NOTICE OF PUBLIC MEETING
PLANNING & ZONING COMMISSION

AGENDA
REGULAR MEETING
THURSDAY, DECEMBER 21, 2023 - 4:30 P.M.

Sewall Smith Council Chambers
18111 Buddy Riley Blvd., Magnolia, Texas 77354

1. CALL TO ORDER

a. INVOCATION
b. PLEDGE OF ALLEGIANCE
c. ROLL CALL AND CERTIFICATION OF QUORUM

2. CONSENT AGENDA

This portion of the agenda consists of items considered to be routine and will be enacted by one motion unless separate discussion is requested by a Commission member or a citizen.

a. **CONSIDERATION – APPROVAL OF MINUTES**

Consideration and possible action to approve the minutes of the regular meeting held November 16, 2023.

3. CITIZENS COMMENTS, REQUESTS OR PETITIONS FROM THE PUBLIC

*(**This agenda item provides an opportunity for citizens to address the City Council on any matter not on the agenda**).*
Comments shall be limited to three (3) minutes per person. Comments by the governing body shall be limited to:
a. Statements of specific factual information given in response to an inquiry;
b. A recitation of existing policy in response to an inquiry;
c. A proposal to place the subject on a future agenda.

4. ANNOUNCEMENTS

(Hear announcements concerning items of community interest from the Board Members of the Planning Commission and City Staff for which no action will be taken or discussed.

5. UPDATE ON CITY OF MAGNOLIA DEVELOPMENTS (Staff)

6. CONSIDERATION AND POSSIBLE ACTION TO APPROVE PAINT COLORS IN THE STROLL OVERLAY DISTRICT AT 119 MAGNOLIA BLVD

7. CONSIDERATION AND POSSIBLE ACTION TO APPROVE SITE PLAN FOR SHERWIN WILLIAMS

8. CONSIDERATION AND POSSIBLE ACTION TO APPROVE SITE PLAN FOR MISTER CAR WASH

9. CONSIDERATION AND POSSIBLE ACTION TO APPROVE SITE PLAN FOR THE OAKS ON 6TH STREET

10. FUTURE AGENDA ITEMS

11. ADJOURN

The Planning & Zoning Commission of the City of Magnolia, Texas, reserves the right to adjourn into Closed Executive Session at any time during the course of this meeting to discuss any of the matters listed above as authorized by Title 5, Chapter 551, of the Texas Government Code. 551.071(Consultation with Attorney), 551.072 (Deliberations about Real Property), 551.073 (Deliberations about Gifts and Donations), 551.074 (Personnel Matters), 551.076 (Deliberations about Security Devices), 551.086 (Deliberations about competitive matters), and 551.087 (Deliberation about Economic Development Matters).

Persons with disabilities who plan to attend this meeting and who may need auxiliary aids or services are requested to contact the City Secretary's office at (281-305-0550), two working days prior to the meeting for appropriate arrangements.

CERTIFICATE

I certify that a copy of the *Notice of Meeting* was posted on the City Hall bulletin board, a place convenient and readily accessible to the general public at all times, and to the City's website, www.cityofmagnolia.com, in compliance with Chapter 551, Texas Government Code.

DATE _____
TIME _____
TAKEN DOWN _____

_____
Christian Gable, City Secretary

MINUTES OF THE PLANNING & ZONING COMMISSION
REGULAR MEETING – NOVEMBER 16, 2023

A meeting of the Planning & Zoning Commission was held on November 16, 2023, beginning at 4:34pm in the Sewall Smith Council Chambers located at 18111 Buddy Riley Blvd., Magnolia, Texas 77354.

1. CALL TO ORDER

Chairman Scott Shelburne called the meeting to order at 4:34 pm.

a. INVOCATION
Tom Mayhew delivered the invocation.

b. PLEDGE OF ALLEGIANCE
Chairman Shelburne led the Pledge of Allegiance.

c. ROLL CALL AND CERTIFICATION OF QUORUM
Chairman Shelburne called roll and certified a quorum present with the following Planning & Zoning Commission members in attendance: Scott Shelburne, Anne Sundquist, Tom Mayhew, and Robert Barker III.

Absent: Holly Knee, Josh Jakubik

2. CONSENT AGENDA

This portion of the agenda consists of items considered to be routine and will be enacted by one motion unless separate discussion is requested by a Commission member or a citizen.

a. **CONSIDERATION – APPROVAL OF MINUTES**
Consideration and possible action to approve the minutes of the regular meeting held October 19, 2023.

MOTION: Upon a motion to approve the Consent Agenda made by Anne Sundquist and seconded by Robert Barker, the Commission members voted, and the motion carried unanimously, 3-0.

3. CITIZENS COMMENTS, REQUESTS OR PETITIONS FROM THE PUBLIC

*(**This agenda item provides an opportunity for citizens to address the City Council on any matter not on the agenda**).*
Comments shall be limited to three (3) minutes per person. Comments by the governing body shall be limited to:
a. Statements of specific factual information given in response to an inquiry;
b. A recitation of existing policy in response to an inquiry;
c. A proposal to place the subject on a future agenda.

None

4. ANNOUNCEMENTS

(Hear announcements concerning items of community interest from the Board Members of the Planning Commission and City Staff for which no action will be taken or discussed.

None

5. UPDATE ON CITY OF MAGNOLIA DEVELOPMENTS (Staff)

Planning Coordinator Christian Gable provided a spreadsheet of current development. Chairman Shelburne explained that the following businesses in the Heritage Green development are expected to open within the next 3-4 weeks: Wendy's, MOD Pizza, Teriyaki Madness, Wingstop and Great Clips.

6. CONSIDERATION AND POSSIBLE ACTION TO APPROVE SITE PLAN FOR MAGNOLIA VILLAGE PHASE 2

No representatives were present. Chairman Shelburne explained that he spoke with Patrick Egan and they agreed to table this item for next month's meeting.

No action was taken.

7. CONSIDERATION AND POSSIBLE ACTION TO APPROVE SITE PLAN FOR LOWE'S

Todd Simmons, Freeland & Kauffman Civil Engineer working with Lowe's Home Centers, was present to answer any questions and thanked staff for the cooperative effort to get their project to this point in a timely manner.
Robert Barker mentioned a discrepancy in the plans showing concrete on one page and asphalt on another.
Todd Simmons responded that the project will be bid both ways, with concrete and asphalt.
City Engineer Tim Robertson and Chairman Shelburne agreed that access easement documentation must be obtained before a building permit can be issued.

MOTION: Upon a motion to approve made by Robert Barker and seconded by Anne Sundquist, the Commission members voted, and the motion carried unanimously, 3-0.

8. CONSIDERATION AND POSSIBLE ACTION TO APPROVE SITE PLAN FOR SALAD AND GO

Robert Barker commented that there seems to be a discrepancy between the pre and post development rainfall intensity values for the 5-year storm event.
Peter Licata, Salad and Go representative, confirmed he would relay the comment to the engineer for the project.

MOTION: Upon a motion to approve the Site Plan for Salad and Go pending the correction of the drainage calculations made by Robert Barker and seconded by Anne Sundquist, the Commission members voted, and the motion carried

unanimously, 3-0.

9. CONSIDERATION AND POSSIBLE ACTION TO APPROVE SITE PLAN FOR SWIG

Roberto Galindo, Civil Engineer with Bowman Consulting, was present to answer any questions.

MOTION: Upon a motion to approve made by Anne Sundquist and seconded by Robert Barker, the Commission members voted, and the motion carried unanimously, 3-0.

10. CONSIDERATION AND POSSIBLE ACTION TO APPROVE SITE PLAN FOR MISTER CAR WASH

Girardo Benavides with Langan Engineering was present to answer any questions. He explained that the existing utility easement along Magnolia Village Drive prevents the opportunity to plant the required canopy trees along that side of the property in accordance with the Development Agreement.

Chairman Shelburne, City Engineer Tim Robertson, and Girardo Benevides discussed possible design alternatives.

Lauren Smith, Project Manager, stated that they don't like to plant trees near the tunnel and that the drive-thru lane cannot be reduced to less than 16 ft because of the turning radius.

Chairman Shelburne and Girardo Benavides agreed to table this item until revisions are made.

No action was taken.

11. CONSIDERATION AND POSSIBLE ACTION TO APPROVE SITE PLAN FOR THE OAKS ON 6TH STREET

Louis Faust with Texas Professional Engineering and Robert Van Buren were present to answer any questions.

Robert Barker provided 6 comments that can be found on the final page of the meeting minutes. None of the comments were addressed at the meeting.

Chairman Shelburne tabled this item until the comments are addressed and HOA documents are presented.

No action was taken.

12. FUTURE AGENDA ITEMS

Items 6, 10 and 11.

City Engineer Tim Robertson hopes to bring site plans for Taco Bell, 7 Brew Coffee, and Sherwin Williams to next month's meeting. He reported that the City has drilled 2 water wells, 2 more are under contract, and 2 more future wells are expected to be under design this coming year.

13. ADJOURN

MOTION: Upon a motion to adjourn made by Anne Sundquist and seconded by Tom Mayhew, the Commission members voted, the motion carried unanimously, and Chairman Shelburne adjourned the meeting at 5:41 pm.

Planning & Zoning Commission

_____

Scott Shelburne, Chairman

CERTIFICATION

I certify this to be a true and correct copy of the minutes of the special meeting of the City of Magnolia Planning and Zoning Commission held on November 16, 2023.

ATTEST:

_____

Christian Gable, Interim City Secretary

CITY OF MAGNOLIA
INCORPORATED
1968
MONTGOMERY COUNTY, TEXAS

ITEM 11 COMMENTS FROM ROBERT BARKER:

1. The offsite contours at the north end of the watershed should be provided past the delineated watershed with labeled elevations to help ensure the complete drainage area is included.

2. It appears by the contours that the land west of sixth street may be draining towards 6th St. The elevations should be noted on the contours to help determine the direction of flow.

3. There is a storm drainage pipe underneath 6th St. that conveys drainage from the west to east side of 6th St., and then into a creek area that runs through lots 2, 3, and 4. This was not indicated on the plans. Please revise the drainage area limits to include the appropriate areas, along with updated drainage calculations.

4. From the street to the proposed detention pond, a drainage facility will need to be constructed to convey the flows, and a minimum 15' drainage easement will need to be dedicated for the drainage improvements. Consideration should be given to the future improvements of 6th St., which will likely include a larger and deeper pipe culvert outfall.

5. The outfall of the proposed detention pond is blocked by a built-up trail across the creek, offsite of the property about 20-30'. The blockage will need to be addressed to ensure the detention pond will function as designed. There is likely a pipe beneath the trail, but it is difficult to confirm.

6. There are creek areas flowing through the property, and low areas just north of the existing house that convey some flows. If there is drainage coming from the west side of 6th St. and a pipe that may not accommodate it all, then there may be water flowing over the roadway, across the street, and onto these properties. The designed detention pond may not be able to accept these flows. To ensure any houses built on the property do not flood, minimum finish floor elevations need to be set and indicated on the plat.

City of Magnolia
UDC Administrator
18111 Buddy Riley Boulevard
Magnolia, TX 77354

December 1, 2023

Dear Magnolia UDC Administrator:

By way of this letter, I am requesting an agenda item on the upcoming December 21, 2023 Magnolia Planning and Zoning Commission agenda for the review and consideration of exterior paint colors for 119 Magnolia Boulevard.

119 Magnolia Boulevard is located within The Stroll overlay district in the city of Magnolia and to comply with the architectural guidelines under the Magnolia Unified Development Code, Ch.4-2-5.03-8 exterior paint finishes must be approved by the Magnolia Planning and Zoning Commission.

The paint colors chosen for the structure are from The Stroll paint pallet provided by your office.

- Primary exterior paint color: SW 2819 - DOWNING SLATE
- Trim exterior paint color: MAGNOLIA WHITE CMYK 0, 0, 0, 0

I appreciate your time and attention to this request. Please do not hesitate to contact me if there are any questions.

Sincerely,

Brett Sims
Property Owner
119 Magnolia Boulevard, Magnolia Texas

Choose a sample of **Downing Slate**

8" x 8" peel & stick

$3.95 ea. or **any 4 or more $3.50 ea.**

ADD TO CART

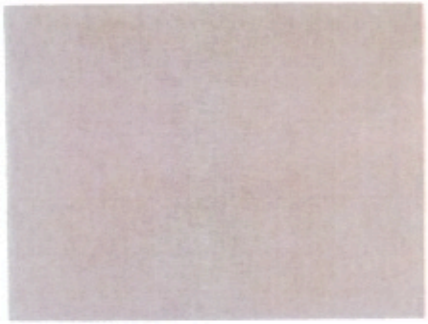
2" x 3" color chip

FREE

ADD TO CART

The Stroll Overlay Color Palette

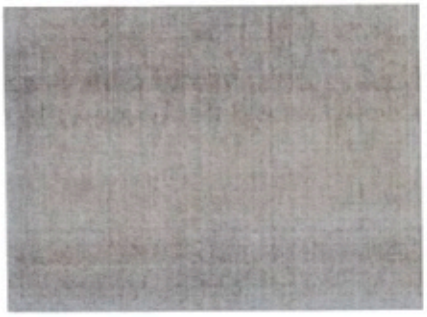
Rustic Red
CMYK 36, 88, 83, 52



Weathered Timber
CMYK 53, 57, 53, 23

Loire Valley
CMYK 65,38,85,23

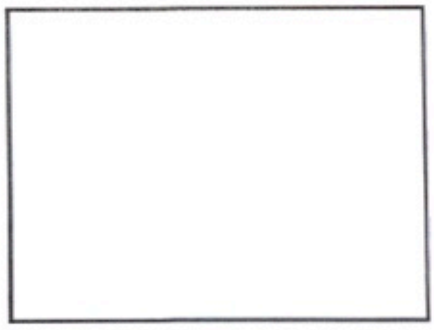
Distressed Steel
CMYK 43, 35, 35, 1



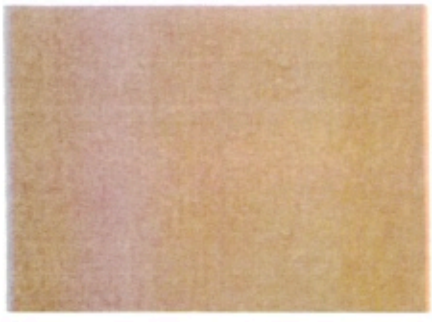
Charcoal Grey
CMYK 67, 61 59, 47

La Luna Yellow
CMYK 1, 11, 42, 0

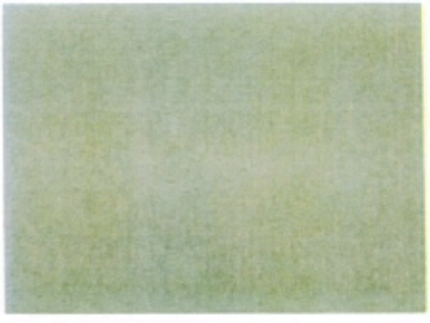
Buckskin Tan
CMYK 39,39, 43, 2



Magnolia White
CMYK 0, 0, 0, 0



Rust
CMYK 34, 63, 78, 23



Equestrian Green
CMYK 15, 0, 22, 59

Adopted by Planning and Zoning Commission12/16/2021

Christian Gable

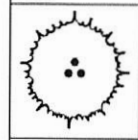
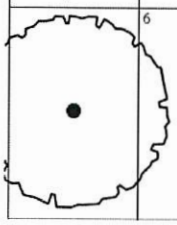
From: Tim Robertson
Sent: Thursday, December 14, 2023 2:04 PM
To: Christian Gable
Subject: FW: Sherwin Williams Site Plan Resubmittal
Attachments: Site Plan Resubmittal Comment Response.docx

Christian:

No objections on the putting Sherwin William on the P&Z Agenda.

There is some slight variation in their required plantings due to restrictions associated with the power lines. I will need to mention this to the Commissioners during the meeting and let them decide if the proposed plantings are acceptable. See snip below.

PLANT SCHEDULE

TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE		REQUIRED	PROVIDED
	13	LAGERSTROEMIA INDICA	CRAPE MYRTLE	3" CAL.		(4) 3" CALIPER (ALONG FM 1488)	(13) 3" CALIPER (INCLUDES 7 ALONG FM 1488, 3 ADDITIONAL TREES WERE PLANTED IN PLACE OF LARGE CANOPY TREES. LARGE CANOPY TREES CANNOT BE PLANTED TO ADJACENT POWER LINES
	6	QUERCUS VIRGINIANA	SOUTHERN LIVE OAK	4" CAL.		(9) 4" CALIPER	(6) 4" CALIPER (3) LARGE CANOPY TREES WERE NOT PROPOSED ALONG FM 1488 FRONTAGE, DUE TO LOCATION OF EXISTING POWER LINES. (3) ADDITIONAL CRAPE MYRTLES WERE PROPOSED ALONG FM 1488 IN LIEU OF LARGE CANOPY TREES.

Sherwin Williams: Planting Plan, Sheet L1.0, Required and Provided

Thanks,
Tim

Timothy W. Robertson, P.E.
City Engineer

City of Magnolia
18111 Buddy Riley Blvd.
Magnolia, Texas 77354

E: trobertson@cityofmagnolia.com
M: (979) 551-6868
O: (281) 305-0546

PROJECT ADDRESS:

MAGNOLIA VILLAGE
13313 FM 1488
Magnolia, TX 77354

CIVIL PLANS
FOR
MAGNOLIA VILLAGE LOT N
CITY OF MAGNOLIA, TEXAS
MONTGOMERY COUNTY MUD NO. 108

NOTE:
CONTRACTOR SHALL NOTIFY:

- CITY OF MAGNOLIA ENGINEERING (281) 356-2266
- CITY OF MAGNOLIA WATER AND SEWER UTILITIES:
  - BURT SMITH
  - MOBIL PHONE: 832-797-2124
  - EMAIL: BSMITH@CITYOFMAGNOLIA.COM

CONTRACTOR SHALL NOTIFY THE ABOVE CONTACTS AT LEAST 48 HOURS PRIOR TO START OF CONSTRUCTION.

NO.	DATE	REVISIONS

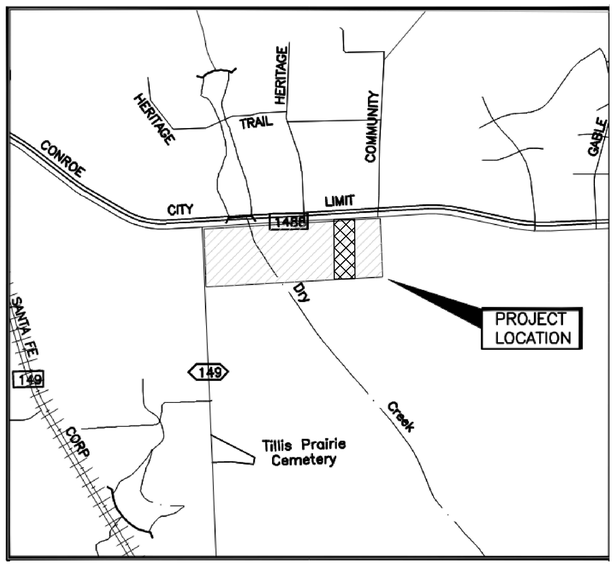
CITY OF MAGNOLIA APPROVAL

_____ _____
CITY ENGINEER DATE

MONTGOMERY COUNTY MUD NO. 108 APPROVAL

_____ _____
DISTRICT ENGINEER DATE
SIGNATURE IS VALID FOR ONE (1) YEAR

SE PROJECT NO. 23-008-01



VICINITY MAP

Sheet List Table

Sheet Number	Sheet Title
C-1	COVER SHEET
C-2	GENERAL NOTES AND SURVEY BOUNDARY
C-3	PAVING LAYOUT
C-4	PAVING POINT TABLES
C-5	UTILITY LAYOUT
C-6	SWPPP
C-7	DA MAP
C-8	STORM CALCULATIONS
C-9	DETAIL SHEET 1
C-10	DETAIL SHEET 2
C-11	DETAIL SHEET 3

STATE OF TEXAS
BRICE A. STANFORD
123337
LICENSED PROFESSIONAL ENGINEER
10/25/2023

Stanford Engineering

Stanford Engineering
4506 PRIMROSE VALLEY LANE
FULSHEAR, TEXAS 77441
TBPELS FIRM #23646

	HORIZ:
	VERT:
Sheet No. C—1 of 11	Drawing Scale

COVER SHEET-MV.dwg
10/25/2023 8:48:30 PM

GENERAL NOTES-MV.dwg

10/25/2023 8:48:31 PM

GENERAL NOTES

1. Construct wastewater collection systems, storm sewer systems, water lines and pavement in accordance with the latest edition of the City of Magnolia Unified Development Code and City of Magnolia Standard Details. If the city of Magnolia criteria does not define certain construction requirements, the contractor shall refer to the City of Houston standard specifications, City of Houston Infrastructure Design Manual and the Texas Commission on Environmental Quality for additional guidance. The city of Magnolia criteria shall govern if requirements conflict.

2. Utilities presented on these drawings are shown based on the best available information. Contractor shall verify the exact locations in the field prior to commencing construction. Contractor shall notify Texas One Call at 713-223-4567/811 or 800-344-8377 and Lone Star Notification Center at 800-669-8344 at least 48 hours before proceeding with any excavation.

3. Contractor shall be responsible for damages to existing water, wastewater and storm drainage lines. Damages shall be repaired in accordance with the City of Magnolia Unified Development Code and City of Magnolia Standard Details referenced above, at no additional cost.

4. Contractor shall notify the Office of the City Engineer, Magnolia Public Works in writing prior to commencing construction.

5. Adequate drainage shall be maintained at all times during construction and any drainage ditch or structure disturbed during construction shall be restored to existing conditions or better.

6. Contractor shall comply with latest edition of OSHA regulations and the State of Texas laws concerning excavation.

GENERAL NOTES CONTINUED:

1. THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS BEFORE BEGINNING CONSTRUCTION.

2. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING SECURITY TO PROTECT THE PROJECT SITE, CONTRACTOR PROPERTY, EQUIPMENT, AND WORK.

3. THE CONTRACTOR IS RESPONSIBLE FOR CLEANING STREETS OF CONSTRUCTION DIRT AND DEBRIS AT CLOSE OF EACH WORK DAY.

4. THE CONDITION OF THE ROAD AND/OR RIGHT-OF-WAY, UPON COMPLETION OF THE JOB SHALL BE AS GOOD AS OR BETTER THAN PRIOR TO STARTING WORK.

5. PRIOR TO CONSTRUCTION, THE CONTRACTOR, ALONG WITH CONCURRENCE FROM THE FIELD ENGINEER, SHALL DETERMINE HIS/HER LAY-DOWN AND/OR STAGING AREA LOCATIONS.

6. THE CONTRACTOR SHALL NOTIFY ALL PROPERTY OWNERS A MINIMUM OF 24 HOURS PRIOR TO BLOCKING DRIVEWAYS OR ENTERING UTILITY EASEMENTS.

7. TRAFFIC INGRESS AND EGRESS FOR DRIVEWAYS AND PEDESTRIAN ACCESS FACILITIES SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.

8. THE CONTRACTOR SHALL REMOVE ANY FENCES, POSTS, MAILBOXES, PLANTERS, PERMANENT TRASH CONTAINERS, CULVERTS, ETC. OR SECTIONS THEREOF, THAT ENCROACH WITHIN THE COUNTY'S RIGHT-OF-WAY. NOTE: PRIOR TO CONSTRUCTION, THE PROPERTY OWNER WAS PAID TO RELOCATE OR REPLACE THESE ITEMS OUTSIDE OF THE COUNTY'S RIGHT-OF-WAY. IF THE OWNER HAS FAILED TO DO SO, THE CONTRACTOR WILL REPLACE THEM WITH THE MINIMUM LEVEL OF QUALITY NEEDED TO SECURE THE PROPERTY AND/OR MAINTAIN MAIL DELIVERY. IN THAT CASE, PAYMENT FOR THESE INSTALLATIONS WILL BE INCLUDED AS EXTRA WORK ITEMS OR AS OVERRUNS TO EXISTING PAY ITEMS. ANY DAMAGE CAUSED BY THE CONTRACTOR TO SUCH ITEMS LOCATED OUTSIDE OF THE COUNTY'S RIGHT-OF-WAY, SHALL BE REPLACED WITH LIKE-KIND OR BETTER AT THE CONTRACTOR'S EXPENSE.

   ALSO, IF THESE ITEMS ARE LOCATED WITHIN THE PROJECT RIGHT-OF-WAY AND ARE DESIGNATED TO REMAIN, ANY DAMAGE CAUSED BY THE CONTRACTOR TO SUCH ITEMS, SHALL BE REPLACED WITH LIKE-KIND OR BETTER AT THE CONTRACTOR'S EXPENSE. TREES, BUSHES, SHRUBBERY AND OTHER DAMAGED PLANTINGS DESIGNATED TO REMAIN SHALL BE REPLACED WITHIN 72 HOURS OF REMOVAL AND ARE TO BE THOROUGHLY WATERED-IN. NO SEPARATE PAY.

9. PAVED SURFACES, PAVEMENT MARKERS AND MARKINGS SHALL BE PROTECTED FROM DAMAGE BY TRACKED EQUIPMENT.

10. IRON RODS DISTURBED DURING CONSTRUCTION ARE TO BE REPLACED BY A REGISTERED PROFESSIONAL LAND SURVEYOR FOR THE ORIGINAL PROPERTY OWNER AT NO SEPARATE PAY.

11. CONSTRUCTION STAKING WILL BE PROVIDED BY THE CONTRACTOR. TWO COPIES OF STAKING NOTES TO BE PROVIDED TO THE ENGINEER PRIOR TO CONSTRUCTION.

12. THE CONTRACTOR SHALL MAINTAIN UPDATED RED-LINED RECORD DRAWINGS ON SITE FOR INSPECTION BY THE ENGINEER.

13. PROPER MOWING, MAINTENANCE, AND CLEAN-UP OF THE PROJECT SITE, AS DETERMINED BY THE CITY OF MAGNOLIA, SHALL BE THE CONTRACTOR'S RESPONSIBILITY.

14. THE REMOVAL OF ANY ABANDONED UTILITIES REQUIRED TO COMPLETE THE WORK SHALL BE INCIDENTAL AND NO SEPARATE PAYMENT SHALL BE MADE.

15. IT IS THE CONTRACTOR'S RESPONSIBILITY TO STOCKPILE NECESSARY MATERIAL ON-SITE OR AT A SECURED OFF-SITE LOCATION AT NO ADDITIONAL EXPENSE TO THE OWNER.
   ANY SUITABLE EXCAVATED MATERIAL ON THE PROJECT WHICH IS AVAILABLE AT THE TIME OF NEED;
   WHETHER FROM STORM SEWER, ROADWAY, AND/OR CHANNEL EXCAVATION, SHALL BE USED BEFORE BORROW IS BROUGHT ON-SITE.

17. MANHOLES, JUNCTION BOXES, INLETS, AND RISERS ARE TO BE PRE-CAST OR CAST IN PLACE

SANITARY SEWER NOTES:

1. ALL SEWERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF MAGNOLIA UNIFIED DEVELOPMENT CODE AND CITY OF MAGNOLIA STANDARD DETAILS AND ALL CURRENT AMENDMENTS THERETO AND BE SUBJECT TO A STANDARD EXFILTRATION TEST. TESTS ARE TO BE PERFORMED ON THE TOTAL FOOTAGE OF SEWER LINE INCLUDED IN THE PROJECT. REQUIREMENTS OF TEXAS ADMINISTRATIVE CODE, TITLE 30 CHAPTER 217, "DESIGN CRITERIA FOR DOMESTIC WASTEWATER SYSTEMS" SHALL GOVERN WHERE CONFLICTS EXIST EXCEPT WHERE CITY REQUIREMENTS ARE MORE STRINGENT.

2. ALL MANHOLES ARE TO BE PER CITY OF CITY OF MAGNOLIA UNIFIED DEVELOPMENT CODE AND CITY OF MAGNOLIA STANDARD DETAILS .

3. SANITARY SEWER MANHOLES WILL HAVE BEDDING AND BACKFILL PER CITY OF HOUSTON STANDARD DETAILS DRAWING NO. 02317-08 UNLESS OTHERWISE NOTED.

4. THE SANITARY SEWER PVC PIPE SHALL BE ASTM D 3034 TYPE PSM SDR 26 GRAVITY SEWER PIPE, ASTM D2241 SDR 26 PRESSURE RATED SEWER PIPE OR AWWA C-900 DR-18 GREEN PVC PRESSURE RATED SEWER PIPE BASED ON CONSTRUCTION CONDITION REQUIREMENT AND CONFORMING TO ASTM D1784 AND CITY OF HOUSTON STANDARD SPECIFICATION SECTION 02506 POLYVINYL CHLORIDE PIPE.

5. WHEN SS PRESSURE RATED PVC PIPE IS USED ON WATERLINE (WL) CROSSING UNDER CONDITION 1 OF COH IDM TABLE 7.3, THE SAME TYPE OF D2241 SDR 26 PVC PIPE OR C-900 GREEN DR-18 PVC GREEN PRESSURED TO BE UTILIZING IN-BETWEEN TWO SS MH'S. OR TO UTILIZE A DI TRANSITION ADAPTER FOR THE CONNECTING OF ASTM D-3034 PVC GRAVITY PIPE TO DI-OD AWWA C-900 PVC PIPE CENTERED AT WL WHEN CONNECTING TWO DIFFERENT TYPES OF PVC PIPES FOR SEWER CONSTRUCTION.

6. AWWA C-900 DR-18 PVC PIPE USES EITHER AWWA C900 DR-18 PVC FITTINGS OR DIP FITTINGS.

7. ALL SANITARY SEWER LINES UNDER PROPOSED OR FUTURE PAVEMENT AND TO A POINT ONE (1) FOOT BACK OF ALL PROPOSED OR FUTURE CURBS SHALL HAVE BEDDING PER CITY OF HOUSTON STANDARD DETAILS DRAWING NUMBERS 02317-01, 02317-02, OR 02317-03 AS APPLICABLE, WITH 1 ½ SACK CEMENT/CY STABILIZED SAND BACKFILL UP TO THE BOTTOM OF THE PAVEMENT SUBGRADE. 100 PSI PERFORMANCE RESULTS ARE STILL REQUIRED.

8. ALL SANITARY SEWERS CROSSING WATER LINES WITH A CLEARANCE BETWEEN 12 INCHES AND 9 FEET SHALL HAVE A MINIMUM OF ONE 18' JOINT OF 150 PSI DUCTILE IRON OR (GREEN) C900 PVC PIPE MEETING ASTM SPECIFICATION D2241 CENTERED ON WATER LINE. WHEN WATER LINE IS BELOW SANITARY SEWER, PROVIDE MINIMUM 2 FOOT SEPARATION.

9. CONTRACTOR SHALL PROVIDE A MINIMUM HORIZONTAL CLEARANCE OF 9' FEET BETWEEN WATER LINES AND SANITARY SEWER MANHOLES AND LINES.

10. SANITARY SEWER MANHOLE RIMS OUTSIDE OF PROPOSED PAVING WILL BE SET 3" - 6" ABOVE THE SURROUNDING LEVEL FINISHED GRADE AFTER PAVING WITH SLOPED BACKFILL ADDED FOR STORM WATER TO DRAIN AWAY FROM MANHOLE RIM.

11. IN WET STABLE TRENCH AREAS USE BEDDING PER CITY OF HOUSTON STANDARD DETAILS DRAWING NUMBER 02317-02.

12. DEFLECTION TEST: DEFLECTION TESTS SHALL BE PERFORMED ON ALL FLEXIBLE AND SEMI-RIGID SEWER PIPE. THE TEST SHALL BE CONDUCTED AFTER THE FINAL BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS. NO PIPE SHALL EXCEED A DEFLECTION OF 5% IF THE DEFLECTION TEST IS TO BE RUN USING A RIGID MANDREL, IT SHALL HAVE A DIAMETER EQUAL TO 95% OF THE INSIDE DIAMETER OF THE PIPE. THE TEST SHALL BE PERFORMED AS PER 30 TAC 217.57 LATEST AMENDMENT AND WITHOUT MECHANICAL PULLING DEVICES. NO BALL-TYPE MANDREL IS ALLOWED.

13. INFILTRATION, EXFILTRATION OR LOW-PRESSURE AIR TEST: EITHER OF THE FOLLOWING TESTS SHALL BE PERFORMED AS PER TAC, TITLE 30 217.57 WITHIN THE SPECIFIED TOLERANCES ON ALL GRAVITY SEWERS.

   A. INFILTRATION OR EXFILTRATION TEST: TOTAL LEAKAGE AS DETERMINED BY A HYDROSTATIC HEAD TEST SHALL NOT EXCEED 50 GALLONS PER INCH DIAMETER PER MILE OF PIPE PER 24 HOURS AT A MINIMUM TEST HEAD OF TWO (2) FEET.

   B. LOW-PRESSURE AIR TEST: PERFORM TEST ACCORDING TO UNI-B-6-90 OR OTHER APPROPRIATE PROCEDURES. FOR SECTIONS OF PIPE LESS THAN 36" (INCH) AVERAGE INSIDE DIAMETER, THE MINIMUM ALLOWABLE TIME FOR PRESSURE DROP FROM 3.5 P.S.I.G. TO 2.5 P.S.I.G. SHALL BE AS FOLLOWS:

   6" 340 SECONDS OR 0.855(L) FOR TEST LENGTHS GREATER THAN 398'

   8" 454 SECONDS OR 1.520(L) FOR TEST LENGTHS GREATER THAN 298'

   10" 567 SECONDS OR 2.374(L) FOR TEST LENGTHS GREATER THAN 239'

   12" 680 SECONDS OR 3.419(L) FOR TEST LENGTHS GREATER THAN 199'

   15" 850 SECONDS OR 5.342(L) FOR TEST LENGTHS GREATER THAN 159'

   18" 1020 SECONDS OR 7.693(L) FOR TEST LENGTHS GREATER THAN 133'

   WHERE L = LENGTH OF LINE OF SAME PIPE SIZE IN FEET.

14. "SAN. S. E." INDICATES "SANITARY SEWER EASEMENT"

15. FOR SANITARY MANHOLE (MH) RIMS SET INSIDE OF OR @ CURB & GUTTER PAVEMENT AND/OR BELOW T.C., MH RIMS WILL BE SET FLUSHED WITH AN ABUTTING PAVED SURFACE. THE (VALCUN, NEENAH OR EQUAL) HEAVY DUTY BOLTED SOLID MH COVER SHALL BE PROPERLY (AND SECURELY) ATTACHED AND SEALED TO ITS COMPATIBLE GASKETED FRAME BY USING BOTH A NEOPRENE GASKET AND (AT LEAST) 4 COUNTER-SUNK HEX-HEAD COARSE THREADED ½"-13 UNC STAINLESS STEEL BOLTS. THE HEAVY DUTY FRAME MH COVER SHALL BE SOLID (NO AIR HOLES). SAID FRAME SHALL BE BOTH EMBEDDED INTO THE MH'S TOP ALSO SECURELY ANCHORED TO THE UNDERLYING MH STRUCTURE WITH EITHER SECURELY ATTACHED EMBEDDED ANCHOR BOLTS OR THE CONCRETE MH'S EXPOSED REBARS WELDED TO THE FRAME OR OTHER EQUALLY SECURED METHODS TO PREVENT MH COVER/FRAME BLOW-OFFS/EJECTIONS.

WATERLINE NOTES:

1) WATER LINES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST CITY OF MAGNOLIA UNIFIED DEVELOPMENT CODE AND CITY OF MAGNOLIA STANDARD DETAILS.

2) ALL 4" THROUGH 12" WATER LINE TO BE AWWA C-900 PVC DR-18 BLUE PRESSURE RATED WATER MAIN WITH 2" AND SMALLER WATER SERVICE LINE TO BE CONTINUOUS TYPE K COPPER TUBING PER CITY OF MAGNOLIA STANDARD DETAIL. ALL 4" THRU 54" DUCTILE IRON PIPE WATER LINES SHALL BE AWWA C151 WITH INSIDE LINING WITH AWWA C104 AND DOUBLE WRAPPED WITH 8-MIL POLYETHYLENE SHEETS.

3) CONCRETE THRUST BLOCKS SHALL BE PROVIDED AS NECESSARY TO PREVENT PIPE MOVEMENT. USE RESTRAINED JOINTS WHERE PREVENTING MOVEMENT OF 16" OR GREATER PIPE IS NECESSARY DUE TO THRUST.

4) ALL WATER LINES UNDER PROPOSED OR FUTURE PAVING AND TO A POINT OF ONE (1) FOOT BACK OF ALL PROPOSED OR FUTURE CURBS SHALL BE ENCASED IN BANK SAND TO 12" OVER PIPE AND BACKFILLED WITH CEMENT STABILIZED SAND TO WITHIN ONE (1) FOOT OF SUBGRADE.

5) ALL WATER LINE AND SEWER LINE CROSSINGS SHALL BE CONSTRUCTED PER TCEQ REGULATIONS.

6) ALL WATER VALVES SHALL BE SUPPLIED AND INS TALLED IN ACCORDANCE WITH THE LATEST EDITION OF AWWA C-500 AND SHALL BE OF THE RESILIENT SEAT TYPE.

7) ALL WATER LINES TO BE DISINFECTED IN CONFORMANCE WITH AWWA C-651 AND THE TEXAS STATE DEPARTMENT OF HEALTH. AT LEAST ONE BACTERIOLOGICAL SAMPLE SHALL BE COLLECTED FOR EVERY 1,000 LINEAR FEET OF WATER LINE AND SHALL BE REPEATED IF CONTAMINATION PERSISTS.

8) ALL BELOW GRADE VALVES SHALL BE GASKETED, HUB-END GATE VALVES WITH A CAST IRON BOX, EXCEPT WHERE FLANGES ARE CALLED OUT ON THE PLANS.

9) 4" THRU 12" FIT TINGS SHALL BE CEMENT MORTAR LINED COMPACT DUCTILE IRON PRESSURE FITTINGS PER ANSI A21.53, OR PUSH ON FITTINGS PER ANSI A21.10 PRESSURE RATED AT 250 PSIG.

10) HYDROSTATIC TESTING: ALL WATER PIPE SHALL BE TESTED FOR LEAKAGE IN ACCORDANCE WITH THE LATEST CITY OF HOUSTON STANDARD CONSTRUCTION SPECIFICATIONS. TESTS ARE TO BE PERFORMED ON THE ENTIRE FOOTAGE OF WATER PIPE LINE INCLUDED IN THE PROJECT.

11) ALL WATER LINES TO HAVE 4' MINIMUM COVER TO FINISHED GRADE AND MINIMUM 12" CLEARANCE TO OTHER UTILITIES AT CROSSING UNLESS OTHERWISE NOTED ON PLANS. ALL WATER LINE INSTALLED OVER 8' DEEP SHALL UTILIZE RESTRAINED JOINT FITTINGS.

12) CONTRACTOR SHALL KEEP WATER PIPE CLEAN AND CAPPED (OR OTHERWISE EFFECTIVELY COVERED) OPEN PIPE ENDS TO EXCLUDE INSECTS, ANIMALS OR OTHER SOURCES OF CONTAMINATION FROM UNFINISHED PIPE LINES AT TIMES WHEN CONSTRUCTION IS NOT IN PROGRESS.

GRADING NOTES

1) GENERAL CONTRACTOR AND ALL SUBCONTRACTORS SHALL VERIFY THE SUITABILITY OF ALL EXISTING AND PROPOSED SITE CONDITIONS INCLUDING GRADES AND DIMENSIONS BEFORE STARTING CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES.

2) BEFORE STARTING CONSTRUCTION, CONTRACTOR SHALL VERIFY BENCHMARK ELEVATION AND NOTIFY ENGINEER IF ANY DISCREPANCY AND/OR CONFLICT IS FOUND.

3) CONTRACTOR SHALL ENSURE THERE IS POSITIVE DRAINAGE FROM THE PROPOSED BUILDINGS AND NO PONDING IN PAVED AREAS, AND SHALL NOTIFY ENGINEER IF ANY GRADING DISCREPANCIES ARE FOUND IN THE EXISTING AND PROPOSED GRADES PRIOR TO PLACEMENT OF PAVEMENT OR UTILITIES.

4) CONTRACTOR SHALL PROTECT ALL MANHOLE COVERS, VALVE COVERS, VAULT LIDS, FIRE HYDRANTS, POWER POLES, GUY WIRES, AND TELEPHONE BOXES THAT ARE TO REMAIN IN PLACE AND UNDISTURBED DURING CONSTRUCTION.

5) ALL EXISTING CONCRETE PAVING, SIDEWALK, AND CURB DEMOLITION SHALL BE REMOVED AND DISPOSED OF BY CONTRACTOR. DISPOSAL SHALL BE AT AN APPROVED OFF-SITE, LAWFUL LOCATION, UNLESS DIRECTED OTHERWISE BY THE OWNER.

METES AND BOUNDS DESCRIPTION
0.9004 ACRE (39,220 SQUARE FEET)
IN THE HAMPTON TILLONS SURVEY, A-556
MONTGOMERY COUNTY, TEXAS

Being a tract or parcel of land containing 0.9004 acre (39,220 square feet) situated in the Hampton Tillons Survey, Abstract No. 556, Montgomery County, Texas, said 0.9004-acre tract being out of Unrestricted Reserve B, Block 2 of Magnolia Village, a subdivision recorded in Cabinet 00Z, Sheets 8123-8125, Montgomery County Plat Records, Texas (M.C.P.R.), further being out of that certain tract conveyed to GC Magnolia, L.P. referred to as Tract 2, called to contain 20.951 acres as recorded under Montgomery County Clerk's File No. (M.C.C.F. No.) 2021118371 of the Official Public Records (O.P.R.), said 0.9004-acre tract being more particularly described by metes and bounds as follows (with all bearings referenced to Texas Coordinate System of 1983, Central Zone):

COMMENCING at a 5/8-inch iron rod found on the south right-of-way line of Farm-to-Market Road 1488 (width varies) as dedicated under Volume 523, Pages 113 & 117 in the Montgomery County Deed Records (M.C.D.R.), for the northeast corner of said Magnolia Village and the northwest corner of that certain tract called 33.66 acres conveyed to Cobalt 201, LTD and Cobalt 201 Realty, LLC as recorded under M.C.C.F. No. 2021011747 of the O.P.R.;

THENCE South 86°59'44" West, along said south right-of-way-line of Farm-to-Market Road 1488 and the north line of said Magnolia Village, a distance of 502.41 feet to a point of curvature of said line;

THENCE in a westerly direction along said south right-of-way line of Farm-to-Market Road 1488 and said north line of Magnolia Village, along the arc of a curve to the left, with a radius of 11,384.16 feet, a central angle of 00°04'19", an arc length of 14.32 feet, a chord bearing South 86°57'39" West, and a chord distance of 14.32 feet to a 1/2-inch iron rod with cap stamped "Pedraza" set marking the POINT OF BEGINNING of the herein described tract;

THENCE South 03°46'43" East, departing said south right-of-way line of Farm-to-Market Road 1488, over and across said Reserve B, a distance of 283.63 feet to a 1/2-inch iron rod with cap stamped "Pedraza" set in the north right-of-way line of Magnolia Village Drive (called 50-foot wide) as dedicated by said Magnolia Village plat and the south line of said Reserve B, marking the southeast corner of the herein described tract;

THENCE South 86°13'20" West, along said north right-of-way line of Magnolia Village Drive and said south line of Reserve B, a distance of 138.00 feet to a Cut "X" in concrete set marking the southwest corner of the herein described tract;

THENCE North 03°46'43' West, departing said north right-of-way line of Magnolia Village Drive, over and across said Reserve B, a distance of 284.49 feet to a Cut "X" in concrete set on said south right-of-way line of Farm-to-Market Road 1488 and said north line of Magnolia Village, marking the northwest corner of the herein described tract, from which 5/8-inch iron rod with cap stamped "IDS" found bears South 85°27'37" West 306.06 feet;

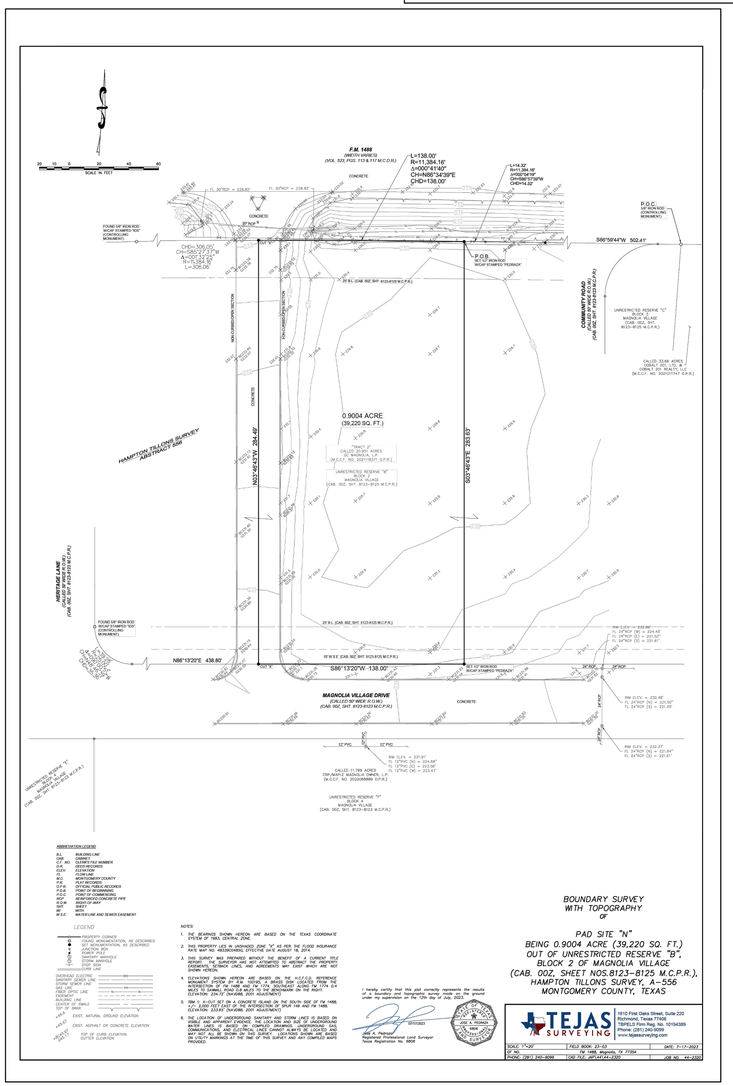
Page **1** of **2**

THENCE in an easterly direction along said south right-of-way line of Farm-to-Market Road 1488 and said north line of Magnolia Village, along a non-tangent curve to the right, with a radius of 11,384.16 feet, a central angle of 00°41'40", an arc length of 138.00 feet, a chord bearing North 86°34'29" East, and a chord distance of 138.00 feet back to the POINT OF BEGINNING, containing 0.9004 acre (39,220 square feet) of land, more or less.

PEDRAZA SURVEYING, LLC
DBA TEJAS SURVEYING
Firm No. 10194739
Job No. 44-2023
July 17, 2023

07/17/2023

JOSE A. PEDRAZA
6806



NOTES:

1. THE BEARINGS SHOWN HEREON ARE BASED ON THE TEXAS COORDINATE SYSTEM OF 1983, CENTRAL ZONE.
2. THIS PROPERTY LIES IN UNSHADED ZONE "X" AS PER THE FLOOD INSURANCE RATE MAP NO. 48339C0485G, EFFECTIVE DATE AUGUST 18, 2014.
3. THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A CURRENT TITLE REPORT. THE SURVEYOR HAS NOT ATTEMPTED TO ABSTRACT THE PROPERTY. EASEMENTS, SETBACK LINES, AND AGREEMENTS MAY EXIST WHICH ARE NOT SHOWN HEREON.
4. ELEVATIONS SHOWN HEREON ARE BASED ON THE H.C.F.C.D. REFERENCE MONUMENT SYSTEM BY R.M. 100195, A BRASS DISK LOCATED FROM THE INTERSECTION OF FM 1488 AND FM 1774, SOUTHEAST ALONG FM 1774 0.4 MILES TO SAWMILL ROAD 0.8 MILES TO THE BENCHMARK ON THE RIGHT. ELEVATION: 234.72' (NAVD88, 2001 ADJUSTMENT)
5. TBM 1: X-CUT SET ON A CONCRETE ISLAND ON THE SOUTH SIDE OF FM 1488; +/- 2,000 FEET EAST OF THE INTERSECTION OF SPUR 149 AND FM 1488. ELEVATION: 233.65' (NAVD88, 2001 ADJUSTMENT)
6. THE LOCATION OF UNDERGROUND SANITARY AND STORM LINES IS BASED ON VISIBLE AND APPARENT EVIDENCE. THE LOCATION AND SIZE OF UNDERGROUND WATER LINES IS BASED ON COMPILED DRAWINGS. UNDERGROUND GAS, COMMUNICATIONS, AND ELECTRICAL LINES CANNOT ALWAYS BE LOCATED AND MAY NOT ALL BE SHOWN ON THIS SURVEY. LOCATIONS SHOWN ARE BASED ON UTILITY MARKINGS AT THE TIME OF THIS SURVEY AND ANY COMPILED MAPS PROVIDED.

I hereby certify that this plat correctly represents the results of a boundary and topographic survey made on the ground under my supervision on the 12th day of July, 2023.

07/17/2023
Jose A. Pedraza
Registered Professional Land Surveyor
Texas Registration No. 6806

BOUNDARY SURVEY
WITH TOPOGRAPHY
OF

PAD SITE "N"
BEING 0.9004 ACRE (39,220 SQ. FT.)
OUT OF UNRESTRICTED RESERVE "B",
BLOCK 2 OF MAGNOLIA VILLAGE
(CAB. 00Z, SHEET NOS.8123–8125 M.C.P.R.),
HAMPTON TILLONS SURVEY, A–556
MONTGOMERY COUNTY, TEXAS

TEJAS SURVEYING
1810 First Oaks Street, Suite 220
Richmond, Texas 77406
TBPELS Firm Reg. No. 10194389
Phone: (281) 240-9099
www.tejassurveying.com

SCALE: 1"=20'	FIELD BOOK: 23–03	DATE: 7–17–2023
GF NO.	FM 1488, Magnolia, TX 77354	
PHONE: (281) 240–9099	CAD FILE: JAP\44\44–2320	JOB NO. 44–2320

NOTICE:

FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED. THIS SIGNATURE DOES NOT FULFILL YOUR OBLIGATION TO CALL 811

BRICE A. STANFORD
123337
10/25/2023

Stanford Engineering

4506 PRIMROSE VALLEY LANE
FULSHEAR, TEXAS 77441
TBPELS FIRM #23646

MAGNOLIA VILLAGE LOT N

GENERAL NOTES AND SURVEY BOUNDARY

HORIZ:
VERT:

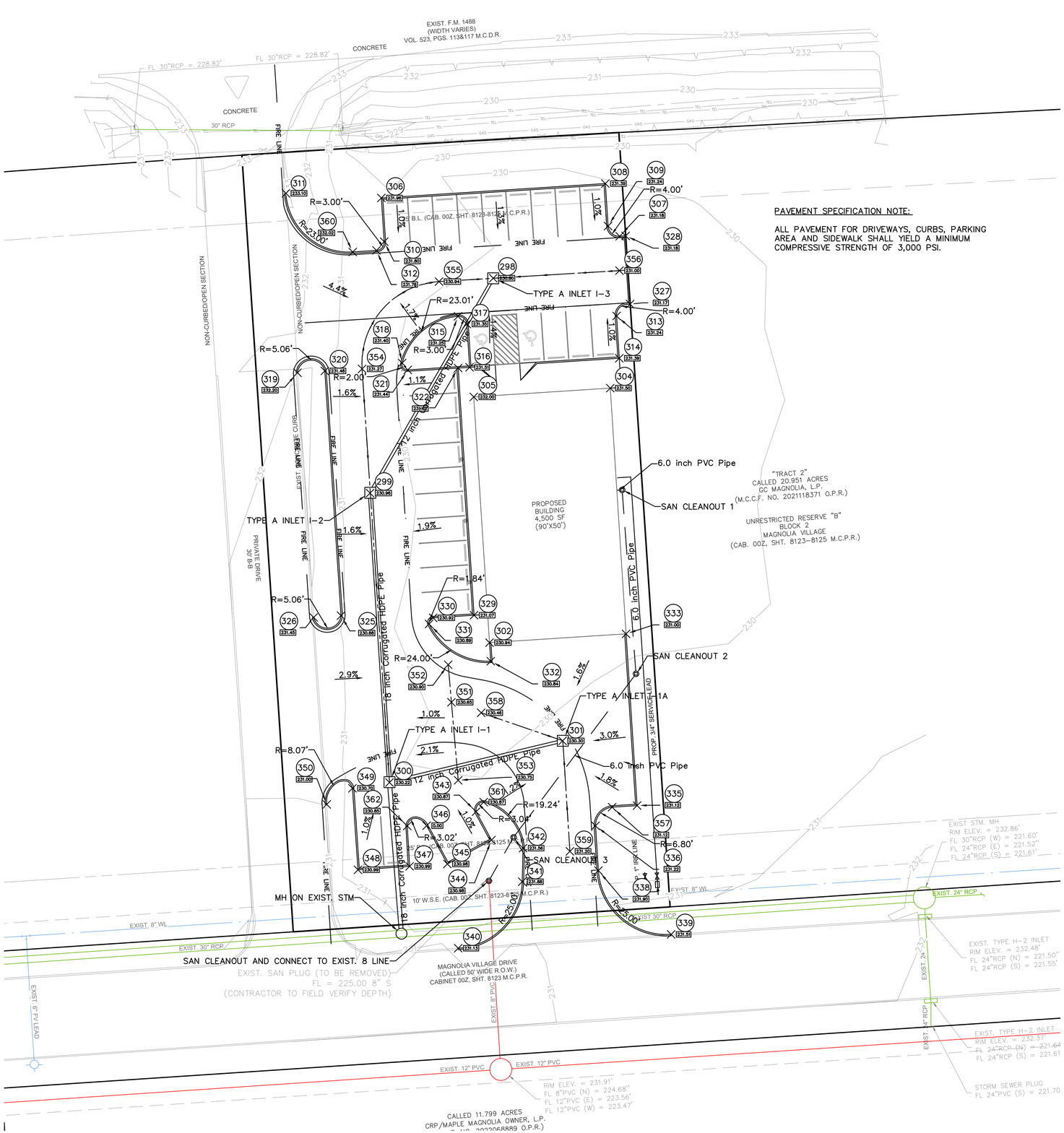
Sheet No. C – 2 of 11

Drawing Scale

LEGEND

163 — EXIST. GROUND ELEVATION AND COUNTOUR

63 / 162.50 — PROPOSED GRADING POINT #. AND ELEVATION



PAVEMENT SPECIFICATION NOTE:

ALL PAVEMENT FOR DRIVEWAYS, CURBS, PARKING AREA AND SIDEWALK SHALL YIELD A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

FLOODPLAIN REFERENCE MARK NO. 100195 IS A BRASS DISK LOCATED FROM THE INTERSECTION OF FM1488 AND FM1774. SOUTHEAST ALONG FM1774 0.4 MILES TO NICHOLS SAWMILL RD. SOUTH ALONG NICHOLS SAWMILL RD. 0.8 MILES TO THE BENCHMARK ON THE RIGHT.
ELEVATION: 231.72 (NAVD88)(2001 ADJUSTMENT)

TBM
X-CUT SET ON A CONCRETE ISLAND ON THE SOUTH SIDE OF FM1488; +- 2,000 FEET EAST OF THE INTERSECTION OF SPUR 149 AND FM1488.
ELEVATION: 233.65 (NAVD88, 2001 ADJUSTMENT)

COORDINATES NOTE:
THE COORDINATES SHOWN HEREON ARE SURFACE COORDINATES (TEXAS STATE PLANE SYSTEM OF 1983, CENTRAL ZONE). TO CONVERT THE COORDINATES TO GRID, MULTIPLY THE COORDINATESY BY THE COMBINED SCALE FACTOR OF 0.99997000

PAVING NOTE:
PAVING TO BE 6" THICK REINFORCED CONCRETE PAVEMENT WITH #4 REBAR @ 12" C-C. CONTRACTOR TO SUBMIT JOINT SPACING PLAN TO THE ENGINEER FOR REVIEW AND APPROVAL BEFORE CONSTRUCTION.

0 20 40 Feet

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STATE OF TEXAS
BRICE A. STANFORD
123337
LICENSED
PROFESSIONAL ENGINEER
10/25/2023

Stanford Engineering
4506 PRIMROSE VALLEY LANE
FULSHEAR, TEXAS 77441
TBPELS FIRM #23646

MAGNOLIA VILLAGE LOT N

PAVING LAYOUT

HORIZ:
VERT:
Sheet No. C-3 of 11
Drawing Scale

10/25/2023 8:48:37 PM GRADING AND CROSS SECTIONS-MVr.dwg

FLOODPLAIN REFERENCE MARK NO. 100195 IS A BRASS DISK LOCATED FROM THE INTERSECTION OF FM1488 AND FM1774. SOUTHEAST ALONG FM1774 0.4 MILES TO NICHOLS SAWMILL RD. SOUTH ALONG NICHOLS SAWMILL RD. 0.8 MILES TO THE BENCHMARK ON THE RIGHT.
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Point Table

Point #	Elevation	Northing	Easting	Description
298	230.80	10075943.01	3768071.36	INLETS
299	230.96	10075864.47	3768026.33	INLETS
300	230.22	10075758.68	3768033.44	INLETS
301	230.30	10075773.89	3768096.69	INLETS
302	230.94	10075809.80	3768069.99	BUILDING SLAB
304	231.50	10075902.82	3768114.12	BUILDING SLAB
305	232.00	10075899.61	3768064.22	BUILDING SLAB
306	231.96	10075972.33	3768030.47	TOP OF PAVEMENT
307	231.18	10075958.34	3768117.55	TOP OF PAVEMENT
308	231.39	10075977.59	3768112.32	TOP OF PAVEMENT
309	231.24	10075962.08	3768113.31	TOP OF PAVEMENT
310	231.80	10075956.34	3768031.50	TOP OF PAVEMENT
311	233.10	10075974.02	3767995.57	TOP OF PAVEMENT
312	231.76	10075953.15	3768028.69	TOP OF PAVEMENT
313	231.24	10075929.20	3768116.41	TOP OF PAVEMENT
314	231.39	10075913.74	3768117.40	TOP OF PAVEMENT
315	231.25	10075929.06	3768058.46	TOP OF PAVEMENT
316	231.51	10075910.43	3768062.71	TOP OF PAVEMENT
317	231.35	10075926.26	3768061.70	TOP OF PAVEMENT
318	231.40	10075912.00	3768038.05	TOP OF PAVEMENT

Point Table

Point #	Elevation	Northing	Easting	Description
319	232.20	10075908.44	3767999.82	TOP OF PAVEMENT
320	231.48	10075909.11	3768009.79	TOP OF PAVEMENT
321	231.44	10075909.48	3768040.11	TOP OF PAVEMENT
322	231.62	10075910.17	3768058.53	TOP OF PAVEMENT
325	230.88	10075819.67	3768015.72	TOP OF PAVEMENT
326	231.45	10075819.01	3768005.74	TOP OF PAVEMENT
327	231.17	10075933.53	3768121.36	TOP OF PAVEMENT
328	231.18	10075958.48	3768119.73	TOP OF PAVEMENT
329	231.07	10075819.82	3768064.34	TOP OF PAVEMENT
330	230.92	10075818.86	3768049.39	TOP OF PAVEMENT
331	230.89	10075816.61	3768047.89	TOP OF PAVEMENT
332	230.84	10075803.01	3768070.44	TOP OF PAVEMENT
333	231.00	10075813.00	3768119.89	TOP OF PAVEMENT
335	231.12	10075750.25	3768123.92	TOP OF PAVEMENT
336	231.22	10075742.84	3768108.72	TOP OF PAVEMENT
338	231.90	10075726.48	3768109.77	TOP OF PAVEMENT
339	231.51	10075703.14	3768136.35	TOP OF PAVEMENT
340	231.13	10075698.09	3768058.55	TOP OF PAVEMENT
341	231.88	10075722.42	3768081.94	TOP OF PAVEMENT
342	231.56	10075734.68	3768082.25	TOP OF PAVEMENT

Point Table

Point #	Elevation	Northing	Easting	Description
343	230.87	10075748.00	3768065.08	TOP OF PAVEMENT
344	230.98	10075737.62	3768070.70	TOP OF PAVEMENT
345	230.98	10075728.89	3768054.58	TOP OF PAVEMENT
346	0.00	10075742.89	3768047.00	TOP OF PAVEMENT
347	230.99	10075728.04	3768040.80	TOP OF PAVEMENT
348	230.99	10075726.76	3768021.93	TOP OF PAVEMENT
349	230.70	10075756.56	3768019.91	TOP OF PAVEMENT
350	231.00	10075750.66	3768010.49	TOP OF PAVEMENT
351	230.65	10075788.00	3768056.07	PAV GRADE BREAK
352	230.90	10075801.73	3768054.89	PAV GRADE BREAK
353	230.75	10075759.49	3768058.53	PAV GRADE BREAK
354	231.27	10075909.84	3768023.42	PAV HIGH POINT
355	230.94	10075941.77	3768051.54	PAV GRADE BREAK
356	231.00	10075945.77	3768117.48	PAV HIGH POINT
357	231.12	10075749.66	3768114.80	PAV HIGH POINT
358	230.46	10075784.16	3768066.95	PAV HIGH POINT
359	231.20	10075733.52	3768099.37	PAV HIGH POINT
360	232.02	10075952.60	3768020.00	TOP OF PAVEMENT
361	230.87	10075751.51	3768067.86	TOP OF PAVEMENT
362	230.85	10075742.79	3768039.91	TOP OF PAVEMENT

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STATE OF TEXAS
BRICE A. STANFORD
123337
LICENSED PROFESSIONAL ENGINEER
10/25/2023

Stanford Engineering

4506 PRIMROSE VALLEY LANE
FULSHEAR, TEXAS 77441
TBPELS FIRM #23646

MAGNOLIA VILLAGE LOT N

PAVING POINT TABLES

HORIZ:
VERT:
Sheet No. C – 4 of 11
Drawing Scale

GRADING AND CROSS SECTIONS-MVr.dwg
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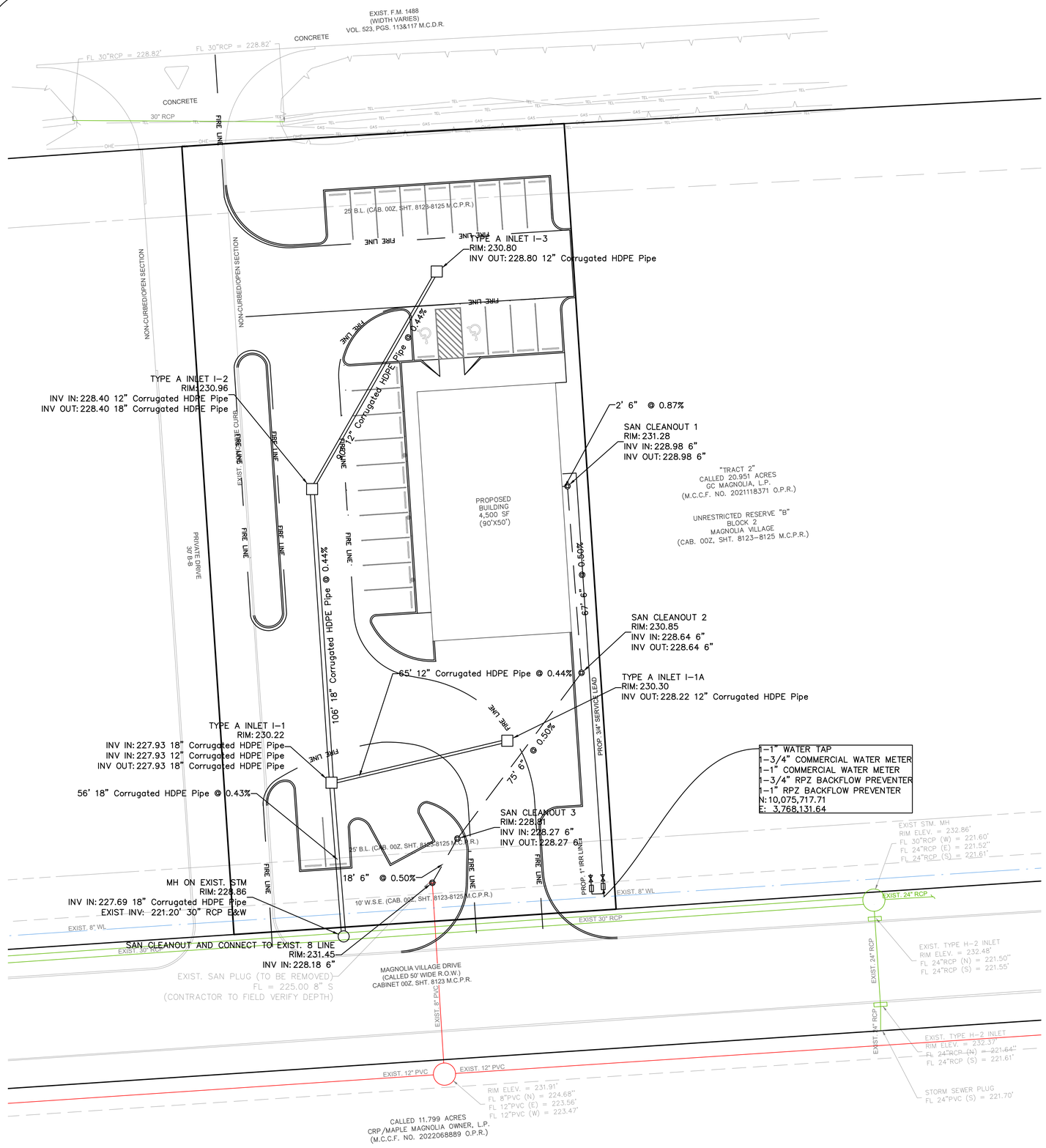

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ELEVATION: 231.72 (NAVD88)(2001 ADJUSTMENT)

TBM
X-CUT SET ON A CONCRETE ISLAND ON THE SOUTH SIDE OF FM1488; +- 2,000 FEET EAST OF THE INTERSECTION OF SPUR 149 AND FM1488.
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COORDINATES NOTE:
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N

0 20 40 Feet

SEWER STRUCTURE TABLE		
STRUCTURE NAME	NORTHING	EASTING
SAN CLEANOUT 1	10075865.62	3768118.44
SAN CLEANOUT 2	10075798.39	3768123.51
SAN CLEANOUT 3	10075738.65	3768078.77
SAN CLEANOUT AND CONNECT TO EXIST. 8 LINE	10075722.71	3768069.73

STORM STRUCTURE TABLE		
STRUCTURE NAME:	NORTHING	EASTING
Type A Inlet I-2	10075864.56	3768026.42
Type A Inlet I-3	10075942.97	3768071.34
Type A Inlet I-1A	10075773.92	3768096.77
Type A Inlet I-1	10075758.79	3768033.43
MH ON EXIST. STM	10075703.40	3768037.80

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LICENSED PROFESSIONAL ENGINEER
10/25/2023

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TBPELS FIRM #23646

MAGNOLIA VILLAGE LOT N

UTILITY LAYOUT

HORIZ:
VERT:
Sheet No. C-5 of 11
Drawing Scale

STORM LAYOUT-MV.dwg
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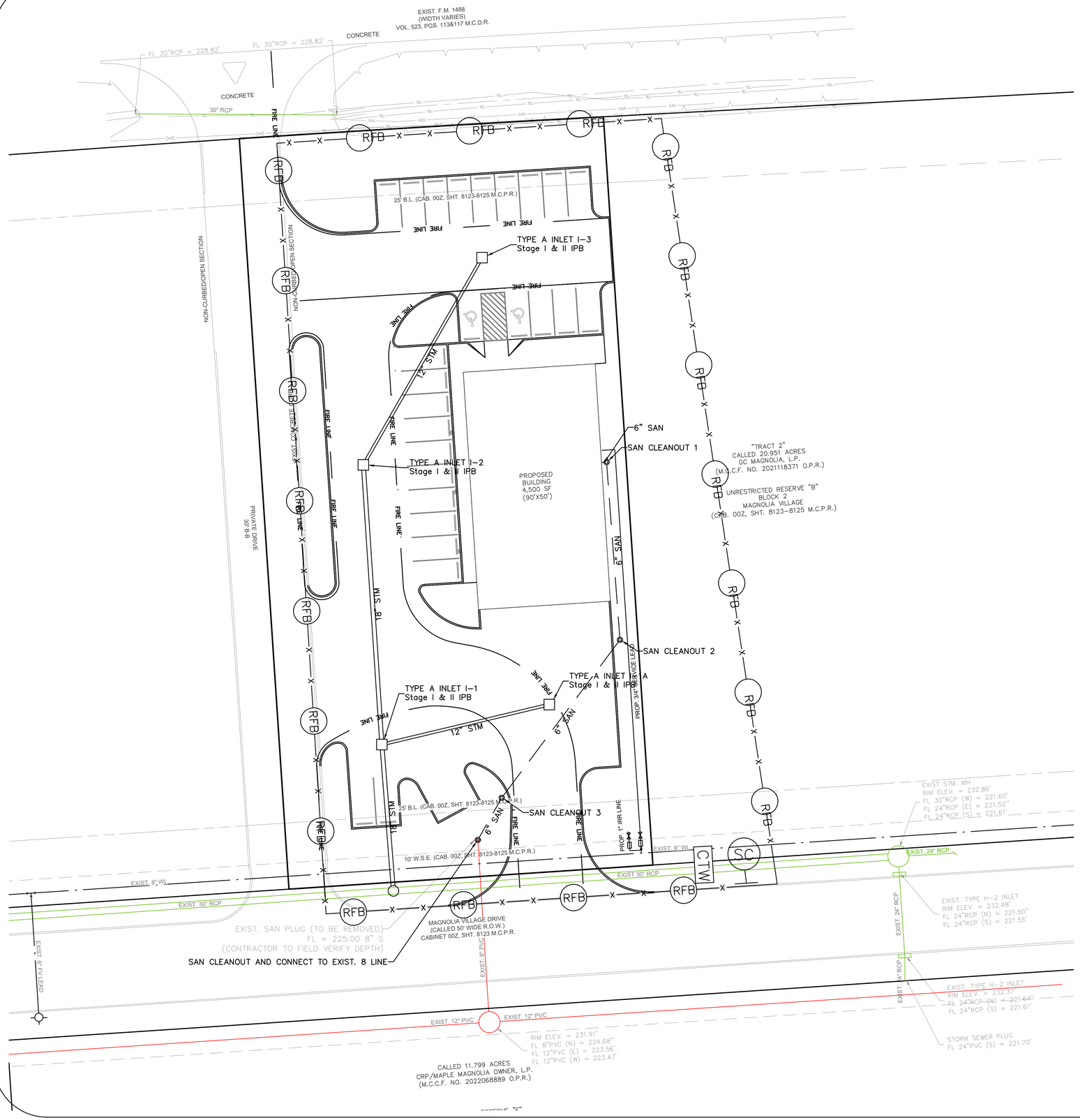

FLOODPLAIN REFERENCE MARK NO. 100195 IS A BRASS DISK LOCATED FROM THE INTERSECTION OF FM1488 AND FM1774. SOUTHEAST ALONG FM1774 0.4 MILES TO NICHOLS SAWMILL RD. SOUTH ALONG NICHOLS SAWMILL RD. 0.8 MILES TO THE BENCHMARK ON THE RIGHT.
ELEVATION: 231.72 (NAVD88)(2001 ADJUSTMENT)

TBM
X-CUT SET ON A CONCRETE ISLAND ON THE SOUTH SIDE OF FM1488; +- 2,000 FEET EAST OF THE INTERSECTION OF SPUR 149 AND FM1488.
ELEVATION: 233.65 (NAVD88, 2001 ADJUSTMENT)

COORDINATES NOTE:
THE COORDINATES SHOWN HEREON ARE SURFACE COORDINATES (TEXAS STATE PLANE SYSTEM OF 1983, CENTRAL ZONE). TO CONVERT THE COORDINATES TO GRID, MULTIPLY THE COORDINATESY BY THE COMBINED SCALE FACTOR OF 0.99997000

N

0 20 40 Feet

LEGEND

STAGE I IPB – INLET PROTECTION BARRIER FOR THE FIRST STAGE OF CONSTRUCTION

STAGE II IPB – INLET PROTECTION BARRIER FOR THE SECOND STAGE OF CONSTRUCTION

—X— RFB —X— REINFORCED FABRIC BARRIER

SC STABILIZED CONSTRUCTION ACCESS

CTW CONCRETE TRUCK WASHOUT

CONTRACTOR TO PLACE RFB BEFORE DISTURBING PROPERTY

CONTRACTOR TO PROVIDE STAGE I AND STAGE II IPB FOR ALL STORM SEWER INLETS.

CONTRACTOR TO PLACE GRAVEL BAGS AT EACH END OF ALL EXISTING STORM SEWER INLETS ADJACENT TO THIS PROJECT.

CONTRACTOR TO INSTALL AND MAINTAIN STABILIZED CONSTRUCTION ACCESS THROUGHOUT THE DURATION OF THE PROJECT. CONTRACTOR TO REMOVE STABILIZED CONSTRUCTION ACCESS UPON COMPLETION OF THE PROJECT.

RFB IS TO REMAIN INSTALLED UNTIL VEGETATION IS ESTABLISHED ON-SITE AS DETERMINED BY HARRIS COUNTY. ONCE IT IS DETERMINED THAT VEGETATION HAS BEEN ESTABLISHED, THE CONTRACTOR IS RESPONSIBLE FOR RETURNING TO THE SITE TO REMOVE SAID RFB.

NOTICE:

FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED. THIS SIGNATURE DOES NOT FULFILL YOUR OBLIGATION TO CALL 811

STATE OF TEXAS
BRICE A. STANFORD
123337
LICENSED
PROFESSIONAL ENGINEER

10/25/2023

Stanford Engineering

4506 PRIMROSE VALLEY LANE
FULSHEAR, TEXAS 77441
TBPELS FIRM #23646

MAGNOLIA VILLAGE LOT N

SWPPP

HORIZ:
VERT:
Sheet No. C-6 of 11 | Drawing Scale

SWPPP-MV.dwg
10/25/2023 8:48:40 PM

FLOODPLAIN REFERENCE MARK NO. 100195 IS A BRASS DISK LOCATED FROM THE INTERSECTION OF FM1488 AND FM1774. SOUTHEAST ALONG FM1774 0.4 MILES TO NICHOLS SAWMILL RD. SOUTH ALONG NICHOLS SAWMILL RD. 0.8 MILES TO THE BENCHMARK ON THE RIGHT.
ELEVATION: 231.72 (NAVD88)(2001 ADJUSTMENT)

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X-CUT SET ON A CONCRETE ISLAND ON THE SOUTH SIDE OF FM1488; +- 2,000 FEET EAST OF THE INTERSECTION OF SPUR 149 AND FM1488.
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N

0 20 40 Feet

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STATE OF TEXAS
BRICE A. STANFORD
123337
LICENSED PROFESSIONAL ENGINEER
10/25/2023

Stanford Engineering
4506 PRIMROSE VALLEY LANE
FULSHEAR, TEXAS 77441
TBPELS FIRM #23646

MAGNOLIA VILLAGE LOT N

DA MAP

	HORIZ:
	VERT:
Sheet No. C-7 of 11	Drawing Scale

DA MAP-MV.dwg
10/25/2023 8:48:41 PM

Client: Huffco Services
Project: Magnolia Village Lot N
County: Montgomery
City: Magnolia
MUD: Montgomery County MUD 108
Date: October 25, 2023
Prepared by: ABT

Df= 82
S= 0.015
V= 2.49

Storm Event: 5yr

i=-2.39*ln(Tc)+12.218 Tc=Df/(60*V)

Line	Manhole/Inlet Number Upstream	Manhole/Inlet Number Downstream	Reach Length (feet)	Pipe Rise (inches)	Pipe Span (inches)	Pipe X Section (ft^2)	Pipe Perimeter (ft)	"n" Value	Pipe Grade %	Area (AC)	C	C (weighted)	i	Total Area (AC)	Time of Concentration (minutes)	Q (cfs)	Actual Velocity (fps)	Design Velocity Q (cfs)	Design Velocity Velocity (fps)	Hydraulic Gradiant (%)	Change in Head (feet)	Top of Grate (feet)	Hydraulic Grade Upstream (feet)	Hydraulic Grade Downstream (feet)	Pipe Flowline Upstream (feet)	Pipe Flowline Downstream (feet)	Depth from grate to HGL (feet)
I	Type A I-1A	Type A I-1	65	12		0.79	3.14	0.013	0.44%	0.16	0.8	0.8	8.37	0.16	5.00	1.07	1.36	2.37	3.02	0.090%	0.0585	230.3	228.99	228.93	228.22	227.93	1.31
I	Type A I-3	Type A I-2	90	12		0.79	3.14	0.013	0.44%	0.22	0.8	0.8	8.37	0.22	5.00	1.47	1.88	2.37	3.02	0.170%	0.1531	230.80	229.63	229.48	228.79	228.39	1.17
I	Type A I-2	Type A I-1	106	18		1.77	4.71	0.013	0.44%	0.14	0.8	0.8	8.02	0.36	5.80	2.31	1.31	6.99	3.95	0.048%	0.0509	230.96	229.48	229.43	228.39	227.93	1.48
I	Type A I-1	MH ON EXIST STM	113	18		1.77	4.71	0.013	0.44%	0.51	0.8	0.8	7.52	0.87	7.15	5.23	2.96	6.99	3.95	0.247%	0.2787	230.22	229.21	228.93	227.93	227.43	1.01

2

Storm Event: 100yr

i=-4.277*ln(Tc)+21.511 Tc=Df/(60*V)

Line	Manhole/Inlet Number Upstream	Manhole/Inlet Number Downstream	Reach Length (feet)	Pipe Rise (inches)	Pipe Span (inches)	Pipe X Section (ft^2)	Pipe Perimeter (ft)	"n" Value	Pipe Grade %	Area (AC)	C	C (weighted)	i	Total Area (AC)	Time of Concentration (minutes)	Q (cfs)	Actual Velocity (fps)	Design Velocity Q (cfs)	Design Velocity Velocity (fps)	Hydraulic Gradiant (%)	Change in Head (feet)	Top of Grate (feet)	Hydraulic Grade Upstream (feet)	Hydraulic Grade Downstream (feet)	Pipe Flowline Upstream (feet)	Pipe Flowline Downstream (feet)	Depth from grate to HGL (feet)
I	Type A I-1A	Type A I-1	65	12		0.79	3.14	0.013	0.44%	0.16	0.8	0.8	14.63	0.16	5.00	1.87	2.38	2.37	3.02	0.275%	0.1785	230.30	229.11	228.93	228.22	227.93	1.19
I	Type A I-3	Type A I-2	90	12		0.79	3.14	0.013	0.44%	0.22	0.8	0.8	14.63	0.22	5.00	2.57	3.28	2.37	3.02	0.519%	0.4674	230.80	230.48	230.02	228.79	228.39	0.32
I	Type A I-2	Type A I-1	106	18		1.77	4.71	0.013	0.44%	0.14	0.8	0.8	14.25	0.36	5.46	4.10	2.32	6.99	3.95	0.152%	0.1610	230.96	230.02	229.86	228.39	227.93	0.94
I	Type A I-1	MH ON EXIST STM	113	18		1.77	4.71	0.013	0.44%	0.51	0.8	0.8	13.69	0.87	6.22	9.53	5.39	6.99	3.95	0.819%	0.9254	230.22	229.86	228.93	227.93	227.43	0.36

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STATE OF TEXAS
BRICE A. STANFORD
123337
REGISTERED
CIVIL ENGINEER
10/25/2023

Stanford Engineering
4506 PRIMROSE VALLEY LANE
FULSHEAR, TEXAS 77441
TBPELS FIRM #23646

MAGNOLIA VILLAGE LOT N

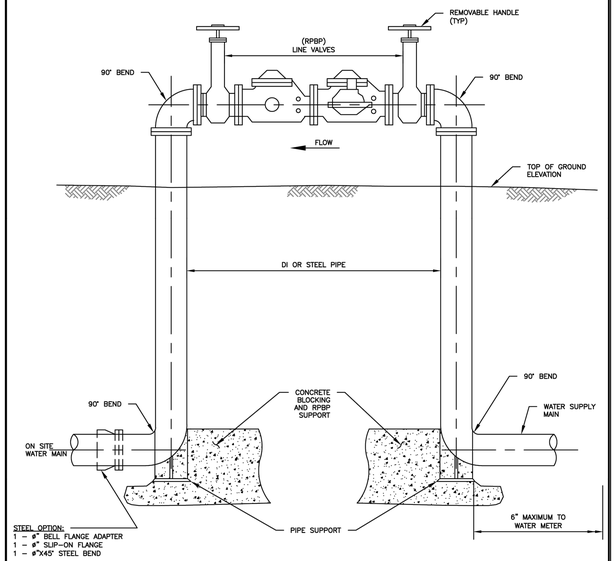
STORM CALCULATIONS

HORIZ:
VERT:
Sheet No. C – 8 of 11
Drawing Scale

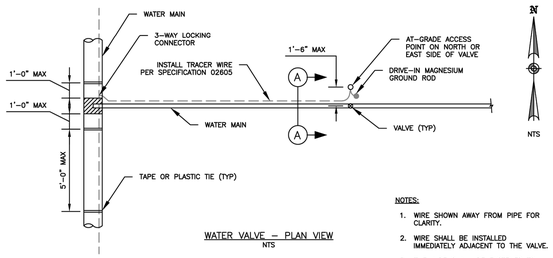
STORM CALCULATIONS-MV.dwg
10/25/2023 8:48:41 PM

GENERAL NOTES:

1. INSULATE REDUCED PRESSURE BACKFLOW PREVENTER TO AVOID FREEZING.
2. REDUCED PRESSURE BACKFLOW PREVENTER'S DISCHARGE OPENING IS TO BE A MINIMUM OF 12 INCHES ABOVE GROUND ELEVATION OR 100 YEAR FLOOD ELEVATION, WHICHEVER IS GREATER.



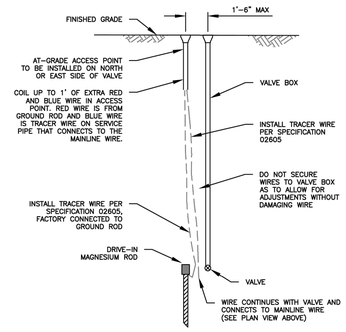
CITY OF MAGNOLIA 18111 BUDDY RILEY BOULEVARD MAGNOLIA, TEXAS 77354	REDUCED PRESSURE BACKFLOW PREVENTER (RPBP) CITY OF MAGNOLIA STANDARD DETAIL	DETAIL NO. WTR-05 EFFECTIVE DATE: 8/3/2022



WATER VALVE – PLAN VIEW
NTS

NOTES:

1. WIRE SHOWN AWAY FROM PIPE FOR CLARITY.
2. WIRE SHALL BE INSTALLED IMMEDIATELY ADJACENT TO THE VALVE.
3. THE WIRE SHALL BE FASTENED TO THE PIPE WITH TAPE OR PLASTIC TIES AT 5' INTERVALS.

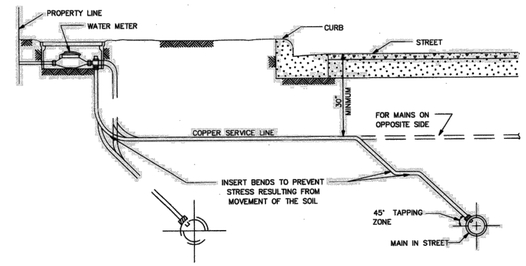


WATER VALVE – SECTION VIEW "A-A"
NTS

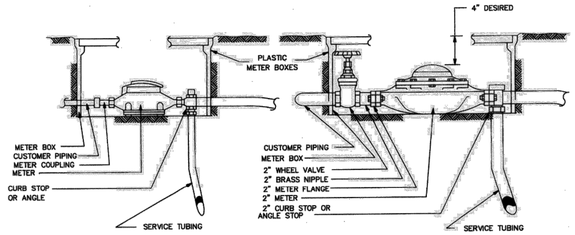
CITY OF MAGNOLIA 18111 BUDDY RILEY BOULEVARD MAGNOLIA, TEXAS 77354	COMPLETE UTILITY LOCATING SYSTEM WATER SERVICE DETAIL CITY OF MAGNOLIA STANDARD DETAIL	DETAIL NO. WTR-16 EFFECTIVE DATE: 8/3/2022

NOTES:

1 1/2" METER SET IS SAME AS 2" EXCEPT WHEEL VALVE IS NOT REQUIRED.



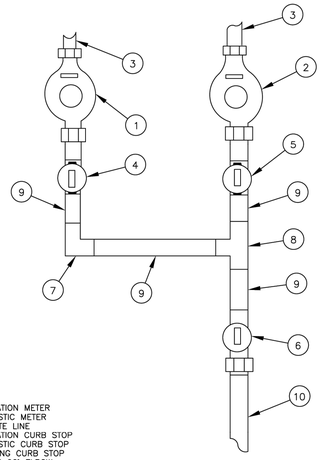
TYPICAL SECTION SERVICE LINE



5/8", 3/4" AND 1" METER SET

2" METER SET

CITY OF MAGNOLIA 18111 BUDDY RILEY BOULEVARD MAGNOLIA, TEXAS 77354	TYPICAL METER SETTINGS CITY OF MAGNOLIA STANDARD DETAIL	DETAIL NO. WTR-13 EFFECTIVE DATE: 8/3/2022



LEGEND

1. IRRIGATION METER
2. DOMESTIC METER
3. PRIVATE LINE
4. IRRIGATION CURB STOP
5. DOMESTIC CURB STOP
6. EXISTING CURB STOP
7. BRASS 90° ELBOW
8. BRASS TEE
9. BRASS PIPE
10. SERVICE LINE

CITY OF MAGNOLIA 18111 BUDDY RILEY BOULEVARD MAGNOLIA, TEXAS 77354	SCHEMATIC IRRIGATION TEE OFF DOMESTIC 3/4" THRU 2" CITY OF MAGNOLIA STANDARD DETAIL	DETAIL NO. WTR-08 EFFECTIVE DATE: 8/3/2022

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STATE OF TEXAS
BRICE A. STANFORD
123337
PROFESSIONAL ENGINEER
10/25/2023

Stanford Engineering
4506 PRIMROSE VALLEY LANE
FULSHEAR, TEXAS 77441
TBPELS FIRM #23646

MAGNOLIA VILLAGE LOT N

DETAIL SHEET 1

HORIZ:
VERT:
Sheet No. C – 9 of 11
Drawing Scale

DETAIL SHEET 1-MV.dwg
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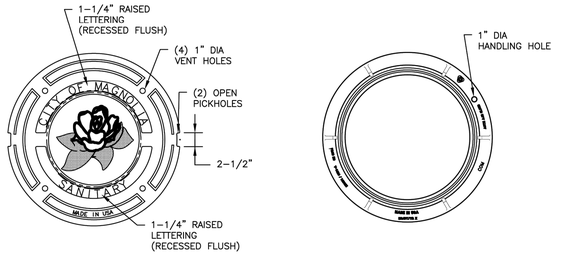
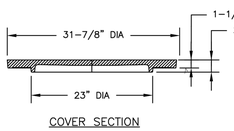
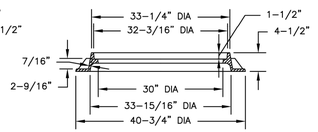
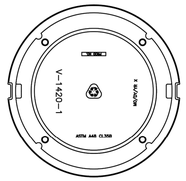




COVER SECTION



FRAME SECTION



BOTTOM VIEW

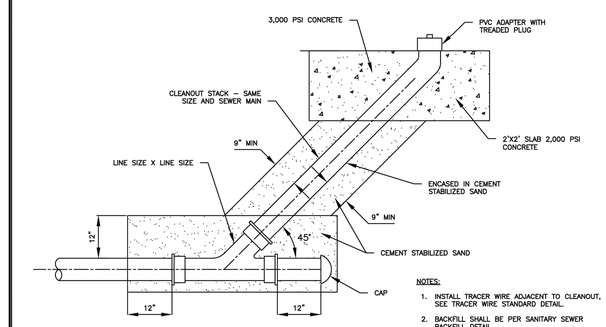
ALL PRODUCTS TO BE CERTIFIED AS MANUFACTURED/MADE IN THE USA.

NOTES:

1. APPROXIMATE WEIGHTS:
   FRAME – 170 LBS (77kg)
   COVER – 275 LBS (125kg)
   UNIT – 445 LBS (202kg)
2. MATERIALS – GRAY CAST IRON ASTM A48 CL35B.
3. CASTING TO MEET PROOF LOAD SPECIFICATION.
4. EAST JORDAN IRON WORKS V-1420 ASY OR APPROVED EQUAL.
5. MACHINED SURFACE.

COVER

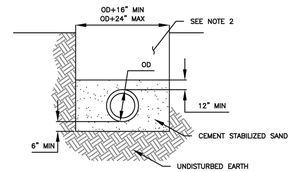
CITY OF MAGNOLIA 18111 BUDDY RILEY BOULEVARD MAGNOLIA, TEXAS 77354	32-INCH SANITARY SEWER MANHOLE COVER AND FRAME (TYP) CITY OF MAGNOLIA STANDARD DETAIL	DETAIL NO. SAN-005 EFFECTIVE DATE: 8/3/2022



NOTES:

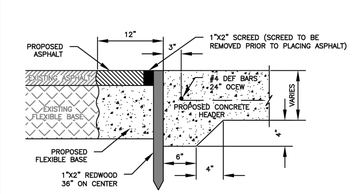
1. INSTALL TRACER WIRE ADJACENT TO CLEANOUT, SEE TRACER WIRE STANDARD DETAIL.
2. BACKFILL SHALL BE PER SANITARY SEWER BACKFILL DETAIL.

STANDARD CLEANOUT
NTS

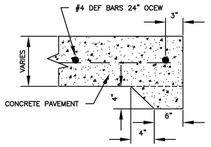


EMBEDMENT CROSS SECTION FOR PVC PIPE
NTS

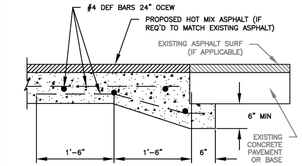
CITY OF MAGNOLIA 18111 BUDDY RILEY BOULEVARD MAGNOLIA, TEXAS 77354	STANDARD CLEANOUT AND EMBEDMENT CROSS SECTION FOR PVC PIPE CITY OF MAGNOLIA STANDARD DETAIL	DETAIL NO. SAN-012 EFFECTIVE DATE: 8/3/2022



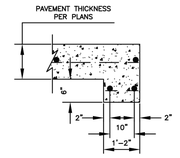
PAVING HEADER
(FOR USE IN CONNECTING CONCRETE PAVEMENT TO ASPHALT PAVEMENT)
NTS



STANDARD CONCRETE PAVEMENT HEADER
(FOR USE AT END OF ANY CONCRETE PAVEMENT WHICH DOES NOT TIE TO CONCRETE OR ASPHALT PAVEMENT)
NTS

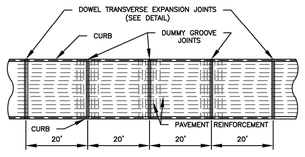


UNDERCUT DETAIL
(USE FOR NEW CONCRETE PAVEMENT TIE TO EXISTING CONCRETE PAVEMENT)
NTS

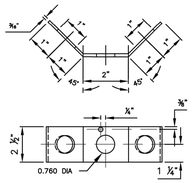


CONCRETE PAVEMENT RAILROAD HEADER
NTS

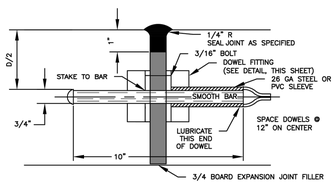
CITY OF MAGNOLIA 18111 BUDDY RILEY BOULEVARD MAGNOLIA, TEXAS 77354	PAVEMENT HEADER DETAILS CITY OF MAGNOLIA STANDARD DETAIL	DETAIL NO. PAV-04 EFFECTIVE DATE: 8/3/2022



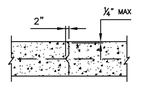
EXPANSION AND CONTRACTION JOINT LOCATIONS ON CONCRETE PAVEMENTS
NTS



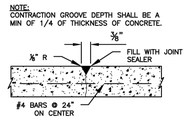
DOWEL FITTING
NTS



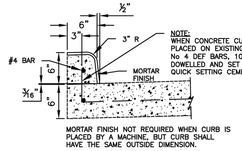
DOWEL TYPE EXPANSION JOINT IN CONCRETE PAVEMENT
NTS



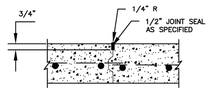
DEFORMED METAL STRIP CONTRACTION JOINT
NTS



DUMMY GROOVE CONTRACTION JOINT
NTS

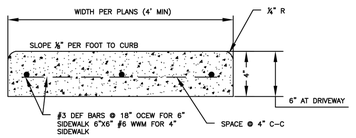


CONCRETE CURB
NTS



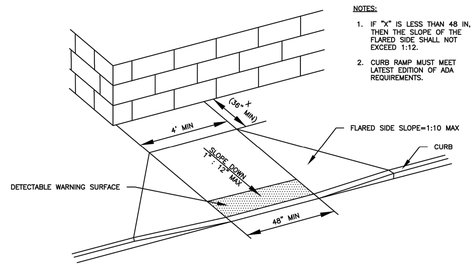
CONSTRUCTION JOINT – KEYED
NTS

CITY OF MAGNOLIA 18111 BUDDY RILEY BOULEVARD MAGNOLIA, TEXAS 77354	DOWEL AND JOINT FITTING DETAILS CITY OF MAGNOLIA STANDARD DETAIL	DETAIL NO. PAV-03 EFFECTIVE DATE: 8/3/2022



DUMMY GROOVE CONTRACTION JOINTS TO BE 1" DEEP @ 5' SPACING. EXPANSION JOINTS TO BE ½" BITUMINOUS JOINT FILLER @ 20' SPACING. SEAL EXPANSION JOINT WITH ½" THICK JOINT SEALER. FINISHED GRADE ADJACENT TO SIDEWALK TO BE 0.1' BELOW CONCRETE.

CONCRETE SIDEWALK
NTS

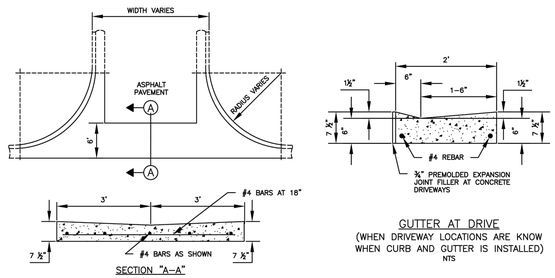


NOTES:

1. IF "X" IS LESS THAN 48 IN, THEN THE SLOPE OF THE FLARED SIDE SHALL NOT EXCEED 1:12.
2. CURB RAMP MUST MEET LATEST EDITION OF ADA REQUIREMENTS.

CURB RAMP
NTS

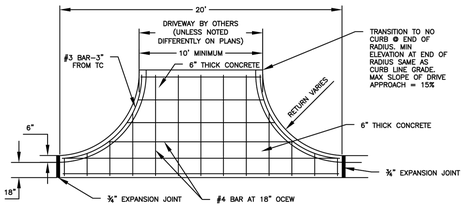
CITY OF MAGNOLIA 18111 BUDDY RILEY BOULEVARD MAGNOLIA, TEXAS 77354	CONCRETE SIDEWALK AND CURB RAMP DETAILS CITY OF MAGNOLIA STANDARD DETAIL	DETAIL NO. PAV-05 EFFECTIVE DATE: 8/3/2022



SECTION "A–A"

TYPICAL VALLEY GUTTER
NTS

GUTTER AT DRIVE
(WHEN DRIVEWAY LOCATIONS ARE KNOW WHEN CURB AND GUTTER IS INSTALLED)
NTS



NOTES:

1. MATCH TOP OF CURB AND SIDEWALK. TOP OF CURB AND DRIVE APRON WILL COME TOGETHER AT THE END OF THE CURB RETURN.
2. FOR NEW DRIVEWAY ON EXISTING STREET, SAWCUT AND COMPLETELY REMOVE EXISTING CURB AND GUTTER SECTION. TIE INTO CURB AND GUTTER REINFORCING WITH NEW DRIVEWAY REINFORCING. SEAL CRACK WHERE ASPHALT MEETS NEW CONCRETE WITH JOINT SEALER.
3. FOR EXISTING DRIVEWAY, REPLACE TO NEXT EXPANSION JOINT.

