



November 15, 2024

Mr. Otis Spriggs  
Director of Development Services  
City of Angleton  
121 S. Velasco  
Angleton, TX 77515

Re: On-Going Services  
Ashland Model Home Park Construction Plans – 2<sup>nd</sup> Submittal Review  
Angleton, Texas  
HDR Job No. 10391496

Dear Mr. Spriggs:

HDR Engineering, Inc. (HDR) has reviewed the construction plans for the above referenced subdivision and offers the following comments:

Construction Plans

1. Respective Authority Approvals shall be coordinated and received prior to construction. This includes but is not limited to Brazoria County and TxDOT.
2. The storm pipe material within the planset was previously designed using reinforced concrete pipe and has changed to "HP Storm Pipe" with the most recent submittals. Request for the use of this pipe material alternative was recently coordinated through the City in which use of the pipe would be allowed subject to the installation being performed per standard specifications designated by TxDOT. A formal request shall be made in writing for use of the pipe in other concurrent and future sections within the subdivision.

HDR takes no objection to the proposed Ashland Model Home Park Construction Plans with the exceptions noted. Please note, this does not necessarily mean that the entire drawings, including all supporting data and calculations, has been completely checked and verified; however, the drawings and supporting data are signed, dated, and sealed by a Professional Engineer licensed to practice in the State of Texas, which therefore conveys the engineer's responsibility and accountability.

If you have any questions, please feel free to contact us at our office (713)-622-9264.

Sincerely,

HDR Engineering, Inc.

Javier Vasquez, P.E., CFM  
Civil Engineer

cc: Files (10391496)

Attachments





CITY OF ANGLETON GENERAL CONSTRUCTION NOTES:

- 1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE ANGLETON CONSTRUCTION MANUAL (ACM) AND LAND DEVELOPMENT CODE, HEREAFTER REFERRED TO THE ACM AND THE LDC.
2. APPROVAL OF THESE CONSTRUCTION PLANS DOES NOT CONSTITUTE A VERIFICATION OF ALL DATA, INFORMATION AND CALCULATIONS SUPPLIED BY THE APPLICANT.
3. ALL RESPONSIBILITY FOR THE PLANS RESTS ON DESIGN ENGINEER WHO PREPARED THEM.
4. DESIGNS SHALL BE IN COMPLETE COMPLIANCE WITH THE LDC AND THE ACM.
5. A MINIMUM OF TWO EXISTING BENCHMARKS SHOULD BE SHOWN ON THE PLANS.
6. CAST BRONZE SURVEY MARKERS SHALL BE PLACED IN CONCRETE IN PERMANENT, ACCESSIBLE LOCATIONS AT THE TIME OF CONSTRUCTION.
7. PRIOR TO BEGINNING CONSTRUCTION, THE OWNER OR HIS AUTHORIZED REPRESENTATIVE SHALL CONVENE A PRE-CONSTRUCTION CONFERENCE WITH THE CITY, THE DEVELOPER'S CONSULTING ENGINEER, CONTRACTOR, AND ANY OTHER AFFECTED PARTIES.
8. THE CONTRACTOR SHALL PROVIDE THE CITY A MINIMUM OF 48 HOURS NOTICE BEFORE BEGINNING EACH PHASE OF CONSTRUCTION.
9. BARRICADES, BUILT TO CITY SPECIFICATIONS, SHALL BE CONSTRUCTED ON ALL DEAD-END STREETS AND AS NECESSARY DURING CONSTRUCTION TO MAINTAIN JOB SAFETY.
10. IF BLASTING IS PLANNED, A BLASTING PERMIT MUST BE SECURED PRIOR TO COMMENCEMENT OF ANY BLASTING.
11. ANY EXISTING PAVEMENT, CURBS, AND/OR SIDEWALKS DAMAGED OR REMOVED WILL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE BEFORE ACCEPTANCE OF THE SUBDIVISION.
12. THE LOCATION OF ANY WATER OR WASTEWATER LINES SHOWN ON THE PLANS MUST BE VERIFIED BY THE PUBLIC WORKS DEPARTMENT.
13. USE ONE CALL UTILITY SYSTEM: DIAL 1-800-344-8377, 48 HOURS BEFORE YOU DIG.
14. ALL STORM SEWER PIPES TO BE CLASS III RCP UNLESS NOTED OTHERWISE.

CITY OF ANGLETON SPECIAL NOTES:

- 1. THE SUBGRADE MATERIAL IN ASHLAND WAS TESTED BY TOLUNAY-WONG ENGINEERS GEOTECHNICAL LABORATORY ON 06/06/2022 AND THE STREET SECTION DESIGNED ACCORDING TO THE LDC AND ACM.
2. CONSTRUCTED STREET SECTIONS SHALL SHOW THE FOLLOWING:
PROVIDE STREET NAMES, WIDTH OF R.O.W., OR OTHER METHODS TO IDENTIFY PROPOSED DESIGN OF DIFFERENT PAVEMENT THICKNESS.
MANHOLE FRAMES, COVERS, AND WATER VALVE COVERS WILL BE RAISED TO FINISHED PAVEMENT GRADE AT THE OWNER'S EXPENSE BY A QUALIFIED CONTRACTOR WITH CITY INSPECTION.
CROWNS OF INTERSECTING STREETS WILL CULMINATE IN A DISTANCE OF 40' FROM THE INTERSECTING CURB LINE UNLESS OTHERWISE NOTED.
PRIOR TO FINAL ACCEPTANCE OF A STREET OUTSIDE THE CITY LIMITS, STREET NAME SIGNS CONFORMING TO COUNTY STANDARDS SHALL BE INSTALLED BY DEVELOPER.
SIDEWALK REQUIREMENTS (GIVE STREET NAME AND LOCATION OF REQUIRED SIDEWALK, I.E., NORTH, SOUTH, EAST, OR WEST SIDE.
A CURB LAY DOWN WHERE REQUIRED WHEN ALL POINTS OF SIDEWALKS INTERSECTS CURBS.
INSIDE THE CITY LIMITS, SIDEWALKS SHALL BE COMPLETED PRIOR TO ACCEPTANCE OF ANY DRIVEWAY APPROACHES AND /OR ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
CITY LIMITS, A LETTER OF CREDIT MAY BE POSTED OR OTHER SUITABLE FINANCIAL ARRANGEMENTS MAY BE MADE TO ENSURE CONSTRUCTION OF THE SIDEWALKS.
ADJACENT TO "COMMON AREAS", PARKWAYS, OR OTHER LOCATIONS ON WHICH NO BUILDING CONSTRUCTION WILL TAKE PLACE, MUST BE CONSTRUCTED PRIOR TO FINAL ACCEPTANCE OF THE SUBDIVISION.
A LICENSE AGREEMENT FOR LANDSCAPING MAINTENANCE AND IRRIGATION IN STREET R.O.W. SHALL BE EXECUTED BY THE DEVELOPER IN PARTY WITH THE CITY PRIOR TO FINAL ACCEPTANCE.

CITY OF ANGLETON STANDARD CONSTRUCTION SEQUENCING:

- 1. CALL THE CITY 48 HOURS PRIOR TO BEGINNING ANY WORK AND SCHEDULE A PRECONSTRUCTION MEETING WITH THE CITY AND ALL AFFECTED UTILITY PROVIDERS, THE GENERAL CONTRACTOR, THE DEVELOPER AND THE DEVELOPER'S ENGINEER.
2. OBTAIN A DEVELOPMENT PERMIT FROM THE CITY.
3. PROVIDE THE CITY WITH EVIDENCE ALL TCEQ LICENSES AND REQUIREMENTS ARE UP TO DATE.
4. INSTALL TEMPORARY EROSION CONTROLS AND TREE PROTECTION FENCING PRIOR TO ANY CLEARING AND GRUBBING. NOTIFY THE CITY WHEN INSTALLED.
5. ROUGH-CUT ALL REQUIRED OR NECESSARY PONDS. EITHER THE PERMANENT OUTLET STRUCTURE OR A TEMPORARY OUTLET MUST BE CONSTRUCTED PRIOR TO DEVELOPMENT OF ANY EMBANKMENT OR EXCAVATION THAT LEADS TO PONDING CONDITIONS.
6. DELIVER APPROVED ROUGH-CUT SHEETS TO THE CITY ENGINEER PRIOR TO CLEARING AND GRUBBING.
7. ROUGH GRADE STREETS. NO DEVELOPMENT OF EMBANKMENT WILL BE PERMITTED AT THIS TIME.
8. INSTALL ALL UTILITIES TO BE LOCATED UNDER THE PROPOSED PAVEMENT OR WITHIN THE ROAD RIGHT-OF-WAY.
9. DELIVER STORM SEWER CUT SHEETS TO THE CITY ENGINEER.
10. BEGIN INSTALLATION OF STORM SEWER LINES. UPON COMPLETION, RESTORE AS MUCH DISTURBED AREA AS POSSIBLE, PARTICULARLY CHANNELS AND LARGE OPEN AREAS.
11. DELIVER FINAL GRADE CUT SHEETS TO THE CITY ENGINEER.
12. RE-GRADE STREETS TO SUB-GRADE.
13. ENSURE THAT UNDERGROUND UTILITY CROSSINGS ARE COMPLETED. LAY 1ST-COURSE BASE MATERIAL ON STREETS.
14. INSTALL CURB AND GUTTER.
15. LAY FINAL BASE COURSE ON ALL STREETS.
16. LAY ASPHALT.
17. COMPLETE FINAL GRADING AND RESTORATION OF DETENTION, SEDIMENTATION / FILTRATION PONDS.
18. COMPLETE PERMANENT EROSION CONTROL AND RESTORATION OF SITE VEGETATION.
19. REMOVE AND DISPOSE OF TEMPORARY EROSION CONTROLS.
20. COMPLETE ANY NECESSARY FINAL DRESS UP OF AREAS DISTURBED.

TCEQ WATER DISTRIBUTION SYSTEM GENERAL CONSTRUCTION NOTES

- 1. THIS WATER DISTRIBUTION SYSTEM MUST BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) RULES AND REGULATIONS FOR PUBLIC WATER SYSTEMS 30 TEXAS ADMINISTRATIVE CODE (TAC) CHAPTER 290 SUBCHAPTER D.
2. ALL NEWLY INSTALLED PIPES AND RELATED PRODUCTS MUST CONFORM TO AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)/NSF INTERNATIONAL STANDARD 61 AND MUST BE CERTIFIED BY AN ORGANIZATION ACCREDITED BY ANSI [§290.44(A)(1)].
3. PLASTIC PIPE FOR USE IN PUBLIC WATER SYSTEMS MUST BEAR THE NSF INTERNATIONAL SEAL OF APPROVAL (NSF-PW) AND HAVE AN ASTM DESIGN PRESSURE RATING OF AT LEAST 150 PSI OR A STANDARD DIMENSION RATIO OF 26 OR LESS [§290.44(A)(2)].
4. 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 [§290.44(A)(3)].
5. ALL WATER LINE CROSSINGS OF WASTEWATER MAINS SHALL BE PERPENDICULAR [§290.44(E)(4)(B)].
6. WATER TRANSMISSION AND DISTRIBUTION LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
7. THE MAXIMUM ALLOWABLE LEAD CONTENT OF PIPES, PIPE FITTINGS, PLUMBING FITTINGS, AND FIXTURES IS 0.25 PERCENT [§290.44(B)].
8. THE CONTRACTOR SHALL INSTALL APPROPRIATE AIR RELEASE DEVICES WITH VENT OPENINGS TO THE ATMOSPHERE COVERED WITH 16-MESH OR FINER, CORROSION RESISTANT SCREENING MATERIAL OR AN ACCEPTABLE EQUIVALENT [§290.44(D)(1)].
9. THE CONTRACTOR SHALL NOT PLACE THE PIPE IN WATER OR WHERE IT CAN BE FLOODED WITH WATER OR SEWAGE DURING ITS STORAGE OR INSTALLATION [§290.44(F)(1)].
10. WHEN WATERLINES ARE LAID UNDER ANY FLOWING OR INTERMITTENT STREAM OR SEMI-PERMANENT BODY OF WATER THE WATERLINE SHALL BE INSTALLED IN A SEPARATE WATERTIGHT PIPE ENCASEMENT.
11. PURSUANT TO 30 TAC §290.44(A)(5), THE HYDROSTATIC LEAKAGE RATE SHALL NOT EXCEED THE AMOUNT ALLOWED OR RECOMMENDED BY THE MOST CURRENT AWWA FORMULAS FOR PVC PIPE, CAST IRON AND DUCTILE IRON PIPE.
WHERE:
Q = THE QUANTITY OF MAKEUP WATER IN GALLONS PER HOUR,
L = THE LENGTH OF THE PIPE SECTION BEING TESTED, IN FEET,
D = THE NOMINAL DIAMETER OF THE PIPE IN INCHES, AND
P = THE AVERAGE TEST PRESSURE DURING THE HYDROSTATIC TEST IN POUNDS PER SQUARE INCH (PSI).
12. THE CONTRACTOR SHALL MAINTAIN A MINIMUM SEPARATION DISTANCE IN ALL DIRECTIONS OF NINE FEET BETWEEN THE PROPOSED WATERLINE AND WASTEWATER COLLECTION FACILITIES INCLUDING MANHOLES.
13. THE SEPARATION DISTANCE FROM A POTABLE WATERLINE TO A WASTEWATER MAIN OR LATERAL MANHOLE OR CLEANOUT SHALL BE A MINIMUM OF NINE FEET.
14. FIRE HYDRANTS SHALL NOT BE INSTALLED WITHIN NINE FEET VERTICALLY OR HORIZONTALLY OF ANY WASTEWATER LINE, WASTEWATER LATERAL, OR WASTEWATER SERVICE LINE REGARDLESS OF CONSTRUCTION [§290.44(E)(6)].
15. SUCTION MAINS TO PUMPING EQUIPMENT SHALL NOT CROSS WASTEWATER MAINS, WASTEWATER LATERALS, OR WASTEWATER SERVICE LINES.
16. WATERLINES SHALL NOT BE INSTALLED CLOSER THAN TEN FEET TO SEPTIC TANK DRAINFIELDS [§290.44(E)(8)].
17. THE CONTRACTOR SHALL DISINFECT THE NEW WATERLINES IN ACCORDANCE WITH AWWA STANDARD C-651-14 OR MOST RECENT, THEN FLUSH AND SAMPLE THE LINES BEFORE BEING PLACED INTO SERVICE.
18. DECHLORINATION OF DISINFECTING WATER SHALL BE IN STRICT ACCORDANCE WITH CURRENT AWWA STANDARD C655-09 OR MOST RECENT.

TEXAS COMMISSION OF ENVIRONMENTAL QUALITY ORGANIZED SEWAGE COLLECTION SYSTEM GENERAL CONSTRUCTION NOTES

- 1. THIS ORGANIZED SEWAGE COLLECTION SYSTEM (SCS) MUST BE CONSTRUCTED IN ACCORDANCE WITH 30.1. TEXAS ADMINISTRATIVE CODE (TAC) §213.5(C).
2. A WRITTEN NOTICE OF CONSTRUCTION MUST BE SUBMITTED TO THE PRESIDING TCEQ REGIONAL OFFICE AT LEAST 48 HOURS PRIOR TO THE START OF ANY REGULATED ACTIVITIES.
3. PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITY, ALL TEMPORARY EROSION AND SEDIMENTATION (E&S) CONTROL MEASURES MUST BE PROPERLY INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS.
4. SEWER LINES LOCATED WITHIN OR CROSSING THE 5-YEAR FLOODPLAIN OF A DRAINAGE WAY WILL BE PROTECTED FROM INUNDATION AND STREAM VELOCITIES WHICH COULD CAUSE EROSION AND SCOURING OF BACKFILL.
5. WHERE WATER LINES AND NEW SEWER LINE ARE INSTALLED WITH A SEPARATION DISTANCE CLOSER THAN NINE FEET (I.E., WATER LINES CROSSING WASTEWATER LINES, WATER LINES PARALLELING WASTEWATER LINES, OR WATER LINES NEXT TO MANHOLES) THE INSTALLATION MUST MEET THE REQUIREMENTS OF 30 TAC §217.53(D) (PIPE DESIGN) AND 30 TAC §290.44(E) (WATER DISTRIBUTION).
6. TRENCHING, BEDDING AND BACKFILL MUST CONFORM WITH 30 TAC §217.54.
7. SEWER LINES MUST BE TESTED FROM MANHOLE TO MANHOLE.
8. ALL SEWER LINES MUST BE TESTED IN ACCORDANCE WITH 30 TAC §217.57.
9. ALL MANHOLES MUST BE TESTED TO MEET OR EXCEED THE REQUIREMENTS OF 30 TAC §217.58.

UTILITY CONSTRUCTION NOTES:

- 1. CONSTRUCTION OF WATER, SANITARY SEWER, AND STORM DRAINAGE FACILITIES SHALL BE IN ACCORDANCE WITH THE LATEST VERSION OF THE CITY OF ANGLETON STANDARD SPECIFICATIONS UNLESS OTHERWISE NOTED IN THE PLANS.
2. WHEN TRENCH CONDITION WARRANTS THE USE OF DEWATERING SYSTEMS, THEIR USE SHALL BE REQUESTED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER.
3. CONTRACTOR SHALL REMOVE ALL MUD, DIRT AND DEBRIS DEPOSITED OR DROPPED ON EXISTING PAVEMENT DUE TO HIS CONSTRUCTION ACTIVITY DAILY.
4. CONTRACTOR SHALL PROTECT ALL TREES ADJACENT TO WORK AREA.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SAFEGUARDING AND PROTECTING ALL MATERIAL AND EQUIPMENT STORED ON THE JOB SITE.
6. THE CONTRACTOR SHALL PROVIDE SHEETING, SHORING AND BRACING NECESSARY TO PROTECT WORKMEN AND EXISTING UTILITIES DURING ALL PHASES OF CONSTRUCTION.
7. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE TO THE EXISTING PUBLIC OR PRIVATE UTILITY LINES, INCLUDING, BUT NOT LIMITED TO, WATER LINES, WASTEWATER COLLECTION SYSTEMS, STORM SEWERS, BACKSLOPE INTERCEPTORS, IRRIGATION LINES, ELECTRICAL LINES, AND MATERIAL AND PROPERTY DAMAGES DURING CONSTRUCTION.
8. THE CONTRACTOR SHALL RETURN ALL EXISTING PAVING AND DRIVEWAYS TO ORIGINAL OR BETTER CONDITION AT NO ADDITIONAL COST TO THE OWNER UNLESS OTHERWISE NOTED OR SPECIFICALLY CALLED OUT AS A PAY ITEM.

