEVELOPER further agrees to pay the cost of all engineering, inspection and laboratory cost incidental to the construction of subdivision streets including but not limited to material and density testing. The DEVELOPER further agrees to make all necessary adjustments to manholes and valve boxes to meet finished surface grade and to repair subsurface or base material, as required, in areas directed by the CITY Engineer, prior to application of final surface.

B3.6 Time Period for Construction

The DEVELOPER agrees to be bound to complete, within three (3) years of commencement of construction, all IMPROVEMENTS shown on the plat and plans and all things required by this agreement.

The DEVELOPER further agrees that if due to unforeseen circumstances, he is unable to complete all work included in this agreement within the time specified above, but desires to complete said agreement to the satisfaction of the CITY, the DEVELOPER shall submit a written request for extension of the agreement period to the CITY at least sixty (60) days prior to the expiration of the existing agreement period, specifying the reason for the DEVELOPER's failure to complete the work as agreed and a prospective date for such completion. The DEVELOPER further agrees that if the performance surety executed to secure the value of the work to be performed under this agreement, due to inflation or rising costs, is determined to be inadequate by the City Engineer to secure the cost of said IMPROVEMENTS at the time an extension is sought, the DEVELOPER will provide the additional security to bring the performance surety amount in line with current cost projections as made by the CITY. The DEVELOPER understands that the DEVELOPER's failure to follow the extension procedure constitutes a breach of this agreement and places the DEVELOPER in violation of the Subdivision Regulations. The DEVELOPER further understands, that should the DEVELOPER fail to complete any part of the work outlined in this agreement in a good and workmanlike manner as approved, the CITY shall reserve the right to withhold and withdraw all building permits within the PROJECT until all items of this Agreement have been fulfilled by the DEVELOPER.

B3.7 Off-Site Improvements

The DEVELOPER shall construct any and all off-site facilities that may be required to serve the PROJECT. Unless specifically noted in the Construction Plans and made a part of separate agreement with the CITY, the CITY shall not be required to reimburse the DEVELOPER for construction of off-site improvements.

B3.9 Inspection and Compliance

After construction begins, the CITY shall provide on-site construction inspection as the CITY deems necessary to ensure that all work is performed and completed in accordance with the Construction Plans, CITY specifications, and the contents of this agreement. In the event of a disagreement as to compliance with or interpretation of the Construction Plans and the CITY'S specifications, the decision of the CITY shall be final and binding on the DEVELOPER. If the DEVELOPER fails to construct in accordance with the approved Construction Plans or to comply with the CITY'S specifications, the CITY may issue a stop-work order and DEVELOPER, hereby, agrees to be bound by such order.

B3.10 Testing

The DEVELOPER agrees to pay the cost of all engineering, inspection, and laboratory cost incidental to construction of the streets, sidewalks, utilities, sewers, compacted fill material, and other facilities included within this agreement. Such testing includes, but is not limited to, material and density testing.

B3.11 Scrap Removal

The DEVELOPER agrees to comply with all local, state, and federal rules and regulations regarding waste material and debris disposal.

B3.12 Traffic Control

The DEVELOPER, hereby, agrees to prepare a traffic control/detour plan where required and shall submit said plan to the CITY for review and approval. All traffic control and safety devices, including

signs, lane markings, and barriers necessitated by construction activity undertaken pursuant to this agreement shall be installed and maintained by the DEVELOPER. All traffic control devices shall meet the standards and be installed in accordance with the latest edition of the Manual on Uniform Traffic Control Devices for Streets and Highways, published by the United States Department of Transportation.

B3.13 Temporary Facilities

The DEVELOPER shall provide all temporary facilities including but not limited to utilities and roadways, that are determined by the CITY to be required in connection with or as a result of interruption of service or access that occurs as a consequence of construction activity associated with the work covered by this agreement. Such temporary services shall in all regards and at all points in time be adequate to assure emergency access and adequate fire flows.

B4 Acceptance of Improvements

B4.1 Completion of Improvements

At such time as the improvements have been constructed and installed, in accordance with the Constructions Plans and specifications, required testing and inspections completed and found satisfactory, and all clean-up and cover-up has been done to the satisfaction the City Engineer, a letter requesting preliminary acceptance of the PROJECT will be provided by the DEVELOPER. Formal acceptance shall follow the procedure established in the Subdivision Regulations.

The DEVELOPER agrees the DEVELOPER shall have no claim, direct or implied, in the title or ownership of the IMPROVEMENTS specified in this agreement when the IMPROVEMENTS are complete and thereafter accepted by the CITY. The DEVELOPER will be responsible for construction failures and defects in PROJECT prior to final acceptance. During this period, it shall remain the responsibility of the DEVELOPER to correct and cure these defects and failures.

B4.2 As-Built Drawings and Post-Completion Items

The DEVELOPER agrees to furnish to the CITY as-built plans, on a reproducible, stable media, of the sanitary sewer, storm water management, water mains and service system, and streets within the subdivision before the CITY shall accept the subdivision.

B4.3 Acceptance of Facilities

Upon final acceptance of all or part of the IMPROVEMENTS in the PROJECT, then those IMPROVEMENTS shall become the property of the CITY free from all claims from any person or entity without the necessity of any further writing, agreement, or deed. The DEVELOPER further agrees that any facilities placed within a public or platted right-of-way or dedicated public easement are irrevocably dedicated to the public use without any right of reimbursement or compensation of any kind.

B4.4 Failure to Install

In the event the DEVELOPER fails to install the facilities in accordance with the terms of this agreement, the CITY may, in its sole discretion, elect to accept all or a portion of the IMPROVEMENTS in the PROJECT. Should the CITY choose to accept all or a portion of these IMPROVEMENTS, the CITY shall become the sole owner of these facilities. The CITY may give notice of acceptance by writing delivered to the DEVELOPER or recorded in the Register’s Office of Maury County, Tennessee. No further writing or deed shall be required.

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed in multiple originals by persons properly authorized so, to do on or as of the day and year first given.

_____ PROJECT	
Completed by the Developer	*Completed by the City*
_____ DEVELOPER NAME	
_____ AUTHORIZED AGENT NAME	_____ CITY ENGINEER
_____ SIGNATURE	_____ SIGNATURE
_____ DATE	_____ DATE
_____ STREET	
_____ CITY, STATE, ZIP	
_____ PHONE	
_____ EMAIL	
Attest	*Attest*
_____ ATTEST NAME	_____ ATTEST NAME
_____ ATTEST SIGNATURE	_____ ATTEST SIGNATURE
_____ DATE	_____ DATE

OWNER AFFIDAVIT
COLUMBIA, MAURY COUNTY, TENNESSEE

I/we, Hampshire Pike Holdings, LLC
(Print Name(s) in Full)

being duly sworn, depose and say(s) that I/we am/are the owner(s) of the property described as:

Map 089, Parcel 41.15
(Property Parcel/Tax ID Number)

and located at:

Hampshire Pike, Columbia, TN
(Street Address)

am fully aware of the request for development approval in Columbia, Tennessee. Furthermore, I/we hereby appoint:

Wilson & Associates - Joey Wilson, Sean McGowan, Abigail Overstreet
(Print Name(s) in Full)

to act as my/our authorized agent on my/our behalf on all matters pertaining to the processing and obtaining the application with the exception of legal documents for recording purposes.

Signature

18100 Von Karman, Suite 500
Property Owner Mailing Address

Irvine, CA 92612
City, State, & Zip

Subscribed and sworn to before me this ____ day of _____, 20____.

See attached certificate
Notary Public

My Commission Expires: _____

CALIFORNIA ALL PURPOSE JURAT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of CALIFORNIA)
ss
County of ORANGE)

Subscribed and sworn to (or affirmed) before me on this 17th day of March, 2025, by Rodney F. Emery, proved to me on the basis of satisfactory evidence to be the person who appeared before me.

CRISTINA B. SONG
Notary Public - California
Orange County
Commission # 2422287
My Comm. Expires Oct 20, 2026

WITNESS my hand and official seal.

C Song

Signature of Notary Public

CITY OF COLUMBIA TENNESSEE

DEVELOPMENT SERVICES
700 NORTH GARDEN STREET
COLUMBIA, TN 38401
PHONE: (931) 560-1560
FAX: (931) 560-1541

PLANNING COMMISSION
PROJECT DEVELOPMENT APPLICATION

SUBMITTAL REQUIREMENTS

Final Plat: * *1 hard copy of all materials for submittal + PDF copy on a USB flash drive (no multiple applications on one storage device)*
Fold hard copy submittals larger than 8½"x11"
All Others: * Please submit the Application online at City of Columbia | Permitting (onlama.com)

ADDRESS/LOCATION	Hampshire Pike, Columbia, TN		
	TAX MAP: 089	GROUP:	PARCEL: 41.15
SUMMARY OF NATURE OF REQUEST AND WORK	The purpose of this plat is to create 7 lots and dedicate right-of-way.		

DATE OF PRE-APPLICATION CONFERENCE	N/A	*Pre-application meetings are scheduled for Wednesdays.*

SELECT REQUEST	SUBMITTALS SHALL INCLUDE BUT NOT LIMITED TO:
❑ Comprehensive Plan Amendment ❑ Annexation ❑ Rezoning ❑ Preliminary Plat ☑ Final Plat ❑ PUD Preliminary Master Plan ❑ PUD Final Site Plan ❑ Site Development Plan ❑ Other: **File naming nomenclature examples:* *Freedom Point Site Plan* *Freedom Point Master Plan* *Freedom Point Final Plat*	**Annexations:** ❑ Annexation Permission Form **Annexations/Rezoning/Plan Amendments:** ❑ Requested Zone Listed ❑ Statement of Compliance with Comprehensive Plan ❑ Concept Plan **Preliminary Plats/Site Development Plans:** ❑ Plans and/or Plats conforming to City standards with signed and completed check list **All Annexations/Rezoning/Preliminary Plats/Site Development Plans and PUDS:** ❑ Receipt of Payment for Pre-Application Meeting ❑ Written Legal Description copy ❑ Columbia Water System Availability Letter ❑ Columbia Waste Water Department Will Serve Letter

	Plats/PUDs: ☑ Project Name (include Sections & Phases) ☑ Total Number of Lots/Residential Units ☑ Square Footage of Non-Residential Floor Space ☑ Total acreage

Applications and all required submittals must be filed with the Department of Development Services prior to the established deadline. Both the applicant and property owner (if different from applicant) must sign the application. Any requests to defer or move the item to future meeting dates must be requested by the resubmittal date listed on the Planning Commission schedule.

APPLICANT
All communications go to the Applicant's email that is provided.

NAME	Abigail Overstreet	PHONE	615-749-0740
ADDRESS	108 Beasley Dr, Franklin, TN 37064	EMAIL	aoverstreet@wilsonpc.com

PROPERTY OWNER NAME	Hampshire Pike Holdings, LLC	PHONE	(949) 852-0700
ADDRESS	18100 Von Karman, Suite 500 Irvine, CA 92612	EMAIL	james.palda@steadfastco.com

If owner is not a natural person, documentation must be provided showing signing authority on behalf of the entity. If multiple persons are listed as owners in the records of the Maury County Assessor, all owners must sign or the signatory must provide documentation of authority to apply on behalf of record owner (i.e., Power of Attorney or notarized Letter of Authorization). In filling out this application, I attest that (1) I am familiar with the rules, regulations, and procedures of the City of Columbia & (2) all information contained herein is accurate & true to the best of my knowledge.

Abigail Overstreet	Abigail Overstreet	3/14/2025
APPLICANT NAME	APPLICANT SIGNATURE	DATE
Hampshire Pike Holdings, LLC Rod Emery, Authorized Signer	Rod Emery (Mar 17, 2025 13:22 PDT)	Mar 17, 2025
PROPERTY OWNER NAME	PROPERTY OWNER SIGNATURE	DATE

21-1752 Hampshire Pike - Final Plat - Submittal Application

Final Audit Report 2025-03-17

Created:	2025-03-17
By:	Breana Finney (Breana.Finney@SteadfastCo.com)
Status:	Signed
Transaction ID:	CBJCHBCAABAAlMpDagpxplhKy8PvX-SVlsP8MHtXF6Hf

"21-1752 Hampshire Pike - Final Plat - Submittal Application" History

Document created by Breana Finney (Breana.Finney@SteadfastCo.com)
2025-03-17 - 6:38:59 PM GMT- IP address: 72.194.102.130

Document emailed to Rod Emery (Rod.Emery@SteadfastCo.com) for signature
2025-03-17 - 6:39:27 PM GMT

Email viewed by Rod Emery (Rod.Emery@SteadfastCo.com)
2025-03-17 - 8:22:21 PM GMT- IP address: 104.47.56.126

Document e-signed by Rod Emery (Rod.Emery@SteadfastCo.com)
Signature Date: 2025-03-17 - 8:22:53 PM GMT - Time Source: server- IP address: 204.2.198.46

Agreement completed.
2025-03-17 - 8:22:53 PM GMT

A.1 Certificate of Ownership and Dedication

I (we) hereby certify that I am (we are) the owner(s) of the property shown and described hereon as evidenced in Book_____ , Page _____ , Maury County Registers Office, and adopt this final subdivision plat of the property as shown hereon and dedicate all public ways and easements as noted with my (our) free consent.

EMG HONEY FARM, LLC
BY: EQUITAS MANAGEMENT GROUP, LLC

OWNER

3/14/2025
DATE

SENIOR VICE PRESIDENT
TITLE (IF ACTION FOR CORPORATION OR PARTNERSHIP)

A.2 CERTIFICATE OF SURVEY ACCURACY

I (we) hereby certify that to the best of my (our) knowledge and belief this is a true and accurate survey of the property shown hereon; that this is a class "_____" Land Survey as defined in Title 62, Chapter 18, Tennessee Code Annotated, and that the ratio of precision is greater than or equal to 1: _____.

REGISTERED LAND SURVEYOR

NUMBER

DATE

A.3 Certificate of Approval of Water System

I hereby certify that the water system(s) outlined or indicated on this final subdivision plat has/have 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

NAME DATE

TITLE AUTHORIZING AGENCY

A.4 Certificate of Approval of Streets, Drainage, and Utilities

I hereby certify that the streets, drainage, and utilities outlined or indicated on this final subdivision plat have been installed in accordance with City specifications, or a performance surety in the amount of $ _____ for streets and drainage has been posted with the City of Columbia, Tennessee, to assure completion of such improvements.

CITY ENGINEER
COLUMBIA, TN

DATE

A.5 Certificate of Approval for Recording

I hereby certify that the final subdivision plat shown hereon has been found to comply with the City of Columbia Subdivision Regulations, with the exception of such variances, if any, as noted in the minutes of the Columbia Municipal Planning Commission, and that it has been approved for recording in the Office of the Maury County Register of Deeds.

PLANNING DIRECTOR
COLUMBIA, TN

DATE

A.6 Certificate of Subdivision Name and Street Names

Subdivision name and street names approved by the City Engineering Department and by E-911 Maury County.

MAURY COUNTY E-911

DATE

A.7 Certificate of Sanitary Sewer System

I hereby certify that the sanitary sewer system outlined or indicated on this final subdivision plat has been installed in accordance with the current local and state government requirements, or a sufficient bond or other surety has been filed to guarantee said installation.

DIRECTOR OF WASTEWATER DEPARTMENT
COLUMBIA, TN

DATE

A.8 Certificate of Compliance

I hereby certify that the final subdivision plat shown hereon has been found to comply with the City of Columbia Subdivision Regulations and other adopted ordinances and policies.

CITY ENGINEER
COLUMBIA, TN

DATE

BASIS OF BEARINGS & ELEVATIONS
THE BASIS OF THE BEARINGS SHOWN HEREON WERE BASED ON GRID NORTH AS IT RELATES TO THE TENNESSEE STATE PLANE COORDINATE SYSTEM NAD 83 DATUM. ALL ELEVATION SHOWN HEREON WERE BASED ON NAVD88 (GEOID 19). AS OBSERVED VIA RTK BASED OFF OF AN OPUS SOLUTION. MAY, 2023.

SURVEYOR'S CERTIFICATE

EMG HONEY FARM LLC
6148 LEE HWY STE 300
CHATTANOOGA, TN 73421

I HEREBY CERTIFY THAT THIS PLAT REPRESENTS A SURVEY MADE UNDER MY SUPERVISION IN ACCORDANCE WITH ACCEPTABLE PROFESSIONAL STANDARDS, AND THE CURRENT TENNESSEE MINIMUM STANDARDS OF PRACTICE. THIS IS A CATEGORY I SURVEY, AND THE RATIO OF PRECISION OF THE UNADJUSTED SURVEY IS GREATER THAN 1:22,495 AS SHOWN HEREON. THE BEARINGS AND DISTANCES SHOWN HEREON ARE BASED ON A SUCCESSFULLY WEIGHTED LEAST SQUARED ADJUSTMENT. THE INFORMATION SHOWN HEREON IS TRUE AND ACCURATE, TO THE BEST OF MY KNOWLEDGE. (JAMES D. PEDIGO, RLS #1611)

MARCH 6, 2025
DATE OF SURVEY

PRELIMINARY

DON PEDIGO, TN R.L.S.
TENNESSEE REGISTERED LAND SURVEYOR #1611

MARCH 13, 2025
DATE OF SIGNATURE

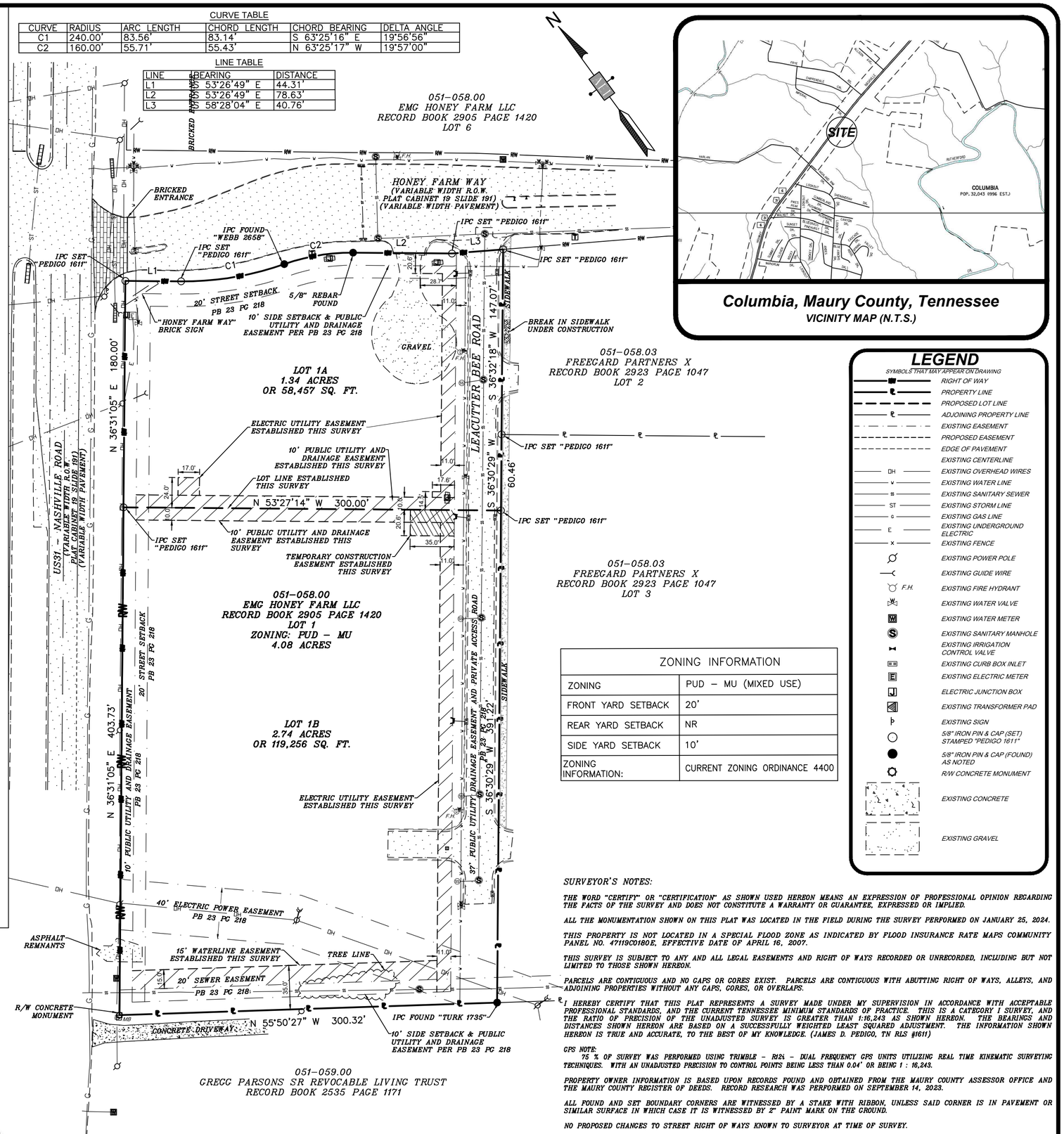
JAMES D. PEDIGO II
REGISTERED LAND SURVEYOR
XVI
AGRICU
COMMERCE
TENNESSEE NO. 1611

CURVE TABLE

CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE
C1	240.00'	83.56'	83.14'	S 63°25'16" E	19°56'56"
C2	160.00'	55.71'	55.43'	N 63°25'17" W	19°57'00"

LINE TABLE

LINE	BEARING	DISTANCE
L1	S 53°26'49" E	44.31'
L2	S 53°26'49" E	78.63'
L3	S 58°28'04" E	40.76'



Columbia, Maury County, Tennessee
VICINITY MAP (N.T.S.)

ZONING INFORMATION	
ZONING	PUD – MU (MIXED USE)
FRONT YARD SETBACK	20'
REAR YARD SETBACK	NR
SIDE YARD SETBACK	10'
ZONING INFORMATION:	CURRENT ZONING ORDINANCE 4400

LEGEND

SYMBOLS THAT MAY APPEAR ON DRAWING

- RIGHT OF WAY
- PROPERTY LINE
- PROPOSED LOT LINE
- ADJOINING PROPERTY LINE
- EXISTING EASEMENT
- PROPOSED EASEMENT
- EDGE OF PAVEMENT
- EXISTING CENTERLINE
- OH — EXISTING OVERHEAD WIRES
- W — EXISTING WATER LINE
- SS — EXISTING SANITARY SEWER
- ST — EXISTING STORM LINE
- G — EXISTING GAS LINE
- E — EXISTING UNDERGROUND ELECTRIC
- X — EXISTING FENCE
- EXISTING POWER POLE
- EXISTING GUIDE WIRE
- F.H. — EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- W — EXISTING WATER METER
- S — EXISTING SANITARY MANHOLE
- EXISTING IRRIGATION CONTROL VALVE
- EXISTING CURB BOX INLET
- E — EXISTING ELECTRIC METER
- EXISTING ELECTRIC JUNCTION BOX
- EXISTING TRANSFORMER PAD
- EXISTING SIGN
- 5/8" IRON PIN & CAP (SET) STAMPED "PEDIGO 1611"
- 5/8" IRON PIN & CAP (FOUND) AS NOTED
- R/W CONCRETE MONUMENT
- EXISTING CONCRETE
- EXISTING GRAVEL

SURVEYOR'S NOTES:

THE WORD "CERTIFY" OR "CERTIFICATION" AS SHOWN USED HEREON MEANS AN EXPRESSION OF PROFESSIONAL OPINION REGARDING THE FACTS OF THE SURVEY AND DOES NOT CONSTITUTE A WARRANTY OR GUARANTEE, EXPRESSED OR IMPLIED.

ALL THE MONUMENTATION SHOWN ON THIS PLAT WAS LOCATED IN THE FIELD DURING THE SURVEY PERFORMED ON JANUARY 25, 2024.

THIS PROPERTY IS NOT LOCATED IN A SPECIAL FLOOD ZONE AS INDICATED BY FLOOD INSURANCE RATE MAPS COMMUNITY PANEL NO. 47119C0180E, EFFECTIVE DATE OF APRIL 16, 2007.

THIS SURVEY IS SUBJECT TO ANY AND ALL LEGAL EASEMENTS AND RIGHT OF WAYS RECORDED OR UNRECORDED, INCLUDING BUT NOT LIMITED TO THOSE SHOWN HEREON.

PARCELS ARE CONTIGUOUS AND NO GAPS OR GORES EXIST. PARCELS ARE CONTIGUOUS WITH ABUTTING RIGHT OF WAYS, ALLEYS, AND ADJOINING PROPERTIES WITHOUT ANY GAPS, GORES, OR OVERLAPS.

I HEREBY CERTIFY THAT THIS PLAT REPRESENTS A SURVEY MADE UNDER MY SUPERVISION IN ACCORDANCE WITH ACCEPTABLE PROFESSIONAL STANDARDS, AND THE CURRENT TENNESSEE MINIMUM STANDARDS OF PRACTICE. THIS IS A CATEGORY I SURVEY, AND THE RATIO OF PRECISION OF THE UNADJUSTED SURVEY IS GREATER THAN 1:16,243 AS SHOWN HEREON. THE BEARINGS AND DISTANCES SHOWN HEREON ARE BASED ON A SUCCESSFULLY WEIGHTED LEAST SQUARED ADJUSTMENT. THE INFORMATION SHOWN HEREON IS TRUE AND ACCURATE, TO THE BEST OF MY KNOWLEDGE. (JAMES D. PEDIGO, TN RLS #1611)

GPS NOTE:
75 % OF SURVEY WAS PERFORMED USING TRIMBLE - R8s - DUAL FREQUENCY GPS UNITS UTILIZING REAL TIME KINEMATIC SURVEYING TECHNIQUES. WITH AN UNADJUSTED PRECISION TO CONTROL POINTS BEING LESS THAN 0.04' OR BEING 1 : 16,243.

PROPERTY OWNER INFORMATION IS BASED UPON RECORDS FOUND AND OBTAINED FROM THE MAURY COUNTY ASSESSOR OFFICE AND THE MAURY COUNTY REGISTER OF DEEDS. RECORD RESEARCH WAS PERFORMED ON SEPTEMBER 14, 2023.

ALL FOUND AND SET BOUNDARY CORNERS ARE WITNESSED BY A STAKE WITH RIBBON, UNLESS SAID CORNER IS IN PAVEMENT OR SIMILAR SURFACE IN WHICH CASE IT IS WITNESSED BY 2" PAINT MARK ON THE GROUND.

NO PROPOSED CHANGES TO STREET RIGHT OF WAYS KNOWN TO SURVEYOR AT TIME OF SURVEY.

RECENT EARTH MOVING WORK, AND UTILITY WORK, WAS OBSERVED IN THE PROCESS OF CONDUCTING THE FIELD WORK.

THERE WAS NO FIELD DELINEATION OF WETLANDS OBSERVED AT THE TIME OF SURVEY (EXCEPT AS SHOWN OR NOTED HEREON).

THERE IS NO OBSERVED EVIDENCE OF SITE USE AS A SOLID WASTE DUMP, SUMP, OR SANITARY LANDFILL (EXCEPT AS SHOWN OR NOTED HEREON).

NO VISIBLE EVIDENCE OF CEMETERY ON SUBJECT PROPERTY.

ZONING INFORMATION IS BEING PROVIDED WITHOUT EXPRESSING ANY LEGAL OPINION.

PURPOSE OF PLAT: THE PURPOSE OF THIS PLAT IS TO SUBDIVIDE LOT 1 OF THE HONEY FARM CROSSING PLAT AS RECORDED IN PLAT BOOK P23 PAGE 218

PARCEL OWNER AND SOURCE OF TITLE FOR SURVEY
EMC HONEY FARM LLC
6148 LEE HWY STE 300
CHATTANOOGA, TN 73421
PVA# 051-058.00
PORTION OF:
DEED BOOK 2905 PAGE 1420
PLAT BOOK P23 PAGE 218

0 60 120 180

EMG HONEY FARM LLC
6148 LEE HWY STE 300
CHATTANOOGA, TN 73421
PVA# 051-058.00
DEED BOOK 2905 PAGE 1420
PLAT BOOK P23 PAGE 218

PROPERTY ADDRESS:
2240 NASHVILLE HWY,
COLUMBIA, TN 38401
TOTAL ACREAGE: 4.08 ACRES

PLANS PREPARED AND SUBMITTED BY:

AEI — an STV Company
AMERICAN ENGINEERS, INC.
DESIGNING YOUR FUTURE
65 Aberdeen Drive Glasgow KY
270.651.7220

PROJECT
AMENDMENT TO LOT 1
HONEY FARM CROSSING
2240 NASHVILLE HWY,
COLUMBIA, TN 38401

CLIENT
MCDONALD'S CORPORATION
P.O. BOX 66207, AMF O'HARE
CHICAGO, ILLINOIS 60666

DATE:
MARCH 14TH, 2025

SCALE:
1" = 60'

DRAWN BY:
J. DAKIN

APPROVED BY:
D. PEDIGO

DRAWING FILE: T:\22 PROJECTS\222-281 McDonalds Columbia TN

PROJECT NO. 222-281
PHASE NO.

BOUNDARY
SHT 1 OF 1

Appendix B: Subdivision Development Agreement

This DEVELOPMENT AGREEMENT is made and entered into on this

21st day of January, 2025,
between THE CITY OF COLUMBIA, TENNESSEE, (hereinafter the "CITY"), and

EMG Honey Farm, LLC, the DEVELOPER (hereinafter the "DEVELOPER") named on the Addendum to this Agreement attached hereto and by this reference made a part hereof (hereinafter the "ADDENDUM").

WITNESSETH:

WHEREAS, the DEVELOPER desires to develop the property described on the ADDENDUM (hereinafter the "PROJECT"); and,

WHEREAS, the Development Plan of the PROJECT has been approved by the Columbia Municipal Planning Commission (hereinafter the "CMPC") on the

8th day of December, 2022,
pursuant to Tennessee Code Annotated Title 13, Chapter 4, and the Subdivision Regulations of Columbia, Tennessee (hereinafter the "SUBDIVISION REGULATIONS"); and,

WHEREAS, the DEVELOPER is the owner of the PROJECT and has authority to engage in such development; and,

WHEREAS, the DEVELOPER desires to develop and improve said PROJECT; and,

WHEREAS, in order to provide for the health, safety, and welfare of future residents of the PROJECT, it will be necessary for certain improvements to the CITY'S utility systems, public infrastructure, and common areas to be constructed within and to serve the PROJECT including but not be limited to roads, bridges, sidewalks, pedestrian facilities, stormwater facilities, street signs, markings, signals, street lighting, recreation and park facilities, landscaping, and the like (hereinafter the "IMPROVEMENTS"); and,

WHEREAS, in order for the IMPROVEMENTS to be fully integrated with the utility systems and public infrastructure of the CITY and to function in a satisfactory manner, the DEVELOPER has agreed to construct, in accordance with the Subdivision Regulations and other rules, regulations, and ordinances of the CITY, the IMPROVEMENTS in said PROJECT and extend utilities to the PROJECT at their own cost; and,

WHEREAS, the CITY is willing to accept the dedication of the streets, utilities, and other improvements as determined in the Development Plan of the PROJECT, subject to the City of Columbia City Council approval by resolution, and subject to the applicant's compliance with all requirements in this agreement and applicable existing laws of the CITY of Columbia and the State of Tennessee,

NOW, THEREFORE, it is agreed and understood as follows:

B1 General Conditions

B1.1 Construction Costs

The DEVELOPER shall pay for all material and labor necessary to install and complete the roads, sidewalks, sewers, utilities, and other facilities in accordance with this agreement.

B1.2 City Ordinances, Rules and Regulations

All currently existing CITY ordinances, rules and regulations, and the Subdivision Regulations adopted by the CMPC are made a part of this agreement. In the event of a conflict between the terms of this agreement and a CITY ordinance, the ordinance shall prevail. In the event of a conflict between the terms of this agreement and the Subdivision Regulations, the Subdivision Regulations shall prevail. All work done under this agreement is to be performed in accordance with plans and specifications approved by the City and made a part, hereof.

B1.3 Fees

Review fees, inspection fees, and other amounts established by the CITY shall be paid prior to any review of the plans. If the DEVELOPER fails to install the facilities in accordance with the terms of this Agreement, no portion of the review fees, inspection fees, or other amounts paid to the CITY shall be refundable to the DEVELOPER.

B1.4 Inspection

The CITY shall have a continuous right to inspect the work and facilities to assure that the work and facilities are in accordance with the Subdivision Regulations, approved Construction Plans, and other rules, regulations, and ordinances of the CITY.

B1.5 Right of Entry

The CITY shall have the right, in case of breach of the Performance Agreement, to enter upon any property of the DEVELOPER and take all necessary actions to complete the work and obligations not completed.

B1.6 Easements

The DEVELOPER shall obtain and dedicate to the CITY or cause to be dedicated to the CITY, either by dedication on the plat or by easement deed, in either case in a form acceptable to the CITY, permanent easements of such widths as required by the CITY and noted on the Plans. The DEVELOPER further agrees to grant the necessary easements and rights-of-way across the DEVELOPER's properties without expense to the CITY and waive any claim for damages.

B1.7 Stormwater Maintenance Agreement

If the PROJECT includes any detention or retention ponds, common drainage ditches, water quality facilities, or stormwater facilities outside of the CITY rights-of-way, the DEVELOPER will submit a Stormwater Maintenance Agreement, to be filed with and recorded with the Final Plat.

B1.8 Attorney Fees and Other Expenses

The DEVELOPER shall pay all reasonable costs and expenses incurred by the CITY in enforcing or completing this agreement. The DEVELOPER shall pay all costs and expenses, including the CITY'S attorney fees, of any legal proceedings brought by the CITY against the DEVELOPER seeking remedies for the DEVELOPER'S failure to perform any of its obligations hereunder, whether or not any proceedings are prosecuted to judgment.

B1.9 Agreement Not Assignable

No third party shall obtain any benefits or rights under this agreement nor shall the rights or duties be assigned by either party.

B1.10 Revocation and Interpretation

This agreement shall bind the DEVELOPER when executed by the DEVELOPER and may not be revoked by the DEVELOPER without permission of the CITY, even if the agreement has not been executed by the CITY, or does not bind CITY, for other reasons. This agreement shall be interpreted in accordance with Tennessee law and may only be enforced in the Chancery Court or Circuit Court or Court of competent jurisdiction of Maury County, Tennessee, and Tennessee Appellate Courts.

B1.11 No Oral Agreement

This agreement may not be orally amended and supersedes all prior negotiations, commitments, or understandings.

B1.12 Separability

If any portion of this agreement is held to be unenforceable, the CITY shall have the right to determine whether the remainder of the agreement shall remain in effect, or whether the agreement shall be void and all rights of the DEVELOPER pursuant to this agreement terminated.

B 1.13 Transferability

The DEVELOPER agrees to not transfer the property on which this PROJECT is to be located without first providing the CITY with written notice. The transferee shall provide the CITY an Assumption Agreement of this Agreement, whereby the transferee agrees to perform the IMPROVEMENTS required under this agreement and to provide a performance surety. The DEVELOPER understands that if the DEVELOPER transfers said property without providing the notice of transfer and Assumption Agreement as required herein, they will be in breach of this agreement and in violation of the Subdivision Regulations.

B1.14 Indemnity

The DEVELOPER shall indemnify and hold the CITY harmless from all loss, costs, expenses, liability, money damages, penalties, or claims arising out of any work covered by this agreement, including any attorney fees incurred by the CITY in connection therewith. Inspection of the IMPROVEMENTS by an authorized representative of the CITY shall not constitute a waiver by the CITY of any defect or of any of the DEVELOPER'S obligations hereunder.

B1.15 Binding Effect

This agreement shall be binding upon the DEVELOPER and the DEVELEPOR's heirs, administrators, executors, assigns, and any other successors in interest.

B1.16 Entire Agreement

This document contains the entire agreement between the parties, and there are no collateral understandings or agreements between them. No variations or alterations of the terms of this agreement shall be binding upon either of the parties, unless the same be reduced to writing and made an amendment to this agreement.

B1.17 Headings

Paragraph titles and headings contained herein are inserted for convenience only and shall not be deemed a part of the agreement and in no way shall define, limit, extend, or describe the scope or intent of any provision, hereof.

B2 Performance Surety

At the time of execution of this agreement, the DEVELOPER shall provide the CITY a performance surety, in an amount determined by the City Engineer for the IMPROVEMENTS and other items specified by the Construction Plans, plats, and plans approved by the CMPC. This performance surety shall secure performance of all obligations of the DEVELOPER under this agreement. The performance surety shall meet all requirements established in Chapter 4: Performance Agreement of the Subdivision Regulations and secure full compliance with all terms and conditions of this agreement. The performance surety may be called for failure to comply with the provisions of this agreement in whole or in part according to the terms of the performance surety. The performance surety will not be released, except and until there has been full compliance with this agreement.

B3 Construction

B3.1 Construction Plans

The DEVELOPER shall submit to the CITY, Construction Plans describing in reasonable detail all utility systems, all storm water management systems, all street systems, pedestrian facilities, and all IMPROVEMENTS. The Construction Plans shall be designed according to the Engineering Standards and Specifications, all other codes and ordinances enforced by the City, and sound engineering judgment. The design of all utility systems shall follow the State of Tennessee and utility provider design criteria and specifications. In the event of a disagreement as to compliance with or interpretation of the Construction Plans and the CITY'S specifications, the decision of the CITY shall be final and binding on the DEVELOPER. The Construction Plans shall be prepared by a design professional licensed by the State of Tennessee to design all systems and shall bear the seal, signature, date, and license number of the professional preparing the Construction Plans.

B3.2 Commencement of Construction

Construction of IMPROVEMENTS may not begin until the following events have occurred:

A. The Preliminary Plat has been approved by the CMPC;
B. The Construction Plans are approved by the CITY;
C. The Tennessee Department of Environment and Conservation has approved the applicable portions of the Plans and has confirmed its approval to the CITY and/or DEVELOPER in writing;
D. The CITY shall have received an appropriately executed Development Agreement; and
E. The DEVELOPER shall give the CITY notice of commencement of construction, in writing at least one (1) working day prior to commencement.

B3.3 Site Grading

The DEVELOPER, hereby, agrees to construct all site grading to comply with the approved Construction Plans, including the approved Erosion Control Plan for the PROJECT and to comply with the Engineering Standards and Specifications, Stormwater Ordinance, and all other codes and ordinances enforced by the CITY.

B3.4 Storm Water Management Systems

The DEVELOPER shall be responsible for all storm water management work made necessary by the development of this PROJECT. It is understood and agreed that the CITY in its proprietary function is not and could not be expected to oversee, supervise, or direct the construction of all drainage improvements, and the excavation incident thereto. Neither is the CITY vested with the original design responsibility nor the means to formally survey elevations or the locations of improvements at every stage of the construction process. The CITY is vested with the right of periodic inspections, stop work order, and final approval as a measure of secondary or subsequent enforcement. The DEVELOPER has and shall retain the responsibility to properly anticipate, survey, design and construct the subdivision storm water improvements and give full assurance that same shall not adversely affect the flow or quality of surface water from or upon any property. In providing technical assistance, plan and design review, the CITY does not and shall not relieve or accept any liability from the DEVELOPER.

B3.5 Street Construction

The DEVELOPER, hereby, agrees to construct and improve the streets shown on the Construction Plans to comply with the CITY's specifications and to the satisfaction and approval of the City Engineer by grading, draining, subgrade preparation, base preparation, curbing, signage, striping, signalization, sidewalk installation, and paving with the required preparation, amounts, and types of material. The DEVELOPER further agrees to pay the cost of all engineering, inspection and laboratory cost incidental to the construction of subdivision streets including but not limited to material and density testing. The DEVELOPER further agrees to make all necessary adjustments to manholes and valve boxes to meet finished surface grade and to repair subsurface or base material, as required, in areas directed by the CITY Engineer, prior to application of final surface.

B3.6 Time Period for Construction

The DEVELOPER agrees to be bound to complete, within three (3) years of commencement of construction, all IMPROVEMENTS shown on the plat and plans and all things required by this agreement.

The DEVELOPER further agrees that if due to unforeseen circumstances, he is unable to complete all work included in this agreement within the time specified above, but desires to complete said agreement to the satisfaction of the CITY, the DEVELOPER shall submit a written request for extension of the agreement period to the CITY at least sixty (60) days prior to the expiration of the existing agreement period, specifying the reason for the DEVELOPER's failure to complete the work as agreed and a prospective date for such completion. The DEVELOPER further agrees that if the performance surety executed to secure the value of the work to be performed under this agreement, due to inflation or rising costs, is determined to be inadequate by the City Engineer to secure the cost of said IMPROVEMENTS at the time an extension is sought, the DEVELOPER will provide the additional security to bring the performance surety amount in line with current cost projections as made by the CITY. The DEVELOPER understands that the DEVELOPER's failure to follow the extension procedure constitutes a breach of this agreement and places the DEVELOPER in violation of the Subdivision Regulations. The DEVELOPER further understands, that should the DEVELOPER fail to complete any part of the work outlined in this agreement in a good and workmanlike manner as approved, the CITY shall reserve the right to withhold and withdraw all building permits within the PROJECT until all items of this Agreement have been fulfilled by the DEVELOPER.

B3.7 Off-Site Improvements

The DEVELOPER shall construct any and all off-site facilities that may be required to serve the PROJECT. Unless specifically noted in the Construction Plans and made a part of separate agreement with the CITY, the CITY shall not be required to reimburse the DEVELOPER for construction of off-site improvements.

B3.9 Inspection and Compliance

After construction begins, the CITY shall provide on-site construction inspection as the CITY deems necessary to ensure that all work is performed and completed in accordance with the Construction Plans, CITY specifications, and the contents of this agreement. In the event of a disagreement as to compliance with or interpretation of the Construction Plans and the CITY'S specifications, the decision of the CITY shall be final and binding on the DEVELOPER. If the DEVELOPER fails to construct in accordance with the approved Construction Plans or to comply with the CITY'S specifications, the CITY may issue a stop-work order and DEVELOPER, hereby, agrees to be bound by such order.

B3.10 Testing

The DEVELOPER agrees to pay the cost of all engineering, inspection, and laboratory cost incidental to construction of the streets, sidewalks, utilities, sewers, compacted fill material, and other facilities included within this agreement. Such testing includes, but is not limited to, material and density testing.

B3.11 Scrap Removal

The DEVELOPER agrees to comply with all local, state, and federal rules and regulations regarding waste material and debris disposal.

B3.12 Traffic Control

The DEVELOPER, hereby, agrees to prepare a traffic control/detour plan where required and shall submit said plan to the CITY for review and approval. All traffic control and safety devices, including

signs, lane markings, and barriers necessitated by construction activity undertaken pursuant to this agreement shall be installed and maintained by the DEVELOPER. All traffic control devices shall meet the standards and be installed in accordance with the latest edition of the Manual on Uniform Traffic Control Devices for Streets and Highways, published by the United States Department of Transportation.

B3.13 Temporary Facilities

The DEVELOPER shall provide all temporary facilities including but not limited to utilities and roadways, that are determined by the CITY to be required in connection with or as a result of interruption of service or access that occurs as a consequence of construction activity associated with the work covered by this agreement. Such temporary services shall in all regards and at all points in time be adequate to assure emergency access and adequate fire flows.

B4 Acceptance of Improvements

B4.1 Completion of Improvements

At such time as the improvements have been constructed and installed, in accordance with the Constructions Plans and specifications, required testing and inspections completed and found satisfactory, and all clean-up and cover-up has been done to the satisfaction the City Engineer, a letter requesting preliminary acceptance of the PROJECT will be provided by the DEVELOPER. Formal acceptance shall follow the procedure established in the Subdivision Regulations.

The DEVELOPER agrees the DEVELOPER shall have no claim, direct or implied, in the title or ownership of the IMPROVEMENTS specified in this agreement when the IMPROVEMENTS are complete and thereafter accepted by the CITY. The DEVELOPER will be responsible for construction failures and defects in PROJECT prior to final acceptance. During this period, it shall remain the responsibility of the DEVELOPER to correct and cure these defects and failures.

B4.2 As-Built Drawings and Post-Completion Items

The DEVELOPER agrees to furnish to the CITY as-built plans, on a reproducible, stable media, of the sanitary sewer, storm water management, water mains and service system, and streets within the subdivision before the CITY shall accept the subdivision.

B4.3 Acceptance of Facilities

Upon final acceptance of all or part of the IMPROVEMENTS in the PROJECT, then those IMPROVEMENTS shall become the property of the CITY free from all claims from any person or entity without the necessity of any further writing, agreement, or deed. The DEVELOPER further agrees that any facilities placed within a public or platted right-of-way or dedicated public easement are irrevocably dedicated to the public use without any right of reimbursement or compensation of any kind.

B4.4 Failure to Install

In the event the DEVELOPER fails to install the facilities in accordance with the terms of this agreement, the CITY may, in its sole discretion, elect to accept all or a portion of the IMPROVEMENTS in the PROJECT. Should the CITY choose to accept all or a portion of these IMPROVEMENTS, the CITY shall become the sole owner of these facilities. The CITY may give notice of acceptance by writing delivered to the DEVELOPER or recorded in the Register's Office of Maury County, Tennessee. No further writing or deed shall be required.

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed in multiple originals by persons properly authorized so, to do on or as of the day and year first given.

PROJECT	
Completed by the Developer	*Completed by the City*
EMG Honey Farm, LLC DEVELOPER NAME	
Drew Smith AUTHORIZED AGENT NAME	CITY ENGINEER
SIGNATURE	SIGNATURE
Janurary 21, 2025 DATE	DATE
6148 Lee Highway, Suite 300 STREET	
Chattanooga, TN 37421 CITY, STATE, ZIP	
469-585-7913 PHONE	
drew.smith@equitasmg.com EMAIL	
Attest	*Attest*
ATTEST NAME	ATTEST NAME
ATTEST SIGNATURE	ATTEST SIGNATURE
DATE	DATE

CITY OF COLUMBIA TENNESSEE

DEVELOPMENT SERVICES
700 NORTH GARDEN STREET
COLUMBIA, TN 38401
PHONE: (931) 560-1560
FAX: (931) 560-1541

PLANNING COMMISSION
PROJECT DEVELOPMENT APPLICATION

SUBMITTAL REQUIREMENTS

Final Plat: * *1 hard copy of all materials for submittal + PDF copy on a USB flash drive (no multiple applications on one storage device)*
Fold hard copy submittals larger than 8½"x11"
All Others: * Please submit the Application online at City of Columbia | Permitting (onlama.com)

ADDRESS/LOCATION	2240 Nashville Highway, Columbia, TN 38401		
	TAX MAP: 051	GROUP:	PARCEL: 058.00
SUMMARY OF NATURE OF REQUEST AND WORK	Subdividing lot 1 of the Honey Farm Crossing Subdivision		

DATE OF PRE-APPLICATION CONFERENCE		*Pre-application meetings are scheduled for Wednesdays.*

SELECT REQUEST	SUBMITTALS SHALL INCLUDE BUT NOT LIMITED TO:
❑ Comprehensive Plan Amendment ❑ Annexation ❑ Rezoning ❑ Preliminary Plat ☑ Final Plat ❑ PUD Preliminary Master Plan ❑ PUD Final Site Plan ❑ Site Development Plan ❑ Other: **File naming nomenclature examples:* *Freedom Point Site Plan* *Freedom Point Master Plan* *Freedom Point Final Plat*	**Annexations:** ❑ Annexation Permission Form **Annexations/Rezoning/Plan Amendments:** ❑ Requested Zone Listed ❑ Statement of Compliance with Comprehensive Plan ❑ Concept Plan **Preliminary Plats/Site Development Plans:** ❑ Plans and/or Plats conforming to City standards with signed and completed check list **All Annexations/Rezoning/Preliminary Plats/Site Development Plans and PUDS:** ❑ Receipt of Payment for Pre-Application Meeting ❑ Written Legal Description copy ❑ Columbia Water System Availability Letter ❑ Columbia Waste Water Department Will Serve Letter

	Plats/PUDs: ❑ Project Name (include Sections & Phases) ❑ Total Number of Lots/Residential Units ❑ Square Footage of Non-Residential Floor Space ❑ Total acreage

Applications and all required submittals must be filed with the Department of Development Services prior to the established deadline. Both the applicant and property owner (if different from applicant) must sign the application. Any requests to defer or move the item to future meeting dates must be requested by the resubmittal date listed on the Planning Commission schedule.

APPLICANT
All communications go to the Applicant's email that is provided.

NAME	Jansen Dakin	PHONE	(270) 670-5700
ADDRESS	65 Aberdeen Drive, Glasgow, KY 42141	EMAIL	dakinjansen@gmail.com

PROPERTY OWNER NAME	EMG Honey Farm, LLC	PHONE	(469) 585-7913
ADDRESS	6148 Lee Hwy, Chattanooga, TN 37421	EMAIL	drew.smith@equitasmg.com

If owner is not a natural person, documentation must be provided showing signing authority on behalf of the entity. If multiple persons are listed as owners in the records of the Maury County Assessor, all owners must sign or the signatory must provide documentation of authority to apply on behalf of record owner (i.e., Power of Attorney or notarized Letter of Authorization). In filling out this application, I attest that (1) I am familiar with the rules, regulations, and procedures of the City of Columbia & (2) all information contained herein is accurate & true to the best of my knowledge.

Jansen Dakin	Jansen Dakin	03/14/2025
APPLICANT NAME	APPLICANT SIGNATURE	DATE
EMG Honey Farm, LLC	Drew Smith SR. V. P.	03/14/2025
PROPERTY OWNER NAME	PROPERTY OWNER SIGNATURE	DATE

PURPOSE NOTE

THE PURPOSE OF THIS PLAT IS TO CREATE 22 RESIDENTIAL LOTS.

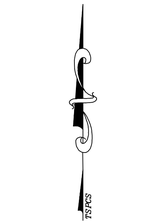
Surveyor's Notes

1. The property shown hereon is located within the City of Columbia, Maury County, TN. All matters pertaining to construction, use, location of improvements, signage, parking, noise, vibration, emissions, fire hazards, radiation, illumination, setback provisions, etc., are subject to the City of Columbia's Zoning Regulations as interpreted and regulated by the Department of Development Services.
2. This property currently identified as a portion of Parcel Number 053.00 per Tax Map No. 72.
3. Deed reference: Record Book R2704, Page 868, Register's Office of Maury County, Tennessee.
4. Bearings based on: Tennessee State Plane Coordinate System, NAD83.
5. This drawing was prepared in accordance with our field survey notes. It shows improvements as they exist to the best of our knowledge, but is not guaranteed to be correct in each and every detail.
6. This survey was prepared from current deeds of record and does not represent a title search or a guarantee of title, and is subject to any state of facts a current and accurate search may reveal.
7. Total area of property surveyed is 5.65 Acres ±.
8. New Right-Of-Way dedication: 0.96 Acres ±.
9. There is a 10 foot easement on property lines parallel to the public road for public utility and drainage easements. Additional requirements may apply based on actual field conditions.
10. Subject property does not lie in a FEMA/FIRM "Special Flood Hazard Area" as shown on Map 47119C0195E dated April 16, 2007.
11. Unless otherwise noted, all lot corners are marked with iron rods.

Utility Notes

Stormwater appurtenances as depicted on this Final Plat shall be maintained as directed in the "Inspection and Maintenance Agreement of Private Stormwater Management Facilities" as recorded in Record Book R3013, Page 160 in the Register's Office of Maury County, Tennessee.

Note:
Preliminary Plat passed Planning Commission at the Dec 9th, 2020 meeting.



Scale : 1" = 50'

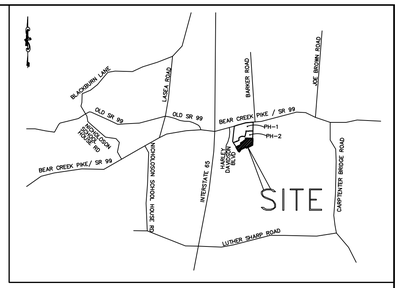
0' 25' 50' 100'

GRAPHIC SCALE

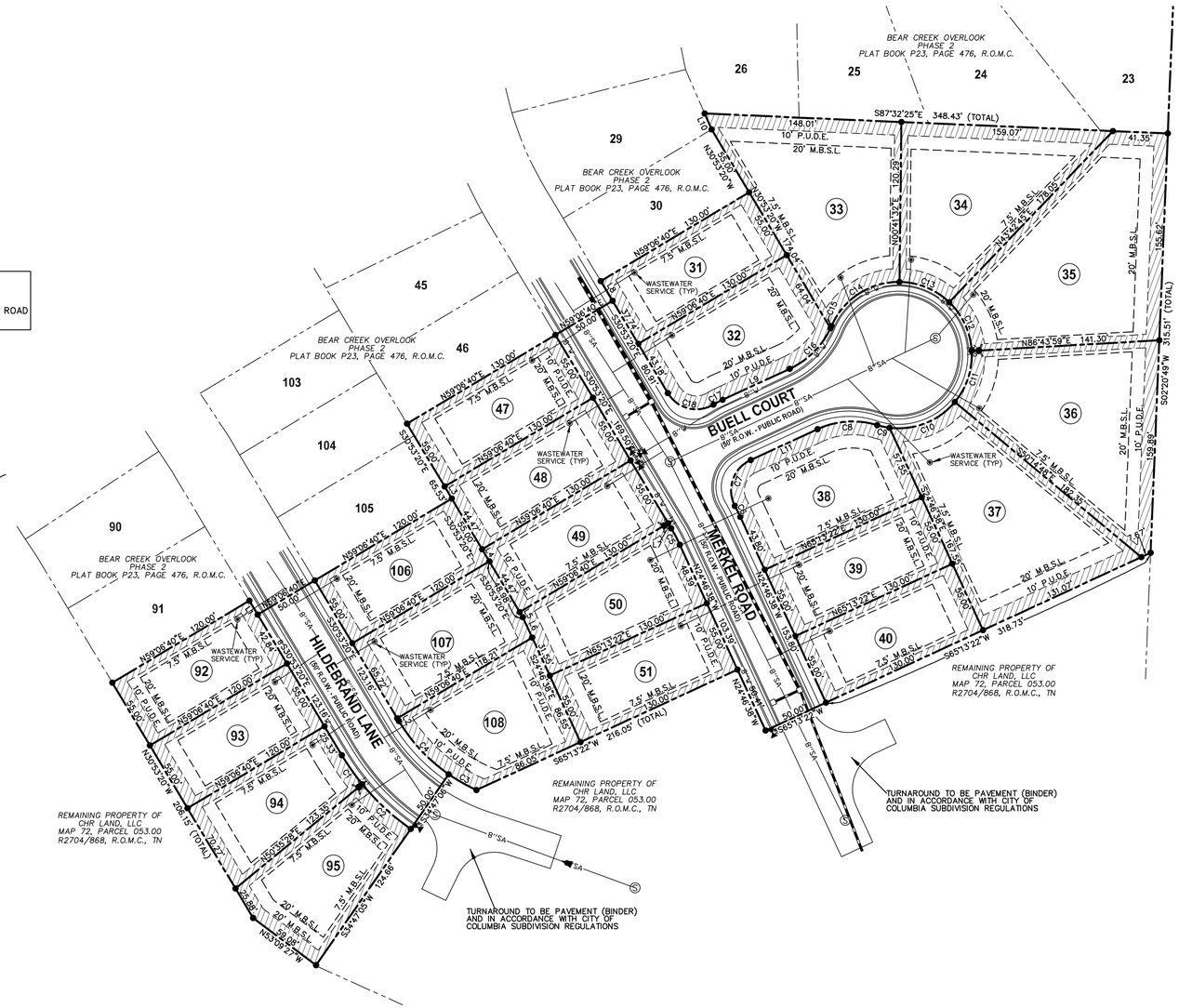
BOUNDARY ANNOTATION TABLES

LINE	BEARING	DISTANCE
L1	S30°53'20"E	12.16'
L2	S30°53'20"E	2.44'
L3	S30°53'20"E	10.53'
L4	S30°53'20"E	10.53'
L5	S30°53'20"E	4.50'
L6	S24°46'38"E	16.84'
L7	S30°53'20"E	4.50'
L8	S30°53'20"E	17.26'
L9	N65°13'22"E	55.56'
L10	N23°32'48"W	13.08'
L11	N65°13'22"E	55.34'

CURVE	DELTA ANGLE	RADIUS	ARC LENGTH	CHORD BEARING	CHORD LENGTH
C1	8°31'11"	180.00'	26.77'	S35°08'56"E	26.74'
C2	15°48'23"	180.00'	49.66	S47°18'43"E	49.50'
C3	10°36'54"	130.00'	24.08'	N60°31'21"W	24.05'
C4	24°19'54"	130.00'	55.19'	N43°03'08"W	54.78'
C5	6°06'43"	130.00'	13.87'	S27°49'59"E	13.86'
C6	2°55'19"	180.00'	9.18'	N26°14'18"W	9.18'
C7	9°25'36"	25.06'	40.87'	N19°05'05"E	36.49'
C8	41°46'31"	63.00'	45.93'	N86°06'38"E	44.92'
C9	9°57'14"	55.00'	9.56'	S77°58'44"E	9.54'
C10	57°17'27"	55.00'	55.00'	N68°23'56"E	52.73'
C11	43°01'13"	55.00'	41.30'	N18°14'35"E	40.33'
C12	43°01'13"	55.00'	41.30'	N24°46'38"W	40.33'
C13	43°01'13"	55.00'	41.30'	N67°47'51"W	40.33'
C14	67°14'41"	55.00'	64.55'	S57°04'11"W	60.91'
C15	1°36'12"	63.00'	1.76'	S24°14'57"W	1.76'
C16	40°10'20"	63.00'	44.17'	S45°08'12"W	43.27'
C17	5°55'59"	75.10'	7.78'	S62°04'44"W	7.77'
C18	90°00'00"	25.00'	39.27'	N75°53'20"W	35.36'

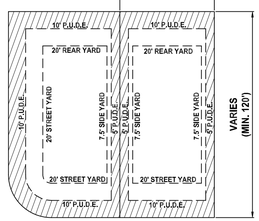


VICINITY MAP
NOT TO SCALE



LOT TABLE	
LOT NO.	AREA (SF)
31	7,150
32	9,073
33	14,458
34	12,800
35	17,687
36	15,303
37	14,960
38	9,822
39	7,150
40	7,150
47	7,150
48	7,150
49	7,150
50	7,777
51	7,150
92	6,600
93	6,600
94	7,371
95	8,407
106	6,600
107	7,872
108	8,610

DETAIL
N.T.S.



TYPICAL LOT CONFIGURATION FOR LOTS 31-40, 47-51, 92-95, & 106-108
P.U.D.E.=PUBLIC UTILITY AND DRAINAGE EASEMENT

=P.U.D.E.

LEGEND

These standard symbols will be found in the drawing.

- STORM LINE
- SANITARY SEWER LINE
- WATER LINE
- FIRE HYDRANT COMPLETE ASSEMBLY
- WATER VALVE
- BUILDING SETBACK
- EASEMENT
- PROPERTY LINE
- IRON ROD (SET) (UNLESS OTHERWISE NOTED)

Owner:
CHR LAND, LLC
1081 CRANFORD HOLLOW ROAD
COLUMBIA, TN 38401

Certificate of Ownership and Dedication

I (we) hereby certify that I am (we are) the owner(s) of the property shown and described hereon as evidenced in Book Number R2704, Page 868, Maury County Register's Office, and that I (we) hereby adopt this plan of subdivision with my (our) free consent, establish the minimum building restriction lines, and that offers of irrevocable dedication for all public ways, utilities, and other facilities have been filed.

_____, 2025 _____
Date

_____
Title (CHR Land, LLC.)

Certificate of Survey Accuracy

I hereby certify that to the best of my knowledge and belief that this is a true and accurate survey of the property shown hereon; that this is a Class "I" Land Survey as defined in Title 62, Chapter 18, Tennessee Code Annotated, and that the ratio of precision is greater than or equal to 1:10,000.

3/13, 2025 David Lee Cyphers 2779
Date Registered Land Surveyor Number
DAVID LEE CYPHERS, RLS
TENNESSEE RLS NO. 2779

Certificate of Approval of Water System

I hereby certify that the water system(s) outlined or indicated on the final subdivision plat entitled "Final Plat – Bear Creek Overlook – Phase 3" has/have 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.

_____, 2025 _____
Date Superintendent, Columbia Water System

Certificate of Approval of Streets, Drainage, and Utilities

I hereby certify that the streets, drainage, and utilities designated in Bear Creek Overlook – Phase 3 have been installed in accordance with City specifications, or a performance bond in the amount of $_____ for streets and drainage has been posted with the City of Columbia, Tennessee, to assure completion of such improvements.

_____, 2025 _____
Date City Engineer, Columbia, Tennessee

Certificate of Approval for Recording

I hereby certify that the subdivision plat shown hereon has been found to comply with the Columbia Subdivision Regulations, with the exceptions of such variances, if any, as noted in the minutes of the Planning Commission, and that it has been approved for recording in the Office of the County Register.

_____ _____
Secretary, Planning Commission Date
Columbia, Tennessee

Certificate of Approval of Subdivision Name and Street Names

Subdivision name and street names approved by Maury County E-911,

_____, 2025 _____
Date Maury County E-911

Certificate of Approval for Sewer System

I hereby certify that the sewer 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.

_____, 2025 _____
Date Superintendent, Columbia Wastewater 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.

_____ _____
City Engineer Date
Columbia, Tennessee

H & H LAND SURVEYING, INC.
P.O. BOX 2433
SMYRNA, TENNESSEE 37167
(615) 831-0756 (FAX) 355-6928
H & H Project No. 2023-0437

Final Plat
Bear Creek Overlook - Phase 3

3rd CIVIL DISTRICT OF MAURY COUNTY, TN
CITY OF COLUMBIA, MAURY COUNTY, TENNESSEE

SHEET 1 OF 1

TAX MAP 72, P/O PARCEL 53.00
ZONED: MRC

SCALE: 1"= 50'
AREA: 5.65 ACRES±
DATE: MARCH 13, 2025

Docusign Envelope ID: BD5C4CFE-1ABA-40C6-A8AC-37E6810DF81C

Appendix B: Subdivision Development Agreement

This DEVELOPMENT AGREEMENT is made and entered into on this

_____ day of _____, 20_____ ,
between THE CITY OF COLUMBIA, TENNESSEE, (hereinafter the "CITY"), and

_____Gary Martin_____, the DEVELOPER (hereinafter the "DEVELOPER") named on the Addendum to this Agreement attached hereto and by this reference made a part hereof (hereinafter the "ADDENDUM").

WITNESSETH:

WHEREAS, the DEVELOPER desires to develop the property described on the ADDENDUM (hereinafter the "PROJECT"); and,

WHEREAS, the Development Plan of the PROJECT has been approved by the Columbia Municipal Planning Commission (hereinafter the “CMPC”) on the

_____ day of _____, 20_____ ,
pursuant to Tennessee Code Annotated Title 13, Chapter 4, and the Subdivision Regulations of Columbia, Tennessee (hereinafter the "SUBDIVISION REGULATIONS”); and,

WHEREAS, the DEVELOPER is the owner of the PROJECT and has authority to engage in such development; and,

WHEREAS, the DEVELOPER desires to develop and improve said PROJECT; and,

WHEREAS, in order to provide for the health, safety, and welfare of future residents of the PROJECT, it will be necessary for certain improvements to the CITY'S utility systems, public infrastructure, and common areas to be constructed within and to serve the PROJECT including but not be limited to roads, bridges, sidewalks, pedestrian facilities, stormwater facilities, street signs, markings, signals, street lighting, recreation and park facilities, landscaping, and the like (hereinafter the “IMPROVEMENTS”); and,

WHEREAS, in order for the IMPROVEMENTS to be fully integrated with the utility systems and public infrastructure of the CITY and to function in a satisfactory manner, the DEVELOPER has agreed to construct, in accordance with the Subdivision Regulations and other rules, regulations, and ordinances of the CITY, the IMPROVEMENTS in said PROJECT and extend utilities to the PROJECT at their own cost; and,

WHEREAS, the CITY is willing to accept the dedication of the streets, utilities, and other improvements as determined in the Development Plan of the PROJECT, subject to the City of Columbia City Council approval by resolution, and subject to the applicant's compliance with all requirements in this agreement and applicable existing laws of the CITY of Columbia and the State of Tennessee,

NOW, THEREFORE, it is agreed and understood as follows:

Docusign Envelope ID: BD5C4CFE-1ABA-40C6-A8AC-37E6810DF81C

B1 General Conditions

B1.1 Construction Costs

The DEVELOPER shall pay for all material and labor necessary to install and complete the roads, sidewalks, sewers, utilities, and other facilities in accordance with this agreement.

B1.2 City Ordinances, Rules and Regulations

All currently existing CITY ordinances, rules and regulations, and the Subdivision Regulations adopted by the CMPC are made a part of this agreement. In the event of a conflict between the terms of this agreement and a CITY ordinance, the ordinance shall prevail. In the event of a conflict between the terms of this agreement and the Subdivision Regulations, the Subdivision Regulations shall prevail. All work done under this agreement is to be performed in accordance with plans and specifications approved by the City and made a part, hereof.

B1.3 Fees

Review fees, inspection fees, and other amounts established by the CITY shall be paid prior to any review of the plans. If the DEVELOPER fails to install the facilities in accordance with the terms of this Agreement, no portion of the review fees, inspection fees, or other amounts paid to the CITY shall be refundable to the DEVELOPER.

B1.4 Inspection

The CITY shall have a continuous right to inspect the work and facilities to assure that the work and facilities are in accordance with the Subdivision Regulations, approved Construction Plans, and other rules, regulations, and ordinances of the CITY.

B1.5 Right of Entry

The CITY shall have the right, in case of breach of the Performance Agreement, to enter upon any property of the DEVELOPER and take all necessary actions to complete the work and obligations not completed.

B1.6 Easements

The DEVELOPER shall obtain and dedicate to the CITY or cause to be dedicated to the CITY, either by dedication on the plat or by easement deed, in either case in a form acceptable to the CITY, permanent easements of such widths as required by the CITY and noted on the Plans. The DEVELOPER further agrees to grant the necessary easements and rights-of-way across the DEVELOPER’s properties without expense to the CITY and waive any claim for damages.

B1.7 Stormwater Maintenance Agreement

If the PROJECT includes any detention or retention ponds, common drainage ditches, water quality facilities, or stormwater facilities outside of the CITY rights-of-way, the DEVELOPER will submit a Stormwater Maintenance Agreement, to be filed with and recorded with the Final Plat.

Docusign Envelope ID: BD5C4CFE-1ABA-40C6-A8AC-37E6810DF81C

B1.8 Attorney Fees and Other Expenses

The DEVELOPER shall pay all reasonable costs and expenses incurred by the CITY in enforcing or completing this agreement. The DEVELOPER shall pay all costs and expenses, including the CITY'S attorney fees, of any legal proceedings brought by the CITY against the DEVELOPER seeking remedies for the DEVELOPER'S failure to perform any of its obligations hereunder, whether or not any proceedings are prosecuted to judgment.

B1.9 Agreement Not Assignable

No third party shall obtain any benefits or rights under this agreement nor shall the rights or duties be assigned by either party.

B1.10 Revocation and Interpretation

This agreement shall bind the DEVELOPER when executed by the DEVELOPER and may not be revoked by the DEVELOPER without permission of the CITY, even if the agreement has not been executed by the CITY, or does not bind CITY, for other reasons. This agreement shall be interpreted in accordance with Tennessee law and may only be enforced in the Chancery Court or Circuit Court or Court of competent jurisdiction of Maury County, Tennessee, and Tennessee Appellate Courts.

B1.11 No Oral Agreement

This agreement may not be orally amended and supersedes all prior negotiations, commitments, or understandings.

B1.12 Separability

If any portion of this agreement is held to be unenforceable, the CITY shall have the right to determine whether the remainder of the agreement shall remain in effect, or whether the agreement shall be void and all rights of the DEVELOPER pursuant to this agreement terminated.

B 1.13 Transferability

The DEVELOPER agrees to not transfer the property on which this PROJECT is to be located without first providing the CITY with written notice. The transferee shall provide the CITY an Assumption Agreement of this Agreement, whereby the transferee agrees to perform the IMPROVEMENTS required under this agreement and to provide a performance surety. The DEVELOPER understands that if the DEVELOPER transfers said property without providing the notice of transfer and Assumption Agreement as required herein, they will be in breach of this agreement and in violation of the Subdivision Regulations.

B1.14 Indemnity

The DEVELOPER shall indemnify and hold the CITY harmless from all loss, costs, expenses, liability, money damages, penalties, or claims arising out of any work covered by this agreement, including any attorney fees incurred by the CITY in connection therewith. Inspection of the IMPROVEMENTS by an authorized representative of the CITY shall not constitute a waiver by the CITY of any defect or of any of the DEVELOPER'S obligations hereunder.

Docusign Envelope ID: BD5C4CFE-1ABA-40C6-A8AC-37E6810DF81C

B1.15 Binding Effect

This agreement shall be binding upon the DEVELOPER and the DEVELEPOR's heirs, administrators, executors, assigns, and any other successors in interest.

B1.16 Entire Agreement

This document contains the entire agreement between the parties, and there are no collateral understandings or agreements between them. No variations or alterations of the terms of this agreement shall be binding upon either of the parties, unless the same be reduced to writing and made an amendment to this agreement.

B1.17 Headings

Paragraph titles and headings contained herein are inserted for convenience only and shall not be deemed a part of the agreement and in no way shall define, limit, extend, or describe the scope or intent of any provision, hereof.

B2 Performance Surety

At the time of execution of this agreement, the DEVELOPER shall provide the CITY a performance surety, in an amount determined by the City Engineer for the IMPROVEMENTS and other items specified by the Construction Plans, plats, and plans approved by the CMPC. This performance surety shall secure performance of all obligations of the DEVELOPER under this agreement. The performance surety shall meet all requirements established in Chapter 4: Performance Agreement of the Subdivision Regulations and secure full compliance with all terms and conditions of this agreement. The performance surety may be called for failure to comply with the provisions of this agreement in whole or in part according to the terms of the performance surety. The performance surety will not be released, except and until there has been full compliance with this agreement.

B3 Construction

B3.1 Construction Plans

The DEVELOPER shall submit to the CITY, Construction Plans describing in reasonable detail all utility systems, all storm water management systems, all street systems, pedestrian facilities, and all IMPROVEMENTS. The Construction Plans shall be designed according to the Engineering Standards and Specifications, all other codes and ordinances enforced by the City, and sound engineering judgment. The design of all utility systems shall follow the State of Tennessee and utility provider design criteria and specifications. In the event of a disagreement as to compliance with or interpretation of the Construction Plans and the CITY'S specifications, the decision of the CITY shall be final and binding on the DEVELOPER. The Construction Plans shall be prepared by a design professional licensed by the State of Tennessee to design all systems and shall bear the seal, signature, date, and license number of the professional preparing the Construction Plans.

Docusign Envelope ID: BD5C4CFE-1ABA-40C6-A8AC-37E6810DF81C

B3.2 Commencement of Construction

Construction of IMPROVEMENTS may not begin until the following events have occurred:

A. The Preliminary Plat has been approved by the CMPC;
B. The Construction Plans are approved by the CITY;
C. The Tennessee Department of Environment and Conservation has approved the applicable portions of the Plans and has confirmed its approval to the CITY and/or DEVELOPER in writing;
D. The CITY shall have received an appropriately executed Development Agreement; and
E. The DEVELOPER shall give the CITY notice of commencement of construction, in writing at least one (1) working day prior to commencement.

B3.3 Site Grading

The DEVELOPER, hereby, agrees to construct all site grading to comply with the approved Construction Plans, including the approved Erosion Control Plan for the PROJECT and to comply with the Engineering Standards and Specifications, Stormwater Ordinance, and all other codes and ordinances enforced by the CITY.

B3.4 Storm Water Management Systems

The DEVELOPER shall be responsible for all storm water management work made necessary by the development of this PROJECT. It is understood and agreed that the CITY in its proprietary function is not and could not be expected to oversee, supervise, or direct the construction of all drainage improvements, and the excavation incident thereto. Neither is the CITY vested with the original design responsibility nor the means to formally survey elevations or the locations of improvements at every stage of the construction process. The CITY is vested with the right of periodic inspections, stop work order, and final approval as a measure of secondary or subsequent enforcement. The DEVELOPER has and shall retain the responsibility to properly anticipate, survey, design and construct the subdivision storm water improvements and give full assurance that same shall not adversely affect the flow or quality of surface water from or upon any property. In providing technical assistance, plan and design review, the CITY does not and shall not relieve or accept any liability from the DEVELOPER.

B3.5 Street Construction

The DEVELOPER, hereby, agrees to construct and improve the streets shown on the Construction Plans to comply with the CITY's specifications and to the satisfaction and approval of the City Engineer by grading, draining, subgrade preparation, base preparation, curbing, signage, striping, signalization, sidewalk installation, and paving with the required preparation, amounts, and types of material. The DEVELOPER further agrees to pay the cost of all engineering, inspection and laboratory cost incidental to the construction of subdivision streets including but not limited to material and density testing. The DEVELOPER further agrees to make all necessary adjustments to manholes and valve boxes to meet finished surface grade and to repair subsurface or base material, as required, in areas directed by the CITY Engineer, prior to application of final surface.

B3.6 Time Period for Construction

The DEVELOPER agrees to be bound to complete, within three (3) years of commencement of construction, all IMPROVEMENTS shown on the plat and plans and all things required by this agreement.

Docusign Envelope ID: BD5C4CFE-1ABA-40C6-A8AC-37E6810DF81C

The DEVELOPER further agrees that if due to unforeseen circumstances, he is unable to complete all work included in this agreement within the time specified above, but desires to complete said agreement to the satisfaction of the CITY, the DEVELOPER shall submit a written request for extension of the agreement period to the CITY at least sixty (60) days prior to the expiration of the existing agreement period, specifying the reason for the DEVELOPER's failure to complete the work as agreed and a prospective date for such completion. The DEVELOPER further agrees that if the performance surety executed to secure the value of the work to be performed under this agreement, due to inflation or rising costs, is determined to be inadequate by the City Engineer to secure the cost of said IMPROVEMENTS at the time an extension is sought, the DEVELOPER will provide the additional security to bring the performance surety amount in line with current cost projections as made by the CITY. The DEVELOPER understands that the DEVELOPER's failure to follow the extension procedure constitutes a breach of this agreement and places the DEVELOPER in violation of the Subdivision Regulations. The DEVELOPER further understands, that should the DEVELOPER fail to complete any part of the work outlined in this agreement in a good and workmanlike manner as approved, the CITY shall reserve the right to withhold and withdraw all building permits within the PROJECT until all items of this Agreement have been fulfilled by the DEVELOPER.

B3.7 Off-Site Improvements

The DEVELOPER shall construct any and all off-site facilities that may be required to serve the PROJECT. Unless specifically noted in the Construction Plans and made a part of separate agreement with the CITY, the CITY shall not be required to reimburse the DEVELOPER for construction of off-site improvements.

B3.9 Inspection and Compliance

After construction begins, the CITY shall provide on-site construction inspection as the CITY deems necessary to ensure that all work is performed and completed in accordance with the Construction Plans, CITY specifications, and the contents of this agreement. In the event of a disagreement as to compliance with or interpretation of the Construction Plans and the CITY'S specifications, the decision of the CITY shall be final and binding on the DEVELOPER. If the DEVELOPER fails to construct in accordance with the approved Construction Plans or to comply with the CITY'S specifications, the CITY may issue a stop-work order and DEVELOPER, hereby, agrees to be bound by such order.

B3.10 Testing

The DEVELOPER agrees to pay the cost of all engineering, inspection, and laboratory cost incidental to construction of the streets, sidewalks, utilities, sewers, compacted fill material, and other facilities included within this agreement. Such testing includes, but is not limited to, material and density testing.

B3.11 Scrap Removal

The DEVELOPER agrees to comply with all local, state, and federal rules and regulations regarding waste material and debris disposal.

B3.12 Traffic Control

The DEVELOPER, hereby, agrees to prepare a traffic control/detour plan where required and shall submit said plan to the CITY for review and approval. All traffic control and safety devices, including

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signs, lane markings, and barriers necessitated by construction activity undertaken pursuant to this agreement shall be installed and maintained by the DEVELOPER. All traffic control devices shall meet the standards and be installed in accordance with the latest edition of the Manual on Uniform Traffic Control Devices for Streets and Highways, published by the United States Department of Transportation.

B3.13 Temporary Facilities

The DEVELOPER shall provide all temporary facilities including but not limited to utilities and roadways, that are determined by the CITY to be required in connection with or as a result of interruption of service or access that occurs as a consequence of construction activity associated with the work covered by this agreement. Such temporary services shall in all regards and at all points in time be adequate to assure emergency access and adequate fire flows.

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B4 Acceptance of Improvements

B4.1 Completion of Improvements

At such time as the improvements have been constructed and installed, in accordance with the Constructions Plans and specifications, required testing and inspections completed and found satisfactory, and all clean-up and cover-up has been done to the satisfaction the City Engineer, a letter requesting preliminary acceptance of the PROJECT will be provided by the DEVELOPER. Formal acceptance shall follow the procedure established in the Subdivision Regulations.

The DEVELOPER agrees the DEVELOPER shall have no claim, direct or implied, in the title or ownership of the IMPROVEMENTS specified in this agreement when the IMPROVEMENTS are complete and thereafter accepted by the CITY. The DEVELOPER will be responsible for construction failures and defects in PROJECT prior to final acceptance. During this period, it shall remain the responsibility of the DEVELOPER to correct and cure these defects and failures.

B4.2 As-Built Drawings and Post-Completion Items

The DEVELOPER agrees to furnish to the CITY as-built plans, on a reproducible, stable media, of the sanitary sewer, storm water management, water mains and service system, and streets within the subdivision before the CITY shall accept the subdivision.

B4.3 Acceptance of Facilities

Upon final acceptance of all or part of the IMPROVEMENTS in the PROJECT, then those IMPROVEMENTS shall become the property of the CITY free from all claims from any person or entity without the necessity of any further writing, agreement, or deed. The DEVELOPER further agrees that any facilities placed within a public or platted right-of-way or dedicated public easement are irrevocably dedicated to the public use without any right of reimbursement or compensation of any kind.

B4.4 Failure to Install

In the event the DEVELOPER fails to install the facilities in accordance with the terms of this agreement, the CITY may, in its sole discretion, elect to accept all or a portion of the IMPROVEMENTS in the PROJECT. Should the CITY choose to accept all or a portion of these IMPROVEMENTS, the CITY shall become the sole owner of these facilities. The CITY may give notice of acceptance by writing delivered to the DEVELOPER or recorded in the Register’s Office of Maury County, Tennessee. No further writing or deed shall be required.

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed in multiple originals by persons properly authorized so, to do on or as of the day and year first given.

Bear Creek Overlook - Phase 3

PROJECT

Completed by the Developer	*Completed by the City*
Gary Martin	
DEVELOPER NAME	
Gary Martin	
AUTHORIZED AGENT NAME	CITY ENGINEER
DocuSigned by: Gary Martin CBB2CD49D41645C...	
SIGNATURE	SIGNATURE
03-13-2025 | 10:34:29 CDT	
DATE	DATE
1081 Cranford Hollow Road	
STREET	
Columbia, TN 38401	
CITY, STATE, ZIP	
615-812-2147	
PHONE	
gary@martinengrg.com	
EMAIL	
Attest	*Attest*
Davide Tocci, PE	
ATTEST NAME	ATTEST NAME
Signed by: Davide Tocci BD1954365D9A482...	
ATTEST SIGNATURE	ATTEST SIGNATURE
03-13-2025 | 08:46:51 PDT	
DATE	DATE

Docusign Envelope ID: BD5C4CFE-1ABA-40C6-A8AC-37E6810DF81C

CITY OF COLUMBIA TENNESSEE

DEVELOPMENT SERVICES
700 NORTH GARDEN STREET
COLUMBIA, TN 38401
PHONE: (931) 560-1560
FAX: (931) 560-1541

PLANNING COMMISSION
PROJECT DEVELOPMENT APPLICATION

SUBMITTAL REQUIREMENTS

Final Plat: * *1 hard copy of all materials for submittal + PDF copy on a USB flash drive (no multiple applications on one storage device)*
Fold hard copy submittals larger than 8½"x11"
All Others: * Please submit the Application online at City of Columbia | Permitting (onlama.com)

ADDRESS/LOCATION			
	TAX MAP: 72	GROUP:	PARCEL: 053.00
SUMMARY OF NATURE OF REQUEST AND WORK	Final Plat review of Bear Creek Overlook Phase 3		

DATE OF PRE-APPLICATION CONFERENCE		*Pre-application meetings are scheduled for Wednesdays.*

SELECT REQUEST	SUBMITTALS SHALL INCLUDE BUT NOT LIMITED TO:
❑ Comprehensive Plan Amendment ❑ Annexation ❑ Rezoning ❑ Preliminary Plat ☒ Final Plat ❑ PUD Preliminary Master Plan ❑ PUD Final Site Plan ❑ Site Development Plan ❑ Other: **File naming nomenclature examples:* *Freedom Point Site Plan* *Freedom Point Master Plan* *Freedom Point Final Plat*	**Annexations:** ❑ Annexation Permission Form **Annexations/Rezoning/Plan Amendments:** ❑ Requested Zone Listed ❑ Statement of Compliance with Comprehensive Plan ❑ Concept Plan **Preliminary Plats/Site Development Plans:** ❑ Plans and/or Plats conforming to City standards with signed and completed check list **All Annexations/Rezoning/Preliminary Plats/Site Development Plans and PUDS:** ❑ Receipt of Payment for Pre-Application Meeting ❑ Written Legal Description copy ❑ Columbia Water System Availability Letter ❑ Columbia Waste Water Department Will Serve Letter

Docusign Envelope ID: BD5C4CFE-1ABA-40C6-A8AC-37E6810DF81C

	Plats/PUDs: ❑ Project Name (include Sections & Phases) Bear Creek Glen - Phase 2 ❑ Total Number of Lots/Residential Units 22 Residential Lots ❑ Square Footage of Non-Residential Floor Space 0 SF ❑ Total acreage 5.65 Acres +/-

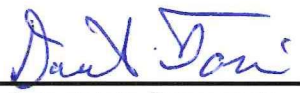
Applications and all required submittals must be filed with the Department of Development Services prior to the established deadline. Both the applicant and property owner (if different from applicant) must sign the application. Any requests to defer or move the item to future meeting dates must be requested by the resubmittal date listed on the Planning Commission schedule.

APPLICANT
All communications go to the Applicant's email that is provided.

NAME	DAVIDE TOCCI	PHONE	615-656-0257 X1003
ADDRESS	P.O. BOX 2543, BRENTWOOD TN 37024	EMAIL	dave@m2groupllc.com

PROPERTY OWNER NAME	GARY MARTIN	PHONE	615-812-2147
ADDRESS	818 S. MAIN ST, COLUMBIA TN 38401	EMAIL	gary@martinengrg.com

If owner is not a natural person, documentation must be provided showing signing authority on behalf of the entity. If multiple persons are listed as owners in the records of the Maury County Assessor, all owners must sign or the signatory must provide documentation of authority to apply on behalf of record owner (i.e., Power of Attorney or notarized Letter of Authorization). In filling out this application, I attest that (1) I am familiar with the rules, regulations, and procedures of the City of Columbia & (2) all information contained herein is accurate & true to the best of my knowledge.

DAVIDE TOCCI		3/13/2025
APPLICANT NAME	APPLICANT SIGNATURE	DATE
GARY MARTIN	DocuSigned by: Gary Martin CBB2CD49D1164...	03-13-2025 | 10:34:29 CDT
PROPERTY OWNER NAME	PROPERTY OWNER SIGNATURE	DATE

GENERAL NOTES:

1. The intent of this plat is to rezone map 089M group A parcels 020.00 and 020.01 from RM-1 to RM-1 PUD to construct 16 residential units with related appurtenances.
2. This parcel is subject to any and all rights-of-way and easements as shown or any other rights-of-way and easements or restrictions either recorded or by prescription that a title search may reveal.
3. This survey has been made using the latest recorded deeds and there are no encroachments or projections other than those shown hereon. This survey is subject to the findings of a title report. This parcel is subject to all restrictions, covenants, and easements applicable.
4. This final plat is vested under the previous Zoning Ordinance 3638 within an RM-1 PUD.
5. Bearings based on the Tennessee State Plane Coordinate System (NAD 1983).
6. Public Utility and Drainage Easements (PUDE) shall be required and be ten (10) feet in width on all property lines parallel and abutting public roads or rights-of-way, and five (5) feet in width on all interior lot lines.

CERTIFICATE OF OWNERSHIP AND DEDICATION
I hereby certify that I am the owner of the property shown and described hereon as evidenced in Book Number 2891, Page 269, Maury County Registers Office, and that I hereby adopt this plan of subdivision with my free consent, establish the minimum building restriction lines, and that offers of irrevocable dedication for all public ways, utilities, and other facilities have been filed.

Date Curt Harakas

CERTIFICATE OF SURVEY ACCURACY
I hereby certify that to the best of my knowledge and belief this is a true and accurate survey of the property shown hereon; that this is a Class "1" Land Survey as defined in TCA Title 62, Chapter 18 and that the ratio of precision is greater than or equal to 1:15,000.

Date Doyle M. Elkins - RLS 2427

CERTIFICATE OF APPROVAL OF WATER SYSTEM
I hereby certify that the water system(s) outlined or indicated on this final subdivision plat has/have 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.

Date Columbia Power & Water Systems

CERTIFICATE OF APPROVAL OF STREETS, DRAINAGE, AND UTILITIES
I hereby certify that the streets, drainage, and utilities outlined or indicated on this final subdivision plat have been installed in accordance with City specifications, or a performance surety in the amount of $_____ for streets and drainage has been posted with the City of Columbia, Tennessee, to assure completion of such improvements.

Date City Engineer

CERTIFICATE OF APPROVAL FOR RECORDING
I hereby certify that the subdivision plat shown hereon has been found to comply with the City of Columbia Subdivision Regulations, with the exception of such variances, if any, as are noted in the minutes of the Columbia Municipal Planning Commission, and that it has been approved for recording in the Office of the Maury County Register of Deeds.

Date Planning Director

CERTIFICATE OFSUBDIVISION NAME AND STREET NAMES
Subdivision name and street names approved by the City Engineering Department and by E-911 Maury County.

Date Maury County E-911

CERTIFICATE OF SANITARY SEWER SYSTEM
I hereby certify that the sanitary sewer system outlined or indicated on this final subdivision plat has been installed in accordance with the current local and state government requirements, or a sufficient bond or other surety has been filed to guarantee said installation.

Date Director of Wastewater Department

CERTIFICATE OF COMPLIANCE
I hereby certify that the final subdivision plat shown hereon has been found to comply with the City of Columbia Subdivision Regulations and other adopted ordinances and policies.

Date City Engineer

COMPASS NORTH

Doyle Elkins
Professional Land Surveyor
Registered in TN & AL
520 W Lytle St. Suite B
Murfreesboro, TN 37130
Phone: 615-907-8625
Cell: 931-636-2414
Elkinsdoyle@gmail.com

Total Area:
71,248 S.F.
1.64 Acres

Open Space:
55,095 S.F.
1.26 Acres

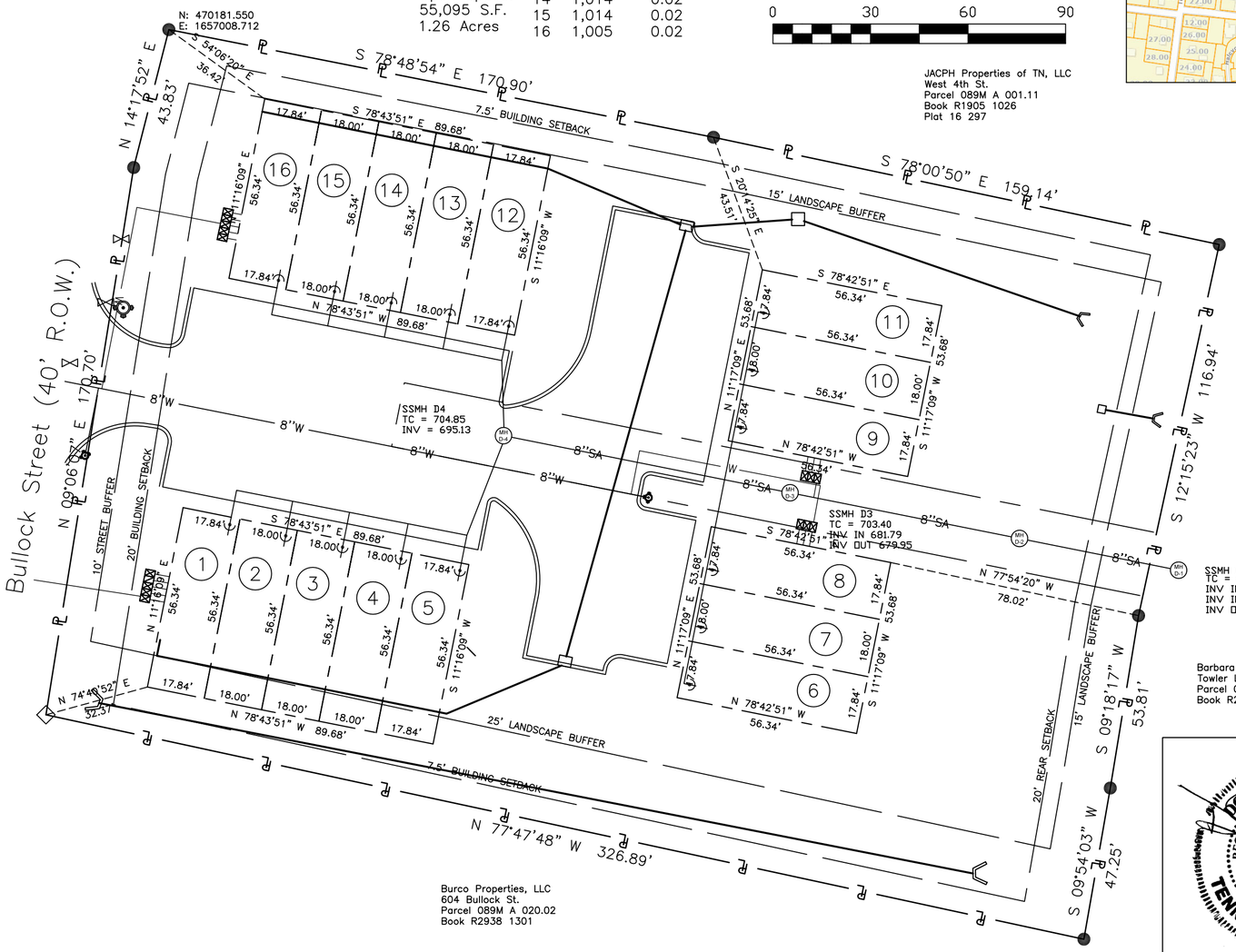
LOT SIZE TABLE

Lot	Sq. Feet	Acres
1	1,005	0.02
2	1,014	0.02
3	1,014	0.02
4	1,014	0.02
5	1,005	0.02
6	1,005	0.02
7	1,014	0.02
8	1,005	0.02
9	1,005	0.02
10	1,014	0.02
11	1,005	0.02
12	1,005	0.02
13	1,014	0.02
14	1,014	0.02
15	1,014	0.02
16	1,005	0.02

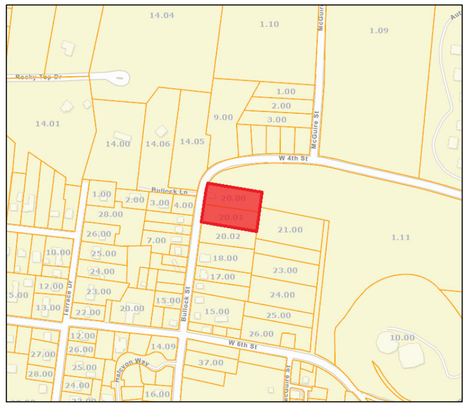
LEGEND
These standard symbols will be found in the drawing.

WATER VALVE
FIRE HYDRANT
IRON PIN FOUND
DEED POINT
PROPERTY LINE
NEW LOT LINE
SETBACK/BUFFER
SAN. SEWER
WATER LINE
EASEMENT

0 30 60 90



JACPH Properties of TN, LLC
West 4th St.
Parcel 089M A 001.11
Book R1905 1026
Plat 16 297



VICINITY MAP NOT TO SCALE

But the fruit of the *Spirit* is
love, joy, peace, patience, kindness, goodness, faithfulness, gentleness and *self-control*
Against these things there is no law.
Galatians 5:22

EXISTING SSMH
TC 675.35
INV IN 670.25
INV OUT 669.82

Barbara Hopkins
Towler Ln.
Parcel 089M A 021.00
Book R2537 527

Burco Properties, LLC
604 Bullock St.
Parcel 089M A 020.02
Book R2938 1301

DOYLE M. ELKINS
REGISTERED LAND SURVEYOR
AGRICULTURE
COMMERCE
TENNESSEE NO 2427

APPROX. BLDG LOCATION

APPROX. BLDG LOCATION

OWNER INFORMATION:
Curt Harakas
2700 New Highway 7
Santa Fe, TN 38482
615-207-3813
harakasconst@yahoo.com

PROPERTY INFORMATION:
600 & 602 Bullock Street
Columbia, TN 38401
Parcels 089M A 020.00 & 020.01
Book R2891 269
Zoning: PUD

FLOOD INSURANCE NOTE:
By graphics plotting only, this property is in **ZONE X** of the Flood Insurance Rate Map, Community Panel No. **47119C0285E** effective date of 4/16/2007. Exact designations can only be determined by an Elevation Certificate. Based on the above information, this property IS NOT in a Special Flood Hazard Area.

I HEREBY CERTIFY THIS IS A CATEGORY I SURVEY AND THE RATIO OF PRECISION FOR THE UNADJUSTED SURVEY IS GREATER THAN 1:15,000 AS SHOWN HEREON.

FINAL PLAT
BULLOCK STREET TOWNHOMES
600 BULLOCK ST, COLUMBIA, TN
PREPARED FOR: HARAKAS GRADING

DATE	SCALE	SHEET	DRAWN BY	PROJECT
11/12/2024	1" = 30'	1 OF 1	DME/BKA	24235

REVISED 1/21/2025

ELKINS SURVEYING COMPANY

520 WEST LYTLE ST. SUITE B
MURFREESBORO, TN 37130

RESPONSE LETTER
INITIAL REVIEW COMMENTS
ITEM NO. 24-0525
600 BULLOCK STREET

Planning

1. The case planner for this project is Austin Brass (abrass@columbiatn.gov) Please provide a updated plat with comment response letter by resubmittal deadline. **This is the response letter.**
2. Provide a purpose note that describes the intent of the plat. **See note 1.**
3. Provide note referencing Tennessee State Plane Coordinate System, NAD 83 Datum. **See note 5.**
4. Provide The approximate location of all existing structures adjacent to the property. **Done.**
5. Provide a typical lot layout depicting proposed setbacks and easement. **The typical lot does not have any setbacks or easements.**
6. Provide information on proposed ownership and maintenance responsibility of ROW **Provided by Harakas.**
7. Correct 25' boundary buffer to 25' landscape buffer **Done.**
8. Correct 15' boundary buffer to 15' landscape buffer **Done.**
9. Provide zoning notation of current zoning and note that this final plat is vested under the previous Zoning Ordinance 3638 within an RM-1 PUD. **See note 4.**

Engineering

10. Provide LOC calculation and LOC by resubmittal date. **Provided by Harakas.**
11. Record and reference the stormwater maintenance agreement by resubmittal date **Provided by Harakas.**
12. Install street signs by resubmittal date. Stop & St Names **Acknowledged.**
13. Grading shall be substantially in compliance with the approved construction plans (within 1 ft.). **Acknowledged.**
14. Asphalt binder and subgrade failures to be repaired by resubmittal date **Acknowledged.**
15. Remove contours from the final plat **Done.**
16. Provide note referencing the TN State Plane Coordinate System, NAD 83 Datum **See note 5.**
17. Provide note referencing the PUDE. **Was unable to get clarification regarding the content of this note.**
18. Provide signed development agreement by resubmittal date **Provided by Harakas.**
19. Install storm infrastructure as approved in the PUD and Construction plans, and show/label on final plat by resubmittal date. **Done.**
20. Condition: final pavement repair on Bullock shall be completed prior to the first certificate of occupancy. **Acknowledged.**

21. Condition: sidewalk along Bullock St shall be completed prior to the first certificate of occupancy. **Acknowledged.**
22. Condition: sidewalks, curbing, landscaping, and other site improvements adjacent to each block of units shall be completed prior to the first certificate of occupancy within each block of units. **Acknowledged.**
23. Condition: all site improvements shall be completed prior to the first certificate of occupancy in the last block of units. **Acknowledged.**
24. Area between lots 5 and 6 shall be graded to the approved construction plans. **Acknowledged.**
25. Pads for lots 12-16 shall be completed to grade and debris and rocks over 6" in diameter shall be removed from the compacted area. **Acknowledged.**

Building

26. No comments.

Police

27. No comments provided.

City Attorney

28. No comments provided.

Public Works

29. For 16 townhomes, we recommend one 8-yard dumpster with once a week collection if utilizing City of Columbia sanitation services. Private sanitation services, including dumpsters, compactors, individual receptacles or valet service, may be utilized for townhome and multi-family residents. Individual trash receptacles will not be provided by the City of Columbia to townhome residents. Please see the attached City of Columbia Dumpster Guidelines & Accessibility Requirements. **Acknowledged.**

Wastewater

30. Final Plat signature is subject to final testing and inspection. **Acknowledged.**

Maury County Schools

31. Riverside Elementary, Whitthorne Middle School, Central High School
    The development combined with current neighborhoods and additional approved developments in these zones may require either new construction of realignment of school zones to accommodate new students.
    * Due to numbers, MCPS will be rezoning all Columbia and Spring Hill elementary schools for the 25/26 SY.

Fire

32. No comments

ATT

33. ATT INTENDS TO SERVE.

Columbia Power

34. Columbia Power System has an existing power line near your proposed development. We are willing to serve this new development subject to all Columbia Power System policies and procedures in effect at actual time service is rendered provided an approved final plat and complete electrical load information is furnished as soon as possible prior to start of actual construction. Unfortunately, due to current supply chain challenges, no timeframe can be guaranteed regarding the availability of meters or transformers appropriate for your development.
35. CPWS BB: Plan to Serve

Atmos Energy

36. Gas available on Bullock Street.

Maury County Highway Dept.

37. No comment.

Duck River Electric Membership Corp

38. No comment.

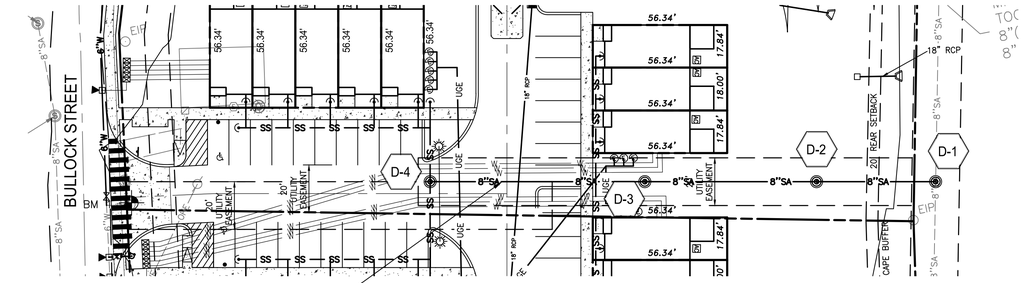
Columbia Water

39. Coordinate walk-through, Bacteria pressure testing with CPWS. **Acknowledged.**

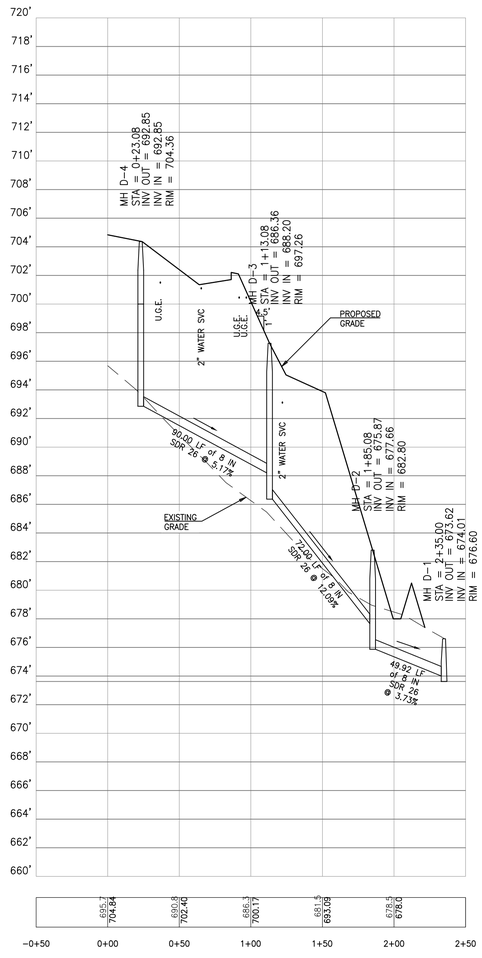
Maury County E911

40. No comments provided.

SANITARY SEWER PLAN & PROFILE



ALL SANITARY SEWER BACKFILL IN THE ROAD SHALL BE #67 CRUSHED STONE UP TO THE ROAD SUB GRADE.



BENCHMARK

BENCHMARK #1

X ON EXISTING FIRE HYDRANT

N= 470,071.68

E= 1,656,986.51

ELEV. = 708.72'

WARNING! UTILITY LINES!

THE CONTRACTOR WILL EXERCISE EXTREME CAUTION IN THE USE OF EQUIPMENT IN AND AROUND OVERHEAD AND UNDERGROUND UTILITY WIRES AND SERVICES. IF AT ANY TIME IN THE PURSUIT OF THIS WORK THE CONTRACTOR MUST WORK IN CLOSE PROXIMITY OF OVERHEAD OR UNDERGROUND SERVICES, THE UTILITY COMPANY SHALL BE CONTACTED PRIOR TO SUCH WORK AND THE PROPER SAFETY MEASURES TAKEN. A THOROUGH EXAMINATION OF THE OVERHEAD WIRES IN THE PROJECT AREA SHOULD BE MADE BY THE CONTRACTOR PRIOR TO THE INITIATION OF CONSTRUCTION. THE UNDERGROUND UTILITY LINES HAVE BEEN SHOWN AS BEST AS CAN BE DETERMINED AT THIS TIME FROM THE INFORMATION OBTAINED FROM THE SURVEY. THE CONTRACTOR SHALL CONTACT EACH OF THESE COMPANIES PRIOR TO BEGINNING CONSTRUCTION AND HAVE THEM DETERMINE THE EXACT LOCATION AND TYPE OF THEIR SERVICES.