STANDARD DRIVE APPROACH
NTS

CITY OF MAGNOLIA 18111 BUDDY RILEY BOULEVARD MAGNOLIA, TEXAS 77354	STANDARD DRIVE AND GUTTER DETAILS CITY OF MAGNOLIA STANDARD DETAIL	DETAIL NO. PAV-06 EFFECTIVE DATE: 8/3/2022

NOTICE:

FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED. THIS SIGNATURE DOES NOT FULFILL YOUR OBLIGATION TO CALL 811

STATE OF TEXAS
BRICE A. STANFORD
123337
LICENSED PROFESSIONAL ENGINEER
10/25/2023

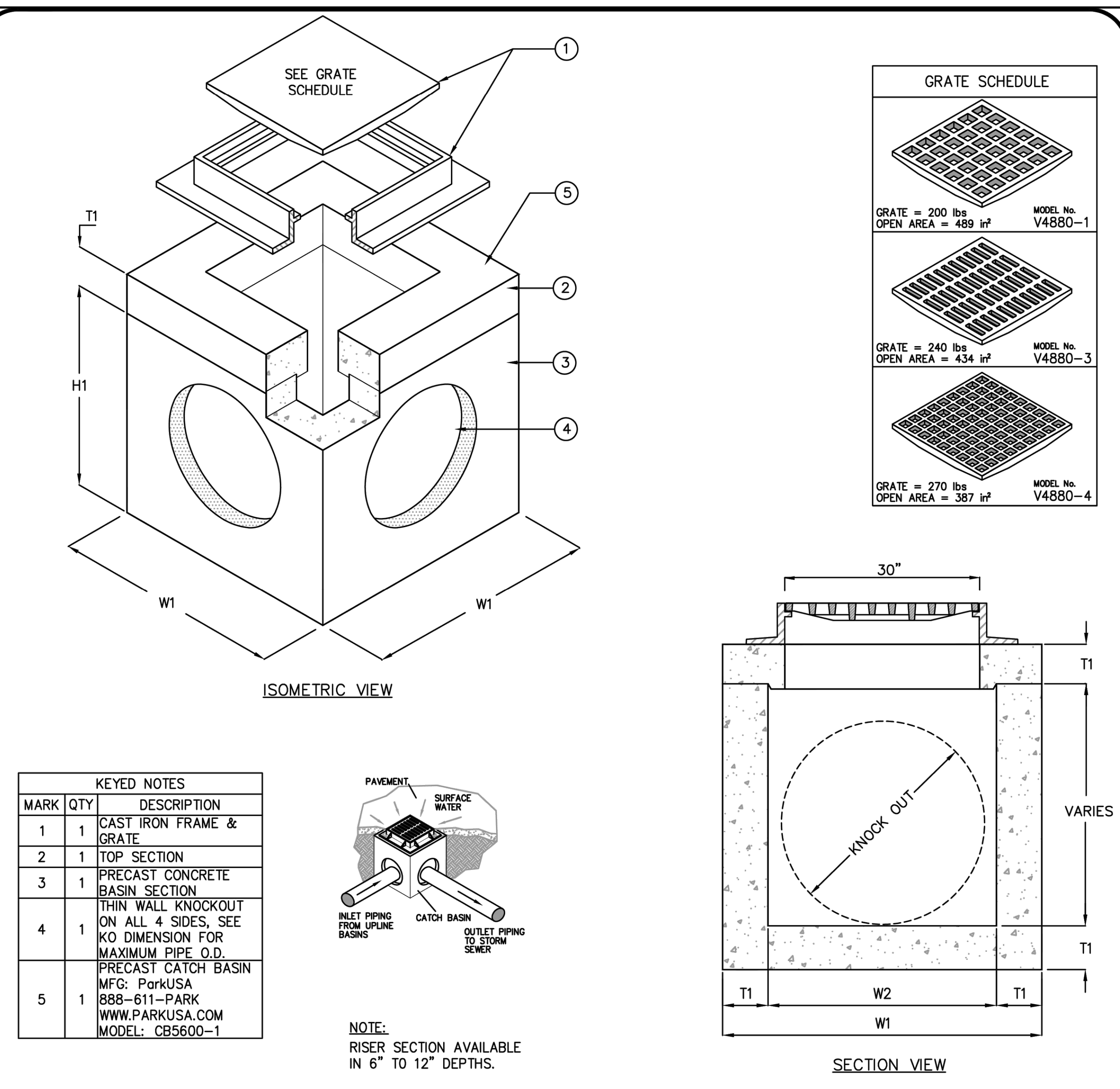
Stanford Engineering
4506 PRIMROSE VALLEY LANE
FULSHEAR, TEXAS 77441
TBPELS FIRM #23646

MAGNOLIA VILLAGE LOT N

DETAIL SHEET 2

	HORIZ:
	VERT:
Sheet No. C – 10 of 11	Drawing Scale

10/25/2023 8:48:49 PM DETAIL SHEET 2-MV.dwg



KEYED NOTES		
MARK	QTY	DESCRIPTION
1	1	CAST IRON FRAME & GRATE
2	1	TOP SECTION
3	1	PRECAST CONCRETE BASIN SECTION
4	1	THIN WALL KNOCKOUT ON ALL 4 SIDES, SEE KO DIMENSION FOR MAXIMUM PIPE O.D.
5	1	PRECAST CATCH BASIN MFG: ParkUSA 888-611-PARK WWW.PARKUSA.COM MODEL: CB5600-1

NOTE:
RISER SECTION AVAILABLE IN 6" TO 12" DEPTHS.

MODEL	W1	W2	H1	H2	T1	T2	KO	GRATE SIZE	OPEN AREA	WEIGHT LBS
CB-12	15"	10"	21"	18"	3"	2i"	10"	12"x12"x1"	90	180
CB-14	20"	12"	28"	24"	4"	4"	12"	14"x14"x1½"	120	600
CB-18	24"	16"	34"	30"	4"	4"	15"	18"x18"x1½"	168	1,000
CB-20	26"	18"	34"	30"	4"	4"	17"	20"x20"x1½"	170	1,335
CB-24	32"	22"	41"	36"	5"	5"	22"	24"x24"x2"	268	2,245
CB-27	37"	25"	42"	36"	6"	6"	24"	27"x27"x2"	350	2,875

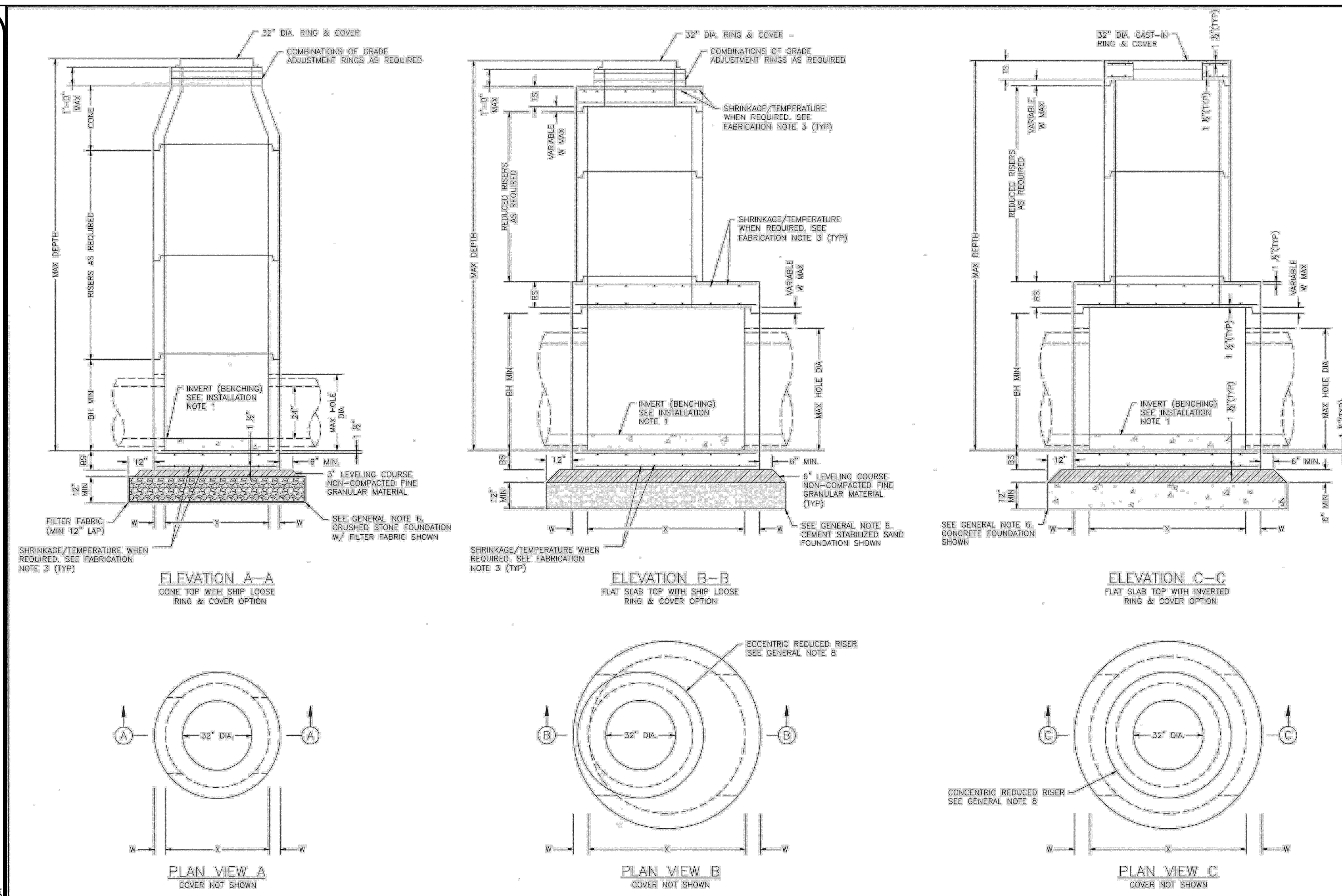
SPECIFICATIONS

CONCRETE : CLASS I/II CONCRETE WITH OF DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH. RATED FOR H-20 LOADING.

REINFORCEMENT: GRADE 60 REINFORCED WITH STEEL REBAR TO CONFORM TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.

C.I. CASTINGS: CAST IRON FRAMES AND GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48-76 CLASS 30.

PARK USA
www.parkusa.com 888-611-PARK
TYPE-A GRATE INLET
MODEL CB5600 12" THRU 27"
DWG. NO. CB5600-1
DATE 01/2019



4-FT DIA MANHOLE

5-FT & 6-FT DIA MANHOLE
ECCENTRIC MANHOLE
(PREFERRED CONFIGURATION)

5-FT & 6-FT DIA MANHOLE
CONCENTRIC MANHOLE
(ALTERNATE CONFIGURATION)

FABRICATION NOTES:

1. PROVIDE CLASS "H" CONCRETE IN ACCORDANCE WITH TEXAS DEPARTMENT OF TRANSPORTATION ITEM 421 AND HAVING A MINIMUM COMPRESSIVE STRENGTH OF 5,000 PSI.
2. PROVIDE GRADE 60 REINFORCING STEEL OR EQUIVALENT AREA OF WWR. PROVIDE CIRCUMFERENTIAL REINFORCING STEEL IN VERTICAL WALLS OF BASE, RISER AND CONE IN ACCORDANCE WITH ASTM C478.
3. SLABS WITH A THICKNESS OF 8" OR GREATER REQUIRE SHRINKAGE AND TEMPERATURE REINFORCING STEEL. PROVIDE STEEL AREA = 0.11 IN²/FT EACH WAY.
4. MANUFACTURE BASE AND RISERS TO NEAREST 3" INCREMENT.
5. DESIGN TONGUE AND GROOVE JOINTS FOR FULL CLOSURE ON BOTH SHOULDERS. MINIMUM SPIGOT DEPTH IS ¾".
6. PROVIDE LIFTING DEVICES IN CONFORMANCE WITH MANUFACTURER'S RECOMMENDATIONS.
7. PROVIDE CAST IRON SOLID COVER, UNLESS NOTED OTHERWISE ELSEWHERE IN THE PLANS.
8. THREE DIFFERENT OPTIONS FOR CAPPING THE MANHOLE RISER NEAR THE FINISHED GRADE ARE SHOWN. CONES CAN BE USED WHEN COVER IS SUFFICIENT TO ALLOW FOR PROPER PLACEMENT. FLAT LIDS ARE TO BE USED WHERE COVER IS LIMITED.

INSTALLATION NOTES:

1. IF REQUIRED ELSEWHERE, INVERTS (BENCHING) TO BE PROVIDED BY CONTRACTOR. CONCRETE OR MORTAR USED FOR INVERT IS SUBSIDIARY TO THIS ITEM. REFER TO CITY OF HOUSTON SPECIFICATION SECTION 02082 FOR INVERT (BENCHING) REQUIREMENTS.
2. SEAL TONGUE AND GROOVE JOINTS WITH PREFORMED OR BULK MASTIC IN CONFORMANCE WITH MANUFACTURER'S RECOMMENDATIONS. TONGUE AND GROOVE JOINTS MAY BE GROUTED NO MORE THAN 1" BETWEEN EACH SECTION, OR ½ THE JOINT DEPTH, WHICHEVER IS GREATER.
3. DO NOT GROUT RUBBER GASKET JOINTS WITHOUT MANUFACTURER'S RECOMMENDATION.
4. INITIAL INSTALLATION OF GRADE ADJUSTMENT RINGS IS LIMITED TO 1'-0" MAX AS SHOWN.
5. GRADE ADJUSTMENT RINGS MAY BE INCREASED TO 1'-6" MAX WHEN FUTURE CONSTRUCTION AFFECTS FINAL GRADE OF STRUCTURE. MAKE ADJUSTMENTS GREATER THAN 1'-6" WITH ADDITIONAL RISERS. ADJUSTMENTS MAY BE MADE UP TO THE MAX DEPTH OF 25'-0". STRUCTURE MUST BE EVALUATED IF MAX DEPTH WILL BE EXCEEDED.

GENERAL NOTES:

1. SEE TABLE 1 FOR MINIMUM DESIGN REQUIREMENTS. CONCENTRIC RISER WITH RESPECT TO BASE (ALTERNATIVE CONFIGURATION) FALLS OUTSIDE THE SCOPE OF REQUIREMENTS PROVIDED. ENGINEER OF RECORD ACCEPTS RESPONSIBILITY FOR SAFETY AND ADEQUACY OF MANHOLE IF THE ALTERNATIVE CONFIGURATION IS USED.
2. DESIGNED ACCORDING TO ASTM C478.
3. PAYMENT FOR PRECAST MANHOLE PER SECTION 02082 "PRECAST CONCRETE MANHOLES".
4. PIPE OD + PLACEMENT TOLERANCE MUST BE EQUAL OR LESS THAN MAX HOLE DIA. FOR RIGID PIPE, PLACEMENT TOLERANCE IS 4" MAX, 2" MIN. FOR FLEXIBLE PIPE, CONSULT BOOT/SEAL MANUFACTURER'S SPECIFICATION FOR PLACEMENT TOLERANCE.
5. STORM WATER SEWER PIPE INTERNAL DIA SHALL NOT BE LESS THAN 24".
6. FOUNDATION/SUBGRADE TO BE DESIGNED BY ENGINEER AND MEET MINIMUM REQUIREMENTS ACCORDING TO SECTION 02082.
7. ALL STORM WATER MANHOLES ARE TO BE PRECAST CONCRETE, UNLESS OTHERWISE NOTED ELSEWHERE IN THE PLANS.
8. ECCENTRIC REDUCED RISER WITH RESPECT TO BASE IS THE PREFERRED MANHOLE CONFIGURATION. CONCENTRIC REDUCED RISER WITH RESPECT TO BASE MANHOLE CONFIGURATION IS AN ALTERNATIVE DESIGN THAT WILL BE ACCEPTED BASED ON THE NEEDS OF THE CITY OF HOUSTON.
9. CONES MAY BE CONCENTRIC OR ECCENTRIC. REDUCTION CONES ARE ACCEPTABLE. REFER TO MANUFACTURER FOR CONE DIMENSIONS.
10. MANHOLE SIZE SHALL CONSIDER ENGINEERING ECONOMY. THIS DETAIL IS NOT APPLICABLE TO ROUND MANHOLES LARGER THAN 6-FOOT DIA.

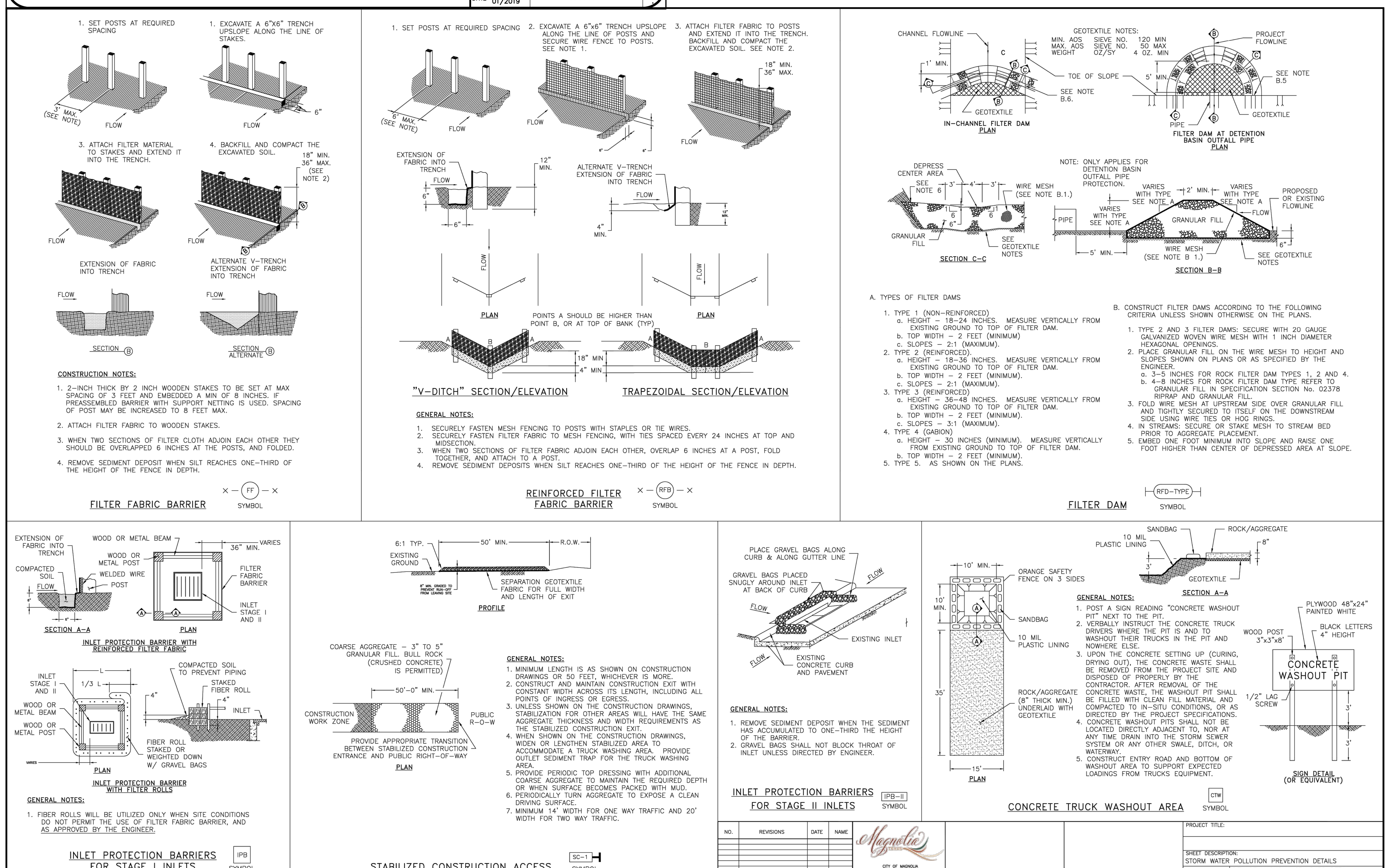
TABLE 1

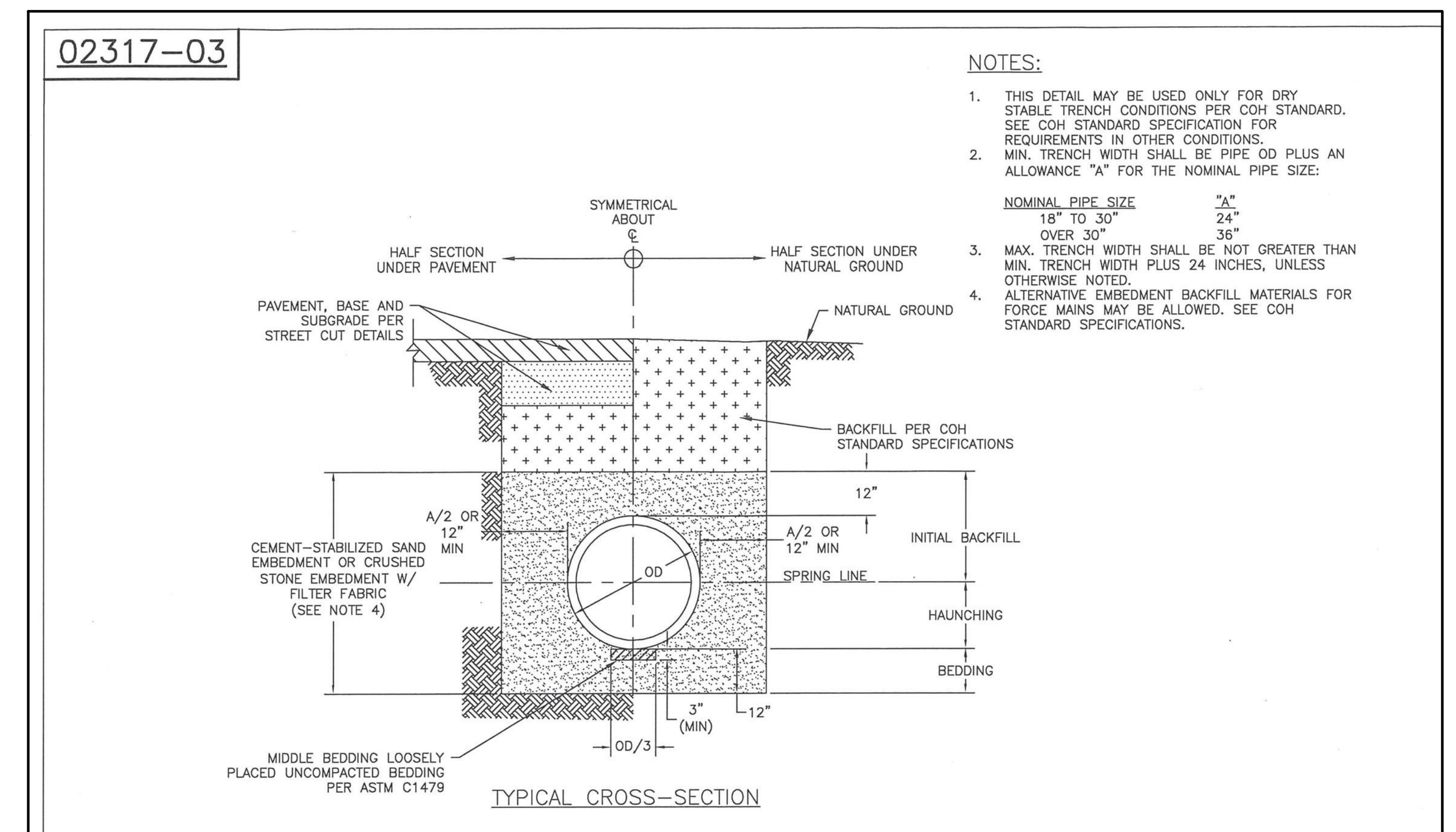
PRECAST ROUND MANHOLE (PRM) MINIMUM REQUIREMENTS FOR 24 IN. TO 42 IN. INTERNAL DIA STORM SEWER PIPES

	SIZE	BASE SLAB THICKNESS	BASE UNIT OR RISER THICKNESS	REDUCED RISER DIA	REDUCING SLAB THICKNESS	TOP SLAB THICKNESS	MAX DEPTH TO TOP OF BASE SLAB	MIN HEIGHT	MAX HOLE DIA
	X	BS	W	ID	RS	TS	MAX DEPTH	BH MIN	MAX HOLE DIA
	FT	IN.	IN.	IN.	IN.	IN.	FT.	IN.	IN.
PRM	4	9	5	–	–	9	25	42	35
	5	9	6	48	9	9	25	42	42
	6	9	7	48/60*	12	9	25	42	56

(*) 60-IN REDUCED RISER IS TO BE USED WHEN DEEMED NECESSARY TO SATISFY WALL PENETRATION SPACING REQUIREMENTS.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS
STORM SEWER TYPE 'C' PRECAST ROUND MANHOLE
(NOT TO SCALE)
APPROVED BY: Suhail Kanwar, CITY ENGINEER
APPROVED BY: Carl Haddell, DIRECTOR OF HOUSTON PUBLIC WORKS
EFF DATE: JUL-01-2021 DWG NO: 02082-12





SANITARY OR STORM SEWER BEDDING AND BACKFILL FOR DRY STABLE TRENCH
NTS

NOTICE:
FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED. THIS SIGNATURE DOES NOT FULFILL YOUR OBLIGATION TO CALL 811

STATE OF TEXAS — BRICE A. STANFORD — 123337 — LICENSED PROFESSIONAL ENGINEER
10/25/2023

Stanford Engineering
4506 PRIMROSE VALLEY LANE
FULSHEAR, TEXAS 77441
TBPELS FIRM #23646

MAGNOLIA VILLAGE LOT N

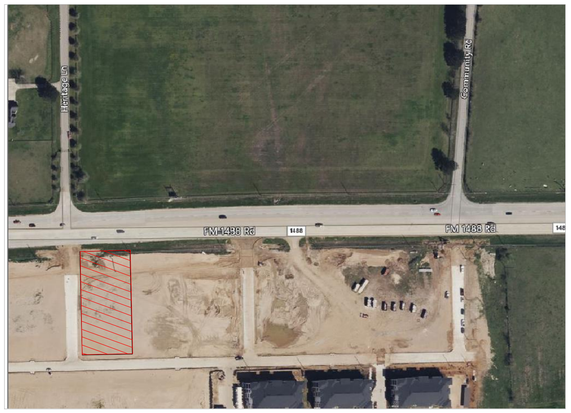
DETAIL SHEET 3

Sheet No. C-11 of 11	HORIZ: VERT: Drawing Scale

DETAIL SHEET 2-MV.dwg
10/25/2023 8:48:56 PM

SHERWIN WILLIAMS-MAGNOLIA VILLAGE LOT "N"
13313 FM 1488
MAGNOLIA, TEXAS 77354
PLANTING PLAN/IRRIGATION PLAN

LOCATION MAP



North

N.T.S.

PROJECT BY

ARCHITECT
HUFFCO SERVICES
103 LONGVIEW STREET
CONROE, TX 77301
936-759-2278

LANDSCAPE ARCHITECT: CONTACT - MATT LOUDERBACK,RLA
E.L.I. LAND DESIGN, LLC.
P.O.BOX 131264
THE WOODLANDS, TEXAS 77393
281.259.2610 OFFICE
WWW.ELILANDDESIGN.COM

SHEET INDEX

DATE	ISSUE	SHEET TITLE	PAGE #
9/8/2023	FOR PERMITTING	COVER PAGE	L0.0
9/8/2023	FOR PERMITTING	PLANTING PLAN	L1.0
9/8/2023	FOR PERMITTING	PLANTING PLAN CONT.	L1.1
9/8/2023	FOR PERMITTING	PLANTING DETAILS/SPEC.	L1.2
9/8/2023	FOR PERMITTING	IRRIGATION PLAN	L2.0
9/8/2023	FOR PERMITTING	IRRIGATION PLAN CONT.	L2.1
9/8/2023	FOR PERMITTING	IRRIGATION DETAILS	L2.2
9/8/2023	FOR PERMITTING	IRRIGATION SPECIFICATIONS	L2.3

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THE WOODLANDS, TX 77393

OFFICE: 281.259.2610
FAX: 281.259.2622

www.elilanddesign.com

REGISTERED LANDSCAPE ARCHITECT
MATTHEW LOUDERBACK
3093
09/08/23

PROJECT: SHERWIN WILLIAMS-MAGNOLIA VILLAGE
CLIENT INFORMATION: HUFFCO SERVICES- BART HUFFAKER
103 LONGVIEW ST.
CONROE, TX 77301
PROJECT LOCATION: 13313 FM 1488
MAGNOLIA, TX 77354

SHEET TITLE: COVER SHEET
PHASE: 100%
ISSUE: FOR PERMIT
DATE: 09/08/23
AUTHOR: ML
FILE: SHERWINMAGV.dwg
PLOT STYLE: ELI.ctb

REVISIONS:

#	
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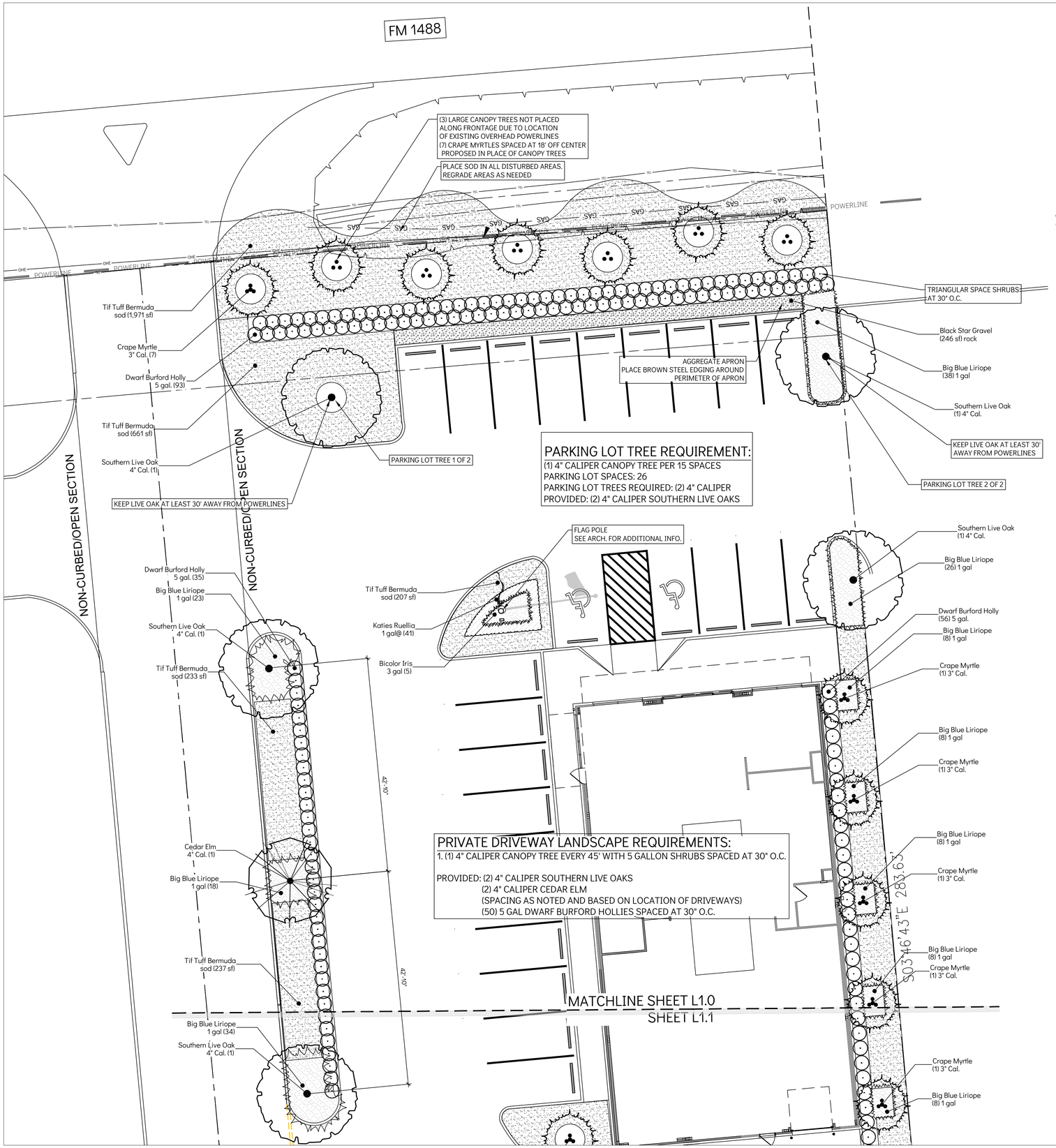
ORIGINAL SCALE: N/A
ORIGINAL SIZE: 36" x 24"

SHEET: L0.0



1

PLANT SCHEDULE

TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE		REQUIRED	PROVIDED
	13	LAGERSTROEMIA INDICA	CRAPE MYRTLE	3" CAL.		(4) 3" CALIPER (ALONG FM 1488)	(13) 3" CALIPER (INCLUDES 7 ALONG FM 1488, 3 ADDITIONAL TREES WERE PLANTED IN PLACE OF LARGE CANOPY TREES. LARGE CANOPY TREES CANNOT BE PLANTED TO ADJACENT POWER LINES
	6	QUERCUS VIRGINIANA	SOUTHERN LIVE OAK	4" CAL.		(9) 4" CALIPER	(6) 4" CALIPER (3) LARGE CANOPY TREES WERE NOT PROPOSED ALONG FM 1488 FRONTAGE, DUE TO LOCATION OF EXISTING POWER LINES. (3) ADDITIONAL CRAPE MYRTLES WERE PROPOSED ALONG FM 1488 IN LIEU OF LARGE CANOPY TREES.
	4	ULMUS CRASSIFOLIA	CEDAR ELM	4" CAL.		(4) 4" CALIPER	(4) 4" CALIPER
SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE		REQUIRED	PROVIDED
	201	ILEX CORNUTA `BURFORDII NANA`	DWARF BURFORD HOLLY	5 GAL.	30" o.c.	(171) 5 GALLON	(201) 5 GALLON
SHRUB AREAS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING		
	5	DIETES BICOLOR	BICOLOR IRIS	3 GAL	36" o.c.	0	5
	277	LIRIOPE MUSCARI `BIG BLUE`	BIG BLUE LIRIOPE	1 GAL	24" o.c.	0	277
	41	RUELLIA BRITTONIANA	KATIES RUELLIA	1 GAL	16" o.c.	0	41
GROUND COVERS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REQUIRED	PROVIDED
	307 SF	BLACK STAR GRAVEL	BLACK STAR GRAVEL	ROCK		0	307 SF
	7,395 SF	CYNODON DACTYLON `TIF TUFF`	TIF TUFF BERMUDA	SOD		0	0

North

0 5 10 20 30

SCALE: 1" = 10'-0"

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REGISTERED LANDSCAPE ARCHITECT
MATTHEW LOUDERBACK
3093
09/08/23

PROJECT: SHERWIN WILLIAMS-MAGNOLIA VILLAGE

CLIENT INFORMATION: HUFFCO SERVICES- BART HUFFAKER
103 LONGVIEW ST.
CONROE, TX 77301

PROJECT LOCATION: 13313 FM 1488
MAGNOLIA, TX 77354

SHEET TITLE: PLANTING PLAN

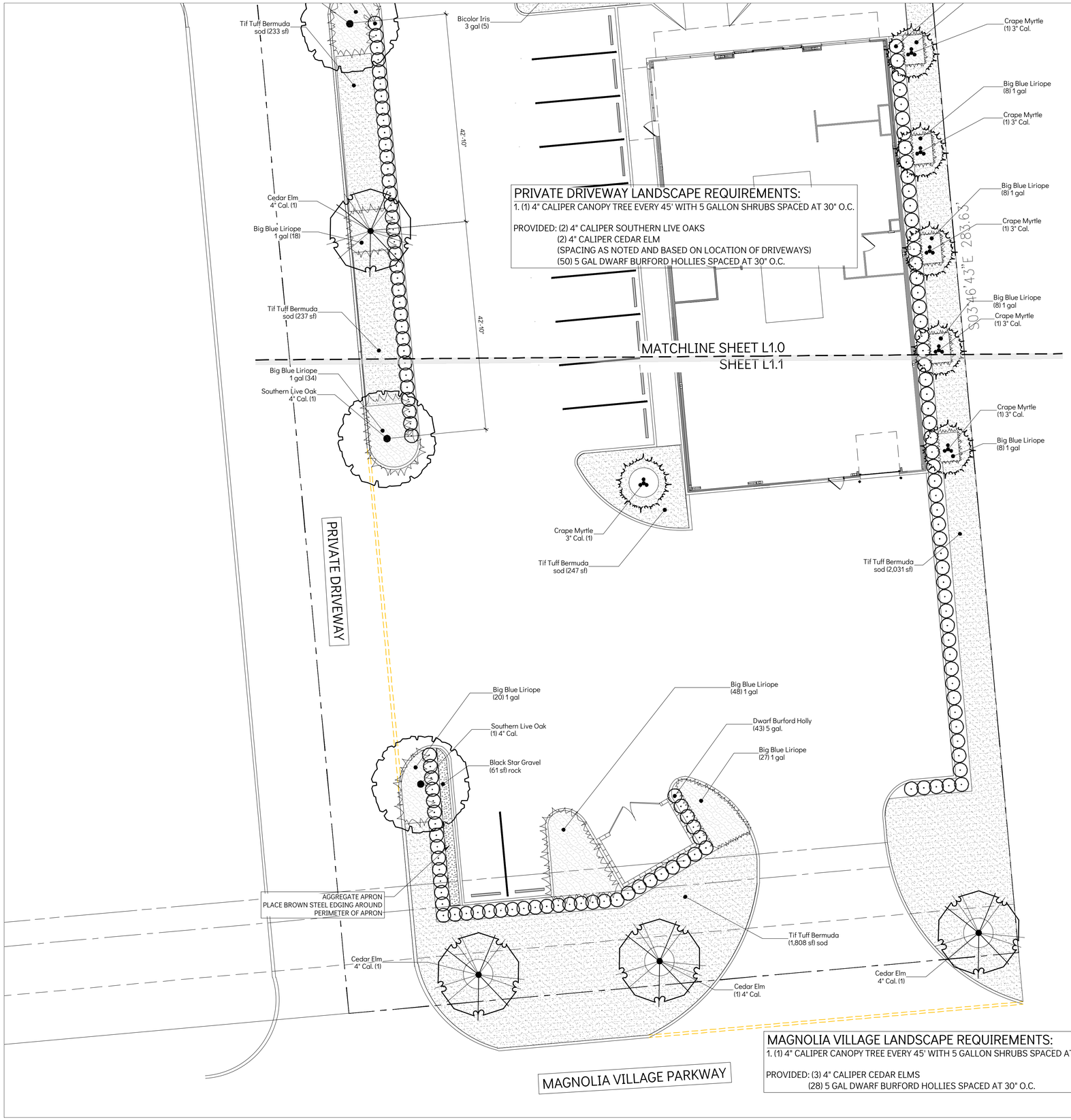
PHASE: 100%
ISSUE: FOR PERMIT
DATE: 09/08/23
AUTHOR: ML
FILE: SHERWINMAGV.dwg
PLOT STYLE: ELI.ctb

REVISIONS:

10/19/23	"REQUIRED" & "PROVIDED" ON THE SPACING & CALIPER OF PLANTINGS ADDED TO PLANT SCHEDULE
#	
#	
#	
#	

ORIGINAL SCALE: 1" = 10'-0"
ORIGINAL SIZE: 36" x 24"

SHEET: L1.0



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REGISTERED LANDSCAPE ARCHITECT
MATTHEW LOUDERBACK
3093
09/08/23

PROJECT: SHERWIN WILLIAMS-MAGNOLIA VILLAGE

CLIENT INFORMATION:
HUFFCO SERVICES- BART HUFFAKER
103 LONGVIEW ST.
CONROE, TX 77301

PROJECT LOCATION:
13313 FM 1488
MAGNOLIA, TX 77354

SHEET TITLE: PLANTING PLAN

PHASE: 100%
ISSUE: FOR PERMIT
DATE: 09/08/23
AUTHOR: ML
FILE: SHERWINMAGV.dwg
PLOT STYLE: ELLctb

REVISIONS:

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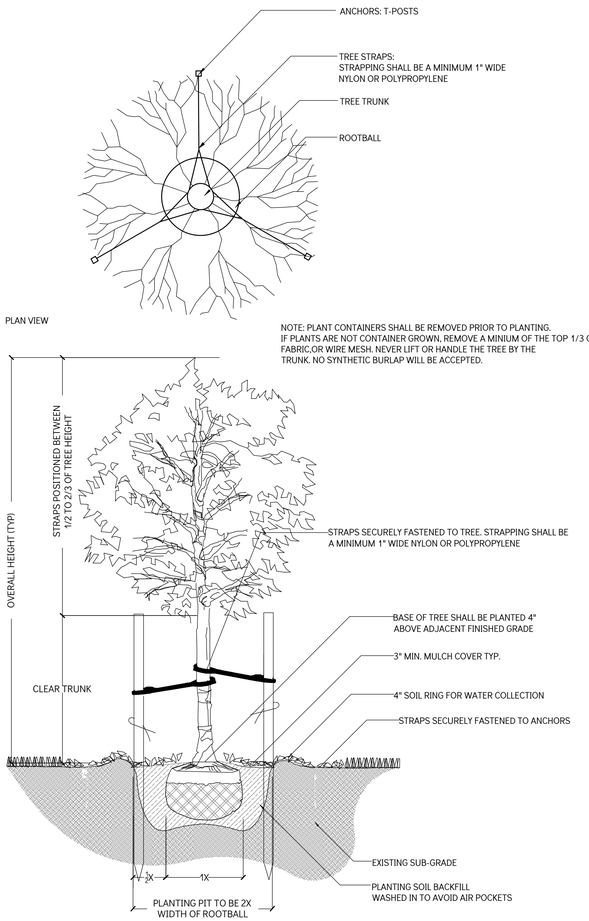
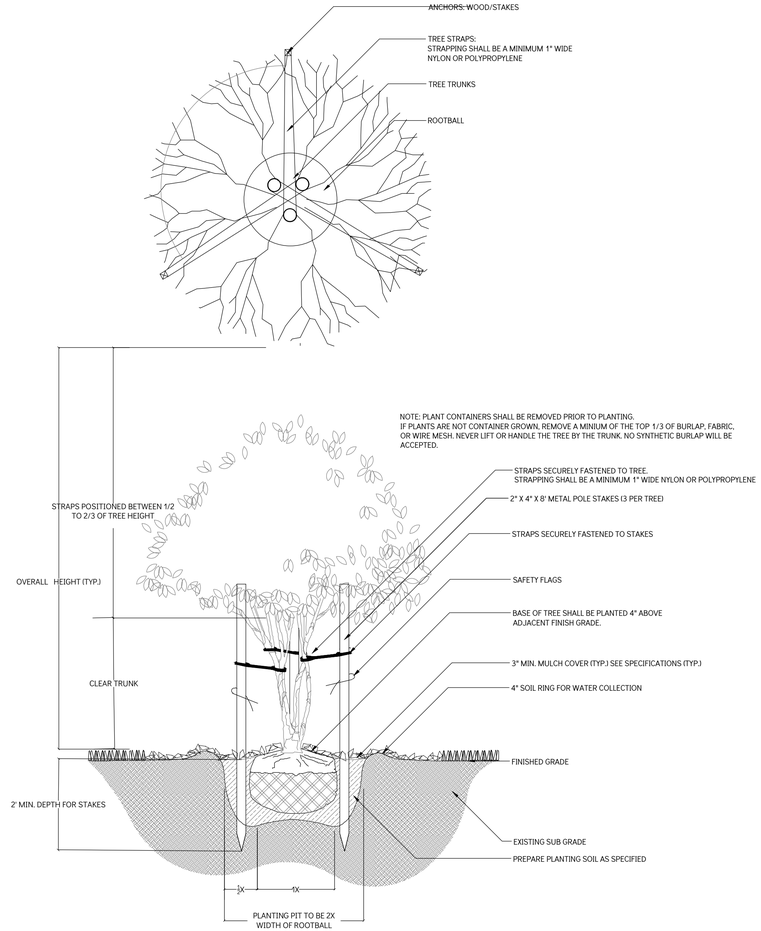
ORIGINAL SCALE: 1" = 10'-0"
ORIGINAL SIZE: 36" x 24"

SHEET: L1.1



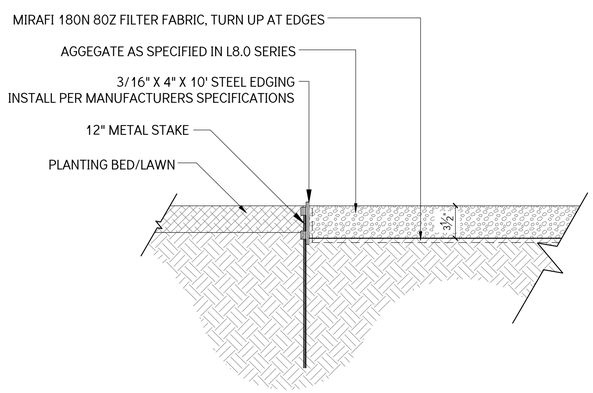
1 LARGE TREE PLANTING

PLAN/ELEVATION 3/8" = 1'-0"



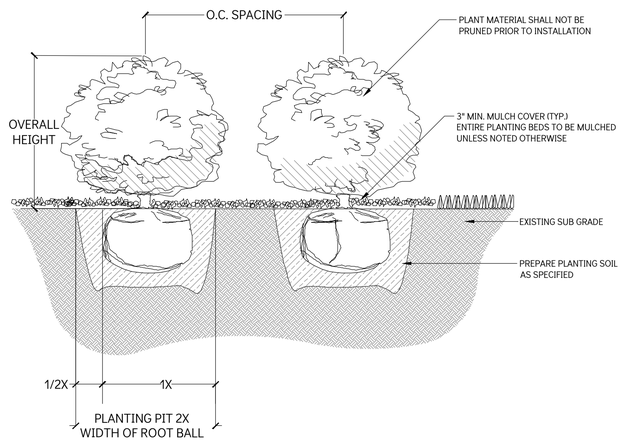
2 MULTI-TRUNK TREE DETAIL

ELEVATION N.T.S.



3 STEEL EDGING AT AGGREGATE

SECTION 1 1/2" = 1'-0"



4 SHRUB DETAIL

SECTION 1/2" = 1'-0"

LANDSCAPE NOTES:

1. FINAL GRADING SHALL BE APPROVED BY THE OWNER'S REPRESENTATIVE IN THE FIELD PRIOR TO PLANTING OR PLANTING LAYOUT.
2. CONTRACTOR IS RESPONSIBLE FOR VERIFYING LOCATIONS OF UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION.
3. TREES SHALL BE PLANTED AT LEAST FIVE (5') FEET FROM ANY UTILITY LINE AND OUTSIDE ALL UTILITY EASEMENTS.
4. LANDSCAPED AREAS SHALL BE KEPT FREE OF TRASH, LITTER, AND WEEDS AT ALL TIMES DURING CONSTRUCTION.
5. LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR FINE GRADING, REMOVAL OF MISCELLANEOUS DEBRIS AND ANY ADDITIONAL FILL REQUIRED TO CREATE A SMOOTH CONDITION PRIOR TO PLANTING IN ALL PLANTING AREAS.
6. THE QUANTITIES SHOWN ON THE PLAN ARE FOR THE CONTRACTOR'S CONVENIENCE. CONTRACTOR SHALL VERIFY ALL QUANTITIES
7. CONTRACTOR SHALL PROVIDE SAMPLES OF COMPOST AND COMPOST MULCH MIX TO THE OWNER'S REPRESENTATIVE ALONG WITH SOIL TESTING DATA.
8. EXCESS SOIL FROM LANDSCAPE GRADING TO BE REMOVED AND DISPOSED OFF-SITE BY CONTRACTORS.
9. ALL PLANTS SHALL BE NURSERY GROWN OR TRANSPLANTED ON SITE AND IN ACCORDANCE WITH THE AMERICAN STANDARD FOR NURSERY STOCK LATEST EDITION (ANSI Z-60).
10. ALL PLANTS SHALL BE HARDY UNDER CLIMATIC CONDITIONS SIMILAR TO THOSE IN THE LOCALITY OF THE PROJECT.
11. ALL PLANTS SHALL BE TYPICAL OF THEIR SPECIES OR VARIETY AND SHALL HAVE A NORMAL GROWTH HABIT. THEY SHALL BE SOUND, HEALTHY AND VIGOROUS, WELL BALANCED AND DENSELY FOLIATED WHEN IN LEAF. THEY SHALL BE FREE OF DISEASE AND INSECT PESTS, EGGS OR LARVAE. PLANTS SHALL HAVE HEALTHY, WELL-DEVELOPED ROOT SYSTEMS.
12. SUBSTITUTIONS: WHEN PLANTS OF A SPECIFIED KIND OR SIZE ARE NOT AVAILABLE WITHIN A REASONABLE DISTANCE, SUBSTITUTIONS MAY BE MADE, UPON REQUEST BY THE CONTRACTOR, IF APPROVED BY THE OWNER OR THEIR REPRESENTATIVE.
13. MEASUREMENT: DIMENSIONS OF TREES AND SHRUBS SHALL CONFORM TO THE AMERICAN STANDARD FOR NURSERY STOCK, LATEST EDITION (ANSI Z-60).
14. SIZE: ALL PLANTS SHALL CONFORM TO THE MEASUREMENTS SPECIFIED ON THE PLANT MATERIAL SCHEDULE UNLESS AUTHORIZED, IN WRITING, BY THE OWNER OR THEIR REPRESENTATIVE.
15. BALLED PLANTS SHALL BE DUG WITH FIRM, NATURAL BALLS OF EARTH OF A DIAMETER AND DEPTH TO INCLUDE MOST OF THE FIBROUS ROOTS. CONTAINER GROWN STOCK SHALL HAVE BEEN GROWN IN A CONTAINER LONG ENOUGH FOR THE ROOT SYSTEM TO HAVE SUFFICIENTLY DEVELOPED TO HOLD ITS SOIL TOGETHER FIRM AND WHOLE. NO PLANTS SHALL BE LOOSE IN THE CONTAINER OR ROOT BOUND.
16. ROOT BALLS AND CANOPIES OF ALL PLANTS SHALL BE ADEQUATELY PROTECTED AT ALL TIMES FROM SUN AND DRYING WINDS OR FROST.
17. THE OWNER OR THEIR REPRESENTATIVE SHALL BE NOTIFIED PRIOR TO BEGINNING PLANTING OPERATIONS.
18. PLANTS WITH BROKEN ROOT BALLS, EXCESSIVE DAMAGE TO THE CROWN, OR GIRDLING ROOTS SHALL BE REPLACED PRIOR TO PLANTING.
19. ALL TREES SHALL BE STAKED AND GUY-WIRED ACCORDING TO ACCEPTED INDUSTRY PRACTICE AND DETAILS.
20. EACH NEWLY PLANTED TREE AND SHRUB SHALL BE PRUNED IN ACCORDANCE WITH THE AMERICAN ASSOCIATION OF NURSERYMEN STANDARDS OR AS DIRECTED BY OWNER'S REPRESENTATIVE TO PRESERVE THE NATURAL CHARACTER OF THE PLANT. ALL DEAD WOOD, SUCKER, AND BROKEN OR BADLY BRUISED BRANCHES SHALL BE REMOVED.
21. MULCH: IMMEDIATELY AFTER PLANTING OPERATIONS ARE COMPLETED ALL TREES AND SHRUB PLANTING PITS SHALL BE COVERED WITH A 3" LAYER OF SHREDDED DECOMPOSED HARDWOOD MULCH OR OTHER MATERIAL APPROVED BY THE OWNER OR THEIR REPRESENTATIVE. MULCH LIMITS FOR TREES SHALL BE THE AREA OF THE PIT; MULCH LIMITS FOR SHRUBS IN BEDS SHALL BE THE ENTIRE AREA OF THE SHRUB BED.
22. PLANTING SOIL FOR TREES IF NATIVE TOPSOIL IS NOT AVAILABLE SHALL CONSIST OF 20% TO 30% ORGANIC MATERIAL MIXED WITH EXISTING SOIL AT A RATE OF 1/3 PLANTING SOIL TO 2/3 EXISTING SOIL FOR BEDDING PLANTS.
23. PLANTING SOIL FOR SHRUB BEDS CONSISTS OF 100% MIX SOIL WITH COMPOST FROM NATURE'S WAY RESOURCES OR APPROVED EQUAL.
24. GUARANTEE: ALL PLANT MATERIAL SHALL BE GUARANTEED BY THE CONTRACTOR FOR ONE FULL YEAR FROM THE DATE OF INSTALLATION. THE OWNER SHALL BE RESPONSIBLE FOR MAINTENANCE UNLESS OTHERWISE AGREED WITH CONTRACTOR. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MONITOR THE PROJECT DURING THE GUARANTEE PERIOD AND INFORM THE OWNER IF PROBLEMS DEVELOP WITH THE PLANT MATERIAL. A PLANT SHALL BE CONSIDERED DEAD IF 25% OR MORE OF THE CROWN, OR MAIN LEADER HAS DIED.
25. ALL PLANTING SHALL BE AT THE LOCATIONS INDICATED ON THE DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PLANTING AT THE CORRECT GRADES TO ENSURE POSITIVE DRAINAGE, AND FOR ESTABLISHING PLANTING BEDS AS INDICATED.
26. LAYOUT OF PLANTING: THE CONTRACTOR SHALL LAY OUT, WITH IDENTIFIABLE STAKES, THE LOCATION OF ALL PLANTS AND THE ARRANGEMENT AND OUTLINES OF PLANTING BEDS AS INDICATED ON DRAWING. THE LAYOUT OF PLANTING SHALL BE APPROVED BY THE PROJECT REPRESENTATIVE PRIOR TO ANY EXCAVATION OF PLANT PITS OR PLANT BEDS.
27. CONDITIONS DETRIMENTAL TO PLANTS: THE CONTRACTOR SHALL NOTIFY THE PROJECT REPRESENTATIVE, IN WRITING, OF ALL SOIL OR DRAINAGE CONDITIONS WHICH THE CONTRACTOR CONSIDERS DETRIMENTAL TO THE GROWTH OF PLANTS. THE CONTRACTOR SHALL STATE THE CONDITIONS AND SUBMIT A PROPOSAL FOR CORRECTING THE CONDITIONS, INCLUDING ANY CHANGE IN COST FOR REVIEW AND ACCEPTANCE BY THE PROJECT REPRESENTATIVE.
28. MINOR ADJUSTMENT TO TREE LOCATION MAY BE NECESSARY DUE TO FIELD CONDITIONS AND FINAL GRADING. THE CONTRACTOR SHALL NOTIFY THE OWNER IF MAJOR ADJUSTMENTS ARE REQUIRED.
29. TRIANGULAR SPACING OF PLANT MATERIAL WHEN PLANTING LARGE MASSES, UNLESS OTHERWISE NOTED.
30. LANDSCAPE CONTRACTOR IS TO CONDUCT SOILS ANALYSIS TESTING AND PRESENT FINDINGS TO OWNER OR LANDSCAPE ARCHITECT WITH RECOMMENDED SOIL AMENDMENT PRIOR TO CONSTRUCTION.

GENERAL NOTES:

1. VERIFY SITE INFORMATION, INCLUDING PROPERTY LINES, EASEMENTS, BUILDINGS, ROADWAY CURB AND GUTTERS, UTILITIES AND OTHER INFORMATION AFFECTING THE SCOPE OF WORK INCLUDED ON THESE DRAWINGS. MORE SPECIFIC UTILITY INFORMATION IS INDICATED ON THE CIVIL DRAWINGS. CONTRACTOR SHALL CONTACT THE OWNER OR OWNER'S REPRESENTATIVE FOR DIRECTION ON HOW TO PROCEED IF ACTUAL SITE CONDITIONS VARY FROM WHAT IS SHOWN ON THE CIVIL OR LANDSCAPE PLANS.
2. EXCAVATION IN THE VICINITY OF UTILITIES SHALL BE UNDERTAKEN WITH CARE. THE CONTRACTOR BEARS FULL RESPONSIBILITY FOR THIS WORK. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL SITE UTILITIES PRIOR TO BEGINNING EXCAVATION. ANY DAMAGE TO UTILITIES THAT ARE TO REMAIN CAUSED BY ANY PERSON, VEHICLE, EQUIPMENT, OR TOOL RELATED TO THE EXECUTION OF THE CONTRACT SHALL BE REPAIRED IMMEDIATELY AT NO EXPENSE TO THE OWNER.
3. BASE INFORMATION INCLUDING THE LOCATION OF PROPERTY LINES, EASEMENTS, BUILDINGS, ROADS AND CURBS HAVE BEEN TAKEN FROM THE ARCHITECT'S DRAWINGS. FOR ADDITIONAL INFORMATION REFER TO CIVIL DRAWINGS.
4. BUILDING FOOTPRINTS HAVE BEEN TAKEN FROM THE ARCHITECTURAL DRAWINGS. FOR ADDITIONAL INFORMATION REFER TO ARCHITECTURAL DRAWINGS.
5. THE CONTRACTOR SHALL NOTIFY LOCAL AUTHORITIES AND THE GENERAL CONTRACTOR FOR LOCATION OF EXISTING UNDERGROUND UTILITIES. EXCAVATE AS NECESSARY TO CONFIRM LOCATIONS PRIOR TO EXCAVATION.

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REGISTERED LANDSCAPE ARCHITECT
MATTHEW LOUDENBACK
3093
09/08/23

PROJECT: SHERWIN WILLIAMS-MAGNOLIA VILLAGE

CLIENT INFORMATION: HUFFCO SERVICES- BART HUFFAKER
103 LONGVIEW ST.
CONROE, TX 77301

PROJECT LOCATION: 13313 FM 1488
MAGNOLIA, TX 77354

SHEET TITLE: PLANTING DETAILS/SPEC.'S

PHASE: 100%
ISSUE: FOR PERMIT
DATE: 09/08/23
AUTHOR: ML
FILE: SHERWINMAGV.dwg
PLOT STYLE: ELI.ctb

REVISIONS:

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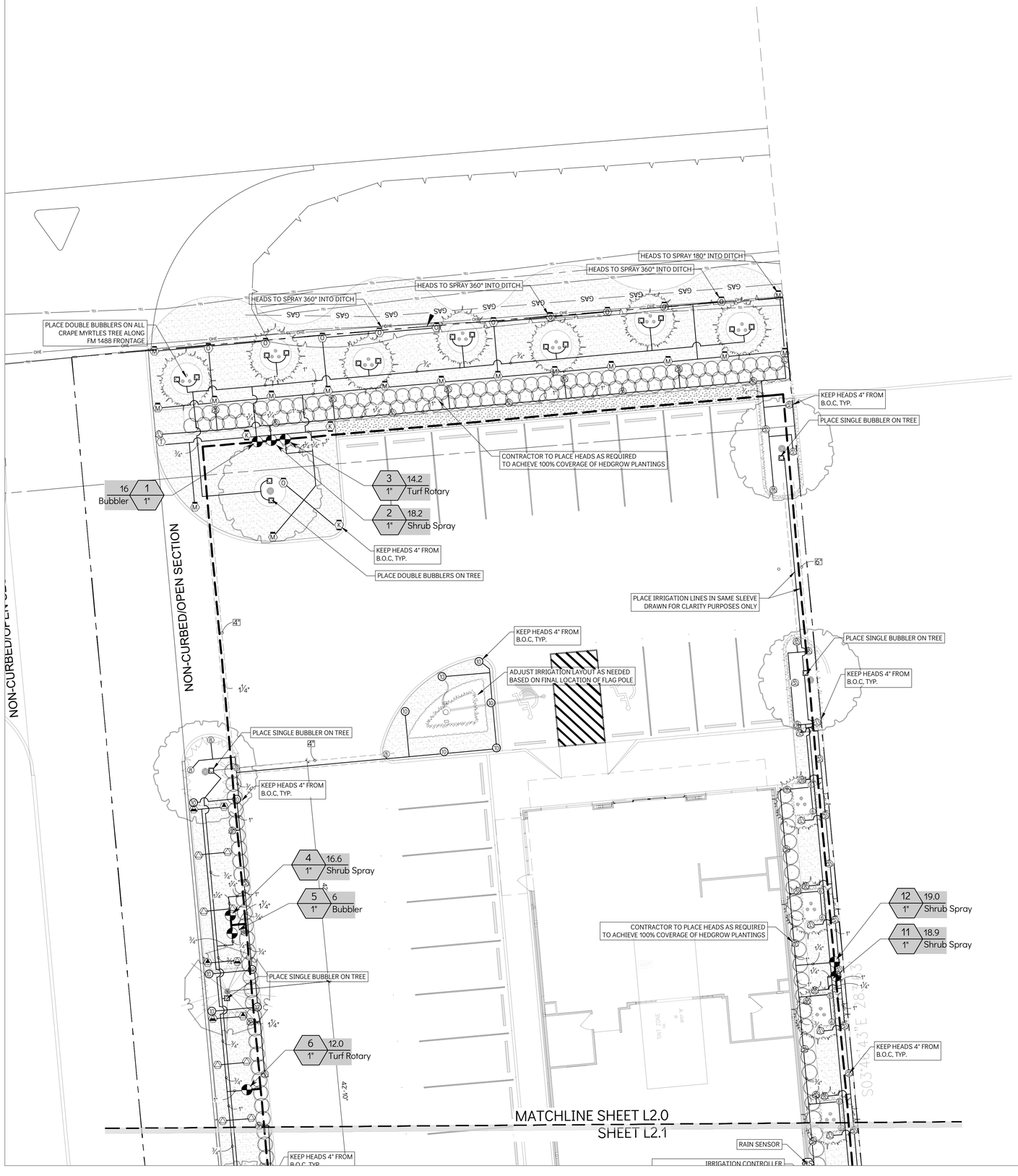
ORIGINAL SCALE: AS NO
ORIGINAL SIZE: 36" x 24"

SHEET: L1.2



IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL	QTY	ARC	PSI	GPM	RADIUS
ES	HUNTER PROS-06 ES-515	1	EST	30	0.65	5'x15'
LCS	HUNTER PROS-06 LCS-515	13	LCS	30	0.65	5'x15'
RCS	HUNTER PROS-06 RCS-515	13	RCS	30	0.65	5'x15'
SS	HUNTER PROS-06 SS-530	50	SST	30	1.3	5'x30'
6	HUNTER PROS-06 06A	11	ADJ	30	≤ 1.37	6'
8	HUNTER PROS-06 08A	13	ADJ	30	≤ 1.76	8'
10	HUNTER PROS-06 10A	22	ADJ	30	≤ 2.02	10'
T	HUNTER MP CORNER PROS-04 T	6	ADJ	40		14'
LST	HUNTER MP STRIP PROS-04 LST	8	LCS	40	0.22	5'x15'
RST	HUNTER MP STRIP PROS-04 RST	8	RCS	40	0.22	5'x15'
SST	HUNTER MP STRIP PROS-04 SST	18	SST	40	0.44	5'x30'
M	HUNTER MP1000 PROS-04 M	23	90-210	30		12'
O	HUNTER MP1000 PROS-04 O	11	360	30	0.69	12'
K	HUNTER MP2000 PROS-04 K	4	90-210	30		17'
B	HUNTER MP3000 PROS-04 B	10	90-210	35		28'
10	HUNTER PCB 10	30	360	30	1	3'

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	HUNTER PGV-101G 1" 1" PLASTIC ELECTRIC REMOTE CONTROL VALVE, FOR COMMERCIAL USE. GLOBE CONFIGURATION, WITH FLOW CONTROL.	12
	SCH. 80 BALL VALVE SCH. 80 BALL VALVE SHUT OFF VALVE. SIZE VALVE TO FIT IRRIGATION MAINLINE	3
BF	FEBCO 765 1" PRESSURE VACUUM BREAKER, BRASS WITH BALL VALVE SOV. INSTALL 12" (305MM) ABOVE HIGHEST DOWNSTREAM OUTLET AND THE HIGHEST POINT IN THE DOWNSTREAM PIPING.	1
C	HUNTER IC-1200-PL MODULAR CONTROLLER, 12 STATIONS, OUTDOOR MODEL, PLASTIC CABINET. COMMERCIAL USE. WITH ONE ICM-600 MODULE INCLUDED.	1
RS	HUNTER RAIN-CLIK RAIN SENSOR, WITH CONDUIT INSTALLATION, MOUNT AS NOTED. NORMALLY CLOSED SWITCH.	1
	IRRIGATION LATERAL LINE: PVC SCHEDULE 40 3/4"	3,108 L.F.
	IRRIGATION LATERAL LINE: PVC SCHEDULE 40 1"	274.7 L.F.
	IRRIGATION LATERAL LINE: PVC SCHEDULE 40 1 1/4"	99.0 L.F.
	IRRIGATION MAINLINE: PVC SCHEDULE 40 1 1/4"	752.9 L.F.
	PIPE SLEEVE: PVC SCHEDULE 40 2"	46.6 L.F.
	PIPE SLEEVE: PVC SCHEDULE 40 4"	229.3 L.F.
	PIPE SLEEVE: PVC SCHEDULE 40 6"	71.2 L.F.

Valve Callout
- Valve Number
- Valve Flow
- Valve Size

IRRIGATION SCHEDULE IS FOR INFORMATIONAL PURPOSES ONLY. CONTRACTOR TO VERIFY QUANTITIES OF ALL PARTS & MATERIALS IN ORDER TO PROVIDE A COMPLETE SYSTEM.

North

0 5 10 20 30

SCALE: 1" = 10'-0"

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REGISTERED LANDSCAPE ARCHITECT
MATTHEW LOUDE FRASCA
3093
09/08/23

PROJECT: SHERWIN WILLIAMS-MAGNOLIA VILLAGE

CLIENT INFORMATION: HUFFCO SERVICES- BART HUFFAKER
103 LONGVIEW ST.
CONROE, TX 77301

PROJECT LOCATION: 13313 FM 1488
MAGNOLIA, TX 77354

SHEET TITLE: IRRIGATION PLAN & SCH.

PHASE: 100%
ISSUE: FOR PERMIT
DATE: 09/08/23
AUTHOR: ML
FILE: SHERWINMAGV.dwg
PLOT STYLE: ELLG16

REVISIONS:

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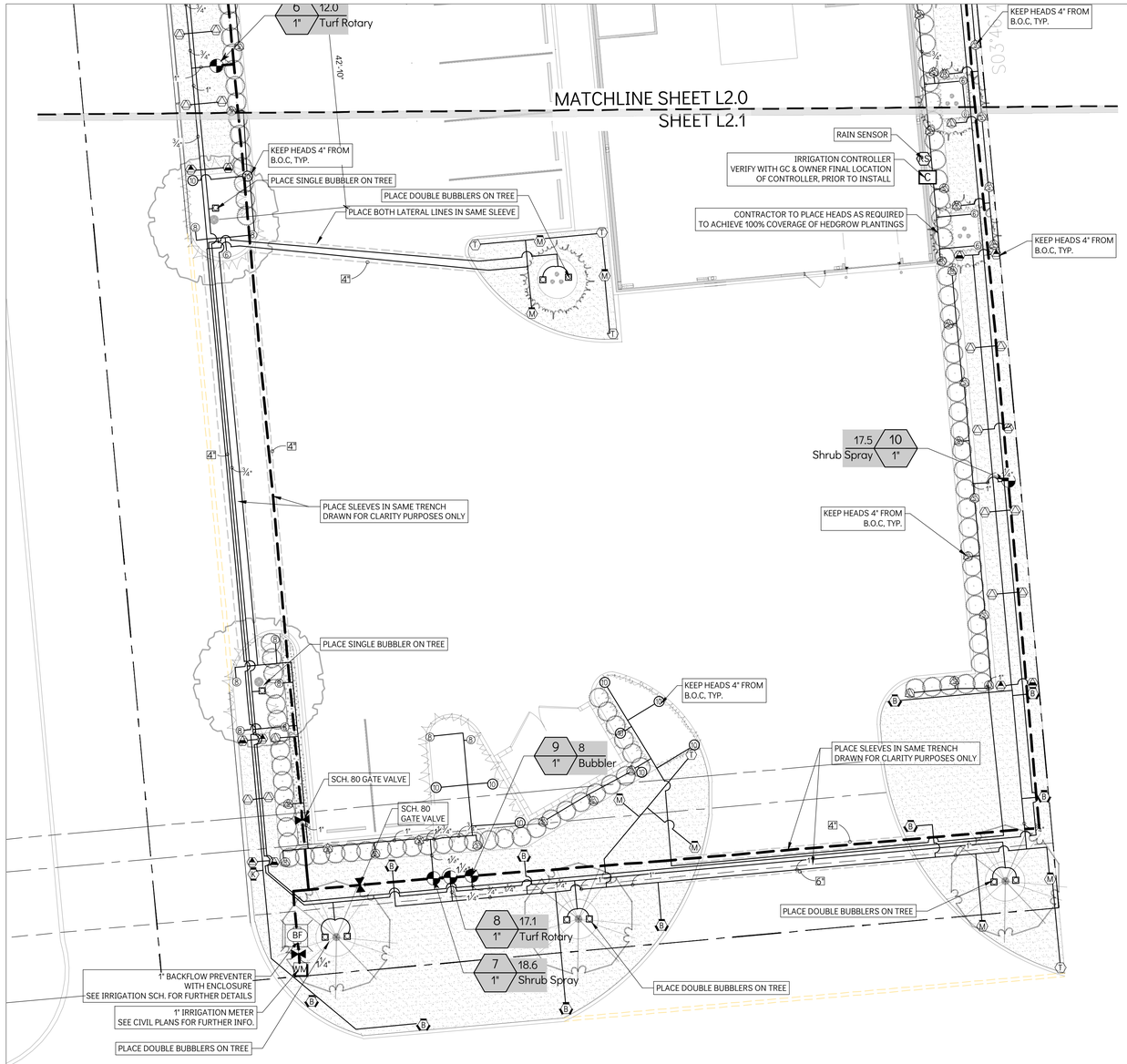
ORIGINAL SCALE: 1" = 10'-0"
ORIGINAL SIZE: 36" x 24"

SHEET: L2.0



VALVE SCHEDULE

NUMBER	MODEL	SIZE	TYPE	GPM	PIPE	DESIGN PSI	FRICTION LOSS	VALVE LOSS	PSI	PSI @ POC	PRECIP
1	HUNTER PGV-101G	1"	BUBBLER	16	214.2	30	3.08	1.94	35.0	42.5	3.88 in/h
2	HUNTER PGV-101G	1"	SHRUB SPRAY	18.2	189.2	30	3.09	2.69	35.8	44.5	2.25 in/h
3	HUNTER PGV-101G	1"	TURF ROTARY	14.24	357.9	30	2.29	1.65	33.9	40.6	0.39 in/h
4	HUNTER PGV-101G	1"	SHRUB SPRAY	16.62	208.0	30	2.07	2.15	34.2	41.8	2.02 in/h
5	HUNTER PGV-101G	1"	BUBBLER	6	558.9	30	3.56	1.9	35.5	39.4	3.4 in/h
6	HUNTER PGV-101G	1"	TURF ROTARY	12.04	401.0	40	3.67	1.78	45.5	51.1	0.47 in/h
7	HUNTER PGV-101G	1"	SHRUB SPRAY	18.56	256.9	30	3.54	2.81	36.4	43.1	2.26 in/h
8	HUNTER PGV-101G	1"	TURF ROTARY	17.09	384.2	35	4.09	2.31	41.4	47.6	0.41 in/h
9	HUNTER PGV-101G	1"	BUBBLER	8	308.3	30	1.28	1.9	33.2	37.3	3.99 in/h
10	HUNTER PGV-101G	1"	SHRUB SPRAY	17.51	236.1	30	4.85	2.45	37.3	45.4	2.62 in/h
11	HUNTER PGV-101G	1"	SHRUB SPRAY	18.85	159.8	30	1.17	2.91	34.1	43.2	3.1 in/h
12	HUNTER PGV-101G	1"	SHRUB SPRAY	19.01	203.1	30	1.65	2.96	34.6	43.8	2.88 in/h

CRITICAL ANALYSIS

Generated: 2023-09-07 15:46

P.O.C. NUMBER: 01
Water Source Information:

FLOW AVAILABLE
Water Meter Size: 1"
Flow Available 19.88 GPM

PRESSURE AVAILABLE
Static Pressure at POC: 60 PSI
Elevation Change: 5.00 ft
Service Line Size: 1"
Length of Service Line: 5 ft
Pressure Available: 57 PSI

DESIGN ANALYSIS
Maximum Station Flow: 19.01 GPM
Flow Available at POC: 19.88 GPM
Residual Flow Available: 0.87 GPM

Critical Station: 6
Design Pressure: 40 PSI
Friction Loss: 3.34 PSI
Fittings Loss: 0.33 PSI
Elevation Loss: 0 PSI
Loss through Valve: 1.78 PSI
Pressure Req. at Critical Station: 45.5 PSI
Loss for Fittings: 0.1 PSI
Loss for Main Line: 0.97 PSI
Loss for POC to Valve Elevation: 0 PSI
Loss for Backflow: 3.64 PSI
Loss for Water Meter: 0.9 PSI
Critical Station Pressure at POC: 51.1 PSI
Pressure Available: 57 PSI
Residual Pressure Available: 5.93 PSI

North

0 5 10 20 30
SCALE: 1" = 10'-0"

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REGISTERED LANDSCAPE ARCHITECT
MATTHEW LOUDERBACK
3093
09/08/23

PROJECT: SHERWIN WILLIAMS-MAGNOLIA VILLAGE

CLIENT INFORMATION: HUFFCO SERVICES- BART HUFFAKER
103 LONGVIEW ST.
CONROE, TX 77301

PROJECT LOCATION: 13313 FM 1488
MAGNOLIA, TX 77354

SHEET TITLE: IRRIGATION PLAN & SCH.

PHASE: 100%
ISSUE: FOR PERMIT
DATE: 09/08/23
AUTHOR: ML
FILE: SHERWINMAGV.dwg
PLOT STYLE: ELLC4b

REVISIONS:

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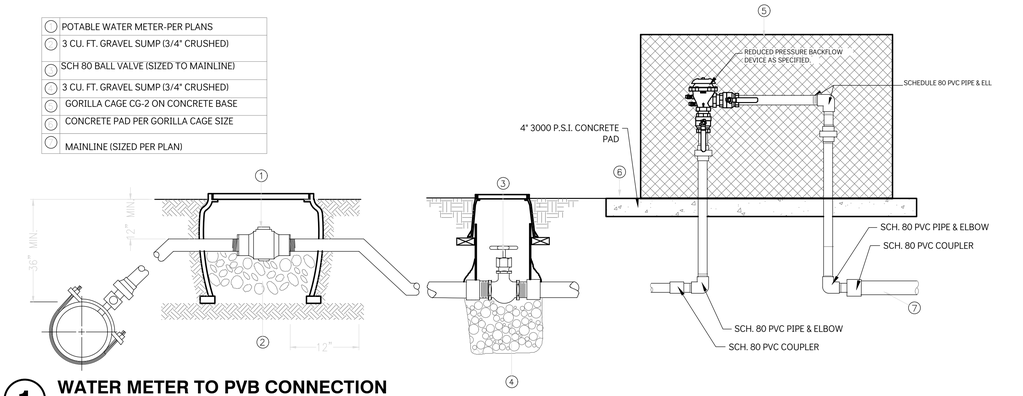
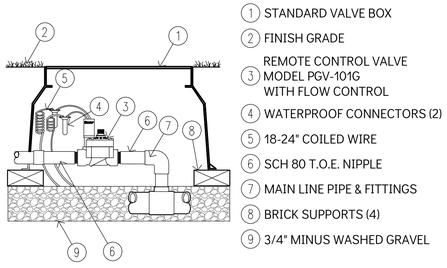
ORIGINAL SCALE: 1" = 10'-0"
ORIGINAL SIZE: 36" x 24"

SHEET: L2.1



1 WATER METER TO PVB CONNECTION

SECTION 3/4" = 1'-0"

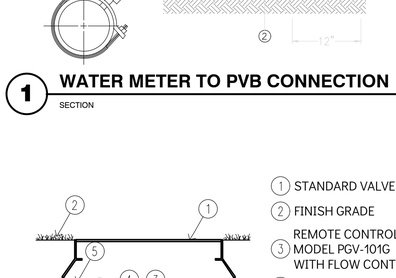


2 HUNTER PGV-101 REMOTE CONTROL VALVE

SECTION 1 1/2" = 1'-0"

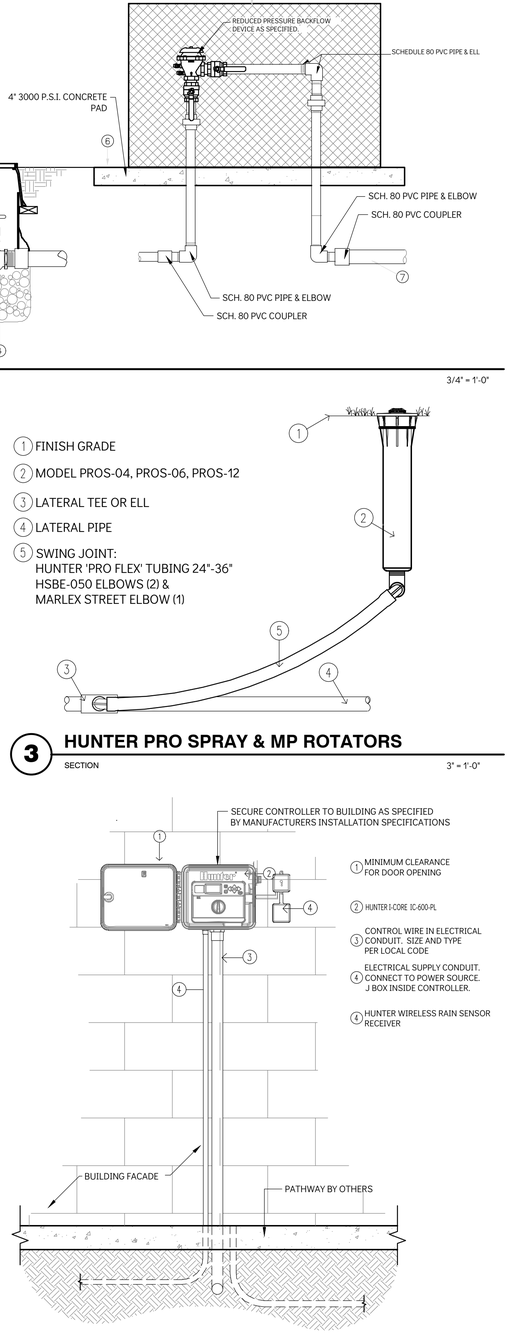
3 HUNTER PRO SPRAY & MP ROTATORS

SECTION 3" = 1'-0"



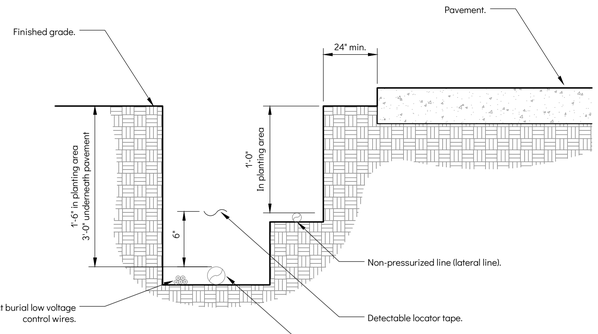
4 HUNTER BUBBLERS

SECTION 3" = 1'-0"



5 HUNTER I-CORE CONTROLLER WALL MOUNT

ELEVATION 1" = 1'-0"



NOTES:
1- See irrigation legend for mainline and lateral line pipe size and type.

2- Direct burial control wires shall be installed in Sch. 40 PVC electrical conduit if required.

3- 2-wire irrigation wire shall be installed in Sch. 40 PVC electrical conduit.

4- Detectable locator tape shall be located six inches (6") above the entire mainline run.

6 IRRIGATION TRENCHING

1 1/2" = 1'-0"

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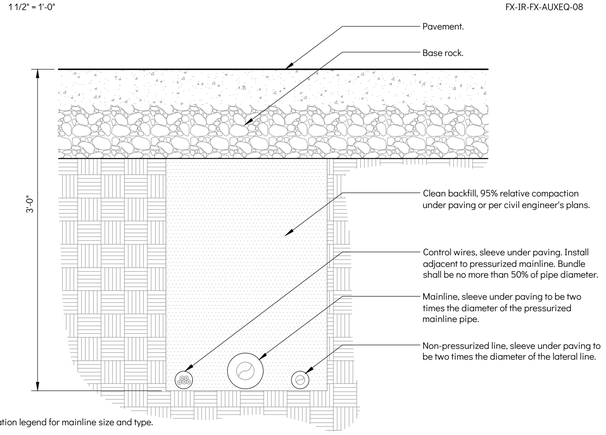
FX-IR-FX-AUXEQ-08



Notes:
1- See irrigation legend for mainline size and type.

2- All sleeves shall be Sch. 40 PVC pipe.

3- All sleeves shall extend 12" beyond the edge of pavement.

4- End of sleeves shall be located with a wooden stake or PVC pipe. Locators shall run continuously from the end of the sleeve to finished grade.

7 PIPE BENEATH PAVEMENT

1 1/2" = 1'-0"

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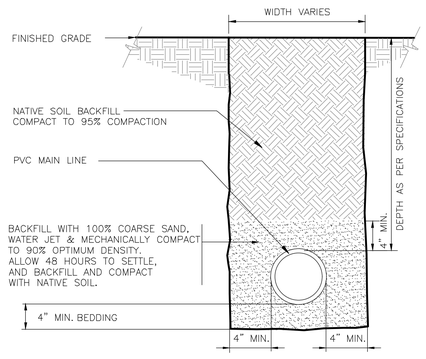
FX-IR-FX-AUXEQ-05



8 SLEEVE AT ROAD

1 1/2" = 1'-0" FX-IR-FX-AUXEQ-15

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OFFICE: 281.259.2610
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REGISTERED LANDSCAPE ARCHITECT — MATTHEW LOUDERBACK — 3093 — 09/08/23

PROJECT: SHERWIN WILLIAMS-MAGNOLIA VILLAGE

CLIENT INFORMATION: HUFFCO SERVICES- BART HUFFAKER
103 LONGVIEW ST.
CONROE, TX 77301

PROJECT LOCATION: 13313 FM 1488
MAGNOLIA, TX 77354

SHEET TITLE: IRRIGATION DETAILS

PHASE: 100%
ISSUE: FOR PERMIT
DATE: 09/08/23
AUTHOR: ML
FILE: SHERWINMAGV.dwg
PLOT STYLE: ELI.ctb

REVISIONS:

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ORIGINAL SCALE: AS NOTED
ORIGINAL SIZE: 36" x 24"

SHEET: L2.2

IRRIGATION NOTES & SPECIFICATIONS

Irrigation design based on the ELI Land Design Irrigation Plans dated 09/08/23.
Contractor shall refer to these plans to coordinate sprinkler and pipe locations.

The system has been designed to conform with the requirements of all applicable codes, laws, ordinances, rules, regulations and conventions. Should any conflict exist, the requirements of the codes shall prevail. It is the responsibility of the owner/installation contractor to ensure the entire system is installed as designed. Irrigation contractor responsible for obtaining all required permits according to federal, state and local laws.

The scope of work is shown on the plans, notes and details. The Irrigation Contractor must be licensed by TCEQ as a Licensed Texas Irrigator. Additional certification as a CERTIFIED IRRIGATION CONTRACTOR by the Irrigation Association is preferred but not required. All certification(s)/license(s) shall be current and in good standing.

THE WORK

The work specified in this section consists of furnishing all components necessary for the installation, testing, and delivery of a complete, fully functional automatic landscape irrigation system that complies with the irrigation plans, specifications, notes, and details. This work shall include, but not be limited to, the providing of all required material if applicable (pump(s), backflows, pipes, valves, fittings, controllers, wire, primer, glue, etc.), layout, protection to the public, excavation, assembly, installation, back filling, compacting, repair of road surfaces, controller and low voltage feeds to valves, cleanup, maintenance, guarantee and as-built plans.

All irrigated areas shall provide 100% head-to-head and emitter to emitter coverage from a fully automatic irrigation system with a rain (and freeze as appropriate) shut off device. If the rain shut off device is a rain sensor, it shall be installed to prevent activation by adjacent heads. Zones are prioritized first by public safety and then by hydraulic concerns. This sequencing will be a mandatory punch list item.

These plans have been designed to satisfy/exceed the Texas Commission on Environmental Equality (TCEQ) Subchapter F: Standards for Designing, Installing, and Maintaining Landscape Irrigation Systems (344.60-344.65). All products should be installed per manufacturer's recommendation. Contractor shall verify all underground utilities 72 hours prior to commencement of work.

It is the responsibility of the irrigation contractor to familiarize themselves with all grade differences, location of walls, retaining walls, structures and utilities. Do not willfully install the sprinkler system as shown on the drawings when it is obvious in the field that unknown obstruction, grade differences or differences in the area dimensions exist that might not have been considered in the engineering. Such obstructions, or differences, should be brought to the attention of the owner's authorized representative. In the event this notification is not performed, the irrigation contractor shall assume full responsibility for any revisions necessary.

Irrigation contractor shall repair or replace all items damaged by their work. Irrigation contractor shall coordinate their work with other contractors for the location and installation of pipe sleeves and laterals through walls, under roadways and paving, etc.

The contractor shall take immediate steps to repair, replace, or restore all services to any utilities which are disrupted due to their operations. All costs involved in disruption of service and repairs due to negligence on the part of the contractor shall be their responsibility.

POINT OF CONNECTION (P.O.C.)

The P.O.C. is a 1" potable meter (by others, see Civil Plan) and a 1" Backflow Preventer as specified. The P.O.C. must be capable of delivering a minimum of 19.01 GPM at 51.10 PSI downstream of the meter.

Contractor to verify these minimum conditions can be met prior to ordering of materials and the beginning of installation. If the conditions can not be met, the contractor must notify the designer prior to proceeding with the work. If the contractor does not do so, the contractor proceeds at their own risk and becomes responsible for any future work required to make the system perform as required.

THE PIPE

Pipe locations shown on the plan are schematic and shall be adjusted in the field. When laying out mainlines place a maximum of 18" away from either the back of curb, front of walk, back of walk, or other hardscape to allow for ease in locating and protection from physical damage. Install all lateral pipe near edges of pavement or against buildings whenever possible to allow space for plant root balls. Always install piping inside project property's boundary.

All pipes are to be placed in planting beds. If it is necessary to have piping under hardscapes, such as roads, walks, and patios, the pipes must be sleeved using Class 200 PVC with the sleeve diameter being twice the size of the pipe it is carrying with a minimum sleeve size of 2".

Pipe sizes shall conform to those shown on the drawings. No substitutions of smaller pipe sizes shall be permitted, but substitutions of larger sizes may be approved. All damaged and rejected pipe shall be removed from the site at the time of said rejection.

Mainline shall be Sch 40 solvent-weld with Sch 40 PVC solvent-weld fittings.

Contractor to ensure all mainline piping is properly restrained using mechanical joint fittings, restraining collars, threaded rods, thrust blocks, etc.., as and where required. Contractor shall refer to pipe manufacturers recommended installation practices for further direction.

PVC pipe joint compound and primer: The PVC cement shall be Weld-On 705 CLEAR (slow-drying, heavy duty) and the primer shall be Weld-On P70 (purple tinted, compatible with cement), or approved equals.

ELECTRICAL POWER SUPPLY

Electrical supply for controller to be provided by irrigation contractor. Contractor to coordinate with local utilities for the installation of, and connection to, site available power supplies for required electrical components as set forth in the irrigation plans.

All electrical work is to comply with the National Electrical Code and any, and all, other applicable electrical codes, laws and regulations. A licensed electrician shall perform all electrical hook-ups. Power for each controller/CCU shall be a dedicated 120 volt, 20 amp circuit unless otherwise specified in the plans. Power for each pump to be according to pump specifications indicated in these plans.

WIRING

Irrigation control wire shall be thermoplastic solid copper, single conductor, low voltage irrigation controller wire; suitable for direct burial and continuous operation at rated voltages.

Tape and bundle control wires every 10' and run alongside the mainline. At all turns in direction make a 2' coil of wire. At all valve boxes coil wire around a 3/4" piece of PVC pipe to make a coil using 30 linear inches of wire. Make electrical connections with 3MDBY/R connectors.

Number all wires, using an electrical book of numbers, according to the plans. Number wires in all valve boxes, junction boxes and at the controller.

Controller and Pump station Control Panel grounding - Contractor to utilize 4"X8'X5/8" copper grounding plates, 5/8"X10' copper clad grounding rods, 'One Strike' CAD wells at all connection points, #6 insulated copper wire, and earth contact material. Install these and other required components as outlined in the detail. Contractor to verify that the earth to ground resistance does not exceed 10 ohms. Contractor shall provide a written certification, on a licensed electrical contractors letter head, showing the date of the test, controller/pump location, and test results. Each controller/pump shall be so grounded and tested. Each component must have its own separate grounding grid, unless they are sitting side by side, in which case up to two controllers can share a common grounding grid.

LAYOUT

Lay out irrigation system mainlines and lateral lines. Make the necessary adjustments as required to take into account all site obstructions and limitations prior to excavating trenches.

Stake all sprinkler head locations. Adjust location and make the necessary modifications to nozzle types, etc. required to ensure 100% head to head coverage. Refer to the Edge of Pavement Detail on the Irrigation Detail Sheet.

Spray heads shall be installed 4" from sidewalks or curbed roadways and 12" from uncurbed roadways and building foundations. Rotors shall be installed 4" from sidewalks or curbed roadways, 12" from building foundations, and 36" from uncurbed roadways.

Shrub heads shall be installed on 1/2" funny pipe. The risers shall be set at a minimum of 12" off sidewalks, roadway curbing, building foundations, and/or any other hardscaped areas. Shrub heads shall be installed to a standard height of 4" below maintained height of plants and shall be installed a minimum of 6" within planted masses to be less visible and offer protection.

Locate valves prior to excavation. Ensure that their location provides for easy access and that there is no interference with physical structures, plants, trees, poles, etc. Valve boxes must be placed a minimum of 12" and a maximum of 15" from the edge of pavement, curbs, etc. and the top of the box must be 2" above finish grade. No valve boxes shall be installed in turf areas without approval by the irrigation designer - only in shrub beds. Never install in sport field areas.

VALVES

Sequence all valves so that the farthest valve from the P.O.C. operates first and the closest to the P.O.C. operates last. The closest valve to the P.O.C. should be the last valve in the programmed sequence.

Adjust the flow control on each RCV to ensure shut off in 10 seconds after deactivation by the irrigation controller.

EQUIPMENT

All pop-up heads and shrub risers shall be pressure compensating. All pop-up heads shall be mounted on flex-type swing joints. All rotors shall be installed with PVC triple swing joints unless otherwise detailed.

All sprinkler equipment, not otherwise detailed or specified on these plans, shall be installed as per manufacturer's recommendations and specifications, and according to local and state laws.

TRENCHING

Excavate straight and vertical trenches with smooth, flat or sloping bottoms. Trench width and depth should be sufficient to allow for the proper vertical and horizontal separation between piping as shown in the pipe installation detail on the detail sheet.

Protect existing landscaped areas. Remove and replant any damaged plant material upon job completion. The replacement material shall be of the same genus and species, and of the same size as the material it is replacing. The final determination as to what needs to be replaced and the acceptability of the replacement material shall be solely up to the owner or owner's representative.

INSTALLATION

Solvent Weld Pipe: Cut all pipe square and deburr. Clean pipe and fittings of foreign material; then apply a small amount of primer while ensuring that any excess is wiped off immediately. Primer should not puddle or drip from pipe or fittings. Next apply a thin coat of PVC cement; first apply a thin layer to the pipe, next a thin layer inside the fitting, and finally another very thin layer on the pipe. Insert the pipe into the fitting. Insure that the pipe is inserted to the bottom of the fitting, then turn the pipe a 1/4 turn and hold for 10 seconds. Make sure that the pipe doesn't recede from the fitting. If the pipe isn't at the bottom of the fitting upon completion, the glue joint is unacceptable and must be discarded.

Pipes must cure a minimum of 30 minutes prior to handling and placing into trenches. A longer curing time may be required; refer to the manufacturer's specifications. The pipe must cure a minimum of 24 hours prior to filling with water.

BACK FILL

The Back fill 6" below, 6" above, and around all piping shall be of clean sand and anything beyond that in the trench can be of native material but nothing larger than 2" in diameter.

Main line pipe depth measured to the top of pipe shall be:
18" minimum for 3/4"-2 1/2" PVC with a 30" minimum at vehicular crossings;

Lateral line depths measured to top of pipe shall be:
12" minimum for 3/4"-3" PVC with a 30" minimum at vehicular crossings;

Contractor shall backfill all piping, both mainline and laterals, prior to performing any pressure tests. The pipe shall be backfilled with the exception of 2' on each side of every joint (bell fittings, 90's, tees, 45's, etc.). These joints shall not be backfilled until all piping has satisfactorily passed its appropriate pressure test as outlined below.

FLUSHING

Prior to the placement of valves, flush all mainlines for a minimum of 10 minutes or until lines are completely clean of debris, whichever is longer.

Prior to the placement of heads, flush all lateral lines for a minimum of 10 minutes or until lines are completely clean of debris, whichever is longer.

Use screens in heads and adjust heads for proper coverage avoiding excess water on walls, walks and paving.

TESTING

Soil: At a minimum of 2 locations on the site, soil tests for infiltration and texture shall be performed according to the USDA Soil Quality Test Kit Guide. The tests shall be documented in a USDA Soil Worksheet. (All of the above is available at http://soils.usda.gov/sqi/assessment/ test_kit.html) The completed worksheet shall be submitted to the owners representative for review/approval. Do not proceed without written direction from the owner/owner's representative.

Schedule testing with Owner's Representative a minimum of three (3) days in advance of testing.

Mainline: Remove all remote control valves and cap using a threaded cap on SCH 80 nipple. Hose bibs and gate valves shall not be tested against during a pressure test unless authorized by written permission from the owner. Fill mainline with water and pressurize the system to 125 PSI. Monitor the system pressure at two gauge locations; the gauge locations must be at opposite ends of the mainline. With the same respective pressures, monitor the gauges for two hours. There can be no loss in pressure at either gauge for solvent-welded pipe. If these parameters are exceeded, locate the problem; repair it; wait 24 hours and retry the test. This procedure must be followed until the mainline passes the test.

Lateral Lines: The lateral lines must be fully filled to operational pressure and visually checked for leaks. Any leaks detected must be repaired.

Operational Testing -Once the mainline and lateral lines have passed their respective tests, and the system is completely operational, a coverage test and demonstration of the system is required. The irrigation contractor must demonstrate to the owner, or his/her representative, that proper coverage is obtained and the system works automatically from the controller. This demonstration requires each zone to be turned on, in the proper sequence as shown on the plans, from the controller. Each zone will be inspected for proper coverage and function. The determination of proper coverage and function is at the sole discretion of the owner or owner's representative.

Upon completion of the operational test, run each zone until water begins to puddle or run off. This will allow you to determine the number of irrigation start times necessary to meet the weekly evapotranspiration requirements of the planting material in each zone. In fine sandy soils, it is possible no puddling will occur. If this is experienced, then theoretical calculations for run times will be required for controller programming.

SUBMITTALS

Pre-Construction: Deliver five (5) copies of submittals to Owner's Representative within ten (10) working days from date of Notice to Proceed. Furnish information in 3-ring binder with table of contents and index sheet. Index sections for different components and label with specification section number and name of component. Furnish submittals for components on material list. Indicate which items are being supplied on catalog cut sheets when multiple items are shown on one sheet. Owner's Representative. Incomplete submittals will be returned without review.

After project completion:
As a condition of final acceptance, the irrigation contractor shall provide the owner with:

1. Irrigations As-builts - shall be provided utilizing a sub-foot Global Navigation Satellite System (GNSS) to accurately locate all mainlines, sleeves, remote control valves, gate valves, independent wire runs, wire splice boxes, controllers, high voltage supply sources/conduit path, control mechanisms, sensors, wells and water source connections in Texas State Plane Zone # 3, NAD 83, and CORS 96 format with altitude measurements made as Height Above Ellipsoid (HAE). The data collected shall be in POINT format and include an ID for each data point with Manufacturer, Type, Size, and Depth. All mainline and independent runs of wire shall be located every 30' for straight runs and at every change of direction. Sleeves will be located at end points and every 20' of length. All underground items shall include depth in inch format. These POINTS once collected shall be imported into an AutoCAD DWG geo-referenced base file to be labeled accordingly. The completed AS-Built shall be a Geo-Referenced DWF file and delivered to the owner on a compact disk (CD).

2. Controller charts - Upon completion of "as-built" prepare a controller chart. Indicate on the chart the area controlled by a remote control valve (using a different color for each zone). This chart shall be reduced to a size that will fit inside of the controller door. The reduction shall be hermetically sealed inside two 2ml pieces of clear plastic.

3. Grounding Certification - Provide ground certification results for each controller and pump panel grounding grid installed. This must be on a licensed electrician letter head indicating location tested (using IR plan symbols), date, time, test method, and testing results.

INSPECTIONS AND COORDINATION MEETINGS REQUIRED - Contractor is required to schedule, perform, and attend the following, and demonstrate to the owner and/or owners representative to their satisfaction, as follows:

1. Pre-construction meeting - Designer and contractor to review entire install process and schedule with owner/general contractor.
2. Mainline installation inspection(s) - all mainline must be inspected for proper pipe, fittings, depth of coverage, backfill. and installation method
3. Mainline pressure test - All mainline shall be pressure tested according to this design's requirements
4. USDA Soil Quality Tests for infiltration/texture
5. Coverage and operational test
6. Final inspection
7. Punch list inspection

FINAL ACCEPTANCE

Final acceptance of the irrigation system will be given after the following documents and conditions have been completed and approved. Final payment will not be released until these conditions are satisfied.

1. All above inspections are completed, documented, and approved by owner.
2. Completion and acceptance of `as-built' drawings.
3. Acceptance of required controller charts and placement inside of controllers.
4. All other submittals have be made to the satisfaction of the owner.

GUARANTEE: The irrigation system shall be guaranteed for a minimum of one calendar year from the time of final acceptance.

MINIMUM RECOMMENDED
IRRIGATION MAINTENANCE PROCEDURES

1. Every irrigation zone should be checked monthly and written reports generated describing the date(s) each zone was inspected, problems identified, date problems repaired, and a list of materials used in the repair. At minimum, these inspections should include the following tasks:

A. Turn on each zone from the controller to verify automatic operation.

B. Check schedules to ensure they are appropriate for the season, plant and soil type, and irrigation method. Consult an I.A. certified auditor for methods used in determining proper irrigation scheduling requirements.

C. Check remote control valve to ensure proper operation.

D. Check setting on pressure regulator to verify proper setting, if present.

E. Check flow control and adjust as needed; ensure valve closure within 10-15 seconds after deactivation by controller.

F. Check for leaks - mainline, lateral lines, valves, heads, etc.

G. Check all heads as follows:

1. Proper set height (top of sprinkler is 1" below mow height)
2. Verify head pop-up height - 4" in turf, 6" min. in ground cover, and pop-up on riser in shrub beds.
3. Check wiper seal for leaks - if leaking, clean head and re-inspect.
4. If still leaking, replace head with the appropriate head with pressure regulator and built-in check valve.
5. All nozzles checked for proper pattern, clogging, leaks, correct make & model, etc. - replace as needed
6. Check for proper alignment - perfectly vertical; coverage area is correct; minimize over spray onto hardscapes.
7. Riser height raised/lowered to accommodate plant growth patterns and ensure proper coverage.
8. Verify the pop-up riser retracts after operation. If not, repair/replace as needed.

H. Check controller/C.C.U. grounds for resistance (10 ohms or less) once per year. Submit written reports.

I. Check rain shut-off device monthly to ensure it functions properly.

J. Inspect all filters monthly and clean/repair/replace as needed.

K. Inspect backflow devices by utilizing a properly licensed backflow inspector. This should be done annually, at minimum.

L. Inspect all valve boxes to ensure they are in good condition, lids are in place and locked.

M. Check pump stations for proper operation, pressures, filtration, settings, etc. - refer to pump station operations manual.

N. Check and clean intake screens on all suction lines quarterly, at minimum. Clean and/or repair, as needed.

O. Winterize, if applicable, as weather in your area dictates. Follow manufacturer recommendations and blow out all lines and equipment using compressed air. Perform seasonal startup of system as per manufacturer recommendations.