WATER MAIN CONSTRUCTION NOTES:

- 1. ALL WATER MAIN PIPE SHALL BE BLUE AND INCLUDE TRACER WIRE IN THE SAME TRENCH AND ABOVE THE WATER MAIN AND IN GATE VALVES.
2. ALL WATER MAIN PIPING SHALL HAVE A MINIMUM COVER OF FOUR (4) FEET BELOW FINISHED GROUND UNLESS OTHERWISE NOTED.
3. ALL PROPOSED 4-INCH TO 12-INCH WATER MAINS SHALL BE POLYVINYL CHLORIDE PIPE (PVC) C900, DR 18.
4. ALL WATER MAIN PIPE SHALL BE BANK SAND BEDDED AND BACKFILLED.
5. ALL WATER MAINS SHALL BE HYDROSTATICALLY TESTED IN AN APPROVED MANNER IN ACCORDANCE WITH CITY OF ANGLETON STANDARD SPECIFICATIONS.
6. MAINTAIN 12-INCH MINIMUM VERTICAL CLEARANCE BETWEEN ALL STORM SEWERS AND CULVERTS UNLESS OTHERWISE NOTED.
7. SANITARY FACILITY CLEARANCES TO POTABLE WATER FACILITIES SHALL FOLLOW THE LATEST RULES AND REGULATIONS OF THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
8. ALL TEES, ELBOWS, BENDS, AND PLUGS SHALL INCLUDE RESTRAINT OF FITTINGS.
9. ALL WATER MAINS SHALL BE RESTRAINTED JOINT PIPE (OF APPROVED MANUFACTURER).
10. SANITARY FACILITY CLEARANCES TO POTABLE WATER FACILITIES SHALL FOLLOW THE LATEST RULES AND REGULATIONS OF THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

SANITARY SEWER CONSTRUCTION NOTES:

- 1. ALL SANITARY SEWER MAIN PIPE SHALL BE GREEN.
2. ALL PROPOSED 4-INCH TO 15-INCH SANITARY SEWER MAINS SHALL BE POLYVINYL CHLORIDE PIPE (PVC) SDR 26.
3. ALL SANITARY SEWER MAIN PIPE SHALL BE BANK SAND BEDDED AND BACKFILLED.
4. ALL SANITARY SEWER MAINS & MANHOLES SHALL BE TESTED IN AN APPROVED MANNER IN ACCORDANCE WITH CITY OF ANGLETON STANDARD SPECIFICATIONS.
5. MAINTAIN 24-INCH MINIMUM CLEARANCE BETWEEN ALL STORM SEWERS AND CULVERTS UNLESS OTHERWISE NOTED.
6. SANITARY FACILITY CLEARANCES TO POTABLE WATER FACILITIES SHALL FOLLOW THE LATEST RULES AND REGULATIONS OF THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
7. SANITARY SEWER MANHOLE COVERS SHALL BE STANDARD CITY OF ANGLETON, UNLESS OTHERWISE NOTED.
8. ALL SANITARY MANHOLES WITHIN THE 100-YEAR FLOOD PLAIN (DESIGNATED) SHALL HAVE THE TOP SET AT LEAST TWELVE (12) INCHES ABOVE THE BASE FLOOD ELEVATION OR SEALED AND VENTED.
9. SANITARY SEWER MANHOLES SHALL BE PRECAST OR CAST-IN-PLACE IN ACCORDANCE WITH CITY OF SUGAR LAND SPECIFICATIONS.
10. MANHOLE RIMS ARE TO BE SET AT THE ELEVATIONS SHOWN ON THE PLANS INITIALLY. AFTER SITE RESTORATION IS COMPLETED, RIMS ARE TO BE ADJUSTED TO THREE (3) TO SIX (6) INCHES ABOVE FINAL GRADE AND BACK-DRESSED WITH DIRT TO PROVIDE DRAINAGE AWAY FROM THE MANHOLE.

GENERAL CONSTRUCTION NOTES:

- 1. PRIOR TO BIDDING THE PROJECT, THE CONTRACTOR SHALL INSPECT THE SITE AND SATISFY ITSELF THAT ABOVE AND BELOW GROUND CONDITIONS OF THE SITE ARE ACCEPTABLE FOR CONSTRUCTION.
2. THIS PROJECT IS WITHIN THE CITY OF ANGLETON E.T.J. AND BRAZORIA COUNTY, TEXAS.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL APPLICABLE CITY, COUNTY, STATE, AND FEDERAL PERMITS.
4. THE APPROXIMATE LOCATION OF EXISTING UTILITIES ARE GIVEN FOR REFERENCE ONLY.
5. CONTRACTOR IS TO CONTACT THE TEXAS811 AT 811 OR 1-800-344-8347 FOR LOCATION OF EXISTING FACILITIES THAT MAY NOT BE SHOWN ON THE PLANS AT LEAST 72 HOURS PRIOR BUT NOT MORE THAN 14 WORKING DAYS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING, MAINTAINING, AND RESTORING ALL EXISTING FACILITIES OR ANY OFF-SITE AREAS AFFECTED BY THIS CONSTRUCTION PROJECT TO EXISTING OR BETTER CONDITION, UNLESS OTHERWISE NOTED, AT NO ADDITIONAL COST TO THE OWNER.
7. CONTRACTOR SHALL COMPLY WITH O.S.H.A. REGULATIONS AND TEXAS STATE LAW CONCERNING TRENCH SAFETY SYSTEMS.
8. DURING CONSTRUCTION, THE CONTRACTOR SHALL MAINTAIN PEDESTRIAN AND VEHICULAR ACCESS TO ALL ADJACENT PROPERTIES.
9. ADEQUATE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION, AND ANY DRAINAGE DITCH OR STRUCTURE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO THE SATISFACTION OF THE OWNING AUTHORITY.
10. SHOULD SOFT UNSTABLE AREAS APPEAR DURING THE COURSE OF GRADING, THE CONTRACTOR SHALL REMOVE UNSTABLE MATERIAL AS DIRECTED BY THE ENGINEER.
11. ALL WASTE MATERIALS SHALL BE REMOVED FROM THE SITE AND PROPERLY DISPOSED OF BY THE CONTRACTOR.
12. PROVIDE ISOLATION JOINTS BETWEEN ALL PROPOSED SIDEWALKS AND ALL SLABS, STRUCTURES, AND PAVEMENTS.
13. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING RED LINE RECORD DRAWINGS AT THE COMPLETION OF THIS PROJECT, PRIOR TO FINAL PAYMENT.
14. CONTRACTOR TO FOLLOW CONSTRUCTION DETAILS IF DRAWINGS DEVIATE FROM CITY OF SUGARLAND STANDARDS.
15. THE CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING AND MAINTAINING SITE DRAINAGE AT ALL TIMES AT NO ADDITIONAL COST TO THE OWNER WHETHER BY GRADING OR PUMPING.
16. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES TO THE EXISTING PUBLIC OR PRIVATE LINES INCLUDING BUT NOT LIMITED TO WATER LINES, WASTEWATER COLLECTION SYSTEM AND STORM SEWERS DURING CONSTRUCTION.

Table with 4 columns: NO., DATE, REVISIONS, APP. (Empty header row)

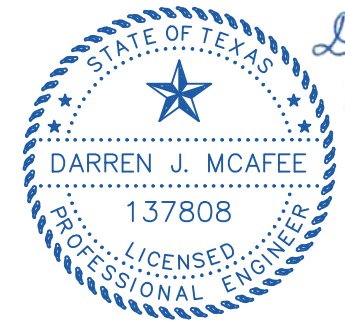
BRAZORIA COUNTY MUD NO. 82
BARZORIA COUNTY, TEXAS

ASHLAND MODEL HOME PARK

GENERAL CONSTRUCTION NOTES



SCALE: DGN. BY: AHR
DATE: NOVEMBER 2024 DWN. BY: JWS
JOB NO. 16759-0010-12 DWG. NO.
SUBMITTED: SURV. BY:
F.B. NO.



Signature: Darren McAffee
Date: 11/11/2024



**RESTRICTED RESERVE A**  
Restricted to Open Space,  
Landscape, and Incidental  
Utility Purposes Only  
0.03 AC  
1,143 Sq. Ft.

**RESTRICTED RESERVE B**  
Restricted to Open Space  
and Landscape Purposes  
Only  
0.43 AC  
18,649 Sq. Ft.

ANCHOR HOLDINGS MP, LLC  
by SPECIAL WARRANTY DEED  
C.C.F. No. 2021085145  
O.P.R.W.C.T.

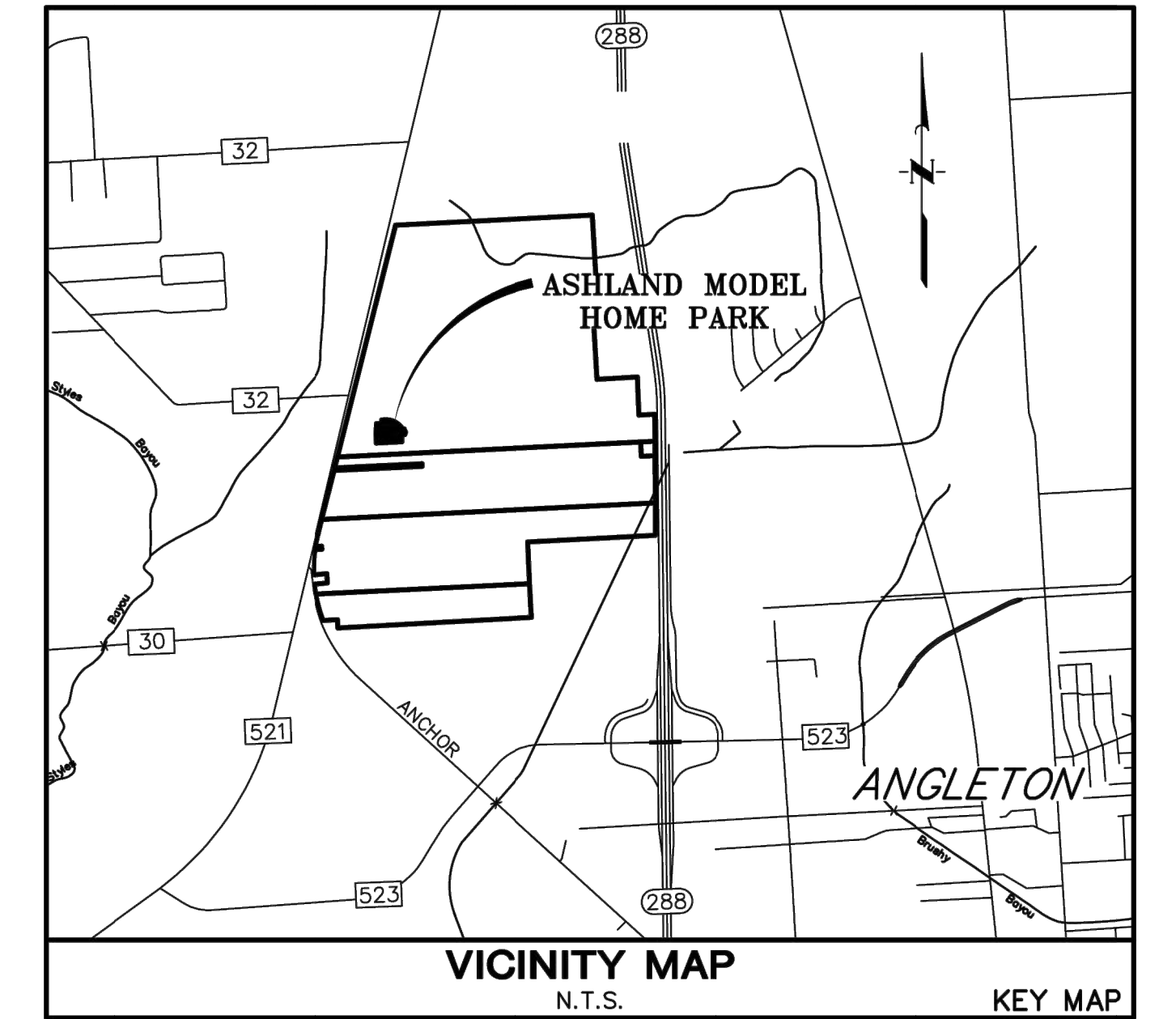
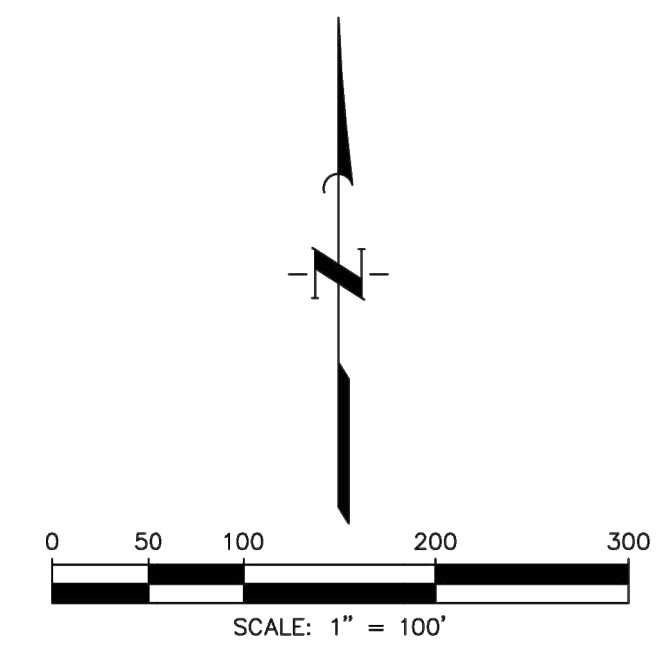
ASHLAND STREET DEDICATION  
SEC 1 AND RESERVES  
C.C.F. No. \_\_\_\_\_  
O.C.C.B.C.T.

ASHLAND  
SEC 1  
C.C.F. No. \_\_\_\_\_  
O.C.C.B.C.T.

ASHLAND STREET DEDICATION  
SECTION 2  
C.C.F. NO. \_\_\_\_\_  
O.P.R.B.C.

ASHLAND STREET DEDICATION  
SEC 1 AND RESERVES  
C.C.F. No. \_\_\_\_\_  
O.P.R.W.C.T.

CALLLED 8.35 ACRES  
TO ANCHOR HOLDINGS MP LLC  
BY SPECIAL WARRANTY DEED  
CF NO. 2022009979  
O.P.R.B.C.



- BL ..... "Building Line"
- C.C.F. .... "County Clerk's File"
- DE ..... "Drainage Easement"
- Eam ..... "Easement"
- FC ..... "Firm Code"
- JUP ..... "Incidental Utility Purposes"
- O.C.C.B.C.T. .... "Official County Clerk, Brazoria County, Texas"
- No ..... "Number"
- ROW ..... "Right-of-Way"
- SSE ..... "Sanitary Sewer Easement"
- Sq. Ft. .... "Square Feet"
- Stm SE ..... "Storm Sewer Easement"
- Temp ..... "Temporary"
- UE ..... "Utility Easement"
- Vol - Pg ..... "Volumes and Page"
- WLE ..... "Waterline Easement"
- ..... "Block Number"
- ..... "Set 3/4-inch Iron Rod With Cap Stamped "Quiddity" as Per Certification"

- General Notes
1. A one-foot reserve (1' reserve) has been dedicated to the public in fee as a buffer separation between the side or end of streets in subdivision plots where such streets abut adjacent acreage tracts, the condition of such dedicated being that when the adjacent property is subdivided in a recorded plat, the one-foot reserve shall thereupon become vested in the public for street right-of-way purposes and the title fee thereto shall revert to and vest in the dedicator, his heirs, assigns or successors.
  2. All building lines along street rights-of-way are as shown on the plat.
  3. The Coordinates shown hereon are Texas South Central Zone No. 4204 State Plane Grid Coordinates (NAD83) and have a combined scale factor 0.999870017.
  4. Absent written authorization by the affected utilities, all utility and aerial easements must be kept unobstructed from any non-utility improvements or obstructions by the property owner. Any unauthorized improvements or obstructions may be removed by any public utility at the property owner's expense. While wooden posts and paneled wooden fences along the perimeter and back to back easements and alongside rear lots lines are permitted, they too may be removed by public utilities at the property owner's expense should they be an obstruction. Public Utilities may put said wooden posts and paneled wooden fences back up, but generally will not replace with new fencing.
  5. There are no pipelines or pipeline easements within the plotted area shown hereon.
  6. HORIZONTAL DATUM: All bearings are referenced to the Texas Coordinate system, North American datum of 1983 (nad83), South Central Zone.
  7. VERTICAL DATUM: All elevations are referenced to the North American Vertical Datum of 1988 (nav88), Geoid 12b, based on Allterra's RTK Network, Stations HAGS\_1012 and HCG6\_14012.
  8. These tracts lie within Zone "X" and Zone "X-Shaded" of the Flood Insurance Rate Map, Community Panel No. 485458, Map Number 48039C0430K, Panel 430, Suffix "K", dated December 30, 2020, for Brazoria County, Texas and incorporated areas.
  9. All drainage easements shown hereon shall be dedicated to the public and shall be maintained by the MUD.
  10. Sidewalks shall be constructed in accordance with the Development Agreement between the City of Angleton, Texas and Developer.
  11. Notice: Selling a portion of this addition by metes and bounds is a violation of the Unified Development Code of the City of Angleton and State platting statutes and is subject to fines and withholding of utilities and building permits.
  12. Notice: Plat approval shall not be deemed to or presumed to give authority to violate, nullify, void, or cancel any provisions of local, state, or federal laws, ordinances, or codes.
  13. Notice: The applicant is responsible for securing any Federal permits that may be necessary as the result of proposed development activity. The City of Angleton is not responsible for determining the need for, or ensuring compliance with any Federal permit.
  14. Notice: Approval of this plat does not constitute a verification of all data, information and calculations supplied by the applicant. The Engineer of Record or Registered Public Land Surveyor is solely responsible for the completeness, accuracy and adequacy of his/her submitted work or not the application is reviewed by the City Engineer.
  15. Notice: All responsibility for the adequacy of this plat remains with the engineer or surveyor who prepared them. In approving these plans, the City of Angleton must rely on the adequacy of the work of the Engineer and/or surveyor of record.
  16. Reserves A and B shall be owned and maintained by Brazoria County MUD No. 82 and the Home Owners Association.
  17. Incidental Utilities are including but not limited to the underground utility services.