Tennessee811 Know what's **below** **Call** before you dig.

LEGEND

	EXISTING	PROPOSED
WATER MAIN		W
SANITARY SEWER	8"SA	8"SA
STORM SEWER	15"ST	15"ST
OVERHEAD		
FENCE		
GAS		
DRAINAGE DITCH		
TREE PROTECTION FENCE		
SIGN		
UTILITY POLE		
IRON PIN SET		IPS
EXISTING IRON PIN		
CONCRETE MONUMENT		
DECIDUOUS TREE		
GATE VALVE IN BOX		
LIGHT POLE		
BENCHMARK	BM 1	

TREE LINE

STORM STRUCTURE LABEL (ST1)

ASPHALT

CONCRETE

PARKING SPACES (14)

T.O.W. TOP OF WALL
B.O.W. BOTTOM OF WALL

SURVEYOR NOTE:

REVISED PROFILE GRADING IS BASED ON SURVEY INFORMATION PROVIDED BY OTHERS. AS-BUILT INFORMATION WAS PROVIDED TO MY ON AN AS-BUILT DOCUMENT SIGNED AND SEALED BY MR ELKINS:

DOYLE ELKINS
ELKINS LAND SURVEYING
520 W. LYTLE STREET, SUITE B
MURFREESBORO, TN 37130
(615) 907-8625

THE DOCUMENT WAS PRESENTED TO ME ON FEBURARY 21, 2025 AND THE SEAL IS UNDATED.

GEOTECHNICAL NOTE:

CONTRACTOR TO COMPLETE A GEOTECHNICAL STUDY CONDUCTED ON THIS SITE PRIOR TO COMINCEMENT OF CONSTRUCTION. THE DESIGN FOR THE SITE IMPROVEMENTS SHOWN ON THIS PLAN HAVE RELIED ON GENERAL INFORMATION FROM FIELD REVIEW OF EXISTING TERRAIN. IF, IN THE PURSUIT OF THIS WORK BY THE CONTRACTOR, CONDITIONS OR CIRCUMSTANCES ARE ENCOUNTERED THAT ARE DIFFERENT THAN REFLECTED IN THESE PLANS OR THAT APPEAR TO IMPACT THE SCOPE OF THE WORK, THE CONTRACTOR WILL IMMEDIATELY NOTIFY THE CIVIL ENGINEER, THE GEOTECHNICAL ENGINEER AND THE OWNER/DEVELOPER. BEFORE ANY REMEDIAL COURSE OF ACTION OR DESIGN CHANGE IS INITIATED, ALL PARTIES TO THE PROCESS (OWNER, CIVIL ENGINEER, GEOTECHNICAL ENGINEER, AND CONTRACTOR) MUST BE IN AGREEMENT AND THE MAGNITUDE OF THE COST/TIME REQUIRED FOR THE MEASURES ESTABLISHED.

SITE BENCHMARK NOTE:

CONTRACTOR SHALL ESTABLISH A BENCHMARK PRIOR TO CONSTRUCTION. EXISTING BENCHMARK MUST BE RE-VERIFIED AND APPROVED BY THE ENGINEER/SURVEYOR PRIOR TO USE.

BOUNDARY & TOPOGRAPHIC SURVEY PROVIDED BY:

W.E.S. ENGINEERS AND SURVEYORS
2486 NASHVILLE HWY
COLUMBIA, TENNESSEE 38401
(931) 388-2329

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

FLOOD STUDY NOTE:

THIS PROPERTY IS NOT LOCATED IN A FLOOD HAZARD AREA AS PER FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP (FIRM) COMMUNITY PANEL NO. 47119C0285E DATED APRIL 16, 2007 (ZONE "X")

GERALD W. HERRICK 11/7/25 STATE OF TENNESSEE No. 107415 AGRICULTURE ENGINEER COMMERCE

gerald@wesengineers.com

RELEASED FOR CONSTRUCTION WHEN STAMPED APPROVED BY MUNICIPALITY

© 2022

TN GRID NORTH

WES ENGINEERS & SURVEYORS
CIVIL ENGINEERS & LAND SURVEYORS
2486 NASHVILLE HIGHWAY
COLUMBIA, TN 38401
PHONE: (931) 388-2329
www.wesengineers.com
ENGINEERS & SURVEYORS

Client
STEVE DESOTO
14 GIST STREET
FRANKLIN, TN 37064

REVISIONS	DATE
Addressed Staff Comments	3/19/21
Rev. Water Per CPWS Requirements	7/26/23

BULLOCK STREET TOWNHOMES

BULLOCK STREET
COLUMBIA, MAURY COUNTY, TENNESSEE
SANITARY SEWER PLAN & PROFILE

Drawn: KC | Checked: GV | Approved: GV | Date: 7/26/23

Job. no. 20531 | Scale: Vertical: 1"=50' Horizontal: | C-60

FILE:J:\ WES_Engineers_Surveyors 2020\20531 - Bullock Street - DeSoto\Dwg\Engineering\20531 Bullock_base Rev Grading (sewer).dwg

Appendix B: Subdivision Development Agreement

This DEVELOPMENT AGREEMENT is made and entered into on this

13th day of January, 2025,
between THE CITY OF COLUMBIA, TENNESSEE, (hereinafter the "CITY"), and

Harakas Development LLC, the DEVELOPER (hereinafter the "DEVELOPER") named on the Addendum to this Agreement attached hereto and by this reference made a part hereof (hereinafter the "ADDENDUM").

WITNESSETH:

WHEREAS, the DEVELOPER desires to develop the property described on the ADDENDUM (hereinafter the "PROJECT"); and,

WHEREAS, the Development Plan of the PROJECT has been approved by the Columbia Municipal Planning Commission (hereinafter the "CMPC") on the

16th day of May, 2022,
pursuant to Tennessee Code Annotated Title 13, Chapter 4, and the Subdivision Regulations of Columbia, Tennessee (hereinafter the "SUBDIVISION REGULATIONS"); and,

WHEREAS, the DEVELOPER is the owner of the PROJECT and has authority to engage in such development; and,

WHEREAS, the DEVELOPER desires to develop and improve said PROJECT; and,

WHEREAS, in order to provide for the health, safety, and welfare of future residents of the PROJECT, it will be necessary for certain improvements to the CITY'S utility systems, public infrastructure, and common areas to be constructed within and to serve the PROJECT including but not be limited to roads, bridges, sidewalks, pedestrian facilities, stormwater facilities, street signs, markings, signals, street lighting, recreation and park facilities, landscaping, and the like (hereinafter the "IMPROVEMENTS"); and,

WHEREAS, in order for the IMPROVEMENTS to be fully integrated with the utility systems and public infrastructure of the CITY and to function in a satisfactory manner, the DEVELOPER has agreed to construct, in accordance with the Subdivision Regulations and other rules, regulations, and ordinances of the CITY, the IMPROVEMENTS in said PROJECT and extend utilities to the PROJECT at their own cost; and,

WHEREAS, the CITY is willing to accept the dedication of the streets, utilities, and other improvements as determined in the Development Plan of the PROJECT, subject to the City of Columbia City Council approval by resolution, and subject to the applicant's compliance with all requirements in this agreement and applicable existing laws of the CITY of Columbia and the State of Tennessee,

NOW, THEREFORE, it is agreed and understood as follows:

B1 General Conditions

B1.1 Construction Costs

The DEVELOPER shall pay for all material and labor necessary to install and complete the roads, sidewalks, sewers, utilities, and other facilities in accordance with this agreement.

B1.2 City Ordinances, Rules and Regulations

All currently existing CITY ordinances, rules and regulations, and the Subdivision Regulations adopted by the CMPC are made a part of this agreement. In the event of a conflict between the terms of this agreement and a CITY ordinance, the ordinance shall prevail. In the event of a conflict between the terms of this agreement and the Subdivision Regulations, the Subdivision Regulations shall prevail. All work done under this agreement is to be performed in accordance with plans and specifications approved by the City and made a part, hereof.

B1.3 Fees

Review fees, inspection fees, and other amounts established by the CITY shall be paid prior to any review of the plans. If the DEVELOPER fails to install the facilities in accordance with the terms of this Agreement, no portion of the review fees, inspection fees, or other amounts paid to the CITY shall be refundable to the DEVELOPER.

B1.4 Inspection

The CITY shall have a continuous right to inspect the work and facilities to assure that the work and facilities are in accordance with the Subdivision Regulations, approved Construction Plans, and other rules, regulations, and ordinances of the CITY.

B1.5 Right of Entry

The CITY shall have the right, in case of breach of the Performance Agreement, to enter upon any property of the DEVELOPER and take all necessary actions to complete the work and obligations not completed.

B1.6 Easements

The DEVELOPER shall obtain and dedicate to the CITY or cause to be dedicated to the CITY, either by dedication on the plat or by easement deed, in either case in a form acceptable to the CITY, permanent easements of such widths as required by the CITY and noted on the Plans. The DEVELOPER further agrees to grant the necessary easements and rights-of-way across the DEVELOPER's properties without expense to the CITY and waive any claim for damages.

B1.7 Stormwater Maintenance Agreement

If the PROJECT includes any detention or retention ponds, common drainage ditches, water quality facilities, or stormwater facilities outside of the CITY rights-of-way, the DEVELOPER will submit a Stormwater Maintenance Agreement, to be filed with and recorded with the Final Plat.

B1.8 Attorney Fees and Other Expenses

The DEVELOPER shall pay all reasonable costs and expenses incurred by the CITY in enforcing or completing this agreement. The DEVELOPER shall pay all costs and expenses, including the CITY'S attorney fees, of any legal proceedings brought by the CITY against the DEVELOPER seeking remedies for the DEVELOPER'S failure to perform any of its obligations hereunder, whether or not any proceedings are prosecuted to judgment.

B1.9 Agreement Not Assignable

No third party shall obtain any benefits or rights under this agreement nor shall the rights or duties be assigned by either party.

B1.10 Revocation and Interpretation

This agreement shall bind the DEVELOPER when executed by the DEVELOPER and may not be revoked by the DEVELOPER without permission of the CITY, even if the agreement has not been executed by the CITY, or does not bind CITY, for other reasons. This agreement shall be interpreted in accordance with Tennessee law and may only be enforced in the Chancery Court or Circuit Court or Court of competent jurisdiction of Maury County, Tennessee, and Tennessee Appellate Courts.

B1.11 No Oral Agreement

This agreement may not be orally amended and supersedes all prior negotiations, commitments, or understandings.

B1.12 Separability

If any portion of this agreement is held to be unenforceable, the CITY shall have the right to determine whether the remainder of the agreement shall remain in effect, or whether the agreement shall be void and all rights of the DEVELOPER pursuant to this agreement terminated.

B 1.13 Transferability

The DEVELOPER agrees to not transfer the property on which this PROJECT is to be located without first providing the CITY with written notice. The transferee shall provide the CITY an Assumption Agreement of this Agreement, whereby the transferee agrees to perform the IMPROVEMENTS required under this agreement and to provide a performance surety. The DEVELOPER understands that if the DEVELOPER transfers said property without providing the notice of transfer and Assumption Agreement as required herein, they will be in breach of this agreement and in violation of the Subdivision Regulations.

B1.14 Indemnity

The DEVELOPER shall indemnify and hold the CITY harmless from all loss, costs, expenses, liability, money damages, penalties, or claims arising out of any work covered by this agreement, including any attorney fees incurred by the CITY in connection therewith. Inspection of the IMPROVEMENTS by an authorized representative of the CITY shall not constitute a waiver by the CITY of any defect or of any of the DEVELOPER'S obligations hereunder.

B1.15 Binding Effect

This agreement shall be binding upon the DEVELOPER and the DEVELEPOR's heirs, administrators, executors, assigns, and any other successors in interest.

B1.16 Entire Agreement

This document contains the entire agreement between the parties, and there are no collateral understandings or agreements between them. No variations or alterations of the terms of this agreement shall be binding upon either of the parties, unless the same be reduced to writing and made an amendment to this agreement.

B1.17 Headings

Paragraph titles and headings contained herein are inserted for convenience only and shall not be deemed a part of the agreement and in no way shall define, limit, extend, or describe the scope or intent of any provision, hereof.

B2 Performance Surety

At the time of execution of this agreement, the DEVELOPER shall provide the CITY a performance surety, in an amount determined by the City Engineer for the IMPROVEMENTS and other items specified by the Construction Plans, plats, and plans approved by the CMPC. This performance surety shall secure performance of all obligations of the DEVELOPER under this agreement. The performance surety shall meet all requirements established in Chapter 4: Performance Agreement of the Subdivision Regulations and secure full compliance with all terms and conditions of this agreement. The performance surety may be called for failure to comply with the provisions of this agreement in whole or in part according to the terms of the performance surety. The performance surety will not be released, except and until there has been full compliance with this agreement.

B3 Construction

B3.1 Construction Plans

The DEVELOPER shall submit to the CITY, Construction Plans describing in reasonable detail all utility systems, all storm water management systems, all street systems, pedestrian facilities, and all IMPROVEMENTS. The Construction Plans shall be designed according to the Engineering Standards and Specifications, all other codes and ordinances enforced by the City, and sound engineering judgment. The design of all utility systems shall follow the State of Tennessee and utility provider design criteria and specifications. In the event of a disagreement as to compliance with or interpretation of the Construction Plans and the CITY'S specifications, the decision of the CITY shall be final and binding on the DEVELOPER. The Construction Plans shall be prepared by a design professional licensed by the State of Tennessee to design all systems and shall bear the seal, signature, date, and license number of the professional preparing the Construction Plans.

B3.2 Commencement of Construction

Construction of IMPROVEMENTS may not begin until the following events have occurred:

A. The Preliminary Plat has been approved by the CMPC;
B. The Construction Plans are approved by the CITY;
C. The Tennessee Department of Environment and Conservation has approved the applicable portions of the Plans and has confirmed its approval to the CITY and/or DEVELOPER in writing;
D. The CITY shall have received an appropriately executed Development Agreement; and
E. The DEVELOPER shall give the CITY notice of commencement of construction, in writing at least one (1) working day prior to commencement.

B3.3 Site Grading

The DEVELOPER, hereby, agrees to construct all site grading to comply with the approved Construction Plans, including the approved Erosion Control Plan for the PROJECT and to comply with the Engineering Standards and Specifications, Stormwater Ordinance, and all other codes and ordinances enforced by the CITY.

B3.4 Storm Water Management Systems

The DEVELOPER shall be responsible for all storm water management work made necessary by the development of this PROJECT. It is understood and agreed that the CITY in its proprietary function is not and could not be expected to oversee, supervise, or direct the construction of all drainage improvements, and the excavation incident thereto. Neither is the CITY vested with the original design responsibility nor the means to formally survey elevations or the locations of improvements at every stage of the construction process. The CITY is vested with the right of periodic inspections, stop work order, and final approval as a measure of secondary or subsequent enforcement. The DEVELOPER has and shall retain the responsibility to properly anticipate, survey, design and construct the subdivision storm water improvements and give full assurance that same shall not adversely affect the flow or quality of surface water from or upon any property. In providing technical assistance, plan and design review, the CITY does not and shall not relieve or accept any liability from the DEVELOPER.

B3.5 Street Construction

The DEVELOPER, hereby, agrees to construct and improve the streets shown on the Construction Plans to comply with the CITY's specifications and to the satisfaction and approval of the City Engineer by grading, draining, subgrade preparation, base preparation, curbing, signage, striping, signalization, sidewalk installation, and paving with the required preparation, amounts, and types of material. The DEVELOPER further agrees to pay the cost of all engineering, inspection and laboratory cost incidental to the construction of subdivision streets including but not limited to material and density testing. The DEVELOPER further agrees to make all necessary adjustments to manholes and valve boxes to meet finished surface grade and to repair subsurface or base material, as required, in areas directed by the CITY Engineer, prior to application of final surface.

B3.6 Time Period for Construction

The DEVELOPER agrees to be bound to complete, within three (3) years of commencement of construction, all IMPROVEMENTS shown on the plat and plans and all things required by this agreement.

The DEVELOPER further agrees that if due to unforeseen circumstances, he is unable to complete all work included in this agreement within the time specified above, but desires to complete said agreement to the satisfaction of the CITY, the DEVELOPER shall submit a written request for extension of the agreement period to the CITY at least sixty (60) days prior to the expiration of the existing agreement period, specifying the reason for the DEVELOPER's failure to complete the work as agreed and a prospective date for such completion. The DEVELOPER further agrees that if the performance surety executed to secure the value of the work to be performed under this agreement, due to inflation or rising costs, is determined to be inadequate by the City Engineer to secure the cost of said IMPROVEMENTS at the time an extension is sought, the DEVELOPER will provide the additional security to bring the performance surety amount in line with current cost projections as made by the CITY. The DEVELOPER understands that the DEVELOPER's failure to follow the extension procedure constitutes a breach of this agreement and places the DEVELOPER in violation of the Subdivision Regulations. The DEVELOPER further understands, that should the DEVELOPER fail to complete any part of the work outlined in this agreement in a good and workmanlike manner as approved, the CITY shall reserve the right to withhold and withdraw all building permits within the PROJECT until all items of this Agreement have been fulfilled by the DEVELOPER.

B3.7 Off-Site Improvements

The DEVELOPER shall construct any and all off-site facilities that may be required to serve the PROJECT. Unless specifically noted in the Construction Plans and made a part of separate agreement with the CITY, the CITY shall not be required to reimburse the DEVELOPER for construction of off-site improvements.

B3.9 Inspection and Compliance

After construction begins, the CITY shall provide on-site construction inspection as the CITY deems necessary to ensure that all work is performed and completed in accordance with the Construction Plans, CITY specifications, and the contents of this agreement. In the event of a disagreement as to compliance with or interpretation of the Construction Plans and the CITY'S specifications, the decision of the CITY shall be final and binding on the DEVELOPER. If the DEVELOPER fails to construct in accordance with the approved Construction Plans or to comply with the CITY'S specifications, the CITY may issue a stop-work order and DEVELOPER, hereby, agrees to be bound by such order.

B3.10 Testing

The DEVELOPER agrees to pay the cost of all engineering, inspection, and laboratory cost incidental to construction of the streets, sidewalks, utilities, sewers, compacted fill material, and other facilities included within this agreement. Such testing includes, but is not limited to, material and density testing.

B3.11 Scrap Removal

The DEVELOPER agrees to comply with all local, state, and federal rules and regulations regarding waste material and debris disposal.

B3.12 Traffic Control

The DEVELOPER, hereby, agrees to prepare a traffic control/detour plan where required and shall submit said plan to the CITY for review and approval. All traffic control and safety devices, including

signs, lane markings, and barriers necessitated by construction activity undertaken pursuant to this agreement shall be installed and maintained by the DEVELOPER. All traffic control devices shall meet the standards and be installed in accordance with the latest edition of the Manual on Uniform Traffic Control Devices for Streets and Highways, published by the United States Department of Transportation.

B3.13 Temporary Facilities

The DEVELOPER shall provide all temporary facilities including but not limited to utilities and roadways, that are determined by the CITY to be required in connection with or as a result of interruption of service or access that occurs as a consequence of construction activity associated with the work covered by this agreement. Such temporary services shall in all regards and at all points in time be adequate to assure emergency access and adequate fire flows.

B4 Acceptance of Improvements

B4.1 Completion of Improvements

At such time as the improvements have been constructed and installed, in accordance with the Constructions Plans and specifications, required testing and inspections completed and found satisfactory, and all clean-up and cover-up has been done to the satisfaction the City Engineer, a letter requesting preliminary acceptance of the PROJECT will be provided by the DEVELOPER. Formal acceptance shall follow the procedure established in the Subdivision Regulations.

The DEVELOPER agrees the DEVELOPER shall have no claim, direct or implied, in the title or ownership of the IMPROVEMENTS specified in this agreement when the IMPROVEMENTS are complete and thereafter accepted by the CITY. The DEVELOPER will be responsible for construction failures and defects in PROJECT prior to final acceptance. During this period, it shall remain the responsibility of the DEVELOPER to correct and cure these defects and failures.

B4.2 As-Built Drawings and Post-Completion Items

The DEVELOPER agrees to furnish to the CITY as-built plans, on a reproducible, stable media, of the sanitary sewer, storm water management, water mains and service system, and streets within the subdivision before the CITY shall accept the subdivision.

B4.3 Acceptance of Facilities

Upon final acceptance of all or part of the IMPROVEMENTS in the PROJECT, then those IMPROVEMENTS shall become the property of the CITY free from all claims from any person or entity without the necessity of any further writing, agreement, or deed. The DEVELOPER further agrees that any facilities placed within a public or platted right-of-way or dedicated public easement are irrevocably dedicated to the public use without any right of reimbursement or compensation of any kind.

B4.4 Failure to Install

In the event the DEVELOPER fails to install the facilities in accordance with the terms of this agreement, the CITY may, in its sole discretion, elect to accept all or a portion of the IMPROVEMENTS in the PROJECT. Should the CITY choose to accept all or a portion of these IMPROVEMENTS, the CITY shall become the sole owner of these facilities. The CITY may give notice of acceptance by writing delivered to the DEVELOPER or recorded in the Register's Office of Maury County, Tennessee. No further writing or deed shall be required.

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed in multiple originals by persons properly authorized so, to do on or as of the day and year first given.

PROJECT	
Completed by the Developer	*Completed by the City*
Harakas Development LLC. DEVELOPER NAME	
Curt Harakas AUTHORIZED AGENT NAME	CITY ENGINEER
SIGNATURE	SIGNATURE
1-13-25 DATE	DATE
1138 West Highway 7 STREET	
Columbia TN 38401 CITY, STATE, ZIP	
615-207-3813 PHONE	
harakasconst@yahoo.com EMAIL	
Attest	*Attest*
Laura Turner ATTEST NAME	ATTEST NAME
ATTEST SIGNATURE	ATTEST SIGNATURE
1/13/25 DATE	DATE

BK/PG: R3040/798-804
25000256

7 PGS:AL-EASEMENT	
JANE BATCH: 342471	01/06/2025 - 03:13 PM
VALUE	0.00
MORTGAGE TAX	0.00
TRANSFER TAX	0.00
RECORDING FEE	35.00
ARCHIVE FEE	0.00
DP FEE	2.00
REGISTER'S FEE	0.00
TOTAL AMOUNT	37.00

STATE OF TENNESSEE, MAURY COUNTY
JOHN FLEMING
REGISTER OF DEEDS

DOCUMENT PREPARED BY: Pla
Name: Curt Harakas
Company: Harakas Development LLC
Address: 1138 New Highway 7 Columbia Tn 38401

After recording return copy to City of Columbia, Development Services

INSPECTION AND MAINTENANCE AGREEMENT OF PRIVATE STORMWATER MANAGEMENT FACILITIES

Map & Parcel Number: 089M-020.00 000/089M-020.01 000
Project Name: Bullock street townhomes

Recorded by deed in the Register of Deeds Office of Maury County in Deed Book Plat 5, Page(s) 260.

THIS AGREEMENT, made this 6th day of Janurary, 2025, by and between Deed R2891 Pg 269 Harakas Development LLC hereinafter referred to as the "OWNER(S)" of the following property and City of Columbia, Tennessee, hereinafter referred to as the "CITY",

WE, the OWNER(S), with full authority to execute deeds, mortgages, other covenants, all rights, titles, and interests in the property described above, do hereby covenant with the CITY and agree as follows:

1. The OWNER(S) covenant and agree with the CITY that the OWNER(S) shall provide for adequate long term maintenance and continuation of stormwater control measures described in the Long Term Maintenance Plan and shown on the location map, deed of easement drawing or plat attached hereto to ensure that the facilities, are and remain in proper working condition in accordance with approved design standards, rules and regulations, and applicable laws. The OWNER(S) shall perform preventative maintenance activities at intervals described in the schedule attached hereto along with necessary landscaping (grass cutting, etc.) and trash removal as part of regular maintenance.

2. The OWNER(S) shall perform routine inspections to ensure that all long term stormwater management facilities are properly functioning. These inspections shall be conducted on an annual basis, at a minimum. These inspections shall be conducted by a person familiar with control measures implemented at the site. The OWNER(S) or operators shall maintain documents of these inspections.

3. The OWNER(S) shall perform comprehensive inspections of all stormwater management facilities and practices. These inspections shall be conducted once every five years, at a minimum. Such inspections must be conducted by either a professional engineer or landscape architect.

4. The OWNER(S) shall grant to the CITY or its agent or contractor the right of entry at reasonable times and in a reasonable manner for the purpose of inspecting, operating, installing, constructing, reconstructing, maintaining or repairing the facility within the CITY.

5. The OWNER(S) shall record and grant to the CITY the necessary easements and rights-of-way and maintain perpetual access from public rights-of-way to the facility for the CITY or its agent and contractor.

6. If, upon inspection, the CITY finds that the OWNER(S) has failed to properly maintain the facilities, the CITY may order the work performed within ten (10) days. In the event the work is not performed within the specified time, the ONWER(S) agrees to allow the CITY to enter the property and take whatever steps it deems necessary to maintain the stormwater control facilities. This provision shall not be construed to allow the CITY to erect any structure of a permanent nature on the PROPERTY without first obtaining written approval of the OWNER(S)

7. The CITY is under no obligation to maintain or repair said facilities, and in no event shall this Agreement be construed to impose any obligation on the CITY. The OWNER(S) shall reimburse the CITY upon demand the costs incurred in the maintenance of the facilities.

8. If the OWNER(S) fails to pay the CITY for the above expensive after forty-five (45) days written notice, the OWNER(S) authorizes the CITY to collect said expenses from the OWNER(S) through appropriate legal action and the OWNER(S) shall be liable for the reasonable expenses of collection, court costs, and attorney fees.

9. The OWNER(S) and the OWNER(S) heirs, administrators, executors, assigns, and any other successor in interest shall indemnify and hold harmless the CITY and its officers, agents and employees for any and all damages, accidents, casualties, occurrences, claims or attorney's fees which might arise or be asserted, in whole or in part,

against the CITY from the construction, presence, existence, or maintenance of the stormwater control facilities subject to this AGREEMENT. In the event a claim is asserted against the CITY, its officers, agents or employees, the CITY shall notify OWNER(S) and the OWNER(S) shall defend at OWNER(S) expense any suit based on such claim. If any judgment or claims against the CITY, its officers, agents or employees, shall be allowed, the OWNER(S) shall pay all costs and expenses in connection therewith. The CITY will not indemnify, defend or hold harmless in any fashion the OWNER(S) from any claims arising from any failure, regardless of any language in any attachment or other document that the OWNER(S) may provide

10. The OWNER(S) shall not be able to transfer, assign or modify its responsibilities with respect to this agreement without the CITY's written prior consent. Nothing herein shall be construed to prohibit a transfer by OWNER(S) to subsequent owners and assigns.

11. No waiver of any provision of this AGREEMENT shall affect the right of any party thereafter to enforce such provision or to exercise any right or remedy available to it in the event of any default.

12. The OWNER(S) shall record a plat showing and accurately defining the easements for stormwater control facilities. The plat must reference the Instrument Number where this AGREEMENT and its attachments are recorded and contain a note that the OWNER(S) is responsible for maintaining the stormwater management facilities.

13. The OWNER(S) shall record this AGREEMENT in the office of the Register of Deeds for the county of Maury, Tennessee, and the AGREEMENT shall constitute a covenant running with the land, and shall be binding upon the OWNER(S) and the OWNER(S) heirs, administrators, executors, assigns, and any other successors in interest

ATTEST BY OWNER(S):

Print Name Curt Harakas

Title Managing member

Signature

Owner Harakas Development LLC

Address 1138 New Highway 7

City, State ZIP Columbia Tn 38401

STATE OF TN
COUNTY OF Maury

Before me, ~~Curt Harakas~~ Laura Turner of the state and county mentioned, personally appeared Curt Harakas, with whom I am personally acquainted and who acknowledged that he/she executed the foregoing instrument of the purposes therein contained.

Witness my hand this the 16 day of Jan, 20 25.

Notary Public

My Commission Expires: 4/20/27

LAURA LAWSON TURNER STATE OF TENNESSEE NOTARY PUBLIC MAURY COUNTY

CITY OF COLUMBIA, TENNESSEE
ENGINEERING DEPARTMENT

APPROVED BY:

STATE OF TENNESSEE
COUNTY OF MAURY

Before me, Leia Smith of the state and county mentioned, personally appeared Nedl Scruggs, with whom I am personally acquainted, and who acknowledged themselves to be the City Engineer of the City of Columbia or his designee and as such, being authorized so to do, executed the foregoing instrument of the purposes therein contained.

Witness my hand this the 16 day of Jan, 20 25

Notary Public

My Commission Expires: 23 April 25

LEIA SMITH STATE OF TENNESSEE NOTARY PUBLIC MAURY COUNTY

Rev. 1/17/2017

City of COLUMBIA TENNESSEE DEVELOPMENT SERVICES 700 NORTH

GARDEN STREET COLUMBIA, TN 38401 PHONE: (931) 560-1560 FAX: (931) 560-1541

POST CONSTRUCTION LONG TERM MAINTENANCE PLAN FOR

PROJECT NAME: *Bullock Street townhomes*

SYSTEM DESCRIPTION

The site consists of a series of stormwater conveyances both open channel and piped, detention / retention.

There is one stormwater detention pond sized to detain through the 100 year peak event. The orifice is designed to contain the first flush, 1 inch, for 72 hour.

- 275 feet of 8" pipe for gutter drains all drains to storm water infrastructure
- All down spouts of building drain to detention pond
- 580 feet of 18 inch pipe and 2 storm inlets, 1 Junction box 4 head walls.
- 1 storm water outlet structure at east side mid ways of the detention pond.

Upon completion of the site construction, 'Record Drawings' in a version not less than AutoCAD 2006 LT (NAD83, NAVD88) of the stormwater controls will be provided to the City of Columbia for verification.

A copy of the **INSPECTION AND MAINTENANCE AGREEMENT OF PRIVATE STORMWATER MANAGEMENT FACILITIES** that has been completed, notarized and recorded in the Land Records of the County of Maury, Tennessee will be kept on site with this document.

MAINTENANCE PROCEDURES 1. STORMWATER DETENTION PONDS

- The outlet structure shall be checked regularly for clogging and shall be cleaned and repaired as necessary---monthly after it is first built then a regular sequence should be established or at least quarterly or after a large rain event.
- Check banks and bottom surface of basin for erosion and correct as necessary.
- Check at least quarterly and after each extreme storm event, the facility should be cleaned of accumulated debris. The banks of surface ponds should be checked and areas of erosion repaired. Remove nuisance wetland species and take appropriate measures to control mosquitoes.
- This maintenance typically includes sediment, floatable, and debris removal from inlets, outlets and skimmers
- Pond vegetation needs to be trimmed or harvested as appropriate, grassy areas frequently mowed. Grass should be mowed so that it does not get over 6 inches.

- Remove sediment when accumulation reached 6 inches, or if re-suspension is observed or probable.

- Some sediment may contain contaminants which the Tennessee Department of Environment and Conservation (TDEC) requires special disposal procedure. If there is any uncertainty about what the sediment contains or it is known to contain contaminants, then TDEC should be consulted and their disposal recommendations followed. The TDEC Division of Water Pollution Control should be contacted at (931) 380-3371. Generally, special attention or sampling should be given to sediment accumulated in facilities serving industrial, manufacturing or heavy commercial sites,

fueling centers or automotive maintenance areas, large parking areas, or other areas where pollutants (other than clean soil) are suspected to accumulate and be conveyed by storm runoff.

- Some sediment collected may be innocuous (free of pollutants) and can be used as fill material, cover or land spreading. It is important that this material not be placed in any way that will promote or allow re-suspension in storm runoff.

2. GRASS LINED OPEN CHANNEL

- The facility should be checked annually for signs of erosion, vegetation loss, and channelization of the flow.
- The grass should be mowed when it reaches a height of 8 inches (20.3 cm) and no shorter than 3 inches (7.6 cm). Allowing the grass to grow taller may cause it to thin and become less effective. The clippings should be bagged and removed.
- Mow grass covered biofilters regularly to promote growth and pollutant uptake.
- Remove cuttings and dispose of properly (preferably through composting).
- Remove sediment by hand with a flat-bottomed shovel during dry periods.
- Remove only the amount of sediment necessary to restore hydraulic capacity, leaving as much of the vegetation in place as possible. Reseed or plug any damaged turf or vegetation.
- Eventually, sufficient sediment will be trapped that the entire biofilter will need to be removed with sediment and reconstructed to begin a new cycle of stormwater quality control.
- Roto-till or cultivate the surface of the sand/soil bed of dry swales if the swale does not draw down within 48.

3. 580 FT OF 18 INCH PIPE AND 2 STORM DRAINS

- These structures will be inspected and cleaned annually

4. STORMCEPTOR WATER QUALITY UNIT

- N/A

5. STREAMSIDE WATER QUALITY BUFFER

- N/A

6. TYPICAL MAINTENANCE ACTIVITIES FOR BIORETENTION AREAS (SOURCE: EPA, 1999)

- N/A

CITY OF COLUMBIA TENNESSEE **DEVELOPMENT SERVICES** 700 NORTH GARDEN STREET COLUMBIA, TN 38401 PHONE: (931) 560-1560 FAX: (931) 560-1541

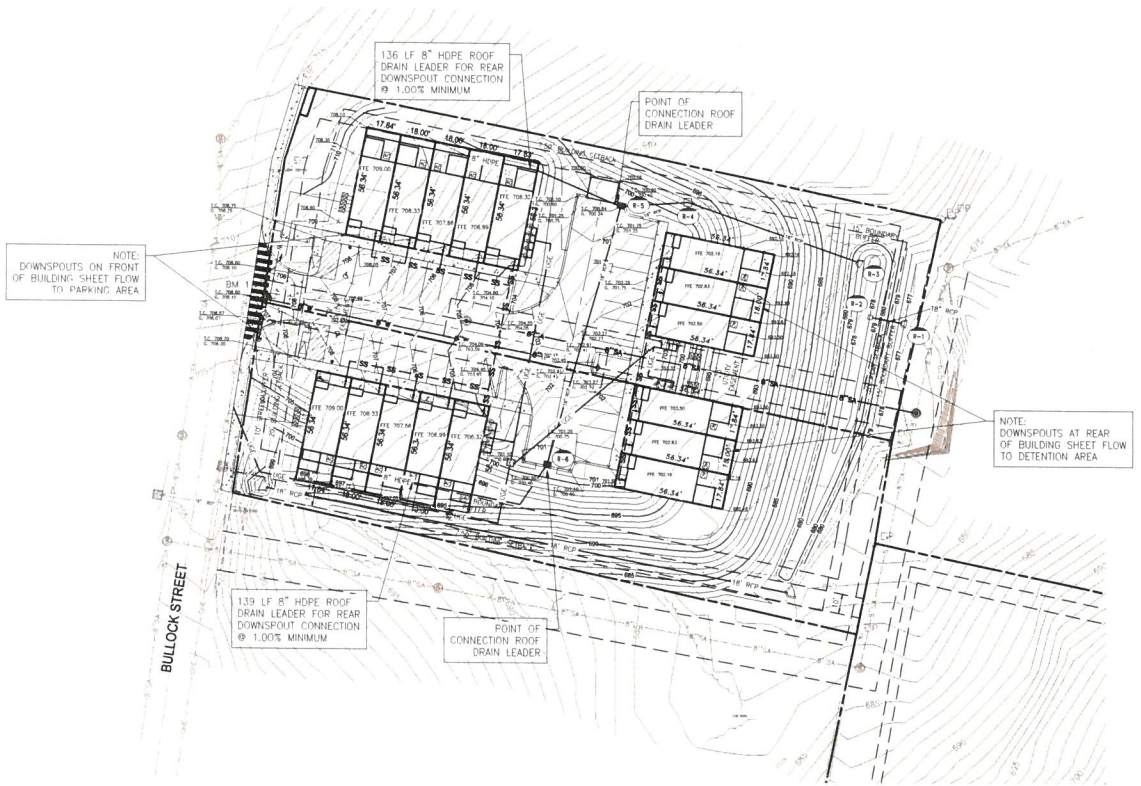
EXAMPLE STORMWATER MANAGEMENT INSPECTION/MAINTENANCE FORM

To be kept on site

PROJECT NAME: Bullock Street townhomes
PROJECT LOCATION: 600/602 Bullock st
OWNER/LEGAL ENTITY: Curt Harakas/Harakas Development
TELEPHONE: (615)207-3813

E-MAIL: harakasconst@yahoo.com **DATE**	**ITEM INSPECTED**	**INSPECTOR**	**OBSERVATION & REMARKS**

GRADING AND DRAINAGE PLAN



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TN GRID NORTH

GENERAL GRADING AND DRAINAGE NOTES

1. ALL GRADING AND DRAINAGE WORK AS SHOWN ON THIS PLAN SHALL BE DONE IN STRICT ACCORDANCE WITH THE REQUIREMENTS AND SPECIFICATIONS OF THE LOCAL ENGINEERING DEPARTMENT.
2. THE NECESSARY PERMITS FOR THE WORK SHOWN ON THESE SITE DEVELOPMENT PLANS WILL BE OBTAINED BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF ANY WORK ON THIS PROJECT. THE CONTRACTOR SHALL GIVE ALL NECESSARY NOTICES, OBTAIN ALL PERMITS AND PAY ALL FEES WHICH ARE IN REQUIRING SAID PERMITS. THE CONTRACTOR SHALL ALSO COMPLY WITH ALL LOCAL AND STATE BUILDING CODES, ORDINANCES AND REGULATIONS RELATING TO THE CONSTRUCTION OF THE ITEMS SHOWN ON THE SE PLANS.
3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO AVOID DAMAGE TO ALL EXISTING UTILITIES TO REMAIN DURING CONSTRUCTION. IF DAMAGE DOES OCCUR TO ANY SUCH EXISTING INSTALLATIONS, FULL REPAIR SHALL BE AT THE EXPENSE OF THE CONTRACTOR AND SHALL BE ACCOMPLISHED AS PER THE CURRENT SPECIFICATIONS FOR SUCH WORK FOR THE RESPONSIBLE AGENCY.
4. THE LOCATION OF EXISTING PIPING AND UNDERGROUND UTILITIES (I.E., WATER AND GAS LINES, ELECTRICAL AND TELEPHONE CONDUITS, ETC.) AS SHOWN ON THIS PORTION OF THE PLANS HAVE BEEN DETERMINED FROM THE BEST INFORMATION FROM ACTUAL SURVEYS, OR TAKEN FROM THE RECORDS AND DRAWINGS OF THE EXISTING UTILITIES. HOWEVER, THE CIVIL ENGINEER DOES NOT ASSUME RESPONSIBILITY THAT, DURING CONSTRUCTION, THE POSSIBILITY OF UTILITIES OTHER THAN THOSE SHOWN MAY BE ENCOUNTERED OR THAT THE ACTUAL LOCATIONS OF UTILITIES SHOWN MAY VARY SOMEWHAT FROM THE LOCATIONS DESIGNATED ON THIS PORTION OF THE PLANS. IN AREAS WHERE IT IS NECESSARY THAT THE EXACT LOCATIONS OF UNDERGROUND UTILITIES BE KNOWN, THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, FURNISH ALL LABOR AND TOOLS TO EITHER VERIFY AND SUBSTANTIATE OR DEFINITELY ESTABLISH THE LOCATION OF THE UTILITIES.
5. ALL DELETERIOUS MATERIAL SHALL BE REMOVED AND DISPOSED OF OFF-SITE BY THE CONTRACTOR AS PER THE INSPECTION AND FINAL APPROVAL OF THE ENGINEER AND OWNER. ALL FILL MATERIAL TO BE USED FOR SITE GRADING SHALL BE AN INORGANIC SOIL, FREE OF DEBRIS AND APPROVED BY THE ENGINEER AND OWNER.
6. THE PLACING AND SPREADING OF ANY FILL MATERIAL IS TO BE STARTED AT THE LOWEST POINT AND BROUGHT UP IN HORIZONTAL LAYERS OF 8-INCH THICKNESS. SAID FILL MATERIAL IS TO BE SOIL AND ROCK ONLY. FREE OF SOD, ROOTS, PROPEN SOILS, OR ANY OTHER DECOMPOSABLE MATERIAL. THE RELATIVE COMPACTION OF EACH LAYER SHALL NOT BE LESS THAN 95% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D-698) IN ALL AREAS OF FILL, AND COMPACTION OF 98% OF SAME SPECIFICATION FOR MATERIALS USED IN THE UPPER 12 INCHES BENEATH PAVEMENT AND GRADE SLABS.
7. THE CONTRACTOR IS TO CHECK AND VERIFY ALL MEASUREMENTS, LEVELS, ETC., BEFORE ORDERING MATERIALS AND PROCEEDING WITH WORK, AND IS RESPONSIBLE FOR THE SAME.
8. CONTRACTOR IS BE RESPONSIBLE FOR SECURING WRITTEN APPROVAL FROM ALL ADJOINING PROPERTY OWNER FOR OFF-SITE GRADING WORK THAT RESULTS FROM CONSTRUCTION ACTIVITIES.

BASIN CONSTRUCTION NOTES

1. AREAS UNDER THE EMBANKMENT OR ANY STRUCTURAL WORKS RELATED TO THE BASIN SHALL BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL, TREES, VEGETATION, ROOTS, OR OTHER OBJECTIONABLE MATERIAL. IN ORDER TO FACILITATE CLEANOUT AND RESTORATION, THE AREA OF MOST FREQUENT INUNDATION (MEASURED FROM THE TOP OF THE PRINCIPAL SPILLWAY) WILL BE CLEARED OF ALL BRUSH AND TREES.
2. THE PLACING AND SPREADING OF EMBANKMENT MATERIALS IS TO BE STARTED AT THE LOWEST POINT AND BROUGHT UP IN HORIZONTAL LAYERS OF 8" THICKNESS. SAID MATERIAL IS TO BE FREE OF SOD, ROOTS, FROZEN SOIL, OR ANY OTHER DECOMPOSABLE MATERIAL. THE RELATIVE COMPACTION OF EACH LAYER SHALL NOT BE LESS THAN 95% OF STANDARD PROCTOR TEST IN ALL AREAS.
3. FOR EARTH FILL EMBANKMENTS, A CUTOFF TRENCH SHALL BE EXCAVATED ALONG THE CENTERLINE OF THE BERM. THE TRENCH MUST EXTEND AT LEAST 1 FOOT INTO A STABLE, IMPERVIOUS LAYER OF SOIL AND HAVE A MINIMUM DEPTH OF TWO FEET. THE CUTOFF TRENCH SHALL EXTEND UP BOTH ABUTMENTS TO THE RISER CREST ELEVATION. THE MINIMUM BOTTOM WIDTH SHALL BE FOUR FEET, BUT AS SO MUST BE WIDE ENOUGH TO PERMIT OPERATION OF COMPACTION EQUIPMENT. THE SIDE SLOPES SHALL BE NO STEEPER THAN 1:1. COMPACTION REQUIREMENTS SHALL BE THE SAME AS THOSE FOR THE EMBANKMENT. THE TRENCH SHALL BE DRY DURING THE BACKFILLING AND COMPACTION OPERATIONS.
4. THE EMBANKMENT SHALL BE CONSTRUCTED TO AN ELEVATION 10 PERCENT HIGHER THAN THE DESIGN HEIGHT TO ALLOW FOR SETTLEMENT IF COMPACTION IS OBTAINED WITH HAULING EQUIPMENT IF COMPACTORS ARE USED FOR COMPACTION, THE OVERBUILD MAY BE REDUCED TO NOT LESS THAN 5 PERCENT.
5. THE EMBANKMENT OF THE DETENTION POND SHALL BE STABILIZED WITH TEMPORARY OR PERMANENT VEGETATION IMMEDIATELY AFTER INSTALLATION OF THE BASIN.
6. ALL STATE AND LOCAL REQUIREMENTS SHALL BE MET CONCERNING FENCING AND SIGNS WARNING THE PUBLIC OF THE HAZARDS OF BOKY, SATURATED SEDIMENT AND FLOOD WATERS.

EXISTING CONDITIONS		
IMPERVIOUS	0.02 ACRES	1.23%
PERVIOUS	1.61 ACRES	98.77%
TOTAL SITE	1.63 ACRES	100.00%

PROPOSED CONDITIONS		
IMPERVIOUS	0.78 ACRES	47.85%
PERVIOUS	0.85 ACRES	52.15%
TOTAL SITE	1.63 ACRES	100.00%

TOTAL DISTURBED AREA 71,171 SF OR 1.63 ACRES

DEVELOPMENT RUNOFF (CFS)

STORM EVENT	EXISTING SITE	PROPOSED SITE	DETENTION BASIN OUTFALL	BYPASS	TOTAL PROPOSED RUNOFF	Q DECREASE
2-YR	2.05	4.84	0.26	0.97	1.23	0.82
5-YR	2.75	6.38	0.61	1.28	1.89	0.86
10-YR	3.10	7.12	0.88	1.43	2.31	0.79
25-YR	3.56	8.16	1.30	1.63	2.93	0.63
50-YR	3.87	9.09	1.71	1.82	3.53	0.44
100-YR	4.39	9.93	2.08	1.99	4.07	0.32

BENCHMARK

BENCHMARK #1
X ON EXISTING FIRE HYDRANT
ELEV. = 708.72'

WARNING! UTILITY LINES!

THE CONTRACTOR WILL EXERCISE EXTREME CAUTION IN THE USE OF EQUIPMENT IN AND AROUND OVERHEAD AND UNDERGROUND UTILITY WIRES AND SERVICES. IF AT ANY TIME IN THE PURSUIT OF THIS WORK THE CONTRACTOR MUST WORK IN CLOSE PROXIMITY OF OVERHEAD OR UNDERGROUND SERVICES, THE UTILITY COMPANY SHALL BE CONTACTED PRIOR TO SUCH WORK AND THE PROPER SAFETY MEASURES TAKEN. A THOROUGH EXAMINATION OF THE OVERHEAD WIRES IN THE PROJECT AREA SHOULD BE MADE BY THE CONTRACTOR PRIOR TO THE INITIATION OF CONSTRUCTION. THE UNDERGROUND UTILITY LINES HAVE BEEN SHOWN AS BEST AS CAN BE DETERMINED AT THIS TIME FROM THE INFORMATION OBTAINED FROM THE SURVEY. THE CONTRACTOR SHALL CONTACT EACH OF THESE COMPANIES PRIOR TO BEGINNING CONSTRUCTION AND HAVE THEM DETERMINE THE EXACT LOCATION AND TYPE OF THEIR SERVICES.

Tennessee 811 — Know what's below. Call before you dig.

LEGEND

	EXISTING	PROPOSED
WATER MAIN		
SANITARY SEWER		
STORM SEWER		
OVERHEAD		
FENCE		
TREE LINE		
DRAINAGE DITCH		
TREE PROTECTION FENCE		
TION		
UTILITY POLE		
IRON PIN SET		
EXISTING IRON PIN		
CONCRETE MONUMENT		
DECIDUOUS TREE		
GATE VALVE IN BOX		
LIGHT POLE		
BENCHMARK		
TREE LINE		
STORM STRUCTURE LABEL		
ASPHALT		
CONCRETE		
# PARKING SPACES		

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

GEOTECHNICAL NOTE:

CONTRACTOR TO COMPLETE A GEOTECHNICAL STUDY CONDUCTED ON THIS SITE PRIOR TO COMMENCEMENT OF CONSTRUCTION. THE DESIGN FOR THE SITE IMPROVEMENTS SHOWN ON THIS PLAN HAVE REFLECTION OF GENERAL INFORMATION FROM FIELD REVIEW OF EXISTING TERRAIN. IF, IN THE PURSUIT OF THIS WORK, THE CONTRACTOR, CONDITIONS OR CIRCUMSTANCES ARE ENCOUNTERED THAT ARE DIFFERENT THAN REFLECTED IN THESE PLANS OR THAT APPEAR TO IMPACT THE SCOPE OF THE WORK, THE CONTRACTOR WILL IMMEDIATELY NOTIFY THE CIVIL ENGINEER, THE GEOTECHNICAL ENGINEER AND THE OWNER/DEVELOPER. BEFORE ANY REMEDIAL COURSE OF ACTION OR DESIGN CHANGE IS INITIATED. ALL PARTIES TO THE PROCESS (OWNER, CIVIL ENGINEER, GEOTECHNICAL ENGINEER, AND CONTRACTOR) MUST BE IN AGREEMENT AND THE MAGNITUDE OF THE COST/TIME REQUIRED FOR THE MEASURES ESTABLISHED.

SITE BENCHMARK NOTE:

CONTRACTOR SHALL ESTABLISH A BENCHMARK PRIOR TO CONSTRUCTION. EXISTING BENCHMARK MUST BE RE VERIFIED AND APPROVED BY THE ENGINEER/SURVEYOR PRIOR TO USE.

BOUNDARY & TOPOGRAPHIC SURVEY PROVIDED BY:

WES ENGINEERS AND SURVEYORS
2480 NASHVILLE HWY
COLUMBIA, TENNESSEE 38401
(931) 388-2329

FLOOD STUDY NOTE:

THIS PROPERTY IS NOT LOCATED IN A FLOOD HAZARD AREA AS PER FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP (FIRM), COMMUNITY PANEL NO. 47119C0095E DATED APRIL 16, 2007 (ZONE "X")

WES ENGINEERS & SURVEYORS
CIVIL ENGINEERS & LAND SURVEYORS
2480 NASHVILLE HIGHWAY
COLUMBIA, TN 38401
PHONE (931) 388-2329
ENGINEERS & SURVEYORS

Client
STEVE DESOTO
14 GIST STREET
FRANKLIN, TN 37064

REVISIONS	DATE

BULLOCK STREET TOWNHOMES
BULLOCK STREET
COLUMBIA, MAURY COUNTY, TENNESSEE
GRADING AND DRAINAGE PLAN

Job No. 20531
Drawn: AC
Checked: GV
Approved: GV
Date: JANUARY 13, 2021
Scale: Vertical 1"=30' Horizontal

SUBMITTED FOR MUNICIPAL APPROVAL
NOT FOR CONSTRUCTION

geralo@wesengineers.com

C-4.0

P:\Civil\WES Engineers_Surveyors\20531 - Bullock Street - Columbia\Engineering\20531_Base.dwg

City of COLUMBIA TENNESSEE DEVELOPMENT SERVICES 700 NORTH

GARDEN STREET COLUMBIA, TN 38401 PHONE: (931) 560-1560 FAX: (931) 560-1541

POST CONSTRUCTION LONG TERM MAINTENANCE PLAN FOR

PROJECT NAME: *Bullock Street townhomes*

SYSTEM DESCRIPTION

The site consists of a series of stormwater conveyances both open channel and piped, detention / retention.

There is one stormwater detention pond sized to detain through the 100 year peak event. The orifice is designed to contain the first flush, 1 inch, for 72 hour.

- 275 feet of 8" pipe for gutter drains all drains to storm water infrastructure
- All down spouts of building drain to detention pond
- 580 feet of 18 inch pipe and 2 storm inlets, 1 Junction box 4 head walls.
- 1 storm water outlet structure at east side mid ways of the detention pond.

Upon completion of the site construction, 'Record Drawings' in a version not less than AutoCAD 2006 LT (NAD83, NAVD88) of the stormwater controls will be provided to the City of Columbia for verification.

A copy of the **INSPECTION AND MAINTENANCE AGREEMENT OF PRIVATE STORMWATER MANAGEMENT FACILITIES** that has been completed, notarized and recorded in the Land Records of the County of Maury, Tennessee will be kept on site with this document.

MAINTENANCE PROCEDURES 1. STORMWATER DETENTION PONDS

- The outlet structure shall be checked regularly for clogging and shall be cleaned and repaired as necessary---monthly after it is first built then a regular sequence should be established or at least quarterly or after a large rain event.
- Check banks and bottom surface of basin for erosion and correct as necessary.
- Check at least quarterly and after each extreme storm event, the facility should be cleaned of accumulated debris. The banks of surface ponds should be checked and areas of erosion repaired. Remove nuisance wetland species and take appropriate measures to control mosquitoes.
- This maintenance typically includes sediment, floatable, and debris removal from inlets, outlets and skimmers
- Pond vegetation needs to be trimmed or harvested as appropriate, grassy areas frequently mowed. Grass should be mowed so that it does not get over 6 inches.

- Remove sediment when accumulation reached 6 inches, or if re-suspension is observed or probable.

- Some sediment may contain contaminants which the Tennessee Department of Environment and Conservation (TDEC) requires special disposal procedure. If there is any uncertainty about what the sediment contains or it is known to contain contaminants, then TDEC should be consulted and their disposal recommendations followed. The TDEC Division of Water Pollution Control should be contacted at (931) 380-3371. Generally, special attention or sampling should be given to sediment accumulated in facilities serving industrial, manufacturing or heavy commercial sites,

fueling centers or automotive maintenance areas, large parking areas, or other areas where pollutants (other than clean soil) are suspected to accumulate and be conveyed by storm runoff.

- Some sediment collected may be innocuous (free of pollutants) and can be used as fill material, cover or land spreading. It is important that this material not be placed in any way that will promote or allow re-suspension in storm runoff.

2. GRASS LINED OPEN CHANNEL

- The facility should be checked annually for signs of erosion, vegetation loss, and channelization of the flow.
- The grass should be mowed when it reaches a height of 8 inches (20.3 cm) and no shorter than 3 inches (7.6 cm). Allowing the grass to grow taller may cause it to thin and become less effective. The clippings should be bagged and removed.
- Mow grass covered biofilters regularly to promote growth and pollutant uptake.
- Remove cuttings and dispose of properly (preferably through composting).
- Remove sediment by hand with a flat-bottomed shovel during dry periods.
- Remove only the amount of sediment necessary to restore hydraulic capacity, leaving as much of the vegetation in place as possible. Reseed or plug any damaged turf or vegetation.
- Eventually, sufficient sediment will be trapped that the entire biofilter will need to be removed with sediment and reconstructed to begin a new cycle of stormwater quality control.
- Roto-till or cultivate the surface of the sand/soil bed of dry swales if the swale does not draw down within 48.

3. 580 FT OF 18 INCH PIPE AND 2 STORM DRAINS

- These structures will be inspected and cleaned annually

4. STORMCEPTOR WATER QUALITY UNIT

- N/A

5. STREAMSIDE WATER QUALITY BUFFER

- N/A

6. TYPICAL MAINTENANCE ACTIVITIES FOR BIORETENTION AREAS (SOURCE: EPA, 1999)

- N/A

CITY OF COLUMBIA TENNESSEE DEVELOPMENT SERVICES 700 NORTH GARDEN STREET COLUMBIA, TN 38401 PHONE: (931) 560-1560 FAX: (931) 560-1541

EXAMPLE STORMWATER MANAGEMENT INSPECTION/MAINTENANCE FORM

To be kept on site

PROJECT NAME: Bullock Street townhomes
PROJECT LOCATION: 600/602 Bullock st
OWNER/LEGAL ENTITY: Curt Harakas/Harakas Development
TELEPHONE: (615)207-3813

E-MAIL: harakasconst@yahoo.com **DATE**	**ITEM INSPECTED**	**INSPECTOR**	**OBSERVATION & REMARKS**

DOCUMENT PREPARED BY:
Name: Curt Harakas
Company Harakas Development LLC
Address: 1138 New Highway 7 Columbia Tn 38401

After recording return copy to City of Columbia, Development Services

INSPECTION AND MAINTENANCE AGREEMENT OF PRIVATE STORMWATER MANAGEMENT FACILITIES

Map & Parcel Number: 089M-020.00 000/089M-020.01 000
Project Name: Bullock street townhomes

Recorded by deed in the Register of Deeds Office of Maury County in Deed Book 5, Page(s) 260.

THIS AGREEMENT, made this 6th day of Janurary, 2025, by and between Harakas Development LLC hereinafter referred to as the "OWNER(S)" of the following property and City of Columbia, Tennessee, hereinafter referred to as the "CITY",

WE, the OWNER(S), with full authority to execute deeds, mortgages, other covenants, all rights, titles, and interests in the property described above, do hereby covenant with the CITY and agree as follows:

1. The OWNER(S) covenant and agree with the CITY that the OWNER(S) shall provide for adequate long term maintenance and continuation of stormwater control measures described in the Long Term Maintenance Plan and shown on the location map, deed of easement drawing or plat attached hereto to ensure that the facilities, are and remain in proper working condition in accordance with approved design standards, rules and regulations, and applicable laws. The OWNER(S) shall perform preventative maintenance activities at intervals described in the schedule attached hereto along with necessary landscaping (grass cutting, etc.) and trash removal as part of regular maintenance.
2. The OWNER(S) shall perform routine inspections to ensure that all long term stormwater management facilities are properly functioning. These inspections shall be conducted on an annual basis, at a minimum. These inspections shall be conducted by a person familiar with control measures implemented at the site. The OWNER(S) or operators shall maintain documents of these inspections.
3. The OWNER(S) shall perform comprehensive inspections of all stormwater management facilities and practices. These inspections shall be conducted once every five years, at a minimum. Such inspections must be conducted by either a professional engineer or landscape architect.
4. The OWNER(S) shall grant to the CITY or its agent or contractor the right of entry at reasonable times and in a reasonable manner for the purpose of inspecting, operating, installing, constructing, reconstructing, maintaining or repairing the facility within the CITY.
5. The OWNER(S) shall record and grant to the CITY the necessary easements and rights-of-way and maintain perpetual access from public rights-of-way to the facility for the CITY or its agent and contractor.
6. If, upon inspection, the CITY finds that the OWNER(S) has failed to properly maintain the facilities, the CITY may order the work performed within ten (10) days. In the event the work is not performed within the specified time, the ONWER(S) agrees to allow the CITY to enter the property and take whatever steps it deems necessary to maintain the stormwater control facilities. This provision shall not be construed to allow the CITY to erect any structure of a permanent nature on the PROPERTY without first obtaining written approval of the OWNER(S)
7. The CITY is under no obligation to maintain or repair said facilities, and in no event shall this Agreement be construed to impose any obligation on the CITY. The OWNER(S) shall reimburse the CITY upon demand the costs incurred in the maintenance of the facilities.
8. If the OWNER(S) fails to pay the CITY for the above expensive after forty-five (45) days written notice, the OWNER(S) authorizes the CITY to collect said expenses from the OWNER(S) through appropriate legal action and the OWNER(S) shall be liable for the reasonable expenses of collection, court costs, and attorney fees.
9. The OWNER(S) and the OWNER(S) heirs, administrators, executors, assigns, and any other successor in interest shall indemnify and hold harmless the CITY and its officers, agents and employees for any and all damages, accidents, casualties, occurrences, claims or attorney's fees which might arise or be asserted, in whole or in part,

against the CITY from the construction, presence, existence, or maintenance of the stormwater control facilities subject to this AGREEMENT. In the event a claim is asserted against the CITY, its officers, agents or employees, the CITY shall notify OWNER(S) and the OWNER(S) shall defend at OWNER(S) expense any suit based on such claim. If any judgment or claims against the CITY, its officers, agents or employees, shall be allowed, the OWNER(S) shall pay all costs and expenses in connection therewith. The CITY will not indemnify, defend or hold harmless in any fashion the OWNER(S) from any claims arising from any failure, regardless of any language in any attachment or other document that the OWNER(S) may provide

10. The OWNER(S) shall not be able to transfer, assign or modify its responsibilities with respect to this agreement without the CITY's written prior consent. Nothing herein shall be construed to prohibit a transfer by OWNER(S) to subsequent owners and assigns.
11. No waiver of any provision of this AGREEMENT shall affect the right of any party thereafter to enforce such provision or to exercise any right or remedy available to it in the event of any default.
12. The OWNER(S) shall record a plat showing and accurately defining the easements for stormwater control facilities. The plat must reference the Instrument Number where this AGREEMENT and its attachments are recorded and contain a note that the OWNER(S) is responsible for maintaining the stormwater management facilities.
13. The OWNER(S) shall record this AGREEMENT in the office of the Register of Deeds for the county of Maury, Tennessee, and the AGREEMENT shall constitute a covenant running with the land, and shall be binding upon the OWNER(S) and the OWNER(S) heirs, administrators, executors, assigns, and any other successors in interest

ATTEST BY OWNER(S):

Print Name Curt Harakas

Title Managing member

Signature _____

Owner Harakas Development LLC

Address 1138 New Highway 7

City, State ZIP Columbia Tn 38401

STATE OF _____
COUNTY OF _____

Before me, _____ of the state and county mentioned, personally appeared _____, with whom I am personally acquainted and who acknowledged that he/she executed the foregoing instrument of the purposes therein contained.

Witness my hand this the _____ day of _____, 20_____.

_____
Notary Public

My Commission Expires:_____

CITY OF COLUMBIA, TENNESSEE
ENGINEERING DEPARTMENT APPROVED BY :_____

STATE OF TENNESSEE
COUNTY OF MAURY

Before me, _____ of the state and county mentioned, personally appeared _____, with whom I am personally acquainted, and who acknowledged themselves to be the City Engineer of the City of Columbia or his designee and as such, being authorized so to do, executed the foregoing instrument of the purposes therein contained.

Witness my hand this the _____ day of _____, 20_____.

_____
Notary Public
My Commission Expires:_____

PER ITEM 1 OF THIS AGREEMENT:

A post construction long term maintenance plan shall be recorded with this agreement.

The plan shall include a reduced grading and drainage sheet, location map, and deed of easement drawing or plat.

REMOVE THIS SHEET

REPLACE WITH THE REQUIREMENTS LISTED ABOVE.

CPWS

May 19, 2023

Mr. Gerald W. Vick P.E.
WES Engineers & Surveyors
2486 Nashville Hwy
Columbia, TN 38401
Sent via email: gerald@wesengineers.com

RE: **Water Availability Letter**
Bullock Street Townhomes – 16 Units
600 Bullock Street
Tax Map 89M, Parcel 20.00 & 20.01
Columbia, Maury County, TN

Dear Mr. Vick:

Columbia Power and Water Systems ("the Utility"/CPWS) is a municipal corporation authorized to provide water services in accordance with State law. CPWS has adopted rules, regulations, and standard operation procedures, prescribing the conditions under which CPWS will furnish water service. In addition, certain State laws delegate authority to the Tennessee Department of Environment and Conservation, various Planning Commissions and other authorities in Cities and Counties. These Cities and Counties have also adopted rules and regulations. Subject to the payment of all charges and fees imposed by CPWS and the approval of any and all required governmental agencies, water service will be made available on a first-come, first-served basis, subject to availability of all CPWS furnished equipment and materials appropriate for the development and provided the applicant complies with all rules and regulations of CPWS and conditions set out herein.

The proposed development consists of 16 townhome units. CPWS has evaluated the projected water demands for the proposed residential development in the water system hydraulic model and is able to meet a fire-flow capacity of 1,000 gpm at 20 psi while maintaining the existing level of service and pressures in this portion of the distribution system. CPWS can provide water for the proposed development according to the following requirements:

- Domestic waterline connection will be made to the existing 6-inch water main located on Bullock Street.

CPWS

- A 6-inch water main will be required to be extended from West 4Th Street to Bullock Street to create a looped connection to meet fire flow requirements. See attached figure.
- Units may be served via gang-meter vaults located at the lot frontage.

All of the above requirements are to be constructed and paid for by the Applicant and dedicated to CPWS once complete up to and including the meter. No construction of CPWS infrastructure shall be initiated until final construction plans have been approved by TDEC and all parties have fully executed a water service agreement.

Once you have received this Water Availability Letter, next steps in the process to obtain water service from CPWS are as follows:

- Present the attached hydrant analysis report for coordination and approval of development from the Columbia Fire & Rescue Fire Marshall.
- Provide site base CAD files in DWG format, including roads, lot lines, existing and proposed contours, and other existing and proposed utilities, for use in development of water construction drawings.
- Remit to CPWS new water service fees:

New Water Service Fee: $1,500 + $370 per SFU (16 SFUs)	$7,420.00

- CPWS will then develop water construction drawings and submit to TDEC for approval. Upon approval by TDEC and payment of meter and impact fees by the applicant, applicant may then schedule a pre-construction meeting with CPWS. Pre-construction meeting will not be scheduled until fees are paid in full or surety is provided in lieu of full payment. Final meter and impact fees are subject to change based on final design and meter size determination. Meter fees are subject to change based on market costs at time of purchase. Meters will not be set until meter and impact fees are paid.

Meter Fee: $540 per 3/4" meter (16 meters)	$8,640.00
Impact Fee: $4,500 per 3/4" meter (16 meters)	$72,000.00
Total Meter and Impact Fees Due =	**$80,640.00**

- After the pre-construction meeting, CPWS will then issue a formal notice to proceed. No construction of CPWS infrastructure may take place prior to the pre-construction meeting.
- Applicant is then required to construct all public water infrastructure per CPWS standard specifications and provide CPWS personnel unregulated access to the site to inspect the construction of the water infrastructure.

CPWS

If you have any questions, please feel free to contact me at 423-774-0349 or eric.king@inflodesign.com. This letter is valid for one-hundred twenty (120) days from the date of this letter.

Sincerely,

Eric King

Eric King, P.E.
Inflo Design Group, LLC
on behalf of Columbia Power and Water Systems

cc: Jonathan Hardin, CPWS
File 22-046

Water Availability Review

Bullock Street Townhomes

Tax Map 089M, Group A, Parcel 20.00 and 20.01

Esri Community Maps Contributors, Tennessee STS GIS, © OpenStreetMap, Microsoft, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, Maxar, Microsoft, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA

2022

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Columbia Fire & Rescue

Fire Flow Requirements

Water Purveyor: Columbia Power & Water System

Date: 1-17-2023
Name: Curt Harakas
Phone: 615-207-3813
Email: harakasconst@yahoo.com
Address/Parcel ID: 600 Bullock Street Townhomes
Property Type: (•) Residential ( ) Commercial ( ) Industrial
Construction Type: VB
Enclosed Area (ft^2): < 3,600

FILLED OUT BY COLUMBIA FIRE AND RESCUE

NFPA Sprinkler Type: NFPA 13R

Water System Demand without Sprinkler Credit

Fire flow Requirements (International Fire Code Appendix B)

Fire Flow: 1,000 gpm Duration: 1 hours

Fire Hydrant Location and Distribution (International Fire Code Appendix C)

Minimum number of hydrants: 1

Average spacing between hydrants: 500 ft.

Maximum distance from frontage to hydrant: 250 ft.

Water System Demand with Sprinkler Credit

Fire flow requirements (International Fire Code Appendix B)

Fire Flow: 500 gpm Duration: 1/2 hours

Fire Hydrant Location and Distribution (International Fire Code Appendix C)

Minimum number of hydrants: 1

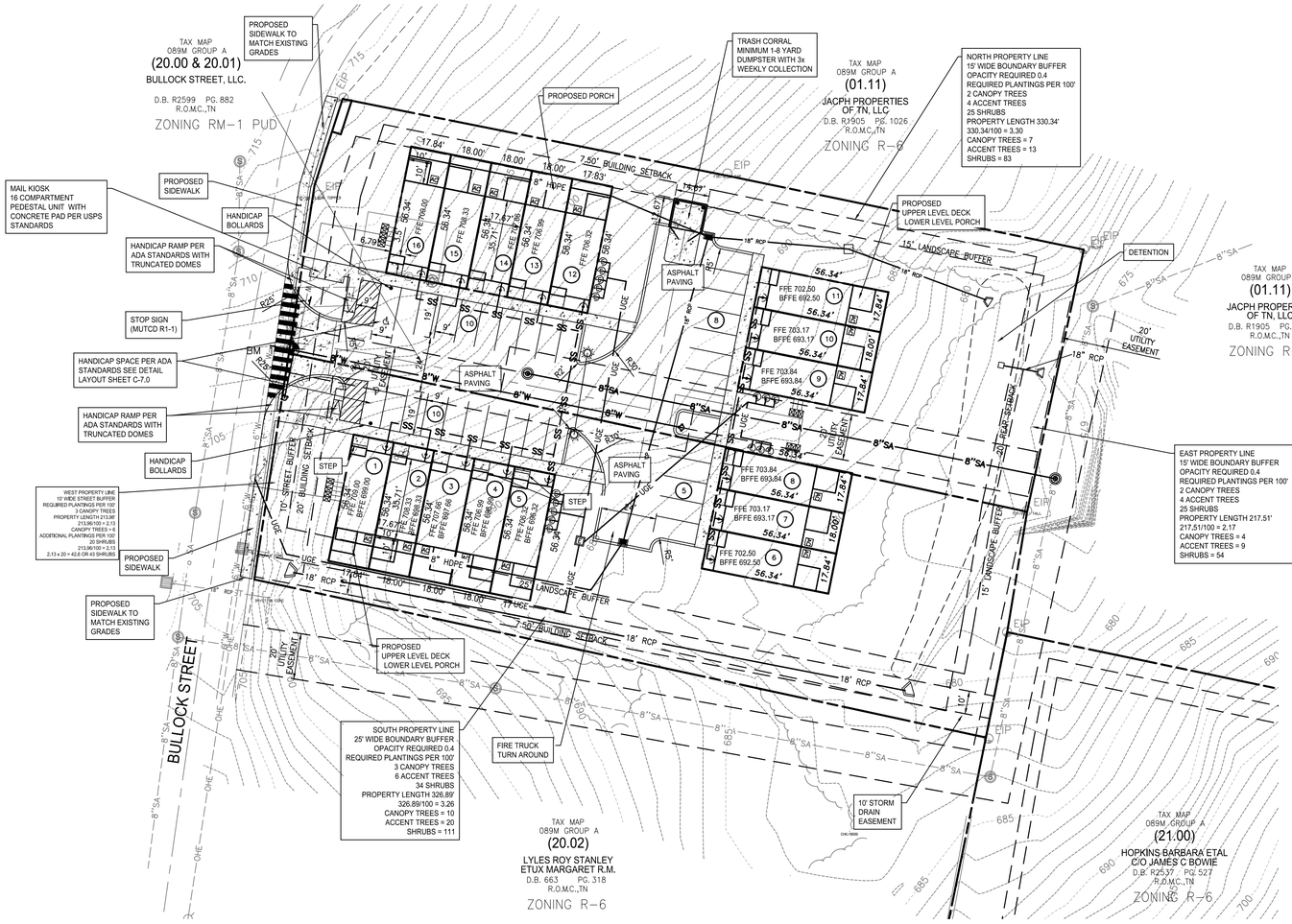
Average spacing between hydrants: 500 ft.

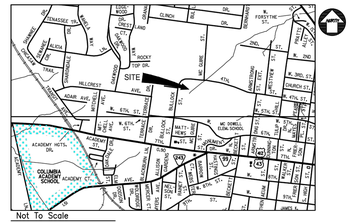
Maximum distance from frontage to hydrant: 250 ft.

Fire Plan Reviewer: Brad Massey Date: 1-17-2023

PUD FINAL PLAN / PRELIMINARY PLAT

LOT AREA TABLE		
LOT NUMBER	SQUARE FEET	ACRES
1	1005	0.023
2	1014	0.023
3	1014	0.023
4	1014	0.023
5	1005	0.023
6	1005	0.023
7	1014	0.023
8	1005	0.023
9	1005	0.023
10	1014	0.023
11	1005	0.023
12	1005	0.023
13	1014	0.023
14	1014	0.023
15	1014	0.023
16	1005	0.023





Location Map

SITE DATA:

OWNER: BULLOCK STREET, LLC
1113 MURFREESBORO ROAD SUITE 106-406
FRANKLIN, TN 37064

PARCEL NUMBER: TAX MAP 89M GROUP A PARCELS 020.00& 020.01
DEED BOOK: R2537, PG 527

SUBJECT PARCEL ZONING: MAP 89M GROUP A PARCELS 020.00 & 020.01 - RM-1

PROPOSED PARCEL ZONING: RM-1 PUD

ACREAGE OF SITE: 1.63± ACRES

MINIMUM REQUIRED BUILDING SETBACKS:
20' FRONT (MINOR)
20' REAR
7.5' SIDE

UTILITY SERVICES: WATER SERVICE
COLUMBIA POWER & WATER SYSTEMS
201 PICKENS LANE
COLUMBIA, TENNESSEE 38401
(931) 388-4833

ELECTRIC SERVICE
COLUMBIA POWER & WATER SYSTEMS
201 PICKENS LANE
COLUMBIA, TENNESSEE 38401
(931) 388-4833

PURPOSE NOTE: REZONE MAP 089M GROUP A PARCELS 020.00 AND 020.01 FROM RM-1 TO RM-1 PUD TO CONSTRUCT 16 RESIDENTIAL UNITS WITH RELATED APPURTENANCES

NOTES:

1. INSTALLATION OF HVAC EQUIPMENT IN P.U.D.E.'s WITH BURIED PIPES IS PROHIBITED.
2. MINIMUM UNIT WIDTH IS 17'-8"
3. ALL DRAINAGE SWALES AND BERMS TO BE MAINTAINED BY HOMEOWNERS.

PARKING DATA: MULTIFAMILY/APARTMENT 1.5 SPACES PER TWO BEDROOMS

REQUIRED PARKING
16 UNITS @ TWO BEDROOM/UNIT = 32 BEDROOMS
16 X 1.5 = 24 SPACES

PROPOSED PARKING 33 SPACES

NOTE:
PATIOS THAT FALL WITHIN THE BUILDING SETBACK WILL NOT BE PERMITTED TO HAVE ANY VERTICAL STRUCTURES INSTALLED.

PUD FINAL PLAN / PRELIMINARY PLAT:

THE PUD MASTER PLAN FOR THIS PROJECT WAS APPROVED JANUARY 2021 - PLANNING CASE #20-0236
THE PRELIMINARY PLAT FOR THIS PROJECT WAS APPROVED APRIL 2021 - PLANNING CASE #21-0037

THIS SUBMITTAL IS TO REQUEST APPROVAL OF THE PUD FINAL PLAN (FINAL MASTER PLAN, FINAL MASTER DEVELOPMENT PLAN, FINAL PUD MASTER PLAN, PUD FINAL MASTER PLAN) / PRELIMINARY PLAT FOR THE PROJECT.

COLUMBIA FIRE & RESCUE NOTES:

PUBLIC WATER SYSTEM DEMAND:

NFPA 13R

FIRE FLOW: 2,250 GPM	DURATION: 2 HOURS	(WITHOUT SPRINKLER CREDIT)
FIRE FLOW: 1,500 GPM	DURATION: 2 HOURS	(WITH SPRINKLER CREDIT)
MINIMUM NO OF HYDRANTS:		2
SPACING BETWEEN HYDRANTS:		450 FT
MAX DISTANCE FROM FRONTAGE TO HYDRANT:		225 FT

GEOTECHNICAL NOTE:

CONTRACTOR TO COMPLETE A GEOTECHNICAL STUDY CONDUCTED ON THIS SITE PRIOR TO COMINCEMENT OF CONSTRUCTION. THE DESIGN FOR THE SITE IMPROVEMENTS SHOWN ON THIS PLAN HAVE RELIED ON GENERAL INFORMATION FROM FIELD REVIEW OF EXISTING TERRAIN, IF, IN THE PURSUIT OF THIS WORK BY THE CONTRACTOR, CONDITIONS OR CIRCUMSTANCES ARE ENCOUNTERED THAT ARE DIFFERENT THAN REFLECTED IN THESE PLANS OR THAT APPEAR TO IMPACT THE SCOPE OF THE WORK, THE CONTRACTOR WILL IMMEDIATELY NOTIFY THE CIVIL ENGINEER, THE GEOTECHNICAL ENGINEER AND THE OWNER/DEVELOPER, BEFORE ANY REMEDIAL COURSE OF ACTION OR DESIGN CHANGE IS INITIATED, ALL PARTIES TO THE PROCESS (OWNER, CIVIL ENGINEER, GEOTECHNICAL ENGINEER, AND CONTRACTOR) MUST BE IN AGREEMENT AND THE MAGNITUDE OF THE COST/TIME REQUIRED FOR THE MEASURES ESTABLISHED.

SITE BENCHMARK NOTE:

CONTRACTOR SHALL ESTABLISH A BENCHMARK PRIOR TO CONSTRUCTION. EXISTING BENCHMARK MUST BE RE-VERIFIED AND APPROVED BY THE ENGINEER/SURVEYOR PRIOR TO USE.

BOUNDARY & TOPOGRAPHIC SURVEY PROVIDED BY:

W.E.S. ENGINEERS AND SURVEYORS
2486 NASHVILLE HWY
COLUMBIA, TENNESSEE 38401
(931) 388-2329

FLOOD STUDY NOTE:

THIS PROPERTY IS NOT LOCATED IN A FLOOD HAZARD AREA AS PER FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD BOUNDARY AND FLOODWAY MAP COMMUNITY PANEL NO. 47119C0285E DATED APRIL 16, 2007 (ZONE "X")

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

BENCHMARK

BENCHMARK #1
X ON EXISTING FIRE HYDRANT
N=470,071.68
E=1,656,986.51
ELEV. = 708.72'

WARNING! UTILITY LINES!

THE CONTRACTOR WILL EXERCISE EXTREME CAUTION IN THE USE OF EQUIPMENT IN AND AROUND OVERHEAD AND UNDERGROUND UTILITY WIRES AND SERVICES. IF AT ANY TIME IN THE PURSUIT OF THIS WORK THE CONTRACTOR MUST WORK IN CLOSE PROXIMITY OF OVERHEAD OR UNDERGROUND SERVICES, THE UTILITY COMPANY SHALL BE CONTACTED PRIOR TO SUCH WORK AND THE PROPER SAFETY MEASURES TAKEN. A THOROUGH EXAMINATION OF THE OVERHEAD WIRES IN THE PROJECT AREA SHOULD BE MADE BY THE CONTRACTOR PRIOR TO THE INITIATION OF CONSTRUCTION. THE UNDERGROUND UTILITY LINES HAVE BEEN SHOWN AS BEST AS CAN BE DETERMINED AT THIS TIME FROM THE INFORMATION OBTAINED FROM THE SURVEY. THE CONTRACTOR SHALL CONTACT EACH OF THESE COMPANIES PRIOR TO BEGINNING CONSTRUCTION AND HAVE THEM DETERMINE THE EXACT LOCATION AND TYPE OF THEIR SERVICES.

Tennessee811 Know what's below Call before you dig.

LEGEND

	EXISTING	PROPOSED
WATER MAIN		W
SANITARY SEWER	8"SA	8"SA
STORM SEWER	15"RCP	15"RCP
OVERHEAD	OHE	
FENCE		
GAS		
DRAINAGE DITCH		
TREE PROTECTION FENCE		
SIGN		
UTILITY POLE		
IRON PIN SET		
EXISTING IRON PIN	EIP	
CONCRETE MONUMENT		
DECIDUOUS TREE		
GATE VALVE IN BOX		
LIGHT POLE		
BENCHMARK	BM 1	
TREE LINE		
STORM STRUCTURE LABEL		S#1
ASPHALT		
CONCRETE		
# PARKING SPACES		14

PROPOSED CONSTRUCTION SCHEDULE FOR THE YEAR 2021

ACTIVITY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC
TEMPORARY SEDIMENT STRUCTURES												
SEDIMENT BASINS												
DIVERSION DITCHES												
CLEARING & CHIPPING												
TOPSOIL STRIPPING AND STORAGE												
ROADWAY GRADING												
PERMANENT STORM SEWER												
UTILITIES												
TEMPORARY VEGETATION												
PAVING												
PERMANENT VEGETATION												
REMOVE TEMPORARY STRUCTURES												

OPEN SPACE NOTE:

ALL OPEN SPACE AREA IS TO BE MAINTAINED BY THE OWNERS ASSOCIATION, CREATED FOR THE PURPOSE OF MAINTAINING ALL COMMON OPEN SPACE, DRAINAGE EASEMENTS AND GROUNDS INCLUDING THE DETENTION AREAS SHOWN ON THIS PLAT.

GERALD W. LOVICK
REGISTERED ENGINEER
AGRICULTURE
No. 107415
STATE OF TENNESSEE
gerald@wesengineers.com

RELEASED FOR CONSTRUCTION WHEN STAMPED APPROVED BY MUNICIPALITY

© 2022

WES ENGINEERS & SURVEYORS
CIVIL ENGINEERS & LAND SURVEYORS
2486 NASHVILLE HIGHWAY
COLUMBIA, TN 38401
PHONE: (931) 388-2329
www.wesengineers.com
ENGINEERS & SURVEYORS

Client
STEVE DESOTO
14 GIST STREET
FRANKLIN, TN 37064

REVISIONS	DATE
Addressed Staff Comments	1/19/21

Drawn: KC
Checked: GV
Approved: GV
Date: 4/8/2022

Job. no. 20531
Scale: Vertical: 1"=30' Horizontal:

BULLOCK STREET TOWNHOMES

BULLOCK STREET
COLUMBIA, MAURY COUNTY, TENNESSEE
PUD FINAL PLAN / PRELIMINARY PLAT

1OF 1

FILE:J:\WES_Engineers_Surveyors 2020\20531 - Bullock Street - DeSoto\Dwg\Engineering\20531_base.dwg

CITY OF COLUMBIA
TENNESSEE

WASTEWATER DEPARTMENT

15 May 2023

Jennifer Dodd, Director
Division of Water Resources
ATTN: Engineering Services Unit
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 11th Floor
Nashville, TN 37243

RE: Bullock St
Columbia, TN 38401

Ms. Dodd,

The City of Columbia Wastewater Department has reviewed and approved the design of the subject project, consisting of 212 linear feet of 8" gravity sewer main. Our Department has conducted an analysis and determined the system has adequate capacity and the project will not create or exacerbate any overflow problems.

Regards,

Donald J. Boshers, Director
City of Columbia, TN
Wastewater Department
(931) 560-1001

CITY OF COLUMBIA TENNESSEE

DEVELOPMENT SERVICES
700 NORTH GARDEN STREET
COLUMBIA, TN 38401
PHONE: (931) 560-1560
FAX: (931) 560-1541

PLANNING COMMISSION
PROJECT DEVELOPMENT APPLICATION

SUBMITTAL REQUIREMENTS

** 1 hard copy of all materials for submittal + PDF copy on a USB thumb drive or CD (no multiple applications on one storage device)*
Fold hard copy submittals larger than 8½"x11"

ADDRESS/LOCATION	600 Bullock St 602 Bullock St		
	TAX MAP: 089	GROUP: A	PARCEL: 02000 & 02001
SUMMARY OF NATURE OF REQUEST AND WORK	Final Plat		

DATE OF PRE-APPLICATION CONFERENCE		*Pre-application meetings are scheduled for Wednesdays.*

SELECT REQUEST	SUBMITTALS SHALL INCLUDE BUT NOT LIMITED TO:
☐ Annexation ☐ Rezoning ☐ Preliminary Plat ☒ Final Plat ☐ PUD Preliminary Master Plan ☐ PUD Final Site Plan ☐ Multi-Family Site Plan ☐ Other: **File naming nomenclature examples:* *Freedom Point Site Plan* *Freedom Point Master Plan* *Freedom Point Final Plat*	**Annexations/Rezoning/PUD's:** ☐ Written Legal Description copy ☐ Requested Zone Listed ☐ Compliance with Comprehensive Plan ☐ Annexation Permission Form ☐ Plans and/or Plats conforming to City standards with check list completed ☐ Columbia Water System Availability Letter **Plats/PUDs:** ☒ Project Name (include Sections & Phases) 600 Bullock St ☒ Total Number of Lots 16 ☐ Total acreage 1.39

Rev. 4/14/2022

Applications and all required submittals must be filed with the Department of Development Services prior to the established deadline. Both the applicant and property owner (if different from applicant) must sign the application.

Any requests to defer or move the item to future meetings dates must be requested by the resubmittal date listed on the Planning Commission schedule.

APPLICANT

All communications go to the Applicant's email that is provided.

NAME	Curt Harakas	PHONE	615-207-3813
ADDRESS	1138 New Hwy 7	EMAIL	harakasconst@yahoo.com

PROPERTY OWNER NAME	Curt Harakas	PHONE	615-207-3813
ADDRESS	1138 New Hwy 7	EMAIL	harakasconst@yahoo.com

In filling out this application, I attest that (1) I am familiar with the rules, regulations, and procedures of the City of Columbia & (2) all information contained herein is accurate & true to the best of my knowledge.

Curt Harakas		12-2-24
APPLICANT NAME	APPLICANT SIGNATURE	DATE
PROPERTY OWNER NAME	PROPERTY OWNER SIGNATURE	DATE

STAFF USE ONLY

DOCKET NO.		FEE PAID	
RECEIPT NO.		REQUESTED AGENDA	

DATE NOTICES SENT TO ADJACENT PROPERTY OWNERS	
DATE OF PUBLIC NOTICES IN DAILY HERALD	

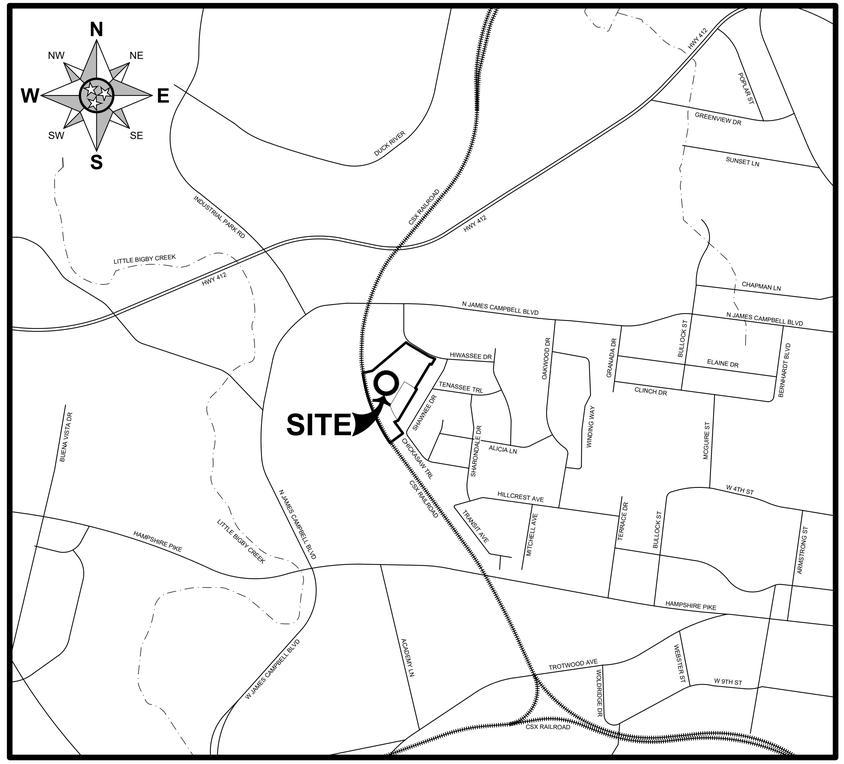
BOARD ACTION	

FINAL PLAT FOR:
IDLEWILD FARMS

HIWASSEE DRIVE
CITY OF COLUMBIA
MAURY COUNTY, TENNESSEE
MAP 89, PARCELS 23.01 & 23.02
MARCH 17, 2025

LOT AREA TABLE		
Lot #	Area (s.f.)	Area (ac.)
1	28,866	0.66
2	38,245	0.88
3	22,790	0.52
4	20,000	0.46
5	20,000	0.46
6	20,000	0.46
7	20,000	0.46
8	20,000	0.46
9	22,236	0.51
10	24,542	0.56
11	22,122	0.51
12	22,083	0.51
13	22,424	0.51
14	20,333	0.47
15	20,307	0.47
16	25,816	0.59

SHEET LIST TABLE	
SHEET NUMBER	SHEET TITLE
FP-01	COVER SHEET
FP-02	FINAL PLAT



VICINITY MAP
SCALE: 1"=1000'

SUBJECT PROPERTY INFORMATION:

- OWNER: HABITAT FOR HUMANITY WILLIAMSON-MAURY
- PARCEL ID: TAX MAP 89, PARCEL 23.01 & 23.02
- INSTRUMENT: RB R2892, PG 825
- PLAT INSTRUMENT: PB 4, PG 15
- TOTAL AREA = 15.60 AC. (679,753 S.F.)
- ZONING: CD-3L

CONTACT LIST

OWNER/DEVELOPER

HABITAT FOR HUMANITY WILLIAMSON-MAURY
109 NOAH DRIVE
FRANKLIN, TN 37064
(615) 690-8090
CONTACT: JENNEE GALLAND, PRESIDENT & COO
E-MAIL: jgalland@hfhwm.org

SURVEYOR

M2 GROUP, LLC
P.O. BOX 2543
BRENTWOOD, TN 37024
PHONE: (931) 623-8913
CONTACT: STEPHEN VANDER HORST, RLS, CFS
E-MAIL: stephen@m2groupllc.com

FINAL SUBDIVISION PLAT MAURY COUNTY, TENNESSEE	
TOTAL ACRES: 15.61	TOTAL LOTS: 16
ACRES NEW STREETS: 1.28	FEET NEW STREETS: 1,330
CIVIL DISTRICT: 4TH	CLOSURE ERROR: 1:10,000±
MILES OF NEW ROADS: 0.25	DATE: MARCH 17, 2025

GENERAL NOTES:

1. THE PURPOSE OF THIS PLAT IS TO ABANDON LOTS 82 & 83, AS REFERENCED IN IDLEWILD SUBDIVISION, SECTION 3, PB 4, PG 15, CREATE 16 LOTS AND 2 OPEN SPACES.
2. THE RECORDING OF THIS PLAT SHALL VOID, VACATE, AND SUPERCEDE THE PREVIOUSLY RECORDED PLAT(S), PLAT OF SURVEY FOR IDLEWILD SUBDIVISION, SECTION 3, PB 4, PG 15. ALL OTHER INFORMATION ON SAID PLATS SHALL REMAIN THE SAME.
3. BEARINGS ARE BASED ON THE TENNESSEE STATE PLANE COORDINATE SYSTEM (NAD83).
4. SURVEY FIELD WORK WAS COMPLETED ON JANUARY 26, 2024.
5. THIS SURVEY WAS PREPARED USING THE CURRENT DEEDS AND PLATS OF RECORD FOR THE SUBJECT PROPERTY.
6. ALL DEED BOOK AND PLAT REFERENCES PERTAIN TO THE REGISTER'S OFFICE FOR MAURY COUNTY, TENNESSEE.
7. ADJOINING PROPERTY LINES SHOWN WERE PLOTTED FROM INFORMATION TAKEN FROM EITHER DEED DESCRIPTION, RECORD PLATS, OR TAX MAPS.
8. PROPERTY CORNERS SET THIS SURVEY ARE 18" #4 REBAR WITH ORANGE PLASTIC CAP STAMPED "M2 GROUP", 18" #5 REBAR WITH YELLOW PLASTIC CAP STAMPED "M2 GROUP, LLC", OR PK NAIL WITH STAINLESS STEEL WASHER STAMPED "M2 GROUP, LLC", UNLESS NOTED OTHERWISE.
9. UNDERGROUND UTILITIES, IF SHOWN, HAVE BEEN PLOTTED FROM PLANS AND MARKINGS COMBINED WITH OBSERVED EVIDENCE OF UTILITIES TO DEVELOP A VIEW OF THOSE UNDERGROUND UTILITIES (CI/ASCE 38-2, QUALITY LEVEL C). OTHER UNDERGROUND UTILITIES MAY EXIST WHICH ARE NOT SHOWN AS A RESULT OF INFORMATION NOT BEING PROVIDED BY THE UTILITY OWNER. HOWEVER, LACKING EXCAVATION, THE EXACT LOCATION OF UNDERGROUND FEATURES CANNOT BE ACCURATELY, COMPLETELY AND RELIABLY DEPICTED. WHERE ADDITIONAL OR MORE DETAILED INFORMATION IS REQUIRED, THE CLIENT OR CONTRACTOR IS ADVISED THAT EXCAVATION MAY BE NECESSARY. CALL 811 BEFORE YOU DIG.
10. THE PROPERTY SHOWN HEREON IS LOCATED IN A FLOOD HAZARD ZONE "X" (AREAS DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN) ACCORDING TO F.I.R.M. MAP "MAURY COUNTY, TENNESSEE" PANELS 170 & 285 OF 440, MAP NUMBER 47119C0170E & 47119C0285E, REVISED APRIL 16, 2007.
11. THE SUBJECT PROPERTY SHOWN HEREON HAS A ZONING DESIGNATION OF "CD-3L", NEIGHBORHOOD DISTRICT ACCORDING TO THE CURRENT CITY OF COLUMBIA OFFICIAL ZONING MAP. SETBACK REQUIREMENTS ARE AS FOLLOWS:
    FRONT = 30 FEET
    SIDE = 12 FEET
    REAR = 30 FEET, OR 15 FEET FROM CENTER LINE OF REAR ALLEY
12. DEVELOPMENT IS TO BE SERVED BY A MAIL KIOSK LOCATED IN OS-2.
13. THE OVERALL PROPERTY BOUNDARY SHOWN HEREON IS BASED ON A SURVEY BY WES ENGINEERS AND SURVEYORS, DATE OF SURVEY IS UNKNOWN.
14. ALL OPEN SPACE IS TO SERVE AS A PUBLIC UTILITY, DRAINAGE, AND ACCESS EASEMENT (PUDAE).

CERTIFICATE OF OWNERSHIP AND DEDICATION

I (WE) HEREBY CERTIFY THAT I AM (WE ARE) THE OWNER(S) OF THE PROPERTY SHOWN AND DESCRIBED HEREON AS EVIDENCED IN BOOK R2892, PAGE 825, MAURY COUNTY REGISTERS OFFICE, AND ADOPT THIS FINAL SUBDIVISION PLAT OF THE PROPERTY AS SHOWN HEREON AND DEDICATE ALL PUBLIC WAYS AND EASEMENTS AS NOTED WITH MY (OUR) FREE CONSENT.

OWNER(S) _____ DATE _____

TITLE (IF ACTION FOR CORPORATION OR PARTNERSHIP) _____

CERTIFICATE OF APPROVAL OF WATER SYSTEM

I HEREBY CERTIFY THAT THE WATER SYSTEM(S) OUTLINED OR INDICATED ON THIS FINAL SUBDIVISION PLAT HAS/HAVE 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.

NAME _____ DATE _____

TITLE _____ AUTHORIZING AGENCY _____

CERTIFICATE OF APPROVAL OF STREETS, DRAINAGE, AND UTILITIES

I HEREBY CERTIFY THAT THE STREETS, DRAINAGE, AND UTILITIES OUTLINED OR INDICATED ON THIS FINAL SUBDIVISION PLAT HAVE BEEN INSTALLED IN ACCORDANCE WITH CITY SPECIFICATIONS, OR A PERFORMANCE SURETY IN THE AMOUNT OF $ _____ FOR STREETS AND DRAINAGE HAS BEEN POSTED WITH THE CITY OF COLUMBIA, TENNESSEE, TO ASSURE COMPLETION OF SUCH IMPROVEMENTS.

CITY ENGINEER _____ DATE _____
COLUMBIA, TENNESSEE

CERTIFICATE OF APPROVAL FOR RECORDING

I HEREBY CERTIFY THAT THE FINAL SUBDIVISION PLAT SHOWN HEREON HAS BEEN FOUND TO COMPLY WITH THE CITY OF COLUMBIA SUBDIVISION REGULATIONS, WITH THE EXCEPTION OF SUCH VARIANCES, IF ANY, AS NOTED IN THE MINUTES OF THE COLUMBIA MUNICIPAL PLANNING COMMISSION, AND THAT IT HAS BEEN APPROVED FOR RECORDING IN THE OFFICE OF THE MAURY COUNTY REGISTER OF DEEDS.

PLANNING DIRECTOR _____ DATE _____
COLUMBIA, TENNESSEE

CERTIFICATE OF SUBDIVISION NAME AND STREET NAMES

SUBDIVISION NAME AND STREET NAMES APPROVED BY THE CITY ENGINEERING DEPARTMENT AND BY E-911 MAURY COUNTY.

MAURY COUNTY E-911 _____ DATE _____

CERTIFICATE OF ACCURACY

I (WE) HEREBY CERTIFY THAT TO THE BEST OF MY (OUR) KNOWLEDGE AND BELIEF THIS IS A TRUE AND ACCURATE SURVEY OF THE PROPERTY SHOWN HEREON; THAT THIS IS A CLASS "I" LAND SURVEY AS DEFINED IN TITLE 62, CHAPTER 18, TENNESSEE CODE ANNOTATED, AND THAT THE RATIO OF PRECISION IS GREATER THAN OR EQUAL TO 1:10,000.

REGISTERED LAND SURVEYOR _____ NUMBER _____ DATE _____

CERTIFICATE OF SANITARY SEWER SYSTEM

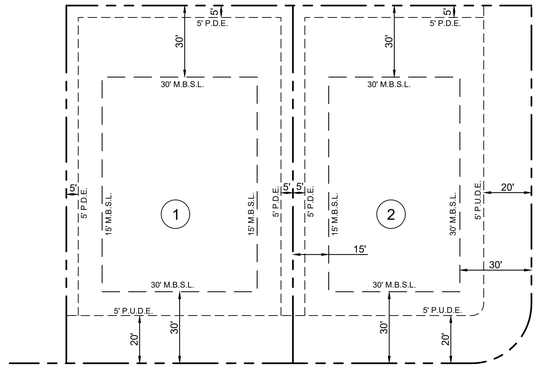
I HEREBY CERTIFY THAT THE SANITARY SEWER SYSTEM OUTLINED OR INDICATED ON THIS FINAL SUBDIVISION PLAT HAS BEEN INSTALLED IN ACCORDANCE WITH THE CURRENT LOCAL AND STATE GOVERNMENT REQUIREMENTS, OR A SUFFICIENT BOND OR OTHER SURETY HAS BEEN FILED TO GUARANTEE SAID INSTALLATION.

DIRECTOR OF WASTEWATER DEPARTMENT _____ DATE _____
COLUMBIA, TENNESSEE

CERTIFICATE OF COMPLIANCE

I HEREBY CERTIFY THAT THE FINAL SUBDIVISION PLAT SHOWN HEREON HAS BEEN FOUND TO COMPLY WITH THE CITY OF COLUMBIA SUBDIVISION REGULATIONS AND OTHER ADOPTED ORDINANCES AND POLICIES.

CITY ENGINEER _____ DATE _____
COLUMBIA, TENNESSEE



TYPICAL LOT LAYOUT
SCALE: 1"=30'
(TYPICAL UNLESS NOTED OTHERWISE)

REVISION #	DATE	DESCRIPTION

FINAL PLAT
IDLEWILD FARMS
HIWASSEE DRIVE
CITY OF COLUMBIA
MAURY COUNTY, TENNESSEE

M2 GROUP
P.O. BOX 2543
BRENTWOOD, TN 37024-2543
WWW.M2GROUPLLC.COM

COVER SHEET

DRAWN BY : ERG
CHECKED BY : SVH
DATE : MARCH 17, 2025
PROJECT NO. : 23-070

SHEET NUMBER:
FP-01

DRAWING1.DWG (Wednesday, January 10, 2018 12:04:03 PM)

SUBJECT PROPERTY INFORMATION:

- OWNER: HABITAT FOR HUMANITY WILLIAMSON-MAURY
- PARCEL ID: TAX MAP 89, PARCEL 23.01 & 23.02
- INSTRUMENT: RB R2892, PG 825
- PLAT INSTRUMENT: PB 4, PG 15
- TOTAL AREA = 15.60 AC. (679,753 S.F.)
- ZONING: CD-3L

50 0 50 100
GRAPHIC SCALE

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14. ALL OPEN SPACE IS TO SERVE AS A PUBLIC UTILITY, DRAINAGE, AND ACCESS EASEMENT (PUDAE).

LINE TABLE		
LINE #	DIRECTION	LENGTH
L1	S72° 13' 06"W	52.46
L2	N49° 45' 38"E	4.55
L3	N66° 08' 05"W	25.02
L4	S59° 07' 45"E	25.50

CURVE TABLE				
CURVE #	LENGTH	RADIUS	CHORD DIRECTION	CHORD LENGTH
C1	34.29	175.00	N30° 53' 42"W	34.24
C2	123.91	175.00	N4° 59' 50"W	121.34
C3	48.06	175.00	N23° 09' 20"E	47.91
C4	39.33	25.00	N14° 02' 30"W	35.40
C5	39.21	25.00	S75° 57' 30"W	35.31
C6	147.33	125.00	S2° 44' 32"E	138.95
C7	200.69	2301.59	N31° 59' 47"W	200.62
C8	165.12	2301.59	N27° 26' 35"W	165.08
C9	162.85	2301.59	N23° 21' 39"W	162.82
C10	528.11	2301.59	N14° 45' 38"W	526.95
C11	46.68	206.10	S52° 37' 10"E	46.58
C12	127.63	543.54	S65° 50' 03"E	127.34

CSX TRANSPORTATION
RIGHT-OF-WAY CHARTER
MAP 099, PARCEL 403.00

MILLIKEN NONWOVENS LLC
MAP 089, PARCEL 23.03
DB R2260, PG 919

N76° 50' 38"E 139.85'

N49° 45' 38"E 611.89'

STORMWATER MANAGEMENT AREA

OS-1
OPEN SPACE
4.83 AC.

150' TVA TRANSMISSION EASEMENT
(REFERENCED PER PB 4, PG 15)

N31° 01' 25"E 1043.63' (TOTAL)

114.69' 164.30' 125.00' 125.00' 125.00' 125.00' 125.00' 139.63'

150' TVA TRANSMISSION EASEMENT
(REFERENCED PER PB 4, PG 15)

N31° 01' 25"E 809.85' (TOTAL)

S31° 01' 25"W 810.08' (TOTAL)

N30° 56' 22"E 396.77' (TOTAL)

N30° 52' 41"E 513.19' (TOTAL)

S30° 50' 35"W 94.69'

S74° 42' 45"E 173.04'

N64° 43' 07"E 180.27'

S53° 29' 30"W 209.29'

S33° 29' 30"W 225.07'

N68° 30' 30"W 200.00'

S6° 20' 29"E 108.75'

N68° 30' 30"W 91.91'

S59° 06' 26"W 291.39' (TOTAL)

OVERHEAD ELECTRIC LINES AND POLES TO BE RELOCATED

LOT LINES TO BE ABANDONED WITH THE RECORDING OF THIS PLAT

OS-2
OPEN SPACE
1.00 AC.