P. Conduct additional inspections, maintenance tasks, etc. that are particular for your site.

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Call 811 two business days before digging

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FAX: 281.259.2622

www.elilanddesign.com

REGISTERED LANDSCAPE ARCHITECT
MATTHEW LOUDERBACK
3093
09/08/23

PROJECT:
SHERWIN WILLIAMS-MAGNOLIA VILLAGE

PROJECT LOCATION:
13313 FM 1488
MAGNOLIA, TX 77354

CLIENT INFORMATION:
HUFFCO SERVICES- BART HUFFAKER
103 LONGVIEW ST.
CONROE, TX 77301

SHEET TITLE:
IRRIGATION SPEC'S

PHASE: 100%
ISSUE: FOR PERMIT
DATE: 09/08/23
AUTHOR: ML
FILE: SHERWINMAGV.dwg
PLOT STYLE: ELI.ctb

REVISIONS:

#	
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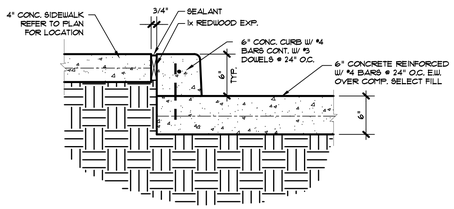
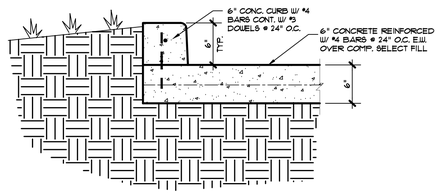
ORIGINAL SCALE: N/A
ORIGINAL SIZE: 36" x 24"

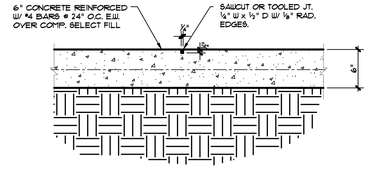
SHEET: L2.3



1 TYP. CURB @ SIDEWALK
SCALE: 1½"=1'-0"

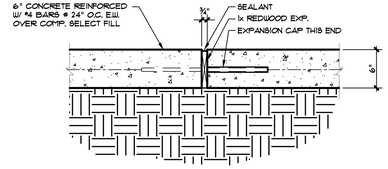


2 TYP. CONCRETE CURB DETAIL
SCALE: 1½"=1'-0"



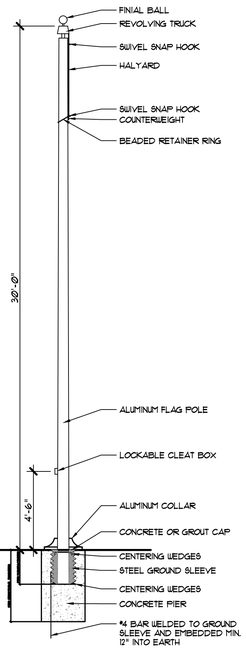
PROVIDE CONTROL JOINTS @ 20'-0" O.C. EA. WAY

3 TYP. CONTROL JOINT @ PAVING
SCALE: 1½"=1'-0"



PROVIDE EXPANSION JOINTS @ 60'-0" O.C. EA. WAY

4 TYP. EXPANSION JOINTS @ PAVING
SCALE: 1½"=1'-0"



FLAGPOLE NOTES:

FLAGPOLE SHALL BE EXTRUDED SATIN ALUMINUM CONE TAPERED TUBING WITH MINIMUM WALL THICKNESS OF $\frac{3}{32}$" AND HEAT TEMPERED.

HALYARD SHALL BE INTERNAL BRAIDED NYLON ROPE WITH BALL BEARING, NON-FOULING, REVOLVING TRUCK. PROVIDE TWO STAINLESS STEEL SWIVEL SNAP HOOKS AND COUNTERWEIGHTED BEADED RETAINER RING.

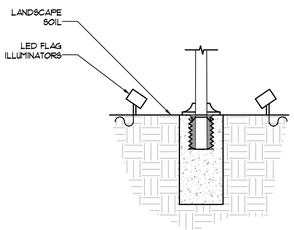
FINIAL BALL SHALL BE MANUFACTURER'S STANDARD FLUSH SEAMED GOLD ANODIZED BALL SIZED TO MATCH FLAGPOLE.

INSTALL MATCHING FINISH CLEATS PER MANUFACTURER'S DIRECTIONS AT HEIGHT INDICATED. CLEATS SHALL BE LOCATED IN A LOCKABLE CLEAT BOX OR INTERNAL TO THE FLAGPOLE WITH A LOCKABLE COVER. PROVIDED TWO (2) SETS OF KEYS.

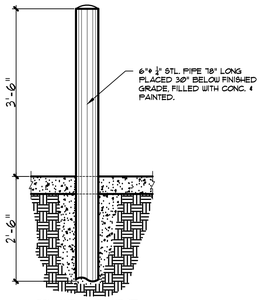
PROVIDE TWO (2) FLAGS: 4'-0" x 6'-0" NYLON AMERICAN FLAG WITH SEWN STRIPES AND EMBROIDERED STARS. INSTALL ONE ON FLAG POLE AND AIM SPOTLIGHTS. LEAVE ONE (1) FLAG IN BOX OR BAG IN MANAGER'S OFFICE.

AFTER INSTALLATION: CLEAN FLAGPOLE SURFACES. ADJUST DEVICES FOR SMOOTH OPERATION AND FLAG FUNCTION.

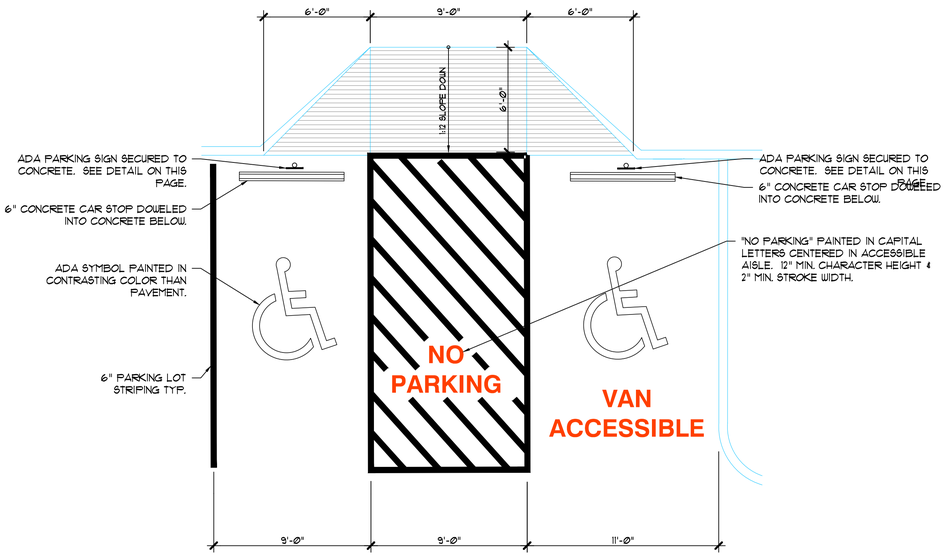
8 FLAG POLE
SCALE: ¼"=1'-0"



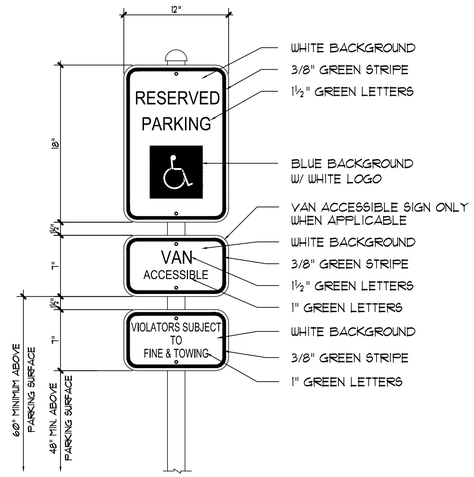
6 FLAG ILLUMINATION @ LANDSCAPE
SCALE: ¼"=1'-0"



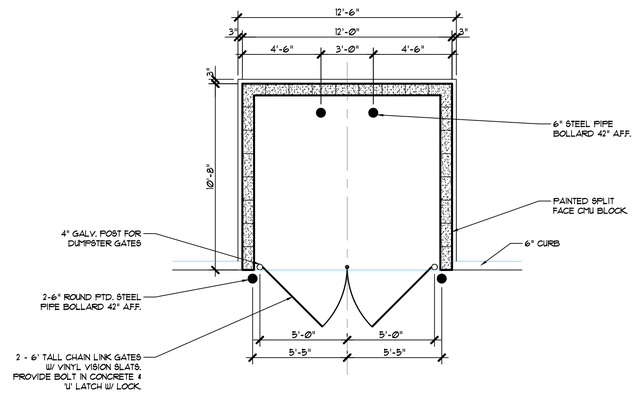
7 TYP. PIPE BOLLARD DETAIL
SCALE: ½"=1'-0"



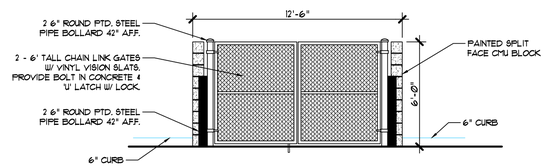
8 ENLARGED PARKING PLAN
SCALE: ¼"=1'-0"



9 ADA PARKING SIGN
SCALE: 1"=1'-0"



10 DUMPSTER ENCLOSURE DETAIL
SCALE: ¼"=1'-0"



10 DUMPSTER ENCLOSURE ELEVATION
SCALE: ¼"=1'-0"

HUFFCO SERVICES, INC.
DESIGN-BUILD GENERAL CONTRACTOR
103 LONGVIEW ST.
CONROE, TX. 77301
OFFICE: 936-756-2278
FAX: 936-788-5443

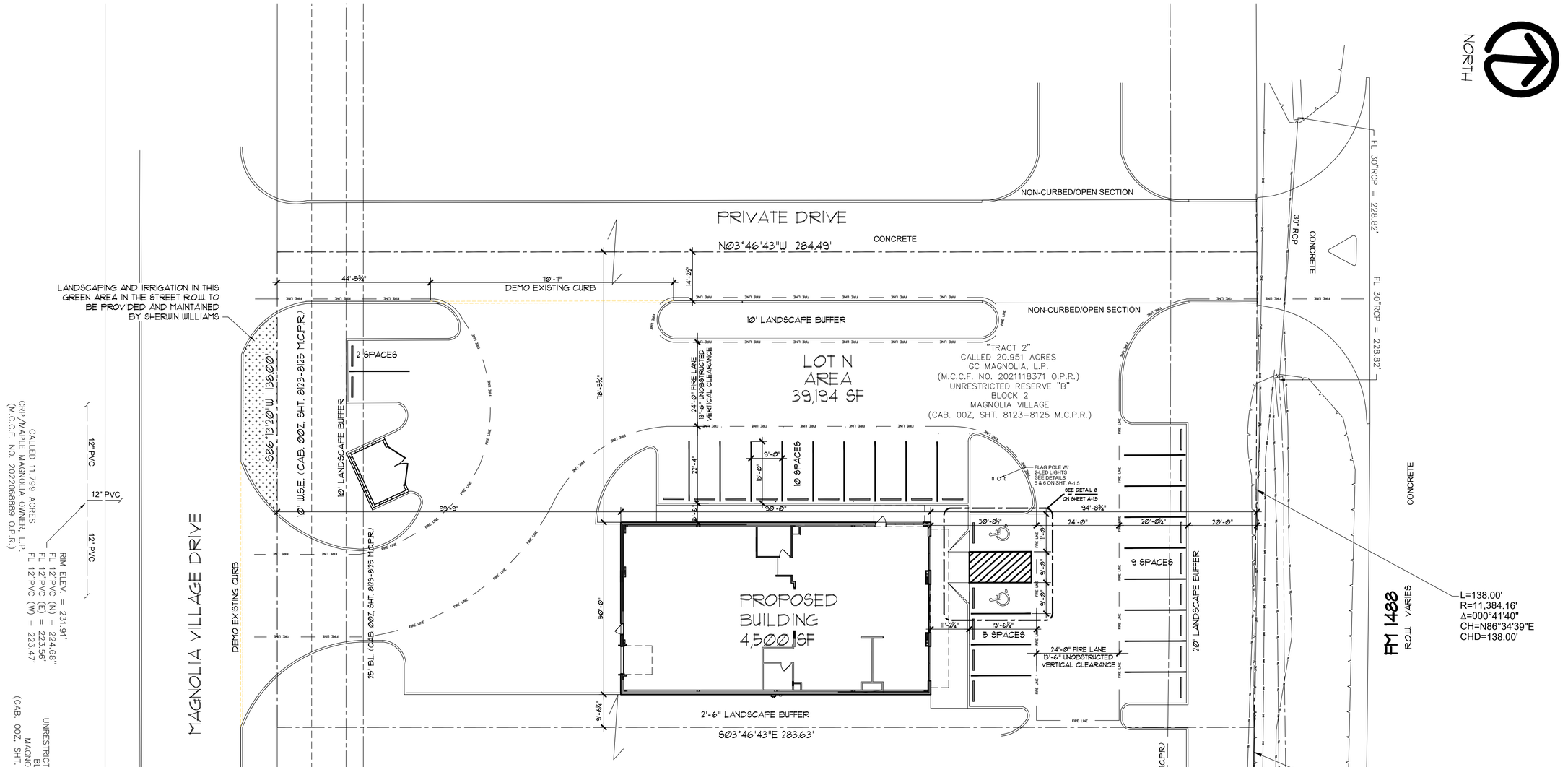
SHERWIN WILLIAMS

A NEW BUILDING FOR:
SHERWIN WILLIAMS
13313 F.M. 1488
MAGNOLIA, TX 77354

PROJECT #:	HS23-108
DATE:	11-10-2023
SCALE:	¼"=1'-0"

REVISIONS / ISSUE
1
2
3
4
5

SHEET
A-1.5



PARKING REQUIREMENTS	REQUIRED SPACES	PROVIDED SPACES
NUMBER OF PARKING SPACES	23	26

COMMERCIAL RETAIL PER UNIFIED DEVELOPMENT CODE 1 SPACE PER 200 SF - 4547/200=23

BUILDING SETBACK	REQUIRED SETBACK	PROVIDED SETBACK
MINIMUM FRONT YARD SETBACK	25 FEET	94 FEET 8¾ INCHES
MINIMUM SIDE YARD SETBACK	5 FEET	10 FEET
MINIMUM SIDE STREET SETBACK	10 FEET	14 FEET 2½ INCHES
MINIMUM REAR YARD SETBACK	10 FEET	10 FEET

LANDSCAPE SETBACK LOCATION	REQUIRED SETBACK	PROVIDED SETBACK
F.M. 1488	20 FEET	20 FEET
MAGNOLIA VILLAGE DRIVE	10 FEET	10 FEET
PRIVATE DRIVEWAY	10 FEET	10 FEET
INTERIOR LANDSCAPE SETBACKS	5 FEET	9 FEET 6¼ INCHES

NOTE: ANY DEVIATION FROM THE PLANNED DEVELOPMENT (PD) AGREEMENT REQUIRES THE DOCUMENT TO BE AMENDED TO ALLOW THE DEVIATION.

HUFFCO SERVICES, INC.
DESIGN-BUILD GENERAL CONTRACTOR
103 LONGVIEW ST.
CONROE, TX. 77301
OFFICE: 936-756-2278
FAX: 936-788-5443

SHERWIN WILLIAMS
COVER THE EARTH

A NEW BUILDING FOR:
SHERWIN WILLIAMS
13313 F.M. 1488
MAGNOLIA, TX 77354

PROJECT #:	HS23-108
DATE:	9-5-2023
SCALE:	1" = 15'-0"

REVISIONS / ISSUE

1	REVISED PER CITY OF MAGNOLIA COMMENTS 11-9-2023
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SHEET
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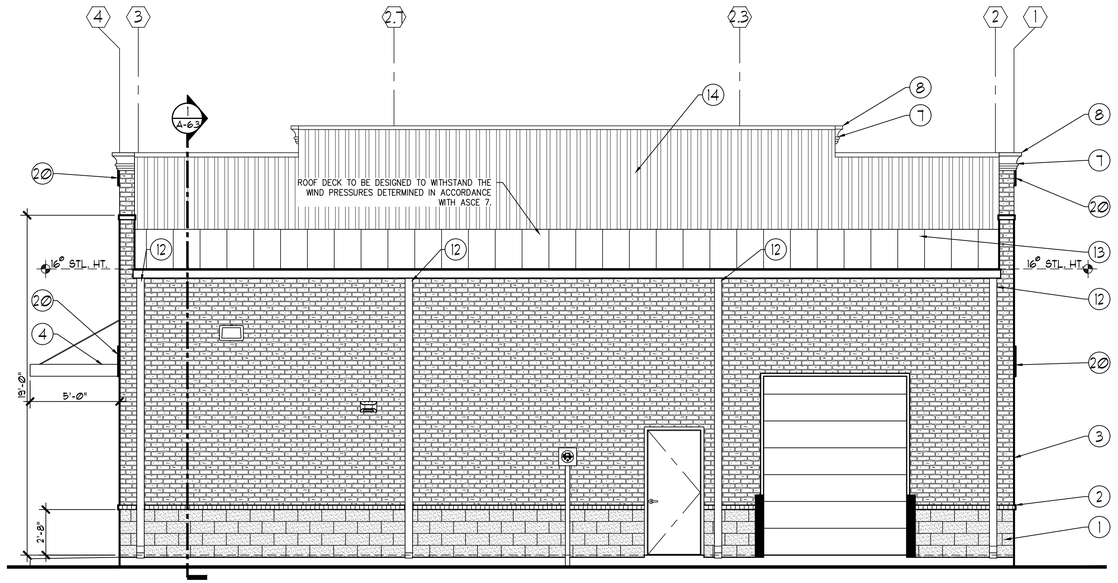
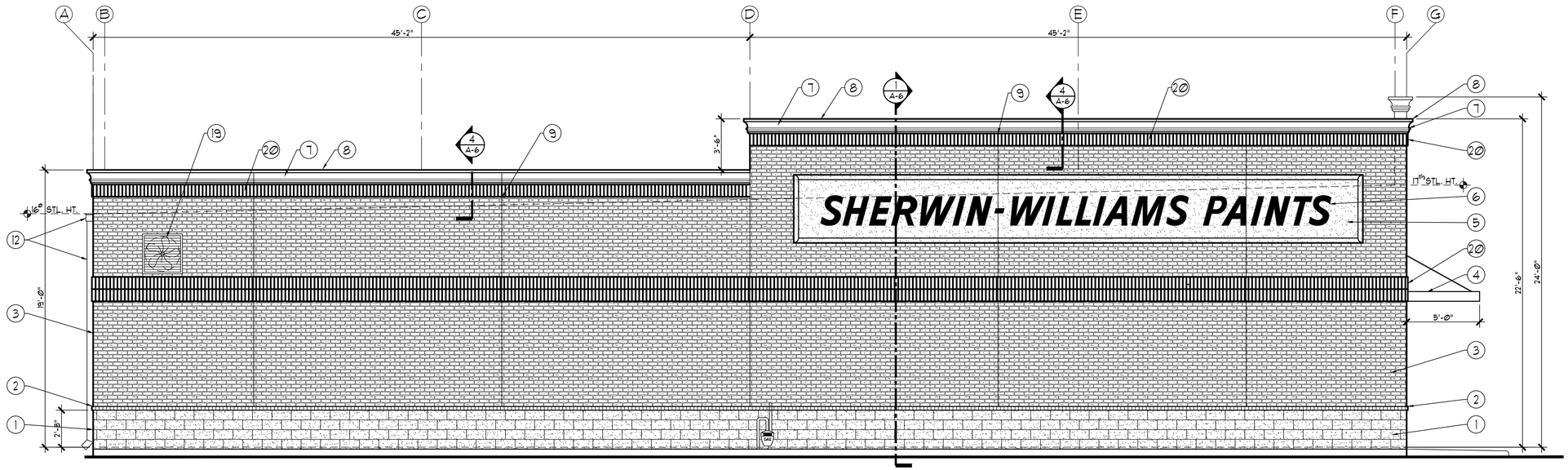


REAR ELEVATION

SCALE: ¼"=1'-0"



LEFT ELEVATION

SCALE: ¼"=1'-0"

EXTERIOR FINISH SCHEDULE

1. 4 COURSES OF 4"x8"x16" COLORED SPLIT-FACE CMU BLOCK WAINSCOT W/ WEEPS @ 32" O.C. & BRICK TIES AT INDUSTRY STANDARD SPACING. HCM, #702 LIMESTONE CREAM W/ HCM, WHITE LIMESTONE MORTAR.
2. KING SIZE FACE BRICK ROWLOK COURSE PROJECTED 1" FROM FACE. ACME, RAVENS CREEK BRICK W/ HCM, WHITE LIMESTONE MORTAR.
3. KING SIZE FACE BRICK W/ COLORED MORTAR, PROVIDE GALVANIZED BRICK TIES @ 18" O.C. VERTICALLY & 32" O.C. HORIZONTALLY. ACME, RAVENS CREEK BRICK W/ HCM, WHITE LIMESTONE MORTAR.
4. ALUMINUM FRAMED CANOPY WITH LIGHTS BOLTED THRU WALL TO STRUCTURAL STEEL BEYOND. COLOR, CLEAR ANODIZED ALUMINUM OR GALVALUME.
5. EIFS OVER 1½" FOAM MECHANICALLY FASTENED TO PLYWOOD BACKING. COLOR, FIELD-STO: FRENCH VANILLA, TRIM-STO: SPECTRAL.
6. SIGNAGE TO BE PROVIDED BY SHERWIN WILLIAMS.
7. EIFS COPING TO BE MECHANICALLY FASTENED TO BRICK, COLOR, STO: FRENCH VANILLA.
8. 24 Ga. MTL. PARAPET CAP. SEE EXTERIOR WALL DETAILS. COLOR @ BRICK, MEDIUM BRONZE. COLOR @ EIFS CROWN, ALMOND.
9. BRICK EXPANSION JOINT, TYP.
10. ALUMINUM STOREFRONT WINDOW FRAMES W/ GLASS AS SPECIFIED. CLEAR ANODIZED.
11. BI-PARTING AUTOMATIC DOORS WITH FIXED SIDE PANELS & TRANSOM AS SCHEDULED. COLOR CLEAR ANODIZED.
12. 26 Ga. PRE-FINISHED METAL GUTTER & DOWNSPOUT, COLOR, MEDIUM BRONZE.
13. 24 Ga. DOUBLE LOK ULTRA-DEK ROOF, SOLAR WHITE WITH 3" R-13 REINFORCED VINYL INSULATION BELOW.
14. 26 Ga. 'PBU' METAL PANELS, POLAR WHITE, OVER 7/8" HAT CHANNELS RUNNING HORIZONTAL AT 24" O.C.
15. NOT USED.
16. NOT USED.
17. NOT USED.
18. 30"x30" MAKE UP AIR LOUVER WITH MOTORIZED DAMPER INTERCONNECTED WITH EXHAUST FAN MOUNTED 12'-0" ABOVE FINISHED FLOOR.
19. 24"x24" EXHAUST FAN MOUNTED 12'-0" ABOVE FINISHED FLOOR WITH THERMOSTAT, BACK DRAFT DAMPER & EXTERIOR WEATHER LOUVER.
20. KING SIZE FACE BRICK DOUBLE SOLDIER COURSE PROJECTED 1" FROM FACE.

HUFFCO SERVICES, INC.
DESIGN-BUILD GENERAL CONTRACTOR
103 LONGVIEW ST.
CONROE, TX. 77301
OFFICE: 936-756-2278
FAX: 936-788-5443

SHERWIN WILLIAMS

A NEW BUILDING FOR:
SHERWIN WILLIAMS
13313 F.M. 1488
MAGNOLIA, TX 77354

PROJECT #:	HS23-108
DATE:	8-9-2023
SCALE:	1/4" = 1'-0"

REVISIONS / ISSUE

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SHEET
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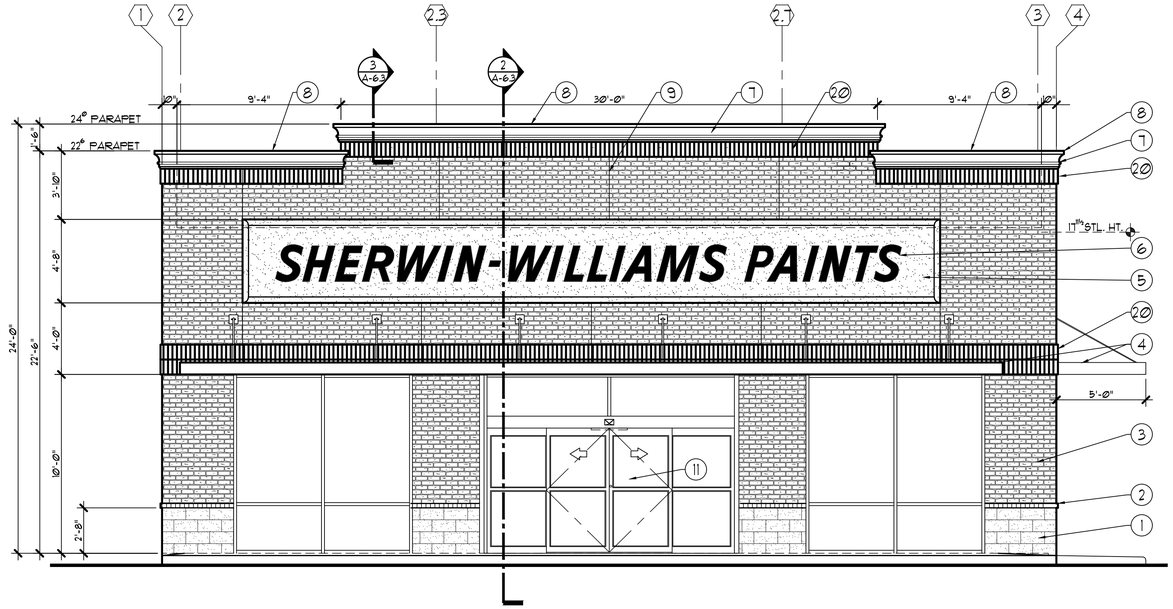
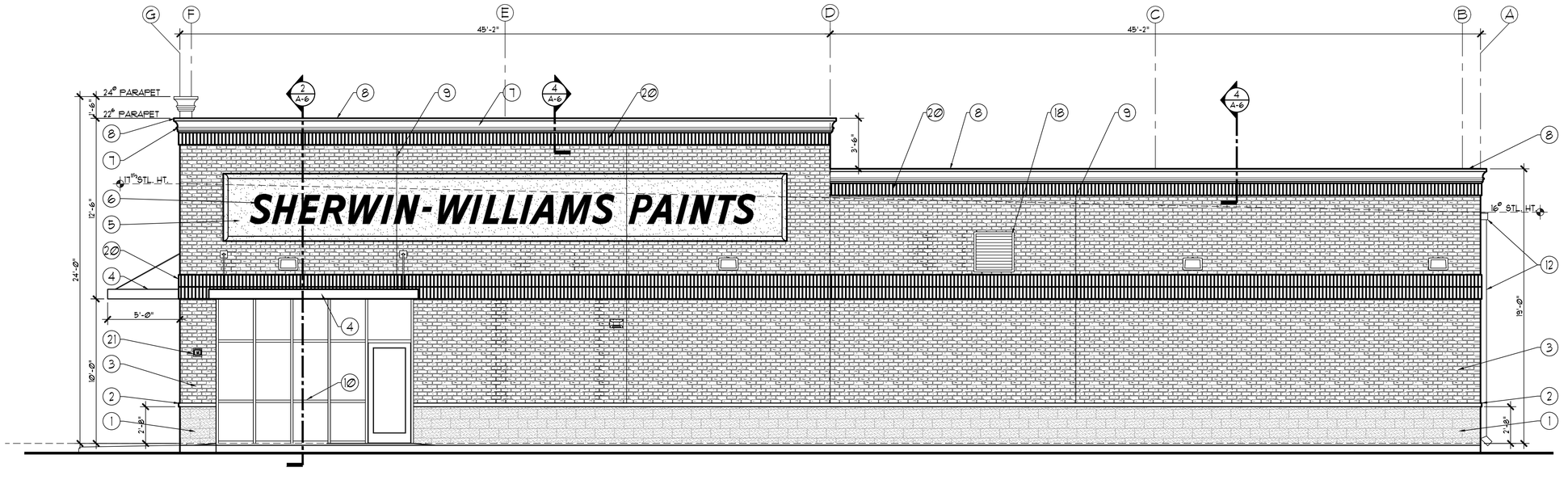


FRONT ELEVATION

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



RIGHT ELEVATION

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

EXTERIOR FINISH SCHEDULE

1. 4 COURSES OF 4"x8"x16" COLORED SPLIT-FACE CMU BLOCK WAINSCOT W/ WEEPS @ 32" O.C. & BRICK TIES AT INDUSTRY STANDARD SPACING. HCM, #702 LIMESTONE CREAM W/ HCM, WHITE LIMESTONE MORTAR.
2. KING SIZE FACE BRICK ROWLOK COURSE PROJECTED 1" FROM FACE. ACME, RAVENS CREEK BRICK W/ HCM, WHITE LIMESTONE MORTAR.
3. KING SIZE FACE BRICK W/ COLORED MORTAR, PROVIDE GALVANIZED BRICK TIES @ 18" O.C. VERTICALLY & 32" O.C. HORIZONTALLY. ACME, RAVENS CREEK BRICK W/ HCM, WHITE LIMESTONE MORTAR.
4. ALUMINUM FRAMED CANOPY WITH LIGHTS BOLTED THRU WALL TO STRUCTURAL STEEL BEYOND. COLOR, CLEAR ANODIZED ALUMINUM OR GALVALUME.
5. EIFS OVER 1½" FOAM MECHANICALLY FASTENED TO PLYWOOD BACKING. COLOR, FIELD-STO: FRENCH VANILLA, TRIM-STO: SPECTRAL.
6. SIGNAGE TO BE PROVIDED BY SHERWIN WILLIAMS.
7. EIFS COPING TO BE MECHANICALLY FASTENED TO BRICK, COLOR, STO: FRENCH VANILLA.
8. 24 Ga. MTL. PARAPET CAP. SEE EXTERIOR WALL DETAILS. COLOR @ BRICK, MEDIUM BRONZE. COLOR @ EIFS CROWN, ALMOND.
9. BRICK EXPANSION JOINT, TYP.
10. ALUMINUM STOREFRONT WINDOW FRAMES W/ GLASS AS SPECIFIED. CLEAR ANODIZED.
11. BI-PARTING AUTOMATIC DOORS WITH FIXED SIDE PANELS & TRANSOM AS SCHEDULED. COLOR CLEAR ANODIZED.
12. 26 Ga. PRE-FINISHED METAL GUTTER & DOWNSPOUT, COLOR, MEDIUM BRONZE.
13. 24 Ga. DOUBLE LOK ULTRA-DEK ROOF, SOLAR WHITE WITH 3" R-13 REINFORCED VINYL INSULATION BELOW.
14. 26 Ga. 'PBU' METAL PANELS, POLAR WHITE, OVER 7/8" HAT CHANNELS RUNNING HORIZONTAL AT 24" O.C.
15. NOT USED.
16. NOT USED.
17. NOT USED.
18. 30"x30" MAKE UP AIR LOUVER WITH MOTORIZED DAMPER INTERCONNECTED WITH EXHAUST FAN MOUNTED 12'-0" ABOVE FINISHED FLOOR.
19. 24"x24" EXHAUST FAN MOUNTED 12'-0" ABOVE FINISHED FLOOR WITH THERMOSTAT, BACK DRAFT DAMPER & EXTERIOR WEATHER LOUVER.
20. KING SIZE FACE BRICK DOUBLE SOLDIER COURSE PROJECTED 1" FROM FACE.
21. RECESS MOUNTED KNOX BOX MODEL #3274, DARK BRONZE, INTO BRICK @ 72" A.F.F.

HUFFCO SERVICES, INC.
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103 LONGVIEW ST.
CONROE, TX. 77301
OFFICE: 936-756-2278
FAX: 936-788-5443

SHERWIN WILLIAMS

A NEW BUILDING FOR:
SHERWIN WILLIAMS
13313 F.M. 1488
MAGNOLIA, TX 77354

PROJECT #:	HS23-108
DATE:	8-9-2023
SCALE:	1/4" = 1'-0"

REVISIONS / ISSUE

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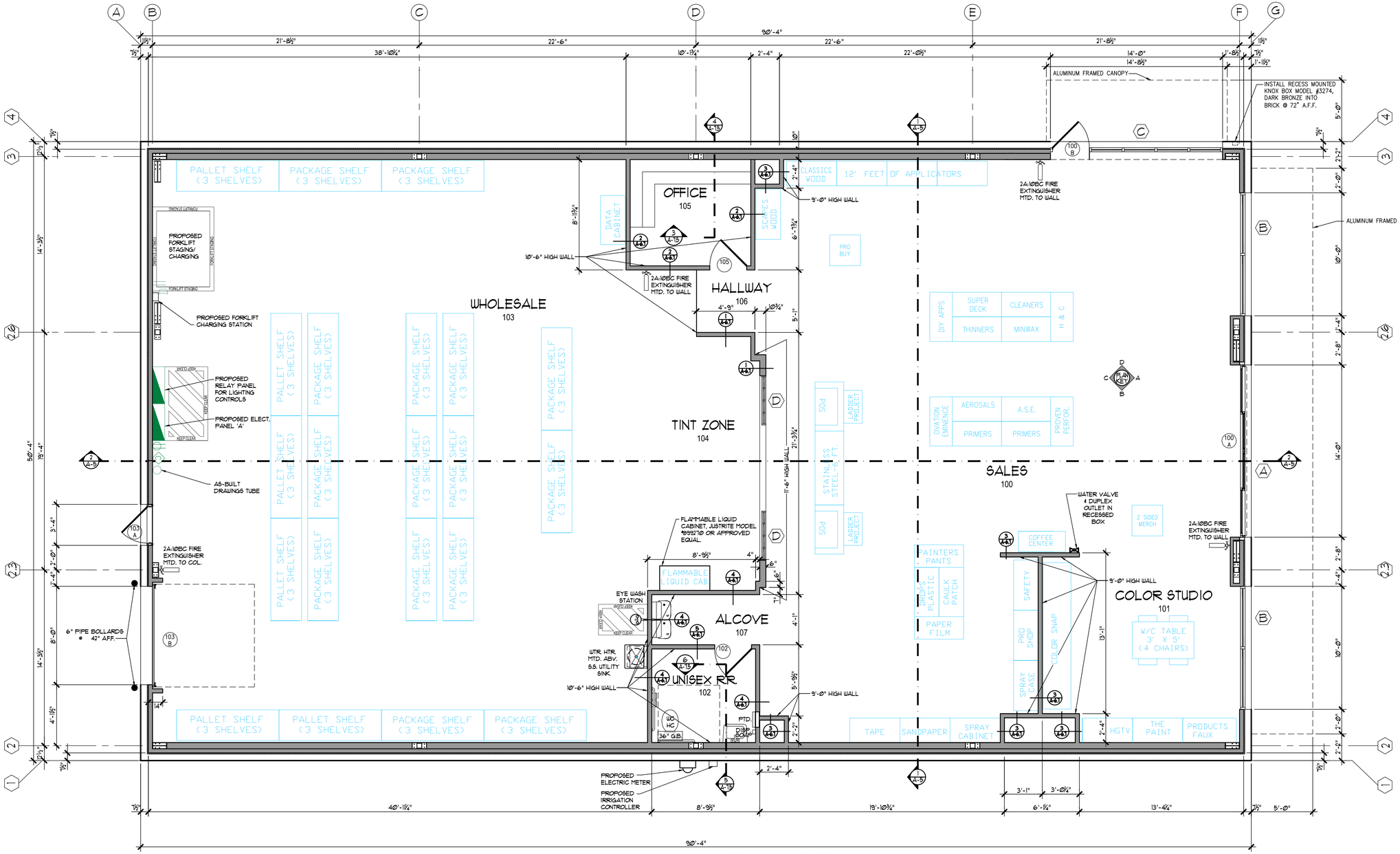
GENERAL PROJECT NOTES:

1. ALL CONTRACTORS, SUB-CONTRACTORS, MATERIAL SUPPLIERS AND LABORERS TO MAINTAIN A CLEAN AND ORDERLY SITE AT ALL TIMES DURING CONSTRUCTION.
2. PROPERLY STAGE ALL MATERIALS ON SITE TO PREVENT DAMAGE FROM WIND, RAIN & THEFT.
3. PROTECT ALL TENANT PROVIDED MATERIALS FROM DAMAGE & THEFT.
4. REMOVE ALL DEBRIS AND WASTE, DISPOSE ACCORDING TO THE CITY, COUNTY OR OTHER REGULATORY REQUIREMENTS.
5. INSPECT AREA AND PREMISES PRIOR TO BEGINNING WORK, START OF WORK CONSTITUTES ACCEPTANCE AND KNOWLEDGE OF SURROUNDING CONDITIONS
6. PRIOR TO BEGINNING WORK, CORRECT DEFICIENCIES SO THAT WORK MAY CONTINUE IN A SAFE AND WORKMANSHIP LIKE MANNER.
7. THE GENERAL CONTRACTOR SHALL BE FAMILIAR WITH THE REQUIREMENTS OF THE LEASE EXHIBITS.
8. CONTRACT DOCUMENTS BETWEEN THE LANDLORD AND THE CONTRACTOR SHALL NOT TAKE PRECEDENCE OVER ANY REQUIREMENT OF THE LEASE EXHIBITS.
9. PREVENT DAMAGE TO EXISTING STRUCTURES INDICATED TO REMAIN. REPAIR ANY DAMAGED STRUCTURAL OR FEATURE TO THE SAME STATE IT WAS PRIOR TO THE START OF CONSTRUCTION.
10. INSTALL WALLS, FINISHES, FEATURES AND ELEMENTS TO THE LEVEL AND GUIDELINES INDICATED.
11. ALL DIMENSIONS GIVEN ARE FROM EXTERIOR FACES OF WALLS OR THE FINISH FACE OF THE WALL NOT INCLUDING WALL COVERINGS.

FLOOR PLAN NOTES:

1. THE CONTRACTOR OR SUB-CONTRACTOR SHALL INSTALL STOREFRONT WINDOWS AND DOORS WHERE SHOWN. THESE OPENINGS SHALL CONTAIN DOUBLE GLAZED, INSULATED "E" GLASS.
2. THE CONTRACTOR OR SUB-CONTRACTOR SHALL INSTALL THE SPECIFIED 3-SECTIONED, WOOD FRAMED, WINDOW FEATURE IN THE WALL BETWEEN THE SALES AND TINT AREA. PRIME AND PAINT THE WINDOW. INSTALL CLEAR GLASS IN THE TWO END SECTIONS, LEAVING THE CENTER AS A CASED OPENING.
3. THE CONTRACTOR OR SUB-CONTRACTOR SHALL INSTALL A PLASTIC LAMINATE WORK COUNTER AND UPPER BOOK SHELF IN THE OFFICE AS INDICATED.
4. THE CONTRACTOR OR SUB-CONTRACTOR SHALL INSTALL A PRIMED AND PAINTED WOOD CAP AND CROWN MOULDING ON TOP OF THE "T" WALL IN THE COLOR STUDIO AREA AND ON THE PERIMETER WALLS OF THE OFFICE, RESTROOMS AND TINT/SALES WALL AS INDICATED.
5. THE CONTRACTOR OR SUB-CONTRACTOR SHALL INSTALL WHITE FRP ON THE WALL BEHIND THE UTILITY SINK AND EYE WASH STATION. THIS FEATURE SHALL EXTEND FROM THE SLAB TO 4 FEET A.F.F. AND TO 2 FEET BEYOND EACH SIDE OF THE EQUIPMENT AS SHOWN.
6. THE CONTRACTOR OR SUB-CONTRACTOR SHALL PAINT OR STAIN ALL INTERIOR AND EXTERIOR WALLS, DOORS, ROOF DECK, EXPOSED CONDUITS AS INDICATED. SHERWIN WILLIAMS SHALL PROVIDE ALL LIQUID PAINT PRODUCTS FOR APPLICATION BY THE CONTRACTOR.
7. SEE THE PAINTING SCHEMATIC FOR THE LOCATION OF ACCENT COLORS.
8. SEE THE PAINTING SCHEDULE CONTAINED IN THE DESIGN GUIDELINES AND THESE DRAWINGS FOR ALL PRODUCT AND COLOR SELECTIONS.

NOTE:
STORAGE OF NON-FLAMMABLE SOLIDS & NON-FLAMMABLE & NON-COMBUSTABLE LIQUIDS NOT TO EXCEED QUANTITIES LISTED IN TABLE 5003.11.1 OF THE 2012 IFC. ALL FLAMMABLE LIQUIDS & AEROSOLS TO BE STORED IN ACCORDANCE WITH 5704.3.4.1 & TABLE 5704.3.4.1 OF THE 2012 IFC.



FLOOR PLAN
SCALE: ¼"=1'-0"

HUFFCO SERVICES, INC.
DESIGN-BUILD GENERAL CONTRACTOR
103 LONGVIEW ST.
CONROE, TX. 77301
OFFICE: 936-756-2278
FAX: 936-788-5443

SHERWIN WILLIAMS

A NEW BUILDING FOR:
SHERWIN WILLIAMS
13313 F.M. 1488
MAGNOLIA, TX 77354

PROJECT #: HS23-108
DATE: 10-26-2023
SCALE: ¼" = 1'-0"

REVISIONS / ISSUE
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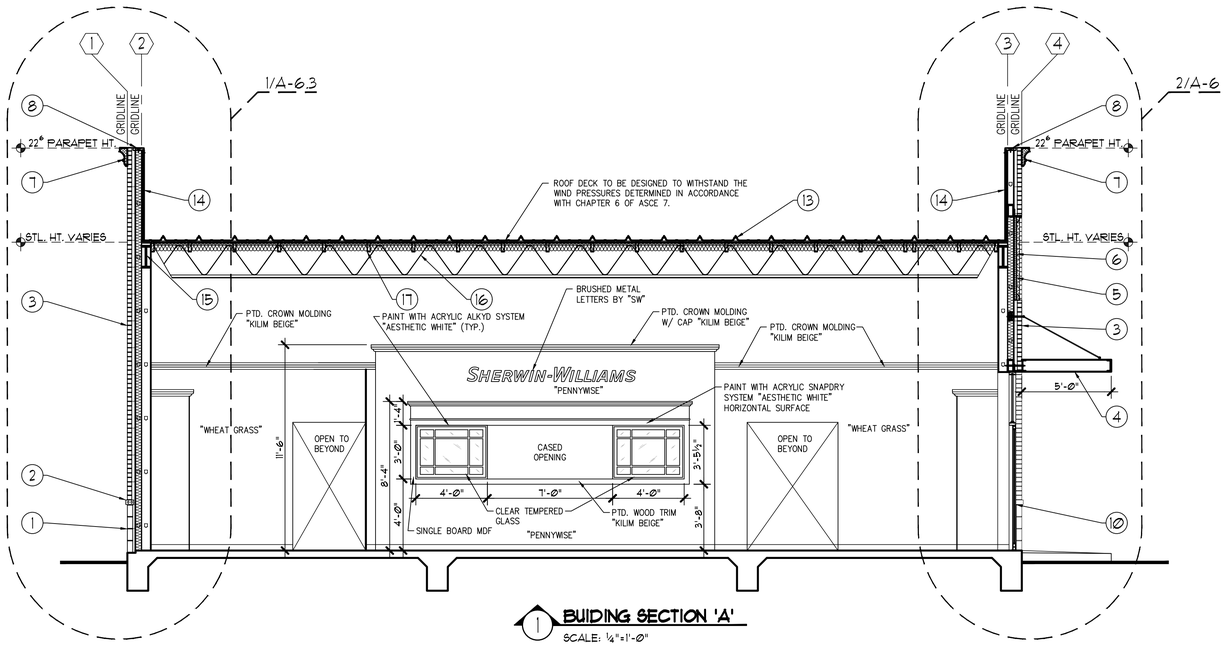
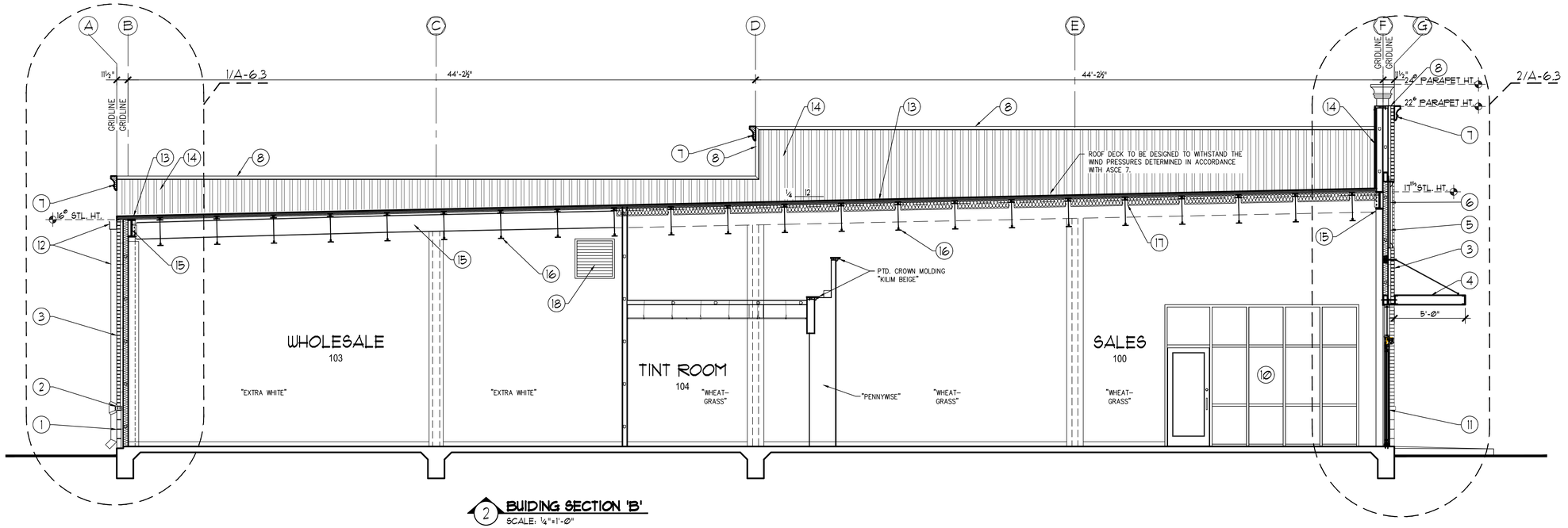


1 BUIDING SECTION 'A'
SCALE: ¼"=1'-0"



2 BUIDING SECTION 'B'
SCALE: ¼"=1'-0"

EXTERIOR FINISH SCHEDULE

1. 4 COURSES OF 4"x8"x16" COLORED SPLIT-FACE CMU BLOCK WAINSCOT W/ WEEPS @ 32" O.C. & BRICK TIES AT INDUSTRY STANDARD SPACING.
2. KING SIZE FACE BRICK ROWLOK COURSE PROJECTED 1" FROM FACE.
3. KING SIZE FACE BRICK W/ COLORED MORTAR, PROVIDE GALVANIZED BRICK TIES @ 18" O.C. VERTICALLY & 32" O.C. HORIZONTALLY.
4. ALUMINUM FRAMED CANOPY WITH LIGHTS BOLTED THRU WALL TO STRUCTURAL STEEL BEYOND.
5. EIFS OVER 1½" FOAM MECHANICALLY FASTENED TO PLYWOOD BACKING. COLOR TBD.
6. SIGNAGE TO BE PROVIDED BY SHERWIN WILLIAMS.
7. EIFS COPING TO BE MECHANICALLY FASTENED TO BRICK, COLOR TBD.
8. 24 Ga. MTL. PARAPET CAP. SEE EXTERIOR WALL DETAILS.
9. NOT USED.
10. ALUMINUM STOREFRONT WINDOW FRAMES W/ GLASS AS SPECIFIED.
11. BI-PARTING AUTOMATIC DOORS WITH FIXED SIDE PANELS & TRANSOM AS SCHEDULED.
12. 26 Ga. PRE-FINISHED METAL GUTTER & DOWNSPOUT, COLOR TBD.
13. 24 Ga. DOUBLE LOK ULTRA-DEK ROOF WITH 3" R-13 REINFORCED VINYL INSULATION BELOW.
14. 26 Ga. 'PBU' METAL PANELS, POLAR WHITE, OVER ⅞" HAT CHANNELS RUNNING HORIZONTAL AT 24" O.C.
15. STEEL MAINFRAMES PER MID-WEST STEEL FRAMING PLANS.
16. LONG BAY PURLIN PER MID-WEST STEEL FRAMING PLANS.
17. THERM-ALL HIGH 'R' BANDING SYSTEM WITH 6" OF R-19 VINYL INSULATION PAINTED WITH SHERWIN WILLIAMS DRY-FAL PAINT, COLOR: KILIM BEIGE.
18. 30"x30" MAKE UP AIR LOUVER WITH MOTORIZED DAMPER INTERCONNECTED WITH EXHAUST FAN MOUNTED 12'-0" ABOVE FINISHED FLOOR.

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SHERWIN WILLIAMS

A NEW BUILDING FOR:
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13313 F.M. 1488
MAGNOLIA, TX 77354

PROJECT #:	HS23-108
DATE:	8-9-2023
SCALE:	¼" = 1'-0"

REVISIONS / ISSUE
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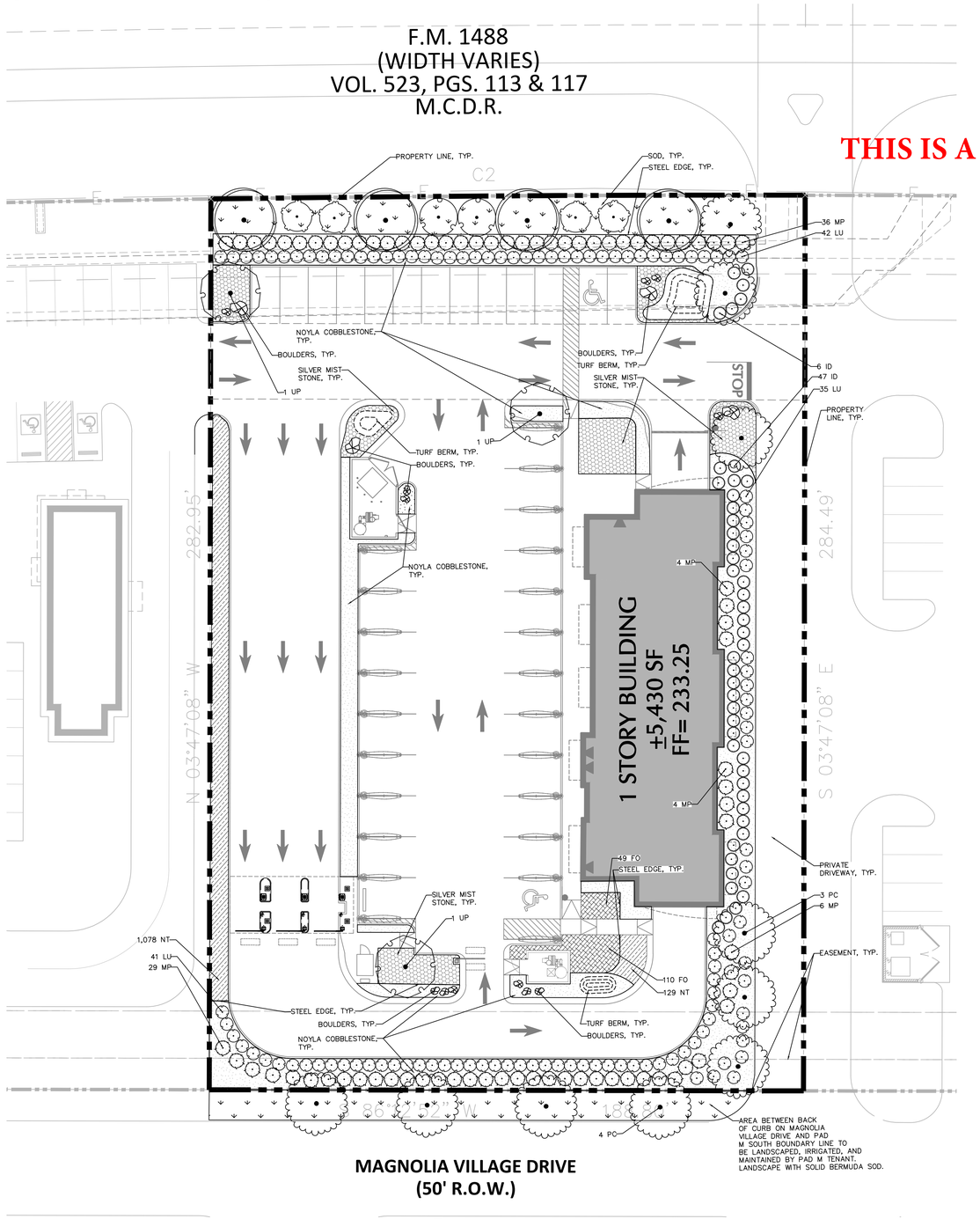
NOTE:
1) ALL NEWLY PLANTED AREAS TO BE IRRIGATED
2) REFERENCE LP501 FOR LANDSCAPING NOTES AND DETAILS



MAGNOLIA VILLAGE DRIVE
(50' R.O.W.)

THIS IS A REVISION MADE AFTER LAST MEETING

20 0 5 10 20
SCALE: 1 INCH = 20 FEET

CITY OF MAGNOLIA COMPLIANCE CHART

ORDINANCE SECTION	DESCRIPTION/REQUIRED	PROPOSED	COMPLIANCE
Planned Development District Section IV. Project/Plan Description Landscape Requirements	1 Canopy Tree every 45 LF: Magnolia Village Drive: 173'/45'= 4 Trees F.M. 1488: 173'/45'= 4 Trees Private Driveway: 240'/45'= 6 Trees	Magnolia Village Drive: 4 Trees F.M. 1488: 4 Trees Private Driveway: 6 Trees	COMPLIES
	1 Ornamental/Evergreen Tree every 30 LF along F.M. 1488: F.M. 1488: 173'/30'= 6 Trees	F.M. 1488: 6 Ornamental Trees	COMPLIES
	1 shrub every 30" (2.5') O.C. for F.M. 1488, Magnolia Village, and the private driveway: Magnolia Village Drive: 173'/2.5'= 70 Shrubs F.M. 1488: 173'/2.5'= 70 Shrubs Private Driveway: 240'/2.5'= 96 Shrubs	Magnolia Village Drive: 70 Shrubs F.M. 1488: 70 Shrubs Private Driveway: 96 Shrubs	COMPLIES
	A tree required every 15 parking spaces 34 Parking Spaces/15 = 3 Trees Required	3 Trees proposed in Parking area	COMPLIES

PLANT SCHEDULE

TREES	KEY	QTY	BOTANICAL / COMMON NAME	SIZE	ROOT
	CB	4	CATALPA BIGNONIOIDES / SOUTHERN CATALPA	3" CAL.	B&B
	CC	2	CERCIS CANADENSIS / EASTERN REDBUD	2.5" CAL.	B&B
	LI	4	LAGERSTROEMIA INDICA / CRAPE MYRTLE	10' HT.	B&B
	PC	10	PISTACIA CHINENSIS / CHINESE PISTACHE	4" CAL.	B&B
	UP	3	ULMUS PUMILA / CHINESE ELM	3" CAL.	B&B
SHRUBS	**KEY**	**QTY**	**BOTANICAL / COMMON NAME**	**SIZE**	**ROOT**
	ID	47	ILEX CORNUTA 'DWARF BURFORD' / DWARF BURFORD HOLLY	5 GAL.	CONTAINER
	LU	118	LOROPETALUM CHINENSE RUBRUM 'PIILC-III' / PURPLE DAYDREAM®DWARF LOROPETALUM	5 GAL.	CONTAINER
	MP	79	MYRICA CERIFERA 'PUMILA' / DWARF WAX MYRTLE	5 GAL.	CONTAINER
GROUND COVERS	**KEY**	**QTY**	**BOTANICAL / COMMON NAME**	**SIZE**	**ROOT** **SPACING**
	FO	159	FESTUCA OVINA GLAUCA 'ELIJAH BLUE' / ELIJAH BLUE FESCUE	1 GAL.	CONTAINER 18" o.c.
	NT	1,207	NASSELLA TENUISSIMA / MEXICAN FEATHER GRASS	1 GAL.	CONTAINER 12" o.c.

BOULDER AND MULCH TYPES

4" DEPTH MIX OF 75% 2"–3" DIAMETER NOLYA COBBLESTONE AND 25% 1–1/2" DIAMETER OF SILVER MIST GRAVEL OVER COMMERCIAL–GRADE WEED BARRIER FABRIC. CONTRACTOR TO SUBMIT SAMPLE TO LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO PROCUREMENT. COBBLE AREAS SHALL BE EDGED WITH DURA–EDGE 3/16"X4" BROWN STEEL EDGING.

3" LAYER OF 1–1/2" SILVER MIST WITH STEEL EDGING OVER COMMERCIAL–GRADE WEED BARRIER FABRIC. CONTRACTOR TO SUBMIT SAMPLE TO LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO PROCUREMENT. STONE AREAS SHALL BE EDGED WITH DURA–EDGE 3/16"X4" BROWN STEEL EDGING.

24"–48" MOSS ROCK BOULDERS PARTIALLY BURIED AND PLACED TO APPEAR AS NATURAL OUTCROPPINGS. BOULDER SIZES TO BE APPROXIMATELY AS SCALED ON THE PLAN.

Date	Description	No.
Revisions		

JAYNE SPECTOR, PLA.
TEXAS LIC. NO. 3031

LANGAN
Langan Engineering and Environmental Services, Inc.
17220 Katy Freeway, First Floor, Suite 125
Houston, TX 77094
T: 281.675.7900 F: 281.675.7901 www.langan.com
TBPE FIRM REG. #F-13709

Project
13321 FM 1488
MAGNOLIA, TX 77354
MONTGOMERY MAGNOLIA TEXAS

Drawing Title
LANDSCAPE PLANTING PLAN

Project No.	Drawing No.
510057201	LP101
Date: 09/01/2023	
Drawn By: DH	
Checked By: TT/JS	

LANGAN
Project No. 510057201

Date: 11/21/2023 Time: 10:13 User: dholland Style Table: Langan.stb Layout: LP101 Document Code: 510057201-0501-LP101-0101

Site Plan Application Form

This form shall be submitted with each application for a site plan.

ORIGINAL SUBMITTAL STARTS HERE

CONTACT INFORMATION

Applicant

Langan Engineering and Environmental
Name

Gerardo Benavides, P.E.
Street Address

17220 Katy Freeway, Suite 125
City, State Zip

Houston, TX 77094
Phone

281-675-7955
Fax

gbenavides@langan.com
E-mail

Property Owner (if different)

GC Magnolia LP
Name

788 W. Sam Houston Parkway Suite 206
Street Address

Houston, Texas 77024
City, State Zip

713-271-5900
Phone

Fax

E-mail

Architect (if different)

a.23 Studios
Name

Burak Bekat
Street Address

711 East 9th Street
City, State Zip

Tucson, AZ 85719
Phone

520-245-4010
Fax

burak@a23studios.com
E-mail

Engineer/Land Surveyor (if different)

Langan Engineering and Environmental
Name

Kyle W. Bogardus, P.E.
Street Address

17220 Katy Freeway, Suite 125
City, State Zip

Houston, TX 77094
Phone

281-675-7955
Fax

gbenavides@langan.com
E-mail

Project Name: MCW TX1112 Magnolia Lot#: _____ Reviewer: _____

PROPERTY PROFILE

Site Address 13321 Farm to Market Rd 1488

Legal Description Being 1.231 acres (53,616 square feet) of land in the Hampton Tillons Survey, Abstract 556 Montgomery County, Texas and being a portion of Unrestricted Reserve "B" in MAGNOLIA VILLAGE, the plat thereof recorded in Cabinet Z, Sheet 8125 of the Montgomery County Map Records
(Subdivision) (Lot) (Block)

Current Zoning ETJ Boundary (as per City GIS Map 072723)

Present Use of Property

Tract of land is currently vacant - there is no existing use for this property

Proposed Use of the Property

Commercial - Part of a Master Plan development. Proposed use for this site is a automatic tunnel car wash facility, with self serve vacuum parking stalls.

Project site will have all site improvements per City of Magnolia Code of Ordinance.

Total Area of Site 53,616 SF

Project Name: MCW TX1112 Magnolia Lot#: _____ Reviewer: _____

Required Information

- ☒ One (1) completed application
- ☐ Five (5) copies of a complete submittal package, minimum 24 in. by 36 in. sheet size Submitted electronically
- ☒ All fees Previously Paid
- ☒ Proposed generalized land uses
- ☒ Areas counted towards open space ratio or landscape surface ratio (as appropriate), including annotation of the land area and general function (*e.g.*, buffer, drainage, passive recreation, etc.) of each open space tract or designated landscape area See sheet CS101
- ☒ Areas intended for dedication to City or other public entity
- ☒ Areas intended for common ownership by property owners' association
- ☒ Proposed site improvements, showing:
  - ☒ Location and dimensions (length and width of segments; curb radii) of proposed streets, sidewalks, and trails, including connections to existing streets, sidewalks, and trails
  - ☒ Access spacing and corner clearance measurements
  - ☒ Proposed building footprints and required and actual setback distances (not required for site plans that support single-family and duplex subdivision plats)
  - ☒ Proposed utility easements, including type and size of utility lines or facilities, and spacing of fire hydrants
  - ☒ Proposed drainage facilities and easements
  - ☒ Proposed motor vehicle parking spaces, including typical dimensions, spaces angles, and drive aisle widths, and location and dimensions of disabled parking spaces, and accessible routes
  - ☒ Proposed bicycle parking areas, number of spaces, and dimensions of maneuvering area around bicycle racks
- N/A ☐ Proposed loading areas, including loading space dimensions
  - ☒ Proposed garbage collection locations, including distances from dumpster enclosures to property lines
  - ☒ Proposed fire and emergency access lanes
  - ☒ Proposed location of street lighting
- N/A ☐ Location, materials, and height of proposed fences and walls
  - ☒ Required and proposed bufferyard widths
- ☒ Building elevation drawings, showing:
  - ☒ Building materials for all sides of nonresidential, mixed-use, and multi-family buildings
  - ☒ Materials and height of all structural screening
  - ☒ Canopies and awnings
  - ☒ Building heights
- ☒ Tables and calculations, showing:
  - ☒ Area of parcel proposed for development
  - ☒ Required and provided open space ratio or landscaped surface ratio
  - ☒ Base site area and net buildable area
  - ☒ Maximum and actual gross and net density
  - ☒ Total floor area for each proposed use
  - ☒ Lot, parcel, and tract areas (if a subdivision is proposed)

- ☒ Parking spaces required and provided, including disabled parking spaces and bicycle parking spaces; any credits or shared parking calculations; and whether spaces are on-street or off-street
- ☒ Park dedication
- ☒ Providers of sanitary sewer, potable water, telephone, and gas utilities
- N/A ☐ Elementary, middle, and high school (if residential development is proposed)

N/A ☐ Narrative sheets or documents:

- N/A ☐ Required justifications for cul-de-sacs, if cul-de-sacs are proposed
- N/A ☐ Parking study, if used to reduce parking requirements
- N/A ☐ Traffic study, or calculation of vehicle trips that shows that a complete traffic study is not necessary to demonstrate that the proposal will not significantly impact the transportation system
- ☒ Grading, drainage, and erosion control plans and drainage study
- ☒ Copy of recorded plat
- ☒ Copy of concept plan (if site is part of a larger development)

I, Gerardo Benavides (print or type name), certify with my signature below that the information included in my submittal packet is complete, true, and correct, to the best of my knowledge.

Gerardo Benavides _____ 11/09/2023 _____

Signature of Applicant Date

Project Name: MCW TX1112 Magnolia _____ Lot#: _____ Reviewer: _____

SITE DEVELOPMENT DRAWINGS
FOR
TX1112 MAGNOLIA MISTER CAR WASH
MAGNOLIA, TX 77354

Owner/Prepared for:

222 East 5th Street
Tucson, AZ 85705
(520) 615-4000

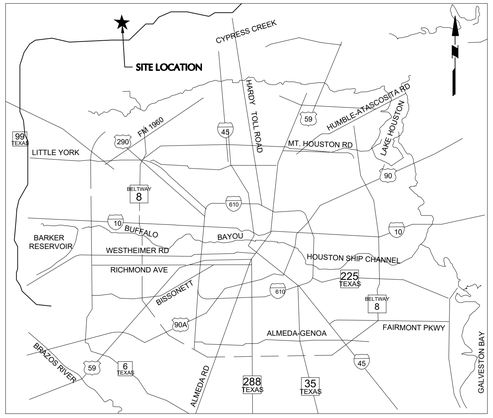
Prepared by:

LANGAN

c/o: Gerardo Benavides, PE
17220 Katy Freeway, Suite 125
Houston, TX 77094
(281) 675-7920

Surveyor:

1505 S TEXAS 6 #180
Houston, TX 77077
(281) 760-1656



MONTGOMERY COUNTY, TEXAS
VICINITY MAP - NTS
KEYMAP: 290L

MONTGOMERY COUNTY, TEXAS
LOCATION MAP - NTS

TEXAS UTILITIES CODE
TITLE 5 CHAPTER 251

UTILITY LOCATIONS AS SHOWN ON THIS PLAN ARE APPROXIMATE AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR, PER THE STATE OF TEXAS UNDERGROUND FACILITY DAMAGE PREVENTION AND SAFETY ACT, TO CONTACT THE UTILITY COMPANIES FOR MORE ACCURATE LOCATION PRIOR TO ANY EXCAVATION.

TO OBTAIN ADDITIONAL UTILITY INFORMATION OR TO ARRANGE FOR FIELD LOCATION OF EXISTING UTILITIES BEFORE EXCAVATION, CALL TEXAS 8-1-1 BY DIALING 8-1-1 FROM ANYWHERE IN THE STATE, OR BY DIALING 1-800-344-8377. THE UTILITY COMPANIES SHOWN MAY OR MAY NOT HAVE UTILITY LINES IN THE AREA.

CALL BEFORE YOU DIG !!

TEXAS LAW REQUIRES A MINIMUM (2) WORKING DAYS NOTICE BEFORE EXCAVATION (EXCLUDING WEEKENDS AND STATE HOLIDAYS)
"STOP & CALL"

TEXAS 8-1-1
1-800-344-8377

ON-SITE DRAWING INDEX

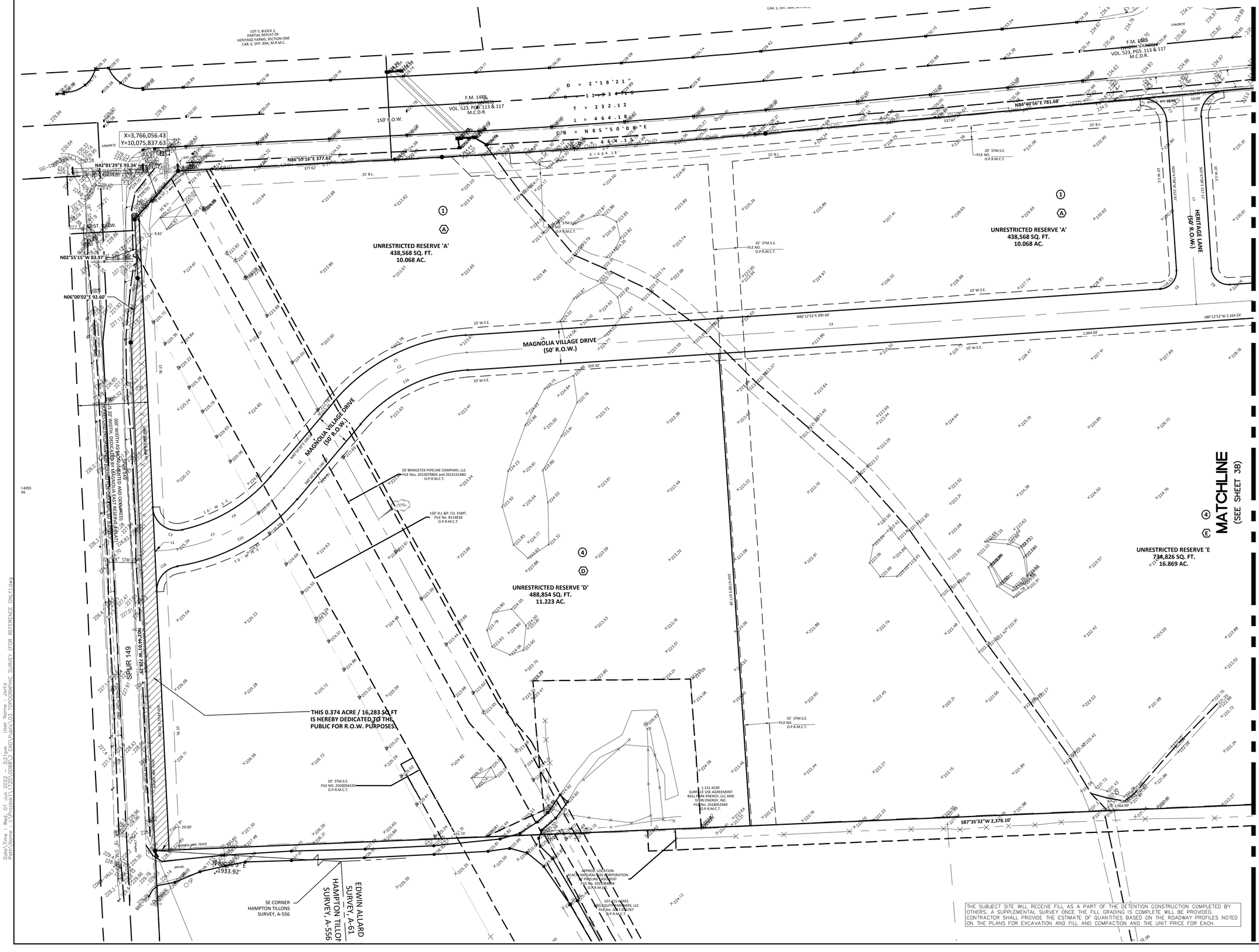
NUMBER	TITLE	ORIGINAL DATE	DRAWING REVISED
CS001	COVER SHEET	09/01/2023	-----
---	PLAT MAP	02/28/2021	-----
---	PLAT NOTES	02/28/2021	-----
---	ALTA/NSPS LAND TITLE AND TOPOGRAPHIC SURVEY	11/17/2021	-----
CS003	GENERAL NOTES AND LEGEND	09/01/2023	-----
CS102	SITE PLAN	09/01/2023	-----
CG101	GRADING PLAN	09/01/2023	-----
CG103	EXISTING DRAINAGE AREA MAP	09/01/2023	-----
CG104	PROPOSED DRAINAGE AREA MAP	09/01/2023	-----
CU101	UTILITY PLAN	09/01/2023	-----
CE101	SOIL EROSION & SEDIMENT CONTROL PLAN	09/01/2023	-----
LL101	LIGHTING PLAN	09/01/2023	-----
LP101	LANDSCAPE PLANTING PLAN	09/01/2023	-----
CE501	SOIL EROSION & SEDIMENT CONTROL DETAILS	09/01/2023	-----
CS501	SITE DETAILS I	09/01/2023	-----
CS502	SITE DETAILS II	09/01/2023	-----
CS503	SITE DETAILS III	09/01/2023	-----
CS504	SITE DETAILS IV	09/01/2023	-----
LL501	LIGHTING NOTES & DETAILS	09/01/2023	-----
LP501	LANDSCAPE NOTES AND DETAILS	09/01/2023	-----

RELEASE DATES

DATE	ISSUED FOR
09/01/2023	City of Magnolia Submission
11/09/2023	City of Magnolia Submission

STATE OF TEXAS
WALTER K BOGARDUS
119534
LICENSED PROFESSIONAL ENGINEER
11/9/23

W. KYLE BOGARDUS P.E.
LANGAN ENGINEERING AND ENVIORNMENTAL SERVICES, INC.
TBPE FIRM REG. #F-13709



N

GRAPHIC SCALE
100 0 50 100 200
(IN FEET)
1 inch = 100 ft.

FLOODPLAIN INFORMATION:
NO PORTION OF THE SUBJECT SITE IS LOCATED WITHIN THE 100 YEAR SPECIAL FLOOD HAZARD AREA ACCORDING TO THE MOST RECENT OFFICIAL INSURANCE RATE MAP, DATED AUGUST 18, 2014 MAP NUMBER 48339C0485G, ZONE(S) "X".

PRIMARY BENCHMARK: ELEV.=231.72'
FLOODPLAIN REFERENCE MARK NO. 100195 IS A BRASS DISK LOCATED FROM THE INTERSECTION OF FM 1488 AND FM 1774, SOUTHEAST ALONG FM 1774 0.4 MILES TO NICHOLS SAWMILL RD., SOUTH ALONG NICHOLS SAWMILL RD. 0.8 MILES TO THE BENCHMARK ON THE RIGHT.
ELEVATION: 231.72 (NAVD88)(2001 ADJUSTMENT)

TEMPORARY BENCHAMARK: ELEV.=229.00'
CUT "X" ON THE SOUTHWEST CORNER OF A CONCRETE BASE OF A TSCB PEDESTAL LOCATED AT SOUTHEAST CORNER OF THE INTERSECTION OF FM 1488 AND SPUR 149.
ELEVATION: 229.00

STATE OF TEXAS
GREGORY J. PATCH
89069
LICENSED
PROFESSIONAL
LAND SURVEYOR
JUN 01 2022

NOTE:
IN CASE OF CONFLICT BETWEEN DETAILS SHOWN ON THIS SHEET AND THE CITY MAGNOLIA DESIGN STANDARDS, THE MORE STRINGENT SHALL APPLY.

DATE	REVISION

MAGNOLIA VILLAGE DRIVE, HERITAGE LANE, COMMUNITY ROAD
MAGNOLIA, TX 77354

PUBLIC ROADS, UTILITIES AND STORM DRAINAGE TO SERVE MAGNOLIA VILLAGE RETAIL CENTER

TOPO SURVEY (FOR REFERENCE ONLY) SHEET 1 OF 2

LJA Engineering Inc.
1904 W. Grand Parkway N. Phone 713.953.5200
Suite 100 Fax 713.953.5026
Katy, Texas 77449 FRN-F-1386

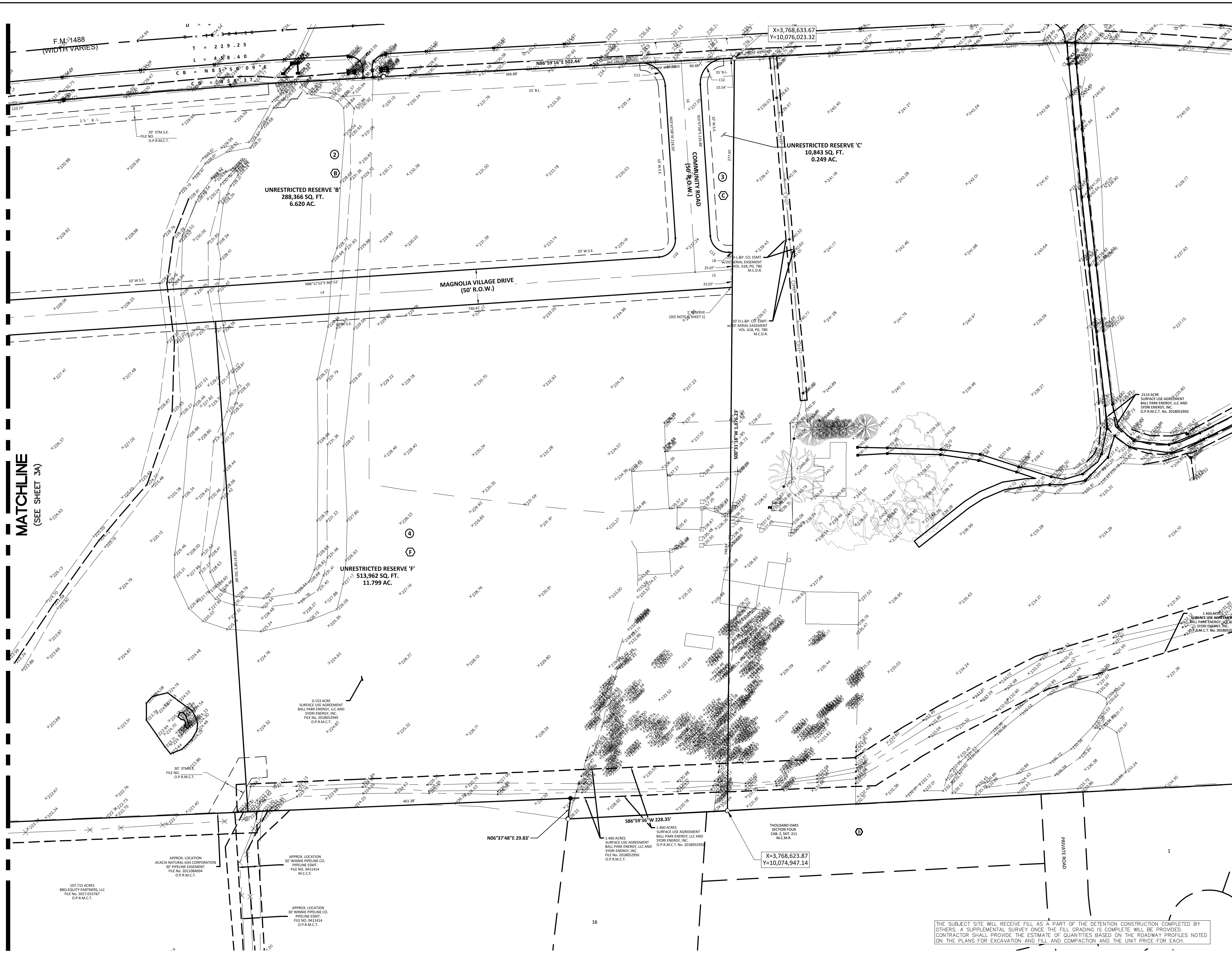
LJA PROJECT NO.: 1725-0068

SUBMITTED:
SCALE: 1"=40'
DATE: MONTH, YEAR
SURVEYED BY: XXXXXX
F B NO:

DESIGNED BY: JA
DRAWN BY: JA/AC
SHEET NO. 3A OF 27
CITY DWG NO:

PUBLIC PLANS – PUBLIC ROADS, UTILITIES AND STORM DRAINAGE TO SERVE MAGNOLIA VILLAGE RETAIL CENTER; CITY

Date\Time : Wed, 01 Jun 2022 – 3:21pm User Name : JonTiz
Path\Name : L:\Projects\1725\0068\2 CAD\Public\03 TOPOGRAPHIC SURVEY (FOR REFERENCE ONLY).dwg



THE SUBJECT SITE WILL RECEIVE FILL AS A PART OF THE DETENTION CONSTRUCTION COMPLETED BY OTHERS. A SUPPLEMENTAL SURVEY ONCE THE FILL GRADING IS COMPLETE WILL BE PROVIDED. CONTRACTOR SHALL PROVIDE THE ESTIMATE OF QUANTITIES BASED ON THE ROADWAY PROFILES NOTED ON THE PLANS FOR EXCAVATION AND FILL AND COMPACTION AND THE UNIT PRICE FOR EACH.

GRAPHIC SCALE

100 0 50 100 200

(IN FEET)
1 inch = 100 ft.

FLOODPLAIN INFORMATION:
NO PORTION OF THE SUBJECT SITE IS LOCATED WITHIN THE 100 YEAR SPECIAL FLOOD HAZARD AREA ACCORDING TO THE MOST RECENT OFFICIAL INSURANCE RATE MAP, DATED AUGUST 18, 2014 MAP NUMBER 48339C0485G, ZONE(S) "X".

PRIMARY BENCHMARK: ELEV.=231.72'
FLOODPLAIN REFERENCE MARK NO. 100195 IS A BRASS DISK LOCATED FROM THE INTERSECTION OF FM 1488 AND FM 1774, SOUTHEAST ALONG FM 1774 0.4 MILES TO NICHOLS SAWMILL RD., SOUTH ALONG NICHOLS SAWMILL RD. 0.8 MILES TO THE BENCHMARK ON THE RIGHT.
ELEVATION: 231.72 (NAVD88)(2001 ADJUSTMENT)

TEMPORARY BENCHMARK: ELEV.=229.00'
CUT "X" ON THE SOUTHWEST CORNER OF A CONCRETE BASE OF A TSCB PEDESTAL LOCATED AT SOUTHEAST CORNER OF THE INTERSECTION OF FM 1488 AND SPUR 149.
ELEVATION: 229.00

STATE OF TEXAS
GREGORY J. PATCH
89063
LICENSED
JUN 01 2022

NOTE:
IN CASE OF CONFLICT BETWEEN DETAILS SHOWN ON THIS SHEET AND THE CITY MAGNOLIA DESIGN STANDARDS, THE MORE STRINGENT SHALL APPLY.

DATE	REVISION

MAGNOLIA VILLAGE DRIVE, HERITAGE LANE, COMMUNITY ROAD
MAGNOLIA, TX 77354

PUBLIC ROADS, UTILITIES AND STORM DRAINAGE TO SERVE MAGNOLIA VILLAGE RETAIL CENTER

TOPO SURVEY (FOR REFERENCE ONLY) SHEET 2 OF 2

LJA Engineering Inc.
1904 W. Grand Parkway N. Suite 100 Katy, Texas 77449
Phone 713.953.5200 Fax 713.953.5026 FRN-F-1386

LJA PROJECT NO.: 1725-0068

SUBMITTED:	DESIGNED BY: JA
SCALE: 1"=40'	DRAWN BY: JA/AC
DATE: MONTH, YEAR	SHEET NO. 3B OF 27
SURVEYED BY: XXXXXX	CITY DWG NO:
F B NO:	

PUBLIC PLANS – PUBLIC ROADS, UTILITIES AND STORM DRAINAGE TO SERVE MAGNOLIA VILLAGE RETAIL CENTER; CITY

SCHEDULE B-10 ITEMS:

Fidelity National Title Insurance Company, GF No. SAT-41-4000412201337-CV,
effective date of May 4, 2022, issue date of May 12, 2022

10. The following matters and all terms of the documents creating or offering evidence of the matters (We must insert matters or delete this exception):

a. All leases, grants, exceptions or reservations of coal, lignite, oil, gas and other minerals, together with all rights, privileges, and immunities relating thereto, appearing in the Public Records whether listed in Schedule B or not. There may be leases, grants, exceptions or reservations of mineral interest that are not listed.

b. Standard Exceptions:

(i) Those liens created at closing, if any, pursuant to lender instructions. (Owner's Policy only)

(ii) Rights of parties in possession. (Owner's Policy only)

(Note: This exception may be deleted, at the request of the proposed insured, upon Company's receipt of an "Owner's Affidavit" acceptable to the Company, from the vested owner of the Land, at or prior to closing of the transaction contemplated hereby)

(iii) Rights of tenants in possession, as tenants only, under prior unrecorded leases, as amended.

(Note: This exception may be deleted or amended, at the request of the proposed insured, upon Company's receipt of an affidavit acceptable to the Company, disclosing all outstanding leases or rental agreements, receipt of a certified rent roll (if applicable), and verification that outstanding leases or rental documents do not include private rights in the Land, such as purchase options or rights of first refusal)

(iv) Visible or apparent easement(s) and/or rights of way on, over, under or across the Land.

(Note: This exception to be deleted upon Company's receipt, review and approval of a current survey of Land)

(v) The following exception will appear in any policy issued (other than the T-1R Residential Owner Policy of Title Insurance and the T-2R Short-Form Residential Mortgagee Policy) if the Company is not provided a survey of the Land, acceptable to the Company, for review at or prior to closing:

Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the title that would be disclosed by an accurate and complete land survey of the Land.

c. If any portion of the proposed loan and/or the Owner's Title Policy coverage amount includes funds for immediately contemplated improvements, the following exceptions will appear in Schedule B of any policy issued as indicated:

Owner and Loan Policy(ies): Any and all liens arising by reason of unpaid bills or claims for work performed or materials furnished in connection with improvements placed, or to be placed, upon the subject land. However, the Company does insure the insured against loss, if any, sustained by the Insured under this policy if such liens have been filed with the County Clerk of County, Texas, prior to the date hereof.

Owner Policy(ies) Only: Liability hereunder at the date hereof is limited to $ 0.00. Liability shall increase as contemplated improvements are made, so that any loss payable hereunder shall be limited to said sum plus the amount actually expended by the insured in improvements at the time the loss occurs. Any expenditures made for improvements, subsequent to the date of this policy, will be deemed made as of the date of this policy. In no event shall the liability of the Company hereunder exceed the face amount of this policy. Nothing contained in this paragraph shall be construed as limiting any exception or any printed provision of this policy.

Loan Policy(ies) Only: Pending disbursement of the full proceeds of the loan secured by the lien instrument set forth under Schedule A hereof, this policy insures only to the extent of the amount actually disbursed, but increase as each disbursement is made in good faith and without knowledge of any defect in, or objections to, the title up to the face amount of the policy. Nothing contained in this paragraph shall be construed as limiting any exception under Schedule B, or any printed provision of this policy.

d. Matters set forth on the plat recorded in Cabinet Z, Sheet 8123, Map Records of Montgomery County, Texas, as follows:

1. 25 foot Building Line along the north and south property lines; (SHOWN)

2. 10 foot Water and Sewer Easements along the south property line. (SHOWN)

e. Pipe line right-of-way granted to Sinclair Pipe Line Company by instrument recorded in Volume 106, Page 405 of the Deed Records of Montgomery County, Texas; as modified by that certain Partial Release of Easement and Pipeline Bill of Sale recorded under Montgomery County Clerk's File No. 2019010568. (NOT PLOTTABLE)

f. Easement for electric transmission and distribution lines, granted to Houston Lighting & Power Company by instrument recorded under Montgomery County Clerk's File No. 8114818. (NOT LOCATED ON SUBJECT)

g. Right-of-way agreement in favor of Winnie Pipeline Company, as set forth in instrument recorded under Montgomery County Clerk's File No. 9411414. (NOT PLOTTABLE)

h. Right-of-way agreements in favor of Acacia Natural Gas Company, as set forth in instruments recorded under Montgomery County Clerk's File Nos. 9732502, 9732503, 9732504 and 9732505. (NOT PLOTTABLE)

i. Easement and Right of Way Agreement granted to BridgeTex Pipeline Company, LLC, by instrument recorded under Montgomery County Clerk's File No. 2013079805. (NOT LOCATED ON SUBJECT)

j. Pipeline Easement and Consent granted to BridgeTex Pipeline Company, LLC, by instrument recorded under Montgomery County Clerk's File No. 2013131480 (NOT LOCATED ON SUBJECT)

k. Short Form Blanket Easement for electric distribution facilities and related communication facilities, granted to CenterPoint Energy Houston Electric, LLC, recorded under Montgomery County Clerk's File No. 2021169596. (LOCATED ON SUBJECT - BLANKET)

l. Terms, conditions, stipulations, easements and provisions of those certain non-exclusive access easement(s) for the purposes of ingress and egress, pursuant to Declaration of Access, Utilities and Drainage Easements, Covenants and Conditions recorded under Montgomery County Clerk's File No. 2021118370.

m. Terms, conditions and provisions of that certain Waiver of Special Appraisal For The Benefit of Montgomery County Municipal Utility District No. 108, recorded on October 29, 2021 in Clerk's File No. 2021150589, Official Puiblic Records of Montgomery County, Texas.

n. Interest in and to all the oil, gas and other minerals on, in, under or that may be produced from the Property as the same are reserved by R. L. Damuth by instruments recorded in Volume 130, Page 359 and in Volume 217, Page 178 of the Deed Records of Montgomery County, Texas. Said mineral interest not traced subsequent to the date of the above-cited instrument.

o. Interest in and to all the oil, gas and other minerals on, in, under or that may be produced from the Property as the same are reserved by Eddie E. Jones, etal, by instrument recorded in Volume 326, Page 238 of the Deed Records, and subsequently corrected by instruments recorded under Montgomery County Clerk's File Nos. 2000-039041, 2000-039042 and 2000-039043. Said mineral interest not traced subsequent to the date of the above-cited instrument.

p. Interest in and to all the oil, gas and other minerals on, in, under or that may be produced from the Property as the same are reserved by Edna Damuth Madeley, Guardian of the Estate of Joyce Faye Damuth, by instrument recorded in Volume 331, Page 257 of the Deed Records of Montgomery County, Texas. Said mineral interest not traced subsequent to the date of the above-cited instrument.

q. Interest in and to all the oil, gas and other minerals on, in, under or that may be produced from the Property as the same are conveyed to Mrs. Tanie Mae Damuth by instrument recorded in Volume 724, Page 347 of the Deed Records of Montgomery County, Texas. Subject to 3/4ths of said interest having been subsequently conveyed to Bobby D. Damuth (1/4th), Vivian Lucille Laughlin (1/4th), and Barbara Jo Dickson (1/4th) by instrument recorded under Montgomery County Clerk's File No. 9462612. The remaining 1/4th of 1/12th was subsequently conveyed to Barbara Jo Dickson by instrument recorded under Montgomery County Clerk's File No. 9539591. Said mineral interest not traced subsequent to the date of the above-cited instrument.

r. Oil, gas and mineral lease(s) recorded under Clerk's File Nos. 9052475, 9052476 and 9139611 of the Real Property Records of Montgomery County, Texas, in favor of Mitchell Energy Corporation. Subject to Designation of Gas Unit establishing the Wendell J. Doggett Gas Unit, recorded under Montgomery County Clerk's File No. 9300578. Said mineral interest not traced subsequent to the date of the
above-cited instrument.

s. Interest in and to all the oil, gas and other minerals on, in, under or that may be produced from the Property as the same are conveyed to Steven Craig Damuth by instrument recorded under Montgomery County Clerk's File No. 9301403. Said mineral interest not traced subsequent to the date of the above-cited instrument.

t. Interest in and to all the oil, gas and other minerals on, in, under or that may be produced from the Property as the same are conveyed to M. C. Damuth by instrument recorded under Montgomery County Clerk's File No. 9733112. Said interest having been subsequently conveyed to Steven Craig Damuth by instrument recorded under Montgomery County Clerk's File No. 2002-006787. Said mineral interest not traced subsequent to the date of the above-cited instrument.

u. Mineral and/or royalty deed from Barbara Jo Dickson conveying a 1/6th of 1/4th of 1/12th of 1/6th mineral and/or royalty interest to each Donald Lee Damuth, Vivian Audine Earley, Lonnie Banks Damuth, Patricia Ann Moore, Robert Joseph Damuth and Rosena Lee Damuth, recorded under Montgomery County Clerk's File No. 9809847. Said mineral interest not traced subsequent to the date of the above-cited instrument.

v. Royalty Deed from Marilyn S. Damuth Wilson conveying all interest in the Wendell J. Doggett Lease Unit to JD Minerals, recorded under Montgomery County Clerk's File No. 9818109. Said mineral interest not traced subsequent to the date of the above-cited instrument.

w. Interest in the oil, gas and other minerals, the royalties, bonuses, rentals and all other rights in connection with same as set forth in instruments recorded under Montgomery County Clerk's File Nos. 2015034597, 2015034598 and 2015034599. Said mineral interest not traced subsequent to the date of the above-cited instruments.

x. Affidavit of Non-Production dated May 18, 2018, filed and recorded June 6, 2018 under Montgomery County Clerk's File No. 2018052947.

y. All oil, gas and other minerals, the royalties, bonuses, rentals and all other rights in connection with same are excepted herefrom as set forth in Deed recorded under Montgomery County Clerk's File No. 2018052948. No further search of title has been made as to the interest(s) evidenced by this instrument, and the Company makes no representation as to the ownership or holder of such interest(s).

z. Terms, conditions and stipulations contained in Surface Use Agreement recorded June 6, 2018, under Montgomery County Clerk's File No. 2018052950.

aa. The Land lies within the boundaries of Montgomery County Municipal Utility District No. 108 and may be subject to taxes or special assessments by reason thereof.

METES AND BOUNDS DESCRIPTION
OF 1.231 ACRES (53,616 SQUARE FEET) LAND
IN THE HAMPTON TILLONS SURVEY, A-556
MONTGOMERY COUNTY, TEXAS

Being 1.231 acres (53,616 square feet) of land in the Hampton Tillons Survey, Abstract 556, Montgomery County, Texas, and being a portion of Unrestricted Reserve "B" in MAGNOLIA VILLAGE, the plat thereof recorded in Cabinet Z, Sheet 8125 of the Montgomery County Map Records, and more particularly described by metes and bounds as follows with bearings based on the Texas Coordinate System of 1983, Central Zone:

COMMENCING at a 5/8-inch iron rod with cap stamped "IDS" found for the northeast corner of said Unrestricted Reserve "B", being the northwest corner of the 33.66 acre tract of land described in the deed to COBALT 201 REALTY, LLC recorded in File Number 2021011747 of the Official Public Records of Montgomery County, Texas, and being on the south right-of-way line of F.M. 1488 (Volume 523, Pages 113 & 117, Montgomery County Deed Records)(width varies);

THENCE South 86° 59' 16" West - 502.44 feet, with the north line of said Unrestricted Reserve "B" and south right-of-way line of said F.M. 1488, to a 5/8-inch iron rod with TxDOT aluminum cap found for the beginning of a curve to the left;

THENCE, in a southwesterly direction, with said curve to the left, having a radius of 11384.16 feet, a central angle of 00° 46' 05", a chord bearing and distance of South 86° 36' 19" West - 152.63 feet, and an arc distance of 152.63 feet to a 5/8-inch iron rod with cap stamped "IDS" set for the northeast corner and **POINT OF BEGINNING** of the herein described tract;

THENCE South 03° 47' 08" East - 284.49 feet, across said Unrestricted Reserve "B", to the southeast corner of the herein described tract and being on the north right-of-way line of Magnolia Village Drive (50-feet wide);

THENCE South 86° 12' 52" West - 188.80 feet, with the north right-of-way line of said Magnolia Village Drive, to the southwest corner of the herein described tract,

THENCE North 03° 47' 08" West - 282.95 feet, across said Unrestricted Reserve "B", to a 5/8-inch iron rod with cap stamped "IDS" set for the northwest corner of the herein described tract and being on the south right-of-way line of said F.M. 1488 and on the arc of a non-tangent curve to the right;

THENCE, in a northeasterly direction, with said curve to the right and the south right-of-way line of said F.M. 1488, having a radius of 11384.16 feet, a central angle of 00° 57' 01", a chord bearing and distance of North 85° 44' 45" East - 188.81 feet, and an arc distance of 188.81 feet to the **POINT OF BEGINNING** and containing 1.231 acres (53,616 square feet) of land.

SURVEYOR'S CERTIFICATE

TO: CWP Asset CORP, and First American Title Insurance Company

This is to certify that this map or plat and the survey on which it is based were made in accordance with the 2021 Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys, jointly established and adopted by ALTA and NSPS, and includes Items 1–4, 6, 7(a), 8, 9, 13, and 19 of Table A thereof. The fieldwork was completed on April 30, 2022.

Date of Plat or Map: June 14, 2022

Michael L. Swan

Michael L. Swan
Registered Professional Land Surveyor
Texas Registration Number 5551

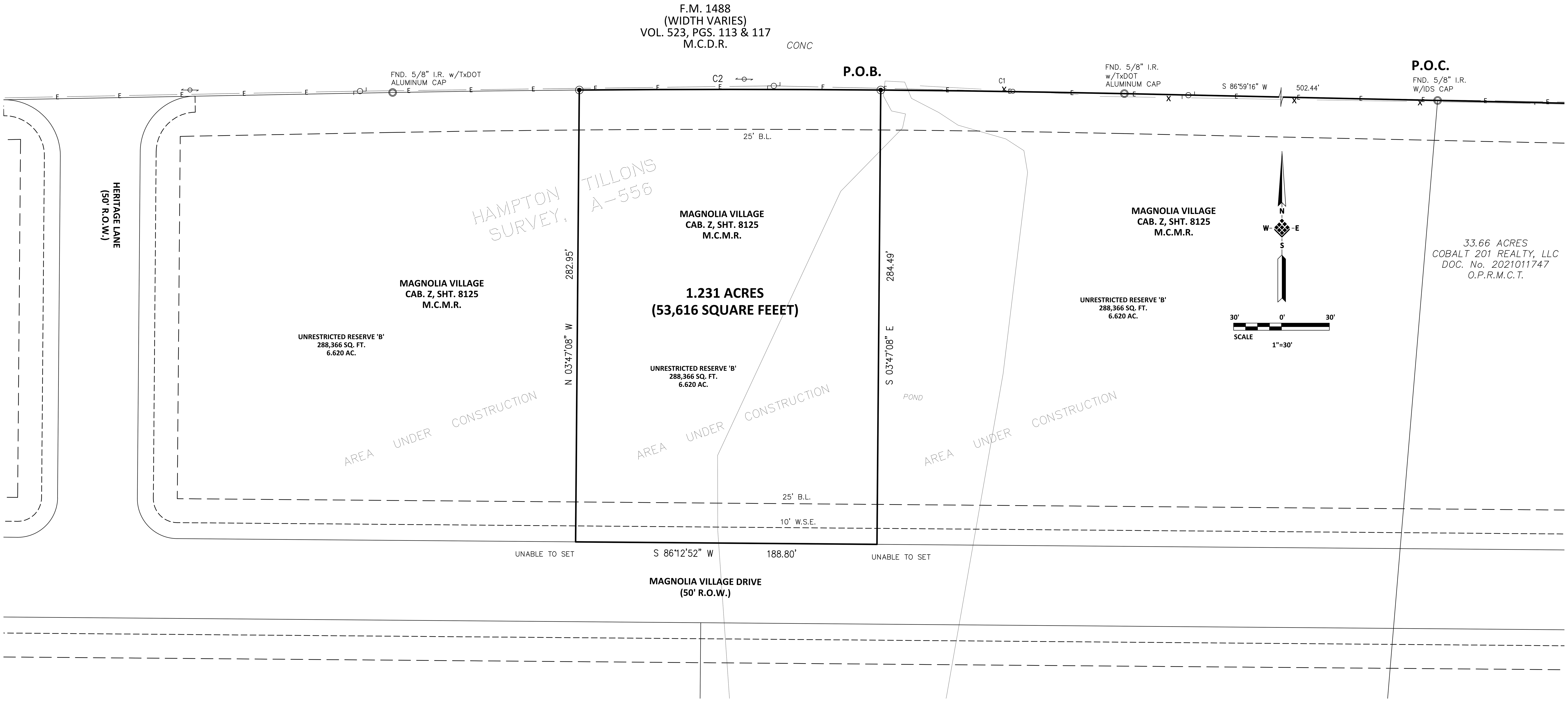
DATE	REVISION

IDS Engineering Group
13430 Northwest Fwy., Ste. 700
Houston, Texas 77040
713.462.3178
TBPE F-002726 | TBPLS 10110700
50 YEARS 1970-2020

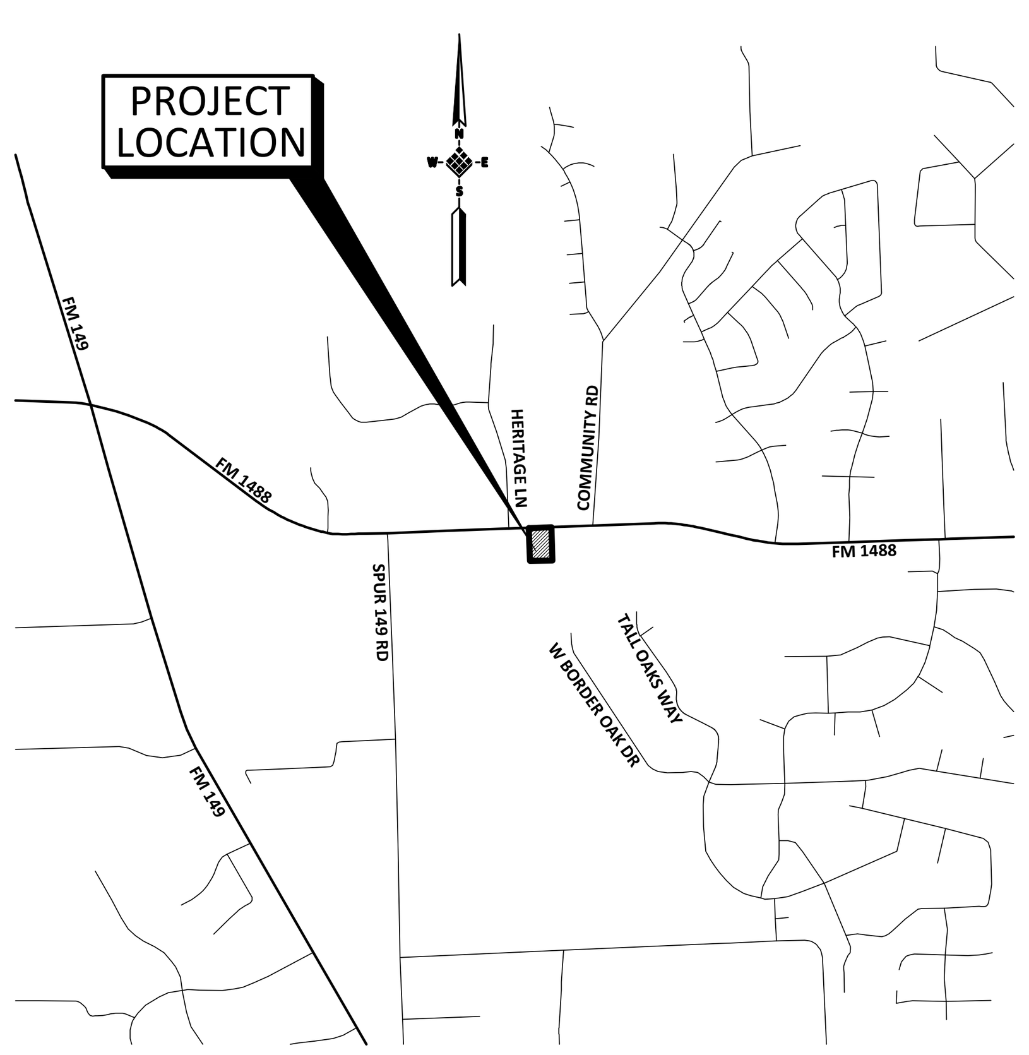
ALTA/NSPS LAND TITLE SURVEY

1.231 ACRES
(53,616 SQUARE FEET)
IN THE HAMPTON TILLONS SURVEY, A-556
MONTGOMERY COUNTY, TEXAS

DRAWN: MLS	ORIGINAL ISSUE DATE: June 14, 2022	ORIGINAL SCALE 1" = 30"
APPROVED FOR ISSUE: MLS	JOB NO.: 2410-001-00-530	



CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE
C1	11384.16'	152.63'	152.63'	S 86°36'19" W	0°46'05"
C2	11384.16'	188.81'	188.81'	N 85°44'45" E	0°57'01"



LOCATION MAP
N.T.S.
(KEY MAP # 213 G & L)

NOTES:

1. Commitment for Title Insurance issued by Fidelity National Title Insurance Company, GF No. SAT–41–4000412201337–CV, effective date May 4, 2022, issued date May 12, 2022. The surveyor has relied on Fidelity National Title Insurance Company to provide copies of recorded deeds, plats or other instruments describing the subject property and adjoining tracts, used to support the determination of the location of the intended boundaries of the land surveyed.
2. The bearings shown hereon are referenced to the Texas Coordinate System of 1983, Central Zone.
3. Based on FEMA Map No. 48339C0485 G with a Map Revised date of August 18, 2014, the subject property lies within Zone "X" (areas determined to be outside the 0.2% annual chance floodplain).
4. Adjoiner information is shown per the Texas Board of Professional Land Surveying Rules and is shown for informational purposes only.