CURVE TABLE						
CURVE	RADIUS	DELTA ANGLE	ARC LENGTH	CHORD BEARING	CHORD LENGTH	TANGENT
C1	330.00'	59°45'21"	344.17'	S63°06'46"E	328.78'	189.59'
C2	25.00'	79°12'04"	34.56'	S72°50'07"E	31.87'	20.68'
C3	520.00'	0°20'32"	3.11'	N67°23'34"E	3.11'	1.55'
C4	25.00'	82°37'24"	36.05'	S25°54'36"W	33.01'	21.97'
C5	330.00'	0°58'07"	5.58'	S14°55'02"E	5.58'	2.79'
C6	270.00'	11°47'21"	55.55'	S08°32'18"E	55.46'	27.88'
C7	780.00'	2°32'53"	34.69'	N88°17'00"E	34.68'	17.35'
C8	300.00'	78°33'28"	411.33'	N53°42'42"W	379.86'	245.36'
C9	55.00'	96°28'40"	92.61'	N44°24'16"W	82.05'	61.60'
C10	550.00'	20°08'06"	193.28'	N77°17'21"E	192.29'	97.65'
C11	25.00'	96°49'31"	42.25'	N44°34'41"W	37.40'	28.17'
C12	25.00'	23°04'26"	10.07'	N15°22'17"E	10.00'	5.10'
C13	50.00'	142°37'32"	124.46'	N44°24'16"W	94.73'	147.83'
C14	25.00'	23°04'26"	10.07'	N75°49'11"E	10.00'	5.10'
C15	25.00'	87°54'10"	38.35'	N58°23'03"W	34.70'	24.10'
C16	25.00'	122°55'43"	53.64'	N19°48'53"E	43.93'	45.98'
C17	25.00'	98°20'44"	42.91'	N53°00'26"E	37.83'	28.93'
C18	520.00'	6°04'39"	55.16'	N84°19'04"E	55.13'	27.61'
C19	270.00'	36°10'14"	170.45'	N59°44'05"W	167.63'	88.17'
C20	25.00'	96°28'40"	42.10'	N44°24'16"W	37.30'	28.00'
C21	580.00'	9°41'32"	98.11'	N82°30'38"E	98.00'	49.17'

LINE TABLE		
LINE	BEARING	DISTANCE
L1	N87°00'33"E	45.65'
L2	S22°46'42"E	60.00'
L3	S75°34'02"W	60.00'
L4	S02°38'38"E	53.59'
L5	S87°21'22"W	429.00'
L6	N02°38'38"W	126.84'
L7	N00°33'35"W	61.83'
L8	N03°36'41"E	135.68'
L9	N87°00'33"E	60.01'
L10	N02°59'27"W	60.00'
L11	N87°00'33"E	45.65'
L12	N03°50'04"E	142.94'
L13	N87°21'24"E	84.99'
L14	N45°35'44"E	6.56'
L15	S86°09'56"E	119.89'

Lot Area Summary

Block 1	
Lot No.	Sq. Ft.
1	8,670
2	7,676
3	7,201
4	6,575
5	10,632
6	14,549
7	6,946
8	6,087
9	6,627

Street Name and Length		
Street Name	Length (Centerline)	Type
Pearl Heights Lane	456.98 Ft	LOCAL
Quartz Manor Drive	189.24 Ft	LOCAL
Sapphire Springs Trail	324.58 Ft	LOCAL

# FINAL PLAT OF ASHLAND MODEL HOME PARK

A SUBDIVISION OF 3.46 ACRES OF LAND  
OUT OF THE  
SHUBAEL MARSH SURVEYS, A - 81 & 82  
BRAZORIA COUNTY, TEXAS  
9 LOTS      2 RESERVES      2 BLOCKS  
MAY 2024

OWNER  
ANCHOR HOLDINGS MP, LC  
101 PARKLANE BOULEVARD,  
SUITE 102  
SUGAR LAND, TEXAS 77478  
281.912.3364

ENGINEER/PLANNER/SURVEYOR:  
**QUIDDITY**  
Quiddity Engineering, LLC  
Texas Board of Professional Engineers and Land Surveyors  
Registration No. F-2296 & 20080100  
6330 West Loop South, Suite 550 • Bellaire, TX 77401 • 713.777.5337



NOTE: CONTRACTOR TO VERIFY ELEVATION AND LOCATION OF ALL EXISTING UTILITIES PRIOR TO COMMENCEMENT OF ANY NEW CONSTRUCTION

0.026 ACRE VARIABLE WIDTH UTILITY ESMT TO EXPIRE UPON INCORPORATION INTO PLATTED SINGLE-FAMILY SECTION

ASHLAND PHASE 1D  
DETECTION & MASS GRADING  
C.C.F. No. \_\_\_\_\_  
O.P.R.B.C.T.

ASHLAND STREET DEDICATION  
SECTION 1 & 2  
C.C.F. No. \_\_\_\_\_  
O.P.R.B.C.T.

FUTURE  
ASHLAND  
DEVELOPMENT

FUTURE  
ASHLAND  
DEVELOPMENT

**BENCHMARK**  
ELEVATIONS WERE OBTAINED WITH REAL TIME KINETIC GLOBAL POSITIONING SATELLITE EQUIPMENT AND ARE BASED ON NATIONAL GEODETIC SURVEY MONUMENT DESIGNATION:  
D6956 DW1 CLUTE COOP CORS ARP  
DL3490 TXBC BAY CITY CORS ARP  
DH3514 TXLM LA MARQUE CORS ARP

TBM A BEING A PK NAIL IN ASPHALT LOCATED ON THE EAST SIDE OF FM 521, APPROXIMATELY 1600 ± SOUTH FROM FM 32, AT THE NORTHWEST CORNER OF THE SUBJECT TRACT, 4.0' FROM THE EDGE OF ASPHALT AND 37' NORTHWEST FROM A POWER POLE  
ELEVATION = 40.01 FEET, NAVD 88.

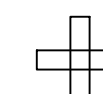
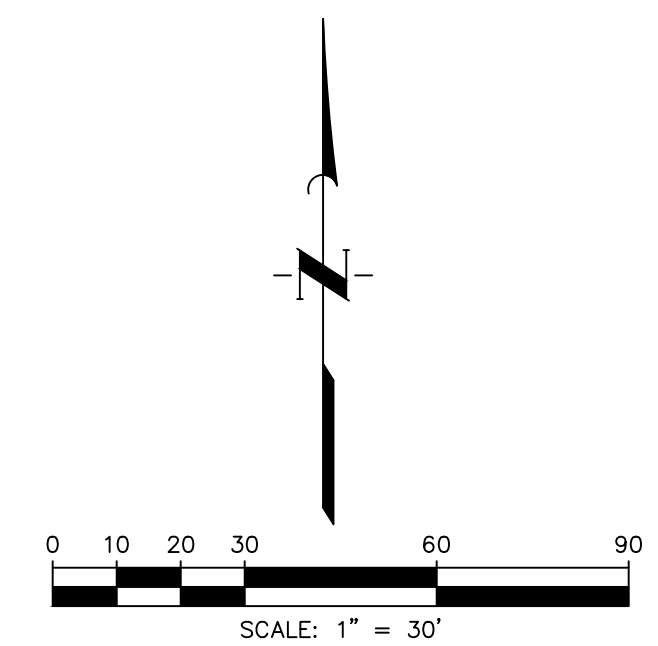
TBM B BEING A PK NAIL IN ASPHALT LOCATED ON THE INTERSECTION OF ANCHOR ROAD, 2.7' FROM THE EDGE OF ASPHALT AND 36' NORTHWEST FROM A POWER POLE  
ELEVATION = 36.59 FEET, NAVD 88.

**FLOODPLAIN**  
THIS TRACT LIES WITHIN ZONES "X-SHADED" OF THE FLOOD INSURANCE RATE MAP, COMMUNITY NO. 485458, MAP NUMBER 48039C0430K, PANEL 430, SUFFIX "K" DATED DECEMBER 30, 2020, FOR BRAZORIA COUNTY, TEXAS AND INCORPORATED AREAS. ZONE "X-SHADED" IS DEFINED AS AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD.

**WATER LINE-SANITARY SEWER CROSSING**  
PLACE ONE FULL 18" SECTION OF RESTRAINED JOINT WATERLINE AND SANITARY SEWER PIPE CENTERED AT CROSSING. EMBED SANITARY SEWER PIPE WITH CEMENT STABILIZED SAND FOR THE TOTAL LENGTH OF ONE PIPE SEGMENT PLUS ONE FOOT BEYOND THE JOINTS ON EACH END. FOR CROSSINGS WHERE PROPOSED WATERLINE IS UNDER PROPOSED SANITARY SEWER, PROVIDE RESTRAINED JOINT DUCTILE IRON PIPE WATERLINE (FOR DIAMETERS LESS THAN 24" INCHES) AND RESTRAINED JOINT PRESSURE RATED (MIN 150 PSI) SANITARY (SEE SANITARY SEWER CONSTRUCTION NOTES - SHEET XX - PROTECTION REQUIREMENTS AT WATERLINE - SANITARY SEWER CROSSING), 24" MIN CLEARANCE. NO SEPARATE PAY.

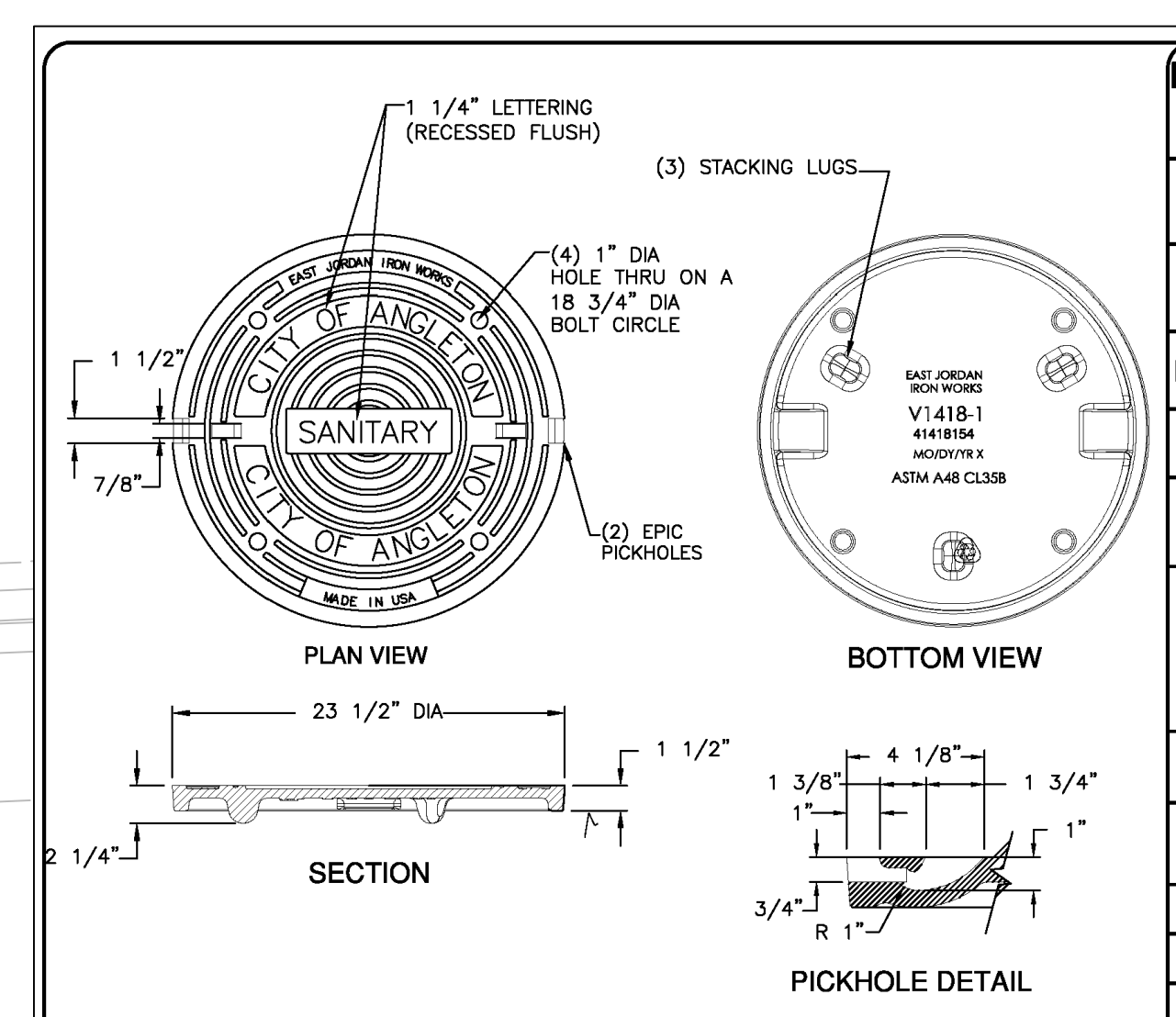
**SANITARY SEWER MANHOLES**  
ALL SANITARY SEWER MANHOLES SHALL BE COATED IN ACCORDANCE WITH CITY OF SUGAR LAND STANDARD SPECIFICATIONS AND APPROVED PRODUCTS LIST.

**SANITARY SEWER NOTE**  
ALL GRAVITY SANITARY SEWER PIPE SHALL BE SDR 26 PVC.



**LEGEND**

EXISTING	PROPOSED	
		WATERLINE w/ GATE VALVE
		FLUSH VALVE w/ GATE VALVE
		PLUG & CLAMP w/ BLOW OFF
		WATERLINE LEAD
		SANITARY SEWER w/ MANHOLE
		SANITARY STACK
		SANITARY LEAD
		STORM SEWER w/ MANHOLE
		STORM SEWER w/ INLET
		GASLINE
		SWALE CENTERLINE
		NATURAL GROUND CONTOUR
		UTILITY EASEMENT
		WATERLINE EASEMENT
		SANITARY SEWER EASEMENT
		STORM SEWER EASEMENT
		DRAINAGE EASEMENT
		AERIAL EASEMENT
		RESTRICTED RESERVE



<b>EJW EAST JORDAN</b> 800-626-4653 www.ejw.com MADE IN USA	
PRODUCT NUMBER	41418154
CATALOG NUMBER	V1418-1
<b>MANHOLE COVER</b>	
LOAD RATING	HEAVY DUTY
COATING	UNDIPPED
MATERIAL SPECIFICATION	COVER - GRAY IRON ASTM A48 CL358
OPEN AREA	N/A
✓ DESIGNATES MACHINED SURFACE	
DRAWN	DATE
TCL	05/04/04
LAST REVISED	DATE
DEW	07/26/07
REFERENCE INFORMATION	41418039-1C 41418040-1D

NO.	DATE	REVISIONS	APP.

BRAZORIA COUNTY MUD NO. 82  
BRAZORIA COUNTY, TEXAS

ASHLAND MODEL HOME PARK  
GENERAL CONSTRUCTION LAYOUT

**WATER & SEWER**

**QUIDDITY**  
TYPE 1 Registration No. F-23290 & 10046100  
601 Northwest Loop 410, Suite 403 • San Antonio, Texas 78216 • 210.494.5511

SCALE: 1"=30' DGN. BY: AHR  
DATE: NOVEMBER 2024 DWN. BY: JWS  
JOB NO. 16759-0010-12 DWG. NO. \_\_\_\_\_  
SUBMITTED: \_\_\_\_\_ SURV. BY: \_\_\_\_\_  
F.B. NO. \_\_\_\_\_

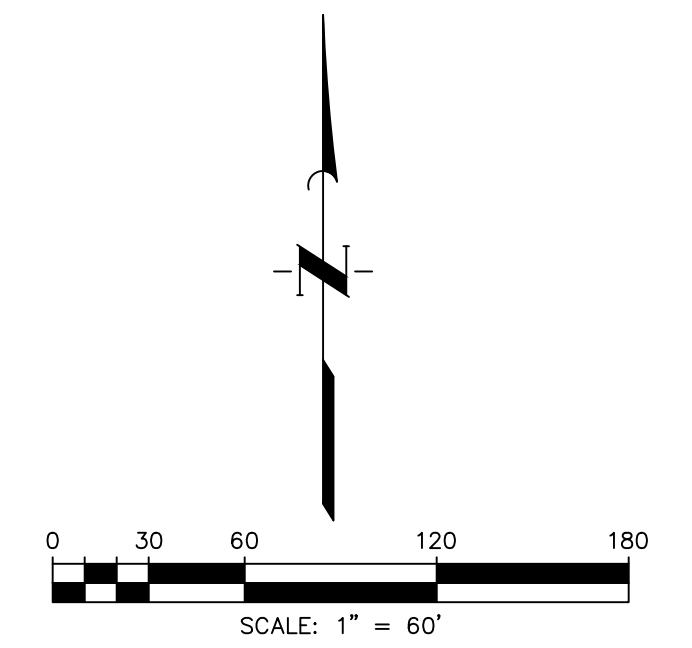
Darren J. McAffee  
11/11/2024  
137808  
LICENSED PROFESSIONAL ENGINEER

SHEET NO.  
**4**  
OF 18

- IRRIGATION SLEEVES**
- Sleeves Shall be Schedule 40 PVC Extending a min 2' Beyond Back of Curb, Install 90 Deg bend and riser to a min. 24" above back of curb with ends capped.
  - Install a min. 24" Below Top of Pvm't to Top of Pipe.



NOTE: CONTRACTOR TO VERIFY ELEVATION AND LOCATION OF ALL EXISTING UTILITIES PRIOR TO COMMENCEMENT OF ANY NEW CONSTRUCTION



**BENCHMARK**  
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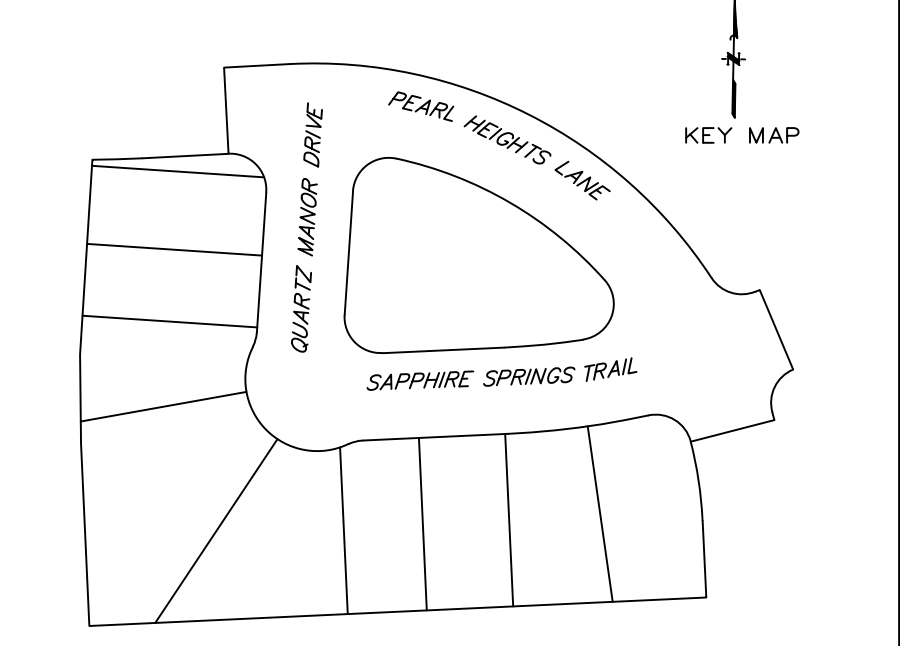
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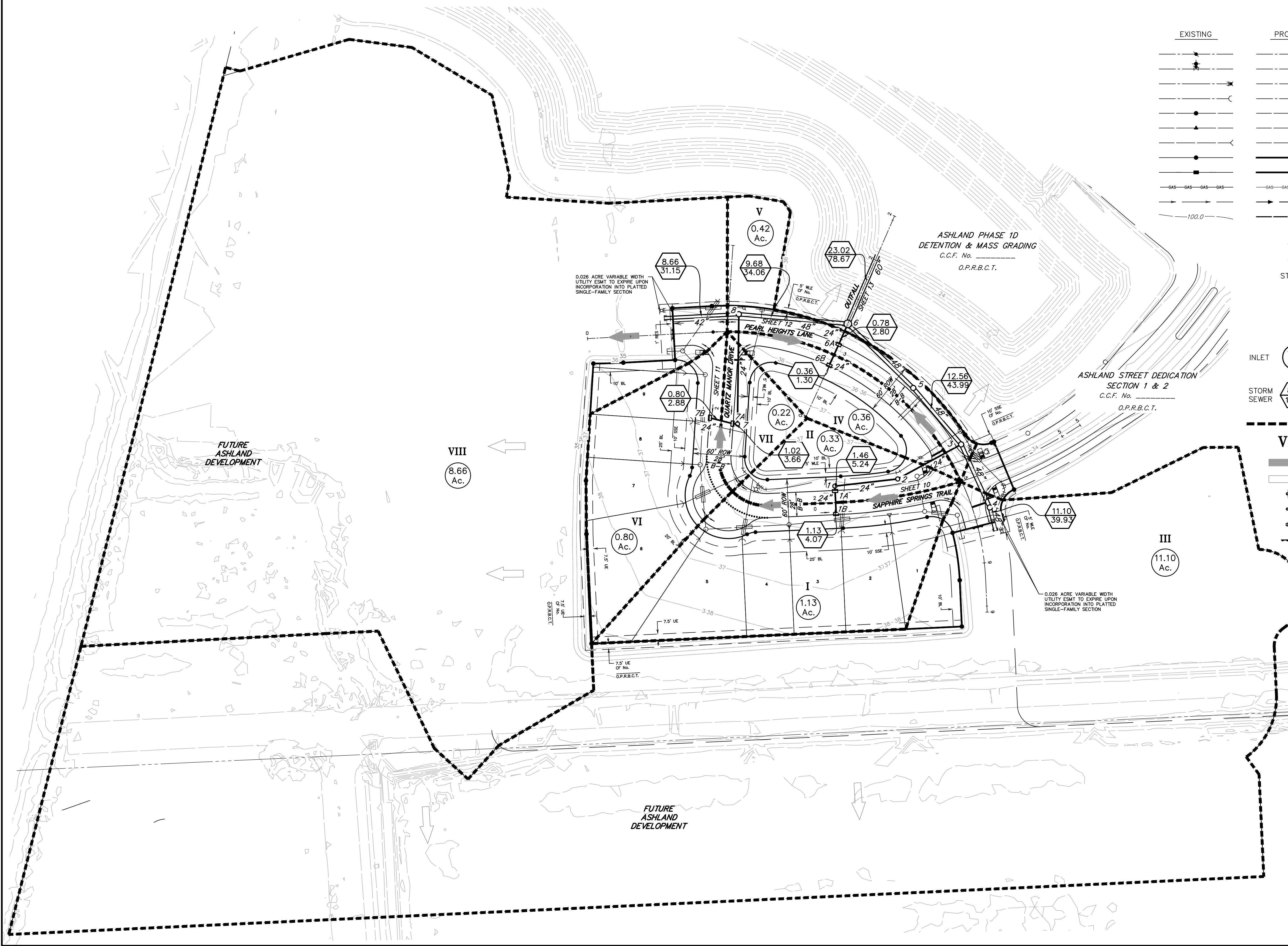
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**SANITARY SEWER MANHOLES**  
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**SANITARY SEWER NOTE**  
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EXISTING	PROPOSED	
		WATERLINE w/ GATE VALVE
		FLUSH VALVE w/ GATE VALVE
		PLUG & CLAMP w/ BLOW OFF
		WATERLINE LEAD
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		SANITARY STACK
		SANITARY LEAD
		STORM SEWER w/ MANHOLE
		STORM SEWER w/ INLET
		GASLINE
		SWALE CENTERLINE
		NATURAL GROUND CONTOUR
		UTILITY EASEMENT
		WATERLINE EASEMENT
		SANITARY SEWER EASEMENT
		STORM SEWER EASEMENT
		DRAINAGE EASEMENT
		AERIAL EASEMENT
		RESTRICTED RESERVE
		INLET
		STORM SEWER
		DRAINAGE AREA LINE
		DRAINAGE AREA NUMBER
		EXTREME EVENT SHEET FLOW
		OFFSITE FLOW
		STREET SIGN (AS LABELED)
		STREET NAME SIGNS ONLY
		WHEELCHAIR RAMP
		TYPE III BARRICADE



NO.	DATE	REVISIONS	APP.