STORMWATER MANAGEMENT AREA

BESSER SPRINGS WAY
(50' PUBLIC R/W - MINOR LOCAL)

SHAWNEE DRIVE
(50' PUBLIC R/W - MINOR LOCAL)

HIWASSEE DRIVE
(50' PUBLIC R/W - MINOR LOCAL)

AMANDA NICOLE POTTS HOUSER, ET VIR
MAP 089K, GROUP B
PARCEL 23.00
DB R2662, PG 1309
MINOR PLAT SUBDIVISION OF PROPERTY OF KENT CARVELL
PB 8, PG 135 — 71B

AMANDA NICOLE POTTS
MAP 089K, GROUP B
PARCEL 22.00
DB R2097, PG 1107
MINOR PLAT SUBDIVISION OF PROPERTY OF KENT CARVELL
PB 8, PG 135 — 71A

THREE LITTLE BEES LLC
MAP 089K, GROUP A
PARCEL 10.00
DB R2608, PG 358
IDLEWILD SECTION 3
PB 4, PG 15 — 81

NOLAN PATEE
MAP 089K, GROUP A
PARCEL 9.00
DB R2641, PG 619
IDLEWILD SECTION 3
PB 4, PG 15 — 80

LETOURNEAU PROPERTIES TN LLC
MAP 089K, GROUP A
PARCEL 8.00
DB R2579, PG 99
IDLEWILD SECTION 3
PB 4, PG 15 — 79

SHERRY D TAYLOR
MAP 089K, GROUP A
PARCEL 7.00
DB R2263, PG 667
IDLEWILD SECTION 3
PB 4, PG 15 — 78

MARION PATRICK REAVES
MAP 089K, GROUP A
PARCEL 6.00
DB 1367, PG 918
IDLEWILD SECTION 3
PB 4, PG 15 — 77

G & R CONSTRUCTION, INC
MAP 089K, GROUP A
PARCEL 5.00
DB R2842, PG 63
IDLEWILD SECTION 3
PB 4, PG 15 — 76

KRISTIN G COGGIN
MAP 089K, GROUP A
PARCEL 4.00
DB R2338, PG 193
IDLEWILD SECTION 3
PB 4, PG 15 — 75

ADAM RYAN ETUX
MAP 089K, GROUP A
PARCEL 3.00
DB 2207, PG 708
IDLEWILD SECTION 3
PB 4, PG 15 — 74

ERNEST NEAL BRADY ETUX
MAP 089K, GROUP A
PARCEL 2.00
DB R2439, PG 1195
IDLEWILD SECTION 3
PB 4, PG 15 — 73

STEPHEN TAYLOR ELLIS
MAP 089K, GROUP A
PARCEL 1.00
DB R2559, PG 1097
IDLEWILD SECTION 3
PB 4, PG 15 — 72

LARON M TAYLOR
MAP 089N, GROUP F, PARCEL 3.00
DB R1416, PG 403
IDLEWILD SECTION 3
PB 4, PG 15 — 84

LEGEND:

PROPOSED PROPERTY LINE	SAN	EXISTING SANITARY SEWER LINE	IRON PIPE FOUND (IPF)	ET	TRANSFORMER
PROPOSED RIGHT-OF-WAY	ST	EXISTING STORM SEWER LINE	IRON REBAR SET W/CAP (IRS)		ELECTRIC PEDESTAL
EXISTING ADJACENT PROPERTY LINE	W	EXISTING WATER LINE	FIRE HYDRANT		LIGHT STANDARD
PROPOSED EASEMENT	OHE	EXISTING OVERHEAD ELECTRIC	SANITARY MANHOLE		COMMUNICATION PEDESTAL
EXISTING EASEMENT	OH-E	PROPOSED OVERHEAD ELECTRIC	CLEAN OUT	MBSL	MINIMUM BUILDING SETBACK LINE
MINIMUM BUILDING SETBACK LINE	G	EXISTING GAS LINE	CURB INLET	PDE	PERMANENT DRAINAGE EASEMENT
PROPOSED SANITARY SEWER LINE		EXISTING RAILROAD TRACKS	POWER POLE	PUDE	PERMANENT UTILITY & DRAINAGE EASEMENT
PROPOSED STORM SEWER LINE		IRON REBAR FOUND (IRF)	GUY WIRE	HW	HEADWALL
PROPOSED WATER LINE		CONCRETE MONUMENT FOUND (CMF)	HIGH TENSION TOWER	1	LOT NUMBER

811 Know what's below. Call before you dig.

REVISION #	DATE	DESCRIPTION

FINAL PLAT
IDLEWILD FARMS
HIWASSEE DRIVE
CITY OF COLUMBIA
MAURY COUNTY, TENNESSEE

M2 GROUP
P.O. BOX 2543
BRENTWOOD, TN 37024-2543
WWW.M2GROUPLLC.COM

FINAL PLAT

DRAWN BY : ERG
CHECKED BY : SVH
DATE : MARCH 17, 2025
PROJECT NO. : 23-070

SHEET NUMBER:
FP-02

DRAWING1.DWG / Wednesday, January 10, 2018 12:04:03 PM

Appendix B: Subdivision Development Agreement

This DEVELOPMENT AGREEMENT is made and entered into on this

_____ day of _____, 20_____ ,
between THE CITY OF COLUMBIA, TENNESSEE, (hereinafter the "CITY"), and

Habitat for Humanity Williamson - Maury _____, the DEVELOPER (hereinafter the "DEVELOPER") named on the Addendum to this Agreement attached hereto and by this reference made a part hereof (hereinafter the "ADDENDUM").

WITNESSETH:

WHEREAS, the DEVELOPER desires to develop the property described on the ADDENDUM (hereinafter the "PROJECT"); and,

WHEREAS, the Development Plan of the PROJECT has been approved by the Columbia Municipal Planning Commission (hereinafter the “CMPC”) on the

_____ day of _____, 20_____ ,
pursuant to Tennessee Code Annotated Title 13, Chapter 4, and the Subdivision Regulations of Columbia, Tennessee (hereinafter the "SUBDIVISION REGULATIONS”); and,

WHEREAS, the DEVELOPER is the owner of the PROJECT and has authority to engage in such development; and,

WHEREAS, the DEVELOPER desires to develop and improve said PROJECT; and,

WHEREAS, in order to provide for the health, safety, and welfare of future residents of the PROJECT, it will be necessary for certain improvements to the CITY'S utility systems, public infrastructure, and common areas to be constructed within and to serve the PROJECT including but not be limited to roads, bridges, sidewalks, pedestrian facilities, stormwater facilities, street signs, markings, signals, street lighting, recreation and park facilities, landscaping, and the like (hereinafter the “IMPROVEMENTS”); and,

WHEREAS, in order for the IMPROVEMENTS to be fully integrated with the utility systems and public infrastructure of the CITY and to function in a satisfactory manner, the DEVELOPER has agreed to construct, in accordance with the Subdivision Regulations and other rules, regulations, and ordinances of the CITY, the IMPROVEMENTS in said PROJECT and extend utilities to the PROJECT at their own cost; and,

WHEREAS, the CITY is willing to accept the dedication of the streets, utilities, and other improvements as determined in the Development Plan of the PROJECT, subject to the City of Columbia City Council approval by resolution, and subject to the applicant's compliance with all requirements in this agreement and applicable existing laws of the CITY of Columbia and the State of Tennessee,

NOW, THEREFORE, it is agreed and understood as follows:

B1 General Conditions

B1.1 Construction Costs

The DEVELOPER shall pay for all material and labor necessary to install and complete the roads, sidewalks, sewers, utilities, and other facilities in accordance with this agreement.

B1.2 City Ordinances, Rules and Regulations

All currently existing CITY ordinances, rules and regulations, and the Subdivision Regulations adopted by the CMPC are made a part of this agreement. In the event of a conflict between the terms of this agreement and a CITY ordinance, the ordinance shall prevail. In the event of a conflict between the terms of this agreement and the Subdivision Regulations, the Subdivision Regulations shall prevail. All work done under this agreement is to be performed in accordance with plans and specifications approved by the City and made a part, hereof.

B1.3 Fees

Review fees, inspection fees, and other amounts established by the CITY shall be paid prior to any review of the plans. If the DEVELOPER fails to install the facilities in accordance with the terms of this Agreement, no portion of the review fees, inspection fees, or other amounts paid to the CITY shall be refundable to the DEVELOPER.

B1.4 Inspection

The CITY shall have a continuous right to inspect the work and facilities to assure that the work and facilities are in accordance with the Subdivision Regulations, approved Construction Plans, and other rules, regulations, and ordinances of the CITY.

B1.5 Right of Entry

The CITY shall have the right, in case of breach of the Performance Agreement, to enter upon any property of the DEVELOPER and take all necessary actions to complete the work and obligations not completed.

B1.6 Easements

The DEVELOPER shall obtain and dedicate to the CITY or cause to be dedicated to the CITY, either by dedication on the plat or by easement deed, in either case in a form acceptable to the CITY, permanent easements of such widths as required by the CITY and noted on the Plans. The DEVELOPER further agrees to grant the necessary easements and rights-of-way across the DEVELOPER's properties without expense to the CITY and waive any claim for damages.

B1.7 Stormwater Maintenance Agreement

If the PROJECT includes any detention or retention ponds, common drainage ditches, water quality facilities, or stormwater facilities outside of the CITY rights-of-way, the DEVELOPER will submit a Stormwater Maintenance Agreement, to be filed with and recorded with the Final Plat.

B1.8 Attorney Fees and Other Expenses

The DEVELOPER shall pay all reasonable costs and expenses incurred by the CITY in enforcing or completing this agreement. The DEVELOPER shall pay all costs and expenses, including the CITY'S attorney fees, of any legal proceedings brought by the CITY against the DEVELOPER seeking remedies for the DEVELOPER'S failure to perform any of its obligations hereunder, whether or not any proceedings are prosecuted to judgment.

B1.9 Agreement Not Assignable

No third party shall obtain any benefits or rights under this agreement nor shall the rights or duties be assigned by either party.

B1.10 Revocation and Interpretation

This agreement shall bind the DEVELOPER when executed by the DEVELOPER and may not be revoked by the DEVELOPER without permission of the CITY, even if the agreement has not been executed by the CITY, or does not bind CITY, for other reasons. This agreement shall be interpreted in accordance with Tennessee law and may only be enforced in the Chancery Court or Circuit Court or Court of competent jurisdiction of Maury County, Tennessee, and Tennessee Appellate Courts.

B1.11 No Oral Agreement

This agreement may not be orally amended and supersedes all prior negotiations, commitments, or understandings.

B1.12 Separability

If any portion of this agreement is held to be unenforceable, the CITY shall have the right to determine whether the remainder of the agreement shall remain in effect, or whether the agreement shall be void and all rights of the DEVELOPER pursuant to this agreement terminated.

B 1.13 Transferability

The DEVELOPER agrees to not transfer the property on which this PROJECT is to be located without first providing the CITY with written notice. The transferee shall provide the CITY an Assumption Agreement of this Agreement, whereby the transferee agrees to perform the IMPROVEMENTS required under this agreement and to provide a performance surety. The DEVELOPER understands that if the DEVELOPER transfers said property without providing the notice of transfer and Assumption Agreement as required herein, they will be in breach of this agreement and in violation of the Subdivision Regulations.

B1.14 Indemnity

The DEVELOPER shall indemnify and hold the CITY harmless from all loss, costs, expenses, liability, money damages, penalties, or claims arising out of any work covered by this agreement, including any attorney fees incurred by the CITY in connection therewith. Inspection of the IMPROVEMENTS by an authorized representative of the CITY shall not constitute a waiver by the CITY of any defect or of any of the DEVELOPER'S obligations hereunder.

B1.15 Binding Effect

This agreement shall be binding upon the DEVELOPER and the DEVELEPOR's heirs, administrators, executors, assigns, and any other successors in interest.

B1.16 Entire Agreement

This document contains the entire agreement between the parties, and there are no collateral understandings or agreements between them. No variations or alterations of the terms of this agreement shall be binding upon either of the parties, unless the same be reduced to writing and made an amendment to this agreement.

B1.17 Headings

Paragraph titles and headings contained herein are inserted for convenience only and shall not be deemed a part of the agreement and in no way shall define, limit, extend, or describe the scope or intent of any provision, hereof.

B2 Performance Surety

At the time of execution of this agreement, the DEVELOPER shall provide the CITY a performance surety, in an amount determined by the City Engineer for the IMPROVEMENTS and other items specified by the Construction Plans, plats, and plans approved by the CMPC. This performance surety shall secure performance of all obligations of the DEVELOPER under this agreement. The performance surety shall meet all requirements established in Chapter 4: Performance Agreement of the Subdivision Regulations and secure full compliance with all terms and conditions of this agreement. The performance surety may be called for failure to comply with the provisions of this agreement in whole or in part according to the terms of the performance surety. The performance surety will not be released, except and until there has been full compliance with this agreement.

B3 Construction

B3.1 Construction Plans

The DEVELOPER shall submit to the CITY, Construction Plans describing in reasonable detail all utility systems, all storm water management systems, all street systems, pedestrian facilities, and all IMPROVEMENTS. The Construction Plans shall be designed according to the Engineering Standards and Specifications, all other codes and ordinances enforced by the City, and sound engineering judgment. The design of all utility systems shall follow the State of Tennessee and utility provider design criteria and specifications. In the event of a disagreement as to compliance with or interpretation of the Construction Plans and the CITY'S specifications, the decision of the CITY shall be final and binding on the DEVELOPER. The Construction Plans shall be prepared by a design professional licensed by the State of Tennessee to design all systems and shall bear the seal, signature, date, and license number of the professional preparing the Construction Plans.

B3.2 Commencement of Construction

Construction of IMPROVEMENTS may not begin until the following events have occurred:

A. The Preliminary Plat has been approved by the CMPC;
B. The Construction Plans are approved by the CITY;
C. The Tennessee Department of Environment and Conservation has approved the applicable portions of the Plans and has confirmed its approval to the CITY and/or DEVELOPER in writing;
D. The CITY shall have received an appropriately executed Development Agreement; and
E. The DEVELOPER shall give the CITY notice of commencement of construction, in writing at least one (1) working day prior to commencement.

B3.3 Site Grading

The DEVELOPER, hereby, agrees to construct all site grading to comply with the approved Construction Plans, including the approved Erosion Control Plan for the PROJECT and to comply with the Engineering Standards and Specifications, Stormwater Ordinance, and all other codes and ordinances enforced by the CITY.

B3.4 Storm Water Management Systems

The DEVELOPER shall be responsible for all storm water management work made necessary by the development of this PROJECT. It is understood and agreed that the CITY in its proprietary function is not and could not be expected to oversee, supervise, or direct the construction of all drainage improvements, and the excavation incident thereto. Neither is the CITY vested with the original design responsibility nor the means to formally survey elevations or the locations of improvements at every stage of the construction process. The CITY is vested with the right of periodic inspections, stop work order, and final approval as a measure of secondary or subsequent enforcement. The DEVELOPER has and shall retain the responsibility to properly anticipate, survey, design and construct the subdivision storm water improvements and give full assurance that same shall not adversely affect the flow or quality of surface water from or upon any property. In providing technical assistance, plan and design review, the CITY does not and shall not relieve or accept any liability from the DEVELOPER.

B3.5 Street Construction

The DEVELOPER, hereby, agrees to construct and improve the streets shown on the Construction Plans to comply with the CITY's specifications and to the satisfaction and approval of the City Engineer by grading, draining, subgrade preparation, base preparation, curbing, signage, striping, signalization, sidewalk installation, and paving with the required preparation, amounts, and types of material. The DEVELOPER further agrees to pay the cost of all engineering, inspection and laboratory cost incidental to the construction of subdivision streets including but not limited to material and density testing. The DEVELOPER further agrees to make all necessary adjustments to manholes and valve boxes to meet finished surface grade and to repair subsurface or base material, as required, in areas directed by the CITY Engineer, prior to application of final surface.

B3.6 Time Period for Construction

The DEVELOPER agrees to be bound to complete, within three (3) years of commencement of construction, all IMPROVEMENTS shown on the plat and plans and all things required by this agreement.

The DEVELOPER further agrees that if due to unforeseen circumstances, he is unable to complete all work included in this agreement within the time specified above, but desires to complete said agreement to the satisfaction of the CITY, the DEVELOPER shall submit a written request for extension of the agreement period to the CITY at least sixty (60) days prior to the expiration of the existing agreement period, specifying the reason for the DEVELOPER's failure to complete the work as agreed and a prospective date for such completion. The DEVELOPER further agrees that if the performance surety executed to secure the value of the work to be performed under this agreement, due to inflation or rising costs, is determined to be inadequate by the City Engineer to secure the cost of said IMPROVEMENTS at the time an extension is sought, the DEVELOPER will provide the additional security to bring the performance surety amount in line with current cost projections as made by the CITY. The DEVELOPER understands that the DEVELOPER's failure to follow the extension procedure constitutes a breach of this agreement and places the DEVELOPER in violation of the Subdivision Regulations. The DEVELOPER further understands, that should the DEVELOPER fail to complete any part of the work outlined in this agreement in a good and workmanlike manner as approved, the CITY shall reserve the right to withhold and withdraw all building permits within the PROJECT until all items of this Agreement have been fulfilled by the DEVELOPER.

B3.7 Off-Site Improvements

The DEVELOPER shall construct any and all off-site facilities that may be required to serve the PROJECT. Unless specifically noted in the Construction Plans and made a part of separate agreement with the CITY, the CITY shall not be required to reimburse the DEVELOPER for construction of off-site improvements.

B3.9 Inspection and Compliance

After construction begins, the CITY shall provide on-site construction inspection as the CITY deems necessary to ensure that all work is performed and completed in accordance with the Construction Plans, CITY specifications, and the contents of this agreement. In the event of a disagreement as to compliance with or interpretation of the Construction Plans and the CITY'S specifications, the decision of the CITY shall be final and binding on the DEVELOPER. If the DEVELOPER fails to construct in accordance with the approved Construction Plans or to comply with the CITY'S specifications, the CITY may issue a stop-work order and DEVELOPER, hereby, agrees to be bound by such order.

B3.10 Testing

The DEVELOPER agrees to pay the cost of all engineering, inspection, and laboratory cost incidental to construction of the streets, sidewalks, utilities, sewers, compacted fill material, and other facilities included within this agreement. Such testing includes, but is not limited to, material and density testing.

B3.11 Scrap Removal

The DEVELOPER agrees to comply with all local, state, and federal rules and regulations regarding waste material and debris disposal.

B3.12 Traffic Control

The DEVELOPER, hereby, agrees to prepare a traffic control/detour plan where required and shall submit said plan to the CITY for review and approval. All traffic control and safety devices, including

signs, lane markings, and barriers necessitated by construction activity undertaken pursuant to this agreement shall be installed and maintained by the DEVELOPER. All traffic control devices shall meet the standards and be installed in accordance with the latest edition of the Manual on Uniform Traffic Control Devices for Streets and Highways, published by the United States Department of Transportation.

B3.13 Temporary Facilities

The DEVELOPER shall provide all temporary facilities including but not limited to utilities and roadways, that are determined by the CITY to be required in connection with or as a result of interruption of service or access that occurs as a consequence of construction activity associated with the work covered by this agreement. Such temporary services shall in all regards and at all points in time be adequate to assure emergency access and adequate fire flows.

B4 Acceptance of Improvements

B4.1 Completion of Improvements

At such time as the improvements have been constructed and installed, in accordance with the Constructions Plans and specifications, required testing and inspections completed and found satisfactory, and all clean-up and cover-up has been done to the satisfaction the City Engineer, a letter requesting preliminary acceptance of the PROJECT will be provided by the DEVELOPER. Formal acceptance shall follow the procedure established in the Subdivision Regulations.

The DEVELOPER agrees the DEVELOPER shall have no claim, direct or implied, in the title or ownership of the IMPROVEMENTS specified in this agreement when the IMPROVEMENTS are complete and thereafter accepted by the CITY. The DEVELOPER will be responsible for construction failures and defects in PROJECT prior to final acceptance. During this period, it shall remain the responsibility of the DEVELOPER to correct and cure these defects and failures.

B4.2 As-Built Drawings and Post-Completion Items

The DEVELOPER agrees to furnish to the CITY as-built plans, on a reproducible, stable media, of the sanitary sewer, storm water management, water mains and service system, and streets within the subdivision before the CITY shall accept the subdivision.

B4.3 Acceptance of Facilities

Upon final acceptance of all or part of the IMPROVEMENTS in the PROJECT, then those IMPROVEMENTS shall become the property of the CITY free from all claims from any person or entity without the necessity of any further writing, agreement, or deed. The DEVELOPER further agrees that any facilities placed within a public or platted right-of-way or dedicated public easement are irrevocably dedicated to the public use without any right of reimbursement or compensation of any kind.

B4.4 Failure to Install

In the event the DEVELOPER fails to install the facilities in accordance with the terms of this agreement, the CITY may, in its sole discretion, elect to accept all or a portion of the IMPROVEMENTS in the PROJECT. Should the CITY choose to accept all or a portion of these IMPROVEMENTS, the CITY shall become the sole owner of these facilities. The CITY may give notice of acceptance by writing delivered to the DEVELOPER or recorded in the Register’s Office of Maury County, Tennessee. No further writing or deed shall be required.

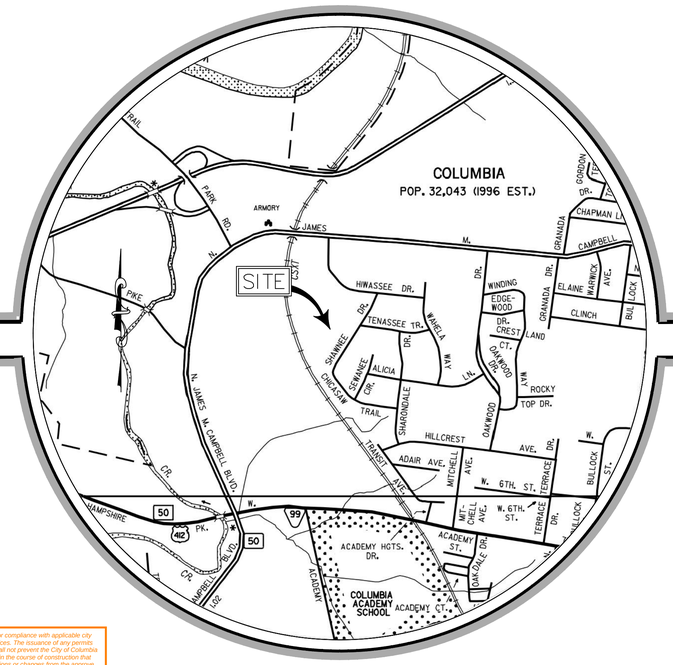
IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed in multiple originals by persons properly authorized so, to do on or as of the day and year first given.

Idlewild Farm PROJECT	
Completed by the Developer	*Completed by the City*
Habitat for Humanity Williamson - Maury DEVELOPER NAME	
AUTHORIZED AGENT NAME	CITY ENGINEER
SIGNATURE	SIGNATURE
DATE	DATE
1908 Noah Drive STREET	
Franklin, TN 37064 CITY, STATE, ZIP	
PHONE	
EMAIL	
Attest	*Attest*
ATTEST NAME	ATTEST NAME
ATTEST SIGNATURE	ATTEST SIGNATURE
DATE	DATE

A SITE PLAN FOR

IDLEWILD FARMS

HIWASSEE DRIVE, COLUMBIA, TENNESSEE
TAX MAP 89, PARCEL 23.01 & 23.02
16 RESIDENTIAL LOTS



LOCATION MAP
NOT TO SCALE
COLUMBIA, MAURY COUNTY, TENNESSEE

SPECIFIED SEQUENCE OF WORK FOR THE SELECTED CONTRACTOR:

1. INSTALL PHASE 1 OF EROSION PREVENTION & SEDIMENT CONTROL MEASURES.
2. BEGIN SITE EXCAVATION & FILLING TO CONSTRUCT DETENTION BASINS TO FUNCTION AS SEDIMENT BASINS DURING CONSTRUCTION.
3. BEGIN ROADWAY CONSTRUCTION & UTILITY CONSTRUCTION.
4. CONSTRUCT / INSTALL PAVEMENT BASE STONE & BINDER ONCE UTILITY CONSTRUCTION IS COMPLETE.
5. COMPLETE SOIL STABILIZATION (FINAL DRESSING SITE) ONCE ROADWAY IS NEARING COMPLETION.
6. COMPLETE PUNCH LIST ITEMS, AS-BUILT, INFRASTRUCTURE CERTIFICATIONS AS REQUIRED FOR C.O.

UTILITY COMPANIES:

UTILITIES SHOWN ARE BASED ON LIMITED DATA. THERE IS NO GUARANTEE AS TO THEIR LOCATION OR SIZE. PLEASE CONTACT RESPECTIVE UTILITY COMPANIES PRIOR TO CONSTRUCTION. POSSIBLE CONTACTS IN THIS AREA INCLUDE:

MUNICIPALITY:
CITY OF COLUMBIA
707 NORTH MAIN ST.
COLUMBIA, TN 38401

ELECTRIC:
COLUMBIA POWER & WATER SYSTEMS
201 PICKENS LANE
COLUMBIA, TN 38401
(931) 388-4833

CABLE TELEVISION:
COLUMBIA POWER & WATER SYSTEMS
201 PICKENS LANE
COLUMBIA, TN 38401
(931) 388-4833

STORM WATER:
CITY OF COLUMBIA
ENGINEERING/INSPECTION
707 N. MAIN STREET
COLUMBIA, TN 38401
(931) 560-1530
Contact: Glenn Harper, P.E.

WATER:
COLUMBIA POWER & WATER SYSTEMS
201 PICKENS LANE
COLUMBIA, TN 38401
(931) 388-4833

CABLE TELEVISION:
CHARTER COMMUNICATIONS
2008 S. MAIN STREET
COLUMBIA, TN 38401
(931) 388-1326

SANITARY:
CITY OF COLUMBIA
WASTEWATER SYSTEM
1244 TREATMENT PLANT RD.
COLUMBIA, TN 38401
(931) 560-1001
Mark Williams, Director

TELEPHONE:
AT&T
904 S. HIGH ST
COLUMBIA, TN 38401
(931) 380-3448

GAS:
ATMOS ENERGY
810 NASHVILLE HWY.
COLUMBIA, TN 38401
(888) 824-3434
NASHVILLE
(615) 872-5100

Tennessee811
Know what's **below** **Call** before you dig.

The City of Columbia has reviewed the following plans for compliance with applicable city codes, ordinances, and engineering standards and practices. The issuance of any permits based on these construction documents and other data shall not prevent the City of Columbia from requiring correction of errors, conditions may arise in the course of construction that necessitate changes to these approved plans. Any deviations or changes from the approve plans must be reviewed and approved by the City of Columbia.

APPROVED
CITY OF COLUMBIA
DEVELOPMENT SERVICES
dtoney 01/11/2024

CITY OF COLUMBIA TENNESSEE
DEVELOPMENT SERVICES
700 NORTH GARDEN STREET
COLUMBIA, TN 38401
PHONE: (931) 560-1560
FAX: (931) 560-1561

MEETING ATTENDANCE SHEET

TOPIC: Idlewild — DATE: 1/11/24 — TIME: 4:00 — LOCATION: City Hall

	NAME	COMPANY/ORGANIZATION	PHONE	EMAIL
1.	Lee Holcomb	HFHomes	615-573-5619	lholcomb@HFHomes.com
2.	Dustin Tollichow	HFHomes	217-412-5811	DTollichow@HFHomes.com
3.	Trent Parks	TP Enterprise	931-797-2763	trent@tpent.com
4.	Michael Langer	Langer Services LLC	615-857-2520	langerservices11@gmail.com
5.	Joe Gray	Gray	931-684-7093	
6.	Jeremy Gray	Gray's Welding + Erc	931-581-9767	grayswelding@gmail.com
7.	Kevin Swanson	MC Equip, LLC	(440) 476-1626	kswanson@mcequip.com
8.	Gerald Wyck	WES ENGINEERS INC	931-588-2329	gerald@wesengineers.com
9.				

INITIAL	NAME	COMPANY/ORGANIZATION	PHONE	EMAIL
	Paul Kallmer	Director, Development Services	(931) 560-1560	pkallmer@columbiatn.com
	Glenn Harper	City Engineer	(931) 560-1560	gharper@columbiatn.com
DTONEY	Douglas Toney	Assistant City Engineer	(931) 560-1560	dtoney@columbiatn.com
	Albert Dominguez	Engineering	(931) 560-1560	adominguez@columbiatn.com
	John Williams	Engineering	(931) 560-1560	jwilliams@columbiatn.com
	Brad Massey	Fire Marshall	(931) 560-1760	bmassey@columbiatn.com
	Ryan Filipkowski	Wastewater	(931) 560-1001	rfilipkowski@columbiatn.com

wes & c
+ drive
+ headlights

STORMWATER DETENTION AGREEMENT:
RECORDED: _____
DEED BOOK: _____ PAGE: _____

CITY OF COLUMBIA TENNESSEE
DEVELOPMENT SERVICES
700 NORTH GARDEN STREET
COLUMBIA, TN 38401
PHONE: (931) 560-1560

LAND DISTURBANCE PERMIT
21-0227

Issued: 1/4/2024

Permit is valid for 18 months
Construction must commence within 180 days

Description of Work: Idlewild Subdivision: Construct a 16 lot subdivision

This permit must be posted on site and be protected from weather. It is required for all land disturbances greater than 1 acre. Erosion controls shall be maintained at all times in accordance with TDEC Construction General Permit and the TDEC Erosion Control Handbook. Any changes to the plans must be approved by the City of Columbia Development Services Department

THIS SITE PLAN HAS BEEN DESIGNED TO MEET THE CRITERIA OF THE CITY OF COLUMBIA, TENNESSEE. THE PLANS ARE NOT RELEASED FOR CONSTRUCTION UNTIL THE RELATIVE PERMIT HAS BEEN ISSUED BY THE MUNICIPALITY. CHANGES SHALL NOT BE MADE TO THE APPROVED SITE PLAN UNLESS APPROVED BY THE RELEVANT DEPARTMENT SUPERINTENDANT OR THE PLANNING COMMISSION.

PRIMARY CONTRACTOR INFORMATION:

COMPANY NAME: _____
CONTACT PHONE: _____

TDEC LEVEL I CERTIFIED 24 HOUR POINT OF CONTACT FOR SOIL EROSION CONTROL:
NAME: _____
PHONE: _____

STATE OF TENNESSEE NPDES PERMIT - NOTICE OF COVERAGE
TRACKING NUMBER: _____
DATE: _____

SHEET INDEX

C-0.0 COVER (THIS SHEET)
1 of 1 PRELIMINARY PLAT
C-1.0 LAYOUT & UTILITY PLAN
C-2.0 SITE GRADING PLAN
C-2.1 SITE DRAINAGE PLAN
C-3.0 EPSC PHASE 1 PLAN
C-3.1 EPSC PHASE 2 PLAN
C-3.2 EPSC PHASE 3 PLAN
C-3.3 EPSC DETAILS
C-4.0 ROADWAY PLAN & PROFILE
C-4.1 CONSTRUCTION DETAILS
C-4.2 CONSTRUCTION DETAILS

GENERAL NOTES

1. PROPOSED USE: RESIDENTIAL SUBDIVISION
2. A PRE CONSTRUCTION MEETING WITH THE MUNICIPALITY IS REQUIRED PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
3. CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING AND PROPOSED UTILITIES FROM DAMAGE DURING ALL STAGES OF CONSTRUCTION.
4. THE ENGINEER AND APPLICABLE AGENCY MUST APPROVE, PRIOR TO CONSTRUCTION, ANY ALTERATION, OR VARIANCE FROM THESE PLANS.
5. DEVELOPER SHALL COMPLY WITH TDEC EROSION PREVENTION AND SEDIMENTATION CONTROL HANDBOOK, CURRENT EDITION.
6. UNDERGROUND DRY UTILITIES SHALL BE EXTENDED FROM EXISTING LOCATIONS TO SERVICE THIS SITE AS REQUIRED BY UTILITY COMPANIES.
7. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES OR SAFETY PRECAUTIONS OR PROGRAMS UTILIZED IN CONNECTION WITH THE WORK, AND WILL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
8. HANDICAP PARKING SPACES SHALL BE MARKED WITH ABOVE GRADE SIGNS IN ACCORDANCE WITH CURRENT ADA STANDARDS. VAN ACCESSIBLE SPACES SHALL BE MARKED AS SUCH.
9. ALL ON-SITE TRAFFIC SIGNS SHALL MEET THE REQUIREMENTS OF THE CITY ENGINEERING REQUIREMENT, ZONING ORDINANCE, & THE MUTCD.
10. ALL CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THE CURRENT STANDARDS AND SPECIFICATIONS OF THE CITY OF COLUMBIA, TENNESSEE.
11. UTILITIES AS SHOWN INDICATE THE APPROXIMATE LOCATION OF FACILITIES ONLY AND NO GUARANTEE IS GIVEN TO THE COMPLETENESS OR ACCURACY THEREOF. NO EXCAVATION MAY BE MADE WITHIN 4 FEET OF THESE UTILITIES UNLESS AND UNTIL SUCH UTILITIES HAVE BEEN POSITIVELY LOCATED AS TO HORIZONTAL AND VERTICAL POSITION. CONTRACTOR SHALL CONTACT UTILITY COMPANY AND "TENNESSEE ONE CALL" AT 811 (1-800-351-1111) THREE WORKING DAYS PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITIES. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING EXACT LOCATION OF ALL EXISTING UTILITIES.
12. THIS PROPERTY IS NOT LOCATED IN A FLOOD HAZARD AREA AS PER FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD BOUNDARY AND FLOODWAY MAP COMMUNITY PANEL NO. 47119C0285E, (ZONE X)
13. THE LIMIT OF CONSTRUCTION IS SHOWN ON THE CONSTRUCTION PLANS. ANY WORK OUTSIDE OF THE LIMIT OF CONSTRUCTION IS TO BE COORDINATED BY THE CONTRACTOR AND PRE-APPROVED BY THE APPROPRIATE PROPERTY OWNER.

SITE DATA

PARCEL NUMBER	TAX MAP 89, PARCEL 23.01 TAX MAP 89, PARCEL 23.02 DEED BOOK: R2664, PG 649
PARCEL ADDRESS:	HIWASSEE DRIVE COLUMBIA, TENNESSEE 38401
EXISTING ZONING:	R-20
ACREAGE OF SITE:	±15.79 ACRES
DISTURBED ACREAGE:	±9.71 ACRES
MINIMUM REQUIRED BUILDING SETBACK LINES:	30' FRONT (MINOR) 30' REAR 12' SIDE
PROPERTY OWNER:	K2L GROUP, LLC 116 MAJESTIC LANE FRANKLIN, TN 37064

IDLEWILD FARMS
HIWASSEE DRIVE
COLUMBIA, TENNESSEE

PROPRIETOR

K2L GROUP, LLC
116 MAJESTIC LANE
FRANKLIN, TENNESSEE 37064
CONTACT:

WES ENGINEERS & SURVEYORS
CIVIL ENGINEERS & LAND SURVEYORS
2486 NASHVILLE HIGHWAY
COLUMBIA, TN 38401
PHONE: (931) 388-2329
www.wesengineers.com

RESIDENTIAL SUBIDIVISION
HIWASSEE DRIVE
COLUMBIA, TENNESSEE 38401

ENGINEER'S SEAL
GERALD W. WYCK — REGISTERED ENGINEER — AGRICULTURAL — No. 107415 — STATE OF TENNESSEE

REVISIONS	DATE

PROJECT No. 17571
1 of 14
DATE: 08/30/2021

gerald@wesengineers.com

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SUBMITTED FOR MUNICIPAL APPROVAL
NOT FOR CONSTRUCTION

FILE: J:_WES_Engineers_Surveyors 2017\17571 – Hiwassee – Reeves\Dwg\Engineering\17571_16 LOTS Hiwassee Base.dwg

PRELIMINARY PLAT

Columbia Fire & Rescue
Underground Water Plan Review for Fire Protection

* Fill all spaces if the space is not applicable put N/A

Date: 5/17/2021 Plat Check No: TBD Water Purveyor: CPWS
Address: Idlewild Farms
Property type: Residential ☑ Commercial/Industrial ☐ Construction Type V ☐ 13 ☐ TBD
NFPA Sprinkler Type: N/A

PUBLIC WATER SYSTEM DEMAND

Fire flow requirements (International Fire Code Appendix B)

Fire Flow: 1,000 gpm Duration: 3 hours *without sprinkler credit
Fire Flow: N/A gpm Duration: N/A hours *with sprinkler credit

Fire Hydrant Location and Distribution (International Fire Code Appendix C)

a. Minimum number of hydrants: 1
b. Average spacing between hydrants: 500 ft
c. Maximum distance from frontage to hydrant: 250 ft

PRIVATE FIRE SYSTEM DEMAND

DCBA Required N/A Location: N/A

Fire Flow: N/A gpm Duration: N/A hours *without sprinkler credit
Fire Flow: N/A gpm Duration: N/A hours *with sprinkler credit

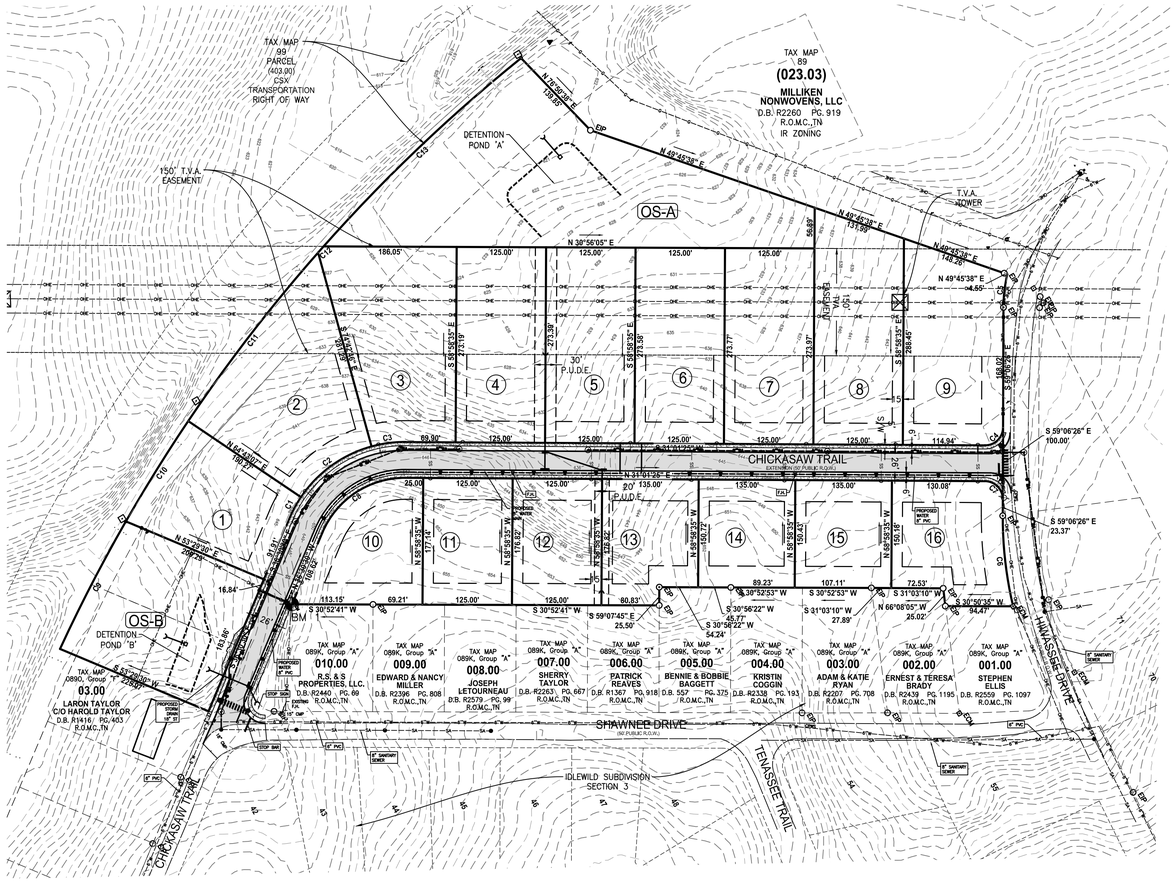
Fire Hydrant Location and Distribution (International Fire Code Appendix C)

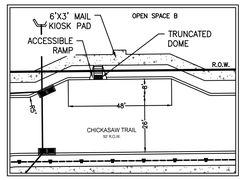
a. Minimum number of hydrants: N/A
b. Average spacing between hydrants: N/A ft
c. Maximum distance from frontage to hydrant: N/A ft

Plan reviewer: Stephen Chero Date: 5/17/2021

FD1) Fire Hydrant

An approved water supply for fire protection, either temporary or permanent, shall be made available as soon as combustible material arrives on the site.





MAIL KIOSK DETAIL
N.T.S.

LOT AREA TABLE

LOT #	Sq. Ft.	Acre
1	28,911.1	0.66
2	44,308.1	1.02
3	61,326.4	1.41
4	63,218.1	1.45
5	34,185.0	0.78
6	49,306.7	1.13
7	44,006.7	1.01
8	38,706.7	0.89
9	36,943.7	0.85
10	24,519.9	0.56
11	22,122.4	0.51
12	22,102.5	0.51
13	22,436.7	0.51
14	20,329.3	0.47
15	20,286.2	0.47
16	25,820.7	0.59
OS-A	93,836.7	2.15
OS-B	43,728.3	1.01

BENCHMARK

BENCHMARK #1
CONC. MONUMENT
ELEV. = 645.98'
N = 471,239.77
E = 1,653,222.11

WARNING! UTILITY LINES!

THE CONTRACTOR WILL EXERCISE EXTREME CAUTION IN THE USE OF EQUIPMENT IN AND AROUND OVERHEAD AND UNDERGROUND UTILITY WIRES AND SERVICES. IF AT ANY TIME IN THE PURSUIT OF THIS WORK THE CONTRACTOR MUST WORK IN CLOSE PROXIMITY OF OVERHEAD OR UNDERGROUND SERVICES, THE UTILITY COMPANY SHALL BE CONTACTED PRIOR TO SUCH WORK AND THE PROPER SAFETY MEASURES TAKEN. A THOROUGH EXAMINATION OF THE OVERHEAD WIRES IN THE PROJECT AREA SHOULD BE MADE BY THE CONTRACTOR PRIOR TO THE INITIATION OF CONSTRUCTION. THE UNDERGROUND UTILITY LINES HAVE BEEN SHOWN AS BEST AS CAN BE DETERMINED AT THIS TIME FROM THE INFORMATION OBTAINED FROM THE SURVEY. THE CONTRACTOR SHALL CONTACT EACH OF THESE COMPANIES PRIOR TO BEGINNING CONSTRUCTION AND HAVE THEM DETERMINE THE EXACT LOCATION AND TYPE OF THEIR SERVICES.

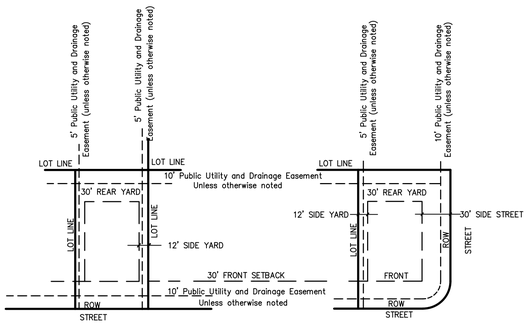
Tennessee811 Know what's **below** **Call** before you dig.

LEGEND

	EXISTING	PROPOSED
WATER MAIN		
SANITARY SEWER		
STORM SEWER		
OVERHEAD		
FENCE		
GAS		
DRAINAGE DITCH		
TREE PROTECTION FENCE		
SIGN		
UTILITY POLE		
IRON PIN SET	IPS	
EXISTING IRON PIN	EIP	
CONCRETE MONUMENT		
DECIDUOUS TREE		
GATE VALVE IN BOX		
LIGHT POLE		
BENCHMARK		
TREE LINE		
STORM STRUCTURE LABEL		(ST1)
ASPHALT		
CONCRETE		
# PARKING SPACES		(14)

PROPOSED CONSTRUCTION SCHEDULE FOR THE YEAR 2021

ACTIVITY	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
TEMPORARY SEDIMENT STRUCTURES												
SEDIMENT BASINS												
DIVERSION DITCHES												
CLEARING & CHIPPING												
TOPSOIL STRIPPING AND STORAGE												
ROADWAY GRADING												
PERMANENT STORM SEWER												
UTILITIES												
TEMPORARY VEGETATION												
PAVING												
PERMANENT VEGETATION												
REMOVE TEMPORARY STRUCTURES												



SUBDIVISION TYPICAL LOT LAYOUT

SUBDIVISION TYPICAL CORNER LOT LAYOUT

OPEN SPACE NOTE:

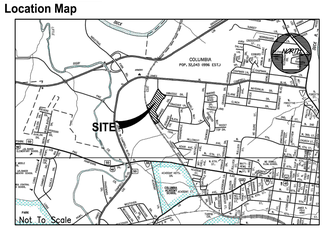
ALL OPEN SPACE AREA IS TO BE MAINTAINED BY THE HOMEOWNERS ASSOCIATION, CREATED FOR THE PURPOSE OF MAINTAINING ALL COMMON OPEN SPACE AND GROUNDS INCLUDING THE DETENTION AREAS SHOWN ON THIS PLAT.

GRAPHIC SCALE

100 0 50 100 200 400
(IN FEET)
1 inch = 100 ft.

TN GRID NORTH

Location Map



©2021

SITE DATA:

OWNER: K2L GROUP LLC
116 MAJESTIC LANE
FRANKLIN, TN 37064

PARCEL NUMBER: TAX MAP 89 PARCEL 23.01
DEED BOOK: R2664, PG 649

TAX MAP 89 PARCEL 23.02
DEED BOOK: R2664, PG 649

SUBJECT PARCEL ZONING: R-20

ACREAGE OF SITE: 14.61 ACRES
(PROPOSED 56,276.48 S.F. - 1.29 Ac.
RIGHT OF WAY DEDICATION)

MINIMUM REQUIRED BUILDING SETBACKS:
30' FRONT (MINOR)
30' REAR
12' SIDE

MINIMUM LOT AREA: 20,000 S.F.
MINIMUM LOT WIDTH: 125'

UTILITY SERVICES: WATER SERVICE
COLUMBIA POWER & WATER SYSTEMS
201 PICKENS LANE
COLUMBIA, TN 38401
(931) 388-4833

ELECTRIC SERVICE
COLUMBIA POWER & WATER SYSTEMS
201 PICKENS LANE
COLUMBIA, TN 38401
(931) 388-4833

PURPOSE NOTE: CONSTRUCT 1,329.90 L.F. OF ROADWAY AND PROVIDE 16 RESIDENTIAL LOTS.

NOTES:

1. INSTALLATION OF HVAC EQUIPMENT IN P.U.D.E.'s WITH BURIED PIPES IS PROHIBITED.
2. ALL DRAINAGE SWALES AND BERMS TO BE MAINTAINED BY INDIVIDUAL HOMEOWNERS.

GEOTECHNICAL NOTE:

CONTRACTOR TO COMPLETE A GEOTECHNICAL STUDY CONDUCTED ON THIS SITE PRIOR TO COMINCEMENT OF CONSTRUCTION. THE DESIGN FOR THE SITE IMPROVEMENTS SHOWN ON THIS PLAN HAVE RELIED ON GENERAL INFORMATION FROM FIELD REVIEW OF EXISTING TERRAIN. IF, IN THE PURSUIT OF THIS WORK BY THE CONTRACTOR, CONDITIONS OR CIRCUMSTANCES ARE ENCOUNTERED THAT ARE DIFFERENT THAN REFLECTED IN THESE PLANS OR THAT APPEAR TO IMPACT THE SCOPE OF THE WORK, THE CONTRACTOR WILL IMMEDIATELY NOTIFY THE CIVIL ENGINEER, THE GEOTECHNICAL ENGINEER AND THE OWNER/DEVELOPER. BEFORE ANY REMEDIAL COURSE OF ACTION OR DESIGN CHANGE IS INITIATED, ALL PARTIES TO THE PROCESS (OWNER, CIVIL ENGINEER, GEOTECHNICAL ENGINEER, AND CONTRACTOR) MUST BE IN AGREEMENT AND THE MAGNITUDE OF THE COST/TIME REQUIRED FOR THE MEASURES ESTABLISHED.

SITE BENCHMARK NOTE:

CONTRACTOR SHALL ESTABLISH A BENCHMARK PRIOR TO CONSTRUCTION. EXISTING BENCHMARK MUST BE RE-VERIFIED AND APPROVED BY THE ENGINEER/SURVEYOR PRIOR TO USE.

BOUNDARY & TOPOGRAPHIC SURVEY PROVIDED BY:

WES ENGINEERS & SURVEYORS
W.E.S. ENGINEERS AND SURVEYORS
2486 NASHVILLE HWY
COLUMBIA, TENNESSEE 38401
(931) 388-2329

FLOOD STUDY NOTE:

THIS PROPERTY IS NOT LOCATED IN A FLOOD HAZARD AREA AS PER FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD BOUNDARY AND FLOODWAY MAP COMMUNITY PANEL NO. 47119C0285E DATED APRIL 16, 2007 (ZONE "X")

CLIFFORD W. KRAMER, JR. REGISTERED ENGINEER No. 107415 STATE OF TENNESSEE 5/16/21

SUBMITTED FOR MUNICIPAL APPROVAL
NOT FOR CONSTRUCTION

WES ENGINEERS & SURVEYORS
CIVIL ENGINEERS & LAND SURVEYORS
2486 NASHVILLE HIGHWAY
COLUMBIA, TN 38401
PHONE: (931) 388-2329
www.wesengineers.com
ENGINEERS & SURVEYORS

Client
KYLE KRAMER, AIA
FUSION ARCHITECTURE
1104 WEST MAIN STREET
FRANKLIN, TN 37064

REVISIONS	DATE

IDLEWILD FARMS
HIWASSEE DRIVE
COLUMBIA, MAURY COUNTY, TENNESSEE
PRELIMINARY PLAT

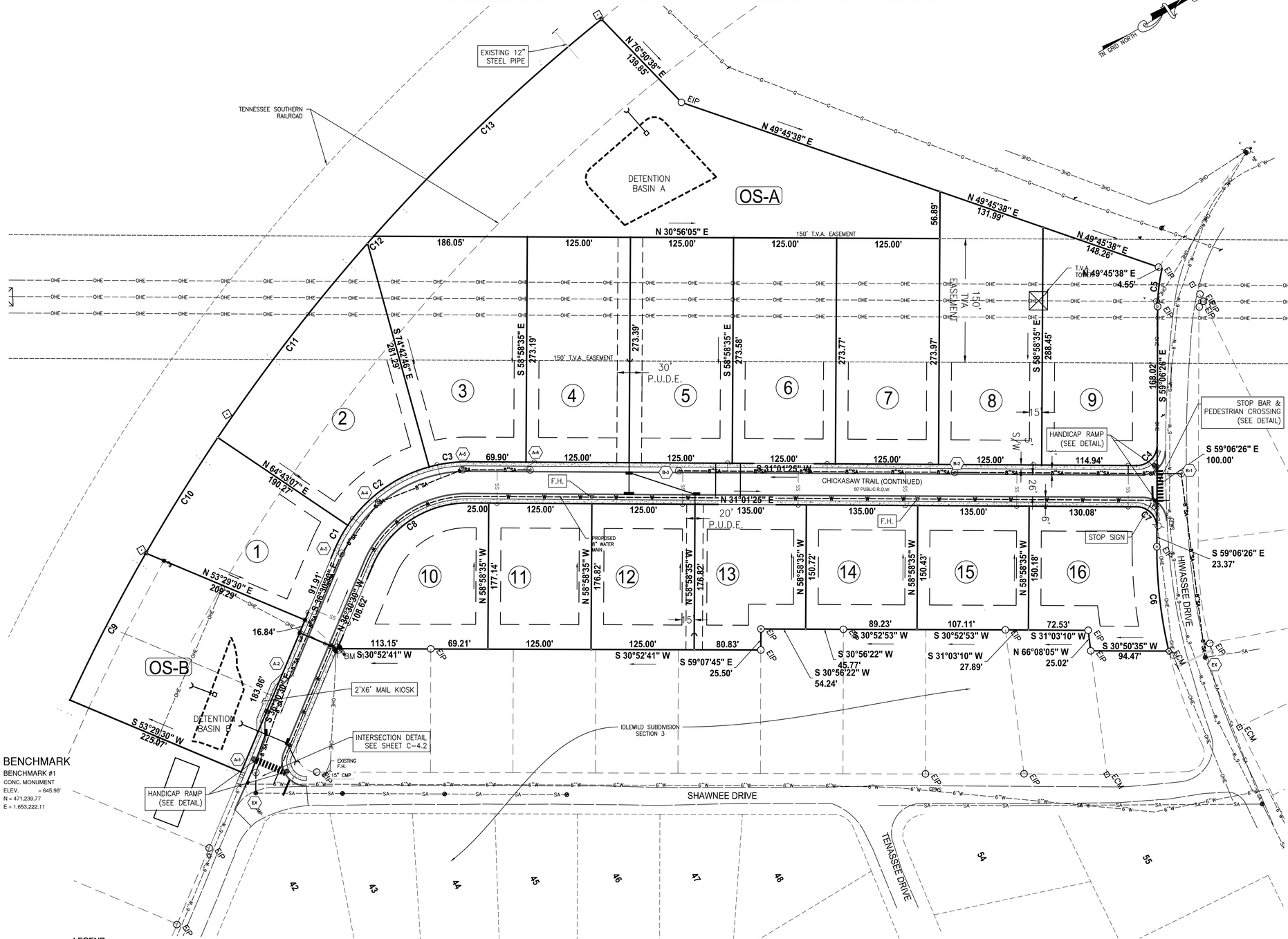
Drawn: RP
Checked: JG
Approved: CW
Date: 09/20/2021

Job. no. 17571
Scale: Vertical: 1"=100'
Horizontal:

1 of 1

FILE: J:_WES_Engineers_Surveyors 2017\17571 – Hiwassee – Reeves\Dwg\Engineering\17571_16 LOTS Hiwassee Base.dwg

SITE LAYOUT & UTILITY PLAN



BENCHMARK

BENCHMARK #1
CONC. MONUMENT
ELEV. = 645.98'
N = 471,239.77
E = 1,653,222.11

LEGEND

	EXISTING	PROPOSED
WATER MAIN	W	W
SANITARY SEWER	SS	SS
STORM SEWER	15"SD	15"SD
OVERHEAD	OHE	
FENCE		
GAS	G	G
DRAINAGE DITCH		
TREE PROTECTION FENCE		
SIGN		
UTILITY POLE		
IRON PIN SET	IPS	
EXISTING IRON PIN	EIP	
CONCRETE MONUMENT		
DECIDUOUS TREE		
GATE VALVE IN BOX		
LIGHT POLE		
BENCHMARK	BM 1	

TREE LINE
STORM STRUCTURE LABEL (P-1)
ASPHALT
CONCRETE
PARKING SPACES (14)

Tennessee811 Know what's below. Call before you dig.

WARNING! UTILITY LINES!

THE CONTRACTOR WILL EXERCISE EXTREME CAUTION IN THE USE OF EQUIPMENT IN AND AROUND OVERHEAD AND UNDERGROUND UTILITY WIRES AND SERVICES. IF AT ANY TIME IN THE PURSUIT OF THIS WORK THE CONTRACTOR MUST WORK IN CLOSE PROXIMITY OF OVERHEAD OR UNDERGROUND SERVICES, THE UTILITY COMPANY SHALL BE CONTACTED PRIOR TO SUCH WORK AND THE PROPER SAFETY MEASURES TAKEN. A THOROUGH EXAMINATION OF THE OVERHEAD WIRES IN THE PROJECT AREA SHOULD BE MADE BY THE CONTRACTOR PRIOR TO THE INITIATION OF CONSTRUCTION. THE UNDERGROUND UTILITY LINES HAVE BEEN SHOWN AS BEST AS CAN BE DETERMINED AT THIS TIME FROM THE INFORMATION OBTAINED FROM THE SURVEY. THE CONTRACTOR SHALL CONTACT EACH OF THESE COMPANIES PRIOR TO BEGINNING CONSTRUCTION AND HAVE THEM DETERMINE THE EXACT LOCATION AND TYPE OF THEIR SERVICES.

OPEN SPACE NOTE:

ALL OPEN SPACE AREA IS TO BE MAINTAINED BY THE HOMEOWNERS ASSOCIATION, CREATED FOR THE PURPOSE OF MAINTAINING ALL COMMON OPEN SPACE AND GROUNDS INCLUDING THE DETENTION AREAS SHOWN ON THIS PLAT.

GENERAL NOTES:

1. THE CONTRACTOR SHALL GIVE ALL NECESSARY NOTICES AND OBTAIN ALL PERMITS, AND PAY ALL LEGAL FEES. HE SHALL ALSO COMPLY WITH ALL CITY, COUNTY AND STATE BUILDING LAWS, ORDINANCES OR REGULATIONS.
2. THERE IS A PUBLIC UTILITY AND DRAINAGE EASEMENT, 10 FT 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 FT IN WIDTH ON ALL OTHER INTERIOR LOT LINES, EXCEPT AS OTHERWISE SHOWN.
3. TEMPORARY INLET FILTERS SHALL BE INSTALLED IN ALL EXISTING CATCH BASINS IN AREA PRIOR TO EARTH DISRUPTION.
4. EXISTING UTILITIES AS SHOWN INDICATE THE APPROXIMATE LOCATION OF FACILITIES ONLY AND NO GUARANTEE IS GIVEN TO THE COMPLETENESS OR ACCURACY THEREOF. NO EXCAVATION MAY BE MADE WITHIN 5 FEET OF THESE UTILITIES UNLESS AND UNTIL SUCH UTILITIES HAVE BEEN POSITIVELY LOCATED AS TO HORIZONTAL AND VERTICAL POSITION. CONTRACTOR SHALL CONTACT "TENNESSEE ONE CALL" AT 1-800-351-1111 THREE WORKING DAYS PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITIES.
5. ALL RADII ARE 3' UNLESS DIMENSIONED.
6. THE CONTRACTOR WILL BE RESPONSIBLE FOR COORDINATING THE SEQUENCING OF CONSTRUCTION FOR ALL UTILITY LINES SO THAT WATER LINES, GAS LINES, AND ANY UNDERGROUND ELECTRIC LINES DO NOT CONFLICT WITH SEWAGE LINES OR STORM SEWERS. INSTALL ALL UTILITIES PRIOR TO FINAL PAVEMENT CONSTRUCTION.
7. BACKFILL UTILITY TRENCHES UNDER PAVEMENT AREAS WITH CRUSHED STONE OR GRAVEL. BACKFILL UTILITY TRENCHES IN LAWN AREAS WITH SATISFACTORY FILL MATERIAL.
8. CARE SHALL BE TAKEN TO PROTECT ANY UTILITIES, TREES, BUILDINGS, ETC. WHICH ARE TO REMAIN AND NOT TO BE DISTURBED BY THE CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES TO SUCH PROPERTY.
9. THE CONTRACTOR WILL EXERCISE EXTREME CAUTION IN THE USE OF EQUIPMENT IN AND AROUND OVERHEAD AND UNDERGROUND UTILITY WIRES AND SERVICES. IF AT ANY TIME IN THE PURSUIT OF THIS WORK THE CONTRACTOR MUST WORK IN CLOSE PROXIMITY OF THE ABOVE-NOTED SERVICES, THE UTILITY COMPANY SHALL BE CONTACTED PRIOR TO SUCH WORK AND THE PROPER SAFETY MEASURES TAKEN. A THOROUGH EXAMINATION OF THE OVERHEAD WIRES IN THE PROJECT AREA SHOULD BE MADE BY THE CONTRACTOR PRIOR TO THE INITIATION OF CONSTRUCTION. THESE UNDERGROUND CABLES AND/OR LINES HAVE BEEN SHOWN AS BEST AS CAN BE DETERMINED AT THIS TIME FROM THE INFORMATION OBTAINED FROM THE SURVEY. THE CONTRACTOR SHALL CONTACT EACH OF THESE COMPANIES PRIOR TO BEGINNING CONSTRUCTION AND HAVE THEM DETERMINE THE EXACT LOCATION AND TYPE OF THEIR SERVICES.
10. THE OWNER AND ENGINEER DO NOT ASSUME RESPONSIBILITY FOR THE POSSIBILITY THAT, DURING CONSTRUCTION, UTILITIES OTHER THAN THOSE SHOWN MAY BE ENCOUNTERED OR THAT ACTUAL LOCATION OF THOSE SHOWN MAY BE DIFFERENT FROM THE LOCATIONS DESIGNATED ON THE CONTRACT DRAWINGS. IN AREAS WHERE IT IS NECESSARY THAT EXACT LOCATIONS BE KNOWN OF UNDERGROUND UTILITIES, THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, FURNISH ALL LABOR AND TOOLS TO EITHER VERIFY AND SUBSTANTIATE OR DEFINITELY ESTABLISH THE POSITION OF UNDERGROUND UTILITIES.
11. THE CONTRACTOR SHALL REPAIR ANY CONTRACTOR CAUSED DAMAGE, ACCORDING TO THE LOCAL STANDARDS AND AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL ALSO COORDINATE ALL CONSTRUCTION TO MAINTAIN REQUIRED SERVICES TO THE EXISTING FACILITIES DURING CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE ALL CONSTRUCTION WITH THE APPROPRIATE UTILITY COMPANY(IES).

PAVING NOTES:

1. PROPOSED ASPHALT PAVEMENT CROSS-SECTION TO CONFORM TO CITY OF COLUMBIA STANDARDS. REFERENCE DETAIL PROVIDED.
2. ALL CURVE RADII = 3' (THREE FEET) UNLESS NOTED OTHERWISE.
3. SURFACES TO RECEIVE MARKING PAINT SHALL BE CLEAN, DRY AND METAL SURFACES ARE TO BE FREE FROM HEAVY RUST.
4. YELLOW CURBING AND BOLLARDS ARE TO RECEIVE 2 COATS SHERWIN WILLIAMS - KEM 4000 ACRYLIC ALKYD ENAMEL SAFETY YELLOW B55Y300. (TO BE WHITE IF REQUIRED BY ARCHITECTURAL REVIEW COMMITTEE)
5. 4" WIDE TRANSVERSE PAVEMENT MARKING TO RECEIVE TOP COAT SHERWIN WILLIAMS -PRO MAR TRAFFIC MARKING PAINT, YELLOW TM5495. (TO BE WHITE IF REQUIRED BY ARCHITECTURAL REVIEW COMMITTEE)
6. ACCESSIBLE SPACES TO RECEIVE TOP COAT SHERWIN WILLIAMS - PRO MAR TRAFFIC MARKING PAINT "H.C." BLUE.

STORMWATER NOTES:

1. ROOF DRAINAGE TO SHEET FLOW ACROSS YARD AND INTO THE THE PROPOSED DRAINAGE SYSTEM.
2. SUBJECT PROPERTY IS NOT IN A FLOODPLAIN AS PER F.I.R.M. F.E.M.A. COMMUNITY PANEL # 47119C0285E, DATED APRIL 16, 2007.

WATERMAIN NOTES:

1. WATER MAINS TO BE EXTENDED PER COLUMBIA POWER & WATER SYSTEMS STANDARDS AND SPECIFICATIONS . NO SITE CONSTRUCTION OF WATER SERVICES IS PROPOSED.

SANITARY SEWER LEAD NOTES:

1. MAINTAIN A MINIMUM OF 18" VERTICAL CLEARANCE, AND 10' HORIZONTAL LEARANCE BETWEEN ALL UTILITIES.
2. ALL MATERIALS AND WORKMANSHIP FOR SANITARY SEWER LEADS SHALL BE IN STRICT COMPLIANCE WITH CURRENT CITY OF COLUMBIA WWTP STANDARDS.
3. SEWER SERVICE LEADS ARE TO BE EXTENDED TO A POINT 5-FT. OUTSIDE THE BUILDING WHERE THE PLUMBING CONTRACTOR WILL COMPLETE THE CONNECTION TO THE BUILDING PLUMBING SYSTEM.
4. ALL SANITARY SEWER LEADS WITHIN A 1:1 INFLUENCE OF EXISTING, PROPOSED, OR FUTURE PAVEMENT SHALL HAVE COMPACTED SAND BACKFILL.
5. NO CONNECTION TO THE EXISTING SANITARY SEWER SYSTEM WILL BE PERMITTED UNTIL THE PROPOSED WORK HAS BEEN COMPLETED IN COMPLIANCE WITH THE CITY OF COLUMBIA WWTP REGULATIONS.

ELECTRICAL CONDUIT NOTES:

1. ALL BUILDERS, CONTRACTORS, AND ELECTRICIANS MUST MEET WITH CITY OF COLUMBIA POWER & WATER SERVICE BEFORE CONSTRUCTION.
2. ALL ELECTRICAL CONNECTIONS AND FACILITIES TO CONFORM TO CURRENT COLUMBIA POWER & WATER SERVICE STANDARDS.
3. ALL ELECTRICAL CONNECTIONS TO BE EXTENDED FROM WITHIN THE EXISTING BUILDING TO ADDITIONS. NO SITE CONSTRUCTION OF ELECTRICAL SERVICES IS PROPOSED.

GEOTECHNICAL NOTE:

CONTRACTOR TO COMPLETE A GEOTECHNICAL STUDY CONDUCTED ON THIS SITE PRIOR TO COMINCEMENT OF CONSTRUCTION. THE DESIGN FOR THE SITE IMPROVEMENTS SHOWN ON THIS PLAN HAVE RELIED ON GENERAL INFORMATION FROM FIELD REVIEW OF EXISTING TERRAIN. IF, IN THE PURSUIT OF THIS WORK BY THE CONTRACTOR, CONDITIONS OR CIRCUMSTANCES ARE ENCOUNTERED THAT ARE DIFFERENT THAN REFLECTED IN THESE PLANS OR THAT APPEAR TO IMPACT THE SCOPE OF THE WORK, THE CONTRACTOR WILL IMMEDIATELY NOTIFY THE CIVIL ENGINEER, THE GEOTECHNICAL ENGINEER AND THE OWNER/DEVELOPER, BEFORE ANY REMEDIAL COURSE OF ACTION OR DESIGN CHANGE IS INITIATED, ALL PARTIES TO THE PROCESS (OWNER, CIVIL ENGINEER, GEOTECHNICAL ENGINEER, AND CONTRACTOR) MUST BE IN AGREEMENT AND THE MAGNITUDE OF THE COST/TIME REQUIRED FOR THE MEASURES ESTABLISHED.

SITE BENCHMARK NOTE:

CONTRACTOR SHALL ESTABLISH A BENCHMARK PRIOR TO CONSTRUCTION. EXISTING BENCHMARK MUST BE RE-VERIFIED AND APPROVED BY THE ENGINEER/SURVEYOR PRIOR TO USE.

BOUNDARY & TOPOGRAPHIC SURVEY PROVIDED BY:

W.E.S. ENGINEERS AND SURVEYORS
2486 NASHVILLE HWY
COLUMBIA, TENNESSEE 38401
(931) 388-2329

FLOOD STUDY NOTE:

THIS PROPERTY IS NOT LOCATED IN A FLOOD HAZARD AREA AS PER FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD BOUNDARY AND FLOODWAY MAP COMMUNITY PANEL NO. 47119C0285E DATED APRIL 16, 2007 (ZONE "X")

GRAPHIC SCALE

60 0 30 60 120 240
(IN FEET)
1 inch = 60 ft.

GEORGE D. WOLICK — REGISTERED ENGINEER — No. 107415 — STATE OF TENNESSEE

SUBMITTED FOR MUNICIPAL APPROVAL
NOT FOR CONSTRUCTION

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2486 NASHVILLE HIGHWAY
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PHONE: (931) 388-2329
www.wesengineers.com
ENGINEERS & SURVEYORS

Client
KYLE KRAMER, AIA
FUSION ARCHITECTURE
1104 WEST MAIN STREET
FRANKLIN, TN 37064

DATE
REVISIONS

IDLEWILD FARMS
HIWASSEE DRIVE
COLUMBIA, MAURY COUNTY, TENNESSEE
SITE LAYOUT & UTILITY PLAN

Drawn: RP
Checked: JG
Approved: GV
Date: 09/20/2021

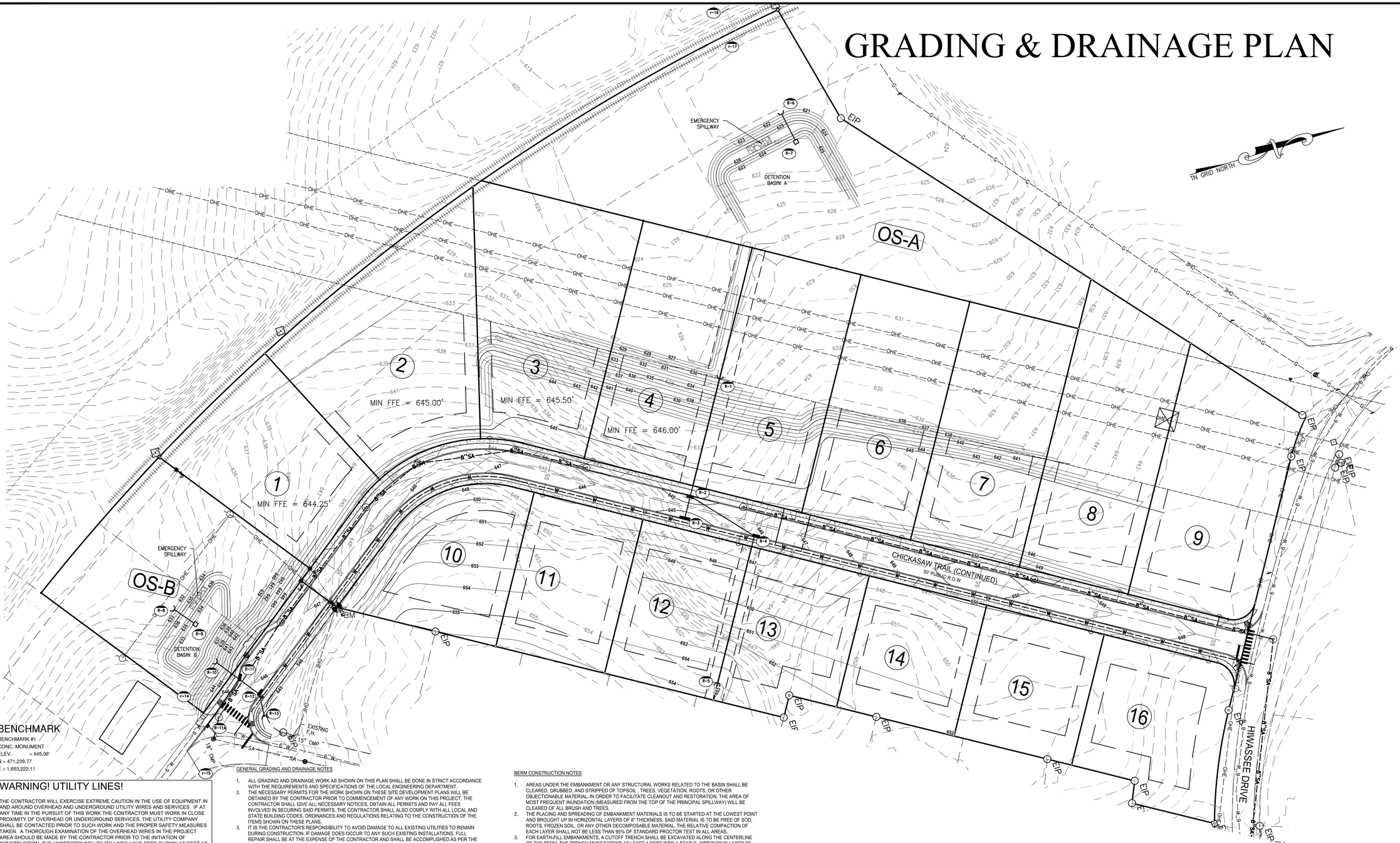
Job. no. 17571
Scale: Vertical: Horizontal: 1"=60'

C-1.0

FILE: J:\WES_Engineers_Surveyors 2017\17571 - Hiwassee - Reeves\Dwg\Engineering\17571_16 LOTS Hiwassee Base.dwg

GRADING & DRAINAGE PLAN

©2021



BENCHMARK

BENCHMARK #1
CONC. MONUMENT
ELEV. = 645.98'
N = 471,239.77
E = 1,653,222.11

WARNING! UTILITY LINES!

THE CONTRACTOR WILL EXERCISE EXTREME CAUTION IN THE USE OF EQUIPMENT IN AND AROUND OVERHEAD AND UNDERGROUND UTILITY WIRES AND SERVICES. IF AT ANY TIME IN THE PURSUIT OF THIS WORK THE CONTRACTOR MUST WORK IN CLOSE PROXIMITY OF OVERHEAD OR UNDERGROUND SERVICES, THE UTILITY COMPANY SHALL BE CONTACTED PRIOR TO SUCH WORK AND THE PROPER SAFETY MEASURES TAKEN. A THOROUGH EXAMINATION OF THE OVERHEAD WIRES IN THE PROJECT AREA SHOULD BE MADE BY THE CONTRACTOR PRIOR TO THE INITIATION OF CONSTRUCTION. THE UNDERGROUND UTILITY LINES HAVE BEEN SHOWN AS BEST AS CAN BE DETERMINED AT THIS TIME FROM THE INFORMATION OBTAINED FROM THE SURVEY. THE CONTRACTOR SHALL CONTACT EACH OF THESE COMPANIES PRIOR TO BEGINNING CONSTRUCTION AND HAVE THEM DETERMINE THE EXACT LOCATION AND TYPE OF THEIR SERVICES.

Tennessee811
Know what's **below**
Call before you dig.

LEGEND

	EXISTING	PROPOSED
WATER MAIN		
SANITARY SEWER		
STORM SEWER		
OVERHEAD		
FENCE		
GAS		
DRAINAGE DITCH		
TREE PROTECTION FENCE		
SIGN		
UTILITY POLE		
IRON PIN SET	IPS	
EXISTING IRON PIN	IP	
CONCRETE MONUMENT		
DECIDUOUS TREE		
GATE VALVE IN BOX		
LIGHT POLE		
BENCHMARK	BM 1	

TREE LINE
STORM STRUCTURE LABEL R-1
ASPHALT
CONCRETE
PARKING SPACES 14

GENERAL GRADING AND DRAINAGE NOTES

1. ALL GRADING AND DRAINAGE WORK AS SHOWN ON THIS PLAN SHALL BE DONE IN STRICT ACCORDANCE WITH THE REQUIREMENTS AND SPECIFICATIONS OF THE LOCAL ENGINEERING DEPARTMENT.
2. THE NECESSARY PERMITS FOR THE WORK SHOWN ON THESE SITE DEVELOPMENT PLANS WILL BE OBTAINED BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF ANY WORK ON THIS PROJECT, THE CONTRACTOR SHALL GIVE ALL NECESSARY NOTICES, OBTAIN ALL PERMITS AND PAY ALL FEES INVOLVED IN SECURING SAID PERMITS. THE CONTRACTOR SHALL ALSO COMPLY WITH ALL LOCAL AND STATE BUILDING CODES, ORDINANCES AND REGULATIONS RELATING TO THE CONSTRUCTION OF THE ITEMS SHOWN ON THESE PLANS.
3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO AVOID DAMAGE TO ALL EXISTING UTILITIES TO REMAIN DURING CONSTRUCTION. IF DAMAGE DOES OCCUR TO ANY SUCH EXISTING INSTALLATIONS, FULL REPAIR SHALL BE AT THE EXPENSE OF THE CONTRACTOR AND SHALL BE ACCOMPLISHED AS PER THE CURRENT SPECIFICATIONS FOR SUCH WORK FOR THE RESPONSIBLE AGENCY.
4. THE LOCATION OF EXISTING PIPING AND UNDERGROUND UTILITIES (I.E., WATER AND GAS LINES, ELECTRICAL AND TELEPHONE CONDUITS, ETC.) AS SHOWN ON THIS PORTION OF THE PLANS HAVE BEEN DETERMINED FROM THE BEST INFORMATION FROM ACTUAL SURVEYS, OR TAKEN FROM THE RECORDS AND DRAWINGS OF THE EXISTING UTILITIES. HOWEVER, THE CIVIL ENGINEER DOES NOT ASSUME RESPONSIBILITY THAT, DURING CONSTRUCTION, THE POSSIBILITY OF UTILITIES OTHER THAN THOSE SHOWN MAY BE ENCOUNTERED OR THAT THE ACTUAL LOCATIONS OF UTILITIES SHOWN MAY VARY SOMEWHAT FROM THE LOCATIONS DESIGNATED ON THIS PORTION OF THE PLANS. IN AREAS WHERE IT IS NECESSARY THAT THE EXACT LOCATIONS OF UNDERGROUND UTILITIES BE KNOWN, THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, FURNISH ALL LABOR AND TOOLS TO EITHER VERIFY AND SUBSTANTIATE OR DEFINITELY ESTABLISH THE LOCATION OF THE UTILITIES.
5. ALL DELETERIOUS MATERIAL SHALL BE REMOVED AND DISPOSED OF OFF-SITE BY THE CONTRACTOR AS PER THE INSPECTION AND FINAL APPROVAL OF THE ENGINEER AND OWNER. ALL FILL MATERIAL TO BE USED FOR SITE GRADING SHALL BE AN INORGANIC SOIL, FREE OF DEBRIS AND APPROVED BY THE ENGINEER AND OWNER.
6. THE PLACING AND SPREADING OF ANY FILL MATERIAL IS TO BE STARTED AT THE LOWEST POINT AND BROUGHT UP IN HORIZONTAL LAYERS OF 8-INCH THICKNESS. SAID FILL MATERIAL IS TO BE SOIL AND ROCK ONLY, FREE OF SOD, ROOTS, FROZEN SOILS, OR ANY OTHER DECOMPOSABLE MATERIAL. THE RELATIVE COMPACTION OF EACH LAYER SHALL NOT BE LESS THAN 95% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D-698) IN ALL AREAS OF FILL, AND COMPACTION OF 98% OF SAME SPECIFICATION FOR MATERIALS USED IN THE UPPER 12 INCHES BENEATH PAVEMENT AND GRADE SLABS.
7. THE CONTRACTOR IS TO CHECK AND VERIFY ALL MEASUREMENTS, LEVELS, ETC., BEFORE ORDERING MATERIALS AND PROCEEDING WITH WORK, AND IS RESPONSIBLE FOR THE SAME.
8. CONTRACTOR IS RESPONSIBLE FOR SECURING WRITTEN APPROVAL FROM ADJOINING PROPERTY OWNER FOR OFF-SITE GRADING WORK THAT RESULTS FROM CONSTRUCTION ACTIVITIES.

BERM CONSTRUCTION NOTES

1. AREAS UNDER THE EMBANKMENT OR ANY STRUCTURAL WORKS RELATED TO THE BASIN SHALL BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL, TREES, VEGETATION, ROOTS, OR OTHER OBJECTIONABLE MATERIAL, IN ORDER TO FACILITATE CLEANOUT AND RESTORATION, THE AREA OF MOST FREQUENT INUNDATION (MEASURED FROM THE TOP OF THE PRINCIPAL SPILLWAY) WILL BE CLEARED OF ALL BRUSH AND TREES.
2. THE PLACING AND SPREADING OF EMBANKMENT MATERIALS IS TO BE STARTED AT THE LOWEST POINT AND BROUGHT UP IN HORIZONTAL LAYERS OF 8" THICKNESS. SAID MATERIAL IS TO BE FREE OF SOD, ROOTS, FROZEN SOIL, OR ANY OTHER DECOMPOSABLE MATERIAL. THE RELATIVE COMPACTION OF EACH LAYER SHALL NOT BE LESS THAN 95% OF STANDARD PROCTOR TEST IN ALL AREAS.
3. FOR EARTH-FILL EMBANKMENTS, A CUTOFF TRENCH SHALL BE EXCAVATED ALONG THE CENTERLINE OF THE BERM. THE TRENCH MUST EXTEND AT LEAST 1 FOOT INTO A STABLE, IMPERVIOUS LAYER OF SOIL AND HAVE A MINIMUM DEPTH OF TWO FEET. THE CUTOFF TRENCH SHALL EXTEND UP BOTH ABUTMENTS TO THE RISER CREST ELEVATION. THE MINIMUM BOTTOM WIDTH SHALL BE FOUR FEET, BUT ALSO MUST BE WIDE ENOUGH TO PERMIT OPERATION OF COMPACTION EQUIPMENT. THE SIDE SLOPES SHALL BE NO STEEPER THAN 1:1. COMPACTION REQUIREMENTS SHALL BE THE SAME AS THOSE FOR THE EMBANKMENT. THE TRENCH SHALL BE DRY DURING THE BACKFILLING AND COMPACTION OPERATIONS.
4. THE EMBANKMENT SHALL BE CONSTRUCTED TO AN ELEVATION 10 PERCENT HIGHER THAN THE DESIGN HEIGHT TO ALLOW FOR SETTLEMENT IF COMPACTION IS OBTAINED WITH HAULING EQUIPMENT, IF COMPACTORS ARE USED FOR COMPACTION, THE OVERBUILD MAY BE REDUCED TO NOT LESS THAN 5 PERCENT.
5. THE EMBANKMENT OF THE DETENTION POND SHALL BE STABILIZED WITH TEMPORARY OR PERMANENT VEGETATION IMMEDIATELY AFTER INSTALLATION OF THE BASIN.
6. ALL STATE AND LOCAL REQUIREMENTS SHALL BE MET CONCERNING FENCING AND SIGNS WARNING THE PUBLIC OF THE HAZARDS OF SOFT, SATURATED SEDIMENT AND FLOOD WATERS.

GEOTECHNICAL NOTE:

CONTRACTOR TO COMPLETE A GEOTECHNICAL STUDY CONDUCTED ON THIS SITE PRIOR TO COMMCEMENT OF CONSTRUCTION. THE DESIGN FOR THE SITE IMPROVEMENTS SHOWN ON THIS PLAN HAVE RELIED ON GENERAL INFORMATION FROM FIELD REVIEW OF EXISTING TERRAIN. IF, IN THE PURSUIT OF THIS WORK BY THE CONTRACTOR, CONDITIONS OR CIRCUMSTANCES ARE ENCOUNTERED THAT ARE DIFFERENT THAN REFLECTED IN THESE PLANS OR THAT APPEAR TO IMPACT THE SCOPE OF THE WORK, THE CONTRACTOR WILL IMMEDIATELY NOTIFY THE CIVIL ENGINEER. THE GEOTECHNICAL ENGINEER AND THE OWNER/DEVELOPER. BEFORE ANY REMEDIAL COURSE OF ACTION OR DESIGN CHANGE IS INITIATED, ALL PARTIES TO THE PROCESS (OWNER, CIVIL ENGINEER, GEOTECHNICAL ENGINEER, AND CONTRACTOR) MUST BE IN AGREEMENT AND THE MAGNITUDE OF THE COST/TIME REQUIRED FOR THE MEASURES ESTABLISHED.

SITE BENCHMARK NOTE:

CONTRACTOR SHALL ESTABLISH A BENCHMARK PRIOR TO CONSTRUCTION. EXISTING BENCHMARK MUST BE RE-VERIFIED AND APPROVED BY THE ENGINEER/SURVEYOR PRIOR TO USE.

BOUNDARY & TOPOGRAPHIC SURVEY PROVIDED BY:

WESA ENGINEERS & SURVEYORS
W.E.S. ENGINEERS AND SURVEYORS
2486 NASHVILLE HWY
COLUMBIA, TENNESSEE 38401
(931) 388-2329

FLOOD STUDY NOTE:

THIS PROPERTY IS NOT LOCATED IN A FLOOD HAZARD AREA AS PER FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD BOUNDARY AND FLOODWAY MAP COMMUNITY PANEL NO. 47119C0285E DATED APRIL 16, 2007 (ZONE "X")

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

CHARLES D. WICK III
REGISTERED ENGINEER
No. 107415
STATE OF TENNESSEE

SUBMITTED FOR MUNICIPAL APPROVAL
NOT FOR CONSTRUCTION

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ENGINEERS & SURVEYORS

Client
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FUSION ARCHITECTURE
1104 WEST MAIN STREET
FRANKLIN, TN 37064

DATE	REVISIONS

IDLEWILD FARMS

HIWASSEE DRIVE
COLUMBIA, MAURY COUNTY, TENNESSEE
GRADING AND DRAINAGE PLAN

Drawn: RP
Checked: JG
Approved: CW
Date: 09/20/2021

Job. no. 17571
Scale:
Vertical: 1"=50'
Horizontal:

C-2.0

FILE: J:_WES_Engineers_Surveyors 2017\17571 - Hiwassee - Reaves\Dwg\Engineering\17571_16 LOTS Hiwassee Base.dwg

DRAINAGE PLAN

PROPOSED STORM SEWER STRUCTURE SCHEDULE

STR. NO.	PIPE	TYPE	RIM ELEV.	INV. IN	INV. OUT	LENGTH	SLOPE %	NOTES
R-1		HEADWALL OUTLET			629.50			
	R2-R1	18" RCP		637.00	629.50	135.39	5.54	
R-2		CURB INLET [2]	644.84	637.20	637.00			DOUBLE INLET
	R3-R2	18" RCP		637.46	637.20	26.00	1.00	
R-3		CURB INLET [2]	644.84		637.46			TRIPLE INLET
	R4-R2	18" RCP		638.04	637.20	84.16	1.00	
R-4		AREA DRAIN	645.76	638.24	638.04			DOUBLE INLET
	R5-R4	18" RCP		651.00	638.24	169.36	7.53	
R-5		HEADWALL INLET		651.00				
R-6		HEADWALL OUTLET	SEE DETENTION POND BASIN A DETAIL					
	R7-R6	18" RCP						
R-7		RISER [4]						
R-8		HEADWALL OUTLET	SEE DETENTION POND BASIN B DETAIL					
	R9-R8	18" RCP						
R-9		RISER [4]						
R-10		HEADWALL OUTLET			640.00			
	R11-R10	18" RCP		641.06	640.00	31.21	3.40	
R-11		CURB INLET	644.84	641.26	641.06			DOUBLE INLET
	R11A-R11	18" RCP		641.70	641.26	62.73	0.70	
R-11A		CURB INLET	644.95		641.70			
	R12-R11	18" RCP		641.55	641.26	28.56	1.02	
R-12		CURB INLET	644.84	641.75	641.55			
	R13-R12	18" RCP		642.00	641.75	25.11	1.00	DOUBLE INLET
R-13		HEADWALL INLET			642.00			
r-14		HEADWALL OUTLET			639.70			
	r15-r14	18" CMP		643.21	639.70	78.68	4.46	
r-15		CURB INLET		643.21				
r-16		HEADWALL OUTLET			615.85			
	r17-r16	12" STEEL		616.92	615.85	44.03	2.43	
r-17		CURB INLET		616.92				

1. PIPE MATERIAL SHALL BE RCP CLASS III ASTM C-76.
2. STANDARD TYPE "V" GRATE TO BE INSTALLED - JOHN BOUCHARD NO. 3300-V OR APPROVED EQUAL ON CURB INLETS WHERE NOTED
3. STANDARS TYPE "K" GRATE TO BE INSTALLED - JOHN BOUCHARD NO. 3300 OR APPROVED EQUAL ON ALL CURB INLETS EXCEPT WHERE NOTED
4. STANDARD TYPE "K" GRATE TO BE INSTALLED - JOHN BOUCHARD NO. 4310 OR APPROVED EQUAL WHERE NOTED.

GENERAL GRADING AND DRAINAGE NOTES

1. ALL GRADING AND DRAINAGE WORK AS SHOWN ON THIS PLAN SHALL BE DONE IN STRICT ACCORDANCE WITH THE REQUIREMENTS AND SPECIFICATIONS OF THE LOCAL ENGINEERING DEPARTMENT.
2. THE NECESSARY PERMITS FOR THE WORK SHOWN ON THESE SITE DEVELOPMENT PLANS WILL BE OBTAINED BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF ANY WORK ON THIS PROJECT. THE CONTRACTOR SHALL GIVE ALL NECESSARY NOTICES, OBTAIN ALL PERMITS AND PAY ALL FEES INVOLVED IN SECURING SAID PERMITS. THE CONTRACTOR SHALL ALSO COMPLY WITH ALL LOCAL AND STATE BUILDING CODES, ORDINANCES AND REGULATIONS RELATING TO THE CONSTRUCTION OF THE ITEMS SHOWN ON THESE PLANS.
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4. THE LOCATION OF EXISTING PIPING AND UNDERGROUND UTILITIES (I.E., WATER AND GAS LINES, ELECTRICAL AND TELEPHONE CONDUITS, ETC.,) AS SHOWN ON THIS PORTION OF THE PLANS HAVE BEEN DETERMINED FROM THE BEST INFORMATION FROM ACTUAL SURVEYS, OR TAKEN FROM THE RECORDS AND DRAWINGS OF THE EXISTING UTILITIES. HOWEVER, THE CIVIL ENGINEER DOES NOT ASSUME RESPONSIBILITY THAT, DURING CONSTRUCTION, THE POSSIBILITY OF UTILITIES OTHER THAN THOSE SHOWN MAY BE ENCOUNTERED OR THAT THE ACTUAL LOCATIONS OF UTILITIES SHOWN MAY VARY SOMEWHAT FROM THE LOCATIONS DESIGNATED ON THIS PORTION OF THE PLANS, IN AREAS WHERE IT IS NECESSARY THAT THE EXACT LOCATIONS OF UNDERGROUND UTILITIES BE KNOWN, THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, FURNISH ALL LABOR AND TOOLS TO EITHER VERIFY AND SUBSTANTIATE OR DEFINITELY ESTABLISH THE LOCATION OF THE UTILITIES.
5. ALL DELETERIOUS MATERIAL SHALL BE REMOVED AND DISPOSED OF OFF-SITE BY THE CONTRACTOR AS PER THE INSPECTION AND FINAL APPROVAL OF THE ENGINEER AND OWNER. ALL FILL MATERIAL TO BE USED FOR SITE GRADING SHALL BE AN INORGANIC SOIL, FREE OF DEBRIS AND APPROVED BY THE ENGINEER AND OWNER.
6. THE PLACING AND SPREADING OF ANY FILL MATERIAL IS TO BE STARTED AT THE LOWEST POINT AND BROUGHT UP IN HORIZONTAL LAYERS OF 8-INCH THICKNESS. SAID FILL MATERIAL IS TO BE SOIL AND ROCK ONLY, FREE OF SOD, ROOTS, FROZEN SOILS, OR ANY OTHER DECOMPOSABLE MATERIAL. THE RELATIVE COMPACTION OF EACH LAYER SHALL NOT BE LESS THAN 95% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D-698) IN ALL AREAS OF FILL, AND COMPACTION OF 98% OF SAME SPECIFICATION FOR MATERIALS USED IN THE UPPER 12 INCHES BENEATH PAVEMENT AND GRADE SLABS.
7. THE CONTRACTOR IS TO CHECK AND VERIFY ALL MEASUREMENTS, LEVELS, ETC., BEFORE ORDERING MATERIALS AND PROCEEDING WITH WORK, AND IS RESPONSIBLE FOR THE SAME.
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BERM CONSTRUCTION NOTES

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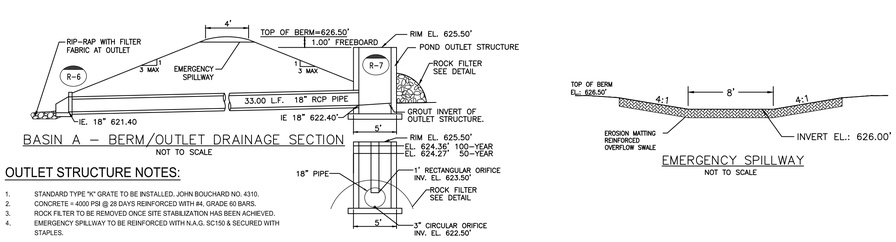
3. FOR EARTH-FILL EMBANKMENTS, A CUTOFF TRENCH SHALL BE EXCAVATED ALONG THE CENTERLINE OF THE BERM. THE TRENCH MUST EXTEND AT LEAST 1 FOOT INTO A STABLE, IMPERVIOUS LAYER OF SOIL AND HAVE A MINIMUM DEPTH OF TWO FEET. THE CUTOFF TRENCH SHALL EXTEND UP BOTH ABUTMENTS TO THE RISER CREST ELEVATION. THE MINIMUM BOTTOM WIDTH SHALL BE FOUR FEET, BUT ALSO MUST BE WIDE ENOUGH TO PERMIT OPERATION OF COMPACTION EQUIPMENT. THE SIDE SLOPES SHALL BE NO STEEPER THAN 1:1. COMPACTION REQUIREMENTS SHALL BE THE SAME AS THOSE FOR THE EMBANKMENT. THE TRENCH SHALL BE DRY DURING THE BACKFILLING AND COMPACTION OPERATIONS.
4. THE EMBANKMENT SHALL BE CONSTRUCTED TO AN ELEVATION 10 PERCENT HIGHER THAN THE DESIGN HEIGHT TO ALLOW FOR SETTLEMENT IF COMPACTION IS OBTAINED WITH HAULING EQUIPMENT, IF COMPACTORS ARE USED FOR COMPACTION, THE OVERBUILD MAY BE REDUCED TO NOT LESS THAN 5 PERCENT.
5. THE EMBANKMENT OF THE DETENTION POND SHALL BE STABILIZED WITH TEMPORARY OR PERMANENT VEGETATION IMMEDIATELY AFTER INSTALLATION OF THE BASIN.
6. ALL STATE AND LOCAL REQUIREMENTS SHALL BE MET CONCERNING FENCING AND SIGNS WARNING THE PUBLIC OF THE HAZARDS OF SOFT, SATURATED SEDIMENT AND FLOOD WATERS.

DETENTION BASIN A DETAILS



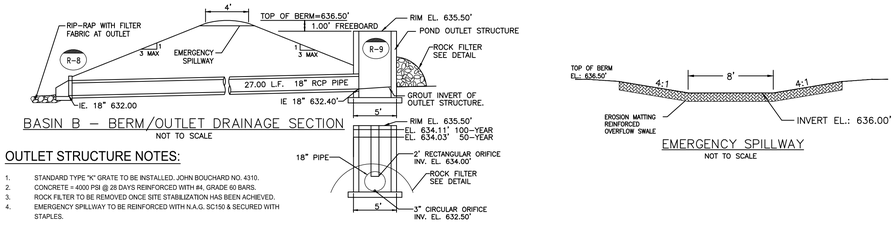
BASIN A – BERM/OUTLET DRAINAGE SECTION
NOT TO SCALE

OUTLET STRUCTURE NOTES:

1. STANDARD TYPE "K" GRATE TO BE INSTALLED. JOHN BOUCHARD NO. 4310.
2. CONCRETE = 4000 PSI @ 28 DAYS REINFORCED WITH #4, GRADE 60 BARS.
3. ROCK FILTER TO BE REMOVED ONCE SITE STABILIZATION HAS BEEN ACHIEVED.
4. EMERGENCY SPILLWAY TO BE REINFORCED WITH N.A.G. SC150 & SECURED WITH STAPLES.

EMERGENCY SPILLWAY
NOT TO SCALE

DETENTION BASIN B DETAILS

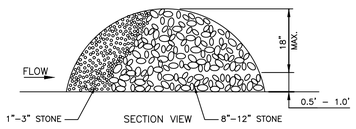


BASIN B – BERM/OUTLET DRAINAGE SECTION
NOT TO SCALE

OUTLET STRUCTURE NOTES:

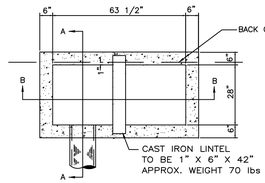
1. STANDARD TYPE "K" GRATE TO BE INSTALLED. JOHN BOUCHARD NO. 4310.
2. CONCRETE = 4000 PSI @ 28 DAYS REINFORCED WITH #4, GRADE 60 BARS.
3. ROCK FILTER TO BE REMOVED ONCE SITE STABILIZATION HAS BEEN ACHIEVED.
4. EMERGENCY SPILLWAY TO BE REINFORCED WITH N.A.G. SC150 & SECURED WITH STAPLES.

EMERGENCY SPILLWAY
NOT TO SCALE

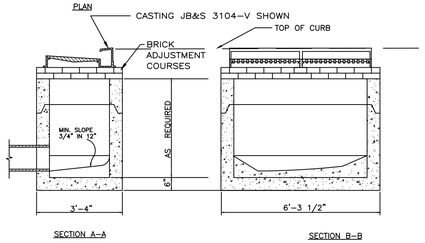


NOTE:
MAINTAIN FILTER DURING CONSTRUCTION & REMOVE ONCE SLOPES ARE STABILIZED.

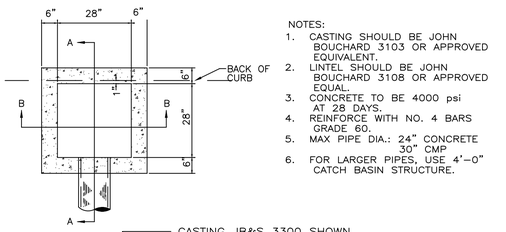
ROCK FILTER CONSTRUCTION
NOT TO SCALE



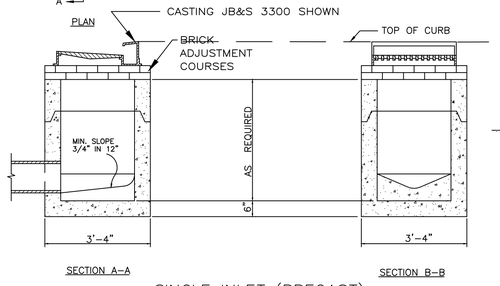
NOTES:
1. CASTING SHOULD BE JOHN BOUCHARD 3104-V OR APPROVED EQUIVALENT.
2. LINTEL SHOULD BE JOHN BOUCHARD 3108 OR APPROVED EQUAL.
3. CONCRETE TO BE 4000 psi AT 28 DAYS.
4. REINFORCE WITH NO. 4 BARS GRADE 60.
5. MAX PIPE DIA.: 24" RCP (NARROW SIDE) 36" RCP (WIDE SIDE)



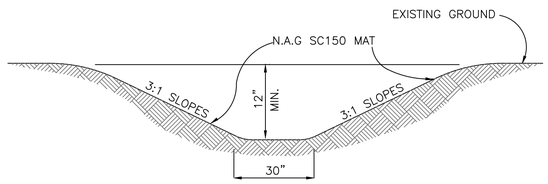
DOUBLE INLET (PRECAST)
NOT TO SCALE



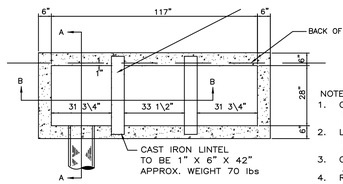
NOTES:
1. CASTING SHOULD BE JOHN BOUCHARD 3103 OR APPROVED EQUIVALENT.
2. LINTEL SHOULD BE JOHN BOUCHARD 3108 OR APPROVED EQUAL.
3. CONCRETE TO BE 4000 psi AT 28 DAYS.
4. REINFORCE WITH NO. 4 BARS GRADE 60.
5. MAX PIPE DIA.: 24" CONCRETE 30" CMP
6. FOR LARGER PIPES, USE 4'-0" CATCH BASIN STRUCTURE.



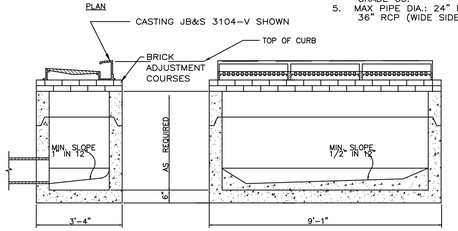
SINGLE INLET (PRECAST)
NOT TO SCALE



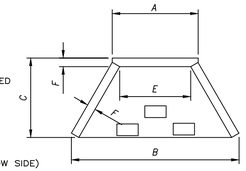
DITCH SECTION
NOT TO SCALE



NOTES:
1. CASTING SHOULD BE JOHN BOUCHARD 3104-V OR APPROVED EQUIVALENT.
2. LINTEL SHOULD BE JOHN BOUCHARD 3108 OR APPROVED EQUAL.
3. CONCRETE TO BE 4000 psi AT 28 DAYS.
4. REINFORCE WITH NO. 4 BARS GRADE 60.
5. MAX PIPE DIA.: 24" RCP (NARROW SIDE) 36" RCP (WIDE SIDE)



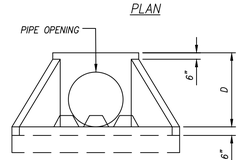
TRIPLE INLET (PRECAST)
NOT TO SCALE



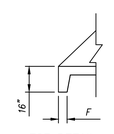
PLAN

SIZE	AW	BW	CW	DW
A	32"	48"	80"	99"
B	48"	72"	102"	120"
C	30"	44"	54"	56"
D	26"	36"	60"	66"
E	24"	36"	64"	83"
F	6"	8"	8"	8"
MAX. OPENING	22"	32"	55"	75"
WT/*	1,380	3,100	8,100	11,400

NOTES:
1. MINIMUM 2" CONCRETE COVER ON REBAR.
2. CONCRETE: CLASS A – 3500 PSI @ 28 DAYS W/ AIR ENTRAINMENT.
3. ALL PICK UP POINTS AND PIPE OPENINGS TO BE GROUTED BY CONTRACTOR WITH NON-SHRINK GROUT.
4. 3/4" CHAMFER ON ALL EXPOSED EDGES.