LEGEND

P.O.C.	POINT OF COMMENCEMENT
P.O.B.	POINT OF BEGINNING
M.R.M.C.T.	MAP RECORDS MONTGOMERY COUNTY, TEXAS
M.C.D.R.	MONTGOMERY COUNTY DEED RECORDS
M.C.C.F.	MONTGOMERY COUNTY CLERK FILE
P.R.M.C.	PLAT RECORDS MONTGOMERY COUNTY
O.P.R.M.C.T.	OFFICIAL PUBLIC RECORDS OF MONTGOMERY COUNTY, TEXAS
—x—	FENCE
— E —	OVERHEAD ELECTRIC
○	FOUND MONUMENT
◉	SET 5/8" IRON ROD WITH "IDS" CAP
○	FENCE POST
	PIPELINE MARKER (UNLESS NOTED)
	PIPELINE PROBE
⊠	ELECTRIC BOX
→	GUY WIRE
	POWER POLE
	GAS VALVE
	TELEPHONE PEDESTAL
	SIGN
	PULL BOX
●TELMH	TELEPHONE MANHOLE
⊘	WATER SPIGOT
☼	LIGHT POLE
	COMMON OWNER

SURVEYOR'S CERTIFICATE

TO: CWP Asset CORP, and First American Title Insurance Company

This is to certify that this map or plat and the survey on which it is based were made in accordance with the 2021 Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys, jointly established and adopted by ALTA and NSPS, and includes Items 1–4, 6, 7(a), 8, 9, 13, and 19 of Table A thereof. The fieldwork was completed on April 30, 2022.

Date of Plat or Map: June 14, 2022

Michael L Swan

Michael L. Swan
Registered Professional Land Surveyor
Texas Registration Number 5551

DATE	REVISION

IDS Engineering Group
13430 Northwest Fwy., Ste. 700
Houston, Texas 77040
713.462.3178
TBPE F-002726 | TBPLS 10110700
50 YEARS 1970-2020

ALTAS/NSPS LAND TITLE SURVEY

1.231 ACRES
(53,616 SQUARE FEET)
IN THE HAMPTON TILLONS SURVEY, A-556
MONTGOMERY COUNTY, TEXAS

DRAWN: MLS	ORIGINAL ISSUE DATE: June 14, 2022	ORIGINAL SCALE 1" = 30"
APPROVED FOR ISSUE: MLS	JOB NO.: 2410-001-00-530	

LEGEND

	EXISTING	PROPOSED
PROPERTY LINE	─── ─ ─ ───	━━━ ━ ━ ━━━
R.O.W LINE	────	
CURB LINE		═════
TRAFFIC SIGN	╕	┬
SIGN DESIGNATION		◈B
CONCRETE PAVEMENT FOR WALKS		▨
LIGHT DUTY CONCRETE PAVEMENT		▭
REGULAR DUTY CONCRETE PAVEMENT		▒
HEAVY DUTY CONCRETE PAVEMENT		▨
DOOR LOCATION		▼
OVERHEAD DOOR LOCATION		▽
DOWNSPOUT LOCATION		▯
BOLLARD		•
POWER POLE	● PP	
DITCH	────	
DETENTION POND LIMITS		- - - - - - - -
MODULAR BLOCK RETAINING WALL		▧▧▧▧▧▧
WATER LINE		──UW──
FIRE HYDRANT	─○─	▼
FIRE DEPARTMENT CONNECTION		▯
GATE VALVE		⊗
BACKFLOW PREVENTER		▭
WATER METER	◙ WM	▭
TEE CONNECTION		─⊗─
GAS LINE		──UG──
UNDERGROUND ELECTRIC		──UE──
GAS METER	GM ◙	▯
TRANSFORMER		T
OVERHEAD ELECTRIC	──P──	
UNDERGROUND TELECOMMUNICATIONS		──UT──
SANITARY MANHOLE	◉	Ⓢ
SANITARY CLEANOUT	○CO	CO○
CONTOUR		──902──
SPOT ELEVATION	88.7	× 902.81
CATCH BASIN	▦	▥
STORM MANHOLE	◉	●
STORM PIPE	— — — — — —	▬▭▬▭▬▭▬
SANITARY PIPE		━━━━━━
FILTER FABRIC BARRIER		••••••••••••
INLET PROTECTION		⊜ ▥
STABILIZED CONSTRUCTION ACCESS		▩
TEMPORARY STOCKPILE		● ● ● ● ● ●
CONCRETE TRUCK WASHOUT		CTW
HAYBALES		▭▭▭▭▭▭

ABBREVIATIONS

ACR = ACCESSIBLE CURB RAMP
AHJ = AUTHORITY HAVING JURISDICTION
ARCH = ARCHITECTURAL
BC = BOTTOM OF CURB
BW = BOTTOM OF WALL
CB = CATCH BASIN
CCB = CURB CATCHBASIN
CG = CURB & GUTTER
CMP = CORRIGATED METAL PIPE
CO = CLEAN OUT
COH = CITY OF HOUSTON
CONC = CONCRETE
CWS = CONCRETE WASHOUT SYSTEM
DIP = DUCTILE IRON PIPE
EX = EXISTING
GC = GRANITE CURB
HP = HIGH POINT
HDPE = HIGH DENSITY POLYETHYLENE PIPE
INV = INVERT
LA = LANDSCAPED AREA
LF = LINEAR FEET
MCC = MONOLITHIC CONCRETE CURB
MH = MANHOLE
NIC = NOT IN CONTRACT
PCC = PRECAST CONCRETE CURB
PVC = POLYVINYL CHLORIDE PIPE (SDR-35)
PR = PROPOSED
R&D = REMOVE & DISPOSE
R&R = REMOVE & REPLACE
RCP = REINFORCED CONCRETE PIPE
RET = RETAINING
RL = ROOF LEADER
ROW = RIGHT OF WAY
SET = SAFETY END TREATMENT
TBM = TEMPORARY BENCH MARK
TC = TOP OF CURB
TF = TOP OF FRAME
TP = TOP OF PAVING
TW = TOP OF WALL
TYP = TYPICAL
WL = WHITE LINE
WSE = WATER SURFACE ELEVATION
YL = YELLOW LINE

GENERAL NOTES

1. ALL TOPOGRAPHIC, PROPERTY LINE, AND UTILITY INFORMATION TAKEN FROM PLAN ENTITLED "LAND TITLE & TOPOGRAPHIC SURVEY OF 1.231 AC./53,616 SQ. FT. SITUATED IN THE HAMPTON TILLONS SURVEY ABSTRACT NO. 556 MONTGOMERY COUNTY, TEXAS", PREPARED BY IDS ENGINEERING GROUP, JUNE 14, 2022.
2. PROPOSED SITE WORK IMPROVEMENTS SHALL CONFORM TO THE STANDARD DETAILS AND SPECIFICATIONS OF THE CITY OF MAGNOLIA. IN THE ABSENCE OF LOCAL STANDARDS, SITE WORK SHALL CONFORM TO THE REQUIREMENTS OF TEXAS DEPARTMENT OF TRANSPORTATION STANDARD DETAILS.
3. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING TEXAS 811 (1-800-545-6005, WWW.TEXAS811.COM) OR LONE STAR 811 (1-800-669-8344, WWW.LONESTAR811.COM), FOR EXCAVATION TEST HOLES, PERFORMING TEST BORINGS, AND PERFORMING WHATEVER ADDITIONAL INVESTIGATION NECESSARY TO PROTECT AND MAINTAIN ALL EXISTING UTILITIES TO REMAIN THROUGHOUT THE CONSTRUCTION PERIOD. ANY CONFLICTS BETWEEN EXISTING UTILITIES AND PROPOSED UTILITIES DISCOVERED DURING CONSTRUCTION SHALL BE PROMPTLY REPORTED TO THE PROJECT ENGINEER.
4. ALL IMPROVEMENTS CONSTRUCTED IN THE PUBLIC RIGHT-OF-WAY SHALL COMPLY WITH TXDOT AND MONTGOMERY COUNTY DETAILS AND STANDARD SPECIFICATIONS.
5. FOR AREAS OUTSIDE THE PROPERTY LINES, REPAIR AND/OR REPLACE ALL DAMAGE DONE TO EXISTING ELEMENTS (SIDEWALKS, PAVING, LANDSCAPING, ETC) AS REQUIRED BY OWNER AND/OR GOVERNING AUTHORITY.
6. CONTRACTOR TO REPAIR/REPLACE ANY EXISTING SIDEWALK THAT IS DAMAGED PRIOR TO OR DURING CONSTRUCTION.
7. ALL SIGNS AND PAVEMENT MARKINGS SHALL CONFORM TO THE LATEST EDITION OF THE TMUTCD.
8. ALL RADII ARE 2.0' EXCEPT WHERE NOTED. ALL DIMENSIONS SHOWN ARE FACE OF CURB TO FACE OF CURB.
9. CONTRACTOR SHALL PREVENT DUST, SEDIMENT AND DEBRIS FROM EXITING THE SITE AND SHALL BE RESPONSIBLE FOR CLEANUP, REPAIR AND CORRECTIVE ACTION IF SUCH OCCURS. ADJOINING STREETS AND PROPERTIES TO BE KEPT FREE OF DEBRIS AND SHALL BE CLEANED ON A DAILY BASIS AS NECESSARY. DUST CONTROL TREATMENTS SHALL BE APPLIED AS NECESSARY TO CONTROL AND REDUCE THE AMOUNT OF DUST WHICH MAY CAUSE OFF-SITE DAMAGE, BE A HEALTH HAZARD TO HUMANS, WILDLIFE AND PLANT LIFE, OR POSE A HAZARD TO TRAFFIC SAFETY.
10. THE LOCATION OF EXISTING UNDERGROUND UTILITIES SHOWN HEREON IS TAKEN FROM DESIGN PLANS, AS-BUILT SKETCHES, EXISTING UTILITY COMPANY RECORDS, AND OTHER SOURCES OF INFORMATION AND IS NOT TO BE CONSTRUED AS AN ACCURATE "AS-BUILT" SURVEY AND IS SUBJECT TO SUCH CORRECTIONS THAT A MORE ACCURATE SURVEY MAY DISCLOSE.
11. THE EXISTING UTILITIES INDICATED HEREON MAY NOT BE LOCATED AS SHOWN. IN ADDITION, OTHER UTILITIES NOT SHOWN HEREON MAY BE PRESENT. ANY DISCREPANCIES DISCOVERED DURING THE COURSE OF CONSTRUCTION SHALL BE PROMPTLY REPORTED TO THE PROJECT ENGINEER.
12. ALL UTILITY WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS AND SPECIFICATIONS/DETAILS OF THE UTILITY COMPANY HAVING AUTHORITY OVER THE PROPOSED WORK. ALL PROPOSED UTILITY WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL ORDINANCES/REQUIREMENTS GOVERNING THE PROPOSED WORK.
13. ANY UTILITY EASEMENTS REQUIRED BY ANY OF THE VARIOUS UTILITY COMPANIES SHALL BE OBTAINED, EXECUTED, AND RECORDED PRIOR TO ANY OF THE AFFECTED UTILITY WORK BEING PERFORMED.
14. ALL PROPOSED UTILITIES WILL BE LOCATED UNDERGROUND UNLESS STATED OTHERWISE.
15. CONTRACTOR TO COORDINATE GAS MAIN, ELECTRIC, AND TELEPHONE INSTALLATION WITH APPROPRIATE UTILITY COMPANIES.
16. THE CONTRACTOR MUST VERIFY THE LOCATION, SIZE, AND SERVICEABILITY OF THE EXISTING WATER MAINS PRIOR TO BEGINNING ANY SITE OR BUILDING CONSTRUCTION.
17. RESET ALL EXISTING SANITARY AND DRAINAGE STRUCTURES TO TEXAS STATE STANDARDS AND AS REQUIRED BY REPAIRING, MILLING OR OVERLAYING.
18. CONTRACTOR SHALL MAINTAIN A MINIMUM OF 4 FEET OF COVER FOR ALL UNDERGROUND ELECTRIC, TELEPHONE AND GAS UTILITIES.
19. FOR SANITARY SEWER AND WATER LINE CROSSINGS REFER TO LOCAL ORDINANCE. IN ABSENCE OF SPECIFIC GUIDANCE WITHIN LOCAL ORDINANCE, REFER TO CITY OF HOUSTON TABLE 7-3 OF PUBLIC WORKS DESIGN MANUAL.
20. ALL RIMS AND STRUCTURES SHALL ACCOMMODATE H20 LOADING.
21. COORDINATE ALL SERVICE LATERAL LOCATIONS AND ELEVATIONS WITH MEP/ARCHITECTURAL DRAWINGS.
22. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS. ANY DISCREPANCIES DISCOVERED DURING THE COURSE OF CONSTRUCTION SHALL BE PROMPTLY REPORTED TO THE PROJECT ENGINEER.
23. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS AND SPECIFICATIONS TO CONFIRM LOCATIONS OF ALL UTILITY ENTRANCES, INCLUDING SANITARY SEWER LATERALS, DOMESTIC AND FIRE PROTECTION WATER SERVICE, ELECTRICAL, TELEPHONE AND GAS SERVICE, PRIOR TO CONSTRUCTION. CONTRACTOR SHALL COORDINATE INSTALLATION OF UTILITIES IN SUCH A MANNER AS TO AVOID CONFLICTS AND TO ENSURE PROPER DEPTHS ARE ACHIEVED WHILE COORDINATING WITH THE UTILITY COMPANIES TO LOCATE AND SCHEDULE CONNECTIONS TO THEIR FACILITIES.
24. LOCATIONS AND ELEVATIONS OF ROOF LEADERS SHOULD BE COORDINATED WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION.
25. CLEANOUTS SHALL BE PROVIDED FLUSH TO GRADE AT ALL LOCATIONS OF ROOF DRAIN INTERSECTIONS, BENDS AND UPSTREAM ENDS.
26. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPERLY SIZING ALL DRAINAGE STRUCTURES AND SUBMITTING SHOP DRAWINGS TO ENGINEER FOR REVIEW.
27. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PAVEMENT REPAIRS REQUIRED AS A RESULT OF ANY UTILITY WORK.
28. ALL ABANDONED UTILITIES SHALL BE TERMINATED AT THE APPROPRIATE MAIN OR STRUCTURE.
29. ALL SIGNS WITHIN THE STATE RIGHT-OF-WAY SHALL BE INSTALLED PER TXDOT STANDARDS AND SPECIFICATIONS.
30. CONTRACTOR TO MATCH EXISTING CURB AT GUTTER AND NEXT CONSTRUCTION JOINT IN ORDER TO PROVIDE A CLEAN TRANSITION.
31. ALL WORK PERFORMED WITH-IN THE PUBLIC RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH THE CITY OF MAGNOLIA STANDARD CONSTRUCTION SPECIFICATIONS. PRIOR TO DOING ANY WORK IN THE IN THE CITY RIGHT-OF-WAY, THE CONTRACTOR SHALL CALL THE ENGINEERING DEPARTMENT.
32. ALL SIGNS TO BE APPROVED BY THE MONTGOMERY COUNTY ENGINEERING DEPARTMENT.
33. REFER TO GEOTECHNICAL INVESTIGATION REPORT PROVIDED BY PARADIGM CONSULTANTS, INC. PROVIDED MARCH 24, 2021

STORM SEWER NOTES

1. STORM SEWER PIPE TO BE HIGH DENSITY POLYETHYLENE (HDPE) OR POLYVINYL CHLORIDE PIPE (PVC) CONFORMING TO ASTM D-3034, SDR 35, FOR 8"-15" PIPE AND ASTM F-679 FOR 18″-24″ PIPE OR REINFORCED CONCRETE PIPE (RCP) SHALL CONFORM TO ASTM C-76, CLASS III, OR DUCTILE IRON PIPE SHALL CONFORM TO ANSI A21.51, THICKNESS CLASS 51, EXCEPT AS OTHERWISE NOTED ON THE PLANS.
2. ALL STORM SEWERS TO RECEIVE BEDDING AND BACKFILL IN ACCORDANCE WITH THE DETAILS CONTAINED IN THE PLANS. STORM SEWERS WITHIN PUBLIC STREET RIGHTS-OF-WAY OR EASEMENTS TO RECEIVE BEDDING AND BACKFILL IN ACCORDANCE WITH MONTGOMERY COUNTY AND CITY OF HOUSTON PUBLIC WORKS DEPARTMENT AND ENGINEERING STANDARD CONSTRUCTION DETAILS, FORM E-14-62, LATEST PRINTING AND AMENDMENTS THERETO.
3. STORM SEWER CONSTRUCTION, INCLUDING INLETS AND MANHOLES, OUTSIDE OF PUBLIC STREET RIGHTS-OF-WAY OR EASEMENTS TO BE IN ACCORDANCE WITH THE DETAILS CONTAINED IN THE PLANS. STORM SEWER CONSTRUCTION WITHIN PUBLIC STREET RIGHTS-OF-WAY OR EASEMENTS TO BE IN ACCORDANCE WITH CITY OF HOUSTON PUBLIC WORKS DEPARTMENT AND ENGINEERING STANDARD CONSTRUCTION DETAILS LATEST PRINTING AMENDMENTS THERETO.
4. ALL STORM SEWER TRENCHES UNDER PROPOSED AND FUTURE PAVEMENT OR WITHIN ONE (1) FOOT BACK OF ALL CURBS TO BE BACKFILLED WITH CEMENT-STABILIZED SAND (CLEAN BANK SAND AND *1 ½ SK/C.Y. MIN. PORTLAND CEMENT MIXTURE) TO A POINT ONE (1) FOOT BELOW PAVEMENT SUBGRADE AS SHOWN FOR CLASS "AA" BEDDING AND BACKFILL IN ACCORDANCE WITH THE DETAILS CONTAINED IN THE PLANS. THE REMAINING BACKFILL TO BE MADE WITH COMPACTED SELECT MATERIAL.
5. WHERE MANHOLES, GRATE INLETS, OR JUNCTION BOXES ARE LOCATED WITHIN PAVED AREAS CONTRACTOR SHALL SET RIM ELEVATIONS TO MATCH TOP OF PAVEMENT ELEVATIONS. OUTSIDE OF PAVED AREAS, SET MANHOLE RIMS AND TOP OF GRATE AT ELEVATION SHOWN ON THE PLANS.
6. CONTRACTOR TO PROVIDE A MINIMUM OF 6-INCH VERTICAL CLEARANCE BETWEEN STORM SEWER AND OTHER EXISITING OR PROPOSED UTILITIES.
7. IN EVERY CASE WHERE TRENCHES ON-SITE HAVE BEEN EXCAVATED BELOW THE SPECIFIED DEPTH FOR CLASS "B" BEDDING, THE PIPE SHALL BE LAID WITH CLASS "A" BEDDING.

PAVING NOTES

1. ALL ROAD WIDTHS, RADII AND ALIGNMENT SHOWN INDICATED FACE OF CURB OR EDGE OF PAVEMENT WHICHEVER IS APPLICABLE.
2. CONCRETE SHALL BE PORTLAND CEMENT CONCRETE AND HAVE A COMPRESSIVE STRENGTH OF 3,500 PSI MINIMUM AT 28 DAYS. REBARS SHALL BE GRADE 60 REINFORCING STEEL. REFER TO PRELIMINARY GEOTECHNICAL ENGINEERING STUDY PROVIDED BY MURILLO COMPANY IN APRIL 2021 FOR PAVEMENT RECOMMENDATIONS.
3. EXISTING PAVING, IN PUBLIC STREET RIGHTS-OF-WAY OR EASEMENTS, DAMAGED BY CONSTRUCTION SHALL BE REPAIRED AS PER CITY OF HOUSTON DWG. NO. 02902-01, AS APPLICABLE. ALL OTHER EXISTING PAVING, NOT SHOWN TO BE REMOVED, DAMAGED BY CONSTRUCTION SHALL BE REPAIRED IN ACCORDANCE WITH DETAILS CONTAINED IN THE PLANS.
4. EXISTING CURBS, SIDEWALKS, AND DRIVEWAYS IN PUBLIC STREET RIGHTS-OF-WAY OR EASEMENTS DAMAGED OR REMOVED DURING CONSTRUCTION SHALL BE REPLACED TO CITY OF HOUSTON STANDARD. ALL OTHER CURBS, SIDEWALKS AND DRIVEWAYS, NOT SHOWN TO BE REMOVED, DAMAGED BY CONSTRUCTION SHALL BE REPLACED IN ACCORDANCE WITH THE DETAILS CONTAINED IN THE PLANS.
5. CONTROL JOINTS IN HEAVY DUTY CONCRETE PAVEMENT TO BE PLACED BETWEEN 15 AND 45 FEET FROM EDGE OF BUILDING AND/OR 65 FEET FROM EDGE OF BUILDING.
6. LONGITUDINAL CONTROL JOINTS IN HEAVY DUTY CONCRETE PAVEMENT TO ALIGN WITH STAIRS ALONG BUILDING WHEN POSSIBLE.

WATER LINE NOTES

1. WATER LINES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST CITY OF MAGNOLIA INFRASTRUCTURE DESIGN MANUAL, STANDARD SPECIFICATION, AND CONSTRUCTION DETAILS.
2. ALL 4" THROUGH 12" WATER LINE TO BE AWWA C-900 PVC DR-18 BLUE PRESSURE RATED WATER MAIN WITH 2" AND SMALLER WATER SERVICE LINE TO BE CONTINUOUS TYPE K COPPER TUBING PER COH STANDARD SPECIFICATION SECTION 02503. ALL 4" THRU 54" DI PIPE WATER LINES SHALL BE AWWA C151 WITH INSIDE LINING WITH AWWA C104 AND DOUBLE WRAPPED WITH 8-MIL POLYETHYLENE SHEETS.
3. CONCRETE THRUST BLOCKS SHALL BE PROVIDED AS NECESSARY TO PREVENT PIPE MOVEMENT. USE RESTRAINED JOINTS WHERE PREVENTING MOVEMENT OF 16" OR GREATER PIPE IS NECESSARY DUE TO THRUST.
4. ALL WATER LINES UNDER PROPOSED OR FUTURE PAVING AND TO A POINT OF ONE (1) FOOT BACK OF ALL PROPOSED OR FUTURE CURBS SHALL BE ENCASED IN BANK SAND TO 12" OVER PIPE AND BACKFILLED WITH CEMENT STABILIZED SAND TO WITHIN ONE (1) FOOT OF SUBGRADE.
5. ALL WATER LINE AND SEWER LINE CROSSINGS SHALL BE CONSTRUCTED PER CITY OF MAGNOLIA AND TCEQ REGULATIONS.
6. ALL WATER VALVES SHALL BE SUPPLIED AND INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF AWWA C-500 AND SHALL BE OF THE RESILIENT SEAT TYPE.
7. ALL WATER LINES TO BE DISINFECTED IN CONFORMANCE WITH AWWA C-651 AND THE TEXAS STATE DEPARTMENT OF HEALTH. AT LEAST ONE BACTERIOLOGICAL SAMPLE SHALL BE COLLECTED FOR EVERY 1,000 LINEAR FEET OF WATER LINE AND SHALL BE REPEATED IF CONTMINATION PERSISTS.
8. ALL BELOW GRADE VALVES SHALL BE GASKETED, HUB-END GATE VALVES WITH A CAST IRON BOX, EXCEPT WHERE FLANGES ARE CALLED OUT ON THE PLANS.
9. 4" THRU 12" FITTINGS SHALL BE CEMENT MORTAR LINED COMPACT DUCTILE IRON PRESSURE FITTINGS PER ANSI A21.53, OR PUSH ON FITTINGS PER ANSI A21.10 PRESSURE RATED AT 250 PSIG.
10. HYDROSTATIC TESTING: ALL WATER PIPE SHALL BE TESTED FOR LEAKAGE IN ACCORDANCE WITH THE LATEST CITY OF MAGNOLIA STANDARD CONSTRUCTION SPECIFICATIONS. TESTS ARE TO BE PERFORMED ON THE ENTIRE FOOTAGE OF WATER PIPE LINE INCLUDED IN THE PROJECT.
11. ALL WATER LINES TO HAVE 4' MINIMUM COVER TO FINISHED GRADE AND MINIMUM 12" CLEARANCE TO OTHER UTILITIES AT CROSSING UNLESS OTHERWISE NOTED ON PLANS. ALL WATER LINE INSTALLED OVER 8' DEEP SHALL UTILIZE RESTRAINED JOINT FITTINGS.
12. CONTRACTOR SHALL KEEP WATER PIPE CLEAN AND CAPPED (OR OTHERWISE EFFECTIVELY COVERED) OPEN PIPE ENDS TO EXCLUDE INSECTS, ANIMALS OR OTHER SOURCES OF CONTAMINATION FROM UNFINISHED PIPE LINES AT TIMES WHEN CONSTRUCTION IS NOT IN PROGRESS.
13. CONTRACTOR TO CONTACT DESIGN ENGINEER CONCERNING CONFLICT WITH EXISTING WATER MAIN DURING PROPOSED STORM SEWER CONSTRUCTION. IF WATER MAINS WERE TO BE RELOCATED, THE DRAWINGS SHALL BE REVISED AND APPROVED BY THE DISTRICT ENGINEER.
14. WHEREVER NEW WATER LINES CROSS SANITARY SEWER LINES WITH LESS THAN NINE (9) FEET OF VERTICAL CLEARANCE, THE SEWER LINE SHALL BE CONSTRUCTED OF CONTINUOUS DUCTILE IRON PIPE FOR A DISTANCE OF NINE (9) FEET EACH SIDE OF THE WATER LINE PER CITY OF HOUSTON DWG. NO. 02531-07. MINIMUM HORIZONTAL LINE TO BE NINE (9) FEET. MINIMUM VERTICAL CLEAR DISTANCE TO BE TWO (2) FEET WITH SEWER LINE LOCATED AT LOWER ELEVATION THAN WATER LINE.
15. CONTRACTOR TO PROVIDE ALL NECESSARY WATER MAIN BENDS AND FITTINGS AS REQUIRED TO ACHIEVE THE LAYOUT AND AVOID EXISTING AND PROPOSED UTILITIES.

SANITARY SEWER NOTES

1. ALL SEWERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF MAGNOLIA "STANDARD CONSTRUCTION SPECIFICATIONS FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE, STREET PAVING, AND TRAFFIC" AND ALL CURRENT AMENDMENTS THERETO AND BE SUBJECT TO A STANDARD EXFILTRATION TEST. TESTS ARE TO BE PERFORMED ON THE TOTAL FOOTAGE OF SEWER LINE INCLUDED IN THE PROJECT. REQUIREMENTS OF TEXAS ADMINISTRATIVE CODE, TITLE 30 CHAPTER 317, "DESIGN CRITERIA FOR SEWERAGE SYSTEMS" SHALL GOVERN WHERE CONFLICTS EXIST EXCEPT WHERE CITY REQUIREMENTS ARE MORE STRINGENT.
2. ALL MANHOLES ARE TO BE PER CITY OF MAGNOLIA STANDARD DETAILS
3. SANITARY SEWER MANHOLES WILL HAVE BEDDING AND BACKFILL PER CITY OF MAGNOLIA.
4. THE SANITARY SEWER PVC PIPE SHALL BE ASTM D 3034 TYPE PSM SDR 26 GRAVITY SEWER PIPE, ASTM D2241 SDR 26 PRESSURE RATED SEWER PIPE OR AWWA C-900 DR-18 GREEN PVC PRESSURE RATED SEWER PIPE BASED ON CONSTRUCTION CONDITION REQUIREMENT AND CONFORMING TO ASTM D1784 AND CITY OF MAGNOLIA STANDARD SPECIFICATION SECTION 02506 POLYVINYL CHLORIDE PIPE.
5. WHEN SS PRESSURE RATED PVC PIPE IS USED ON WATERLINE (WL) CROSSING UNDER CONDITION 1 OF CITY OF MAGNOLIA , THE SAME TYPE OF D2241 SDR 26 PVC PIPE OR C-900 GREEN DR-18 PVC GREEN PRESSURED TO BE UTILIZING IN-BETWEEN TWO SS MH'S. OR TO UTILIZE A DI TRANSITION ADAPTER FOR THE CONNECTING OF ASTM D-3034 PVC GRAVITY PIPE TO DI-OD AWWA C-900 PVC PIPE CENTERED AT WL WHEN CONNECTING TWO DIFFERENT TYPES OF PVC PIPES FOR SEWER CONSTRUCTION.
6. AWWA C-900 DR-18 PVC PIPE USES EITHER AWWA C900 DR-18 PVC FITTINGS OR DIP FITTINGS.
7. ALL SANITARY SEWER LINES UNDER PROPOSED OR FUTURE PAVEMENT AND TO A POINT ONE (1) FOOT BACK OF ALL PROPOSED OR FUTURE CURBS SHALL HAVE BEDDING PER CITY OF MAGNOLIA STANDARD DETAILS DRAWING NUMBERS 02317-01, 02317-02, OR 02317-03 AS APPLICABLE, WITH 1 ½ SACK CEMENT/CY STABILIZED SAND BACKFILL UP TO THE BOTTOM OF THE PAVEMENT SUBGRADE. 100 PSI PERFORMANCE RESULTS ARE STILL REQUIRED.
8. ALL SANITARY SEWERS CROSSING WATER LINES WITH A CLEARANCE BETWEEN 12 INCHES AND 9 FEET SHALL HAVE A MINIMUM OF ONE 18' JOINT OF 150 PSI DUCTILE IRON OR (GREEN) C900 PVC PIPE MEETING ASTM SPECIFICATION D2241 CENTERED ON WATER LINE. WHEN WATER LINE IS BELOW SANITARY SEWER PROVIDE MINIMUM 2 FOOT SEPARATION.
9. CONTRACTOR SHALL PROVIDE A MINIMUM HORIZONTAL CLEARANCE OF 9' FEET BETWEEN WATER LINES AND SANITARY SEWER MANHOLES AND LINES.
10. SANITARY SEWER MANHOLE RIMS OUTSIDE OF PROPOSED PAVING WILL BE SET 3" - 6" ABOVE THE SURROUNDING LEVEL FINISHED GRADE AFTER PAVING WITH SLOPED BACKFILL ADDED FOR STORM WATER TO DRAIN AWAY FROM MANHOLE RIM.
11. IN WET STABLE TRENCH AREAS USE BEDDING PER CITY OF HOUSTON STANDARD DETAILS DRAWING NUMBER 02317-02 (2002).
12. DEFLECTION TEST: DEFLECTION TESTS SHALL BE PERFORMED ON ALL FLEXIBLE AND SEMI-RIGID SEWER PIPE. THE TEST SHALL BE CONDUCTED AFTER THE FINAL BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS. NO PIPE SHALL EXCEED A DEFLECTION OF 5% IF THE DEFLECTION TEST IS TO BE RUN USING A RIGID MANDREL, IT SHALL HAVE A DIAMETER EQUAL TO 95% OF THE INSIDE DIAMETER OF THE PIPE. THE TEST SHALL BE PERFORMED AS PER 30 TAC 317.2 LATEST AMENDMENT AND WITHOUT MECHANICAL PULLING DEVICES. NO BALL-TYPE MANDREL IS ALLOWED.
13. FOR SANITARY MANHOLE (MH) RIMS SET INSIDE OF OR @ CURB & GUTTER PAVEMENT AND/OR BELOW T.C., MH RIMS WILL BE SET FLUSHED WITH AN ABUTTING PAVED SURFACE. THE (VALCUN, NEENAH OR EQUAL) HEAVY DUTY BOLTED SOLID MH COVER SHALL BE PROPERLY (AND SECURELY) ATTACHED AND SEALED TO ITS COMPATIBLE GASKETED FRAME BY USING BOTH A NEOPRENE GASKET AND (AT LEAST) 4 COUNTER-SUNK HEX-HEAD COARSE THREADED ½"-13 UNC STAINLESS STEEL BOLTS. THE HEAVY DUTY FRAME MH COVER SHALL BE SOLID (NO AIR HOLES). SAID FRAME SHALL BE BOTH EMBEDDED INTO THE MH'S TOP ALSO SECURELY ANCHORED TO THE UNDERLYING MH STRUCTURE WITH EITHER SECURELY ATTACHED EMBEDDED ANCHOR BOLTS OR THE CONCRETE MH'S EXPOSED REBARS WELDED TO THE FRAME OR OTHER EQUALLY SECURED METHODS TO PREVENT MH COVER/FRAME BLOW-OFFS/EJECTIONS.

CENTERPOINT ENERGY NOTES

CAUTION: UNDERGROUND GAS FACILITIES

LOCATIONS OF CENTERPOINT ENERGY MAIN LINES (TO INCLUDE CENTERPOINT ENERGY INTRASTRATE PIPELINE, LLC. WHERE APPLICABLE) ARE SHOWN IN AN APPROXIMATE LOCATION ONLY. SERVICE LINES ARE USUALLY NOT SHOWN. OUR SIGNATURE ON THESE PLANS ONLY INDICATES THAT OUR FACILITIES ARE SHOWN IN APPROXIMATE LOCATION. IT DOES NOT IMPLY THAT A CONFLICT ANALYSIS HAS BEEN MADE. THE CONTRACTOR SHALL CONTACT THE UTILITY COORDINATING COMMITTEE AT 1-800-545-6005 OR 811 A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE MAIN AND SERVICE LINES FIELD LOCATED.

- WHEN CENTERPOINT ENERGY PIPELINE MARKINGS ARE NOT VISIBLE, CALL (713) 207-5463 OR (713) 945-8037 (7:00 A.M. TO 4:30 P.M.) FOR STATUS OF LINE LOCATION REQUEST BEFORE EXCAVATION BEGINS.
- WHEN EXCAVATING WITHIN EIGHTEEN (18") OF THE INDICATED LOCATION OF CENTERPOINT ENERGY FACILITIES, ALL EXCAVATION MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES.
- WHEN CENTERPOINT ENERGY FACILITIES ARE EXPOSED, SUFFICIENT SUPPORT MUST BE PROVIDED TO THE FACILITIES TO PREVENT EXCESSIVE STRESS ON THE PIPING.
- FOR EMERGENCIES REGARDING GAS LINES CALL (713) 659-3552 OR (713) 207-4200.

THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGES CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND FACILITIES.

WARNING: OVERHEAD ELECTRICAL LINES

OVERHEAD LINES MAY EXIST ON THE PROPERTY. THE LOCATION OF OVERHEAD LINES HAS NOT BEEN SHOWN ON THESE DRAWINGS AS THE LINES ARE CLEARLY VISIBLE, BUT YOU SHOULD LOCATE THEM PRIOR TO BEGINNING ANY CONSTRUCTION. TEXAS LAW, SECTION 752, HEALTH & SAFETY CODE FORBIDS ACTIVITIES THAT OCCUR IN CLOSE PROXIMITY TO HIGH VOLTAGE LINES, ESPECIALLY:

- ANY ACTIVITY WHERE PERSON OR THINGS MAY COME WITHIN SIX (6) FEET OF LIVE OVERHEAD HIGH VOLTAGE LINES; AND
- OPERATING A CRANE, DERRICK, POWER SHOVEL, DRILLING RIG, PILE DRIVER, HOISTING EQUIPMENT, OR SIMILAR APPARATUS WITHIN 10 FEET OF LIVE OVERHEAD HIGH VOLTAGE LINES.

PARTIES RESPONSIBLE FOR THE WORK, INCLUDING CONTRACTORS ARE LEGALLY RESPONSIBLE FOR THE SAFETY OF CONSTRUCTION WORKERS UNDER THIS LAW. THIS LAW CARRIES BOTH CRIMINAL AND CIVIL LIABILITY. TO ARRANGE FOR LINES TO BE TURNED OFF OR REMOVED CALL CENTERPOINT ENERGY AT (713) 207-2222.

ACTIVITIES ON OR ACROSS CENTERPOINT ENERGY FEE OR EASEMENT PROPERTY
1. NO APPROVAL TO USE, CROSS OR OCCUPY CENTERPOINT FEE OR EASEMENT PROPERTY IS GIVEN. IF YOU NEED TO USE CENTERPOINT PROPERTY, PLEASE CONTACT OUR SURVEYING & RIGHT OF WAY DIVISION AT (713) 207-6348 OR (713) 207-5769.

ELEVATION REQUIREMENTS

THE MINIMUM ELEVATION REQUIREMENT FOR THE TOP OF THE EQUIPMENT PADS SHALL BE FIFTEEN FEET (15') ABOVE MEAN SEA LEVEL AND TWO FEET (2') ABOVE THE DOCUMENTED 500-YEAR FLOODPLAIN. THE CUSTOMER MUST PROVIDE EQUIPMENT PADS THAT MEET THESE ELEVATION REQUIREMENTS. THE EASEMENT (MINIMUM WORKING CLEARANCE) AROUND THE EQUIPMENT PADS SHALL ALSO BE BROUGHT UP TO THE ABOVE MENTIONED MINIMUM ELEVATION, AS OUTLINED ON THE EQUIPMENT PAD DETAIL SPECIFICATION. THE CUSTOMER MUST PROVIDE STAIRS OUTSIDE OF THE EASEMENT AREA, AND A GUARDRAIL AROUND THE PERIMETER OF THE ELEVATED AREA AS REQUIRED BY OSHA AND THE GOVERNING CITY OF COUNTY BUILDING CODE. THE EASEMENT AREA SURROUNDING THE EQUIPMENT PADS SHALL NOT HAVE A SLOPE GREATER THAN 2%. THE PAD AND MINIMUM EASEMENT ELEVATIONS (MINIMUM WORKING CLEARANCE) MUST BE VERIFIED AT THE TIME OF INSTALLATION.

CONTRACTOR NOTES

1. THESE PLANS REPRESENT THE OVERALL SITEWORK IMPROVEMENTS REQUIRED FOR PROJECT CONSTRUCTION. THE CONTRACTOR SHALL FURNISH, INSTALL, TEST AND COMPLETE ALL WORK TO THE SATISFACTION OF THE ENGINEER AND OWNER IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR MEANS AND METHODS OF CONSTRUCTION; AS SUCH, THESE PLANS DO NOT COMPLETELY REPRESENT, NOR ARE THEY INTENDED TO REPRESENT, ALL SPECIFIC INSTRUCTIONS REQUIRED FOR SITEWORK CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONSTRUCT ALL IMPROVEMENTS DEPICTED ON THESE PLANS IN ACCORDANCE WITH ALL APPLICABLE RULES, REGULATIONS AND LAWS IN EFFECT AT THE TIME OF CONSTRUCTION.
2. THE CONTRACTOR SHALL ACCEPT THE SITE AS IS. THE CONTRACTOR SHALL ASSESS CONDITIONS, AND THE KIND, QUALITY AND QUANTITY OF WORK REQUIRED. THE OWNER MAKES NO GUARANTEE IN REGARD TO THE ACCURACY OF ANY AVAILABLE INFORMATION WHICH WAS OBTAINED DURING INVESTIGATIONS. THE CONTRACTOR SHALL MAKE A THOROUGH SITE INSPECTION IN ORDER TO FIELD CHECK EXISTING SITE CONDITIONS, CORRELATE CONDITIONS WITH THE DRAWINGS AND RESOLVE ANY POSSIBLE CONSTRUCTION CONFLICTS WITH THE OWNER AND ENGINEER PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR SHALL MAKE ADDITIONAL TOPOGRAPHIC SURVEYS HE DEEMS NECESSARY, PROVIDED THEY ARE COORDINATED WITH THE OWNER. ANY CONDITIONS DETERMINED BY THE CONTRACTOR THAT DIFFER FROM THE INFORMATION SHOWN ON THE DRAWINGS THAT ARE NOT BROUGHT TO THE ATTENTION OF THE OWNER AND ENGINEER PRIOR TO THE START OF WORK SHALL NOT BE CONSIDERED GROUNDS FOR ADDITIONAL PAYMENT OR CHANGES TO THE CONTRACT DURATION, OR ANY OTHER CLAIMS AGAINST THE OWNER OR OWNER'S ENGINEER.
3. THE CONTRACTOR SHALL, WHEN THEY DEEM NECESSARY, PROVIDE WRITTEN REQUESTS FOR INFORMATION (RFIS) TO THE OWNER AND ENGINEER PRIOR TO THE CONSTRUCTION OF ANY SPECIFIC SITEWORK ITEM. THE (RFI) SHALL BE IN A FORM ACCEPTABLE TO OWNER AND ENGINEER AND SHALL ALLOW FOR A MINIMUM OF TWO WORK DAYS OR ADDITIONAL REASONABLE TIME FOR A WRITTEN REPLY. RFIS SHALL BE NUMBERED CONSECUTIVELY BY DATE SUBMITTED. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SITEWORK ITEMS CONSTRUCTED DIFFERENTLY THAN INTENDED OR AS DEPICTED ON THE PLANS.
4. INFORMATION RELATED TO ELEVATIONS AND PROPOSED UTILITIES (SUCH AS ROADWAY GRADES, INVERT ELEVATIONS, RIM ELEVATIONS, GRATE ELEVATIONS, BUILDING FINISHED FLOOR ELEVATIONS, ETC.) MAY BE FOUND IN MORE THAN ONE LOCATION IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL SUFFICIENTLY REVIEW ALL PLANS, PROFILES AND ANY OTHER INFORMATION IN THE CONTRACT DOCUMENTS FOR CONSISTENCY PRIOR TO CONSTRUCTION. ANY INCONSISTENCIES OR DISCREPANCIES THAT ARE FOUND BY THE CONTRACTOR OR HIS ASSIGNS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER AND ENGINEER IN WRITING, IN THE FORMAT OF AN RFI PRIOR TO CONSTRUCTION.
5. THERE ARE ADDITIONAL NOTES, SPECIFICATIONS AND REQUIREMENTS CONTAINED THROUGHOUT THE PLAN SET AS WELL AS REFERENCES TO SPECIFICATIONS FROM APPLICABLE GOVERNING AUTHORITIES AND INDUSTRY STANDARDS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN, REVIEW AND ADHERE TO ALL THESE DOCUMENTS.
6. CONTRACTOR IS RESPONSIBLE FOR HIS OWN HORIZONTAL AND VERTICAL CONTROL, REFERENCE POINTS AND CONSTRUCTION STAKING AS INCIDENTAL TO THE PROJECT.
7. CONTRACTOR TO FIELD VERIFY ALL BOUNDARY AND TOPOGRAPHIC INFORMATION PRIOR TO BEGINNING WORK.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND FOR NOTIFICATION OF ALL AUTHORIZED INSPECTORS, SUPERINTENDENTS OR PERSONS IN CHARGE OF PRIVATE OR PUBLIC UTILITIES AFFECTED BY HIS OPERATIONS PRIOR TO COMMENCEMENT OF WORK.
9. CONTRACTOR SHALL NOTIFY UTILITY COORDINATING COMMITTEE BY TELEPHONE AT 713-223-4567 OR 1-800-669-8344 AND CITY OF MAGNOLIA
10. CONTRACTOR TO BE RESPONSIBLE FOR PROVIDING AND MAINTAINING ALL BARRICADES, WARNING SIGNS, FLASHING LIGHTS AND TRAFFIC CONTROL DEVICES IN CONFORMANCE WITH PART VI OF THE "TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES", (TEXAS M.U.T.C.D. MOST RECENT EDITION AS REVISED) DURING CONSTRUCTION.
11. IF CONTRACTOR OPTS TO USE OPEN CUT METHOD OF CONSTRUCTION, TRENCH BEDDING AND BACKFILL SHALL MEET CITY OF MAGNOLIA STANDARD SPECIFICATIONS REQUIREMENTS AND ALL OPEN EXCAVATIONS IN VEHICULAR TRAFFIC AREAS SHALL BE COVERED WITH ANCHORED STEEL PLATES CAPABLE OF SUPPORTING HS 20 LOADING AT END OF EACH DAYS WORK OR WHEN NOT IN USE.
12. OFF DUTY UNIFORMED POLICE OFFICER IS REQUIRED TO DIRECT TRAFFIC WHERE TRAFFIC LANES ARE BLOCKED.
13. CONTRACTOR SHALL COMPLY WITH O.S.H.A. REGULATIONS AND STATE OF TEXAS LAW CONCERNING EXCAVATION, TRENCHING AND SHORING AS SPECIFIED IN CITY OF MAGNOLIA. EXCAVATIONS OVER 5 FEET DEEP TO BE SHEETED AND PROTECTED IN ACCORDANCE WITH THE "TRENCH SAFETY DETAILS" AS REQUIRED BY STATE LAW AND O.S.H.A. ANY DEVIATION FROM THE METHOD SHOWN IN THE PLANS MUST BE DESIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED IN THE STATE OF TEXAS AND IN GOOD STANDING. SAID DESIGN MUST BE FORWARDED TO THE ENGINEER AND IN HIS HANDS AT LEAST 48 HOURS BEFORE BEGINNING EXCAVATION OPERATIONS. FAILURE TO COMPLY WITH THE REQUIREMENTS HEREIN WILL CONSTITUTE AGREEMENT BY THE CONTRACTOR TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO COMPLY. ASSUME TYPE "C" SOIL.
14. CONTRACTOR TO ENSURE POSITIVE DRAINAGE TO STORM STRUCTURES AND NO PONDING.
15. IN PEDESTRIAN ACCESSIBLE AREAS CROSS SLOPES SHALL NOT EXCEED 2% AND RUNNING SLOPE SHALL NOT EXCEED 5% WITHOUT ADDITIONAL ADA PROVISIONS.

AT&T TEXAS FACILITIES

1. THE LOCATIONS OF AT&T TEXAS/SWBT FACILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND UTILITIES.
2. THE CONTRACTOR SHALL CALL 1-800-344-8377 (TEXAS 811) A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE UNDERGROUND LINES FIELD LOCATED.
3. WHEN EXCAVATING WITHIN EIGHTEEN INCHES (18″) OF THE INDICATED LOCATION OF AT&T TEXAS/SWBT FACILITIES, ALL EXCAVATIONS MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES. WHEN BORING, THE CONTRACTOR SHALL EXPOSE THE AT&T TEXAS/SWBT FACILITIES.
4. WHEN AT&T TEXAS/SWBT FACILITIES ARE EXPOSED, THE CONTRACTOR WILL PROVIDE SUPPORT TO PREVENT DAMAGE TO THE CONDUIT DUCTS OR CABLES. WHEN EXCAVATING NEAR TELEPHONE POLES THE CONTRACTOR SHALL BRACE THE POLE FOR SUPPORT.
5. THE PRESENCE OR ABSENCE OF AT&T TEXAS/SWBT UNDERGROUND CONDUIT FACILITES OR BURIED CABLE FACILITIES SHOWN ON THESE PLANS DOES NOT MEAN THAT THERE ARE NO DIRECT BURIED CABLES OR OTHER CABLES IN CONDUIT IN THE AREA.
6. PLEASE CONTACT THE AT&T TEXAS DAMAGE PREVENTION, IF THERE ARE QUESTIONS ABOUT BORING OR EXCAVATING NEAR OUR AT&T TEXAS/SWBT FACILITIES.

GENERAL CONTRACTOR NOTE

AS PER MONTGOMERY COUNTY'S DIRECTIVE, ALL TYPICAL DETAILS AND SPECIFICATIONS SHOULD FOLLOW CITY OF HOUSTON STANDARDS

Date	Description	No.
Revisions		

WALTER K BOGARDUS
119534
Signature 11/9/2023 Date
W. KYLE BOGARDUS
PROFESSIONAL ENGINEER TX Lic. No. 119534

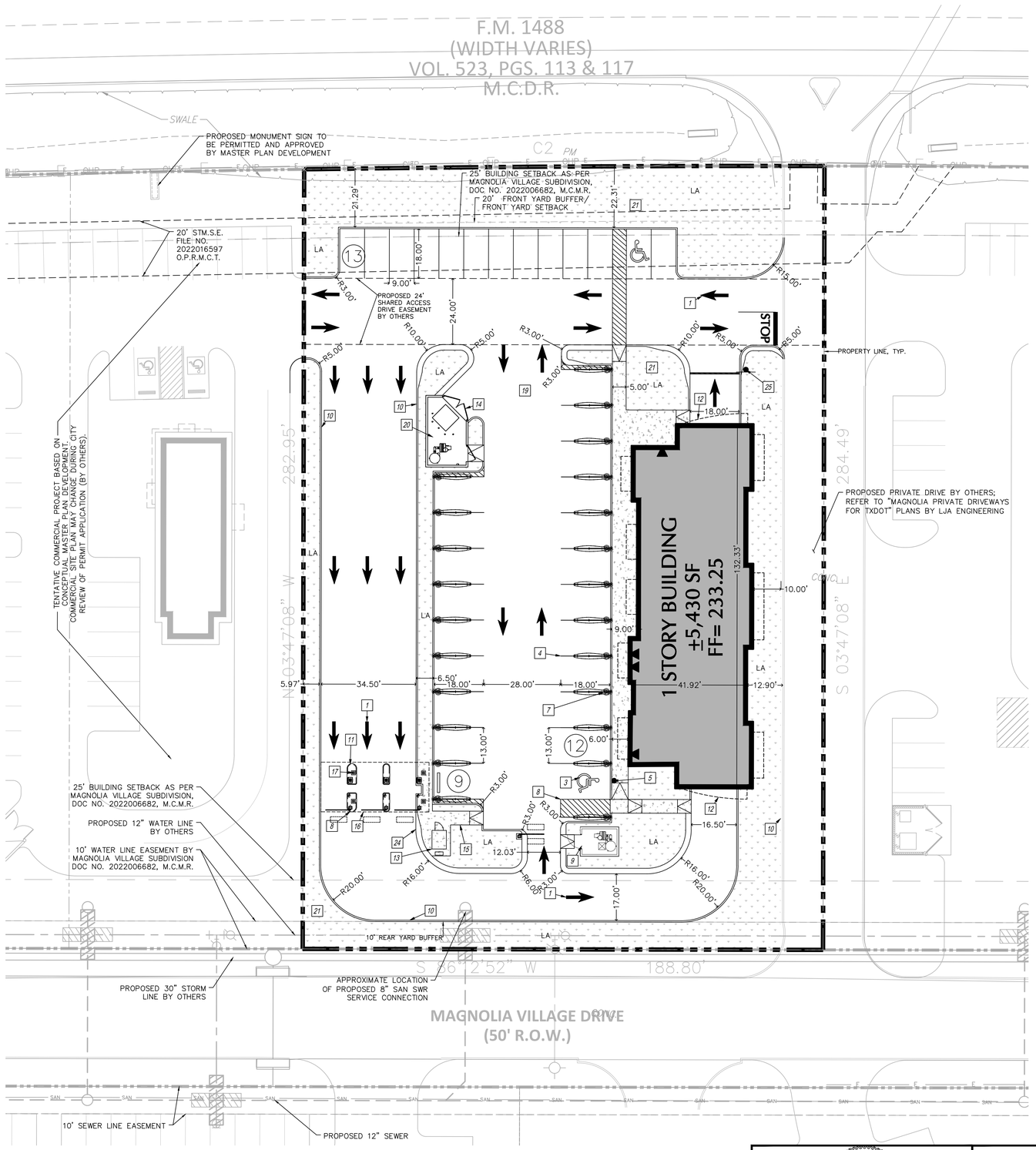
LANGAN
Langan Engineering and
Environmental Services, Inc.
17220 Katy Freeway, First Floor, Suite 125
Houston, TX 77094
T: 281.675.7900 F: 281.675.7901 www.langan.com
TBPE FIRM REG. #F-13709

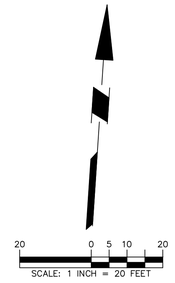
Project
13321 FM 1488
MAGNOLIA, TX 77354
MAGNOLIA
MONTGOMERY TEXAS

Drawing Title
GENERAL NOTES & LEGEND

Project No. 510057201
Date 09/01/2023
Drawn By CS
Checked By GB
Drawing No. CS003

LANGAN
Project No. 510057201





SITE DATA

ADDRESS:	13321 FARM TO MARKET RD 1488
PARCEL ID:	S710900 (7109-00-00200)
LOT AREA:	52,707 SF (1.21 AC)
CURRENT ZONING:	CITY OF MAGNOLIA
EXISTING USE:	VACANT TRACT OF LAND
PROPOSED USE:	EXPRESS CAR WASH
BUILDING AREA:	5,430 SF
BUILDING LOT COVERAGE:	5,430 SF/52,707 SF = 10.3%
BUILDING HEIGHT:	35' (1 STORY)
MINIMUM LOT WIDTH:	60'
MINIMUM LOT DEPTH:	100'
MINIMUM FRONT YARD SETBACK	25'
MINIMUM SIDE YARD SETBACK:	5'
MINIMUM SIDE STREET SETBACK:	10'
MINIMUM REAR YARD SETBACK:	10'
PARKING REQUIRED:	3 PARKING SPACES FOR EACH BAY OR STALL FOR STACKING SPACE PLUS 1 SPACE PER 2 STALLS IF ATTENDED
PARKING PROVIDED:	34
HANDICAP PARKING REQUIRED:	2
HANDICAP PARKING PROVIDED:	2
PARKING DIMENSION, TYP:	13'X18' 9'X18'

SITE DATA

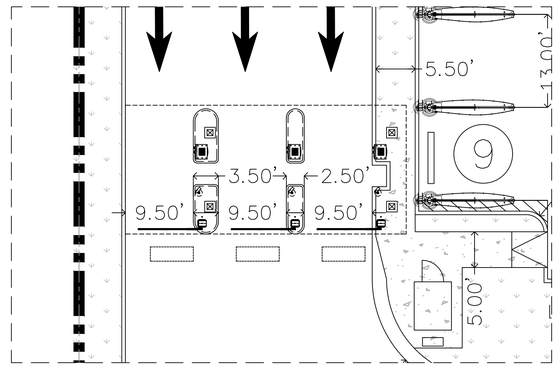
AREA OF PARCEL PROPOSED FOR DEVELOPMENT	100%
REQ. AND PROV. OPEN SPACE RATIO OR LANDSCAPE SURFACE RATIO:	REFER TO LANDSCAPE PLAN
NET BUILDABLE AREA:	43,494 SF (1.00 AC)
MAXIMUM AND ACTUAL GROSS AND NET DENSITY:	N/A
PROVIDER FOR :	
SANITARY SEWER:	CITY OF MAGNOLIA
POTABLE WATER:	CITY OF MAGNOLIA
TELEPHONE:	AT&T
GAS UTILITIES:	CENTERPOINT
OPEN SPACE RATIO:	11,335 SF/43,494 SF =0.261 (26.1%)

SITE NOTES

1. ALL ON-SITE CONSTRUCTION SHALL BE IN ACCORDANCE WITH CURRENT MISTER CAR WASH SPECIFICATIONS AND/OR CITY OF MAGNOLIA SPECIFICATIONS, WHICHEVER IS MORE RESTRICTIVE.
2. ALL CONSTRUCTION IN CITY RIGHT-OF-WAYS AND/OR EASEMENT SHALL BE IN ACCORDANCE WITH CITY OF MAGNOLIA STANDARD SPECIFICATIONS.
3. PRIOR TO STARTING CONSTRUCTION, THE CONTRACTOR SHALL MAKE CERTAIN ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED, NO CONSTRUCTION OR FABRICATION SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED ALL PLANS AND OTHER DOCUMENTS AS APPROVED BY ALL PERMITTING AUTHORITIES.
4. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING UTILITIES DURING THE CONSTRUCTION OF THIS PROJECT.
5. IF CONTRACTOR FINDS A DISCREPANCY WITH THE TOPOGRAPHIC INFORMATION ON THESE PLANS, HE/SHE SHALL CONTACT THE CONSTRUCTION MANAGER/SUPERVISOR IMMEDIATELY.
6. ALL DIMENSIONS SHOWN ARE TO FACE OF CURB, BRICK, OR AS OTHERWISE NOTED.
7. REFER TO ARCHITECTURAL PLANS FOR EXACT BUILDING DIMENSIONS.
8. ALL PARKING STALLS SHALL BE STRIPED IN ACCORDANCE W/ APPLICABLE GOVERNING AUTHORITIES.
9. ALL FIRE LANES SHALL BE STRIPED ACCORDING TO CITY OF MAGNOLIA REQUIREMENTS.
10. REFER TO THE MCW SITE PLAN STANDARDS FOR CRITICAL DIMENSIONS AND WHERE TO PROPOSE VERTICAL AND ROLLED CURBS.
11. NO ASPHALT ON -SITE

LAYOUT NOTES

1	PAINTED TRAFFIC ARROW
2	DRIVE THROUGH STRIPING
3	PAINTED HANDICAP PARKING SYMBOL
4	PARKING STALLS WITH 4" STRIPE
5	HANDICAP SIGN ON BOLLARD (SEE DETAIL CS501)
6	NO PARKING AREA STRIPING
7	INSTALL VACUUM
8	INSTALL PEGASUS 30" W/ CONCRETE POS ISLAND; SEE DETAILS
9	INSTALL VACUUM ENCLOSURE; SEE DETAILS
10	6" RAISED CURB
11	POINT OF SALE
12	OVERHEAD CANOPY
13	CSA HUT; SEE DETAILS
14	COMBINED DUMPSTER AND VACUUM ENCLOSURE (BY OTHERS)
15	SIDEWALK
16	DRIVE THROUGH CANOPY
17	CANOPY COLUMN
18	LIGHT DUTY CONCRETE PAVEMENT (SEE DETAIL 4, SHEET CS501)
19	MEDIUM DUTY CONCRETE PAVEMENT
20	HEAVY DUTY CONCRETE PAVEMENT
21	LANDSCAPE
22	6" CURB TO FLUSHED
23	24" ROLLOVER CURB
24	6" CURB TO 24" ROLLOVER CURB TRANSITION
25	STOP SIGN, TYP.
26	MATCH TO EXISTING CURB
27	EXISTING CONCRETE DRIVE
28	MATCH TO EXISTING PAVEMENT
29	12" SOLID WHITE STOP BAR



Date	Description	No.
Revisions		

STATE OF TEXAS
WALTER K. BOGARDUS
119534
LICENSED
PROFESSIONAL ENGINEER
11/9/2023
Signature Date
W. KYLE BOGARDUS
PROFESSIONAL ENGINEER TX Lic. No. 119534

LANGAN
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17220 Katy Freeway, First Floor, Suite 125
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TBPE FIRM REG. #F-13709

Project
13321 FM 1488
MAGNOLIA, TX 77354
MAGNOLIA
MONTGOMERY TEXAS

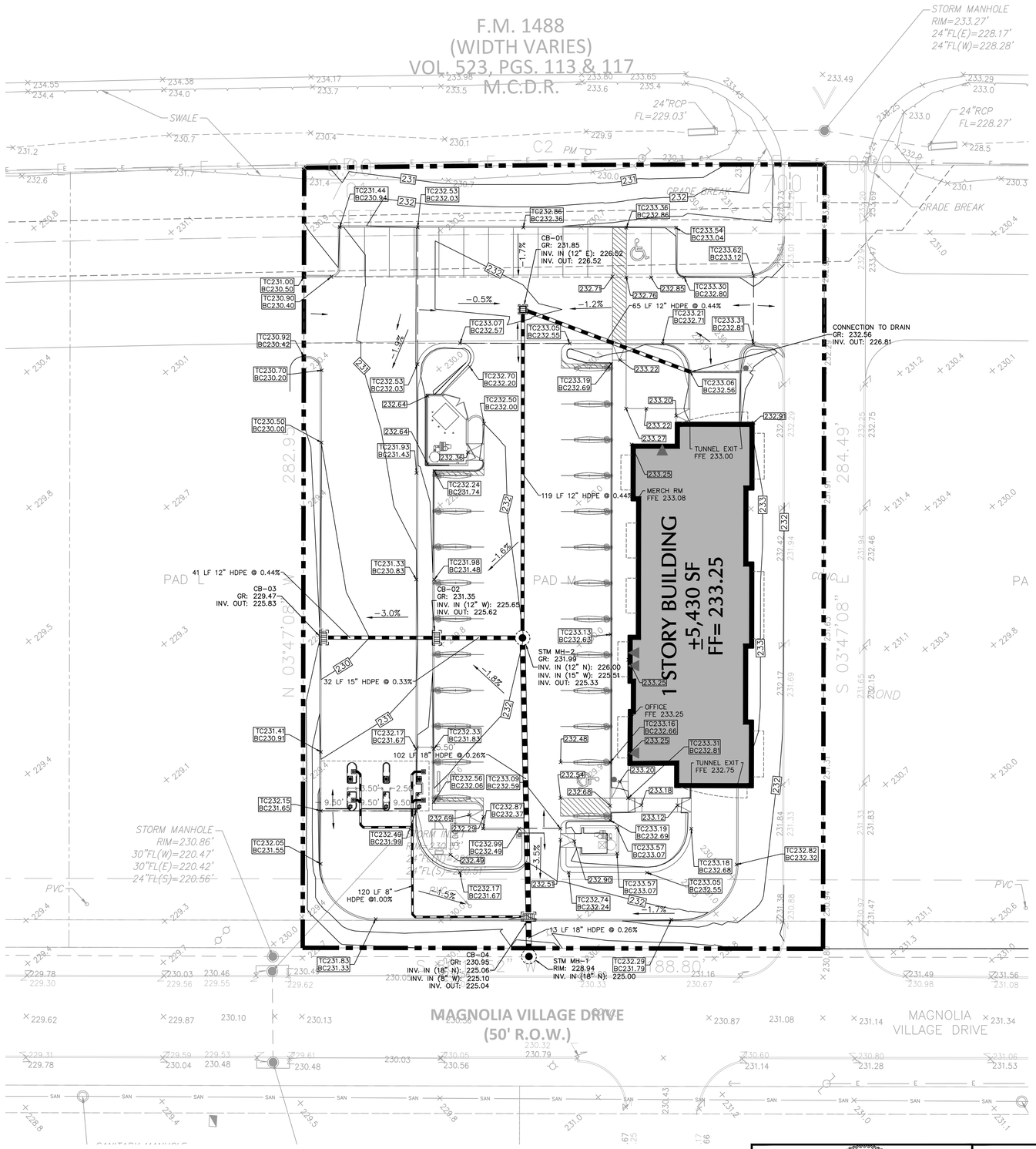
Drawing Title
SITE PLAN

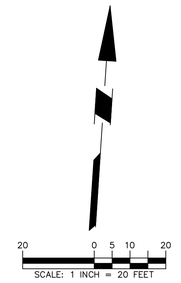
Project No. 510057201
Date 09/01/2023
Drawn By CS
Checked By GB

Drawing No. CS101

LANGAN
Project No. 510057201

Date: 11/9/2023 Time: 11:06 User: jmarquez Style Table: Langan.stb Layout: CS101 Document Code: 510057201-0501-CS101-0101





NOTES:

1. IN AREAS WHERE THE PROJECT DESIGN INCORPORATES FILL ADJACENT TO NEIGHBORING LANDOWNERS, THE CONTRACTOR SHALL IMPLEMENT GRADING AND/OR PERIMETER RUNOFF CATCHMENTS DEVICES (EG—PERMITER DITCHES) DURING CONSTRUCTION TO ENSURE THAT ADJACENT PARCELS BORDERING THE PROJECT SITE DO NOT EXPERIENCE INTERIM DRAINAGE FLOWS THAT EXCEED PRE—DEVELOPMENT CONDITIONS FOR STORM EVENTS UP TO AND INCLUDING THE CURRENT STORM DRAINAGE DESIGN CRITERIA AT THE TIME OF THE PERMIT OR CARRY SEDIMENT GENERATED AS PART OF CONSTRUCTION ACTIVITIES. WHERE APPLICABLE, THESE PRACTICES ARE IN ADDITION TO THE STANDARD STORM WATER POLLUTION PREVENTION PLAN DESIGN AND SHALL INCLUDE ADDITIONAL DITCHES REDIRECTION SITE DRAINAGE OR TEMPORARY PIPING. THIS IS NOT INTENDED TO ADDRESS ANY LIABILITY OR RESPONSIBILITY UNDER TEXAS WATER CODE 11.086

2. THE CONTRACTOR SHALL PREPARE EARTHWORK CALCULATIONS PRIOR TO BIDDING TO QUANTIFY THE VOLUME OF ON—SITE CUT AND FILL AND ANY IMPORT/EXPORT REQUIRED TO COMPLETE THIS PROJECT, ALL OF WHICH WILL BE INCLUDED IN THE BASE BID. THE EARTHWORK CALCULATIONS SHALL CONSIDER THE DATA AND RECOMMENDATIONS OF THE GEOTECHNICAL AND ENVIRONMENTAL REPORTS WITH REGARD TO THE SUITABILITY OF ON—SITE SOIL/MATERIAL FOR USE ON THE SITE. THE CONTRACTOR MAY PROPOSE, AS PART OF THEIR BID, MODIFICATIONS TO THE FINISHED FLOOD ELEVATION AND/OR EXTERIOR GRADES TO MINIMIZE IMPORT OR EXPORT OF SOIL WHILE ACCOMPLISHING THE DESIGN INTENT. IF DEEMED ACCEPTABLE AND APPROPRIATE BY THE OWNER AND ENGINEER, THE ENGINEER WILL REVISE THE PROPOSED GRADING PLAN BASED ON THE CONTRACTOR'S RECOMMENDATIONS. ONCE THE GRADING PLAN HAS BEEN REVISED (AND IF NECESSARY RE—APPROVED BY LOCAL AUTHORITIES), THE REVISED PLANS SHALL BE CONSIDERED THE FINAL CONTRACT DRAWINGS AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST OF ALL EARTHWORK ACTIVITIES (INCLUDING MEANS AND METHODS AS WELL AS ANY REQUIRED IMPORT OR EXPORT OF MATERIAL

3. 48 HOUR NOTICE: CONTRACTOR SHALL NOTIFY HARRIS COUNTY PRIOR TO COMMENCING CONSTRUCTION AND/OR BACKFILLING ANY UTILITIES. CONTRACTOR(S) TO CONTACT PUBLIC REVIEW DEPARTMENT @ (713)—274—3931 OR PUBLIC.REVIEW@HCPID.ORG

Date	Description	No.
Revisions		

STATE OF TEXAS — WALTER K. BOGARDUS — 119534 — LICENSED PROFESSIONAL ENGINEER

Signature 11/9/2023 Date

W. KYLE BOGARDUS
PROFESSIONAL ENGINEER TX Lic. No. 119534

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TBPE FIRM REG. #F-13709

Project
13321 FM 1488
MAGNOLIA, TX 77354
MAGNOLIA
MONTGOMERY TEXAS

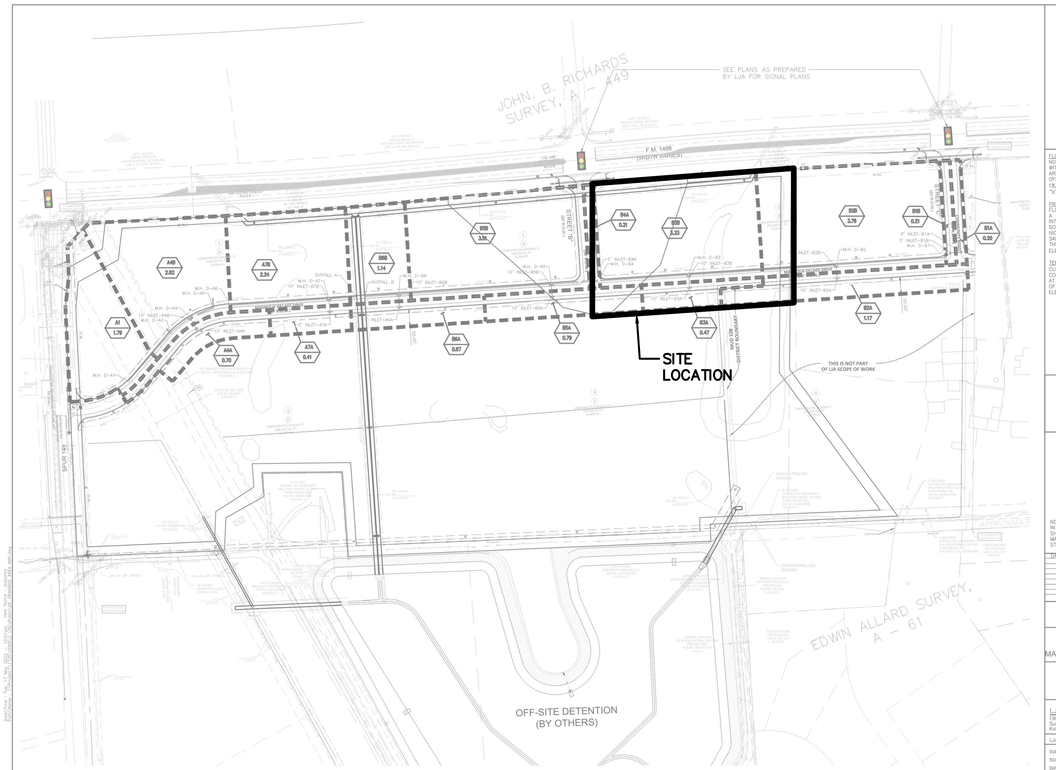
Drawing Title
GRADING & DRAINAGE PLAN

Project No.	510057201
Date	09/01/2023
Drawn By	CS
Checked By	GB

Drawing No. CG101
Sheet of 25

Date: 11/9/2023 Time: 11:07 User: jmarquez Style Table: Langan.stb Layout: CG101 Document Code: 510057201-0501-CG101-0101

LANGAN Project No. 510057201



GRAPHIC SCALE
100 0 50 100 200
(IN FEET)
1 inch = 100 ft.

FLOODPLAIN INFORMATION:
NO PORTION OF THE SUBJECT SITE IS LOCATED WITHIN THE 100 YEAR SPECIAL FLOOD HAZARD AREA ACCORDING TO THE MOST RECENT OFFICIAL INSURANCE RATE MAP, DATED AUGUST 18, 2014 MAP NUMBER 48339C0485G, ZONE(S) "X".

PRIMARY BENCHMARK: ELEV.=231.72'
FLOODPLAIN REFERENCE MARK NO. 100195 IS A BRASS DISK LOCATED FROM THE INTERSECTION OF FM 1488 AND FM 1774, SOUTHEAST ALONG FM 1774 0.4 MILES TO NICHOLS SAWMILL RD., SOUTH ALONG NICHOLS SAWMILL RD. 0.8 MILES TO THE BENCHMARK ON THE RIGHT.
ELEVATION: 231.72 (NAVD88)(2001 ADJUSTMENT)

TEMPORARY BENCHAMARK: ELEV.=229.00'
CUT "X" ON THE SOUTHWEST CORNER OF A CONCRETE BASE OF A TSCB PEDESTAL LOCATED AT SOUTHEAST CORNER OF THE INTERSECTION OF FM 1488 AND SPUR 149.
ELEVATION: 229.00

GREGORY J. PATCH
89063
MAY 17 2022

NOTE:
IN CASE OF CONFLICT BETWEEN DETAILS SHOWN ON THIS SHEET AND THE CITY MAGNOLIA DESIGN STANDARDS, THE MORE STRINGENT SHALL APPLY.

DATE	REVISION

MAGNOLIA VILLAGE DRIVE, HERITAGE
LANE, COMMUNITY ROAD
MAGNOLIA, TX 77354

PUBLIC ROADS, UTILITIES AND
STORM DRAINAGE TO SERVE
MAGNOLIA VILLAGE RETAIL CENTER

DRAINAGE AREA MAP

LJA Engineering Inc.
1904 W. Grand Parkway N.
Suite 100
Katy, Texas 77449
Phone 713.953.5200
Fax 713.953.5026
FRN-F-1386

LJA PROJECT NO.: 1725-0068

SUBMITTED:
SCALE: 1"=40'
DATE: MONTH, YEAR
SURVEYED BY: XXXXXX
F B NO:
DESIGNED BY: JA
DRAWN BY: JA/AC
SHEET NO. 6 OF 27
CITY DWG NO:

5 YEAR STORM SEWER ATLAS 14 CALCULATIONS
Magnolia Village
PREPARED ON: November, 2021

JOB NO.: 1725-0068

	5yr	100yr
B	70	145.71
D	7.7	15.69
E	0.749	0.7898

File Name: I:\Projdsk1\1725\0068\1 Engineering\Design Calculations and One Lines\Drainage\[1725-0068 Xcalcs-JA.xls]5 YEAR

Manhole From	Manhole To	Delta Area	Area (Acres)	Runoff Coefficient C	Sum of C x A	Frequency	Intensity I (In/Hr)	Sum of Flows (CFS)	Time of Concentration (Minutes)	Pipe Time (Minutes)	Reach Length (Feet)	Diameter or Rise (Inches)	Span (Inches)	Slope %	Mannings "n"	Design Capacity (CFS)	Design Velocity (Ft/S)	Fall (Feet)	Manhole Drop (Feet)	Flowline Elevation Upstream (Feet)	Flowline Elevation ownstrear (Feet)	*Actual Velocity (Ft/S)*	*Hydraulic Gradient (%)*	*Change in Head (Feet)*	*Hyd. Grad. Upstream (Feet)*	Hyd. Grad. Downstream (Feet)	Top of Grate Elevation (Feet)	Differance Hyd. Grad. Gutter
SYSTEM "A"																												
1	2	1.79	1.79	0.80	1.43	5	5.01	7.18	26.08	0.78	108	24	---	0.26	0.013	11.54	3.67	0.20	0.00	219.74	219.46	2.29	0.10	0.11	221.82	221.71	225.79	(3.97)
2	3	0.00	1.79	0.80	1.43	5	4.93	7.06	26.86	0.58	79	24	---	0.26	0.013	11.54	3.67	0.20	0.00	219.46	219.26	2.25	0.10	0.08	221.71	221.64	225.55	(3.84)
3	4	0.00	1.79	0.80	1.43	5	4.87	6.97	27.45	0.54	72	24	---	0.26	0.013	11.54	3.67	0.19	0.00	219.26	219.07	2.22	0.09	0.07	221.64	221.57	224.55	(2.91)
4	5	2.62	5.11	0.80	3.53	5	4.81	16.97	27.99	0.36	74	30	---	0.26	0.013	20.91	4.26	0.19	0.00	219.07	218.88	3.46	0.17	0.13	221.57	221.38	224.56	(2.99)
5	6	0.00	5.11	0.80	3.53	5	4.78	16.85	28.35	0.24	50	30	---	0.26	0.013	20.91	4.26	0.05	0.00	218.88	218.75	3.43	0.17	0.08	221.38	221.25	224.37	(2.99)
6	7	0.00	5.11	0.80	3.53	5	4.75	16.76	28.59	1.40	287	30	---	0.26	0.013	20.91	4.26	0.75	0.00	218.75	218.00	3.42	0.17	0.48	221.25	220.57	224.34	(3.09)
7	OUTFALL	2.24	7.76	0.80	5.32	5	4.62	24.57	29.99	0.24	71	30	---	0.26	0.013	20.91	4.26	0.18	0.00	218.00	217.82	5.01	0.36	0.25	220.57	220.32	223.80	(3.23)
SYSTEM "A" INLETS																												
A4A	A4B	0.70	0.70	0.80	0.56	5	5.21	2.92	24.39	0.54	30	24	---	0.67	0.013	18.47	5.88	0.20	0.00	219.37	219.17	0.93	0.02	0.00	221.57	221.57	226.52	(4.95)
A4B	A4	0.00	0.70	0.80	0.56	5	5.15	2.88	24.93	0.13	7	24	---	1.43	0.013	27.04	8.61	0.10	0.00	219.17	219.07	0.92	0.02	0.00	221.57	221.57	226.45	(4.88)
A7A	A7B	0.41	0.41	0.80	0.89	5	5.13	4.56	25.06	0.34	30	24	---	0.67	0.013	18.47	5.88	0.20	0.00	218.30	218.10	1.45	0.04	0.01	220.59	220.57	224.50	(3.91)
A7B	A7	0.00	0.41	0.80	0.89	5	5.09	4.52	25.40	0.08	7	24	---	1.43	0.013	27.04	8.61	0.10	0.00	218.10	218.00	1.44	0.04	0.00	220.57	220.57	224.50	(3.93)
SYSTEM "B"																												
1	2	0.41	0.41	0.80	0.33	5	5.31	1.74	23.55	9.52	317	24	---	0.26	0.013	11.54	3.67	0.20	0.00	222.22	221.40	0.55	0.01	0.02	224.24	224.22	233.92	(9.68)
2	3	3.76	5.34	0.80	3.34	5	4.35	14.53	33.07	2.42	430	30	---	0.26	0.013	20.91	4.26	1.12	0.00	221.40	220.28	2.96	0.13	0.54	224.22	223.68	231.14	(6.92)
3	4	3.33	9.14	0.80	6.00	5	4.17	25.02	35.49	0.86	264	30	---	0.26	0.013	20.91	4.26	0.69	0.00	220.28	219.59	5.10	0.37	0.98	223.68	222.70	228.83	(5.15)
4	5	0.21	9.35	0.80	6.17	5	4.11	25.35	36.35	0.63	136	36	---	0.26	0.013	34.01	4.81	0.35	0.00	219.59	219.24	3.59	0.14	0.20	222.70	222.50	228.82	(6.12)
5	6	3.51	13.65	0.80	8.98	5	4.07	36.49	36.99	1.44	445	36	---	0.26	0.013	34.01	4.81	0.05	0.00	219.24	218.08	5.16	0.30	1.33	222.50	221.17	228.58	(6.08)
6	OUTFALL	1.14	15.46	0.80	9.89	5	3.97	39.26	38.42	0.30	101	36	---	0.26	0.013	34.01	4.81	0.26	0.00	218.08	217.82	5.55	0.35	0.35	221.17	220.82	224.71	(3.54)
SYSTEM "B" INLETS																												
1A	1B	0.20	0.20	0.80	0.16	5	5.45	0.87	22.53	1.80	30	24	---	0.18	0.013	9.60	3.06	0.05	0.00	222.52	222.32	0.28	0.00	0.00	224.52	224.32	234.50	(9.98)
1B	1	0.21	0.41	0.80	0.33	5	5.22	1.71	24.33	0.21	7	24	---	0.18	0.013	9.60	3.06	0.01	0.00	222.32	222.22	0.54	0.01	0.00	224.32	224.24	234.50	(10.18)
2A	2B	1.17	1.17	0.80	1.26	5	5.19	6.56	24.55	0.24	30	24	---	0.18	0.013	9.60	3.06	0.05	0.00	221.70	221.50	2.09	0.08	0.03	224.25	224.22	231.89	(7.64)
2B	2	0.00	1.17	0.80	1.26	5	5.16	6.52	24.79	0.06	7	24	---	0.18	0.013	9.60	3.06	0.01	0.00	221.50	221.40	2.08	0.08	0.01	224.22	224.22	231.89	(7.67)
3A	3B	0.47	0.47	0.80	0.38	5	5.29	1.99	23.76	0.79	30	24	---	0.18	0.013	9.60	3.06	0.05	0.00	220.58	220.38	0.63	0.01	0.00	223.68	223.68	229.74	(6.06)
3B	3	0.00	0.47	0.80	0.38	5	5.19	1.95	24.54	0.19	7	24	---	0.18	0.013	9.60	3.06	0.01	0.00	220.38	220.28	0.62	0.01	0.00	223.68	223.68	229.74	(6.06)
4A	4A	0.21	0.21	0.80	0.54	5	5.17	2.81	24.73	0.31	16.4	24	---	0.18	0.013	9.60	3.06	0.03	0.00	219.79	219.59	0.89	0.02	0.00	221.79	221.59	229.00	(7.21)
5A	5B	0.79	0.79	0.80	1.18	5	5.13	6.04	25.04	0.26	30	24	---	0.18	0.013	9.60	3.06	0.05	0.00	219.54	219.34	1.92	0.07	0.02	222.53	222.51	227.74	(5.21)
5B	5	0.00	0.79	0.80	1.18	5	5.10	6.00	25.30	0.06	7	24	---	0.18	0.013	9.60	3.06	0.01	0.00	219.34	219.24	1.91	0.07	0.00	222.51	222.50	227.74	(5.23)
6A	6B	0.67	0.67	0.80	0.54	5	5.22	2.80	24.32	0.56	30	24	---	0.18	0.013	9.60	3.06	0.05	0.00	218.38	218.18	0.89	0.02	0.00	221.17	221.17	225.51	(4.34)
6B	6	0.00	0.67	0.80	0.54	5	5.15	2.76	24.88	0.13	7	24	---	0.18	0.013	9.60	3.06	0.01	0.00	218.18	218.08	0.88	0.01	0.00	221.17	221.17	225.51	(4.34)

100 YEAR STORM SEWER ATLAS 14 CALCULATIONS
Magnolia Village
PREPARED ON: Novemever, 2021

JOB NO.: 1725-0068

File Name: I:\Projdsk1\1725\0068\1 Engineering\Design Calculations and One Lines\Drainage\[1725-0068 Xcalcs-JA.xls]100 YEA

Manhole From	Manhole To	Delta Area	Area (Acres)	Runoff Coefficient C	Sum of C x A	Frequency	Intensity I (In/Hr)	Sum of Flows (CFS)	Time of Concentration (Minutes)	Pipe Time (Minutes)	Reach Length (Feet)	Diameter or Rise (Inches)	Slope %	Mannings "n"	Design Capacity (CFS)	Design Velocity (Ft/S)	Fall (Feet)	Manhole Drop (Feet)	Flowline Elevation Upstream (Feet)	Flowline Elevation ownstrear (Feet)	*Actual Velocity (Ft/S)*	*Hydraulic Gradient (%)*	*Change in Head (Feet)*	*Hyd. Grad. Upstream (Feet)*	Hyd. Grad. Downstream (Feet)	Top of Grate Elevation (Feet)	Differance Hyd. Grad. Gutter
SYSTEM "A"																											
1	2	1.79	1.79	0.80	1.43	100	7.64	10.95	26.08	0.51	108	24	0.26	0.013	11.54	3.67	0.20	0.00	219.74	219.46	3.48	0.23	0.25	223.23	222.97	225.79	(2.56)
2	3	0.00	1.79	0.80	1.43	100	7.57	10.84	26.59	0.38	79	24	0.26	0.013	11.54	3.67	0.20	0.00	219.46	219.26	3.45	0.23	0.18	222.97	222.79	225.55	(2.58)
3	4	0.00	1.79	0.80	1.43	100	7.52	10.76	26.97	0.35	72	24	0.26	0.013	11.54	3.67	0.19	0.00	219.26	219.07	3.43	0.23	0.16	222.79	222.63	224.55	(1.76)
4	5	2.62	5.11	0.80	3.53	100	7.47	26.35	27.32	0.23	74	30	0.26	0.013	20.91	4.26	0.19	0.00	219.07	218.88	5.37	0.41	0.31	222.63	222.32	224.56	(1.93)
5	6	0.00	5.11	0.80	3.53	100	7.44	26.24	27.55	0.16	50	30	0.26	0.013	20.91	4.26	0.05	0.00	218.88	218.75	5.35	0.41	0.20	222.32	222.12	224.37	(2.05)
6	7	0.00	5.11	0.80	3.53	100	7.42	26.17	27.71	0.90	287	30	0.26	0.013	20.91	4.26	0.75	0.00	218.75	218.00	5.33	0.41	1.17	222.12	220.95	224.34	(2.22)
7	OUTFALL	2.24	7.76	0.80	5.32	100	7.30	38.82	28.61	0.15	71	30	0.26	0.013	20.91	4.26	0.18	0.00	218.00	217.82	7.91	0.90	0.64	220.95	220.32	223.80	(2.85)
SYSTEM "A" INLETS																											
A4A	A4B	0.70	0.70	0.80	0.56	100	7.90	4.42	24.39	0.36	30	24	0.67	0.013	18.47	5.88	0.20	0.00	219.37	219.17	1.41	0.04	0.01	222.64	222.63	226.52	(3.88)
A4B	A4	0.00	0.70	0.80	0.56	100	7.84	4.39	24.75	0.08	7	24	1.43	0.013	27.04	8.61	0.10	0.00	219.17	219.07	1.40	0.04	0.00	222.63	222.63	226.45	(3.82)
A7A	A7B	0.41	0.41	0.80	0.89	100	7.83	6.95	24.83	0.23	30	24	0.67	0.013	18.47	5.88	0.20	0.00	218.30	218.10	2.21	0.09	0.03	220.99	220.96	224.50	(3.51)
A7B	A7	0.00	0.41	0.80	0.89	100	7.80	6.92	25.06	0.05	7	24	1.43	0.013	27.04	8.61	0.10	0.00	218.10	218.00	2.20	0.09	0.01	220.96	220.95	224.50	(3.54)
SYSTEM "B"																											
1	2	0.41	0.41	0.80	0.33	100	8.03	2.63	23.55	6.30	317	24	0.26	0.013	11.54	3.67	0.20	0.00	222.22	221.40	0.84	0.01	0.04	230.46	230.42	233.92	(3.46)
2	3	3.78	5.36	0.80	3.35	100	7.14	23.93	29.85	1.47	430	30	0.26	0.013	20.91	4.26	1.12	0.00	221.40	220.28	4.88	0.34	1.46	230.42	228.96	231.14	(0.72)
3	4	3.33	9.16	0.80	6.02	100	6.96	41.89	31.32	0.52	264	30	0.26	0.013	20.91	4.26	0.69	0.00	220.28	219.59	8.53	1.04	2.75	228.96	226.20	228.83	0.13
4	5	0.21	9.37	0.80	6.18	100	6.90	42.69	31.83	0.38	136	36	0.26	0.013	34.01	4.81	0.35	0.00	219.59	219.24	6.04	0.41	0.56	226.20	225.64	228.82	(2.62)
5	6	3.51	13.67	0.80	8.99	100	6.86	61.69	32.21	0.85	445	36	0.26	0.013	34.01	4.81	0.05	0.00	219.24	218.08	8.73	0.86	3.81	225.64	221.84	228.58	(2.94)
6	OUTFALL	1.14	15.48	0.80	9.90	100	6.77	67.01	33.06	0.18	101	36	0.26	0.013	34.01	4.81	0.26	0.00	218.08	217.82	9.48	1.01	1.02	221.84	220.82	224.71	(2.87)
SYSTEM "B" INLETS																											
1A	1B	0.20	0.20	0.80	0.16	100	8.20	1.31	22.53	1.20	30	24	0.18	0.013	9.60	3.06	0.05	0.00	222.52	222.32	0.42	0.00	0.00	230.46	230.46	234.50	(4.04)
1B	1	0.21	0.41	0.80	0.33	100	8.00	2.62	23.73	0.14	7	24	0.18	0.013	9.60	3.06	0.01	0.00	222.32	222.22	0.84	0.01	0.00	230.46	230.46	234.50	(4.04)
2A	2B	1.17	1.17	0.80	1.26	100	7.98	10.09	23.87	0.16	30	24	0.18	0.013	9.60	3.06	0.05	0.00	221.70	221.50	3.21	0.20	0.06	230.49	230.43	231.89	(1.40)
2B	2	0.00	1.17	0.80	1.26	100	7.95	10.06	24.02	0.04	7	24	0.18	0.013	9.60	3.06	0.01	0.00	221.50	221.40	3.20	0.20	0.01	230.43	230.42	231.89	(1.46)
3A	3B	0.47	0.47	0.80	0.38	100	8.00	3.01	23.76	0.52	30	24	0.18	0.013	9.60	3.06	0.05	0.00	220.58	220.38	0.96	0.02	0.01	228.96	228.96	229.74	(0.78)
3B	3	0.00	0.47	0.80	0.38	100	7.92	2.98	24.28	0.12	7	24	0.18	0.013	9.60	3.06	0.01	0.00	220.38	220.28	0.95	0.02	0.00	228.96	228.96	229.74	(0.78)
4A	4	0.21	0.21	0.80	0.54	100	7.90	4.30	24.40	0.20	16.4	24	0.18	0.013	9.60	3.06	0.03	0.00	219.79	219.59	1.37	0.04	0.01	221.79	221.59	229.00	(7.21)
5A	5B	0.79	0.79	0.80	1.18	100	7.87	9.25	24.60	0.17	30	24	0.18	0.013	9.60	3.06	0.05	0.00	219.54	219.34	2.94	0.17	0.05	225.71	225.66	227.74	(2.03)
5B	5	0.00	0.79	0.80	1.18	100	7.84	9.22	24.77	0.04	7	24	0.18	0.013	9.60	3.06	0.01	0.00	219.34	219.24	2.93	0.17	0.01	225.66	225.64	227.74	(2.08)
6A	6B	0.67	0.67	0.80	0.54	100	7.91	4.24	24.32	0.37	30	24	0.18	0.013	9.60	3.06	0.05	0.00	218.38	218.18	1.35	0.04	0.01	221.85	221.84	225.51	(3.66)
6B	6	0.00	0.67	0.80	0.54	100	7.85	4.21	24.69	0.09	7	24	0.18	0.013	9.60	3.06	0.01	0.00	218.18	218.08	1.34	0.03	0.00	221.84	221.84	225.51	(3.67)

NOTE:
IN CASE OF CONFLICT BETWEEN
MAGNOLIA VILLAGE DRIVE, HERIT
LANE, COMMUNITY ROAD
MAGNOLIA, TX 77354
PUBLIC ROADS, UTILITIES
STORM DRAINAGE TO SE
MAGNOLIA VILLAGE RETAIL
DRAINAGE AREA MA
CALCULATIONS
LJA Engineering Inc.
LJA PROJECT NO.: 1725-0068

Date	Description	No.
	Revisions	

Signature
Date
WALTER K BOGARDUS
119534
W. KYLE BOGARDUS
PROFESSIONAL ENGINEER TX Lic. No. 119534

LANGAN
Langan Engineering and
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17220 Katy Freeway, First Floor, Suite 125
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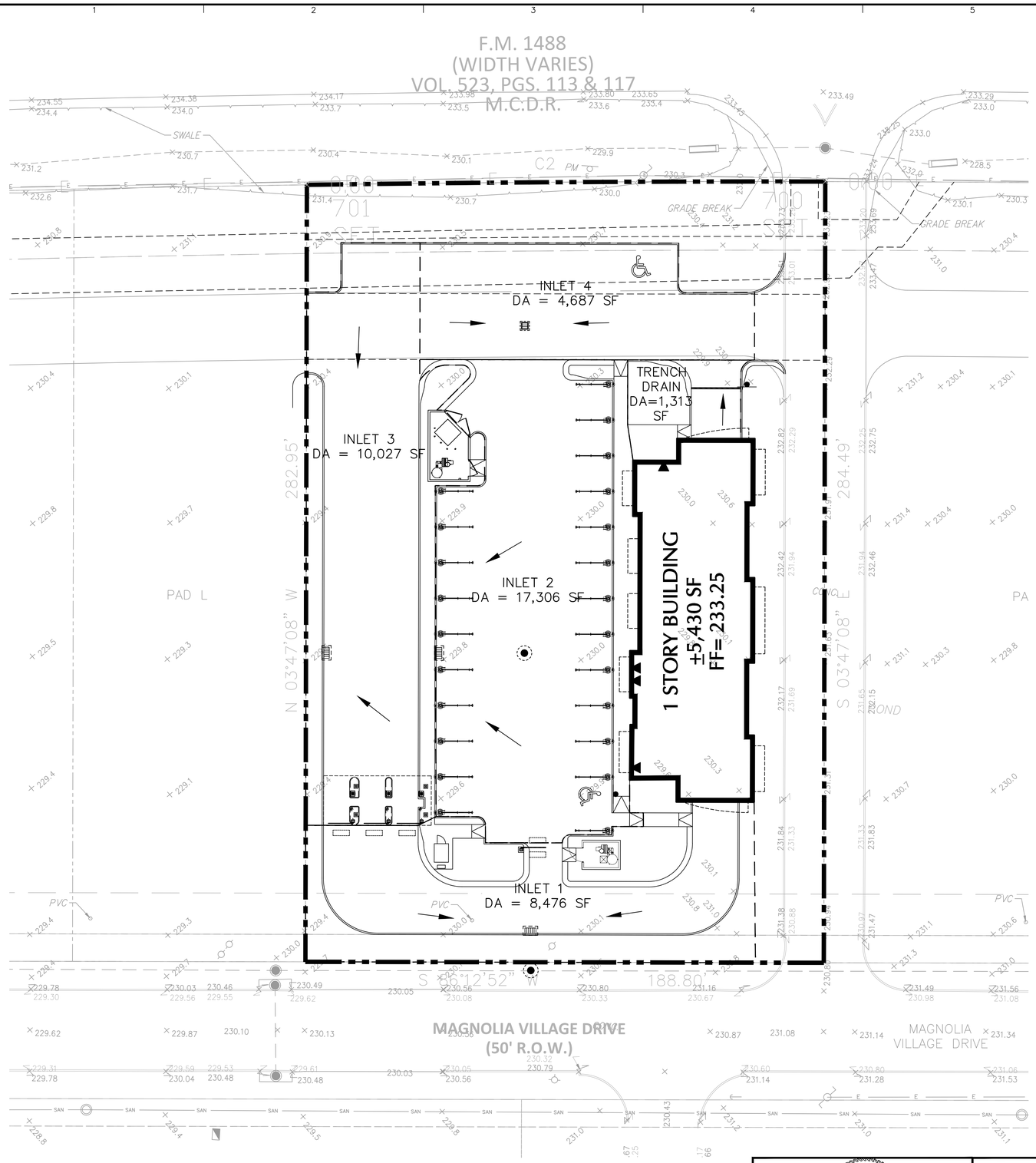
T: 281.675.7900 F: 281.675.7901 www.langan.com
TBPE FIRM REG. #F-13709

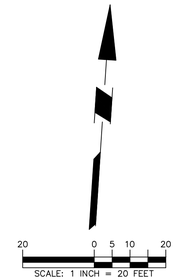
Project
MISTER CAR WASH
SPRING
HARRIS TEXAS

Drawing Title
EXISTING DRAINAGE AREA PLAN

Project No.
510054801
Date
11/01/2022
Drawn By
CS
Checked By
GB

Drawing No.
CG103





DRAINAGE AREA NOTES

1. IN AREAS WHERE THE PROJECT DESIGN INCORPORATES FILL ADJACENT TO NEIGHBORING LANDOWNERS, THE CONTRACTOR SHALL IMPLEMENT GRADING AND/OR PERIMETER RUNOFF CATCHMENTS DEVICES (E.G. PERIMETER DITCHES) DURING CONSTRUCTION TO ENSURE THAT ADJACENT PARCELS BORDERING THE PROJECT SITE DO NOT EXPERIENCE INTERIM DRAINAGE FLOWS THAT EXCEED PRE-DEVELOPMENT CONDITIONS FOR STORM EVENTS UP TO AND INCLUDING THE CURRENT STORM DRAINAGE DESIGN CRITERIA AT THE TIME OF PERMIT OR CARRY SEDIMENT GENERATED AS PART OF CONSTRUCTION ACTIVITIES. WHERE APPLICABLE, THESE PRACTICES ARE IN ADDITION TO STANDARD STORM WATER POLLUTION PREVENTION DESIGN AND SHALL INCLUDE ADDITIONAL DITCHES REDIRECTING SITE DRAINAGE OR TEMPORARY PIPING. THIS NOTE IS NOT INTENDED TO ADDRESS ANY LIABILITY OR RESPONSIBILITY UNDER TEXAS WATER CODE 11.086.