BRAZORIA COUNTY MUD NO. 82  
 BRAZORIA COUNTY, TEXAS

ASHLAND MODEL HOME PARK  
 GENERAL CONSTRUCTION LAYOUT

PAVING & DRAINAGE



SCALE: 1"=30' DGN. BY: AHR  
 DATE: NOVEMBER 2024 DWN. BY: JWS  
 JOB NO. 16759-0010-12 DWG. NO. \_\_\_\_\_  
 SUBMITTED: \_\_\_\_\_ SURV. BY: \_\_\_\_\_  
 F.B. NO. \_\_\_\_\_

STATE OF TEXAS  
  
 DARREN J. MCAFFEE  
 137808  
 LICENSED PROFESSIONAL ENGINEER

SHEET NO. 5 OF 18

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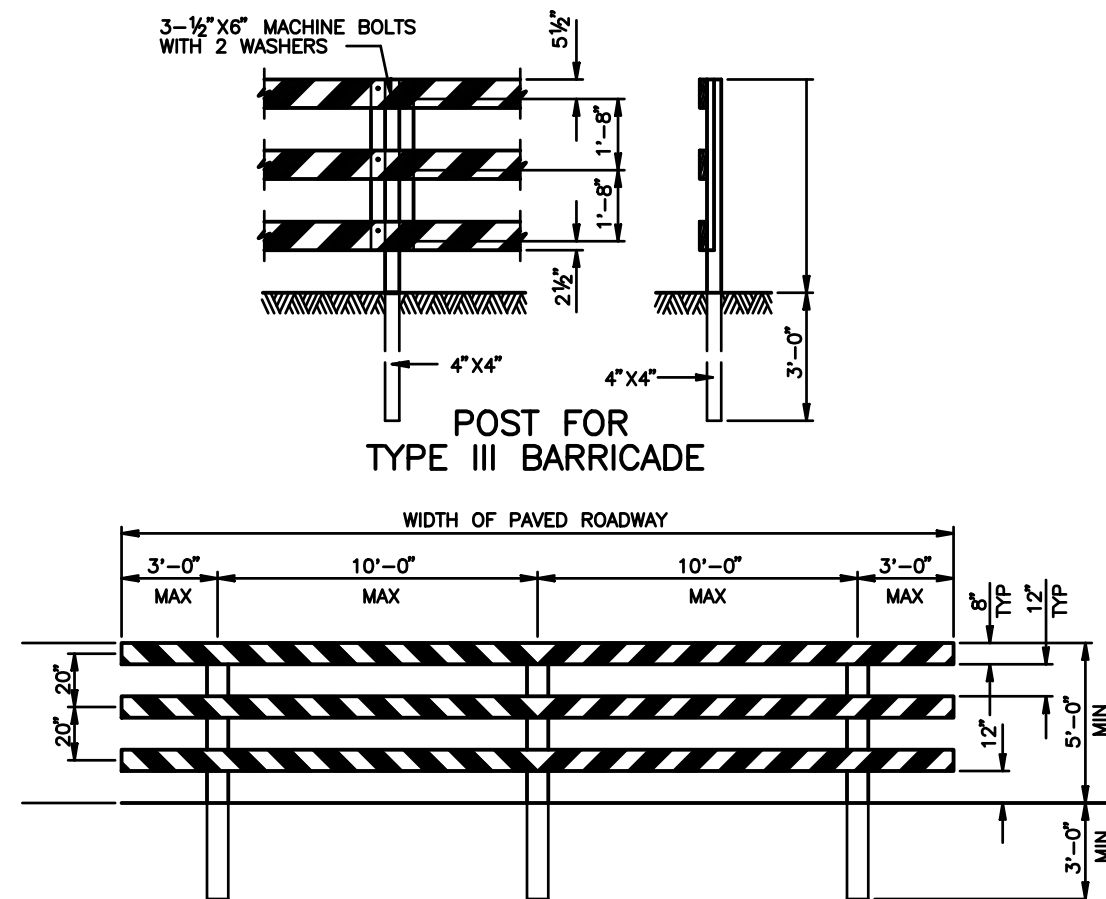
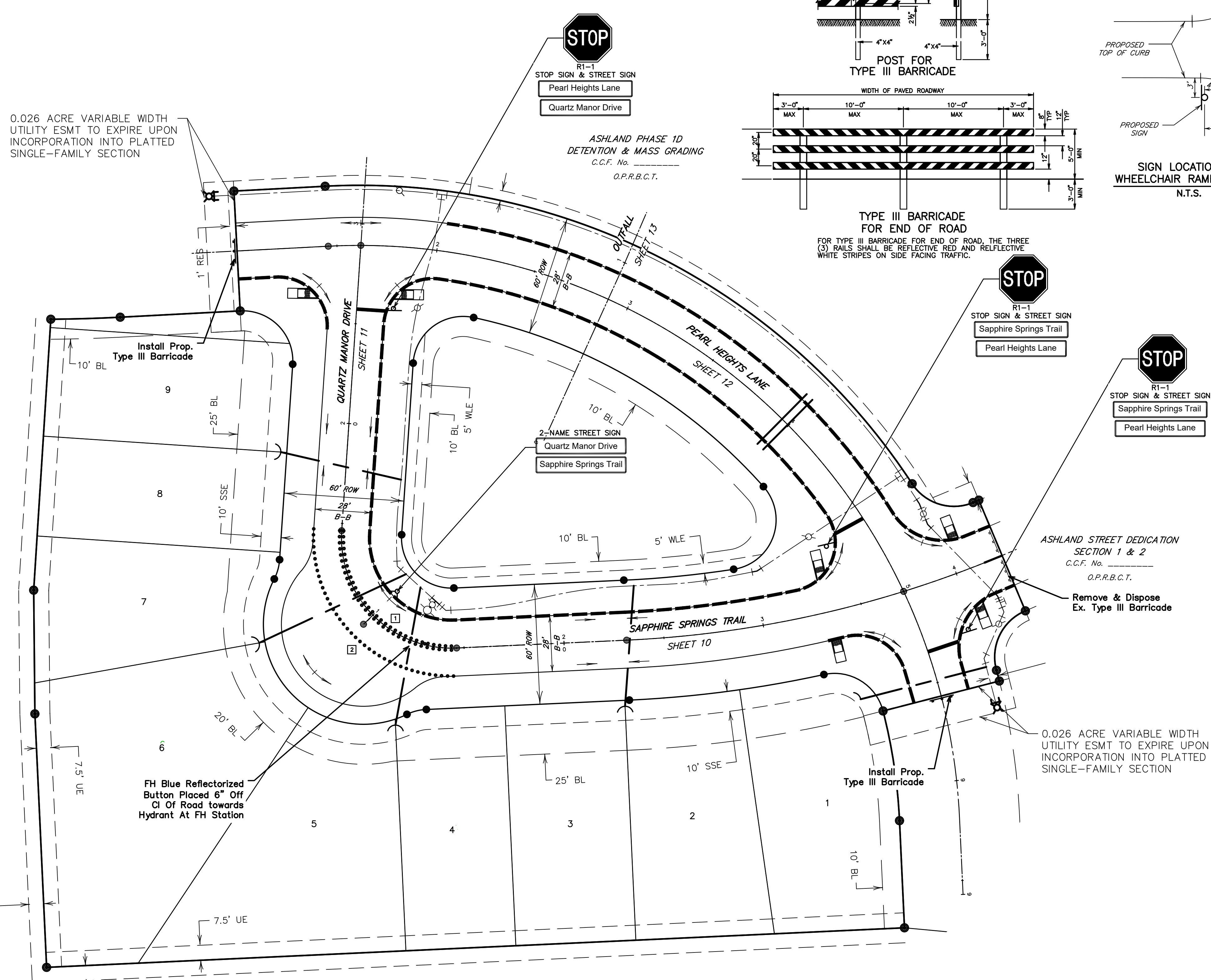


NOTE: CONTRACTOR TO VERIFY ELEVATION AND LOCATION OF ALL EXISTING UTILITIES PRIOR TO COMMENCEMENT OF ANY NEW CONSTRUCTION

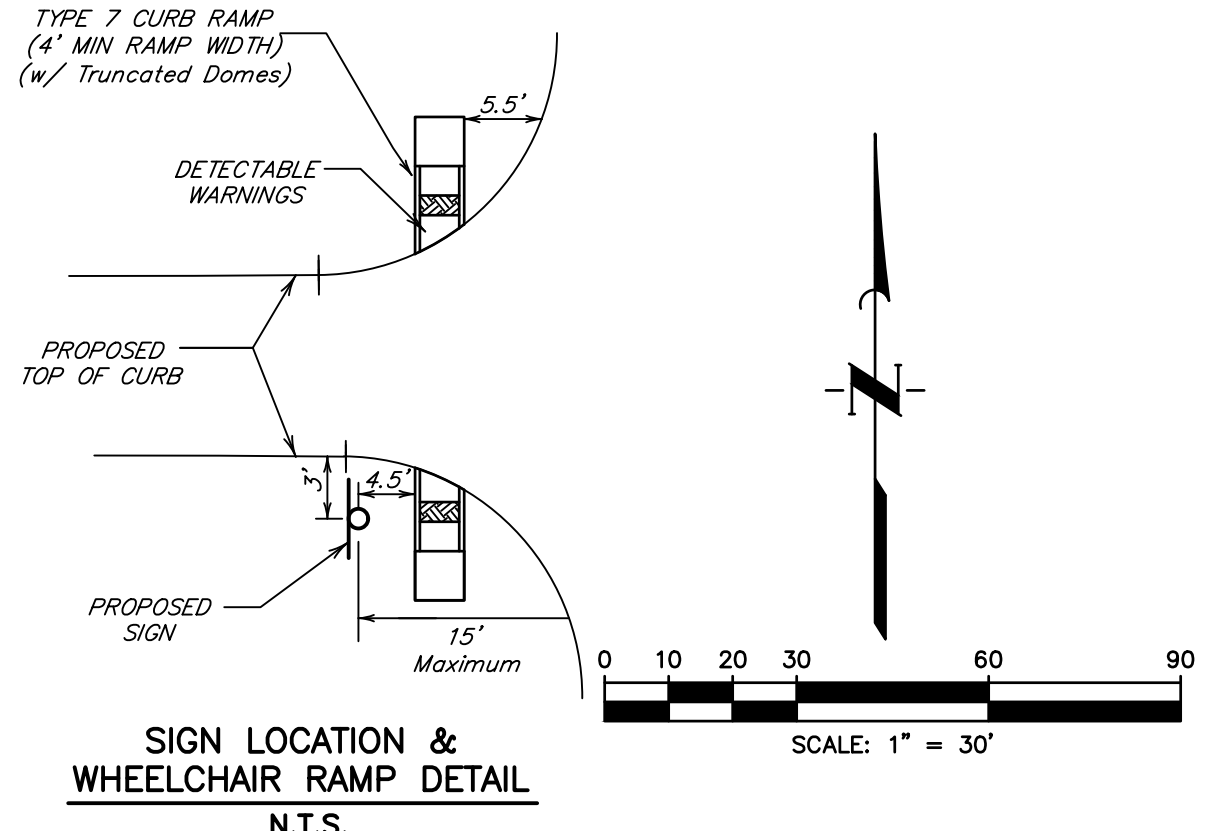
0.026 ACRE VARIABLE WIDTH UTILITY ESMT TO EXPIRE UPON INCORPORATION INTO PLATTED SINGLE-FAMILY SECTION

FUTURE ASHLAND DEVELOPMENT

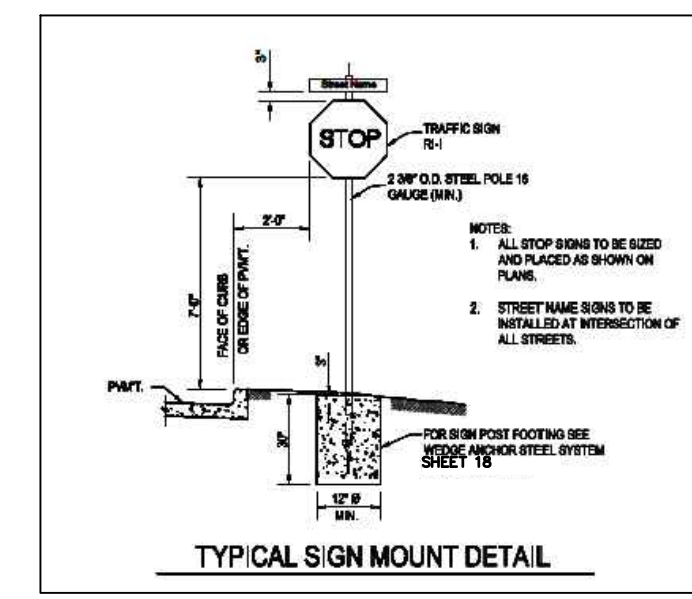
FUTURE ASHLAND DEVELOPMENT



TYPE III BARRICADE FOR END OF ROAD  
FOR TYPE III BARRICADE FOR END OF ROAD, THE THREE (3) RAILS SHALL BE REFLECTIVE RED AND REFLECTIVE WHITE STRIPES ON SIDE FACING TRAFFIC.



NOTE: All Combination Street and Regulatory Signs Shall be Located at Curb Returns Unless Otherwise Noted.



**BENCHMARK**  
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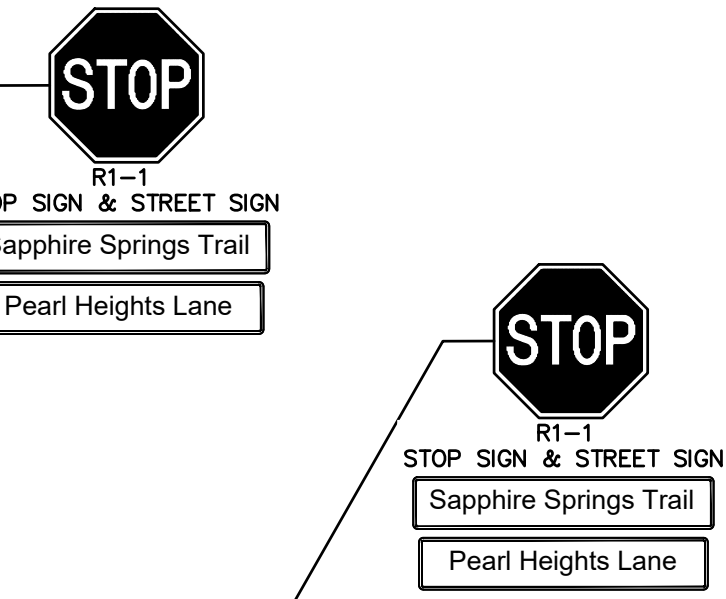
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**WATER LINE-SANITARY SEWER CROSSING**  
PLACE ONE FULL 18" SECTION OF RESTRAINED JOINT WATERLINE AND SANITARY SEWER PIPE CENTERED AT CROSSING. EMBED SANITARY SEWER PIPE WITH CEMENT STABILIZED SAND FOR THE TOTAL LENGTH OF ONE PIPE SEGMENT PLUS ONE FOOT BEYOND THE JOINTS ON EACH END. FOR CROSSINGS WHERE PROPOSED WATERLINE IS UNDER PROPOSED SANITARY SEWER, PROVIDE RESTRAINED JOINT DUCTILE IRON PIPE WATERLINE (FOR DIAMETERS LESS THAN 24" INCHES) AND RESTRAINED JOINT PRESSURE RATED (MIN 150 PSI) SANITARY (SEE SANITARY SEWER CONSTRUCTION NOTES - SHEET XX - PROTECTION REQUIREMENTS AT WATERLINE - SANITARY SEWER CROSSING), 24" MIN CLEARANCE. NO SEPARATE PAY.

**SANITARY SEWER MANHOLES**  
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**SANITARY SEWER NOTE**  
ALL GRAVITY SANITARY SEWER PIPE SHALL BE SDR 26 PVC.



- SPECIAL NOTES:**
- BLUE REFLECTOR BUTTONS SHALL BE PLACED 6" OFF OF THE CENTERLINE OF THE SIDE FLUSH VALVE.
  - ALL R1-1 STOP SIGNS SHALL BE 30"x30" DIAMOND GRADE SHEETING.
  - ALL STREET NAME SIGNS SHALL BE ON 8-INCH BLADES.
  - CONTRACTOR SHALL VERIFY ALL STREET NAMES WITH RECORDED PLAT PRIOR TO ORDERING STREET NAME SIGNS.
  - CONTRACTOR TO CONSTRUCT 4"x12" CONCRETE CURB WHERE 6" CURB NOT INDICATED.
  - CONTRACTOR SHALL COORDINATE SIGN COLOR, TEXT STYLE WITH OWNER

**LEGEND**

	STOP SIGN
	STREET NAME SIGNS ONLY
	TYPE III BARRICADE
	SPEED LIMIT SIGN
	6" CURB (TRANSITION BETWEEN 6" CURB AND 4"x12" CURB AT WHEEL CHAIR RAMP OR LOT LINES)
	TYPE 7 ADA RAMP
	RESTRICTED RESERVE

**LEGEND**

①		Button With Reflector in Both Directions
	YELLOW	
②		Button (Non-Reflective)
	YELLOW	
③		Button With Reflector in One Direction
	WHITE	
④		Button (Non-Reflective)
	WHITE	

**BUTTON LEGEND**  
N.T.S.

**TRAFFIC BUTTON PLACEMENT**  
PROPOSED REFLECTORIZED TRAFFIC BUTTONS TO BE PLACED AS FOLLOWS:  
1) PLACE DOUBLE ROW OF YELLOW REFLECTORIZED (TYPE II A-A) TRAFFIC BUTTONS AT 8' C-C, SPACED 3' C-C FROM ER TO ER.  
2) PLACE SINGLE ROW OF WHITE REFLECTORIZED (TYPE I-C) TRAFFIC BUTTONS AT 3' C-C, FROM ER TO ER.