ELEVATION



TOE DETAIL

CONCRETE HEADWALL W/ENERGY DISSIPATORS
NOT TO SCALE

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WES ENGINEERS & SURVEYORS
CIVIL ENGINEERS & LAND SURVEYORS
2486 NASHVILLE HIGHWAY
COLUMBIA, TN 38401
PHONE: (931) 388-2329
www.wesengineers.com
ENGINEERS & SURVEYORS

Client
KYLE KRAMER, AIA
FUSION ARCHITECTURE
1104 WEST MAIN STREET
FRANKLIN, TN 37064

REVISIONS | DATE

IDLEWILD FARMS
HIWASSEE DRIVE
COLUMBIA, MAURY COUNTY, TENNESSEE
GRADING AND DRAINAGE PLAN

Drawn: RP | Checked: JG | Approved: GV | Date: 09/20/2021

Job. no. 17571 | Scale: Vertical: 1"=50' Horizontal:

C-2.1

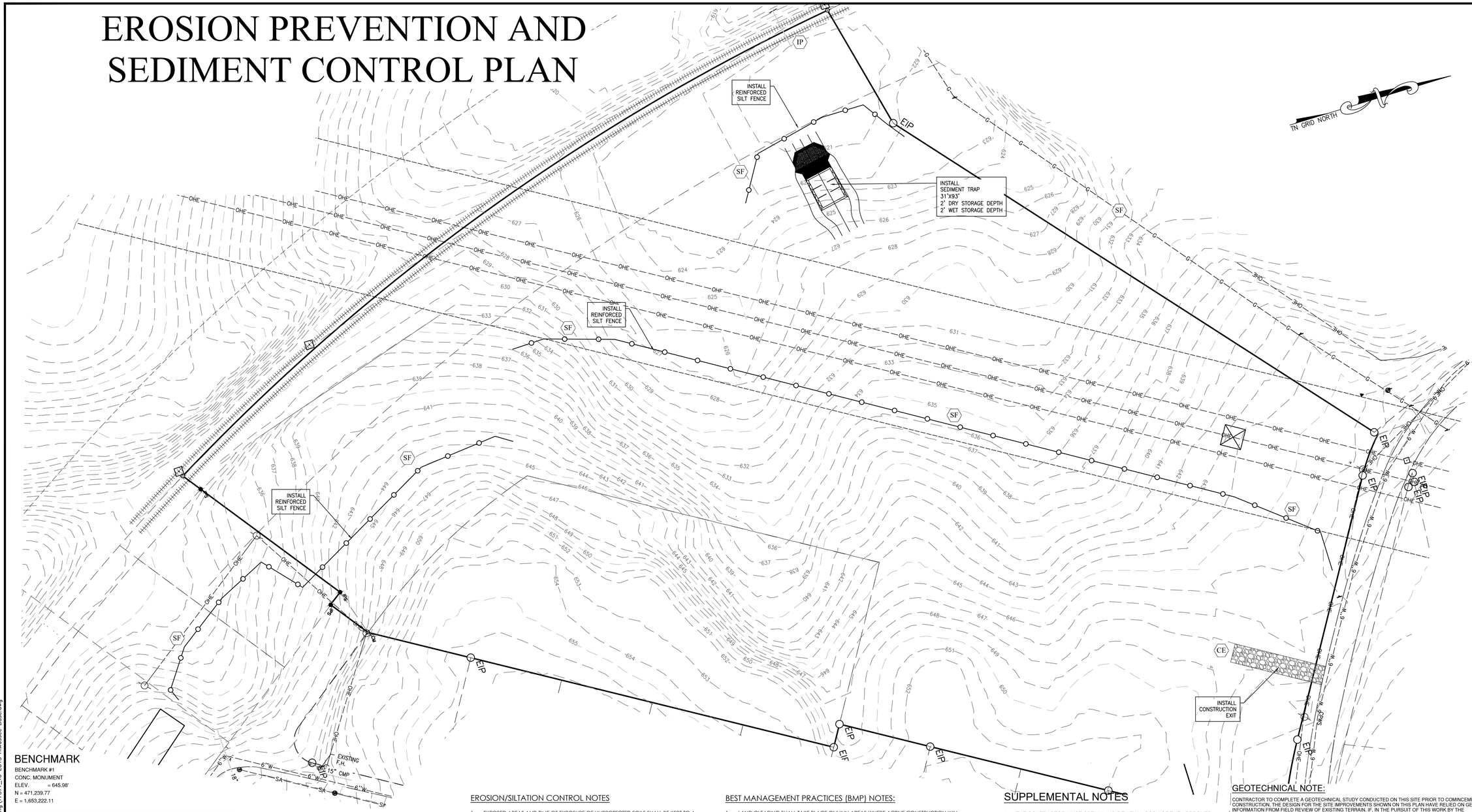
CLARK D. WOLVERTON
LICENSED PROFESSIONAL ENGINEER
No. 107415
STATE OF TENNESSEE

SUBMITTED FOR MUNICIPAL APPROVAL
NOT FOR CONSTRUCTION

FILE: J:\WES_Engineers_Surveyors 2017\17571 - Hiwassee - Reeves\Dwg\Engineering\17571_16 LOTS Hiwassee Base.dwg

EROSION PREVENTION AND SEDIMENT CONTROL PLAN

©2021



BENCHMARK

BENCHMARK #1
CONC. MONUMENT
ELEV. = 645.98'
N = 471,239.77
E = 1,653,222.11

WARNING! UTILITY LINES!

THE CONTRACTOR WILL EXERCISE EXTREME CAUTION IN THE USE OF EQUIPMENT IN AND AROUND OVERHEAD AND UNDERGROUND UTILITY WIRES AND SERVICES. IF AT ANY TIME IN THE PURSUIT OF THIS WORK THE CONTRACTOR MUST WORK IN CLOSE PROXIMITY OF OVERHEAD OR UNDERGROUND SERVICES, THE UTILITY COMPANY SHALL BE CONTACTED PRIOR TO SUCH WORK AND THE PROPER SAFETY MEASURES TAKEN. A THOROUGH EXAMINATION OF THE OVERHEAD WIRES IN THE PROJECT AREA SHOULD BE MADE BY THE CONTRACTOR PRIOR TO THE INITIATION OF CONSTRUCTION. THE UNDERGROUND UTILITY LINES HAVE BEEN SHOWN AS BEST AS CAN BE DETERMINED AT THIS TIME FROM THE INFORMATION OBTAINED FROM THE SURVEY. THE CONTRACTOR SHALL CONTACT EACH OF THESE COMPANIES PRIOR TO BEGINNING CONSTRUCTION AND HAVE THEM DETERMINE THE EXACT LOCATION AND TYPE OF THEIR SERVICES.

Tennessee811
Know what's **below**
Call before you dig.

LEGEND

	EXISTING	PROPOSED
WATER MAIN	W	W
SANITARY SEWER	8"SA	8"SA
STORM SEWER	18"ST	18"ST
OVERHEAD	OHE	OHE
FENCE		
GAS		
DRAINAGE DITCH		
TREE PROTECTION FENCE		
SIGN		
UTILITY POLE		
IRON PIN SET	IPS	
EXISTING IRON PIN	EIP	
CONCRETE MONUMENT		
DECIDUOUS TREE		
GATE VALVE IN BOX		
LIGHT POLE		
BENCHMARK	BM 1	
TREE LINE		
STORM STRUCTURE LABEL		ST1
ASPHALT		
CONCRETE		
# PARKING SPACES		14

EPSC PHASE 1:

PHASE 1:

- CONSTRUCT CONSTRUCTION EXIT AND TEMPORARY EPSC MEASURES.
- CALL COLUMBIA ENGINEERING DEPARTMENT FOR INSPECTION OF EROSION CONTROL INSTALLATION PRIOR TO PROCEEDING.
- TEMPORARY SEED AND STABILIZATION OF EACH DISTURBED AREA BEFORE PROCEEDING TO NEXT AREA.

SOIL EROSION PROTECTION AND CONTROL MEASURES

SILTFENCE			
CONSTRUCTION EXIT	CE	INLET PROTECTION	IP
SILT FENCE	SF	STORM OUTLET PROTECTION	OP
CHECK DAMS	CD	REINFORCEMENT MAT	MA
PERMANENT SEEDING & MULCHING	PS	TEMPORARY SEEDING	TS

EROSION/SILTATION CONTROL NOTES

1. EXPOSED AREAS AND TIME OF EXPOSURE OF UNPROTECTED SOILS SHALL BE KEPT TO A MINIMUM WHENEVER POSSIBLE.
2. KEEP DUST WITHIN TOLERABLE LIMITS BY SPRINKLING OR OTHER ACCEPTABLE MEANS APPROVED BY THE OWNER'S REPRESENTATIVE.
3. DISTURBED AREAS ARE TO BE GRADED TO DRAIN AS INDICATED ON PLAN TO SEDIMENT BARRIERS DURING AND UPON COMPLETION OF CONSTRUCTION.
4. NO OTHER WORK WILL BE INITIATED ON THE PROJECT UNTIL THE EROSION/SILTATION MEASURES SHOWN ON THE PLANS AND DETAILS ARE PROPERLY IN PLACE.
5. IF, AT ANY TIME DURING THE CONSTRUCTION PHASE OF THIS PROJECT, THE EROSION/SILTATION MEASURES INSTALLED FAIL TO FUNCTION PROPERLY, NEED MAINTENANCE OR REPAIR, OR NEED NEW REPLACEMENT IN KIND, THE CONTRACTOR WILL EFFECT SUCH ACTIONS AS ARE NEEDED TO CORRECT THE SITUATION AT NO ADDITIONAL COST TO THE OWNER.
6. EROSION/SILTATION FENCING SHOWN IS TO BE USED AS A TEMPORARY SEDIMENT BARRIER. FENCING IS TO BE FIRM AND SECURELY TIED AS SHOWN ON THE INCLUDED DETAIL.
7. USE TEMPORARY VEGETATION AND/OR MULCH TO PROTECT BARE AREAS FROM SEDIMENT LOSS DURING AND UPON COMPLETION OF CONSTRUCTION.
8. UPON STABILIZATION OF THE PROJECT SITE WITH A GOOD & ACCEPTABLE STAND OF GRASS AND/OR GROUND COVER, THE EROSION/SILTATION INSTALLATIONS WILL BE REMOVED AND THE AREA DISTURBED WILL BE SEEDED AND MULCHED WITH THE SAME TREATMENT AS OTHER NEW DISTURBED AREAS OF THE PROJECT.
9. A STONE ACCESS RAMP IS TO BE CONSTRUCTED WITH A MINIMUM WIDTH OF 20 FEET AND MINIMUM LENGTH OF 50 FEET. RAMP IS TO BE BASED WITH 6 INCHES INCHES OF ASTM D 448, SIZE NO. 1 STONE, AND MAINTAINED THROUGHOUT CONSTRUCTION.
10. EROSION AND SEDIMENT CONTROL MUST BE IMPLEMENTED AND MAINTAINED. PERFORM ALL WORK IN ACCORDANCE WITH THE "TDEC EROSION AND SEDIMENT CONTROL HANDBOOK", NOVEMBER 2006. FAILURE TO COMPLY TO THESE BMP PRACTICES MAY RESULT IN A STOP WORK ORDER AND FINES.
11. IN AREAS OF 2:1 OR GREATER SLOPE THAT EXCEED 5-FEET IN UNINTERRUPTED VERTICAL ELEVATION CHANGE WILL RECEIVE NORTH AMERICAN GREEN SC150 EROSION CONTROL MAT SEEDED FOR STABILIZATION (TEMPORARY OR PERMANENT). FOLLOW STABILIZATION PLAN INCLUDED IN APPROVED SWPPP FOR TEMPORARY & PERMANENT STABILIZATION OF SITE.
12. ALL PROPOSED INLETS WILL BE INSTALLED WITH SILT FENCE EROSION PROTECTION OR APPROVED MAT TYPE INLET FILTER UNTIL STABILIZATION IS ESTABLISHED.
13. PHASE I EP&SC SHOWN. ADJUSTMENTS TO BE MADE WHEN SLOPE CONSTRUCTION BEGINS TO KEEP SILT FENCE @ TOE OF SLOPE.
14. ALL OPEN FLOW CHANNELS AND OUTLET STRUCTURES ARE TO RECEIVE NORTH AMERICAN GREEN SC150 EROSION CONTROL MATTING FOR STABILIZATION.

BEST MANAGEMENT PRACTICES (BMP) NOTES:

1. LAND CLEARING SHALL TAKE PLACE ONLY IN AREAS WHERE ACTIVE CONSTRUCTION WILL BEGIN WITHIN A REASONABLE AMOUNT OF TIME. LAND CLEARING DURING THE RAINY SEASON SHALL BE AVOIDED IN SENSITIVE AREAS SUCH AS STEEP SLOPES AND BUFFERS, IF POSSIBLE.
2. DENUDED AREAS, SOIL STOCKPILES, DIKES, DAMS, CHANNELS, ETC., ARE TO BE SEEDED AND MULCHED. AREAS AND TIME OF EXPOSURE OF UNPROTECTED SOILS SHALL BE KEPT TO A MAXIMUM OF 15 DAYS. SUCH AREAS ARE TO IMMEDIATELY RECEIVE SEED AND MULCH STABILIZATION FOLLOWING THIS TIME PERIOD. ON STEEP SLOPES AND CHANNELS, MATTING SHALL BE FASTENED TO THE GROUND WITH WIRE STAPLES OR WOOD PEGS. WHERE SURFACE WATER CANNOT BE DIVERTED FROM FLOWING OVER THE FACE OF SLOPES, INSTALL A STRIP OF EROSION CONTROL MATTING AND FASTEN TIGHT ALONG THE CROWN OR TOP OF THE SLOPE FOR EXTRA PROTECTION AGAINST LIFTING AND UNDERCUTTING OF SOIL.
3. STEEP AND UNSTABLE SLOPES SHALL NOT BE DISTURBED IF THEY ARE OUTSIDE OF THE APPROVED GRADING PLAN AREA. RUNOFF SHALL BE CONVEYED FROM THE TOP OF THE SLOPE IN A SAFE MANNER ENSURING THAT THE SLOPE IS STABILIZED AS SOON AS POSSIBLE. ALL RUNOFF EXITING THE CONSTRUCTION SITE SHALL BE FREE OF EXCESSIVE SEDIMENT, AND OTHER POLLUTANTS.
4. STREET AND/OR CURB INLET PROTECTION DEVICES SHALL BE PLACED AROUND ALL INLETS UPON THE CONSTRUCTION OF THE STORM WATER SEWER SYSTEM.
5. ALL MATTED AREAS TO RECEIVE PERMANENT SEEDING.
6. PLEASE CALL THE CITY OF COLUMBIA ENGINEERING DEPARTMENT @ 931-560-1530 FOR INSPECTION OF EROSION CONTROL MEASURES BEFORE GRADING COMMENCES.

SUPPLEMENTAL NOTES

1. THE CONTRACTOR MUST OBTAIN AND REVIEW A COPY OF THE APPROVED STORM WATER POLLUTION PLAN SUBMITTED TO THE TENNESSEE DEPARTMENT OF ENVIRONMENT & CONSERVATION. CONTRACTOR IS EXPECTED TO READ AND FOLLOW THIS PLAN DURING THE CONSTRUCTION OF THIS PROJECT. THE APPROVED SWPPP IS CONSIDERED TO BE A PART OF THE FINAL CONSTRUCTION DOCUMENTS.
2. THE EROSION PREVENTION & SEDIMENT CONTROL MEASURES INCLUDED ON THIS SHEET REPRESENT PHASE 1 ONLY AND ARE REQUIRED TO BE INSTALLED PRIOR TO THE START OF EARTH DISTURBANCE IN THE AFFECTED AREA.
3. ADJUSTMENTS TO THE EPSC MEASURES WILL BE REQUIRED DURING NORMAL PROGRESSION OF THE PROJECT. REVIEW ALL PHASES OF THE EPSC PLANS INCLUDED IN THE SWPPP FOR ADDITIONAL INFORMATION. COST ASSOCIATED WITH THESE ADJUSTMENTS ARE TO BE INCLUDED IN OTHER ITEMS OF CONSTRUCTION.
4. UNDERCUT / REPLACEMENT OF SOFT SOILS SHALL BE PERFORMED AT THE DIRECTION OF THE OWNER AND FOLLOWING THE REQUIREMENTS ESTABLISHED BY THE GEOTECHNICAL ENGINEER. THE REPLACEMENT OF MATERIAL MAY INCLUDE EXISTING SOILS MEETING THE GEOTECHNICAL REQUIREMENTS.
5. CONTRACTOR IS TO MARK THE LIMIT OF DISTURBANCE PRIOR TO START OF CONSTRUCTION AND OBSERVE THESE LIMITS FOR THE DURATION OF THE PROJECT.
6. MAINTAIN EROSION CONTROL MEASURES AS INDICATED IN THE SWPPP BETWEEN PHASES AND REPLACE BMP MATERIALS BEFORE FAILURE RESULTS DUE TO DEGREDATION.

GEOTECHNICAL NOTE:

CONTRACTOR TO COMPLETE A GEOTECHNICAL STUDY CONDUCTED ON THIS SITE PRIOR TO COMINCEMENT OF CONSTRUCTION. THE DESIGN FOR THE SITE IMPROVEMENTS SHOWN ON THIS PLAN HAVE RELIED ON GENERAL INFORMATION FROM FIELD REVIEW OF EXISTING TERRAIN. IF, IN THE PURSUIT OF THIS WORK BY THE CONTRACTOR, CONDITIONS OR CIRCUMSTANCES ARE ENCOUNTERED THAT ARE DIFFERENT THAN REFLECTED IN THESE PLANS OR THAT APPEAR TO IMPACT THE SCOPE OF THE WORK, THE CONTRACTOR WILL IMMEDIATELY NOTIFY THE CIVIL ENGINEER, THE GEOTECHNICAL ENGINEER AND THE OWNER/DEVELOPER. BEFORE ANY REMEDIAL COURSE OF ACTION OR DESIGN CHANGE IS INITIATED, ALL PARTIES TO THE PROCESS (OWNER, CIVIL ENGINEER, GEOTECHNICAL ENGINEER, AND CONTRACTOR) MUST BE IN AGREEMENT AND THE MAGNITUDE OF THE COST/TIME REQUIRED FOR THE MEASURES ESTABLISHED.

SITE BENCHMARK NOTE:

CONTRACTOR SHALL ESTABLISH A BENCHMARK PRIOR TO CONSTRUCTION. EXISTING BENCHMARK MUST BE RE-VERIFIED AND APPROVED BY THE ENGINEER/SURVEYOR PRIOR TO USE.

BOUNDARY & TOPOGRAPHIC SURVEY PROVIDED BY:

W.E.S. ENGINEERS AND SURVEYORS
2486 NASHVILLE HWY
COLUMBIA, TENNESSEE 38401
(931) 388-2329

FLOOD STUDY NOTE:

THIS PROPERTY IS NOT LOCATED IN A FLOOD HAZARD AREA AS PER FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD BOUNDARY AND FLOODWAY MAP COMMUNITY PANEL NO. 47119C0285E DATED APRIL 16, 2007 (ZONE "X")

GRAPHIC SCALE

50 0 25 50 100 200
(IN FEET)
1 inch = 50 ft.

GREGORY W. WICK — REGISTERED ENGINEER — AGRICULTURAL — COMMERCIAL — No. 107413 — STATE OF TENNESSEE

SUBMITTED FOR MUNICIPAL APPROVAL
NOT FOR CONSTRUCTION

WES E NGINEERS & S URVEYORS
CIVIL ENGINEERS & LAND SURVEYORS
2486 NASHVILLE HIGHWAY
COLUMBIA, TN 38401
PHONE: (931) 388-2329
www.wesengineers.com
ENGINEERS & SURVEYORS

Client
KYLE KRAMER, AIA
FUSION ARCHITECTURE
1104 WEST MAIN STREET
FRANKLIN, TN 37064

REVISIONS	DATE

IDLEWILD FARMS

HIWASSEE DRIVE
COLUMBIA, MAURY COUNTY, TENNESSEE
EROSION PREVENTION & SEDIMENT CONTROL PLAN PHASE 1

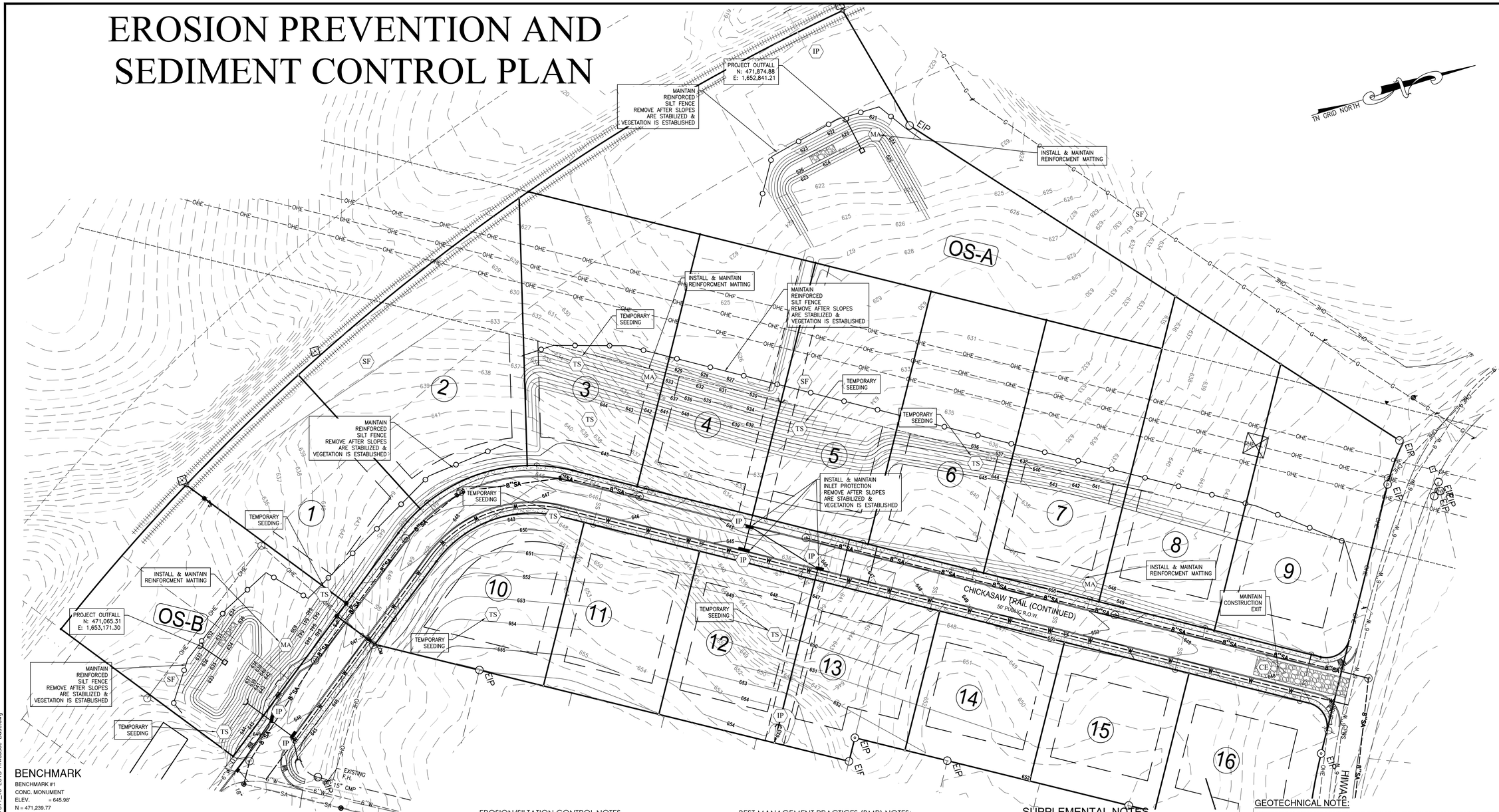
Drawn: RP | Checked: JG | Approved: GW | Date: 09/20/2021

Job. no. 17571
Scale:
Vertical: 1"=50'
Horizontal:

C-3.0

FILE: J:\ WES_Engineers_Surveyors 2017\17571 – Hiwassee – Reaves\Dwg\Engineering\17571_16 LOTS Hiwassee Base.dwg

EROSION PREVENTION AND SEDIMENT CONTROL PLAN



BENCHMARK

BENCHMARK #1
CONC. MONUMENT
ELEV. = 645.98'
N = 471,239.77
E = 1,653,222.11

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Tennessee811
Know what's **below**
Call before you dig.

LEGEND

	EXISTING	PROPOSED
WATER MAIN		
SANITARY SEWER		
STORM SEWER		
OVERHEAD		
FENCE		
GAS		
DRAINAGE DITCH		
TREE PROTECTION FENCE		
SIGN		
UTILITY POLE		
IRON PIN SET	IPS	
EXISTING IRON PIN	EIP	
CONCRETE MONUMENT		
DECIDUOUS TREE		
GATE VALVE IN BOX		
LIGHT POLE		
BENCHMARK	BM 1	
TREE LINE		
STORM STRUCTURE LABEL		(ST)
ASPHALT		
CONCRETE		
# PARKING SPACES		(14)

SOIL EROSION PROTECTION AND CONTROL MEASURES

SILTFENCE			
CONSTRUCTION EXIT	CE	INLET PROTECTION	IP
SILT FENCE	SF	STORM OUTLET PROTECTION	OP
CHECK DAMS	CD	REINFORCEMENT MAT	MA
PERMANENT SEEDING & MULCHING	PS	TEMPORARY SEEDING	TS

EPSC PHASE 2:

PHASE 2:

- MAINTAIN TEMPORARY STABILIZATION MEASURES THROUGH CONSTRUCTION.
- TEMPORARY SEED AND STABILIZE OF EACH DISTURBED AREA BEFORE PROCEEDING TO NEXT AREA.
- ONCE FINAL STABILIZATION IS COMPLETE, REMOVE TEMPORARY EPSC MEASURES INCLUDING ALL SILT FENCE AND CHECK DAMS AND PERMANENTLY STABILIZE DISTURBED AREAS.

EROSION/SILTATION CONTROL NOTES

1. EXPOSED AREAS AND TIME OF EXPOSURE OF UNPROTECTED SOILS SHALL BE KEPT TO A MINIMUM WHENEVER POSSIBLE.
2. KEEP DUST WITHIN TOLERABLE LIMITS BY SPRINKLING OR OTHER ACCEPTABLE MEANS APPROVED BY THE OWNER'S REPRESENTATIVE.
3. DISTURBED AREAS ARE TO BE GRADED TO DRAIN AS INDICATED ON PLAN TO SEDIMENT BARRIERS DURING AND UPON COMPLETION OF CONSTRUCTION.
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5. IF, AT ANY TIME DURING THE CONSTRUCTION PHASE OF THIS PROJECT, THE EROSION/SILTATION MEASURES INSTALLED FAIL TO FUNCTION PROPERLY, NEED MAINTENANCE OR REPAIR, OR NEED NEW REPLACEMENT IN KIND, THE CONTRACTOR WILL EFFECT SUCH ACTIONS AS ARE NEEDED TO CORRECT THE SITUATION AT NO ADDITIONAL COST TO THE OWNER.
6. EROSION/SILTATION FENCING SHOWN IS TO BE USED AS A TEMPORARY SEDIMENT BARRIER, FENCING IS TO BE FIRM AND SECURELY TIED AS SHOWN ON THE INCLUDED DETAIL.
7. USE TEMPORARY VEGETATION AND/OR MULCH TO PROTECT BARE AREAS FROM SEDIMENT LOSS DURING AND UPON COMPLETION OF CONSTRUCTION.
8. UPON STABILIZATION OF THE PROJECT SITE WITH A GOOD & ACCEPTABLE STAND OF GRASS AND/OR GROUND COVER, THE EROSION/SILTATION INSTALLATIONS WILL BE REMOVED AND THE AREA DISTURBED WILL BE SEEDED AND MULCHED WITH THE SAME TREATMENT AS OTHER NEW GRASSED AREAS OF THE PROJECT.
9. A STONE ACCESS RAMP IS TO BE CONSTRUCTED WITH A MINIMUM WIDTH OF 20 FEET AND MINIMUM LENGTH OF 50 FEET. RAMP IS TO BE BASED WITH 6 INCHES INCHES OF ASTM D 448, SIZE NO. 1 STONE, AND MAINTAINED THROUGHOUT CONSTRUCTION.
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11. IN AREAS OF 2:1 OR GREATER SLOPE THAT EXCEED 5-FEET IN UNINTERRUPTED VERTICAL ELEVATION CHANGE WILL RECEIVE NORTH AMERICAN GREEN SC150 EROSION CONTROL MAT SEEDED FOR STABILIZATION (TEMPORARY OR PERMANENT). FOLLOW STABILIZATION PLAN INCLUDED IN APPROVED SWPPP FOR TEMPORARY & PERMANENT STABILIZATION OF SITE.
12. ALL PROPOSED INLETS WILL BE INSTALLED WITH SILT FENCE EROSION PROTECTION OR APPROVED MAT TYPE INLET FILTER UNTIL STABILIZATION IS ESTABLISHED.
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2. THE EROSION PREVENTION & SEDIMENT CONTROL MEASURES INCLUDED ON THIS SHEET REPRESENT PHASE 1 ONLY AND ARE REQUIRED TO BE INSTALLED PRIOR TO THE START OF EARTH DISTURBANCE IN THE AFFECTED AREA.
3. ADJUSTMENTS TO THE EPSC MEASURES WILL BE REQUIRED DURING NORMAL PROGRESSION OF THE PROJECT. REVIEW ALL PHASES OF THE EPSC PLANS INCLUDED IN THE SWPPP FOR ADDITIONAL INFORMATION. COST ASSOCIATED WITH THESE ADJUSTMENTS ARE TO BE INCLUDED IN OTHER ITEMS OF CONSTRUCTION.
4. UNDERCUT / REPLACEMENT OF SOFT SOILS SHALL BE PERFORMED AT THE DIRECTION OF THE OWNER AND FOLLOWING THE REQUIREMENTS ESTABLISHED BY THE GEOTECHNICAL ENGINEER. THE REPLACEMENT OF MATERIAL MAY INCLUDE EXISTING SOILS MEETING THE GEOTECHNICAL REQUIREMENTS.
5. CONTRACTOR IS TO MARK THE LIMIT OF DISTURBANCE PRIOR TO START OF CONSTRUCTION AND OBSERVE THESE LIMITS FOR THE DURATION OF THE PROJECT.
6. MAINTAIN EROSION CONTROL MEASURES AS INDICATED IN THE SWPPP BETWEEN PHASES AND REPLACE BMP MATERIALS BEFORE FAILURE RESULTS DUE TO DEGREDATION.

GEOTECHNICAL NOTE:

CONTRACTOR TO COMPLETE A GEOTECHNICAL STUDY CONDUCTED ON THIS SITE PRIOR TO COMINCEMENT OF CONSTRUCTION. THE DESIGN FOR THE SITE IMPROVEMENTS SHOWN ON THIS PLAN HAVE RELIED ON GENERAL INFORMATION FROM FIELD REVIEW OF EXISTING TERRAIN. IF, IN THE PURSUIT OF THIS WORK BY THE CONTRACTOR, CONDITIONS OR CIRCUMSTANCES ARE ENCOUNTERED THAT ARE DIFFERENT THAN REFLECTED IN THESE PLANS OR THAT APPEAR TO IMPACT THE SCOPE OF THE WORK, THE CONTRACTOR WILL IMMEDIATELY NOTIFY THE CIVIL ENGINEER, THE GEOTECHNICAL ENGINEER AND THE OWNER/DEVELOPER. BEFORE ANY REMEDIAL COURSE OF ACTION OR DESIGN CHANGE IS INITIATED, ALL PARTIES TO THE PROCESS (OWNER, CIVIL ENGINEER, GEOTECHNICAL ENGINEER, AND CONTRACTOR) MUST BE IN AGREEMENT AND THE MAGNITUDE OF THE COST/TIME REQUIRED FOR THE MEASURES ESTABLISHED.

SITE BENCHMARK NOTE:

CONTRACTOR SHALL ESTABLISH A BENCHMARK PRIOR TO CONSTRUCTION. EXISTING BENCHMARK MUST BE RE-VERIFIED AND APPROVED BY THE ENGINEER/SURVEYOR PRIOR TO USE.

BOUNDARY & TOPOGRAPHIC SURVEY PROVIDED BY:

WES ENGINEERS & SURVEYORS
W.E.S. ENGINEERS AND SURVEYORS
2486 NASHVILLE HWY
COLUMBIA, TENNESSEE 38401
(931) 388-2329

FLOOD STUDY NOTE:

THIS PROPERTY IS NOT LOCATED IN A FLOOD HAZARD AREA AS PER FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD BOUNDARY AND FLOODWAY MAP COMMUNITY PANEL NO. 47119C0285E DATED APRIL 16, 2007 (ZONE "X")

GRAPHIC SCALE

50 0 25 50 100 200
(IN FEET)
1 inch = 50 ft.

CLINTON D. WOLICK
No. 107413
AGRICULTURAL
STATE OF TENNESSEE

SUBMITTED FOR MUNICIPAL APPROVAL
NOT FOR CONSTRUCTION

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www.wesengineers.com
ENGINEERS & SURVEYORS

Client
KYLE KRAMER, AIA
FUSION ARCHITECTURE
1104 WEST MAIN STREET
FRANKLIN, TN 37064

REVISIONS | DATE

IDLEWILD FARMS
HIWASSEE DRIVE
COLUMBIA, MAURY COUNTY, TENNESSEE
EROSION PREVENTION & SEDIMENT CONTROL PLAN PHASE 2

Drawn: RP
Checked: JG
Approved: GV
Date: 09/30/2021

Job no. 17571
Scale: Vertical: 1"=50'
Horizontal:

C-3.1

FILE: J:_WES_Engineers_Surveyors 2017\17571 - Hiwassee - Reeves\Dwg\Engineering\17571_16 LOTS Hiwassee Base.dwg

EROSION PREVENTION AND SEDIMENT CONTROL PLAN

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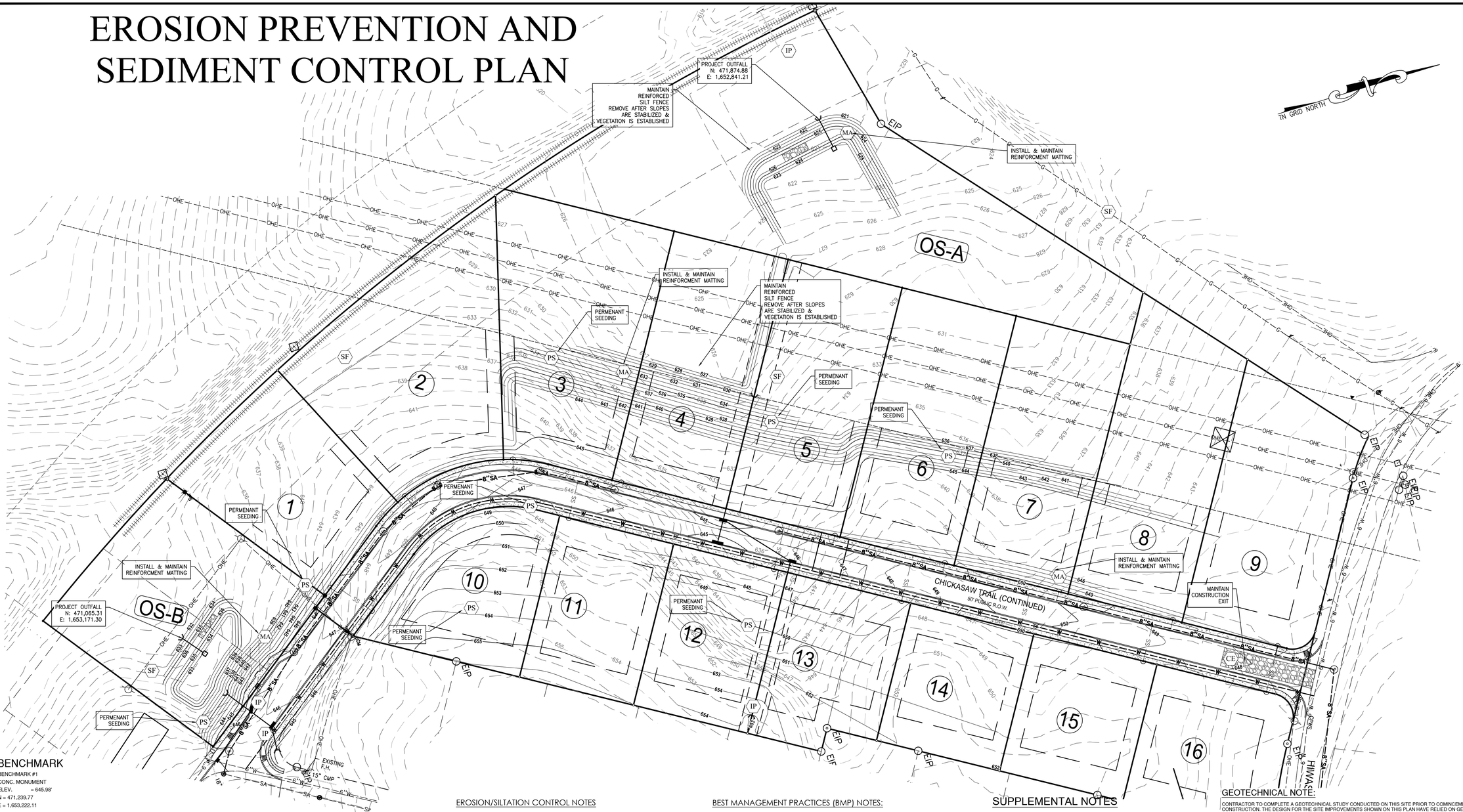

BENCHMARK

BENCHMARK #1
CONC. MONUMENT
ELEV. = 645.98'
N = 471,239.77
E = 1,653,222.11

WARNING! UTILITY LINES!

THE CONTRACTOR WILL EXERCISE EXTREME CAUTION IN THE USE OF EQUIPMENT IN AND AROUND OVERHEAD AND UNDERGROUND UTILITY WIRES AND SERVICES. IF AT ANY TIME IN THE PURSUIT OF THIS WORK THE CONTRACTOR MUST WORK IN CLOSE PROXIMITY OF OVERHEAD OR UNDERGROUND SERVICES, THE UTILITY COMPANY SHALL BE CONTACTED PRIOR TO SUCH WORK AND THE PROPER SAFETY MEASURES TAKEN. A THOROUGH EXAMINATION OF THE OVERHEAD WIRES IN THE PROJECT AREA SHOULD BE MADE BY THE CONTRACTOR PRIOR TO THE INITIATION OF CONSTRUCTION. THE UNDERGROUND UTILITY LINES HAVE BEEN SHOWN AS BEST AS CAN BE DETERMINED AT THIS TIME FROM THE INFORMATION OBTAINED FROM THE SURVEY. THE CONTRACTOR SHALL CONTACT EACH OF THESE COMPANIES PRIOR TO BEGINNING CONSTRUCTION AND HAVE THEM DETERMINE THE EXACT LOCATION AND TYPE OF THEIR SERVICES.

Tennessee811 — Know what's **below**. **Call** before you dig.

LEGEND

	EXISTING	PROPOSED
WATER MAIN		
SANITARY SEWER		
STORM SEWER		
OVERHEAD		
FENCE		
GAS		
DRAINAGE DITCH		
TREE PROTECTION FENCE		
SIGN		
UTILITY POLE		
IRON PIN SET		
EXISTING IRON PIN		
CONCRETE MONUMENT		
DECIDUOUS TREE		
GATE VALVE IN BOX		
LIGHT POLE		
BENCHMARK		

TREE LINE
STORM STRUCTURE LABEL
ASPHALT
CONCRETE
PARKING SPACES

EPSC PHASE 3:

PHASE 3:

- ONCE CONSTRUCTION IS SUBSTANTIALLY COMPLETE, DISTRIBUTE PERMANENT SEED AND STABILIZATION AS SHOWN ON THIS PLAN.
- ONCE FINAL STABILIZATION IS COMPLETE, REMOVE TEMPORARY EPSC MEASURES INCLUDING ALL SILT FENCE AND CHECK DAMS AND PERMANENTLY STABILIZE DISTURBED AREAS.
- PERMANENT SEED AND STABILIZATION OF EACH DISTURBED AREA BEFORE PROCEEDING TO NEXT AREA.

SOIL EROSION PROTECTION AND CONTROL MEASURES

SILTFENCE			
CONSTRUCTION EXIT	CE	INLET PROTECTION	IP
SILT FENCE	SF	STORM OUTLET PROTECTION	OP
CHECK DAMS	CD	REINFORCEMENT MAT	MA
PERMANENT SEEDING & MULCHING	PS	TEMPORARY SEEDING	TS

EROSION/SILTATION CONTROL NOTES

1. EXPOSED AREAS AND TIME OF EXPOSURE OF UNPROTECTED SOILS SHALL BE KEPT TO A MINIMUM WHENEVER POSSIBLE.
2. KEEP DUST WITHIN TOLERABLE LIMITS BY SPRINKLING OR OTHER ACCEPTABLE MEANS APPROVED BY THE OWNER'S REPRESENTATIVE.
3. DISTURBED AREAS ARE TO BE GRADED TO DRAIN AS INDICATED ON PLAN TO SEDIMENT BARRIERS DURING AND UPON COMPLETION OF CONSTRUCTION.
4. NO OTHER WORK WILL BE INITIATED ON THE PROJECT UNTIL THE EROSION/SILTATION MEASURES SHOWN ON THE PLANS AND DETAILS ARE PROPERLY IN PLACE.
5. IF, AT ANY TIME DURING THE CONSTRUCTION PHASE OF THIS PROJECT, THE EROSION/SILTATION MEASURES INSTALLED FAIL TO FUNCTION PROPERLY, NEED MAINTENANCE OR REPAIR, OR NEED NEW REPLACEMENT IN KIND, THE CONTRACTOR WILL EFFECT SUCH ACTIONS AS ARE NEEDED TO CORRECT THE SITUATION AT NO ADDITIONAL COST TO THE OWNER.
6. EROSION/SILTATION FENCING SHOWN IS TO BE USED AS A TEMPORARY SEDIMENT BARRIER. FENCING IS TO BE FIRM AND SECURELY TIED AS SHOWN ON THE INCLUDED DETAIL.
7. USE TEMPORARY VEGETATION AND/OR MULCH TO PROTECT BARE AREAS FROM SEDIMENT LOSS DURING AND UPON COMPLETION OF CONSTRUCTION.
8. UPON STABILIZATION OF THE PROJECT SITE WITH A GOOD & ACCEPTABLE STAND OF GRASS AND/OR GROUND COVER, THE EROSION/SILTATION INSTALLATIONS WILL BE REMOVED AND THE AREA DISTURBED WILL BE SEEDED AND MULCHED WITH THE SAME TREATMENT AS OTHER NEW GRASSED AREAS OF THE PROJECT.
9. A STONE ACCESS RAMP IS TO BE CONSTRUCTED WITH A MINIMUM WIDTH OF 20 FEET AND MINIMUM LENGTH OF 50 FEET. RAMP IS TO BE BASED WITH 6 INCHES INCHES OF ASTM D 448, SIZE NO. 1 STONE, AND MAINTAINED THROUGHOUT CONSTRUCTION.
10. EROSION AND SEDIMENT CONTROL MUST BE IMPLEMENTED AND MAINTAINED. PERFORM ALL WORK IN ACCORDANCE WITH THE "TDEC EROSION AND SEDIMENT CONTROL HANDBOOK", NOVEMBER 2006. FAILURE TO COMPLY TO THESE BMP PRACTICES MAY RESULT IN A STOP WORK ORDER AND FINES.
11. IN AREAS OF 2:1 OR GREATER SLOPE THAT EXCEED 5-FEET IN UNINTERRUPTED VERTICAL ELEVATION CHANGE WILL RECEIVE NORTH AMERICAN GREEN SC150 EROSION CONTROL MAT SEEDED FOR STABILIZATION (TEMPORARY OR PERMANENT). FOLLOW STABILIZATION PLAN INCLUDED IN APPROVED SWPPP FOR TEMPORARY & PERMANENT STABILIZATION OF SITE.
12. ALL PROPOSED INLETS WILL BE INSTALLED WITH SILT FENCE EROSION PROTECTION OR APPROVED MAT TYPE INLET FILTER UNTIL STABILIZATION IS ESTABLISHED.
13. PHASE I EP&SC SHOWN. ADJUSTMENTS TO BE MADE WHEN SLOPE CONSTRUCTION BEGINS TO KEEP SILT FENCE @ TOE OF SLOPE.
14. ALL OPEN FLOW CHANNELS AND OUTLET STRUCTURES ARE TO RECEIVE NORTH AMERICAN GREEN SC150 EROSION CONTROL MATTING FOR STABILIZATION.

BEST MANAGEMENT PRACTICES (BMP) NOTES:

1. LAND CLEARING SHALL TAKE PLACE ONLY IN AREAS WHERE ACTIVE CONSTRUCTION WILL BEGIN WITHIN A REASONABLE AMOUNT OF TIME. LAND CLEARING DURING THE RAINY SEASON SHALL BE AVOIDED IN SENSITIVE AREAS SUCH AS STEEP SLOPES AND BUFFERS, IF POSSIBLE.
2. DENUDED AREAS, SOIL STOCKPILES, DIKES, DAMS, CHANNELS, ETC., ARE TO BE SEEDED AND MULCHED, AREAS AND TIME OF EXPOSURE OF UNPROTECTED SOILS SHALL BE KEPT TO A MAXIMUM OF 15 DAYS, SUCH AREAS ARE TO IMMEDIATELY RECEIVE SEED AND MULCH STABILIZATION FOLLOWING THIS TIME PERIOD. ON STEEP SLOPES AND CHANNELS, MATTING SHALL BE FASTENED TO THE GROUND WITH WIRE STAPLES OR WOOD PEGS. WHERE SURFACE WATER CANNOT BE DIVERTED FROM FLOWING OVER THE FACE OF SLOPES, INSTALL A STRIP OF EROSION CONTROL MATTING AND FASTEN TIGHT ALONG THE CROWN OR TOP OF THE SLOPE FOR EXTRA PROTECTION AGAINST LIFTING AND UNDERCUTTING OF SOIL.
3. STEEP AND UNSTABLE SLOPES SHALL NOT BE DISTURBED IF THEY ARE OUTSIDE OF THE APPROVED GRADING PLAN AREA. RUNOFF SHALL BE CONVEYED FROM THE TOP OF THE SLOPE IN A SAFE MANNER ENSURING THAT THE SLOPE IS STABILIZED AS SOON AS POSSIBLE. ALL RUNOFF EXITING THE CONSTRUCTION SITE SHALL BE FREE OF EXCESSIVE SEDIMENT, AND OTHER POLLUTANTS.
4. STREET AND/OR CURB INLET PROTECTION DEVICES SHALL BE PLACED AROUND ALL INLETS UPON THE CONSTRUCTION OF THE STORM WATER SEWER SYSTEM.
5. ALL MATTED AREAS TO RECEIVE PERMANENT SEEDING.
6. PLEASE CALL THE CITY OF COLUMBIA ENGINEERING DEPARTMENT @ 931-560-1530 FOR INSPECTION OF EROSION CONTROL MEASURES BEFORE GRADING COMMENCES.

SUPPLEMENTAL NOTES

1. THE CONTRACTOR MUST OBTAIN AND REVIEW A COPY OF THE APPROVED STORM WATER POLLUTION PLAN SUBMITTED TO THE TENNESSEE DEPARTMENT OF ENVIRONMENT & CONSERVATION. CONTRACTOR IS EXPECTED TO READ AND FOLLOW THIS PLAN DURING THE CONSTRUCTION OF THIS PROJECT. THE APPROVED SWPPP IS CONSIDERED TO BE A PART OF THE FINAL CONSTRUCTION DOCUMENTS.
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2486 NASHVILLE HWY
COLUMBIA, TENNESSEE 38401
(931) 388-2329

FLOOD STUDY NOTE:

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GRAPHIC SCALE

50 0 25 50 100 200
(IN FEET)
1 inch = 50 ft.

SUBMITTED FOR MUNICIPAL APPROVAL
NOT FOR CONSTRUCTION

WES ENGINEERS & SURVEYORS
CIVIL ENGINEERS & LAND SURVEYORS
2486 NASHVILLE HIGHWAY
COLUMBIA, TN 38401
PHONE: (931) 388-2329
www.wesengineers.com

ENGINEERS & SURVEYORS

Client
KYLE KRAMER, AIA
FUSION ARCHITECTURE
1104 WEST MAIN STREET
FRANKLIN, TN 37064

DATE	REVISIONS

IDLEWILD FARMS

HIWASSEE DRIVE
COLUMBIA, MAURY COUNTY, TENNESSEE
EROSION PREVENTION & SEDIMENT CONTROL PLAN PHASE 3

Drawn: RP | Checked: JG | Approved: CV | Date: 09/20/2021

Job. no. 17571 | Scale: Vertical: 1"=50' Horizontal:

C-3.2

FILE: J:\WES_Engineers_Surveyors 2017\17571 - Hiwassee - Reeves\Dwg\Engineering\17571_16 LOTS Hiwassee Base.dwg

EROSION PREVENTION AND SEDIMENT CONTROL DETAILS

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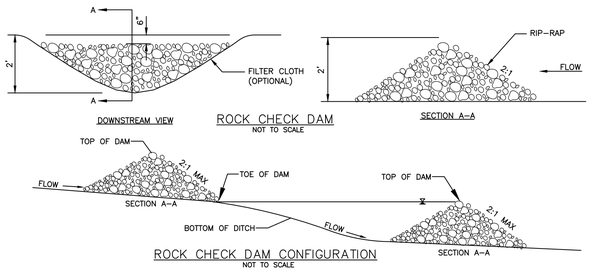
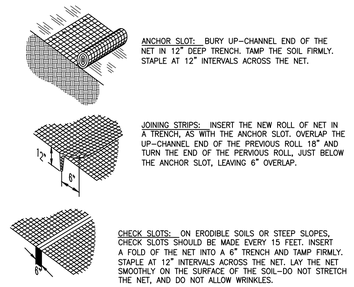
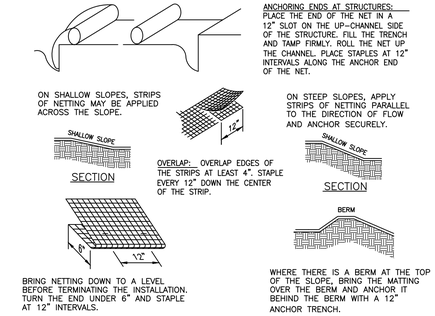


ROCK CHECK DAM
NOT TO SCALE

ROCK CHECK DAM CONFIGURATION
NOT TO SCALE

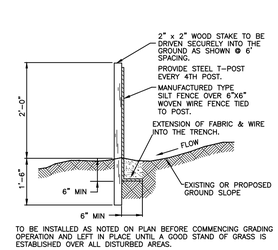




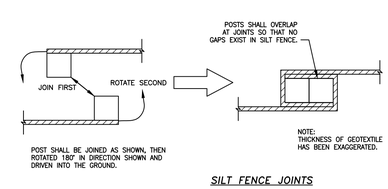
NOTE:

1. FOLLOW N.A.G. INSTALLATION INSTRUCTIONS FOR STAPLE PATTERN GUIDE.
2. INSTALL USING 3.75 STAPLES PER SQUARE YARD UNLESS OTHERWISE INDICATED ON THE PLANS.
3. ALL SLOPES 3:1 AND/OR GREATER TO RECEIVE EROSION CONTROL MATTING.

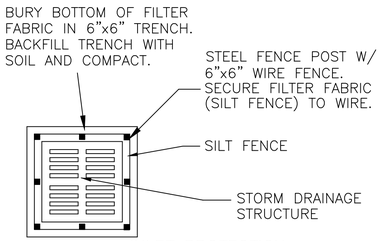
TEMPORARY EROSION CONTROL MATTING
NOT TO SCALE



REINFORCED
EROSION/SILTATION FENCE
NOT TO SCALE



SILT FENCE JOINTS



INLET PROTECTION
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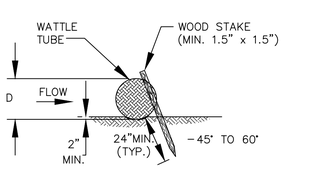
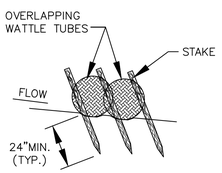
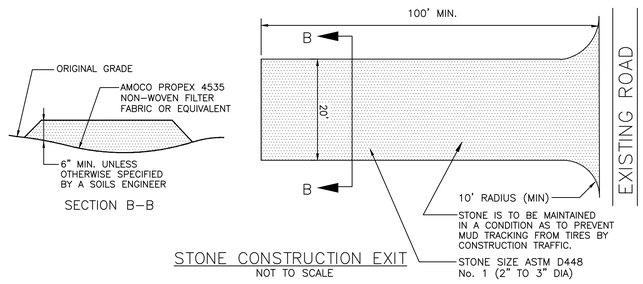


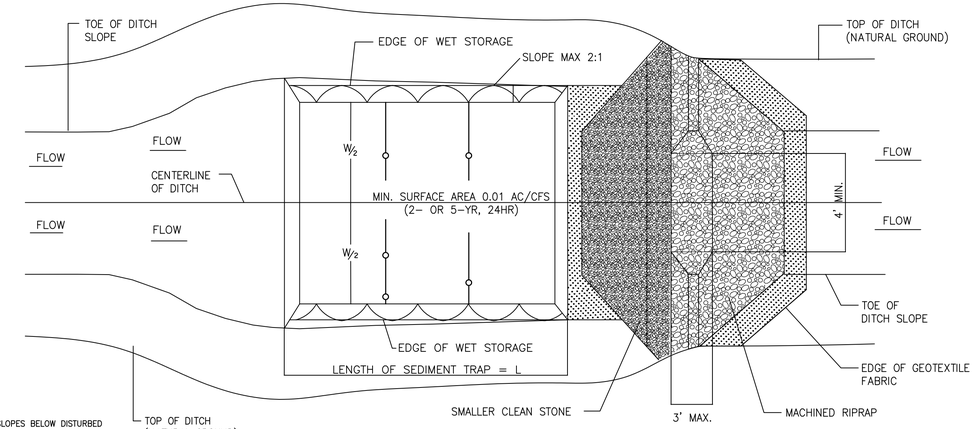
STAKING DETAIL



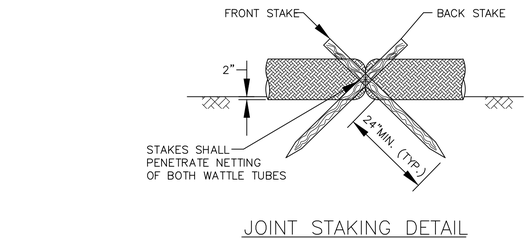
SECTION C-C



STONE CONSTRUCTION EXIT
NOT TO SCALE



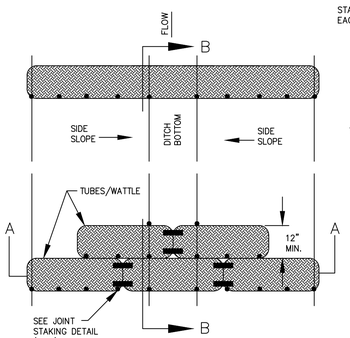
PLAN VIEW



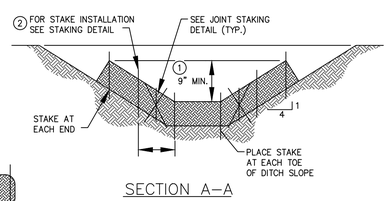
JOINT STAKING DETAIL

NOTES:

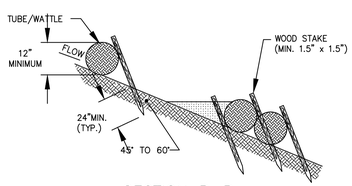
1. THE DEPTH AND WIDTH OF THE WEIR SECTION OF THE WATTLE SHALL BE DESIGNED TO PASS THE 2yr/24hr OR 5yr/24hr STORM EVENT WITHOUT OVERTOPPING THE CHANNEL.
2. STAKE PER MANUFACTURERS RECOMMENDATIONS



PLAN VIEW FOR DITCH APPLICATION

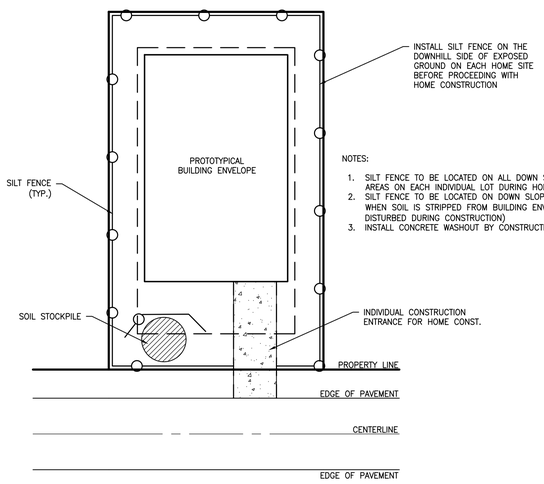


SECTION A-A



SECTION B-B

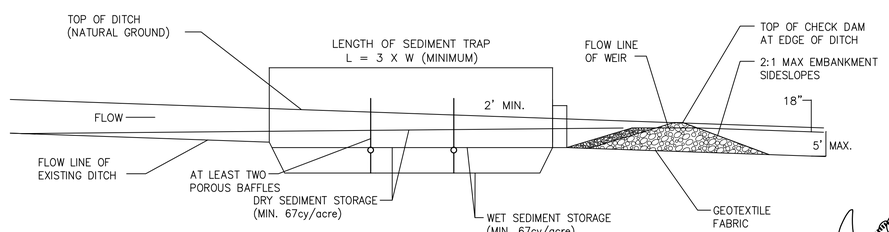
TUBES & WATTLES
NOT TO SCALE



NOTES:

1. SILT FENCE TO BE LOCATED ON ALL DOWN SLOPES BELOW DISTURBED AREAS ON EACH INDIVIDUAL LOT DURING HOME CONSTRUCTION.
2. SILT FENCE TO BE LOCATED ON DOWN SLOPE OF SOIL STOCKPILE WHEN SOIL IS STRIPPED FROM BUILDING ENVELOPE (OR OTHER AREAS DISTURBED DURING CONSTRUCTION).
3. INSTALL CONCRETE WASHOUT BY CONSTRUCTION ENTRANCE AS NEEDED

PROTOTYPICAL LOT EPSC PLAN
NOT TO SCALE



SEDIMENT TRAP
NOT TO SCALE

PROFILE VIEW

SUBMITTED FOR MUNICIPAL APPROVAL
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DATE	REVISIONS

IDLEWILD FARMS
HIWASSEE DRIVE
COLUMBIA, MAURY COUNTY, TENNESSEE
EPSC DETAILS

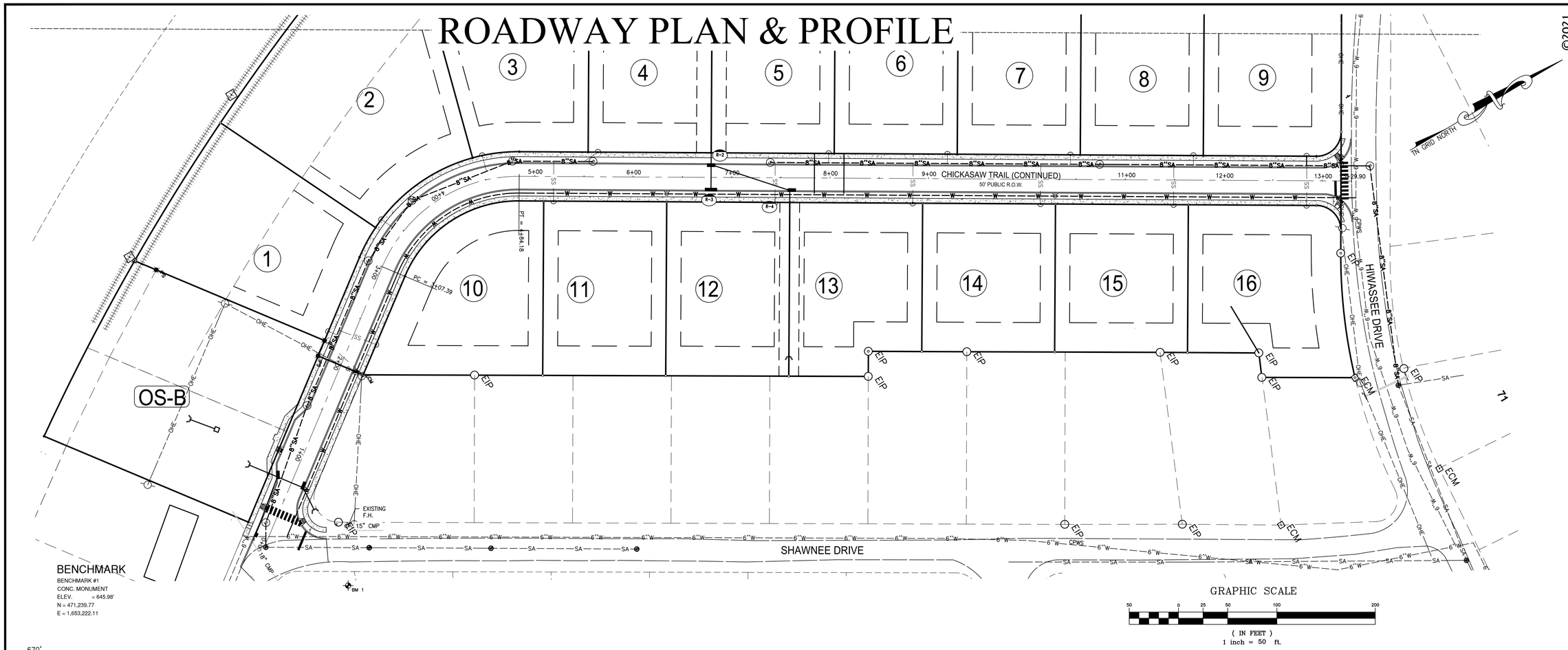
Drawn: RP | Checked: JG | Approved: CW | Date: 09/20/2021

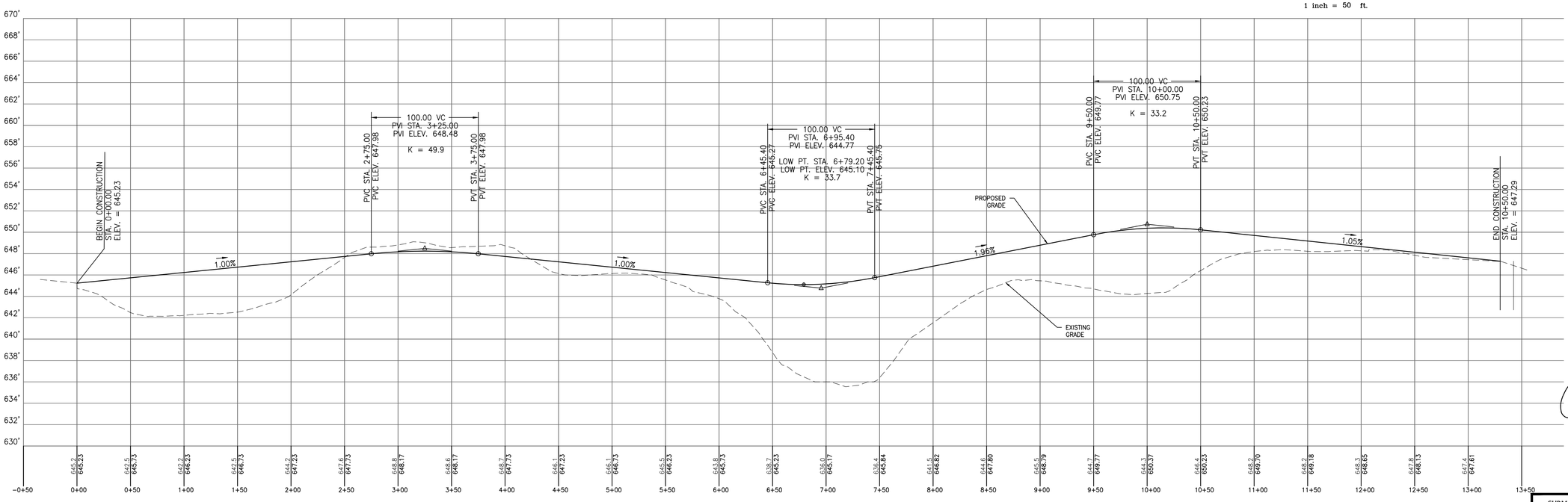
Job. no. 17571 | Scale: | Vertical: | Horizontal:

C-3.3

FILE: J:\WES_Engineers_Surveyors 2017\17571 - Hiwassee - Reeves\Dwg\Engineering\17571_16 LOTS Hiwassee Base.dwg

ROADWAY PLAN & PROFILE





SUBMITTED FOR MUNICIPAL APPROVAL
NOT FOR CONSTRUCTION

WES ENGINEERS & SURVEYORS
CIVIL ENGINEERS & LAND SURVEYORS
2486 NASHVILLE HIGHWAY
COLUMBIA, TN 38401
PHONE: (931) 388-2329
www.wesengineers.com

Client
KYLE KRAMER, AIA
FUSION ARCHITECTURE
1104 WEST MAIN STREET
FRANKLIN, TN 37064

REVISIONS | DATE

IDLEWILD FARMS
HIWASSEE DRIVE
COLUMBIA, MAURY COUNTY, TENNESSEE
ROADWAY PLAN & PROFILE

Drawn: RP
Checked: JG
Approved: GV
Date: 09/20/2021

Job. no. 17571
Scale: Vertical: 1"=5' Horizontal: 1"=50'

C-4.0

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FILE:J:\WES_Engineers_Surveyors 2017\17571 - Hiwassee - Reaves\Dwg\Engineering\17571_16 LOTS Hiwassee Base.dwg

CONSTRUCTION DETAILS

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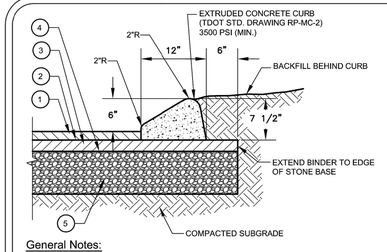


1. 1 1/2" ASPHALTIC CONCRETE SURFACE (GRADING E) ITEM NO. 411-01.11
2. TACK COAT (RS-2) ITEM NO. 403-01
3. 2" ASPHALTIC CONCRETE BASE (GRADING B) ITEM NO. 307-01.06
4. PRIME COAT (AE-P) ITEM NO. 402-01
5. 8" STONE (GRADING D PUG MILL MIX) ITEM NO. 303-01

ITEM NUMBERS ARE TO MEET TDOT SPECIFICATIONS

General Notes:

1. Expansion joints to be spaced a maximum of 100 feet apart and align with ramps, inlets and other required target points.
2. Contraction/construction joints are required and are to be cut into curb every 10 feet.
3. Details shall meet the standards as set forth in the latest version of the Tennessee Department of Transportation Roadway Design Guidelines.
4. The extruded 6" mountable concrete curb is to be used only in special conditions such as low speed low volume local streets and when tying to similar curbs on subdivision streets or in parking lots.
5. Where concrete median pavement is poured behind extruded 6" mountable concrete curb, it may be poured monolithically with the curb.

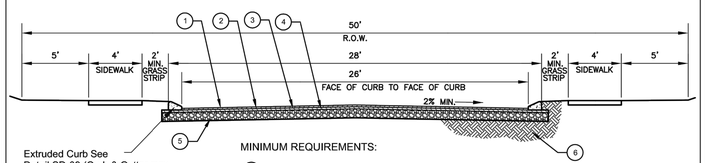
CITY OF COLUMBIA TENNESSEE

MOUNTABLE CURB DETAIL

(NTS)

DATE 4-23-2012

DWG. NO. SD-09



Extruded Curb See Detail SD-09 (Curb & Gutter may be used in place of Extruded Curb See Detail SD-10)

MINIMUM REQUIREMENTS:

1. 1 1/2" ASPHALTIC CONCRETE SURFACE (GRADING E) ITEM NO. 411-01.11
2. TACK COAT (RS-2) ITEM NO. 403-01
3. 2" ASPHALTIC CONCRETE BASE (GRADING B) ITEM NO. 307-01.06
4. PRIME COAT (AE-P) ITEM NO. 402-01
5. 8" STONE (GRADING D PUG MILL MIX) ITEM NO. 303-01
6. APPROVED COMPACTED SUBGRADE

ITEM NUMBERS ARE TO MEET TDOT SPECIFICATIONS

Notes:

Additional right-of-way may be required near intersections.

Elements of this typical section may be revised if approved by the City Engineer.

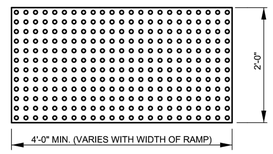
CITY OF COLUMBIA TENNESSEE

RESIDENTIAL LOCAL STREET

(NTS)

DATE 9-10-2014

DWG. NO. SD-04



TRUNCATED DOME PLAN VIEW

NOTES:

1. DETECTABLE WARNINGS SHALL BE INSTALLED PER MANUFACTURERS SPECIFICATIONS.
2. WIDTH OF DETECTABLE WARNING AREA SHALL BE A MINIMUM OF 4 FEET AND VARY WITH WIDTH OF RAMP.
3. LENGTH OF DETECTABLE WARNING AREA SHALL BE 2 FEET REGARDLESS OF SECTION WIDTH.
4. DETECTABLE WARNING DOMES SHALL BE ALIGNED ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF TRAVEL TO PERMIT WHEELS TO ROLL BETWEEN THE DOMES.
5. THE MATERIAL USED TO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE.
6. DETECTABLE WARNINGS USED ON INTERIOR SURFACES SHALL DIFFER FROM ADJOINING WALKING SURFACES IN RESILIENCY OR SOUND-ON-CANE CONTACT.
7. THE MATERIAL USED TO PROVIDE CONTRAST SHOULD CONTRAST BY AT LEAST 70%. CONTRAST IN PERCENT IS DETERMINED BY:

CONTRAST = [(B1-B2)/B1] x 100

WHERE B1 = LIGHT REFLECTANCE VALUE (LRV) OF THE LIGHTER AREA AND B2 = LIGHT REFLECTANCE VALUE (LRV) OF THE DARKER AREA.
(NOTE THAT IN ANY APPLICATION BOTH WHITE AND BLACK ARE NEVER ABSOLUTE; THUS, B1 NEVER EQUALS 100 AND B2 IS ALWAYS GREATER THAN 0.

8. ALL MATERIALS AND WORKMANSHIP SHALL MEET CURRENT ADA REQUIREMENTS.

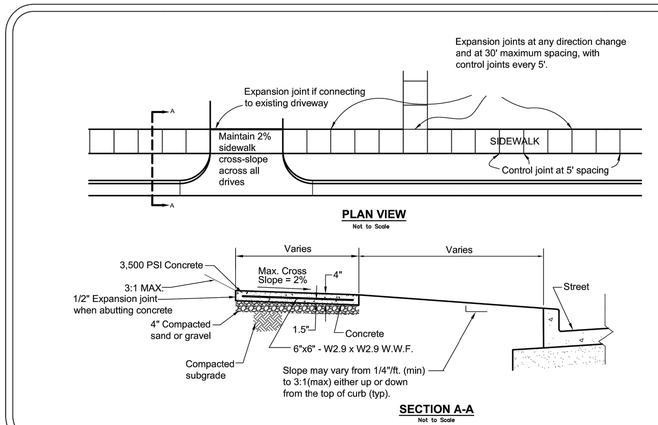
CITY OF COLUMBIA TENNESSEE

DETECTABLE WARNING

(NTS)

DATE 4-23-2012

DWG. NO. SD-15



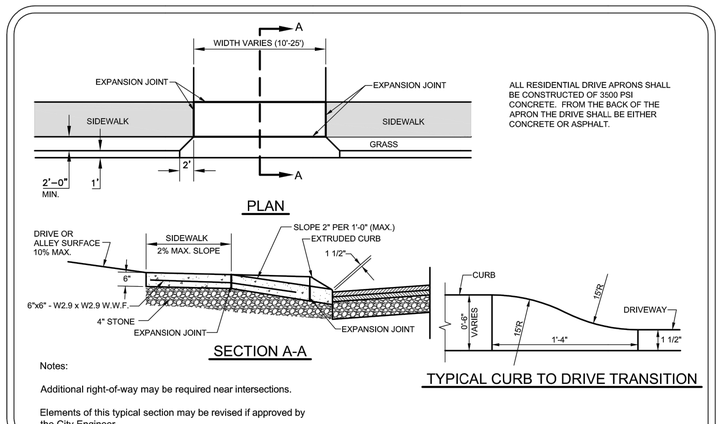
CITY OF COLUMBIA TENNESSEE

SIDEWALK DETAIL

(NTS)

DATE 4-23-2012

DWG. NO. SD-13



ALL RESIDENTIAL DRIVE APRONS SHALL BE CONSTRUCTED OF 3500 PSI CONCRETE. FROM THE BACK OF THE APRON THE DRIVE SHALL BE EITHER CONCRETE OR ASPHALT.

Notes:

Additional right-of-way may be required near intersections.

Elements of this typical section may be revised if approved by the City Engineer.

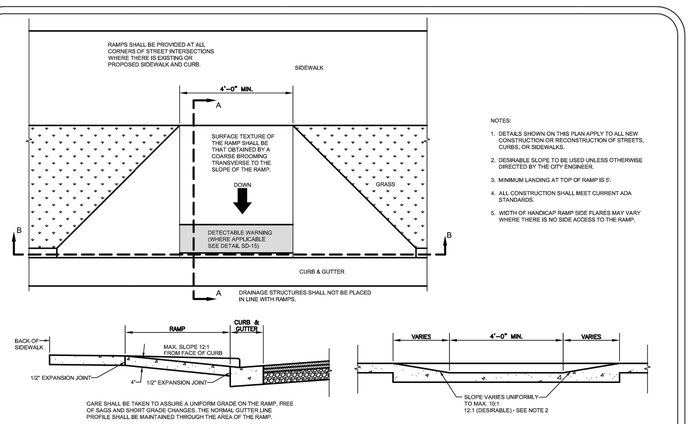
CITY OF COLUMBIA TENNESSEE

DRIVEWAY APRON (RESIDENTIAL)

(NTS)

DATE 4-23-2012

DWG. NO. SD-11



NOTES:

1. DETAILS SHOWN ON THIS PLAN APPLY TO ALL NEW CONSTRUCTION OR RECONSTRUCTION OF STREETS, CURBS, OR SIDEWALKS.
2. DESIRABLE SLOPE TO BE USED UNLESS OTHERWISE DIRECTED BY THE CITY ENGINEER.
3. MINIMUM LANDING AT TOP OF RAMP IS 5'.
4. ALL CONSTRUCTION SHALL MEET CURRENT ADA STANDARDS.
5. WIDTH OF HANDICAP RAMP SIDE FLARES MAY VARY WHERE THERE IS NO SIDE ACCESS TO THE RAMP.

CITY OF COLUMBIA TENNESSEE

HANDICAP RAMP

(NTS)

DATE 4-23-2012

DWG. NO. SD-14

CONC. WALK/CURB DETAIL

NOT TO SCALE

NOTE: PAVEMENT SECTION REPRESENTS MINIMUM STANDARD. REFER TO GEOTECH REPORT FOR SITE SPECIFIC SOIL BEARING INFORMATION.

ASPHALT PAVEMENT

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REVISIONS | DATE

IDLEWILD FARMS
HIWASSEE DRIVE
COLUMBIA, MAURY COUNTY, TENNESSEE
CONSTRUCTION DETAILS

Drawn: RP
Checked: JG
Approved: GV
Date: 09/20/2021

Job. no. 17571

Scale:
Vertical:
Horizontal:

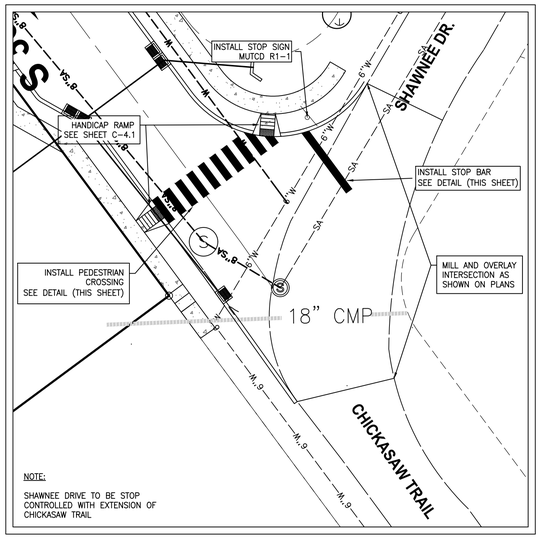
C-4.1

CLIFFORD W. VICK
REGISTERED
AGRICULTURAL
No. 107413
STATE OF TENNESSEE

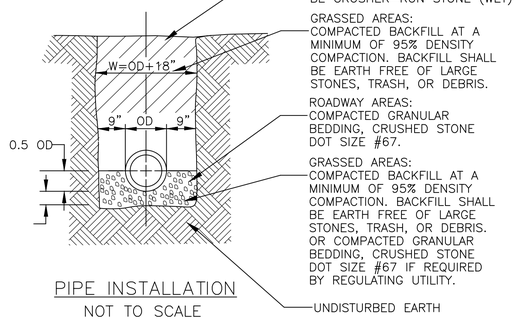
SUBMITTED FOR MUNICIPAL APPROVAL
NOT FOR CONSTRUCTION

FILE: J:_WES_Engineers_Surveyors 2017\17571 - Hiwassee - Reeves\Dwg\Engineering\17571_16 LOTS Hiwassee Base.dwg

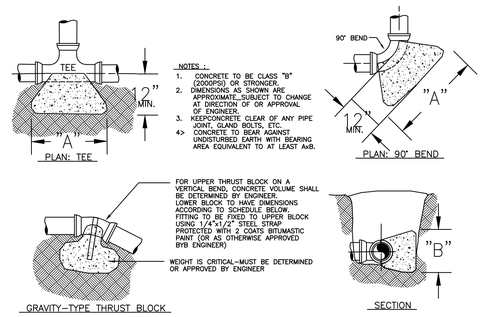
CONSTRUCTION DETAILS



INTERSECTION DETAIL
SCALE 1" = 20'



PIPE INSTALLATION
NOT TO SCALE



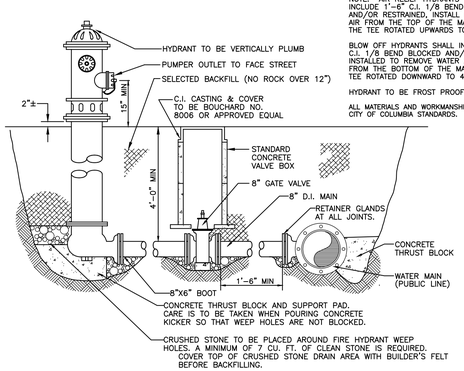
NOTES :
1. CONCRETE TO BE CLASS "B" (2000PSI) OR STRONGER.
2. DIMENSIONS, AS SHOWN ARE APPROXIMATE..SUBJECT TO CHANGE AFTER INSPECTION OF OR APPROVAL OF ENGINEER.
3. KEEP CONCRETE CLEAR OF ANY PIPE JOINT, GLAND BOLTS, ETC.
4> CONCRETE TO BEAR AGAINST UNDISTURBED EARTH WITH BEARING AREA EQUIVALENT TO AT LEAST AxB.

SCHEDULE OF MINUMIM BEARING AREA REQUIRED BASED ON 2000 PSI INTERNAL PRESSURE AND 4000 PSI SOIL BEARING CAPACITY *

PIPE SIZE	TEE OR DEAD END	90° BEND	45° BEND	22 1/2° BEND	11 1/2° BEND
4"	1.0	1.5	1.0	1.0	1.0
6"	2.5	3.0	2.0	1.0	1.0
8"	4.0	5.5	3.0	1.5	1.0
10"	6.0	8.5	4.5	2.5	1.5
12"	8.5	12.0	6.5	3.0	2.0
16"	15.0	21.5	11.0	6.0	3.0
VALUES ARE TABULATED IN SQUARE FEET					

* ENGINEER TO CONFIRM ACTUAL REQUIREMENTS BEFORE CONSTRUCTION OF THE THRUST BLOCK. BEARING AREA (SQUARE FEET) = A(FEET)xB(FEET) .

CONCRETE THRUST BLOCK
NOT TO SCALE



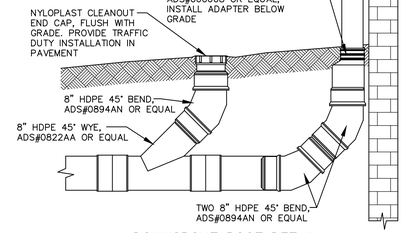
NOTE: AIR RELIEF HYDRANTS SHALL INCLUDE 1'-6" C.I. 1/8 BEND BLOCKED AND/OR RESTRAINED, INSTALL TO RELEASE AIR FROM THE TOP OF THE MAIN WITH THE TEE ROTATED UPWARDS TO 45°.

BLOW OFF HYDRANTS SHALL INCLUDE 1'-6" C.I. 1/8 BEND BLOCKED AND/OR RESTRAINED INSTALLED TO REMOVE WATER AND SEDIMENT FROM THE BOTTOM OF THE MAIN WITH THE TEE ROTATED DOWNWARD TO 45°.

HYDRANT TO BE FROST PROOF.

ALL MATERIALS AND WORKMANSHIP TO MEET CPWS AND CITY OF COLUMBIA STANDARDS.

FIRE HYDRANT ASSEMBLY
NOT TO SCALE



DOWNSPOUT BOOT DETAIL
NOT TO SCALE

TECHNICAL SPECIFICATION

8" STONE BASE SPECIFICATIONS

PROOF ROLLING

1. QUALITY ASSURANCE
   A. THE CONTRACTOR WILL SELECT A TESTING AGENCY TO BE SUB-CONTRACTED BY THE CONTRACTOR TO OBSERVE PROOF-ROLLING OPERATIONS AND REPORT ON ALL REQUIRED TESTING OPERATIONS.
   B. DO NOT PERFORM PROOF-ROLLING OPERATIONS UN-LESS TESTING AGENCY AND CITY PERSONNEL ARE PRESENT.
   C. NEITHER PROOF-ROLLING OPERATIONS OR SUBSEQUENT FILL OPERATIONS WILL BE ACCEPTABLE FOR PAYMENT UNLESS TESTING AGENCY AND CITY PERSONNEL VIEWS PROOF-ROLLING.
2. MATERIALS
   A. VEHICLE: LOADED RUBBER TIRED DUMP STRUCK HAVING A SINGLE AXLE WEIGHT OF APPROXIMATELY 30,000 LBS.
3. PROOF-ROLLING
   A. OBSERVATION: RUN VEHICLE AT NORMAL WALKING SPEED SO THAT THE TESTING AGENCY PERSONNEL MAY OBSERVE THE GROUND AT ALL TIMES. TESTING PERSONNEL WILL CONDUCT ADDITIONAL TESTS THEY DEEM NECESSARY TO DETERMINE EXISTING CONDITIONS. TESTING PERSONNEL WILL DIRECT REMEDIAL ACTIONS THEY DEEM NECESSARY.

TESTING REQUIREMENTS

THE CONTRACTOR WILL BE RESPONSIBLE FOR SUB-CONTRACTING AN INDEPENDENT TESTING AGENCY THAT IS SELECTED BY AN OWNER'S REPRESENTATIVE AND SHALL PROVIDE THE OWNER WITH TEST RESULTS VERIFYING THAT CONSTRUCTION WAS PERFORMED TO ACCEPTABLE STANDARDS.

SECTION 02203

EMBANKMENT

PART 1 GENERAL

1.3 CONDUCT ALL EMBANKMENT OPERATIONS IN ACCORDANCE WITH THE REQUIREMENTS OF THE EROSION CONTROL PLAN APPROVED BY THE A/E.

1.4 EMBANKMENT UNDER BUILDING PADS SHOULD BE IN ACCORDANCE WITH RECOMMENDATIONS FROM A GEOTECHNICAL ENGINEER.

PART 2 PRODUCTS

2.1 USE ONLY ACCEPTABLE MATERIALS IN EMBANKMENT FORMATION. PLACE NO FROZEN MATERIAL, STUMPS, LOGS, ROOTS OR OTHER PERISHABLE MATERIALS IN ANY EMBANKMENT. PLACE NO STONE OR MASONRY FRAGMENT GREATER THAN 4 INCHES IN ANY DIMENSION WITHIN 12 INCHES OF THE FINISHED SUBGRADE ELEVATIONS.

3.1 REMOVE TOPSOIN FROM ALL EMBANKMENT AREAS.

3.5 COMPACT THE EMBANKMENT TO A DENSITY OF AT LEAST 95 PERCENT OF THE MAXIMUM DENSITY AS DETERMINED BY ASTM D698 (STANDARD PROCTOR)

3.7 PERFORM CONSTRUCTION OPERATIONS SO THAT SIMULTANEOUS ROLLING AND PLACING OF MATERIAL IN THE SAME LANE OR SECTION IS PREVENTED. TO AVOID UNEVEN COMPACTION, SEE THAT HAULING EQUIPMENT TRAVERSES THE FULL WIDTH OF THE CROSS-SECTION AS MUCH AS POSSIBLE. COMPACT EACH LAYER AS NECESSARY BEFORE DEPOSITING MATERIAL FOR THE NEXT LAYER.

3.8 THE DENSITY REQUIREMENTS SHALL BE THE CONTROLLING FACTOR IN COMPACTION. USE ONLY SUCH EQUIPMENT THAT WILL SATISFY THE DENSITY REQUIREMENTS AT ALL TIMES.

ASPHALTIC CONCRETE PAVING

1. QUALITY ASSURANCE

A: PERFORM WORK IN ACCORDANCE WITH THE STATE OF TENNESSEE DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION HEREINAFTER REFERRED TO AS "STATE HIGHWAY SPECIFICATIONS" MEASUREMENTS AND PAYMENTS PORTIONS OF THOSE STATE SPECIFICATIONS DO NOT APPLY TO WORK PERFORMED UNDER THIS CONTRACT.

B: MIXING PLANT: COMPLY WITH STATE HIGHWAY SPECIFICATIONS.

C: OBTAIN METERIALS FROM THE SAME SOURCE THROUGHOUT.

2: ENVIRONMENTAL REQUIREMENTS

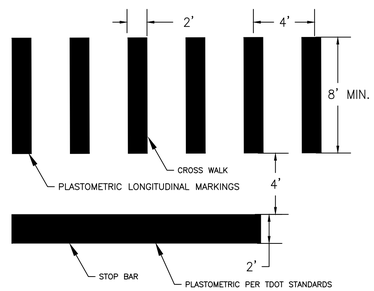
   A: DO NOT PLACE ASPHALT MATERIALS WHEN BASE SURFACE TEMPERATURE IS LESS THAN 40° F.
   B: DO NOT APPLY MATERIALS WHEN SUBSTRATA IS WET OR CONTAINS SUFFICIENT MOISTURE TO PREVENT UNIFORM DISTRIBUTION AND PROPER PENETRATION.

3: PLACING ASPHALT PAVEMENT

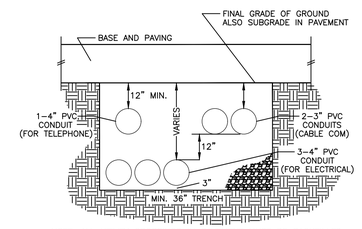
   A: PLACE MATERIALS IN ACCORDANCE WITH REFERENCED STATE HIGHWAY SPECIFICATIONS.
   B: DEVELOP ROLLING WITH CONSECUTIVE PASSES TO ACHIEVE EVEN AND SMOOTH FINISH OF UNIFORM TEXTURE, WITHOUT ROLLER MARKS.
   C: MAKE JOINTS BETWEEN SUCCESSIVE DAYS WORK, OR BETWEEN OLD AND NEW PAVEMENTS IN ACCORDANCE WITH REFERENCED HIGHWAY STANDARDS. ENSURE A CONTINUOUS BOND IS ATTAINED.

4: SCHEDULE OF PAVEMENT SECTIONS

   A: PLACE AND COMPACT MATERIALS TO THE THICKNESS CALLED FOR ON THE DRAWINGS.



THERMOPLASTIC PAVEMENT MARKINGS
NOT TO SCALE



NOTE: ALL UTILITY CROSSINGS IN PAVEMENT MUST BE BACKFILLED WITH CRUSHED STONE!

CONDUIT BANK DETAIL
NOT TO SCALE

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Client
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FUSION ARCHITECTURE
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FRANKLIN, TN 37064

REVISIONS | DATE

IDLEWILD FARMS
HIWASSEE DRIVE
COLUMBIA, MAURY COUNTY, TENNESSEE
CONSTRUCTION DETAILS

Drawn: RP | Checked: JG | Approved: GV | Date: 09/20/2021

Job. no. 17571 | Scale: | Vertical: | Horizontal:

C-4.2

CHARLES D. WOLFE — REGISTERED ENGINEER — No. 107419 — STATE OF TENNESSEE — 5/16/21

SUBMITTED FOR MUNICIPAL APPROVAL
NOT FOR CONSTRUCTION

FILE: J:\WES_Engineers_Surveyors 2017\17571 - Hiwassee - Reeves\Dwg\Engineering\17571_16 LOTS Hiwassee Base.dwg

GRADING & DRAINAGE PLAN

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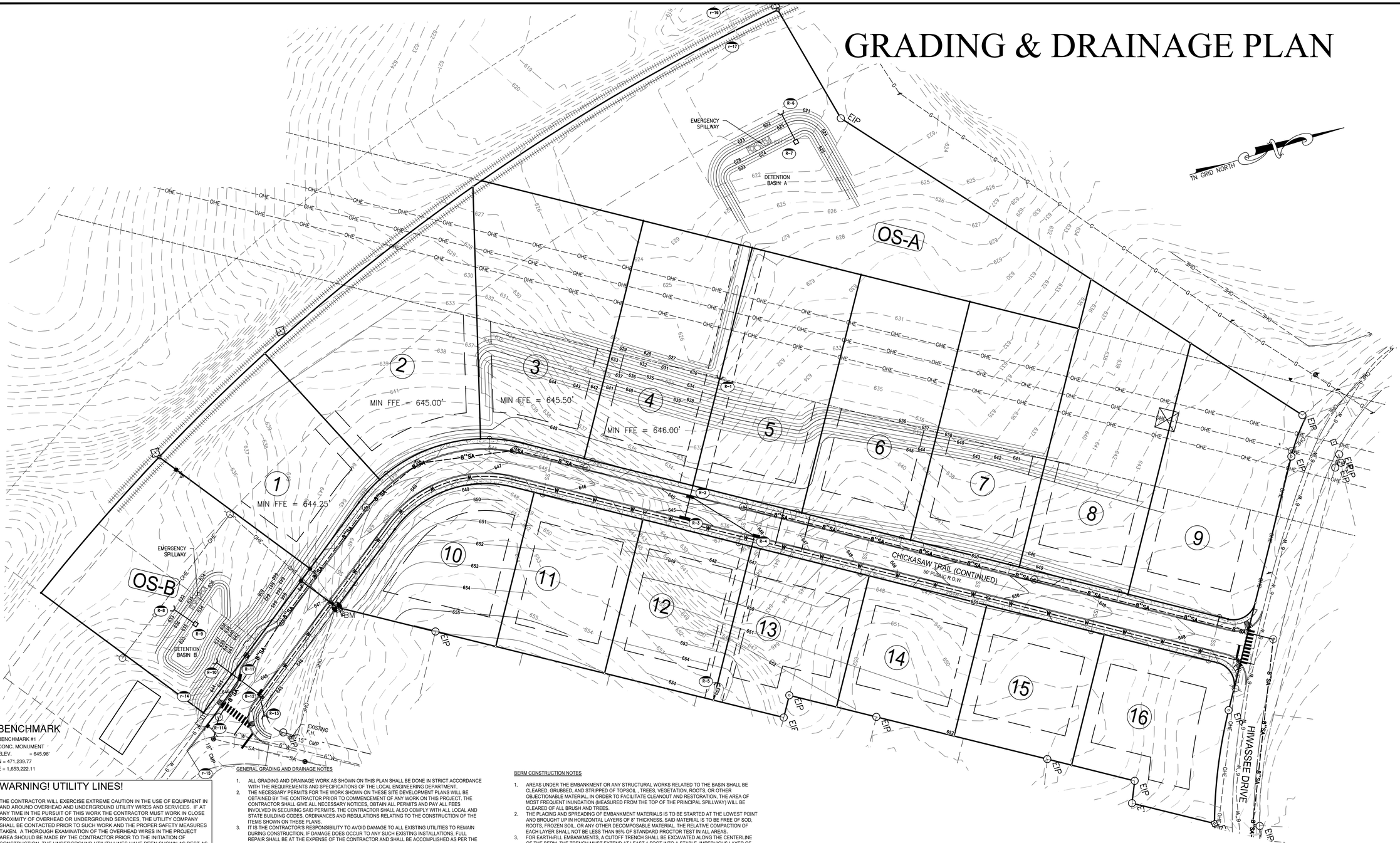


BENCHMARK

BENCHMARK #1
CONC. MONUMENT
ELEV. = 645.98'
N = 471,239.77
E = 1,653,222.11

WARNING! UTILITY LINES!

THE CONTRACTOR WILL EXERCISE EXTREME CAUTION IN THE USE OF EQUIPMENT IN AND AROUND OVERHEAD AND UNDERGROUND UTILITY WIRES AND SERVICES. IF AT ANY TIME IN THE PURSUIT OF THIS WORK THE CONTRACTOR MUST WORK IN CLOSE PROXIMITY OF OVERHEAD OR UNDERGROUND SERVICES, THE UTILITY COMPANY SHALL BE CONTACTED PRIOR TO SUCH WORK AND THE PROPER SAFETY MEASURES TAKEN. A THOROUGH EXAMINATION OF THE OVERHEAD WIRES IN THE PROJECT AREA SHOULD BE MADE BY THE CONTRACTOR PRIOR TO THE INITIATION OF CONSTRUCTION. THE UNDERGROUND UTILITY LINES HAVE BEEN SHOWN AS BEST AS CAN BE DETERMINED AT THIS TIME FROM THE INFORMATION OBTAINED FROM THE SURVEY. THE CONTRACTOR SHALL CONTACT EACH OF THESE COMPANIES PRIOR TO BEGINNING CONSTRUCTION AND HAVE THEM DETERMINE THE EXACT LOCATION AND TYPE OF THEIR SERVICES.

Tennessee811
Know what's **below**
Call before you dig.

LEGEND

	EXISTING	PROPOSED
WATER MAIN		W
SANITARY SEWER	8"SA	8"SA
STORM SEWER	18"SD	18"SD
OVERHEAD	OHE	
FENCE		
GAS		
DRAINAGE DITCH		
TREE PROTECTION FENCE		
SIGN		
UTILITY POLE		
IRON PIN SET		IPS
EXISTING IRON PIN		EIP
CONCRETE MONUMENT		
DECIDUOUS TREE		
GATE VALVE IN BOX		
LIGHT POLE		
BENCHMARK	BM 1	

TREE LINE
STORM STRUCTURE LABEL R-1
ASPHALT
CONCRETE
PARKING SPACES 14

GENERAL GRADING AND DRAINAGE NOTES

1. ALL GRADING AND DRAINAGE WORK AS SHOWN ON THIS PLAN SHALL BE DONE IN STRICT ACCORDANCE WITH THE REQUIREMENTS AND SPECIFICATIONS OF THE LOCAL ENGINEERING DEPARTMENT.
2. THE NECESSARY PERMITS FOR THE WORK SHOWN ON THESE SITE DEVELOPMENT PLANS WILL BE OBTAINED BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF ANY WORK ON THIS PROJECT, THE CONTRACTOR SHALL GIVE ALL NECESSARY NOTICES, OBTAIN ALL PERMITS AND PAY ALL FEES INVOLVED IN SECURING SAID PERMITS. THE CONTRACTOR SHALL ALSO COMPLY WITH ALL LOCAL AND STATE BUILDING CODES, ORDINANCES AND REGULATIONS RELATING TO THE CONSTRUCTION OF THE ITEMS SHOWN ON THESE PLANS.
3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO AVOID DAMAGE TO ALL EXISTING UTILITIES TO REMAIN DURING CONSTRUCTION. IF DAMAGE DOES OCCUR TO ANY SUCH EXISTING INSTALLATIONS, FULL REPAIR SHALL BE AT THE EXPENSE OF THE CONTRACTOR AND SHALL BE ACCOMPLISHED AS PER THE CURRENT SPECIFICATIONS FOR SUCH WORK FOR THE RESPONSIBLE AGENCY.
4. THE LOCATION OF EXISTING PIPING AND UNDERGROUND UTILITIES (I.E., WATER AND GAS LINES, ELECTRICAL AND TELEPHONE CONDUITS, ETC.) AS SHOWN ON THIS PORTION OF THE PLANS HAVE BEEN DETERMINED FROM THE BEST INFORMATION FROM ACTUAL SURVEYS, OR TAKEN FROM THE RECORDS AND DRAWINGS OF THE EXISTING UTILITIES. HOWEVER, THE CIVIL ENGINEER DOES NOT ASSUME RESPONSIBILITY THAT, DURING CONSTRUCTION, THE POSSIBILITY OF UTILITIES OTHER THAN THOSE SHOWN MAY BE ENCOUNTERED OR THAT THE ACTUAL LOCATIONS OF UTILITIES SHOWN MAY VARY SOMEWHAT FROM THE LOCATIONS DESIGNATED ON THIS PORTION OF THE PLANS. IN AREAS WHERE IT IS NECESSARY THAT THE EXACT LOCATIONS OF UNDERGROUND UTILITIES BE KNOWN, THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, FURNISH ALL LABOR AND TOOLS TO EITHER VERIFY AND SUBSTANTIATE OR DEFINITELY ESTABLISH THE LOCATION OF THE UTILITIES.
5. ALL DELETERIOUS MATERIAL SHALL BE REMOVED AND DISPOSED OF OFF-SITE BY THE CONTRACTOR AS PER THE INSPECTION AND FINAL APPROVAL OF THE ENGINEER AND OWNER. ALL FILL MATERIAL TO BE USED FOR SITE GRADING SHALL BE AN INORGANIC SOIL, FREE OF DEBRIS AND APPROVED BY THE ENGINEER AND OWNER.
6. THE PLACING AND SPREADING OF ANY FILL MATERIAL IS TO BE STARTED AT THE LOWEST POINT AND BROUGHT UP IN HORIZONTAL LAYERS OF 8-INCH THICKNESS. SAID FILL MATERIAL IS TO BE SOIL AND ROCK ONLY, FREE OF SOD, ROOTS, FROZEN SOILS, OR ANY OTHER DECOMPOSABLE MATERIAL. THE RELATIVE COMPACTION OF EACH LAYER SHALL NOT BE LESS THAN 95% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D-698) IN ALL AREAS OF FILL, AND COMPACTION OF 98% OF SAME SPECIFICATION FOR MATERIALS USED IN THE UPPER 12 INCHES BENEATH PAVEMENT AND GRADE SLABS.
7. THE CONTRACTOR IS TO CHECK AND VERIFY ALL MEASUREMENTS, LEVELS, ETC., BEFORE ORDERING MATERIALS AND PROCEEDING WITH WORK, AND IS RESPONSIBLE FOR THE SAME.
8. CONTRACTOR IS RESPONSIBLE FOR SECURING WRITTEN APPROVAL FROM ADJOINING PROPERTY OWNER FOR OFF-SITE GRADING WORK THAT RESULTS FROM CONSTRUCTION ACTIVITIES.

BERM CONSTRUCTION NOTES

1. AREAS UNDER THE EMBANKMENT OR ANY STRUCTURAL WORKS RELATED TO THE BASIN SHALL BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL, TREES, VEGETATION, ROOTS, OR OTHER OBJECTIONABLE MATERIAL, IN ORDER TO FACILITATE CLEANOUT AND RESTORATION, THE AREA OF MOST FREQUENT INUNDATION (MEASURED FROM THE TOP OF THE PRINCIPAL SPILLWAY) WILL BE CLEARED OF ALL BRUSH AND TREES.
2. THE PLACING AND SPREADING OF EMBANKMENT MATERIALS IS TO BE STARTED AT THE LOWEST POINT AND BROUGHT UP IN HORIZONTAL LAYERS OF 8" THICKNESS. SAID MATERIAL IS TO BE FREE OF SOD, ROOTS, FROZEN SOIL, OR ANY OTHER DECOMPOSABLE MATERIAL. THE RELATIVE COMPACTION OF EACH LAYER SHALL NOT BE LESS THAN 95% OF STANDARD PROCTOR TEST IN ALL AREAS.
3. FOR EARTH-FILL EMBANKMENTS, A CUTOFF TRENCH SHALL BE EXCAVATED ALONG THE CENTERLINE OF THE BERM. THE TRENCH MUST EXTEND AT LEAST 1 FOOT INTO A STABLE, IMPERVIOUS LAYER OF SOIL AND HAVE A MINIMUM DEPTH OF TWO FEET. THE CUTOFF TRENCH SHALL EXTEND UP BOTH ABUTMENTS TO THE RISER CREST ELEVATION. THE MINIMUM BOTTOM WIDTH SHALL BE FOUR FEET, BUT ALSO MUST BE WIDE ENOUGH TO PERMIT OPERATION OF COMPACTION EQUIPMENT. THE SIDE SLOPES SHALL BE NO STEEPER THAN 1:1. COMPACTION REQUIREMENTS SHALL BE THE SAME AS THOSE FOR THE EMBANKMENT. THE TRENCH SHALL BE DRY DURING THE BACKFILLING AND COMPACTION OPERATIONS.
4. THE EMBANKMENT SHALL BE CONSTRUCTED TO AN ELEVATION 10 PERCENT HIGHER THAN THE DESIGN HEIGHT TO ALLOW FOR SETTLEMENT IF COMPACTION IS OBTAINED WITH HAULING EQUIPMENT, IF COMPACTORS ARE USED FOR COMPACTION, THE OVERBUILD MAY BE REDUCED TO NOT LESS THAN 5 PERCENT.
5. THE EMBANKMENT OF THE DETENTION POND SHALL BE STABILIZED WITH TEMPORARY OR PERMANENT VEGETATION IMMEDIATELY AFTER INSTALLATION OF THE BASIN.
6. ALL STATE AND LOCAL REQUIREMENTS SHALL BE MET CONCERNING FENCING AND SIGNS WARNING THE PUBLIC OF THE HAZARDS OF SOFT, SATURATED SEDIMENT AND FLOOD WATERS.