Project Information

Project: MCW MAGNOLIA
Job No.: 510057201
System: A
Designed: JM — Date: 8/31/2023
Checked: WKB — Date: 8/31/2023

Design Criteria

Starting
HGL Elev. (ft): 226.50
City of Magnolia
Design Storm: 10 yr
b = 81.00
d = 7.70
e = 0.7530

Min Cover (ft): 2
Match C or F: C
Min. Tc (min):
Default n: 0.013
Junction K: 0.3
Peaking Factor: 1.25

Downstream MH/Inlet	Downstream Flowline	Upstream MH/Inlet	Upstream Flowline	Pipe Length (ft)	Round or Box	Pipe Rise (in or ft)	Pipe Span (ft)	No. of Pipes	Pipe Material	n	Min Slope (%)	C	I (in/hr)	Area (Acres)	Roof Area (sf)	Branch Area (Acres)	Cum. Area (Acres)	Tc (min)	Flow (cfs)	Roof Flow (cfs)	Branch Flow (cfs)	Cum. Flow (cfs)	Design Cap. (cfs)	Flow Velocity (ft/s)	Upstream TG (ft)	HGL (ft)
OUTFALL	225.00	CCB-04	225.03	13	Round	18		1	RCP	0.013	0.26%	0.8	9.31	0.19			0.96	10.00	1.45	0.00		7.15	5.37	4.04	230.95	226.64
CCB-04	225.03	STM MH-2	225.30	102	Round	18		1	RCP	0.013	0.26%	0.8	9.31			0.14	0.77	10.00	0.00	0.00	1.03	5.70	5.37	3.22	231.99	226.98
STM MH-2	225.55	CB-02	225.65	32	Round	15		1	RCP	0.013	0.33%	0.8	9.31	0.40			0.63	10.00	2.96	0.00		4.67	3.72	3.81	231.35	227.22
CB-02	225.90	CB-03	226.09	41	Round	12		1	RCP	0.013	0.44%	0.8	9.31	0.23			0.23	10.00	1.71	0.00		1.71	2.37	2.18	229.47	227.33
STM MH-2	226.00	CB-01	226.52	119	Round	12		1	RCP	0.013	0.44%	0.8	9.31	0.11			0.14	10.00	0.80	0.00		1.03	2.37	1.31	231.85	227.52
CB-01	226.52	TRENCH DRAIN	226.81	65	Round	12		1	RCP	0.013	0.44%	0.8	9.31	0.03			0.03	10.00	0.22	0.00		0.22	2.37	0.29	232.56	227.81

Project Information

Project: MCW MAGNOLIA
Job No.: 510057201
System: A
Designed: JM — Date: 8/31/2023
Checked: WKB — Date: 8/31/2023

Design Criteria

Starting
HGL Elev. (ft): 226.50
City of Magnolia
Design Storm: 25 yr
b = 81.00
d = 7.70
e = 0.7240

Min Cover (ft): 2
Match C or F: C
Min. Tc (min):
Default n: 0.013
Junction K: 0.3
Peaking Factor: 1.25

Downstream MH/Inlet	Downstream Flowline	Upstream MH/Inlet	Upstream Flowline	Pipe Length (ft)	Round or Box	Pipe Rise (in or ft)	Pipe Span (ft)	No. of Pipes	Pipe Material	n	Min Slope (%)	C	I (in/hr)	Area (Acres)	Roof Area (sf)	Branch Area (Acres)	Cum. Area (Acres)	Tc (min)	Flow (cfs)	Roof Flow (cfs)	Branch Flow (cfs)	Cum. Flow (cfs)	Design Cap. (cfs)	Flow Velocity (ft/s)	Upstream TG (ft)	HGL (ft)
OUTFALL	225.00	CCB-04	225.03	13	Round	18		1	RCP	0.013	0.26%	0.8	10.11	0.19			0.96	10.00	1.57	0.00		7.77	5.37	4.39	230.95	226.66
CCB-04	225.03	STM MH-2	225.30	102	Round	18		1	RCP	0.013	0.26%	0.8	10.11			0.14	0.77	10.00	0.00	0.00	1.11	6.19	5.37	3.50	231.99	227.07
STM MH-2	225.55	CB-02	225.65	32	Round	15		1	RCP	0.013	0.33%	0.8	10.11	0.40			0.63	10.00	3.21	0.00		5.08	3.72	4.14	231.35	227.35
CB-02	225.90	CB-03	226.09	41	Round	12		1	RCP	0.013	0.44%	0.8	10.11	0.23			0.23	10.00	1.86	0.00		1.86	2.37	2.37	229.47	227.48
STM MH-2	226.00	CB-01	226.52	119	Round	12		1	RCP	0.013	0.44%	0.8	10.11	0.11			0.14	10.00	0.87	0.00		1.11	2.37	1.42	231.85	227.52
CB-01	226.52	TRENCH DRAIN	226.81	65	Round	12		1	RCP	0.013	0.44%	0.8	10.11	0.03			0.03	10.00	0.24	0.00		0.24	2.37	0.31	232.56	227.81

Date	Description	No.
Revisions		

STATE OF TEXAS — WALTER K. BOGARDUS — 119534 — REGISTERED PROFESSIONAL ENGINEER

Signature 11/9/2023 Date

W. KYLE BOGARDUS
PROFESSIONAL ENGINEER TX Lic. No. 119534

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Langan Engineering and Environmental Services, Inc.
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TBPE FIRM REG. #F-13709

Project
13321 FM 1488
MAGNOLIA, TX 77354
MONTGOMERY MAGNOLIA TEXAS

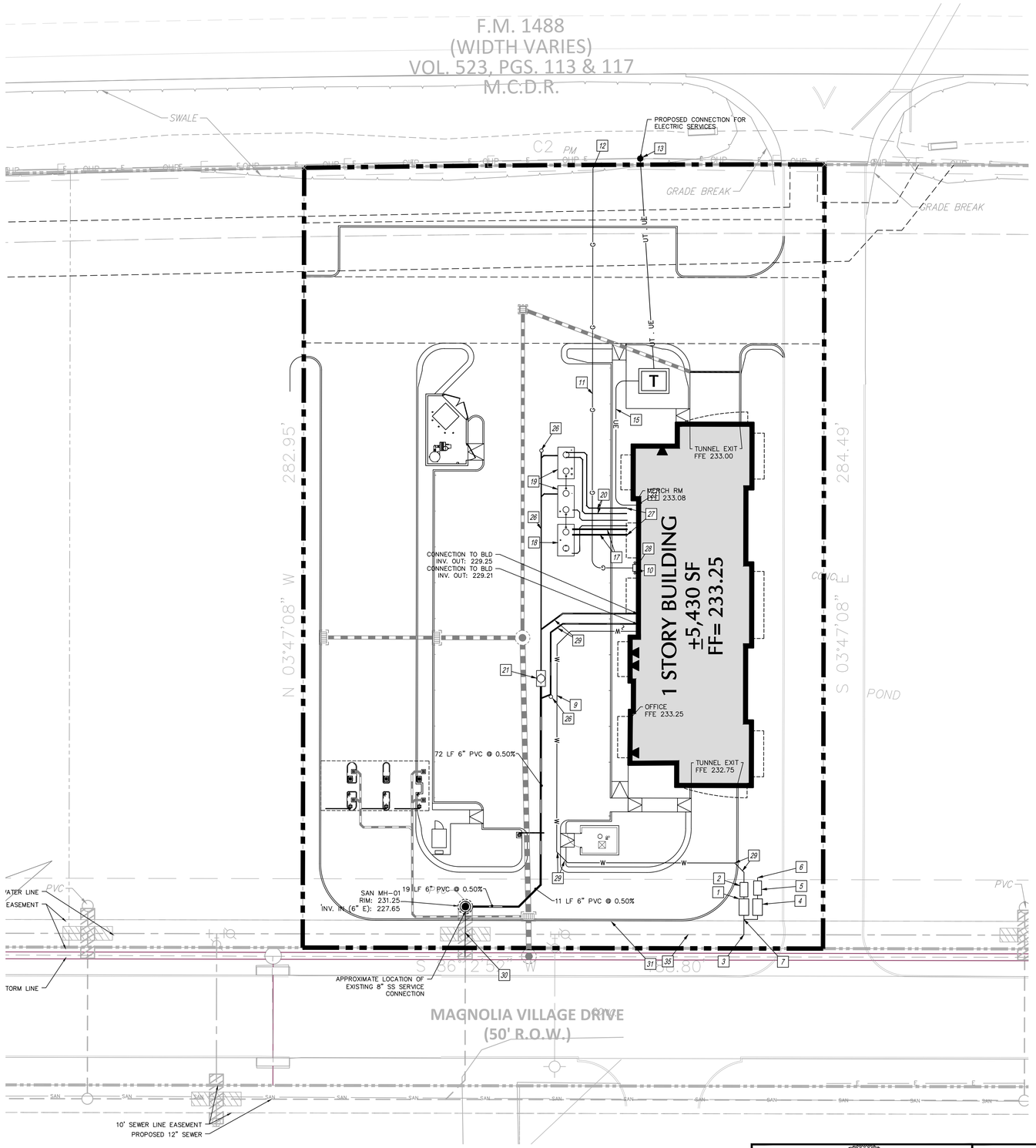
Drawing Title
PROPOSED DRAINAGE AREA MAP

Project No. 510057201
Date 09/01/2023
Drawn By CS
Checked By GB

Drawing No. CG104
Sheet of 25

LANGAN
Project No. 510057201

Date: 11/9/2023 Time: 11:08 User: jmarquez Style Table: Langan.stb Layout: CG104 Document Code: 510057201-0501-CG104-0101



20 0 5 10 20
SCALE: 1 INCH = 20 FEET

UTILITY NOTES

1. ALL 2" WATER METERS ARE TO BE PROVIDED AND INSTALLED BY CITY OF MAGNOLIA. ALL OTHER PORTIONS OF WATER SERVICES (I.E. TAPS, SERVICE LINE, METER SETTING, ECT.) TO BE PROVIDED AND INSTALLED BY OWNERS CONTRACTOR.

LAYOUT NOTES

1	2" DOMESTIC WATER MASTER METER TO BE INSTALLED BY MAGNOLIA OPERATOR
2	2" RPZ BACKFLOW PREVENTER
3	12"x12"x2" TS&V
4	1" IRRIGATION WATER METER TO BE INSTALLED BY THE DOWDELL OPERATOR
5	1" PVB BACKFLOW PREVENTER
6	1" STUB
7	2"X2"X1" TEE
8	NOT USED
9	2" DOMESTIC WATER LINE
10	GAS METER
11	3" GAS LINE
12	CONTRACTOR TO COORDINATE CONNECTION TO EXISTING GAS LINE WITH CENTERPOINT ENERGY
13	EXISTING CENTERPOINT ENERGY AND TELEPHONE LINE, TYP.
14	NOT USED
15	UNDERGROUND ELECTRICAL LINE, TYP.
16	NOT USED
17	TRASH PIT CONNECTION TO RECLAIM TANK
18	RECLAIM TANK 1, DEPTH IS DETERMINED BY DISTANCE FROM BUILDING STEM WALL
19	RECLAIM TANK 2 & 3 OVERFLOW, FLOW THRU SAND/OIL
20	SUCTION LINES TO RETURN RECLAIMED WATER TO MECHANICAL ROOM
21	750 GALLON SAND/OIL INTERCEPTOR, UNDERGROUND
22	NOT USED
23	ELECTRICAL CONNECTION; REFER TO MEP PLANS
24	NOT USED
25	NOT USED
26	CLEAN OUT
27	REFER TO MEP FOR CONTINUATION
28	PROPOSED GAS LINE CONNECTION TO BUILDING; REFER TO MEP PLANS
29	45 DEGREE BEND, TYP.
30	EXISTING SANITARY SEWER STUB OUT
31	EXISTING WATER EASEMENT
32	PROPOSED MANHOLE TO EXISTING STUB OUT CONNECTION
33	NOT USED
34	NOT USED
35	EXISTING 12" WATER LINE

Date	Description	No.
Revisions		

STATE OF TEXAS · WALTER K. BOGARDUS · 119534 · LICENSED PROFESSIONAL ENGINEER

Signature 11/9/2023 Date

W. KYLE BOGARDUS
PROFESSIONAL ENGINEER TX Lic. No. 119534

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TBPE FIRM REG. #F-13709

Project
13321 FM 1488
MAGNOLIA, TX 77354
MONTGOMERY MAGNOLIA TEXAS

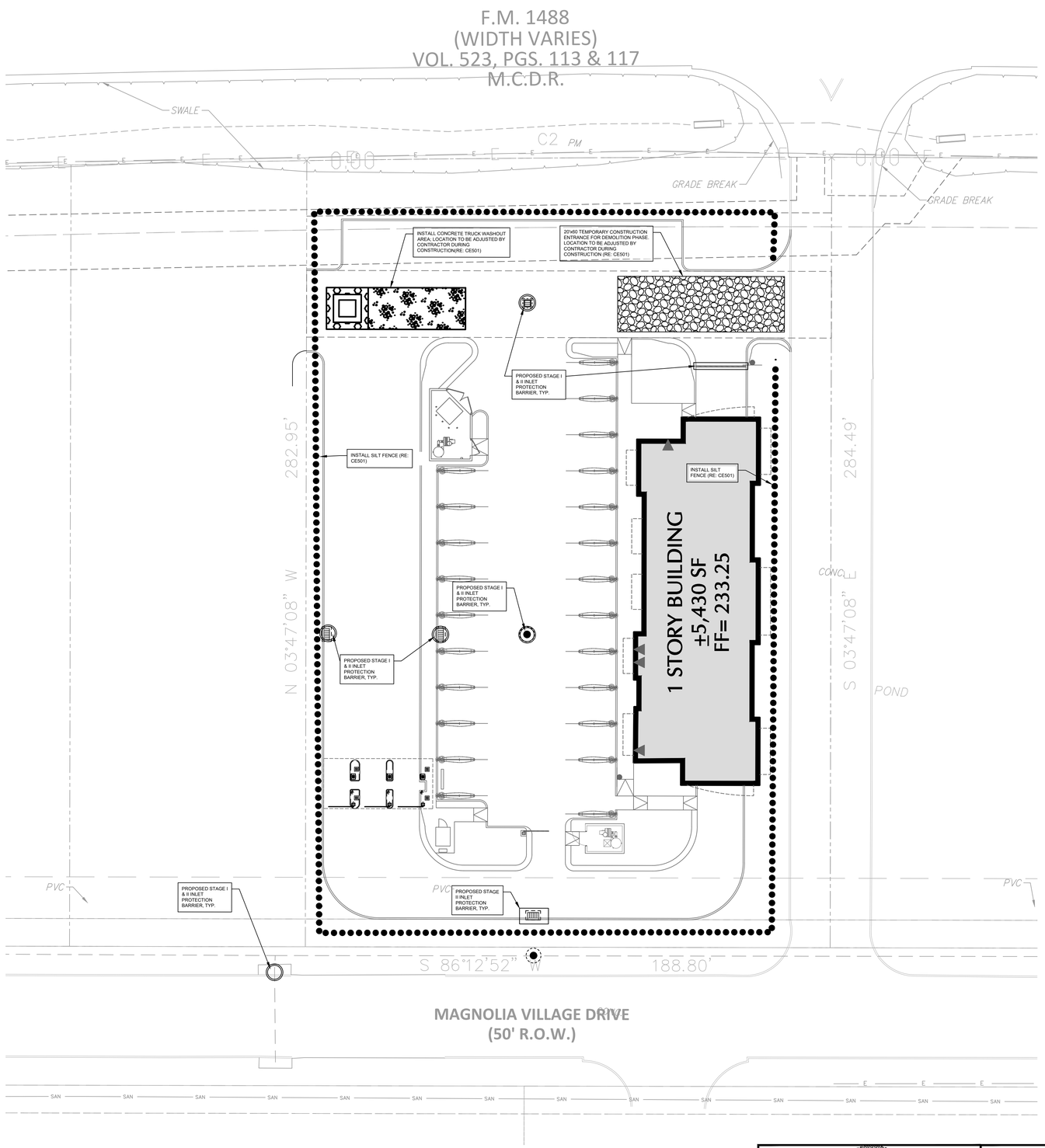
Drawing Title
UTILITY PLAN

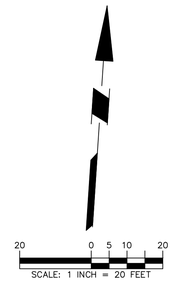
Project No.	510057201
Date	09/01/2023
Drawn By	CS
Checked By	GB

Drawing No. CU101

LANGAN
Project No. 510057201

Date: 11/9/2023 Time: 11:08 User: jmarquez Style Table: Langan.stb Layout: CU101 Document Code: 510057201-0501-CU101-0101





LEGEND

- INLET PROTECTION
- SILT FENCE
- CONSTRUCTION ENTRANCE / EXIT

CONSTRUCTION SEQUENCE NOTES

1. OBTAIN GRADING PERMIT.
2. INSTALL ALL EROSION CONTROL MEASURES AND DEVICES THAT CAN BE INSTALLED PRIOR TO SITE CLEARING.
3. CLEAR SITE.
4. INSTALL ANY REMAINING CONTROL MEASURES AND DEVICES THAT COULD NOT BE INSTALLED PRIOR TO SITE CLEARING.
5. GRADE SITE.
6. INSTALL ALL UNDERGROUND UTILITIES. INSTALL EROSION CONTROL AROUND CATCH BASINS AND INLETS.
7. INSTALL PAVEMENT.
8. INSPECT AND MAINTAIN ALL EROSION CONTROL MEASURES UNTIL ALL DISTURBED OFFSITE & ONSITE AREAS HAVE BEEN HYDROMULCHED OR SODDED (IN ACCORDANCE WITH THE LANDSCAPE PLAN) AND A MOWABLE STAND OF GRASS IS ACHIEVED.

EROSION AND SEDIMENT CONTROL NOTES

1. EROSION CONTROL MEASURES, SITE WORK AND RESTORATION WORK SHALL BE IN ACCORDANCE WITH CITY OF MAGNOLIA REQUIREMENTS.
2. ALL SLOPES SHALL BE SODDED OR SEEDED WITH APPROVED GRASS, GRASS MIXTURE OR GROUND COVER SUITABLE TO THE AREA AND SEASON IN WHICH THEY ARE APPLIED (IN ACCORDANCE WITH LANDSCAPE PLANS.)
3. BRUSH BERMS, HAY BALES, SEDIMENTATION BASINS AND SIMILARLY RECOGNIZED TECHNIQUES AND MATERIALS, SHALL BE EMPLOYED DURING CONSTRUCTION TO PREVENT POINT SOURCE IF THEY ARE WARRANTED.
4. ALL TEMPORARY EROSION CONTROL MEASURES SHALL NOT BE REMOVED UNTIL FINAL INSPECTION AND APPROVAL OF THE PROJECT BY CITY OF MAGNOLIA. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN ALL TEMPORARY EROSION CONTROL STRUCTURES AND TO REMOVE EACH STRUCTURE AS APPROVED BY CITY OF MAGNOLIA.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTROL OF DUST AND DIRT RISING AND SCATTERING IN THE AIR DURING CONSTRUCTION AND SHALL PROVIDE WATER SPRINKLING OR OTHER SUITABLE METHODS OF CONTROL.

Date	Description	No.
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WALTER K BOGARDUS
119534
LICENSED PROFESSIONAL ENGINEER

Signature 11/9/2023 Date

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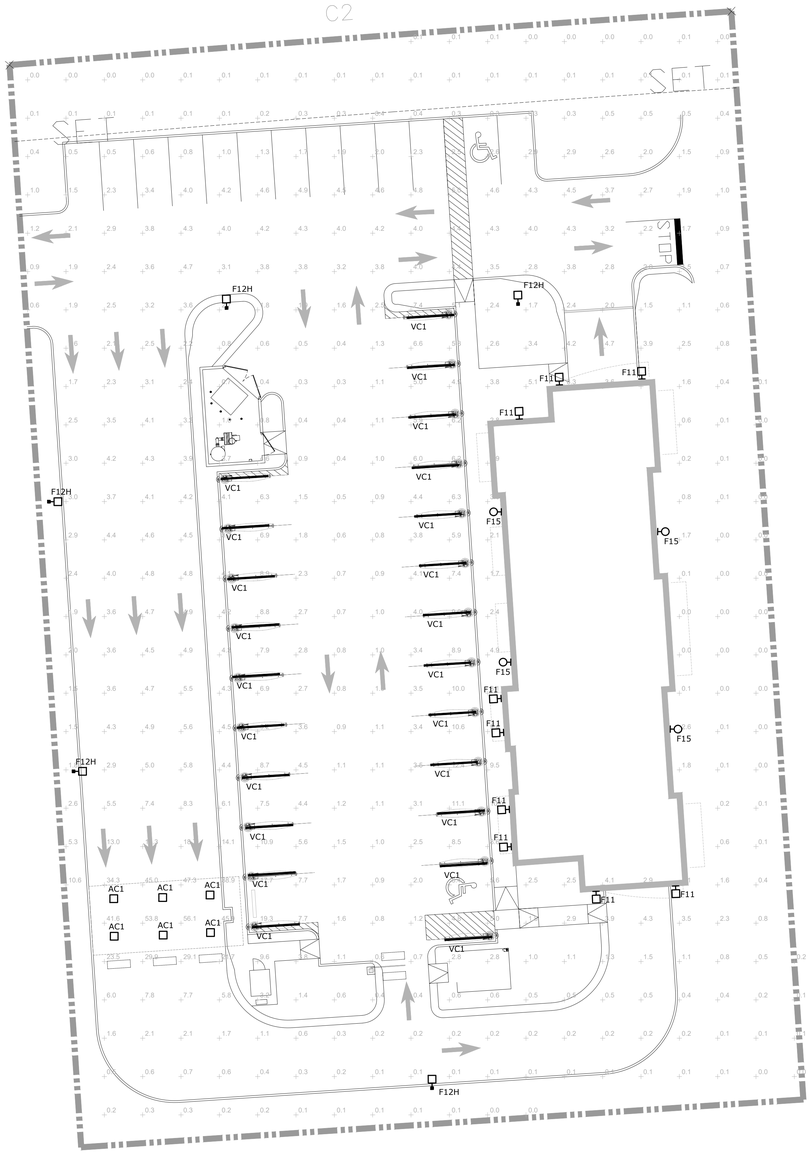
Project
13321 FM 1488
MAGNOLIA, TX 77354
MAGNOLIA
MONTGOMERY TEXAS

Drawing Title
SOIL EROSION & SEDIMENT CONTROL PLAN

Project No.	Drawing No.
510057201	CE101
Date: 09/01/2023	
Drawn By: CS	
Checked By: GB	Sheet of 25

Project No. 510057201

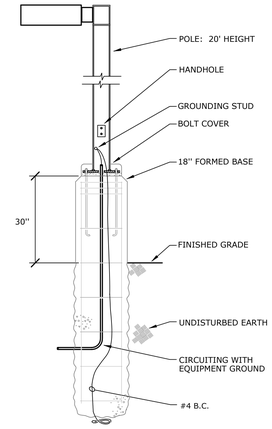
Date: 11/9/2023 Time: 11:09 User: jmarquez Style Table: Langan.stb Layout: CE101 Document Code: 510057201-0501-CE101-0101



A EP1.0 PHOTOMETRIC SITE PLAN
1/16" = 1'-0"

0' 4' 8' 16' 32'

NORTH



NOTE:
ASSEMBLY SHALL BE FACTORY CERTIFIED TO WITHSTAND 110 MPH WINDS (1.3 GUST FACTOR) WITHOUT DAMAGE OR PERMANENT DEFLECTION.
PROVIDE POLE BASE SHOP DRAWING FOR REVIEW. REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL POLE BASE DIAGRAMS.

B 1.0 POLE BASE DIAGRAM
NO SCALE

LIGHTING FIXTURE SCHEDULE

FIXTURE SCHEDULE GENERAL NOTES:

1. FIXTURES SHALL HAVE APPROPRIATE U.L. LABEL (i.e., DAMP OR WET) AS REQUIRED BY CODES AND ORDINANCES.
2. FIXTURES SHALL INCLUDE ALL ACCESSORIES NECESSARY FOR INSTALLATION ACCORDING TO MANUFACTURER'S SHOP DRAWINGS AND AS REQUIRED BY CODES AND LOCAL ORDINANCES.
3. PRIOR TO ORDERING ANY LIGHTING EQUIPMENT, THE CONTRACTOR SHALL COORDINATE ALL FIXTURE LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING PLANS AND CEILING CAVITY DEPTHS.
4. ALL LAMPS SHALL BE PROVIDED AND INSTALLED ACCORDING TO THE ATTACHED FIXTURE SCHEDULE AND SPECIFICATIONS. ENSURE COMPATIBILITY BETWEEN FIXTURE, LAMP(S) AND BALLAST(S). (OSRAM SYLVANIA SERIES)
5. CONTRACTOR SHALL VERIFY FIXTURE VOLTAGES AND CEILING TRIM COMPATIBILITY PRIOR TO ORDERING FIXTURE.
6. PROVIDE APPROVED FIRE-RATED ENCLOSURES FOR ALL LIGHTING FIXTURES LOCATED IN FIRE-RATED CEILINGS.
7. LIGHTING FIXTURE CATALOG NUMBERS ARE SERIES TYPE ONLY. PROVIDE ALL NECESSARY HARDWARE AS REQUIRED BY THE SPECIFICATIONS, DRAWINGS, AND PROJECT CONDITIONS FOR A COMPLETE INSTALLATION.
8. ENSURE COMPATIBILITY OF ALL LIGHTING SYSTEM COMPONENTS, ESPECIALLY DIMMED SYSTEMS. FIXTURES, LED DRIVERS, LAMPS, BALLAST(S), AND DIMMING SYSTEMS/INDIVIDUAL CONTROLS SHALL BE FACTORY CERTIFIED COMPATIBLE FOR FULL RANGE OF DIMMING COMPATIBILITY.
9. PROVIDE CLEARANCES FROM COMBUSTIBLES: A MINIMUM OF 1/2" (OTHER THAN AT POINTS OF SUPPORT) AND 3" FROM INSULATION FOR RECESSED LIGHTING FIXTURES WHICH ARE NON-IC RATED.
10. FOR FIXTURES RECESSED IN SUSPENDED T-BAR CEILING, PROVIDE A MINIMUM OF TWO (2) #12 SUPPORT WIRES ATTACHED TO BUILDING FRAME IN ADDITION TO T-BAR CLIPS.
11. FIXTURES WITH EMERGENCY BATTERY BACKUP SHALL BE WIRED AHEAD OF ANY LOCAL SWITCHING IN COMPLIANCE WITH NEC ARTICLE 700.
12. EMERGENCY LIGHTING UNITS SHALL BE EQUIPPED WITH FACTORY-INSTALLED INTEGRAL TEST SWITCHES.
13. FOR ALL FIXTURES LOCATED IN FOOD SERVICE AREAS, PROVIDE DOOR-TO-FRAME AND LENS-TO-DOOR GASKETING, INVERTED LENS, AND FOOD SERVICE RATING.
14. LED FIXTURES SHALL EQUAL OR EXCEED THE FOLLOWING MINIMUM REQUIREMENTS:
    - L8/50: 80% OF LUMEN OUTPUT AT 50,000 HOURS
    - CRI GREATER THAN OR EQUAL TO 80.
    - LUMENS PER WATT: DOWNLIGHTS = GREATER THAN 60, OTHERWISE GREATER THAN 90.
    - UNIFORMITY: (3) MCADAMS ELLIPSES.
    - FUNCTIONAL LIFE: GREATER THAN 60,000 HOURS
    - INTERIOR AMBIENT: GREATER THAN 40°C, 104°F
    - EXTERIOR AMBIENT: GREATER THAN 50°C, 122°F
    - SEAL AGAINST DUST AND INSECT ENTRY.
    - POWER FACTOR: 0.9 OR BETTER.
    - MANUFACTURERS GUARANTEE: 5 YEARS.
15. FOR LED RETROFIT LAMPS, PROVIDE SELF-BALLASTED LED LAMPS WITH THESE CHARACTERISTICS:
    - CRI GREATER THAN OR EQUAL TO 80.
    - COLOR = 2700K OR 3000K
    - LIFE = GREATER THAN OR EQUAL 25,000 HOURS
    - MANUFACTURERS GUARANTEE = 5 YEARS.
    - DIMMABLE AS NOTED.
    - LUMENS AS NOTED.
16. WHERE FIXTURE AND/OR LAMP IS SPECIFIED BY MANUFACTURER AND CATALOG NUMBER, PERFORMANCE OF PROPOSED SUBSTITUTE SHALL EQUAL OR EXCEED PUBLISHED DATA OF THE SPECIFIED FIXTURE.

TYPE	DESCRIPTION	LAMP	CONTROL	VOLTAGE	LOAD	MANUFACTURER	SERIES	NOTES
F11	WALL MOUNTED LED WALL SCONCE. DARK BRONZE FINISH	LED: 3460 Lm 4000K 80CRI	ON/OFF	120/277	28W	LSI	XWM-FT-LED-03-40-UE-BRZ	
F11E	WALL MOUNTED LED WALL SCONCE. DARK BRONZE FINISH WITH EMERGENCY BATTERY BACKUP	LED: 3460 Lm 4000K 80CRI	ON/OFF	120/277	28W	LSI	XWM-FT-LED-03-40-UE-BRZ-BB	
F12H	SINGLE POLE MOUNTED LED AREA LIGHT. TYPE 3 DISTRIBTUION, DARK BRONZE FINISH. WITH 20' 4" SQUARE POLE WITH HOUSE SIDE SHIELD. PROVIDE WITH FIXTURE MOUNTED OCCUPANCY SENSOR TO DIM FIXTURE DURING UNOCCUPIED HOURS.	LED: 9926 Lm 4000K 70CRI	0-10V	120/277	154W	LSI	MRM-LED-9L-SIL-3-UNV-DIM-40-70CRI-BRZ-IL	
F15	WALL MOUNTED LED 15 DEG. DOWN LIGHT SCONCE, TEXTURED BRONZE	LED: 820 Lm 4000K 80CRI EACH	ON/OFF	120/277	7W	INSIGHT	SSL-DN-7W-40K-15-40K -05-WM -277-DIM-TBR	
VC1	VACUUM CANOPY ARCH LIGHT - FURNISHED WITH VACUUM CANOPY WITH GLARE CONTROL FOR DOWNLIGHT ONLY FUNCTIONALITY	LED	ON/OFF	120/277	27W	G&G	GPX-6-SO-40K-GC SERIES	
AC1	POS CANOPY LIGHT - FURNISHED WITH POS CANOPY	LED: 13000 Lm 5000K	ON/OFF	120/277	93W	LSI	CRUS-SC-LED-SS-50-UE -WHT SERIES	

DAVID J. MELROY III
101515
LICENSED
PROFESSIONAL ENGINEER
10-06-23
FIRM #18632 / EXP 2-29-24

Revisions

PHOTOMETRIC SITE PLAN

Mister

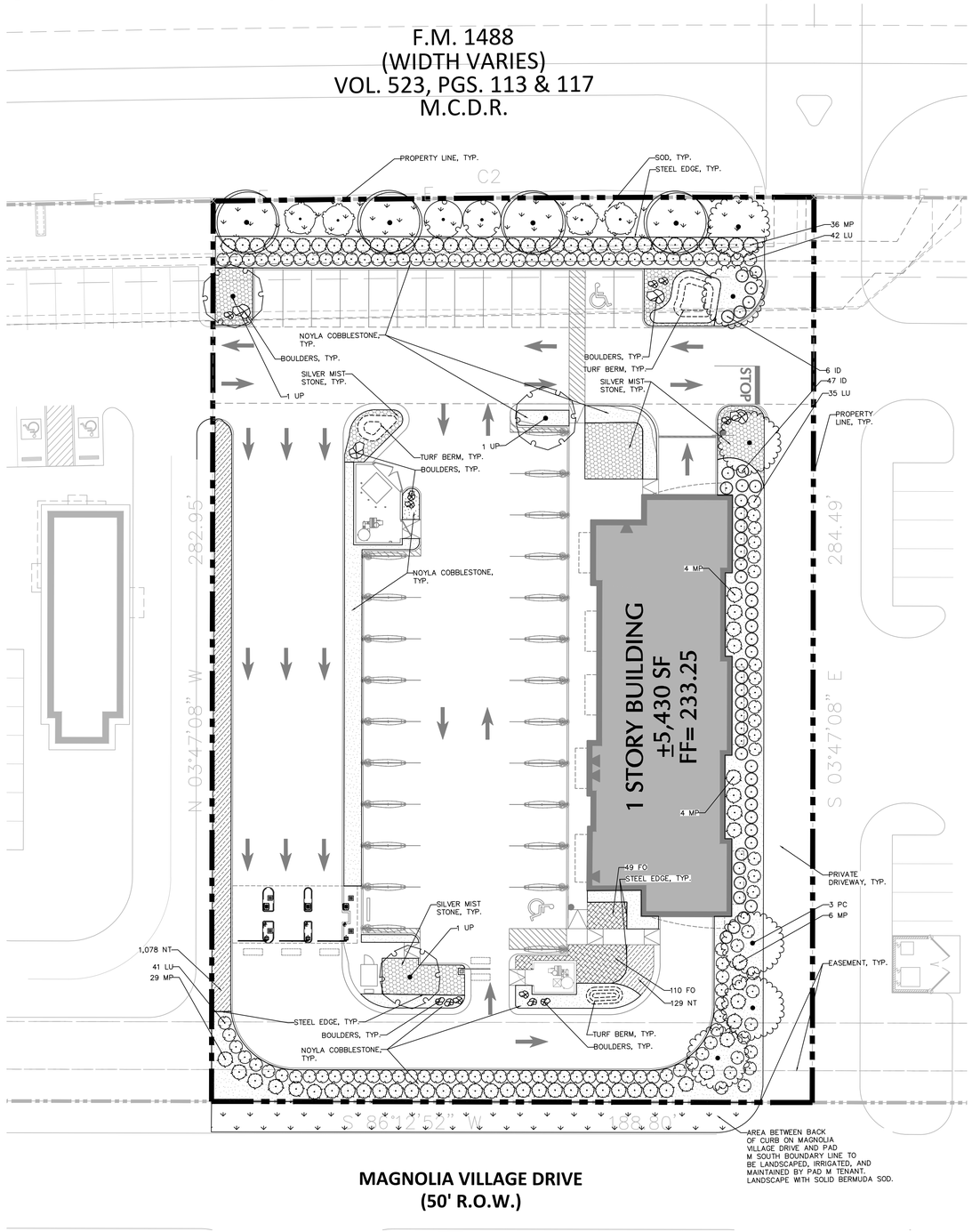
Mister Car Wash TX1111112
Magnolia Town Center - 130.W1
13526 Farm to Market Rd. 1488
Magnolia, TX 77354

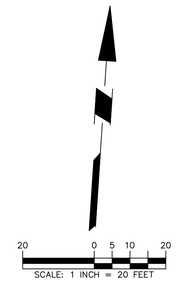
711 East 9th Street
Tucson, Arizona 85719
(520) 623-2323 phone
www.a23studios.com
a.23studios

22201
Date 09.27.23
Scale Noted
Sheet

EP1.0

NOTE:
1) ALL NEWLY PLANTED AREAS TO BE IRRIGATED
2) REFERENCE LP501 FOR LANDSCAPING NOTES AND DETAILS





CITY OF MAGNOLIA COMPLIANCE CHART

ORDINANCE SECTION	DESCRIPTION/REQUIRED	PROPOSED	COMPLIANCE
Planned Development District Section IV. Project/Plan Description Landscape Requirements	1 Canopy Tree every 45 LF: Magnolia Village Drive: 173'/45'= 4 Trees F.M. 1488: 173'/45'= 4 Trees Private Driveway: 240'/45'= 6 Trees	Magnolia Village Drive: 0 Trees due to easement F.M. 1488: 4 Trees Private Driveway: 6 Trees	Variance Required Along Magnolia Village Drive
	1 Ornamental/Evergreen Tree every 30 LF along F.M. 1488: F.M. 1488: 173'/30'= 6 Trees	F.M. 1488: 6 Ornamental Trees	COMPLIES
	1 shrub every 30" (2.5') O.C. for F.M. 1488, Magnolia Village, and the private driveway: Magnolia Village Drive: 173'/2.5'= 70 Shrubs F.M. 1488: 173'/2.5'= 70 Shrubs Private Driveway: 240'/2.5'= 96 Shrubs	Magnolia Village Drive: 70 Shrubs F.M. 1488: 70 Shrubs Private Driveway: 96 Shrubs	COMPLIES
	A tree required every 15 parking spaces 34 Parking Spaces/15 = 3 Trees Required	3 Trees proposed in Parking area	COMPLIES

PLANT SCHEDULE

TREES	KEY	QTY	BOTANICAL / COMMON NAME	SIZE	ROOT
	CB	4	CATALPA BIGNONIOIDES / SOUTHERN CATALPA	3" CAL.	B&B
	CC	2	CERCIS CANADENSIS / EASTERN REDBUD	2.5" CAL.	B&B
	LI	4	LAGERSTROEMIA INDICA / CRAPE MYRTLE	10' HT.	B&B
	PC	6	PISTACIA CHINENSIS / CHINESE PISTACHE	4" CAL.	B&B
	UP	3	ULMUS PUMILA / CHINESE ELM	3" CAL.	B&B
SHRUBS	**KEY**	**QTY**	**BOTANICAL / COMMON NAME**	**SIZE**	**ROOT**
	ID	47	ILEX CORNUTA 'DWARF BURFORD' / DWARF BURFORD HOLLY	5 GAL.	CONTAINER
	LU	118	LOROPETALUM CHINENSE RUBRUM 'PIILC-III' / PURPLE DAYDREAM®DWARF LOROPETALUM	5 GAL.	CONTAINER
	MP	79	MYRICA CERIFERA 'PUMILA' / DWARF WAX MYRTLE	5 GAL.	CONTAINER
GROUND COVERS	**KEY**	**QTY**	**BOTANICAL / COMMON NAME**	**SIZE**	**ROOT** **SPACING**
	FO	159	FESTUCA OVINA GLAUCA 'ELIJAH BLUE' / ELIJAH BLUE FESCUE	1 GAL.	CONTAINER 18" o.c.
	NT	1,207	NASSELLA TENUISSIMA / MEXICAN FEATHER GRASS	1 GAL.	CONTAINER 12" o.c.

BOULDER AND MULCH TYPES

4" DEPTH MIX OF 75% 2"–3" DIAMETER NOLYA COBBLESTONE AND 25% 1–1/2" DIAMETER OF SILVER MIST GRAVEL OVER COMMERCIAL–GRADE WEED BARRIER FABRIC. CONTRACTOR TO SUBMIT SAMPLE TO LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO PROCUREMENT. COBBLE AREAS SHALL BE EDGED WITH DURA–EDGE 3/16"X4" BROWN STEEL EDGING.

3" LAYER OF 1–1/2" SILVER MIST WITH STEEL EDGING OVER COMMERCIAL–GRADE WEED BARRIER FABRIC. CONTRACTOR TO SUBMIT SAMPLE TO LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO PROCUREMENT. STONE AREAS SHALL BE EDGED WITH DURA–EDGE 3/16"X4" BROWN STEEL EDGING.

24"–48" MOSS ROCK BOULDERS PARTIALLY BURIED AND PLACED TO APPEAR AS NATURAL OUTCROPPINGS. BOULDER SIZES TO BE APPROXIMATELY AS SCALED ON THE PLAN.

Date	Description	No.
Revisions		

JAYNE SPECTOR, PLA.
TEXAS LIC. NO. 3031

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Project
13321 FM 1488
MAGNOLIA, TX 77354
MONTGOMERY MAGNOLIA TEXAS

Drawing Title
LANDSCAPING PLANTING PLAN

Project No.	Drawing No.
510057201	LP101
Date: 11/9/2023	
Drawn By: DH	
Checked By: AM/JS	

LANGAN
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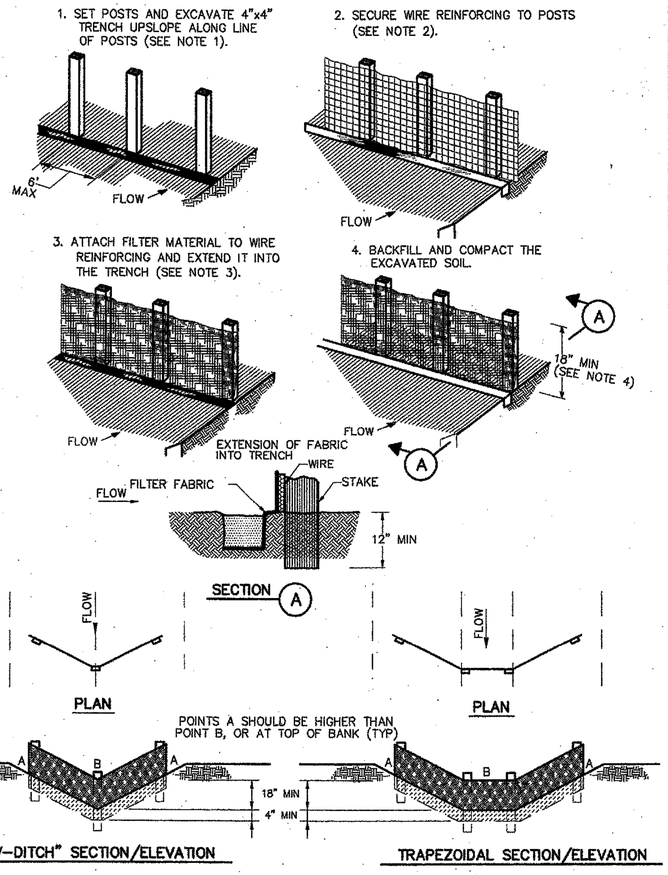


CONSTRUCTION NOTES:

1. SET 2 INCH BY 2 INCH WOODEN STAKES SPACED A MAX OF 6 FEET APART AND EMBEDDED A MIN OF 12 INCHES.
2. WOVEN WIRE REINFORCING TO BE FASTENED SECURELY TO BARRIER POSTS WITH STAPLES.
3. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE REINFORCING, WITH TIES SPACED EVERY 24 INCHES AT TOP AND MIDSECTION.
4. MINIMUM HEIGHT OF FILTER SHOULD BE 18 INCHES AND A MAXIMUM OF 36 INCHES ABOVE NATURAL GROUND.
5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED 6 INCHES AT THE POSTS, AND FOLDED.
6. SEE COH STANDARD SPECIFICATION FOR FILTER FABRIC BARRIER.

SYMBOL

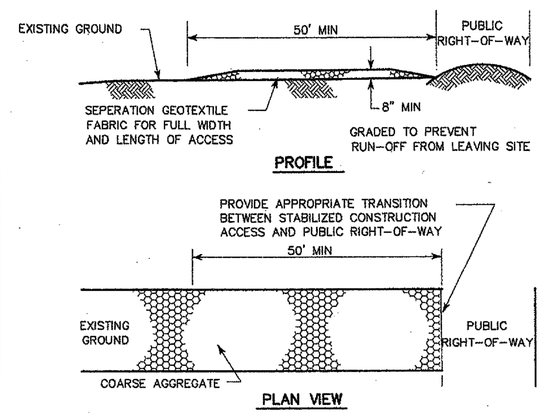
REINFORCED FILTER FABRIC BARRIER

CONSTRUCTION NOTES:

1. 2 INCH THICK BY 2 INCH WOODEN STAKES TO BE SET AT MAX SPACING OF 3 FEET AND EMBEDDED A MIN OF 8 INCHES. IF PREASSEMBLED BARRIER WITH SUPPORT NETTING IS USED, SPACING OF POST MAY BE INCREASED TO 8 FEET MAX.
2. ATTACH FILTER FABRIC TO WOODEN STAKES. FILTER FABRIC BARRIER SHALL HAVE A MIN HEIGHT OF 18 INCHES AND MAX HEIGHT OF 36 INCHES ABOVE NATURAL GROUND.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHOULD BE OVERLAPPED 6 INCHES AT THE POSTS, AND FOLDED.
4. SEE COH STANDARD SPECIFICATION FOR FILTER FABRIC BARRIER.

SYMBOL

FILTER FABRIC BARRIER

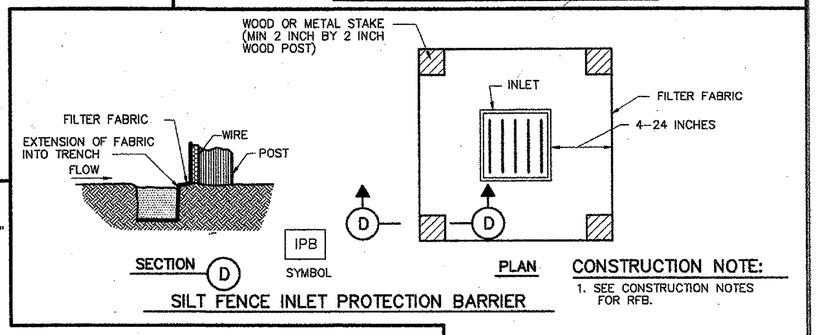


CONSTRUCTION NOTES:

1. LENGTH SHALL BE AS SHOWN ON THE CONSTRUCTION DRAWINGS, BUT NOT LESS THAN 50 FEET.
2. THICKNESS SHALL BE NOT LESS THAN 8 INCHES.
3. WIDTH SHALL BE NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.
4. STABILIZATION FOR OTHER AREAS SHALL HAVE THE SAME AGGREGATE THICKNESS AND WIDTH REQUIREMENTS AS THE STABILIZED CONSTRUCTION ACCESS, UNLESS OTHERWISE SHOWN ON THE CONSTRUCTION DRAWINGS.
5. STABILIZED AREA MAY BE WIDENED OR LENGTHENED TO ACCOMODATE A WASHING AREA. AN OUTLET SEDIMENT TRAP MUST BE PROVIDED FOR THE WASHING AREA.
6. COH STANDARD SPECIFICATION FOR STABILIZED CONSTRUCTION ACCESS.
7. STABILIZED CONSTRUCTION ACCESS SHALL BE MAINTAINED FREE OF SEDIMENT FOR THE DURATION OF THE PROJECT.

SC
SYMBOL

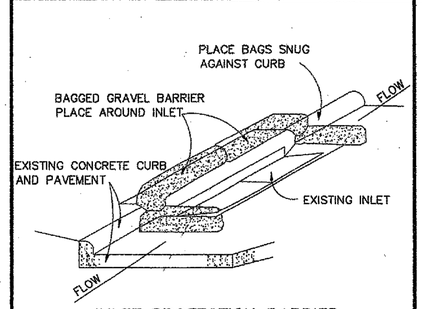
STABILIZED CONSTRUCTION ACCESS



CONSTRUCTION NOTE:

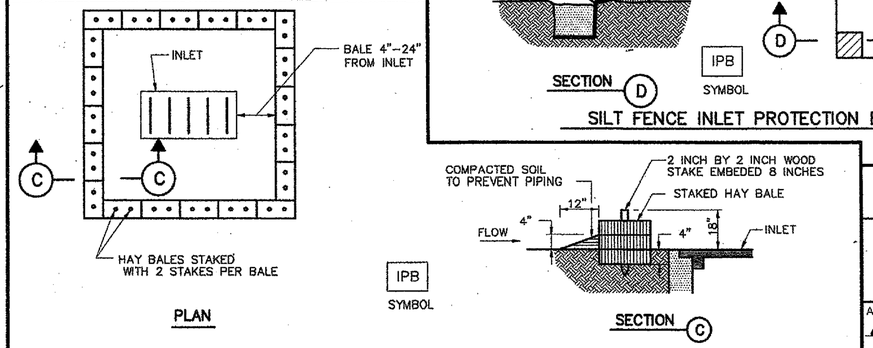
1. SEE CONSTRUCTION NOTES FOR RFB.

SILT FENCE INLET PROTECTION BARRIER



INLET PROTECTION BARRIER

(FOR STAGE II INLETS)
BAGGED GRAVEL BARRIER



HAY BALE INLET PROTECTION BARRIER

STORM WATER POLLUTION PREVENTION PLAN DETAILS

(NOT TO SCALE)

APPROVED
CITY ENGINEER

APPROVED
DIRECTOR OF PUBLIC WORKS AND ENGINEERING

EFF DATE: JULY-01-2010

DWG NO: 01571-01

No.	Description	Date
	Revisions	

STATE OF TEXAS
WALTER K. BOGARDUS
119534
LICENSED PROFESSIONAL ENGINEER

Signature 11/9/2023 Date

W. KYLE BOGARDUS
PROFESSIONAL ENGINEER TX Lic. No. 119534

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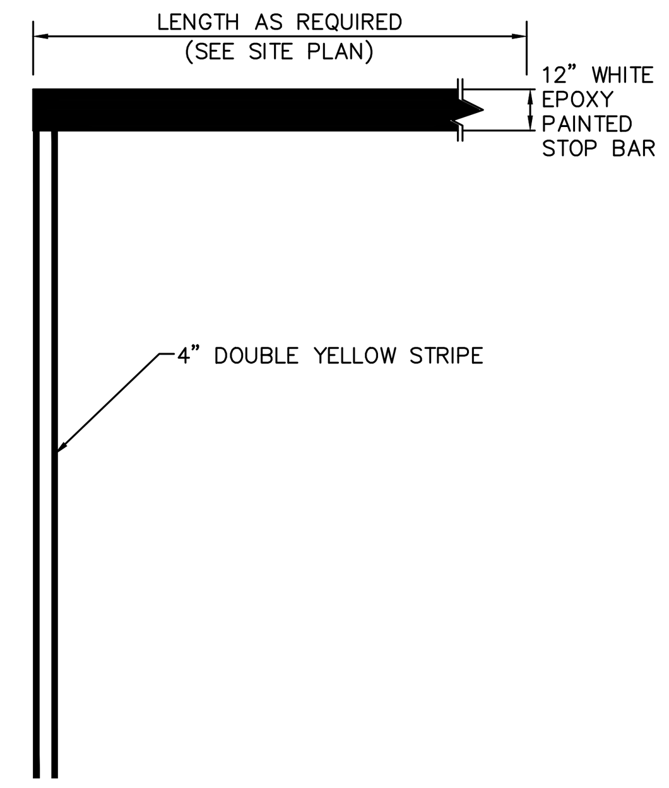
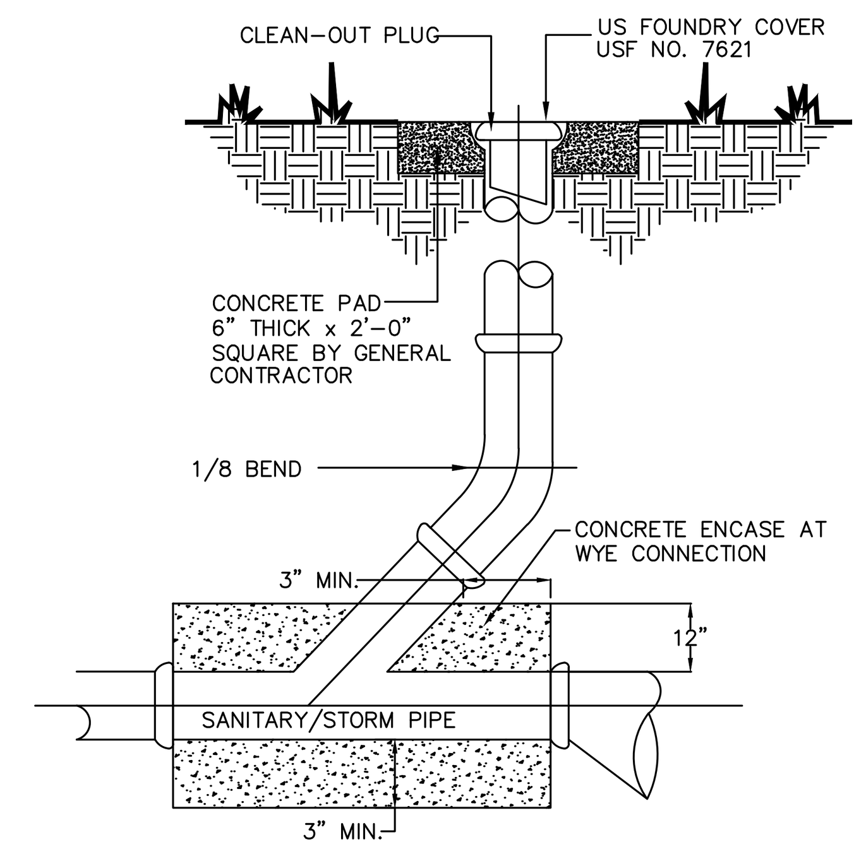
Drawing Title
SOIL EROSION & SEDIMENT CONTROL DETAILS

Project No.	Drawing No.
510057201	CE501
Date: 09/01/2023	
Drawn By: CS	
Checked By: GB	

Date: 11/9/2023 Time: 11:11 User: jmarquez Style Table: Langan.stb Layout: Layout1 Document Code: 510057201-0501-CE501-0101



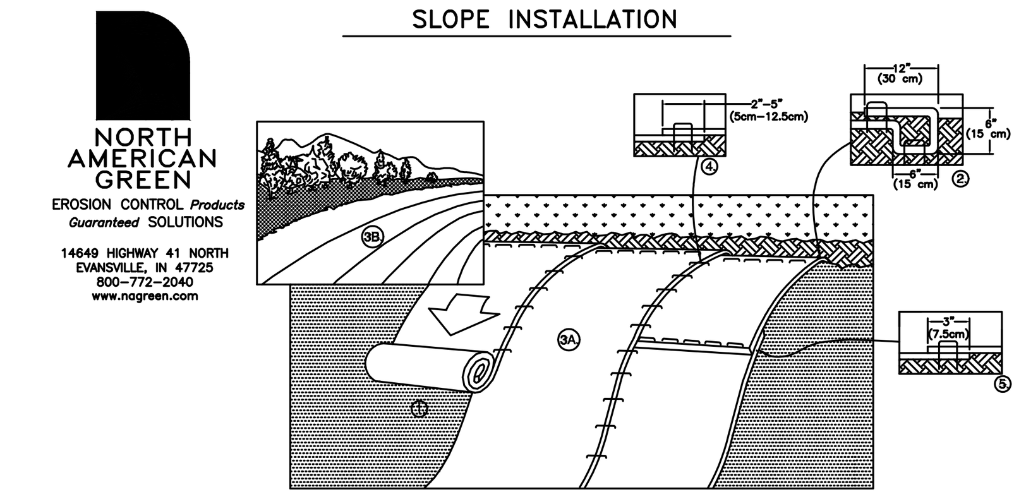
(1) **STOP BAR**
N.T.S.



(2) **SANITARY/STORM CLEANOUT**
N.T.S.

SC150BN SINGLE NET STRAW BLANKET – BIODEGRADABLE

SLOPE INSTALLATION



1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP's), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
   NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECP's IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30cm) OF RECP's EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECP's WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30 CM) PORTION OF RECP's BACK OVER SEED AND COMPACTED SOIL. SECURE RECP's OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) APART ACROSS THE WIDTH OF THE RECP's.
3. ROLL THE RECP's (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. RECP's WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECP's MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM™, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. THE EDGES OF PARALLEL RECP's MUST BE STAPLED WITH APPROXIMATELY 2" – 5" (5 CM – 12.5 CM) OVERLAP DEPENDING ON RECP's TYPE.
5. CONSECUTIVE RECP's SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5 CM) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30 CM) APART ACROSS ENTIRE RECP's WIDTH.
   NOTE:
   *IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 CM) MAY BE NECESSARY TO PROPERLY SECURE THE RECP's.
6. CONTRACTOR TO ESTABLISH THE BANKS OF THE PONDS EARLY WITHIN THE PROJECT SCHEDULE. IN THE EVENT THAT ALL SLOPES CAN NOT BE FULLY ESTABLISHED, THE NEED TO INSTALL EROSION CONTROL BLANKETS AS DESCRIBED BELOW WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.

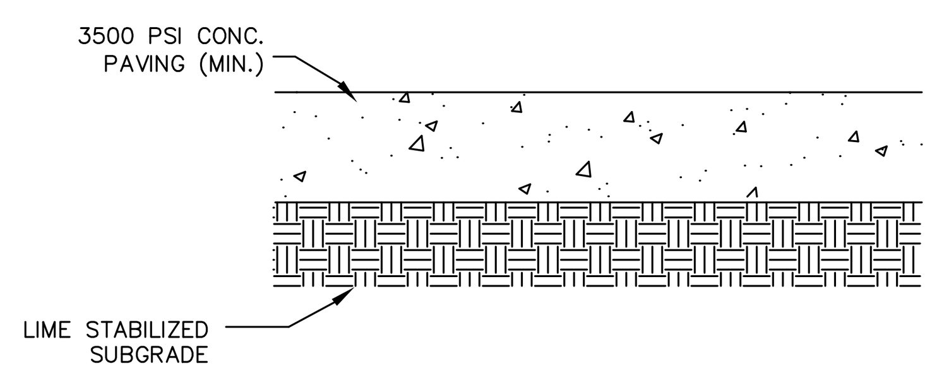
NOTE:
CONTRACTOR TO PROVIDE EROSION CONTROL BLANKET ON ALL SLOPES 3:1 OR STEEPER.

(3) **BIODEGRADABLE EROSION CONTROL BLANKET**
N.T.S.

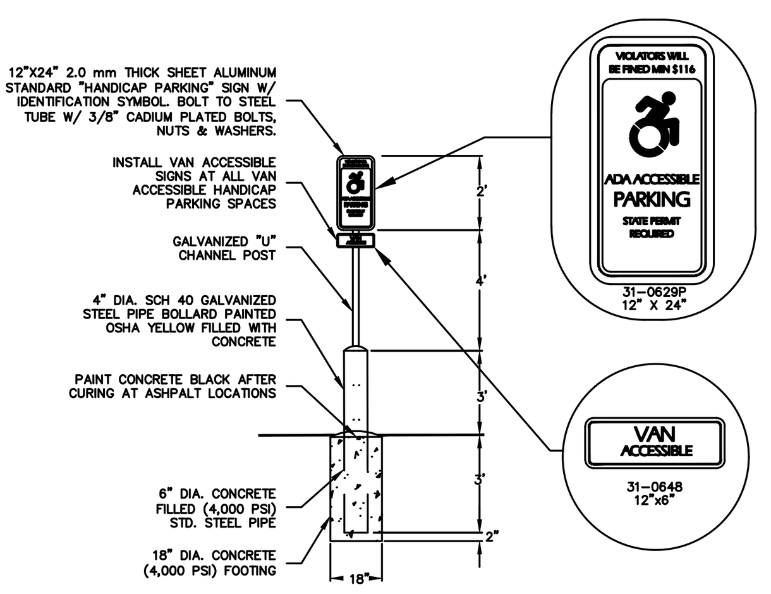
RIGID PAVEMENT RECOMENDED THICKNESS (INCHES)			
PAVEMENT MATERIALS	LIGHT DUTY CONCRETE	REGULAR DUTY CONCRETE	HEAVY DUTY CONCRETE
PORTLAND CEMENT CONCRETE f'c=3,500psi	5	6	7
LIME STABILIZED SUBGRADE	8	8	8

NOTES:
DIMENSION INFORMATION PROVIDED BY THE GEOTECHNICAL EVALUATION OF SUBSURFACE CONDITIONS PROVIDED BY PARADIGM CONSULTANTS, INC PROVIDED MARCH 24, 2021.

LIGHT DUTY PAVEMENT TO HAVE #3 BARS SPACED ON 24-INCH INTERVALS OR 12X12 – W5 X W5 WELDED WIRE FABRIC
REGULAR DUTY PAVEMENT TO HAVE #3 BARS SPACED ON 18-INCH INTERVALS OR 12X12 – W6 X W6 WELDED WIRE FABRIC
HEAVY DUTY PAVEMENT TO HAVE #3 BARS SPACED ON 18-INCH INTERVALS OR 12X12 – W6.5 X W6.5 WELDED WIRE FABRIC



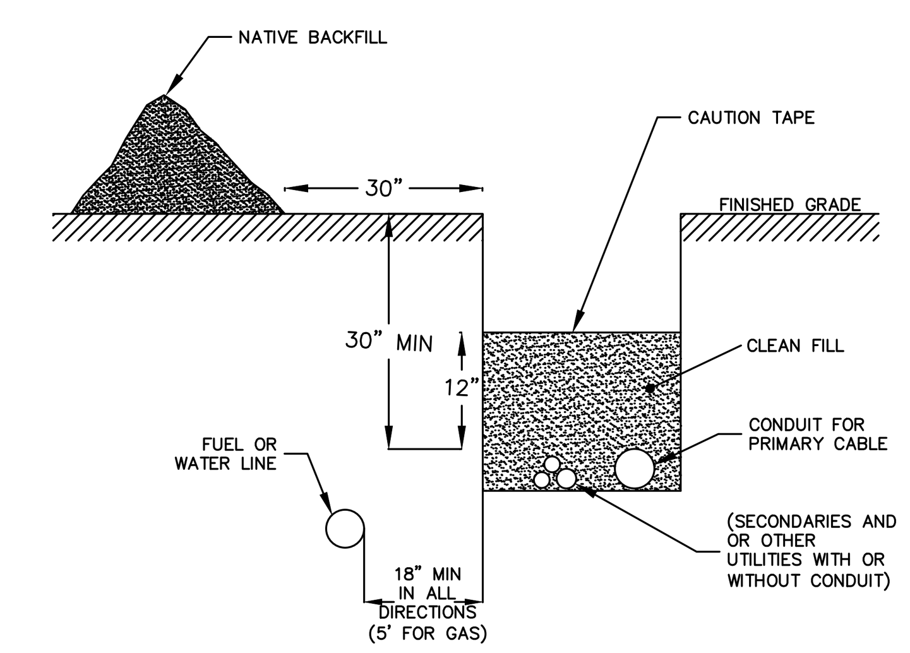
(4) **CONCRETE PAVEMENT**
N.T.S.



ADA ACCESSIBLE PARKING SIGN SHALL CONFORM WITH CURRENT STATE & LOCAL CODES AND REGULATIONS.

NOTES:
1. ALL POSTS SHALL BE OF ADEQUATE LENGTH TO MEET THE REQUIREMENTS FOR ERECTION AS STATED IN THE CURRENT "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS".
2. ALL POSTS SHALL BE EMBEDDED 4'-6" MINIMUM BELOW GRADE.
3. ALL STEEL POSTS AND BRACKETS SHALL BE CUT, BENT, AND HOLES PUNCHED AND DRILLED BEFORE GALVANIZING. GALVANIZING SHALL BE IN CONFORMANCE WITH CURRENT A.S.T.M. SPECIFICATION A123-78 (OR LATEST REVISED).
4. POSTS SHALL BE BREAKAWAY TYPE II TWO-PIECE U-POST OR OTHER BREAKAWAY STRUCTURAL SUPPORT HARDWARE AS NOTED IN THE LATEST EDITION OF AASHTO'S "SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINARIES, AND TRAFFIC SIGNALS."
5. SIGN PANEL SIZES SHALL DETERMINE POST TYPE AND NUMBERS AS SHOWN ON THIS DETAIL AND DIRECTIONAL SIGN SHEET.
6. BOLTS SHALL NOT PROTRUDE MORE THAN 3/4" BEYOND THE NUT WHEN TIGHT BUT SHALL ENGAGE ALL THREADS IN THE NUT.

(5) **ACCESSIBLE PARKING SIGN**
N.T.S.

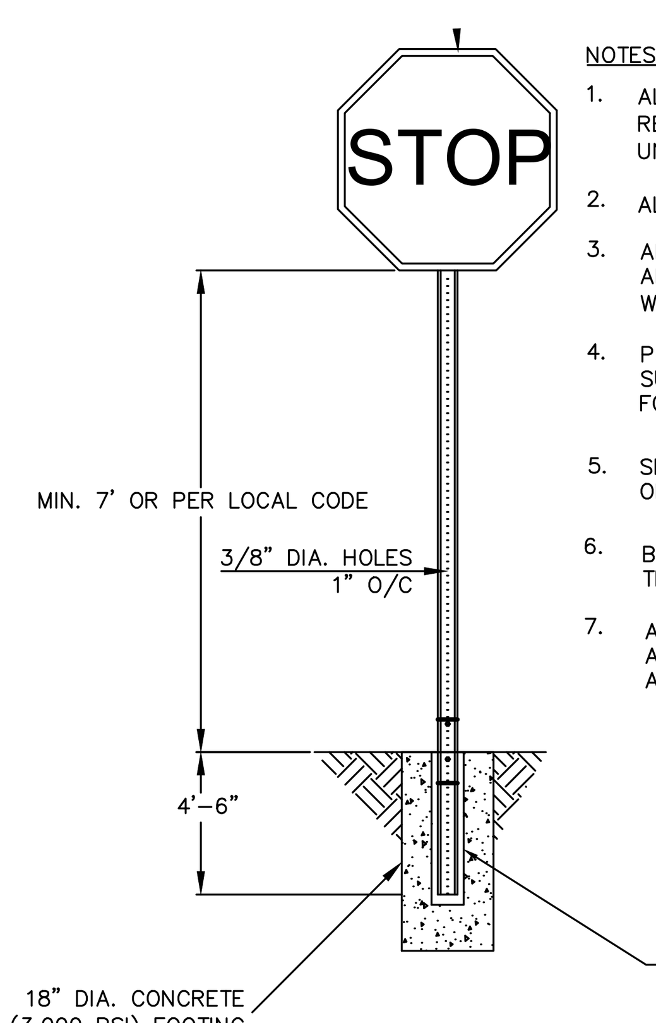


NOTES:
ALL DIRECT-BURIED CABLES SHALL BE INSTALLED AT A DEPTH OF AT LEAST 30 INCHES IN THE FOLLOWING ORDER:
A. ENSURE THAT THE BOTTOM OF THE TRENCH IS WELL-TAMPED AND FREE OF ROCKS.
B. INSTALL THE CONDUIT, GLUING ALL COUPLINGS.
C. INSTALL SECONDARIES AND OTHER UTILITY CABLES OR CONDUITS LARGER THAN 2 INCHES IN MAXIMUM DIAMETER.
D. BACKFILL WITH 12 INCHES CLEAN FILL NOT TO CONTAIN STONES LARGER THAN 2 INCHES IN MAXIMUM DIAMETER.
E. INSTALL CABLE WARNING TAPE 12 INCHES OVER THE CONDUIT.
F. FILL IN THE REMAINDER OF THE TRENCH WITH NATIVE BACKFILL.

THE TRENCH SHALL BE BACKFILLED IMMEDIATELY FOLLOWING PLACEMENT OF THE CONDUIT.

1/4-INCH NYLON ROPE AND PLASTIC CONDUIT PLUG TO BE SUPPLIED AND INSTALLED BY CONTRACTOR.

(6) **ELECTRICAL UTILITY TRENCH**
N.T.S.



NOTES:
1. ALL POSTS SHALL BE OF ADEQUATE LENGTH TO MEET THE REQUIREMENTS FOR ERECTION AS STATED IN THE CURRENT "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS".
2. ALL POSTS SHALL BE EMBEDDED 4'-6" MINIMUM BELOW GRADE.
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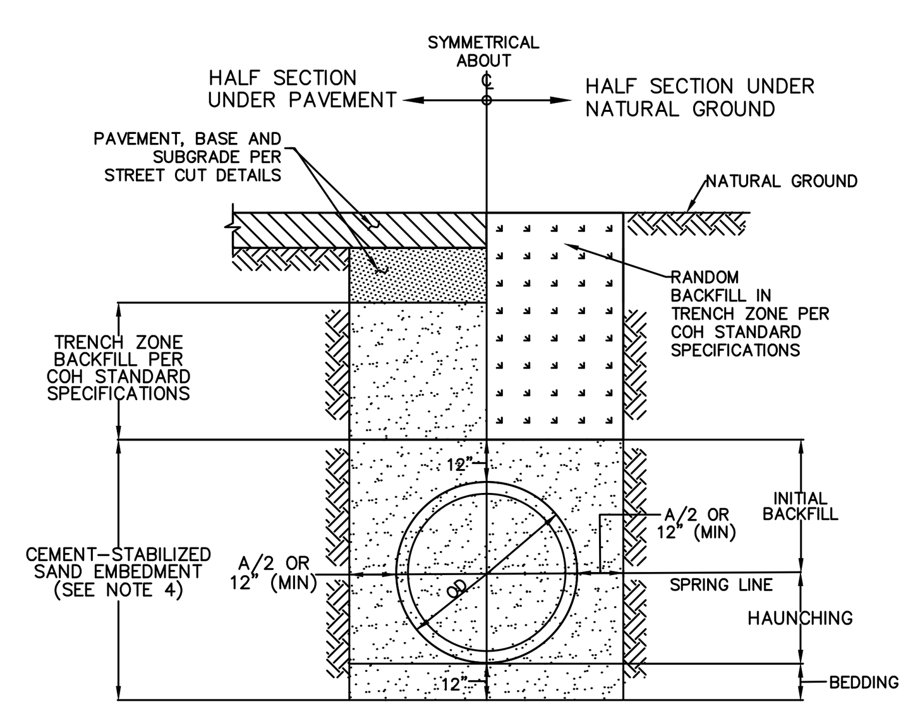
4. POSTS SHALL BE BREAKAWAY TYPE II TWO-PIECE U-POST OR OTHER BREAKAWAY STRUCTURAL SUPPORT HARDWARE AS NOTED IN THE LATEST EDITION OF AASHTO'S "SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINARIES, AND TRAFFIC SIGNALS."
5. SIGN PANEL SIZES SHALL DETERMINE POST TYPE AND NUMBERS AS SHOWN ON THIS DETAIL AND DIRECTIONAL SIGN SHEET.
6. BOLTS SHALL NOT PROTRUDE MORE THAN 3/4" BEYOND THE NUT WHEN TIGHT BUT SHALL ENGAGE ALL THREADS IN THE NUT.
7. ALL TRAFFIC AND PEDESTRIAN SIGNAGE AND LOCATION SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND ALL CURRENT AMENDMENTS.

(7) **TRAFFIC SIGN POST**
N.T.S.



DETAIL OBTAINED FROM COH STANDARD DETAILS

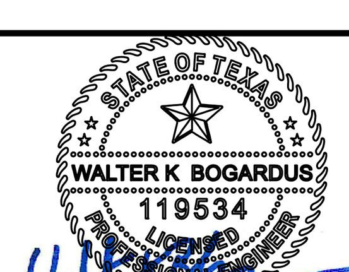
NOTES:
1. THIS DETAIL MAY BE USED ONLY FOR DRY STABLE TRENCH CONDITIONS PER COH STANDARD. SEE COH STANDARD SPECIFICATION FOR REQUIREMENTS IN OTHER CONDITIONS.
2. MIN TRENCH WIDTH SHALL BE PIPE OD PLUS AN ALLOWANCE "A" FOR THE NOMINAL PIPE SIZE:

NOMINAL PIPE SIZE	"A"
18" TO 30"	24"
OVER 30"	36"

3. MAX TRENCH WIDTH SHALL BE NOT GREATER THAN MIN TRENCH WIDTH PLUS 24 INCHES, UNLESS OTHERWISE NOTED.
4. ALTERNATIVE EMBEDMENT BACKFILL MATERIALS FOR FORCE MAINS MAY BE ALLOWED. SEE COH STANDARD SPECIFICATIONS.

(8) **SANITARY OR STORM SEWER BEDDING AND BACKFILL FOR DRY STABLE TRENCH**
N.T.S.

Date	Description	No.
	Revisions	



Signature 11/9/2023 Date
W. KYLE BOGARDUS
PROFESSIONAL ENGINEER TX Lic. No. 119534

LANGAN
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17220 Katy Freeway, First Floor, Suite 125
Houston, TX 77094
T: 281.675.7900 F: 281.675.7901 www.langan.com
TBPE FIRM REG. #F-13709

Project
13321 FM 1488
MAGNOLIA, TX 77354
MONTGOMERY MAGNOLIA TEXAS

Drawing Title
SITE DETAILS I

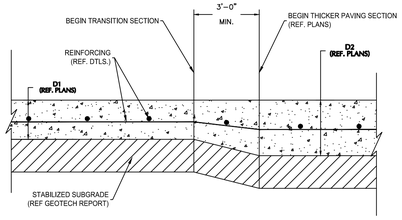
Project No. 510057201
Date 11/04/2022
Drawn By CS
Checked By GB

Drawing No.
CS501

LANGAN

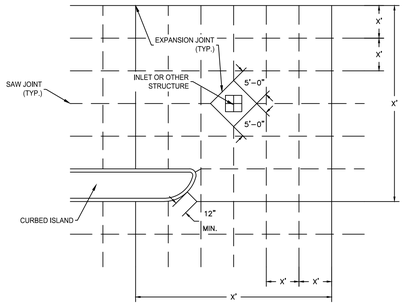
Project No. 510057201

Date: 11/9/2023 Time: 11:12 User: jmarquez Style Table: Langan.stb Layout: CS501 Document Code: 510057201-0501-CS501-0101



1 CONCRETE THICKNESS TRANSITION

N.T.S.

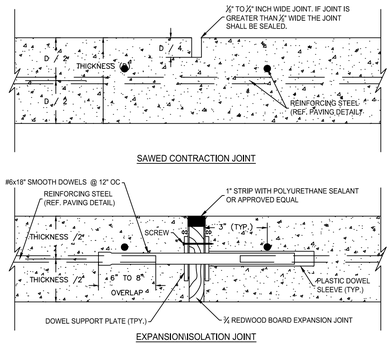


NOTES:

1. AN EFFORT SHALL BE MADE TO UTILIZE JOINTS TO DELINEATE DRIVING LANES AND PARKING STALLS.
2. UTILIZE EXPANSION JOINTS TO SEPARATE CONCRETE POURS.
3. AVOID PLACING EXPANSION JOINTS WHERE RUNOFF WILL FLOW ALONG THE JOINT.
4. ALL JOINTS SHALL INTERSECT CURBS, INLETS AND OTHER STRUCTURES AT RIGHT ANGLES.
5. EVENLY SPACE SAWED JOINTS BETWEEN EXPANSION JOINTS. THE MAXIMUM SPACING SHALL BE 12-FT UNLESS OTHERWISE APPROVED.
6. JOINT PATTERN SHOULD DIVIDE THE PAVEMENT IN APPROXIMATELY SQUARE PANELS. THE LENGTH OF A PANEL SHOULD NOT BE MORE THAN 25% GREATER THAN ITS WIDTH. AVOID CREATING IRREGULAR SHAPED OR SMALL PANELS.

2 TYPICAL JOINT LAYOUT

N.T.S.

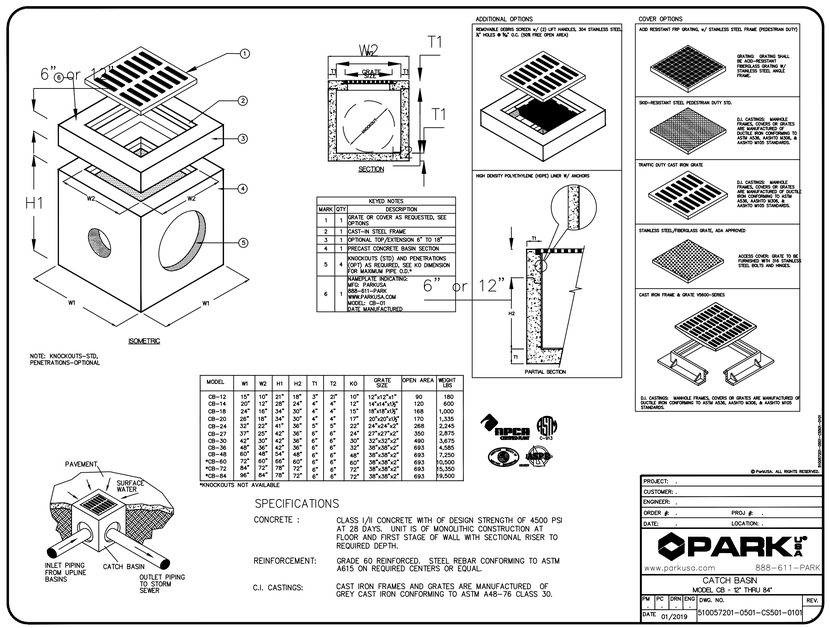


NOTES:

1. PROPERLY ANCHOR BOARD JOINT TO PREVENT MOVEMENT DURING CONCRETE PLACEMENT.
2. MAXIMUM EXPANSION JOIN SPACING SHALL BE 60-FT UNLESS OTHERWISE APPROVED.
3. STAKES TO SUPPORT FORMS SHALL BE DRIVEN A MINIMUM PF 2' BELOW THE TOP OF PAVEMENT.
4. COMMENCE SAWING AS SOON AS CONCRETE HAS HARDENED SUFFICIENTLY TO PERMIT CUTTING WITHOUT CHIPPING, SPALLING OR TEARING AND PRIOR TO INITIATION OF CRACKS.
5. ONCE SAWING HAS COMMENCED, CONTINUE UNTIL COMPLETED.
6. MAKE SAW CUT WITH ONE PASS.
7. COMPLETE SAWING WITHIN 24 HOURS OF CONCRETE PLACEMENT.
8. **5" & 6" PAVING: ¾" DOWEL x 18" LONG x 12" CENTERS**
9. **7" PAVING: 1" DOWEL x 18" LONG x 12" CENTER**
10. **4.5" SIDEWALKS: ¾" DOWEL x 18" LONG x 12" CENTERS**

4 CONCRETE PAVING JOINTS

N.T.S.



KEYED NOTES

MARK	QTY	DESCRIPTION
1	1	GRATE OR COVER AS REQUESTED, SEE OPTIONS
2	1	CAST-IN STEEL FRAME
3	1	OPTIONAL TOP-/EXTENSION 6" TO 18"
4	1	PRECAST CONCRETE BASIN SECTION
5	4	KNOCKOUTS (STD) AND PENETRATIONS (OPT) AS REQUIRED, SEE KO DIMENSION FOR MAXIMUM PIPE O.D.*
6	1	NAMEPLATE INDICATING: MFG: PARKUSA 888-611-PARK WWW.PARKUSA.COM MODEL: CB-01 DATE MANUFACTURED

MODEL	W1	W2	H1	H2	T1	T2	KO	GRATE SIZE	OPEN AREA	WEIGHT LBS
CB-12	15"	10"	21"	18"	3"	2"	10"	12"x12"x1"	90	180
CB-14	20"	12"	28"	24"	4"	4"	12"	14"x14"x1"	120	600
CB-18	24"	18"	34"	30"	4"	4"	15"	18"x18"x1"	168	1,000
CB-20	28"	18"	34"	30"	4"	4"	17"	20"x20"x1"	170	1,335
CB-24	32"	22"	41"	36"	5"	5"	20"	24"x24"x2"	288	2,245
CB-27	37"	25"	42"	36"	6"	6"	24"	27"x27"x2"	350	2,875
CB-30	42"	30"	42"	36"	6"	6"	30"	32"x32"x2"	490	3,675
CB-36	48"	36"	42"	36"	6"	6"	33"	38"x38"x2"	693	4,585
CB-48	60"	48"	54"	48"	6"	6"	48"	38"x38"x2"	693	7,250
*CB-60	72"	60"	66"	60"	6"	6"	60"	38"x38"x2"	693	10,500
*CB-72	84"	72"	78"	72"	6"	6"	72"	38"x38"x2"	693	13,350
*CB-84	96"	84"	78"	72"	6"	6"	72"	38"x38"x2"	693	19,500

*KNOCKOUTS NOT AVAILABLE

SPECIFICATIONS

CONCRETE : CLASS I/II CONCRETE WITH OF DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH.

REINFORCEMENT: GRADE 60 REINFORCED. STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.

C.I. CASTINGS: CAST IRON FRAMES AND GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48-76 CLASS 30.

PROJECT: .
CUSTOMER: .
ENGINEER: .
ORDER #: . PROJ #: .
DATE: . LOCATION: .

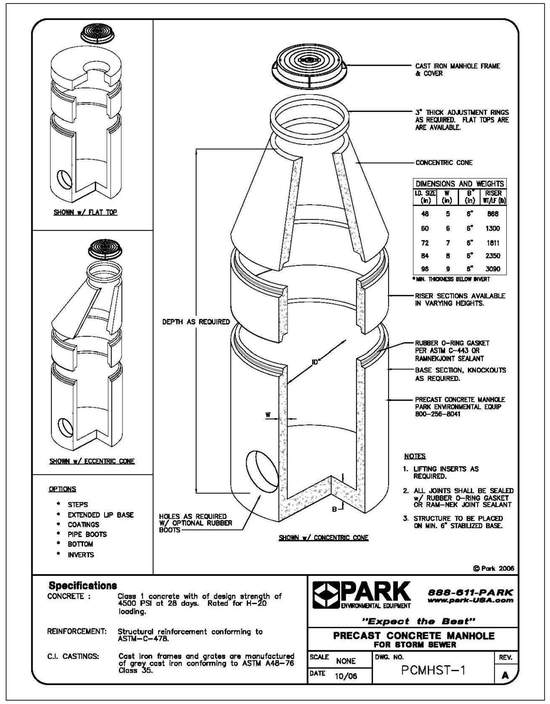
PARK USA
www.parkusa.com 888-611-PARK

CATCH BASIN
MODEL CB - 12" THRU 84"

PM	PC	DRN	ENG	DWG. NO.	REV.
DATE 01/2019				510057201-0501-CS501-0101	

3 CATCH BASIN

N.T.S.



Specifications

CONCRETE : Class I concrete with of design strength of 4500 PSI at 28 days. Rated for H-20 loading.

REINFORCEMENT: Structural reinforcement conforming to ASTM-C-478.

C.I. CASTINGS: Cast iron frames and grates are manufactured of grey cast iron conforming to ASTM A48-76 Class 35.

PARK ENVIRONMENTAL EQUIPMENT 888-611-PARK www.park-USA.com

"Expect the Best"

PRECAST CONCRETE MANHOLE FOR STORM SEWER

SCALE	NONE	DWG. NO.	REV.
DATE	10/06	PCMHST-1	A

5 STORM SEWER MANHOLE

N.T.S.

Date	Description	No.
Revisions		

STATE OF TEXAS
WALTER K BOGARDUS
119534
LICENSED PROFESSIONAL ENGINEER

Signature 11/9/2023 Date

W. KYLE BOGARDUS
PROFESSIONAL ENGINEER TX Lic. No. 119534

LANGAN

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TBPE FIRM REG. #F-13709

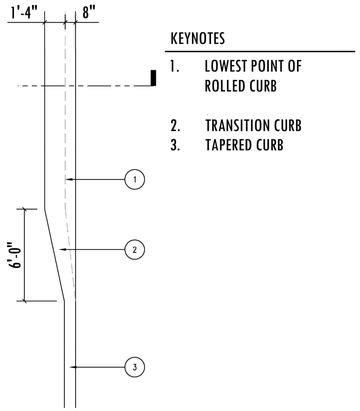
Project
13321 FM 1488
MAGNOLIA, TX 77354
MAGNOLIA
MONTGOMERY TEXAS

Drawing Title
SITE DETAILS II

Project No.	Drawing No.
510057201	CS502
Date: 11/04/2022	
Drawn By: CS	
Checked By: GB	

LANGAN
Project No. 510057201

Date: 11/9/2023 Time: 11:12 User: jmarquez Style Table: Langan.stb Layout: CS502 Document Code: 510057201-0501-CS501-0101



KEYNOTES

1. LOWEST POINT OF ROLLED CURB
2. TRANSITION CURB
3. TAPERED CURB

1 TAPERED CURB TRANSITION TO ROLLED CURB

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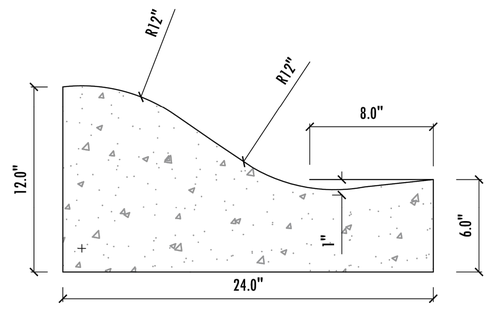

2 ROLLED CURB DETAIL

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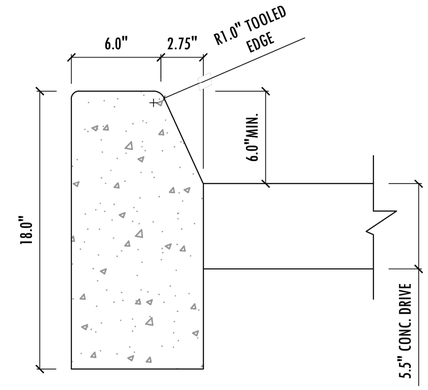
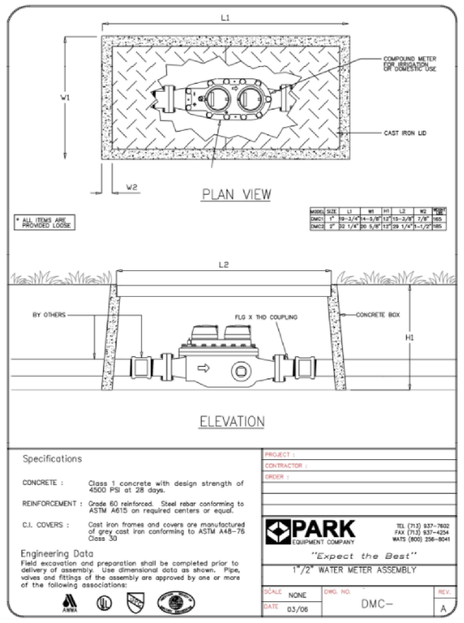


3 TAPERED CURB DETAIL

N.T.S.



Specifications

CONCRETE : Class 1 concrete with design strength of 4500 PSI at 28 days.

REINFORCEMENT : Grade 60 reinforced. Steel rebar conforming to ASTM A615 on required centers or equal.

C.I. COVERS : Cast iron frames and covers are manufactured of grey cast iron conforming to ASTM A48-76 Class 30

Engineering Data

Field excavation and preparation shall be completed prior to delivery of assembly. Use dimensional data as shown. Pipe, valves and fittings of the assembly are approved by one or more of the following associations:

AWWA

PROJECT :
CONTRACTOR :
ORDER :

PARK EQUIPMENT COMPANY
TEL (713) 937-7602
FAX (713) 937-4254
WATS (800) 256-8041

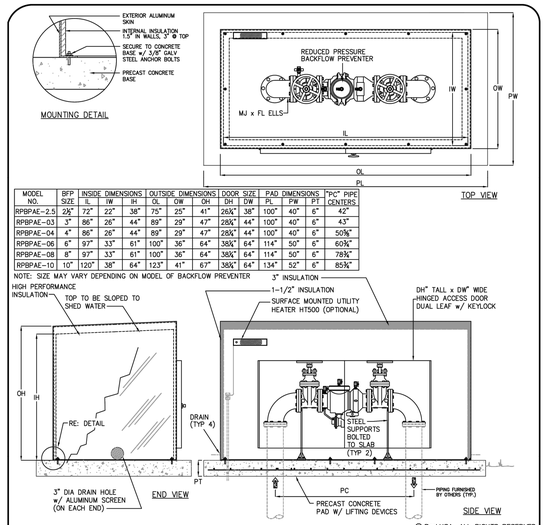
"Expect the Best"

1"/2" WATER METER ASSEMBLY

SCALE NONE | DWG. NO. DMC- | REV.
DATE 03/06 | A

4 2" DOMESTIC WATER METER

N.T.S.



MODEL NO.	BFP SIZE	INSIDE DIMENSIONS IL	IW	IH	OUTSIDE DIMENSIONS OL	OW	OH	DOOR SIZE DH	DW	PAD DIMENSIONS PL	PW	PT	"PC" PIPE CENTERS
RPBPAE-2.5	2½"	72"	22"	38"	75"	25"	41"	26¾"	38"	100"	40"	6"	42"
RPBPAE-03	3"	86"	26"	44"	89"	29"	47"	28¾"	44"	100"	40"	6"	43"
RPBPAE-04	4"	86"	26"	44"	89"	29"	47"	28¾"	44"	100"	40"	6"	50⅝"
RPBPAE-06	6"	97"	33"	61"	100"	36"	64"	38¾"	64"	114"	50"	6"	60⅜"
RPBPAE-08	8"	97"	33"	61"	100"	36"	64"	38¾"	64"	114"	50"	6"	78⅜"
RPBPAE-10	10"	120"	38"	64"	123"	41"	67"	36¾"	64"	134"	52"	6"	85⅜"

NOTE: SIZE MAY VARY DEPENDING ON MODEL OF BACKFLOW PREVENTER

Specifications

GENERAL
The Model ERP aluminum enclosure is pre engineered to provide protection to backflow preventers, meters, pumps, and other devices installed above ground. These water conveying devices are subject to freezing and vandalism. The enclosure is designed to be installed over the equipment after installation. The enclosure is equipped with access doors to provide adequate access to the equipment.

CONSTRUCTION
The enclosure shall be manufactured from all new materials. The exterior shall be fabricated with 0.090 aluminum, continuously welded. The access door(s) shall be of like material and hinged with a continuous hinge. The door shall be equipped with a 3-point locking mechanism. The interior of the enclosure shall be structurally lined with high performance, non-wicking insulation.

HEATER
Interior heaters (if required) shall be thermostatically controlled and be mounted to the interior wall of the enclosure. A GFI receptacle shall be provided by others to provide power to the electric heater.

PROJECT:
CUSTOMER:
ENGINEER:
ORDER #:
PROJ #:
DATE:

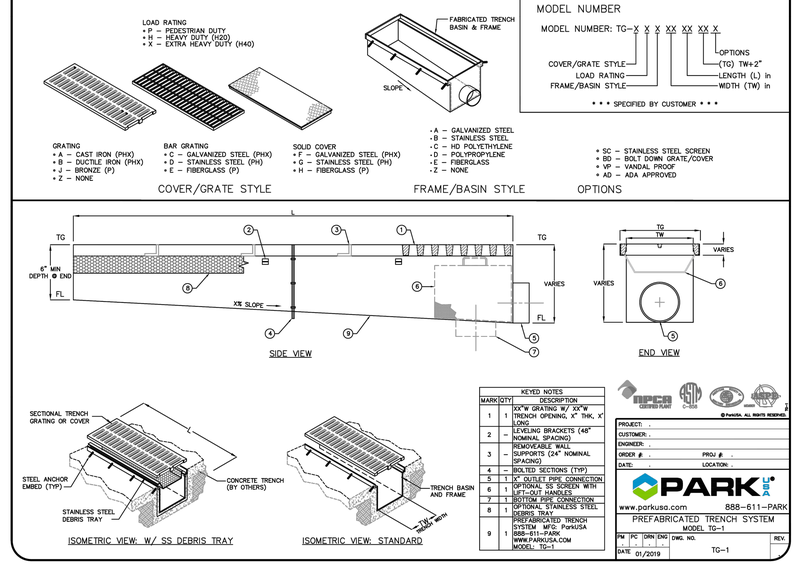
888.611.PARK
www.parkusa.com
PARK USA
DESIGN FOR WATER

WEATHERPROOF ENCLOSURE FOR RPZ BACKFLOW PREVENTER

RPBPAE-1 | PM | DRN | ENG | DWG. NO. RPBPAE-1 | REV. A
DATE 2018

5 REDUCE PRESSURE ZONE BACKFLOW PREVENTER

N.T.S.



MARK	QTY	KEYED NOTES DESCRIPTION
1	1	XX"W GRATING W/ XX"W TRENCH OPENING, X" THK, X' LONG
2	–	LEVELING BRACKETS (48" NOMINAL SPACING)
3	–	REMOVEABLE WALL SUPPORTS (24" NOMINAL SPACING)
4	–	BOLTED SECTIONS (TYP)
5	1	X" OUTLET PIPE CONNECTION
6	1	OPTIONAL SS SCREEN WITH LIFT-OUT HANDLES
7	1	BOTTOM PIPE CONNECTION
8	1	OPTIONAL STAINLESS STEEL DEBRIS TRAY
9	1	PREFABRICATED TRENCH SYSTEM MFG: ParkUSA 888-611-PARK WWW.PARKUSA.COM MODEL: TG-1

PROJECT: .
CUSTOMER: .
ENGINEER: .
ORDER #: . PROJ #: .
DATE: . LOCATION: .

PARK USA
www.parkusa.com 888-611-PARK

PREFABRICATED TRENCH SYSTEM
MODEL TG-1

PM | PC | DRN | ENG | DWG. NO. TG-1 | REV.
DATE 01/2019

6 TRENCH DRAIN

N.T.S.

Date	Description	No.
Revisions		

STATE OF TEXAS
WALTER K BOGARDUS
119534
LICENSED
PROFESSIONAL ENGINEER

Signature 11/9/2023 Date

W. KYLE BOGARDUS
PROFESSIONAL ENGINEER TX Lic. No. 119534

LANGAN
Langan Engineering and Environmental Services, Inc.
17220 Katy Freeway, First Floor, Suite 125
Houston, TX 77094
T: 281.675.7900 F: 281.675.7901 www.langan.com
TBPE FIRM REG. #F-13709

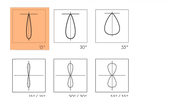
Project
13321 FM 1488
MAGNOLIA, TX 77354
MONTGOMERY MAGNOLIA TEXAS

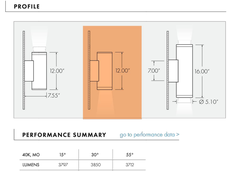
Drawing Title
SITE DETAILS III

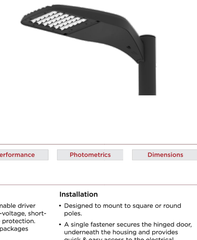
Project No. 510057201
Date 11/04/2022
Drawn By CS
Checked By GB

Drawing No. CS504

Project No. 510057201







Catalog #: CRUS SC LED SS 50 UE WHT
Project: Mister Car Wash

Scottsdale® Legacy (CRUS)
LED Canopy Luminaire

IP66

OVERVIEW	
Lumen Package	5,000 - 22,000
Wattage Range	38 - 152
Efficacy Range (LPW)	114 -156
Weight lbs(kg)	23 (10.4)

QUICK LINKS
Ordering Guide · Performance · Photometrics · Dimensions

FEATURES & SPECIFICATIONS

Scottsdale® Legacy LED Canopy Luminaire (CRUS)

ORDERING GUIDE

CRUS SC LED SS 50 UE WHT

Accessory Ordering Information

PERFORMANCE

E
FIXTURE AC1 CUT-SHEET
EP1.1 NTS

G&G INDUSTRIAL LIGHTING
T 800.285.6780 E sales@ggled.net
www.ggled.net

GPX DRIVERLESS LINEAR

DIRECT AC DRIVERLESS

Low-Profile, Driverless Linkable IP67 LED Linear Luminaire

Product Features
Performance Summary
Ordering Information
Power & Connection Accessories

STRONG. SIMPLE. COMPACT.

G&G INDUSTRIAL LIGHTING
T 800.285.6780 E sales@ggled.net
www.ggled.net

G&G FULLY INTEGRATED GUARANTEE

Low-Profile, Driverless Linkable IP67 LED Linear Luminaire

Product Specifications
Photometry
Polar Candela Distribution
Zonal Lumen Summary
Lumen & Power Data
Dimensions
Maximum Fixture Run

STRONG. SIMPLE. COMPACT.

D
FIXTURE VC1 CUT-SHEET
EP1.1 NTS

insight lighting

SCOPE LARGE SCONCE
CYLINDER UP OR DOWN, UP/DOWN | WHITE LIGHT

PROFILE
STANDARD FINISHES
OPTICS
PERFORMANCE SUMMARY

insight lighting

SCOPE LARGE SCONCE
CYLINDER UP OR DOWN, UP/DOWN | WHITE LIGHT

SPECIFICATION
SSL MO WW

NOTE: FIXTURE HAS BEEN SPECIFIED IN DOWNLIGHT ONLY CONFIGURATION

CONTROL & WIRING OPTIONS

C
FIXTURE F15 CUT-SHEET
EP1.1 NTS

Mirada Medium (MRM)
Outdoor LED Area Light

IP66 IK08

OVERVIEW	
Lumen Package	7,000 - 48,000
Wattage Range	48 - 401
Efficacy Range (LPW)	117 - 160
Weight lbs(kg)	30 (13.6)

QUICK LINKS
Ordering Guide · Performance · Photometrics · Dimensions

FEATURES & SPECIFICATIONS

F12H - WITH HOUSE SIDE SHIELD
F14 - DUAL HEAD, NO HOUSE SIDE SHIELD.

Mirada Medium Outdoor LED Area Light

ORDERING GUIDE

MRM LED 36L SIL FTA UNV DIM 50 70CRI ALSCS04 BRZ IL

Accessory Ordering Information

B
FIXTURE F12H CUT-SHEET
EP1.1 NTS

Mirada Medium Wall Sconce (XWM)
Outdoor Wall Sconce

IK08

OVERVIEW	
Lumen Range	3,000 - 21,000
Wattage Range	23 - 175
Efficacy Range (LPW)	107 - 148
Weight lbs(kg)	30 (13.6)

QUICK LINKS
Ordering Guide · Performance · Photometrics · Dimensions

FEATURES & SPECIFICATIONS

Mirada Wall Sconce (XWM)

ORDERING GUIDE

XWM 2 LED 03L 30 UE BRZ ALSC

ACCESSORY ORDERING INFORMATION

A
FIXTURE F11/F11E CUT-SHEET
EP1.1 NTS

DAVID J. MELROY
101515
10-06-23
FIRM #18632 / EXP 2-29-24

Revisions

SITE LIGHTING CUT-SHEETS

Mister
Mister Car Wash TX1112
Magnolia Town Center - 130.W1
13526 Farm to Market Rd. 1488
Magnolia, TX 77354

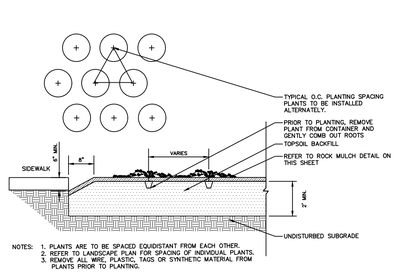
711 East 9th Street
Tucson, Arizona 85719
520.903.2323 phone
www.a23studios.com

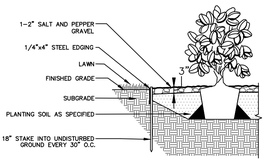
a23studios

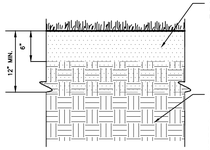
Project	22201
Date	09.27.23
Scale	Noted
Sheet	

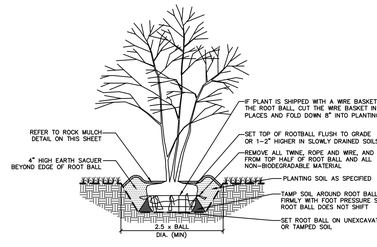
EP1.1

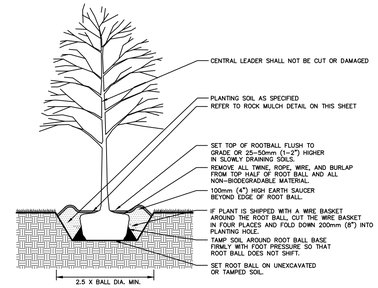
NOTE: THESE DOCUMENTS ESTABLISH THE GENERAL STANDARDS OF QUALITY AND DETAIL FOR DEVELOPING A NEGOTIATED CONSTRUCTION CONTRACT.