**IRRIGATION SLEEVES:**  
1) SLEEVES SHALL BE CLASS 200 PVC EXTENDING A MIN. 2' BEYOND BACK OF CURB WITH ENDS CAPPED.  
2) INSTALL A MIN. 24" BELOW TOP OF PAINT, TO TOP OF PIPE.  
3) CONTRACTOR TO MARK LOCATION ON CURB WITH CHESEBOLD MARK PAINTED GREEN.

NO.	DATE	REVISIONS	APP.

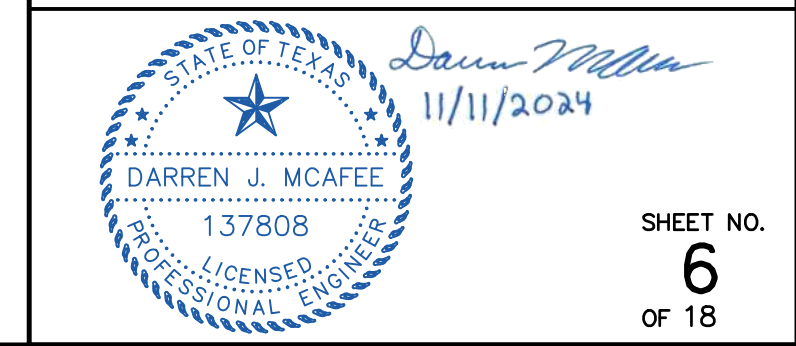
BRAZORIA COUNTY MUD NO. 82  
BRAZORIA COUNTY, TEXAS

ASHLAND MODEL HOME PARK  
GENERAL CONSTRUCTION LAYOUT

**SIGNS & BARRICADES**



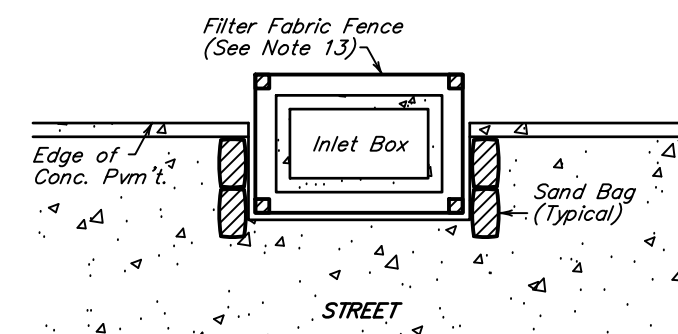
SCALE: 1"=30'  
DATE: NOVEMBER 2024  
JOB NO. 16759-0010-12  
SUBMITTED:  
DGN. BY: AHR  
DWN. BY: JWS  
DWG. NO.:  
SURV. BY:  
F.B. NO.:



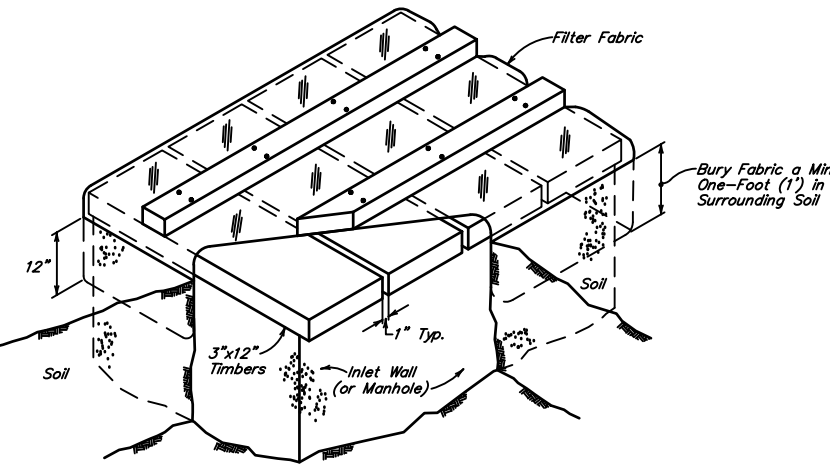
SHEET NO. 6 OF 18



POST A SIGN READING "CONCRETE WASH OUT PIT" NEXT TO THE PIT.  
 VERBALLY INSTRUCT THE CONCRETE TRUCK DRIVERS WHERE THE PIT IS AND TO WASH OUT THEIR TRUCKS IN THE PIT AND NO WHERE ELSE.  
 UPON THE CONCRETE SETTING UP (CURING, DRYING OUT), THE CONCRETE WASTE SHALL BE REMOVED FROM THE PROJECT SITE AND DISPOSED OF PROPERLY BY THE CONTRACTOR. AFTER REMOVAL OF THE CONCRETE WASTE, THE WASH OUT PIT SHALL BE FILLED WITH CLEAN FILL MATERIAL AND COMPACTED TO IN-SITU CONDITIONS, OR AS DIRECTED BY THE PROJECT SPECIFICATIONS.  
 CONCRETE WASH OUT PITS SHALL NOT BE LOCATED DIRECTLY ADJACENT TO, NOR AT ANY TIME DRAIN INTO THE STORM SEWER SYSTEM OR ANY OTHER SWALE, DITCH, OR WATERWAY.  
 CONSTRUCT ENTRY ROAD AND BOTTOM OF WASHOUT AREA TO SUPPORT EXPECTED LOADINGS FROM TRUCKS EQUIPMENT.



TYPICAL INLET PROTECTION UPPER STAGE - AFTER REMOVAL OF TIMBER COVER



TYPICAL INLET AND MANHOLE PROTECTION - LOWER STAGE

NOTE: CONTRACTOR TO VERIFY ELEVATION AND LOCATION OF ALL EXISTING UTILITIES PRIOR TO COMMENCEMENT OF ANY NEW CONSTRUCTION

**EROSION AND SEDIMENTATION CONTROL NOTES**

- PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL INSTALL EROSION AND SEDIMENTATION CONTROLS AT LOCATION SHOWN ON PLANS.
- CONTRACTOR SHALL INSPECT ALL EROSION AND SEDIMENTATION CONTROL SYSTEMS SPECIFIED HEREIN, AT A MINIMUM OF ONCE EVERY CALENDAR DAY.
- CONTRACTOR SHALL MAINTAIN, REPAIR AND/OR REPLACE DAMAGED EROSION AND SEDIMENTATION CONTROL SYSTEM THROUGHOUT THE DURATION OF THE CONTRACT. (NO SEPARATE PAY).
- CONTRACTOR SHALL PROVIDE PROTECTED STORAGE AREAS FOR CHEMICALS, PAINTS, SOLVENTS, FERTILIZERS, AND OTHER POTENTIALLY TOXIC MATERIALS.
- 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).
- 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.
- CONTRACTOR IS RESPONSIBLE FOR DISPOSING OF HIS FUELS, MATERIALS, AND CONTAMINATED EXCAVATIONS IN A LEGALLY APPROVED MANNER. (NO SEPARATE PAY).
- CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE ENVIRONMENTAL LAWS.
- CONTRACTOR IS RESPONSIBLE FOR PROVIDING ADEQUATELY MAINTAINED SANITARY FACILITIES.
- 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.
- 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.
- 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.
- IF PAVING CONTRACTOR REMOVES OR PUNCTURES TIMBER GRATE TO ESTABLISH DRAINAGE, INLET MUST BE SURROUNDED BY FILTER FABRIC FENCE AS SHOWN IN DETAIL ON THIS SHEET.

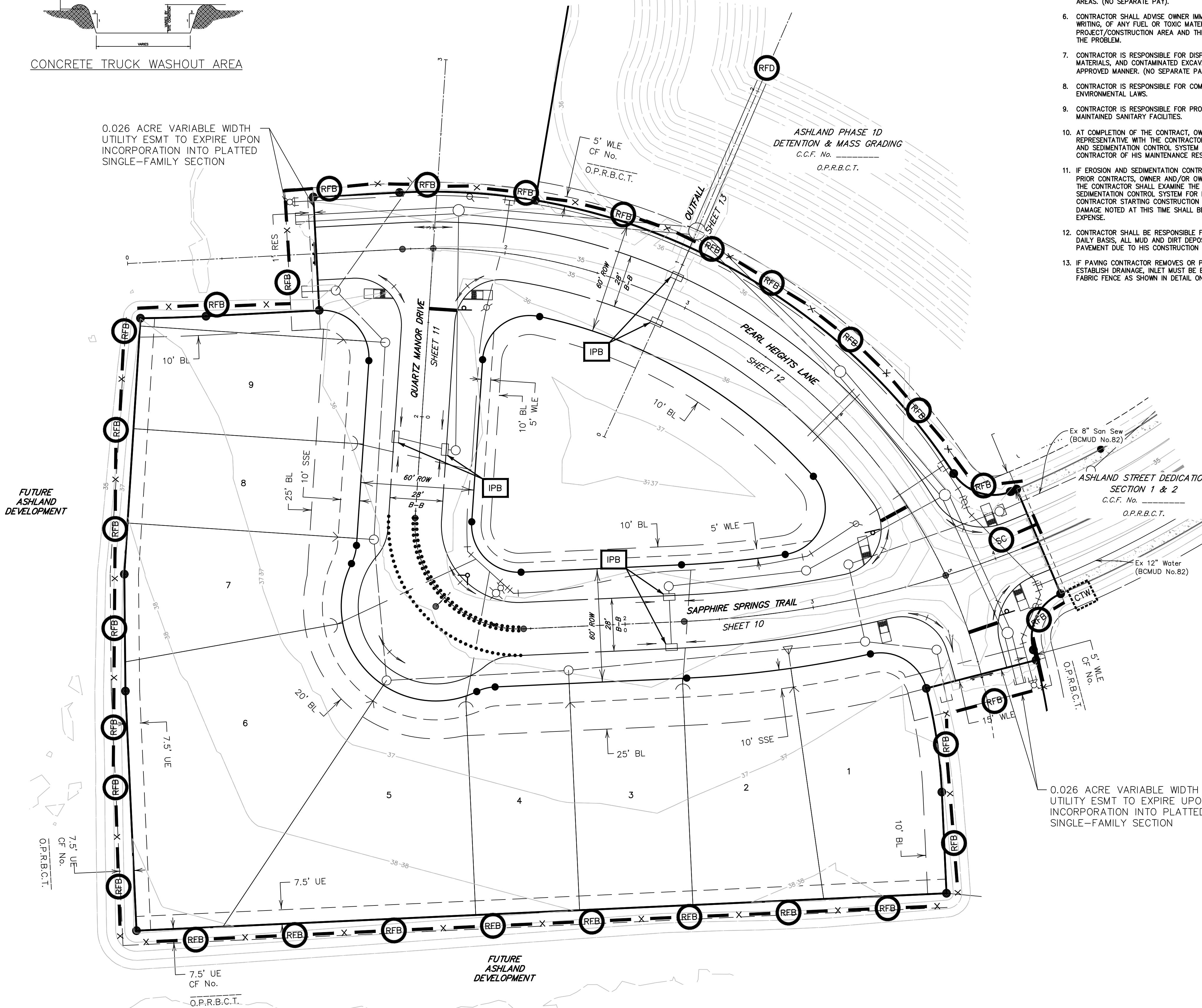
**MANHOLE/INLET PROTECTION NOTES**

- INLETS AND MANHOLES THAT ARE NOT COMPLETE AND/OR ARE SUBJECT TO CONVEYING STORM WATER FLOWS ARE TO BE PROTECTED TO PREVENT SEDIMENT FROM ENTERING THE PROPOSED OR EXISTING STORM SEWER SYSTEM.
- PROTECTION SHALL CONSIST OF ONE LAYER OF 3x12-INCH OAK TIMBERS, ONE (1) INCH SPART, COVERED WITH ONE LAYER OF WOVEN POLYPROPYLENE OR POLYESTER FILTER FABRIC (EXXON GTF 100s, PHILLIPS SUPAC 4WS(UV) OR APPROVED EQUAL) HELD IN PLACE WITH 1/2" STAPLES. TIMBERS SHALL BE HELD IN PLACE WITH TWO (2) 2x4'S NAILED SECURELY TO EACH TIMBER OVER THE FILTER FABRIC. THE FILTER FABRIC SHALL EXTEND BEYOND THE PERIMETER OF THE OAK TIMBERS AS TO ENSURE ONE (1) FOOT OF BURY BETWEEN THE MANHOLE OR INLET AND THE SURROUNDING SOIL AS SHOWN.
- FILTER FABRIC TO BE CLEANED OR REPLACED WHEN IT CEASES TO FUNCTION PROPERLY OR AS DIRECTED BY THE ENGINEER.
- CONTRACTOR MAY SUBMIT PLANS FOR ALTERNATE METHODS OF PROTECTION. THESE ALTERNATE METHODS MUST BE APPROVED PRIOR TO USE IN THE FIELD.
- NO SEPARATE PAYMENT SHALL BE MADE FOR INLET AND MANHOLE PROTECTION. INCLUDE THE COST IN THE UNIT PRICE FOR THE INLETS AND MANHOLES.

**BENCHMARK**  
 ELEVATIONS WERE OBTAINED WITH REAL TIME KINETIC GLOBAL POSITIONING SATELLITE EQUIPMENT AND ARE BASED ON NATIONAL GEODETIC SURVEY MONUMENT DESIGNATION: D66956 DW1 CLUTE COOP CORRS ARP DL3490 TX8C BAY CITY CORRS ARP D43614 TXLM LA MARQUE CORRS ARP  
 TBM A BEING A PK NAIL IN ASPHALT LOCATED ON THE EAST SIDE OF FM 521, APPROXIMATELY 160' ± SOUTH FROM FM 32, AT THE NORTHWEST CORNER OF THE SUBJECT TRACT, 4.0' FROM THE EDGE OF ASPHALT AND 37' NORTHWEST FROM A POWER POLE. ELEVATION = 40.01 FEET, NAVD 88.  
 TBM B BEING A PK NAIL IN ASPHALT LOCATED ON THE EAST SIDE OF FM 521, 3130 FEET NORTH FROM THE INTERSECTION OF ANCHOR ROAD, 2.7' FROM THE EDGE OF ASPHALT AND 36' NORTHWEST FROM A POWER POLE. ELEVATION = 36.59 FEET, NAVD 88.  
**FLOODPLAIN**  
 THIS TRACT LIES WITHIN ZONES "X-SHADED" OF THE FLOOD INSURANCE RATE MAP, COMMUNITY NO. 485458, MAP NUMBER 480390A030K, PANEL 430, SUFFIX "K" DATED DECEMBER 30, 2020, FOR BRAZORIA COUNTY, TEXAS AND INCORPORATED AREAS. ZONE "X-SHADED" IS DEFINED AS AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD.  
**WATER LINE-SANITARY SEWER CROSSING**  
 PLACE ONE FULL 18" SECTION OF RESTRAINED JOINT WATERLINE AND SANITARY SEWER PIPE CENTERED AT CROSSING. EMBED SANITARY SEWER PIPE WITH CEMENT STABILIZED SAND FOR THE TOTAL LENGTH OF ONE PIPE SEGMENT PLUS ONE FOOT BEYOND THE JOINTS ON EACH END. FOR CROSSINGS WHERE PROPOSED WATERLINE IS UNDER PROPOSED SANITARY SEWER, PROVIDE RESTRAINED JOINT DUCTILE IRON PIPE WATERLINE (FOR DIAMETERS LESS THAN 24" INCHES) AND RESTRAINED JOINT PRESSURE RATED (MIN 150 PSI) SANITARY (SEE SANITARY SEWER CONSTRUCTION NOTES - SHEET XX - PROTECTION REQUIREMENTS AT WATERLINE - SANITARY SEWER CROSSING), 24" MIN CLEARANCE. NO SEPARATE PAY.  
**SANITARY SEWER MANHOLES**  
 ALL SANITARY SEWER MANHOLES SHALL BE COATED IN ACCORDANCE WITH CITY OF SUGAR LAND STANDARD SPECIFICATIONS AND APPROVED PRODUCTS LIST.  
**SANITARY SEWER NOTE**  
 ALL GRAVITY SANITARY SEWER PIPE SHALL BE SDR 26 PVC.

**CONCRETE TRUCK WASHOUT AREA**

0.026 ACRE VARIABLE WIDTH UTILITY ESMT TO EXPIRE UPON INCORPORATION INTO PLATTED SINGLE-FAMILY SECTION



**LEGEND**

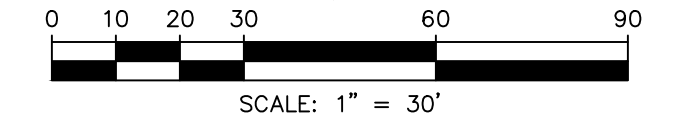
- IPB INLET PROTECTION BARRIERS FOR STAGE I & II INLETS
- X RFB REINFORCED FILTER FABRIC BARRIER
- RFD ROCK FILTER DAM
- SC STABILIZED CONSTRUCTION ENTRANCE
- CTW CONCRETE TRUCK WASHOUT AREA

**INSTALLATION SEQUENCE**

- SWPPP CONTRACTOR:**
- Install (RFB) at start of construction.
  - Install (RFB) at designated locations.
  - Install Gravel Bags at existing inlets.
  - Install other Best Management Practices needed prior to construction.
- UTILITY CONTRACTOR:**
- Maintain existing facilities.
  - Install (IPB) for Stage I inlets.
  - Install (IPB) for Stage II inlets.
  - Install Filter Fabric below manhole covers and inlet grates.
- PAVING CONTRACTOR:**
- Maintain existing Best Management Practices.
  - Repair Stage I Inlet protection as needed.
  - Install (RFB) behind Stage I inlets immediately upon completion of paving.
  - Coordinate/Request (RFB) installed by SWPPP Contractor upon completion of curb.
  - Sweep existing streets during construction.
- SWPPP CONTRACTOR:**
- Install (RFB) at designated locations.
  - Install (IPB) for Stage II inlets upon completion of paving.
  - Area within ROW and Adjacent Easements Disturbed during Construction of Utilities to be Hydro-Mulch Seeded upon completion of Utilities.
  - Broadcast Seeding of disturbed areas after final grading.
  - Install rock filter dam or velocity dissipation devices if needed.