GEOTECHNICAL NOTE:

CONTRACTOR TO COMPLETE A GEOTECHNICAL STUDY CONDUCTED ON THIS SITE PRIOR TO COMMCEMENT OF CONSTRUCTION. THE DESIGN FOR THE SITE IMPROVEMENTS SHOWN ON THIS PLAN HAVE RELIED ON GENERAL INFORMATION FROM FIELD REVIEW OF EXISTING TERRAIN, IF, IN THE PURSUIT OF THIS WORK BY THE CONTRACTOR, CONDITIONS OR CIRCUMSTANCES ARE ENCOUNTERED THAT ARE DIFFERENT THAN REFLECTED IN THESE PLANS OR THAT APPEAR TO IMPACT THE SCOPE OF THE WORK, THE CONTRACTOR WILL IMMEDIATELY NOTIFY THE CIVIL ENGINEER, THE GEOTECHNICAL ENGINEER AND THE OWNER/DEVELOPER. BEFORE ANY REMEDIAL COURSE OF ACTION OR DESIGN CHANGE IS INITIATED, ALL PARTIES TO THE PROCESS (OWNER, CIVIL ENGINEER, GEOTECHNICAL ENGINEER, AND CONTRACTOR) MUST BE IN AGREEMENT AND THE MAGNITUDE OF THE COST/TIME REQUIRED FOR THE MEASURES ESTABLISHED.

SITE BENCHMARK NOTE:

CONTRACTOR SHALL ESTABLISH A BENCHMARK PRIOR TO CONSTRUCTION. EXISTING BENCHMARK MUST BE RE-VERIFIED AND APPROVED BY THE ENGINEER/SURVEYOR PRIOR TO USE.

BOUNDARY & TOPOGRAPHIC SURVEY PROVIDED BY:

WESA ENGINEERS & SURVEYORS
W.E.S. ENGINEERS AND SURVEYORS
2486 NASHVILLE HWY
COLUMBIA, TENNESSEE 38401
(931) 388-2329

FLOOD STUDY NOTE:

THIS PROPERTY IS NOT LOCATED IN A FLOOD HAZARD AREA AS PER FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD BOUNDARY AND FLOODWAY MAP COMMUNITY PANEL NO. 47119C0285E DATED APRIL 16, 2007 (ZONE "X")

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

CHRISTOPHER D. WARWICK
REGISTERED ENGINEER
No. 107415
STATE OF TENNESSEE

SUBMITTED FOR MUNICIPAL APPROVAL
NOT FOR CONSTRUCTION

WES ENGINEERS & SURVEYORS
CIVIL ENGINEERS & LAND SURVEYORS
2486 NASHVILLE HIGHWAY
COLUMBIA, TN 38401
PHONE: (931) 388-2329
www.wesengineers.com
ENGINEERS & SURVEYORS

Client
KYLE KRAMER, AIA
FUSION ARCHITECTURE
1104 WEST MAIN STREET
FRANKLIN, TN 37064

DATE	REVISIONS

IDLEWILD FARMS

HIWASSEE DRIVE
COLUMBIA, MAURY COUNTY, TENNESSEE
GRADING AND DRAINAGE PLAN

Drawn: RP
Checked: JG
Approved: CW
Date: 09/20/2021

Job. no. 17571
Scale: Vertical: 1"=50'
Horizontal:

C-2.0

FILE: J:_WES_Engineers_Surveyors 2017\17571 - Hiwassee - Reaves\Dwg\Engineering\17571_16 LOTS Hiwassee Base.dwg

CITY OF COLUMBIA
TENNESSEE

WASTEWATER DEPARTMENT

5 January 2024

Kevin Sturgell, Developer
M2 Group LLC
1475 Columbia Ave
Franklin, TN 37064

RE: Project Name: Idlewild Farms
TDEC Project Number (Project ID): 23-0738

This letter serves as your notification to proceed with the construction of the sewer extension referenced above. Start of construction is expected in the obligated time schedule specified in the extension agreement and installation is expected as designed in the approved plans. (Start date, per agreement, is to be on or before 12/12/2024)

This notice to proceed shall be in addition to, and shall not replace, any responsibility to obtain required permits that may be related to the commencement of construction or to the connection of sanitary sewer lines. This notice to proceed is issued solely for the Sanitary Sewer of the above referenced project.

The City of Columbia is authorized to inspect the construction work to verify compliance with the approved plans and specifications which are on the site. The engineer shall notify the City of Columbia Wastewater Department before the start of construction.

If you have any questions, contact our office at (931) 560-1001 between the hours of 7:30am and 4:00pm, Monday - Friday.

Sincerely,
Columbia Wastewater System

Donald Boshers, Director
DB/mds

CITY OF COLUMBIA
TENNESSEE

WASTEWATER DEPARTMENT

13 December 2023

Kevin Sturgell, Developer
M2 Group LLC
1475 Columbia Ave
Franklin, TN 37064

RE: Project Name: Idlewild Farms (1382 linear feet)
TDEC Project Number (Project ID): 23-0738

Dear Kevin Sturgell:

Columbia Wastewater System has received notification from the Tennessee Department of Environment and Conservation of the design approval for the sewer line extension subject project. **Please submit, no later than 1/31/2024, the following items:**

- Surety for Sewer Improvements ($ 134,054.00)
- Inspection Fees ($ 2,764.00 - Payable to City of Columbia)
- Contractor Information
- Executed Agreement for Sewer Line Extension (Two-Paged Attachment to this letter) (12/12/2023- 12/12/2024)
- Confirmation & Status of Any Related Permits (See Notes)

The approved plans and the Notice to Proceed will be issued upon the successful completion of the items stated.

Notes
Approval of these construction documents should not be construed as a permit for any activities related to this project. Activities which may require a permit under the WQC Act and Regulations include, but are not limited to, the following: stream bank vegetation removal; creek crossing(s) for equipment or utility lines; construction within twenty (20) feet of a stream bank; construction in or near a marshy area or wetland, and/or land disturbance greater than one acre. The Water Pollution Control Office should be contacted for determination regarding whether an Aquatic Resource Alteration Permit (ARAP) and/or a National Pollutant Discharge Elimination System (NPDES) Construction Storm water permit will need to be obtained prior to the beginning of construction of this project.

Sincerely,

Donnie Boshers, Director

Columbia Wastewater System

AGREEMENT FOR SEWER LINE EXTENSION

WHEREAS, the undersigned, Jennee Galland, hereinafter referred to as the Owner of property mentioned below herein; and

WHEREAS, the undersigned Owner plans to make sanitary sewer improvements to the development property known as Idlewild Farms located in the City of Columbia, Tennessee, and which shall be served by the public sewer system of the City of Columbia, Tennessee.

NOW, THEREFORE, for and in consideration of the unilateral covenants herein made, the Owner agrees as follows:

1) The Owner shall install sewer facility improvements in accordance with the specific plans and specifications that have received approval of the City of Columbia Wastewater System and the Tennessee Department of Environment and Conservation. The Owner understands the construction of sewer facilities is subject to provisions of the Tennessee Code Annotated regarding contractor's license and penalties for non-compliance.

2) The Owner shall install the sewer taps during construction of the sewer lines, bringing the service line to the property line. Therefore, there will be no tap installation charge upon the builder's connection of sewer service, however, notwithstanding the provision, if for any reason, the Columbia Wastewater System should be requested or required to install a sewer tap, the Person requesting the tap installation shall pay in accordance with the rules and regulations in force at the time of installation.

3) The sewer improvements installed by the Owner shall connect to the Columbia Wastewater System's existing sewer infrastructure however no physical connection shall be made to the existing City wastewater infrastructure until the additional line extension improvements have passed all inspections and surety has been established. It shall be the Owner's responsibility and expense to make such connections in a manner acceptable to the Columbia Wastewater System. In the event that the Columbia Wastewater System should perform any part of making said connections, the Owner shall pay to the Columbia Wastewater System for its labor, materials, and equipment costs, complete with appropriate overhead costs. Owner understands all workmanship, materials, labor, etc., related to the construction of sewer facilities is warranted against defect for one year from date of acceptance by the City Council of the City of Columbia.

4) Owner agrees to construct acceptable sewer system improvements within said development in accordance with applicable Columbia Wastewater System and State of Tennessee guidelines within a 12 month period beginning on 12/12/2023 and ending on 12/12/2024. Surety shall be pledged to secure the improvements before the wastewater utility signs the final subdivision plat. The amount of surety required for wastewater improvements and maintenance shall be in addition to any other surety requirements required by the City of Columbia.

5) Upon Owner's completion of the installation of the sewer lines, and completion of connections to the existing sewer infrastructure, all in a manner acceptable to the Columbia Wastewater System and the Tennessee Department of Environment and Conservation, the Owner shall submit to the Columbia Wastewater System the following:

a) Testing of the sewer as specified in the City of Columbia Standard Sewer Specifications

b) As-built drawings of the system as installed, drawn as specified by the Standard Sewer Specifications or the Wastewater Civil Engineer, including the recording of any public easements to any property on which said sewer improvements are located. Said easement shall be no less than 20 feet in width

c) CCTV video of the sanitary sewer system installed as according to the Standard Sewer Specifications

d) An adequate surety instrument to warrant the improvements against defect for one year from date of acceptance by the City Council of the City of Columbia

e) An affidavit documenting no liens against the sewer improvements and an agreement to indemnify and hold harmless from any liens which may be asserted against same

f) An offer of dedication of the sewer improvements, including a request to the Director of Wastewater to be put on the next Council Agenda, subject to City Council acceptance

g) This agreement shall be binding upon the heirs and assigns of Owner

This the 15th day of December, 2023.

Signature

Dec 15, 2023
Date

Jennee Galland
Print Name

JORDAN T HAMBY
STATE OF TENNESSEE NOTARY PUBLIC
WILLIAMSON COUNTY

STATE OF Tennessee COUNTY OF Williamson

Personally appeared before me, the undersigned authority, a Notary Public in and for said County and State, the within named Jennee Galland, the Owner with whom I am personally acquainted or proved to me on the basis of satisfactory evidence and who acknowledged that Jennee Galland signed the foregoing (Agreement for Sewer Line Extension) instrument for the purposes therein contained.

WITNESS OUR HANDS AND OFFICIAL SEAL AT 9:39 am, this the 15th day of December, 2023.

Jordan T. Hamby
Notary Public

My Commission Expires:

1/28/2024

SEAL

November 17, 2023
Mr. Gerald W. Vick P.E.
WES Engineers & Surveyors
2486 Nashville Hwy
Columbia, TN 38401
Sent via email: gerald@wesengineers.com
RE: Water Availability Letter
Idlewild Farms – 16 Units
Hiwassee Drive
Tax Map 89, Parcel 23.01 & 23.02
Columbia, Maury County, TN

Dear Mr. Vick:

Columbia Power and Water Systems ("the Utility"/CPWS) is a municipal corporation authorized to provide water services in accordance with State law. CPWS has adopted rules, regulations, and standard operation procedures, prescribing the conditions under which CPWS will furnish water service. In addition, certain State laws delegate authority to the Tennessee Department of Environment and Conservation, various Planning Commissions and other authorities in Cities and Counties. These Cities and Counties have also adopted rules and regulations. Subject to the payment of all charges and fees imposed by CPWS and the approval of any and all required governmental agencies, water service will be made available on a first-come, first-served basis, subject to availability of all CPWS furnished equipment and materials appropriate for the development and provided the applicant complies with all rules and regulations of CPWS and conditions set out herein.

The proposed development consists of 16 units. CPWS has evaluated the projected water demands for the proposed residential development in the water system hydraulic model and is able to meet a fire-flow capacity of 1,000 gpm at 20 psi while maintaining the existing level of service and pressures in this portion of the distribution system. CPWS can provide water for the proposed development according to the following requirements:

- Domestic waterline connection will be made to the existing 6-inch water mains located on Hiwassee Drive and Shawnee Drive.
- Minimum size 8-inch diameter water mains will be required through the development.

All of the above requirements are to be constructed and paid for by the Applicant and dedicated to CPWS once complete up to and including the meter. No construction of CPWS infrastructure shall be initiated until final construction plans have been approved by TDEC and all parties have fully executed a water service agreement.

Once you have received this Water Availability Letter, next steps in the process to obtain water service from CPWS are as follows:

- Provide site base CAD files in DWG format, including roads, lot lines, existing and proposed contours, and other existing and proposed utilities, for use in development of water construction drawings.
- Remit to CPWS new water service fees:

New Water Service Fee: $1,500 + $370 per SFU (16 SFUs)	$7,420.00

- CPWS will then develop water construction drawings and submit to TDEC for approval. Upon approval by TDEC and payment of meter and impact fees by the applicant, applicant may then schedule a pre-construction meeting with CPWS. Pre-construction meeting will not be scheduled until fees are paid in full or surety is provided in lieu of full payment. Final meter and impact fees are subject to change based on final design and meter size determination. Meter fees are subject to change based on market costs at time of purchase. Meters will not be set until meter and impact fees are paid.

Meter Fee: $540 per 3/4" meter (16 meters)	$8,640.00
Impact Fee: $4,500 per 3/4" meter (16 meters)	$72,000.00
Total Meter and Impact Fees Due =	**$80,640.00**

- After the pre-construction meeting, CPWS will then issue a formal notice to proceed. No construction of CPWS infrastructure may take place prior to the pre-construction meeting.
- Applicant is then required to construct all public water infrastructure per CPWS standard specifications and provide CPWS personnel unregulated access to the site to inspect the construction of the water infrastructure.

If you have any questions, please feel free to contact me at 423-774-0349 or eric.king@inflodesign.com. This letter is valid for one-hundred twenty (120) days from the date of this letter.

Sincerely,

Eric King, P.E.
Inflo Design Group, LLC
on behalf of Columbia Power and Water Systems

cc: Jonathan Hardin, CPWS
File 23-058

Docusign Envelope ID: 97A84A1C-2722-4163-9F99-F6E97C59882A

CITY OF COLUMBIA TENNESSEE

DEVELOPMENT SERVICES
700 NORTH GARDEN STREET
COLUMBIA, TN 38401
PHONE: (931) 560-1560
FAX: (931) 560-1541

PLANNING COMMISSION
PROJECT DEVELOPMENT APPLICATION

SUBMITTAL REQUIREMENTS

Final Plat: * *1 hard copy of all materials for submittal + PDF copy on a USB flash drive (no multiple applications on one storage device)*

Fold hard copy submittals larger than 8½"x11"

All Others: * Please submit the Application online at City of Columbia | Permitting (onlama.com)

ADDRESS/LOCATION	Hiwassee Drive, Columbia, TN		
	TAX MAP: 89	GROUP:	PARCEL: 23.01 & 23.02
SUMMARY OF NATURE OF REQUEST AND WORK	Plat will abandon lots 82 & 83, as referenced in Idlewild Subdivision, Section 3, Plat Book 4, Page 15 in the Register's Office for Maury County, TN, and create 16 single-family lots and 2 open space lots. Also, plat will dedicate public right-of-way and utility/drainage easements.		

DATE OF PRE-APPLICATION CONFERENCE		*Pre-application meetings are scheduled for Wednesdays.*

SELECT REQUEST	SUBMITTALS SHALL INCLUDE BUT NOT LIMITED TO:
❑ Comprehensive Plan Amendment ❑ Annexation ❑ Rezoning ❑ Preliminary Plat ☒ Final Plat ❑ PUD Preliminary Master Plan ❑ PUD Final Site Plan ❑ Site Development Plan ❑ Other: **File naming nomenclature examples:* *Freedom Point Site Plan* *Freedom Point Master Plan* *Freedom Point Final Plat*	**Annexations:** ❑ Annexation Permission Form **Annexations/Rezoning/Plan Amendments:** ❑ Requested Zone Listed ❑ Statement of Compliance with Comprehensive Plan ❑ Concept Plan **Preliminary Plats/Site Development Plans:** ❑ Plans and/or Plats conforming to City standards with signed and completed check list **All Annexations/Rezoning/Preliminary Plats/Site Development Plans and PUDS:** ❑ Receipt of Payment for Pre-Application Meeting ❑ Written Legal Description copy ❑ Columbia Water System Availability Letter ❑ Columbia Waste Water Department Will Serve Letter

Docusign Envelope ID: 97A84A1C-2722-4163-9F99-F6E97C59882A

	Plats/PUDs: ❑ Project Name (include Sections & Phases) ❑ Total Number of Lots/Residential Units ❑ Square Footage of Non-Residential Floor Space ❑ Total acreage

Applications and all required submittals must be filed with the Department of Development Services prior to the established deadline. Both the applicant and property owner (if different from applicant) must sign the application. Any requests to defer or move the item to future meeting dates must be requested by the resubmittal date listed on the Planning Commission schedule.

APPLICANT
All communications go to the Applicant's email that is provided.

NAME	M2 Group, LLC	PHONE	615-656-0257
ADDRESS	PO Box 2543, Brentwood, TN 37025	EMAIL	stephen@m2groupllc.com

PROPERTY OWNER NAME	Habitat for Humanity Williamson-Maury	PHONE	615-690-8090
ADDRESS	109 Noah Drive, Franklin, TN 37064	EMAIL	jgalland@hfhwm.org

If owner is not a natural person, documentation must be provided showing signing authority on behalf of the entity. If multiple persons are listed as owners in the records of the Maury County Assessor, all owners must sign or the signatory must provide documentation of authority to apply on behalf of record owner (i.e., Power of Attorney or notarized Letter of Authorization). In filling out this application, I attest that (1) I am familiar with the rules, regulations, and procedures of the City of Columbia & (2) all information contained herein is accurate & true to the best of my knowledge.

M2 Group, LLC Stephen Vander Horst, RLS, CFS	DocuSigned by: Stephen Vander Horst E7222172F3E842A...	March 17, 2025
APPLICANT NAME	APPLICANT SIGNATURE	DATE
Habitat for Humanity Williamson-Maury Jennee Galland, President & COO	Signed by: Jennee Galland A120A308CE5D4AC...	March 17, 2025
PROPERTY OWNER NAME	PROPERTY OWNER SIGNATURE	DATE

Rev. 2/7/2024

N

GRAPHIC SCALE
(IN FEET)
50 0 25 50 100
SCALE: 1" = 50'

PHASE 1A
QUAIL RUN MEADOWS
SUBDIVISION
PLAT BOOK: P22, PAGE: 330

50' ROW
LASEA ROAD

JAMES E. & SHARON D. BURNS
TAX MAP 73, PARCEL 17.01
BK 1144, PG 599
(R.O.M.C., TN)

Detention Pond

Civic Space
0.62AC

Civic Space
0.30AC

Detention Pond

Detention Pond

PHASE 2
QUAIL RUN MEADOWS
SUBDIVISION
PLAT BOOK: P23, PAGE: 91

LARRY A. & JO ANN ANDERSON
TAX MAP 73, PARCEL 19.01
BK 1182, PG 974
(R.O.M.C., TN)

HULEN FAMILY PARTNERSHIP
TAX MAP 73, PARCEL 18.00
BK R2756, PG 441
(R.O.M.C., TN)

TRACELAND, LLC
TAX MAP 99, PARCEL 29.05
BK 7090, PG 511
(R.O.W.C., TN)

FLOOD NOTE
THIS PROPERTY IS LOCATED IN AN AREA DESIGNATED AS "ZONE X" AS EVIDENCED ON FEMA PANEL # 47119C0195E OF CITY OF COLUMBIA, MAURY COUNTY, TN, DATED 04/16/2007.

OWNER OF RECORD
SPARKS MIKE & DARYL HANKINS LASEA RD SPRING HILL, TN 37174 DEED BOOK 2963, PAGE 1406, R.O.M.C.
APPLICANT
T-SQUARE ENGINEERING 111 SE PARKWAY COURT FRANKLIN, TN 37064 615.678.8212

NO.	DATE

DATE: 09/06/2024
SCALE: AS SHOWN
DRAWN BY: T-SQUARE
REVIEWER: LTS

CONCEPT PLAN

MAP 073, PARCEL 017.02
COLUMBIA, TENNESSEE

1616 LASEA ROAD

PROJECT
24-0813

SHEET
C-0.0

T-SQUARE ENGINEERING

P:\Projects\2024\24-0813 (1616 Lasea Rd - Mike Sparks)\Reference\24-0813 Concept Plan.dwg, 1/8/2025 8:35:02 AM

CITY OF COLUMBIA
TENNESSEE

WASTEWATER DEPARTMENT

27 January 2025

Louis Sloyan
T-Square Engineering
111 Southeast Parkway Court
Franklin, TN 37064

RE: 1616 Lasea Rd, Columbia, TN 38401; 31-Lot Subdivision

Louis,

This letter serves as confirmation that the City of Columbia Wastewater Department has the available capacity to service the subject development. Any extension to the existing sewer infrastructure will be initiated by the owner/developer, reviewed by our department and approved by the State of Tennessee. The project must be advanced in accordance with local, state and federal rules, regulations and policies. Funding and construction of those improvements will remain the responsibility of the owner/developer. New customers will be required to pay all fees applicable at the time of connection. Any Final Plat approval and Dedication are both subject to installation and function, as determined by our Department. No detailed design plan for an extension of the sewer has been proposed at this time.

Donnie Boshers, Director
City of Columbia, TN
Wastewater Department

March 13, 2025

Mr. Louis Sloyan
T-Square Engineering
111 Southeast Parkway Court
Franklin, TN 37064
Sent via email: *Louis.Sloyan@t2-eng.com*

RE: **Water Availability Letter** Expires: 7/11/2025
1616 Lasea Road Subdivision
Tax Map 73, Parcel 017.02
Columbia, Maury County, TN

Dear Mr. Sloyan:

Columbia Power & Water Systems ("the Utility"/CPWS) is a municipal corporation authorized to provide water services in accordance with State law. CPWS has adopted rules, regulations, and standard operation procedures, prescribing the conditions under which CPWS will furnish water service. In addition, certain State laws delegate authority to the Tennessee Department of Environment and Conservation (TDEC), various Planning Commissions, and other authorities in Cities and Counties. These Cities and Counties have also adopted rules and regulations. Water service will be made available on a first-come, first-served basis, subject to the payment of all charges and fees imposed by CPWS and the approval of any and all required governmental agencies. Water service is subject to availability of all CPWS furnished equipment and materials appropriate for the development and provided the applicant complies with all rules and regulations of CPWS and conditions set out herein.

We have received your application for water availability to serve a proposed residential development consisting of 31 single-family units at 1616 Lasea Road. Expected Fire Flow Requirements for residential development within the City of Columbia are as follows (subject to verification by a formal requirements letter from Columbia Fire Department):

- 1,000 gallons per minute (gpm) without sprinkler credit
- 500 gpm for structures with sprinklers

CPWS has evaluated the projected water demands for the proposed development in the water system hydraulic model and has determined that the existing system is <u>not</u> currently able to provide 1,000 gallons per minute (gpm) fire flow in the proposed development without adverse effects in the surrounding area. However, offsite system improvements have been identified which will improve flow capacity to this area and meet the higher fire flow

requirements. CPWS can provide water for the proposed development according to the following criteria and requirements:

- The current CPWS system is only able to support a minimum fire flow of 500 gpm within the development until a (planned) water main loop connection on Blackburn Road is completed.
- Once the looped connection is completed on Blackburn Road at Clara Mathis Road, then the system will be able to support fire flows above 1,000 gpm.
- Timing of the water system improvements on Blackburn Road is not known, but a rough estimate is within the next 2 to 4 years. If you are interested in accelerating those system improvements by direct participation – including construction – we welcome a meeting to talk through options.
- Separate fire and irrigation meters with backflow devices will be required to serve the proposed Project.

All of the above requirements up to and including the meter(s) are to be constructed and paid for by the Applicant and dedicated to CPWS once complete. No construction of water infrastructure shall be initiated until final construction plans have been approved by CPWS (including TDEC approval).

This Water Availability Letter will expire in one-hundred twenty (120) days unless vested by payment of water service fees and impact fees for the proposed project. If the Applicant elects to pay only a portion of the impact fees due for the proposed development, then the vesting will only apply to the portion for which impact fees were paid. Any request for water availability after the expiration date of this letter will be considered a new application.

Once you have received this Water Availability Letter, next steps in the process to vest water service from CPWS are as follows:

- Remit to CPWS new water service fees for plan review, TDEC coordination, and inspection as follows:

  $1,500 + $370 per SFU equivalent

- Applicant will prepare design drawings for review and approval by CPWS for construction of the proposed water system improvements.
  - Provide design drawings in AutoCAD and .pdf format for CPWS review of proposed development. Include design drawings for grading, drainage, roadway improvements, buried (wet and dry) utilities, water systems, and surface improvements.
  - CPWS will submit proposed improvements design to TDEC for review and approval.
  - Once comments received from TDEC have been addressed and approved, CPWS will approve the Construction Drawings for the proposed water system improvements.

- As an option, the applicant may request CPWS design the public water system infrastructure to support the proposed development project. Under this option, the applicant will:
    - Provide site base CAD files in DWG format, including roads, lot lines, existing and proposed contours, and other existing and proposed utilities, for use in development of water construction drawings.
    - CPWS will then develop design drawings for the water main extension and submit to TDEC for review and approval.
- Current water service fees due prior to CPWS review of design plans are listed in the table below. *Note that payment of Water Service Fees will extend the expiration of this Water Availability Letter for one year, while the applicant is working with CPWS on design and review of the improvement drawings.*

Water Service Fees	SFUs	Total
$1,500 + 370 per SFU	31	**$12,970**

- Upon Construction Drawing approval by CPWS, applicant may then pay Impact Fees and Meter Fees and schedule the pre-construction meeting. Pre-construction meeting will be canceled and re-scheduled unless all impact fees are paid at least 48 hours prior, or surety is provided in lieu of full payment.
- Water meters will be ordered by CPWS once meter fees are paid by the Applicant.
    - Meter fees are subject to change based on final design and the prevailing Board-approved rates at time of payment.
    - If surety is provided in lieu of payment, meters are not ordered until fees are paid and may result in extended lead-times.
- Applicants will be charged Impact Fees and Meter Fees in effect at time of payment. Please see CPWS website for schedule of impact fees and timing of planned fee escalations. Anticipated meter costs and impact fees for this project are according to the following table:

Impact Fees and Meter Costs	Number	$ / Unit	Total
¾" Service Meter Cost	31	$540	$16,740
2" Fire Meter Cost	31	Current Price	Deferred
Current Impact Fee for ¾" Service Meter	31	$5,000	$155,000
Estimate of Fees Due Prior to Pre-Construction Meeting =			**$171,740**

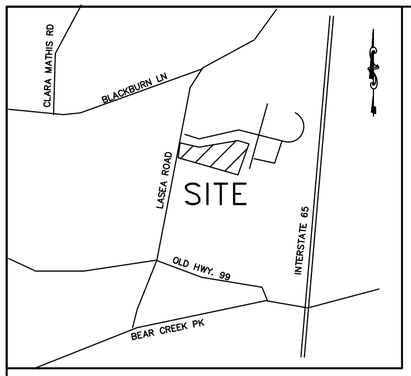
- After the pre-construction meeting, CPWS will then issue a formal Notice to Proceed. No construction of water improvements may take place prior to the Notice to Proceed.
- Applicant is required to construct all public water infrastructure per CPWS standard specifications and provide CPWS personnel unregulated access to the site to inspect the construction of the water infrastructure. No construction of water improvements may take place without a CPWS inspector present.

Please feel free to contact me at 931-388-4833 x7655 or Matt.Wheeler@cpws.com if you have questions or would like to discuss.

Sincerely,

Matthew J. Wheeler, P.E.
Vice President of Water Resources, CPWS

cc: Bart Anderson, CPWS
Eric King, Inflo Design Group
File 25-004



VICINITY MAP
NOT TO SCALE

STANDARD NOTES

1. THE HORIZONTAL LOCATION DATA SHOWN ON THIS SURVEY WAS GATHERED USING STANDARD RADIAL SURVEYING TECHNIQUES WITH AN ELECTRONIC TOTAL STATION AND DATA COLLECTOR AND GLOBAL POSITIONING SYSTEM (GPS) UNIT AND IS BASED UPON A POSITIONAL SOLUTION DERIVED FROM REAL-TIME KINEMATIC (GPS) OBSERVATIONS PROCESSED BY TENNESSEE DOT NETWORK. BEARINGS ARE EXPRESSED IN THE TENNESSEE STATE PLANE COORDINATE SYSTEM USING U.S. SURVEY FOOT (HORIZONTAL = NAD83-C.O.R.S.; VERTICAL = NAVD88; ZONE TN 4100, GEOID MODEL MID TN 25012A), USING SOKKIA GPS MODEL GRX3 GNSS RECEIVER RTK (L1+L2. HORIZONTAL ACCURACY=5mm+.05ppm AND VERTICAL ACCURACY=10mm+.08ppm.
2. THE WITHIN DESCRIBED TRACT LIES WITHIN AN AREA DESIGNATED AS ZONE "X" (UNSHADED) AS EVIDENCED ON FEMA MAPS NUMBERED 47119C0195E ON THE FLOOD INSURANCE RATE MAPS FOR MAURY COUNTY, TENNESSEE (DATED REVISED 04-16-2007).
3. OWNERSHIP INFORMATION INDICATED HEREON IS AS IDENTIFIED IN COUNTY RECORDS.
4. THIS SURVEYOR HAS NOT PHYSICALLY LOCATED ALL UNDERGROUND UTILITIES. ABOVE GRADE AND UNDERGROUND UTILITIES SHOWN WERE TAKEN FROM VISIBLE APPURTENANCES AT THE SITE, PUBLIC RECORDS, AND/OR MAPS PREPARED BY OTHERS. THIS SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION AS INDICATED. THEREFORE, RELIANCE UPON THE TYPE, SIZE AND LOCATION OF ALL UNDERGROUND UTILITIES SHOULD BE DONE SO WITH THIS CIRCUMSTANCE CONSIDERED. DETAILED VERIFICATION OF EXISTENCE, LOCATION AND DEPTH SHOULD ALSO BE MADE PRIOR TO ANY DECISION RELATIVE THERETO IS MADE. AVAILABILITY AND COST OF SERVICE SHOULD BE CONFIRMED WITH THE APPROPRIATE UTILITY COMPANY.
5. IN TENNESSEE IT IS A REQUIREMENT OF THE "UNDERGROUND UTILITY DAMAGE PREVENTION ACT" THAT ANYONE WHO ENGAGES IN EXCAVATION MUST NOTIFY ALL KNOWN UNDERGROUND UTILITY OWNER(S) NO LESS THAN THREE NOR MORE THAN TEN WORKING DAYS PRIOR TO THE DATE OF THEIR INTENT TO EXCAVATE AND ALSO TO AVOID ANY HAZARD OR CONFLICT. THE TENNESSEE ONE CALL TELEPHONE NUMBER IS 1-800-351-1111. UTILITIES WERE NOT CHECKED DURING THE COURSE OF THIS SURVEY.
6. THE WITHIN PLAT AND SURVEY WERE PREPARED WITHOUT BENEFIT OF CURRENT EVIDENCE OF SOURCE OF TITLE FOR THE SUBJECT TRACT OR ADJOINERS AND ARE THEREFORE SUBJECT TO ANY STATEMENT OF FACTS REVEALED BY EXAMINATION OF SUCH DOCUMENTS.
7. THE SURVEYOR'S LIABILITY FOR THIS DOCUMENT SHALL BE LIMITED TO THOSE PARTIES IDENTIFIED IN THE CERTIFICATION AND DOES NOT EXTEND TO ANY UNNAMED PARTY.
8. THE SUBJECT TRACT IS SHOWN ON MAURY COUNTY TAX MAP 73, AS PARCEL 17.02.
9. ALL IRON RODS (SET) ARE CAPPED AND STAMPED "H.H. SURVEY".

STANDARD LEGEND

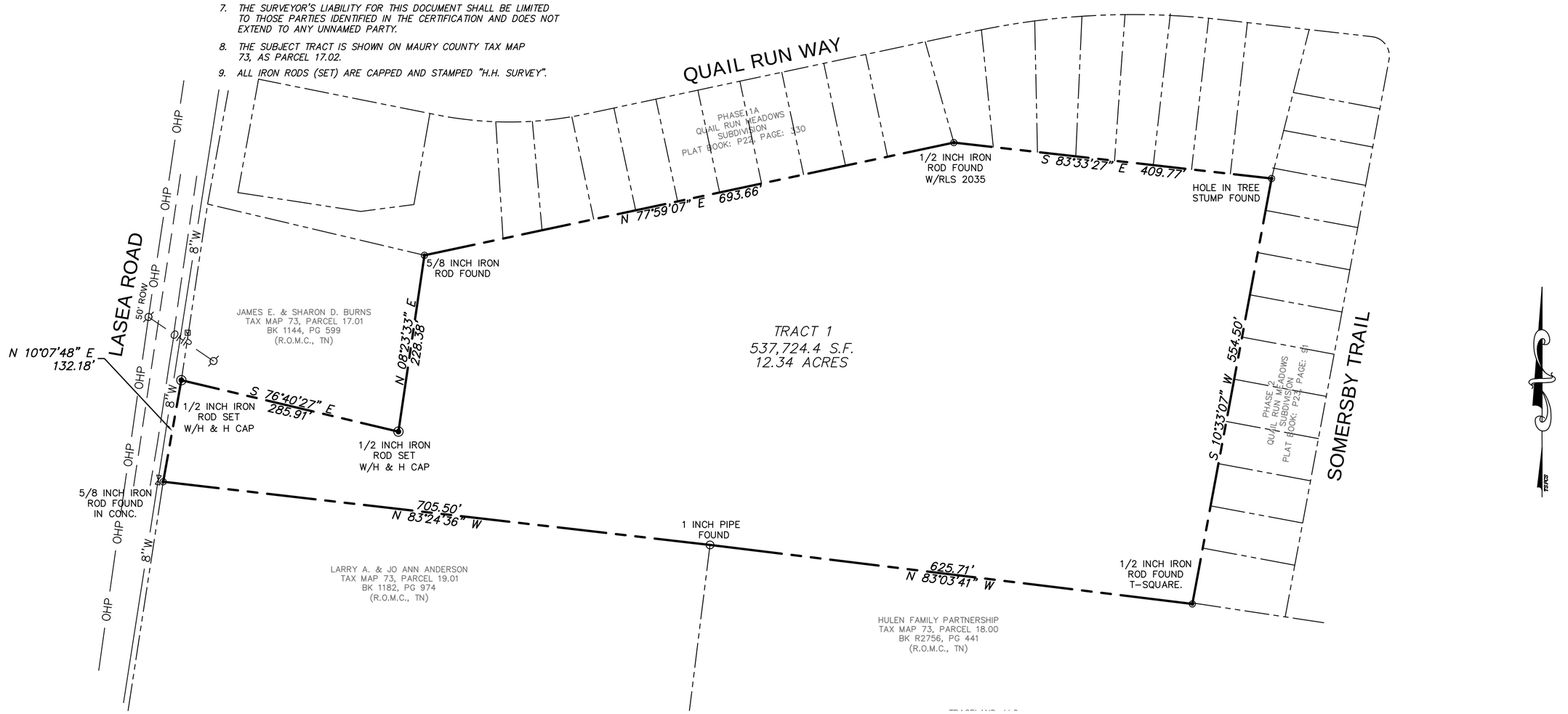
- IPF (IRON PIN FOUND)
- IPS (IRON PIN SET) H AND H SURVEY
- CONCRETE MONUMENT
- OHP — OVERHEAD UTILITY LINES
- WATER LINES

IF YOU DIG TENNESSEE...
CALL US FIRST!
1-800-351-1111
TENNESSEE ONE CALL
IT'S THE LAW

DAVID LEE CYPHERS
REGISTERED LAND SURVEYOR
STATE OF TENNESSEE 2779

I HEREBY CERTIFY THAT IN MY PROFESSIONAL OPINION, AS A LAND SURVEYOR REGISTERED IN THE STATE OF TENNESSEE, THE WITHIN SURVEY REPRESENTS A CATEGORY I SURVEY MADE UNDER MY SUPERVISION IN ACCORDANCE WITH T.C.A. SECTION 0820-3 AND THE RATIO OF PRECISION OF THE UNADJUSTED SURVEY EXCEEDS 1:10,000. THE FIELD WORK FOR THIS SURVEY WAS COMPLETED ON 01/29/2024.

DAVID LEE CYPHERS
RLS NUMBER 2779
DATE: MAY, 01, 2024



H & H LAND SURVEYING, INC.
P.O. BOX 2433
SMYRNA, TENNESSEE 37167
PHONE: (615) 831-0756 / E-MAIL: office@handhland.com

BOUNDARY SURVEY

THE MIKE SPARKS PROPERTY
0 LASEA ROAD
SPRING HILL, MAURY COUNTY, TENNESSEE
TAX MAP 73, PARCEL 17.02
RECORD BOOK R2379, PAGE 457-(R.O.M.C., TN)

DRAWN BY: TSH
CHECKED BY: DLC
Scale : 1" = 100'
GRAPHIC SCALE 0' 50' 100' 200'

DATE: MAY, 01, 2024	REVISIONS		
MK	DATE	BY	CHANGE

JOB NO. 2023-0498
SHEET 1 OF 1

CITY OF COLUMBIA TENNESSEE

DEVELOPMENT SERVICES
700 NORTH GARDEN STREET
COLUMBIA, TN 38401
PHONE: (931) 560-1560
FAX: (931) 560-1541

PLANNING COMMISSION
PROJECT DEVELOPMENT APPLICATION

SUBMITTAL REQUIREMENTS

Final Plat: * *1 hard copy of all materials for submittal + PDF copy on a USB flash drive (no multiple applications on one storage device)*
Fold hard copy submittals larger than 8½"x11"
All Others: * Please submit the Application online at City of Columbia | Permitting (onlama.com)

ADDRESS/LOCATION			
	TAX MAP: 73	GROUP:	PARCEL: 017.02
SUMMARY OF NATURE OF REQUEST AND WORK	Annexation of parcel and rezone to CD-3		

DATE OF PRE-APPLICATION CONFERENCE	1/15/2025	*Pre-application meetings are scheduled for Wednesdays.*

SELECT REQUEST	SUBMITTALS SHALL INCLUDE BUT NOT LIMITED TO:
❑ Comprehensive Plan Amendment ☒ Annexation ☒ Rezoning ❑ Preliminary Plat ❑ Final Plat ❑ PUD Preliminary Master Plan ❑ PUD Final Site Plan ❑ Site Development Plan ❑ Other: **File naming nomenclature examples:* *Freedom Point Site Plan* *Freedom Point Master Plan* *Freedom Point Final Plat*	**Annexations:** ☒ Annexation Permission Form **Annexations/Rezoning/Plan Amendments:** ☒ Requested Zone Listed ☒ Statement of Compliance with Comprehensive Plan ☒ Concept Plan **Preliminary Plats/Site Development Plans:** ❑ Plans and/or Plats conforming to City standards with signed and completed check list **All Annexations/Rezoning/Preliminary Plats/Site Development Plans and PUDS:** ❑ Receipt of Payment for Pre-Application Meeting ❑ Written Legal Description copy ❑ Columbia Water System Availability Letter ❑ Columbia Waste Water Department Will Serve Letter

	Plats/PUDs: ❑ Project Name (include Sections & Phases) ❑ Total Number of Lots/Residential Units ❑ Square Footage of Non-Residential Floor Space ❑ Total acreage

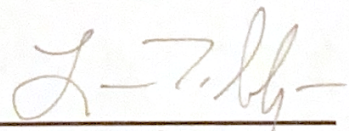
Applications and all required submittals must be filed with the Department of Development Services prior to the established deadline. Both the applicant and property owner (if different from applicant) must sign the application. Any requests to defer or move the item to future meeting dates must be requested by the resubmittal date listed on the Planning Commission schedule.

APPLICANT
All communications go to the Applicant's email that is provided.

NAME	Louis Sloyan	PHONE	615-678-8212
ADDRESS	111 SE Parkway Ct Franklin, TN 37064	EMAIL	Louis.sloyan@t2-eng.com

PROPERTY OWNER NAME	Mike Sparks	PHONE	931-982-3993
ADDRESS		EMAIL	superbuys37174@yahoo.com

If owner is not a natural person, documentation must be provided showing signing authority on behalf of the entity. If multiple persons are listed as owners in the records of the Maury County Assessor, all owners must sign or the signatory must provide documentation of authority to apply on behalf of record owner (i.e., Power of Attorney or notarized Letter of Authorization). In filling out this application, I attest that (1) I am familiar with the rules, regulations, and procedures of the City of Columbia & (2) all information contained herein is accurate & true to the best of my knowledge.

Louis Sloyan		2/17/2025
APPLICANT NAME	APPLICANT SIGNATURE	DATE
Mike Sparks		2/17/2025
PROPERTY OWNER NAME	PROPERTY OWNER SIGNATURE	DATE

Rev. 2/7/2024

T-SQUARE ENGINEERING
SITE DEVELOPMENT|TRAFFIC|WASTEWATER|SURVEYING

111 SE Parkway Court
Franklin, TN 37064
615.678.8212

www.T2-eng.com

City of Columbia
700 North Garden Street
Columbia, TN 38401

3/17/2025

RE: 1616 Lasea Road Annexation and Rezoning

Staff:

We would like to formally request that the property at 1616 Lasea Road, parcel ID 073 01702 000, be annexed into the City of Columbia and rezoned to CD-3 zoning.

This property is bounded to the north and east by Quail Run Meadows Subdivision, the west by Lasea Road, and the south by the CORE Spaces project that has received a Development Plan approval for 331 units (per the City of Columbia Development Tracker Map). The surrounding properties are located inside of the current City of Columbia limits and this annexation would assist in closing an existing "donut hole".

The future land use plan shows this parcel to be classified as Suburban Neighborhoods (SN), which has CD-3 listed as one of the Implementing Districts in the Connect Columbia plan. The CD-3 zoning would match the Quail Run Meadows Subdivision zoning that is adjacent to the north and the south and would be less dense than the approximate 6.9 units/acre of the approved CORE Spaces development plan to the south.

CD-3 Zoning is described as the "Neighborhood Large Lot Character District and consists of primarily medium density single-family detached residential area in which House is the predominant building type". The Zoning Ordinance continues to say "CD-3 is an appropriate District for the Suburban Neighborhoods Future Land Use…".

Please contact me with any questions or concerns.
Thank you,

Louis Sloyan, PE Professional Engineer
T-Square Engineering, Inc.
OFFICE: 615.678.8212
EMAIL: Louis.Sloyan@T2-Eng.com

CITY OF COLUMBIA TENNESSEE

DEVELOPMENT SERVICES
700 NORTH GARDEN STREET
COLUMBIA, TN 38401
PHONE: (931) 560-1560
FAX: (931) 560-1541

PLANNING COMMISSION
PROJECT DEVELOPMENT APPLICATION

SUBMITTAL REQUIREMENTS

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	TAX MAP: 73	GROUP:	PARCEL: 017.02
SUMMARY OF NATURE OF REQUEST AND WORK	Annexation of parcel and rezone to CD-3		

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❑ Comprehensive Plan Amendment ☒ Annexation ☒ Rezoning ❑ Preliminary Plat ❑ Final Plat ❑ PUD Preliminary Master Plan ❑ PUD Final Site Plan ❑ Site Development Plan ❑ Other: **File naming nomenclature examples:* *Freedom Point Site Plan* *Freedom Point Master Plan* *Freedom Point Final Plat*	**Annexations:** ☒ Annexation Permission Form **Annexations/Rezoning/Plan Amendments:** ☒ Requested Zone Listed ☒ Statement of Compliance with Comprehensive Plan ☒ Concept Plan **Preliminary Plats/Site Development Plans:** ❑ Plans and/or Plats conforming to City standards with signed and completed check list **All Annexations/Rezoning/Preliminary Plats/Site Development Plans and PUDS:** ❑ Receipt of Payment for Pre-Application Meeting ❑ Written Legal Description copy ❑ Columbia Water System Availability Letter ❑ Columbia Waste Water Department Will Serve Letter

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ADDRESS		EMAIL	superbuys37174@yahoo.com

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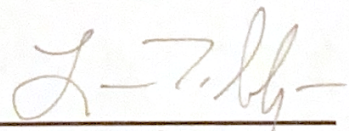
Louis Sloyan		2/17/2025
APPLICANT NAME	APPLICANT SIGNATURE	DATE
Mike Sparks		2/17/2025
PROPERTY OWNER NAME	PROPERTY OWNER SIGNATURE	DATE

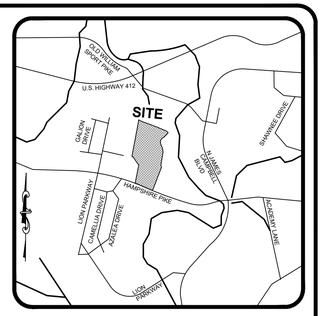
Rev. 2/7/2024

LEGEND

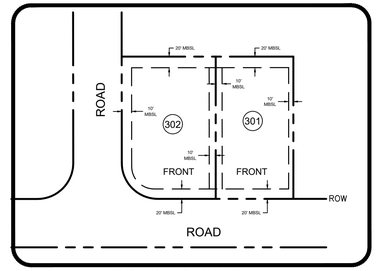
IRON PIN FOUND		FIRE HYDRANT		UTILITY POLE		PUBLIC UTIL. & DRAIN ESMT.	P.U.D.E.	BOUNDARY	
IRON PIN SET		SANITARY SEWER MH	SS	GUY ANCHOR		ADDRESSES	1234	CENTERLINE	
CONC. MON. FOUND		SANITARY SEWER CO	CO	COMMUNICATION BOX	C	HANDICAP SPACE		BUFFER	
CONC. MON. SET		AREA DRAIN		COMMUNICATION MH	C	SANITARY SEWER	8" SA — 8" SA	WATER FEATURE	
CONTROL POINT FOUND		CURB INLET		GAS METER	G	WATER	4" W — 4" W	TREE LINE	
CONTROL POINT SET		STORM MH	ST	GAS VALVE		UNDERGROUND ELEC	UGE — UGE	R.O.W.	RIGHT OF WAY
BENCH MARK		ELECTRIC METER-BOX	E	EVERGREEN TREE		OVERHEAD ELEC	OHE — OHE	PVMT.	EDGE OF PAVEMENT
WATER METER	W	ELECTRIC MH	E	SIDEWALK		GAS	4" G — 4" G	PUDE	PUBLIC UTILITY AND DRAINAGE EASEMENT
WATER VALVE		LIGHT POLE		MIN. BUILDING SETBACK	M.B.S.L	COMMUNICATIONS	COM — COM	G.I.E.	GREEN INFRASTRUCTURE EASEMENT

HATCH LEGEND

ROW DEDICATION



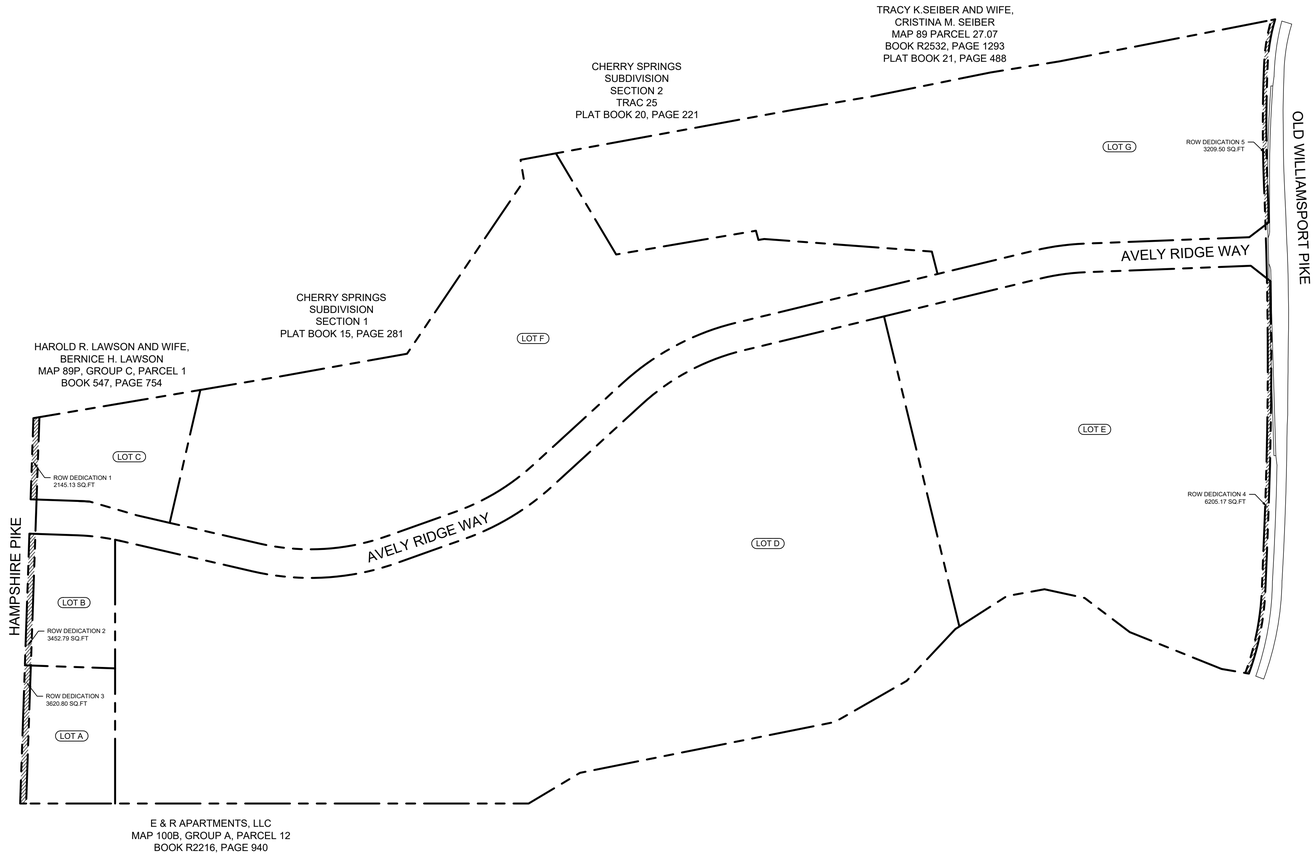
VICINITY MAP
NOT TO SCALE



TYPICAL LOT LAYOUT
N.T.S.

PLAT NOTES

1. THE PURPOSE OF THIS PLAT IS TO CREATE 7 LOTS AND DEDICATE RIGHT-OF-WAY.
2. SUBJECT PROPERTY IS PRESENTLY IDENTIFIED AS PARCEL 41.15, ON MAURY COUNTY TAX MAP 089. SAID PARCEL IS FURTHER IDENTIFIED AS THE PROPERTY DESCRIBED IN BOOK R2858, PAGE 105, REGISTERS OFFICE OF MAURY COUNTY, TENNESSEE.
3. THE PROPERTY SHOWN HEREON IS LOCATED WITHIN THE CITY OF COLUMBIA, MAURY COUNTY, TN. ALL MATTERS PERTAINING TO CONSTRUCTION, USE, LOCATION OF IMPROVEMENTS, SIGNAGE, PARKING, NOISE, VIBRATION, EMISSIONS, FIRE HAZARDS, RADIATION, ILLUMINATION, SETBACK PROVISIONS, ETC., ARE SUBJECT TO THE CITY OF COLUMBIA'S ZONING REGULATIONS AS INTERPRETED AND REGULATED BY THE DEPARTMENT OF DEVELOPMENT SERVICES.
4. EXISTING ZONING: CD-4
5. I HEREBY CERTIFY THAT THIS IS A CATEGORY IV SURVEY AND WAS CONDUCTED IN ACCORDANCE WITH RULE 0820-03.11 (GLOBAL POSITION SYSTEMS SURVEYS) ACCORDING TO THE CURRENT TENNESSEE MINIMUM STANDARDS OF PRACTICE AS PROMULGATED BY THE TENNESSEE STATE BOARD OF EXAMINERS FOR LAND SURVEYORS. THIS SURVEY WAS CONDUCTED WITH DUAL-FREQUENCY RTK GPS EQUIPMENT BASED ON THE TDOT CORPS NETWORK.
   a. POSITIONAL ACCURACY: 0.07'
   b. DATE OF SURVEY: 3/16/2023
   c. DATUM/EPOCH: TENNESSEE STATE PLANE (NAD83). OCCUPATIONS FOR CONTROL POINTS ARE 3 MINUTES EACH, SIDE SHOTS ARE 3 SECONDS.
   d. GEOID 3, ZONE 7 REVISED
6. NO COMBINED GRID FACTORS WERE USED.
7. BEARINGS SHOWN HEREON ARE BASED ON THE TENNESSEE STATE PLANE COORDINATE SYSTEM (NAD83). ELEVATIONS SHOWN HEREON ARE BASED ON NAVD88.
8. BY SCALED MAP LOCATION AND GRAPHIC PLOTTING ONLY, THIS PROPERTY LIES WITHIN ZONE "X" AS DESIGNATED ON CURRENT FEDERAL EMERGENCY MANAGEMENT AGENCY MAP NO. 47119C0280E, WITH AN EFFECTIVE DATE OF APRIL 16, 2007, WHICH MAKES UP A PART OF THE NATIONAL FLOOD INSURANCE PROGRAM. ZONE "X" IS AN AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN. ZONE "X" HAS TWO DESCRIPTIONS. PLEASE SEE FLOOD PLAIN MAP IF ZONE "X" IS SHADED. ***IF FIELD RUN CONTOURS ARE ESTABLISHED YOU MUST PLOT THE FLOOD LINE BASED ON BFE UNLESS THE PROPERTY IS IN ZONE A.
9. ALL CORNERS SHOWN ON THE FACE OF THE SURVEY WILL BE SET WITH 5/8 IRON ROD WITH CAP BEARING THIS SURVEYORS COMPANY NAME.
10. THE DEVELOPER ACKNOWLEDGES THAT ALL LOTS HAVE ADEQUATE BUILDING ENVELOPES AND NO VARIANCES WILL BE REQUIRED.
11. STORMWATER MAINTENANCE AGREEMENT RECORDED IN DEED BOOK ____, PAGES ____.
12. ALL STREETS AND ALLEYS ARE DESIGNATED AS PUBLIC RIGHT-OF-WAY; THE CITY OF COLUMBIA IS NOT RESPONSIBLE FOR THE REPLACEMENT OR REPAIR OF ANY PRIVATE STRUCTURES WITHIN PUBLIC EASEMENTS SHOULD THE STRUCTURES BE DISTURBED IN THE PROCESS OF THE CITY EXERCISING ITS EASEMENT RIGHTS.
13. STREETS, DRAINAGE EASEMENTS, STRUCTURES, AND CULVERTS SHALL BE MAINTAINED BY THE CITY OF COLUMBIA. DETENTION PONDS AND OUTLET STRUCTURES WITHIN PUBLIC DRAINAGE EASEMENTS ARE TO BE MAINTAINED BY THE HOMEOWNER'S ASSOCIATION.
14. OPEN SPACE AREAS, ROADWAY MEDIANS, BRICK PEDESTRIAN CROSSWALKS, BIKE PATHS, SIDEWALKS OUTSIDE OF RIGHT-OF-WAYS, TRAILS AND DETENTION FACILITIES SHALL BE MAINTAINED BY THE HOME OWNER'S ASSOCIATION AND SHALL BE PUBLIC UTILITY, DRAINAGE AND ACCESS EASEMENTS.
15. WITHIN NEW DEVELOPMENTS AND FOR OFF-SITE LINES CONSTRUCTED AS A RESULT OF, OR TO PROVIDE SERVICE TO, THE NEW DEVELOPMENT, ALL UTILITIES, (INCLUDING CABLE TELEVISION, ELECTRICAL, NATURAL GAS, SEWER, TELEPHONE AND WATER LINES) SHALL BE PLACED UNDERGROUND.
16. MAINTENANCE OF ALL STORMWATER MANAGEMENT FEATURES SHALL BE THE RESPONSIBILITY OF THE PROPERTY OWNER(S) OR HOA.
17. NO OBSTRUCTIONS OR ENCROACHMENTS WHICH IMPEDE THE FLOW OF STORMWATER SHALL BE PERMITTED WITHIN PUBLIC DRAINAGE EASEMENTS BETWEEN LOTS. THE CITY OF COLUMBIA IS NOT RESPONSIBLE FOR REPAIR OR REPLACEMENT OF ANY ENCROACHMENTS THAT ARE DAMAGED OR REMOVED IN THE COURSE OF MAINTENANCE ACTIVITY WITHIN EASEMENTS.
18. THE CITY OF COLUMBIA WATER MANAGEMENT DEPARTMENT HAS UNRESTRICTED ACCESS TO ITS DOMESTIC WATER, SANITARY SEWER, RECLAIM WATER LINES OR SYSTEM IMPROVEMENTS LOCATED WITHIN ITS EXCLUSIVE EASEMENTS WITHIN THE DEVELOPMENT. IN THE EVENT LANDSCAPING, FENCING, CONCRETE OR OTHER STRUCTURES ARE INSTALLED OR PLACED WITHIN A CITY OF COLUMBIA EASEMENT, THE CITY OF COLUMBIA SHALL HAVE THE RIGHT TO REMOVE SUCH ENCROACHMENTS WITHIN THE EASEMENT AS MAY BE NECESSARY FOR THE CITY OF COLUMBIA TO REPAIR, MAINTAIN OR REPLACE ITS INFRASTRUCTURE WHICH IS NOW OR IN THE FUTURE MAY BE LOCATED WITHIN THE EASEMENT WITHOUT OBTAINING ANY FURTHER PERMISSION FROM THE PROPERTY OWNER OR HOA. THE PROPERTY OWNER OR HOA SHALL BE RESPONSIBLE FOR REPAIRING AND/OR REPLACING ANY SUCH LANDSCAPING, FENCING, CONCRETE, OR OTHER STRUCTURES REMOVED OR DISTURBED BY THE CITY OF COLUMBIA IN COMMON OPEN SPACE LOTS AND IN AREAS OWNED BY THE PROPERTY OWNER OR HOA AT NO EXPENSE TO THE CITY OF COLUMBIA. INDIVIDUAL HOMEOWNERS SHALL BE RESPONSIBLE FOR STRUCTURES REMOVED OR DISTURBED BY THE CITY OF COLUMBIA WITHIN AN EASEMENT ON THE HOMEOWNER'S LOT AT THE HOMEOWNER'S EXPENSE.
19. PUBLIC UTILITY AND DRAINAGE EASEMENTS (PUDE) SHALL BE REQUIRED AND BE TEN (10) FEET IN WIDTH ON ALL PROPERTY LINES PARALLEL AND ABUTTING PUBLIC ROADS OR RIGHTS-OF-WAY, AND FIVE (5) FEET IN WIDTH ON ALL INTERIOR LOT LINES, EXCEPT FOR INTERIOR LOT LINES WITH A ZERO LOT LINE OR A COMMON WALL ALONG A LOT LINE.



Parcel Area Table		
Parcel #	Area (SF)	Area (AC)
LOT A	51984.83'	1.193
LOT B	47303.93'	1.086
LOT C	67509.15'	1.550
LOT D	1081843.00'	24.836
LOT E	526169.64'	12.079
LOT F	488245.92'	11.209
LOT G	479760.88'	11.014

ROW Dedication Area Table		
Parcel #	Area (SF)	Area (AC)
ROW Dedication 1	2145.13'	0.049
ROW Dedication 2	3452.79'	0.079
ROW Dedication 3	3620.80'	0.083
ROW Dedication 4	6205.17'	0.142
ROW Dedication 5	3209.50'	0.074

OWNER: HAMPSHIRE PIKE HOLDINGS LLC
18100 VON KARMAN AVENUE,SUITE 500
IRVINE,CA,92612
949-518-2191

ENGINEER: KIMLEY-HORN AND ASSOCIATES, INC.
10 LEA AVENUE, SUITE 400
NASHVILLE, TN 37210
615-564-2701
KELLEY FRANK@KIMLEY-HORN.COM

SURVEYOR: SEAN ALAN MCGOWAN, PE, PS
WILSON & ASSOCIATES, P.C.
108 BEASLEY DRIVE
FRANKLIN, TN 37064
(615) 794-2176
SMCGOWAN@WILSONPC.COM

SEAN ALAN MCGOWAN — REGISTERED LAND SURVEYOR — AGRICULTURE — COMMERCE — TENNESSEE NO. 3516

WILSON & ASSOCIATES, P.C. — Engineering/Surveying/Environmental

150 0 75 150 300
GRAPHIC SCALE: 1" = 150'

HAMPSHIRE PIKE

CERTIFICATE OF APPROVAL OF WATER SYSTEM

I HEREBY CERTIFY THAT THE WATER SYSTEM(S) OUTLINED OR INDICATED ON THIS FINAL SUBDIVISION PLAT HAS/HAVE 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.

NAME, TITLE, AGENCY OF AUTHORIZED APPROVING AGENT — DATE

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.

CITY ENGINEER
COLUMBIA, TENNESSEE — DATE

CERTIFICATE OF SURVEY ACCURACY

I (WE) HEREBY CERTIFY THAT TO THE BEST OF MY (OUR) KNOWLEDGE AND BELIEF THIS IS A TRUE AND ACCURATE SURVEY OF THE PROPERTY SHOWN HEREON; THAT THIS IS A CLASS "IV" LAND SURVEY AS DEFINED IN TITLE 62, CHAPTER 18, TENNESSEE CODE ANNOTATED, AND THAT THE RATIO OF PRECISION IS GREATER THAN OR EQUAL TO 1:10,000.

DATE

SEAN ALAN MCGOWAN, PE, PS, TENNESSEE RLS NO. 3516
WILSON & ASSOCIATES, P.C.
108 BEASLEY DRIVE, FRANKLIN, TN 37064
(615) 794-2176
SMCGOWAN@WILSONPC.COM

CERTIFICATE OF OWNERSHIP AND DEDICATION

I (WE) HEREBY CERTIFY THAT I AM (WE ARE) THE OWNER(S) OF THE PROPERTY SHOWN AND DESCRIBED HEREON AS EVIDENCED IN BOOK NUMBER R2858, PAGE 105, MAURY COUNTY REGISTERS OFFICE, AND THAT I (WE) HEREBY ADOPT THIS FINAL SUBDIVISION PLAT OF THE PROPERTY AS SHOWN HEREON AND DEDICATE ALL PUBLIC WAYS AND EASEMENTS AS NOTED WITH MY (OUR) FREE CONSENT.

OWNER — DATE

CERTIFICATE OF APPROVAL OF STREETS, DRAINAGE & UTILITIES

I HEREBY CERTIFY THAT THE STREETS, DRAINAGE, AND UTILITIES OUTLINED OR INDICATED ON THIS FINAL SUBDIVISION PLAT HAVE BEEN INSTALLED IN ACCORDANCE WITH CITY SPECIFICATIONS, OR A PERFORMANCE SURETY IN THE AMOUNT OF $_____ FOR STREETS AND DRAINAGE HAS BEEN POSTED WITH THE CITY OF COLUMBIA, TENNESSEE, TO ASSURE COMPLETION OF SUCH IMPROVEMENTS.

CITY ENGINEER
COLUMBIA, TENNESSEE — DATE

CERTIFICATE OF APPROVAL FOR SANITARY SEWER SYSTEM

I HEREBY CERTIFY THAT THE SANITARY SEWER SYSTEM OUTLINED OR INDICATED ON THIS FINAL SUBDIVISION PLAT HAS BEEN INSTALLED IN ACCORDANCE WITH THE CURRENT LOCAL AND STATE GOVERNMENT REQUIREMENTS, OR A SUFFICIENT BOND OR OTHER SURETY HAS BEEN FILED TO GUARANTEE SAID INSTALLATION.

DIRECTOR OF WASTEWATER DEPARTMENT
COLUMBIA, TENNESSEE — DATE

CERTIFICATE OF APPROVAL FOR RECORDING

I HEREBY CERTIFY THAT THE SUBDIVISION PLAT SHOWN HEREON HAS BEEN FOUND TO COMPLY WITH THE CITY OF COLUMBIA SUBDIVISION REGULATIONS, WITH THE EXCEPTION OF SUCH VARIANCES, IF ANY, AS NOTED IN THE MINUTES OF THE COLUMBIA MUNICIPAL PLANNING COMMISSION, AND THAT IT HAS BEEN APPROVED FOR RECORDING IN THE OFFICE OF THE MAURY COUNTY REGISTER OF DEEDS.

SECRETARY, PLANNING COMMISSION
COLUMBIA, TENNESSEE — DATE

CERTIFICATE OF APPROVAL OF SUBDIVISION NAME & STREET NAMES

SUBDIVISION NAME AND STREET NAMES APPROVED BY THE CITY ENGINEERING DEPARTMENT AND BY E-911 MAURY COUNTY.

MAURY COUNTY E911 — DATE

RECORDING STAMP HERE

IF YOU CAN READ THIS YOU ARE HOLDING AN UNRECORDED COPY

FINAL SUBDIVISION PLAT

CITY OF COLUMBIA - MAURY COUNTY - TENNESSEE

TOTAL ACRES:	67.242	TOTAL NO. OF LOTS:	07
ACRES NEW RD/ST:	3.849 (ROW)	L.F. OF NEW RD/ST:	2749.5717
ACRES OPEN SPACE:	0.000	CIVIL DISTRICT:	3RD
DRAWN BY:	AS	CLOSURE ERROR:	SEE NOTE
SCALE:	1" = 150'	DATE:	03/17/2025

WA PROJECT NO. 21-1752 — SHEET 1 OF 2

Curve Table					
Curve #	Length	Radius	Delta	Chord Direction	Chord Length
C1	93.65'	375.01'	14° 18' 31"	S62° 07' 47"E	93.41'
C2	91.57'	382.50'	13° 43' 01"	S62° 25' 32"E	91.35'
C3	263.09'	3067.97'	4° 54' 48"	S71° 44' 27"E	263.01'
C4	263.74'	3075.50'	4° 54' 48"	S71° 44' 27"E	263.66'
C5	70.30'	8500.11'	0° 28' 26"	S73° 57' 38"E	70.30'
C6	75.56'	8492.43'	0° 30' 35"	S73° 56' 33"E	75.56'
C7	112.41'	8492.43'	0° 45' 30"	S73° 18' 30"E	112.41'
C8	515.22'	8502.67'	3° 28' 19"	S71° 09' 06"E	515.14'
C9	520.87'	8492.43'	3° 30' 51"	S71° 10' 20"E	520.79'
C10	178.22'	575.00'	17° 45' 32"	S60° 32' 09"E	177.51'
C11	177.30'	567.50'	17° 54' 01"	S60° 27' 54"E	176.58'
C12	23.64'	542.26'	2° 29' 53"	N21° 26' 26"E	23.64'
C13	270.04'	480.00'	32° 14' 00"	N14° 45' 19"E	266.49'
C14	191.56'	480.00'	22° 51' 58"	N12° 47' 40"W	190.29'
C15	272.08'	540.00'	28° 52' 06"	N9° 47' 36"W	269.21'
C16	107.15'	540.00'	11° 22' 08"	N10° 19' 31"E	106.97'
C17	95.24'	480.00'	11° 22' 08"	S10° 19' 31"W	95.09'
C18	241.85'	480.00'	28° 52' 06"	S9° 47' 36"E	239.30'
C19	215.51'	540.00'	22° 51' 58"	S12° 47' 40"E	214.08'
C20	307.12'	540.00'	32° 35' 10"	S14° 55' 55"W	303.00'
C21	12.62'	480.00'	1° 30' 23"	S30° 28' 19"W	12.62'
C22	79.66'	480.00'	9° 30' 30"	S24° 57' 52"W	79.57'

HATCH LEGEND

ROW DEDICATION

DETENTION POND

TRACY K.SEIBER AND WIFE,
CRISTINA M. SEIBER
MAP 89 PARCEL 27.07
BOOK R2532, PAGE 1293
PLAT BOOK 21, PAGE 488

CHERRY SPRINGS
SUBDIVISION
SECTION 2
TRAC 25
PLAT BOOK 20, PAGE 221

CHERRY SPRINGS
SUBDIVISION
SECTION 1
PLAT BOOK 15, PAGE 281

HAROLD R. LAWSON AND WIFE,
BERNICE H. LAWSON
MAP 89P, GROUP C, PARCEL 1
BOOK 547, PAGE 754

E & R APARTMENTS, LLC
MAP 100B, GROUP A, PARCEL 12
BOOK R2216, PAGE 940

POB
N:470741.50
E:1649350.82

N7°50'56"E 509.44'
N8°36'08"E 165.39'
N6°48'18"E 251.83'
N9°05'30"E 147.07'
N7°12'33"E 451.72'
N37°45'08"W 346.68'
N7°26'30"E 246.86'
N8°34'35"E 297.19'
N22°32'38"E 352.32'
N8°05'09"E 155.25'
N8°07'29"E 119.25'
N8°39'04"E 507.51'
165.30'
342.21'
S69°47'23"E 172.88'
N69°47'21"W 170.32'
S58°46'30"E 286.06'
S85°24'55"E 669.08'
S69°24'54"E 133.40'
S40°07'42"W 207.42'
S28°34'01"E 148.88'
S11°34'10"E 173.63'
S6°57'14"W 545.10'
S12°37'01"E 125.08'
S18°14'43"W 149.98'
N18°14'27"E 903.38'
716.88'
186.50'
S20°10'59"W 176.65'
N71°45'33"W 553.00'
N69°47'23"W 276.22'
N69°47'23"W 269.70'
N69°47'23"W 289.87'
N69°47'23"W 289.46'
269.70'
283.30'

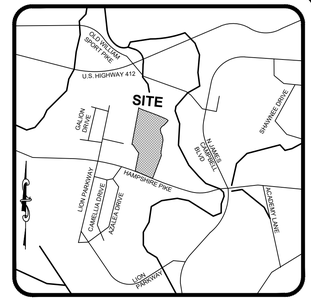
AVELY RIDGE WAY
(PUBLIC - MINOR LOCAL)

OLD WILLIAMSPORT PIKE

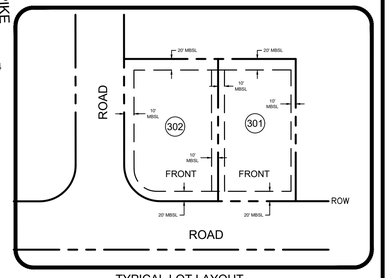
HAMPSHIRE PIKE

LOT A
LOT B
LOT C
LOT D
LOT E
LOT F
LOT G

POND
WATER QUALITY DETENTION POND
RETAINING WALL
TOP OF BANK
BIGBY CREEK
30' STREAM BUFFER
60' STREAM BUFFER
25' ACCESS EASEMENT
ROW DEDICATION 1
2145.13 SQ.FT
ROW DEDICATION 2
3452.79 SQ.FT
ROW DEDICATION 3
3620.80 SQ.FT
ROW DEDICATION 4
8205.17 SQ.FT
ROW DEDICATION 5
3209.50 SQ.FT
20' MBSL (TYP.)
10' MBSL (TYP.)
GAS



VICINITY MAP
NOT TO SCALE



TYPICAL LOT LAYOUT
N.T.S.

Parcel Line Table		
Line #	Length	Direction
L1	75.25'	N7°50'56"E
L2	8.44'	N7°12'30"E
L3	9.18'	S19°07'41"E
L4	9.66'	N56°21'44"E
L5	7.62'	S27°51'17"W
L6	50.44'	S27°52'28"W
L7	118.69'	S55°18'29"W
L8	86.07'	S30°29'38"W
L9	79.95'	S7°58'19"W
L10	118.35'	S14°22'49"E
L11	10.00'	S14°22'49"E
L12	12.51'	S18°17'07"W
L13	12.50'	S20°10'59"W
L14	12.50'	N20°12'37"E
L15	72.00'	N69°47'23"W
L16	12.50'	S20°12'37"W
L17	12.76'	N8°39'08"E
L18	89.26'	N37°28'50"W
L19	44.41'	N81°16'34"W
L20	88.09'	N20°12'37"E
L21	102.68'	N34°29'23"E

Parcel Line Table		
Line #	Length	Direction
L22	70.69'	N31°13'30"E
L23	135.00'	N31°13'30"E
L24	60.03'	N31°12'59"E
L25	151.47'	N1°21'41"W
L26	254.36'	N24°13'39"W
L27	434.74'	N4°38'28"E
L28	12.28'	N8°34'35"E
L29	20.09'	S86°45'59"E
L30	48.48'	S86°12'18"E
L31	207.91'	N4°38'28"E
L32	345.66'	N16°00'35"E
L33	42.70'	N19°07'41"W
L34	42.97'	S56°21'44"W
L35	346.49'	S16°00'35"W
L36	337.96'	S4°38'28"W
L37	304.68'	S4°38'28"W
L38	254.36'	S24°13'39"E
L39	151.47'	S1°21'41"E
L40	274.49'	S31°13'30"W
L41	8.61'	S31°13'30"W
L42	88.09'	S20°12'37"W

LEGEND

IRON PIN FOUND	FIRE HYDRANT	UTILITY POLE	PUBLIC UTIL. & DRAIN ESMT.
IRON PIN SET	SANITARY SEWER MH	GUY ANCHOR	ADDRESSES
CONC. MON. FOUND	SANITARY SEWER CO	COMMUNICATION BOX	HANDICAP SPACE
CONC. MON. SET	AREA DRAIN	COMMUNICATION MH	SANITARY SEWER
CONTROL POINT FOUND	CURB INLET	GAS METER	WATER
CONTROL POINT SET	STORM MH	GAS VALVE	UNDERGROUND ELEC
BENCH MARK	ELECTRIC METER-BOX	EVERGREEN TREE	OVERHEAD ELEC
WATER METER	ELECTRIC MH	SIDEWALK	GAS
WATER VALVE	LIGHT POLE	MIN. BUILDING SETBACK M.B.S.L	COMMUNICATIONS

P.U.D.E. 1234

BOUNDARY	
CENTERLINE	
BUFFER	
WATER FEATURE	
TREE LINE	
R.O.W.	RIGHT OF WAY
PVMT.	EDGE OF PAVEMENT
PUDE	PUBLIC UTILITY AND DRAINAGE EASEMENT
G.I.E.	GREEN INFRASTRUCTURE EASEMENT

SEAN ALAN MCGOWAN
REGISTERED LAND SURVEYOR
AGRICULTURE
TENNESSEE NO. 3515

WILSON & ASSOCIATES, P.C.
Engineering/Surveying/Environmental

100 0 50 100 200
GRAPHIC SCALE: 1" = 100'

HAMPSHIRE PIKE

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FINAL SUBDIVISION PLAT

CITY OF COLUMBIA - MAURY COUNTY - TENNESSEE

TOTAL ACRES:	67.242	TOTAL NO. OF LOTS:	07
ACRES NEW RD/ST:	3.849 (ROW)	L.F. OF NEW RD/ST:	2749.5717
ACRES OPEN SPACE:	0.000	CIVIL DISTRICT:	3RD
DRAWN BY:	AS	CLOSURE ERROR:	SEE NOTE
SCALE:	1" = 100'	DATE:	03/17/2025

WA PROJECT NO. 21-1752 SHEET 2 OF 2

Appendix B: Subdivision Development Agreement

This DEVELOPMENT AGREEMENT is made and entered into on this

_____ day of _____, 20_____ ,
between THE CITY OF COLUMBIA, TENNESSEE, (hereinafter the "CITY"), and

_____, the DEVELOPER (hereinafter the "DEVELOPER") named on the Addendum to this Agreement attached hereto and by this reference made a part hereof (hereinafter the "ADDENDUM").

WITNESSETH:

WHEREAS, the DEVELOPER desires to develop the property described on the ADDENDUM (hereinafter the "PROJECT"); and,

WHEREAS, the Development Plan of the PROJECT has been approved by the Columbia Municipal Planning Commission (hereinafter the “CMPC”) on the

_____ day of _____, 20_____ ,
pursuant to Tennessee Code Annotated Title 13, Chapter 4, and the Subdivision Regulations of Columbia, Tennessee (hereinafter the "SUBDIVISION REGULATIONS”); and,

WHEREAS, the DEVELOPER is the owner of the PROJECT and has authority to engage in such development; and,

WHEREAS, the DEVELOPER desires to develop and improve said PROJECT; and,

WHEREAS, in order to provide for the health, safety, and welfare of future residents of the PROJECT, it will be necessary for certain improvements to the CITY'S utility systems, public infrastructure, and common areas to be constructed within and to serve the PROJECT including but not be limited to roads, bridges, sidewalks, pedestrian facilities, stormwater facilities, street signs, markings, signals, street lighting, recreation and park facilities, landscaping, and the like (hereinafter the “IMPROVEMENTS”); and,

WHEREAS, in order for the IMPROVEMENTS to be fully integrated with the utility systems and public infrastructure of the CITY and to function in a satisfactory manner, the DEVELOPER has agreed to construct, in accordance with the Subdivision Regulations and other rules, regulations, and ordinances of the CITY, the IMPROVEMENTS in said PROJECT and extend utilities to the PROJECT at their own cost; and,

WHEREAS, the CITY is willing to accept the dedication of the streets, utilities, and other improvements as determined in the Development Plan of the PROJECT, subject to the City of Columbia City Council approval by resolution, and subject to the applicant's compliance with all requirements in this agreement and applicable existing laws of the CITY of Columbia and the State of Tennessee,

NOW, THEREFORE, it is agreed and understood as follows:

B1 General Conditions

B1.1 Construction Costs

The DEVELOPER shall pay for all material and labor necessary to install and complete the roads, sidewalks, sewers, utilities, and other facilities in accordance with this agreement.

B1.2 City Ordinances, Rules and Regulations

All currently existing CITY ordinances, rules and regulations, and the Subdivision Regulations adopted by the CMPC are made a part of this agreement. In the event of a conflict between the terms of this agreement and a CITY ordinance, the ordinance shall prevail. In the event of a conflict between the terms of this agreement and the Subdivision Regulations, the Subdivision Regulations shall prevail. All work done under this agreement is to be performed in accordance with plans and specifications approved by the City and made a part, hereof.

B1.3 Fees

Review fees, inspection fees, and other amounts established by the CITY shall be paid prior to any review of the plans. If the DEVELOPER fails to install the facilities in accordance with the terms of this Agreement, no portion of the review fees, inspection fees, or other amounts paid to the CITY shall be refundable to the DEVELOPER.

B1.4 Inspection

The CITY shall have a continuous right to inspect the work and facilities to assure that the work and facilities are in accordance with the Subdivision Regulations, approved Construction Plans, and other rules, regulations, and ordinances of the CITY.

B1.5 Right of Entry

The CITY shall have the right, in case of breach of the Performance Agreement, to enter upon any property of the DEVELOPER and take all necessary actions to complete the work and obligations not completed.

B1.6 Easements

The DEVELOPER shall obtain and dedicate to the CITY or cause to be dedicated to the CITY, either by dedication on the plat or by easement deed, in either case in a form acceptable to the CITY, permanent easements of such widths as required by the CITY and noted on the Plans. The DEVELOPER further agrees to grant the necessary easements and rights-of-way across the DEVELOPER's properties without expense to the CITY and waive any claim for damages.

B1.7 Stormwater Maintenance Agreement

If the PROJECT includes any detention or retention ponds, common drainage ditches, water quality facilities, or stormwater facilities outside of the CITY rights-of-way, the DEVELOPER will submit a Stormwater Maintenance Agreement, to be filed with and recorded with the Final Plat.

B1.8 Attorney Fees and Other Expenses

The DEVELOPER shall pay all reasonable costs and expenses incurred by the CITY in enforcing or completing this agreement. The DEVELOPER shall pay all costs and expenses, including the CITY'S attorney fees, of any legal proceedings brought by the CITY against the DEVELOPER seeking remedies for the DEVELOPER'S failure to perform any of its obligations hereunder, whether or not any proceedings are prosecuted to judgment.

B1.9 Agreement Not Assignable

No third party shall obtain any benefits or rights under this agreement nor shall the rights or duties be assigned by either party.

B1.10 Revocation and Interpretation

This agreement shall bind the DEVELOPER when executed by the DEVELOPER and may not be revoked by the DEVELOPER without permission of the CITY, even if the agreement has not been executed by the CITY, or does not bind CITY, for other reasons. This agreement shall be interpreted in accordance with Tennessee law and may only be enforced in the Chancery Court or Circuit Court or Court of competent jurisdiction of Maury County, Tennessee, and Tennessee Appellate Courts.

B1.11 No Oral Agreement

This agreement may not be orally amended and supersedes all prior negotiations, commitments, or understandings.

B1.12 Separability

If any portion of this agreement is held to be unenforceable, the CITY shall have the right to determine whether the remainder of the agreement shall remain in effect, or whether the agreement shall be void and all rights of the DEVELOPER pursuant to this agreement terminated.

B 1.13 Transferability

The DEVELOPER agrees to not transfer the property on which this PROJECT is to be located without first providing the CITY with written notice. The transferee shall provide the CITY an Assumption Agreement of this Agreement, whereby the transferee agrees to perform the IMPROVEMENTS required under this agreement and to provide a performance surety. The DEVELOPER understands that if the DEVELOPER transfers said property without providing the notice of transfer and Assumption Agreement as required herein, they will be in breach of this agreement and in violation of the Subdivision Regulations.

B1.14 Indemnity

The DEVELOPER shall indemnify and hold the CITY harmless from all loss, costs, expenses, liability, money damages, penalties, or claims arising out of any work covered by this agreement, including any attorney fees incurred by the CITY in connection therewith. Inspection of the IMPROVEMENTS by an authorized representative of the CITY shall not constitute a waiver by the CITY of any defect or of any of the DEVELOPER'S obligations hereunder.

B1.15 Binding Effect

This agreement shall be binding upon the DEVELOPER and the DEVELEPOR's heirs, administrators, executors, assigns, and any other successors in interest.

B1.16 Entire Agreement

This document contains the entire agreement between the parties, and there are no collateral understandings or agreements between them. No variations or alterations of the terms of this agreement shall be binding upon either of the parties, unless the same be reduced to writing and made an amendment to this agreement.

B1.17 Headings

Paragraph titles and headings contained herein are inserted for convenience only and shall not be deemed a part of the agreement and in no way shall define, limit, extend, or describe the scope or intent of any provision, hereof.

B2 Performance Surety

At the time of execution of this agreement, the DEVELOPER shall provide the CITY a performance surety, in an amount determined by the City Engineer for the IMPROVEMENTS and other items specified by the Construction Plans, plats, and plans approved by the CMPC. This performance surety shall secure performance of all obligations of the DEVELOPER under this agreement. The performance surety shall meet all requirements established in Chapter 4: Performance Agreement of the Subdivision Regulations and secure full compliance with all terms and conditions of this agreement. The performance surety may be called for failure to comply with the provisions of this agreement in whole or in part according to the terms of the performance surety. The performance surety will not be released, except and until there has been full compliance with this agreement.

B3 Construction

B3.1 Construction Plans

The DEVELOPER shall submit to the CITY, Construction Plans describing in reasonable detail all utility systems, all storm water management systems, all street systems, pedestrian facilities, and all IMPROVEMENTS. The Construction Plans shall be designed according to the Engineering Standards and Specifications, all other codes and ordinances enforced by the City, and sound engineering judgment. The design of all utility systems shall follow the State of Tennessee and utility provider design criteria and specifications. In the event of a disagreement as to compliance with or interpretation of the Construction Plans and the CITY'S specifications, the decision of the CITY shall be final and binding on the DEVELOPER. The Construction Plans shall be prepared by a design professional licensed by the State of Tennessee to design all systems and shall bear the seal, signature, date, and license number of the professional preparing the Construction Plans.

B3.2 Commencement of Construction

Construction of IMPROVEMENTS may not begin until the following events have occurred:

A. The Preliminary Plat has been approved by the CMPC;
B. The Construction Plans are approved by the CITY;
C. The Tennessee Department of Environment and Conservation has approved the applicable portions of the Plans and has confirmed its approval to the CITY and/or DEVELOPER in writing;
D. The CITY shall have received an appropriately executed Development Agreement; and
E. The DEVELOPER shall give the CITY notice of commencement of construction, in writing at least one (1) working day prior to commencement.

B3.3 Site Grading

The DEVELOPER, hereby, agrees to construct all site grading to comply with the approved Construction Plans, including the approved Erosion Control Plan for the PROJECT and to comply with the Engineering Standards and Specifications, Stormwater Ordinance, and all other codes and ordinances enforced by the CITY.

B3.4 Storm Water Management Systems

The DEVELOPER shall be responsible for all storm water management work made necessary by the development of this PROJECT. It is understood and agreed that the CITY in its proprietary function is not and could not be expected to oversee, supervise, or direct the construction of all drainage improvements, and the excavation incident thereto. Neither is the CITY vested with the original design responsibility nor the means to formally survey elevations or the locations of improvements at every stage of the construction process. The CITY is vested with the right of periodic inspections, stop work order, and final approval as a measure of secondary or subsequent enforcement. The DEVELOPER has and shall retain the responsibility to properly anticipate, survey, design and construct the subdivision storm water improvements and give full assurance that same shall not adversely affect the flow or quality of surface water from or upon any property. In providing technical assistance, plan and design review, the CITY does not and shall not relieve or accept any liability from the DEVELOPER.

B3.5 Street Construction

The DEVELOPER, hereby, agrees to construct and improve the streets shown on the Construction Plans to comply with the CITY's specifications and to the satisfaction and approval of the City Engineer by grading, draining, subgrade preparation, base preparation, curbing, signage, striping, signalization, sidewalk installation, and paving with the required preparation, amounts, and types of material. The DEVELOPER further agrees to pay the cost of all engineering, inspection and laboratory cost incidental to the construction of subdivision streets including but not limited to material and density testing. The DEVELOPER further agrees to make all necessary adjustments to manholes and valve boxes to meet finished surface grade and to repair subsurface or base material, as required, in areas directed by the CITY Engineer, prior to application of final surface.

B3.6 Time Period for Construction

The DEVELOPER agrees to be bound to complete, within three (3) years of commencement of construction, all IMPROVEMENTS shown on the plat and plans and all things required by this agreement.

The DEVELOPER further agrees that if due to unforeseen circumstances, he is unable to complete all work included in this agreement within the time specified above, but desires to complete said agreement to the satisfaction of the CITY, the DEVELOPER shall submit a written request for extension of the agreement period to the CITY at least sixty (60) days prior to the expiration of the existing agreement period, specifying the reason for the DEVELOPER's failure to complete the work as agreed and a prospective date for such completion. The DEVELOPER further agrees that if the performance surety executed to secure the value of the work to be performed under this agreement, due to inflation or rising costs, is determined to be inadequate by the City Engineer to secure the cost of said IMPROVEMENTS at the time an extension is sought, the DEVELOPER will provide the additional security to bring the performance surety amount in line with current cost projections as made by the CITY. The DEVELOPER understands that the DEVELOPER's failure to follow the extension procedure constitutes a breach of this agreement and places the DEVELOPER in violation of the Subdivision Regulations. The DEVELOPER further understands, that should the DEVELOPER fail to complete any part of the work outlined in this agreement in a good and workmanlike manner as approved, the CITY shall reserve the right to withhold and withdraw all building permits within the PROJECT until all items of this Agreement have been fulfilled by the DEVELOPER.

B3.7 Off-Site Improvements

The DEVELOPER shall construct any and all off-site facilities that may be required to serve the PROJECT. Unless specifically noted in the Construction Plans and made a part of separate agreement with the CITY, the CITY shall not be required to reimburse the DEVELOPER for construction of off-site improvements.

B3.9 Inspection and Compliance

After construction begins, the CITY shall provide on-site construction inspection as the CITY deems necessary to ensure that all work is performed and completed in accordance with the Construction Plans, CITY specifications, and the contents of this agreement. In the event of a disagreement as to compliance with or interpretation of the Construction Plans and the CITY'S specifications, the decision of the CITY shall be final and binding on the DEVELOPER. If the DEVELOPER fails to construct in accordance with the approved Construction Plans or to comply with the CITY'S specifications, the CITY may issue a stop-work order and DEVELOPER, hereby, agrees to be bound by such order.

B3.10 Testing

The DEVELOPER agrees to pay the cost of all engineering, inspection, and laboratory cost incidental to construction of the streets, sidewalks, utilities, sewers, compacted fill material, and other facilities included within this agreement. Such testing includes, but is not limited to, material and density testing.

B3.11 Scrap Removal

The DEVELOPER agrees to comply with all local, state, and federal rules and regulations regarding waste material and debris disposal.

B3.12 Traffic Control

The DEVELOPER, hereby, agrees to prepare a traffic control/detour plan where required and shall submit said plan to the CITY for review and approval. All traffic control and safety devices, including

signs, lane markings, and barriers necessitated by construction activity undertaken pursuant to this agreement shall be installed and maintained by the DEVELOPER. All traffic control devices shall meet the standards and be installed in accordance with the latest edition of the Manual on Uniform Traffic Control Devices for Streets and Highways, published by the United States Department of Transportation.

B3.13 Temporary Facilities

The DEVELOPER shall provide all temporary facilities including but not limited to utilities and roadways, that are determined by the CITY to be required in connection with or as a result of interruption of service or access that occurs as a consequence of construction activity associated with the work covered by this agreement. Such temporary services shall in all regards and at all points in time be adequate to assure emergency access and adequate fire flows.

B4 Acceptance of Improvements

B4.1 Completion of Improvements

At such time as the improvements have been constructed and installed, in accordance with the Constructions Plans and specifications, required testing and inspections completed and found satisfactory, and all clean-up and cover-up has been done to the satisfaction the City Engineer, a letter requesting preliminary acceptance of the PROJECT will be provided by the DEVELOPER. Formal acceptance shall follow the procedure established in the Subdivision Regulations.

The DEVELOPER agrees the DEVELOPER shall have no claim, direct or implied, in the title or ownership of the IMPROVEMENTS specified in this agreement when the IMPROVEMENTS are complete and thereafter accepted by the CITY. The DEVELOPER will be responsible for construction failures and defects in PROJECT prior to final acceptance. During this period, it shall remain the responsibility of the DEVELOPER to correct and cure these defects and failures.

B4.2 As-Built Drawings and Post-Completion Items

The DEVELOPER agrees to furnish to the CITY as-built plans, on a reproducible, stable media, of the sanitary sewer, storm water management, water mains and service system, and streets within the subdivision before the CITY shall accept the subdivision.

B4.3 Acceptance of Facilities

Upon final acceptance of all or part of the IMPROVEMENTS in the PROJECT, then those IMPROVEMENTS shall become the property of the CITY free from all claims from any person or entity without the necessity of any further writing, agreement, or deed. The DEVELOPER further agrees that any facilities placed within a public or platted right-of-way or dedicated public easement are irrevocably dedicated to the public use without any right of reimbursement or compensation of any kind.

B4.4 Failure to Install

In the event the DEVELOPER fails to install the facilities in accordance with the terms of this agreement, the CITY may, in its sole discretion, elect to accept all or a portion of the IMPROVEMENTS in the PROJECT. Should the CITY choose to accept all or a portion of these IMPROVEMENTS, the CITY shall become the sole owner of these facilities. The CITY may give notice of acceptance by writing delivered to the DEVELOPER or recorded in the Register’s Office of Maury County, Tennessee. No further writing or deed shall be required.

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed in multiple originals by persons properly authorized so, to do on or as of the day and year first given.

_____ PROJECT	
Completed by the Developer	*Completed by the City*
_____ DEVELOPER NAME	
_____ AUTHORIZED AGENT NAME	_____ CITY ENGINEER
_____ SIGNATURE	_____ SIGNATURE
_____ DATE	_____ DATE
_____ STREET	
_____ CITY, STATE, ZIP	
_____ PHONE	
_____ EMAIL	
Attest	*Attest*
_____ ATTEST NAME	_____ ATTEST NAME
_____ ATTEST SIGNATURE	_____ ATTEST SIGNATURE
_____ DATE	_____ DATE

OWNER AFFIDAVIT
COLUMBIA, MAURY COUNTY, TENNESSEE

I/we, Hampshire Pike Holdings, LLC
(Print Name(s) in Full)

being duly sworn, depose and say(s) that I/we am/are the owner(s) of the property described as:

Map 089, Parcel 41.15
(Property Parcel/Tax ID Number)

and located at:

Hampshire Pike, Columbia, TN
(Street Address)

am fully aware of the request for development approval in Columbia, Tennessee. Furthermore, I/we hereby appoint:

Wilson & Associates - Joey Wilson, Sean McGowan, Abigail Overstreet
(Print Name(s) in Full)

to act as my/our authorized agent on my/our behalf on all matters pertaining to the processing and obtaining the application with the exception of legal documents for recording purposes.

Signature

18100 Von Karman, Suite 500
Property Owner Mailing Address

Irvine, CA 92612
City, State, & Zip

Subscribed and sworn to before me this ____ day of _____, 20____.

See attached certificate
Notary Public

My Commission Expires: _____

CALIFORNIA ALL PURPOSE JURAT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of CALIFORNIA)
ss
County of ORANGE)

Subscribed and sworn to (or affirmed) before me on this 17th day of March, 2025, by Rodney F. Emery, proved to me on the basis of satisfactory evidence to be the person who appeared before me.

CRISTINA B. SONG
Notary Public - California
Orange County
Commission # 2422287
My Comm. Expires Oct 20, 2026

WITNESS my hand and official seal.

C Song

Signature of Notary Public

CITY OF COLUMBIA TENNESSEE

DEVELOPMENT SERVICES
700 NORTH GARDEN STREET
COLUMBIA, TN 38401
PHONE: (931) 560-1560
FAX: (931) 560-1541

PLANNING COMMISSION
PROJECT DEVELOPMENT APPLICATION

SUBMITTAL REQUIREMENTS

Final Plat: * *1 hard copy of all materials for submittal + PDF copy on a USB flash drive (no multiple applications on one storage device)*
Fold hard copy submittals larger than 8½"x11"
All Others: * Please submit the Application online at City of Columbia | Permitting (onlama.com)

ADDRESS/LOCATION	Hampshire Pike, Columbia, TN		
	TAX MAP: 089	GROUP:	PARCEL: 41.15
SUMMARY OF NATURE OF REQUEST AND WORK	The purpose of this plat is to create 7 lots and dedicate right-of-way.		

DATE OF PRE-APPLICATION CONFERENCE	N/A	*Pre-application meetings are scheduled for Wednesdays.*

SELECT REQUEST	SUBMITTALS SHALL INCLUDE BUT NOT LIMITED TO:
❑ Comprehensive Plan Amendment ❑ Annexation ❑ Rezoning ❑ Preliminary Plat ☑ Final Plat ❑ PUD Preliminary Master Plan ❑ PUD Final Site Plan ❑ Site Development Plan ❑ Other: **File naming nomenclature examples:* *Freedom Point Site Plan* *Freedom Point Master Plan* *Freedom Point Final Plat*	**Annexations:** ❑ Annexation Permission Form **Annexations/Rezoning/Plan Amendments:** ❑ Requested Zone Listed ❑ Statement of Compliance with Comprehensive Plan ❑ Concept Plan **Preliminary Plats/Site Development Plans:** ❑ Plans and/or Plats conforming to City standards with signed and completed check list **All Annexations/Rezoning/Preliminary Plats/Site Development Plans and PUDS:** ❑ Receipt of Payment for Pre-Application Meeting ❑ Written Legal Description copy ❑ Columbia Water System Availability Letter ❑ Columbia Waste Water Department Will Serve Letter

	Plats/PUDs: ☑ Project Name (include Sections & Phases) ☑ Total Number of Lots/Residential Units ☑ Square Footage of Non-Residential Floor Space ☑ Total acreage

Applications and all required submittals must be filed with the Department of Development Services prior to the established deadline. Both the applicant and property owner (if different from applicant) must sign the application. Any requests to defer or move the item to future meeting dates must be requested by the resubmittal date listed on the Planning Commission schedule.

APPLICANT
All communications go to the Applicant's email that is provided.

NAME	Abigail Overstreet	PHONE	615-749-0740
ADDRESS	108 Beasley Dr, Franklin, TN 37064	EMAIL	aoverstreet@wilsonpc.com

PROPERTY OWNER NAME	Hampshire Pike Holdings, LLC	PHONE	(949) 852-0700
ADDRESS	18100 Von Karman, Suite 500 Irvine, CA 92612	EMAIL	james.palda@steadfastco.com

If owner is not a natural person, documentation must be provided showing signing authority on behalf of the entity. If multiple persons are listed as owners in the records of the Maury County Assessor, all owners must sign or the signatory must provide documentation of authority to apply on behalf of record owner (i.e., Power of Attorney or notarized Letter of Authorization). In filling out this application, I attest that (1) I am familiar with the rules, regulations, and procedures of the City of Columbia & (2) all information contained herein is accurate & true to the best of my knowledge.

Abigail Overstreet	Abigail Overstreet	3/14/2025
APPLICANT NAME	APPLICANT SIGNATURE	DATE
Hampshire Pike Holdings, LLC Rod Emery, Authorized Signer	Rod Emery (Mar 17, 2025 13:22 PDT)	Mar 17, 2025
PROPERTY OWNER NAME	PROPERTY OWNER SIGNATURE	DATE

21-1752 Hampshire Pike - Final Plat - Submittal Application

Final Audit Report 2025-03-17

Created:	2025-03-17
By:	Breana Finney (Breana.Finney@SteadfastCo.com)
Status:	Signed
Transaction ID:	CBJCHBCAABAAlMpDagpxplhKy8PvX-SVlsP8MHtXF6Hf

"21-1752 Hampshire Pike - Final Plat - Submittal Application" History

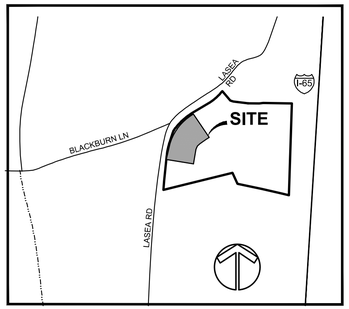
Document created by Breana Finney (Breana.Finney@SteadfastCo.com)
2025-03-17 - 6:38:59 PM GMT- IP address: 72.194.102.130

Document emailed to Rod Emery (Rod.Emery@SteadfastCo.com) for signature
2025-03-17 - 6:39:27 PM GMT

Email viewed by Rod Emery (Rod.Emery@SteadfastCo.com)
2025-03-17 - 8:22:21 PM GMT- IP address: 104.47.56.126

Document e-signed by Rod Emery (Rod.Emery@SteadfastCo.com)
Signature Date: 2025-03-17 - 8:22:53 PM GMT - Time Source: server- IP address: 204.2.198.46

Agreement completed.
2025-03-17 - 8:22:53 PM GMT



VICINITY MAP
(N.T.S.)

GENERAL NOTES

1. THE PURPOSE OF THIS PLAT IS TO CREATE 30 RESIDENTIAL LOTS AND TO DEDICATE RIGHT-OF-WAY.

2. BEARINGS SHOWN HEREON ARE BASED ON THE TENNESSEE COORDINATE SYSTEM OF 1983.

3. THIS PROPERTY IS CURRENTLY ZONED CD3.

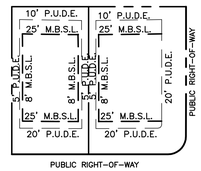
4. BY SCALED MAP LOCATION AND GRAPHIC PLOTTING ONLY, THIS PROPERTY LIES WITHIN FLOOD ZONE "X" AS DESIGNATED ON CURRENT FEDERAL EMERGENCY MANAGEMENT AGENCY MAP NO. 47119C0195E, WITH AN EFFECTIVE DATE OF 4/16/2007 WHICH MAKES UP A PART OF THE NATIONAL FLOOD INSURANCE ADMINISTRATION REPORT; COMMUNITY NO. 471013 PANEL NO. "NOT PRINTED" WHICH IS THE CURRENT FLOOD INSURANCE RATE MAP FOR THE COMMUNITY IN WHICH SAID PREMISES IS SITUATED. SAID MAP DEFINES ZONE "X" AREA OF MINIMAL FLOOD HAZARD.

5. THIS SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES, ABOVE GRADE AND UNDERGROUND UTILITIES SHOWN WERE TAKEN FROM VISIBLE APPURTENANCES AT THE SITE, PUBLIC RECORDS AND/OR MAPS PREPARED BY OTHERS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. THEREFORE, RELIANCE UPON THE TYPE, SIZE AND LOCATION OF UTILITIES SHOWN SHOULD BE DONE SO WITH THIS CIRCUMSTANCE CONSIDERED. DETAILED VERIFICATION OF EXISTENCE, LOCATION AND DEPTH SHOULD ALSO BE MADE PRIOR TO ANY DECISION RELATIVE THERETO IS MADE. AVAILABILITY AND COST OF SERVICE SHOULD BE CONFIRMED WITH THE APPROPRIATE UTILITY COMPANY. IN TENNESSEE IT IS A REQUIREMENT, PER "THE UNDERGROUND UTILITY DAMAGE PREVENTION ACT", THAT ANYONE WHO ENGAGES IN EXCAVATION MUST NOTIFY ALL KNOWN UNDERGROUND UTILITY OWNERS, NO LESS THAN (3) THREE NOR MORE THAN (10) TEN WORKING DAYS PRIOR TO THE DATE OF THEIR INTENT TO EXCAVATE AND ALSO TO AVOID ANY POSSIBLE HAZARD OR CONFLICT. TENNESSEE ONE CALL 811.

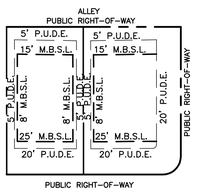
6. BEING A PORTION OF PARCEL NUMBER 15 AS SHOWN ON MAURY COUNTY PROPERTY MAP NUMBER 73.

7. ALL SIDEWALKS OUTSIDE THE RIGHT-OF-WAY SHALL BE MAINTAINED BY THE HOMEOWNER'S ASSOCIATION THE MAURY COUNTY HIGHWAY DEPARTMENT WILL NOT BE RESPONSIBLE FOR ANY MAINTENANCE OF THE SIDEWALK IN THE LASEA ROAD RIGHT-OF-WAY.