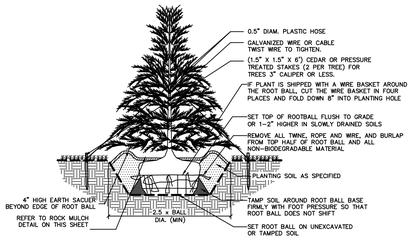












GENERAL LANDSCAPE PLANTING NOTES

1. NAMES OF PLANTS AS DESCRIBED ON THIS PLAN CONFORM TO THOSE GIVEN IN "STANDARDIZED PLANT NAMES", 1942 EDITION, PREPARED BY THE AMERICAN JOINT COMMITTEE ON HORTICULTURAL NOMENCLATURE. NAMES OF PLANT VARIETIES NOT INCLUDED THEREIN CONFORM TO NAMES GENERALLY ACCEPTED IN NURSERY TRADE.
2. ALL EXPOSED GROUND SURFACES THAT ARE NOT PAVED WITHIN THE CONTRACT LIMIT LINE, AND THAT ARE NOT COVERED BY LANDSCAPE PLANTING OR SEEDING AS SPECIFIED, SHALL BE COVERED BY A NATURAL MULCH THAT WILL PREVENT SOIL EROSION AND THE EMANATION OF DUST.
3. NO PLANT SHALL BE PUT INTO THE GROUND BEFORE ROUGH GRADING HAS BEEN COMPLETED AND APPROVED BY THE PROJECT LANDSCAPE ARCHITECT OR PROJECT ENGINEER.
4. STANDARDS FOR TYPE, SPREAD, HEIGHT, ROOT BALL AND QUALITY OF NEW PLANT MATERIAL SHALL BE IN ACCORDANCE WITH GUIDELINES AS SET FORTH IN THE "AMERICAN STANDARD FOR NURSERY STOCK", PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN. PLANT MATERIAL SHALL HAVE NORMAL HABIT OF GROWTH AND BE HEALTHY, VIGOROUS, AND FREE FROM DISEASES AND INSECT INFESTATION.
5. NEW PLANT MATERIAL SHALL BE NURSERY GROWN UNLESS SPECIFIED OTHERWISE. ALL PLANTS SHALL BE SET PLUMB AND SHALL BEAR THE SAME RELATIONSHIP TO FINISHED GRADE AS THE PLANT'S ORIGINAL GRADE BEFORE DIGGING. PLANT MATERIAL OF THE SAME SPECIES AND SPECIFIED AS THE SAME SIZE SHOULD BE SIMILAR IN SHAPE, COLOR AND HABIT. THE LANDSCAPE ARCHITECT HAS THE RIGHT TO REJECT PLANT MATERIAL THAT DOES NOT CONFORM TO THE TYPICAL OR SPECIFIED HABIT OF THAT SPECIES.
6. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UNDERGROUND UTILITY AND SEWER LINES PRIOR TO THE START OF EXCAVATION ACTIVITIES. NOTIFY THE PROJECT ENGINEER AND OWNER IMMEDIATELY OF ANY CONFLICTS WITH PROPOSED PLANTING LOCATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE.
7. THE CONTRACTOR SHALL NOT MAKE SUBSTITUTIONS. IF THE SPECIFIED LANDSCAPE MATERIAL IS NOT OBTAINABLE, THE CONTRACTOR SHALL SUBMIT PROOF OF NON–AVAILABILITY TO THE LANDSCAPE ARCHITECT AND OWNER, TOGETHER WITH A WRITTEN PROPOSAL FOR USE OF AN EQUIVALENT MATERIAL.
8. LANDSCAPE CONTRACTOR TO STAKE OUT PLANTING LOCATIONS, FOR REVIEW AND APPROVAL BY THE LANDSCAPE ARCHITECT AND/OR OWNER BEFORE PLANTING WORK BEGINS. THE LANDSCAPE ARCHITECT AND/OR OWNER SHALL DIRECT THE CONTRACTOR IN THE FINAL PLACEMENT OF ALL PLANT MATERIAL AND LOCATION OF PLANTING BEDS TO ENSURE COMPLIANCE WITH DESIGN INTENT UNLESS OTHERWISE INSTRUCTED.
9. THE LANDSCAPE ARCHITECT MAY REVIEW PLANT MATERIALS AT THE SITE, BEFORE PLANTING, FOR COMPLIANCE WITH REQUIREMENTS FOR GENUS, SPECIES, VARIETY, SIZE, AND QUALITY. THE LANDSCAPE ARCHITECT RETAINS THE RIGHT TO FURTHER REVIEW PLANT MATERIALS FOR SIZE AND CONDITION OF BALLS AND ROOT SYSTEM, INSECTS, INJURIES, AND LATENT DEFECTS, AND TO REJECT UNSATISFACTORY OR DEFECTIVE MATERIAL AT ANY TIME DURING PROGRESS OF WORK. THE CONTRACTOR SHALL REMOVE REJECTED PLANT MATERIALS IMMEDIATELY FROM PROJECT SITE AS DIRECTED BY THE LANDSCAPE ARCHITECT OR OWNER.
10. DELIVERY, STORAGE, AND HANDLING
    - A. PACKAGED MATERIALS: PACKAGED MATERIALS SHALL BE DELIVERED IN CONTAINERS SHOWING WEIGHT, ANALYSIS, AND NAME OF MANUFACTURER. MATERIALS SHALL BE PROTECTED FROM DETERIORATION DURING DELIVERY, AND WHILE STORED AT SITE.
    - B. TREES AND SHRUBS: THE CONTRACTOR SHALL PROVIDE TREES AND SHRUBS DUG FOR THE GROWING SEASON FOR WHICH THEY WILL BE PLANTED. DO NOT PRUNE PRIOR TO DELIVERY UNLESS OTHERWISE DIRECTED BY THE LANDSCAPE ARCHITECT. DO NOT BEND OR BIND–TIE TREES OR SHRUBS IN SUCH A MANNER AS TO DAMAGE BARK, BREAK BRANCHES, OR DESTROY NATURAL SHAPE. PROVIDE PROTECTIVE COVERING DURING TRANSIT. DO NOT DROP BALLED AND BURLAPPED STOCK DURING DELIVERY OR HANDLING.
    - C. ALL PLANTS SHALL BE BALLED AND BURLAPPED OR CONTAINER GROWN AS SPECIFIED. NO CONTAINER GROWN STOCK WILL BE ACCEPTED IF IT IS ROOT BOUND. ALL ROOTBALL WRAPPING AND BINDING MATERIAL MADE OF SYNTHETICS OR PLASTICS SHALL BE REMOVED FROM THE TOP OF THE BALL AT THE TIME OF PLANTING. IF THE PLANT IS SHIPPED WITH A WIRE BASKET AROUND THE ROOT BALL, THE WIRE BASKET SHALL BE CUT AND FOLDED DOWN 8 INCHES INTO THE PLANTING HOLE. WITH CONTAINER GROWN STOCK, THE CONTAINER SHALL BE REMOVED AND THE ROOT BALL SHALL BE CUT THROUGH THE SURFACE IN TWO LOCATIONS.
    - D. THE CONTRACTOR SHALL HAVE TREES AND SHRUBS DELIVERED TO SITE AFTER PREPARATIONS FOR PLANTING HAVE BEEN COMPLETED AND PLANT IMMEDIATELY. IF PLANTING IS DELAYED MORE THAN 6 HOURS AFTER DELIVERY, THE CONTRACTOR SHALL SET TREES AND SHRUBS IN SHADE, PROTECT FROM WEATHER AND MECHANICAL DAMAGE AND KEEP ROOTS MOIST BY COVERING WITH MULCH, BURLAP OR OTHER ACCEPTABLE MEANS OF RETAINING MOISTURE.
11. ALL LANDSCAPED AREAS TO BE CLEARED OF ROCKS, STUMPS, TRASH AND OTHER UNSIGHTLY DEBRIS. ALL FINE GRADED AREAS SHOULD BE HAND RAKED SMOOTH ELIMINATING ANY CLUMPS AND AND UNEVEN SURFACES PRIOR TO PLANTING OR MULCHING.
12. ALL PLANT MATERIAL SHALL BE INSTALLED AS PER DETAILS, NOTES AND CONTRACT SPECIFICATIONS. THE LANDSCAPE ARCHITECT MAY REVIEW INSTALLATION AND MAINTENANCE PROCEDURES.
13. NEW PLANT MATERIAL SHALL BE GUARANTEED TO BE ALIVE AND IN VIGOROUS GROWING CONDITION FOR A PERIOD OF ONE YEAR FOLLOWING ACCEPTANCE BY THE OWNER. PLANT MATERIAL FOUND TO BE UNHEALTHY, DYING OR DEAD DURING THIS PERIOD, SHALL BE REMOVED AND REPLACED IN KIND BY THE CONTRACTOR AT NO EXPENSE TO THE OWNER.
14. THE CONTRACTOR SHALL KEEP AREA CLEAN DURING DELIVERY AND INSTALLATION OF PLANT MATERIALS. REMOVE AND DISPOSE OF OFF–SITE ANY ACCUMULATED DEBRIS OR UNUSED MATERIALS. REPAIR DAMAGE TO ADJACENT AREAS CAUSED BY LANDSCAPE INSTALLATION OPERATIONS.
15. ALL PLANTS SHALL BE WATERED THOROUGHLY TWICE DURING THE FIRST 24–HOUR PERIOD AFTER PLANTING. ALL PLANTS SHALL THEN BE WATERED WEEKLY OR AS REQUIRED BY SITE AND WEATHER CONDITIONS TO MAINTAIN VIGOROUS AND HEALTHY PLANT GROWTH.
16. THE BACKFILL MIXTURE AND SOIL MIXES TO BE INSTALLED PER THE SPECIFICATIONS.
17. AFTER PLANT IS PLACED IN TREE PIT LOCATION, ALL TWINE HOLDING ROOT BALL TOGETHER SHOULD BE COMPLETELY REMOVED AND THE BURLAP SHOULD BE PULLED DOWN SO 1/3 OF THE ROOT BALL IS EXPOSED. SYNTHETIC BURLAP SHOULD BE COMPLETELY REMOVED AFTER INSTALLATION.
18. MULCH SHOULD NOT BE PILED UP AROUND THE TRUNK OF ANY PLANT MATERIAL. NO MULCH OR TOPSOIL SHOULD BE TOUCHING THE BASE OF THE TRUNK ABOVE THE ROOT COLLAR.
19. ALL FENCE INSTALLATION SHALL BE COMPLETED PRIOR TO COMMENCEMENT OF ANY LANDSCAPE PLANTING, LAWN AND GRASSES, OR IRRIGATION WORK.
20. FOR ANY DISCREPANCIES BETWEEN THE PLANT SCHEDULE AND PLANTING PLAN THE GRAPHIC QUANTITY SHOWN SHALL GOVERN.
21. PLANT MATERIALS SHALL NOT BE PLANTED UNTIL THE FINISHED GRADING HAS BEEN COMPLETED.
22. ALL PLANT INSTALLATIONS SHALL BE COMPLETED EITHER BETWEEN APRIL 1 – JUNE 15 OR AUGUST 15 – NOVEMBER 1, UNLESS OTHERWISE DIRECTED BY THE PROJECT LANDSCAPE ARCHITECT. SEE LAWN SEEDING DATES IN SEEDING NOTES.

LANDSCAPE MAINTENANCE NOTES

1. MAINTENANCE OPERATIONS DURING CONSTRUCTION AND BEFORE APPROVAL:
    - A. PLANT CARE SHALL BEGIN IMMEDIATELY AFTER EACH PLANT IS SATISFACTORILY INSTALLED AND SHALL CONTINUE THROUGHOUT THE LIFE OF THE CONTRACT UNTIL FINAL ACCEPTANCE OF THE PROJECT.
    - B. CARE SHALL INCLUDE, BUT NOT BE LIMITED TO, REPLACING MULCH THAT HAS BEEN DISPLACED BY EROSION OR OTHER MEANS, REPAIRING AND RESHAPING WATER RINGS OR SAUCERS, MAINTAINING STAKES AND GUYS AS ORIGINALLY INSTALLED, WATERING WHEN NEEDED OR DIRECTED, AND PERFORMING ANY OTHER WORK REQUIRED TO KEEP THE PLANTS IN A HEALTHY CONDITION.
    - C. CONTRACTOR SHALL REMOVE AND REPLACE ALL DEAD, DEFECTIVE AND/OR REJECTED PLANTS AS REQUIRED BEFORE FINAL ACCEPTANCE.
    - D. MAINTENANCE SHALL BEGIN IMMEDIATELY AFTER PLANTING. PLANTS SHALL BE WATERED, MULCHED, WEEDED, PRUNED, SPRAYED, FERTILIZED, CULTIVATED, AND OTHERWISE MAINTAINED AND PROTECTED UNTIL PROVISIONAL ACCEPTANCE. SETTLED PLANTS SHALL BE RESET TO PROPER GRADE AND POSITION, PLANTING SAUCER RESTORED AND DEAD MATERIAL REMOVED. STAKES AND WIRES SHALL BE TIGHTENED AND REPAIRED. DEFECTIVE WORK SHALL BE CORRECTED AS SOON AS POSSIBLE AFTER IT BECOMES APPARENT AND WEATHER AND SEASON PERMIT.
    - E. IF A SUBSTANTIAL NUMBER OF PLANTS ARE SICKLY OR DEAD AT THE TIME OF INSPECTION, ACCEPTANCE SHALL NOT BE GRANTED AND THE CONTRACTOR'S RESPONSIBILITY FOR MAINTENANCE OF ALL PLANTS SHALL BE EXTENDED FROM THE TIME REPLACEMENTS ARE MADE OR EXISTING PLANTS ARE DEEMED ACCEPTABLE BY THE LANDSCAPE ARCHITECT.
    - F. ALL REPLACEMENTS SHALL BE PLANTS OF THE SAME KIND AND SIZE SPECIFIED ON THE PLANT LIST OR THAT WHICH WAS TO REMAIN OR BE RELOCATED. THEY SHALL BE FURNISHED AND PLANTED AS SPECIFIED. THE COST SHALL BE BORNE BY THE CONTRACTOR. REPLACEMENTS RESULTING FROM REMOVAL, LOSS, OR DAMAGE DUE TO OCCUPANCY OF THE PROJECT IN ANY PART, VANDALISM, PHYSICAL DAMAGE BY ANIMALS, VEHICLES, ETC., AND LOSSES DUE TO CURTAILMENT OF WATER BY LOCAL AUTHORITIES SHALL BE APPROVED AND PAID FOR BY THE OWNER.
    - G. PLANTS SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR AFTER INSPECTION AND PROVISIONAL ACCEPTANCE.
    - H. AT THE END OF THE ESTABLISHMENT PERIOD, INSPECTION SHALL BE MADE AGAIN. ANY PLANT REQUIRED UNDER THIS CONTRACT THAT IS DEAD OR UNSATISFACTORY TO THE LANDSCAPE ARCHITECT OR OWNER SHALL BE REMOVED FROM THE SITE AND REPLACED DURING THE NORMAL PLANTING SEASON.
3. LAWN MAINTENANCE:
    - A. BEGIN MAINTENANCE IMMEDIATELY AFTER EACH PORTION OF LAWN IS PLANTED AND CONTINUE FOR 8 WEEKS AFTER ALL LAWN PLANTING IS COMPLETED.
    - B. WATER TO KEEP SURFACE SOIL MOIST, REPAIR WASHED OUT AREAS BY FILLING WITH TOPSOIL, LIMING, FERTILIZING AND RE–SEEDING; MOW TO 2 1/2 – 3 INCHES AFTER GRASS REACHES 3 1/2 INCHES IN HEIGHT, AND MOW FREQUENTLY ENOUGH TO KEEP GRASS FROM EXCEEDING 3 1/2 INCHES. WEED BY LOCAL SPOT APPLICATION OF SELECTIVE HERBICIDE ONLY AFTER GRASS IS WELL–ESTABLISHED.

PLANTING SOIL SPECIFICATIONS

1. PLANTING SOIL, ALTERNATELY MAY BE REFERRED TO AS TOPSOIL, SHOULD BE FRIABLE, FERTILE, WELL DRAINED, FREE OF DEBRIS, TOXINS, TRASH AND STONES OVER 1/2" DIA., IT SHOULD HAVE A HIGH ORGANIC CONTENT SUITABLE TO SUSTAIN HEALTHY PLANT GROWTH AND SHOULD LOOK AESTHETICALLY PLEASING HAVING NO NOXIOUS ODORS.
2. PLANTING SOIL:

   REUSE SURFACE SOILS STOCKPILED ON SITE, VERIFYING COMPLIANCE WITH PLANTING SOIL AND TOPSOIL CRITERIA IN THIS SPECIFICATION THROUGH TESTING. CLEAN SURFACE SOIL OF ALL ROOTS, PLANTS, SOD, AND GRAVEL OVER 1" IN DIAMETER AND DELETERIOUS MATERIALS. IF ON–SITE SOILS ARE TO BE USED FOR PROPOSED PLANTING, THE CONTRACTOR SHALL DEMONSTRATE, THROUGH SOIL TESTING, THAT ON–SITE SOILS MEET THE SAME CRITERIA AS INDICATED IN NOTES PLANS AND SPECIFICATIONS.

   SUPPLEMENT WITH IMPORTED OR MANUFACTURED TOPSOIL FROM OFF SITE SOURCES WHEN TOPSOIL AND PLANTING SOIL QUANTITIES ARE INSUFFICIENT. OBTAIN SOIL DISPLACED FROM NATURALLY WELL–DRAINED SITES WHERE TOPSOIL OCCURS AT LEAST 4" DEEP. DO NOT OBTAIN FROM AGRICULTURAL LAND, BOGS, MARSHES OR CONTAMINATED SITES.

   CONTRACTOR SHALL TEST SOILS AND FURNISH SAMPLES UPON REQUEST. PACKAGED MATERIALS SHALL BE UNOPENED BAGS OR CONTAINERS, EACH BEARING A NAME, GUARANTEE, AND TRADEMARK OF THE PRODUCER, MATERIAL COMPOSITION, MANUFACTURER'S CERTIFIED ANALYSIS, AND THE WEIGHT OF THE MATERIALS. SOIL OR AMENDMENT MATERIALS SHALL BE STORED ON SITE TEMPORARILY IN STOCKPILES PRIOR TO PLACEMENT AND SHALL BE PROTECTED FROM INTRUSION OF CONTAMINANTS AND EROSION. AFTER MIXING, SOIL MATERIALS SHALL BE COVERED WITH A TARPAULIN UNTIL TIME OF ACTUAL USE.

   ALL PLANTING SOILS SHALL BE SUBMITTED FOR TESTING TO THE STATE COOPERATIVE EXTENSION SERVICE, OR APPROVED EQUAL, PRIOR TO DELIVERY TO THE SITE. CONTRACTOR SHALL FURNISH SOIL SAMPLES AND SOIL TEST RESULTS TO LANDSCAPE ARCHITECT OR OWNER AT A RATE OF ONE SAMPLE PER 500 CUBIC YARDS TO ENSURE CONSISTENCY ACROSS THE TOTAL VOLUME OF PLANTING SOIL REQUIRED. TEST RESULTS SHALL EVALUATE FOR ALL CRITERIA LISTED IN THIS SPECIFICATION. IF TESTING AGENCY DETERMINES THAT THE SOILS ARE DEFICIENT IN ANY MANNER AND MAY BE CORRECTED BY ADDING AMENDMENTS, THE CONTRACTOR SHALL FOLLOW STATED RECOMMENDATIONS FOR SOIL IMPROVEMENT AND FURNISH SUBMITTALS FOR ALL AMENDMENTS PRIOR TO DELIVERY OF SOIL TO THE PROJECT SITE.

    - A. THE FOLLOWING TESTING SHOULD BE PERFORMED AND RESULTS GIVEN TO THE LANDSCAPE ARCHITECT FOR APPROVAL BEFORE INSTALLATION:
        - a. PARTICLE SIZE ANALYSIS – LOAMY SAND: 60–75% SAND, 25–40% SILT, AND 5–15% CLAY.
        - b. FERTILITY ANALYSIS: pH (5.5–6.5), SOLUBLE SALTS (LESS THAN 2 MMHO/CM), NITRATE, PHOSPHATE, POTASSIUM, CALCIUM AND MAGNESIUM
        - c. ORGANIC MATTER CONTENT: 2.5–5% IN NATIVE SOILS; UP TO 10% IN AMENDED SOILS
        - d. TOXIC SUBSTANCE ANALYSIS
        - e. MATERIAL DRAINAGE RATE: 60% PASSING IN 2 MINUTES, 40% RETAINED
        - f. NOT MORE THAN 1% OF MATERIAL SHALL BE RETAINED BY A #4 SIEVE
3. SOIL AMENDMENT FOR PLANT MATERIAL:
   IF SOIL ORGANIC CONTENT IS INADEQUATE, SOIL SHALL BE AMENDED WITH COMPOST OR ACCEPTABLE, WEED FREE, ORGANIC MATTER. ORGANIC AMENDMENT SHALL BE WELL COMPOSTED, PH RANGE OF 6–8; MOISTURE CONTENT 35–55% BY WEIGHT 100% PASSING THROUGH 1" SIEVE; SOLUBLE SALT CONTENT LESS THAN 0.5 MM HOS/CM; MEETING ALL APPLICABLE ENVIRONMENTAL CRITERIA FOR CLEAN FILL.
    - A. ORGANIC MATTER AS A SOIL AMENDMENT: LEAF MOLD WITH 60–90% ORGANIC CONTENT BY WEIGHT. SHREDDED LEAF LITTER, COMPOSTED FOR A MINIMUM OF 1 YR. SHOULD BE FREE OF DEBRIS, STONES OVER 1/2", WOOD CHIPS OVER 1".
    - B. SOIL IN BEDS AND PLANTING ISLANDS OTHER THAN BACKFILL MATERIAL AND TOPSOIL, SHOULD BE FRIABLE, WELL DRAINED, AND FREE OF DEBRIS, INCLUDING STONES AND TRASH.
    - C. AMENDMENTS FOR BACK FILL IN TREE AND SHRUB PITS:
        - a. GROUND LIMESTONE (WITH A MIN. OF 88% OF CALCIUM AND MAGNESIUM CARBONATES) USED PENDING RESULTS OF SOIL ANALYSIS.
            - – BRING pH LEVELS TO 5.5 MIN. TO 6.5 FOR NON–ERICACEOUS PLANTS
            - – BRING pH LEVELS TO 4.5 MIN. TO 5.5 FOR ERICACEOUS PLANTS
        - b. TERRA–SORB BY 'PLANT HEALTH CARE' 800–421–9051 (SEE MANUFACTURER RECOMMENDATIONS) USED IN PLANTER BACKFILL MIXTURE WITH TREES AND SHRUBS.
        - c. MYCOR–ROOT SAVER BY 'PLANT HEALTH CARE' 800–421–9051 (SEE MANUFACTURER RECOMMENDATIONS) USED IN BACKFILL MIXTURE WITH TREES.
4. WHERE PLANTING AREAS ARE PROPOSED FOR FORMER PAVED OR GRAVEL AREAS, BEDS SHALL BE EXCAVATED TO A MINIMUM 30" DEPTH AND, AT A MINIMUM, BE BACKFILLED WITH BOTTOM LAYER OF SANDY LOAM (ORGANIC CONTENT LESS THAN 2%) OVER WHICH TOPSOIL AND PLANTING SOILS WILL BE PLACED AT DEPTHS INDICATED IN PLANS, DETAILS AND NOTES.
5. CLEAN SOIL FILL IN LANDSCAPE AREAS:
   LANDSCAPE FILL MATERIAL, BELOW PLANTING SOILS, SHALL HAVE THE PHYSICAL PROPERTIES OF A SANDY LOAM WITH AN ORGANIC CONTENT OF LESS THAN 2% AND A PH BETWEEN 5 – 7.
6. SOIL PLACEMENT:
    - A. CONTRACTOR TO PROVIDE SIX INCHES (6") MINIMUM DEPTH PLANTING SOIL LAYER IN LAWN AREAS, TWELVE INCHES (12") MINIMUM DEPTH PLANTING SOIL LAYER IN GROUNDCOVER AND PERENNIAL AREAS, EIGHTEEN INCHES (18") MINIMUM DEPTH PLANTING SOIL LAYER IN SHRUB AREAS, AND THIRTY–SIX INCHES (36") MINIMUM DEPTH PLANTING SOIL LAYER IN TREE PLANTING AREAS.
    - B. SCARIFY AND/OR TILL COMPACTED SUBSOILS TO A MINIMUM DEPTH OF 6 INCHES. THOROUGHLY MIX A 6 INCH DEPTH LAYER OF PLANTING SOIL INTO THE SUBSOIL PRIOR TO PLACING PLANTING SOIL AT THE DEPTHS INDICATED ABOVE. PLANTING SOIL SHALL BE PLACED IN 12–18" LIFTS AND WATER THOROUGHLY BEFORE INSTALLING NEXT LIFT. REPEAT UNTIL DEPTHS AND FINISH GRADES HAVE BEEN ACHIEVED. NO SOILS SHALL BE PLACED IN A FROZEN OR MUDDY CONDITION.
    - C. PLANTING SOIL PRESENT AT THE SITE, IF ANY, MAY BE USED TO SUPPLEMENT TOTAL AMOUNT REQUIRED. CONTRACTOR TO FURNISH AN ANALYSIS OF ON–SITE PLANTING SOIL UTILIZED IN ALL PLANTING AREAS.
7. SOIL CONDITIONING:
    - A. ADJUST pH AND NUTRIENT LEVELS AS REQUIRED TO ENSURE AN ACCEPTABLE GROWING MEDIUM. LOWER pH USING ELEMENTAL SULFUR ONLY. PEAT MOSS OR COPPER SULFATE MAY NOT BE USED. GROUND LIMESTONE AS A SOIL AMENDMENT MATERIAL WILL ONLY BE USED PENDING RESULTS OF SOIL ANALYSIS. PROVIDE WITH MINIMUM 88% CALCIUM AND MAGNESIUM CARBONATES AND SHALL HAVE TOTAL 100% PASSING THE 10 MESH SIEVE, MINIMUM 90% PASSING 20 MESH SIEVE, AND MINIMUM 60% PASSING 100 MESH SIEVE.
    - B. ALL DEBRIS EXPOSED FROM EXCAVATION AND CULTIVATION SHALL BE DISPOSED OF AT THE CONTRACTOR'S EXPENSE.
    - C. SOIL MODIFICATIONS (PENDING RESULTS OF SOIL ANALYSIS):
        - a. THOROUGHLY TILL ORGANIC MATTER (LEAF COMPOST) INTO THE TOP 6 TO 12 IN. OF MOST PLANTING SOILS TO IMPROVE THE SOIL'S ABILITY TO RETAIN WATER AND NUTRIENTS. ALL PRODUCTS SHOULD BE COMPOSTED TO A DARK COLOR AND BE FREE OF PIECES WITH IDENTIFIABLE LEAF OR WOOD STRUCTURE. AVOID MATERIAL WITH A pH HIGHER THAN 7.0. PEAT MOSS MAY NOT BE USED AS ORGANIC MATTER AMENDMENT.
        - b. MODIFY HEAVY CLAY OR SILT (MORE THAN 40% CLAY OR SILT) BY ADDING COMPOSTED PINE BARK (UP TO 30% BY VOLUME) AND/OR GYPSUM. COARSE SAND MAY BE USED IF ENOUGH IS ADDED TO BRING THE SAND CONTENT TO MORE THAN 60% OF THE TOTAL MIX. IMPROVE DRAINAGE IN HEAVY SOILS BY PLANTING ON RAISED MOUNDS OR BEDS AND INCLUDING SUBSURFACE DRAINAGE LINES.
        - c. MODIFY EXTREMELY SANDY SOILS (MORE THAN 85% SAND) BY ADDING ORGANIC MATTER AND/OR DRY, SHREDDED CLAY LOAM UP TO 30% OF THE TOTAL MIX.

LAWN (SOD) SPECIFICATIONS

LAWN (SOD)

1. SOD IS TO BE A BERMUDAGRASS (CYNODON DACTYLON) OR MATCH EXISTING. SOD IS TO BE INDIGENOUS TO THE AREA AND BE FURNISHED BY A REPUTABLE GROWER WITH A MINIMUM 5 YEARS EXPERIENCE.
2. PRIOR TO SODDING ALL AREAS ARE TO BE TOPSOILED, FINE GRADED, RAKED, WATERED LIGHTLY, AND FERTILIZED WITH A STARTER FERTILIZER.
3. ALL STONES GREATER THAN 1/2" DIAMETER SHALL BE REMOVED.
4. SOD TO BE INSTALLED PERPENDICULAR TO ALL SLOPED AREAS. SOD STRIPS TO BE LAYED OUT SO JOINTS ARE NOT CLOSER THAN ONE FOOT (1'–0") FROM EACH OTHER.
5. SOD IS TO BE WATERED PER LOCAL RECOMMENDATIONS AT A RATE TO ENSURE ROOT MASS MENDS WITH SOIL. AFTER THIS HAS OCCURED, NORMAL WATERING SHALL BE PERFORMED.
6. ALL SOD AREAS ARE TO BE ROLLED IF ANY HEAVING OR DEPRESSIONS OCCUR.

NOTES:
1. PLANTS ARE TO BE SPACED EQUIDISTANT FROM EACH OTHER.
2. REFER TO LANDSCAPE PLAN FOR SPACING OF INDIVIDUAL PLANTS.
3. REMOVE ALL WIRE, PLASTIC, TAGS OR SYNTHETIC MATERIAL FROM PLANTS PRIOR TO PLANTING.

1 GROUNDCOVER/ PERENNIAL PLANTING

NTS

NOTES:
1. LANDSCAPE STEEL EDGE IS REQUIRED BETWEEN GRAVEL AND LAWN.
2. DO NOT INSTALL STEEL EDGE BETWEEN PLANTING AREA AND CONCRETE.
3. GRAVEL TO BE INSTALLED WHERE PLANTINGS OR LAWN MEET BUILDING WALLS, AND UNDER BUILDING OVERHANGS SHOWN ON LANDSCAPE PLANS.

2 ROCK MULCH

NTS

GENERAL NOTE:

DUE TO GENERAL CONSTRUCTION ACTIVITIES AND ADJACENT SITE COMPACTION REQUIREMENTS, SUBGRADE SOILS WITHIN PROPOSED PLANTING AREAS TEND TO BECOME HIGHLY COMPACTED. IN ORDER TO CREATE A HEALTHY GROWTH MEDIUM TO ALLOW PROPOSED PLANTINGS TO ESTABLISH A VIGOROUS ROOT MASS, THIS SUBGRADE SOIL MUST UNDERGO A RESTORATION PROCESS. IN ADDITION, IMPORTED OR AMENDED EXISTING SOILS SHALL BE MIXED WITH SUBGRADE SOILS WHERE THEY MEET IN ORDER TO CREATE A TRANSITIONAL GRADIENT TO ALLOW FOR PROPER DRAINAGE.

*EXISTING SOIL STRIPPED FROM SITE CAN BE USED FOR PLANTING SOIL UPON APPROVAL BY THE PROJECT LANDSCAPE ARCHITECT. CONTRACTOR SHALL REFER TO PLANTING SOIL SPECIFICATIONS FOR REQUIRED SUBMITTALS.

PLANTING SOIL WITHIN AREAS OF CUT OR RAISED GRADE

PLANTING SOIL WITHIN AREAS OF UNCHANGED GRADE

NOTES:
1. CONTRACTOR IS RESPONSIBLE TO SEND SAMPLES OF EXISTING SOILS INTENDED FOR USE IN PLANTING AREAS (1 PER 500 CY.) TO TESTING LABORATORY OR UNIVERSITY COOPERATIVE EXTENSION FOR TESTING. ALL TESTING COSTS ARE AT THE CONTRACTOR'S EXPENSE.
2. RECYCLED CRUSHED CONCRETE AND ASPHALT MILLINGS SHALL NOT BE PLACED WITHIN 2'–6" OF FINISH GRADE IN PROPOSED LANDSCAPE AREAS.
3. IMPORTED FILL SHALL CONTAIN NO CONTAMINATION IN EXCEEDENCE OF THE APPLICABLE STATE ENVIRONMENTAL STANDARDS AND MEET THE ENVIRONMENTAL REQUIREMENTS FOR THE PROJECT. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION OF COMPLIANCE PRIOR TO DELIVERY OF ANY FILL TO THE SITE.
4. CONTRACTOR TO LIGHTLY COMPACT ALL PLACED PLANTING SOILS AND RAISE GRADES ACCORDINGLY TO ALLOW FOR FUTURE SETTLEMENT OF PLANTING SOILS (TYP.)
5. NO STONES, WOOD CHIPS, OR DEBRIS LARGER THAN 1/2" SHALL BE ACCEPTABLE WITHIN PLANTING AREAS.

3 PLANTING SOIL

NTS

7 EVERGREEN TREE PLANTING

NTS

4 ORNAMENTAL TREE PLANTING

NTS

5 DECIDUOUS TREE PLANTING

NTS

IRRIGATION NOTES:

1. THE IRRIGATION CONTRACTOR SHALL PROVIDE SHOP DRAWINGS OF THE IRRIGATION INSTALLATION PLAN AND CUT–SHEETS FOR ALL COMPONENTS FOR REVIEW AND APPROVAL BY THE PROJECT LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION. THE IRRIGATION INSTALLATION PLAN SHALL BE COMPLETE WITH ZONE DESIGNATIONS AND WATER USAGE IN GALLONS PER MINUTE PER ZONE, RUN TIME SCHEDULE, LEGEND OF COMPONENTS AND PLAN GRAPHICS WITH QUANTITIES, MINIMUM SYSTEM REQUIREMENTS INCLUDING STATIC PRESSURE AT THE WATER CONNECTION POINT, ESTIMATED WATER BUDGET, CONSTRUCTION DETAILS AND IRRIGATION NOTES. THE PLAN SHALL ALSO INCLUDE LOCATIONS OF ALL PROPOSED SLEEVES AND THEIR SIZES, LOCATIONS OF ALL LATERAL LINE SIZE STEP–DOWNS WITH SIZE INDICATIONS, LOCATION OF ALL SOIL MOISTURE SENSORS, CONTROLLER, VALVES AND ALL OTHER COMPONENTS NECESSARY FOR THE SYSTEMS OPERATION.
2. LANDSCAPE AREAS SHALL BE IRRIGATED WITH POP–UP SPRAY AND ROTARY IRRIGATION HEADS IN SUFFICIENT DENSITY TO COVER THE ENTIRE AREA.
3. CONTRACTOR TO AVOID DISTURBANCE OF EXISTING PLANT MATERIAL WHEN LOCATING VALVES AND PIPE LINES. ANY PLANT MATERIAL DAMAGED AS A RESULT OF IRRIGATION INSTALLATION SHALL BE REPLACED AT NO ADDITIONAL COST TO THE OWNER.
4. ALL EXCAVATION MATERIAL SHALL BE PLACED BACK IN TRENCHES.
5. ALL DISTURBED LANDSCAPE AND PAVED AREAS SHALL BE RESTORED TO THE CONDITION FOUND PRIOR TO START OF INSTALLATION.
6. DEPTH OF TRENCHES SHALL BE SUFFICIENT OR PROVIDE A MINIMUM COVER ABOVE THE TOP OF PIPE AS FOLLOWS:
    - – 12" OVER NON–PRESSURE LATERAL LINES
    - – 18" OVER NON–PRESSURE LATERAL LINES UNDER PAVING
    - – 18" OVER CONTROL WIRES
    - – 18" OVER MAIN LINE
    - – 24" OVER MAIN LINE UNDER PAVING
7. THE IRRIGATION CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE LOCATION OF THE PLUMBING TIE–INS, SLEEVES UNDER PAVEMENTS (AS NECESSARY), AND CONTROL DEVICES WITH THE GENERAL CONTRACTOR, OWNER, AND OWNER'S REPRESENTATIVE.
8. CONTRACTOR TO COORDINATE INSTALLATION OF IRRIGATION SYSTEM WITH EXISTING AND PROPOSED UTILITIES, SITE DRAINAGE SYSTEMS, AND PAVING.
9. CONTRACTOR SHALL PROMPTLY NOTIFY THE OWNER'S REPRESENTATIVE SHOULD ANY UTILITIES, NOT SHOWN ON THE PLANS, BE FOUND DURING INSTALLATION WORK.
10. WATERPROOF ALL WIRE CONNECTORS USING 3M 'DBY' WATERPROOF CONNECTORS OR EQUIVALENT.
11. DRAIN VALVES ARE TO BE PROVIDED AT SUFFICIENT INTERVALS TO PROVIDE COMPLETE DRAINAGE OF ALL PIPING.
12. COORDINATE THE LOCATION OF CONTROLS, IRRIGATION CONTROLLER, AND SOIL MOISTURE SENSORS WITH THE PROJECT MEP AND OWNER PRIOR TO INSTALLATION.
13. IRRIGATION CONTRACTOR SHALL MAKE FIELD ADJUSTMENTS TO IRRIGATION DESIGN WHERE REQUIRED TO PROVIDE 100% COVERAGE OF ALL LANDSCAPE AREAS, AS DESIGNATED ON THIS PLAN.
14. INSTALLATION MUST COMPLY WITH ALL LOCAL CODES AND CONDITIONS.
15. ALL IRRIGATION WORK SHALL BE GUARANTEED FOR 1 YEAR AFTER COMPLETION OF ALL WORK.
16. CONTRACTOR TO PROVIDE THREE (3) COPIES OF AS–BUILTS, SERVICE MANUALS AND INSTRUCTIONS TO THE OWNER OR OWNERS REPRESENTATIVE.
17. ALL SPRINKLER HEADS SHALL BE SET BACK 4" MINIMUM FROM BACK OF ALL CURBS.
18. CONTRACTOR MAY SUBMIT ALTERNATE EQUIVALENT MATERIALS FOR REVIEW AND APPROVAL BY OWNER'S REPRESENTATIVE OR PROJECT LANDSCAPE ARCHITECT.

GENERAL IRRIGATION NOTES
1. Contractor to provide design drawings for approval prior to installation.
2. Irrigation to extend from property lines to back of city sidewalks and / or curbs.
3. Install 1 1/2" dia. PVC pipe sleeves where irrigations lines cross or are under pavement.
4. Contractor to provide irrigation plan for permitting at a later date.

FOR INFORMATIONAL PURPOSES ONLY

NTS REG–FIL

8 VALVE, REGULATOR, & FILTER

NOTE: SHOP DRAWINGS TO BE SUBMITTED FOR 10–13 GA. EXPANDED STEEL DIAMOND MESH CAGE WITH LOCKABLE LID AND MOUNTED IN CONCRETE FOOTINGS. MIN. CLEARANCE 3" TOP, 8" SIDES. (CONTRACTOR SHALL PROVIDE & INSTALL PROTECTIVE CAGE & PROVIDE SHOP DRAWINGS TO BE SUBMITTED FOR CITY APPROVAL)

NTS VACUUM

9 PRESSURE TYPE VACUUM BRKR.

LARGE SHRUB

SMALL SHRUB (CONTAINER)

NOTES:
1. ALL SHRUBS TO BE SET PLUMB.
2. REFER TO LANDSCAPE PLAN FOR SPACING OF INDIVIDUAL PLANTS.
3. REMOVE ALL WIRE, PLASTIC, TAGS OR SYNTHETIC MATERIAL FROM PLANTS PRIOR TO PLANTING.

6 SHRUB PLANTING

NTS

Date	Description	No.
Revisions		

JAYNE SPECTOR, PLA.
TEXAS LIC. NO. 3031

LANGAN
Langan Engineering and Environmental Services, Inc.
17220 Katy Freeway, First Floor, Suite 125
Houston, TX 77094
T: 281.675.7900 F: 281.675.7901 www.langan.com
TBPE FIRM REG. #F-13709

Project
13321 FM 1488
MAGNOLIA, TX 77354
MONTGOMERY MAGNOLIA TEXAS

Drawing Title
LANDSCAPE DETAILS

Project No.
510057201
Date
11/9/2023
Drawn By
DH
Checked By
AM/JS

Drawing No.
LP102

STATE OF TEXAS

COUNTY OF MONTGOMERY

WE, RVISION HOMES, LTD, A TEXAS LIMITED PARTNERSHIP, ACTING BY AND THROUGH ITS GENERAL PARTNER, R VISION REMODELS, LLC, A TEXAS LIMITED LIABILITY COMPANY, RYAN ROGERS, MANAGER, OWNERS OF THE PROPERTY SUBDIVIDED IN THE ABOVE AND FOREGOING MAP OF THE OAKS ON 6TH STREET, DO HEREBY MAKE SUBDIVISION OF SAID PROPERTY FOR AND ON BEHALF OF SAID RVISION HOMES, LTD, A TEXAS LIMITED PARTNERSHIP, ACTING BY AND THROUGH ITS GENERAL PARTNER, R VISION REMODELS, LLC, A TEXAS LIMITED LIABILITY COMPANY, ACCORDING TO THE LINES, STREETS, LOTS, ALLEYS, PARKS, BUILDING LINES, AND EASEMENTS THEREIN SHOWN, AND DESIGNATE SAID SUBDIVISION AS THE OAKS ON 6TH STREET, LOCATED IN THE GAMBLE DAWSON SURVEY, ABSTRACT 177, MONTGOMERY COUNTY, TEXAS, AND ON BEHALF OF SAID RVISION HOMES, LTD, A TEXAS LIMITED PARTNERSHIP; AND DEDICATE TO PUBLIC USE, AS SUCH, THE STREETS, ALLEYS, PARKS, AND EASEMENTS SHOWN THEREON FOREVER; AND DO HEREBY WAIVE ANY CLAIMS FOR DAMAGES OCCASIONED BY THE ESTABLISHING OF GRADES AS APPROVED FOR THE STREETS AND ALLEYS DEDICATED, OR OCCASIONED BY THE ALTERATION OF THE SURFACE OF ANY PORTION OF STREETS OR ALLEYS TO CONFORM TO SUCH GRADES; AND DO HEREBY BIND OURSELVES, OUR SUCCESSORS AND ASSIGNS TO WARRANT AND FOREVER DEFEND THE TITLE ON THE LAND SO DEDICATED.

FURTHER, OWNERS HAVE DEDICATED AND BY THESE PRESENTS DO DEDICATE TO THE USE OF THE PUBLIC FOR PUBLIC UTILITY PURPOSE FOREVER UNOBSTRUCTED AERIAL EASEMENTS. THE AERIAL EASEMENTS SHALL EXTEND HORIZONTALLY AN ADDITIONAL ELEVEN FEET, SIX INCHES (11'-6") FOR TEN FEET (10'-0") PERIMETER GROUND EASEMENTS OR SEVEN FEET, SIX INCHES (7'-6") FOR FOURTEEN FEET (14'-0") PERIMETER GROUND EASEMENTS OR FIVE FEET, SIX INCHES (5'-6") FOR SIXTEEN FEET (16'-0") PERIMETER GROUND EASEMENTS, FROM A PLANE SIXTEEN FEET (16'-0") ABOVE THE GROUND LEVEL UPWARD, LOCATED ADJACENT TO AND ADJOINING SAID PUBLIC UTILITY EASEMENTS THAT ARE DESIGNATED WITH AERIAL EASEMENTS (U.E. AND A.E.) AS INDICATED AND DEPICTED HEREON, WHEREBY THE AERIAL EASEMENT TOTALS TWENTY ONE FEET, SIX INCHES (21'-6") IN WIDTH.

FURTHER, OWNERS HAVE DEDICATED AND BY THESE PRESENTS DO DEDICATE TO THE USE OF THE PUBLIC FOR PUBLIC UTILITY PURPOSE FOREVER UNOBSTRUCTED AERIAL EASEMENTS. THE AERIAL EASEMENTS SHALL EXTEND HORIZONTALLY AN ADDITIONAL TEN FEET (10'-0") FOR TEN FEET (10'-0") BACK-TO-BACK GROUND EASEMENTS, OR EIGHT FEET (8'-0") FOR FOURTEEN FEET (14'-0") BACK-TO-BACK GROUND EASEMENTS OR SEVEN FEET (7'-0") FOR SIXTEEN FEET (16'-0") BACK-TO-BACK GROUND EASEMENTS, FROM A PLANE SIXTEEN FEET (16'-0") ABOVE GROUND LEVEL UPWARD, LOCATED ADJACENT TO BOTH SIDES AND ADJOINING SAID PUBLIC UTILITY EASEMENTS THAT ARE DESIGNATED WITH AERIAL EASEMENTS (U.E. AND A.E.) AS INDICATED AND DEPICTED HEREON, WHEREBY THE AERIAL EASEMENT TOTALS THIRTY FEET (30'-0") IN WIDTH.

WE HAVE ALSO COMPILED WITH ALL REGULATIONS HERETO BEFORE ADOPTED BY THE CITY COUNCIL OF THE CITY OF MAGNOLIA, LOCATED IN MONTGOMERY COUNTY, TEXAS.

IN TESTIMONY WHEREOF, THE RVISION HOMES, LTD, A TEXAS LIMITED PARTNERSHIP, ACTING BY AND THROUGH ITS GENERAL PARTNER, R VISION REMODELS, LLC, A TEXAS LIMITED LIABILITY COMPANY, HAS CAUSED THESE PRESENTS TO BE SIGNED BY RYAN ROGERS, ITS MANAGER, THEREUNTO AUTHORIZED THIS _____ DAY OF _____, 2023.

RVISION HOMES, LTD, A TEXAS LIMITED PARTNERSHIP

BY: R VISION REMODELS, LLC, A TEXAS LIMITED LIABILITY COMPANY, ITS GENERAL PARTNER

BY: _____
RYAN ROGERS, MANAGER

STATE OF TEXAS

COUNTY OF MONTGOMERY

BEFORE ME, THE UNDERSIGNED AUTHORITY, ON THIS DAY PERSONALLY APPEARED RYAN ROGERS, KNOWN TO ME TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT AND ACKNOWLEDGED TO ME THAT THEY EXECUTED THE SAME FOR THE PURPOSES AND CONSIDERATIONS THEREIN EXPRESSED.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, THIS_____ DAY OF _____, 2023.

_____
NOTARY PUBLIC IN AND FOR THE STATE OF TEXAS

PRINTED NAME: _____

MY COMMISSION EXPIRES: _____

I, CAREY A. JOHNSON, AM REGISTERED UNDER THE LAWS OF THE STATE OF TEXAS TO PRACTICE THE PROFESSION OF SURVEYING AND HEREBY CERTIFY THAT THE ABOVE SUBDIVISION IS TRUE AND CORRECT; WAS PREPARED FROM AN ACTUAL SURVEY OF THE PROPERTY MADE UNDER MY SUPERVISION ON THE GROUND; THAT THE ELEVATION BENCHMARK REFLECTED ON THE FACE OF THE PLAT WAS ESTABLISHED AS REQUIRED BY REGULATION; THAT ALL CORNERS AND ANGLE POINTS OF THE BOUNDARIES OF THE ORIGINAL TRACT TO BE SUBDIVIDED OF REFERENCE HAVE BEEN MARKED WITH IRON RODS WHICH HAVE A DIAMETER OF NOT LESS THAN FIVE-EIGHTS OF AN INCH (5/8") AND A LENGTH OF NOT LESS THAN THREE FEET (3') UNLESS OTHERWISE NOTED; AND THAT THE PLAT BOUNDARY CORNERS HAVE BEEN TIED TO THE NEAREST SURVEY CORNER.

STATE OF TEXAS · REGISTERED · CAREY A. JOHNSON 6524 PROFESSIONAL LAND SURVEYOR

Carey A. Johnson
Registered Professional Land Surveyor No. 6524

STATE OF TEXAS

COUNTY OF MONTGOMERY

WE, GUARANTY BANK & TRUST, N.A., OWNER AND HOLDER OF A LIEN AGAINST THE PROPERTY DESCRIBED IN THE PLAT KNOWN AS THE OAKS ON 6TH STREET, SAID LIEN BEING EVIDENCED BY INSTRUMENT OF RECORD IN DOCUMENT NO 2023072696, OF THE REAL PROPERTY RECORDS OF MONTGOMERY COUNTY, TEXAS, DO HEREBY IN ALL THINGS SUBORDINATE TO SAID PLAT SAID LIEN, AND WE HEREBY CONFIRM THAT WE ARE THE PRESENT OWNER OF SAID LIEN AND HAVE NOT ASSIGNED THE SAME NOR ANY PART THEREOF.

SIGNED: _____

PRINTED: _____

STATE OF TEXAS

COUNTY OF MONTGOMERY

BEFORE ME, THE UNDERSIGNED AUTHORITY, ON THIS DAY PERSONALLY APPEARED _____

_____, KNOWN TO ME TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT AND ACKNOWLEDGED TO ME THAT THEY EXECUTED THE SAME FOR THE PURPOSES AND CONSIDERATIONS THEREIN EXPRESSED.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, THIS_____ DAY OF _____, 2023.

_____
NOTARY PUBLIC IN AND FOR THE STATE OF TEXAS

PRINTED NAME: _____

MY COMMISSION EXPIRES: _____

THIS IS TO CERTIFY THAT THE PLANNING AND ZONING COMMISSION OF THE CITY OF MAGNOLIA, TEXAS, HAS APPROVED THIS PLAT AND SUBDIVISION OF THE OAKS ON 6TH STREET AS SHOWN HEREIN.

IN TESTIMONY WHEREOF, IN WITNESS OF THE OFFICIAL SIGNATURES ON THE MAYOR, AND THE CITY SECRETARY OF THE CITY OF MAGNOLIA, TEXAS, THIS THE _____ DAY OF _____, 20___, DO APPROVE THIS PLAT TO BE RECORDED IN THE OFFICIAL RECORD AT THE MONTGOMERY COUNTY CLERK'S OFFICE.

_____
SCOTT SHELBURNE, CHAIRMAN

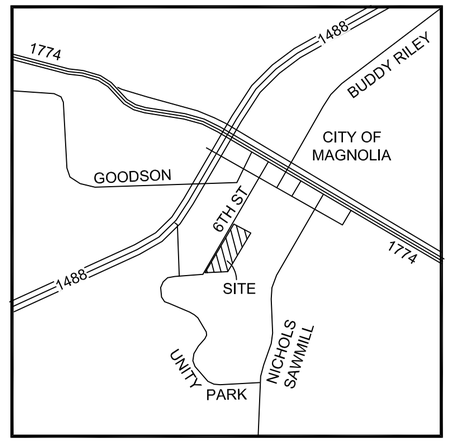
_____
CHRISTIAN GABLE, INTERIM CITY SECRETARY
PERMIT TECH/PLANNING COORDINATOR

THIS IS TO CERTIFY THAT THE CITY COUNCIL OF THE CITY OF MAGNOLIA, TEXAS, HAS APPROVED THIS PLAT AND SUBDIVISION OF THE OAKS ON 6TH STREET AS SHOWN HEREIN.

IN TESTIMONY WHEREOF, IN WITNESS OF THE OFFICIAL SIGNATURES ON THE MAYOR, AND THE CITY SECRETARY OF THE CITY OF MAGNOLIA, TEXAS, THIS THE _____ DAY OF _____, 20___, DO APPROVE THIS PLAT TO BE RECORDED IN THE OFFICIAL RECORD AT THE MONTGOMERY COUNTY CLERK'S OFFICE.

_____
TODD KANA, MAYOR

_____
CHRISTIAN GABLE, INTERIM CITY SECRETARY
PERMIT TECH/PLANNING COORDINATOR



VICINITY MAP
SCALE - 1"=2000'

GENERAL NOTES:

1. NO PORTION OF THIS PROPERTY APPEARS TO LIE WITHIN THE 100 YEAR FLOODPLAIN PER MONTGOMERY COUNTY COMMUNITY MAP NO. 48339C0475G, FEMA FIRM PANEL NO. 0475G, HAVING AN EFFECTIVE DATE OF AUGUST 18, 2014.
2. ALL COORDINATES, BEARINGS AND DISTANCES ARE REFERENCED TO THE TEXAS COORDINATE SYSTEM OF 1983 (NAD83) (2011 ADJUSTMENT), CENTRAL ZONE (TXC-4203), U.S. SURVEY FEET, AND BASED ON GPS OBSERVATIONS, AND MAY BE BROUGHT TO SURFACE BY APPLYING THE FOLLOWING COMBINED SCALE FACTOR OF 1.000028228617.
3. THIS PLAT WAS PREPARED FROM INFORMATION FURNISHED BY ALAMO TITLE INSURANCE COMAPNY, GF NO. ATCH-16-ATCH23128389TC, DAED MAY 10, 2023.
   THE SURVEYOR HAS NOT ABSTRACTED THE PROPERTY.
4. PIPELINES OR PIPELINE EASEMENTS WITHIN THE LIMITS OF THE SUBDIVISION ARE AS SHOWN.

THE STATE OF TEXAS
COUNTY OF MONTGOMERY

I, L. BRANDON STEINMANN, CLERK OF THE COUNTY COURT OF MONTGOMERY COUNTY, TEXAS, DO HEREBY CERTIFY THAT THE WITHIN INSTRUMENT WITH ITS CERTIFICATE OF AUTHENTICATION WAS FILED FOR REGISTRATION IN MY OFFICE ON _____, 20___, AT__ O'CLOCK, _.M., AND DULY RECORDED ON _____, 20___, AT__O'CLOCK, _M, IN CABINET _____, SHEET___ _____, OF RECORD OF _____ FOR SAID COUNTY.

WITNESS MY HAND AND SEAL OF OFFICE, AT CONROE, MONTGOMERY COUNTY, TEXAS, THE DAY AND DATE LAST ABOVE WRITTEN.

_____
L. BRANDON STEINMANN, CLERK, COUNTY COURT
MONTGOMERY COUNTY, TEXAS

BY: _____
DEPUTY

THE OAKS ON 6TH STREET

BEING A SUBDIVISION OF 7.534 ACRES SITUATED IN THE GAMBLE DAWSON SURVEY, ABSTRACT NO. 177, MONTGOMERY COUNTY, TEXAS.

12 LOTS 1 BLOCKS 0 RESERVES
DECEMBER 2023

OWNER
RVISION HOMES, LTD, A TEXAS LIMITED PARTNERSHIP
18640 FM 1488, SUITE # A-510
MAGNOLIA, TX 77354

TPS TEXAS PROFESSIONAL SURVEYING
3032 N. Frazier, Conroe, Texas 77303
Ph: 936.756.7447 Fax: 936.756.7448
www.surveyingtexas.com
Firm No. 10083400

32743.dwg

0' 50' 100' 150'

Scale: 1" = 50'

LEGEND

●	SET 5/8" IRON ROD W/CAP "TPS 100834-00"
○	FOUND SURVEY MONUMENT (DESCRIBED)
◎	CALCULATED CORNER
✥	3-INCH BRASS DISK IN 6-INCH CONCRETE MONUMENT
I.R.	IRON ROD
W/CAP	WITH CAP
CON MON	CONCRETE MONUMENT
VOL. / PG.	VOLUME / PAGE
CAB.	CABINET
O.P.R.M.C.T.	OFFICIAL PUBLIC RECORDS OF MONTGOMERY COUNTY, TEXAS
R.P.R.M.C.T.	REAL PROPERTY RECORDS OF MONTGOMERY COUNTY, TEXAS
D.R.M.C.T.	DEED RECORDS OF MONTGOMERY COUNTY, TEXAS
M.R.M.C.T.	MAP RECORDS OF MONTGOMERY COUNTY, TEXAS
M.C.A.D.	MONTGOMERY COUNTY APPRAISAL DISTRICT
C.F. NO.	CLERK'S FILE NUMBER
R.O.W.	RIGHT-OF-WAY
B.L.	BUILDING LINE
U.E.	UTILITY EASEMENT
D.E.	DRAINAGE EASEMENT
MIN FFE	MINIMUM FINISHED FLOOR ELEVATION
	APPROXIMATE SURVEY LINE
	APPROXIMATE 100-YEAR FLOODPLAIN
	EASEMENT
	BUILDING LINE

REMAINDER OF INCINO ROYALE
CAB. A, SHEET 161, M.R.M.C.T.

MAGNOLIA UNITED METHODIST CHURCH
CALLED 2.871 ACRES
C.F. NO. 2010097839, O.P.R.M.C.T.

PAD C SPRING CREEK LTD
CALLED 14.757 ACRES
C.F. NO. 2015012037, O.P.R.M.C.T.

6TH STREET
(60' R.O.W.)

MAGNOLIA UNITED METHODIST
CHURCH CALLED 6.921 ACRES
"TRACT 2"
C.F. NO. 2010097839, O.P.R.M.C.T.

MAGNOLIA, TEXAS MAGNOLIA
BIBLE CHURCH CALLED 10.239
ACRES
C.F. NO. 2009117981, O.P.R.M.C.T.

FND 5/8" I.R.
W/CAP

THE OAKS ON 6TH STREET

BEING A SUBDIVISION OF 7.534 ACRES SITUATED IN THE GAMBLE DAWSON SURVEY, ABSTRACT NO. 177, MONTGOMERY COUNTY, TEXAS.

12 LOTS 1 BLOCKS 0 RESERVES
DECEMBER 2023

OWNER
RVISION HOMES, LTD, A TEXAS LIMITED PARTNERSHIP
18640 FM 1488, SUITE # A-510
MAGNOLIA, TX 77354

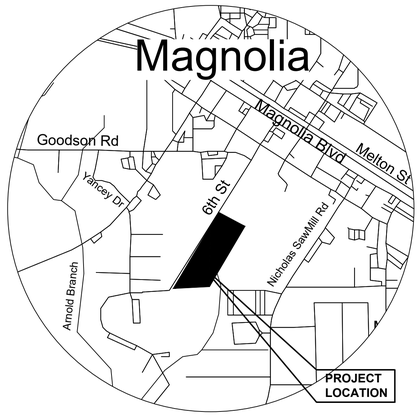
TEXAS PROFESSIONAL SURVEYING
3032 N. Frazier, Conroe, Texas 77303
Ph: 936.756.7447 Fax: 936.756.7448
www.surveyingtexas.com
Firm No. 10083400

32743.dwg

CONSTRUCTION OF DETENTION, DRAINAGE AND PAVING FACILITIES
FOR

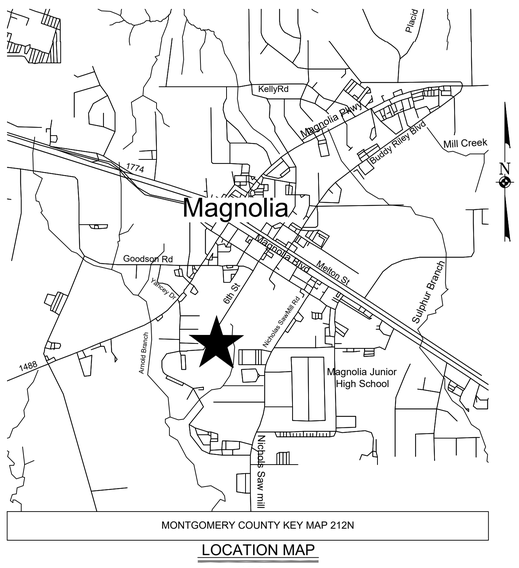
THE OAKS ON 6TH STREET

FOR
RVision Homes LTD
IN
MONTGOMERY COUNTY, TX



VICINITY MAP

N.T.S.



LOCATION MAP

N.T.S.

811 Know what's below. Call before you dig.

!!WARNING!!

EXISTING UTILITIES IN THE AREA. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL EXISTING UTILITIES WITH THE PROVIDER PRIOR TO START OF CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR COORDINATING UTILITY RELOCATION WHERE NECESSARY AND PROTECTING EXISTING UTILITIES (SHOWN OR NOT SHOWN). IF ANY EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL REPLACE THEM AT THEIR OWN EXPENSE.

NOTE:
1) THE DESIGN OF THIS PROJECT WILL NOT NEGATIVELY IMPACT THIS PROPERTY OR ADJACENT PROPERTIES.

SHEET INDEX

TEXAS PROFESSIONAL ENGINEERING
3032 N. Frazier, Conroe, Texas 77303
Ph: 936.756.7101 Fax: 936.756.7448
www.engineeringtexas.com
Firm No. 21819

APPROVED BY | REVISIONS | DATE

TEXAS PROFESSIONAL ENGINEERING Firm No. 2819

STATE OF TEXAS
LOUIS A. FAUST III
127382
LICENSED PROFESSIONAL ENGINEER

12/13/2023

TEXAS PROFESSIONAL ENGINEERING LLC
F-21819

THE OAKS ON 6TH STREET
CITY OF MAGNOLIA, TX
COVER SHEET & INDEX

DESIGNER: LF
DRAFTING: TL/RG
PROJ. MGR.: LF
SCALE:

SHEET
01 OF 09

GENERAL NOTES:

1. CONSTRUCT WASTEWATER COLLECTION SYSTEMS, WATER LINES AND STORM DRAINAGE IN ACCORDANCE WITH THE LATEST EDITION OF THE PUBLICATIONS STANDARD SPECIFICATIONS AND STANDARD DETAILS FOR THE CITY OF MAGNOLIA, WATER LINE DETAILS, PAVING DETAILS, AND SANITARY SEWER DETAILS PUBLISHED BY CITY OF MAGNOLIA.

2. UTILITIES PRESENTED ON THESE DRAWINGS ARE SHOWN BASED ON THE BEST AVAILABLE INFORMATION. CONTRACTOR SHALL VERIFY THE EXACT LOCATIONS IN THE FIELD PRIOR TO COMMENCING CONSTRUCTION. CONTRACTOR SHALL NOTIFY TEXAS ONE CALL AT 713-223-4567/811 OR 800-344-8377 AND LONE STAR NOTIFICATION CENTER AT 800-669-8344 AT LEAST 48 HOURS BEFORE PROCEEDING WITH ANY EXCAVATION.

3. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGES TO EXISTING WATER, WASTEWATER AND STORM DRAINAGE LINES. DAMAGES SHALL BE REPAIRED IN ACCORDANCE WITH THE CITY OF MAGNOLIA STANDARD SPECIFICATIONS AND STANDARD DETAILS FOR THE CITY OF MAGNOLIA, WATER LINE DETAILS, PAVING DETAILS, AND SANITARY SEWER DETAILS REFERENCED ABOVE, AT NO ADDITIONAL COST.

4. CONTRACTOR SHALL NOTIFY THE OFFICE OF THE CITY ENGINEER IN WRITING 48-HOURS PRIOR TO COMMENCING CONSTRUCTION.

5. ADEQUATE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION AND ANY DRAINAGE DITCH OR STRUCTURE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO EXISTING CONDITIONS OR BETTER.

6. CONTRACTOR SHALL COMPLY WITH LATEST EDITION OF OSHA REGULATIONS AND THE STATE OF TEXAS LAWS CONCERNING EXCAVATION.

7. THE APPROXIMATE LOCATION OF EXISTING UTILITIES ARE GIVEN FOR REFERENCE ONLY. BEFORE COMMENCING THE WORK ON THIS CONTRACT, THE CONTRACTOR SHALL VERIFY BY FIELD INVESTIGATION THE ACTUAL LOCATIONS OF ALL UTILITY FACILITIES WITHIN AND ADJACENT TO THE LIMITS OF THE WORK THAT MAY BE AFFECTED BY THE WORK. CONFLICTS WHICH RESULT DUE TO NEGLIGENCE BY THE CONTRACTOR TO LOCATE, HORIZONTALLY AND VERTICALLY, EXISTING UTILITIES WHICH ARE SHOWN ON THE CONSTRUCTION DRAWINGS, OR WHICH THE CONTRACTOR HAS BEEN GIVEN NOTICE OR HAS KNOWLEDGE, SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE COST OF REMEDIAL WORK, REMOVAL OF PORTIONS OF THE WORK OR EXTENSIVE DESIGN CHANGES OCCASIONED BY THE FAILURE OF THE CONTRACTOR TO VERIFY THE LOCATION OF EXISTING UTILITIES AS DESCRIBED ABOVE SHALL BE BORNE BY THE CONTRACTOR. DISTRICT OPERATOR WILL BE PRESENT FOR ALL CONNECTIONS TO EXISTING UTILITIES.

WATERLINE CONSTRUCTION NOTES

1. WATER LINES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST CITY OF MAGNOLIA RULES AND REGULATIONS, STANDARD SPECIFICATIONS, AND CONSTRUCTION DETAILS.

2. NO PIPE WHICH HAS BEEN USED FOR ANY PURPOSE OTHER THAN THE CONVEYANCE OF DRINKING WATER SHALL BE ACCEPTED OR RELOCATED FOR USE IN ANY PUBLIC DRINKING WATER SUPPLY.

3. ALL 4" THROUGH 12" WATER LINE TO BE AWWA C-900 PVC DR-18 BLUE PRESSURE RATED WATER MAIN WITH 2" AND SMALLER WATER SERVICE LINE TO BE CONTINUOUS CLASS 200, SDR-9 POLYETHYLENE TUBING OR TYPE "K" COPPER TUBING CONFORMING TO THE REQUIREMENTS OF ASTM B-88, INSTALLED PER CITY OF MAGNOLIA DETAILS.

4. CONCRETE THRUST BLOCKS SHALL BE PROVIDED AS NECESSARY TO PREVENT PIPE MOVEMENT. WHERE PREVENTING MOVEMENT OF 16" OF GREATER PIPE NECESSARY DUE TO THRUST, USE RESTRAINED JOINTS.

5. ALL WATER LINES UNDER PROPOSED OR FUTURE PAVING AND TO A POINT ONE (1) FOOT BACK OF ALL PROPOSED OR FUTURE CURBS SHALL BE ENCASED IN BANK SAND TO 12" OVER PIPE AND BACKFILLED WITH CEMENT STABILIZED SAND TO WITHIN ONE (1) FOOT OF SUBGRADE.

6. ALL WATER LINE AND SEWER LINE CROSSINGS SHALL BE PERPENDICULAR AND BE CONSTRUCTED PER CITY OF MAGNOLIA AND TCEQ REGULATIONS.

7. THE MAXIMUM ALLOWABLE LEAD CONTENT OF PIPES, PIPE FITTINGS, PLUMBING FITTINGS, AND FIXTURES IS 0.25 PERCENT.

8. ALL WATER VALVES 2" AND LARGER SHALL BE IRON-BODY, RESILIENT RUBBER SEAT, NON-RISING STEM AND SHALL CONFORM TO AWWA C-509.

9. ALL WATER LINES TO BE DISINFECTED IN CONFORMANCE WITH AWWA C–651 AND THE TEXAS STATE DEPARTMENT OF HEALTH. AT LEAST ONE BACTERIOLOGICAL SAMPLE SHALL BE COLLECTED FOR EACH 1,000 LINEAR FEET OF WATER LINE AND SHALL BE REPEATED IF CONTAMINATION PERSISTS.

10. DECHLORINATION OF DISINFECTING WATER SHALL BE IN STRICT ACCORDANCE WITH CURRENT AWWA STANDARD C655-09 OR MORE RECENT.

11. HYDROSTATIC TESTING: ALL WATER PIPE SHALL BE TESTED FOR LEAKAGE IN ACCORDANCE WITH THE LATEST CITY OF MAGNOLIA STANDARD CONSTRUCTION SPECIFICATIONS. TESTS ARE TO BE PERFORMED ON THE TOTAL FOOTAGE OF WATER PIPE LINE INCLUDED IN THE PROJECT.

12. ALL WATER LINES TO HAVE 4' MINIMUM COVER TO FINISHED GRADE AND MINIMUM 12" CLEAR TO OTHER UTILITIES AT CROSSING UNLESS OTHERWISE NOTED ON PLANS. ALL WATER LINE INSTALLED OVER 8' DEEP SHALL UTILIZE RESTRAINED JOINT FITTINGS.

13. CONTRACTOR SHALL KEEP WATER PIPE CLEAN AND CAP (OR OTHER WISE EFFECTIVELY COVER) OPEN PIPE ENDS TO EXCLUDE INSECTS, ANIMALS OR OTHER SOURCES OF CONTAMINATION FROM UNFINISHED PIPE LINES AT TIMES WHEN CONSTRUCTION IS NOT IN PROGRESS.

14. THE CONTRACTOR SHALL NOT PLACE THE PIPE IN WATER OR WHERE IT CAN BE FLOODED WITH WATER OR SEWAGE DURING ITS STORAGE OR INSTALLATION.

STORM SEWER (POND OUTFALL) CONSTRUCTION NOTES:

1. STORM SEWER SHALL BE REINFORCED CONCRETE PIPE (C-76, CLASS III) OR HIGH PERFORMANCE POLYPROPYLENE PIPE, AND SHALL BE INSTALLED, BEDDED, AND BACK FILLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS OTHERWISE SHOWN ON THE DRAWINGS.

2. ALL TRENCH BACKFILL SHALL BE IN 8" LIFTS, WITH TESTS TAKEN AT 100 FOOT INTERVALS IN EACH LIFT, AND MECHANICALLY COMPACTED TO A DENSITY OF NOT LESS THAN 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE STANDARD PROCTOR COMPACTION TEST (ASTM D—698/AASHTO T99).

3. CIRCULAR AND ELLIPTICAL REINFORCED CONCRETE PIPE SHALL BE INSTALLED USING RUBBER GASKET JOINT CONFORMING TO ASTM C443 AND ASTM C877 RESPECTIVELY. HDPE PIPE SHALL BE JOINED USING A BELL & SPIGOT JOINT MEETING THE REQUIREMENTS OF AASHTO M252, AASHTO M294, or ASTM F2306. THE JOINT SHALL BE WATERTIGHT ACCORDING TO THE REQUIREMENTS OF ASTM D3212. GASKETS SHALL MEET THE REQUIREMENTS OF ASTM F477. GASKETS SHALL BE INSTALLED BY THE PIPE MANUFACTURER AND COVERED WITH A REMOVABLE, PROTECTIVE WRAP TO ENSURE THE GASKET IS FREE FROM DEBRIS. A JOINT LUBRICANT AVAILABLE FROM THE MANUFACTURER SHALL BE USED ON THE GASKET AND BELL DURING ASSEMBLY. 12- THROUGH 60-INCH (300 TO 1500 MM) DIAMETERS SHALL HAVE AN EXTERIOR BELL WRAP INSTALLED BY THE MANUFACTURER.

4. ALL STORM SEWER PIPES SHALL BE 24" AND LARGER.

5. ALL DITCHES SHALL BE GRADED TO PROPOSED ELEVATIONS TO INSURE PROPER DRAINAGE. ALL OUTFALLS SHALL BE PROPERLY BACKFILLED AND COMPACTED. ALL DISTURBED AREA SHALL BE REGRADED, SEEDED, AND FERTILIZED.

ALL STORM SEWER, DETENTION FACILITIES, AND DITCHES SHALL BE MAINTAINED BY THE OAKS AT 6TH STREET HOA

NOTE:

CONTRACTOR TO IMPLEMENT A STORM WATER POLLUTION PREVENTION PLAN (SWP3) IN ACCORDANCE WITH THE TPDES CGP TXR150000.

GRADING NOTES :

1. GENERAL CONTRACTOR AND ALL SUBCONTRACTORS SHALL VERIFY THE SUITABILITY OF ALL EXISTING AND PROPOSED SITE CONDITIONS INCLUDING GRADES AND DIMENSIONS BEFORE STARTING CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES.

2. BEFORE STARTING CONSTRUCTION, CONTRACTOR SHALL VERIFY BENCHMARK ELEVATION AND NOTIFY ENGINEER IF ANY DISCREPANCY AND/OR CONFLICT IS FOUND.

3. CONTRACTOR SHALL ENSURE THERE IS POSITIVE DRAINAGE AND SHALL NOTIFY ENGINEER IF ANY GRADING DISCREPANCIES ARE FOUND IN THE EXISTING AND PROPOSED GRADES PRIOR TO PLACEMENT OF PAVEMENT OR UTILITIES.

4. CONTRACTOR SHALL PROTECT ALL MANHOLE COVERS, VALVE COVERS, VAULT LIDS, FIRE HYDRANTS, POWER POLES, GUY WIRES, AND TELEPHONE BOXES THAT ARE TO REMAIN IN PLACE AND UNDISTURBED DURING CONSTRUCTION.

5. ALL EXISTING CONCRETE PAVING, SIDEWALK, AND CURB DEMOLITION SHALL BE REMOVED AND DISPOSED OF BY CONTRACTOR. DISPOSAL SHALL BE AT AN APPROVED OFF-SITE, LAWFUL LOCATION, UNLESS DIRECTED OTHERWISE BY THE OWNER.

6. CLEARING AND GRUBBING OF ANY AREA AND TREES NOT SHOWN ON THE PLANS IS STRICTLY PROHIBITED.

LOT GRADING NOTES:

1. LOT AREAS THAT ARE TO RECEIVE FILL SHALL BE PREPARED AS FOLLOWS (NO SEPARATE PAY)

   A. AREAS THAT ARE TO RECEIVE FILL WILL BE STRIPPED TO A DEPTH OF 3". STRIPPINGS SHALL BE STOCKPILED AND THEN SPREAD EVENLY ON SURFACE OF FILLED AREAS.

   B. PRIOR TO PLACEMENT OF FILL ON STRIPPED AREAS, THE CONTRACTOR SHALL PROOF ROLL USING A PNEUMATIC ROLLER (12 TON OR APPROVED EQUAL) (NO SEPARATE PAY). SHOULD SOFT UNSTABLE AREAS APPEAR IN THE LOTS, THE CONTRACTOR SHALL REMOVE UNSTABLE MATERIAL AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL REPLACE THIS WITH A SUITABLE MATERIAL COMPACTED AS REQUIRED (NO SEPARATE PAY FOR A DEPTH UP TO 2 FEET, UNLESS OTHERWISE NOTED IN BID FORM).

2. LOT FILL SHALL BE PLACED IN MAXIMUM LOOSE LIFTS OF EIGHT INCHES (8") OR LESS AND COMPACTED TO 95% OF MAXIMUM DENSITY AT OPTIMUM TO +5% MOISTURE CONTENT AS DETERMINED BY AASHTO TEST METHOD T-99.

3. FINAL PAYMENT SHALL BE CONTINGENT ON THE ENGINEER'S VERIFICATION THAT LOT GRADING IS IN ACCORDANCE WITH THE GRADING PLAN, AND THAT SOIL COMPACTION TESTS WERE PERFORMED AS REQUIRED.

4. ALL LOTS SHALL BE GRADED SO THAT NO PORTION OF ANY LOT SHALL DRAIN ONTO OR ACROSS ANY OTHER LOT, BUT SHALL DRAIN DIRECTLY TO THE PROPOSED DETENTION FACILITY.

STORM WATER POLLUTION PREVENTION NOTES:

1. THE APPLICABLE REGULATIONS OF THE FOLLOWING AGENCIES SHALL APPLY AS IF WRITTEN HERE IN THEIR ENTIRETY:

   1.1. TCEQ TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
   1.2. US EPA UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

2. THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO PREVENT STORM WATER POLLUTION AND COMPLY WITH THE APPLICABLE REQUIREMENTS OF THE CONTROLLING REGULATORY AGENCIES AS REQUIRED FOR THE PROJECT AND ANY OTHER REQUIREMENTS SET FORTH HEREIN.

3. THE CONTRACTOR SHALL SUBMIT ONE COPY EACH TO THE CITY OF MAGNOLIA AND THE ENGINEER, OR THE DESIGNATED REPRESENTATIVE OF THE ENGINEER, A STORM WATER POLLUTION PREVENTION PLAN (SWP3) WHEN A SWP3 IS REQUIRED FOR THE PROJECT. THE CONTRACTOR SHALL ALSO SUBMIT THREE (3) COPIES OF ALL REQUIRED SUPPORTING DOCUMENTS INCLUDING, BUT NOT LIMITED TO, A NOTICE OF INTENT (NOI) AND A NOTICE OF TERMINATION (NOT) FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY UNDER THE TEXAS POLLUTANT DISCHARGE ELIMINATION SYSTEM.

4. CONTRACTOR SHALL DEVELOP AND IMPLEMENT A STORM WATER POLLUTION PREVENTION PLAN BASED ON THE ACTUAL CONDITIONS ENCOUNTERED ON THE PROJECT AND SHALL IMPLEMENT THE PLAN AND ANY OTHER REQUIREMENTS IN ACCORDANCE WITH ALL APPLICABLE LAWS AND REGULATIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE AREA (ACRES) THAT WILL BE DISTURBED TO PROSECUTE THE WORK REQUIRED FOR THE PROJECT AND TAKE THE APPROPRIATE ACTIONS AS OUTLINED IN THIS SECTION BASED ON THE DISTURBED AREA AS DESCRIBED IN SUBSEQUENT PARAGRAPHS OF THIS SPECIFICATION.

DATE	REVISIONS	APPROVED BY

TEXAS PROFESSIONAL ENGINEERING
Firm No. 2389

STATE OF TEXAS
LOUIS A. FAUST III
127382
LICENSED PROFESSIONAL ENGINEER

12/13/2023

TEXAS PROFESSIONAL ENGINEERING LLC
F–21819

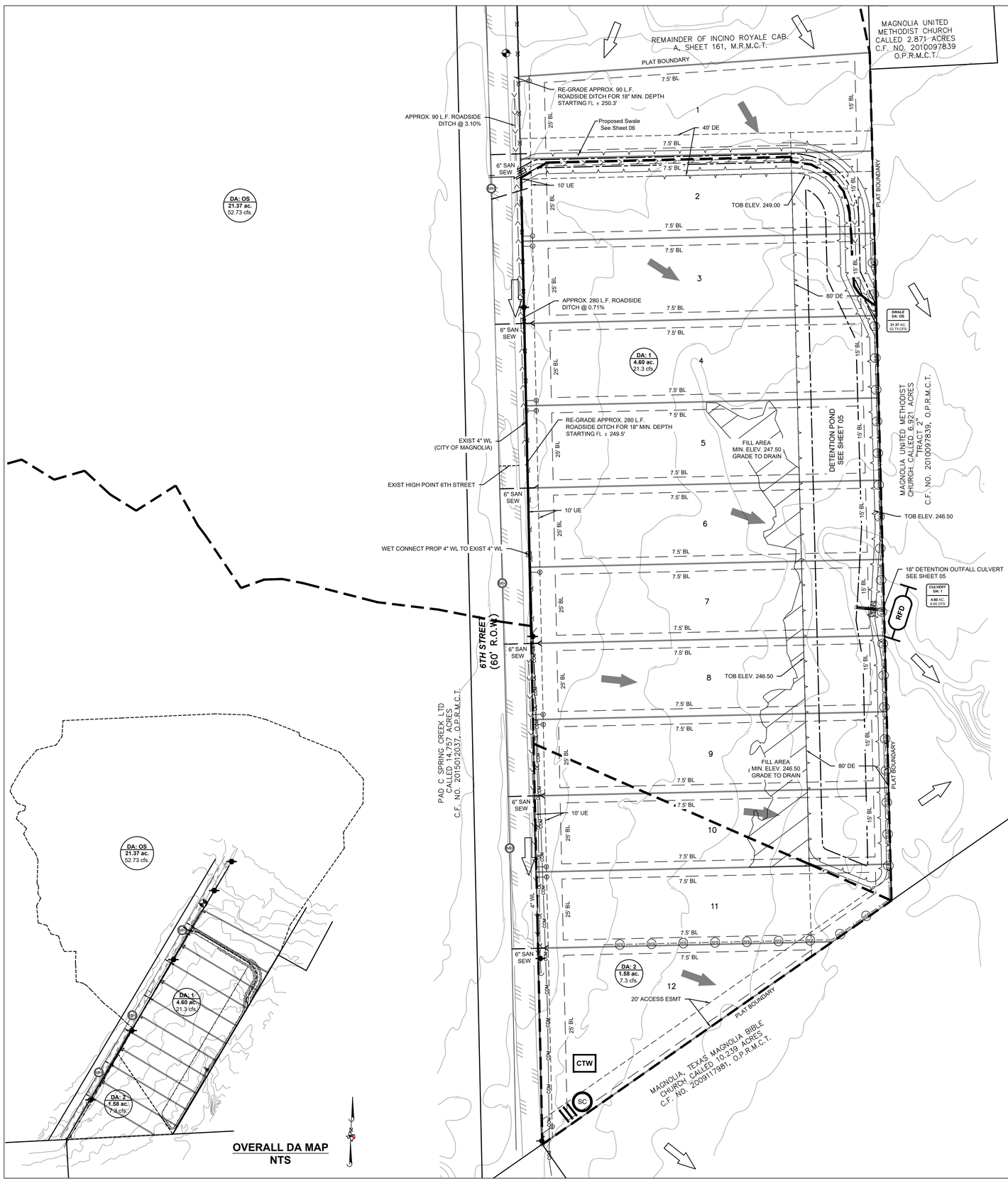
THE OAKS ON 6TH STREET

CITY OF MAGNOLIA, TX

GENERAL CONSTRUCTION NOTES

DESIGNER: LF
DRAFTING: TL/RG
PROJ. MGR.: LF
SCALE: N.T.S.

SHEET
02 OF 08



TEMPORARY BENCHMARK "A":

BEING A MAG NAIL SET IN ASPHALT, APPROXIMATELY 54.33' FEET FROM THE SOUTHERN CORNER OF SUBJECT PROPERTY. (AS SHOWN HEREON)

ELEVATION = 303.77' FEET NAVD 1988 (2001 ADJUSTMENT)

FLOOD ZONE:

THE PROPERTY LIES IN UNSHADED ZONE "X" (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN), AS DELINEATED ON THE FLOOD INSURANCE RATE MAP FOR LEON COUNTY, TEXAS AND UNINCORPORATED AREAS, MAP NUMBER 48289C0525C, EFFECTIVE DATE NOVEMBER 20, 2013.

NOTE:

CONTRACTOR TO VERIFY LOCATION AND ELEVATION OF ALL EXISTING UTILITIES PRIOR TO START OF NEW CONSTRUCTION.

ONE-CALL NOTIFICATION SYSTEM
CALL BEFORE YOU DIG!!!
DIAL 811 or 1-(800)-344-8377
AT LEAST 48 HOURS BEFORE PROCEEDING WITH ANY EXCAVATION

0 50 100 150

SYMBOLS & ABBREVIATIONS

	GATE VALVE	EOP	EDGE OF PAVEMENT	RCP	REINFORCED CONCRETE PIPE
	FLUSH VALVE W/ GATE VALVE	ESMT	EASEMENT	REM	REMOVE
	MECHANICAL BEND/FITTING	EX.	EXISTING	REV	REVERSE
	REDUCER	F-F	FACE TO FACE	R.R.	RAILROAD
	PLUG & CLAMP W/ BLOW OFF	F.F.	FINISHED FLOOR	RT	RIGHT
	SERVICE LEAD W/ WYE	FL	FLOWLINE	SAN SEW	SANITARY SEWER
	MANHOLE	FM	FORCEMAIN	SF	SQUARE FEET
	STACK	FV	FLUSH VALVE	S.L.	STREET LIGHT
	INLET	G	GROUND	SS	SANITARY SEWER
	POWER POLE	FV	GATE VALVE	SSE	SANITARY SEWER EASEMENT
	STREET SIGN	GW	GUY WIRE	STA.	STATION
ADJ	ADJACENT	H.G.L.	HYDRAULIC GRADE LINE	STM	STORM
B-B	BACK TO BACK	HYD.	HYDRANT	STMSE	STORM SEWER EASEMENT
BOC	BACK OF CURB	I.D.	INSIDE DIAMETER	STD	STANDARD
B.M.	BENCHMARK	INL	INLET	SW	SIDEWALK
B.O.	BLOW OFF	LF	LINEAR FEET	SY	SQUARE YARDS
℄	CENTERLINE	LT	LEFT	T.B.R.	TO BE REMOVED
CMP	CORRUGATED METAL PIPE	MAX	MAXIMUM	TELE	TELEPHONE
CTRL	CONTROL	MH	MANHOLE	TEMP	TEMPORARY
C.O.	CLEANOUT	MIN	MINIMUM	TOC	TOP OF CURB
CONC.	CONCRETE	P	PAVEMENT	TP	TOP OF PAVEMENT
CY	CUBIC YARD	PC	POINT OF CURVATURE	TS&V	TAP SLEEVE & VALVE
DE	DRAINAGE EASEMENT	PCC	POINT OF COMPOUND CURVE	T/WALL	TOP OF WALL
DIA.	DIAMETER	PI	POINT OF INTERSECTION	TYP.	TYPICAL
DIP	DUCTILE IRON PIPE	PP	POWER POLE	UE	UTILITY EASEMENT
ELEC.	ELECTRIC	PROP	PROPOSED	WL	WATERLINE
E-E	EDGE TO EDGE	PT	POINT OF TANGENCY	WLE	WATERLINE EASEMENT
EL.	ELEVATION	PVC	POLYVINYL CHLORIDE PIPE	WM	WATER METER
ELEV.	ELEVATION	PVI	POINT OF VERTICAL INTERSECTION	W.S.E	WATER SURFACE ELEVATION
EOA	EDGE OF ASPHALT	PVT	POINT OF VERTICAL TANGENCY	(A)	RESTRICTED RESERVE
EOC	EDGE OF CONCRETE	PVMT	PAVEMENT	(1)	BLOCK NUMBERS
		P.A.E.	PUBLIC ACCESS EASEMENT		
		P.U.E.	PUBLIC UTILITY EASEMENT		
		R	RADIUS		
		R.O.W.	RIGHT-OF-WAY		

DRAINAGE AREAS NOTE
SEE "DRAINAGE AND DETENTION REPORT FOR THE OAKS AT 6TH STREET", DATED 12/13/2023, BY TEXAS PROFESSIONAL ENGINEERING FOR DETAILED DRAINAGE AND DETENTION CALCULATIONS

EROSION AND SEDIMENTATION CONTROL NOTES

1. THE APPLICABLE REGULATIONS OF THE FOLLOWING AGENCIES SHALL APPLY AS IF WRITTEN HERE IN THEIR ENTIRETY:
   1.1. TCEQ TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
   1.2. US EPA UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
2. THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO PREVENT STORM WATER POLLUTION AND COMPLY WITH THE APPLICABLE REQUIREMENTS OF THE CONTROLLING REGULATORY AGENCIES AS REQUIRED FOR THE PROJECT AND ANY OTHER REQUIREMENTS SET FORTH HEREIN.
3. THE CONTRACTOR SHALL SUBMIT ONE COPY EACH TO THE CITY OF MAGNOLIA AND THE ENGINEER, OR THE DESIGNATED REPRESENTATIVE OF THE ENGINEER, A STORM WATER POLLUTION PREVENTION PLAN (SWPP) WHEN A SWP3 IS REQUIRED FOR THE PROJECT. THE CONTRACTOR SHALL ALSO SUBMIT THREE (3) COPIES OF ALL REQUIRED SUPPORTING DOCUMENTS INCLUDING, BUT NOT LIMITED TO, A NOTICE OF INTENT (NOI) AND A NOTICE OF TERMINATION (NOT) FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY UNDER THE TEXAS POLLUTANT DISCHARGE ELIMINATION SYSTEM.
4. CONTRACTOR SHALL DEVELOP AND IMPLEMENT A STORM WATER POLLUTION PREVENTION PLAN BASED ON THE ACTUAL CONDITIONS ENCOUNTERED ON THE PROJECT AND SHALL IMPLEMENT THE PLAN AND ANY OTHER REQUIREMENTS IN ACCORDANCE WITH ALL APPLICABLE LAWS AND REGULATIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE AREA (ACRES) THAT WILL BE DISTURBED TO PROSECUTE THE WORK REQUIRED FOR THE PROJECT AND TAKE THE APPROPRIATE ACTIONS AS OUTLINED IN THIS SECTION BASED ON THE DISTURBED AREA AS DESCRIBED IN SUBSEQUENT PARAGRAPHS OF THIS SPECIFICATION.
5. PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL INSTALL EROSION AND SEDIMENTATION CONTROLS AT LOCATION SHOWN ON PLANS.
6. CONTRACTOR SHALL INSPECT ALL EROSION AND SEDIMENTATION CONTROL SYSTEMS SPECIFIED HEREIN, AT A MINIMUM OF ONCE EVERY CALENDAR DAY.
7. CONTRACTOR SHALL MAINTAIN, REPAIR AND/OR REPLACE DAMAGED EROSION AND SEDIMENTATION CONTROL SYSTEM THROUGHOUT THE DURATION OF THE CONTRACT. (NO SEPARATE PAY).
8. CONTRACTOR SHALL PROVIDE PROTECTED STORAGE AREAS FOR CHEMICALS, SOLVENTS, FERTILIZERS. AND OTHER POTENTIALLY TOXIC MATERIALS.
9. CONTRACTOR SHALL LOCATE FUEL/MATERIAL STORAGE AREAS AWAY FROM STORM WATER CONVEYANCE SYSTEMS. CONTRACTOR SHALL USE SILT FENCING, HAY BALES. OR BERMS AROUND FUEL STORAGE AREAS. (NO SEPARATE PAY).
10. CONTRACTOR SHALL ADVISE OWNER IMMEDIATELY, VERBALLY. AND IN WRITING, OF ANY FUEL OR TOXIC MATERIAL SPILLS ONTO THE PROJECT/CONSTRUCTION AREA AND THE ACTION TAKEN TO REMEDY THE PROBLEM.
11. CONTRACTOR IS RESPONSIBLE FOR DISPOSING OF HIS FUELS. MATERIALS. AND CONTAMINATED EXCAVATIONS IN A LEGALLY APPROVED MANNER. (NO SEPARATE PAY).
12. CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE ENVIRONMENTAL LAWS.
13. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ADEQUATELY MAINTAINED SANITARY FACILITIES.
14. AT COMPLETION OF THE CONTRACT, OWNER AND/OR OWNER'S REPRESENTATIVE WITH THE CONTRACTOR SHALL EXAMINE EROSION AND SEDIMENTATION CONTROL SYSTEM BEFORE RELIEVING CONTRACTOR OF HIS MAINTENANCE RESPONSIBILITIES.
15. IF EROSION AND SEDIMENTATION CONTROL SYSTEM IS EXISTING FROM PRIOR CONTRACTS. OWNER AND/OR OWNER'S REPRESENTATIVES WITH THE CONTRACTOR SHALL EXAMINE THE EXISTING EROSION AND SEDIMENTATION CONTROL SYSTEM FOR DAMAGE PRIOR TO CONTRACTOR STARTING CONSTRUCTION OF THE CONTRACT. ANY DAMAGE NOTED AT THIS TIME SHALL BE REPAIRED AT OWNER'S EXPENSE.
16. CONTRACTOR SHALL BE RESPONSIBLE FOR STREET CLEANING, ON A DAILY BASIS ALL MUD AND DIRT DEPOSITED ON THE EXISTING PAVEMENT DUE TO HIS CONSTRUCTION ACTIVITY.

INSTALLATION SEQUENCE

SWPPP CONTRACTOR:

1. Install SC at start of construction.
2. Install × — RFB — × at designated locations.
3. Install other Best Management Practices needed prior to construction.
4. Broadcast seeding of disturbed areas after final grading.
5. Install rock filter dam or velocity dissipation devices if needed.

LEGEND

- 195.0 — EXISTING GROUND CONTOUR
- DA: 1 / 0.26 ac. / 1.0 cfs — DRAINAGE AREA NUMBER; DRAINAGE AREA IN ACRES; PEAK FLOW IN CFS (100-YR)
- CULVERT DA: 1 / 5.20 AC. / 10.16 CFS — CULVERT DRAINAGE AREA NUMBER; CULVERT DRAINAGE AREA IN ACRES; PEAK FLOW IN CFS (100-YR)
- EXTREME EVENT SHEET FLOW
- OFFSITE DRAINAGE
- SC — STABILIZED CONSTRUCTION ACCESS
- RFB — REINFORCED FILTER FABRIC FENCE
- CTW — CONCRETE TRUCK WASHOUT
- RFD — ROCK FILTER DAM
- PROPOSED LOT FILL AREA
- EXISTING DITCH FL

APPROVED BY | REVISIONS | DATE

TEXAS PROFESSIONAL ENGINEERING Firm No. 2389

STATE OF TEXAS
LOUIS A. FAUST III
127382
LICENSED PROFESSIONAL ENGINEER

12/13/2023

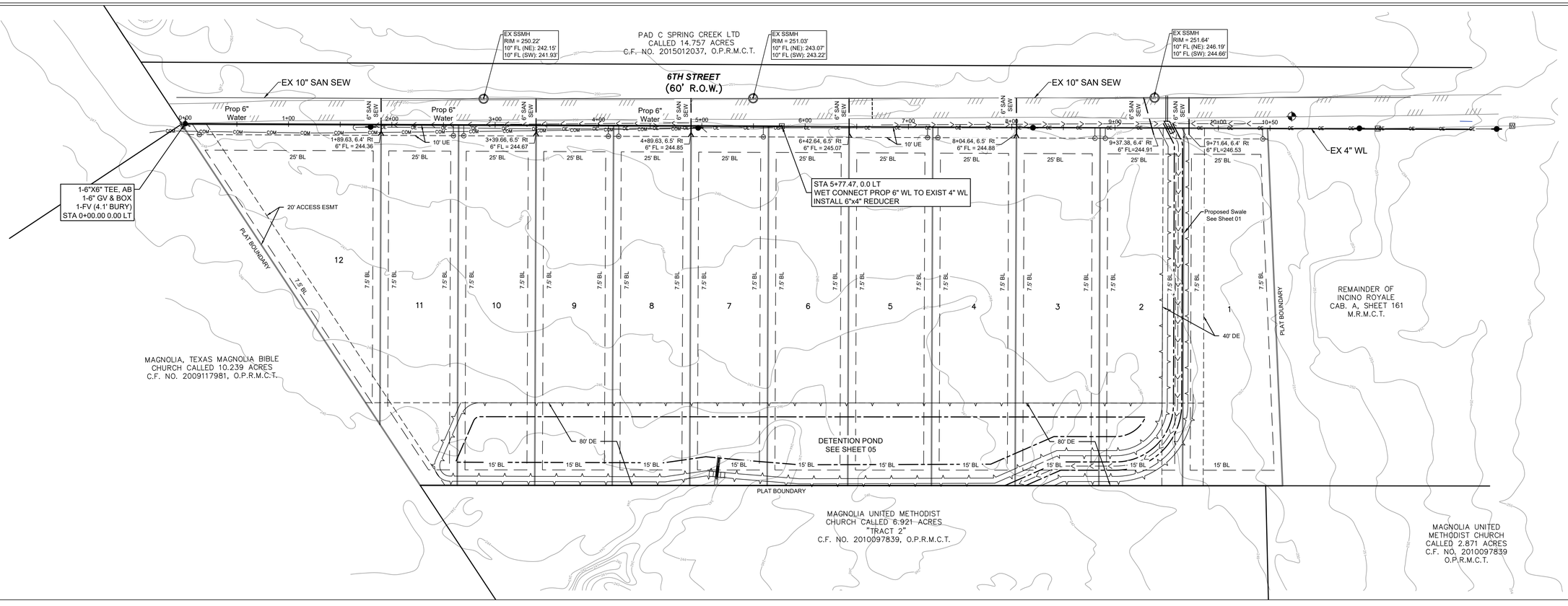
TEXAS PROFESSIONAL ENGINEERING LLC
F-21819

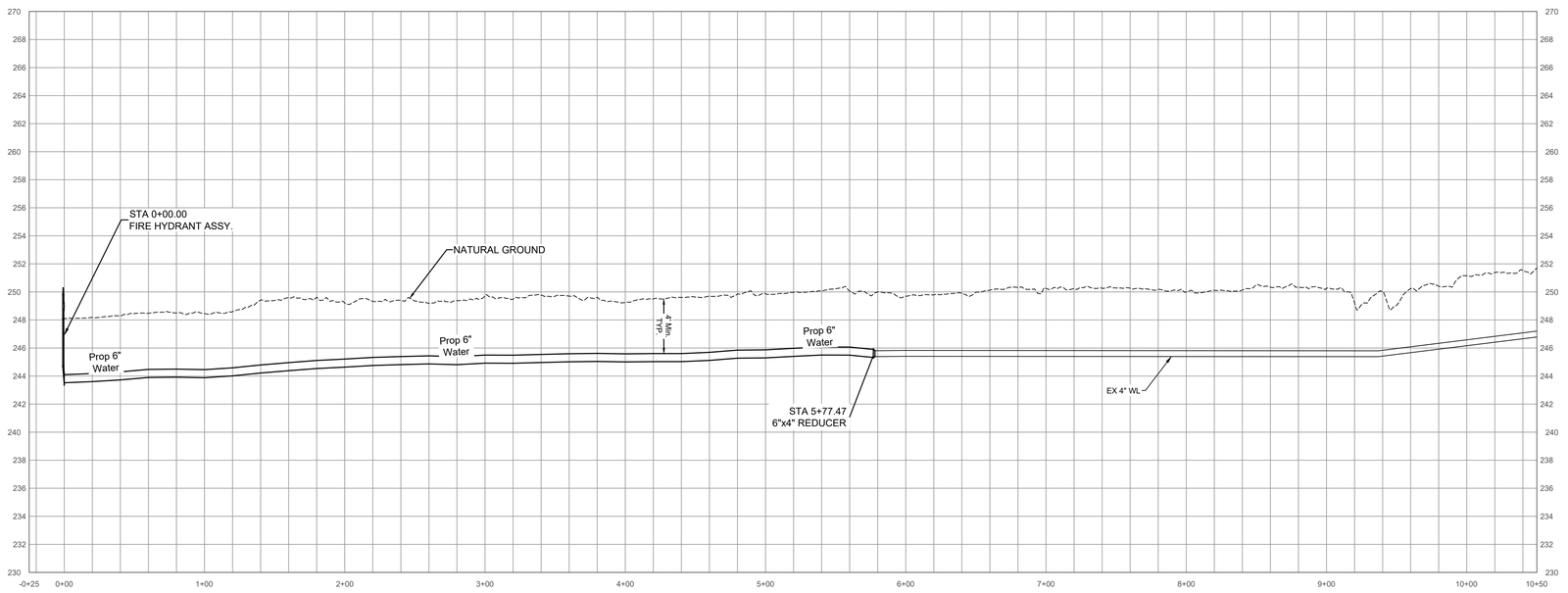
THE OAKS ON 6TH STREET
CITY OF MAGNOLIA, TX
GENERAL CONSTRUCTION LAYOUT - WATER, DRAINAGE, & SWPPP

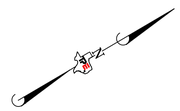
DESIGNER: LF
DRAFTING: TL/RG
PROJ. MGR.: LF
SCALE: 1" = 50'

SHEET 03 OF 08

Z:\PROJECTS\R15 - RVision Homes LTD\R1523-001-00 7.5-Acre Tract Magnolia\2 Design Phase\CAD\Plans\ROADSIDE DITCH DRAINAGE.dwg 12/13/2023 11:39:42 AM







NOTE:

THE DEVELOPER SHALL HAVE WATER AND SEWER SERVICES INSTALLED TO THE PROPERTY LINE OF EACH LOT IN ACCORDANCE WITH CITY OF MAGNOLIA STANDARDS, INCLUDING, BUT NOT LIMITED TO, PROVIDING ALL MATERIALS AND LABOR TO INSTALL TAPS, SERVICE LINES, METER SETTINGS, METER BOXES, AND PAVEMENT REPAIR TO THE PROPERTY.