**SWPPP CONSTRUCTION NOTES**

- CONTRACTOR SHALL IMPLEMENT INLET PROTECTION DEVICES AND REINFORCED FILTER FABRIC BARRIER ALONG ROAD AND SIDE DITCHES AT LOCATIONS SHOWN ON THE TYPICAL STORM WATER POLLUTION PREVENTION (SWPPP) PLANS TO KEEP SILT AND OR EXCAVATED MATERIALS FROM ENTERING INTO THE STORM WATER INLETS AND DITCHES EVENTUALLY POLLUTING THE RECEIVING STORM.
- DURING THE EXCAVATING PHASE OF THE PROJECT, CONTRACTOR SHALL SCHEDULE THE WORK IN SHORT SEGMENTS SO THAT EXCAVATION MATERIAL CAN BE QUICKLY HAULED AWAY FROM THE SITE AND TO PREVENT IT FROM STAYING UNCOLLECTED ON THE EXISTING PAVEMENT. ANY LOOSE EXCAVATED MATERIAL WHICH FALLS ON PAVEMENTS OR DRIVEWAYS SHALL BE SWEEPED BACK INTO THE EXCAVATED AREAS.
- CONTRACTOR SHALL CLEAN UP THE EXISTING STREET INTERSECTIONS AND DRIVEWAYS DAILY, AS NECESSARY, TO REMOVE ANY EXCESS MUD, SILT OR ROCK TRACKED FROM THE EXCAVATED AREA.
- CONTRACTOR SHALL FOLLOW GOOD HOUSEKEEPING PRACTICES DURING THE CONSTRUCTION OF THE PROJECT, ALWAYS CLEANING UP DIRT AND LOOSE MATERIAL AS CONSTRUCTION PROGRESSES.
- CONTRACTOR TO INSPECT AND MAINTAIN THE AREAS LISTED BELOW AT LEAST ONCE EVERY FOURTEEN(14) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF THE STORM EVENT OF 0.5 INCHES OR GREATER.
  - DISTURBED AREAS OF THE CONSTRUCTION SITE THAT HAVE NOT BEEN FINALLY STABILIZED.
  - AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION.
  - STRUCTURAL CONTROL MEASURES.
  - LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE.
- CONTRACTOR TO BE RESPONSIBLE TO MAINTAIN EXISTING DITCHES AND OR CULVERTS FOR UNOBSTRUCTED DRAINAGE AT ALL TIMES. WHERE SODDING IS DISTURBED BY EXCAVATION OR BACKFILLING OPERATIONS, SUCH AREAS SHALL BE REPLACED BY SEEDING OR SODDING. SLOPES 4:1 OR STEEPER SHALL BE REPLACED BY BLOCK SODDING.



NO.	DATE	REVISIONS	APP.

BRAZORIA COUNTY MUD NO. 82  
 BARZORIA COUNTY, TEXAS  
 ASHLAND MODEL HOME PARK  
 GENERAL CONSTRUCTION LAYOUT  
**STORM WATER POLLUTION PREVENTION PLAN**

**QUIDDITY**  
 TEP's Registration No. F-23290 & 13064100  
 601 Northwest Loop 410, Suite 403 • San Antonio, Texas 78216 • 210.494.5511  
 SCALE: 1"=30' DGN. BY: AHR  
 DATE: NOVEMBER 2024 DWN. BY: JWS  
 JOB NO. 16759-0010-12 DWG. NO. \_\_\_\_\_  
 SUBMITTED: \_\_\_\_\_ SURV. BY: \_\_\_\_\_  
 F.B. NO. \_\_\_\_\_

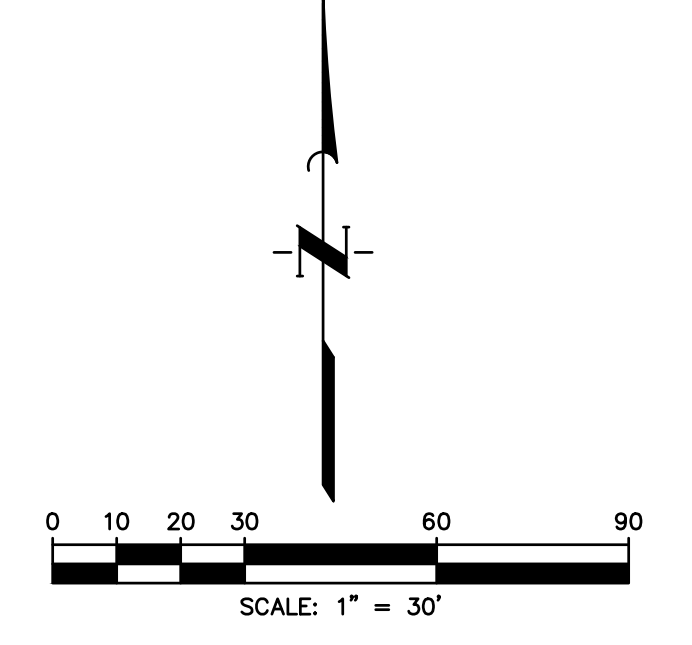
STATE OF TEXAS  
 DARRIN J. MCAFFEE  
 137808  
 LICENSED PROFESSIONAL ENGINEER  
 11/11/2024  
 SHEET NO. 7 OF 18



NOTE: CONTRACTOR TO VERIFY ELEVATION AND LOCATION OF ALL EXISTING UTILITIES PRIOR TO COMMENCEMENT OF ANY NEW CONSTRUCTION

**NOTE:**  
FOR STORM EVENTS UP TO AND INCLUDING THE 100 YR STORM, IT HAS BEEN DETERMINED THAT THE RESULTING SHEET FLOW PONDING WILL BE CONTAINED WITHIN THE STREET RIGHT OF WAY. THE TOP OF SLAB ELEVATION AT ANY POINT ON THE PERIMETER OF THE SLAB SHALL NOT BE LESS THAN TWELVE (12) INCHES ABOVE LOWEST FINISHED GRADE.

**ADDITIONAL NOTES:**  
IN AREAS WHERE THE PROJECT DESIGN INCORPORATES FILL ADJACENT TO NEIGHBORING LANDOWNERS, THE CONTRACTOR SHALL IMPLEMENT GRADING AND/OR PERIMETER RUNOFF CATCHMENT 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 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 NOTE IS NOT INTENDED TO ADDRESS ANY LIABILITY OR RESPONSIBILITY UNDER TEXAS WATER CODE 11.086



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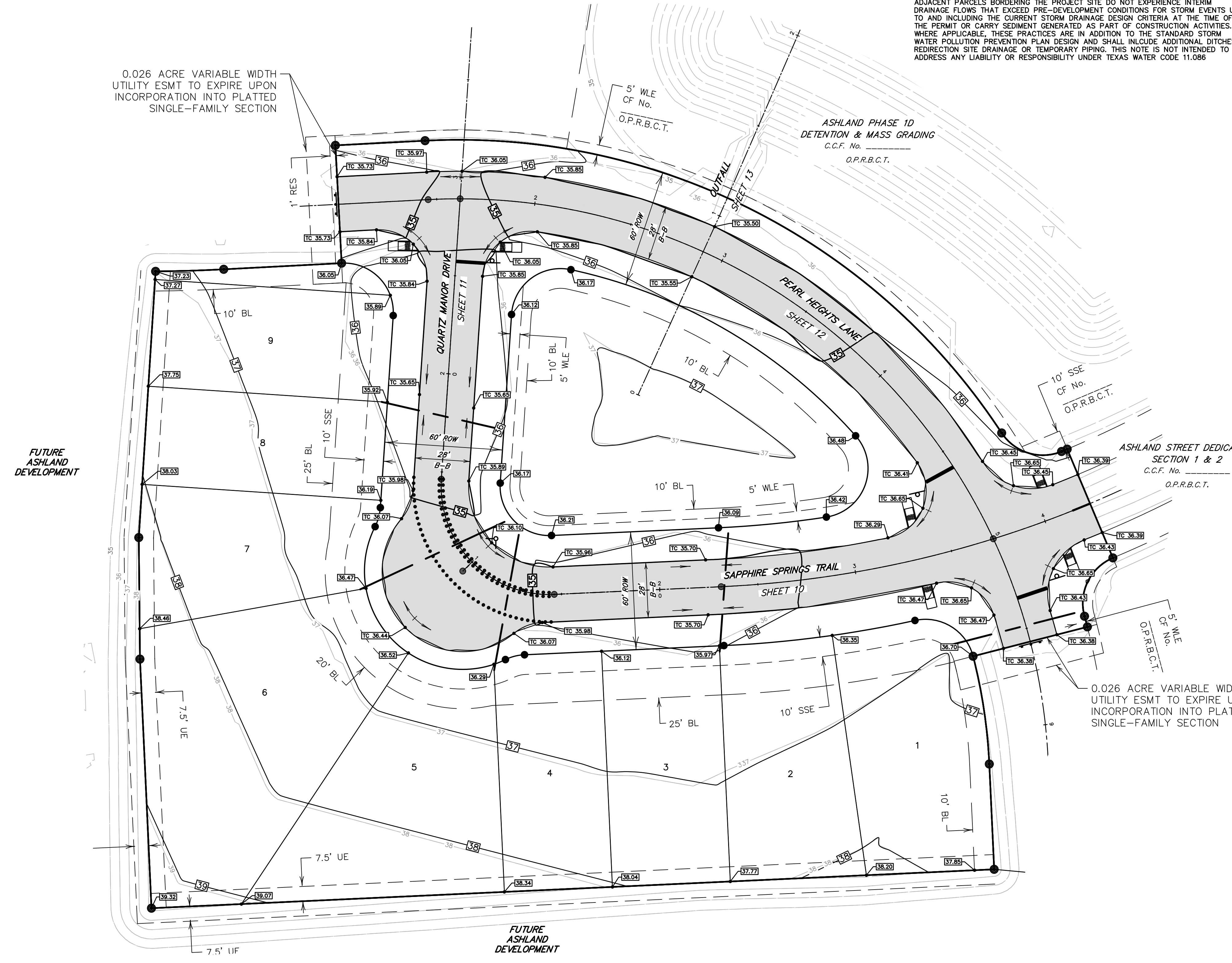
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**SANITARY SEWER NOTE**  
ALL GRAVITY SANITARY SEWER PIPE SHALL BE SDR 26 PVC.

- LOT GRADING NOTES:**
- THE LINES AND GRADES ON THIS GRADING PLAN DO NOT IMPLY AUTHORIZATION TO PERFORM ANY GRADING WORK ON OTHER PROPERTIES, NOR DOES THIS PLAN INDICATE GRADING APPROVAL FOR WORK SHOWN IN UTILITY EASEMENTS. THE CONTRACTOR IS RESPONSIBLE TO OBTAIN SUCH APPROVALS PRIOR TO COMMENCING WORK.
  - THE CONTRACTOR SHALL COMPLETE ALL EXCAVATION ACTIVITIES TO THE LINES AND GRADES SHOWN BY THIS PLAN. UNIFORM SMOOTH GRADING OF ALL AREAS SHALL BE ACCOMPLISHED. THE FINISHED SURFACE SHALL BE REASONABLY SMOOTH AND FREE FROM IRREGULARITIES.
  - THE CONTRACTOR SHALL ADJUST THE PROPOSED LOCATION AND ROUTING OF SURFACE DRAINAGE SWALES TO OPTIMIZE DRAINAGE, AS REQUIRED. CONTRACTOR TO OBTAIN APPROVAL FROM ENGINEER PRIOR TO MAKING ADJUSTMENTS (NO SEPARATE PAY).
  - LOT AREAS THAT ARE TO RECEIVE FILL SHALL BE PREPARED AS FOLLOWS (NO SEPARATE PAY).
    - AREAS TO RECEIVE FILL WITH EXISTING GRASS OR SHRUBBERY HIGHER THAN 2 FEET MUST BE MOWED PRIOR TO THE PLACEMENT OF FILL STAKES.
    - CLEARING OF SCATTERED TREES UP TO 4 INCH CALIPER IN AREAS DESIGNATED TO RECEIVE FILL IS INCIDENTAL TO THE CONTRACT. INCLUDE COSTS IN PRICE BID FOR LOT GRADING.
    - AREAS THAT ARE TO RECEIVE FILL WILL BE STRIPPED TO A DEPTH OF 3". STRIPPINGS SHALL BE STOCK PILED AND THEN SPREAD EVENLY ON SURFACE OF FILL AREAS.
    - CONTRACTOR TO PROOF ROLL ALL LOTS WITHIN THE PROJECT BOUNDARY AS PART OF LOT GRADING. PRIOR TO THE PLACEMENT OF ANY MATERIAL ON NATIVE EARTH, THE AREA SHALL BE PROOF ROLLED. THE NATIVE SOIL SHALL BE ROLLED WITH SUFFICIENT INTENSITY TO BRING OUT WEAK SPOTS IN THE SUBGRADE WHICH WOULD OTHERWISE FAIL DURING THE CONSTRUCTION PROCESS. THE PROOF ROLLING SHALL BE COMPLETED WITH EQUIPMENT WEIGHING AT LEAST 20 TONS WITH TIRE PRESSURES BETWEEN 50 PSI AND 150 PSI. A MINIMUM OF TWO COVERAGE'S OF THE PROOF ROLLER WILL BE REQUIRED. EACH SUCCEEDING TRIP OF THE PROOF ROLLER SHALL BE OFFSET BY NOT GREATER THAN ONE TIRE WIDTH. ROLLERS SHALL BE OPERATED AT SPEEDS BETWEEN 2 AND 6 MPH. SHOULD SOFT UNSTABLE AREAS APPEAR IN THE LOTS, THE CONTRACTOR SHALL REMOVE THE 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 1.5 FOOT).
  - PLACEMENT OF FILL SHALL NOT CREATE PONDING ON ADJACENT LOTS OF PROPERTY.
  - 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.
  - ALL EXISTING DRAINAGE SWALES IN FILL AREAS SHALL BE STRIPPED OF ANY VEGETATION, CLEANED AND MUCKED OUT TO SUITABLE SUBGRADE MATERIAL AND THEN FILLED AS SHOWN WITH EXCAVATION MATERIAL IN MAXIMUM EIGHT INCH (8") LOOSE LIFTS, WITH EACH LIFT COMPACTED TO AT LEAST 95% PROCTOR DENSITY AS DETERMINED BY AASHTO TEST METHOD T-99.
  - ENGINEER WILL PROVIDE APPROXIMATE BACK LOT LINE FINISH ELEVATIONS. CONTRACTOR SHALL VERIFY FINAL LOT GRADES AND ELEVATIONS TIED TO PROJECT BENCHMARK. CONTRACTOR SHALL INCLUDE COST IN ITEM BID FOR LOT GRADING.
- FINAL PAYMENT SHALL BE CONTINGENT ON THE ENGINEERS VERIFICATION THAT LOT GRADING IS IN ACCORDANCE WITH THE GRADING PLAN, AND THAT SOIL COMPACTION TESTS WERE PERFORMED AS REQUIRED.
- 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 STREET UNLESS DESIGNATED AS OTHER THAN TYPE "A" GRADING.



**LEGEND**

	EXISTING		PROPOSED
	194		194
	196.0		196.0
	196.0		196.0

GROUND CONTOUR  
PROPOSED TOP OF CURB  
FINISH ELEVATIONS  
PROPOSED PAVEMENT

NO.	DATE	REVISIONS	APP.

BRAZORIA COUNTY MUD NO. 82  
BRAZORIA COUNTY, TEXAS

ASHLAND MODEL HOME PARK  
GENERAL CONSTRUCTION LAYOUT

**GRADING PLAN**

**QUIDDITY**  
TITLE Registration No. F-23290 & 10046100  
601 Northwest Loop 410, Suite 403 • San Antonio, Texas 78216 • 210.494.5511

SCALE: 1"=30' DGN. BY: AHR  
DATE: NOVEMBER 2024 DWN. BY: JWS  
JOB NO. 16759-0010-12 DWG. NO. \_\_\_\_\_  
SUBMITTED: \_\_\_\_\_ SURV. BY: \_\_\_\_\_  
F.B. NO. \_\_\_\_\_

STATE OF TEXAS  
DARREN J. MCAFFEE  
137808  
LICENSED PROFESSIONAL ENGINEER

11/11/2024

SHEET NO. 8 OF 18



Project: ASHLAND MODEL HOME PARK  
 Date: 9/11/2024  
 Job No: 16759-0010-12  
 System: 5-YEAR STORM  
 By: AHR  
 Checked By: CBJ

Design criteria adheres to the Brazoria County Design Criteria Manual dated May 2022

	Flowline	5-yr HGL	100-yr HGL
Outfall	20.50	32.14	34.47

	5-yr HGL Starting Elevation = 2-yr WSE		100-yr HGL Starting Elevation = 25-yr WSE		
Region 1 Design Storm =	2-YEAR STORM	5-YEAR STORM	10-YEAR STORM	25-YEAR STORM	100-YEAR STORM
b =	57.44	58.019	57.515	52.78	46.316
d =	11.511	9.236	7.777	5.022	1.555
e =	0.754	0.712	0.676	0.618	0.533

Drainage Area	Manhole From	Manhole To	Contributing Area (Acres)	Total Area (Acres)	Runoff Coefficient C	Intensity (in/hr)			Flow (ft <sup>3</sup> /s)		Time of Concentration (min)	Pipe Length (feet)	Pipe Diameter (in)	Slope (%)	Manning "n"	Design Capacity (cfs)	Design Velocity (ft/sec)	Fall (feet)	Manhole Drop (feet)	Flowline Elevation Upstream (feet)	Flowline Elevation Downstream (feet)	Actual Velocity (ft/sec)	Hydraulic Gradient (%)	Change in Head (feet)	Elevation of Hyd. Grad. Upstream (feet)	Elevation of Hyd. Grad. Downstream (feet)	Gutter Elevation Upstream (feet)	Actual Velocity (ft/sec)	Hydraulic Gradient (%)	Change in Head (feet)	Elevation of Hyd. Grad. Upstream (feet)	Elevation of Hyd. Grad. Downstream (feet)	Top of Curb Upstream (feet)
						Sum of C <sub>A</sub>	5yr	100 yr	5yr	100 yr																							
I	1B	1A	1.13	1.13	0.60	0.7	6.00	10.38	4.07	7.04	15.00	28	24	1.07	0.013	23.40	7.45	0.30		31.01	30.71	1.29	0.03	0.01	33.01	32.71	35.20	2.24	0.10	0.03	35.53	35.50	35.70
II	1A	1	0.33	1.46	0.60	0.9	5.98	10.36	5.24	9.07	15.06	5	24	2.00	0.013	31.99	10.18	0.10		30.71	30.61	1.67	0.05	0.00	32.71	32.61	35.20	2.89	0.16	0.01	35.50	35.49	35.70
	1	2		1.46	0.60	0.9	5.98	10.35	5.24	9.07	15.07	73	24	0.18	0.013	9.60	3.06	0.13		30.61	30.47	1.67	0.05	0.04	32.61	32.47	35.31	2.89	0.16	0.12	35.49	35.37	35.81
III	2	3		1.46	0.60	0.9	5.91	10.22	5.24	9.07	15.47	84	24	0.18	0.013	9.60	3.06	0.15	8.53	30.47	30.32	1.67	0.05	0.04	32.47	32.40	35.78	2.89	0.16	0.13	35.37	35.24	36.28
	4A	4	11.10	11.10	0.60	6.7	6.00	10.38	39.93	69.11	15.00	28	48	0.10	0.013	45.42	3.61	0.03		21.90	21.87	3.18	0.08	0.02	32.48	32.46	35.35	5.50	0.23	0.06	35.49	35.42	35.85
	4	3		11.10	0.60	6.7	5.97	10.33	39.93	69.11	15.13	80	48	0.10	0.013	45.42	3.61	0.08		21.87	21.79	3.18	0.08	0.06	32.46	32.40	36.08	5.50	0.23	0.19	35.42	35.24	36.58
IV	3	5		12.56	0.60	7.5	5.84	10.08	43.99	75.96	15.93	86	48	0.10	0.013	45.42	3.61	0.09		21.79	21.71	3.50	0.09	0.08	32.40	32.32	35.77	6.04	0.28	0.24	35.24	35.00	36.27
	5	6		12.56	0.60	7.5	5.77	9.96	43.99	75.96	16.32	106	48	0.10	0.013	45.42	3.61	0.11	1.02	21.71	21.60	3.50	0.09	0.10	32.32	32.22	35.38	6.04	0.28	0.30	35.00	34.70	35.88
V	6B	6A	0.36	0.36	0.60	0.2	6.00	10.38	1.30	2.24	15.00	28	24	1.07	0.013	23.40	7.45	0.30	3.90	30.80	30.50	0.41	0.00	0.00	32.80	32.22	35.05	0.71	0.01	0.00	34.72	34.71	35.55
VI	6A	6	0.42	0.78	0.60	0.5	5.98	10.36	2.80	4.85	15.06	25	24	1.67	0.013	29.23	9.31	0.42	5.59	26.60	26.18	0.89	0.02	0.00	32.22	32.22	35.00	1.54	0.05	0.01	34.71	34.70	35.50
VII	7B	7A	0.80	0.80	0.60	0.5	6.00	10.38	2.88	4.98	15.00	28	24	1.05	0.013	23.18	7.38	0.30		30.90	30.60	0.92	0.02	0.00	32.90	32.60	35.15	1.59	0.05	0.01	35.03	35.02	35.65
	7A	7	0.22	1.02	0.60	0.6	5.98	10.35	3.66	6.34	15.06	5	24	2.00	0.013	31.99	10.18	0.10		30.60	30.50	1.17	0.03	0.00	32.60	32.50	35.15	2.02	0.08	0.00	35.02	35.01	35.65
VIII	7	8		1.02	0.60	0.6	5.98	10.35	3.66	6.34	15.07	127	24	0.18	0.013	9.60	3.06	0.23	8.55	30.50	30.27	1.17	0.03	0.03	32.50	32.29	35.26	2.02	0.08	0.10	35.01	34.92	35.76
	8A	8	8.66	8.66	0.60	5.2	6.00	10.38	31.15	53.92	15.00	86	42	0.10	0.013	31.82	3.31	0.09	0.50	22.31	22.22	3.24	0.10	0.08	32.37	32.29	34.70	5.60	0.29	0.25	35.16	34.92	35.20
	8	6		9.68	0.60	5.8	5.86	10.13	34.06	58.83	15.77	127	48	0.10	0.013	45.42	3.61	0.13	1.01	21.72	21.60	2.71	0.06	0.07	32.29	32.22	35.63	4.68	0.17	0.21	34.92	34.70	36.13
	6	Outfall		23.02	0.60	13.8	5.70	9.82	78.67	135.61	16.81	86	60	0.10	0.013	82.36	4.19	0.09		20.59	20.50	4.01	0.09	0.08	32.22	32.14	34.98	6.91	0.27	0.23	34.70	34.47	35.48

NO.	DATE	REVISIONS	APP.