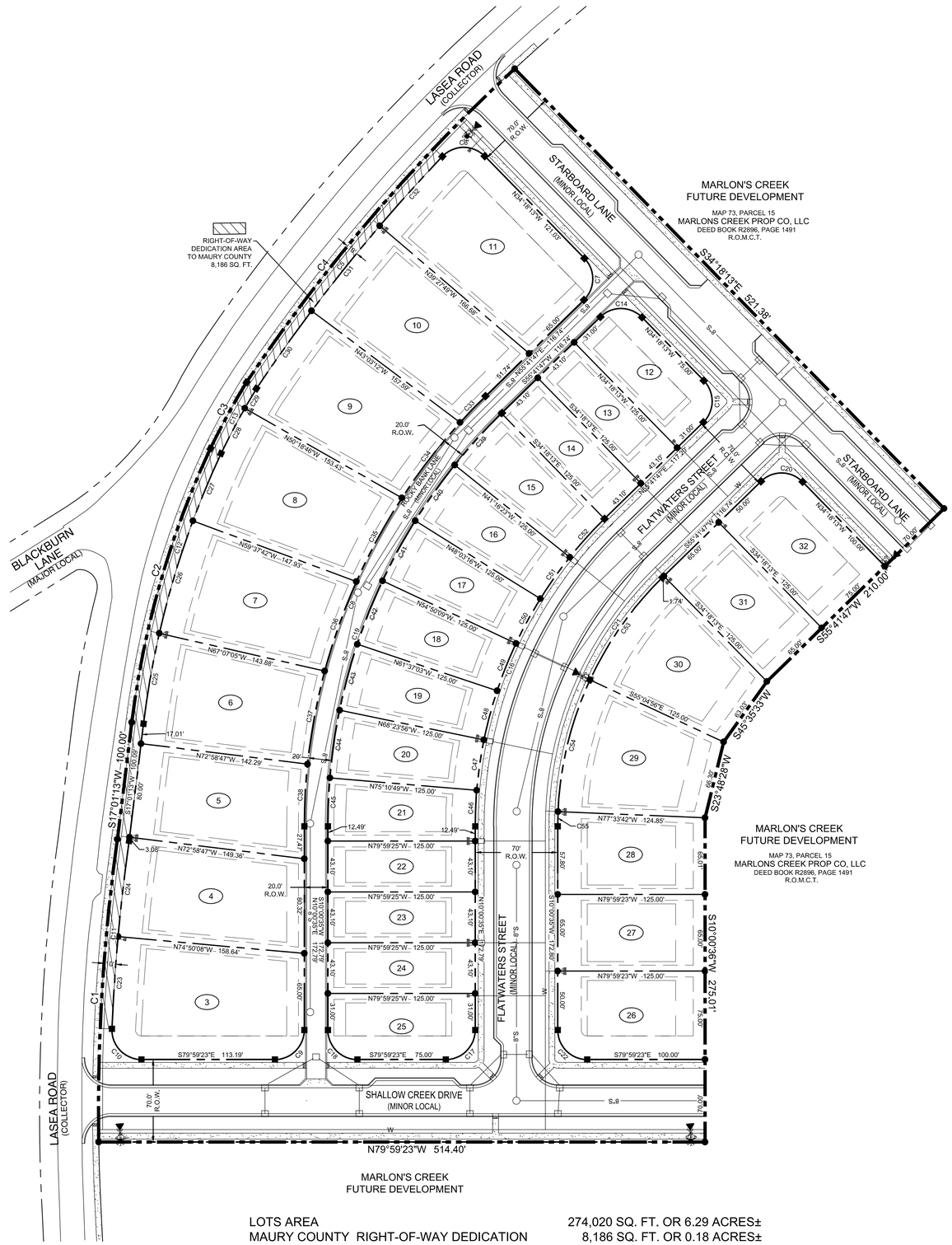
8. THIS PROPERTY IS SUBJECT TO THE INSPECTION AND MAINTENANCE AGREEMENT OF PRIVATE STORMWATER MANAGEMENT FACILITIES AS RECORDED IN BOOK R3051, PAGE 1262 IN THE REGISTERS OFFICE OF MAURY COUNTY, TENNESSEE.



SINGLE FAMILY
TYPICAL LOT DETAIL
(NOT TO SCALE)



ALLEY LOADED
SINGLE FAMILY
TYPICAL LOT DETAIL
(NOT TO SCALE)


LASEA ROAD
(COLLECTOR)
BLACKBURN LANE
(MAJOR LOCAL)
STARBOARD LANE
(MINOR LOCAL)
FLATWATERS STREET
(MINOR LOCAL)
SHALLOW CREEK DRIVE
(MINOR LOCAL)
RIGHT-OF-WAY DEDICATION AREA TO MAURY COUNTY 8,186 SQ. FT.
MARLON'S CREEK
FUTURE DEVELOPMENT
MAP 73, PARCEL 15
MARLONS CREEK PROP CO, LLC
DEED BOOK R2896, PAGE 1491
R.O.M.C.T.
S34°48'13"E 521.38'
S55°41'47"W 210.00'
S23°49'29"W
S11°13'27"W 276.01'
N79°59'23"W 514.40'
S17°01'13"W 100.00'
N74°50'08"W 158.64'
N72°58'47"W 149.36'
N72°58'47"W 142.29'
N67°07'05"W 143.68'
N59°37'42"W 141.93'
N40°16'46"W 153.43'
N29°37'12"W 157.39'
N17°01'13"E 100.08'
N34°18'13"W 121.03'
N29°37'48"W 166.68'
N29°37'12"W 157.39'
N34°18'13"W 165.00'
N34°18'13"W 75.00'
N34°18'13"W 100.00'
N34°18'13"W 70.00'
S34°18'13"E 125.00'
S34°18'13"E 125.00'
S34°18'13"E 125.00'
S34°18'13"E 125.00'
S34°18'13"E 125.00'
S34°18'13"E 125.00'
S45°04'56"E 125.00'
N41°16'23"W 125.00'
N53°26'09"W 125.00'
N61°37'03"W 125.00'
N68°23'56"W 125.00'
N75°10'49"W 125.00'
N79°59'25"W 125.00'
N79°59'25"W 125.00'
N79°59'25"W 125.00'
N79°59'25"W 125.00'
N79°59'25"W 125.00'
N77°33'42"W 124.85'
N79°59'23"W 125.00'
N79°59'23"W 125.00'
N79°59'23"W 125.00'
S79°59'23"E 113.19'
S79°59'23"E 75.00'
S79°59'23"E 100.00'
S65°41'47"W 116.74'
S65°41'47"W 116.74'
S65°41'47"W 116.74

RaganSmith
a Pape-Dawson company

March 17, 2025
via Electronic Application Submittal
Charles Rush
Principal Planner
700 N Garden Street
Columbis, TN., 38401

RE: Marlons Creek, Phase 1A
1686 Lasea Road
Columbia, Tennessee

Dear Mr. Charles Rush,

Enclosed please find the above referenced Final Plat dated March 17, 2025, revised per comments in your email of March 13, 2025. Responses to the comments are addressed as follows:

Planning

Comment 1. *The lead staff person for this case is Charles Rush, Principal Planner. Please contact crush@columbiatn.gov with questions about the development review process or technical comments. The case planner should be copied on all communication with other city staff.*
Response: **Acknowledged.**

Comment 2. *At resubmittal, please provide a response letter addressing each comment along with any revised plans. If the nature of the comment does not warrant a response, or the comment was previously addressed, please simply note that the information has been acknowledged. Any documents or additional information that you want to present to the Planning Commission should be included in your resubmittal.*
Response: **A response letter is included in this re-submittal.**

Comment 3. *Need an updated application that includes total acreage of the development.*
Response: **Now shown thereon.**

Comment 4. *Ensure that total open space are follows the approved preliminary plat and any large deviation needs to be explained.*
Response: **Now shown thereon.**

NASHVILLE
315 Woodland Street
P.O. Box 60070
Nashville, TN 37206

CHATTANOOGA
35 Station Street
Chattanooga, TN 37408

MURFREESBORO
1500 Medical Center Parkway
Suite 2 J
Murfreesboro, TN 37129

FRANKLIN
4068 Rural Plains Circle
Suite 290
Franklin, TN 37064

Comment 5. Subdivision Regulations 2.3.10 Contents of the Final Plat Submittal: (20) Streets and alleys including widths, classification, names, and proposed ownership and maintenance responsibility.
Response: Now shown thereon.

Comment 6. Subdivision Regulations 2.3.10 Contents of the Final Plat Submittal:(25) Connections to existing and propose streets (including classification) located outside the development.
Response: Now shown thereon.

Engineering

Comment 7. Letter of Credit provided in the amount of $485,000.
Response: Acknowledged.

Comment 8. Asphalt binder and curbing shall be installed prior to resubmittal date.
Response: Acknowledged.

Comment 9. Grading shall substantially conform to approved construction plans (within 1 ft.)
Response: Acknowledged.

Comment 10. Record/reference Stormwater Maintenance Agreement.
Response: A copy of the agreement is now included in the submittal documents.

Comment 11. Install street signage (stop, street names)
Response: Acknowledged.

Comment 12. Add note: Sidewalk on Lasea Rd to be dedicated for maintenance and ownership to the City of Columbia.
Response: Now shown thereon.

Comment 13. Indicate ownership and classification for roadways.
Response: Now shown thereon.

Wastewater

Comment 1. Final Plat is not ready for planning commission approval until wastewater reviews all services. Please get with Ryan Filipkowski at wastewater so he can review all applicable items that relate to his department. RFilipkowski@Columbiatn.govShow or note any easements including any pedestrian reciprocal cross access.
Response: Acknowledged.

Building

Comment 14. *No comments*
Response: **Acknowledged.**

Police

Comment 15. *No comments*
Response: **Acknowledged.**

City Attorney

Comment 16. *No comments provided.*
Response: **Acknowledged.**

Columbia Power

Comment 17. *Columbia Power System does not have existing power facilities near your proposed development within our service territory. DREMC will be the service provider for this area.*
Response: **Acknowledged.**

Public Works

Comment 18. *No comments*
Response: **Acknowledged.**

CPWS BB

Comment 19. *Do not plan to serve.*
Response: **Acknowledged.**

Fire

Comment 20. *No comment*
Response: **Acknowledged.**

Columbia Water

Comment 21. *Coordinate walk-through, Bacteria pressure testing with CPWS.*
Response: **Acknowledged.**

Comment 22. All water infrastructure must be installed up to and including the meter box/vault.
Response: Acknowledged.

Comment 23. Available Fire Flow Capacity in Marlon's Creek Subdivision is Less Than 1,000 gpm Until Offsite Improvements are Completed on Blackburn Lane at Clara Mathis.
Response: Acknowledged.

Comment 24. Show water meter/service locations on plat.
Response: Now shown thereon.

Comment 25. Provide a detailed list of water infrastructure cost including labor to CPWS Water Department in advance of plat signing for Deed Over form. Water system must be complete and active at time of plat signing.
Response: Acknowledged.

Atmos Energy

Comment 26. No comments provided.
Response: Acknowledged.

Maury County E911

Comment 27. No comments provided.
Response: Acknowledged.

Maury County Schools

Comment 28. No comments provided.
Response: Acknowledged.

Duck River Electric Membership Corp

Comment 29. We plan to serve.
Response: Acknowledged.

Maury County Highway Dept.

Comment a. *An 8' sidewalk and a 10' ROW dedication is shown along the frontage of Lasea Road. To date, the Maury County Highway Department has not received any documentation detailing the annexation of the Lasea Road ROW by the City of Columbia along the frontage of this development. Confirm and delineate the limits of the City of Columbia ROW and the limits of the Maury County Highway Department ROW on the FinalPlat.*

Comment b. *Furthermore, please add the following: Additional General Note specifying the Maury County Highway Department will not be responsible for any maintenance of the sidewalk in Lasea Road ROW.*

Response: **Now shown thereon.**

Comment c. *Furthermore, please add the following: The beneficiary of the ROW dedication to the associated note.*

Response: **Now shown thereon.**

Comment d. *Also, it has been brought to the attention of the Maury County Highway Department that the construction of the culvert under Starboard Lane has been done so in a way that could be detrimental to the Lasea Road roadway. If not done so already, please coordinate with the Highway Superintendent to ensure all required repairs or adjustments are made to warrant the integrity of the existing Lasea Road roadway.*

Response: **Acknowledged.**

ATT

Comment 30. *ATT to serve*

Response: **Acknowledged.**

Please call if you have any questions or comments.

Sincerely,
RaganSmith Associates, LLC

Ted J. Stevenson II, PLS
Survey Project Manager

CITY OF
COLUMBIA
TENNESSEE

DEVELOPMENT SERVICES
700 NORTH GARDEN STREET
COLUMBIA, TN 38401
PHONE: (931) 560-1560
FAX: (931) 560-1541

DEVELOPMENT REVEW COMMITTEE MEETING
Tuesday, March 11, 2025

ITEM NO.
25-0053

DESCRIPTION: 1686 Lasea Rd Marlon Creek Phase 1A

COMMENTS:

Planning

1. The lead staff person for this case is Charles Rush, Principal Planner. Please contact crush@columbiatn.gov with questions about the development review process or technical comments. The case planner should be copied on all communication with other city staff.
2. At resubmittal, please provide a response letter addressing each comment along with any revised plans. If the nature of the comment does not warrant a response, or the comment was previously addressed, please simply note that the information has been acknowledged. Any documents or additional information that you want to present to the Planning Commission should be included in your resubmittal.
3. Need an updated application that includes total acreage of the development.
4. Ensure that total open space are follows the approved preliminary plat and any large deviation needs to be explained.
5. Subdivision Regulations 2.3.10 Contents of the Final Plat Submittal: (20) Streets and alleys including widths, classification, names, and proposed ownership and maintenance responsibility.
6. Subdivision Regulations 2.3.10 Contents of the Final Plat Submittal:(25) Connections to existing and propose streets (including classification) located outside the development.

Engineering

7. Letter of Credit provided in the amount of $485,000.
8. Asphalt binder and curbing shall be installed prior to resubmittal date.
9. Grading shall substantially conform to approved construction plans (within 1 ft.)
10. Record/reference Stormwater Maintenance Agreement.
11. Install street signage (stop, street names)
12. Add note: Sidewalk on Lasea Rd to be dedicated for maintenance and ownership to the City of Columbia.
13. Indicate ownership and classification for roadways.

CITY OF
COLUMBIA
TENNESSEE

DEVELOPMENT SERVICES
700 NORTH GARDEN STREET
COLUMBIA, TN 38401
PHONE: (931) 560-1560
FAX: (931) 560-1541

Wastewater

1. Final Plat is not ready for planning commission approval until wastewater reviews all services. Please get with Ryan Filipkowski at wastewater so he can review all applicable items that relate to his department. RFilipkowski@Columbiatn.gov

Building

14. No comments.

Police

15. No comments.

City Attorney

16. No comments provided.

Columbia Power

17. Columbia Power System does not have existing power facilities near your proposed development within our service territory. DREMC will be the service provider for this area.

Public Works

18. No comments.

CPWS BB

19. Do not plan to serve.

Fire

20. No comment

Columbia Water

21. Coordinate walk-through, Bacteria pressure testing with CPWS.
22. All water infrastructure must be installed up to and including the meter box/vault.
23. Available Fire Flow Capacity in Marlon's Creek Subdivision is Less Than 1,000 gpm Until Offsite Improvements are Completed on Blackburn Lane at Clara Mathis.
24. Show water meter/service locations on plat.
25. Provide a detailed list of water infrastructure cost including labor to CPWS Water Department in advance of plat signing for Deed Over form.

Water system must be complete and active at time of plat signing.

Atmos Energy

26. No comments provided.

Maury County E911

27. No comments provided.

Maury County Schools

28. No comments provided.

Duck River Electric Membership Corp

29. We plan to serve.

Maury County Highway Dept.

An 8' sidewalk and a 10' ROW dedication is shown along the frontage of Lasea Road. To date, the Maury County Highway Department has not received any documentation detailing the annexation of the Lasea Road ROW by the City of Columbia along the frontage of this development. Confirm and delineate the limits of the City of Columbia ROW and the limits of the Maury County Highway Department ROW on the Final Plat. Furthermore, please add the following:

- Additional General Note specifying the Maury County Highway Department will not be responsible for any maintenance of the sidewalk in Lasea Road ROW.
- The beneficiary of the ROW dedication to the associated note.

Also, it has been brought to the attention of the Maury County Highway Department that the construction of the culvert under Starboard Lane has been done so in a way that could be detrimental to

the Lasea Road roadway. If not done so already, please coordinate with the Highway Superintendent to ensure all required repairs or adjustments are made to warrant the integrity of the existing Lasea Road roadway.

ATT

30. ATT TO SERVE

Resubmittal Guidelines

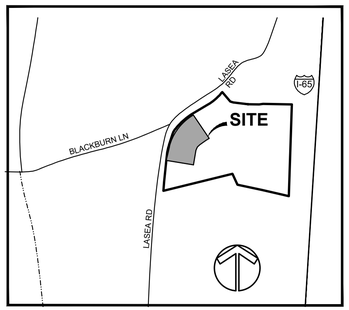
Please provide a comment response letter as well as digital copies of revised plans and supporting documentation. Submit all required documents electronically through the online portal: columbia.onlama.com. If the files are oversized, please provide a file sharing link.

Please contact the case planner identified in the Planning Comments with any questions about the review process.

Please contact pkeltner@columbiatn.gov or srichardson@columbiatn.gov if you encounter difficulties with the online portal.

You will receive an invoice for required advertising and mailing fees. All fees must be paid by the Friday following resubmittal in order advance to the Planning Commission agenda.

NOTE: All resubmittals must demonstrate compliance with city standards prior to Planning Commission review. Requests which do not adhere to regulations and/or remain unresponsive to technical comments will not be forwarded to the next agenda until such items are amended. Final Plat applications which are not ready to proceed to Planning Commission following the first resubmittal deadline will be added to the following DRC agenda to confirm the status of required infrastructure and utilities. Applications which remain incomplete following two resubmittal deadlines will be closed.



VICINITY MAP
(N.T.S.)

GENERAL NOTES

1. THE PURPOSE OF THIS PLAT IS TO CREATE 30 RESIDENTIAL LOTS AND TO DEDICATE RIGHT-OF-WAY.

2. BEARINGS SHOWN HEREON ARE BASED ON THE TENNESSEE COORDINATE SYSTEM OF 1983.

3. THIS PROPERTY IS CURRENTLY ZONED CD3.

4. BY SCALED MAP LOCATION AND GRAPHIC PLOTTING ONLY, THIS PROPERTY LIES WITHIN FLOOD ZONE "X" AS DESIGNATED ON CURRENT FEDERAL EMERGENCY MANAGEMENT AGENCY MAP NO. 47119C0195E, WITH AN EFFECTIVE DATE OF 4/16/2007 WHICH MAKES UP A PART OF THE NATIONAL FLOOD INSURANCE ADMINISTRATION REPORT; COMMUNITY NO. 471013 PANEL NO. "NOT PRINTED" WHICH IS THE CURRENT FLOOD INSURANCE RATE MAP FOR THE COMMUNITY IN WHICH SAID PREMISES IS SITUATED. SAID MAP DEFINES ZONE "X" AREA OF MINIMAL FLOOD HAZARD.

5. THIS SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. ABOVE GRADE AND UNDERGROUND UTILITIES SHOWN WERE TAKEN FROM VISIBLE APPURTENANCES AT THE SITE, PUBLIC RECORDS AND/OR MAPS PREPARED BY OTHERS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. THEREFORE, RELIANCE UPON THE TYPE, SIZE AND LOCATION OF UTILITIES SHOWN SHOULD BE DONE SO WITH THIS CIRCUMSTANCE CONSIDERED. DETAILED VERIFICATION OF EXISTENCE, LOCATION AND DEPTH SHOULD ALSO BE MADE PRIOR TO ANY DECISION RELATIVE THERETO IS MADE. AVAILABILITY AND COST OF SERVICE SHOULD BE CONFIRMED WITH THE APPROPRIATE UTILITY COMPANY. IN TENNESSEE IT IS A REQUIREMENT, PER "THE UNDERGROUND UTILITY DAMAGE PREVENTION ACT", THAT ANYONE WHO ENGAGES IN EXCAVATION MUST NOTIFY ALL KNOWN UNDERGROUND UTILITY OWNERS, NO LESS THAN (3) THREE NOR MORE THAN (10) TEN WORKING DAYS PRIOR TO THE DATE OF THEIR INTENT TO EXCAVATE AND ALSO TO AVOID ANY POSSIBLE HAZARD OR CONFLICT. TENNESSEE ONE CALL 811.

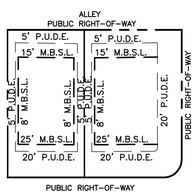
6. PARENT PARCELS: MAP 73, PARCEL 15.00.

7. ALL SIDEWALKS OUTSIDE THE RIGHT-OF-WAY SHALL BE MAINTAINED BY THE HOMEOWNER'S ASSOCIATION.

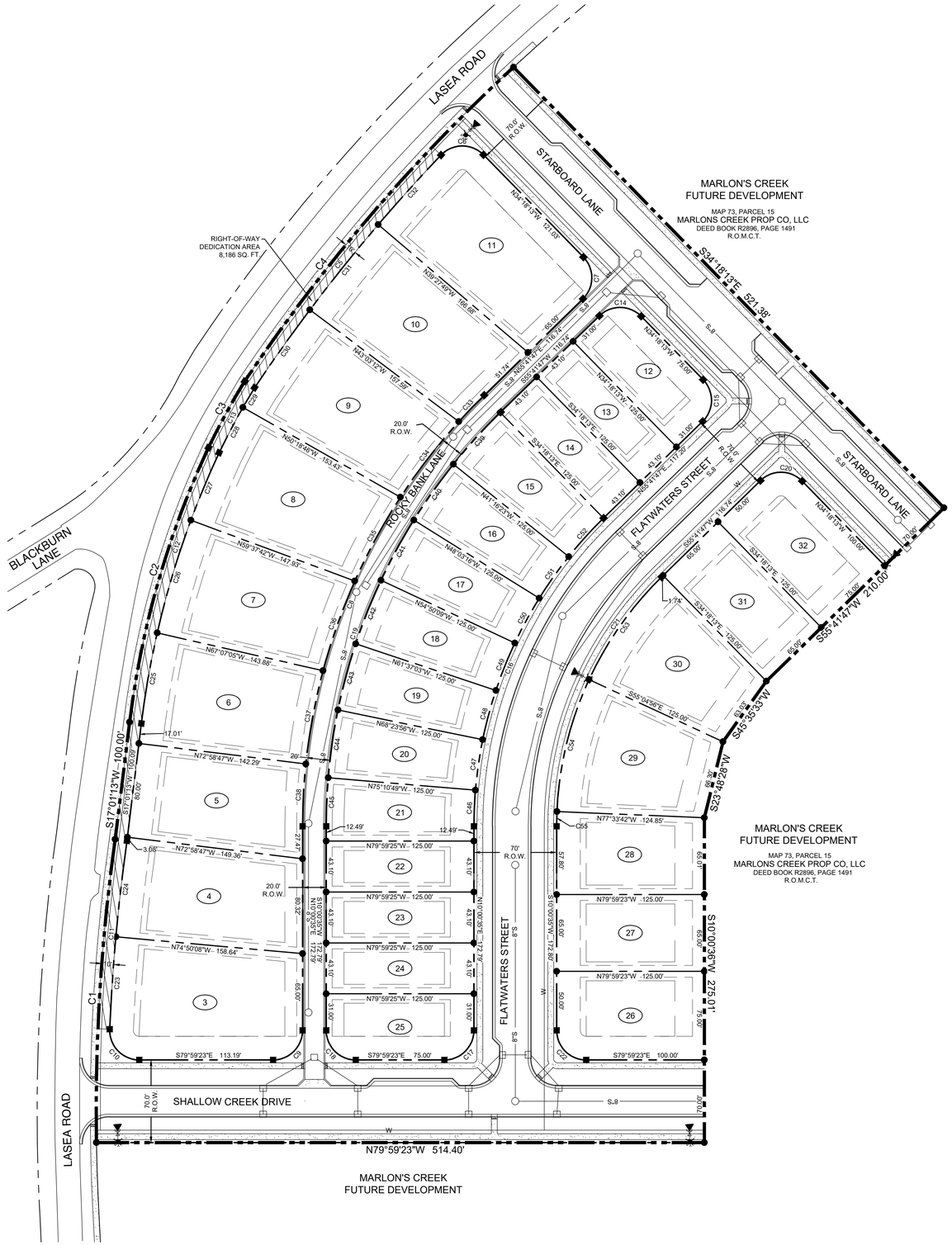
PROPERTY MAP REFERENCE

BEING A PORTION OF PARCEL NUMBER 15 AS SHOWN ON MAURY COUNTY PROPERTY MAP NUMBER 73.

SINGLE FAMILY
TYPICAL LOT DETAIL
(NOT TO SCALE)



ALLEY LOADED
SINGLE FAMILY
TYPICAL LOT DETAIL
(NOT TO SCALE)


LASEA ROAD
STARBOARD LANE
MARLON'S CREEK
FUTURE DEVELOPMENT
MAP 73, PARCEL 15
MARLONS CREEK PROP CO, LLC
DEED BOOK R2896, PAGE 1491
R.O.M.C.T.
RIGHT-OF-WAY
DEDICATION AREA
8,186 SQ. FT
S34°18'13"E 521.36'
N34°18'13"W 121.03'
N34°18'13"W 75.00'
N34°18'13"W 100.00'
N34°18'13"W 70.00'
S34°18'13"E 125.00'
S34°18'13"E 125.00'
S34°18'13"E 125.00'
S34°18'13"E 125.00'
S34°18'13"E 125.00'
S34°18'13"E 125.00'
S65°41'47"W 210.00'
S65°41'47"W 116.74'
S65°41'47"W 116.74'
S65°04'58"E 125.00'
S45°55'33"W
S23°48'26"W
S10°00'38"W 275.01'
S17°01'13"W 100.00'
N20°27'46"W 166.68'
N20°03'12"W 151.39'
N00°16'46"W 153.43'
N59°37'42"W 141.93'
N67°07'05"W 143.88'
N72°58'47"W 142.29'
N72°58'47"W 149.36'
N74°50'08"W 158.64'
S79°59'23"E 113.19'
S79°59'23"E 75.00'
S79°59'23"E 100.00'
N79°59'23"W 514.40'
N77°33'42"W 124.85'
N79°59'25"W 125.00'
N79°59'23"W 125.00'
N79°59'25"W 125.00'
N79°59'25"W 125.00'
N79°59'25"W 125.00'
N79°59'23"W 125.00'
N79°59'23"W 125.00'
N79°59'25"W 125.00'
N79°59'25"W 125.00'
N79°59'25

Plw Owen Hosay

BK/PG: R3051/1262-1278
25003178

17 PGS:AL-AGREEMENT
JANE BATCH: 347084 03/10/2025 - 10:10 AM

VALUE	0.00
MORTGAGE TAX	0.00
TRANSFER TAX	0.00
RECORDING FEE	85.00
ARCHIVE FEE	0.00
DP FEE	2.00
REGISTER'S FEE	0.00
TOTAL AMOUNT	87.00

STATE OF TENNESSEE, MAURY COUNTY
JOHN FLEMING
REGISTER OF DEEDS

DOCUMENT PREPARED BY:
Name: Hunter Fred
Company Ragan Smith
Address: 315 Woodland St.
Nashville TN, 37206

After recording return copy to City of Columbia, Development Services

INSPECTION AND MAINTENANCE AGREEMENT OF PRIVATE STORMWATER MANAGEMENT FACILITIES

Map & Parcel Number: Map 73, Parcel 15.00
Project Name: Marlons Creek Phase 1A

Recorded by deed in the Register of Deeds Office of Maury County in Deed Book R2896, Page(s) 1491-1496.

THIS AGREEMENT, made this 10 day of March, 2025, by and between Marlon's Creek Prop Co. LLC hereinafter referred to as the "OWNER(S)" of the following property and City of Columbia, Tennessee, hereinafter referred to as the "CITY",

WE, the OWNER(S), with full authority to execute deeds, mortgages, other covenants, all rights, titles, and interests in the property described above, do hereby covenant with the CITY and agree as follows:

1. The OWNER(S) covenant and agree with the CITY that the OWNER(S) shall provide for adequate long term maintenance and continuation of stormwater control measures described in the Long Term Maintenance Plan and shown on the location map, deed of easement drawing or plat attached hereto to ensure that the facilities, are and remain in proper working condition in accordance with approved design standards, rules and regulations, and applicable laws. The OWNER(S) shall perform preventative maintenance activities at intervals described in the schedule attached hereto along with necessary landscaping (grass cutting, etc.) and trash removal as part of regular maintenance.

2. The OWNER(S) shall perform routine inspections to ensure that all long term stormwater management facilities are properly functioning. These inspections shall be conducted on an annual basis, at a minimum. These inspections shall be conducted by a person familiar with control measures implemented at the site. The OWNER(S) or operators shall maintain documents of these inspections.

3. The OWNER(S) shall perform comprehensive inspections of all stormwater management facilities and practices. These inspections shall be conducted once every five years, at a minimum. Such inspections must be conducted by either a professional engineer or landscape architect.

4. The OWNER(S) shall grant to the CITY or its agent or contractor the right of entry at reasonable times and in a reasonable manner for the purpose of inspecting, operating, installing, constructing, reconstructing, maintaining or repairing the facility within the CITY.

5. The OWNER(S) shall record and grant to the CITY the necessary easements and rights-of-way and maintain perpetual access from public rights-of-way to the facility for the CITY or its agent and contractor.

6. If, upon inspection, the CITY finds that the OWNER(S) has failed to properly maintain the facilities, the CITY may order the work performed within ten (10) days. In the event the work is not performed within the specified time, the ONWER(S) agrees to allow the CITY to enter the property and take whatever steps it deems necessary to maintain the stormwater control facilities. This provision shall not be construed to allow the CITY to erect any structure of a permanent nature on the PROPERTY without first obtaining written approval of the OWNER(S).

7. The CITY is under no obligation to maintain or repair said facilities, and in no event shall this Agreement be construed to impose any obligation on the CITY. The OWNER(S) shall reimburse the CITY upon demand the costs incurred in the maintenance of the facilities.

8. If the OWNER(S) fails to pay the CITY for the above expensive after forty-five (45) days written notice, the OWNER(S) authorizes the CITY to collect said expenses from the OWNER(S) through appropriate legal action and the OWNER(S) shall be liable for the reasonable expenses of collection, court costs, and attorney fees.

9. The OWNER(S) and the OWNER(S) heirs, administrators, executors, assigns, and any other successor in interest shall indemnify and hold harmless the CITY and its officers, agents and employees for any and all damages, accidents, casualties, occurrences, claims or attorney's fees which might arise or be asserted, in whole or in part, against the CITY from the construction, presence, existence, or maintenance of the stormwater control facilities subject to this AGREEMENT. In the event a claim is asserted against the CITY, its officers, agents or employees, the CITY shall notify OWNER(S) and the OWNER(S) shall defend at OWNER(S) expense any suit based on such claim. If any judgment or claims against the CITY, its officers, agents or employees, shall be allowed, the OWNER(S) shall pay all costs and expenses in connection therewith. The CITY will not indemnify, defend or hold harmless in any fashion the OWNER(S) from any claims arising from any failure, regardless of any language in any attachment or other document that the OWNER(S) may provide.

10. The OWNER(S) shall not be able to transfer, assign or modify its responsibilities with respect to this agreement without the CITY's written prior consent. Nothing herein shall be construed to prohibit a transfer by OWNER(S) to subsequent owners and assigns.

11. No waiver of any provision of this AGREEMENT shall affect the right of any party thereafter to enforce such provision or to exercise any right or remedy available to it in the event of any default.

12. The OWNER(S) shall record a plat showing and accurately defining the easements for stormwater control facilities. The plat must reference the Instrument Number where this AGREEMENT and its attachments are recorded and contain a note that the OWNER(S) is responsible for maintaining the stormwater management facilities.

13. The OWNER(S) shall record this AGREEMENT in the office of the Register of Deeds for the county of Maury, Tennessee, and the AGREEMENT shall constitute a covenant running with the land, and shall be binding upon the OWNER(S) and the OWNER(S) heirs, administrators, executors, assigns, and any other successors in interest

ATTEST BY OWNER(S):

Print Name Lynn Exley

Title Member

Signature

Owner Marlons Creek Propco LLC

Address 2925 Berry Hill Dr.

City, State ZIP Nashville TN, 37204

STATE OF TN
COUNTY OF DAVIDSON

Before me, SUSAN GORMAN of the state and county mentioned, personally appeared Lynn Exley, with whom I am personally acquainted and who acknowledged that he/she executed the foregoing instrument of the purposes therein contained.

Witness my hand this the 5th day of March, 2025.

Susan E. Gorman
Notary Public

My Commission Expires: 3/9/2027

SUSAN E. GORMAN
STATE OF TENNESSEE NOTARY PUBLIC
DAVIDSON COUNTY
MY COMMISSION EXPIRES 3-9-2027

CITY OF COLUMBIA, TENNESSEE
ENGINEERING DEPARTMENT

APPROVED BY: R. Neil Scruggs
R. NEIL SCRUGGS

STATE OF TENNESSEE
COUNTY OF MAURY

Before me, Kim Dale of the state and county mentioned, personally appeared Neil Scruggs, with whom I am personally acquainted, and who acknowledged themselves to be the City Engineer of the City of Columbia or his designee and as such, being authorized so to do, executed the foregoing instrument of the purposes therein contained.

Witness my hand this the 10 day of March, 2025.

Kim Dale
Notary Public
My Commission Expires: 5/20/2026

KIM DALE
STATE OF TENNESSEE NOTARY PUBLIC
MAURY COUNTY

Appendix B: Subdivision Development Agreement

This DEVELOPMENT AGREEMENT is made and entered into on this

17th day of February, 2025,
between THE CITY OF COLUMBIA, TENNESSEE, (hereinafter the "CITY"), and

Marlons Creek Prop Co, LLC, the DEVELOPER (hereinafter the "DEVELOPER") named on the Addendum to this Agreement attached hereto and by this reference made a part hereof (hereinafter the "ADDENDUM").

WITNESSETH:

WHEREAS, the DEVELOPER desires to develop the property described on the ADDENDUM (hereinafter the "PROJECT"); and,

WHEREAS, the Development Plan of the PROJECT has been approved by the Columbia Municipal Planning Commission (hereinafter the "CMPC") on the

17th day of February, 2025,
pursuant to Tennessee Code Annotated Title 13, Chapter 4, and the Subdivision Regulations of Columbia, Tennessee (hereinafter the "SUBDIVISION REGULATIONS"); and,

WHEREAS, the DEVELOPER is the owner of the PROJECT and has authority to engage in such development; and,

WHEREAS, the DEVELOPER desires to develop and improve said PROJECT; and,

WHEREAS, in order to provide for the health, safety, and welfare of future residents of the PROJECT, it will be necessary for certain improvements to the CITY'S utility systems, public infrastructure, and common areas to be constructed within and to serve the PROJECT including but not be limited to roads, bridges, sidewalks, pedestrian facilities, stormwater facilities, street signs, markings, signals, street lighting, recreation and park facilities, landscaping, and the like (hereinafter the "IMPROVEMENTS"); and,

WHEREAS, in order for the IMPROVEMENTS to be fully integrated with the utility systems and public infrastructure of the CITY and to function in a satisfactory manner, the DEVELOPER has agreed to construct, in accordance with the Subdivision Regulations and other rules, regulations, and ordinances of the CITY, the IMPROVEMENTS in said PROJECT and extend utilities to the PROJECT at their own cost; and,

WHEREAS, the CITY is willing to accept the dedication of the streets, utilities, and other improvements as determined in the Development Plan of the PROJECT, subject to the City of Columbia City Council approval by resolution, and subject to the applicant's compliance with all requirements in this agreement and applicable existing laws of the CITY of Columbia and the State of Tennessee,

NOW, THEREFORE, it is agreed and understood as follows:

B1 General Conditions

B1.1 Construction Costs

The DEVELOPER shall pay for all material and labor necessary to install and complete the roads, sidewalks, sewers, utilities, and other facilities in accordance with this agreement.

B1.2 City Ordinances, Rules and Regulations

All currently existing CITY ordinances, rules and regulations, and the Subdivision Regulations adopted by the CMPC are made a part of this agreement. In the event of a conflict between the terms of this agreement and a CITY ordinance, the ordinance shall prevail. In the event of a conflict between the terms of this agreement and the Subdivision Regulations, the Subdivision Regulations shall prevail. All work done under this agreement is to be performed in accordance with plans and specifications approved by the City and made a part, hereof.

B1.3 Fees

Review fees, inspection fees, and other amounts established by the CITY shall be paid prior to any review of the plans. If the DEVELOPER fails to install the facilities in accordance with the terms of this Agreement, no portion of the review fees, inspection fees, or other amounts paid to the CITY shall be refundable to the DEVELOPER.

B1.4 Inspection

The CITY shall have a continuous right to inspect the work and facilities to assure that the work and facilities are in accordance with the Subdivision Regulations, approved Construction Plans, and other rules, regulations, and ordinances of the CITY.

B1.5 Right of Entry

The CITY shall have the right, in case of breach of the Performance Agreement, to enter upon any property of the DEVELOPER and take all necessary actions to complete the work and obligations not completed.

B1.6 Easements

The DEVELOPER shall obtain and dedicate to the CITY or cause to be dedicated to the CITY, either by dedication on the plat or by easement deed, in either case in a form acceptable to the CITY, permanent easements of such widths as required by the CITY and noted on the Plans. The DEVELOPER further agrees to grant the necessary easements and rights-of-way across the DEVELOPER's properties without expense to the CITY and waive any claim for damages.

B1.7 Stormwater Maintenance Agreement

If the PROJECT includes any detention or retention ponds, common drainage ditches, water quality facilities, or stormwater facilities outside of the CITY rights-of-way, the DEVELOPER will submit a Stormwater Maintenance Agreement, to be filed with and recorded with the Final Plat.

B1.8 Attorney Fees and Other Expenses

The DEVELOPER shall pay all reasonable costs and expenses incurred by the CITY in enforcing or completing this agreement. The DEVELOPER shall pay all costs and expenses, including the CITY'S attorney fees, of any legal proceedings brought by the CITY against the DEVELOPER seeking remedies for the DEVELOPER'S failure to perform any of its obligations hereunder, whether or not any proceedings are prosecuted to judgment.

B1.9 Agreement Not Assignable

No third party shall obtain any benefits or rights under this agreement nor shall the rights or duties be assigned by either party.

B1.10 Revocation and Interpretation

This agreement shall bind the DEVELOPER when executed by the DEVELOPER and may not be revoked by the DEVELOPER without permission of the CITY, even if the agreement has not been executed by the CITY, or does not bind CITY, for other reasons. This agreement shall be interpreted in accordance with Tennessee law and may only be enforced in the Chancery Court or Circuit Court or Court of competent jurisdiction of Maury County, Tennessee, and Tennessee Appellate Courts.

B1.11 No Oral Agreement

This agreement may not be orally amended and supersedes all prior negotiations, commitments, or understandings.

B1.12 Separability

If any portion of this agreement is held to be unenforceable, the CITY shall have the right to determine whether the remainder of the agreement shall remain in effect, or whether the agreement shall be void and all rights of the DEVELOPER pursuant to this agreement terminated.

B 1.13 Transferability

The DEVELOPER agrees to not transfer the property on which this PROJECT is to be located without first providing the CITY with written notice. The transferee shall provide the CITY an Assumption Agreement of this Agreement, whereby the transferee agrees to perform the IMPROVEMENTS required under this agreement and to provide a performance surety. The DEVELOPER understands that if the DEVELOPER transfers said property without providing the notice of transfer and Assumption Agreement as required herein, they will be in breach of this agreement and in violation of the Subdivision Regulations.

B1.14 Indemnity

The DEVELOPER shall indemnify and hold the CITY harmless from all loss, costs, expenses, liability, money damages, penalties, or claims arising out of any work covered by this agreement, including any attorney fees incurred by the CITY in connection therewith. Inspection of the IMPROVEMENTS by an authorized representative of the CITY shall not constitute a waiver by the CITY of any defect or of any of the DEVELOPER'S obligations hereunder.

B1.15 Binding Effect

This agreement shall be binding upon the DEVELOPER and the DEVELEPOR's heirs, administrators, executors, assigns, and any other successors in interest.

B1.16 Entire Agreement

This document contains the entire agreement between the parties, and there are no collateral understandings or agreements between them. No variations or alterations of the terms of this agreement shall be binding upon either of the parties, unless the same be reduced to writing and made an amendment to this agreement.

B1.17 Headings

Paragraph titles and headings contained herein are inserted for convenience only and shall not be deemed a part of the agreement and in no way shall define, limit, extend, or describe the scope or intent of any provision, hereof.

B2 Performance Surety

At the time of execution of this agreement, the DEVELOPER shall provide the CITY a performance surety, in an amount determined by the City Engineer for the IMPROVEMENTS and other items specified by the Construction Plans, plats, and plans approved by the CMPC. This performance surety shall secure performance of all obligations of the DEVELOPER under this agreement. The performance surety shall meet all requirements established in Chapter 4: Performance Agreement of the Subdivision Regulations and secure full compliance with all terms and conditions of this agreement. The performance surety may be called for failure to comply with the provisions of this agreement in whole or in part according to the terms of the performance surety. The performance surety will not be released, except and until there has been full compliance with this agreement.

B3 Construction

B3.1 Construction Plans

The DEVELOPER shall submit to the CITY, Construction Plans describing in reasonable detail all utility systems, all storm water management systems, all street systems, pedestrian facilities, and all IMPROVEMENTS. The Construction Plans shall be designed according to the Engineering Standards and Specifications, all other codes and ordinances enforced by the City, and sound engineering judgment. The design of all utility systems shall follow the State of Tennessee and utility provider design criteria and specifications. In the event of a disagreement as to compliance with or interpretation of the Construction Plans and the CITY'S specifications, the decision of the CITY shall be final and binding on the DEVELOPER. The Construction Plans shall be prepared by a design professional licensed by the State of Tennessee to design all systems and shall bear the seal, signature, date, and license number of the professional preparing the Construction Plans.

B3.2 Commencement of Construction

Construction of IMPROVEMENTS may not begin until the following events have occurred:

A. The Preliminary Plat has been approved by the CMPC;
B. The Construction Plans are approved by the CITY;
C. The Tennessee Department of Environment and Conservation has approved the applicable portions of the Plans and has confirmed its approval to the CITY and/or DEVELOPER in writing;
D. The CITY shall have received an appropriately executed Development Agreement; and
E. The DEVELOPER shall give the CITY notice of commencement of construction, in writing at least one (1) working day prior to commencement.

B3.3 Site Grading

The DEVELOPER, hereby, agrees to construct all site grading to comply with the approved Construction Plans, including the approved Erosion Control Plan for the PROJECT and to comply with the Engineering Standards and Specifications, Stormwater Ordinance, and all other codes and ordinances enforced by the CITY.

B3.4 Storm Water Management Systems

The DEVELOPER shall be responsible for all storm water management work made necessary by the development of this PROJECT. It is understood and agreed that the CITY in its proprietary function is not and could not be expected to oversee, supervise, or direct the construction of all drainage improvements, and the excavation incident thereto. Neither is the CITY vested with the original design responsibility nor the means to formally survey elevations or the locations of improvements at every stage of the construction process. The CITY is vested with the right of periodic inspections, stop work order, and final approval as a measure of secondary or subsequent enforcement. The DEVELOPER has and shall retain the responsibility to properly anticipate, survey, design and construct the subdivision storm water improvements and give full assurance that same shall not adversely affect the flow or quality of surface water from or upon any property. In providing technical assistance, plan and design review, the CITY does not and shall not relieve or accept any liability from the DEVELOPER.

B3.5 Street Construction

The DEVELOPER, hereby, agrees to construct and improve the streets shown on the Construction Plans to comply with the CITY's specifications and to the satisfaction and approval of the City Engineer by grading, draining, subgrade preparation, base preparation, curbing, signage, striping, signalization, sidewalk installation, and paving with the required preparation, amounts, and types of material. The DEVELOPER further agrees to pay the cost of all engineering, inspection and laboratory cost incidental to the construction of subdivision streets including but not limited to material and density testing. The DEVELOPER further agrees to make all necessary adjustments to manholes and valve boxes to meet finished surface grade and to repair subsurface or base material, as required, in areas directed by the CITY Engineer, prior to application of final surface.

B3.6 Time Period for Construction

The DEVELOPER agrees to be bound to complete, within three (3) years of commencement of construction, all IMPROVEMENTS shown on the plat and plans and all things required by this agreement.

The DEVELOPER further agrees that if due to unforeseen circumstances, he is unable to complete all work included in this agreement within the time specified above, but desires to complete said agreement to the satisfaction of the CITY, the DEVELOPER shall submit a written request for extension of the agreement period to the CITY at least sixty (60) days prior to the expiration of the existing agreement period, specifying the reason for the DEVELOPER's failure to complete the work as agreed and a prospective date for such completion. The DEVELOPER further agrees that if the performance surety executed to secure the value of the work to be performed under this agreement, due to inflation or rising costs, is determined to be inadequate by the City Engineer to secure the cost of said IMPROVEMENTS at the time an extension is sought, the DEVELOPER will provide the additional security to bring the performance surety amount in line with current cost projections as made by the CITY. The DEVELOPER understands that the DEVELOPER's failure to follow the extension procedure constitutes a breach of this agreement and places the DEVELOPER in violation of the Subdivision Regulations. The DEVELOPER further understands, that should the DEVELOPER fail to complete any part of the work outlined in this agreement in a good and workmanlike manner as approved, the CITY shall reserve the right to withhold and withdraw all building permits within the PROJECT until all items of this Agreement have been fulfilled by the DEVELOPER.

B3.7 Off-Site Improvements

The DEVELOPER shall construct any and all off-site facilities that may be required to serve the PROJECT. Unless specifically noted in the Construction Plans and made a part of separate agreement with the CITY, the CITY shall not be required to reimburse the DEVELOPER for construction of off-site improvements.

B3.9 Inspection and Compliance

After construction begins, the CITY shall provide on-site construction inspection as the CITY deems necessary to ensure that all work is performed and completed in accordance with the Construction Plans, CITY specifications, and the contents of this agreement. In the event of a disagreement as to compliance with or interpretation of the Construction Plans and the CITY'S specifications, the decision of the CITY shall be final and binding on the DEVELOPER. If the DEVELOPER fails to construct in accordance with the approved Construction Plans or to comply with the CITY'S specifications, the CITY may issue a stop-work order and DEVELOPER, hereby, agrees to be bound by such order.

B3.10 Testing

The DEVELOPER agrees to pay the cost of all engineering, inspection, and laboratory cost incidental to construction of the streets, sidewalks, utilities, sewers, compacted fill material, and other facilities included within this agreement. Such testing includes, but is not limited to, material and density testing.

B3.11 Scrap Removal

The DEVELOPER agrees to comply with all local, state, and federal rules and regulations regarding waste material and debris disposal.

B3.12 Traffic Control

The DEVELOPER, hereby, agrees to prepare a traffic control/detour plan where required and shall submit said plan to the CITY for review and approval. All traffic control and safety devices, including

signs, lane markings, and barriers necessitated by construction activity undertaken pursuant to this agreement shall be installed and maintained by the DEVELOPER. All traffic control devices shall meet the standards and be installed in accordance with the latest edition of the Manual on Uniform Traffic Control Devices for Streets and Highways, published by the United States Department of Transportation.

B3.13 Temporary Facilities

The DEVELOPER shall provide all temporary facilities including but not limited to utilities and roadways, that are determined by the CITY to be required in connection with or as a result of interruption of service or access that occurs as a consequence of construction activity associated with the work covered by this agreement. Such temporary services shall in all regards and at all points in time be adequate to assure emergency access and adequate fire flows.

B4 Acceptance of Improvements

B4.1 Completion of Improvements

At such time as the improvements have been constructed and installed, in accordance with the Constructions Plans and specifications, required testing and inspections completed and found satisfactory, and all clean-up and cover-up has been done to the satisfaction the City Engineer, a letter requesting preliminary acceptance of the PROJECT will be provided by the DEVELOPER. Formal acceptance shall follow the procedure established in the Subdivision Regulations.

The DEVELOPER agrees the DEVELOPER shall have no claim, direct or implied, in the title or ownership of the IMPROVEMENTS specified in this agreement when the IMPROVEMENTS are complete and thereafter accepted by the CITY. The DEVELOPER will be responsible for construction failures and defects in PROJECT prior to final acceptance. During this period, it shall remain the responsibility of the DEVELOPER to correct and cure these defects and failures.

B4.2 As-Built Drawings and Post-Completion Items

The DEVELOPER agrees to furnish to the CITY as-built plans, on a reproducible, stable media, of the sanitary sewer, storm water management, water mains and service system, and streets within the subdivision before the CITY shall accept the subdivision.

B4.3 Acceptance of Facilities

Upon final acceptance of all or part of the IMPROVEMENTS in the PROJECT, then those IMPROVEMENTS shall become the property of the CITY free from all claims from any person or entity without the necessity of any further writing, agreement, or deed. The DEVELOPER further agrees that any facilities placed within a public or platted right-of-way or dedicated public easement are irrevocably dedicated to the public use without any right of reimbursement or compensation of any kind.

B4.4 Failure to Install

In the event the DEVELOPER fails to install the facilities in accordance with the terms of this agreement, the CITY may, in its sole discretion, elect to accept all or a portion of the IMPROVEMENTS in the PROJECT. Should the CITY choose to accept all or a portion of these IMPROVEMENTS, the CITY shall become the sole owner of these facilities. The CITY may give notice of acceptance by writing delivered to the DEVELOPER or recorded in the Register's Office of Maury County, Tennessee. No further writing or deed shall be required.

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed in multiple originals by persons properly authorized so, to do on or as of the day and year first given.

Marlons Creek Subdivision
PROJECT

Completed by the Developer	*Completed by the City*
Marlons Creek Prop Co. LLC DEVELOPER NAME	
Owen Hosey AUTHORIZED AGENT NAME	CITY ENGINEER
 SIGNATURE	SIGNATURE
2-17-2025 DATE	DATE
2925 Berry Hill Drive STREET	
Nashville, TN 37204 CITY, STATE, ZIP	
615-934-8264 PHONE	
owen@freehillventures.net EMAIL	
Attest	*Attest*
Mandy A. Allen ATTEST NAME	ATTEST NAME
 ATTEST SIGNATURE	ATTEST SIGNATURE
02/17/2025 DATE	DATE

Freehill
VENTURES

February 17, 2025

Register's Office

Maury County

RE: Marlon's Creek Phase 1A

To Whom It May Concern,

Please allow this letter to serve as Marlon's Creek Prop Co, LLC's authorization for Ragan-Smith Associates, on our behalf, to; final plans, site plan(s), and any other necessary documentation concerning our Marlons Creek project submittal.

Please feel free to contact us if you have any questions, comments, or need additional information at this time.

Sincerely,

Nathan J. Quinn

Owner's Representative

2925 Berry Hill Drive, Nashville, TN 37204

CITY OF COLUMBIA TENNESSEE

DEVELOPMENT SERVICES
700 NORTH GARDEN STREET
COLUMBIA, TN 38401
PHONE: (931) 560-1560
FAX: (931) 560-1541

PLANNING COMMISSION
PROJECT DEVELOPMENT APPLICATION

SUBMITTAL REQUIREMENTS

Final Plat: * *1 hard copy of all materials for submittal + PDF copy on a USB flash drive (no multiple applications on one storage device)*
Fold hard copy submittals larger than 8½"x11"
All Others: * Please submit the Application online at City of Columbia | Permitting (onlama.com)

ADDRESS/LOCATION	1686 Lasea Road, Columbia, TN		
	TAX MAP: 73	GROUP:	PARCEL: 15
SUMMARY OF NATURE OF REQUEST AND WORK	Marlons Creek Phase 1A Final Plat		

DATE OF PRE-APPLICATION CONFERENCE		*Pre-application meetings are scheduled for Wednesdays.*

SELECT REQUEST	SUBMITTALS SHALL INCLUDE BUT NOT LIMITED TO:
❑ Comprehensive Plan Amendment ❑ Annexation ❑ Rezoning ❑ Preliminary Plat ☒ Final Plat ❑ PUD Preliminary Master Plan ❑ PUD Final Site Plan ❑ Site Development Plan ❑ Other: **File naming nomenclature examples:* *Freedom Point Site Plan* *Freedom Point Master Plan* *Freedom Point Final Plat*	**Annexations:** ❑ Annexation Permission Form **Annexations/Rezoning/Plan Amendments:** ❑ Requested Zone Listed ❑ Statement of Compliance with Comprehensive Plan ❑ Concept Plan **Preliminary Plats/Site Development Plans:** ❑ Plans and/or Plats conforming to City standards with signed and completed check list **All Annexations/Rezoning/Preliminary Plats/Site Development Plans and PUDS:** ❑ Receipt of Payment for Pre-Application Meeting ❑ Written Legal Description copy ❑ Columbia Water System Availability Letter ❑ Columbia Waste Water Department Will Serve Letter

Marlons Creek Phase 1A Final Plat	**Plats/PUDs:** ☒ Project Name (include Sections & Phases)
30	☒ Total Number of Lots/Residential Units
N/A	☐ Square Footage of Non-Residential Floor Space
413,586 sq ft	☒ Total acreage

Applications and all required submittals must be filed with the Department of Development Services prior to the established deadline. Both the applicant and property owner (if different from applicant) must sign the application. Any requests to defer or move the item to future meeting dates must be requested by the resubmittal date listed on the Planning Commission schedule.

APPLICANT

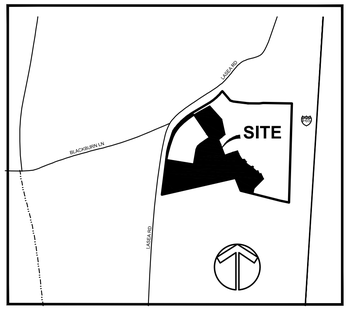
All communications go to the Applicant's email that is provided.

NAME	Owen Hosay	PHONE	615-934-8264
ADDRESS	2925 Berry Hill Dr.Nashville, TN	EMAIL	owen@freehillventures.net

PROPERTY OWNER NAME	Marlons Creek Prop Co, LLC	PHONE	615-934-8264
ADDRESS	2925 Berry Hill Dr.	EMAIL	owen@freehillventures.net

If owner is not a natural person, documentation must be provided showing signing authority on behalf of the entity. If multiple persons are listed as owners in the records of the Maury County Assessor, all owners must sign or the signatory must provide documentation of authority to apply on behalf of record owner (i.e., Power of Attorney or notarized Letter of Authorization). In filling out this application, I attest that (1) I am familiar with the rules, regulations, and procedures of the City of Columbia & (2) all information contained herein is accurate & true to the best of my knowledge.

Owen Hosay		2/17/2025
APPLICANT NAME	APPLICANT SIGNATURE	DATE
Owen Hosay		2/17/2025
PROPERTY OWNER NAME	PROPERTY OWNER SIGNATURE	DATE



VICINITY MAP
(N.T.S.)

GENERAL NOTES

1. THE PURPOSE OF THIS PLAT IS TO CREATE 28 RESIDENTIAL LOTS AND TO DEDICATE RIGHT-OF-WAY.

2. BEARINGS SHOWN HEREON ARE BASED ON THE TENNESSEE COORDINATE SYSTEM OF 1983.

3. THIS PROPERTY IS CURRENTLY ZONED CD3.

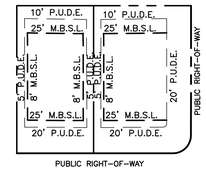
4. BY SCALED MAP LOCATION AND GRAPHIC PLOTTING ONLY, THIS PROPERTY LIES WITHIN FLOOD ZONE "X" AS DESIGNATED ON CURRENT FEDERAL EMERGENCY MANAGEMENT AGENCY MAP NO. 47119C0195E, WITH AN EFFECTIVE DATE OF 4/16/2007 WHICH MAKES UP A PART OF THE NATIONAL FLOOD INSURANCE ADMINISTRATION REPORT; COMMUNITY NO. 471013 PANEL NO. "NOT PRINTED" WHICH IS THE CURRENT FLOOD INSURANCE RATE MAP FOR THE COMMUNITY IN WHICH SAID PREMISES IS SITUATED. SAID MAP DEFINES ZONE "X" AREA OF MINIMAL FLOOD HAZARD.

5. THIS SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES, ABOVE GRADE AND UNDERGROUND UTILITIES SHOWN WERE TAKEN FROM VISIBLE APPURTENANCES AT THE SITE, PUBLIC RECORDS AND/OR MAPS PREPARED BY OTHERS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. THEREFORE, RELIANCE UPON THE TYPE, SIZE AND LOCATION OF UTILITIES SHOWN SHOULD BE DONE SO WITH THIS CIRCUMSTANCE CONSIDERED. DETAILED VERIFICATION OF EXISTENCE, LOCATION AND DEPTH SHOULD ALSO BE MADE PRIOR TO ANY DECISION RELATIVE THERETO IS MADE. AVAILABILITY AND COST OF SERVICE SHOULD BE CONFIRMED WITH THE APPROPRIATE UTILITY COMPANY. IN TENNESSEE IT IS A REQUIREMENT, PER "THE UNDERGROUND UTILITY DAMAGE PREVENTION ACT", THAT ANYONE WHO ENGAGES IN EXCAVATION MUST NOTIFY ALL KNOWN UNDERGROUND UTILITY OWNERS, NO LESS THAN (3) THREE NOR MORE THAN (10) TEN WORKING DAYS PRIOR TO THE DATE OF THEIR INTENT TO EXCAVATE AND ALSO TO AVOID ANY POSSIBLE HAZARD OR CONFLICT. TENNESSEE ONE CALL 811.

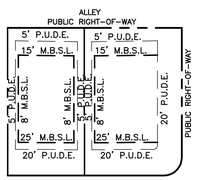
6. BEING A PORTION OF PARCEL NUMBER 15 AS SHOWN ON MAURY COUNTY PROPERTY MAP NUMBER 73.

7. ALL SIDEWALKS OUTSIDE THE RIGHT-OF-WAY SHALL BE MAINTAINED BY THE HOMEOWNER'S ASSOCIATION THE MAURY COUNTY HIGHWAY DEPARTMENT WILL NOT BE RESPONSIBLE FOR ANY MAINTENANCE OF THE SIDEWALK IN THE LASEA ROAD RIGHT-OF-WAY.

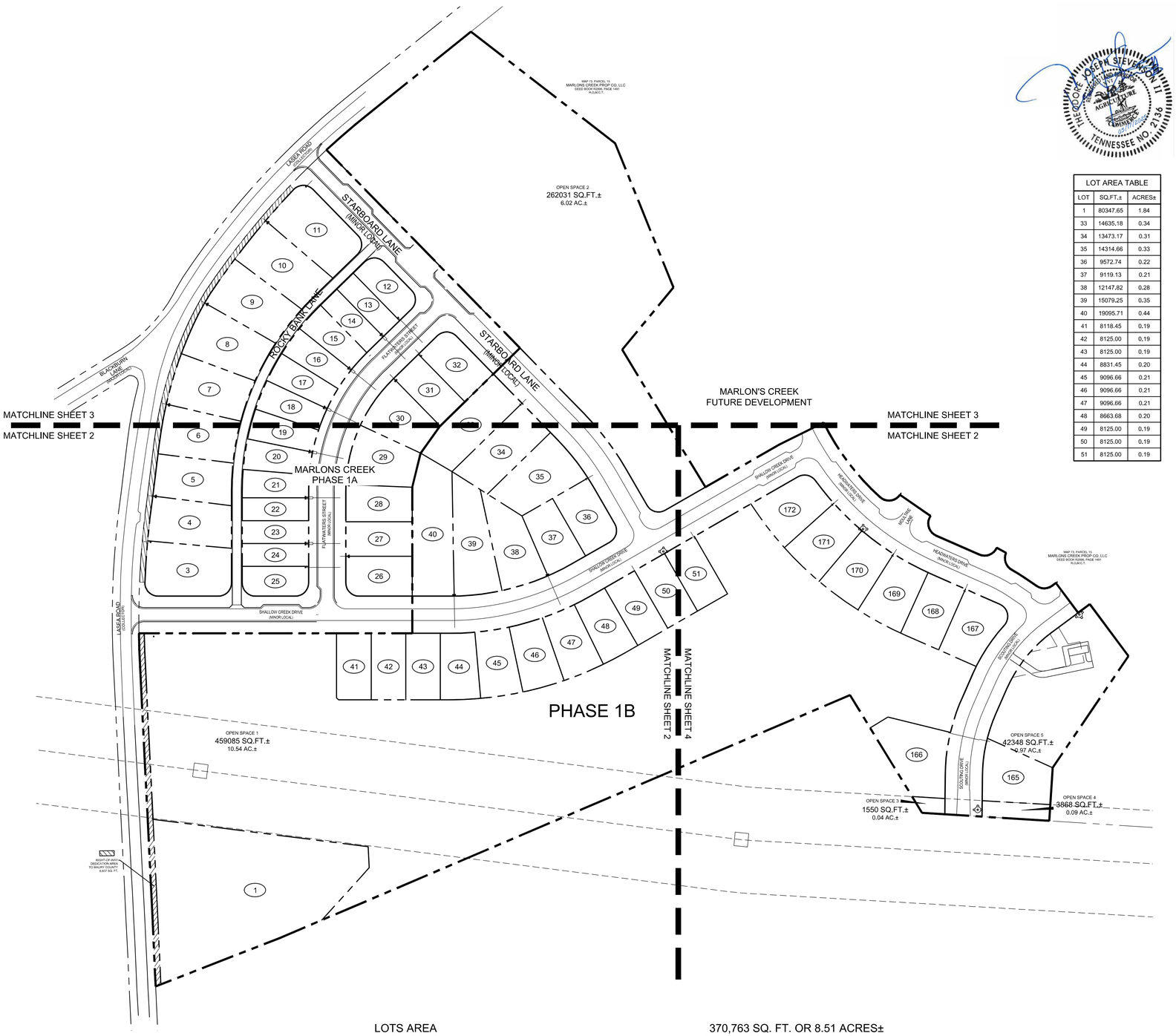
8. THIS PROPERTY IS SUBJECT TO THE INSPECTION AND MAINTENANCE AGREEMENT OF PRIVATE STORMWATER MANAGEMENT FACILITIES AS RECORDED IN BOOK R3051, PAGE 1245 IN THE REGISTERS OFFICE OF MAURY COUNTY, TENNESSEE.



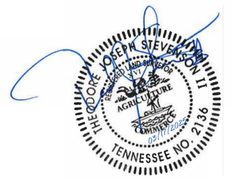
SINGLE FAMILY
TYPICAL LOT DETAIL
(NOT TO SCALE)



ALLEY LOADED
SINGLE FAMILY
TYPICAL LOT DETAIL
(NOT TO SCALE)



LOTS AREA	370,763 SQ. FT. OR 8.51 ACRES±
OPEN SPACE	769,029 SQ. FT. OR 17.65 ACRES±
CITY OF COLUMBIA RIGHT-OF-WAY DEDICATION	159,009 SQ. FT. OR 3.65 ACRES±
MAURY COUNTY RIGHT-OF-WAY DEDICATION	6,637 SQ. FT. OR 0.15 ACRES±
TOTAL AREA	1,305,438 SQ. FT. OR 29.96 ACRES±
PHASE 1A AREA	413,586 SQ.FT. OR 9.49 ACRES±
FUTURE DEVELOPMENT	2,970,389 SQ. FT. OR 68.19 ACRES±
TOTAL SITE AREA	3,797,561 SQ. FT. OR 87.18 ACRES±



0 50 100

LOT AREA TABLE		
LOT	SQ.FT.±	ACRES±
1	80347.65	1.84
33	14635.18	0.34
34	13473.17	0.31
35	14314.66	0.33
36	9572.74	0.22
37	9119.13	0.21
38	12147.82	0.28
39	15079.25	0.35
40	19095.71	0.44
41	8118.45	0.19
42	8125.00	0.19
43	8125.00	0.19
44	8831.45	0.20
45	9096.66	0.21
46	9096.66	0.21
47	9096.66	0.21
48	8663.68	0.20
49	8125.00	0.19
50	8125.00	0.19
51	8125.00	0.19

LOT AREA TABLE		
LOT	SQ.FT.±	ACRES±
165	12280.07	0.28
166	14683.98	0.34
167	10723.58	0.25
168	9686.25	0.22
169	10320.60	0.24
170	10320.60	0.24
171	10320.60	0.24
172	11249.42	0.26

LOT AREA TABLE		
LOT	SQ.FT.±	ACRES±
OS1	459122.00	10.54
OS2	262031.33	6.02
OS3	1550.31	0.04
OS4	3868.30	0.09
OS5	42347.88	0.97

CERTIFICATE OF OWNERSHIP AND DEDICATION

I (WE) HEREBY CERTIFY THAT I AM (WE ARE) THE OWNER(S) OF THE PROPERTY SHOWN AND DESCRIBED HEREON AS EVIDENCED IN DEED BOOK R2896, PAGE 1491, MAURY COUNTY REGISTER'S OFFICE AND ADOPT THIS FINAL SUBDIVISION PLAT OR THE PROPERTY AS SHWON HEREON AND DEDICATE ALL PUBLIC WAYS AND EASEMENTS AS NOTED WITH MY (OUR) FREE CONSENT.

OWNER(S) DATE

TITLE (IF ACTION FOR CORPORATION OR PARTNERSHIP)

CERTIFICATE OF ACCURACY

I (WE) HEREBY CERTIFY THAT TO THE BEST OF MY (OUR) KNOWLEDGE AND BELIEF THIS IS A TRUE AND ACCURATE SURVEY OF THE PROPERTY SHOWN HEREON; THAT THIS IS A CATEGORY "I" LAND SURVEY AS DEFINED IN TITLE 62, CHAPTER 18, TENNESSEE CODE ANNOTATED, AND THAT THE RATIO OF PRECISION IS GREATER THAN OR EQUAL TO 1:304,042.

RAGAN-SMITH ASSOCIATES, LLC

TED J. STEVENSON, II, RLS NUMBER 2136 3/17/2025 DATE

CERTIFICATE OF THE APPROVAL OF WATER SYSTEM

I HEREBY CERTIFY THAT THE WATER SYSTEM(S) OUTLINED OR INDICATED ON THIS FINAL SUBDIVISION PLAT HAS/HAVE 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.

NAME DATE

TITLE AUTHORIZING AGENCY

CERTIFICATE OF APPROVAL OF STREETS, DRAINAGE, AND UTILITIES

I HEREBY CERTIFY THAT THE STREETS, DRAINAGE, AND UTILITIES OUTLINED OR INDICATED ON THIS FINAL SUBDIVISION PLAT HAVE BEEN INSTALLED IN ACCORDANCE WITH CITY SPECIFICATIONS, OR A PERFORMANCE SURETY IN THE AMOUNT OF $____ FOR STREETS AND DRAINAGE HAS BEEN POSTED WITH THE CITY OF COLUMBIA, TENNESSEE, TO ASSURE COMPLETION OF SUCH IMPROVEMENTS.

CITY ENGINEER DATE
COLUMBIA, TENNESSEE

CERTIFICATE OF APPROVAL FOR RECORDING

I HEREBY CERTIFY THAT THE FINAL SUBDIVISION PLAT SHOWN HEREON HAS BEEN FOUND TO COMPLY WITH THE CITY OF COLUMBIA UBDIVISION REGULATIONS, WITH THE EXCEPTION OF SUCH VARIANCES, IF ANY, AS NOTED IN THE MINUTES OF THE COLUMBIA MUNICIPAL PLANNING COMMISSION, AND THAT IT HAS BEEN APPROVED FOR RECORDING IN THE OFFICE OF THE MAURY COUNTY REGISTER OF DEEDS.

PLANNING DIRECTOR DATE
COLUMBIA, TENNESSEE

CERTIFICATE OF SUBDIVISION NAME AND STREET NAMES

SUBDIVISION NAME AND STREET NAMES APPROVED BY THE CITY ENGINEERING DEPARTMENT AND BY E-911 MAURY COUNTY.

MAURY COUNTY E-911 DATE

CERTIFICATE OF SANITARY SEWER SYSTEM

I HEREBY CERTIFY THAT THE SANITARY SEWER SYSTEM OUTLINED OR INDICATED ON THIS FINAL SUBDIVISION PLAT HAS BEEN INSTALLED IN ACCORDANCE WITH THE CURRENT LOCAL AND STATE GOVERNMENT REQUIREMENTS, OR A SUFFICIENT BOND OR OTHER SURETY HAS BEEN FILED TO GUARANTEE SAID INSTALLATION.

DIRECTOR OF WASTEWATER DEPARTMENT DATE
COLUMBIA, TENNESSEE

CERTIFICATE OF COMPLIANCE

I HEREBY CERTIFY THAT THE FINAL SUBDIVISION PLAT SHOWN HEREON HAS BEEN FOUND TO COMPLY WITH THE CITY OF COLUMBIA SUBDIVISION REGULATIONS AND OTHER ADOPTED ORDINANCES AND POLICIES.

CITY ENGINEER DATE
COLUMBIA, TENNESSEE

FINAL PLAT

MARLONS CREEK PHASE 1B

1686 LASEA ROAD
3RD CIVIL DISTRICT
MAURY COUNTY, TENNESSEE

DATE: MARCH 17, 2025
SCALE: 1"= 50'
JOB NO. 21-0282

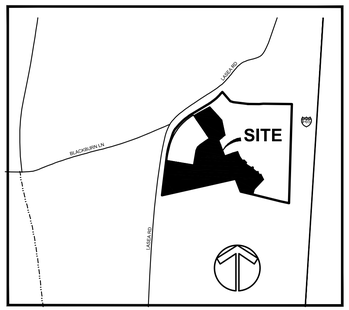
SHEET 1 of 4

LAND SURVEYOR
TED STEVENSON, TN RLS
RAGAN-SMITH ASSOCIATES, LLC.
315 WOODLAND STREET
NASHVILLE, TENNESSEE 37206
OFFICE: 615.244.8591
EMAIL: tstevenson@ragansmith.com

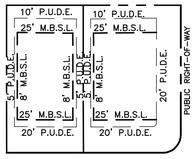
OWNER/DEVELOPER
MARLONS CREEK PROP CO, LLC
2925 BERRY HILL DRIVE
NASHVILLE, TN 37204
CONTACT: OWEN HOSAY
(615) 934-2864

RaganSmith
a Pape-Dawson company

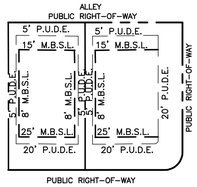
G:\21-0282\1-SURVEY\PLAT\FINAL\PHASE 1B\PHASE 1B FINAL PLAT.DWG



VICINITY MAP
(N.T.S.)



SINGLE FAMILY
TYPICAL LOT DETAIL
(NOT TO SCALE)



ALLEY LOADED
SINGLE FAMILY
TYPICAL LOT DETAIL
(NOT TO SCALE)

LINE TABLE		
LINE	BEARING	DISTANCE
L1	N68°35'24"E	39.08'
L2	N76°39'54"W	62.04'
L3	S10°29'37"W	42.73'
L4	N10°29'37"E	46.21'
L5	S38°15'17"E	5.14'

CURVE TABLE						
CURVE	RADIUS	LENGTH	DELTA	TANGENT	CHORD	CHORD BRG
C1	1481.74'	107.91'	4°10'22"	53.98'	107.89'	N59°24'33"E
C2	470.00'	177.11'	21°35'27"	89.62'	176.07'	S27°08'26"E
C3	25.00'	42.65'	97°44'56"	28.63'	37.66'	S86°48'38"E
C4	25.00'	43.86'	100°31'34"	30.07'	38.45'	S05°56'53"E
C5	25.00'	39.27'	90°00'00"	25.00'	35.36'	N78°47'20"E
C6	25.00'	36.85'	84°27'03"	22.69'	33.60'	S08°26'11"E
C7	335.00'	29.63'	5°04'02"	14.82'	29.62'	S48°07'42"E
C8	25.00'	30.98'	71°00'00"	17.83'	29.04'	S81°05'41"E
C9	1646.76'	62.33'	2°10'07"	31.17'	62.33'	N07°58'45"E
C10	465.00'	242.83'	29°55'14"	124.25'	240.08'	N85°03'01"E
C11	25.00'	39.27'	90°00'00"	25.00'	35.36'	N25°05'24"E
C12	465.00'	116.82'	14°23'37"	58.72'	116.51'	N27°06'25"W
C13	535.00'	134.40'	14°23'37"	67.56'	134.05'	N27°06'25"W
C14	25.00'	39.27'	90°00'00"	25.00'	35.36'	N64°54'36"W
C15	535.00'	279.38'	29°55'14"	142.95'	276.22'	N85°03'01"E
C16	25.00'	36.61'	83°54'14"	22.47'	33.43'	S67°57'29"E
C17	540.00'	284.68'	30°12'18"	145.73'	281.39'	S41°06'31"E
C18	25.00'	47.39'	108°36'25"	34.80'	40.61'	S01°54'27"E
C19	335.00'	108.79'	18°36'25"	54.88'	108.32'	S43°05'33"W
C20	368.91'	155.15'	24°05'49"	78.74'	154.01'	S22°33'23"W
C21	298.00'	121.16'	23°17'43"	61.43'	120.33'	N22°08'29"E
C22	265.00'	136.98'	29°36'59"	70.06'	135.46'	N48°35'50"E
C23	665.00'	386,31'	33°17'03"	198,78'	380,90'	S39°34'09"E
C24	660.00'	80.39'	6°58'42"	40.24'	80.34'	N88°32'23"W
C25	1636,76'	61,81'	2°09'49"	30,91'	61,81'	S07°58'33"W

LEGEND

- ● IR(N) — IRON ROD (NEW) (5/8" X 18" W/CAP STAMPED "RAGAN SMITH & ASSOCIATES")
- FIRE HYDRANT
- WATER VALVE
- CATCH BASIN/CURB INLET
- —W— WATER LINE
- —S— SANITARY SEWER LINE
- —P— OVERHEAD ELECTRIC POWER LINE
- R.O.M.C.T. — REGISTER'S OFFICE FOR MAURY COUNTY, TENNESSEE

MATCHLINE SHEET 3
MATCHLINE SHEET 2

MARLONS CREEK
PHASE 1A

LASEA ROAD
(COLLECTOR)

FLATWATERS STREET
(MINOR LOCAL)

SHALLOW CREEK DRIVE
(MINOR LOCAL)

SHALLOW CREEK DRIVE
(MINOR LOCAL)

N79°59'23"W 514.40'
362.13'

N10°00'36"E 276.01'

S45°35'23"W 68.36'

S23°48'26"W 68.36'

S49°27'14"E 68.47'

S47°36'43"E 82.83'

S47°36'43"E 70.00'

S47°36'43"E 77.13'

S65°35'55"E 187.17'

S65°41'47"W 186.00'

N70°05'24"E 143.36'

N70°05'24"E 66.25'

N19°54'36"W 125.00'

N17°24'19"W 125.00'

N27°27'54"W 149.48'

N08°38'45"E 224.95'

N79°59'23"W 70.61'

S79°59'23"E 70.61'

S70°05'24"W 80.17'

S70°05'24"W 78.96'

S10°54'36"E 125.00'

S15°59'09"E 125.00'

S06°07'34"E 125.00'

S06°07'34"E 125.00'

S10°00'37"W 125.00'

S10°00'37"W 125.00'

S10°00'37"W 125.00'

S10°00'37"W 121.58'

S10°54'36"E 125.00'

S10°54'36"E 125.00'

S10°54'36"E 125.00'

S70°05'24"E 65.00'

S70°05'24"E 65.00'

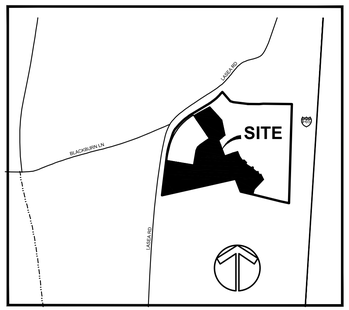
S10°05'24"E 78.96'

S10°05'24"E 70.00'

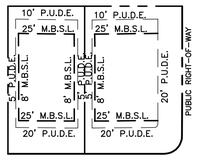
S10°05'24"E 78.96'

N79°59'23"W 209.04'

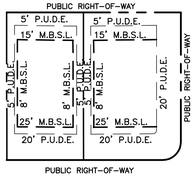
61.17'
65.00'
65.00'
65.00



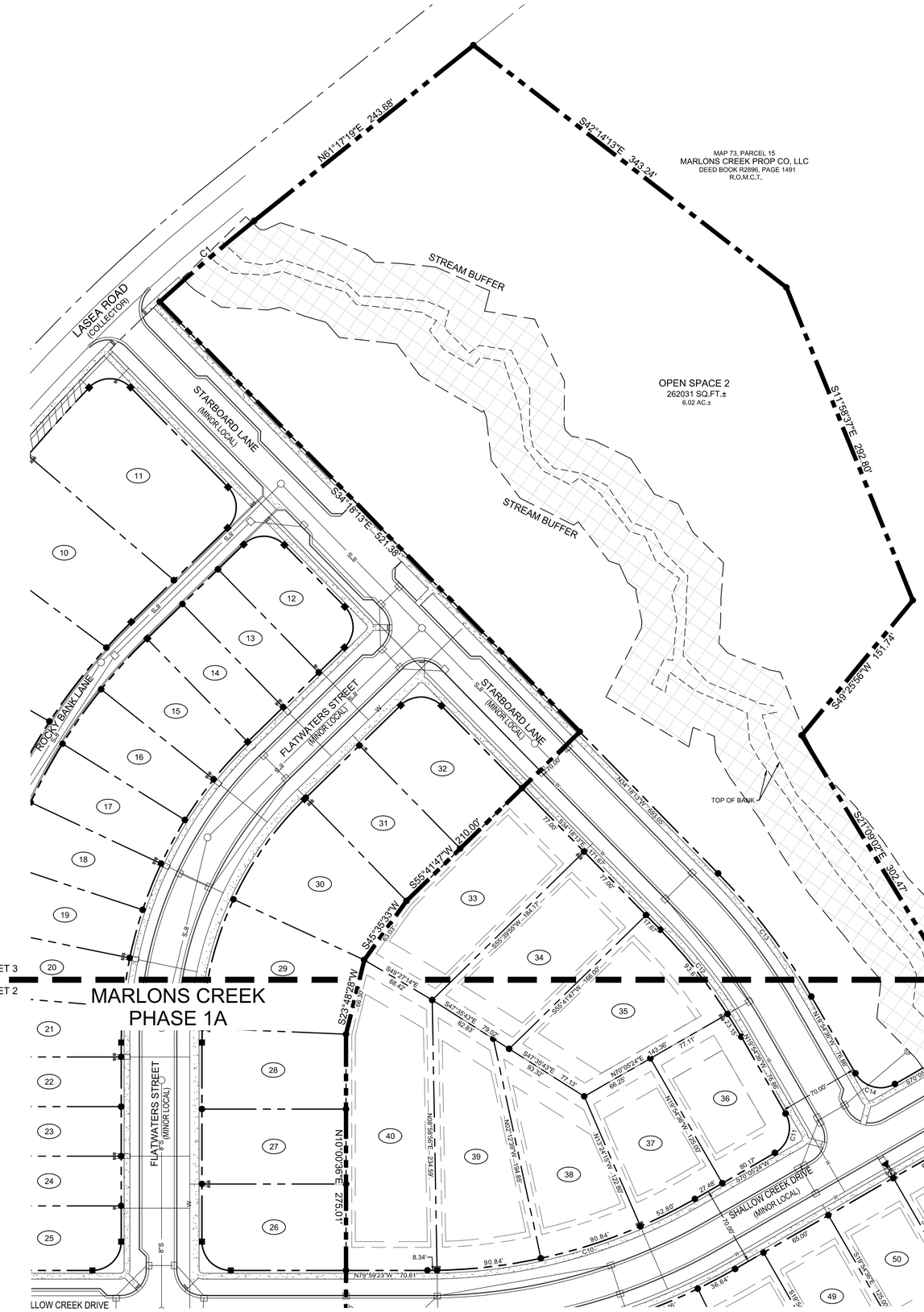
VICINITY MAP
(N.T.S.)

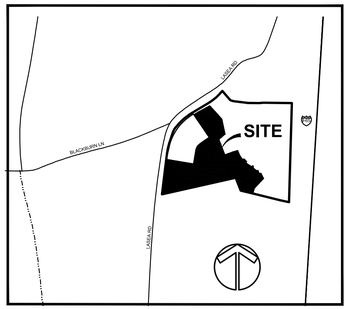


SINGLE FAMILY
TYPICAL LOT DETAIL
(NOT TO SCALE)

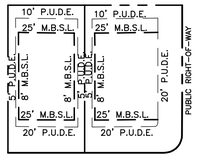


ALLEY LOADED
SINGLE FAMILY
TYPICAL LOT DETAIL
(NOT TO SCALE)

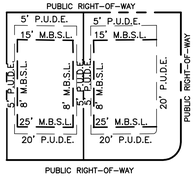

MAP 73, PARCEL 15
MARLONS CREEK PROP CO, LLC
DEED BOOK R2896, PAGE 1491
R.O.M.C.T.
N61°17'19"E 243.68'
S42°14'13"E 343.24'
S11°58'37"E 292.80'
S45°25'56"W 151.74'
S07°09'02"E 302.47'
N73°39'17"E 92.39'
N70°05'24"E 160.74'
LASEA ROAD
(COLLECTOR)
STARBOARD LANE
(MINOR LOCAL)
STREAM BUFFER
OPEN SPACE 2
262031 SQ.FT.±
6.02 AC.±
TOP OF BANK
MARLON'S CREEK
FUTURE DEVELOPMENT
MATCHLINE SHEET 3
MATCHLINE SHEET 2
MARLONS CREEK
PHASE 1A
ROCKY BANK LANE
FLATWATERS STREET
(MINOR LOCAL)
STARBOARD LANE
(MINOR LOCAL)
SHALLOW CREEK DRIVE
(MINOR LOCAL)
HEADWATERS DRIVE
(MINOR LOCAL)
MOULTRIE LANE
OPEN SPACE 1
S34°18'13"E 521.38'
S55°41'47"W 210.00'
S45°38'39"W
S23°48'28"W
N10°00'36"E 275.01'
N79°59'23"W 70.61'
S70°05'24"W
N70°05'24"E 146.21'
S35°05'05"W 164.17'
S55°41'47"W 196.00'
N13°54'36"W 125.00'
N13°47'57"W 122.80'
N22°27'24"W 194.85'
N08°58'36"E 208.22'
N10°54'48"W 378.86'
N19°54'48"W 78.86'
N10°54'48"W 122.80'
S19°54'48"E 125.00'
S35°05'05"W 125.00'
S54°54'55"E 125.00'
N35°05'05"E 125.00'
N54°54'55"W



VICINITY MAP
(N.T.S.)



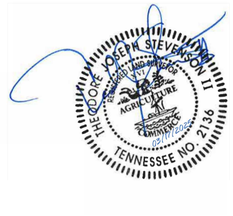
SINGLE FAMILY
TYPICAL LOT DETAIL
(NOT TO SCALE)

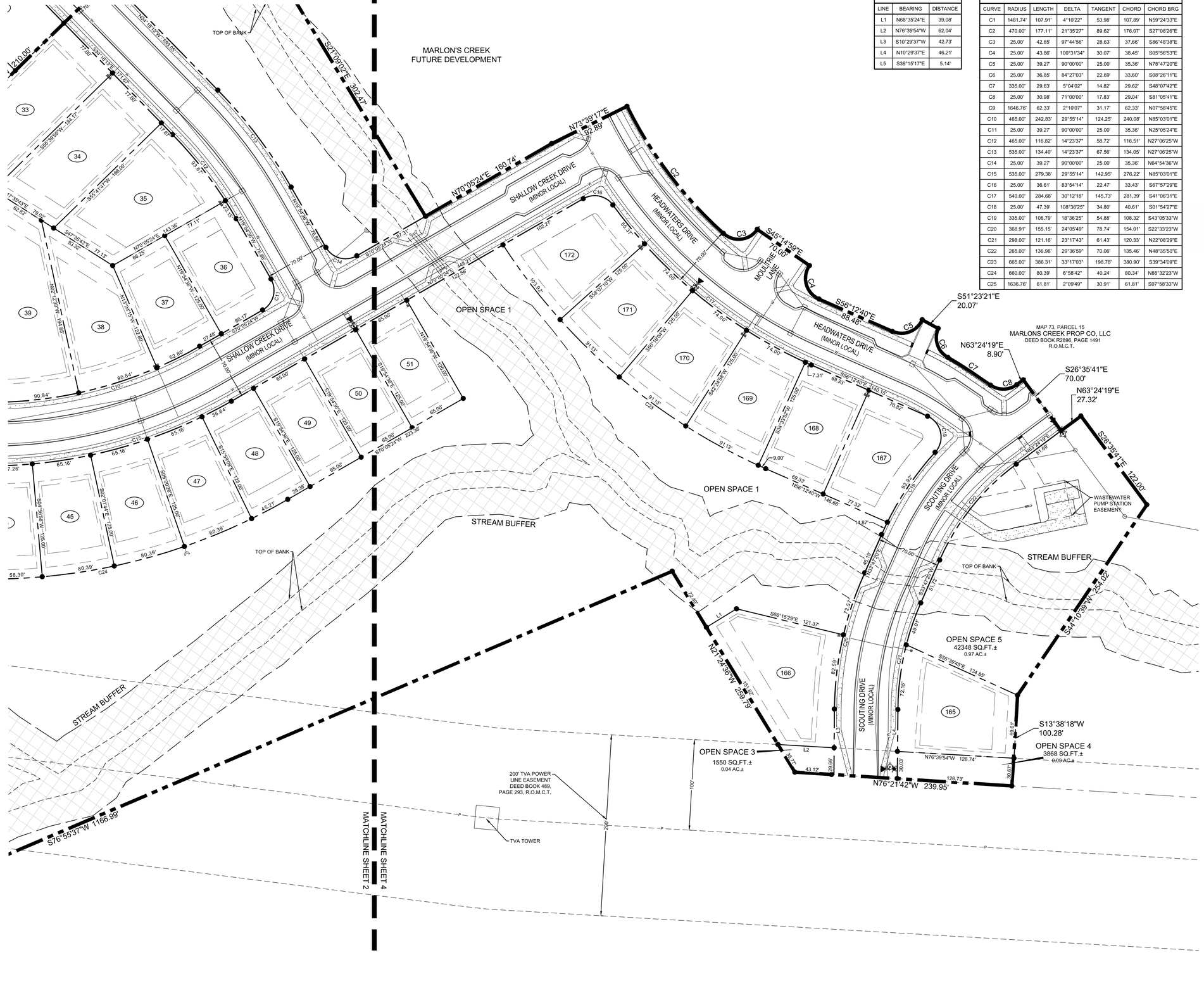


ALLEY LOADED
SINGLE FAMILY
TYPICAL LOT DETAIL
(NOT TO SCALE)

LINE TABLE		
LINE	BEARING	DISTANCE
L1	N68°35'24"E	39.08'
L2	N76°39'54"W	62.04'
L3	S10°29'37"W	42.73'
L4	N10°29'37"E	46.21'
L5	S38°15'17"E	5.14'

CURVE TABLE						
CURVE	RADIUS	LENGTH	DELTA	TANGENT	CHORD	CHORD BRG
C1	1481.74'	107.91'	4°10'22"	53.98'	107.89'	N59°24'33"E
C2	470.00'	177.11'	21°35'27"	89.62'	176.07'	S27°08'26"E
C3	25.00'	42.65'	97°44'56"	28.63'	37.66'	S86°48'38"E
C4	25.00'	43.86'	100°31'34"	30.07'	38.45'	S05°56'53"E
C5	25.00'	39.27'	90°00'00"	25.00'	35.36'	N78°47'20"E
C6	25.00'	36.85'	84°27'03"	22.69'	33.60'	S08°26'11"E
C7	335.00'	29.63'	5°04'02"	14.82'	29.62'	S48°07'42"E
C8	25.00'	30.98'	71°00'00"	17.83'	29.04'	S81°05'41"E
C9	1646.76'	62.33'	2°10'07"	31.17'	62.33'	N07°58'45"E
C10	465.00'	242.83'	29°55'14"	124.25'	240.08'	N85°03'01"E
C11	25.00'	39.27'	90°00'00"	25.00'	35.36'	N25°05'24"E
C12	465.00'	116.82'	14°23'37"	58.72'	116.51'	N27°06'25"W
C13	535.00'	134.40'	14°23'37"	67.56'	134.05'	N27°06'25"W
C14	25.00'	39.27'	90°00'00"	25.00'	35.36'	N64°54'36"W
C15	535.00'	279.38'	29°55'14"	142.95'	276.22'	N85°03'01"E
C16	25.00'	36.61'	83°54'14"	22.47'	33.43'	S67°57'29"E
C17	540.00'	284.68'	30°12'18"	145.73'	281.39'	S41°06'31"E
C18	25.00'	47.39'	108°36'25"	34.80'	40.61'	S01°54'27"E
C19	335.00'	108.79'	18°36'25"	54.88'	108.32'	S43°05'33"W
C20	368.91'	155.15'	24°05'49"	78.74'	154.01'	S22°33'23"W
C21	298.00'	121.16'	23°17'43"	61.43'	120.33'	N22°08'29"E
C22	265.00'	136.98'	29°36'59"	70.06'	135.46'	N48°35'50"E
C23	665.00'	386.31'	33°17'03"	198.78'	380.90'	S39°34'09"E
C24	660.00'	80.39'	6°58'42"	40.24'	80.34'	N88°32'23"W
C25	1636.76'	61.81'	2°09'49"	30.91'	61.81'	S07°58'33"W





LEGEND

- ● IR(N) — IRON ROD (NEW) (5/8" X 18" W/CAP STAMPED "RAGAN SMITH & ASSOCIATES")
- FIRE HYDRANT
- WATER VALVE
- CATCH BASIN/CURB INLET
- —W— WATER LINE
- —S— SANITARY SEWER LINE
- —P— OVERHEAD ELECTRIC POWER LINE
- R.O.M.C.T. — REGISTER'S OFFICE FOR MAURY COUNTY, TENNESSEE

FINAL PLAT

MARLONS CREEK PHASE 1B

1686 LASEA ROAD
3RD CIVIL DISTRICT
MAURY COUNTY, TENNESSEE

DATE: MARCH 17, 2025
SCALE: 1"= 50'
JOB NO. 21-0282

SHEET 4 of 4

LAND SURVEYOR
TED STEVENSON, TN RLS
RAGAN-SMITH ASSOCIATES, LLC.
315 WOODLAND STREET
NASHVILLE, TENNESSEE 37206
OFFICE: 615.244.8591
EMAIL: tstevenson@ragansmith.com

OWNER/DEVELOPER
MARLONS CREEK PROP CO, LLC
2925 BERRY HILL DRIVE
NASHVILLE, TN 37204
CONTACT: OWEN HOSAY
(615) 934-2864

RaganSmith
a Pape-Dawson company

G:\21-0282\1-SURVEY\PLAT\FINAL\PHASE 1B\PHASE 1B FINAL PLAT.DWG

RaganSmith
a Pape-Dawson company

March 17, 2025
via Electronic Application Submittal
Charles Rush
Principal Planner
700 N Garden Street
Columbis, TN., 38401

RE: Marlons Creek, Phase 1B
1686 Lasea Road
Columbia, Tennessee

Dear Mr. Charles Rush,

Enclosed please find the above referenced Final Plat dated March 17, 2025, revised per comments in your email of March 13, 2025. Responses to the comments are addressed as follows:

Planning

Comment 1. *The lead staff person for this case is Charles Rush, Principal Planner. Please contact crush@columbiatn.gov with questions about the development review process or technical comments. The case planner should be copied on all communication with other city staff.*
Response: **Acknowledged.**

Comment 2. *At resubmittal, please provide a response letter addressing each comment along with any revised plans. If the nature of the comment does not warrant a response, or the comment was previously addressed, please simply note that the information has been acknowledged. Any documents or additional information that you want to present to the Planning Commission should be included in your resubmittal.*
Response: **A response letter is included in this re-submittal.**

Comment 3. *Subdivision Regulations 2.3.10 Contents of the Final Plat Submittal: (20) Streets and alleys including widths, classification, names, and proposed ownership and maintenance responsibility.*
Response: **Now shown thereon.**

NASHVILLE
315 Woodland Street
P.O. Box 60070
Nashville, TN 37206

CHATTANOOGA
35 Station Street
Chattanooga, TN 37408

MURFREESBORO
1500 Medical Center Parkway
Suite 2 J
Murfreesboro, TN 37129

FRANKLIN
4068 Rural Plains Circle
Suite 290
Franklin, TN 37064

Comment 4. *Subdivision Regulations 2.3.10 Contents of the Final Plat Submittal: (20) Streets and alleys including widths, classification, names, and proposed ownership and maintenance responsibility.*
Response: **Now shown thereon.**

Comment 5. *Show any monument signs and identify who is the owner/responsible for the maintenance.*
Response: **Now shown thereon.**

Comment 6. *Revisit application to ensure that lots in application is reflected of the lots on the final plat.*
Response: **Now shown thereon.**

Comment 7. *Need an updated application that includes total acreage of the development.*
Response: **Now shown thereon.**

Engineering

Comment 8. *Letter of Credit provided in the amount of $560,000 prior to resubmittal date.*
Response: **Acknowledged.**

Comment 9. *Asphalt binder and curbing shall be installed prior to resubmittal date.*
Response: **Acknowledged.**

Comment10. *Grading shall substantially conform to approved construction plans (within 1 ft.)*
Response: **Acknowledged.**

Comment 11. *Record/reference Stormwater Maintenance Agreement.*
Response: **A copy of the agreement is now included in the submittal documents.**

Comment 12. *Install street signage (stop, street names)*
Response: **Acknowledged.**

Comment 13. *Please show easement for wastewater pump station in OS5.*
Response: **Now shown thereon.**

Comment 14. *Show road ownership and classification.*
Response: **Now shown thereon.**

Wastewater

Comment 15. *Final Plat is not ready for planning commission approval until wastewater reviews all services. Please get with Ryan Filipkowski at wastewater so he can review all applicable items that relate to his department. RFilipkowski@Columbiatn.govShow or note any easements including any pedestrian reciprocal cross access.*
Response: **Acknowledged.**

Building

Comment 16. *No comments*
Response: **Acknowledged.**

Police

Comment 17. *No comments*
Response: **Acknowledged.**

City Attorney

Comment 18. *No comments provided.*
Response: **Acknowledged.**

Columbia Power

Comment 19. *Columbia Power System does not have existing power facilities near your proposed development within our service territory. DREMC will be the service provider for this area.*
Response: **Acknowledged.**

Public Works

Comment 20. *No comments*
Response: **Acknowledged.**

CPWS BB

Comment 21. *Do not plan to serve.*
Response: **Acknowledged.**

Fire

Comment 22. *No comment*
Response: **Acknowledged.**

Columbia Water

Comment 23. *Coordinate walk-through, Bacteria pressure testing with CPWS.*
Response: **Acknowledged.**

Comment 24. All water infrastructure must be installed up to and including the meter box/vault.
Response: Acknowledged.

Comment 25. Available Fire Flow Capacity in Marlon's Creek Subdivision is Less Than 1,000 gpm Until Offsite Improvements are Completed on Blackburn Lane at Clara Mathis.
Response: Acknowledged.

Comment 26. Show water meter/service locations on plat.
Response: Now shown thereon.

Comment 27. Provide a detailed list of water infrastructure cost including labor to CPWS Water Department in advance of plat signing for Deed Over form. Water system must be complete and active at time of plat signing.
Response: Acknowledged.

Comment 28. Water system must be complete and active at time of plat signing.
Response: Acknowledged.

Atmos Energy

Comment 29. No comments provided.
Response: Acknowledged.

Maury County E911

Comment 30. No comments provided.
Response: Acknowledged.

Maury County Schools

Comment 31. No comments provided.
Response: Acknowledged.

Duck River Electric Membership Corp

Comment 32. We plan to serve.
Response: Acknowledged.

Maury County Highway Dept.

Comment 33a. *An 8' sidewalk and a 10' ROW dedication is shown along the frontage of Lasea Road. To date, the Maury County Highway Department has not received any documentation detailing the annexation of the Lasea Road ROW by the City of Columbia along the frontage of this development. Confirm and delineate the limits of the City of Columbia ROW and the limits of the Maury County Highway Department ROW on the FinalPlat. Furthermore, please add the following:*

Comment 33b. *Additional General Note specifying the Maury County Highway Department will not be responsible for any maintenance of the sidewalk in Lasea Road ROW.*

Response: **Now shown thereon.**

Comment 33c. *The beneficiary of the ROW dedication to the associated note.*

Response: **Now shown thereon.**

Comment 33d. *Also, it has been brought to the attention of the Maury County Highway Department that the construction of the culvert under Starboard Lane has been done so in a way that could be detrimental to the Lasea Road roadway. If not done so already, please coordinate with the Highway Superintendent to ensure all required repairs or adjustments are made to warrant the integrity of the existing Lasea Road roadway.*

Response: **Acknowledged.**

ATT

Comment 34. *ATT to serve*

Response: **Acknowledged.**

Please call if you have any questions or comments.

Sincerely,
RaganSmith Associates, LLC

Ted J. Stevenson II, PLS
Survey Project Manager

CITY OF
COLUMBIA
TENNESSEE

DEVELOPMENT SERVICES
700 NORTH GARDEN STREET
COLUMBIA, TN 38401
PHONE: (931) 560-1560
FAX: (931) 560-1541

DEVELOPMENT REVEW COMMITTEE MEETING
Tuesday, March 11, 2025

ITEM NO.
25-0054

DESCRIPTION: 1686 Lasea Road Marlon Creek Phase 1B

COMMENTS:

Planning

1. The lead staff person for this case is Charles Rush, Principal Planner. Please contact crush@columbiatn.gov with questions about the development review process or technical comments. The case planner should be copied on all communication with other city staff.
2. At resubmittal, please provide a response letter addressing each comment along with any revised plans. If the nature of the comment does not warrant a response, or the comment was previously addressed, please simply note that the information has been acknowledged. Any documents or additional information that you want to present to the Planning Commission should be included in your resubmittal.
3. Subdivision Regulations 2.3.10 Contents of the Final Plat Submittal: (20) Streets and alleys including widths, classification, names, and proposed ownership and maintenance responsibility.
4. Subdivision Regulations 2.3.10 Contents of the Final Plat Submittal: (25) Connections to existing and propose streets (including classification) located outside the development.
5. Show any monument signs and identify who is the owner/responsible for the maintenance.
6. Revisit application to ensure that lots in application is reflected of the lots on the final plat.
7. Need an updated application that includes total acreage of the development.

Engineering

8. Provide Letter of Credit in the amount of $560,000 prior to resubmittal date.
9. Asphalt binder and curbing shall be installed prior to resubmittal date.
10. Grading shall substantially conform to approved construction plans (within 1 ft.)
11. Record/reference Stormwater Maintenance Agreement.
12. Install street signage (stop, street names)
13. Please show easement for wastewater pump station in OS5
14. Show road ownership and classification

CITY OF
COLUMBIA
TENNESSEE

DEVELOPMENT SERVICES
700 NORTH GARDEN STREET
COLUMBIA, TN 38401
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Wastewater

15. Final Plat is not ready for planning commission approval until wastewater reviews all services. Please get with Ryan Filipkowski at wastewater so he can review all applicable items that relate to his department. RFilipkowski@Columbiatn.gov

Building

16. No comment.

Police

17. No comment.

City Attorney

18. No comment provided.

Columbia Power

19. Columbia Power System does not have existing power facilities near your proposed development within our service territory. DREMC will be the service provider for this area.

Public Works

20. No comment.

CPWS BB

21. Do not plan to serve.

Fire

22. No comments.

DEVELOPMENT SERVICES
700 NORTH GARDEN STREET
COLUMBIA, TN 38401
PHONE: (931) 560-1560
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Columbia Water

23. Coordinate walk-through, Bacteria pressure testing with CPWS.
24. All water infrastructure must be installed up to and including the meter box/vault.
25. Available Fire Flow Capacity in Marlon's Creek Subdivision is Less Than 1,000 gpm Until Offsite Improvements are completed on Blackburn Lane at Clara Mathis.
26. Show water meter/service locations on plat.
27. Provide a detailed list of water infrastructure cost including labor to CPWS Water Department in advance of plat signing for Deed Over form.
28. Water system must be complete and active at time of plat signing.

Atmos Energy

29. No comments provided.

Maury County E911

30. No comments provided.

Maury County Schools

31. No comments provided.

Duck River Electric Membership Corp

32. We plan to serve.

Maury County Highway Dept.

33. An 8' sidewalk and a 10' ROW dedication is shown along the frontage of Lasea Road. To date, the Maury County Highway Department has not received any documentation detailing the annexation of the Lasea Road ROW by the City of Columbia along the frontage of this development. Confirm and delineate the limits of the City of Columbia ROW and the limits of the Maury County Highway Department ROW on the Final Plat. Furthermore, please add the following:

    - Additional General Note specifying the Maury County Highway Department will not be responsible for any maintenance of the sidewalk in Lasea Road ROW.
    - The beneficiary of the ROW dedication to the associated note.

DEVELOPMENT SERVICES
700 NORTH GARDEN STREET
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Also, it has been brought to the attention of the Maury County Highway Department that the construction of the culvert under Starboard Lane has been done so in a way that could be detrimental to the Lasea Road roadway. If not done so already, please coordinate with the Highway Superintendent to ensure all required repairs or adjustments are made to warrant the integrity of the existing Lasea Road roadway.

ATT

34. We plan to serve.

Resubmittal Guidelines

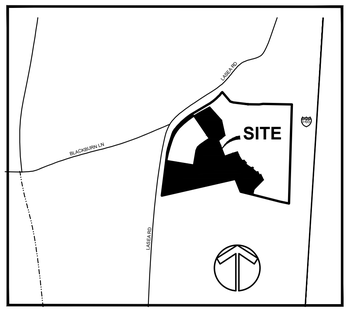
Please provide a comment response letter as well as digital copies of revised plans and supporting documentation. Submit all required documents electronically through the online portal: columbia.onlama.com. If the files are oversized, please provide a file sharing link.

Please contact the case planner identified in the Planning Comments with any questions about the review process.

Please contact pkeltner@columbiatn.gov or srichardson@columbiatn.gov if you encounter difficulties with the online portal.

You will receive an invoice for required advertising and mailing fees. All fees must be paid by the Friday following resubmittal in order advance to the Planning Commission agenda.

NOTE: All resubmittals must demonstrate compliance with city standards prior to Planning Commission review. Requests which do not adhere to regulations and/or remain unresponsive to technical comments will not be forwarded to the next agenda until such items are amended. Final Plat applications which are not ready to proceed to Planning Commission following the first resubmittal deadline will be added to the following DRC agenda to confirm the status of required infrastructure and utilities. Applications which remain incomplete following two resubmittal deadlines will be closed.



VICINITY MAP
(N.T.S.)