APPROVED BY | REVISIONS | DATE

TEXAS PROFESSIONAL ENGINEERING
Firm No. 2309

STATE OF TEXAS
LOUIS A. FAUST III
127382
LICENSED PROFESSIONAL ENGINEER

12/13/2023

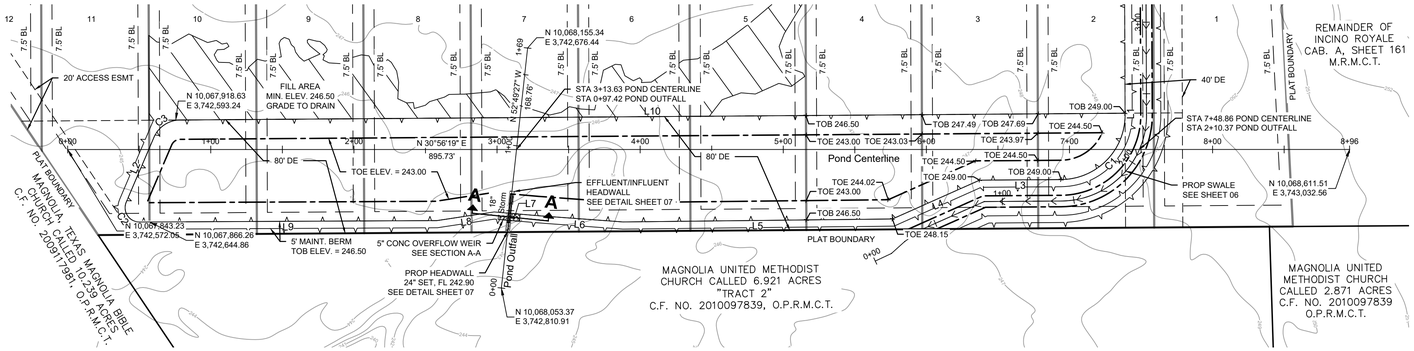
TEXAS PROFESSIONAL ENGINEERING LLC
F-21819

THE OAKS ON 6TH STREET
CITY OF MAGNOLIA, TX
WATERLINE PLAN & PROFILE

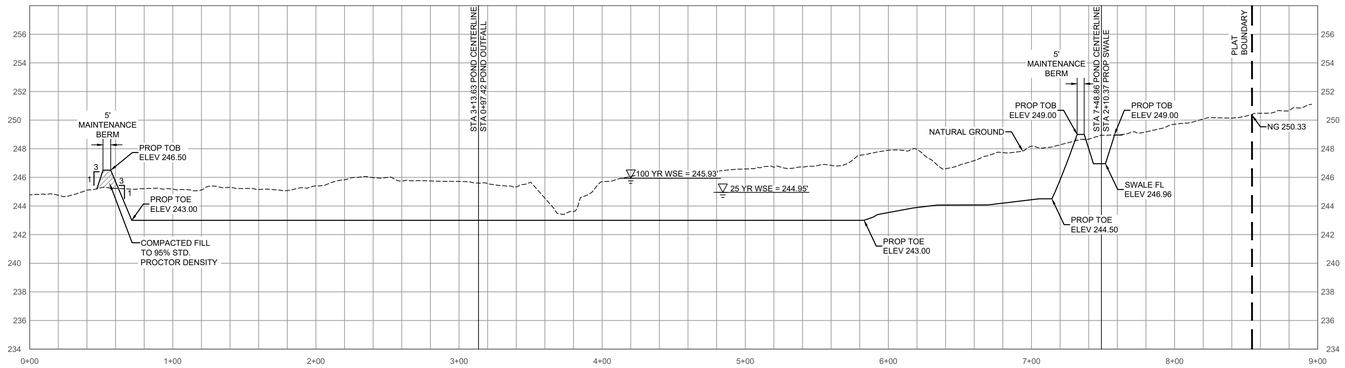
DESIGNER: LF
DRAFTING: TL/RG
PROJ. MGR.: LF
SCALE: 1" = 50'

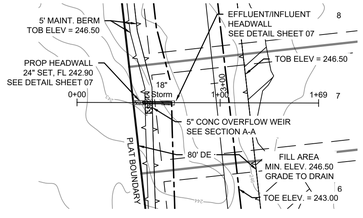
SHEET
04 OF 08

Z:\PROJECTS\R15 - RVision Homes LTD\R1523-001-00 7.5-Acre Tract Magnolia\2 Design Phase\CAD\Plans\6 INCH WATERLINE.dwg 12/12/2023 5:35:01 PM

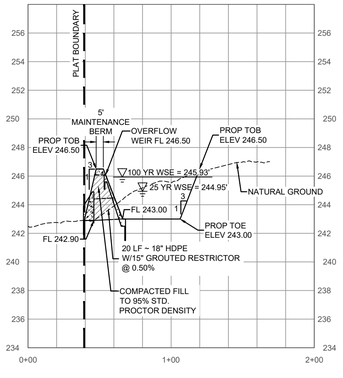


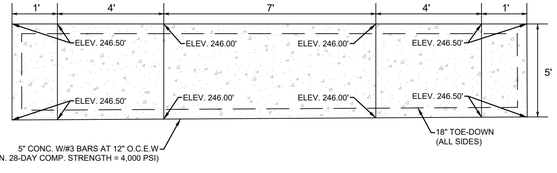
Pond Centerline



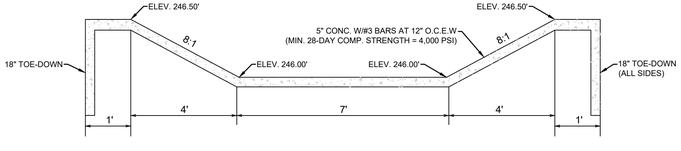


Pond Outfall





WEIR PLAN
NTS



WEIR CROSS SECTION A-A
NTS

Emergency Overflow Weir **Weir 1**

TRAPEZOIDAL		DISCHARGE	
Crest Length	= 7.00 ft	Method	= Known Q
Side Slope, z:1	= 3.00	Known Q	= 8.95 cfs
Total Depth	= 0.50 ft		
Crest Elevation	= 246.00 ft		
Weir Coefficient, Cw	= 3.33		

DETENTION POND STAGE STORAGE

POND 1

Contour Elevation	Contour Area	Depth	Incremental Volume	Cumul. Volume (cu-ft)	Cumul. Volume (ac-ft)
243	22,440 sq-ft	N/A	N/A	0.0 cu-ft	N/A
244	28,622 sq-ft	1.00	13,467 cu-ft	25,390 cu-ft	0.58 ac-ft
245	35,331 sq-ft	1.00	16,977 cu-ft	57,661 cu-ft	1.32 ac-ft
246	40,592 sq-ft	1.00	19,631 cu-ft	95,607 cu-ft	2.19 ac-ft
246.5	43,246 sq-ft	0.50	20,954 cu-ft	116,561 cu-ft	Freeboard

CURVE TABLE					
CURVE #	ARC LENGTH	RADIUS	DELTA ANGLE	CHORD BEARING	CHORD LENGTH
C1	70.56	45.00	89°50'24"	S14°23'19"E	63.55
C2	19.79	10.00	113°24'57"	S87°22'23"W	16.72
C3	23.20	20.00	66°27'01"	N02°41'38"W	21.92

LINE TABLE		
LINE #	BEARING	DISTANCE
L1	S59°18'31"E	1.15
L2	N35°55'08"W	49.18
L3	S30°31'53"W	56.94
L4	S06°55'25"W	66.69
L5	S30°18'55"W	188.25
L6	S35°09'04"W	60.20
L7	S35°51'50"W	30.13
L8	S22°18'15"W	40.42
L9	S30°39'55"W	207.89
L10	N30°31'53"E	660.36

TEMPORARY BENCHMARK "A":

BEING A MAG NAIL SET IN ASPHALT, APPROXIMATELY 54.33' FEET FROM THE SOUTHERN CORNER OF SUBJECT PROPERTY. (AS SHOWN HEREON)

ELEVATION = 303.77' FEET NAVD 1988 (2001 ADJUSTMENT)

FLOOD ZONE:

THE PROPERTY LIES IN UNSHADED ZONE "X" (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN), AS DELINEATED ON THE FLOOD INSURANCE RATE MAP FOR LEON COUNTY, TEXAS AND UNINCORPORATED AREAS, MAP NUMBER 48289C0525C, EFFECTIVE DATE NOVEMBER 20, 2013.

NOTE:

CONTRACTOR TO VERIFY LOCATION AND ELEVATION OF ALL EXISTING UTILITIES PRIOR TO START OF NEW CONSTRUCTION.

ONE-CALL NOTIFICATION SYSTEM
CALL BEFORE YOU DIG!!!
DIAL 811 or 1-(800)-344-8377
AT LEAST 48 HOURS BEFORE
PROCEEDING WITH ANY EXCAVATION

0 50 100 150

SYMBOLS & ABBREVIATIONS

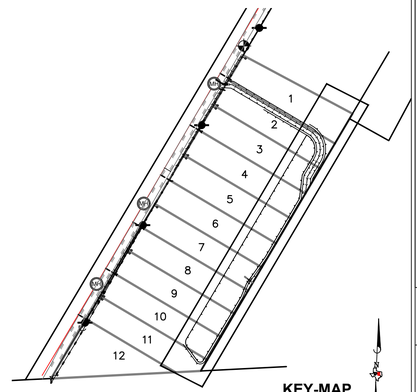
GATE VALVE	ADJ	ADJACENT	EOP	EDGE OF PAVEMENT	RCP	REINFORCED CONCRETE PIPE
FLUSH VALVE W/ GATE VALVE	B-B	BACK TO BACK	ESMT	EASEMENT	REM	REMOVE
MECHANICAL BEND/FITTING	BOC	BACK OF CURB	EX.	EXISTING	REV	REVERSE
REDUCER	B.M.	BENCHMARK	F-F	FACE TO FACE	R.R.	RAILROAD
PLUG & CLAMP W/ BLOW OFF	B.O.	BLOW OFF	F.F.	FINISHED FLOOR	RT	RIGHT
SERVICE LEAD W/ WYE	℄	CENTERLINE	FL	FLOWLINE	SAN SEW	SANITARY SEWER
MANHOLE	CMP	CORRUGATED METAL PIPE	FM	FORCEMAIN	SF	SQUARE FEET
STACK	CTRL	CONTROL	FV	FLUSH VALVE	S.L.	STREET LIGHT
INLET	C.O.	CLEANOUT	G	GROUND	SS	SANITARY SEWER
POWER POLE	CONC.	CONCRETE	FV	GATE VALVE	SSE	SANITARY SEWER EASEMENT
STREET SIGN	CY	CUBIC YARD	GW	GUY WIRE	STA.	STATION
	DE	DRAINAGE EASEMENT	H.G.L.	HYDRAULIC GRADE LINE	STM	STORM
	DIA.	DIAMETER	HYD.	HYDRANT	STMSE	STORM SEWER EASEMENT
	DIP	DUCTILE IRON PIPE	I.D.	INSIDE DIAMETER	STD	STANDARD
	ELEC.	ELECTRIC	INL	INLET	SW	SIDEWALK
	E-E	EDGE TO EDGE	LF	LINEAR FEET	SY	SQUARE YARDS
	EL.	ELEVATION	LT	LEFT	T.B.R.	TO BE REMOVED
	ELEV.	ELEVATION	MAX	MAXIMUM	TELE	TELEPHONE
	EOA	EDGE OF ASPHALT	MH	MANHOLE	TEMP	TEMPORARY
	EOC	EDGE OF CONCRETE	MIN	MINIMUM	TOC	TOP OF CURB
			P	PAVEMENT	TP	TOP OF PAVEMENT
			PC	POINT OF CURVATURE	TS&V	TAP SLEEVE & VALVE
			PCC	POINT OF COMPOUND CURVE	T/WALL	TOP OF WALL
			PI	POINT OF INTERSECTION	TYP.	TYPICAL
			PP	POWER POLE	UE	UTILITY EASEMENT
			PROP	PROPOSED	WL	WATERLINE
			PT	POINT OF TANGENCY	WLE	WATERLINE EASEMENT
			PVC	POLYVINYL CHLORIDE PIPE	WM	WATER METER
			PVI	POINT OF VERTICAL INTERSECTION	W.S.E	WATER SURFACE ELEVATION
			PVT	POINT OF VERTICAL TANGENCY	(A)	RESTRICTED RESERVE
			PVMT	PAVEMENT	(1)	BLOCK NUMBERS
			P.A.E.	PUBLIC ACCESS EASEMENT		
			P.U.E.	PUBLIC UTILITY EASEMENT		
			R	RADIUS		
			R.O.W.	RIGHT-OF-WAY		

LEGEND

195.0 EXISTING GROUND CONTOUR

FILL COMPACTED TO 95% COMPACTION - PLACED IN MAXIMUM 8" LIFTS

DRAINAGE AREAS NOTE
SEE "DRAINAGE AND DETENTION REPORT FOR THE OAKS AT 6TH STREET", DATED 9/6/2023, BY TEXAS PROFESSIONAL ENGINEERING FOR DETAILED DRAINAGE AND DETENTION CALCULATIONS



KEY-MAP
NTS

APPROVED BY | REVISIONS | DATE

TEXAS PROFESSIONAL ENGINEERING Firm No. 2389

STATE OF TEXAS
LOUIS A. FAUST III
127382
LICENSED PROFESSIONAL ENGINEER

12/13/2023

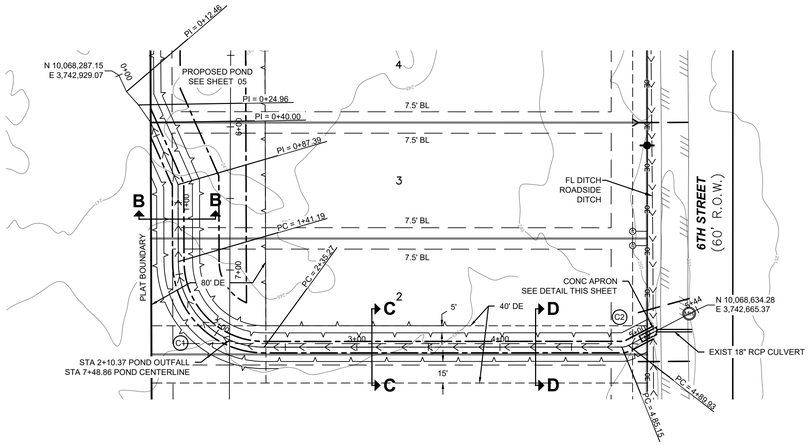
TEXAS PROFESSIONAL ENGINEERING LLC
F-21819

THE OAKS ON 6TH STREET
CITY OF MAGNOLIA, TX
DETENTION POND PLAN & PROFILE

DESIGNER: LF
DRAFTING: TL/RG
PROJ. MGR.: LF
SCALE: 1" = 50' 1" = 5' V.

SHEET
05 OF 08

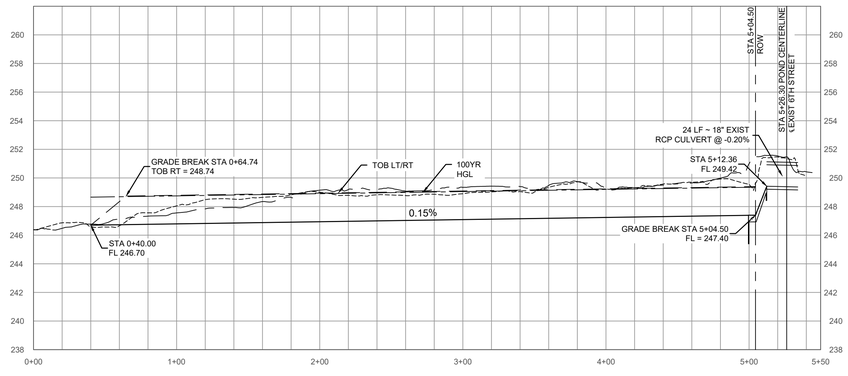
Z:\PROJECTS\R15 - RVision Homes LTD\R1523-001-00 7.5-Acre Tract Magnolia\2 Design Phase\CAD\Plans\DETENTION POND P&P.dwg 12/13/2023 11:20:57 AM

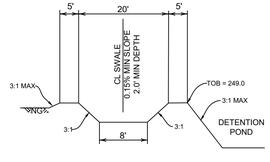


C1 Curve Data
R= 60.00'
L= 94.08'
Δ= 89°50'24"
T= 59.83'
PC= 1+41.19
PT= 2+35.27

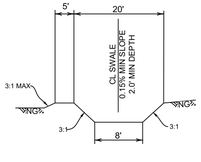
C2 Curve Data
R= 10.00'
L= 4.79'
Δ= 27°25'35"
T= 2.44'
PC= 4+85.15
PT= 4+89.93

Proposed Swale





CROSS SECTION B-B
STA 0+65 TO STA 2+33
NTS



CROSS SECTION C-C
STA 2+33 TO STA 3+78
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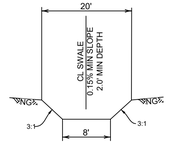
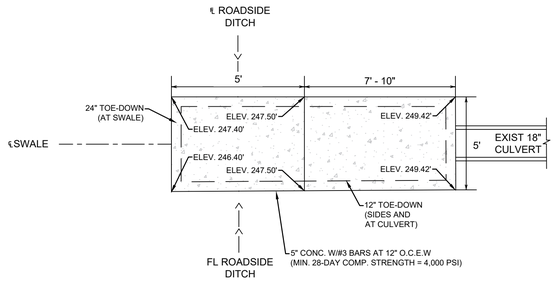
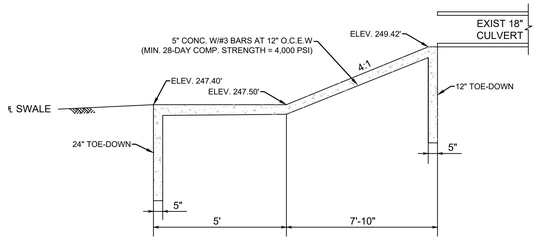


CROSS SECTION C-C
STA 3+78 TO STA 5+04
NTS



CONC APRON PLAN
NTS



CONC APRON PROFILE
NTS

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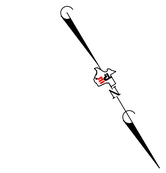

0 50 100 150

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SYMBOLS & ABBREVIATIONS

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	FLUSH VALVE W/ GATE VALVE	ESMT	EASEMENT	REM	REMOVE
	MECHANICAL BEND/FITTING	EX.	EXISTING	REV	REVERSE
	REDUCER	F-F	FACE TO FACE	R.R.	RAILROAD
	PLUG & CLAMP W/ BLOW OFF	F.F.	FINISHED FLOOR	RT	RIGHT
	SERVICE LEAD W/ WYE	FL	FLOWLINE	SAN SEW	SANITARY SEWER
	MANHOLE	FM	FORCEMAIN	SF	SQUARE FEET
	STACK	FV	FLUSH VALVE	S.L.	STREET LIGHT
	INLET	G	GROUND	SS	SANITARY SEWER
	POWER POLE	FV	GATE VALVE	SSE	SANITARY SEWER EASEMENT
	STREET SIGN	GW	GUY WIRE	STA.	STATION
ADJ	ADJACENT	H.G.L.	HYDRAULIC GRADE LINE	STM	STORM
B-B	BACK TO BACK	HYD.	HYDRANT	STMSE	STORM SEWER EASEMENT
BOC	BACK OF CURB	I.D.	INSIDE DIAMETER	STD	STANDARD
B.M.	BENCHMARK	INL	INLET	SW	SIDEWALK
B.O.	BLOW OFF	LF	LINEAR FEET	SY	SQUARE YARDS
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C.O.	CLEANOUT	MIN	MINIMUM	TOC	TOP OF CURB
CONC.	CONCRETE	P	PAVEMENT	TP	TOP OF PAVEMENT
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DIA.	DIAMETER	PI	POINT OF INTERSECTION	TYP.	TYPICAL
DIP	DUCTILE IRON PIPE	PP	POWER POLE	UE	UTILITY EASEMENT
ELEC.	ELECTRIC	PROP	PROPOSED	WL	WATERLINE
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LEGEND

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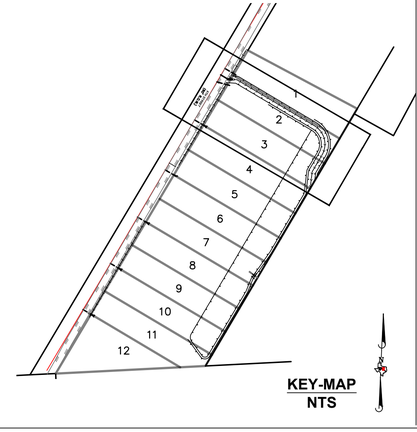

KEY-MAP
NTS

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12/13/2023

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F-21819

THE OAKS ON 6TH STREET
CITY OF MAGNOLIA, TX
PROPOSED SWALE PLAN & PROFILE

DESIGNER: LF
DRAFTING: TL/RG
PROJ. MGR.: LF
SCALE: 1" = 50' 1" = 5' V.

SHEET
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Z:\PROJECTS\R15 - RVision Homes LTD\R1523-001-00 7.5-Acre Tract Magnolia\2 Design Phase\CAD\Plans\SWALE P&P.dwg 12/13/2023 11:17:06 AM

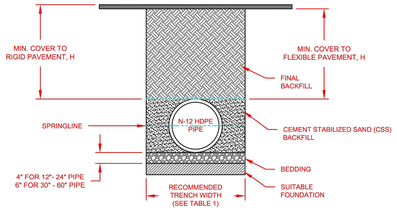


TABLE 1
RECOMMENDED MINIMUM TRENCH WIDTHS

PIPE DIAM.	MIN. TRENCH WIDTH
12" (300mm)	30" (762mm)
15" (375mm)	34" (864mm)
18" (450mm)	39" (991mm)
24" (600mm)	48" (1219mm)
30" (750mm)	56" (1422mm)
36" (900mm)	64" (1626mm)
42" (1050mm)	72" (1829mm)
48" (1200mm)	80" (2032mm)
60" (1500mm)	96" (2438mm)

NOTES:

1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST ADDITION. NATIVE SOILS SHALL BE OF ADEQUATE STIFFNESS TO WITHSTAND A VERTICAL CUT WITHOUT MATERIAL SLOUGHING. DUE TO THE FINAL SET STRENGTH, CEMENT STABILIZED SAND (CSS) SHALL BE COMPACTED TO 85% SPD OR GREATER. SEE NOTES 7 AND 9 REGARDING SET STRENGTH.
2. RECOMMENDED TRENCH WIDTHS ARE LISTED IN TABLE 1 PER ASTM D2321. THESE VALUES ARE BASED ON PROVIDING SUFFICIENT SPACE BETWEEN THE PIPE O.D. AND THE TRENCH WALL, SUCH THAT WORKING ROOM FOR COMPACTION EQUIPMENT IS PROVIDED WITHOUT DAMAGING THE PIPE OR TRENCH WALL INTEGRITY. NARROWER TRENCHES MAY BE POSSIBLE BASED ON THE COMPACTION EQUIPMENT.
3. CSS SHALL HAVE A MIX DESIGN OF ADEQUATE FINAL STRENGTH TO CARRY ALL LIVE AND DEAD LOADING BUT ALLOW FOR ANY FUTURE EXCAVATION. TYPICAL 7 DAY COMPRESSIVE STRENGTHS RANGE BETWEEN 50 AND 100 PSI. MIX DESIGNS CAN VARY BASED ON THE CEMENT, ASH, SOIL, ADMIXTURES, AND WATER RATIO AND SHALL BE DESIGNED AND DEFINED BY THE ENGINEER OF RECORD. THE AMERICAN CONCRETE INSTITUTE (ACI) REPORT ACI 230.1R-09 IS ONE RESOURCE THAT PROVIDES MIX DESIGNS BASED ON DIFFERENT CLASSIFICATIONS OF SOIL.
4. CSS SHOULD NOT BE PLACED WHEN TEMPERATURES ARE BELOW 40°F, AGAINST FROZEN TRENCH MATERIAL OR WHEN APPRECIABLE PRECIPITATION IS FORECASTED DURING PLACEMENT.
5. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
6. BEDDING: SUITABLE MATERIAL SHALL BE CSS, OR CLASS I OR II PER ASTM D2321. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 12"-24" DIAMETER PIPE (300mm-600mm); 6" (150mm) FOR 30"-60" (750mm-1500mm) DIAMETER PIPE. THE MIDDLE 1/3 BENEATH THE PIPE INVERT SHALL BE LOOSELY PLACED.
7. FINAL BACKFILL: THE CSS BACKFILL SHALL BE ALLOWED TO CURE AT LEAST 4 HOURS TO REACH AN INITIAL SET STRENGTH PRIOR TO PLACING SOIL ABOVE THE PIPE EMBEDMENT. ADDITIONAL CURE TIME MAY BE REQUIRED BASED ON THE OVERALL FINAL FILL HEIGHT (SEE NOTE 9).
8. MINIMUM COVER: MINIMUM COVER, H, IS 12" (300mm) THROUGH 48" (1200mm) DIAMETER PIPE AND 24" (600mm) OF COVER FOR 60" (1500mm) DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.
9. MAXIMUM COVER: MAXIMUM COVER, H, IS BASED ON A MINIMUM 4HR SET TIME OF THE CSS BACKFILL PRIOR TO ANY SOIL PLACEMENT ABOVE THE BACKFILL ENVELOPE. FILL HEIGHTS UP TO 15FT ARE SUITABLE FOR ALL DIAMETERS. LONGER SET TIME MAY ALLOW FOR GREATER FILL HEIGHTS, CONTACT AN ADS REPRESENTATIVE FOR GUIDANCE; SET TIME LESS THAN 4HR MAY RESULT IN HIGHER THAN EXPECTED DEFLECTION AND IMPACT LONG-TERM PERFORMANCE.

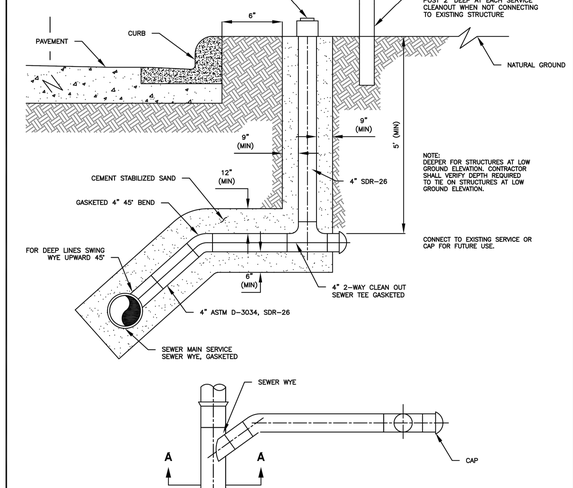
REV.	DESCRIPTION	BY	MM/DD/YY	CHK'D
2	INITIAL BACKFILL	JAB	04/02/20	

DRAWN BY: CKM
DATE: 8/14/18
SCALE: NTS
SHEET: 1 OF 1

N-12 HDPE TRENCH INSTALLATION (CEMENT STABILIZED SAND)

DRAWING NUMBER: STD-101K

ADS — Advanced Drainage Systems, Inc.
4640 TRUEMAN BLVD
HILLIARD, OHIO 43026



NOTES:

1. ALL SERVICE LINES SHALL BE 4" SDR-26 PVC PIPE.
2. SERVICE TAPS ON VITRIFIED CLAY PIPE SHALL BE MADE WITH A 4" "Y" TAP SADDLE DICKEY MODEL No YTD400003 OR EQUAL. A 4" ETCO ADAPTER DICKEY MODEL No 442 ZE 042000 OR APPROVED EQUAL SHALL BE USED TO ADAPT FROM THE ABOVE TAP SADDLE TO 4" SDR-26 PVC PIPE.
3. SERVICE TAPS ON DUCTILE IRON PIPE SHALL BE MADE WITH A 4" PVC SADDLE AS MANUFACTURED BY GPK PRODUCTS OF FARGO, ND OR EQUAL.
4. SERVICE CONNECTIONS FOR PVC PIPE SHALL BE MADE WITH SERVICE WYES OF THE SAME ASTM DESIGNATION AS THE MAIN LINE.
5. BID ITEMS FOR SERVICE WYES SHALL INCLUDE WYES FOR 6" THROUGH 15" PIPE AND SADDLES FOR 18" AND LARGER DIAMETER PIPES.
6. ALL SERVICE WYES AND PVC SERVICE LINES SHALL BE ENCASED IN SAND OR GRAVEL WITH FINES.

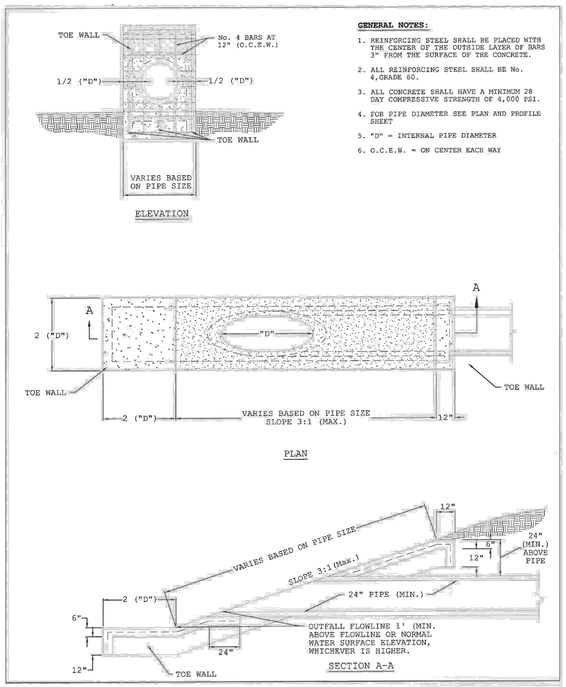
CITY OF MAGNOLIA
18111 BUDDY RILEY BOULEVARD
MAGNOLIA, TEXAS 77354

SANITARY SEWER SERVICE CONNECTION (TYP)

CITY OF MAGNOLIA STANDARD DETAIL

DETAIL NO.
SAN-014

EFFECTIVE DATE: 8/3/2022



GENERAL NOTES:

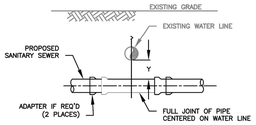
1. REINFORCING STEEL SHALL BE PLACED WITH THE CENTER OF THE OUTSIDE LAYER OF BARS 3" FROM THE SURFACE OF THE CONCRETE.
2. ALL REINFORCING STEEL SHALL BE No. 4,GRADE 60.
3. ALL CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4,000 PSI.
4. FOR PIPE DIAMETER SEE PLAN AND PROFILE SHEET
5. "D" = INTERNAL PIPE DIAMETER
6. O.C.E.W. = ON CENTER EACH WAY

CITY OF CONROE
ENGINEERING
300 W. DAVIS P.O. BOX 3066
CONROE, TEXAS 77305 (936) 522-3100

STORM WATER SYSTEM
EFFLUENT / INFLUENT HEADWALL FOR DETENTION PONDS
Approved By:

Revision Date 03/ 03 /2020

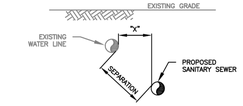
STRM-33



PROPOSED SANITARY SEWER
CROSSING EXISTING WATER LINE
(WHEN PROPOSED SANITARY SEWER IS BELOW EXISTING WATER LINE)

NOTES:

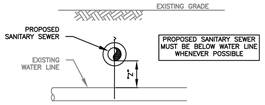
1. EACH PORTION OF THE SANITARY SEWER PIPE WITHIN NINE FEET OF THE WATER LINE MUST BE ENCASED IN A CASING PIPE.
2. THE CASING PIPE MUST BE CONSTRUCTED OF AT LEAST 150 PSI PRESSURE CLASS AND IS SEALED AT BOTH ENDS WITH MANUFACTURED WATERTIGHT SEAL.
3. THE CASING PIPE SHALL BE AT LEAST TWO NOMINAL SIZES LARGER THAN THE SANITARY SEWER PIPE. THE CARRIER PIPE SHALL BE SUPPORTED BY SPACERS AT A MAXIMUM OF FIVE-FOOT INTERVALS.
4. AS AN ALTERNATE TO ENCASING SANITARY SEWER PIPE, A SANITARY SEWER PIPE THAT MEETS THE FOLLOWING SPECIFICATION CAN BE CONSTRUCTED WITHOUT CASING: SANITARY SEWER PIPE CONSTRUCTED OF AT LEAST 150 PSI PRESSURE CLASS, CORROSION-RESISTANT, NON-BRITTLE PIPE AND USES MANUFACTURER-APPROVED ADAPTERS, GASKETED JOINTS, COMPRESSION JOINTS, AND OTHER NON-BONDED JOINTS MUST BE DESIGNED TO SEAL AT ATMOSPHERIC PRESSURE.
5. SANITARY SEWER PIPE CONSTRUCTED WITHOUT CASING SHALL BE LOCATED AT LEAST SIX VERTICAL FEET BETWEEN THE OUTSIDES OF THE SANITARY SEWER PIPE AND THE WATER LINE, CENTERED ON THE CROSSING, AND BE AT LEAST 18 FEET LONG.
6. A SANITARY SEWER PIPE CONSTRUCTED OF ANY MATERIAL, OR PIPE WITH A PRESSURE CLASS OF LESS THAN 150 PSI, SHALL HAVE AT LEAST TWO FEET OF SEPARATION BETWEEN THE OUTSIDES OF THE PIPES AND BE ENCASED IN CEMENT-STABILIZED SAND BACKFILL. CEMENT STABILIZED SAND SHALL INCLUDE AT LEAST 160 POUNDS OF CEMENT FOR EVERY CUBIC YARD OF SAND. CEMENT STABILIZED SAND SHALL BE PLACED AT LEAST BEGINNING ONE-QUARTER PIPE DIAMETER BELOW THE PIPE TO ONE FULL PIPE DIAMETER ABOVE THE TOP OF THE SANITARY SEWER PIPE, OR 12 INCHES ABOVE THE TOP OF THE SANITARY SEWER PIPE, WHICHEVER IS GREATER.



PROPOSED SANITARY SEWER
PARALLEL TO EXISTING WATER LINE
(WHEN PROPOSED SANITARY SEWER IS BELOW EXISTING WATER LINE)

NOTES:

1. EACH PORTION OF THE SANITARY SEWER PIPE WITHIN NINE FEET OF THE WATER LINE MUST BE ENCASED IN A CASING PIPE.
2. THE CASING PIPE MUST BE CONSTRUCTED OF AT LEAST 150 PSI PRESSURE CLASS AND IS SEALED AT BOTH ENDS WITH MANUFACTURED WATERTIGHT SEAL.
3. THE CASING PIPE SHALL BE AT LEAST TWO NOMINAL SIZES LARGER THAN THE SANITARY SEWER PIPE. THE CARRIER PIPE SHALL BE SUPPORTED BY SPACERS AT A MAXIMUM OF FIVE-FOOT INTERVALS.
4. AS AN ALTERNATE TO ENCASING SANITARY SEWER PIPE, A SANITARY SEWER PIPE THAT MEETS THE FOLLOWING SPECIFICATIONS CAN BE CONSTRUCTED WITHOUT CASING: SANITARY SEWER PIPE CONSTRUCTED OF AT LEAST 150 PSI PRESSURE CLASS, CORROSION-RESISTANT, NON-BRITTLE PIPE AND USES MANUFACTURER-APPROVED ADAPTERS, GASKETED JOINTS, COMPRESSION JOINTS, AND OTHER NON-BONDED JOINTS MUST BE DESIGNED TO SEAL AT ATMOSPHERIC PRESSURE.
5. SANITARY SEWER PIPE CONSTRUCTED WITHOUT CASING SHALL BE LOCATED AT LEAST TWO VERTICAL FEET BELOW AND FOUR HORIZONTAL FEET AWAY FROM THE WATER LINE.



PROPOSED SANITARY SEWER
CROSSING EXISTING WATER LINE
(WHEN PROPOSED SANITARY SEWER IS ABOVE EXISTING WATER LINE)

NOTES:

1. EACH PORTION OF THE SANITARY SEWER PIPE WITHIN NINE FEET OF THE WATER LINE MUST BE ENCASED IN A CASING PIPE.
2. THE CASING PIPE MUST BE CONSTRUCTED OF AT LEAST 150 PSI PRESSURE CLASS AND IS SEALED AT BOTH ENDS WITH MANUFACTURED WATERTIGHT SEAL.
3. THE CASING PIPE SHALL BE AT LEAST TWO NOMINAL SIZES LARGER THAN THE SANITARY SEWER PIPE. THE CARRIER PIPE SHALL BE SUPPORTED BY SPACERS AT A MAXIMUM OF FIVE-FOOT INTERVALS.
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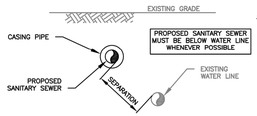
5. SANITARY SEWER PIPE CONSTRUCTED WITHOUT CASING SHALL BE LOCATED AT LEAST TWO VERTICAL FEET BETWEEN THE OUTSIDES OF THE SANITARY SEWER PIPE AND THE WATER LINE, CENTERED ON THE CROSSING, AND BE AT LEAST 18 FEET LONG.



PROPOSED SANITARY SEWER
PARALLEL TO EXISTING WATER LINE
(WHEN PROPOSED SANITARY SEWER IS ABOVE EXISTING WATER LINE)

NOTES:

1. EACH PORTION OF THE SANITARY SEWER PIPE WITHIN NINE FEET OF THE WATER LINE MUST BE ENCASED IN A CASING PIPE.
2. THE CASING PIPE MUST BE CONSTRUCTED OF AT LEAST 150 PSI PRESSURE CLASS AND IS SEALED AT BOTH ENDS WITH CEMENT GROUT OR A MANUFACTURED SEAL.
3. THE CASING PIPE SHALL BE AT LEAST TWO NOMINAL SIZES LARGER THAN THE SANITARY SEWER PIPE. THE CARRIER PIPE SHALL BE SUPPORTED BY SPACERS AT A MAXIMUM OF FIVE-FOOT INTERVALS.

CITY OF MAGNOLIA
18111 BUDDY RILEY BOULEVARD
MAGNOLIA, TEXAS 77354

SANITARY SEWER AND WATER LINE CROSSING SPECIFICATIONS

CITY OF MAGNOLIA STANDARD DETAIL

DETAIL NO.
SAN-013

EFFECTIVE DATE: 8/3/2022

APPROVED BY

REVISIONS

DATE

TEXAS PROFESSIONAL ENGINEERING
Firm No. 2389

STATE OF TEXAS
LOUIS A. FAUST III
127382
LICENSED PROFESSIONAL ENGINEER

12/13/2023

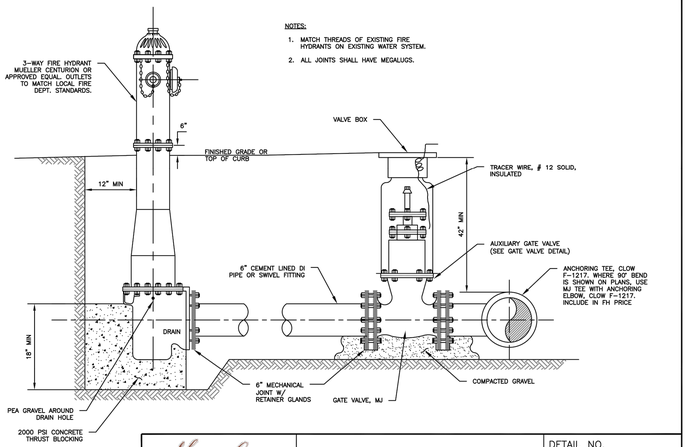
TEXAS PROFESSIONAL ENGINEERING LLC
F-21819

THE OAKS ON 6TH STREET
CITY OF MAGNOLIA, TX
STORM SEWER AND SANITARY SEWER DETAILS

DESIGNER: LF
DRAFTING: TL/RG
PROJ. MGR.: LF
SCALE:

SHEET
07 OF 08

Z:\PROJECTS\R15 - RVision Homes LTD\R1523-001-00 7.5-Acre Tract Magnolia\2 Design Phase\CAD\Plans\STORM SEWER DETAILS.dwg 12/11/2023 11:40:52 AM



CITY OF MAGNOLIA
18111 BUDDY RILEY BOULEVARD
MAGNOLIA, TEXAS 77354

FIRE HYDRANT UNIT ASSEMBLY

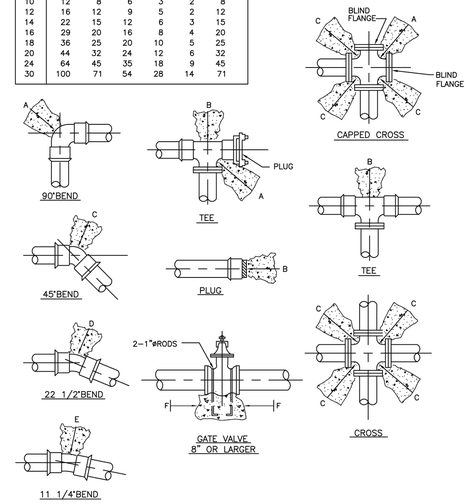
CITY OF MAGNOLIA STANDARD DETAIL

DETAIL NO. **WTR-04**

EFFECTIVE DATE: 8/3/2022

PIPE SIZE (INJ.)	MINIMUM BEARING AREA AGAINST UNDISTURBED SOIL (SQ.FT.)					
	A	B	C	D	E	F
4	2	2	1	1	1	2
6	4	3	3	1	1	3
8	8	5	4	2	1	5
10	12	8	6	3	2	8
12	16	12	9	5	2	12
14	22	15	12	6	3	15
16	29	20	16	8	4	20
18	36	25	20	10	5	25
20	44	32	24	12	6	32
24	64	45	35	18	9	45
30	100	71	54	28	14	71

NOTES:
1. THRUST IS BASED ON A WORKING PRESSURE OF 150 PSI.
2. BEARING AREA IS BASED ON A SAFE SOIL BEARING LOAD OF 1500 PSF.
3. BLOCKING SHALL BEAR AGAINST FITTINGS ONLY AND SHALL BE CLEAR OF THE JOINT.



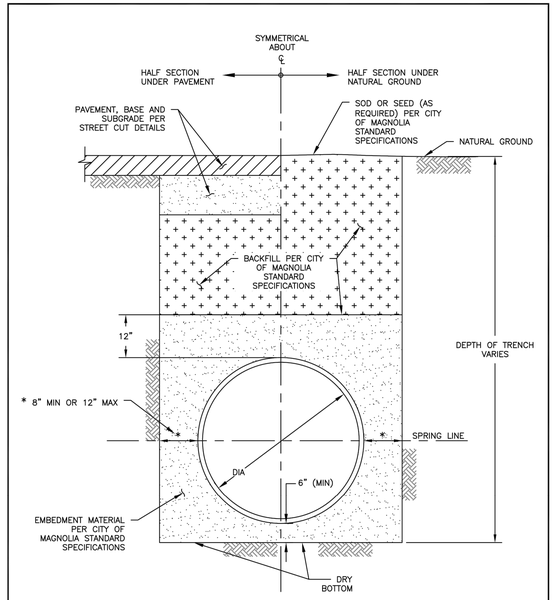
CITY OF MAGNOLIA
18111 BUDDY RILEY BOULEVARD
MAGNOLIA, TEXAS 77354

HORIZONTAL THRUST BLOCKING

CITY OF MAGNOLIA STANDARD DETAIL

DETAIL NO. **WTR-03**

EFFECTIVE DATE: 8/3/2022



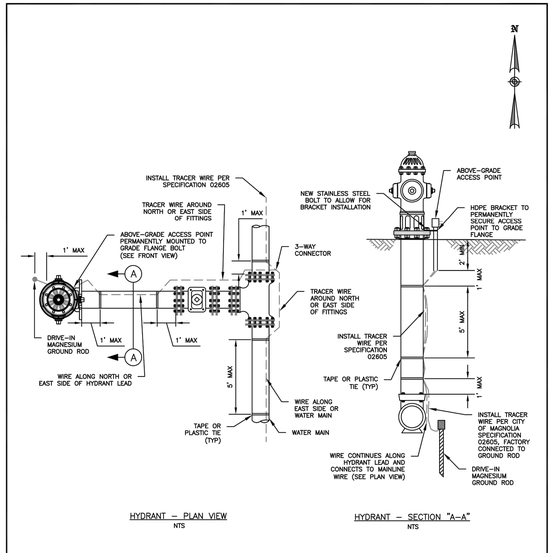
CITY OF MAGNOLIA
18111 BUDDY RILEY BOULEVARD
MAGNOLIA, TEXAS 77354

WATER DISTRIBUTION MAIN BEDDING AND BACKFILL FOR OPEN CUT TRENCHES

CITY OF MAGNOLIA STANDARD DETAIL

DETAIL NO. **WTR-01**

EFFECTIVE DATE: 8/3/2022



HYDRANT – PLAN VIEW
NTS

HYDRANT – SECTION "A–A"
NTS

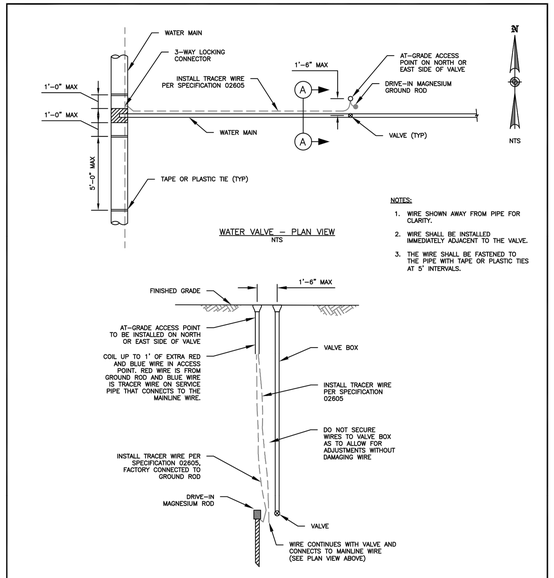
CITY OF MAGNOLIA
18111 BUDDY RILEY BOULEVARD
MAGNOLIA, TEXAS 77354

COMPLETE UTILITY LOCATING SYSTEM HYDRANT DETAIL

CITY OF MAGNOLIA STANDARD DETAIL

DETAIL NO. **WTR-17**

EFFECTIVE DATE: 8/3/2022



WATER VALVE – PLAN VIEW
NTS

NOTES:
1. WIRE SHOWN AWAY FROM PIPE FOR CLARITY.
2. WIRE SHALL BE INSTALLED IMMEDIATELY ADJACENT TO THE VALVE.
3. THE WIRE SHALL BE FASTENED TO THE PIPE WITH TAPE OR PLASTIC TIES AT 5' INTERVALS.

WATER VALVE – SECTION VIEW "A–A"
NTS

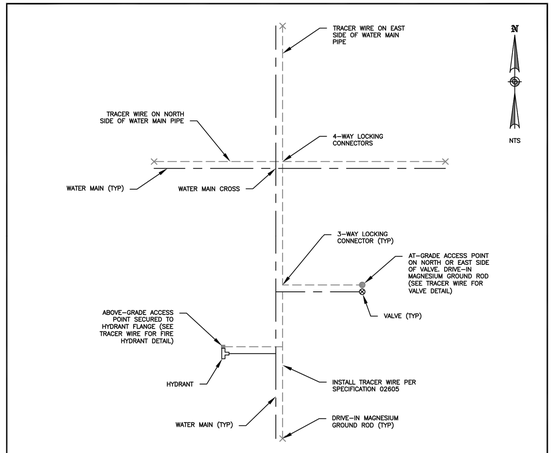
CITY OF MAGNOLIA
18111 BUDDY RILEY BOULEVARD
MAGNOLIA, TEXAS 77354

COMPLETE UTILITY LOCATING SYSTEM WATER SERVICE DETAIL

CITY OF MAGNOLIA STANDARD DETAIL

DETAIL NO. **WTR-16**

EFFECTIVE DATE: 8/3/2022



NOTES:
1. WIRE SHOWN AWAY FROM PIPE FOR CLARITY.
2. TRACER WIRE SHALL BE SECURED TO THE PIPE USING PLASTIC TAPE OR TIES AT 5 FEET INTERVALS IN THE 3 O'CLOCK POSITION.
3. PROVIDE ACCESS POINT COVER CAPS IDENTIFIED AS "WATER" AND COLOR CODE AS PER APWA UNIFORM COLOR CODE STANDARD.
4. FOR OPEN CUT INSTALLATION, PROVIDE HIGH STRENGTH COPPER-CLAD STEEL (HS-CCS), FULLY ANNEALED HIGH CARBON 1055 GRADE STEEL TRACER WIRE. COPPER SHALL BE 12-AWG WITH MINIMUM 450 LB TENSILE BREAK LOAD, AND MINIMUM 30 MIL HDPE INSULATION THICKNESS.
5. FOR TRENCHLESS INSTALLATION, PROVIDE EXTRA-HIGH STRENGTH COPPER-CLAD STEEL (EHS-CCS), HARD-DRAWN, HIGH CARBON 1055 GRADE STEEL TRACER WIRE. COPPER SHALL BE 12-AWG WITH MINIMUM 1,150 TENSILE BREAK LOAD, AND MINIMUM 45 MIL HDPE INSULATION THICKNESS.
6. THERMOPLASTIC WIRE, NYLON JACKETS OR COATINGS SHALL NOT BE USED.
7. TRACE WIRE SHALL BE GROUNDED USING A 15-LB, DRIVE-IN MAGNESIUM GROUND ROD WITH MINIMUM 20-FEET RED #12 AWG COPPER-CLAD STEEL (CCS) WIRE WITH 30 MIL HDPE INSULATED JACKET CONNECTED TO THE ANODE SPECIFICALLY MANUFACTURED FOR GROUNDING PURPOSE AND BURIED AT THE SAME ELEVATION AS THE UTILITY. BRASS, STEEL, OR COPPER GROUND RODS SHALL NOT BE USED.

CITY OF MAGNOLIA
18111 BUDDY RILEY BOULEVARD
MAGNOLIA, TEXAS 77354

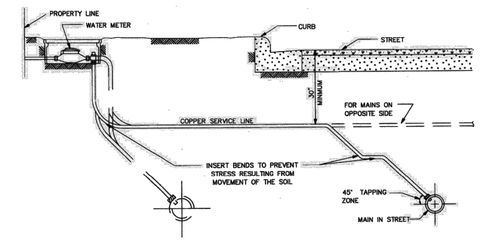
COMPLETE UTILITY LOCATING SYSTEM SAMPLE PLAN

CITY OF MAGNOLIA STANDARD DETAIL

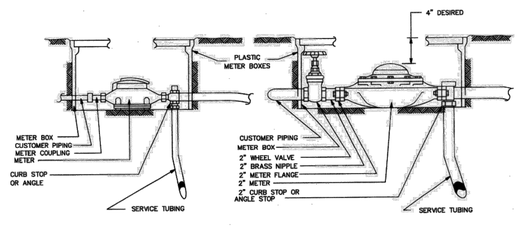
DETAIL NO. **WTR-15**

EFFECTIVE DATE: 8/3/2022

NOTES:
1 1/2" METER SET IS SAME AS 2" EXCEPT WHEEL VALVE IS NOT REQUIRED.



TYPICAL SECTION SERVICE LINE



5/8", 3/4" AND 1" METER SET

2" METER SET

CITY OF MAGNOLIA
18111 BUDDY RILEY BOULEVARD
MAGNOLIA, TEXAS 77354

TYPICAL METER SETTINGS

CITY OF MAGNOLIA STANDARD DETAIL

DETAIL NO. **WTR-13**

EFFECTIVE DATE: 8/3/2022

APPROVED BY	REVISIONS	DATE

TEXAS PROFESSIONAL ENGINEERING
Firm No. 21819

STATE OF TEXAS
LOUIS A. FAUST III
127382
LICENSED PROFESSIONAL ENGINEER

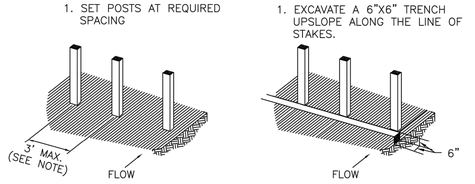
12/13/2023

TEXAS PROFESSIONAL ENGINEERING LLC
F-21819

THE OAKS ON 6TH STREET
CITY OF MAGNOLIA, TX
WATERLINE DETAILS

DESIGNER: LF
DRAFTING: TL/RG
PROJ. MGR.: LF
SCALE:

SHEET
08 OF 08

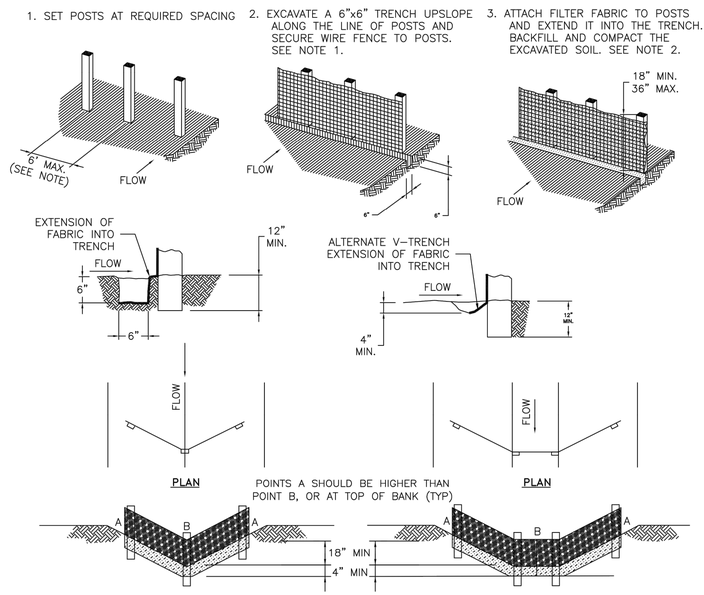


CONSTRUCTION NOTES:

1. 2–INCH THICK BY 2 INCH WOODEN STAKES TO BE SET AT MAX SPACING OF 3 FEET AND EMBEDDED A MIN OF 8 INCHES. IF PREASSEMBLED BARRIER WITH SUPPORT NETTING IS USED. SPACING OF POST MAY BE INCREASED TO 8 FEET MAX.
2. ATTACH FILTER FABRIC TO WOODEN STAKES.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHOULD BE OVERLAPPED 6 INCHES AT THE POSTS, AND FOLDED.
4. REMOVE SEDIMENT DEPOSIT WHEN SILT REACHES ONE–THIRD OF THE HEIGHT OF THE FENCE IN DEPTH.

FILTER FABRIC BARRIER

× — (FF) — × SYMBOL



"V–DITCH" SECTION/ELEVATION

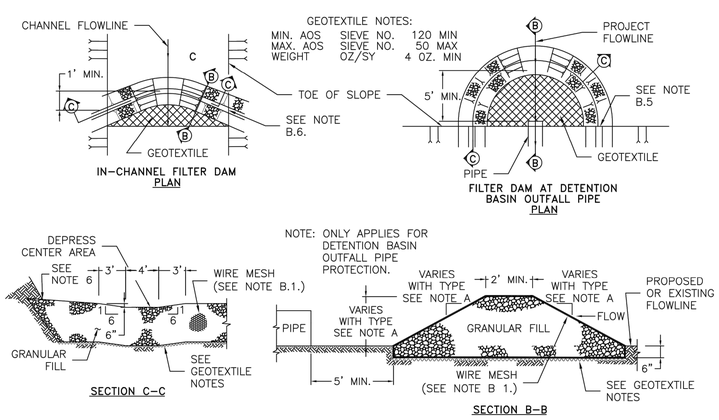
TRAPEZOIDAL SECTION/ELEVATION

GENERAL NOTES:

1. SECURELY FASTEN MESH FENCING TO POSTS WITH STAPLES OR TIE WIRES.
2. SECURELY FASTEN FILTER FABRIC TO MESH FENCING, WITH TIES SPACED EVERY 24 INCHES AT TOP AND MIDSECTION.
3. WHEN TWO SECTIONS OF FILTER FABRIC ADJOIN EACH OTHER, OVERLAP 6 INCHES AT A POST, FOLD TOGETHER, AND ATTACH TO A POST.
4. REMOVE SEDIMENT DEPOSITS WHEN SILT REACHES ONE–THIRD OF THE HEIGHT OF THE FENCE IN DEPTH.

REINFORCED FILTER FABRIC BARRIER

× — (RFB) — × SYMBOL



A. TYPES OF FILTER DAMS

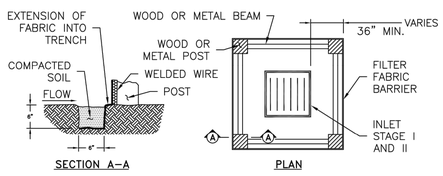
1. TYPE 1 (NON–REINFORCED)
   a. HEIGHT – 18–24 INCHES. MEASURE VERTICALLY FROM EXISTING GROUND TO TOP OF FILTER DAM.
   b. TOP WIDTH – 2 FEET (MINIMUM)
   c. SLOPES – 2:1 (MAXIMUM).
2. TYPE 2 (REINFORCED).
   a. HEIGHT – 18–36 INCHES. MEASURE VERTICALLY FROM EXISTING GROUND TO TOP OF FILTER DAM.
   b. TOP WIDTH – 2 FEET (MINIMUM).
   c. SLOPES – 2:1 (MAXIMUM).
3. TYPE 3 (REINFORCED)
   a. HEIGHT – 36–48 INCHES. MEASURE VERTICALLY FROM EXISTING GROUND TO TOP OF FILTER DAM.
   b. TOP WIDTH – 2 FEET (MINIMUM).
   c. SLOPES – 3:1 (MAXIMUM).
4. TYPE 4 (GABION)
   a. HEIGHT – 30 INCHES (MINIMUM). MEASURE VERTICALLY FROM EXISTING GROUND TO TOP OF FILTER DAM.
   b. TOP WIDTH – 2 FEET (MINIMUM).
5. TYPE 5. AS SHOWN ON THE PLANS.

B. CONSTRUCT FILTER DAMS ACCORDING TO THE FOLLOWING CRITERIA UNLESS SHOWN OTHERWISE ON THE PLANS.

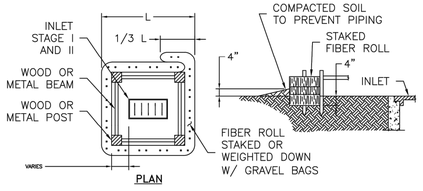
1. TYPE 2 AND 3 FILTER DAMS: SECURE WITH 20 GAUGE GALVANIZED WOVEN WIRE MESH WITH 1 INCH DIAMETER HEXAGONAL OPENINGS.
2. PLACE GRANULAR FILL ON THE WIRE MESH TO HEIGHT AND SLOPES SHOWN ON PLANS OR AS SPECIFIED BY THE ENGINEER.
   a. 3–5 INCHES FOR ROCK FILTER DAM TYPES 1, 2 AND 4.
   b. 4–8 INCHES FOR ROCK FILTER DAM TYPE REFER TO GRANULAR FILL IN SPECIFICATION SECTION No. 02378 RIPRAP AND GRANULAR FILL.
3. FOLD WIRE MESH AT UPSTREAM SIDE OVER GRANULAR FILL AND TIGHTLY SECURED TO ITSELF ON THE DOWNSTREAM SIDE USING WIRE TIES OR HOG RINGS.
4. IN STREAMS: SECURE OR STAKE MESH TO STREAM BED PRIOR TO AGGREGATE PLACEMENT.
5. EMBED ONE FOOT MINIMUM INTO SLOPE AND RAISE ONE FOOT HIGHER THAN CENTER OF DEPRESSED AREA AT SLOPE.

FILTER DAM

RFD–TYPE SYMBOL



INLET PROTECTION BARRIER WITH REINFORCED FILTER FABRIC



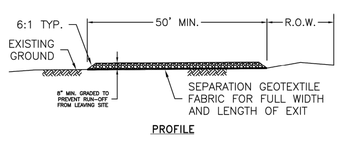
INLET PROTECTION BARRIER WITH FILTER ROLLS

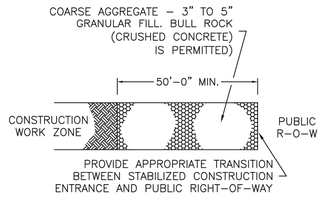
GENERAL NOTES:

1. FIBER ROLLS WILL BE UTILIZED ONLY WHEN SITE CONDITIONS DO NOT PERMIT THE USE OF FILTER FABRIC BARRIER, AND AS APPROVED BY THE ENGINEER.

INLET PROTECTION BARRIERS FOR STAGE I INLETS

IPB SYMBOL



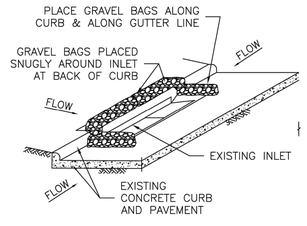


GENERAL NOTES:

1. MINIMUM LENGTH IS AS SHOWN ON CONSTRUCTION DRAWINGS OR 50 FEET, WHICHEVER IS MORE.
2. CONSTRUCT AND MAINTAIN CONSTRUCTION EXIT WITH CONSTANT WIDTH ACROSS ITS LENGTH, INCLUDING ALL POINTS OF INGRESS OR EGRESS.
3. UNLESS SHOWN ON THE CONSTRUCTION DRAWINGS, STABILIZATION FOR OTHER AREAS WILL HAVE THE SAME AGGREGATE THICKNESS AND WIDTH REQUIREMENTS AS THE STABILIZED CONSTRUCTION EXIT.
4. WHEN SHOWN ON THE CONSTRUCTION DRAWINGS, WIDEN OR LENGTHEN STABILIZED AREA TO ACCOMMODATE A TRUCK WASHING AREA. PROVIDE OUTLET SEDIMENT TRAP FOR THE TRUCK WASHING AREA.
5. PROVIDE PERIODIC TOP DRESSING WITH ADDITIONAL COARSE AGGREGATE TO MAINTAIN THE REQUIRED DEPTH OR WHEN SURFACE BECOMES PACKED WITH MUD.
6. PERIODICALLY TURN AGGREGATE TO EXPOSE A CLEAN DRIVING SURFACE.
7. MINIMUM 14' WIDTH FOR ONE WAY TRAFFIC AND 20' WIDTH FOR TWO WAY TRAFFIC.

STABILIZED CONSTRUCTION ACCESS

SC–1 SYMBOL

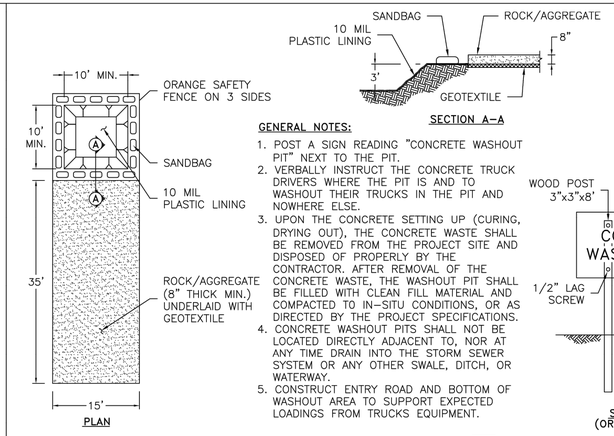


GENERAL NOTES:

1. REMOVE SEDIMENT DEPOSIT WHEN THE SEDIMENT HAS ACCUMULATED TO ONE–THIRD THE HEIGHT OF THE BARRIER.
2. GRAVEL BAGS SHALL NOT BLOCK THROAT OF INLET UNLESS DIRECTED BY ENGINEER.

INLET PROTECTION BARRIERS FOR STAGE II INLETS

IPB–II SYMBOL



CONCRETE TRUCK WASHOUT AREA

CTW SYMBOL

NO.	REVISIONS	DATE	NAME

CITY OF MAGNOLIA
18111 BUDDY RILEY BOULEVARD
MAGNOLIA, TEXAS 77354

PROJECT TITLE:

SHEET DESCRIPTION: STORM WATER POLLUTION PREVENTION DETAILS

DRAWN BY: HLS | CITY OF MAGNOLIA STANDARD DETAIL

CHK'D BY: RCG | EFFECTIVE DATE: 8/3/2022 | NO SCALE | SHEET XX OF XX

APPROVED BY | REVISIONS | DATE

TEXAS PROFESSIONAL ENGINEERING
Firm No. 2389

STATE OF TEXAS
LOUIS A. FAUST III
127382
LICENSED PROFESSIONAL ENGINEER

12/13/2023

TEXAS PROFESSIONAL ENGINEERING LLC
F–21819

THE OAKS ON 6TH STREET
CITY OF MAGNOLIA, TX
STORM WATER POLLUTION PREVENTION PLAN DETAILS

DESIGNER: LF
DRAFTING: TL/RG
PROJ. MGR.: LF
SCALE:

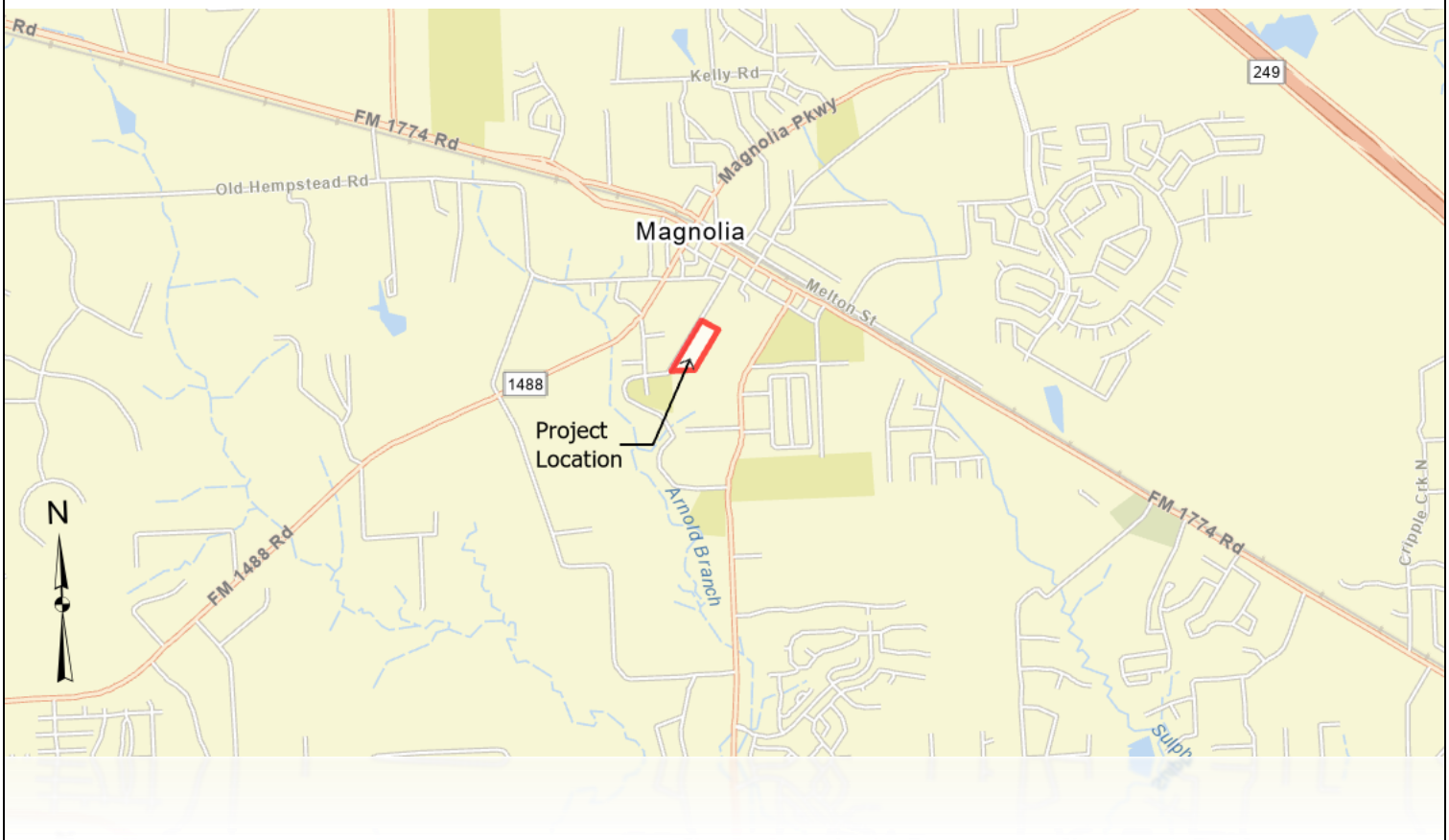
SHEET
09 OF 08

DRAINAGE AND DETENTION REPORT

FOR

THE OAKS AT 6TH STREET

IN
THE CITY OF MAGNOLIA, TEXAS



Prepared by: Texas Professional Engineering

December 13, 2023

3038 N Frazier St, Conroe, TX 77303

TEXAS PROFESSIONAL ENGINEERING

Texas Board of Professional Engineers Registration No. F-21819

STATE OF TEXAS
LOUIS A. FAUST III
127382
LICENSED
PROFESSIONAL ENGINEER

12/13/2023

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THE OAKS AT 6TH STREET
THE CITY OF MAGNOLIA, TEXAS

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DRAINAGE AND DETENTION ANALYSIS FOR
THE OAKS AT 6TH STREET
THE CITY OF MAGNOLIA, TEXAS

DRAINAGE SUMMARY FOR THE OAKS AT 6TH STREET

This report describes the detention pond design for the Oaks at 6th Street, a 7.52-acre proposed single family development. The project is located in the city of Magnolia and ultimately outfalls into an existing channel on the southeastern side of the property.

The Oaks at 6th Street development consists of approximately 7.52 acres in Magnolia, Texas. The land uses of the proposed development consist of 12 half-acre single family lots, and 1 detention reserve. The 7.52-acre site discharges to an existing channel southeast of the property. The proposed drainage plan will mitigate the increased stormwater runoff volume from the proposed development and will collect offsite flow from portions of the northeastern tracts that naturally flow onto the development. There is an existing culvert that allows water from the northern tracts to flow onto the property before exiting to the southeast. This water will be collected in a proposed swale and will be routed around the detention pond to the previous outfall location of the water. The proposed release rate will also be **10% less** than the existing release rate. This drainage study utilized the National Resource Conservation Service (NRCS) TR-20 methodology known as the SCS method, ArcGIS, Hydrology Studio, and SCS curve number loss method to calculate watershed discharge rates and required storage volumes. Time of concentration analysis is based on the NRCS (Velocity) method as described in the Texas Hydraulic Design Manual. **Based on this analysis, the Oaks at 6th Street causes no adverse impact to the existing channel or surrounding areas during the 1% and 4% probability storm events.**

PROJECT NAME: **The Oaks at 6th Street**				
Total Developed Acreage Served by Detention			7.52 ac	
Total Detention Storage Provided at 1% Storm			2.19 ac-ft	
Pond Name	***Discharge Location***	***100 Yr. Det. Vol. Needed***	***Top Pond Elev.***	***100 Yr. WSEL***
Pond 1	Existing Channel	2.13 ac-ft	246.50’	245.93’

Table 1 – The Oaks at 6th Street Detention Storage Summary Table

Project	**Project Name:** The Oaks at 6th Street			
	Discharge Basin: Existing Channel		December 12, 2023	
	Total Project Area (Developed Area)		*7.52 ac*	
	Detention Basin Service Area (Developed Area)		*4.60 ac*	
	Offsite Drainage Area (Undeveloped Area)		*21.37 ac*	
	Storm Event		**4% AEP (25-yr)**	**1% AEP (100-yr)**
Flow (cfs)	**Pre/Post DA 1**	**Proposed Outflow to Southeast** (Pond Outfall + Offsite Flow)	40.51 cfs	64.56 cfs
		Existing Outflow to Southeast	41.97 cfs	68.90 cfs
		Max Allowable Outflow to Southeast (10% Reduction of Developed)	40.73 cfs	66.90 cfs
		Peak Flow Reduction to Southeast	***0.22 cfs***	***2.34 cfs***
	Pre/Post DA 2	**Proposed Outflow to South** (Undetained Flow)	4.70 cfs	7.31 cfs
		Existing Outflow to South	7.86 cfs	12.61 cfs
		Max Allowable Outflow to South (10% Reduction of Developed)	7.07 cfs	11.35 cfs
		Peak Flow Reduction to South	***2.37 cfs***	***4.04 cfs***
Elevations	**Pond 1 High Bank Elevation**		246.50’	
	Pond 1 Calculated Water Surface Elevation		244.95’	245.93’’
	Pond 1 Freeboard		***1.55'***	***0.57'***
Storage	**Minimum Storage Required (ac-ft)**		2.13 ac-ft	
	Detention Storage Provided (ac-ft)		2.19 ac-ft	
	Storage Rate Provided (ac-ft storage/ac of development)		0.29 ac-ft/ac development	
Outfall Structur	**Pond 1 Primary Outlet**		(1) 18” HDPE	
	Pond 1 Restrictor Orifice		(1) 15” Circular Orifice	
	Pond 1 Tailwater Elevation		243.43’	243.60’
	Drain Time (hours) @ 1 % AEP		30.27	

Table 1A – The Oaks at 6th Street Pond Table

1.0 INTRODUCTION

1.1 Project Purpose

This drainage and detention report evaluates the drainage impacts from the proposed 7.52-acre, 12 lot development in Magnolia, Texas. The analysis evaluates the peak runoff from the existing and proposed conditions to determine the drainage system required to mitigate for the

Oaks at 6th Street development. The 1%, and 4% exceedance probability storm events (100-yr & 25-yr events, respectively) were modeled for existing and proposed conditions. The NRCS Unit Hydrograph method was utilized to develop a drainage mitigation plan for the proposed developments, ensuring no adverse impact to the existing channel or the adjacent tracts. Atlas 14 precipitation data was analyzed to evaluate the impact on downstream facilities and the surrounding developments.

1.2 Project Limits

The Oaks at 6th Street development consists of approximately 7.52 acres in the City of Magnolia, Texas. The land uses of the proposed development consist of half-acre single family lots, a detention pond reserve, and a water line extension. The proposed development is located south of the intersection of FM 1488 and FM 1774. 6th street is the sole access road northwest of the proposed development. The nearest stream to the development is Arnold Branch which flows south and is located approximately 1200' southeast of the development.

1.3 Project Objectives

The objective of this analysis is to evaluate site conditions for the proposed Oaks at 6th Street development by determining the amount of storage volume required to mitigate for the proposed development. The proposed development will be mitigated by one proposed detention basins that will outfall to a natural discharge location and ultimately to Arnold Branch. The detention basin will be required to provide the necessary storage to prevent any adverse impacts to the surrounding areas. The detention volume will provide storage to mitigate for the proposed flow from 7.52 acres of development.

1.4 Assumptions and Constraints

This study assumes the proposed developments are not allowed to cause adverse impact to the receiving streams and any surrounding areas. Any future development on nearby offsite tracts must provide their own onsite detention storage to maintain existing discharge rates and show no impact to the Arnold Branch or the surrounding developments. No pond storage or conveyance capacity within the proposed swale is being provided within the proposed onsite basins for any future development outside of the proposed development boundaries.

2023 LiDAR was used to create watershed models for the development and surrounding areas.

2.0 EXISTING CONDITIONS

2.1 Location and Topography

The Oaks at 6th Street development is located completely in the City of Magnolia, Texas. The site is undeveloped and located east of 6th street.

The site is moderately to heavily wooded with shrubs and underbrush. The elevations range from 251' to 242'. Most of the site has slopes of 1 to 2% throughout apart from the southeast border where there is an existing channel that carries flow offsite. There is a large area north of the site that drains naturally onto the development through an existing culvert crossing 6th Street. The northeastern 4.56 acres of the development drain naturally to the southeast through the existing channel. The southwestern 2.96 acres drains naturally south through the adjacent tract. These flows eventually combine, before flowing into Arnold Branch. The elevations stated in this report were taken from 2023 LiDAR data scanned by Texas Professional Surveying. The existing northeastern runoff is delineated by watershed Pre DA 1 (site). The existing southwestern runoff is delineated by watershed Pre DA 2 (site). The existing offsite flow is delineated by watershed OS 1.

2.2 Land Use

The existing condition of the Oaks at 6th Street is mostly undeveloped. There is one single family home on the property. The undeveloped area consists of wooded areas with shrubs, underbrush and partially cleared narrow paths.

2.3 FEMA Floodplain

The proposed Oaks at 6th Street is located outside of a FEMA designated floodplain area.

2.4 Soils

The soil data was found using the USDA's web soil survey. 76.9% of the site was found to be Wockley fine sandy loam, which is classified as SCS Hydrologic Soil Group C/D, and 23.1% of the site was found to be Katy fine sandy loam, which is classified as SCS Hydrologic Soil Group C.

3.0 HYDROLOGY AND HYDRAULICS

3.1 Analysis Objective

The objective of this hydrologic and hydraulic analysis is to evaluate the peak runoff from existing and proposed conditions to develop mitigation plans that will provide the detention storage needed to mitigate for the proposed developments and cause no adverse impacts to the receiving streams.

3.2 Hydrologic Methodology

The hydrologic methods used in this analysis intend to be consistent with the City of Magnolia Unified Development Code. The model was evaluated under 100-year Atlas 14 storm conditions. Hydrology Studio was used to analyze both existing and proposed condition runoff hydrographs.

The NRCS Unit Hydrograph Watershed method characterizes watersheds by a Runoff Curve Number, (CN) derived from soils and land cover, and a Time of Concentration (Tc) based on watershed geometry and flow path. Table 2 and Table 3 – Values of SCS Curve Number for Urban and Suburban Areas were used to determine the weighted CN number for each drainage area. This method utilizes an urbanized curve number which is derived from the land use and hydrologic soil group. The hydrologic soil group was obtained from USGS web soil survey.

The time of concentration used within the NRCS is known colloquially as the velocity method. The velocity method assumes that time of concentration is the sum of travel times for segments along the hydraulically most distant flow path. The segments used in the velocity method may be of three types: sheet flow, shallow concentrated flow, and open channel flow.

$$T_c = T_{t1} + T_{t2} + T_{t3} + \ldots T_{tn} \qquad \text{(eq. 15–7)}$$

where:
T_c = time of concentration, h
T_{tn} = travel time of a segment n, h
n = number of segments comprising the total hydraulic length

TABLE 2.10 Values of SCS Curve Number for Rural Areas

Land Use Description	Hydrologic Soil Group: A	B	C	D
Fallow				
Straight Row	77	86	91	94
Row Crops				
Straight Row, Poor Condition	72	81	88	91
Straight Row, Good Condition	67	78	85	89
Contoured, Poor Condition	70	79	84	88
Contoured, Good Condition	65	75	82	86
Contoured and Terraced, Poor Condition	66	74	80	82
Contoured and Terraced, Good Condition	62	71	78	81
Small Grain				
Straight Row, Poor Condition	65	76	84	88
Straight Row, Good Condition	63	75	83	87
Contoured, Poor Condition	63	74	82	85
Contoured, Good Condition	61	73	81	84
Contoured and Terraced, Poor Condition	61	72	79	82
Contoured and Terraced, Good Condition	59	70	78	81
Close-Seeded Legumes or Rotation Meadow				
Straight Row, Poor Condition	66	77	85	89
Straight Row, Good Condition	58	72	81	85
Contoured, Poor Condition	64	75	83	85
Contoured, Good Condition	55	69	78	83
Contoured and Terraced, Poor Condition	63	73	80	83
Contoured and Terraced, Good Condition	51	67	76	80
Pasture or Range				
Poor Condition	68	79	86	89
Fair Condition	49	69	79	84
Good Condition	39	61	74	80
Contoured, Poor Condition	47	67	81	88
Contoured, Fair Condition	25	59	75	83
Contoured, Good Condition	6	35	70	79
Meadow, Good Condition	30	58	71	78
Woods or Forest Land				
Poor Condition	45	66	77	83
Fair Condition	36	60	73	79
Good Condition	25	55	70	77
Farmsteads	59	74	82	86

Source: [McCuen, 1982]

Table 2 – SCS Curve Numbers for Rural Areas

TABLE 2.11 Values of SCS Curve Number for Urban and Suburban Areas

Land Use Description	Hydrologic Soil Group A	B	C	D
Residential				
1/8 acre or less average lots (65% impervious)	77	85	90	92
1/4 acre average lots (38% impervious)	61	75	83	87
1/3 acre average lots (35% impervious)	57	72	81	86
1/2 acre average lots (25% impervious)	54	70	80	85
1 acre average lots (20% impervious)	51	68	79	84
Paved parking lots, roofs, driveways, etc.	98	98	98	98
Streets and Roads				
Paved with curbs and storm sewers	98	98	98	98
gravel	76	85	89	91
dirt	72	82	87	89
Commercial & Business Areas (85% Impervious)	89	92	94	95
Industrial Districts (72% Impervious)	81	88	91	93
Open Spaces, Lawns, Parks, Golf Courses, Cemeteries, etc.				
good condition: grass cover on 75% or more	39	61	74	80
fair condition: grass cover on 50% to 75%	49	69	79	84

Source: [McCuen, 1982]

Table 2B – SCS Curve Numbers for Urban Areas

For watersheds with varying land uses and soil types, composite Curve Numbers may be computed by determining the Curve Number and drainage area associated with each land use and/or soil category. The composite Curve Number may then be computed using the following equation:

$$CN_W = \sum \frac{(CN_i \times A_i)}{A_T} \qquad \textbf{Equation 50-5}$$

CN_w = weighted Curve Number;
CN_i = Curve Number for various land uses and soil types;

Table 2C – Composite Curve Number Formula

Hydrological Soil	Type of soil	Runoff Potential	Final Infiltration Rate (mm/hr)	Remarks
Group A	Deep, well-drained sands and gravels	Low	>7.5	High rate of water transmission
Group B	Moderately deep, well-drained with moderately fine to coarse textures	Moderate	3.8-7.5	Moderate rate of water transmission
Group C	Clay loams, shallow sandy loam, soils with moderately fine to fine textures	Moderately high	1.3-3.8	Moderate rate of water transmission
Group D	Clay soils that swell significantly when wet, heavy plastic and soils with a permanent high water table	High	<1.3	Low rate of water transmission

Table 3 – USDA-SCS Hydrologic Soil Group Classification

3.3 Watershed Delineation

Watershed boundaries, drainage areas, and flow paths were determined and defined utilizing satellite imagery, LiDAR data collected in 2023, and the spatial analyst tools from ArcGIS.

3.4 Tailwater Conditions

25 and 100-year water surface elevations (WSE) were determined by taking a cross section of the pedestrian walkway 54’ downstream of the pond and then modeling it as a weir in studio express. The depth of flow over this walkway was then used in the hydrology studio model. The 25 and 100-year WSE from the cross sections were 243.43’ and 243.60’ respectively. These were shown to have no impact on the outlet structures of the pond.

3.5 Storage Method

The storage method was developed from a stage storage curve based off proposed contour areas within the detention ponds. The Stage-Storage tables for the proposed detention pond are included in Section 5.0 of this report.

4.0 PROPOSED DRAINAGE PLAN

4.1 Description

The developed northeastern runoff is encompassed by watershed Post DA 1. The developed southeastern runoff is encompassed by watershed Post DA 2. Any offsite runoff flowing into the development is included in OS 1 and will be routed around the property through the proposed swale. The size of the watershed area flowing offsite to the south has been decreased from 2.96 in the pre developed condition, to 1.58 acres in the post developed condition.

The proposed Pond 1 consists of a detention basin with a 5' maintenance berm and 3:1 side slopes from top of bank at 246.5', to the dry bottom at 243'. Outfall structures are proposed at a single location on the southeastern side of the pond. Exhibit 7 shows the proposed detention plan that was assumed for the proposed conditions model. The proposed drainage areas were delineated and analyzed based on the preliminary land plan.

With the proper construction of pond facilities, the **proposed development will decrease peak flow runoff to the existing channel by approximately 2.34 cfs in the 100-year storm event. Discharge to the south will be reduced by approximately 4.04 cfs in the 100-year storm event. This includes a 10% reduction in the allowable flow set by the existing conditions.**

4.2 Land Use

The proposed Oaks at 6th Street development is approximately 7.52-acre and will consist of ½ acre residential lots. Stormwater will be conveyed through the lots to the pond. For the developed condition, the Oaks at 6th Street runoff will have modified watershed basin areas from the pre-developed condition. The southern adjacent tract will see a significant relief in peak flows due to the decrease in watershed area. The areas draining to the southeast will reduce predeveloped flow rates to prevent any adverse downstream impacts.

4.3 Pond 1

The detention basin is sized to mitigate the increased stormwater runoff from the proposed Oaks at 6th Street development that ultimately flows to Arnold Branch. The detention basin will have approximately 3.0 feet of storage depth and contain at least six inches of freeboard. The basin is designed to incorporate 5-foot maintenance berms and 3:1 side slopes. The outfall structure of Pond 1 consists of: (1) 18" HDPE culvert, and (1) 15' restrictor orifice. See **Table 4 – Pond 1 Stage Storage** for the storage provided by the basin at various stages.

5.0 POND VOLUME STAGE-STORAGE

DETENTION POND STAGE STORAGE					
POND 1					
Contour Elevation	**Contour Area**	**Depth**	**Incremental Volume**	**Cumul. Volume (cu-ft)**	**Cumul. Volume (ac-ft)**
243	22,440 sq-ft	N/A	N/A	0.0 cu-ft	N/A
244	28,622 sq-ft	1.00	13,467 cu-ft	25,390 cu-ft	0.58 ac-ft
245	35,331 sq-ft	1.00	16,977 cu-ft	57,661 cu-ft	1.32 ac-ft
246	40,592 sq-ft	1.00	19,631 cu-ft	95,607 cu-ft	2.19 ac-ft
246.5	43,246 sq-ft	0.50	20,954 cu-ft	116,561 cu-ft	Freeboard

Table 4 – Pond 1 Stage Storage

EXHIBITS

Exhibit 1 – Proposed Site Plan

Exhibit 2 – Existing Land Use Map

Exhibit 3 – Proposed Land Use Map

Exhibit 4 – Existing Drainage Area Map

Exhibit 5 – Proposed Drainage Area Map

Exhibit 6 – FEMA FIRM

Exhibit 7 – Detention Pond Plan and Profile

LOCATION MAP
N.T.S.

THE OAKS AT 6TH STREET

Legend

- Lot Lines
- Pond 1
- Proposed Channel

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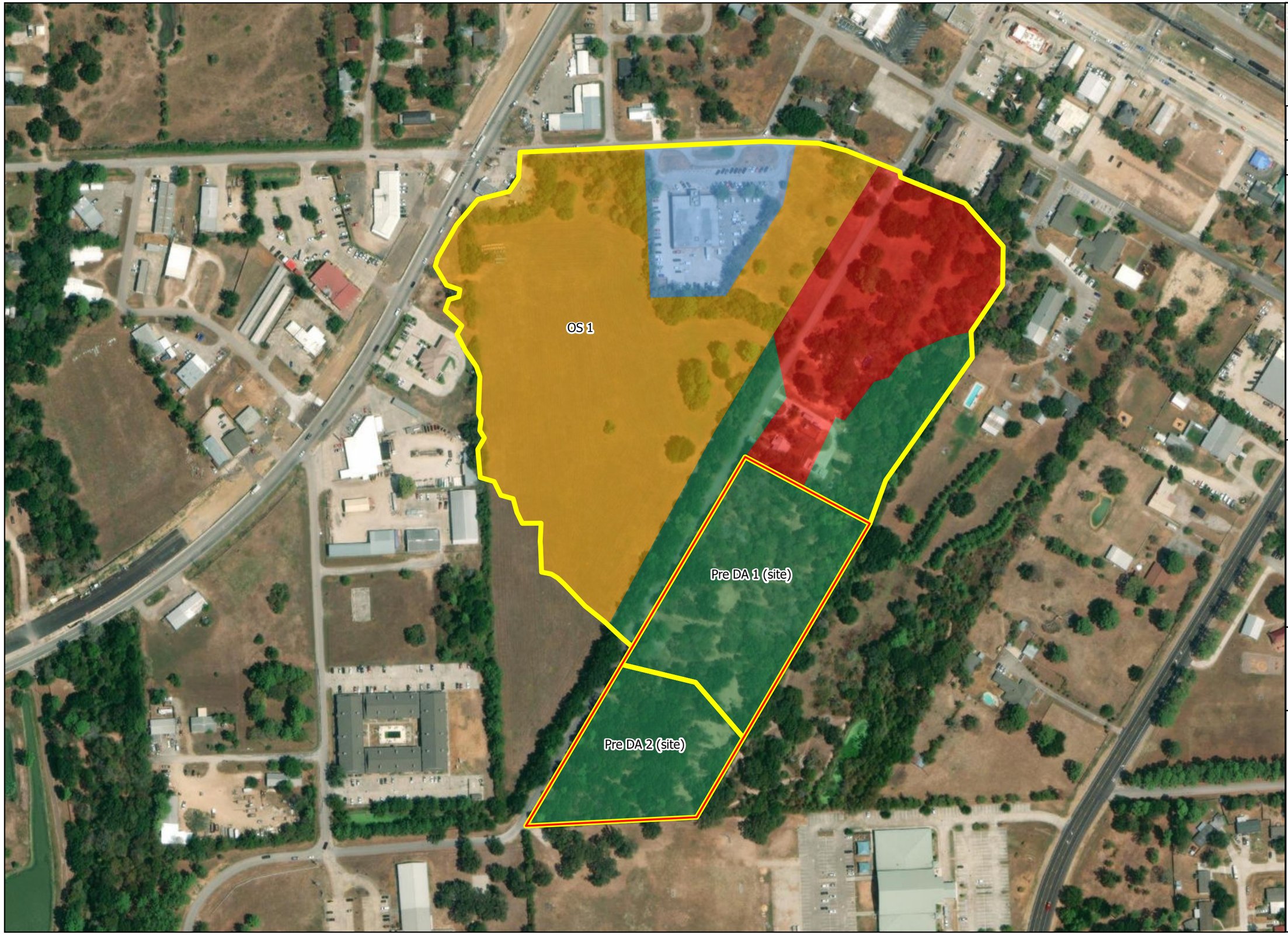
Exhibit 1 -
Proposed Site Plan

N
W
E
S

0 25 50 100
US Feet



LOCATION MAP N.T.S.

THE OAKS AT 6TH STREET

Legend

- Site Boundary
- Existing Drainage Areas

Land Use

- Woods or Forest Land - Fair Condition
- 1/2 Acre Average Lots (25% Impervious)
- Pasture - Fair Condition
- Commercial

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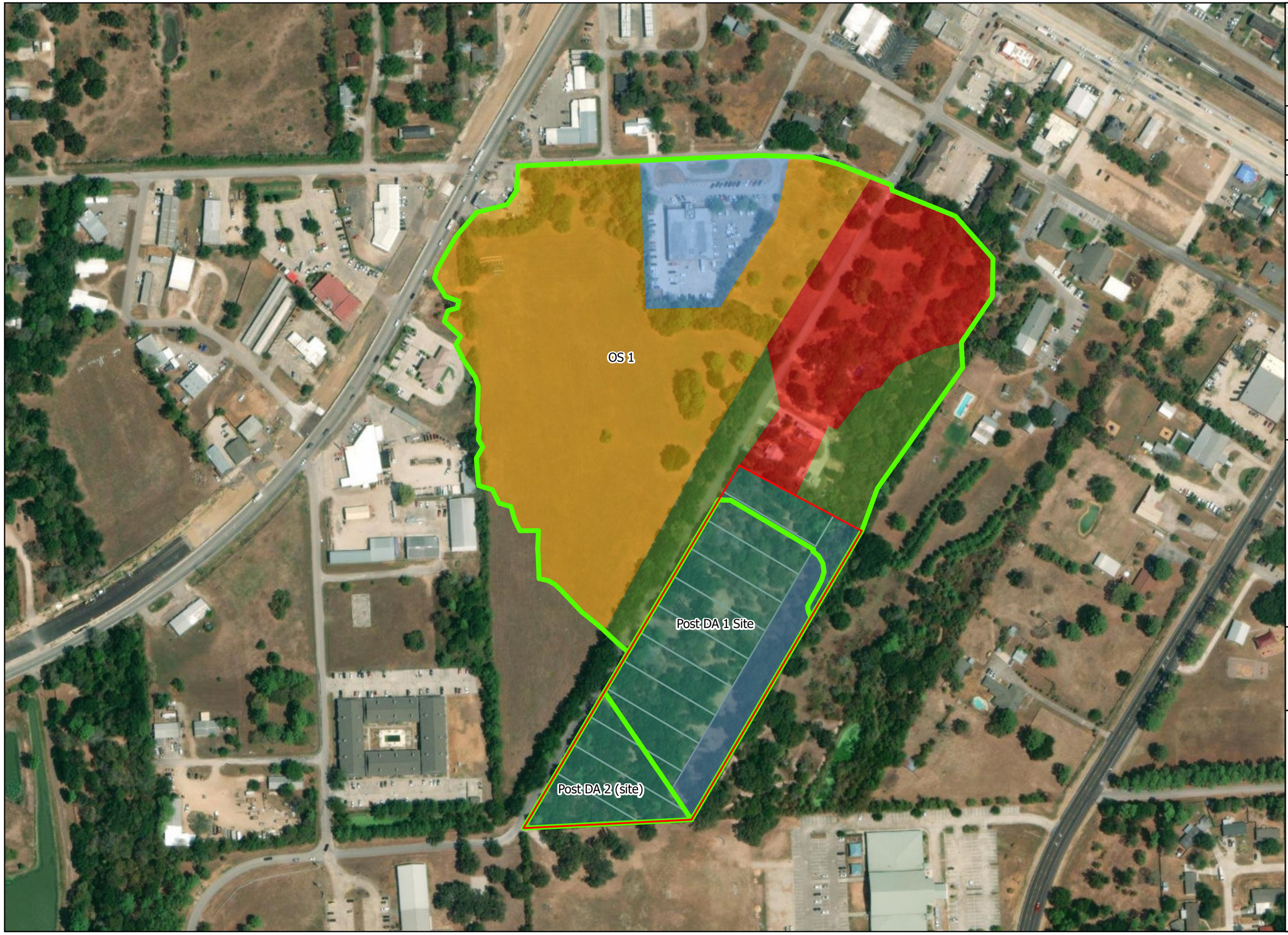
Exhibit 2 - Existing Land Use Map

N
W E
S

0 70 140 280
US Feet



LOCATION MAP N.T.S.

THE OAKS AT 6TH STREET

Legend

- Site Boundary
- Proposed Boundary
- Lot Lines

Land Use

- Woods or Forest Land - Fair Condition
- Existing 1/2 Acre Average Lots (25% Impervious)
- Proposed 1/2 Acre Average Lots (25% Impervious)
- Pond 1
- Commercial
- Pasture - Fair Condition

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Firm No. 21819

Exhibit 3 - Proposed Land Use Map

N
W E
S

0 70 140 280
US Feet

LOCATION MAP
N.T.S.

THE OAKS AT 6TH STREET

Legend

- Site Boundary
- Existing Boundary
- 1ft Contours

TEXAS PROFESSIONAL
ENGINEERING
Firm No. 21819

Exhibit 4 - Existing Drainage Area Map

N
W E
S

0 80 160 320
US Feet

LOCATION MAP N.T.S.

THE OAKS AT 6TH STREET

Legend

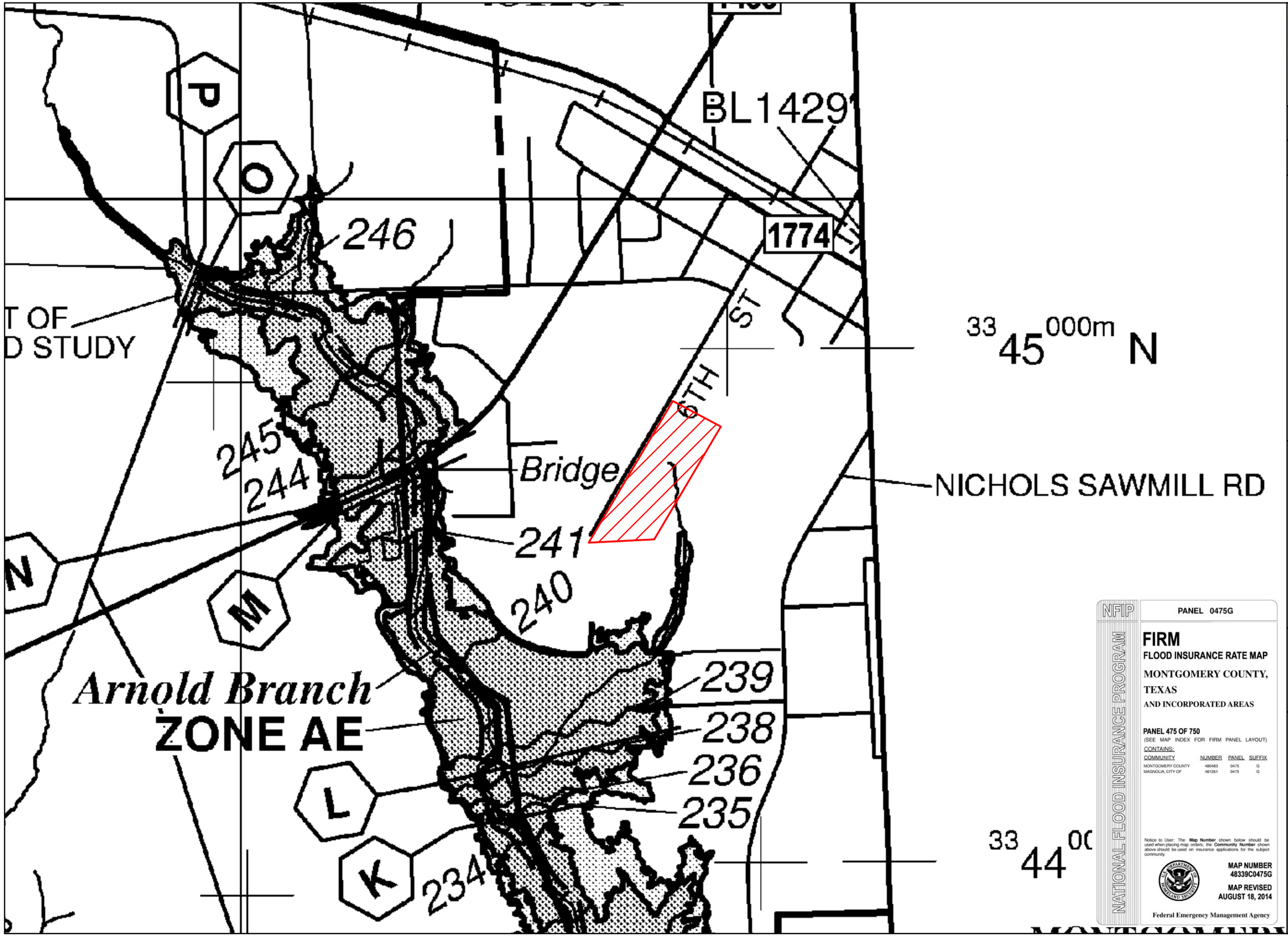
- Proposed Boundary
- Site Boundary
- Lot Lines
- 1ft Contours

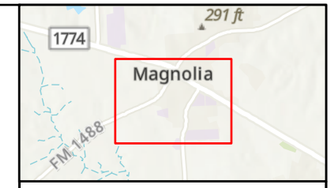
TEXAS PROFESSIONAL ENGINEERING
Firm No. 21819

Exhibit 5 - Proposed Drainage Area Map

N
W E
S

0 70 140 280
US Feet





LOCATION MAP
N.T.S.