BRAZORIA COUNTY MUD NO. 82  
 BARZORIA COUNTY, TEXAS

ASHLAND MODEL HOME PARK

**DRAINAGE CALCULATIONS**



SCALE: \_\_\_\_\_ DGN. BY: AHR  
 DATE: NOVEMBER 2024 DWN. BY: JWS  
 JOB NO. 16759-0010-12 DWG. NO. \_\_\_\_\_  
 SUBMITTED: \_\_\_\_\_ SURV. BY: \_\_\_\_\_  
 F.B. NO. \_\_\_\_\_

*Darren J. McAfee*  
 11/11/2024

DARREN J. MCAFFEE  
 137808  
 LICENSED PROFESSIONAL ENGINEER

SHEET NO. **9**  
 OF 18

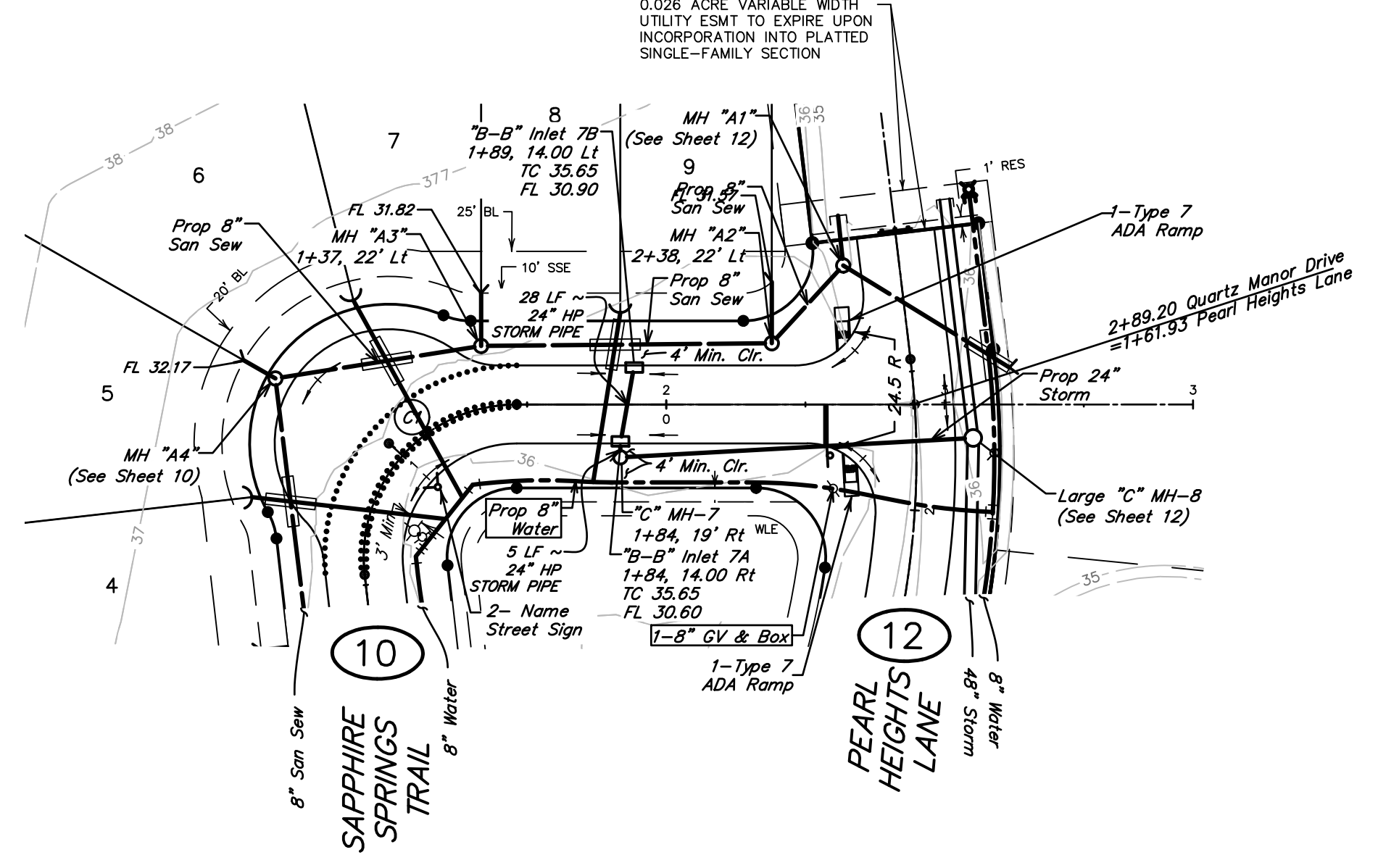
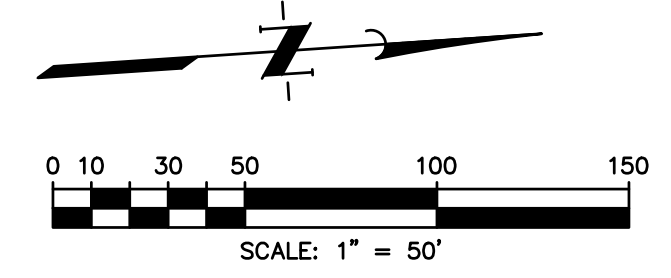






NOTE: CONTRACTOR TO VERIFY ELEVATION AND LOCATION OF ALL EXISTING UTILITIES PRIOR TO COMMENCEMENT OF ANY NEW CONSTRUCTION

(C) Curve Data  
 R=55.00'  
 L=92.61'  
 Δ=48°14'20"  
 T=61.60'  
 PC=0+53.69 Quartz Manor Drive  
 PT=1+46.31 Quartz Manor Drive



**BENCHMARK**  
 ELEVATIONS WERE OBTAINED WITH REAL TIME KINETIC GLOBAL POSITIONING SATELLITE EQUIPMENT AND ARE BASED ON NATIONAL GEODETIC SURVEY MONUMENT DESIGNATION: D66956 DW1 CLUTE COOP CORS ARP DL3490 TXBC BAY CITY CORS ARP DH3614 TXLM LA MARQUE CORS ARP

TBM A BEING A PK NAIL IN ASPHALT LOCATED ON THE EAST SIDE OF FM 521, APPROXIMATELY 1600 ± SOUTH FROM FM 32, AT THE NORTHWEST CORNER OF THE SUBJECT TRACT, 4.0' FROM THE EDGE OF ASPHALT AND 37' NORTHWEST FROM A POWER POLE  
 ELEVATION = 40.01 FEET, NAVD 88.

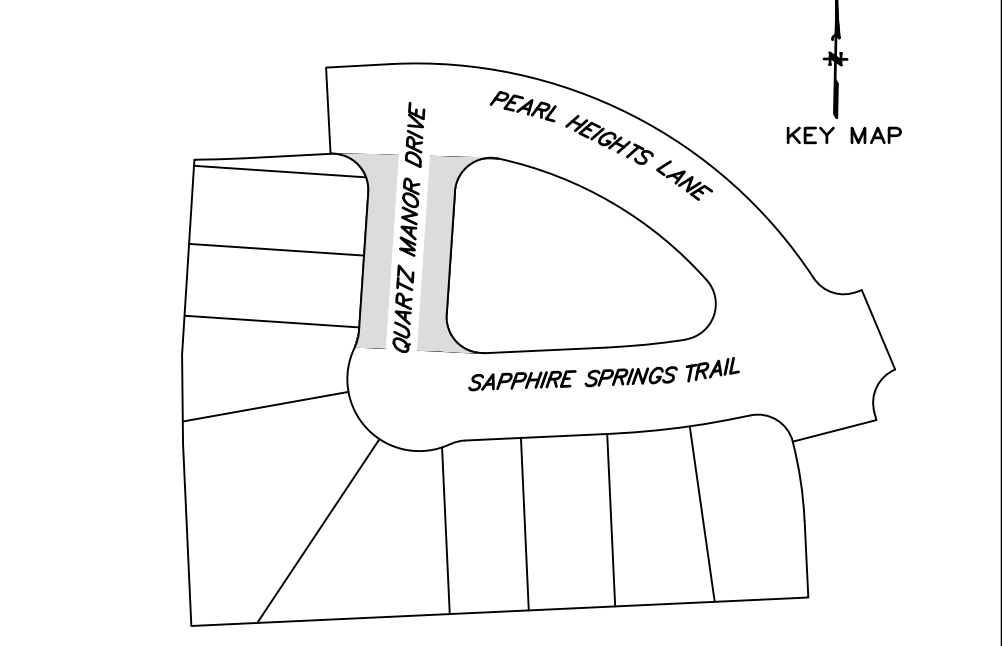
TBM B BEING A PK NAIL IN ASPHALT LOCATED ON THE EAST SIDE OF FM 521, 3130 FEET NORTH FROM THE INTERSECTION OF ANCHOR ROAD, 2.7' FROM THE EDGE OF ASPHALT AND 36' NORTHWEST FROM A POWER POLE  
 ELEVATION = 36.59 FEET, NAVD 88.

**FLOODPLAIN**  
 THIS TRACT LIES WITHIN ZONES "X-SHADED" OF THE FLOOD INSURANCE RATE MAP, COMMUNITY NO. 485458, MAP NUMBER 48039C0430K, PANEL 430, SUFFIX "K" DATED DECEMBER 30, 2020, FOR BRAZORIA COUNTY, TEXAS AND INCORPORATED AREAS. ZONE "X-SHADED" IS DEFINED AS AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD.

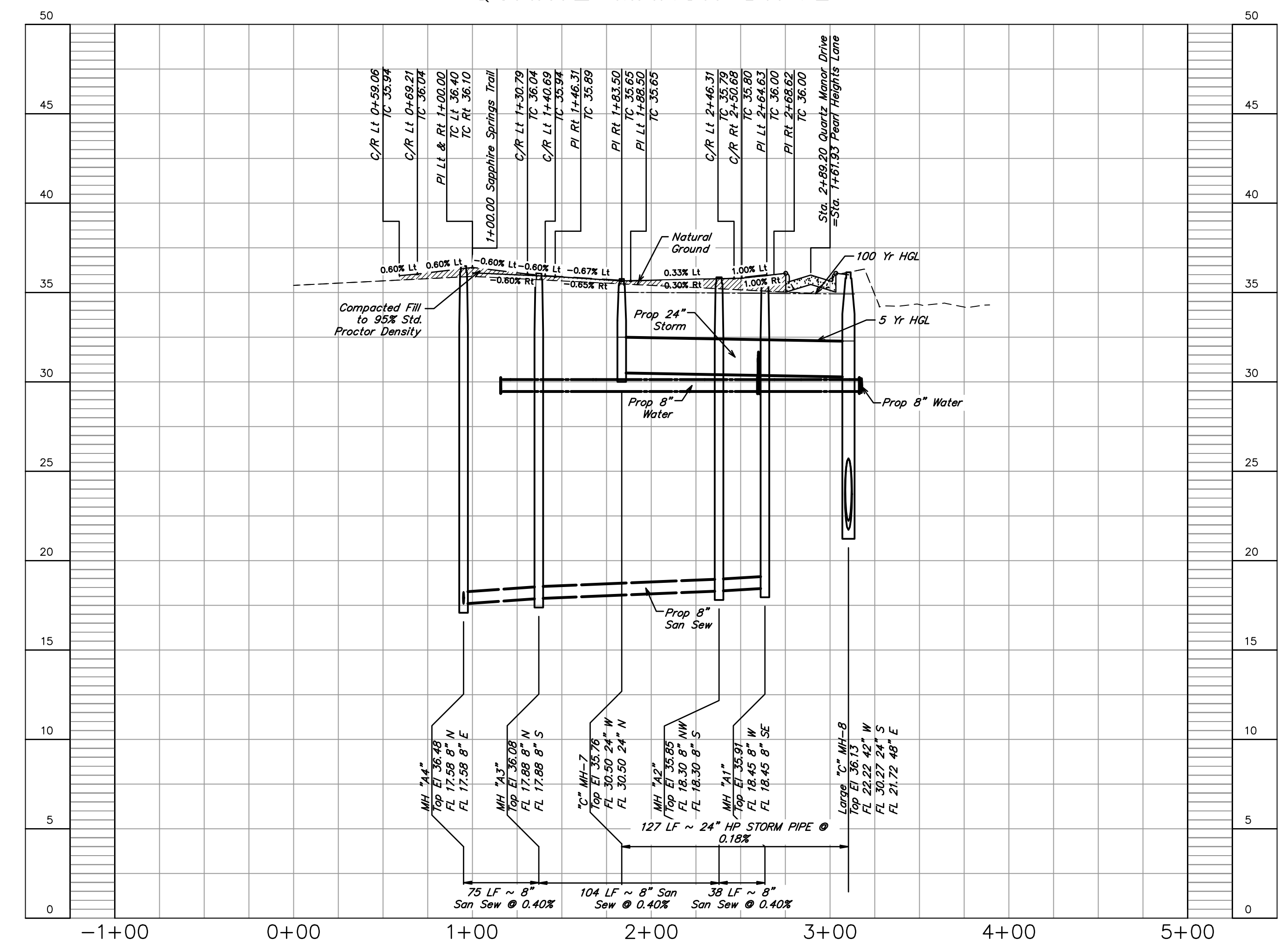
**WATER LINE-SANITARY SEWER CROSSING**  
 PLACE ONE FULL 18" SECTION OF RESTRAINED JOINT WATERLINE AND SANITARY SEWER PIPE CENTERED AT CROSSING. EMBED SANITARY SEWER PIPE WITH CEMENT STABILIZED SAND FOR THE TOTAL LENGTH OF ONE PIPE SEGMENT PLUS ONE FOOT BEYOND THE JOINTS ON EACH END. FOR CROSSINGS WHERE PROPOSED WATERLINE IS UNDER PROPOSED SANITARY SEWER, PROVIDE RESTRAINED JOINT DUCTILE IRON PIPE WATERLINE (FOR DIAMETERS LESS THAN 24" INCHES) AND RESTRAINED JOINT PRESSURE RATED (MIN 150 PSI) SANITARY (SEE SANITARY SEWER CONSTRUCTION NOTES - SHEET XX - PROTECTION REQUIREMENTS AT WATERLINE - SANITARY SEWER CROSSING), 24" MIN CLEARANCE. NO SEPARATE PAY.

**SANITARY SEWER MANHOLES**  
 ALL SANITARY SEWER MANHOLES SHALL BE COATED IN ACCORDANCE WITH CITY OF SUGAR LAND STANDARD SPECIFICATIONS AND APPROVED PRODUCTS LIST.

**SANITARY SEWER NOTE**  
 ALL GRAVITY SANITARY SEWER PIPE SHALL BE SDR 26 PVC.



QUARTZ MANOR DRIVE



NO.	DATE	REVISIONS	APP.