GENERAL NOTES

1. THE PURPOSE OF THIS PLAT IS TO CREATE 28 RESIDENTIAL LOTS AND TO DEDICATE RIGHT-OF-WAY.

2. BEARINGS SHOWN HEREON ARE BASED ON THE TENNESSEE COORDINATE SYSTEM OF 1983.

3. THIS PROPERTY IS CURRENTLY ZONED CD3.

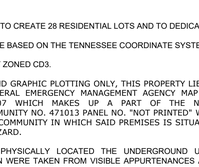
4. BY SCALED MAP LOCATION AND GRAPHIC PLOTTING ONLY, THIS PROPERTY LIES WITHIN FLOOD ZONE "X" AS DESIGNATED ON CURRENT FEDERAL EMERGENCY MANAGEMENT AGENCY MAP NO. 47119C0195E, WITH AN EFFECTIVE DATE OF 4/16/2007 WHICH MAKES UP A PART OF THE NATIONAL FLOOD INSURANCE ADMINISTRATION REPORT; COMMUNITY NO. 471013 PANEL NO. "NOT PRINTED" WHICH IS THE CURRENT FLOOD INSURANCE RATE MAP FOR THE COMMUNITY IN WHICH SAID PREMISES IS SITUATED. SAID MAP DEFINES ZONE "X" AREA OF MINIMAL FLOOD HAZARD.

5. THIS SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. ABOVE GRADE AND UNDERGROUND UTILITIES SHOWN WERE TAKEN FROM VISIBLE APPURTENANCES AT THE SITE, PUBLIC RECORDS AND/OR MAPS PREPARED BY OTHERS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. THEREFORE, RELIANCE UPON THE TYPE, SIZE AND LOCATION OF UTILITIES SHOWN SHOULD BE DONE SO WITH THIS CIRCUMSTANCE CONSIDERED. DETAILED VERIFICATION OF EXISTENCE, LOCATION AND DEPTH SHOULD ALSO BE MADE PRIOR TO ANY DECISION RELATIVE THERETO IS MADE. AVAILABILITY AND COST OF SERVICE SHOULD BE CONFIRMED WITH THE APPROPRIATE UTILITY COMPANY. IN TENNESSEE IT IS A REQUIREMENT, PER "THE UNDERGROUND UTILITY DAMAGE PREVENTION ACT", THAT ANYONE WHO ENGAGES IN EXCAVATION MUST NOTIFY ALL KNOWN UNDERGROUND UTILITY OWNERS, NO LESS THAN (3) THREE NOR MORE THAN (10) TEN WORKING DAYS PRIOR TO THE DATE OF THEIR INTENT TO EXCAVATE AND ALSO TO AVOID ANY POSSIBLE HAZARD OR CONFLICT. TENNESSEE ONE CALL 811.

6. BEING A PORTION OF PARCEL NUMBER 15 AS SHOWN ON MAURY COUNTY PROPERTY MAP NUMBER 73.

7. ALL SIDEWALKS OUTSIDE THE RIGHT-OF-WAY SHALL BE MAINTAINED BY THE HOMEOWNER'S ASSOCIATION.

SINGLE FAMILY
TYPICAL LOT DETAIL
(NOT TO SCALE)



ALLEY LOADED
SINGLE FAMILY
TYPICAL LOT DETAIL
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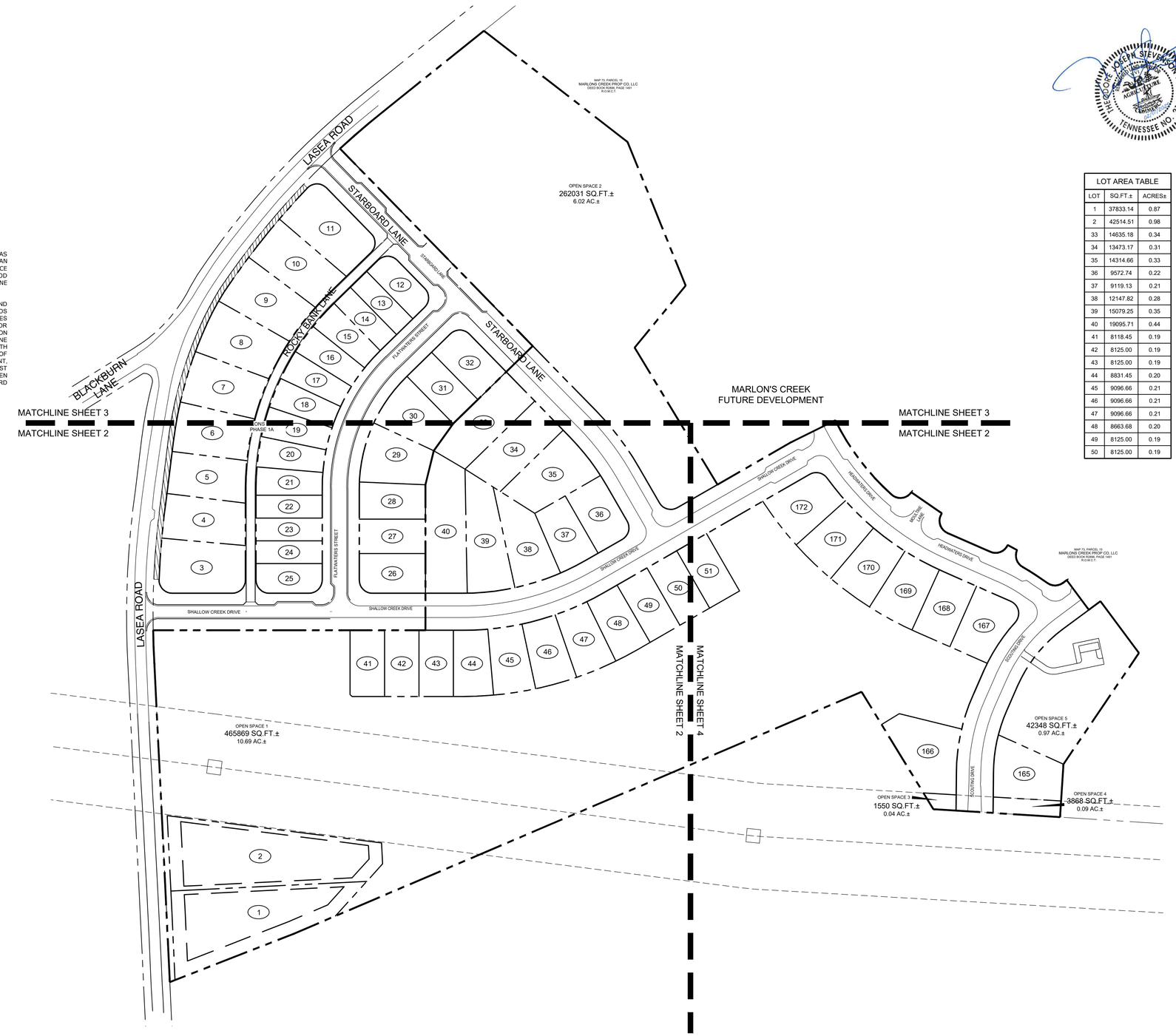


LOTS AREA	370,763 SQ. FT. OR 8.51 ACRES±
OPEN SPACE	775,666 SQ. FT. OR 17.80 ACRES±
RIGHT-OF-WAY	159,009 SQ. FT. OR 3.65 ACRES±
TOTAL AREA	1,305,438 SQ. FT. OR 29.96 ACRES±

SEE NOTE 1.

0 50 100

LOT AREA TABLE		
LOT	SQ.FT.±	ACRES±
1	37833.14	0.87
2	42514.51	0.98
33	14635.18	0.34
34	13473.17	0.31
35	14314.66	0.33
36	9572.74	0.22
37	9119.13	0.21
38	12147.82	0.28
39	15079.25	0.35
40	19095.71	0.44
41	8118.45	0.19
42	8125.00	0.19
43	8125.00	0.19
44	8831.45	0.20
45	9096.66	0.21
46	9096.66	0.21
47	9096.66	0.21
48	8663.68	0.20
49	8125.00	0.19
50	8125.00	0.19

LOT AREA TABLE		
LOT	SQ.FT.±	ACRES±
51	8125.00	0.19
165	12280.07	0.28
166	14683.98	0.34
167	10723.58	0.25
168	9686.25	0.22
169	10320.60	0.24
170	10320.60	0.24
171	10320.60	0.24
172	11249.42	0.26

LOT AREA TABLE		
LOT	SQ.FT.±	ACRES±
OS1	465869.00	10.69
OS2	262031.33	6.02
OS3	1550.31	0.04
OS4	3868.30	0.09
OS5	42347.88	0.97

CERTIFICATE OF OWNERSHIP AND DEDICATION

I (WE) HEREBY CERTIFY THAT I AM (WE ARE) THE OWNER(S) OF THE PROPERTY SHOWN AND DESCRIBED HEREON AS EVIDENCED IN DEED BOOK R2896, PAGE 1491, MAURY COUNTY REGISTER'S OFFICE AND ADOPT THIS FINAL SUBDIVISION PLAT OR THE PROPERTY AS SHWON HEREON AND DEDICATE ALL PUBLIC WAYS AND EASEMENTS AS NOTED WITH MY (OUR) FREE CONSENT.

OWNER(S) DATE

TITLE (IF ACTION FOR CORPORATION OR PARTNERSHIP)

CERTIFICATE OF ACCURACY

I (WE) HEREBY CERTIFY THAT TO THE BEST OF MY (OUR) KNOWLEDGE AND BELIEF THIS IS A TRUE AND ACCURATE SURVEY OF THE PROPERTY SHOWN HEREON; THAT THIS IS A CATEGORY "I" LAND SURVEY AS DEFINED IN TITLE 62, CHAPTER 18, TENNESSEE CODE ANNOTATED, AND THAT THE RATIO OF PRECISION IS GREATER THAN OR EQUAL TO 1:304,042.

RAGAN-SMITH ASSOCIATES, LLC

TED J. STEVENSON, II, RLS NUMBER 2136 2/17/2025 DATE

CERTIFICATE OF THE APPROVAL OF WATER SYSTEM

I HEREBY CERTIFY THAT THE WATER SYSTEM(S) OUTLINED OR INDICATED ON THIS FINAL SUBDIVISION PLAT HAS/HAVE 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.

NAME DATE

TITLE AUTHORIZING AGENCY

CERTIFICATE OF APPROVAL OF STREETS, DRAINAGE, AND UTILITIES

I HEREBY CERTIFY THAT THE STREETS, DRAINAGE, AND UTILITIES OUTLINED OR INDICATED ON THIS FINAL SUBDIVISION PLAT HAVE BEEN INSTALLED IN ACCORDANCE WITH CITY SPECIFICATIONS, OR A PERFORMANCE SURETY IN THE AMOUNT OF $____ FOR STREETS AND DRAINAGE HAS BEEN POSTED WITH THE CITY OF COLUMBIA, TENNESSEE, TO ASSURE COMPLETION OF SUCH IMPROVEMENTS.

CITY ENGINEER DATE

COLUMBIA, TENNESSEE

CERTIFICATE OF APPROVAL FOR RECORDING

I HEREBY CERTIFY THAT THE FINAL SUBDIVISION PLAT SHOWN HEREON HAS BEEN FOUND TO COMPLY WITH THE CITY OF COLUMBIA UBDIVISION REGULATIONS, WITH THE EXCEPTION OF SUCH VARIANCES, IF ANY, AS NOTED IN THE MINUTES OF THE COLUMBIA MUNICIPAL PLANNING COMMISSION, AND THAT IT HAS BEEN APPROVED FOR RECORDING IN THE OFFICE OF THE MAURY COUNTY REGISTER OF DEEDS.

PLANNING DIRECTOR DATE

COLUMBIA, TENNESSEE

CERTIFICATE OF SUBDIVISION NAME AND STREET NAMES

SUBDIVISION NAME AND STREET NAMES APPROVED BY THE CITY ENGINEERING DEPARTMENT AND BY E-911 MAURY COUNTY.

MAURY COUNTY E-911 DATE

CERTIFICATE OF SANITARY SEWER SYSTEM

I HEREBY CERTIFY THAT THE SANITARY SEWER SYSTEM OUTLINED OR INDICATED ON THIS FINAL SUBDIVISION PLAT HAS BEEN INSTALLED IN ACCORDANCE WITH THE CURRENT LOCAL AND STATE GOVERNMENT REQUIREMENTS, OR A SUFFICIENT BOND OR OTHER SURETY HAS BEEN FILED TO GUARANTEE SAID INSTALLATION.

DIRECTOR OF WASTEWATER DEPARTMENT DATE

COLUMBIA, TENNESSEE

CERTIFICATE OF COMPLIANCE

I HEREBY CERTIFY THAT THE FINAL SUBDIVISION PLAT SHOWN HEREON HAS BEEN FOUND TO COMPLY WITH THE CITY OF COLUMBIA SUBDIVISION REGULATIONS AND OTHER ADOPTED ORDINANCES AND POLICIES.

CITY ENGINEER DATE

COLUMBIA, TENNESSEE

FINAL PLAT

MARLONS CREEK PHASE 1B

1686 LASEA ROAD
3RD CIVIL DISTRICT
MAURY COUNTY, TENNESSEE

DATE: FEBRUARY 17, 2025
SCALE: 1"= 50'
JOB NO. 21-0282

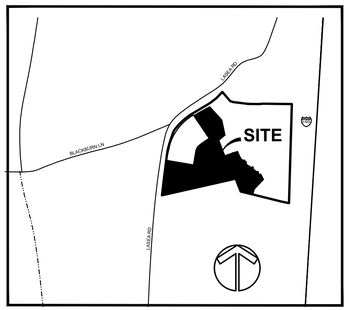
SHEET 1 of 4

LAND SURVEYOR
TED STEVENSON, TN RLS
RAGAN-SMITH ASSOCIATES, LLC.
315 WOODLAND STREET
NASHVILLE, TENNESSEE 37206
OFFICE: 615.244.8591
EMAIL: tstevenson@ragansmith.com

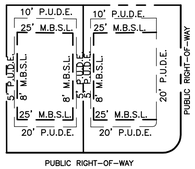
OWNER/DEVELOPER
MARLONS CREEK PROP CO, LLC
2925 BERRY HILL DRIVE
NASHVILLE, TN 37204
CONTACT: OWEN HOSAY
(615) 934-2864

RaganSmith
a Pape-Dawson company

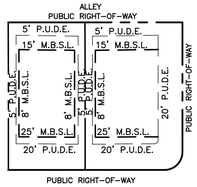
G:\21-0282\1-SURVEY\PLAT\FINAL\PHASE 1B\PHASE 1B FINAL PLAT.DWG



VICINITY MAP
(N.T.S.)



SINGLE FAMILY
TYPICAL LOT DETAIL
(NOT TO SCALE)



ALLEY LOADED
SINGLE FAMILY
TYPICAL LOT DETAIL
(NOT TO SCALE)

LINE TABLE		
LINE	BEARING	DISTANCE
L1	N68°35'24"E	39.08'
L2	N76°39'54"W	62.04'
L3	S10°29'37"W	42.73'
L4	N10°29'37"E	46.21'

CURVE TABLE						
CURVE	RADIUS	LENGTH	DELTA	TANGENT	CHORD	CHORD BRG
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C4	25.00'	43.86'	100°31'34"	30.07'	38.45'	S05°56'53"E
C5	25.00'	39.27'	90°00'00"	25.00'	35.36'	N78°47'20"E
C6	25.00'	36.85'	84°27'03"	22.69'	33.60'	S08°26'11"E
C7	335.00'	29.63'	5°04'02"	14.82'	29.62'	S48°07'42"E
C8	25.00'	30.98'	71°00'00"	17.83'	29.04'	S81°05'41"E
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LEGEND

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- IR(O) — IRON ROD (OLD)
- E — ELECTRIC BOX
- FIRE HYDRANT
- WATER VALVE
- CATCH BASIN/CURB INLET
- SA — SANITARY SEWER LINE
- P — OVERHEAD ELECTRIC POWER LINE
- UTILITY POLE W/ANCHOR
- UTILITY POLE
- R.O.M.C.T. — REGISTER'S OFFICE FOR MAURY COUNTY, TENNESSEE

MATCHLINE SHEET 3
MATCHLINE SHEET 2

MARLONS CREEK
PHASE 1A

LASEA ROAD

FLATWATERS STREET

SHALLOW CREEK DRIVE

N10°00'36"E 729.31'

N79°59'23"W 514.40'

S79°59'23"E 70.61'

N79°59'23"W 70.61'

S45°36'23"W 69.36'

S23°48'28"W 69.36'

S49°27'14"E 68.47'

S47°36'43"E 82.83'

S47°05'43"E 80.36'

S45°14'47"W 68.00'

S45°14'47"W 188.00'

S45°14'47"W 188.17'

N70°05'24"E 143.36'

66.25'

77.11'

77.13'

S70°05'24"W 78.66'

S70°05'24"W 70.00'

S70°05'24"W 80.17'

S70°05'24"W 65.00'

S70°05'24"W 90.84'

S70°05'24"W 52.80'

S70°05'24"W 27.46'

S70°05'24"W 8.34'

N10°54'36"W 78.66'

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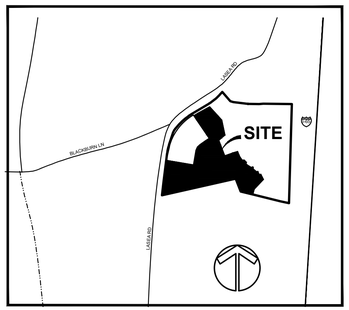
N10°54'36"W 65.00'

N10°54'36"W 65.00'

N10°54'36"W 65



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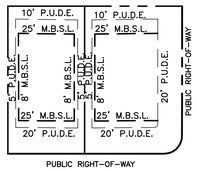
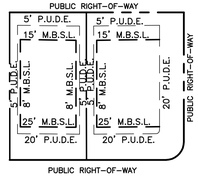
(N.T.S.)



SINGLE FAMILY
TYPICAL LOT DETAIL
(NOT TO SCALE)



ALLEY LOADED
SINGLE FAMILY
TYPICAL LOT DETAIL
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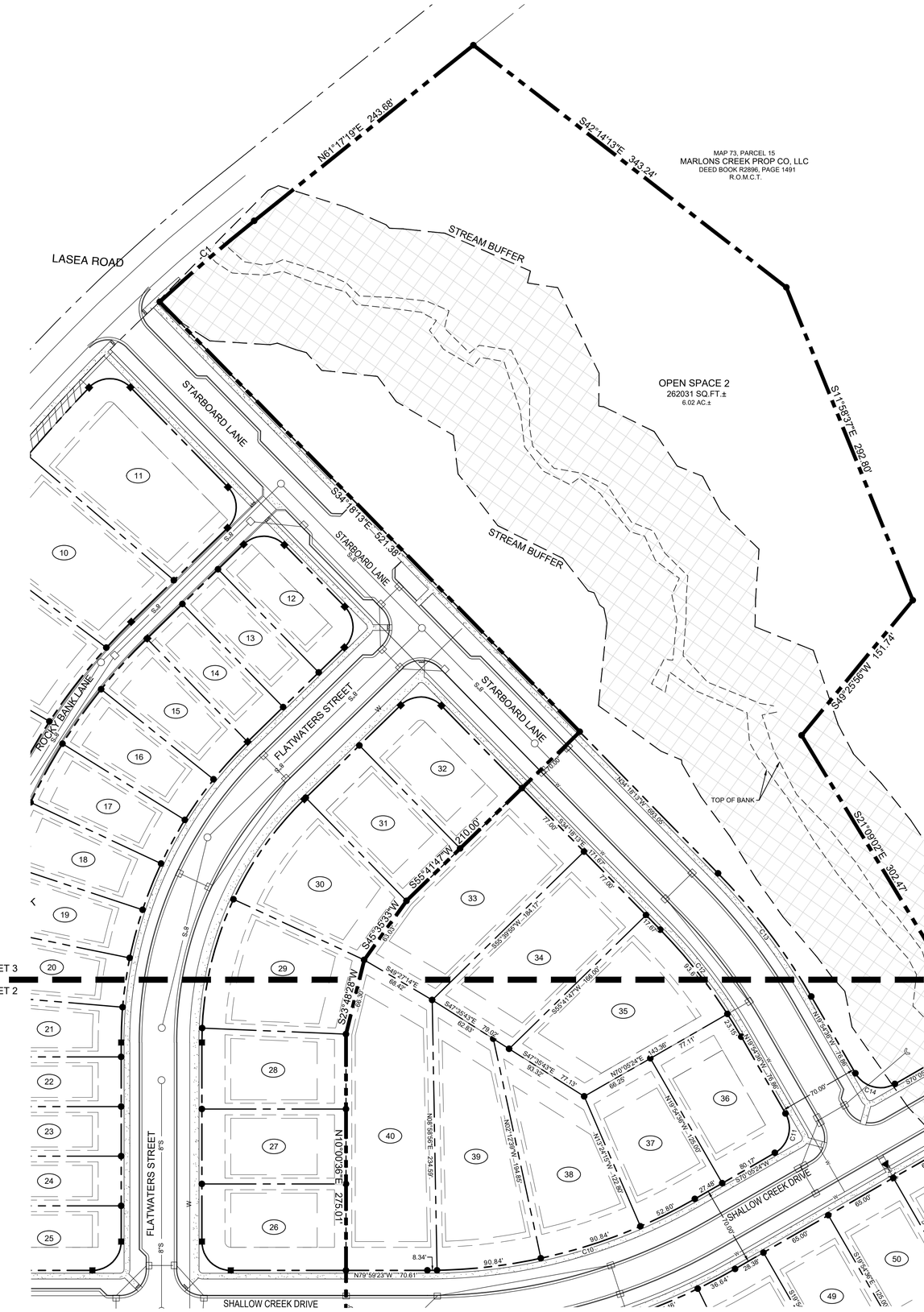

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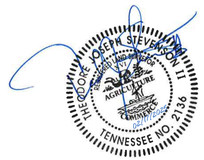
0 50 100



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FINAL PLAT

MARLONS CREEK PHASE 1B

1686 LASEA ROAD
3RD CIVIL DISTRICT
MAURY COUNTY, TENNESSEE

DATE: FEBRUARY 17, 2025
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SHEET 3 of 4

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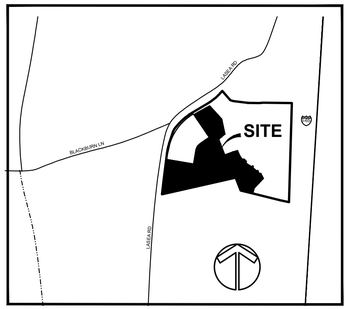
G:\21-0282\1-SURVEY\PLAT\FINAL\PHASE 1B\PHASE 1B FINAL PLAT.DWG



VICINITY MAP
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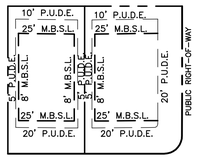
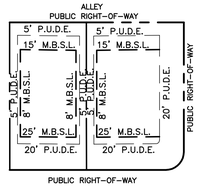


SINGLE FAMILY
TYPICAL LOT DETAIL
(NOT TO SCALE)



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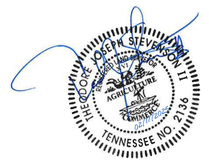
0 50 100



MARLON'S CREEK
FUTURE DEVELOPMENT

TOP OF BANK

S21°09'02"E 302.47'

N73°39'17"E 92.89'

N70°05'24"E 160.74'

SHALLOW CREEK DRIVE

HEADWATERS DRIVE

MOULTRIE LANE

S45°14'39"E 70.00'

S56°12'40"E 88.48'

S51°23'21"E 20.07'

MAP 73, PARCEL 15
MARLONS CREEK PROP CO, LLC
DEED BOOK R2896, PAGE 1491
R.O.M.C.T.

S26°35'41"E 70.00'

N63°24'19"E 27.32'

S26°35'41"E 122.00'

SCOUTING DRIVE

OPEN SPACE 1

STREAM BUFFER

OPEN SPACE 5
42348 SQ.FT.±
0.97 AC.±

OPEN SPACE 3
1550 SQ.FT.±
0.04 AC.±

OPEN SPACE 4
3868 SQ.FT.±
0.09 AC.±

S44°10'39"W 254.02'

N27°21'36"W 259.79'

N76°21'42"W 239.95'

S76°55'37"W 1166.99'

100.28'

S13°38'18"W

200' TVA POWER LINE EASEMENT DEED BOOK 489, PAGE 293, R.O.M.C.T.

MATCHLINE SHEET 2

MATCHLINE SHEET 4

LEGEND

●IR(N)	IRON ROD (NEW) (5/8" X 18" W/CAP STAMPED "RAGAN SMITH & ASSOCIATES")
○IR(O)	IRON ROD (OLD)
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R.O.D.C.T.	REGISTER'S OFFICE FOR MAURY COUNTY, TENNESSEE

FINAL PLAT

MARLONS CREEK PHASE 1B

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EMAIL: tstevenson@ragansmith.com

OWNER/DEVELOPER
MARLONS CREEK PROP CO, LLC
2925 BERRY HILL DRIVE
NASHVILLE, TN 37204
CONTACT: OWEN HOSAY
(615) 934-2864

RaganSmith
a Pape-Dawson company

G:\21-0282\1-SURVEY\PLAT\FINAL\PHASE 1B\PHASE 1B FINAL PLAT.DWG

Appendix B: Subdivision Development Agreement

This DEVELOPMENT AGREEMENT is made and entered into on this

17th day of February, 2025,
between THE CITY OF COLUMBIA, TENNESSEE, (hereinafter the "CITY"), and

Marlons Creek Prop Co, LLC, the DEVELOPER (hereinafter the "DEVELOPER") named on the Addendum to this Agreement attached hereto and by this reference made a part hereof (hereinafter the "ADDENDUM").

WITNESSETH:

WHEREAS, the DEVELOPER desires to develop the property described on the ADDENDUM (hereinafter the "PROJECT"); and,

WHEREAS, the Development Plan of the PROJECT has been approved by the Columbia Municipal Planning Commission (hereinafter the "CMPC") on the

17th day of February, 2025,
pursuant to Tennessee Code Annotated Title 13, Chapter 4, and the Subdivision Regulations of Columbia, Tennessee (hereinafter the "SUBDIVISION REGULATIONS"); and,

WHEREAS, the DEVELOPER is the owner of the PROJECT and has authority to engage in such development; and,

WHEREAS, the DEVELOPER desires to develop and improve said PROJECT; and,

WHEREAS, in order to provide for the health, safety, and welfare of future residents of the PROJECT, it will be necessary for certain improvements to the CITY'S utility systems, public infrastructure, and common areas to be constructed within and to serve the PROJECT including but not be limited to roads, bridges, sidewalks, pedestrian facilities, stormwater facilities, street signs, markings, signals, street lighting, recreation and park facilities, landscaping, and the like (hereinafter the "IMPROVEMENTS"); and,

WHEREAS, in order for the IMPROVEMENTS to be fully integrated with the utility systems and public infrastructure of the CITY and to function in a satisfactory manner, the DEVELOPER has agreed to construct, in accordance with the Subdivision Regulations and other rules, regulations, and ordinances of the CITY, the IMPROVEMENTS in said PROJECT and extend utilities to the PROJECT at their own cost; and,

WHEREAS, the CITY is willing to accept the dedication of the streets, utilities, and other improvements as determined in the Development Plan of the PROJECT, subject to the City of Columbia City Council approval by resolution, and subject to the applicant's compliance with all requirements in this agreement and applicable existing laws of the CITY of Columbia and the State of Tennessee,

NOW, THEREFORE, it is agreed and understood as follows:

B1 General Conditions

B1.1 Construction Costs

The DEVELOPER shall pay for all material and labor necessary to install and complete the roads, sidewalks, sewers, utilities, and other facilities in accordance with this agreement.

B1.2 City Ordinances, Rules and Regulations

All currently existing CITY ordinances, rules and regulations, and the Subdivision Regulations adopted by the CMPC are made a part of this agreement. In the event of a conflict between the terms of this agreement and a CITY ordinance, the ordinance shall prevail. In the event of a conflict between the terms of this agreement and the Subdivision Regulations, the Subdivision Regulations shall prevail. All work done under this agreement is to be performed in accordance with plans and specifications approved by the City and made a part, hereof.

B1.3 Fees

Review fees, inspection fees, and other amounts established by the CITY shall be paid prior to any review of the plans. If the DEVELOPER fails to install the facilities in accordance with the terms of this Agreement, no portion of the review fees, inspection fees, or other amounts paid to the CITY shall be refundable to the DEVELOPER.

B1.4 Inspection

The CITY shall have a continuous right to inspect the work and facilities to assure that the work and facilities are in accordance with the Subdivision Regulations, approved Construction Plans, and other rules, regulations, and ordinances of the CITY.

B1.5 Right of Entry

The CITY shall have the right, in case of breach of the Performance Agreement, to enter upon any property of the DEVELOPER and take all necessary actions to complete the work and obligations not completed.

B1.6 Easements

The DEVELOPER shall obtain and dedicate to the CITY or cause to be dedicated to the CITY, either by dedication on the plat or by easement deed, in either case in a form acceptable to the CITY, permanent easements of such widths as required by the CITY and noted on the Plans. The DEVELOPER further agrees to grant the necessary easements and rights-of-way across the DEVELOPER's properties without expense to the CITY and waive any claim for damages.

B1.7 Stormwater Maintenance Agreement

If the PROJECT includes any detention or retention ponds, common drainage ditches, water quality facilities, or stormwater facilities outside of the CITY rights-of-way, the DEVELOPER will submit a Stormwater Maintenance Agreement, to be filed with and recorded with the Final Plat.

B1.8 Attorney Fees and Other Expenses

The DEVELOPER shall pay all reasonable costs and expenses incurred by the CITY in enforcing or completing this agreement. The DEVELOPER shall pay all costs and expenses, including the CITY'S attorney fees, of any legal proceedings brought by the CITY against the DEVELOPER seeking remedies for the DEVELOPER'S failure to perform any of its obligations hereunder, whether or not any proceedings are prosecuted to judgment.

B1.9 Agreement Not Assignable

No third party shall obtain any benefits or rights under this agreement nor shall the rights or duties be assigned by either party.

B1.10 Revocation and Interpretation

This agreement shall bind the DEVELOPER when executed by the DEVELOPER and may not be revoked by the DEVELOPER without permission of the CITY, even if the agreement has not been executed by the CITY, or does not bind CITY, for other reasons. This agreement shall be interpreted in accordance with Tennessee law and may only be enforced in the Chancery Court or Circuit Court or Court of competent jurisdiction of Maury County, Tennessee, and Tennessee Appellate Courts.

B1.11 No Oral Agreement

This agreement may not be orally amended and supersedes all prior negotiations, commitments, or understandings.

B1.12 Separability

If any portion of this agreement is held to be unenforceable, the CITY shall have the right to determine whether the remainder of the agreement shall remain in effect, or whether the agreement shall be void and all rights of the DEVELOPER pursuant to this agreement terminated.

B 1.13 Transferability

The DEVELOPER agrees to not transfer the property on which this PROJECT is to be located without first providing the CITY with written notice. The transferee shall provide the CITY an Assumption Agreement of this Agreement, whereby the transferee agrees to perform the IMPROVEMENTS required under this agreement and to provide a performance surety. The DEVELOPER understands that if the DEVELOPER transfers said property without providing the notice of transfer and Assumption Agreement as required herein, they will be in breach of this agreement and in violation of the Subdivision Regulations.

B1.14 Indemnity

The DEVELOPER shall indemnify and hold the CITY harmless from all loss, costs, expenses, liability, money damages, penalties, or claims arising out of any work covered by this agreement, including any attorney fees incurred by the CITY in connection therewith. Inspection of the IMPROVEMENTS by an authorized representative of the CITY shall not constitute a waiver by the CITY of any defect or of any of the DEVELOPER'S obligations hereunder.

B1.15 Binding Effect

This agreement shall be binding upon the DEVELOPER and the DEVELEPOR's heirs, administrators, executors, assigns, and any other successors in interest.

B1.16 Entire Agreement

This document contains the entire agreement between the parties, and there are no collateral understandings or agreements between them. No variations or alterations of the terms of this agreement shall be binding upon either of the parties, unless the same be reduced to writing and made an amendment to this agreement.

B1.17 Headings

Paragraph titles and headings contained herein are inserted for convenience only and shall not be deemed a part of the agreement and in no way shall define, limit, extend, or describe the scope or intent of any provision, hereof.

B2 Performance Surety

At the time of execution of this agreement, the DEVELOPER shall provide the CITY a performance surety, in an amount determined by the City Engineer for the IMPROVEMENTS and other items specified by the Construction Plans, plats, and plans approved by the CMPC. This performance surety shall secure performance of all obligations of the DEVELOPER under this agreement. The performance surety shall meet all requirements established in Chapter 4: Performance Agreement of the Subdivision Regulations and secure full compliance with all terms and conditions of this agreement. The performance surety may be called for failure to comply with the provisions of this agreement in whole or in part according to the terms of the performance surety. The performance surety will not be released, except and until there has been full compliance with this agreement.

B3 Construction

B3.1 Construction Plans

The DEVELOPER shall submit to the CITY, Construction Plans describing in reasonable detail all utility systems, all storm water management systems, all street systems, pedestrian facilities, and all IMPROVEMENTS. The Construction Plans shall be designed according to the Engineering Standards and Specifications, all other codes and ordinances enforced by the City, and sound engineering judgment. The design of all utility systems shall follow the State of Tennessee and utility provider design criteria and specifications. In the event of a disagreement as to compliance with or interpretation of the Construction Plans and the CITY'S specifications, the decision of the CITY shall be final and binding on the DEVELOPER. The Construction Plans shall be prepared by a design professional licensed by the State of Tennessee to design all systems and shall bear the seal, signature, date, and license number of the professional preparing the Construction Plans.

B3.2 Commencement of Construction

Construction of IMPROVEMENTS may not begin until the following events have occurred:

A. The Preliminary Plat has been approved by the CMPC;
B. The Construction Plans are approved by the CITY;
C. The Tennessee Department of Environment and Conservation has approved the applicable portions of the Plans and has confirmed its approval to the CITY and/or DEVELOPER in writing;
D. The CITY shall have received an appropriately executed Development Agreement; and
E. The DEVELOPER shall give the CITY notice of commencement of construction, in writing at least one (1) working day prior to commencement.

B3.3 Site Grading

The DEVELOPER, hereby, agrees to construct all site grading to comply with the approved Construction Plans, including the approved Erosion Control Plan for the PROJECT and to comply with the Engineering Standards and Specifications, Stormwater Ordinance, and all other codes and ordinances enforced by the CITY.

B3.4 Storm Water Management Systems

The DEVELOPER shall be responsible for all storm water management work made necessary by the development of this PROJECT. It is understood and agreed that the CITY in its proprietary function is not and could not be expected to oversee, supervise, or direct the construction of all drainage improvements, and the excavation incident thereto. Neither is the CITY vested with the original design responsibility nor the means to formally survey elevations or the locations of improvements at every stage of the construction process. The CITY is vested with the right of periodic inspections, stop work order, and final approval as a measure of secondary or subsequent enforcement. The DEVELOPER has and shall retain the responsibility to properly anticipate, survey, design and construct the subdivision storm water improvements and give full assurance that same shall not adversely affect the flow or quality of surface water from or upon any property. In providing technical assistance, plan and design review, the CITY does not and shall not relieve or accept any liability from the DEVELOPER.

B3.5 Street Construction

The DEVELOPER, hereby, agrees to construct and improve the streets shown on the Construction Plans to comply with the CITY's specifications and to the satisfaction and approval of the City Engineer by grading, draining, subgrade preparation, base preparation, curbing, signage, striping, signalization, sidewalk installation, and paving with the required preparation, amounts, and types of material. The DEVELOPER further agrees to pay the cost of all engineering, inspection and laboratory cost incidental to the construction of subdivision streets including but not limited to material and density testing. The DEVELOPER further agrees to make all necessary adjustments to manholes and valve boxes to meet finished surface grade and to repair subsurface or base material, as required, in areas directed by the CITY Engineer, prior to application of final surface.

B3.6 Time Period for Construction

The DEVELOPER agrees to be bound to complete, within three (3) years of commencement of construction, all IMPROVEMENTS shown on the plat and plans and all things required by this agreement.

The DEVELOPER further agrees that if due to unforeseen circumstances, he is unable to complete all work included in this agreement within the time specified above, but desires to complete said agreement to the satisfaction of the CITY, the DEVELOPER shall submit a written request for extension of the agreement period to the CITY at least sixty (60) days prior to the expiration of the existing agreement period, specifying the reason for the DEVELOPER's failure to complete the work as agreed and a prospective date for such completion. The DEVELOPER further agrees that if the performance surety executed to secure the value of the work to be performed under this agreement, due to inflation or rising costs, is determined to be inadequate by the City Engineer to secure the cost of said IMPROVEMENTS at the time an extension is sought, the DEVELOPER will provide the additional security to bring the performance surety amount in line with current cost projections as made by the CITY. The DEVELOPER understands that the DEVELOPER's failure to follow the extension procedure constitutes a breach of this agreement and places the DEVELOPER in violation of the Subdivision Regulations. The DEVELOPER further understands, that should the DEVELOPER fail to complete any part of the work outlined in this agreement in a good and workmanlike manner as approved, the CITY shall reserve the right to withhold and withdraw all building permits within the PROJECT until all items of this Agreement have been fulfilled by the DEVELOPER.

B3.7 Off-Site Improvements

The DEVELOPER shall construct any and all off-site facilities that may be required to serve the PROJECT. Unless specifically noted in the Construction Plans and made a part of separate agreement with the CITY, the CITY shall not be required to reimburse the DEVELOPER for construction of off-site improvements.

B3.9 Inspection and Compliance

After construction begins, the CITY shall provide on-site construction inspection as the CITY deems necessary to ensure that all work is performed and completed in accordance with the Construction Plans, CITY specifications, and the contents of this agreement. In the event of a disagreement as to compliance with or interpretation of the Construction Plans and the CITY'S specifications, the decision of the CITY shall be final and binding on the DEVELOPER. If the DEVELOPER fails to construct in accordance with the approved Construction Plans or to comply with the CITY'S specifications, the CITY may issue a stop-work order and DEVELOPER, hereby, agrees to be bound by such order.

B3.10 Testing

The DEVELOPER agrees to pay the cost of all engineering, inspection, and laboratory cost incidental to construction of the streets, sidewalks, utilities, sewers, compacted fill material, and other facilities included within this agreement. Such testing includes, but is not limited to, material and density testing.

B3.11 Scrap Removal

The DEVELOPER agrees to comply with all local, state, and federal rules and regulations regarding waste material and debris disposal.

B3.12 Traffic Control

The DEVELOPER, hereby, agrees to prepare a traffic control/detour plan where required and shall submit said plan to the CITY for review and approval. All traffic control and safety devices, including

signs, lane markings, and barriers necessitated by construction activity undertaken pursuant to this agreement shall be installed and maintained by the DEVELOPER. All traffic control devices shall meet the standards and be installed in accordance with the latest edition of the Manual on Uniform Traffic Control Devices for Streets and Highways, published by the United States Department of Transportation.

B3.13 Temporary Facilities

The DEVELOPER shall provide all temporary facilities including but not limited to utilities and roadways, that are determined by the CITY to be required in connection with or as a result of interruption of service or access that occurs as a consequence of construction activity associated with the work covered by this agreement. Such temporary services shall in all regards and at all points in time be adequate to assure emergency access and adequate fire flows.

B4 Acceptance of Improvements

B4.1 Completion of Improvements

At such time as the improvements have been constructed and installed, in accordance with the Constructions Plans and specifications, required testing and inspections completed and found satisfactory, and all clean-up and cover-up has been done to the satisfaction the City Engineer, a letter requesting preliminary acceptance of the PROJECT will be provided by the DEVELOPER. Formal acceptance shall follow the procedure established in the Subdivision Regulations.

The DEVELOPER agrees the DEVELOPER shall have no claim, direct or implied, in the title or ownership of the IMPROVEMENTS specified in this agreement when the IMPROVEMENTS are complete and thereafter accepted by the CITY. The DEVELOPER will be responsible for construction failures and defects in PROJECT prior to final acceptance. During this period, it shall remain the responsibility of the DEVELOPER to correct and cure these defects and failures.

B4.2 As-Built Drawings and Post-Completion Items

The DEVELOPER agrees to furnish to the CITY as-built plans, on a reproducible, stable media, of the sanitary sewer, storm water management, water mains and service system, and streets within the subdivision before the CITY shall accept the subdivision.

B4.3 Acceptance of Facilities

Upon final acceptance of all or part of the IMPROVEMENTS in the PROJECT, then those IMPROVEMENTS shall become the property of the CITY free from all claims from any person or entity without the necessity of any further writing, agreement, or deed. The DEVELOPER further agrees that any facilities placed within a public or platted right-of-way or dedicated public easement are irrevocably dedicated to the public use without any right of reimbursement or compensation of any kind.

B4.4 Failure to Install

In the event the DEVELOPER fails to install the facilities in accordance with the terms of this agreement, the CITY may, in its sole discretion, elect to accept all or a portion of the IMPROVEMENTS in the PROJECT. Should the CITY choose to accept all or a portion of these IMPROVEMENTS, the CITY shall become the sole owner of these facilities. The CITY may give notice of acceptance by writing delivered to the DEVELOPER or recorded in the Register's Office of Maury County, Tennessee. No further writing or deed shall be required.

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed in multiple originals by persons properly authorized so, to do on or as of the day and year first given.

Marlons Creek Subdivision
PROJECT

Completed by the Developer	*Completed by the City*
Marlons Creek Prop Co. LLC DEVELOPER NAME	
Owen Hosey AUTHORIZED AGENT NAME	CITY ENGINEER
 SIGNATURE	SIGNATURE
2-17-2025 DATE	DATE
2925 Berry Hill Drive STREET	
Nashville, TN 37204 CITY, STATE, ZIP	
615-934-8264 PHONE	
owen@freehillventures.net EMAIL	
Attest	*Attest*
Mandy A. Allen ATTEST NAME	ATTEST NAME
 ATTEST SIGNATURE	ATTEST SIGNATURE
02/17/2025 DATE	DATE

BK/PG: R3051/1245-1261
25003177

17 PGS:AL-AGREEMENT
JANE BATCH: 347084 03/10/2025 - 10:10 AM

VALUE	0.00
MORTGAGE TAX	0.00
TRANSFER TAX	0.00
RECORDING FEE	85.00
ARCHIVE FEE	0.00
DP FEE	2.00
REGISTER'S FEE	0.00
TOTAL AMOUNT	87.00

STATE OF TENNESSEE, MAURY COUNTY
JOHN FLEMING
REGISTER OF DEEDS

Plu Owen Hosay

DOCUMENT PREPARED BY:
Name: Hunter Fred
Company Ragan Smith
Address: 315 Woodland St.
Nashville TN, 37206

After recording return copy to City of Columbia, Development Services

INSPECTION AND MAINTENANCE AGREEMENT OF PRIVATE STORMWATER MANAGEMENT FACILITIES

Map & Parcel Number: Map 73, Parcel 15.00
Project Name: Marlons Creek Phase 1B

Recorded by deed in the Register of Deeds Office of Maury County in Deed Book R2896, Page(s) 1491-1496.

THIS AGREEMENT, made this 10 day of March, 2025, by and between Marlons Creek Prop Co. LLC hereinafter referred to as the "OWNER(S)" of the following property and City of Columbia, Tennessee, hereinafter referred to as the "CITY",

WE, the OWNER(S), with full authority to execute deeds, mortgages, other covenants, all rights, titles, and interests in the property described above, do hereby covenant with the CITY and agree as follows:

1. The OWNER(S) covenant and agree with the CITY that the OWNER(S) shall provide for adequate long term maintenance and continuation of stormwater control measures described in the Long Term Maintenance Plan and shown on the location map, deed of easement drawing or plat attached hereto to ensure that the facilities, are and remain in proper working condition in accordance with approved design standards, rules and regulations, and applicable laws. The OWNER(S) shall perform preventative maintenance activities at intervals described in the schedule attached hereto along with necessary landscaping (grass cutting, etc.) and trash removal as part of regular maintenance.

2. The OWNER(S) shall perform routine inspections to ensure that all long term stormwater management facilities are properly functioning. These inspections shall be conducted on an annual basis, at a minimum. These inspections shall be conducted by a person familiar with control measures implemented at the site. The OWNER(S) or operators shall maintain documents of these inspections.

3. The OWNER(S) shall perform comprehensive inspections of all stormwater management facilities and practices. These inspections shall be conducted once every five years, at a minimum. Such inspections must be conducted by either a professional engineer or landscape architect.

4. The OWNER(S) shall grant to the CITY or its agent or contractor the right of entry at reasonable times and in a reasonable manner for the purpose of inspecting, operating, installing, constructing, reconstructing, maintaining or repairing the facility within the CITY.

5. The OWNER(S) shall record and grant to the CITY the necessary easements and rights-of-way and maintain perpetual access from public rights-of-way to the facility for the CITY or its agent and contractor.

6. If, upon inspection, the CITY finds that the OWNER(S) has failed to properly maintain the facilities, the CITY may order the work performed within ten (10) days. In the event the work is not performed within the specified time, the ONWER(S) agrees to allow the CITY to enter the property and take whatever steps it deems necessary to maintain the stormwater control facilities. This provision shall not be construed to allow the CITY to erect any structure of a permanent nature on the PROPERTY without first obtaining written approval of the OWNER(S).

7. The CITY is under no obligation to maintain or repair said facilities, and in no event shall this Agreement be construed to impose any obligation on the CITY. The OWNER(S) shall reimburse the CITY upon demand the costs incurred in the maintenance of the facilities.

8. If the OWNER(S) fails to pay the CITY for the above expensive after forty-five (45) days written notice, the OWNER(S) authorizes the CITY to collect said expenses from the OWNER(S) through appropriate legal action and the OWNER(S) shall be liable for the reasonable expenses of collection, court costs, and attorney fees.

9. The OWNER(S) and the OWNER(S) heirs, administrators, executors, assigns, and any other successor in interest shall indemnify and hold harmless the CITY and its officers, agents and employees for any and all damages, accidents, casualties, occurrences, claims or attorney's fees which might arise or be asserted, in whole or in part, against the CITY from the construction, presence, existence, or maintenance of the stormwater control facilities subject to this AGREEMENT. In the event a claim is asserted against the CITY, its officers, agents or employees, the CITY shall notify OWNER(S) and the OWNER(S) shall defend at OWNER(S) expense any suit based on such claim. If any judgment or claims against the CITY, its officers, agents or employees, shall be allowed, the OWNER(S) shall pay all costs and expenses in connection therewith. The CITY will not indemnify, defend or hold harmless in any fashion the OWNER(S) from any claims arising from any failure, regardless of any language in any attachment or other document that the OWNER(S) may provide.

10. The OWNER(S) shall not be able to transfer, assign or modify its responsibilities with respect to this agreement without the CITY's written prior consent. Nothing herein shall be construed to prohibit a transfer by OWNER(S) to subsequent owners and assigns.

11. No waiver of any provision of this AGREEMENT shall affect the right of any party thereafter to enforce such provision or to exercise any right or remedy available to it in the event of any default.

12. The OWNER(S) shall record a plat showing and accurately defining the easements for stormwater control facilities. The plat must reference the Instrument Number where this AGREEMENT and its attachments are recorded and contain a note that the OWNER(S) is responsible for maintaining the stormwater management facilities.

13. The OWNER(S) shall record this AGREEMENT in the office of the Register of Deeds for the county of Maury, Tennessee, and the AGREEMENT shall constitute a covenant running with the land, and shall be binding upon the OWNER(S) and the OWNER(S) heirs, administrators, executors, assigns, and any other successors in interest

ATTEST BY OWNER(S):

Print Name Lynn Earley

Title Member

Signature

Owner Marlons Creek Propco LLC

Address 2925 Berry Hill Dr.

City, State ZIP Nashville TN, 37204

STATE OF TN
COUNTY OF DAVIDSON

Before me, SUSAN GORMAN of the state and county mentioned, personally appeared Gary Lynn Earley, with whom I am personally acquainted and who acknowledged that he/she executed the foregoing instrument of the purposes therein contained.

Witness my hand this the 5th day of March, 2025.

Susan E. Gorman
Notary Public

My Commission Expires: 3/9/2027

SUSAN E. GORMAN
STATE OF TENNESSEE
NOTARY PUBLIC
DAVIDSON COUNTY
MY COMMISSION EXPIRES 3-9-2027

CITY OF COLUMBIA, TENNESSEE
ENGINEERING DEPARTMENT

APPROVED BY: R. Neil Scruggs
R. NEIL SCRUGGS

STATE OF TENNESSEE
COUNTY OF MAURY

Before me, Kim Dale of the state and county mentioned, personally appeared Neil Scruggs, with whom I am personally acquainted, and who acknowledged themselves to be the City Engineer of the City of Columbia or his designee and as such, being authorized so to do, executed the foregoing instrument of the purposes therein contained.

Witness my hand this the 10 day of March, 2025.

Kim Dale
Notary Public
My Commission Expires: 5/20/2026

KIM DALE
STATE OF TENNESSEE
NOTARY PUBLIC
MAURY COUNTY

Freehill
VENTURES

February 17, 2025

Register's Office

Maury County

RE: Marlon's Creek Phase 1B

To Whom It May Concern,

Please allow this letter to serve as Marlon's Creek Prop Co, LLC's authorization for Ragan-Smith Associates, on our behalf, to; final plans, site plan(s), and any other necessary documentation concerning our Marlons Creek project submittal.

Please feel free to contact us if you have any questions, comments, or need additional information at this time.

Sincerely,

Nathan J. Quinn

Owner's Representative

CITY OF COLUMBIA TENNESSEE

DEVELOPMENT SERVICES
700 NORTH GARDEN STREET
COLUMBIA, TN 38401
PHONE: (931) 560-1560
FAX: (931) 560-1541

PLANNING COMMISSION
PROJECT DEVELOPMENT APPLICATION

SUBMITTAL REQUIREMENTS

Final Plat: * *1 hard copy of all materials for submittal + PDF copy on a USB flash drive (no multiple applications on one storage device)*
Fold hard copy submittals larger than 8½"x11"
All Others: * Please submit the Application online at City of Columbia | Permitting (onlama.com)

ADDRESS/LOCATION	1686 Lasea Road, Columbia, TN		
	TAX MAP: 73	GROUP:	PARCEL: 15
SUMMARY OF NATURE OF REQUEST AND WORK	Marlons Creek Phase 1B Final Plat		

DATE OF PRE-APPLICATION CONFERENCE		*Pre-application meetings are scheduled for Wednesdays.*

SELECT REQUEST	SUBMITTALS SHALL INCLUDE BUT NOT LIMITED TO:
❑ Comprehensive Plan Amendment ❑ Annexation ❑ Rezoning ❑ Preliminary Plat ☒ Final Plat ❑ PUD Preliminary Master Plan ❑ PUD Final Site Plan ❑ Site Development Plan ❑ Other: **File naming nomenclature examples:* *Freedom Point Site Plan* *Freedom Point Master Plan* *Freedom Point Final Plat*	**Annexations:** ❑ Annexation Permission Form **Annexations/Rezoning/Plan Amendments:** ❑ Requested Zone Listed ❑ Statement of Compliance with Comprehensive Plan ❑ Concept Plan **Preliminary Plats/Site Development Plans:** ❑ Plans and/or Plats conforming to City standards with signed and completed check list **All Annexations/Rezoning/Preliminary Plats/Site Development Plans and PUDS:** ❑ Receipt of Payment for Pre-Application Meeting ❑ Written Legal Description copy ❑ Columbia Water System Availability Letter ❑ Columbia Waste Water Department Will Serve Letter

Marlons Creek Phase 1B Final Plat	**Plats/PUDs:** ☒ Project Name (include Sections & Phases)
28	☒ Total Number of Lots/Residential Units
N/A	☐ Square Footage of Non-Residential Floor Space
1,305,438 sq ft	☒ Total acreage

Applications and all required submittals must be filed with the Department of Development Services prior to the established deadline. Both the applicant and property owner (if different from applicant) must sign the application. Any requests to defer or move the item to future meeting dates must be requested by the resubmittal date listed on the Planning Commission schedule.

APPLICANT
All communications go to the Applicant's email that is provided.

NAME	Owen Hosay	PHONE	615-934-8264
ADDRESS	2925 Berry Hill Dr.Nashville, TN	EMAIL	owen@freehillventures.net

PROPERTY OWNER NAME	Marlons Creek Prop Co, LLC	PHONE	615-934-8264
ADDRESS	2925 Berry Hill Dr.	EMAIL	owen@freehillventures.net

If owner is not a natural person, documentation must be provided showing signing authority on behalf of the entity. If multiple persons are listed as owners in the records of the Maury County Assessor, all owners must sign or the signatory must provide documentation of authority to apply on behalf of record owner (i.e., Power of Attorney or notarized Letter of Authorization). In filling out this application, I attest that (1) I am familiar with the rules, regulations, and procedures of the City of Columbia & (2) all information contained herein is accurate & true to the best of my knowledge.

Owen Hosay		2/17/2025
APPLICANT NAME	APPLICANT SIGNATURE	DATE
Owen Hosay		2/17/2025
PROPERTY OWNER NAME	PROPERTY OWNER SIGNATURE	DATE

CITY OF
COLUMBIA
TENNESSEE

DEVELOPMENT SERVICES
700 NORTH GARDEN STREET
COLUMBIA, TN 38401
PHONE: (931) 560-1560
FAX: (931) 560-1541

DEVELOPMENT REVEW COMMITTEE MEETING
Tuesday, March 11, 2025

ITEM NO.
25-0052

DESCRIPTION: 2643 Pulaski Hwy. Hillcrest Village Townhomes

COMMENTS:

Planning

1. The lead staff person for this case is Robert Archibald, Principal Planner. Please contact rarchibald@columbiatn.gov with questions about the development review process or technical comments. The case planner should be copied on all communication with other city staff.
2. At resubmittal, please provide a response letter addressing each comment along with any revised plans. If the nature of the comment does not warrant a response, or the comment was previously addressed, please simply note that the information has been acknowledged. Any documents or additional information that you want to present to the Planning Commission should be included in your resubmittal.
3. Provide correct labeling on typical lot layout. You have noted 5' & 6' MBSL. The minimum front setback is 6 foot.
4. Note minimum lot width and length on typical lot layout as approved on the Preliminary Plat
5. Add PUDE's on typical lot layout
6. Correct zoning notation to only include CD-4 as this is the vestment for the development
7. Identify required Civic Space as shown on Preliminary Plat

Engineering

8. Provide Letter of Credit in the amount of $455,000 prior to resubmittal date.
9. Asphalt binder and curbing shall be installed prior to resubmittal date.
10. Grading shall substantially conform to approved construction plans (within 1 ft.)
11. Record/reference Stormwater Maintenance Agreement
12. Install street signage. (stop, street names)
13. Sign and date seal.
14. Offsite Improvements (Pulaski Hwy) to be completed prior to resubmittal date.
15. Alley A annotation should be Norwood Alley

DEVELOPMENT SERVICES
700 NORTH GARDEN STREET
COLUMBIA, TN 38401
PHONE: (931) 560-1560
FAX: (931) 560-1541

Wastewater

16. Plat is subject to CCTV, as-built and testing comments which might include necessary repair requirements.
17. Plat is also subject to the owner completing the rest of the items related to water service at the sanitary sewer pump station installed in Phase 1.

Building

18. No comments.

Police

19. No comments provided.

City Attorney

20. No comments provided.

Public Works

21. For 55 townhomes, we recommend two 8-yard dumpsters with twice a week collection if utilizing City of Columbia sanitation services. Private sanitation services, including dumpsters, compactors, individual receptacles or valet service, may be utilized for townhome and multi-family residents. Individual trash receptacles will not be provided by the City of Columbia to townhome residents. Please see the attached City of Columbia Dumpster Guidelines & Accessibility Requirements.
22. DUMPSTER GUIDELINES AND ACCESSIBILITY REQUIREMENTS DUMPSTER AND COMPACTOR STANDARDS GENERAL:

    All requirements for collection and accessibility to containers apply, regardless of whether collection is public or private.

    GUIDELINES FOR DUMPSTERS
    - The number and capacity of dumpsters must be adequate to serve the disposal needs of the business, development or complex. Collection must occur at least one time per week, with special approval needed for every other week (EOW) collection. Each dumpster must be easily accessible, as determined by the Public Works Department, and of a size compatible with equipment of the department. If the dumpster is in an enclosed area, there must be at least 2 feet and 6 inches of clearance on each side of the dumpster.

DUMPSTER PAD REQUIREMENTS

- The concrete dumpster pad shall be at least 12 feet by 12 feet.
- The pad(s) shall be 8-inch-thick concrete, reinforced with rebar to support a 30-ton loadbearing capacity.
- A 14-foot-wide by 40-foot-long straight and clear access approach to each dumpster for the truck is required.
- Clearance at each side of the dumpster must be at least 2 feet and 6 inches.
  5. If a gated enclosure is utilized, the gates must be lockable in the open position to prevent the gates from swinging into the path of the truck during servicing.
- Two 6-inch diameter concrete filled steel bollards must be placed in the concrete pad to the rear of each dumpster, 2 feet from the back edge of the dumpster pad, spaced 4 feet apart and centered side to side. The bollards will rise 6 feet above the pad and extend 32 inches below the pad into the concrete footers.
- If the box is enclosed, it is recommended that there be pedestrian access in addition to service gates.
- Access area, approach and pad must be level.
- Standard pads with no drain should be elevated approximately 1-1/2 inches above the surrounding pavement.

ACCESSIBILITY REQUIREMENTS FOR DUMPSTERS AND COMPACTORS

- Access must accommodate a 40-foot-long truck, with a 45-foot turning radius. Circular movement through the complex for the vehicles is highly recommended.
- The collection truck shall not be required to back-up for no more than 200 feet.
- No backing into or across a public right-of-way.
- No overhead obstructions at waste handling or access area. Refuse collection trucks need a minimum of a 25-foot vertical clearance to service containers.
- Heavy duty pavement is required for the collection truck's path through the complex. City of Columbia Public Works will not be responsible for the repair of asphalt or concrete which has been damaged due to normal usage.
- Gates must be unlocked and open for collection.

Columbia Power

23. Columbia Power System has an existing power line near your proposed development. We are willing to serve this new development subject to all Columbia Power System policies and procedures in effect at actual time service is rendered provided an approved final plat and complete electrical load information is furnished as soon as possible prior to start of actual construction. Unfortunately, due to current supply chain challenges, no timeframe can be guaranteed regarding the availability of meters or transformers appropriate for your development.

CPWS BB

24. Plan to Serve

Fire

25. No comments

Columbia Water

26. Coordinate walk-through, Bacteria pressure testing with CPWS.
27. Water Meter Vaults are partially obscured on plat, add Typical Note to identify/clarify location.
28. Provide a detailed list of water infrastructure cost including labor to CPWS Water Department in advance of plat signing for Deed Over form.
29. Water system must be complete and active at time of plat signing.

Atmos Energy

30. No comments provided.

Maury County E911

31. No comments provided.

Maury County Schools

32. No comments provided.

Duck River Electric Membership Corp

33. No comments provided.

Maury County Highway Dept.

34. No comments.

ATT

35. ATT to serve

CITY OF
COLUMBIA
TENNESSEE

DEVELOPMENT SERVICES
700 NORTH GARDEN STREET
COLUMBIA, TN 38401
PHONE: (931) 560-1560
FAX: (931) 560-1541

Resubmittal Guidelines

Please provide a comment response letter as well as digital copies of revised plans and supporting documentation. Submit all required documents electronically through the online portal: columbia.onlama.com. If the files are oversized, please provide a file sharing link.

Please contact the case planner identified in the Planning Comments with any questions about the review process.

Please contact pkeltner@columbiatn.gov or srichardson@columbiatn.gov if you encounter difficulties with the online portal.

You will receive an invoice for required advertising and mailing fees. All fees must be paid by the Friday following resubmittal in order advance to the Planning Commission agenda.

NOTE: All resubmittals must demonstrate compliance with city standards prior to Planning Commission review. Requests which do not adhere to regulations and/or remain unresponsive to technical comments will not be forwarded to the next agenda until such items are amended. Final Plat applications which are not ready to proceed to Planning Commission following the first resubmittal deadline will be added to the following DRC agenda to confirm the status of required infrastructure and utilities. Applications which remain incomplete following two resubmittal deadlines will be closed.

LEGEND

IRON PIN FOUND	FIRE HYDRANT	UTILITY POLE	PUBLIC UTIL. & DRAIN ESMT.	P.U.D.E.	BOUNDARY	
IRON PIN SET	SANITARY SEWER MH	GUY ANCHOR	ADDRESSES	1234	CENTERLINE	
CONC. MON. FOUND	SANITARY SEWER CO	COMMUNICATION BOX	HANDICAP SPACE		BUFFER	
CONC. MON. SET	AREA DRAIN	COMMUNICATION MH	SANITARY SEWER	8" SA — 8" SA	WATER FEATURE	
CONTROL POINT FOUND	CURB INLET	GAS METER	WATER	4" W — 4" W	TREE LINE	
CONTROL POINT SET	STORM MH	GAS VALVE	UNDERGROUND ELEC	UGE — UGE	R.O.W.	RIGHT OF WAY
BENCH MARK	ELECTRIC METER-BOX	EVERGREEN TREE	OVERHEAD ELEC	OHE — OHE	PVMT.	EDGE OF PAVEMENT
WATER METER	ELECTRIC MH	SIDEWALK	GAS	4" G — 4" G	PUDE	PUBLIC UTILITY AND DRAINAGE EASEMENT
WATER VALVE	LIGHT POLE	MIN. BUILDING SETBACK M.B.S.L	COMMUNICATIONS	COM — COM	G.I.E.	GREEN INFRASTRUCTURE EASEMENT

PLAT NOTES

1. THE PURPOSE OF THIS PLAT IS TO CREATE 55 TOWNHOMES RESIDENTIAL LOTS AND 6 OPEN SPACES AND DEDICATE RIGHT-OF-WAY.
2. SUBJECT PROPERTY IS PRESENTLY IDENTIFIED AS A PORTION OF PARCEL 80.47 AND A PORTION OF PARCEL 80.51, ON MAURY COUNTY TAX MAP 113. SAID PARCEL IS FURTHER IDENTIFIED AS THE PROPERTY DESCRIBED IN R2976 PAGE: 625, REGISTERS OFFICE OF MAURY COUNTY, TENNESSEE.
3. THE PROPERTY SHOWN HEREON IS LOCATED WITHIN THE CITY OF COLUMBIA, MAURY COUNTY, TN. ALL MATTERS PERTAINING TO CONSTRUCTION, USE, LOCATION OF IMPROVEMENTS, SIGNAGE, PARKING, NOISE, VIBRATION, EMISSIONS, FIRE HAZARDS, RADIATION, ILLUMINATION, SETBACK PROVISIONS, ETC., ARE SUBJECT TO THE CITY OF COLUMBIA'S ZONING REGULATIONS AS INTERPRETED AND REGULATED BY THE DEPARTMENT OF DEVELOPMENT SERVICES.
4. EXISTING ZONING: CD-4 & RS-40
5. I HEREBY CERTIFY THAT THIS IS A CATEGORY IV SURVEY AND WAS CONDUCTED IN ACCORDANCE WITH RULE 0820-03.11 (GLOBAL POSITION SYSTEMS SURVEYS) ACCORDING TO THE CURRENT TENNESSEE MINIMUM STANDARDS OF PRACTICE AS PROMULGATED BY THE TENNESSEE STATE BOARD OF EXAMINERS FOR LAND SURVEYORS. THIS SURVEY WAS CONDUCTED WITH DUAL-FREQUENCY RTK GPS EQUIPMENT BASED ON THE TDOT CORPS NETWORK.
   a. POSITIONAL ACCURACY: 0.07'
   b. DATE OF SURVEY: 3/16/2023
   c. DATUM/EPOCH: TENNESSEE STATE PLANE (NAD83). OCCUPATIONS FOR CONTROL POINTS ARE 3 MINUTES EACH, SIDE SHOTS ARE 3 SECONDS.
   d. GEOID 3, ZONE 7 REVISED
6. NO COMBINED GRID FACTORS WERE USED.
7. BEARINGS SHOWN HEREON ARE BASED ON THE TENNESSEE STATE PLANE COORDINATE SYSTEM (NAD83). ELEVATIONS SHOWN HEREON ARE BASED ON NAVD88.
8. BY SCALED MAP LOCATION AND GRAPHIC PLOTTING ONLY, THIS PROPERTY LIES WITHIN ZONE "X" AS DESIGNATED ON CURRENT FEDERAL EMERGENCY MANAGEMENT AGENCY MAP NO. 47119C0285E, WITH AN EFFECTIVE DATE OF APRIL 16, 2007, WHICH MAKES UP A PART OF THE NATIONAL FLOOD INSURANCE PROGRAM. ZONE "X" IS AN AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN. ZONE "X" HAS TWO DESCRIPTIONS. PLEASE SEE FLOOD PLAIN MAP IF ZONE "X" IS SHADED. ***IF FIELD RUN CONTOURS ARE ESTABLISHED YOU MUST PLOT THE FLOOD LINE BASED ON BFE UNLESS THE PROPERTY IS IN ZONE A.
9. ALL CORNERS SHOWN ON THE FACE OF THE SURVEY WILL BE SET WITH 5/8 IRON ROD WITH CAP BEARING THIS SURVEYORS COMPANY NAME.
10. THE DEVELOPER ACKNOWLEDGES THAT ALL LOTS HAVE ADEQUATE BUILDING ENVELOPES AND NO VARIANCES WILL BE REQUIRED.
11. STORMWATER MAINTENANCE AGREEMENT RECORDED IN DEED BOOK R2874, PAGES 1163-1170.
12. ALL STREETS AND ALLEYS ARE DESIGNATED AS PUBLIC RIGHT-OF-WAY; THE CITY OF COLUMBIA IS NOT RESPONSIBLE FOR THE REPLACEMENT OR REPAIR OF ANY PRIVATE STRUCTURES WITHIN PUBLIC EASEMENTS SHOULD THE STRUCTURES BE DISTURBED IN THE PROCESS OF THE CITY EXERCISING ITS EASEMENT RIGHTS.
13. STREETS, DRAINAGE EASEMENTS, STRUCTURES, AND CULVERTS SHALL BE MAINTAINED BY THE CITY OF COLUMBIA. DETENTION PONDS AND OUTLET STRUCTURES WITHIN PUBLIC DRAINAGE EASEMENTS ARE TO BE MAINTAINED BY THE HOMEOWNER'S ASSOCIATION.
14. STORMWATER QUALITY SHALL BE ADDRESSED WITH EACH SITE PLAN.
15. OPEN SPACE AREAS, ROADWAY MEDIANS, BRICK PEDESTRIAN CROSSWALKS, BIKE PATHS, SIDEWALKS OUTSIDE OF RIGHT-OF-WAYS, TRAILS AND DETENTION FACILITIES SHALL BE MAINTAINED BY THE HOME OWNER'S ASSOCIATION AND SHALL BE PUBLIC UTILITY, DRAINAGE AND ACCESS EASEMENTS.
16. WITHIN NEW DEVELOPMENTS AND FOR OFF-SITE LINES CONSTRUCTED AS A RESULT OF, OR TO PROVIDE SERVICE TO, THE NEW DEVELOPMENT, ALL UTILITIES, (INCLUDING CABLE TELEVISION, ELECTRICAL, NATURAL GAS, SEWER, TELEPHONE AND WATER LINES) SHALL BE PLACED UNDERGROUND.
17. AT ALL TEMPORARY TURNAROUNDS, A SIGN SHALL BE PLACED STATING, "STREET TO BE EXTENDED BY AUTHORITY OF THE CITY OF COLUMBIA."
18. MAINTENANCE OF ALL STORMWATER MANAGEMENT FEATURES SHALL BE THE RESPONSIBILITY OF THE PROPERTY OWNER(S) OR HOA.
19. NO OBSTRUCTIONS OR ENCROACHMENTS WHICH IMPEDE THE FLOW OF STORMWATER SHALL BE PERMITTED WITHIN PUBLIC DRAINAGE EASEMENTS BETWEEN LOTS. THE CITY OF COLUMBIA IS NOT RESPONSIBLE FOR REPAIR OR REPLACEMENT OF ANY ENCROACHMENTS THAT ARE DAMAGED OR REMOVED IN THE COURSE OF MAINTENANCE ACTIVITY WITHIN EASEMENTS.
20. THE CITY OF COLUMBIA WATER MANAGEMENT DEPARTMENT HAS UNRESTRICTED ACCESS TO ITS DOMESTIC WATER, SANITARY SEWER, RECLAIM WATER LINES OR SYSTEM IMPROVEMENTS LOCATED WITHIN ITS EXCLUSIVE EASEMENTS WITHIN THE DEVELOPMENT. IN THE EVENT LANDSCAPING, FENCING, CONCRETE OR OTHER STRUCTURES ARE INSTALLED OR PLACED WITHIN A CITY OF COLUMBIA EASEMENT, THE CITY OF COLUMBIA SHALL HAVE THE RIGHT TO REMOVE SUCH ENCROACHMENTS WITHIN THE EASEMENT AS MAY BE NECESSARY FOR THE CITY OF COLUMBIA TO REPAIR, MAINTAIN OR REPLACE ITS INFRASTRUCTURE WHICH IS NOW OR IN THE FUTURE MAY BE LOCATED WITHIN THE EASEMENT WITHOUT OBTAINING ANY FURTHER PERMISSION FROM THE PROPERTY OWNER OR HOA. THE PROPERTY OWNER OR HOA SHALL BE RESPONSIBLE FOR REPAIRING AND/OR REPLACING ANY SUCH LANDSCAPING, FENCING, CONCRETE, OR OTHER STRUCTURES REMOVED OR DISTURBED BY THE CITY OF COLUMBIA IN COMMON OPEN SPACE LOTS AND IN AREAS OWNED BY THE PROPERTY OWNER OR HOA AT NO EXPENSE TO THE CITY OF COLUMBIA. INDIVIDUAL HOMEOWNERS SHALL BE RESPONSIBLE FOR STRUCTURES REMOVED OR DISTURBED BY THE CITY OF COLUMBIA WITHIN AN EASEMENT ON THE HOMEOWNER'S LOT AT THE HOMEOWNER'S EXPENSE.
21. ALL LOTS WITHIN TOWNHOMES REQUIRE A FIRE SPRINKLER SYSTEM INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) STANDARDS. A HORN AND STROBE WILL BE REQUIRED ON THE FRONT OF THE HOUSE. IT WILL ACTIVATE WHEN THE SPRINKLER SYSTEM IS ACTIVATED.
22. PUBLIC UTILITY AND DRAINAGE EASEMENTS (PUDE) SHALL BE REQUIRED AND BE TEN (10) FEET IN WIDTH ON ALL PROPERTY LINES PARALLEL AND ABUTTING PUBLIC ROADS OR RIGHTS-OF-WAY, AND FIVE (5) FEET IN WIDTH ON ALL INTERIOR LOT LINES, EXCEPT FOR INTERIOR LOT LINES WITH A ZERO LOT LINE OR A COMMON WALL ALONG A LOT LINE.

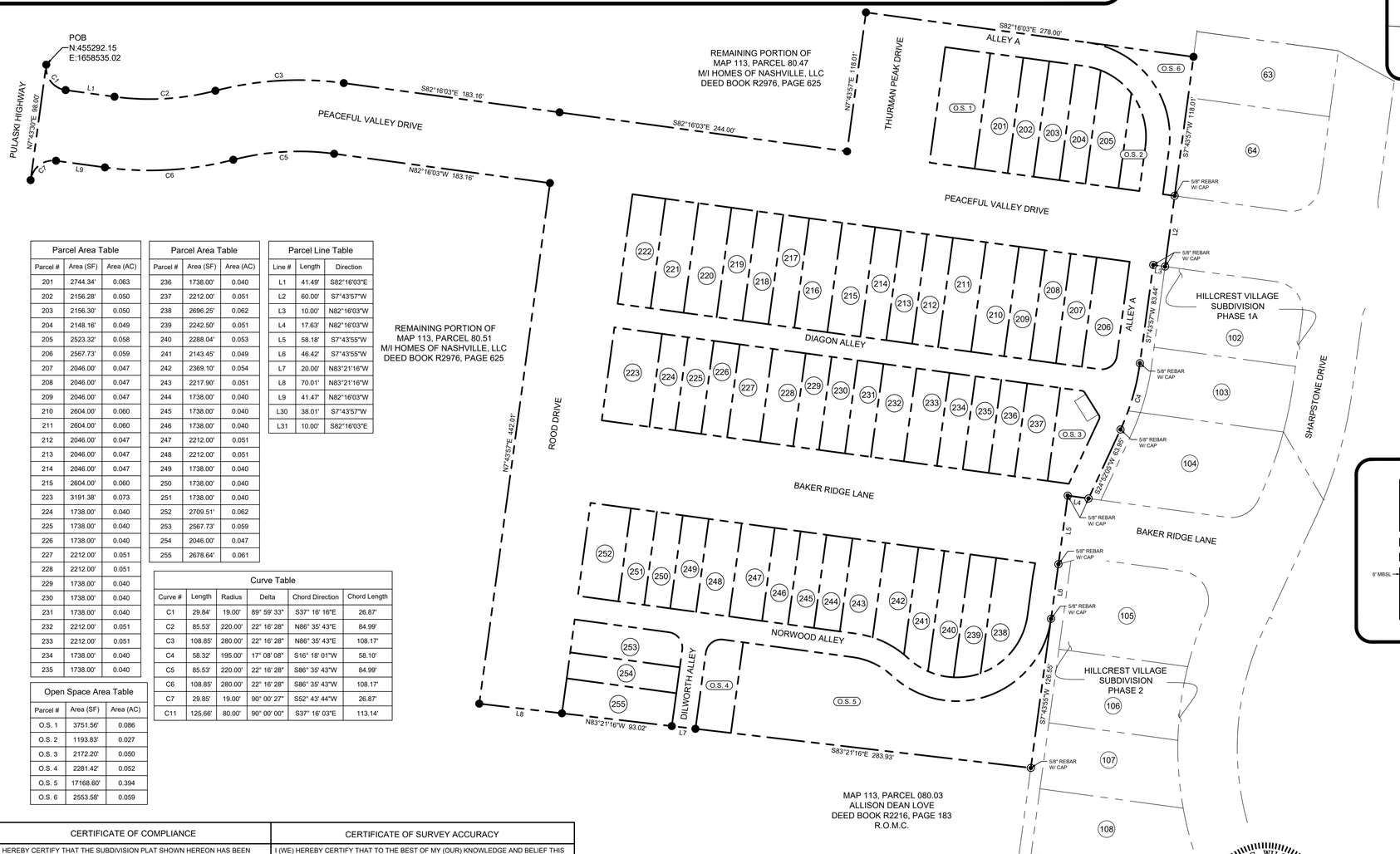
Parcel Area Table		
Parcel #	Area (SF)	Area (AC)
201	2744.34'	0.063
202	2156.28'	0.050
203	2156.30'	0.050
204	2148.16'	0.049
205	2523.32'	0.058
206	2567.73'	0.059
207	2046.00'	0.047
208	2046.00'	0.047
209	2046.00'	0.047
210	2604.00'	0.060
211	2604.00'	0.060
212	2046.00'	0.047
213	2046.00'	0.047
214	2046.00'	0.047
215	2604.00'	0.060
223	3191.38'	0.073
224	1738.00'	0.040
225	1738.00'	0.040
226	1738.00'	0.040
227	2212.00'	0.051
228	2212.00'	0.051
229	1738.00'	0.040
230	1738.00'	0.040
231	1738.00'	0.040
232	2212.00'	0.051
233	2212.00'	0.051
234	1738.00'	0.040
235	1738.00'	0.040

Parcel Area Table		
Parcel #	Area (SF)	Area (AC)
236	1738.00'	0.040
237	2212.00'	0.051
238	2696.25'	0.062
239	2242.50'	0.051
240	2288.04'	0.053
241	2143.45'	0.049
242	2369.10'	0.054
243	2217.90'	0.051
244	1738.00'	0.040
245	1738.00'	0.040
246	1738.00'	0.040
247	2212.00'	0.051
248	2212.00'	0.051
249	1738.00'	0.040
250	1738.00'	0.040
251	1738.00'	0.040
252	2709.51'	0.062
253	2567.73'	0.059
254	2046.00'	0.047
255	2678.64'	0.061

Parcel Line Table		
Line #	Length	Direction
L1	41.49'	S82°16'03"E
L2	60.00'	S7°43'57"W
L3	10.00'	N82°16'03"W
L4	17.63'	N82°16'03"W
L5	58.18'	S7°43'55"W
L6	46.42'	S7°43'55"W
L7	20.00'	N83°21'16"W
L8	70.01'	N83°21'16"W
L9	41.47'	N82°16'03"W
L30	38.01'	S7°43'57"W
L31	10.00'	S82°16'03"E

Curve Table					
Curve #	Length	Radius	Delta	Chord Direction	Chord Length
C1	29.84'	19.00'	89° 59' 33"	S37° 16' 16"E	26.87'
C2	85.53'	220.00'	22° 16' 28"	N86° 35' 43"E	84.99'
C3	108.85'	280.00'	22° 16' 28"	N86° 35' 43"E	108.17'
C4	58.32'	195.00'	17° 08' 08"	S16° 18' 01"W	58.10'
C5	85.53'	220.00'	22° 16' 28"	S86° 35' 43"W	84.99'
C6	108.85'	280.00'	22° 16' 28"	S86° 35' 43"W	108.17'
C7	29.85'	19.00'	90° 00' 27"	S52° 43' 44"W	26.87'
C11	125.66'	80.00'	90° 00' 00"	S37° 16' 03"E	113.14'

Open Space Area Table		
Parcel #	Area (SF)	Area (AC)
O.S. 1	3751.56'	0.086
O.S. 2	1193.83'	0.027
O.S. 3	2172.20'	0.050
O.S. 4	2281.42'	0.052
O.S. 5	17168.60'	0.394
O.S. 6	2553.58'	0.059

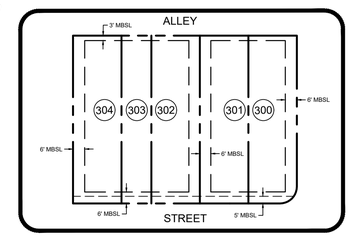


VICINITY MAP
NOT TO SCALE

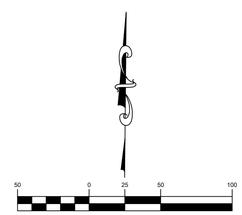
OWNER: M/I HOMES OF NASHVILLE LLC
4131 WORTH AVE STE 500
COLUMBUS OH 43219
(224) 402-5607
DAVID M. CUMMING, PE

ENGINEER: CRUNK ENGINEERING, LLC
7112 CROSSROADS BLVD STE 201
BRENTWOOD, TN 37027
615-873-1795
ADAM CRUNK, PE
ADAM@CRUNKENG.COM

SURVEYOR: JOEY C. WILSON II, PE, RLS
WILSON & ASSOCIATES, P.C.
108 BEASLEY DRIVE
FRANKLIN, TN 37064
(615)794-2275
JWILSON@WILSONPC.COM



TYPICAL LOT LAYOUT- TOWNHOMES
DETAILS
N.T.S.



GRAPHIC SCALE: 1" = 50'

HILLCREST VILLAGE

TOWNHOMES

CERTIFICATE OF APPROVAL OF WATER SYSTEM

I HEREBY CERTIFY THAT THE WATER SYSTEM(S) OUTLINED OR INDICATED ON THIS FINAL SUBDIVISION PLAT HAS/HAVE 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.

NAME, TITLE, AGENCY OF AUTHORIZED APPROVING AGENT — DATE

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.

CITY ENGINEER, COLUMBIA, TENNESSEE — DATE

CERTIFICATE OF SURVEY ACCURACY

I (WE) HEREBY CERTIFY THAT TO THE BEST OF MY (OUR) KNOWLEDGE AND BELIEF THIS IS A TRUE AND ACCURATE SURVEY OF THE PROPERTY SHOWN HEREON; THAT THIS IS A CLASS "IV" LAND SURVEY AS DEFINED IN TITLE 62, CHAPTER 18, TENNESSEE CODE ANNOTATED, AND THAT THE RATIO OF PRECISION IS GREATER THAN OR EQUAL TO 1:10,000.

DATE

JOEY C. WILSON II, TENNESSEE RLS NO. 2089
WILSON & ASSOCIATES, P.C.
ENGINEERING/SURVEYING/ENVIRONMENTAL
108 BEASLEY DRIVE, FRANKLIN, TN 37064
OFFICE: 615.794.2275 FAX 615.794.2176
JWILSON@WILSONPC.COM

CERTIFICATE OF OWNERSHIP AND DEDICATION

I (WE) HEREBY CERTIFY THAT I AM (WE ARE) THE OWNER(S) OF THE PROPERTY SHOWN AND DESCRIBED HEREON AS EVIDENCED IN BOOK NUMBER R2976, PAGE 625, MAURY COUNTY REGISTERS OFFICE, AND THAT I (WE) HEREBY ADOPT THIS FINAL SUBDIVISION PLAT OF THE PROPERTY AS SHOWN HEREON AND DEDICATE ALL PUBLIC WAYS AND EASEMENTS AS NOTED WITH MY (OUR) FREE CONSENT.

OWNER — DATE

CERTIFICATE OF APPROVAL OF STREETS, DRAINAGE & UTILITIES

I HEREBY CERTIFY THAT THE STREETS, DRAINAGE, AND UTILITIES OUTLINED OR INDICATED ON THIS FINAL SUBDIVISION PLAT HAVE BEEN INSTALLED IN ACCORDANCE WITH CITY SPECIFICATIONS, OR A PERFORMANCE SURETY IN THE AMOUNT OF $_____ FOR STREETS AND DRAINAGE HAS BEEN POSTED WITH THE CITY OF COLUMBIA, TENNESSEE, TO ASSURE COMPLETION OF SUCH IMPROVEMENTS.

CITY ENGINEER, COLUMBIA, TENNESSEE — DATE

CERTIFICATE OF APPROVAL FOR SANITARY SEWER SYSTEM

I HEREBY CERTIFY THAT THE SANITARY SEWER SYSTEM OUTLINED OR INDICATED ON THIS FINAL SUBDIVISION PLAT HAS BEEN INSTALLED IN ACCORDANCE WITH THE CURRENT LOCAL AND STATE GOVERNMENT REQUIREMENTS, OR A SUFFICIENT BOND OR OTHER SURETY HAS BEEN FILED TO GUARANTEE SAID INSTALLATION.

DIRECTOR OF WASTEWATER DEPARTMENT, COLUMBIA, TENNESSEE — DATE

CERTIFICATE OF APPROVAL FOR RECORDING

I HEREBY CERTIFY THAT THE SUBDIVISION PLAT SHOWN HEREON HAS BEEN FOUND TO COMPLY WITH THE CITY OF COLUMBIA SUBDIVISION REGULATIONS, WITH THE EXCEPTION OF SUCH VARIANCES, IF ANY, AS NOTED IN THE MINUTES OF THE COLUMBIA MUNICIPAL PLANNING COMMISSION, AND THAT IT HAS BEEN APPROVED FOR RECORDING IN THE OFFICE OF THE MAURY COUNTY REGISTER OF DEEDS.

SECRETARY, PLANNING COMMISSION, COLUMBIA, TENNESSEE — DATE

CERTIFICATE OF APPROVAL OF SUBDIVISION NAME & STREET NAMES

SUBDIVISION NAME AND STREET NAMES APPROVED BY THE CITY ENGINEERING DEPARTMENT AND BY E-911 MAURY COUNTY.

MAURY COUNTY E911 — DATE

JOEY C. WILSON II — REGISTERED LAND SURVEYOR XVI — AGRICULTURE COMMERCE — TENNESSEE NO. 2089

WILSON & ASSOCIATES, P.C. Engineering/Surveying/Environmental

RECORDING STAMP HERE

IF YOU CAN READ THIS YOU ARE HOLDING AN UNRECORDED COPY

FINAL SUBDIVISION PLAT

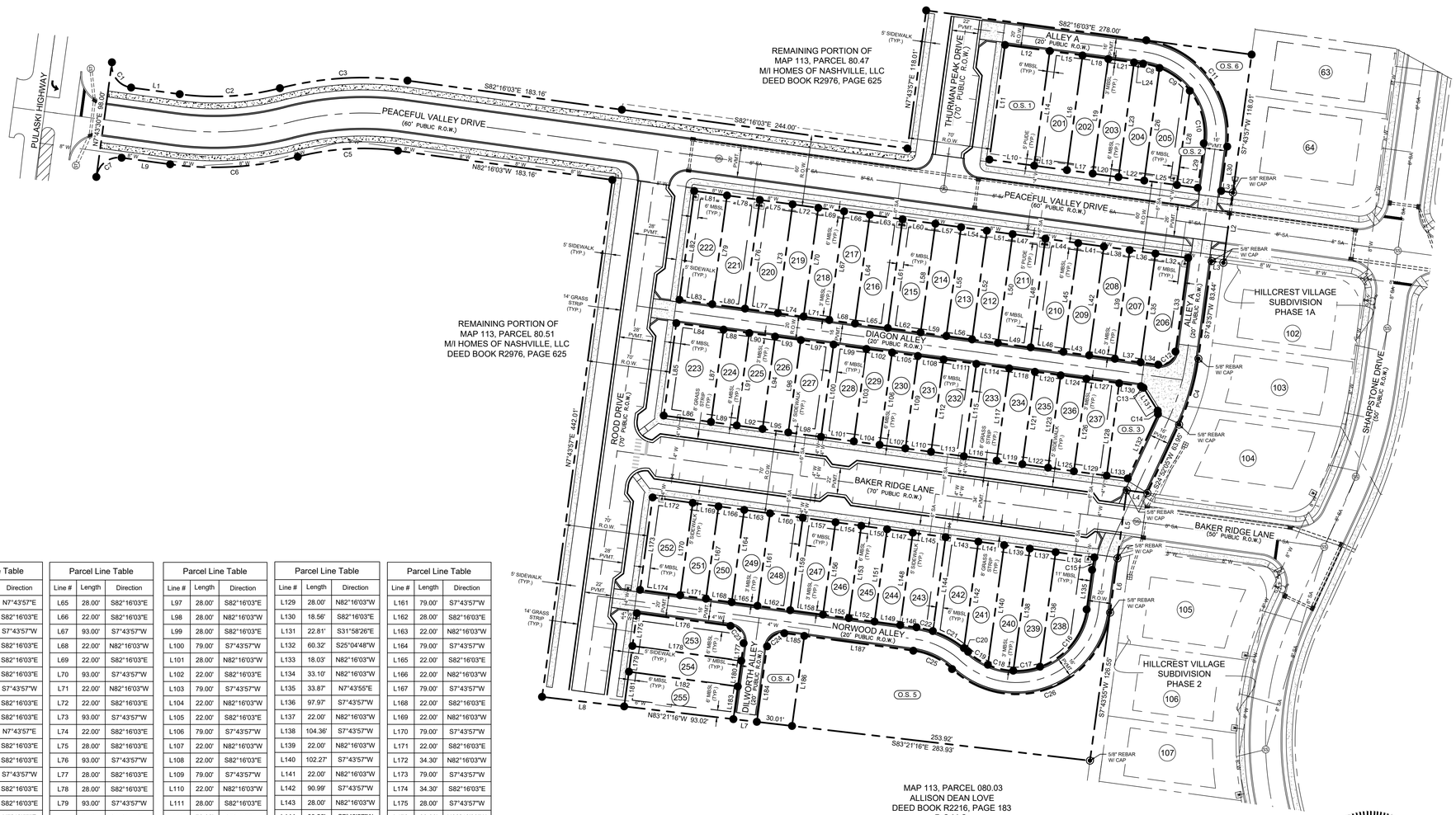
CITY OF COLUMBIA - MAURY COUNTY - TENNESSEE

TOTAL ACRES:	6.949	TOTAL NO. OF LOTS:	55
ACRES NEW RD/ST:	3.534 (ROW)	L.F. OF NEW RD/ST:	3665.4098+/-
ACRES OPEN SPACE:	0.668	CIVIL DISTRICT:	3RD
DRAWN BY:	AS	CLOSURE ERROR:	> 1:10,000
SCALE:	1" = 50'	DATE:	02/12/2025

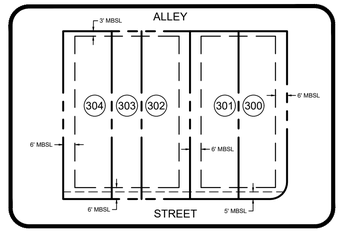
WA PROJECT NO. 21-1861 — SHEET 1 OF 2

LEGEND

IRON PIN FOUND		FIRE HYDRANT		UTILITY POLE		PUBLIC UTIL. & DRAIN ESMT.	P.U.D.E.	BOUNDARY	
IRON PIN SET		SANITARY SEWER MH	SS	GUY ANCHOR		ADDRESSES	1234	CENTERLINE	
CONC. MON. FOUND		SANITARY SEWER CO	CO	COMMUNICATION BOX	C	HANDICAP SPACE		BUFFER	
CONC. MON. SET		AREA DRAIN		COMMUNICATION MH	C	SANITARY SEWER	8" SA	WATER FEATURE	
CONTROL POINT FOUND		CURB INLET		GAS METER	G	WATER	4" W	TREE LINE	
CONTROL POINT SET		STORM MH	ST	GAS VALVE		UNDERGROUND ELEC	UGE	R.O.W.	RIGHT OF WAY
BENCH MARK		ELECTRIC METER-BOX	E	EVERGREEN TREE		OVERHEAD ELEC	OHE	PVMT.	EDGE OF PAVEMENT
WATER METER	W	ELECTRIC MH	E	SIDEWALK		GAS	4" G	PUDE	PUBLIC UTILITY AND DRAINAGE EASEMENT
WATER VALVE		LIGHT POLE		MIN. BUILDING SETBACK	M.B.S.L	COMMUNICATIONS	COM	G.I.E.	GREEN INFRASTRUCTURE EASEMENT



VICINITY MAP
NOT TO SCALE



TYPICAL LOT LAYOUT- TOWNHOMES
DETAILS
N.T.S.

Parcel Line Table		
Line #	Length	Direction
L1	41.49'	S82°16'03"E
L2	60.00'	S7°43'57"W
L3	10.00'	N82°16'03"W
L4	17.63'	N82°16'03"W
L5	58.18'	S7°43'55"W
L6	46.42'	S7°43'55"W
L7	20.00'	N83°21'16"W
L8	70.01'	N83°21'16"W
L9	41.47'	N82°16'03"W
L10	38.28'	N82°15'58"W
L11	98.01'	N7°43'57"E
L12	38.28'	S82°16'03"E
L13	28.00'	N82°15'58"W
L14	98.01'	S7°43'57"W
L15	28.00'	S82°16'03"E
L16	98.01'	S7°43'57"W
L17	22.00'	N82°15'58"W
L18	22.00'	S82°16'03"E
L19	98.01'	S7°43'57"W
L20	22.00'	N82°15'57"W
L21	22.00'	S82°16'03"E
L22	22.00'	N82°15'57"W
L23	98.01'	S7°43'57"W
L24	7.72'	S82°16'03"E
L25	28.00'	N82°15'58"W
L26	96.29'	S7°43'57"W
L27	17.72'	S82°15'58"E
L28	80.59'	S7°43'57"W
L29	38.02'	N7°43'57"E
L30	38.01'	S7°43'57"W
L31	10.00'	S82°16'03"E
L32	28.00'	S82°16'03"E

Parcel Line Table		
Line #	Length	Direction
L33	80.00'	N7°43'57"E
L34	15.00'	S82°16'03"E
L35	93.00'	S7°43'57"W
L36	22.00'	S82°16'03"E
L37	22.00'	S82°16'03"E
L38	22.00'	S82°16'03"E
L39	93.00'	S7°43'57"W
L40	22.00'	S82°16'03"E
L41	22.00'	S82°16'03"E
L42	93.00'	N7°43'57"E
L43	22.00'	S82°16'03"E
L44	28.00'	S82°16'03"E
L45	93.00'	S7°43'57"W
L46	28.00'	S82°16'03"E
L47	28.00'	S82°16'03"E
L48	93.00'	N7°43'57"E
L49	28.00'	S82°16'03"E
L50	93.00'	S7°43'57"W
L51	22.00'	S82°16'03"E
L52	93.00'	S7°43'57"W
L53	22.00'	S82°16'03"E
L54	22.00'	S82°16'03"E
L55	93.00'	S7°43'57"W
L56	22.00'	S82°16'03"E
L57	22.00'	S82°16'03"E
L58	93.00'	S7°43'57"W
L59	22.00'	S82°16'03"E
L60	28.00'	S82°16'03"E
L61	93.00'	S7°43'57"W
L62	28.00'	S82°16'03"E
L63	28.00'	S82°16'03"E
L64	93.00'	S7°43'57"W

Parcel Line Table		
Line #	Length	Direction
L65	28.00'	S82°16'03"E
L66	22.00'	S82°16'03"E
L67	93.00'	S7°43'57"W
L68	22.00'	N82°16'03"W
L69	22.00'	S82°16'03"E
L70	93.00'	S7°43'57"W
L71	22.00'	N82°16'03"W
L72	22.00'	S82°16'03"E
L73	93.00'	S7°43'57"W
L74	22.00'	S82°16'03"E
L75	28.00'	S82°16'03"E
L76	93.00'	S7°43'57"W
L77	28.00'	S82°16'03"E
L78	28.00'	S82°16'03"E
L79	93.00'	S7°43'57"W
L80	28.00'	S82°16'03"E
L81	28.00'	S82°16'03"E
L82	93.00'	S7°43'57"W
L83	28.00'	S82°16'03"E
L84	40.40'	S82°16'03"E
L85	79.00'	N7°43'57"E
L86	40.40'	N82°16'03"W
L87	79.00'	S7°43'57"W
L88	22.00'	S82°16'03"E
L89	22.00'	N82°16'03"W
L90	22.00'	S82°16'03"E
L91	79.00'	S7°43'57"W
L92	22.00'	N82°16'03"W
L93	22.00'	S82°16'03"E
L94	79.00'	S7°43'57"W
L95	22.00'	N82°16'03"W
L96	79.00'	S7°43'57"W

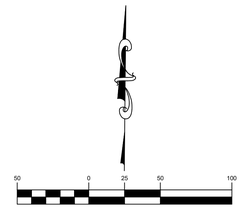
Parcel Line Table		
Line #	Length	Direction
L97	28.00'	S82°16'03"E
L98	28.00'	N82°16'03"W
L99	28.00'	S82°16'03"E
L100	79.00'	S7°43'57"W
L101	28.00'	N82°16'03"W
L102	22.00'	S82°16'03"E
L103	79.00'	S7°43'57"W
L104	22.00'	N82°16'03"W
L105	22.00'	S82°16'03"E
L106	79.00'	S7°43'57"W
L107	22.00'	N82°16'03"W
L108	22.00'	S82°16'03"E
L109	79.00'	S7°43'57"W
L110	22.00'	N82°16'03"W
L111	28.00'	S82°16'03"E
L112	79.00'	S7°43'57"W
L113	28.00'	N82°16'03"W
L114	28.00'	S82°16'03"E
L115	79.00'	S7°43'57"W
L116	28.00'	N82°16'03"W
L117	79.00'	S7°43'57"W
L118	22.00'	S82°16'03"E
L119	22.00'	N82°16'03"W
L120	22.00'	S82°16'03"E
L121	79.00'	S7°43'57"W
L122	22.00'	N82°16'03"W
L123	79.00'	S7°43'57"W
L124	22.00'	S82°16'03"E
L125	22.00'	N82°16'03"W
L126	79.00'	S7°43'57"W
L127	28.00'	S82°16'03"E
L128	79.00'	S7°43'57"W

Parcel Line Table		
Line #	Length	Direction
L129	28.00'	N82°16'03"W
L130	18.56'	S82°16'03"E
L131	22.81'	S31°58'26"E
L132	60.32'	S25°04'48"W
L133	18.03'	N82°16'03"W
L134	33.10'	N82°16'03"W
L135	33.87'	N7°43'55"E
L136	97.97'	S7°43'57"W
L137	22.00'	N82°16'03"W
L138	104.36'	S7°43'57"W
L139	22.00'	N82°16'03"W
L140	102.27'	S7°43'57"W
L141	22.00'	N82°16'03"W
L142	90.99'	S7°43'57"W
L143	28.00'	N82°16'03"W
L144	80.26'	S7°43'57"W
L145	28.00'	N82°16'03"W
L146	13.87'	S82°16'03"E
L147	22.00'	N82°16'03"W
L148	79.00'	S7°43'57"W
L149	22.00'	S82°16'03"E
L150	22.00'	N82°16'03"W
L151	79.00'	N7°43'57"E
L152	22.00'	S82°16'03"E
L153	79.00'	S7°43'57"W
L154	22.00'	N82°16'03"W
L155	22.00'	S82°16'03"E
L156	79.00'	S7°43'57"W
L157	28.00'	N82°16'03"W
L158	79.00'	S7°43'57"W
L159	79.00'	S7°43'57"W
L160	28.00'	N82°16'03"W

Parcel Line Table		
Line #	Length	Direction
L161	79.00'	S7°43'57"W
L162	28.00'	S82°16'03"E
L163	22.00'	N82°16'03"W
L165	22.00'	S82°16'03"E
L166	22.00'	N82°16'03"W
L167	79.00'	S7°43'57"W
L168	22.00'	S82°16'03"E
L169	22.00'	N82°16'03"W
L170	79.00'	S7°43'57"W
L171	22.00'	S82°16'03"E
L172	34.30'	N82°16'03"W
L173	79.00'	S7°43'57"W
L174	34.30'	S82°16'03"E
L175	28.00'	S7°43'57"W
L176	80.00'	N82°16'03"W
L177	15.00'	N7°43'57"E
L178	93.00'	N82°16'03"W
L179	22.00'	S7°43'57"W
L180	22.00'	N7°43'57"E
L181	29.68'	S7°43'57"W
L182	93.00'	N82°16'03"W
L183	27.92'	N7°43'57"E
L184	64.54'	S7°43'57"W
L185	17.00'	N82°16'03"W
L186	76.97'	S7°43'57"W
L187	93.17'	N82°16'03"W

Curve Table					
Curve #	Length	Radius	Delta	Chord Direction	Chord Length
C1	29.84'	19.00'	89° 59' 33"	S37° 16' 16"E	26.87'
C2	85.53'	220.00'	22° 16' 28"	N86° 35' 43"E	84.99'
C3	108.85'	280.00'	22° 16' 28"	N86° 35' 43"E	108.17'
C4	58.32'	195.00'	17° 08' 08"	S16° 18' 01"W	58.10'
C5	85.53'	220.00'	22° 16' 28"	S86° 35' 43"W	84.99'
C6	108.85'	280.00'	22° 16' 28"	S86° 35' 43"W	108.17'
C7	29.85'	19.00'	90° 00' 27"	S52° 43' 44"W	26.87'
C8	14.41'	60.00'	13° 45' 55"	S75° 23' 05"E	14.38'
C9	32.50'	60.00'	31° 01' 58"	S52° 59' 08"E	32.10'
C10	47.34'	60.00'	45° 12' 06"	N14° 52' 06"W	46.12'
C11	125.66'	80.00'	90° 00' 00"	S37° 16' 03"E	113.14'
C12	20.42'	13.00'	90° 00' 00"	N52° 43' 57"E	18.38'
C13	2.63'	3.00'	50° 17' 37"	S57° 07' 14"E	2.55'

Curve Table					
Curve #	Length	Radius	Delta	Chord Direction	Chord Length
C14	2.97'	3.00'	56° 39' 32"	S3° 43' 06"E	2.85'
C15	10.75'	110.00'	5° 36' 01"	N10° 31' 56"E	10.75'
C16	65.77'	60.00'	62° 48' 15"	N39° 08' 02"E	62.52'
C17	23.05'	60.00'	22° 00' 40"	N81° 32' 30"E	22.91'
C18	22.23'	60.00'	21° 13' 27"	S76° 50' 26"E	22.10'
C19	20.07'	60.00'	19° 09' 51"	S56° 38' 47"E	19.98'
C20	4.78'	80.00'	3° 25' 33"	S48° 46' 39"E	4.78'
C21	30.17'	80.00'	21° 36' 16"	S61° 17' 33"E	29.99'
C22	14.20'	80.00'	10° 10' 22"	S77° 10' 52"E	14.19'
C23	20.42'	13.00'	90° 00' 00"	N37° 16' 03"W	18.38'
C24	20.42'	13.00'	90° 00' 00"	S52° 43' 57"W	18.38'
C25	36.86'	60.00'	35° 12' 11"	N64° 39' 57"W	36.29'
C26	174.82'	80.00'	125° 12' 13"	S70° 20' 02"W	142.05'



GRAPHIC SCALE: 1" = 50'

JOEY C. WILSON II
REGISTERED LAND SURVEYOR
AGRICULTURE
COMMERCE
TENNESSEE
NO. 2069

WILSON & ASSOCIATES, P.C.
Engineering/Surveying/Environmental

HILLCREST VILLAGE
TOWNHOMES

RECORDING STAMP
HERE

IF YOU CAN READ THIS
YOU ARE HOLDING AN
UNRECORDED COPY

FINAL SUBDIVISION PLAT

CITY OF COLUMBIA - MAURY COUNTY - TENNESSEE

TOTAL ACRES:	6.949	TOTAL NO. OF LOTS:	55
ACRES NEW RD/ST:	3.534 (ROW)	L.F. OF NEW RD/ST:	3665.4098+/-
ACRES OPEN SPACE:	0.668	CIVIL DISTRICT:	3RD
DRAWN BY:	AS	CLOSURE ERROR:	> 1:10,000
SCALE:	1" = 50'	DATE:	02/12/2025

WA PROJECT NO. 21-1861 SHEET 2 OF 2

Appendix B: Subdivision Development Agreement

This DEVELOPMENT AGREEMENT is made and entered into on this

Fourteenth day of July, 2023,
between THE CITY OF COLUMBIA, TENNESSEE, (hereinafter the "CITY"), and

M/I Homes of Nashville, LLC., the DEVELOPER (hereinafter the "DEVELOPER") named on the Addendum to this Agreement attached hereto and by this reference made a part hereof (hereinafter the "ADDENDUM").