THE OAKS AT 6TH STREET

Legend

Site Boundary

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0475G

FIRM

FLOOD INSURANCE RATE MAP

MONTGOMERY COUNTY, TEXAS

AND INCORPORATED AREAS

PANEL 475 OF 750

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
MONTGOMERY COUNTY	480483	0475	G
MAGNOLIA, CITY OF	481261	0475	G

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
48339C0475G

MAP REVISED
AUGUST 18, 2014

Federal Emergency Management Agency

TEXAS PROFESSIONAL ENGINEERING
Firm No. 21819

Exhibit 6 -
FEMA FIRM

N
W E
S

0 180 360 720
US Feet

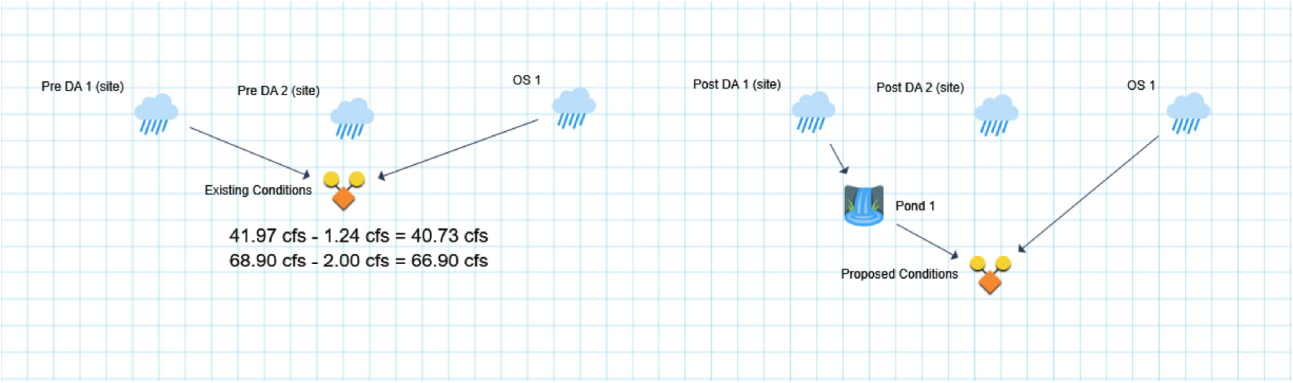
APPENDIX 1 – HYDROLOGY STUDIO RESULT

Basin Model

Hydrology Studio v 3.0.0.29

Project Name:

12-13-2023



Hydrograph Report

Project Name:

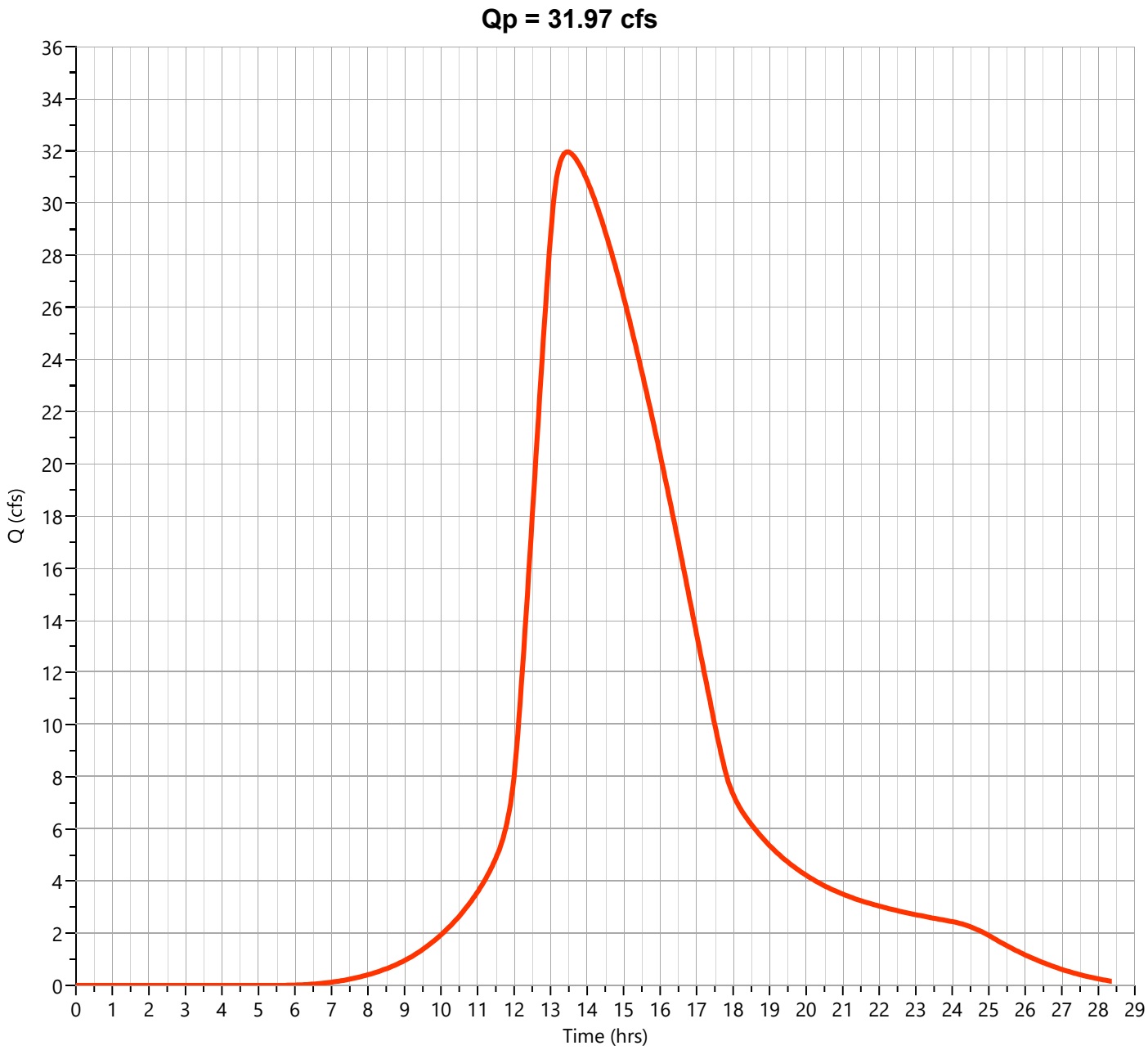
Hydrology Studio v 3.0.0.29

12-13-2023

OS 1

Hyd. No. 1

Hydrograph Type	= NRCS Runoff	Peak Flow	= 31.97 cfs
Storm Frequency	= 25-yr	Time to Peak	= 13.47 hrs
Time Interval	= 2 min	Runoff Volume	= 603,486 cuft
Drainage Area	= 21.37 ac	Curve Number	= 76
Tc Method	= User	Time of Conc. (Tc)	= 113.3 min
Total Rainfall	= 10.80 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 250



Hydrograph Report

Project Name:

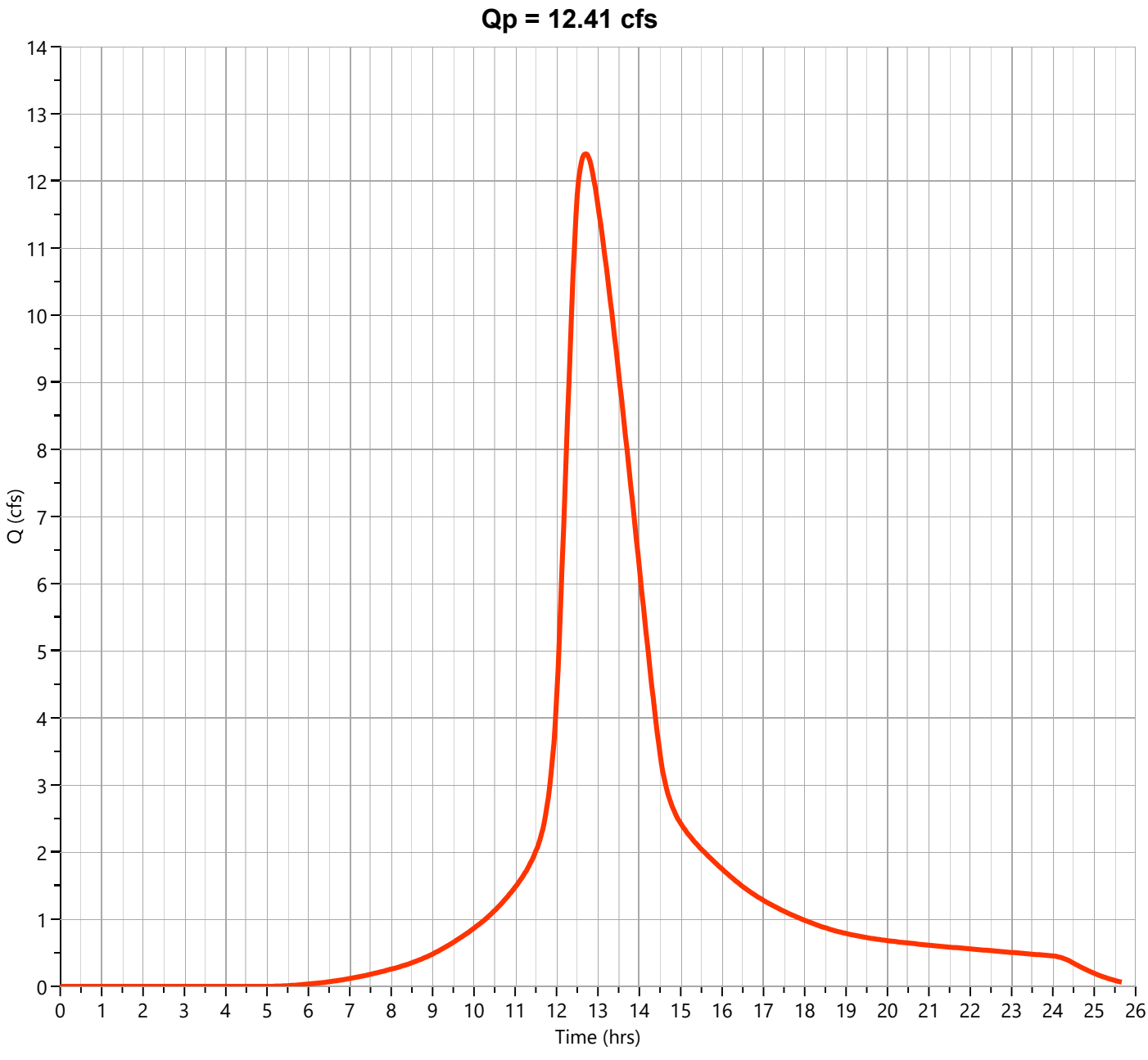
Hydrology Studio v 3.0.0.29

12-13-2023

Pre DA 1 (site)

Hyd. No. 2

Hydrograph Type	= NRCS Runoff	Peak Flow	= 12.41 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.70 hrs
Time Interval	= 2 min	Runoff Volume	= 132,018 cuft
Drainage Area	= 4.558 ac	Curve Number	= 78
Tc Method	= User	Time of Conc. (Tc)	= 50.4 min
Total Rainfall	= 10.80 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 250



Hydrograph Report

Project Name:

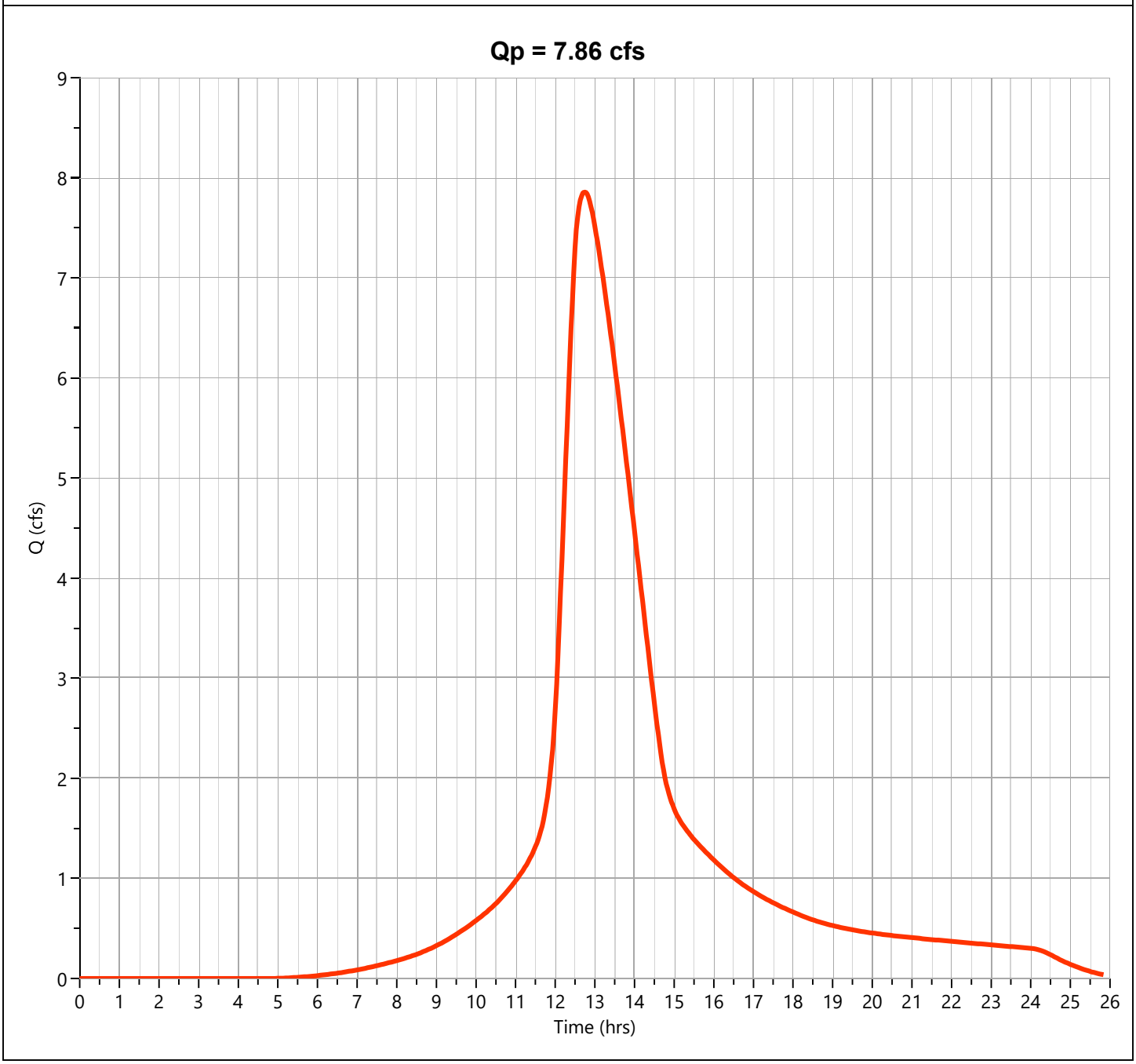
Hydrology Studio v 3.0.0.29

12-13-2023

Pre DA 2 (site)

Hyd. No. 3

Hydrograph Type	= NRCS Runoff	Peak Flow	= 7.861 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.73 hrs
Time Interval	= 2 min	Runoff Volume	= 88,064 cuft
Drainage Area	= 2.96 ac	Curve Number	= 79
Tc Method	= User	Time of Conc. (Tc)	= 51.7 min
Total Rainfall	= 10.80 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 250



Hydrograph Report

Project Name:

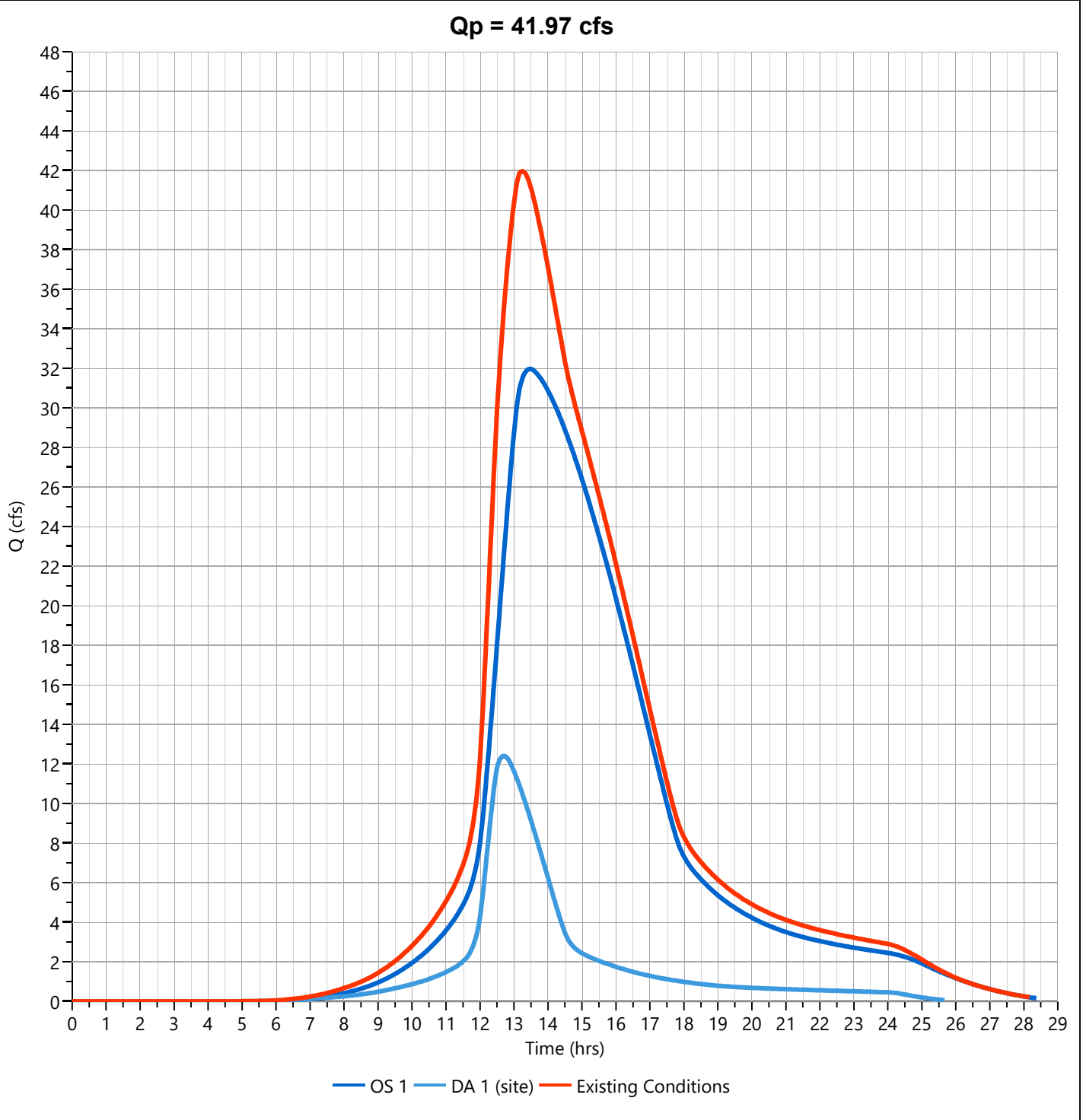
Hydrology Studio v 3.0.0.29

12-13-2023

Existing Conditions

Hyd. No. 4

Hydrograph Type	= Junction	Peak Flow	= 41.97 cfs
Storm Frequency	= 25-yr	Time to Peak	= 13.23 hrs
Time Interval	= 2 min	Hydrograph Volume	= 735,505 cuft
Inflow Hydrographs	= 1, 2	Total Contrib. Area	= 25.928 ac



Hydrograph Report

Project Name:

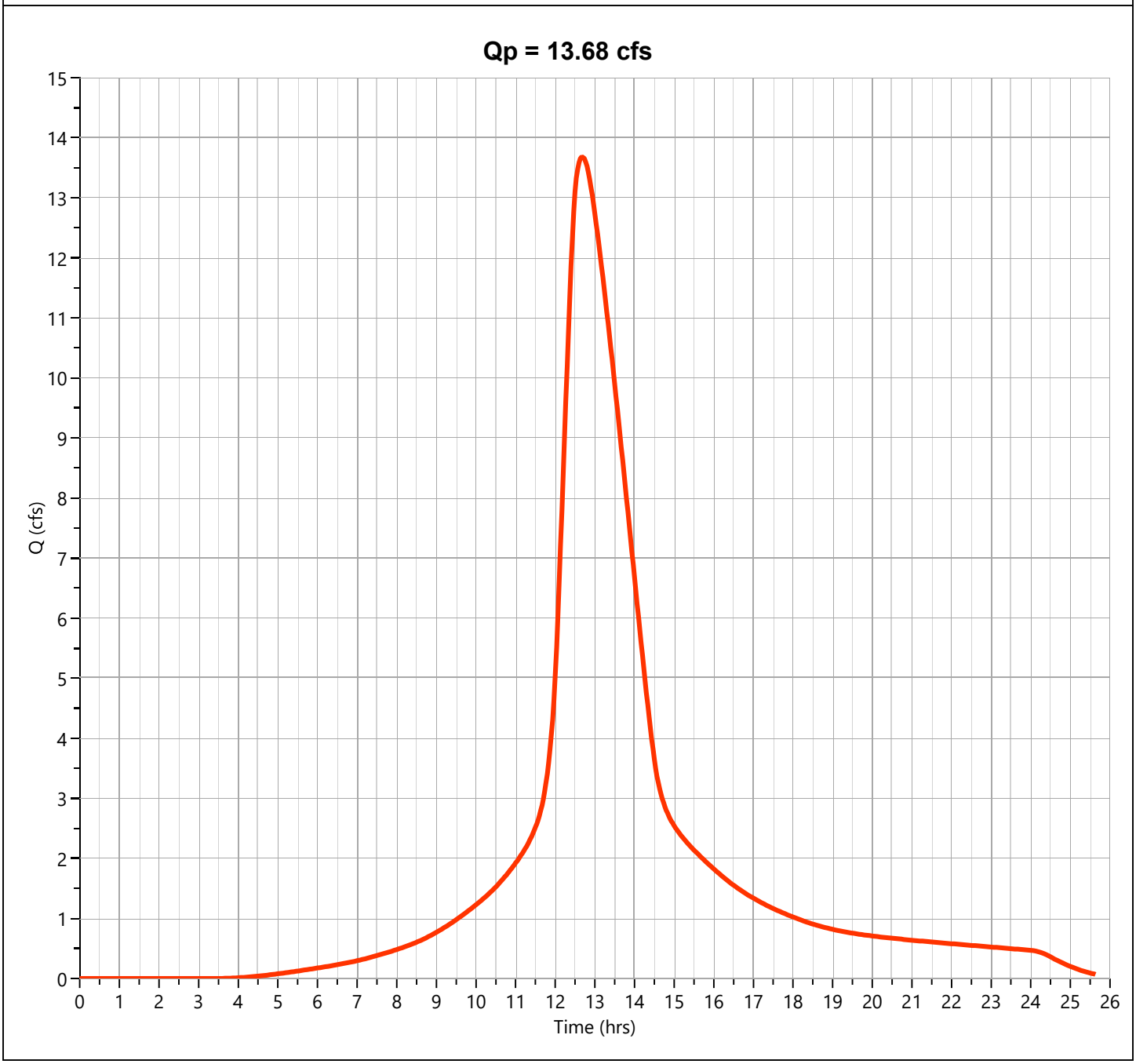
Hydrology Studio v 3.0.0.29

12-13-2023

Post DA 1 (site)

Hyd. No. 5

Hydrograph Type	= NRCS Runoff	Peak Flow	= 13.68 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.70 hrs
Time Interval	= 2 min	Runoff Volume	= 148,356 cuft
Drainage Area	= 4.599 ac	Curve Number	= 85
Tc Method	= User	Time of Conc. (Tc)	= 50.4 min
Total Rainfall	= 10.80 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 250



Hydrograph Report

Project Name:

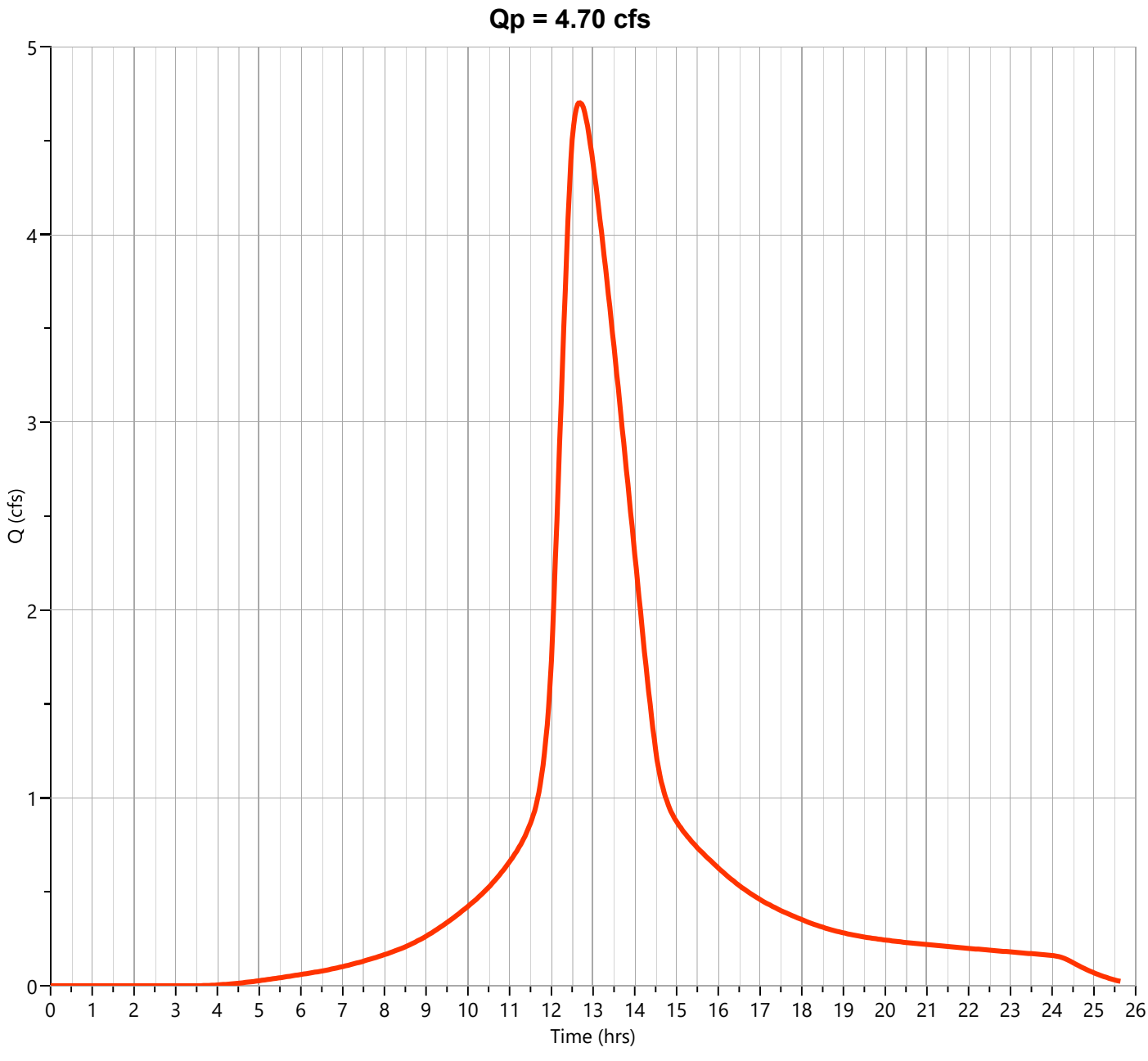
Hydrology Studio v 3.0.0.29

12-13-2023

Post DA 2 (site)

Hyd. No. 6

Hydrograph Type	= NRCS Runoff	Peak Flow	= 4.703 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.70 hrs
Time Interval	= 2 min	Runoff Volume	= 51,000 cuft
Drainage Area	= 1.581 ac	Curve Number	= 85
Tc Method	= User	Time of Conc. (Tc)	= 49.0 min
Total Rainfall	= 10.80 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 250



Hydrograph Report

Project Name:

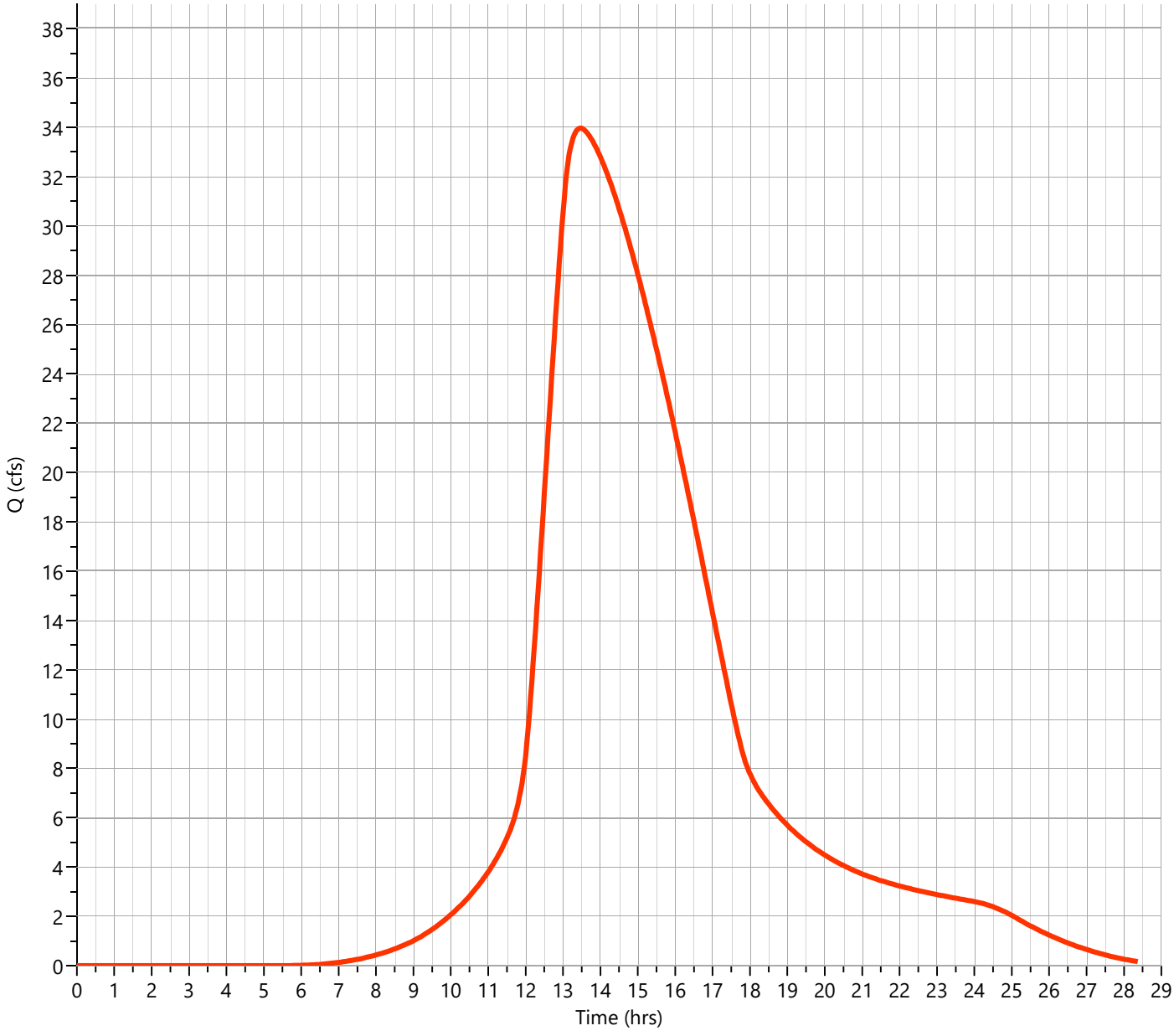
Hydrology Studio v 3.0.0.29

12-13-2023

OS 1

Hyd. No. 7

Hydrograph Type	= NRCS Runoff	Peak Flow	= 33.97 cfs
Storm Frequency	= 25-yr	Time to Peak	= 13.47 hrs
Time Interval	= 2 min	Runoff Volume	= 641,328 cuft
Drainage Area	= 22.71 ac	Curve Number	= 76
Tc Method	= User	Time of Conc. (Tc)	= 113.3 min
Total Rainfall	= 10.80 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 250



Hydrograph Report

Project Name:

Hydrology Studio v 3.0.0.29

12-13-2023

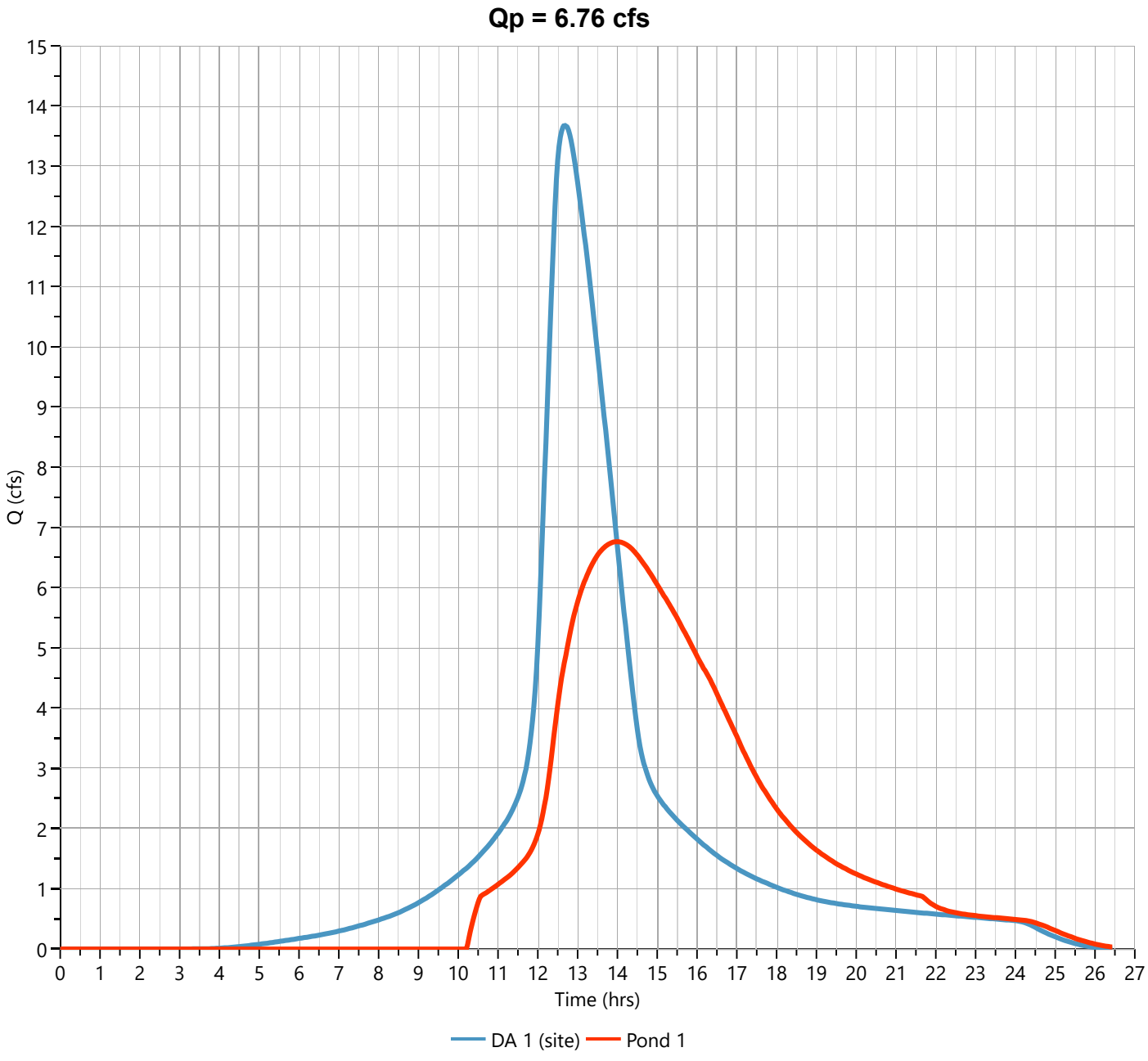
Pond 1

Hyd. No. 8

Hydrograph Type	= Pond Route	Peak Flow	= 6.763 cfs
Storm Frequency	= 25-yr	Time to Peak	= 14.00 hrs
Time Interval	= 2 min	Hydrograph Volume	= 138,816 cuft
Inflow Hydrograph	= 5 - DA 1 (site)	Max. Elevation	= 244.95 ft
Pond Name	= POND 1	Max. Storage	= 55,804 cuft
Routing Option	= Fixed Tailwater	Tailwater Elevation	= 243.43 ft

Pond Routing by Storage Indication Method

Center of mass detention time = 1.77 hrs



Pond Report

Project Name:

Hydrology Studio v 3.0.0.29

12-13-2023

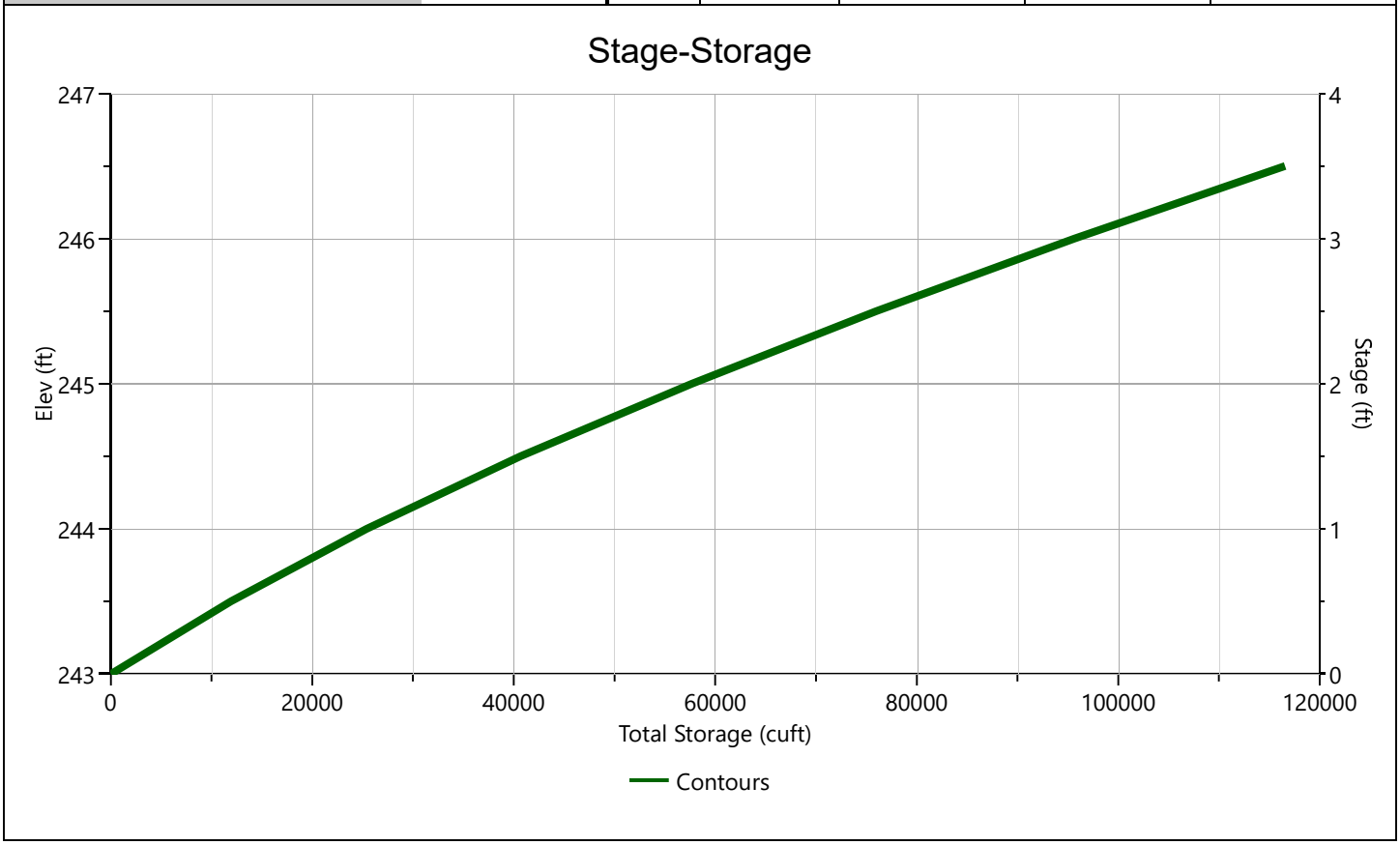
POND 1

Stage-Storage

User Defined Contours	
Description	**Input**
Bottom Elevation, ft	243.00
Voids (%)	100.00
Volume Calc	Conic

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour Area (sqft)	Incr. Storage (cuft)	Total Storage (cuft)
0.00	243.00	22,440	0.000	0.000
0.50	243.50	25,286	11,923	11,923
1.00	244.00	28,622	13,467	25,390
1.50	244.50	32,603	15,294	40,684
2.00	245.00	35,331	16,977	57,661
2.50	245.50	37,953	18,315	75,977
3.00	246.00	40,592	19,631	95,607
3.50	246.50	43,246	20,954	116,561



Pond Report

Project Name:

Hydrology Studio v 3.0.0.29

12-13-2023

POND 1

Stage-Discharge

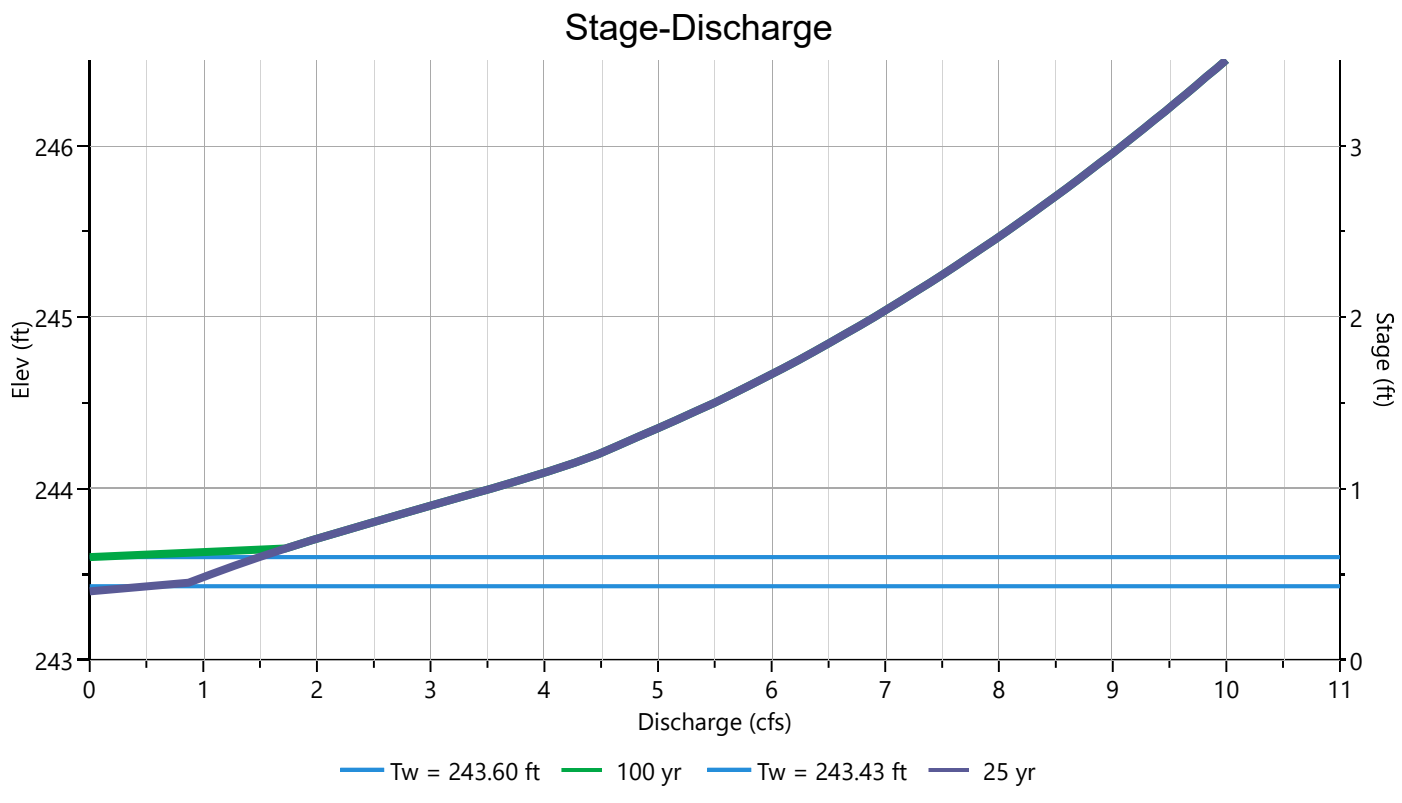
Culvert / Orifices	Culvert w/ Restrictor Plate	Orifices		
		1	2	3
Rise, in	18			
Span, in	18			
No. Barrels	1			
Invert Elevation, ft	Culv: 243.00 15 in Orif: 243.01			
Orifice Coefficient, Co	0.60			
Length, ft	50			
Barrel Slope, %	.1			
N-Value, n	0.013			

Perforated Riser	
Hole Diameter, in	
No. holes	
Invert Elevation, ft	
Height, ft	
Orifice Coefficient, Co	

Weirs	Riser*	Weirs		
		1	2	3
Shape / Type	Circular			
Crest Elevation, ft				
Crest Length, ft				
Angle, deg				
Weir Coefficient, Cw				

Ancillary	
Exfiltration, in/hr	

**Routes through Culvert.*



Pond Report

Project Name:

Hydrology Studio v 3.0.0.29

12-13-2023

POND 1

Stage-Storage-Discharge Summary

Stage (ft)	Elev. (ft)	Storage (cuft)	Culvert (cfs)	Orifices, cfs			Riser (cfs)	Weirs, cfs			Pf Riser (cfs)	Exfil (cfs)	User (cfs)	Total* (cfs)
				1	2	3		1	2	3				
0.00	243.00	0.000	0.000											0.000
0.50	243.50	11,923	1.065 ic											1.065
1.00	244.00	25,390	3.534 ic											3.534
1.50	244.50	40,684	5.495 ic											5.495
2.00	245.00	57,661	6.903 ic											6.903
2.50	245.50	75,977	8.068 ic											8.068
3.00	246.00	95,607	9.086 ic											9.086
3.50	246.50	116,561	10.00 ic											10.00

** No Tailwater. See Stage-Discharge plot for Tw effects. Suffix key: ic = inlet control, oc = outlet control, s = submerged weir*

Pond Report

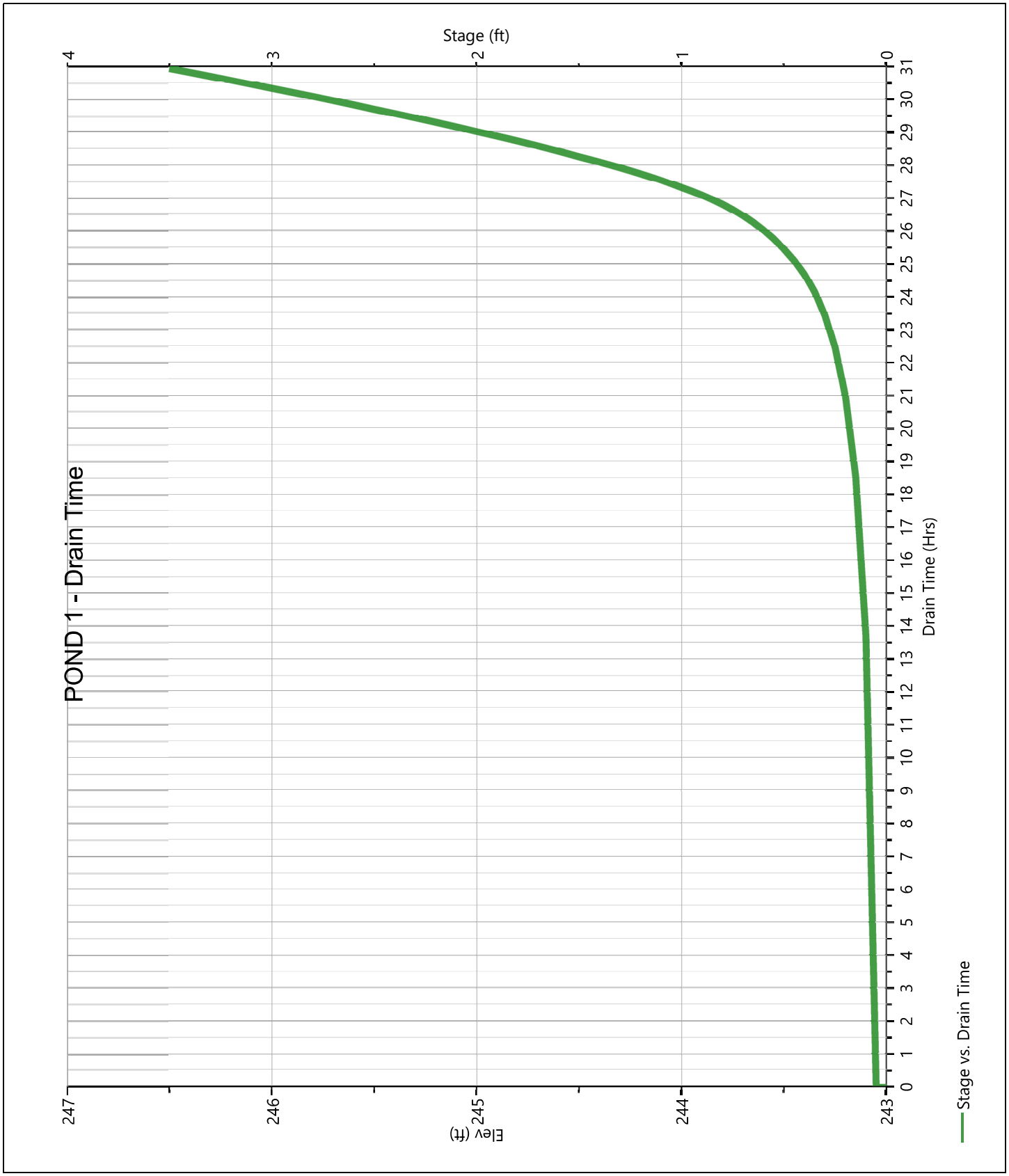
Project Name:

Hydrology Studio v 3.0.0.29

12-13-2023

POND 1

Pond Drawdown



Hydrograph Report

Project Name:

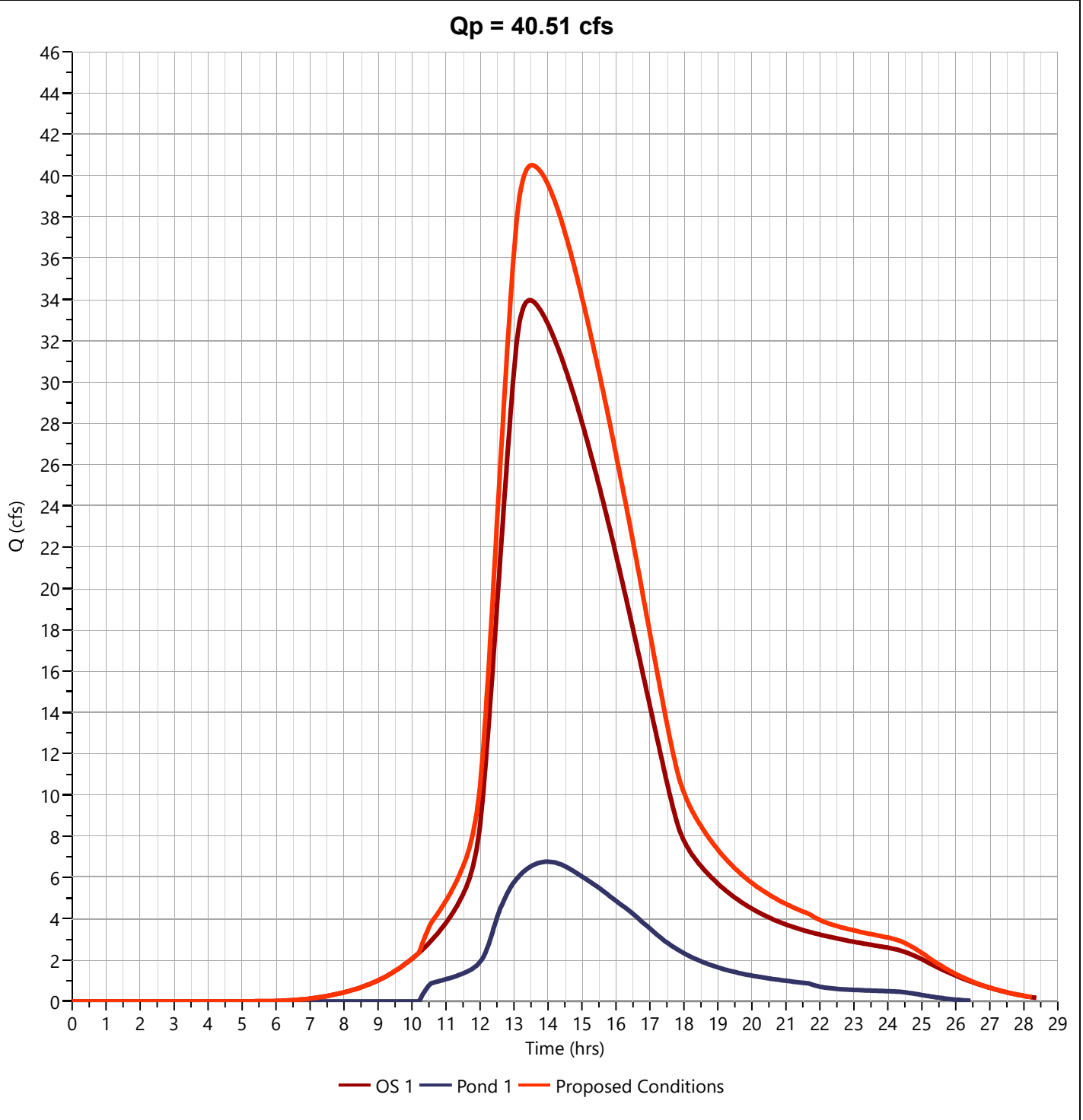
Hydrology Studio v 3.0.0.29

12-13-2023

Proposed Conditions

Hyd. No. 9

Hydrograph Type	= Junction	Peak Flow	= 40.51 cfs
Storm Frequency	= 25-yr	Time to Peak	= 13.53 hrs
Time Interval	= 2 min	Hydrograph Volume	= 780,144 cuft
Inflow Hydrographs	= 7, 8	Total Contrib. Area	= 22.71 ac



Hydrograph Report

Project Name:

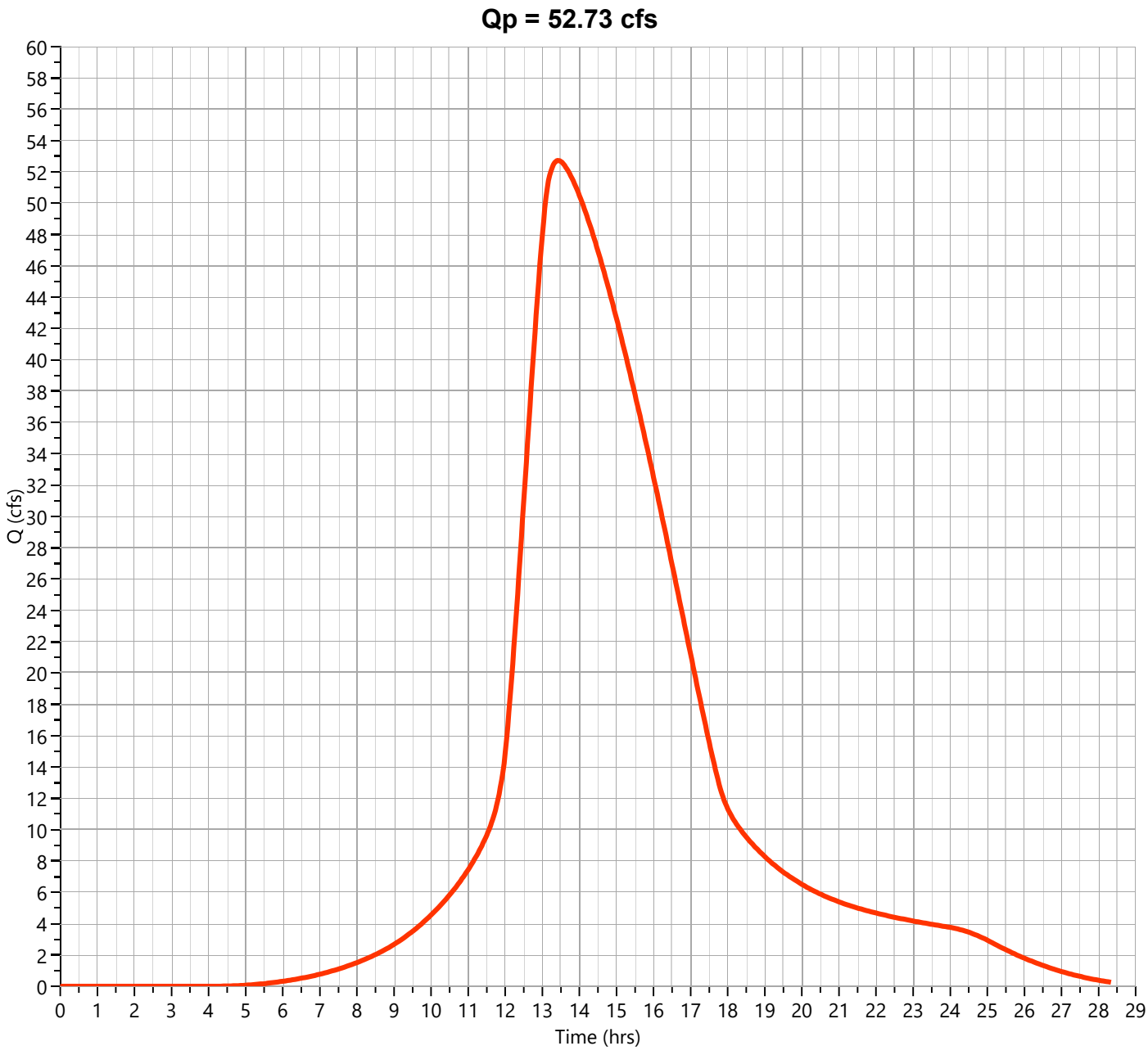
Hydrology Studio v 3.0.0.29

12-13-2023

OS 1

Hyd. No. 1

Hydrograph Type	= NRCS Runoff	Peak Flow	= 52.73 cfs
Storm Frequency	= 100-yr	Time to Peak	= 13.43 hrs
Time Interval	= 2 min	Runoff Volume	= 999,161 cuft
Drainage Area	= 21.37 ac	Curve Number	= 76
Tc Method	= User	Time of Conc. (Tc)	= 113.3 min
Total Rainfall	= 16.10 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 250



Hydrograph Report

Project Name:

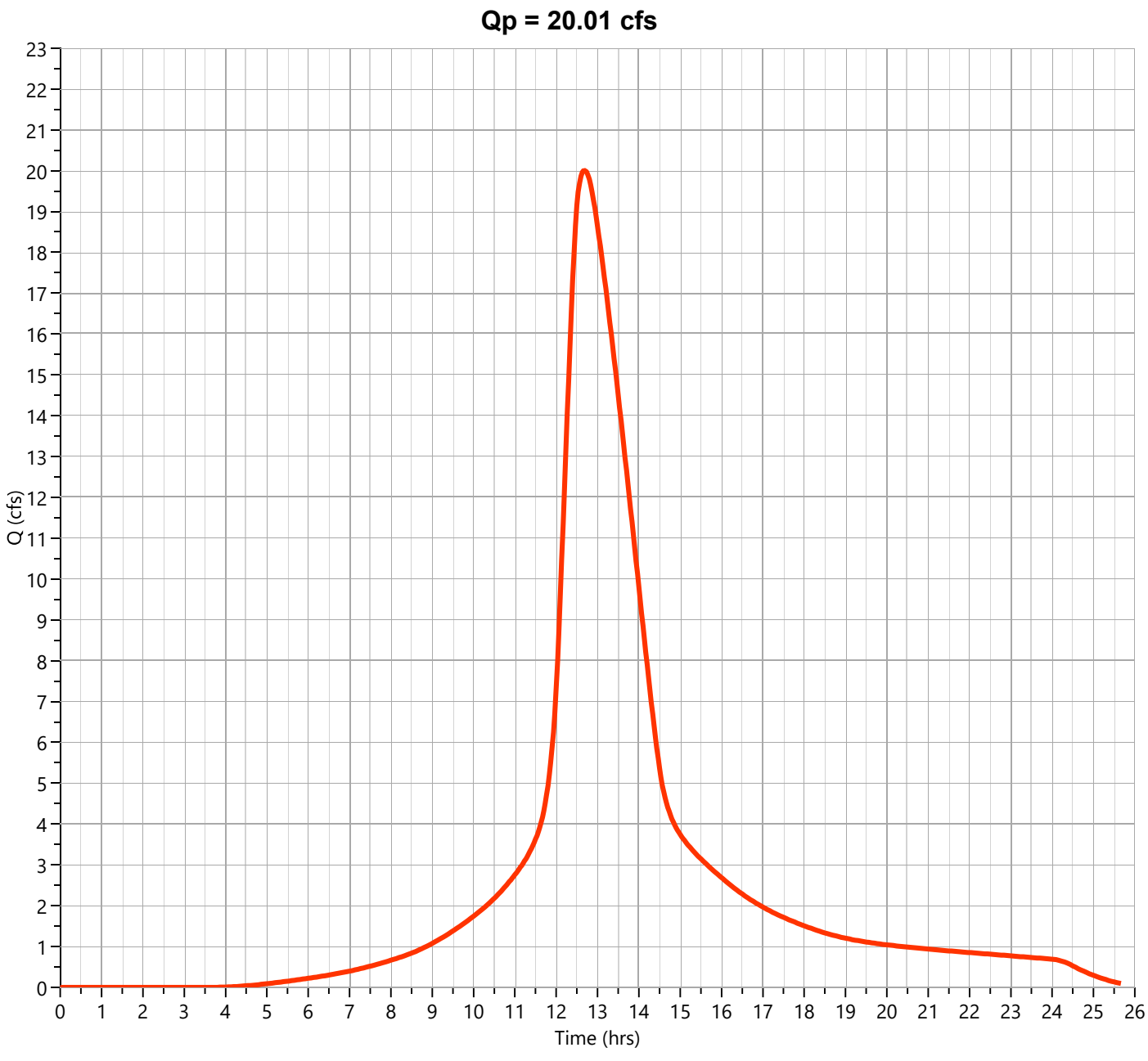
Hydrology Studio v 3.0.0.29

12-13-2023

Pre DA 1 (site)

Hyd. No. 2

Hydrograph Type	= NRCS Runoff	Peak Flow	= 20.01 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.70 hrs
Time Interval	= 2 min	Runoff Volume	= 216,317 cuft
Drainage Area	= 4.558 ac	Curve Number	= 78
Tc Method	= User	Time of Conc. (Tc)	= 50.4 min
Total Rainfall	= 16.10 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 250



Hydrograph Report

Project Name:

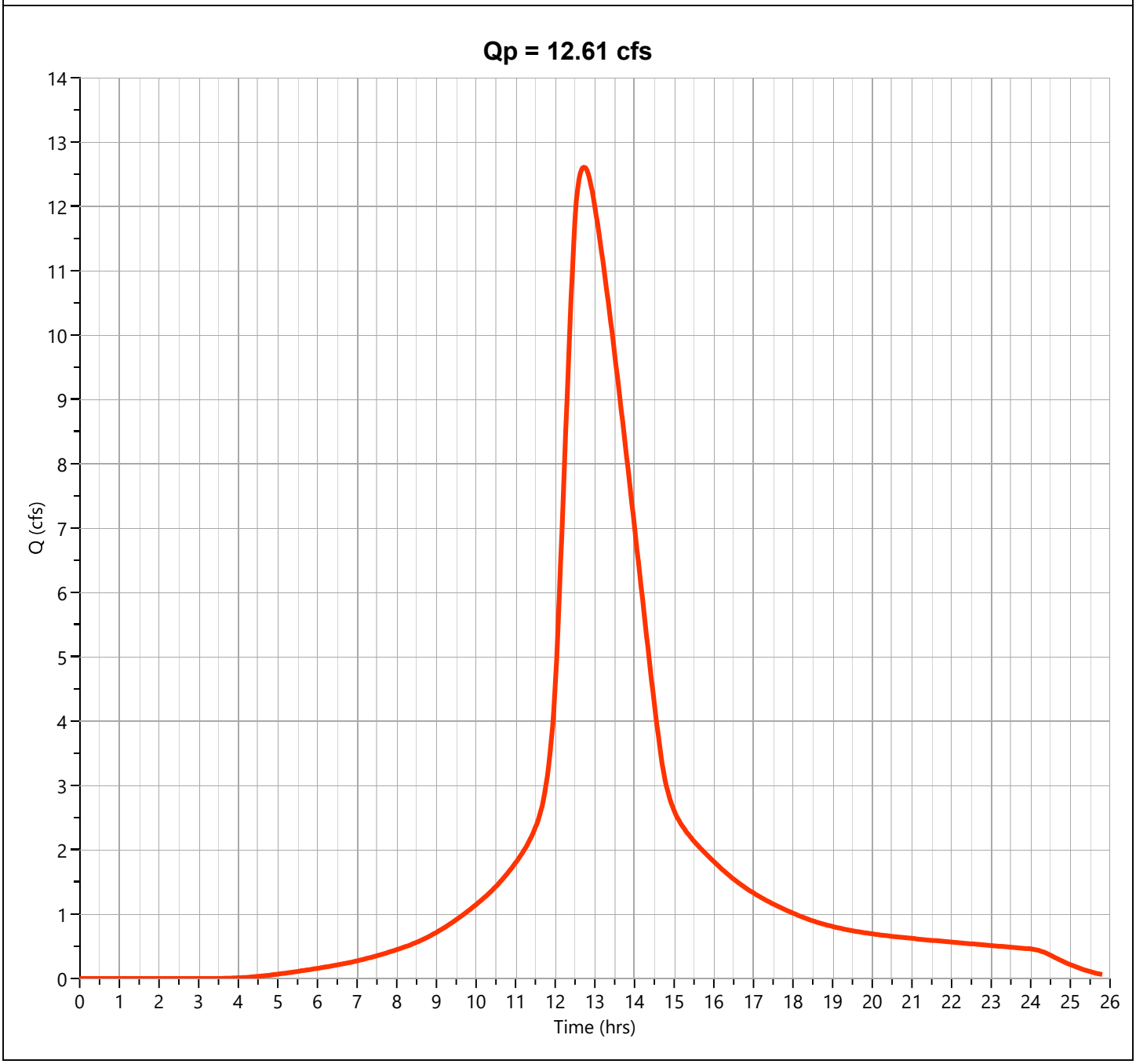
Hydrology Studio v 3.0.0.29

12-13-2023

Pre DA 2 (site)

Hyd. No. 3

Hydrograph Type	= NRCS Runoff	Peak Flow	= 12.61 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.73 hrs
Time Interval	= 2 min	Runoff Volume	= 143,570 cuft
Drainage Area	= 2.96 ac	Curve Number	= 79
Tc Method	= User	Time of Conc. (Tc)	= 51.7 min
Total Rainfall	= 16.10 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 250



Hydrograph Report

Project Name:

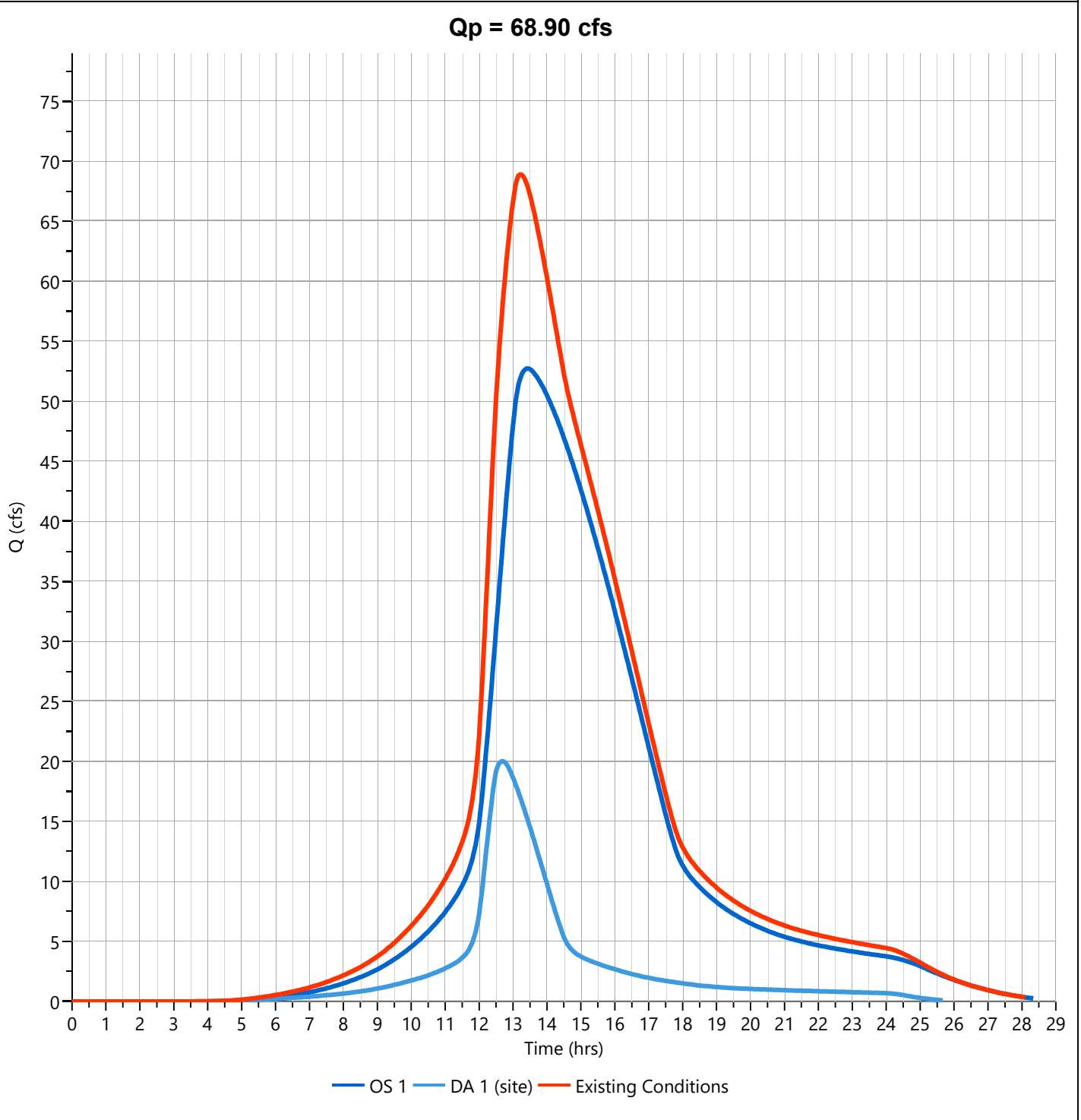
Hydrology Studio v 3.0.0.29

12-13-2023

Existing Conditions

Hyd. No. 4

Hydrograph Type	= Junction	Peak Flow	= 68.90 cfs
Storm Frequency	= 100-yr	Time to Peak	= 13.23 hrs
Time Interval	= 2 min	Hydrograph Volume	= 1,215,479 cuft
Inflow Hydrographs	= 1, 2	Total Contrib. Area	= 25.928 ac



Hydrograph Report

Project Name:

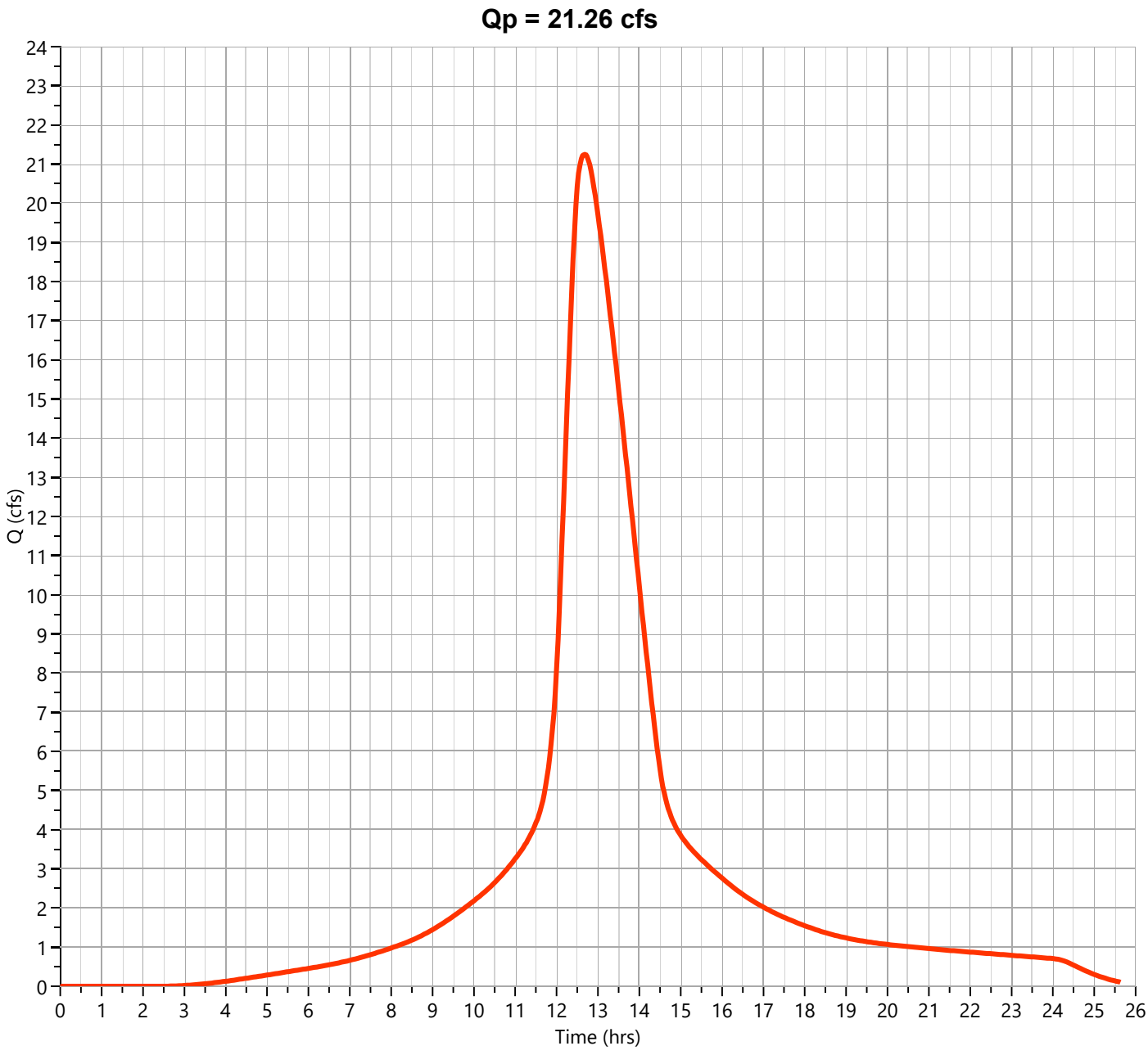
Hydrology Studio v 3.0.0.29

12-13-2023

Post DA 1 (site)

Hyd. No. 5

Hydrograph Type	= NRCS Runoff	Peak Flow	= 21.26 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.67 hrs
Time Interval	= 2 min	Runoff Volume	= 235,052 cuft
Drainage Area	= 4.599 ac	Curve Number	= 85
Tc Method	= User	Time of Conc. (Tc)	= 50.4 min
Total Rainfall	= 16.10 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 250



Hydrograph Report

Project Name:

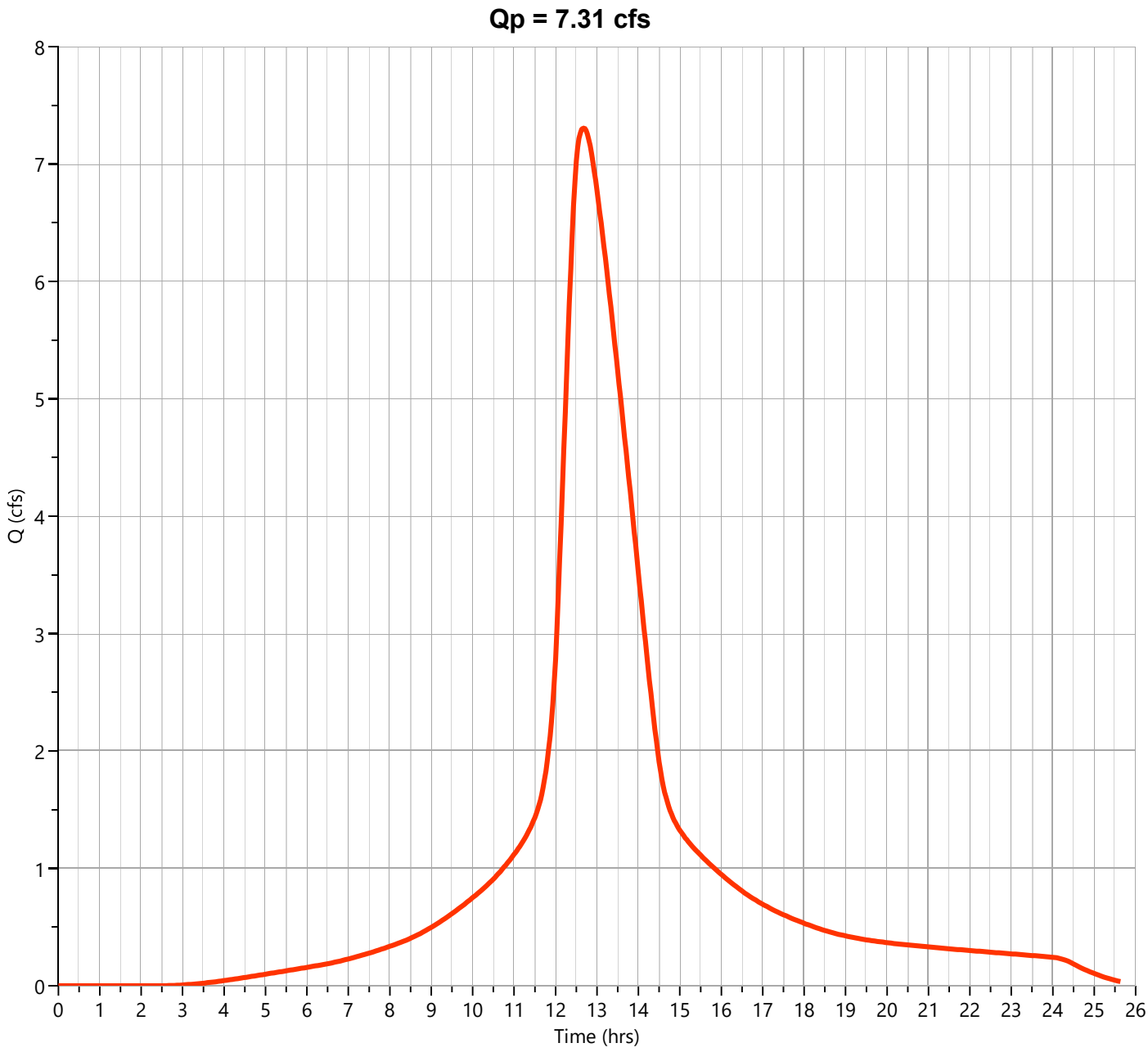
Hydrology Studio v 3.0.0.29

12-13-2023

Post DA 2 (site)

Hyd. No. 6

Hydrograph Type	= NRCS Runoff	Peak Flow	= 7.309 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.67 hrs
Time Interval	= 2 min	Runoff Volume	= 80,804 cuft
Drainage Area	= 1.581 ac	Curve Number	= 85
Tc Method	= User	Time of Conc. (Tc)	= 49.0 min
Total Rainfall	= 16.10 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 250



Hydrograph Report

Project Name:

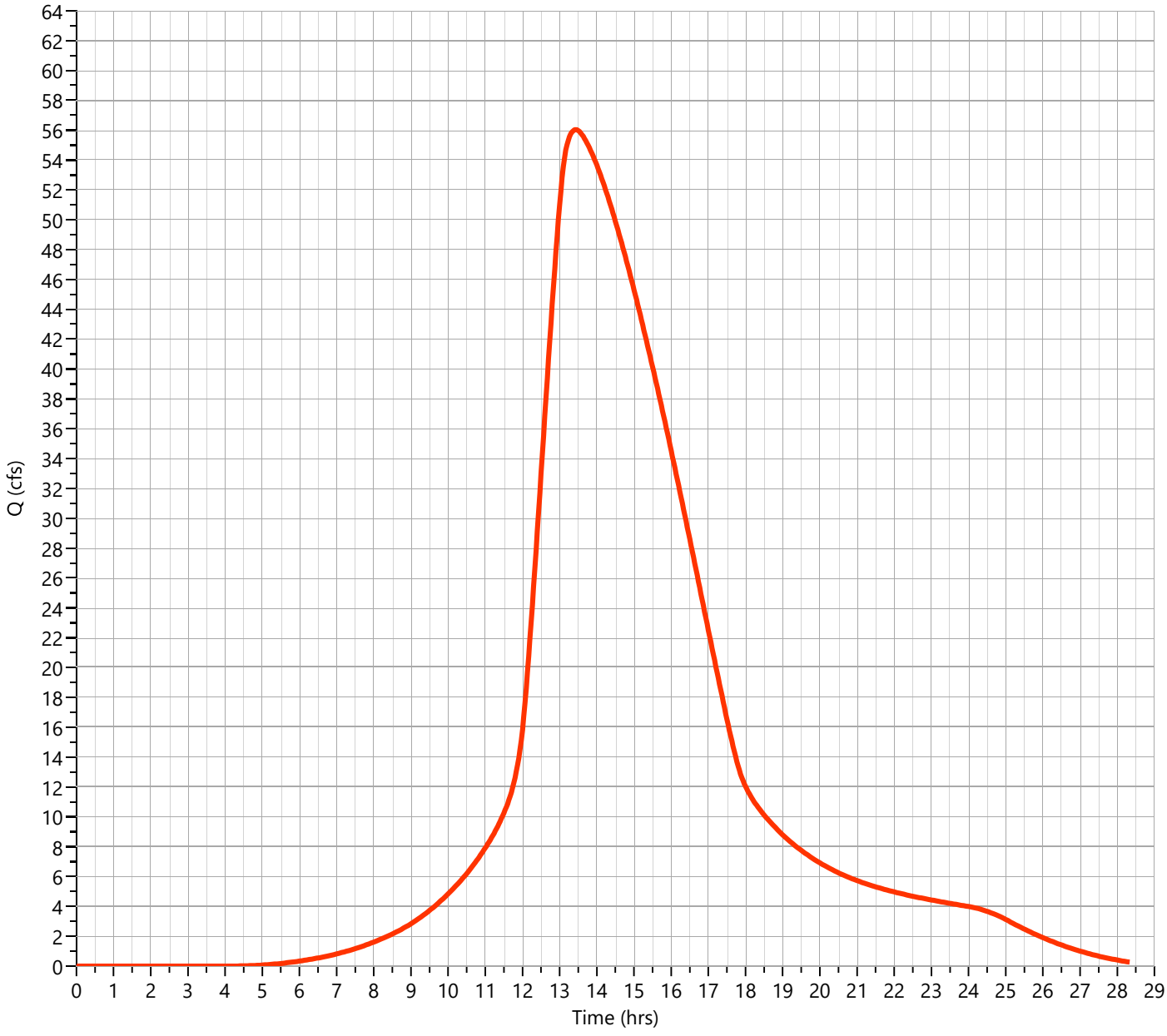
Hydrology Studio v 3.0.0.29

12-13-2023

OS 1

Hyd. No. 7

Hydrograph Type	= NRCS Runoff	Peak Flow	= 56.04 cfs
Storm Frequency	= 100-yr	Time to Peak	= 13.43 hrs
Time Interval	= 2 min	Runoff Volume	= 1,061,813 cuft
Drainage Area	= 22.71 ac	Curve Number	= 76
Tc Method	= User	Time of Conc. (Tc)	= 113.3 min
Total Rainfall	= 16.10 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 250



Hydrograph Report

Project Name:

Hydrology Studio v 3.0.0.29

12-13-2023

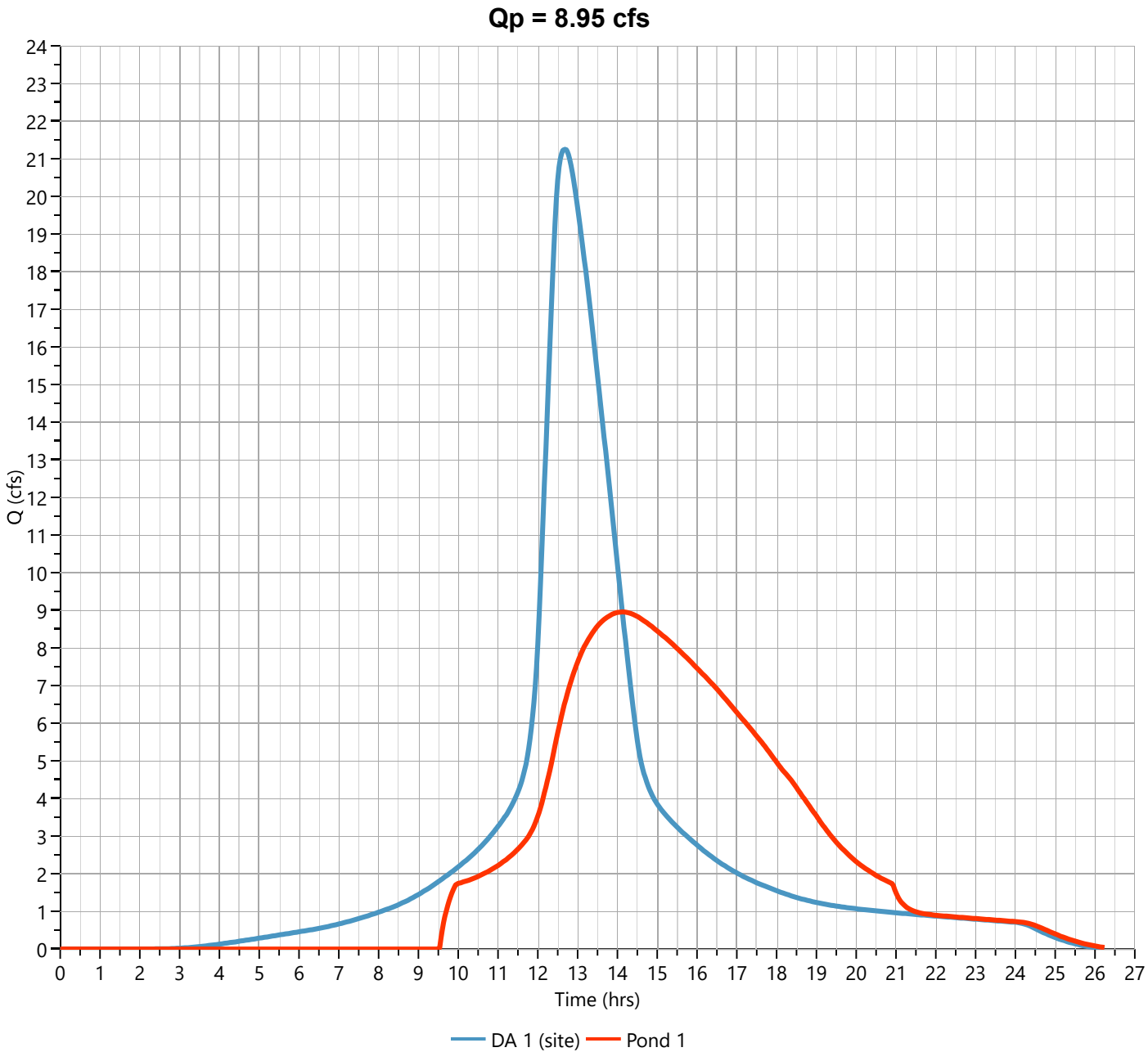
Pond 1

Hyd. No. 8

Hydrograph Type	= Pond Route	Peak Flow	= 8.952 cfs
Storm Frequency	= 100-yr	Time to Peak	= 14.13 hrs
Time Interval	= 2 min	Hydrograph Volume	= 220,435 cuft
Inflow Hydrograph	= 5 - DA 1 (site)	Max. Elevation	= 245.93 ft
Pond Name	= POND 1	Max. Storage	= 92,900 cuft
Routing Option	= Fixed Tailwater	Tailwater Elevation	= 243.60 ft

Pond Routing by Storage Indication Method

Center of mass detention time = 1.97 hrs



Hydrograph Report

Project Name:

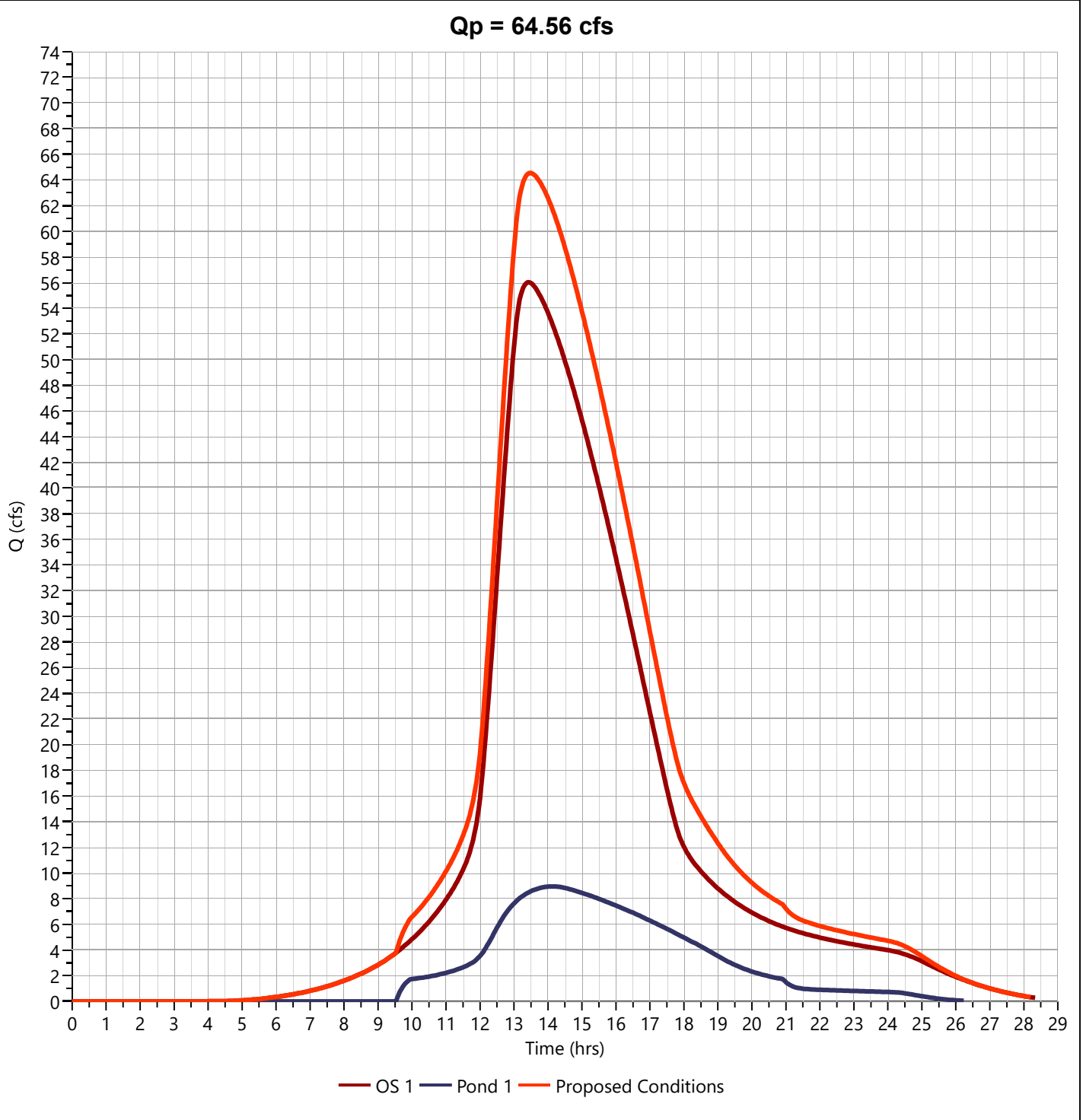
Hydrology Studio v 3.0.0.29

12-13-2023

Proposed Conditions

Hyd. No. 9

Hydrograph Type	= Junction	Peak Flow	= 64.56 cfs
Storm Frequency	= 100-yr	Time to Peak	= 13.47 hrs
Time Interval	= 2 min	Hydrograph Volume	= 1,282,248 cuft
Inflow Hydrographs	= 7, 8	Total Contrib. Area	= 22.71 ac



APPENDIX 2 – POND TAILWATER MODEL

Channel Report

Project filename: Pond Tailwater Cross Section.stx

Studio Express by Hydrology Studio v 1.0.0.14

12-13-2023

Pedestrian Walkway

Channel 1

USER-DEFINED

Total Depth = 1.75 ft

Invert Elevation = 242.67 ft

Channel Slope = 2.100 %

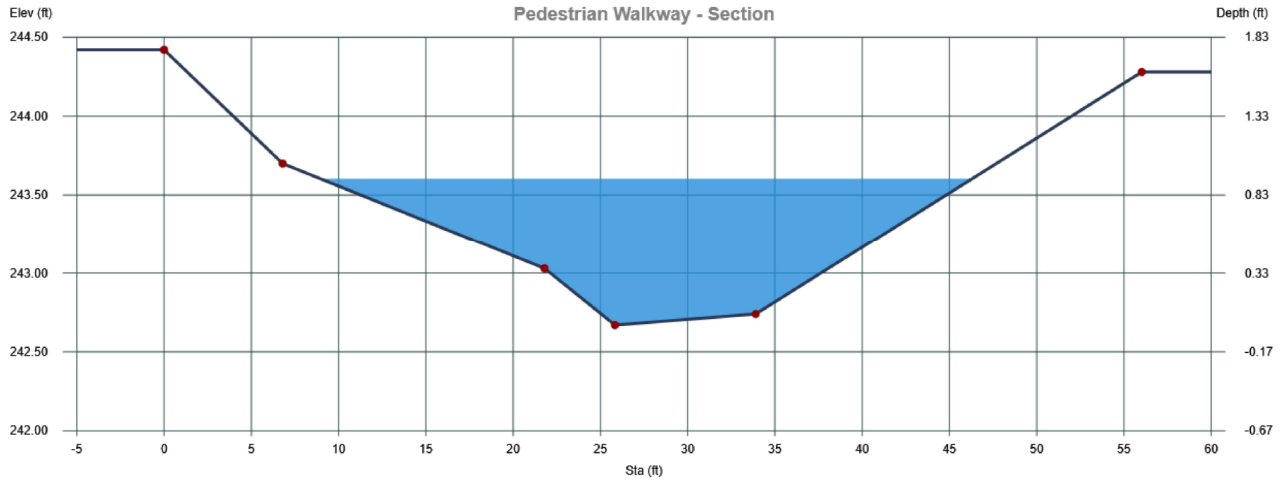
Manning's n = Composite

DISCHARGE

Method = User-defined

CALCULATION SAMPLE 100 Yr

Flow	Depth	Area	Velocity	WP	n-value	Crit Depth	HGL	EGL	Max Shear	Top Width
(cfs)	(ft)	(sqft)	(ft/s)	(ft)	Composite	(ft)	(ft)	(ft)	(lb/sqft)	(ft)
64.89	0.93	19.20	3.38	37.28	0.040	0.86	243.60	243.78	1.22	37.22



APPENDIX 3 – PROPOSED SWALE

Channel Report

Project filename: The Oaks at 6th Street - Channel and Culvert Calcs.cst

Culvert Studio v 2.0.0.27

12-13-2023

Channel 1

Channel 1

TRAPEZOIDAL

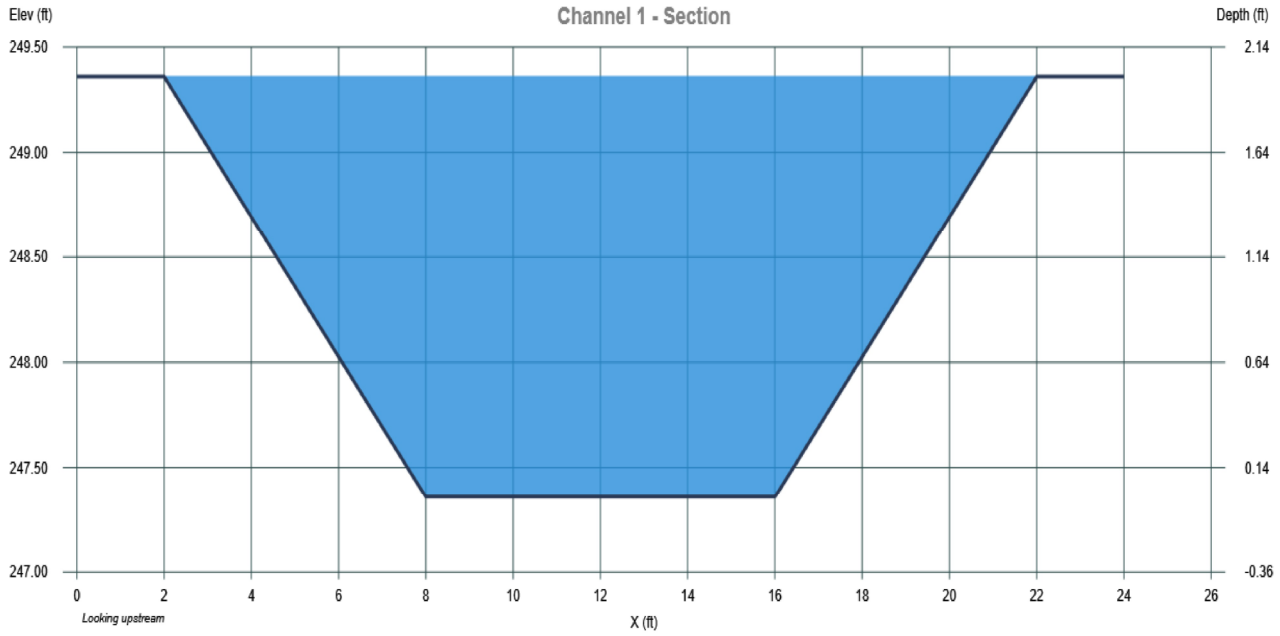
Bottom Width	= 8.00 (ft)
Side Slope Left, z:1	= 3.00
Side Slope Right, z:1	= 3.00
Total Depth	= 2.00 (ft)
Invert Elevation	= 247.36 (ft)
Channel Slope	= 0.002 (ft/ft)
Manning's n	= 0.035

DISCHARGE

Method	= Known Q
Known Q	= 56.04 cfs

CALCULATION SAMPLE

Flow	Depth	Area	Velocity	WP	n-value	Top Width	Crit Depth	HGL	EGL
(cfs)	(ft)	(sqft)	(ft/s)	(ft)		(ft)	(ft)	(ft)	(ft)
56.04	2.00	28.00	2.00	20.65	0.035	20.00	1.01	249.36	249.42



Culvert Report

Project filename: The Oaks at 6th Street - Channel and Culvert Calcs.cst

Culvert Studio v 2.0.0.27

12-13-2023

Existing Culvert

Culvert 1

CULVERT

Shape	= Circular
Inlet Edge	= Projecting
Material	= Concrete
Manning's n	= 0.013
Rise	= 18 in
Span	= 18 in
Invert Elev. Down	= 249.42 ft
Length	= 24.44 ft
Slope	= -0.002 ft/ft
Invert Elev. Up	= 249.37 ft
No. Barrels	= 1
Plan Skew Angle	= 0 degrees

EMBANKMENT

Top Width	= 23.44 ft
Top Elevation	= 251.50 ft
Crest Length	= 100.00 ft

DISCHARGE

Method	= User-defined

TAILWATER

Tailwater Elevation	= Normal Depth

CALCULATION SAMPLE

Discharge			Velocity		Depth		HGL @ Hw/D = 1.58		
Total	Culvert	Over Top	Down	Up	Down	Up	Down	Up	Hw
(cfs)	(cfs)	(cfs)	(ft/s)	(ft/s)	(in)	(in)	(ft)	(ft)	(ft)
48.87	11.46	37.41	6.49	6.49	18.0	18.0	250.92	251.21	251.74