WITNESSETH:

WHEREAS, the DEVELOPER desires to develop the property described on the ADDENDUM (hereinafter the "PROJECT"); and,

WHEREAS, the Development Plan of the PROJECT has been approved by the Columbia Municipal Planning Commission (hereinafter the “CMPC”) on the

8th day of September, 2021,
pursuant to Tennessee Code Annotated Title 13, Chapter 4, and the Subdivision Regulations of Columbia, Tennessee (hereinafter the "SUBDIVISION REGULATIONS”); and,

WHEREAS, the DEVELOPER is the owner of the PROJECT and has authority to engage in such development; and,

WHEREAS, the DEVELOPER desires to develop and improve said PROJECT; and,

WHEREAS, in order to provide for the health, safety, and welfare of future residents of the PROJECT, it will be necessary for certain improvements to the CITY'S utility systems, public infrastructure, and common areas to be constructed within and to serve the PROJECT including but not be limited to roads, bridges, sidewalks, pedestrian facilities, stormwater facilities, street signs, markings, signals, street lighting, recreation and park facilities, landscaping, and the like (hereinafter the “IMPROVEMENTS”); and,

WHEREAS, in order for the IMPROVEMENTS to be fully integrated with the utility systems and public infrastructure of the CITY and to function in a satisfactory manner, the DEVELOPER has agreed to construct, in accordance with the Subdivision Regulations and other rules, regulations, and ordinances of the CITY, the IMPROVEMENTS in said PROJECT and extend utilities to the PROJECT at their own cost; and,

WHEREAS, the CITY is willing to accept the dedication of the streets, utilities, and other improvements as determined in the Development Plan of the PROJECT, subject to the City of Columbia City Council approval by resolution, and subject to the applicant's compliance with all requirements in this agreement and applicable existing laws of the CITY of Columbia and the State of Tennessee,

NOW, THEREFORE, it is agreed and understood as follows:

B1 General Conditions

B1.1 Construction Costs

The DEVELOPER shall pay for all material and labor necessary to install and complete the roads, sidewalks, sewers, utilities, and other facilities in accordance with this agreement.

B1.2 City Ordinances, Rules and Regulations

All currently existing CITY ordinances, rules and regulations, and the Subdivision Regulations adopted by the CMPC are made a part of this agreement. In the event of a conflict between the terms of this agreement and a CITY ordinance, the ordinance shall prevail. In the event of a conflict between the terms of this agreement and the Subdivision Regulations, the Subdivision Regulations shall prevail. All work done under this agreement is to be performed in accordance with plans and specifications approved by the City and made a part, hereof.

B1.3 Fees

Review fees, inspection fees, and other amounts established by the CITY shall be paid prior to any review of the plans. If the DEVELOPER fails to install the facilities in accordance with the terms of this Agreement, no portion of the review fees, inspection fees, or other amounts paid to the CITY shall be refundable to the DEVELOPER.

B1.4 Inspection

The CITY shall have a continuous right to inspect the work and facilities to assure that the work and facilities are in accordance with the Subdivision Regulations, approved Construction Plans, and other rules, regulations, and ordinances of the CITY.

B1.5 Right of Entry

The CITY shall have the right, in case of breach of the Performance Agreement, to enter upon any property of the DEVELOPER and take all necessary actions to complete the work and obligations not completed.

B1.6 Easements

The DEVELOPER shall obtain and dedicate to the CITY or cause to be dedicated to the CITY, either by dedication on the plat or by easement deed, in either case in a form acceptable to the CITY, permanent easements of such widths as required by the CITY and noted on the Plans. The DEVELOPER further agrees to grant the necessary easements and rights-of-way across the DEVELOPER's properties without expense to the CITY and waive any claim for damages.

B1.7 Stormwater Maintenance Agreement

If the PROJECT includes any detention or retention ponds, common drainage ditches, water quality facilities, or stormwater facilities outside of the CITY rights-of-way, the DEVELOPER will submit a Stormwater Maintenance Agreement, to be filed with and recorded with the Final Plat.

B1.8 Attorney Fees and Other Expenses

The DEVELOPER shall pay all reasonable costs and expenses incurred by the CITY in enforcing or completing this agreement. The DEVELOPER shall pay all costs and expenses, including the CITY'S attorney fees, of any legal proceedings brought by the CITY against the DEVELOPER seeking remedies for the DEVELOPER'S failure to perform any of its obligations hereunder, whether or not any proceedings are prosecuted to judgment.

B1.9 Agreement Not Assignable

No third party shall obtain any benefits or rights under this agreement nor shall the rights or duties be assigned by either party.

B1.10 Revocation and Interpretation

This agreement shall bind the DEVELOPER when executed by the DEVELOPER and may not be revoked by the DEVELOPER without permission of the CITY, even if the agreement has not been executed by the CITY, or does not bind CITY, for other reasons. This agreement shall be interpreted in accordance with Tennessee law and may only be enforced in the Chancery Court or Circuit Court or Court of competent jurisdiction of Maury County, Tennessee, and Tennessee Appellate Courts.

B1.11 No Oral Agreement

This agreement may not be orally amended and supersedes all prior negotiations, commitments, or understandings.

B1.12 Separability

If any portion of this agreement is held to be unenforceable, the CITY shall have the right to determine whether the remainder of the agreement shall remain in effect, or whether the agreement shall be void and all rights of the DEVELOPER pursuant to this agreement terminated.

B 1.13 Transferability

The DEVELOPER agrees to not transfer the property on which this PROJECT is to be located without first providing the CITY with written notice. The transferee shall provide the CITY an Assumption Agreement of this Agreement, whereby the transferee agrees to perform the IMPROVEMENTS required under this agreement and to provide a performance surety. The DEVELOPER understands that if the DEVELOPER transfers said property without providing the notice of transfer and Assumption Agreement as required herein, they will be in breach of this agreement and in violation of the Subdivision Regulations.

B1.14 Indemnity

The DEVELOPER shall indemnify and hold the CITY harmless from all loss, costs, expenses, liability, money damages, penalties, or claims arising out of any work covered by this agreement, including any attorney fees incurred by the CITY in connection therewith. Inspection of the IMPROVEMENTS by an authorized representative of the CITY shall not constitute a waiver by the CITY of any defect or of any of the DEVELOPER'S obligations hereunder.

B1.15 Binding Effect

This agreement shall be binding upon the DEVELOPER and the DEVELEPOR's heirs, administrators, executors, assigns, and any other successors in interest.

B1.16 Entire Agreement

This document contains the entire agreement between the parties, and there are no collateral understandings or agreements between them. No variations or alterations of the terms of this agreement shall be binding upon either of the parties, unless the same be reduced to writing and made an amendment to this agreement.

B1.17 Headings

Paragraph titles and headings contained herein are inserted for convenience only and shall not be deemed a part of the agreement and in no way shall define, limit, extend, or describe the scope or intent of any provision, hereof.

B2 Performance Surety

At the time of execution of this agreement, the DEVELOPER shall provide the CITY a performance surety, in an amount determined by the City Engineer for the IMPROVEMENTS and other items specified by the Construction Plans, plats, and plans approved by the CMPC. This performance surety shall secure performance of all obligations of the DEVELOPER under this agreement. The performance surety shall meet all requirements established in Chapter 4: Performance Agreement of the Subdivision Regulations and secure full compliance with all terms and conditions of this agreement. The performance surety may be called for failure to comply with the provisions of this agreement in whole or in part according to the terms of the performance surety. The performance surety will not be released, except and until there has been full compliance with this agreement.

B3 Construction

B3.1 Construction Plans

The DEVELOPER shall submit to the CITY, Construction Plans describing in reasonable detail all utility systems, all storm water management systems, all street systems, pedestrian facilities, and all IMPROVEMENTS. The Construction Plans shall be designed according to the Engineering Standards and Specifications, all other codes and ordinances enforced by the City, and sound engineering judgment. The design of all utility systems shall follow the State of Tennessee and utility provider design criteria and specifications. In the event of a disagreement as to compliance with or interpretation of the Construction Plans and the CITY'S specifications, the decision of the CITY shall be final and binding on the DEVELOPER. The Construction Plans shall be prepared by a design professional licensed by the State of Tennessee to design all systems and shall bear the seal, signature, date, and license number of the professional preparing the Construction Plans.

B3.2 Commencement of Construction

Construction of IMPROVEMENTS may not begin until the following events have occurred:

A. The Preliminary Plat has been approved by the CMPC;
B. The Construction Plans are approved by the CITY;
C. The Tennessee Department of Environment and Conservation has approved the applicable portions of the Plans and has confirmed its approval to the CITY and/or DEVELOPER in writing;
D. The CITY shall have received an appropriately executed Development Agreement; and
E. The DEVELOPER shall give the CITY notice of commencement of construction, in writing at least one (1) working day prior to commencement.

B3.3 Site Grading

The DEVELOPER, hereby, agrees to construct all site grading to comply with the approved Construction Plans, including the approved Erosion Control Plan for the PROJECT and to comply with the Engineering Standards and Specifications, Stormwater Ordinance, and all other codes and ordinances enforced by the CITY.

B3.4 Storm Water Management Systems

The DEVELOPER shall be responsible for all storm water management work made necessary by the development of this PROJECT. It is understood and agreed that the CITY in its proprietary function is not and could not be expected to oversee, supervise, or direct the construction of all drainage improvements, and the excavation incident thereto. Neither is the CITY vested with the original design responsibility nor the means to formally survey elevations or the locations of improvements at every stage of the construction process. The CITY is vested with the right of periodic inspections, stop work order, and final approval as a measure of secondary or subsequent enforcement. The DEVELOPER has and shall retain the responsibility to properly anticipate, survey, design and construct the subdivision storm water improvements and give full assurance that same shall not adversely affect the flow or quality of surface water from or upon any property. In providing technical assistance, plan and design review, the CITY does not and shall not relieve or accept any liability from the DEVELOPER.

B3.5 Street Construction

The DEVELOPER, hereby, agrees to construct and improve the streets shown on the Construction Plans to comply with the CITY's specifications and to the satisfaction and approval of the City Engineer by grading, draining, subgrade preparation, base preparation, curbing, signage, striping, signalization, sidewalk installation, and paving with the required preparation, amounts, and types of material. The DEVELOPER further agrees to pay the cost of all engineering, inspection and laboratory cost incidental to the construction of subdivision streets including but not limited to material and density testing. The DEVELOPER further agrees to make all necessary adjustments to manholes and valve boxes to meet finished surface grade and to repair subsurface or base material, as required, in areas directed by the CITY Engineer, prior to application of final surface.

B3.6 Time Period for Construction

The DEVELOPER agrees to be bound to complete, within three (3) years of commencement of construction, all IMPROVEMENTS shown on the plat and plans and all things required by this agreement.

The DEVELOPER further agrees that if due to unforeseen circumstances, he is unable to complete all work included in this agreement within the time specified above, but desires to complete said agreement to the satisfaction of the CITY, the DEVELOPER shall submit a written request for extension of the agreement period to the CITY at least sixty (60) days prior to the expiration of the existing agreement period, specifying the reason for the DEVELOPER's failure to complete the work as agreed and a prospective date for such completion. The DEVELOPER further agrees that if the performance surety executed to secure the value of the work to be performed under this agreement, due to inflation or rising costs, is determined to be inadequate by the City Engineer to secure the cost of said IMPROVEMENTS at the time an extension is sought, the DEVELOPER will provide the additional security to bring the performance surety amount in line with current cost projections as made by the CITY. The DEVELOPER understands that the DEVELOPER's failure to follow the extension procedure constitutes a breach of this agreement and places the DEVELOPER in violation of the Subdivision Regulations. The DEVELOPER further understands, that should the DEVELOPER fail to complete any part of the work outlined in this agreement in a good and workmanlike manner as approved, the CITY shall reserve the right to withhold and withdraw all building permits within the PROJECT until all items of this Agreement have been fulfilled by the DEVELOPER.

B3.7 Off-Site Improvements

The DEVELOPER shall construct any and all off-site facilities that may be required to serve the PROJECT. Unless specifically noted in the Construction Plans and made a part of separate agreement with the CITY, the CITY shall not be required to reimburse the DEVELOPER for construction of off-site improvements.

B3.9 Inspection and Compliance

After construction begins, the CITY shall provide on-site construction inspection as the CITY deems necessary to ensure that all work is performed and completed in accordance with the Construction Plans, CITY specifications, and the contents of this agreement. In the event of a disagreement as to compliance with or interpretation of the Construction Plans and the CITY'S specifications, the decision of the CITY shall be final and binding on the DEVELOPER. If the DEVELOPER fails to construct in accordance with the approved Construction Plans or to comply with the CITY'S specifications, the CITY may issue a stop-work order and DEVELOPER, hereby, agrees to be bound by such order.

B3.10 Testing

The DEVELOPER agrees to pay the cost of all engineering, inspection, and laboratory cost incidental to construction of the streets, sidewalks, utilities, sewers, compacted fill material, and other facilities included within this agreement. Such testing includes, but is not limited to, material and density testing.

B3.11 Scrap Removal

The DEVELOPER agrees to comply with all local, state, and federal rules and regulations regarding waste material and debris disposal.

B3.12 Traffic Control

The DEVELOPER, hereby, agrees to prepare a traffic control/detour plan where required and shall submit said plan to the CITY for review and approval. All traffic control and safety devices, including

signs, lane markings, and barriers necessitated by construction activity undertaken pursuant to this agreement shall be installed and maintained by the DEVELOPER. All traffic control devices shall meet the standards and be installed in accordance with the latest edition of the Manual on Uniform Traffic Control Devices for Streets and Highways, published by the United States Department of Transportation.

B3.13 Temporary Facilities

The DEVELOPER shall provide all temporary facilities including but not limited to utilities and roadways, that are determined by the CITY to be required in connection with or as a result of interruption of service or access that occurs as a consequence of construction activity associated with the work covered by this agreement. Such temporary services shall in all regards and at all points in time be adequate to assure emergency access and adequate fire flows.

B4 Acceptance of Improvements

B4.1 Completion of Improvements

At such time as the improvements have been constructed and installed, in accordance with the Constructions Plans and specifications, required testing and inspections completed and found satisfactory, and all clean-up and cover-up has been done to the satisfaction the City Engineer, a letter requesting preliminary acceptance of the PROJECT will be provided by the DEVELOPER. Formal acceptance shall follow the procedure established in the Subdivision Regulations.

The DEVELOPER agrees the DEVELOPER shall have no claim, direct or implied, in the title or ownership of the IMPROVEMENTS specified in this agreement when the IMPROVEMENTS are complete and thereafter accepted by the CITY. The DEVELOPER will be responsible for construction failures and defects in PROJECT prior to final acceptance. During this period, it shall remain the responsibility of the DEVELOPER to correct and cure these defects and failures.

B4.2 As-Built Drawings and Post-Completion Items

The DEVELOPER agrees to furnish to the CITY as-built plans, on a reproducible, stable media, of the sanitary sewer, storm water management, water mains and service system, and streets within the subdivision before the CITY shall accept the subdivision.

B4.3 Acceptance of Facilities

Upon final acceptance of all or part of the IMPROVEMENTS in the PROJECT, then those IMPROVEMENTS shall become the property of the CITY free from all claims from any person or entity without the necessity of any further writing, agreement, or deed. The DEVELOPER further agrees that any facilities placed within a public or platted right-of-way or dedicated public easement are irrevocably dedicated to the public use without any right of reimbursement or compensation of any kind.

B4.4 Failure to Install

In the event the DEVELOPER fails to install the facilities in accordance with the terms of this agreement, the CITY may, in its sole discretion, elect to accept all or a portion of the IMPROVEMENTS in the PROJECT. Should the CITY choose to accept all or a portion of these IMPROVEMENTS, the CITY shall become the sole owner of these facilities. The CITY may give notice of acceptance by writing delivered to the DEVELOPER or recorded in the Register’s Office of Maury County, Tennessee. No further writing or deed shall be required.

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed in multiple originals by persons properly authorized so, to do on or as of the day and year first given.

Hillcrest Village (Baker Property)
PROJECT

Completed by the Developer	*Completed by the City*
M/I Homes of Nashville, LLC. DEVELOPER NAME	
David Cumming, P.E. AUTHORIZED AGENT NAME	CITY ENGINEER
SIGNATURE	SIGNATURE
7/14/23 DATE	DATE
3020 Stansberry Ln. St. 202 STREET	
Franklin, TN 37069 CITY, STATE, ZIP	
(919) 763-4630 PHONE	
EJordon@mihomes.com EMAIL	
Attest	*Attest*
Eli Jordon ATTEST NAME	ATTEST NAME
ATTEST SIGNATURE	ATTEST SIGNATURE
7/14/23 DATE	DATE

DOCUMENT PREPARED BY:
Name: Alexander Mollica
Company Crunk Engineering
Address: 7112 Crossroads Blvd.
Brentwood, TN 37027
After recording return copy to City of Columbia, Development Services

INSPECTION AND MAINTENANCE AGREEMENT OF
PRIVATE STORMWATER MANAGEMENT FACILITIES

Map & Parcel Number: Map 113, Group 08047, Parcel 000
Project Name: Hilcrest Townhomes

Recorded by deed in the Register of Deeds Office of Maury County in Deed Book_____, Page(s)_____.

THIS AGREEMENT, made this 12 day of February, 20 25, by and between M/I Homes of Nashville, LLC hereinafter referred to as the "OWNER(S)" of the following property and City of Columbia, Tennessee, hereinafter referred to as the "CITY",

WE, the OWNER(S), with full authority to execute deeds, mortgages, other covenants, all rights, titles, and interests in the property described above, do hereby covenant with the CITY and agree as follows:

1. The OWNER(S) covenant and agree with the CITY that the OWNER(S) shall provide for adequate long term maintenance and continuation of stormwater control measures described in the Long Term Maintenance Plan and shown on the location map, deed of easement drawing or plat attached hereto to ensure that the facilities, are and remain in proper working condition in accordance with approved design standards, rules and regulations, and applicable laws. The OWNER(S) shall perform preventative maintenance activities at intervals described in the schedule attached hereto along with necessary landscaping (grass cutting, etc.) and trash removal as part of regular maintenance.

2. The OWNER(S) shall perform routine inspections to ensure that all long term stormwater management facilities are properly functioning. These inspections shall be conducted on an annual basis, at a minimum. These inspections shall be conducted by a person familiar with control measures implemented at the site. The OWNER(S) or operators shall maintain documents of these inspections.

3. The OWNER(S) shall perform comprehensive inspections of all stormwater management facilities and practices. These inspections shall be conducted once every five years, at a minimum. Such inspections must be conducted by either a professional engineer or landscape architect.

4. The OWNER(S) shall grant to the CITY or its agent or contractor the right of entry at reasonable times and in a reasonable manner for the purpose of inspecting, operating, installing, constructing, reconstructing, maintaining or repairing the facility within the CITY.

5. The OWNER(S) shall record and grant to the CITY the necessary easements and rights-of-way and maintain perpetual access from public rights-of-way to the facility for the CITY or its agent and contractor.

6. If, upon inspection, the CITY finds that the OWNER(S) has failed to properly maintain the facilities, the CITY may order the work performed within ten (10) days. In the event the work is not performed within the specified time, the ONWER(S) agrees to allow the CITY to enter the property and take whatever steps it deems necessary to maintain the stormwater control facilities. This provision shall not be construed to allow the CITY to erect any structure of a permanent nature on the PROPERTY without first obtaining written approval of the OWNER(S)

7. The CITY is under no obligation to maintain or repair said facilities, and in no event shall this Agreement be construed to impose any obligation on the CITY. The OWNER(S) shall reimburse the CITY upon demand the costs incurred in the maintenance of the facilities.

8. If the OWNER(S) fails to pay the CITY for the above expensive after forty-five (45) days written notice, the OWNER(S) authorizes the CITY to collect said expenses from the OWNER(S) through appropriate legal action and the OWNER(S) shall be liable for the reasonable expenses of collection, court costs, and attorney fees.

9. The OWNER(S) and the OWNER(S) heirs, administrators, executors, assigns, and any other successor in interest shall indemnify and hold harmless the CITY and its officers, agents and employees for any and all damages, accidents, casualties, occurrences, claims or attorney's fees which might arise or be asserted, in whole or in part,

against the CITY from the construction, presence, existence, or maintenance of the stormwater control facilities subject to this AGREEMENT. In the event a claim is asserted against the CITY, its officers, agents or employees, the CITY shall notify OWNER(S) and the OWNER(S) shall defend at OWNER(S) expense any suit based on such claim. If any judgment or claims against the CITY, its officers, agents or employees, shall be allowed, the OWNER(S) shall pay all costs and expenses in connection therewith. The CITY will not indemnify, defend or hold harmless in any fashion the OWNER(S) from any claims arising from any failure, regardless of any language in any attachment or other document that the OWNER(S) may provide

10. The OWNER(S) shall not be able to transfer, assign or modify its responsibilities with respect to this agreement **without the CITY's written prior consent. Nothing herein shall be construed to prohibit a transfer by OWNER(S)** to subsequent owners and assigns.

11. No waiver of any provision of this AGREEMENT shall affect the right of any party thereafter to enforce such provision or to exercise any right or remedy available to it in the event of any default.

12. The OWNER(S) shall record a plat showing and accurately defining the easements for stormwater control facilities. The plat must reference the Instrument Number where this AGREEMENT and its attachments are recorded and contain a note that the OWNER(S) is responsible for maintaining the stormwater management facilities.

13. The OWNER(S) shall record this AGREEMENT in the office of the Register of Deeds for the county of Maury, Tennessee, and the AGREEMENT shall constitute a covenant running with the land, and shall be binding upon the OWNER(S) and the OWNER(S) heirs, administrators, executors, assigns, and any other successors in interest

ATTEST BY OWNER(S):

Print Name David M. Cummings

Title VP of Land

Signature

Owner M/I Homes of Nashville, LLC

Address 725 Cool Springs Blvd suite 180

City, State ZIP Franklin, TN 37067

STATE OF Tennessee
COUNTY OF Maury

Before me, Erika Root of the state and county mentioned, personally appeared David M. Cummings, with whom I am personally acquainted and who acknowledged that he/~~she~~ executed the foregoing instrument of the purposes therein contained.

Witness my hand this the 13th day of February 20 25.

Notary Public

My Commission Expires: 6/26/27

ERIKA ROOT
STATE OF TENNESSEE NOTARY PUBLIC
MAURY COUNTY
My Commission Expires 06-26-2027

CITY OF COLUMBIA, TENNESSEE
ENGINEERING DEPARTMENT

APPROVED BY : _____

STATE OF TENNESSEE
COUNTY OF MAURY

Before me, _____ of the state and county mentioned, personally appeared _____, with whom I am personally acquainted, and who acknowledged themselves to be the City Engineer of the City of Columbia or his designee and as such, being authorized so to do, executed the foregoing instrument of the purposes therein contained.

Witness my hand this the _____ day of _____, 20_____.

Notary Public
My Commission Expires: _____

Post Construction Long Term Maintenance Plan

Waterford Townhomes

Columbia, TN

February 12, 2025

Table of Contents

Section Name

System Description
Maintenance Procedures

System Description

The site consists of a series of stormwater conveyance of pipe.

- 2057 feet of 18 in ADS pipe, and 30 storm inlets.

Upon completion of the site construction, 'Record Drawings' in a version not less than AutoCAD 2006 LT (NAD83, NAVD88) of the stormwater controls will be provided to the City of Columbia for verification.

A copy of the INSPECTION AND MAINTENANCE AGREEMENT OF PRIVATE STORMWATER MANAGEMENT FACILITIES that has been completed, notarized, and recorded in the Land Records of the County of Maury, Tennessee will be kept on site with this document.

Maintenance Procedures

1. **2057 feet of 18 in ADS pipe, and 30 storm inlets.**
    a. These structures will be inspected and cleaned quarterly to ensure pipes and drain inlets do not fill with sediment or trash.

C6.0
OVERALL GRADING & DRAINAGE PLAN

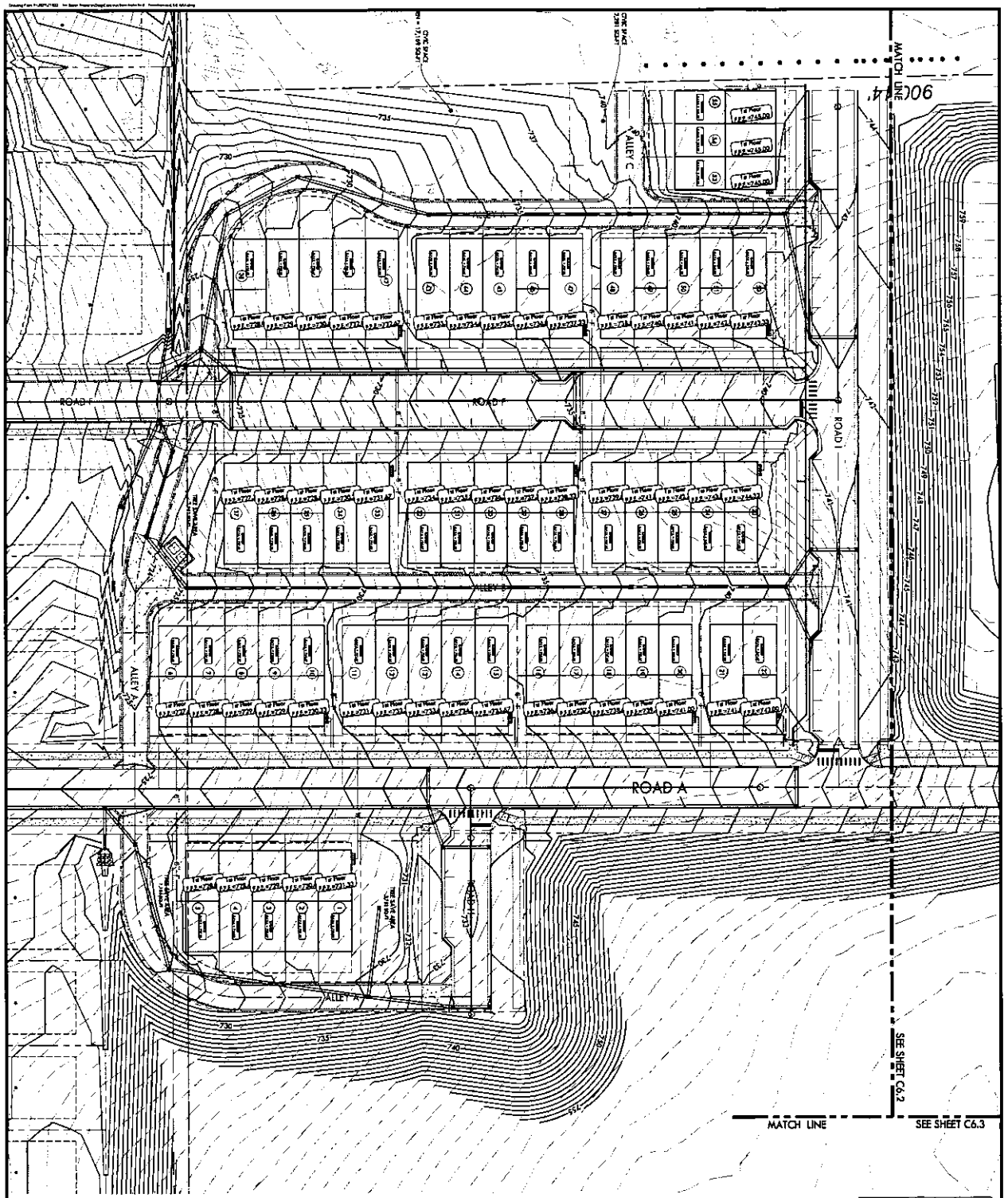
09/08/23
21022

REVISIONS	
No.	DATE

WATERFORD TOWNHOMES

COLUMBIA, TENNESSEE

CRUNK ENGINEERING LLC
711 2 CROSSROADS BOULEVARD
SUITE 201
BRENTWOOD, TN 37027
(615) 873-1795
WWW.CRUNKENG.COM



GRADING & DRAINAGE PLAN KEYNOTES

CODE	DESCRIPTION	DETAIL LOCATION
G1	SINGLE CURB INLET	C6.1 - 3
G2	SINGLE CATCH BASIN	C6.1 - 4
G3	JUNCTION BOX	C6.1 - 2
G4	CONCRETE HEADWALL	C6.1 - 6

NOTES
1. REFER TO SHEET C6.0 FOR NOTES.
2. ADD PIPE TO BE MACHINED WITH #57 STONE TO A DEPTH OF 1' ABOVE SIDE ELEVATION.

PROPOSED GRADING & DRAINAGE LEGEND

- PROPOSED CONTOUR
- PROPOSED SPOT ELEVATION
- STORM STRUCTURE LABEL
- STORM PIPE
- SINGLE CURB INLET
- SINGLE CATCH BASIN
- JUNCTION BOX

GRAPHIC SCALE: 0 10 20 30 60

REVISIONS	
No.	DATE

C6.1
GRADING PLAN

09/08/23
21022

WATERFORD TOWNHOMES

COLUMBIA, TENNESSEE

CRUNK ENGINEERING LLC
7112 CROSSROADS BOULEVARD
SUITE 201
BRENTWOOD, TN 37027
(615) 873-1795
WWW.CRUNKENG.COM

GRADING & DRAINAGE PLAN KEYNOTES

CODE	DESCRIPTION	DETAIL LOCATION
(S1)	SINGLE CURB INLET	C8.1 - 3
(S2)	SINGLE CATCH BASIN	C8.1 - 4
(S3)	JUNCTION BOX	C8.1 - 2
(S4)	CONCRETE HEADWALL	C8.1 - 6

NOTES:
1. REFER TO SHEET C6.0 FOR NOTES.
2. ADD PIPE TO BE ENCIRCLED WITH 45°F STONE TO A DEPTH OF 18" ABOVE PIPE ELEVATION.

PROPOSED GRADING & DRAINAGE LEGEND

- PROPOSED CONTOUR
- PROPOSED SPOT ELEVATION
- STORM STRUCTURE LABEL
- STORM PIPE
- SINGLE CURB INLET
- SINGLE CATCH BASIN
- JUNCTION BOX

REVISIONS	
No.	DATE

09/08/23

21022

C6.2

DRAINAGE PLAN

WATERFORD TOWNHOMES

COLUMBIA, TENNESSEE

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7112 CROSSROADS BOULEVARD
SUITE 201
BRENTWOOD, TN 37027
(615) 873-1795
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C6.2
GRADING PLAN

09/08/23
21022

REVISIONS	
No.	DATE

WATERFORD TOWNHOMES

COLUMBIA, TENNESSEE

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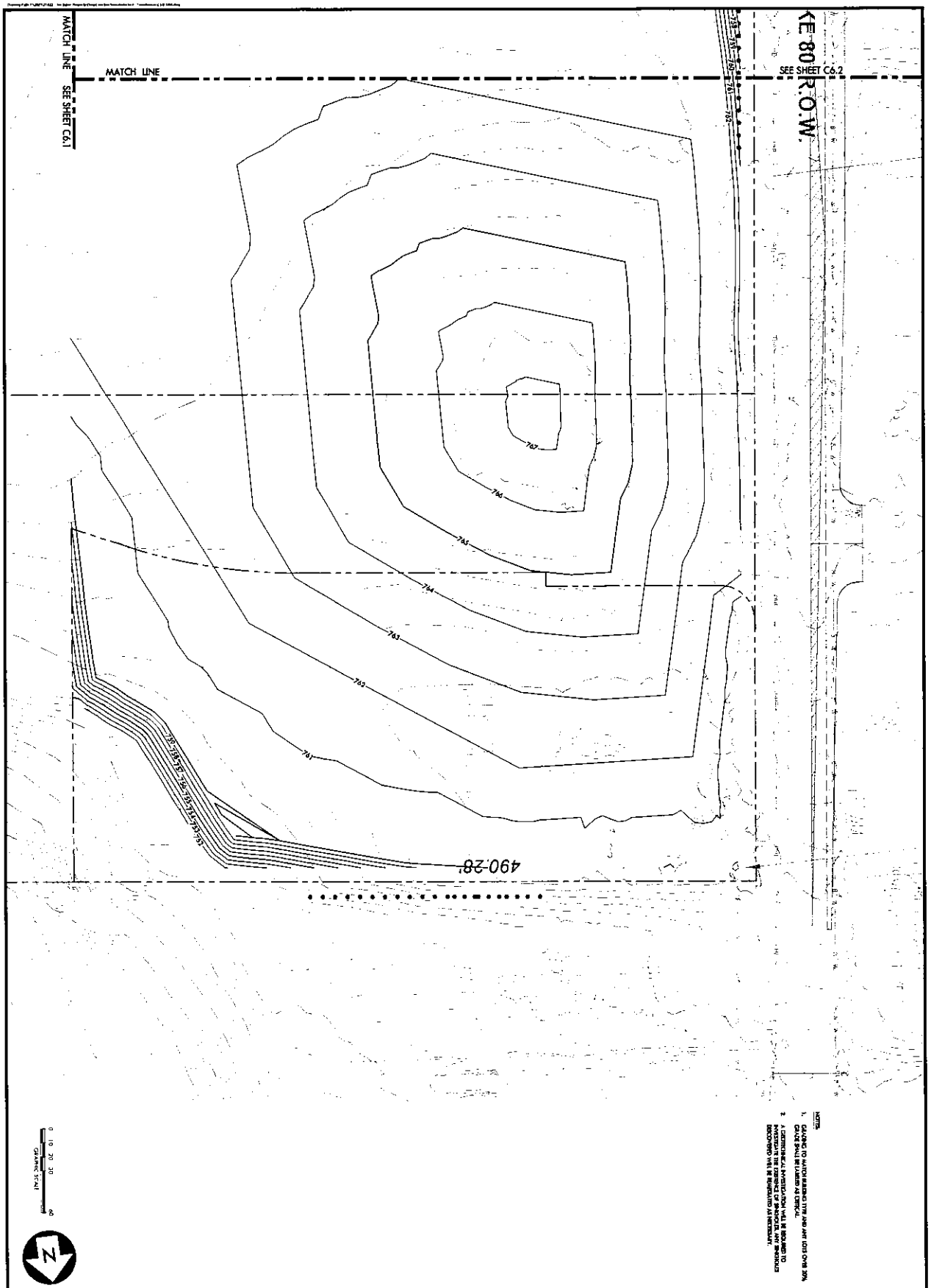

NOTES:

1. GRADING TO MATCH BUILDING TYPE AND ANY LOTS OVER 20% GRADE SHALL BE LIMITED AS CRITICAL.
2. A GEOTECHNICAL INVESTIGATION WILL BE REQUIRED TO INVESTIGATE THE EXISTENCE OF SINKHOLES. ANY SINKHOLES DISCOVERED WILL BE REMEDIATED AS NECESSARY.

C6.3 GRADING PLAN	09/08/23 21022	REVISIONS No. DATE	WATERFORD TOWNHOMES COLUMBIA, TENNESSEE

CRUNK ENGINEERING LLC
7112 CROSSROADS BOULEVARD
SUITE 201
BRENTWOOD, TN 37027
(615) 873-1795
WWW.CRUNKENG.COM

ID	RIM	STORM STRUCTURE TABLE	
		INVERT	TYPE
A1	739.69	18" ADS (PP) (SDR7) 730.10	SINGLE CATCH MAIN
A2	734.98	18" ADS (PP) (SDR7) 730.60 18" ADS (PP) (SDR7) 731.60	SINGLE CATCH MAIN
A3	730.11	18" ADS (PP) RPB 731.60 18" ADS (PP) RPB 731.50 18" ADS (PP) (SDR7) 732.40	SINGLE CATCH MAIN
A4	729.16	18" ADS (PP) (SDR7) 724.10	SINGLE CATCH MAIN
A5	723.23	18" ADS (PP) (SDR7) 722.80 18" ADS (PP) (SDR7) 722.70	SINGLE CURB INLET
B2	723.24	18" ADS (PP) (SDR7) 722.00	SINGLE CURB INLET
C1	731.87	18" ADS (PP) RPB 732.40 18" ADS (PP) (SDR7) 732.30	DOUBLE CURB INLET
C2	731.87	18" ADS (PP) RPB 732.40	SINGLE CURB INLET
D1	732.24	18" ADS (PP) RPB 716.30 18" ADS (PP) (SDR7) 716.20	SINGLE CATCH MAIN
D2	732.51	18" ADS (PP) RPB 716.50 18" ADS (PP) (SDR7) 716.40	SINGLE CATCH MAIN
D3	732.17	18" ADS (PP) RPB 721.20 18" ADS (PP) (SDR7) 721.10	SINGLE CATCH MAIN
D4	732.73	18" ADS (PP) RPB 732.00 18" ADS (PP) (SDR7) 732.90	SINGLE CATCH MAIN
D5	731.44	18" ADS (PP) RPB 727.00 18" ADS (PP) (SDR7) 726.90	SINGLE CATCH MAIN
D6	726.89	18" ADS (PP) (SDR7) 727.20	SINGLE CURB INLET
E1	731.44	18" ADS (PP) RPB 711.60 18" ADS (PP) (SDR7) 711.40	SINGLE CURB INLET
E2	734.27	18" ADS (PP) RPB 732.00 18" ADS (PP) (SDR7) 726.90	SINGLE CURB INLET
E3	734.27	18" ADS (PP) RPB 732.00	SINGLE CURB INLET
E4	741.06	18" ADS (PP) RPB 734.50 18" ADS (PP) (SDR7) 734.40	SINGLE CURB INLET
E5	731.31	18" ADS (PP) RPB 717.10 18" ADS (PP) (SDR7) 717.00	SINGLE CATCH MAIN
E6	736.60	18" ADS (PP) RPB 722.00 18" ADS (PP) (SDR7) 721.90	SINGLE CATCH MAIN
E7	738.64	18" ADS (PP) RPB 734.50 18" ADS (PP) (SDR7) 734.40	SINGLE CATCH MAIN
E8	733.23	18" ADS (PP) RPB 728.60 18" ADS (PP) (SDR7) 727.90	SINGLE CATCH MAIN
E9	728.58	18" ADS (PP) RPB 722.40 18" ADS (PP) (SDR7) 722.30	SINGLE CATCH MAIN
E10	737.44	18" ADS (PP) RPB 727.40 18" ADS (PP) (SDR7) 727.30	SINGLE CATCH MAIN
E11	740.89	18" ADS (PP) (SDR7) 740.10	SINGLE CURB INLET
E12	740.54	18" ADS (PP) RPB 737.40 18" ADS (PP) (SDR7) 737.30	SINGLE CURB INLET
E13	740.04	18" ADS (PP) (SDR7) 737.20	SINGLE CURB INLET
E14	737.58	18" ADS (PP) (SDR7) 737.40	SINGLE CURB INLET

ID	RIM	STORM PIPE TABLE								
		INVERT	OUTLET	INVERT	LENGTH (FT)	SLOPE (%)	SHAPE	DIAMETER (IN)	MATERIAL	
A1	739.69			713.30	31	3.87%	CIRCULAR	18	ADS (PP)	
A2	734.98	739.10	A1	713.00	86	3.49%	CIRCULAR	18	ADS (PP)	
A3	730.11	734.98	A2	711.60	134	3.36%	CIRCULAR	18	ADS (PP)	
A4	729.16	730.11	A3	711.50	69	1.01%	CIRCULAR	18	ADS (PP)	
B1	727.70			722.10	18	2.17%	CIRCULAR	18	ADS (PP)	
B2	729.00	727.70	B1	722.00	31	3.87%	CIRCULAR	18	ADS (PP)	
C1	729.30		A3	713.50	56	4.99%	CIRCULAR	18	ADS (PP)	
C2	728.70	729.30	C1	728.40	31	1.30%	CIRCULAR	18	ADS (PP)	
C3	728.70		C1	717.80	33	1.79%	CIRCULAR	18	ADS (PP)	
D1	718.30			717.80	33	1.79%	CIRCULAR	18	ADS (PP)	
D2	716.40	718.30	D1	716.30	69	1.86%	CIRCULAR	18	ADS (PP)	
D3	711.10	716.40	D2	716.25	44	3.86%	CIRCULAR	18	ADS (PP)	
D4	722.90	711.10	D3	711.25	294	3.97%	CIRCULAR	18	ADS (PP)	
D5	734.90	722.90	D4	713.00	103	3.88%	CIRCULAR	18	ADS (PP)	
E1	718.40	727.00	D6	727.30	40	1.37%	CIRCULAR	18	ADS (PP)	
E2	720.90	718.40	E1	717.10	24	3.81%	CIRCULAR	18	ADS (PP)	
E3	731.70	720.90	E2	716.50	228	5.44%	CIRCULAR	18	ADS (PP)	
F1	734.30	731.70	E3	731.20	37	1.89%	CIRCULAR	18	ADS (PP)	
F2	736.70	734.30	F1	732.40	84	1.07%	CIRCULAR	18	ADS (PP)	
G1	717.20		F1	728.40	31	9.97%	CIRCULAR	18	ADS (PP)	
G2	721.90	717.20	G1	717.10	91	3.30%	CIRCULAR	18	ADS (PP)	
G3	714.10	721.90	G2	712.00	54	3.81%	CIRCULAR	18	ADS (PP)	
G4	727.90	714.10	G3	711.20	91	4.29%	CIRCULAR	18	ADS (PP)	
G5	734.90	727.90	G4	728.00	133	5.52%	CIRCULAR	18	ADS (PP)	
G6	737.30	734.90	G5	734.80	103	2.42%	CIRCULAR	18	ADS (PP)	
G7	740.10	737.30	G6	729.20	28	3.57%	CIRCULAR	18	ADS (PP)	
H1	737.30	737.30	B3	732.20	30	1.67%	CIRCULAR	18	ADS (PP)	
H2	737.20	737.20	H1	732.40	31	4.97%	CIRCULAR	18	ADS (PP)	
I1	730.40	716.50	I1	716.35	17	5.41%	CIRCULAR	18	ADS (PP)	

REVISIONS

No.	DATE

09/08/23

21022

C6.5

STORM STRUCTURE & PIPE TABLES

WATERFORD TOWNHOMES

COLUMBIA, TENNESSEE

CRUNK ENGINEERING LLC
7112 CROSSROADS BOULEVARD
SUITE 201
BRENTWOOD, TN 37027
(615) 873-1795
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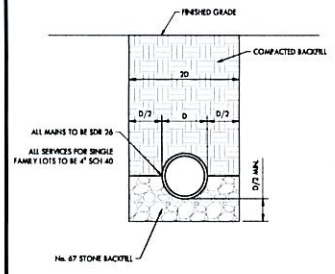
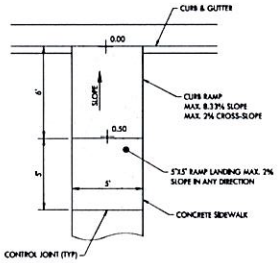
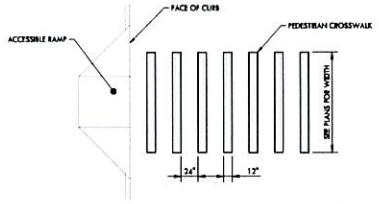


10 PIPE TRENCHING
NOT TO SCALE

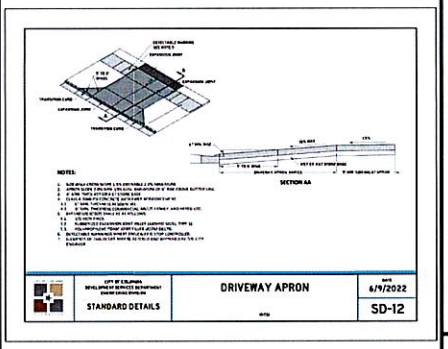


7 CURB RAMP
NOT TO SCALE

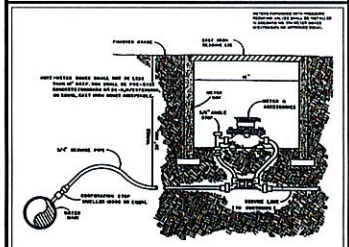


NOTES:
1. THE PEDESTRIAN CROSSWALK SHALL BE IN COMPLIANCE WITH ADAAG 403.3.
2. MARKINGS SHALL BE SOLID WHITE PAINTED ON ASPHALT.
3. PAINT 12" WIDE STRIPES AS INDICATED. USE PORTER "TRAFFIC WHITE" PAINT OR APPROVED EQUAL.

4 PEDESTRIAN CROSSWALK
NOT TO SCALE



1 DRIVEWAY APRON
NOT TO SCALE



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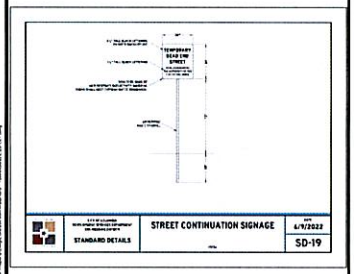
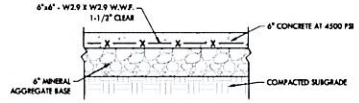
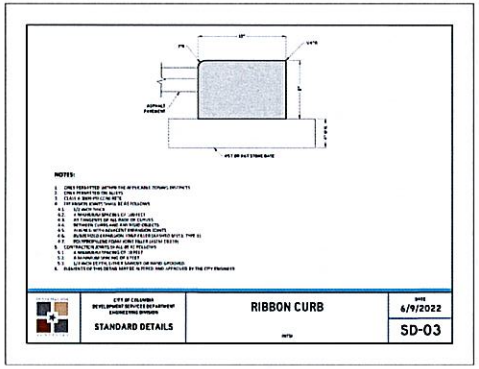


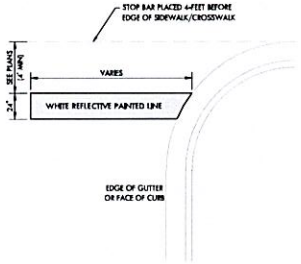
12 STREET CONT. SIGNAGE



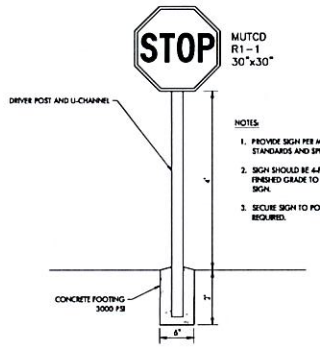
8 CONCRETE PAVEMENT SECTION (DUMPSTER ENCLOSURE)
NOT TO SCALE



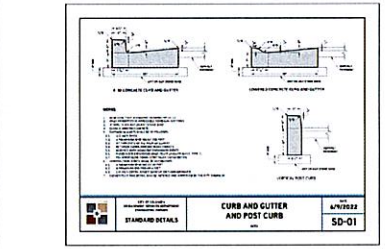
9 CONCRETE RETAINING WALL
NOT TO SCALE



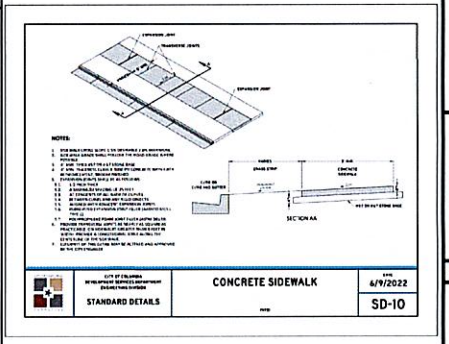
5 24" PAINTED STOP BAR
NOT TO SCALE



6 STOP SIGN
NOT TO SCALE



2 CURB AND GUTTER
NOT TO SCALE



3 CONCRETE SIDEWALK
NOT TO SCALE

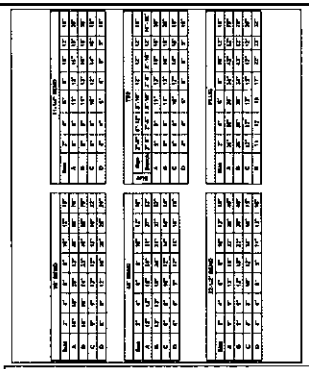
CRUNK ENGINEERING LLC
7112 CROSSROADS BOULEVARD
SUITE 210
BRENTWOOD, TN 37027
(615) 873.1795
WWW.CRUNKENG.COM

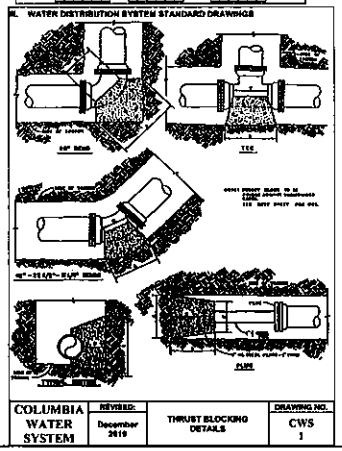
WATERFORD TOWNHOMES
COLUMBIA, TENNESSEE

No.	REVISIONS	DATE

09/08/23 21022

C8.0
DETAILS



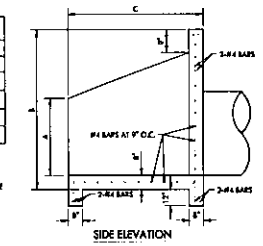


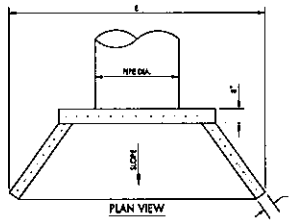
COLUMBIA WATER SYSTEM	REVISED: December 2019	THRUST BLOCKING DETAILS	DRAWING NO. CWS 1

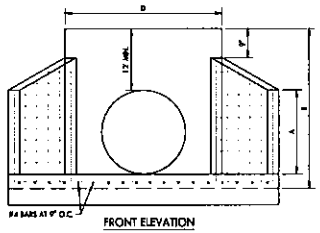
8

DIMENSION TABLE					
PIPE DIA.	A	B	C	D	E
UP TO 18"	15"	36"	30"	30"	96"
18" TO 30"	24"	48"	42"	63"	120"
30" TO 42"	30"	60"	48"	76"	136"
42" TO 60"	36"	80"	54"	96"	160"
60" TO 72"	42"	92"	66"	108"	176"

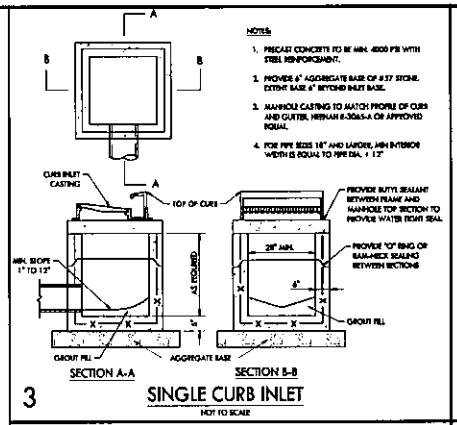
NOTES:
1. CONCRETE TO BE 4000 PSI.
2. REINFORCING STEEL SHALL MEET ASTM A615 FOR GRADE 60, MIN. 2" CLEARANCE.
3. PIPE TO BE GROUTED INTO HEADWALL ON SITE.
4. PRECAST HEADWALLS ARE ACCEPTABLE IN LIEU OF CAST IN PLACE. PRECAST ELEMENTS TO MEET ASTM C913
5. CHAMFER ALL CORNERS 1".



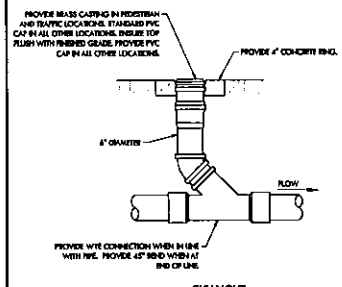




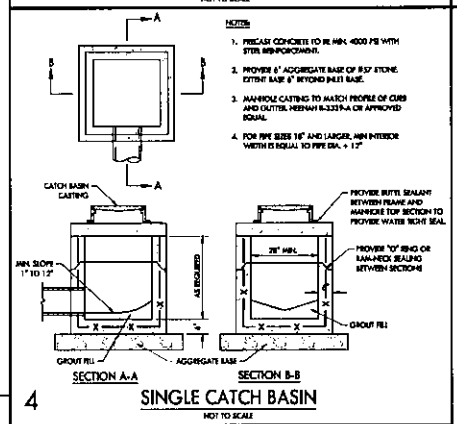
6 CONCRETE HEADWALL
NOT TO SCALE



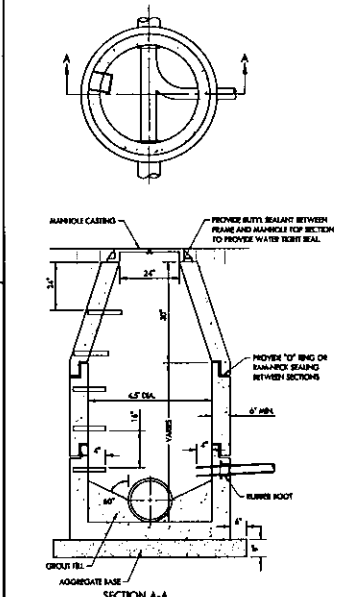
3 SINGLE CURB INLET
NOT TO SCALE



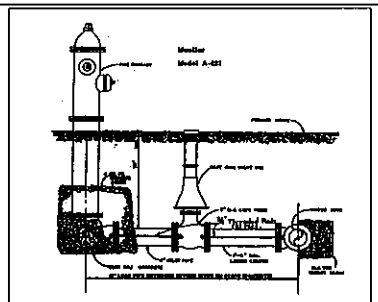
1 CLEANOUT
NOT TO SCALE



4 SINGLE CATCH BASIN
NOT TO SCALE

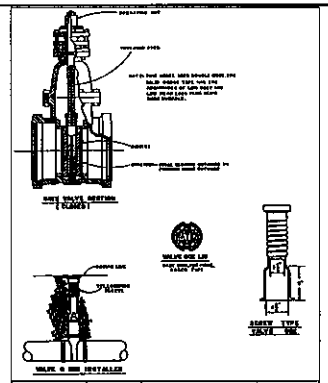


2 PRECAST CONCRETE MANHOLE
NOT TO SCALE



COLUMBIA WATER SYSTEM	REVISED: December 2019	FIRE HYDRANT ASSEMBLY	DRAWING NO. FHA 1

7



COLUMBIA WATER SYSTEM	REVISED: December 2019	GATE VALVE & VALVE BOX	DRAWING NO. GV-VB 1

5

9 RESERVED
NOT TO SCALE

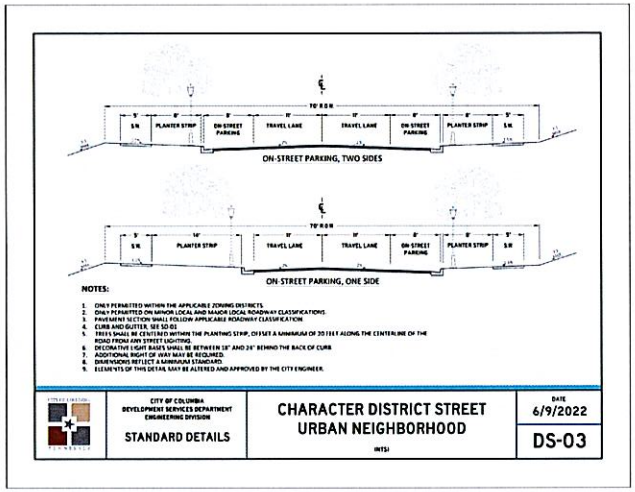
CRUNK ENGINEERING LLC
7112 CROSSKEYS BOULEVARD
SUITE 101
BRENTWOOD, TN 37027
(615) 873-1795
WWW.CRUNKENG.COM

WATERFORD TOWNHOMES
COLUMBIA, TENNESSEE

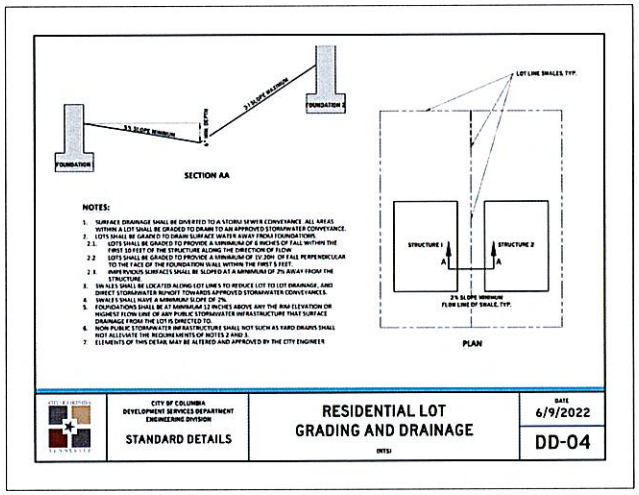
REVISIONS No.	DATE

09/08/23 21022

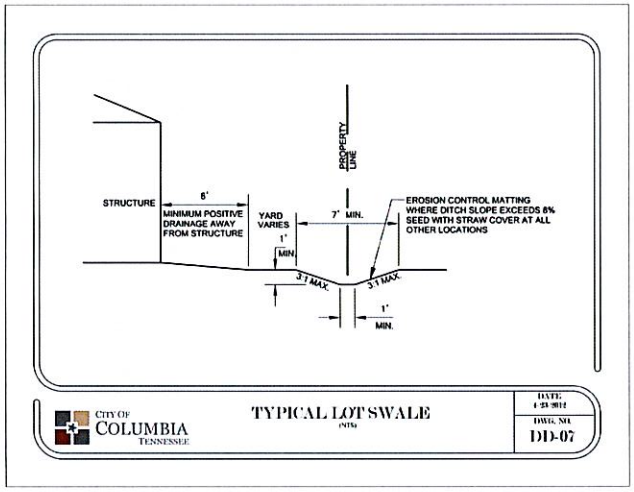
C8.1
DETAILS



5

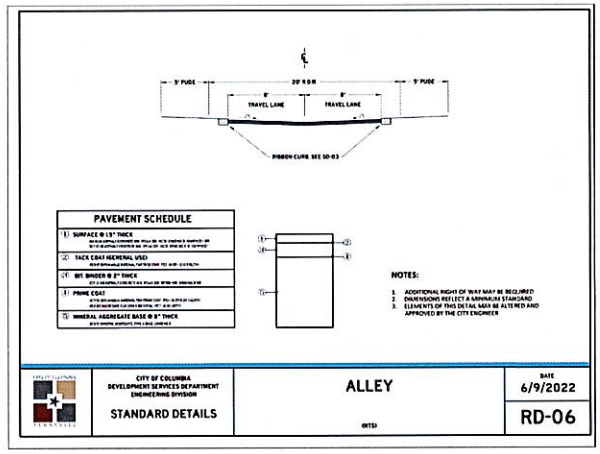


1 RESIDENTIAL LOT GRADING



4 TYPICAL LOT SWALE

3 RESERVED



2 MINOR LOCAL ROADWAY

CRUNK ENGINEERING LLC
7112 CROSSROADS BOULEVARD
SUITE 201
BRENTWOOD, TN 37027
(615) 873-1795
WWW.CRUNKENG.COM

WATERFORD TOWNHOMES
COLUMBIA, TENNESSEE

No.	REVISIONS	DATE

09/08/23 21022

C8.2
DETAILS

OWNER AFFIDAVIT
CITY OF COLUMBIA, MAURY COUNTY, TENNESSEE

I/we, DAVID M. CUMMINGS
(Print Name(s) in Full)

being duly sworn, depose and say(s) that I/we am/are the owner(s) of the property described as:

Tax Map 113, Parcel 80.50
(Property Parcel/Tax ID Number)

and located at:

2643 Pulaski Hwy, Columbia, TN 38401
(Street Address)

am fully aware of the request for development approval in the City of Columbia, Tennessee. Furthermore, I/we hereby appoint:

Wilson & Associates - Joey Wilson, Sean McGowan, Abigail Overstreet
(Print Name(s) in Full)

to act as my/our authorized agent on my/our behalf on all matters pertaining to the processing and obtaining the application with the exception of legal documents for recording purposes.

Signature

3020 Stansberry Lane, Suite 202
Property Owner Mailing Address

Franklin, TN 37069
City, State, & Zip

Subscribed and sworn to before me this 11 day of July, 2023.

Notary Public

My Commission Expires: 11-19-2025

PAIGE SELLERS
STATE OF TENNESSEE NOTARY PUBLIC
WILLIAMSON COUNTY
My Commission Expires 11-19-2025

Zoho Sign Document ID: 33CAC7B8-9LX9FMTMZX86IYOWFWJAMK85YTPT0I3AHUILWSVURYI

CITY OF COLUMBIA TENNESSEE

DEVELOPMENT SERVICES
700 NORTH GARDEN STREET
COLUMBIA, TN 38401
PHONE: (931) 560-1560
FAX: (931) 560-1541

PLANNING COMMISSION
PROJECT DEVELOPMENT APPLICATION

SUBMITTAL REQUIREMENTS

Final Plat: * *1 hard copy of all materials for submittal + PDF copy on a USB flash drive (no multiple applications on one storage device)*

Fold hard copy submittals larger than 8½"x11"

All Others: * Please submit the Application online at City of Columbia | Permitting (onlama.com)

ADDRESS/LOCATION	2643 Pulaski Hwy, Columbia, TN 38401		
	TAX MAP: 113	GROUP:	PARCEL: 80.47 & 80.51
SUMMARY OF NATURE OF REQUEST AND WORK	The purpose of this plat is to create 55 townhome residential lots and 6 open spaces and dedicate right-of-way.		

DATE OF PRE-APPLICATION CONFERENCE	N/A	*Pre-application meetings are scheduled for Wednesdays.*

SELECT REQUEST	SUBMITTALS SHALL INCLUDE BUT NOT LIMITED TO:
❑ Comprehensive Plan Amendment ❑ Annexation ❑ Rezoning ❑ Preliminary Plat ☑ Final Plat ❑ PUD Preliminary Master Plan ❑ PUD Final Site Plan ❑ Site Development Plan ❑ Other: **File naming nomenclature examples:* *Freedom Point Site Plan* *Freedom Point Master Plan* *Freedom Point Final Plat*	**Annexations:** ❑ Annexation Permission Form **Annexations/Rezoning/Plan Amendments:** ❑ Requested Zone Listed ❑ Statement of Compliance with Comprehensive Plan ❑ Concept Plan **Preliminary Plats/Site Development Plans:** ❑ Plans and/or Plats conforming to City standards with signed and completed check list **All Annexations/Rezoning/Preliminary Plats/Site Development Plans and PUDS:** ❑ Receipt of Payment for Pre-Application Meeting ❑ Written Legal Description copy ❑ Columbia Water System Availability Letter ❑ Columbia Waste Water Department Will Serve Letter

Zoho Sign Document ID: 33CAC7B8-9LX9FMTMZX86IYOWFWJAMK85YTPT0I3AHUILWSVURYI

	Plats/PUDs: ❑ Project Name (include Sections & Phases) Hillcrest Village - Townhomes ❑ Total Number of Lots/Residential Units 55 ❑ Square Footage of Non-Residential Floor Space 0 ❑ Total acreage 6.949 acres

Applications and all required submittals must be filed with the Department of Development Services prior to the established deadline. Both the applicant and property owner (if different from applicant) must sign the application. Any requests to defer or move the item to future meeting dates must be requested by the resubmittal date listed on the Planning Commission schedule.

APPLICANT

All communications go to the Applicant's email that is provided.

NAME	Wilson & Associates, P.C. - Abigail Overstreet	PHONE	615-794-2275
ADDRESS	108 Beasley Dr, Franklin, TN 37064	EMAIL	aoverstreet@wilsonpc.com

PROPERTY OWNER NAME	Elias Jordon	PHONE	919-763-4630
ADDRESS	725 Cool Springs Blvd ste. 180 Franklin TN 37067	EMAIL	ejordon@mihomes.com

If owner is not a natural person, documentation must be provided showing signing authority on behalf of the entity. If multiple persons are listed as owners in the records of the Maury County Assessor, all owners must sign or the signatory must provide documentation of authority to apply on behalf of record owner (i.e., Power of Attorney or notarized Letter of Authorization). In filling out this application, I attest that (1) I am familiar with the rules, regulations, and procedures of the City of Columbia & (2) all information contained herein is accurate & true to the best of my knowledge.

Abigail Overstreet	Abigail Overstreet	2/12/2025
APPLICANT NAME	APPLICANT SIGNATURE	DATE
Elias Jordon	Elias Jordon	Feb 12 2025
PROPERTY OWNER NAME	PROPERTY OWNER SIGNATURE	DATE

CITY OF
COLUMBIA
TENNESSEE

DEVELOPMENT SERVICES
700 NORTH GARDEN STREET
COLUMBIA, TN 38401
PHONE: (931) 560-1560
FAX: (931) 560-1541

DEVELOPMENT REVEW COMMITTEE MEETING
Tuesday, March 11, 2025

ITEM NO.
25-0050

DESCRIPTION: Bear Springs Ph 1B

COMMENTS:

Planning
See Previous Comments

Engineering

1. Asphalt binder and curbing shall be installed prior to resubmittal date.
2. Grading shall substantially conform to approved construction plans (within 1 ft.)
3. Install street signage. (stop, street names)
4. Letter of Credit provided in the amount of $120,000

Building

5. No comments.

City Attorney

6. No comments provided.

Police

7. No comments provided.

Public Works

8. For 35 townhomes, we recommend one 8-yard dumpster with two to three times a week collection if utilizing City of Columbia sanitation services. Private sanitation

services, including dumpsters, compactors, individual receptacles or valet service, may be utilized for townhome and multi-family residents. Individual trash receptacles will not be provided by the City of Columbia to townhome residents. Please see the attached City of Columbia Dumpster Guidelines & Accessibility Requirements.

9. DUMPSTER GUIDELINES AND ACCESSIBILITY REQUIREMENTS
   DUMPSTER AND COMPACTOR STANDARDS
   GENERAL
   All requirements for collection and accessibility to containers apply, regardless of whether collection is public or private.
   GUIDELINES FOR DUMPSTERS
   The number and capacity of dumpsters must be adequate to serve the disposal needs of the business, development or complex. Collection must occur at least one time per week, with special approval needed for every other week (EOW) collection. Each dumpster must be easily accessible, as determined by the Public Works Department, and of a size compatible with equipment of the department. If the dumpster is in an enclosed area, there must be at least 2 feet
   and 6 inches of clearance on each side of the dumpster.
   DUMPSTER PAD REQUIREMENTS
   1. The concrete dumpster pad shall be at least 12 feet by 12 feet.
   2. The pad(s) shall be 8-inch-thick concrete, reinforced with rebar to support a 30-ton loadbearing capacity.
   3. A 14-foot-wide by 40-foot-long straight and clear access approach to each dumpster for the truck is required.
   4. Clearance at each side of the dumpster must be at least 2 feet and 6 inches.
   5. If a gated enclosure is utilized, the gates must be lockable in the open position to prevent the gates from swinging into the path of the truck during servicing.
10. 6. Two 6-inch diameter concrete filled steel bollards must be placed in the concrete pad to the rear of each dumpster, 2 feet from the back edge of the dumpster pad, spaced 4 feet apart and centered side to side. The bollards will rise 6 feet above the pad and extend 32 inches below the pad into the concrete footers.
    7. If the box is enclosed, it is recommended that there be pedestrian access in addition to service gates.
    8. Access area, approach and pad must be level.
    9. Standard pads with no drain should be elevated approximately 1-1/2 inches above the surrounding pavement.
    ACCESSIBILITY REQUIREMENTS FOR DUMPSTERS AND COMPACTORS
    1. Access must accommodate a 40-foot-long truck, with a 45-foot turning radius. Circular movement through the complex for the vehicles is highly recommended.
    2. The collection truck shall not be required to back-up for no more than 200 feet.
    3. No backing into or across a public right-of-way.
    4. No overhead obstructions at waste handling or access area. Refuse collection trucks need a minimum of a 25-foot vertical clearance to service containers.
    5. Heavy duty pavement is required for the collection truck's path through the complex.

City of Columbia Public Works will not be responsible for the repair of asphalt or concrete which has been damaged due to normal usage.
6. Gates must be unlocked and open for collection

Columbia Power

11. Columbia Power System does not have existing power facilities near your proposed development within our service territory. DREMC will be the service provider for this area.

12. **CPWS BB**

    Do not plan to serve.

Fire

13. No comments

Maury County Schools

14. We plan to serve.

Atmos Energy

15. No comments provided.

ATT

16. ATT TO SERVE

Maury County E911

17. No comments provided.

Columbia Water

18.
    Water system must be complete and active at time of plat signing.

CITY OF COLUMBIA TENNESSEE

DEVELOPMENT SERVICES
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COLUMBIA, TN 38401
PHONE: (931) 560-1560
FAX: (931) 560-1541

Wastewater

19. no comment.

Duck River Electric Membership Corp

20. No comment provided.

Maury County Highway Dept.

21. No comments.

Planning

22. No comment.

Resubmittal Guidelines

Please provide a comment response letter as well as digital copies of revised plans and supporting documentation. Submit all required documents electronically through the online portal: columbia.onlama.com. If the files are oversized, please provide a file sharing link.

Please contact the case planner identified in the Planning Comments with any questions about the review process.

Please contact pkeltner@columbiatn.gov or srichardson@columbiatn.gov if you encounter difficulties with the online portal.

You will receive an invoice for required advertising and mailing fees. All fees must be paid by the Friday following resubmittal in order advance to the Planning Commission agenda.

NOTE: All resubmittals must demonstrate compliance with city standards prior to Planning Commission review. Requests which do not adhere to regulations and/or remain unresponsive to technical comments will not be forwarded to the next agenda until such items are amended. Final Plat applications which are not ready to proceed to Planning Commission following the first resubmittal deadline will be added to the following DRC agenda to confirm the status of required infrastructure and utilities. Applications which remain incomplete following two resubmittal deadlines will be closed.

Melissa Sanders

From: Amanda Reed <AReed@ragansmith.com>
Sent: Wednesday, March 5, 2025 3:37 PM
To: Austin Brass
Cc: Josh Dickerson; Jake Vincent; Chris Mabery; Melissa Sanders; Paul Keltner; Glenn Harper; Ryan Filipkowski
Subject: [Caution External Email] - RE: Deferral - Bear Springs Ph. 1B Final Plat

Austin,

Unfortunately, there are still delays in getting permanent power to the pump station located in Bear Springs Phase 1B and we need to defer the final plat. We will plan to attend the next DRC meeting on April 8th with plans to resubmit on April 21st.

Thank you,

Amanda Reed | **Associate**

RaganSmith
a Pape-Dawson company

O: 615.244.8591 | **D:** 615.986.0285 | **E:** AReed@ragansmith.com

From: Amanda Reed
Sent: Thursday, February 6, 2025 3:31 PM
To: Austin Brass <ABrass@Columbiatn.gov>
Cc: Josh Dickerson <josh@willowbranchpartners.com>; Jake Vincent <jvincent@ragansmith.com>; Chris Mabery <cmabery@ragansmith.com>; Melissa Sanders <MSanders@Columbiatn.gov>; Paul Keltner <PKeltner@Columbiatn.gov>; Glenn Harper <GHarper@Columbiatn.gov>; Ryan Filipkowski <RFilipkowski@Columbiatn.gov>
Subject: RE: Deferral - Bear Springs Ph. 1B Final Plat

That's what I thought, thank you for confirming. Please withdraw this plat from the February PC agenda. We will submit a new application on February 17th.

Thanks,

From: Austin Brass <ABrass@Columbiatn.gov>
Sent: Thursday, February 6, 2025 3:26 PM
To: Amanda Reed <AReed@ragansmith.com>
Cc: Josh Dickerson <josh@willowbranchpartners.com>; Jake Vincent <jvincent@ragansmith.com>; Chris Mabery <cmabery@ragansmith.com>; Melissa Sanders <MSanders@Columbiatn.gov>; Paul Keltner <PKeltner@Columbiatn.gov>; Glenn Harper <GHarper@Columbiatn.gov>; Ryan Filipkowski <RFilipkowski@Columbiatn.gov>
Subject: RE: Deferral - Bear Springs Ph. 1B Final Plat

Amanda,

Thank you for reaching out. Unfortunately this item was submitted in Dec for the Feb PC and was already deferred one time from the Feb PC docket.

Due to this, the item would need to be withdrawn and resubmitted in February.

Thanks

From: Amanda Reed <AReed@ragansmith.com>
Sent: Thursday, February 6, 2025 3:15 PM
To: Austin Brass <ABrass@Columbiatn.gov>
Cc: Josh Dickerson <josh@willowbranchpartners.com>; Jake Vincent <jvincent@ragansmith.com>; Chris Mabery <cmabery@ragansmith.com>; Melissa Sanders <MSanders@Columbiatn.gov>
Subject: [Caution External Email] - RE: Deferral - Bear Springs Ph. 1B Final Plat

Austin,

The developer is still experiencing some delays with the pump station which means it will not be ready by the February 17th resubmittal deadline. Can you please let me know if we are able to defer this plan again or if we must start a new submittal application on February 17th?

Thanks!

Amanda Reed | **Associate**

RaganSmith
a Pape-Dawson company

O: 615.244.8591 | **D:** 615.986.0285 | **E:** AReed@ragansmith.com

---

From: Austin Brass <ABrass@Columbiatn.gov>
Sent: Monday, January 13, 2025 8:41 AM
To: Amanda Reed <AReed@ragansmith.com>
Cc: Josh Dickerson <josh@willowbranchpartners.com>; Jake Vincent <jvincent@ragansmith.com>; Chris Mabery <cmabery@ragansmith.com>; Melissa Sanders <MSanders@Columbiatn.gov>
Subject: RE: Deferral - Bear Springs Ph. 1B Final Plat

Great. Thank you for this update!

AUSTIN BRASS, AICP
Development Services
Principal Planner

Office: (931) 560-1560
abrass@columbiatn.gov
www.ColumbiaTN.gov
700 N Garden Street, Columbia, TN 38401

Please note my email address has changed to abrass@columbiatn.gov

From: Amanda Reed <AReed@ragansmith.com>
Sent: Friday, January 10, 2025 9:28 AM
To: Austin Brass <ABrass@Columbiatn.gov>
Cc: Josh Dickerson <josh@willowbranchpartners.com>; Jake Vincent <jvincent@ragansmith.com>; Chris Mabery <cmabery@ragansmith.com>
Subject: [Caution External Email] - Deferral - Bear Springs Ph. 1B Final Plat

Good morning Austin,

Due to delays with the pump station installation, we need to defer the Bear Springs Phase 1B Final Plat. We will attend the next DRC meeting on February 11th with plans to resubmit on February 17th.

Thank you,

Amanda Reed | Associate

RaganSmith
a Pape-Dawson company

O: 615.244.8591 | **D:** 615.986.0285 | **E:** AReed@ragansmith.com

Disclaimer

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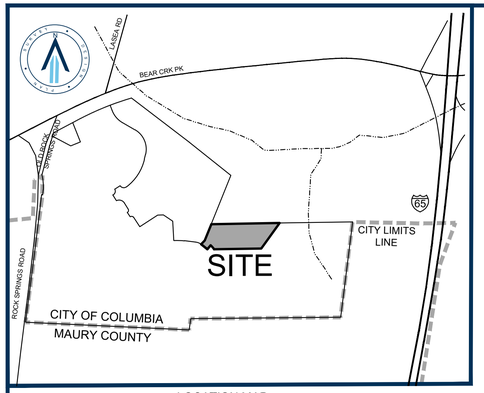


LOCATION MAP
NOT TO SCALE

GENERAL NOTES

1. THE PURPOSE OF THIS PLAT IS TO CREATE A MULTI-FAMILY LOT FOR 35 RESIDENTIAL TOWNHOME UNITS AND TO DEDICATE RIGHT-OF-WAY AND EASEMENTS.

2. BEARINGS SHOWN HEREON ARE BASED ON THE TENNESSEE COORDINATE SYSTEM OF 1983.

3. THIS SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. ABOVE GRADE AND UNDERGROUND UTILITIES SHOWN WERE TAKEN FROM VISIBLE APPURTENANCES AT THE SITE, PUBLIC RECORDS AND/OR MAPS PREPARED BY OTHERS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. THEREFORE, RELIANCE UPON THE TYPE, SIZE AND LOCATION OF UTILITIES SHOWN SHOULD BE DONE SO WITH THIS CIRCUMSTANCE CONSIDERED. DETAILED VERIFICATION OF EXISTENCE, LOCATION AND DEPTH SHOULD ALSO BE MADE PRIOR TO ANY DECISION RELATIVE THERETO IS MADE. AVAILABILITY AND COST OF SERVICE SHOULD BE CONFIRMED WITH THE APPROPRIATE UTILITY COMPANY. IN TENNESSEE IT IS A REQUIREMENT, PER "THE UNDERGROUND UTILITY DAMAGE PREVENTION ACT", THAT ANYONE WHO ENGAGES IN EXCAVATION MUST NOTIFY ALL KNOWN UNDERGROUND UTILITY OWNERS, NO LESS THAN (3) THREE OR MORE THAN (10) TEN WORKING DAYS PRIOR TO THE DATE OF THEIR INTENT TO EXCAVATE AND ALSO TO AVOID ANY POSSIBLE HAZARD OR CONFLICT. TENNESSEE ONE CALL 811.

4. THIS PROPERTY IS CURRENTLY ZONED R-PUD AND IS VESTED UNDER A PREVIOUS PUD SUBJECT TO THE PREVIOUS ZONING ORDINANCE 3638.

   SETBACKS:

   STREET YARD: 22'
   SIDE YARD: 0' SHARED SIDE WALL, 20'
   REAR YARD: 20'

5. BY SCALED MAP LOCATION AND GRAPHIC PLOTTING ONLY, THIS PROPERTY LIES WITHIN FLOOD ZONE X, AS DESIGNATED ON CURRENT FEDERAL EMERGENCY MANAGEMENT AGENCY MAP NO. 47119C0195E, WITH AN EFFECTIVE REVISED DATE OF APRIL 15, 2007 WHICH MAKES UP A PART OF THE NATIONAL FLOOD INSURANCE ADMINISTRATION REPORT; COMMUNITY NO. 470123 PANEL NO. 0195, SUFFIX E WHICH IS THE CURRENT FLOOD INSURANCE RATE MAP FOR THE COMMUNITY IN WHICH SAID PREMISES IS SITUATED. SAID MAP DEFINES ZONE "X" UNDER "OTHER AREAS" AS AN AREA DETERMINED TO BE OUTSIDE THE 2% ANNUAL FLOODPLAIN.

6. ALL SIDEWALKS OUTSIDE THE RIGHT-OF-WAY SHALL BE MAINTAINED BY THE HOMEOWNER'S ASSOCIATION.

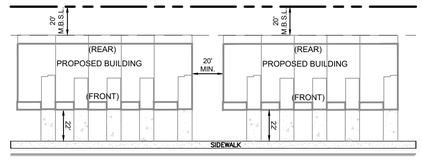
7. THE STORMWATER MAINTENANCE AGREEMENT IS RECORDED IN BOOK R3032, PAGE 1253, REGISTER'S OFFICE FOR MAURY COUNTY, TENNESSEE.

PROPERTY MAP REFERENCE

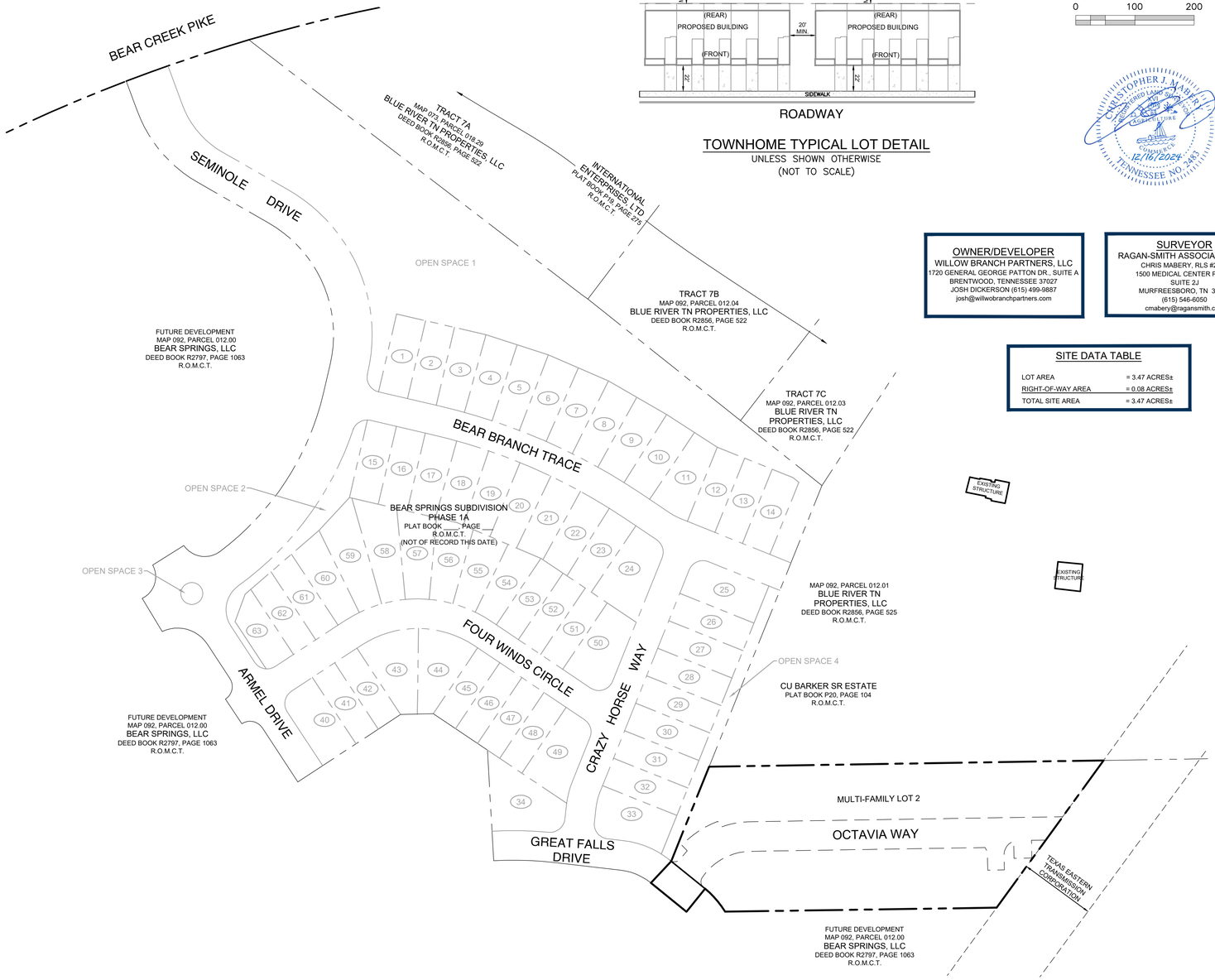
BEING A PORTION OF PARCEL NUMBER 12.05 AS SHOWN ON MAURY COUNTY PROPERTY MAP NUMBER 092.

DEED REFERENCE

BEING A PORTION OF THE SAME PROPERTY CONVEYED TO WILLOW BRANCH PARTNERS, LLC FROM BEAR SPRINGS, LLC BY SPECIAL WARRANTY DEED OF RECORD IN DEED BOOK R2964, PAGE 726, REGISTER'S OFFICE FOR MAURY COUNTY, TENNESSEE.



TOWNHOME TYPICAL LOT DETAIL
UNLESS SHOWN OTHERWISE
(NOT TO SCALE)



SEE GENERAL NOTE 2.

0 100 200

OWNER/DEVELOPER	SURVEYOR
WILLOW BRANCH PARTNERS, LLC	RAGAN-SMITH ASSOCIATES, LLC
1720 GENERAL GEORGE PATTON DR., SUITE A	CHRIS MABERY, RLS #2483
BRENTWOOD, TENNESSEE 37027	1500 MEDICAL CENTER PKWY.
JOSH DICKERSON (615) 499-9887	SUITE 2J
josh@willowbranchpartners.com	MURFREESBORO, TN 37129
	(615) 546-6050
	cmabery@ragansmith.com

SITE DATA TABLE

LOT AREA	= 3.47 ACRES±
RIGHT-OF-WAY AREA	= 0.08 ACRES±
TOTAL SITE AREA	= 3.47 ACRES±

LEGEND

R.O.M.C.T. REGISTER'S OFFICE FOR MAURY COUNTY, TENNESSEE

811 Know what's below. Call before you dig.

RECORDER'S INFORMATION

CERTIFICATE OF OWNERSHIP AND DEDICATION

I (WE) HEREBY CERTIFY THAT I AM (WE ARE) THE OWNER(S) OF THE PROPERTY SHOWN AND DESCRIBED HEREON AS EVIDENCED IN DEED BOOK R2964, PAGE 726, MAURY COUNTY REGISTER'S OFFICE AND ADOPT THIS FINAL SUBDIVISION PLAT OR THE PROPERTY AS SHWON HEREON AND DEDICATE ALL PUBLIC WAYS AND EASEMENTS AS NOTED WITH MY (OUR) FREE CONSENT.

OWNER(S) DATE

TITLE (IF ACTION FOR CORPORATION OR PARTNERSHIP)

CERTIFICATE OF ACCURACY

I (WE) HEREBY CERTIFY THAT TO THE BEST OF MY (OUR) KNOWLEDGE AND BELIEF THIS IS A TRUE AND ACCURATE SURVEY OF THE PROPERTY SHOWN HEREON; THAT THIS IS A CATEGORY "I" LAND SURVEY AS DEFINED IN TITLE 62, CHAPTER 18, TENNESSEE CODE ANNOTATED, AND THAT THE RATIO OF PRECISION IS GREATER THAN OR EQUAL TO 1:10000.

RAGAN-SMITH ASSOCIATES, LLC

12/16/2024

CHRISTOPHER J. MABERY, RLS NUMBER 2483 DATE

CERTIFICATE OF THE APPROVAL OF WATER SYSTEM

I HEREBY CERTIFY THAT THE WATER SYSTEM(S) OUTLINED OR INDICATED ON THIS FINAL SUBDIVISION PLAT HAS/HAVE 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.

NAME DATE

TITLE AUTHORIZING AGENCY

CERTIFICATE OF APPROVAL OF STREETS, DRAINAGE, AND UTILITIES

I HEREBY CERTIFY THAT THE STREETS, DRAINAGE, AND UTILITIES OUTLINED OR INDICATED ON THIS FINAL SUBDIVISION PLAT HAVE BEEN INSTALLED IN ACCORDANCE WITH CITY SPECIFICATIONS, OR A PERFORMANCE SURETY IN THE AMOUNT OF $_____ FOR STREETS AND DRAINAGE HAS BEEN POSTED WITH THE CITY OF COLUMBIA, TENNESSEE, TO ASSURE COMPLETION OF SUCH IMPROVEMENTS.

CITY ENGINEER DATE
COLUMBIA, TENNESSEE

CERTIFICATE OF APPROVAL FOR RECORDING

I HEREBY CERTIFY THAT THE FINAL SUBDIVISION PLAT SHOWN HEREON HAS BEEN FOUND TO COMPLY WITH THE CITY OF COLUMBIA UBDIVISION REGULATIONS, WITH THE EXCEPTION OF SUCH VARIANCES, IF ANY, AS NOTED IN THE MINUTES OF THE COLUMBIA MUNICIPAL PLANNING COMMISSION, AND THAT IT HAS BEEN APPROVED FOR RECORDING IN THE OFFICE OF THE MAURY COUNTY REGISTER OF DEEDS.

PLANNING DIRECTOR DATE
COLUMBIA, TENNESSEE

CERTIFICATE OF SUBDIVISION NAME AND STREET NAMES

SUBDIVISION NAME AND STREET NAMES APPROVED BY THE CITY ENGINEERING DEPARTMENT AND BY E-911 MAURY COUNTY.

MAURY COUNTY E-911 DATE

CERTIFICATE OF SANITARY SEWER SYSTEM

I HEREBY CERTIFY THAT THE SANITARY SEWER SYSTEM OUTLINED OR INDICATED ON THIS FINAL SUBDIVISION PLAT HAS BEEN INSTALLED IN ACCORDANCE WITH THE CURRENT LOCAL AND STATE GOVERNMENT REQUIREMENTS, OR A SUFFICIENT BOND OR OTHER SURETY HAS BEEN FILED TO GUARANTEE SAID INSTALLATION.

DIRECTOR OF WASTEWATER DEPARTMENT DATE
COLUMBIA, TENNESSEE

CERTIFICATE OF COMPLIANCE

I HEREBY CERTIFY THAT THE FINAL SUBDIVISION PLAT SHOWN HEREON HAS BEEN FOUND TO COMPLY WITH THE CITY OF COLUMBIA SUBDIVISION REGULATIONS AND OTHER ADOPTED ORDINANCES AND POLICIES.

CITY ENGINEER DATE
COLUMBIA, TENNESSEE

FINAL SUBDIVISION PLAT

BEAR SPRINGS SUBDIVISION PHASE 1B

4TH CIVIL DISTRICT OF MAURY COUNTY,
CITY OF COLUMBIA, TENNESSEE

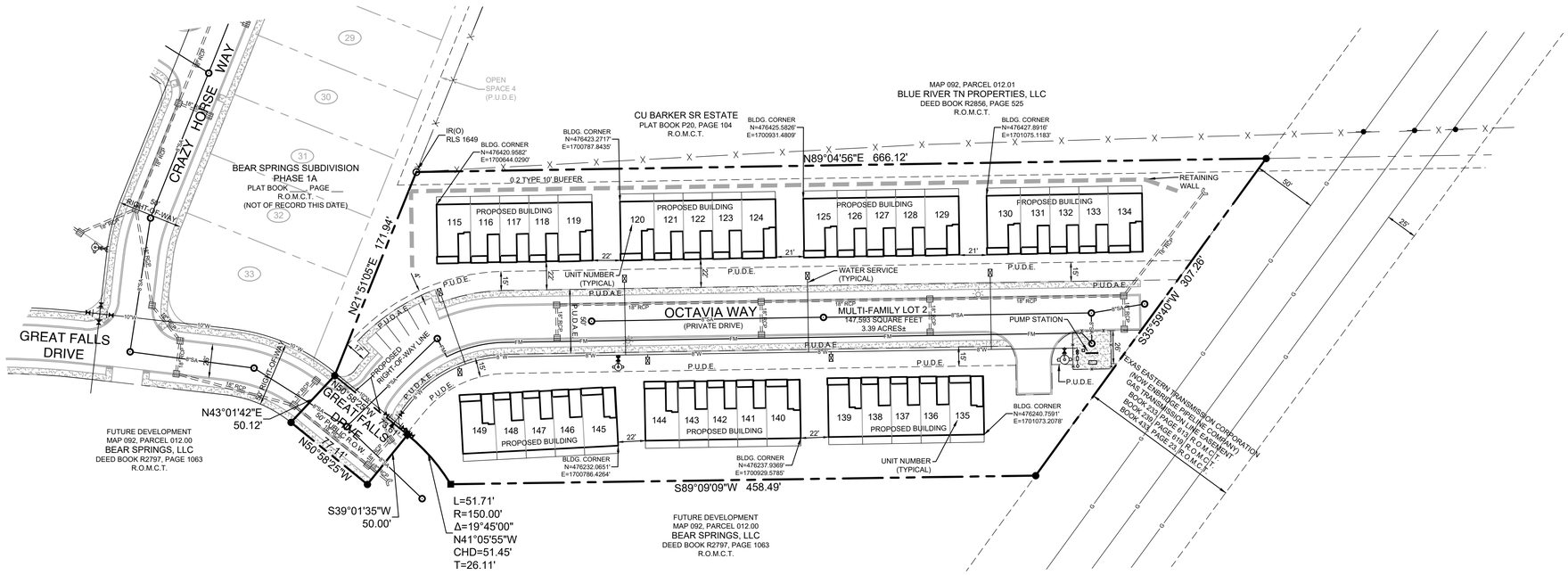
REVISED: DECEMBER 16, 2024
DATE: OCTOBER 21, 2024 SCALE: 1"=100'
JOB NUMBER: 21-0311

RaganSmith
a Pape Dawson company

G:\21311\1-SURVEY\PLAT FINAL\PHASE 1B\21-311_PHASE 1B FINAL PLAT.DWG
XREF: 21-311_PHASE 1B FINAL PLAT.DWG, 21-311_PHASE 1B FINAL PLAT-XREF.DWG
PLOTTED BY: ANNA MAGGARD ON: 11/13/2024 5:37 PM

NOTE

SEE SHEET 1 FOR GENERAL NOTES, LOT AREA TABLES, REFERENCES, ETC.



SEE GENERAL NOTE 2.

0 50 100

LEGEND

- IRON ROD (NEW) (1/2" X 18" W/CAP STAMPED "RAGAN SMITH & ASSOCIATES")
- MONUMENT (NEW) 1/2" Iron Rod W/ 4" Diameter Aluminum Disc Marked Ragan-Smith Associates
- FIRE HYDRANT
- WATER VALVE
- CATCH BASIN
- RCP REINFORCED CONCRETE PIPE
- HEADWALL
- SANITARY SEWER MANHOLE
- —SA— SANITARY SEWER LINE
- —FM— SEWER FORCE MAIN LINE
- —W— WATER LINE
- STREET LIGHT
- —X—X— FENCE
- P.U.D.E. PUBLIC UTILITY AND DRAINAGE EASEMENT
- P.U.D.A.E. PUBLIC UTILITY, DRAINAGE AND ACCESS EASEMENT
- R.O.M.C.T. REGISTER'S OFFICE FOR MAURY COUNTY, TENNESSEE

NOTE

UTILITY SYMBOLS SHOWN IN LEGEND AND DRAWING ARE NOT TO SCALE; FOR GRAPHIC REPRESENTATION ONLY. PLEASE SEE DETAIL SHEETS ON ENGINEERING PLANS WITH SPECIFICATIONS FOR PROPER SIZING.

811 Know what's below. Call before you dig.

CHRISTOPHER J. HABIB REGISTERED LAND SURVEYOR 3045 COMMERCIAL 12/16/2024 TENNESSEE NO. 2465

RECORDER'S INFORMATION

FINAL SUBDIVISION PLAT

BEAR SPRINGS SUBDIVISION PHASE 1B

4TH CIVIL DISTRICT OF MAURY COUNTY, CITY OF COLUMBIA, TENNESSEE

REVISED: DECEMBER 16, 2024
DATE: OCTOBER 21, 2024 SCALE: 1"=100'
JOB NUMBER: 21-0311

RaganSmith
a Pape Dawson company

D:\21-0311 FAIRWAY\PLAT\FINAL DRAWS_SET\21-0311_PHASE 1B FINAL PLAT (DWG)
BY: CHRISTOPHER HABIB, 12/16/2024 4:37 PM LAST REVISED BY: CHRISTOPHER HABIB ON: 11/21/2024 4:37 PM

Appendix B: Subdivision Development Agreement

This DEVELOPMENT AGREEMENT is made and entered into on this

26th day of September, 20 24,
between THE CITY OF COLUMBIA, TENNESSEE, (hereinafter the "CITY"), and

Willow Branch Partners LLC, the DEVELOPER (hereinafter the "DEVELOPER") named on the Addendum to this Agreement attached hereto and by this reference made a part hereof (hereinafter the "ADDENDUM").

WITNESSETH:

WHEREAS, the DEVELOPER desires to develop the property described on the ADDENDUM (hereinafter the "PROJECT"); and,

WHEREAS, the Development Plan of the PROJECT has been approved by the Columbia Municipal Planning Commission (hereinafter the "CMPC") on the

26th day of September, 20 24,
pursuant to Tennessee Code Annotated Title 13, Chapter 4, and the Subdivision Regulations of Columbia, Tennessee (hereinafter the "SUBDIVISION REGULATIONS"); and,

WHEREAS, the DEVELOPER is the owner of the PROJECT and has authority to engage in such development; and,

WHEREAS, the DEVELOPER desires to develop and improve said PROJECT; and,

WHEREAS, in order to provide for the health, safety, and welfare of future residents of the PROJECT, it will be necessary for certain improvements to the CITY'S utility systems, public infrastructure, and common areas to be constructed within and to serve the PROJECT including but not be limited to roads, bridges, sidewalks, pedestrian facilities, stormwater facilities, street signs, markings, signals, street lighting, recreation and park facilities, landscaping, and the like (hereinafter the "IMPROVEMENTS"); and,

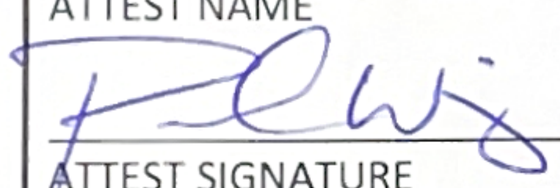
WHEREAS, in order for the IMPROVEMENTS to be fully integrated with the utility systems and public infrastructure of the CITY and to function in a satisfactory manner, the DEVELOPER has agreed to construct, in accordance with the Subdivision Regulations and other rules, regulations, and ordinances of the CITY, the IMPROVEMENTS in said PROJECT and extend utilities to the PROJECT at their own cost; and,

WHEREAS, the CITY is willing to accept the dedication of the streets, utilities, and other improvements as determined in the Development Plan of the PROJECT, subject to the City of Columbia City Council approval by resolution, and subject to the applicant's compliance with all requirements in this agreement and applicable existing laws of the CITY of Columbia and the State of Tennessee,

NOW, THEREFORE, it is agreed and understood as follows:

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed in multiple originals by persons properly authorized so, to do on or as of the day and year first given.

Bear Springs Phase 1A + 1B
PROJECT

Completed by the Developer	*Completed by the City*
Willow Branch Partners LLC DEVELOPER NAME	
Greg Templeton AUTHORIZED AGENT NAME	CITY ENGINEER
 SIGNATURE	SIGNATURE
9/26/24 DATE	DATE
1720 General George Patton Dr., Ste A STREET	
Brentwood, TN 37027 CITY, STATE, ZIP	
615-499-9997 PHONE	
josh@willowbranchpartners.com EMAIL	
Attest	*Attest*
Paul Winegar ATTEST NAME	ATTEST NAME
 ATTEST SIGNATURE	ATTEST SIGNATURE
9/27/2024 DATE	DATE

CITY OF COLUMBIA TENNESSEE

DEVELOPMENT SERVICES
700 NORTH GARDEN STREET
COLUMBIA, TN 38401
PHONE: (931) 560-1560
FAX: (931) 560-1541

PLANNING COMMISSION
PROJECT DEVELOPMENT APPLICATION

SUBMITTAL REQUIREMENTS

Final Plat: * *1 hard copy of all materials for submittal + PDF copy on a USB flash drive (no multiple applications on one storage device)*
Fold hard copy submittals larger than 8½"x11"
All Others: * Please submit the Application online at City of Columbia | Permitting (onlama.com)

ADDRESS/LOCATION	1449 Rock Springs Road		
	TAX MAP: 92	GROUP:	PARCEL: p/o 12.05
SUMMARY OF NATURE OF REQUEST AND WORK	Final Plat Approval for Bear Springs Phase 1B		

DATE OF PRE-APPLICATION CONFERENCE	9/25/24	*Pre-application meetings are scheduled for Wednesdays.*

SELECT REQUEST	SUBMITTALS SHALL INCLUDE BUT NOT LIMITED TO:
❑ Comprehensive Plan Amendment ❑ Annexation ❑ Rezoning ❑ Preliminary Plat ☑ Final Plat ❑ PUD Preliminary Master Plan ❑ PUD Final Site Plan ❑ Site Development Plan ❑ Other: **File naming nomenclature examples:* *Freedom Point Site Plan* *Freedom Point Master Plan* *Freedom Point Final Plat*	**Annexations:** ❑ Annexation Permission Form **Annexations/Rezoning/Plan Amendments:** ❑ Requested Zone Listed ❑ Statement of Compliance with Comprehensive Plan ❑ Concept Plan **Preliminary Plats/Site Development Plans:** ❑ Plans and/or Plats conforming to City standards with signed and completed check list **All Annexations/Rezoning/Preliminary Plats/Site Development Plans and PUDS:** ❑ Receipt of Payment for Pre-Application Meeting ❑ Written Legal Description copy ❑ Columbia Water System Availability Letter ❑ Columbia Waste Water Department Will Serve Letter

	Plats/PUDs: ☑ Project Name (include Sections & Phases) Bear Springs - Phase 1B ☑ Total Number of Lots/Residential Units 35 Residential Units ☐ Square Footage of Non-Residential Floor Space ☑ Total acreage 3.47 acres

Applications and all required submittals must be filed with the Department of Development Services prior to the established deadline. Both the applicant and property owner (if different from applicant) must sign the application. Any requests to defer or move the item to future meeting dates must be requested by the resubmittal date listed on the Planning Commission schedule.

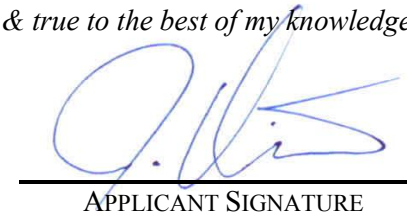
APPLICANT

All communications go to the Applicant's email that is provided.

NAME	Jacob Vincent	PHONE	(615) 244-8591
ADDRESS	P.O. Box 60070 Nasvhille, TN 370206-0070	EMAIL	jvincent@ragansmith.com

PROPERTY OWNER NAME	Willow Branch Partners & Bear Springs LLC	PHONE	615-499-9887
ADDRESS	1720 Gen. George Patton Dr. Brentwood, TN 37027	EMAIL	Paul@willowbranchpartners.com

If owner is not a natural person, documentation must be provided showing signing authority on behalf of the entity. If multiple persons are listed as owners in the records of the Maury County Assessor, all owners must sign or the signatory must provide documentation of authority to apply on behalf of record owner (i.e., Power of Attorney or notarized Letter of Authorization). In filling out this application, I attest that (1) I am familiar with the rules, regulations, and procedures of the City of Columbia & (2) all information contained herein is accurate & true to the best of my knowledge.

Jacob Vincent		10/18/24
APPLICANT NAME	APPLICANT SIGNATURE	DATE
Paul Winegar		10/14/2024
PROPERTY OWNER NAME	PROPERTY OWNER SIGNATURE	DATE

CONSENT ACTION AND RESOLUTION
WILLOW BRANCH PARTNERS, LLC, A TENNESSEE LIMITED LIABILITY COMPANY

The undersigned, being the Sole Member and Chief Manager of Willow Branch Partners, LLC, a Tennessee limited liability company ("Company"); authorizes Paul Winegar as Authorized Agent to sign the following documents on behalf of the Company:

1. Contracts , Amendments/Addendums, Warranties and any related documents for the sale of new homes
2. Notice of Completions
3. Lead Pipe Certifications
4. FHA/VA builder documents
5. New Vendor Authorizations
6. Vendor rebate applications or forms

However, without the approval of the Sole Member, this consent does not include the ability to sign for any credit applications with new vendors or sign for any debt on behalf of the company.

Witness my hand this 14th day of October, 2020.

Henry Preston Ingram, Jr.