BRAZORIA COUNTY MUD NO. 82  
 BARZORIA COUNTY, TEXAS

ASHLAND MODEL HOME PARK

QUARTZ MANOR DRIVE  
 STA 0+00.00 TO 3+89.24

**QUIDDITY**  
TRIPLE Registration Nos. F-23290 & 10046100  
 601 Northwest Loop 410, Suite 453 • San Antonio, Texas 78216 • 210.494.5511

SCALE: 1"=50' H. 1"=5' V. DGN. BY: AHR  
 DATE: NOVEMBER 2024 DWN. BY: JWS  
 JOB NO. 16759-0010-12 DWG. NO. \_\_\_\_\_  
 SUBMITTED: \_\_\_\_\_ SURV. BY: \_\_\_\_\_  
 F.B. NO. \_\_\_\_\_

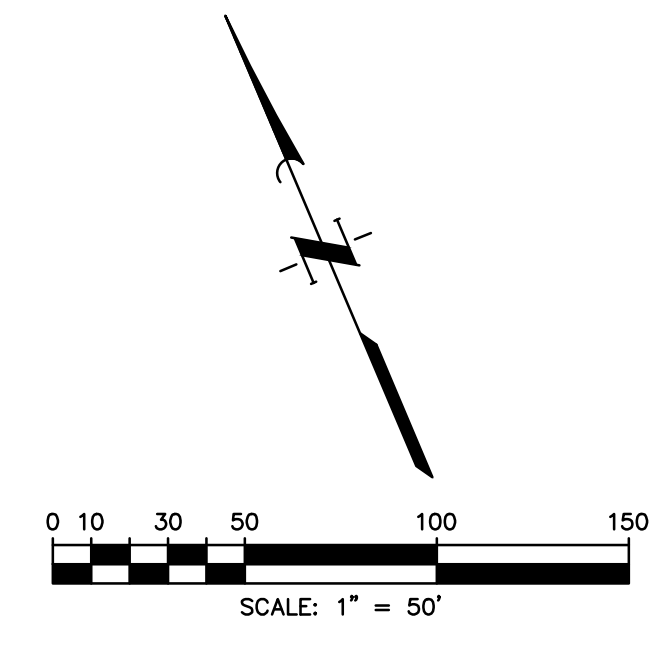
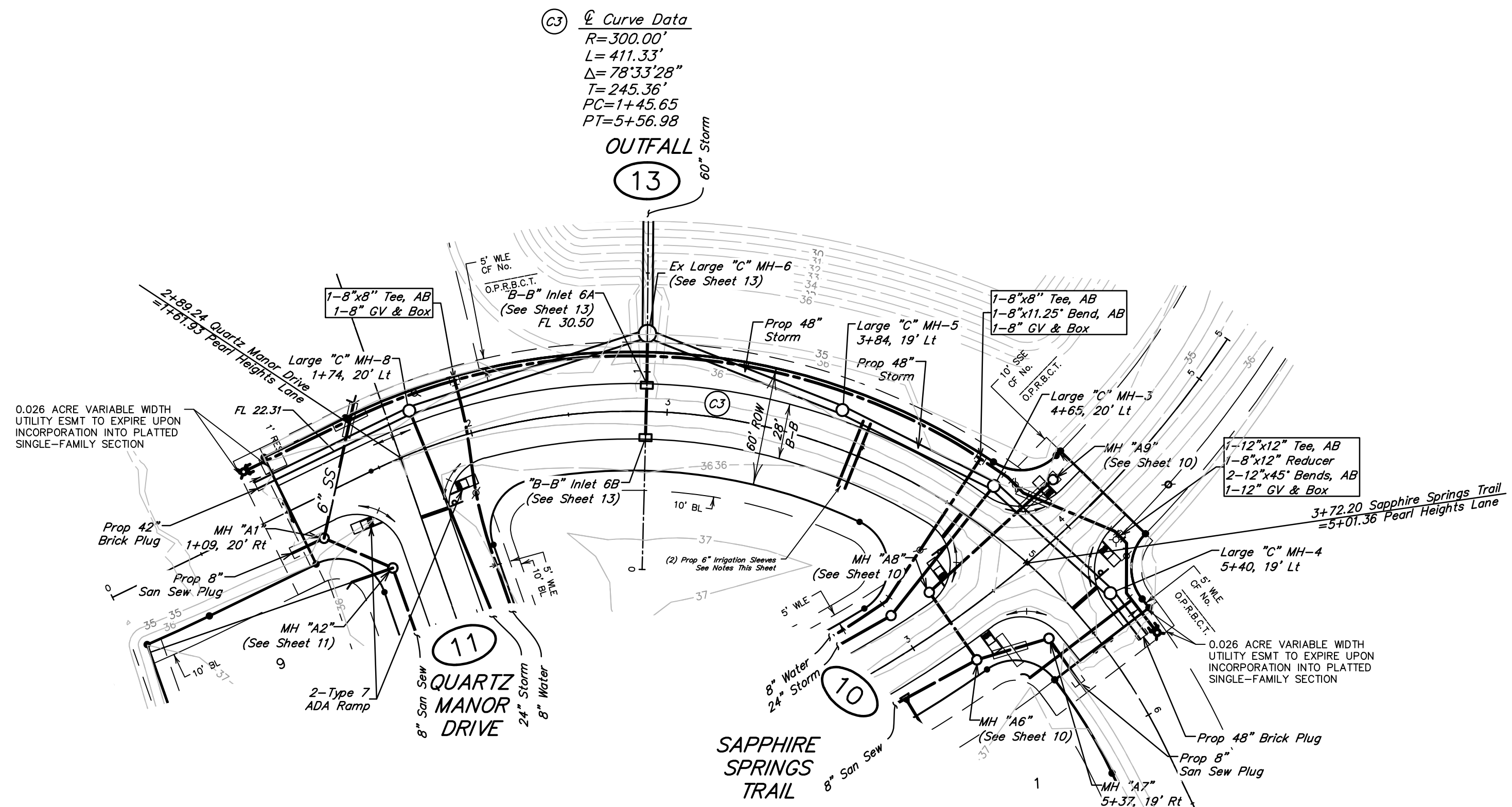
STATE OF TEXAS  
 DARREN J. MCAFFEE  
 137808  
 LICENSED PROFESSIONAL ENGINEER

11/11/2024

SHEET NO. 11 OF 18



NOTE: CONTRACTOR TO VERIFY ELEVATION AND LOCATION OF ALL EXISTING UTILITIES PRIOR TO COMMENCEMENT OF ANY NEW CONSTRUCTION



**BENCHMARK**  
ELEVATIONS WERE OBTAINED WITH REAL TIME KINETIC GLOBAL POSITIONING SATELLITE EQUIPMENT AND ARE BASED ON NATIONAL GEODETIC SURVEY MONUMENT DESIGNATION:  
D6956 DW1 CLUTE COOP CORS ARP  
DL3490 TXBC BAY CITY CORS ARP  
DH3614 TXLM LA MARQUE CORS ARP

TBM A BEING A PK NAIL IN ASPHALT LOCATED ON THE EAST SIDE OF FM 521, APPROXIMATELY 1600 ± SOUTH FROM FM 32, AT THE NORTHWEST CORNER OF THE SUBJECT TRACT, 4.0' FROM THE EDGE OF ASPHALT AND 37' NORTHWEST FROM A POWER POLE  
ELEVATION = 40.01 FEET, NAVD 88.

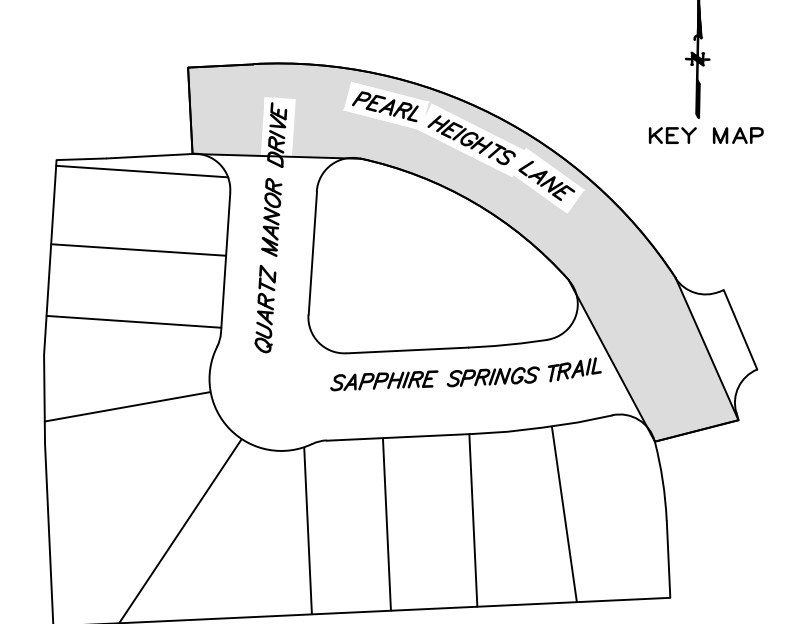
TBM B BEING A PK NAIL IN ASPHALT LOCATED ON THE EAST SIDE OF FM 521, 3130 FEET NORTH FROM THE INTERSECTION OF ANCHOR ROAD, 2.7' FROM THE EDGE OF ASPHALT AND 36' NORTHWEST FROM A POWER POLE  
ELEVATION = 36.59 FEET, NAVD 88.

**FLOODPLAIN**  
THIS TRACT LIES WITHIN ZONES "X-SHADED" OF THE FLOOD INSURANCE RATE MAP, COMMUNITY NO. 485458, MAP NUMBER 4803900430K, PANEL 430, SUFFIX "K" DATED DECEMBER 30, 2020, FOR BRAZORIA COUNTY, TEXAS AND INCORPORATED AREAS. ZONE "X-SHADED" IS DEFINED AS AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD.

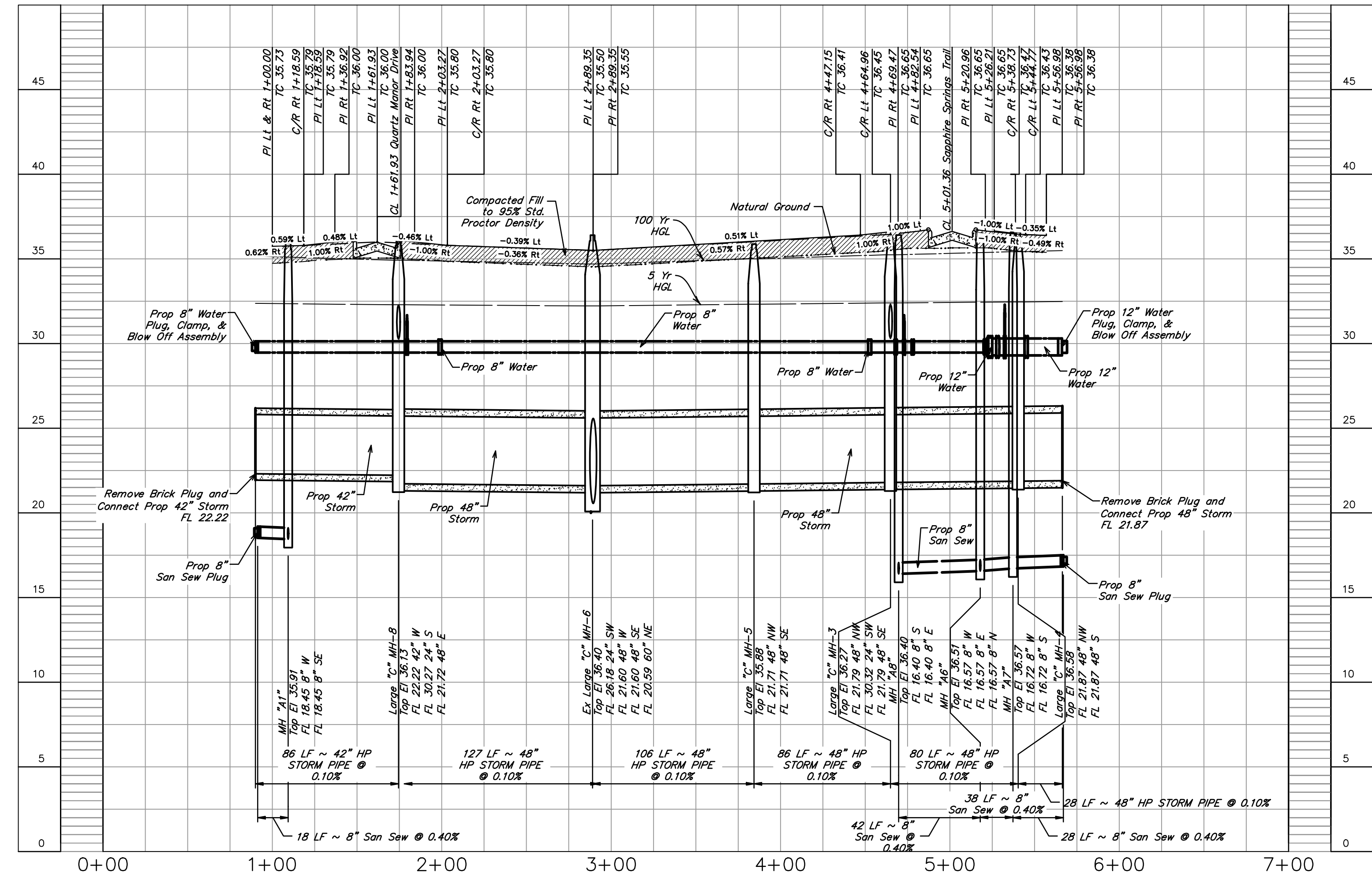
**WATER LINE-SANITARY SEWER CROSSING**  
PLACE ONE FULL 18" SECTION OF RESTRAINED JOINT WATERLINE AND SANITARY SEWER PIPE CENTERED AT CROSSING. EMBED SANITARY SEWER PIPE WITH CEMENT STABILIZED SAND FOR THE TOTAL LENGTH OF ONE PIPE SEGMENT PLUS ONE FOOT BEYOND THE JOINTS ON EACH END. FOR CROSSINGS WHERE PROPOSED WATERLINE IS UNDER PROPOSED SANITARY SEWER, PROVIDE RESTRAINED JOINT DUCTILE IRON PIPE WATERLINE (FOR DIAMETERS LESS THAN 24" INCHES) AND RESTRAINED JOINT PRESSURE RATED (MIN 150 PSI) SANITARY (SEE SANITARY SEWER CONSTRUCTION NOTES - SHEET XX - PROTECTION REQUIREMENTS AT WATERLINE - SANITARY SEWER CROSSING), 24" MIN CLEARANCE. NO SEPARATE PAY.

**SANITARY SEWER MANHOLES**  
ALL SANITARY SEWER MANHOLES SHALL BE COATED IN ACCORDANCE WITH CITY OF SUGAR LAND STANDARD SPECIFICATIONS AND APPROVED PRODUCTS LIST.

**SANITARY SEWER NOTE**  
ALL GRAVITY SANITARY SEWER PIPE SHALL BE SDR 26 PVC.



PEARL HEIGHTS LANE



NO.	DATE	REVISIONS	APP.

BRAZORIA COUNTY MUD NO. 82  
BRAZORIA COUNTY, TEXAS

ASHLAND MODEL HOME PARK

PEARL HEIGHTS LANE  
STA 0+00.00 TO 6+56.98

**QUIDDITY**  
TENTATIVE Registration No. F-23290 & 10046100  
601 Northwest Loop 410, Suite 453 • San Antonio, Texas 78216 • 210.494.5511

SCALE: 1"=50' H. 1"=5' V. DGN. BY: AHR  
DATE: NOVEMBER 2024 DWN. BY: JWS  
JOB NO. 16759-0010-12 DWG. NO.:  
SUBMITTED: SURV. BY:  
F.B. NO.:

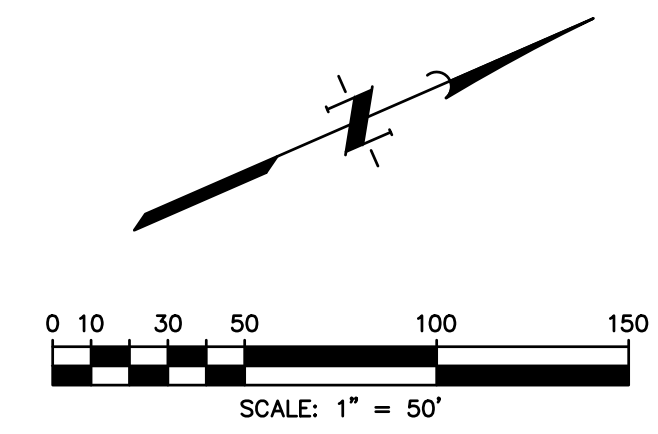
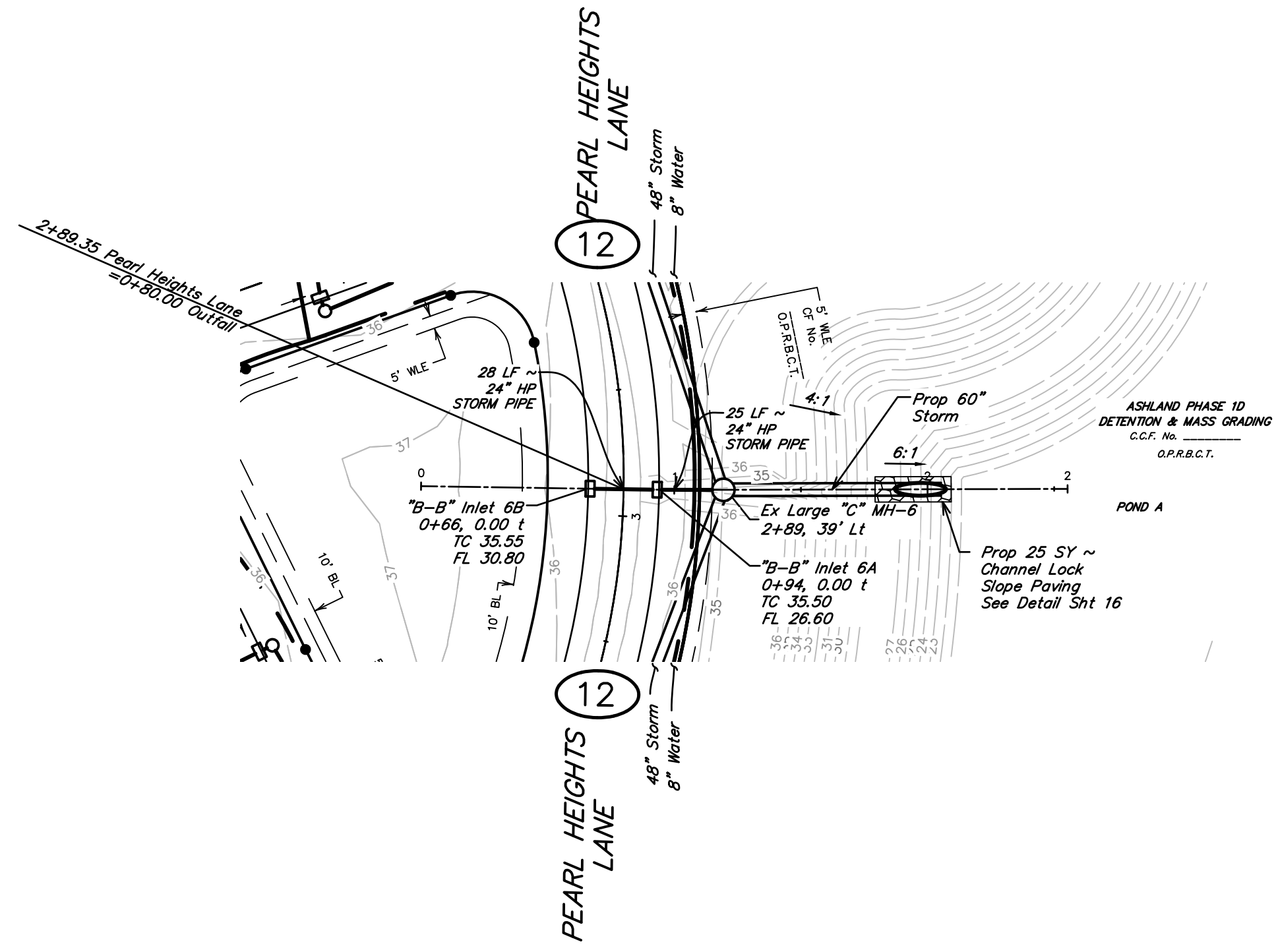
STATE OF TEXAS  
DARREN J. MCAFFEE  
137808  
LICENSED PROFESSIONAL ENGINEER

11/11/2024

SHEET NO. 12 OF 18



NOTE: CONTRACTOR TO VERIFY ELEVATION AND LOCATION OF ALL EXISTING UTILITIES PRIOR TO COMMENCEMENT OF ANY NEW CONSTRUCTION



**BENCHMARK**  
 ELEVATIONS WERE OBTAINED WITH REAL TIME KINETIC GLOBAL POSITIONING SATELLITE EQUIPMENT AND ARE BASED ON NATIONAL GEODETIC SURVEY MONUMENT DESIGNATION: D66956 DW1 CLUTE COOP CORS ARP, DL3490 TXBC BAY CITY CORS ARP, DH3614 TXLM LA MARQUE CORS ARP.

TBM A BEING A PK NAIL IN ASPHALT LOCATED ON THE EAST SIDE OF FM 521, APPROXIMATELY 160' ± SOUTH FROM FM 32, AT THE NORTHWEST CORNER OF THE SUBJECT TRACT, 4.0' FROM THE EDGE OF ASPHALT AND 37' NORTHWEST FROM A POWER POLE. ELEVATION = 40.01 FEET, NAVD 88.

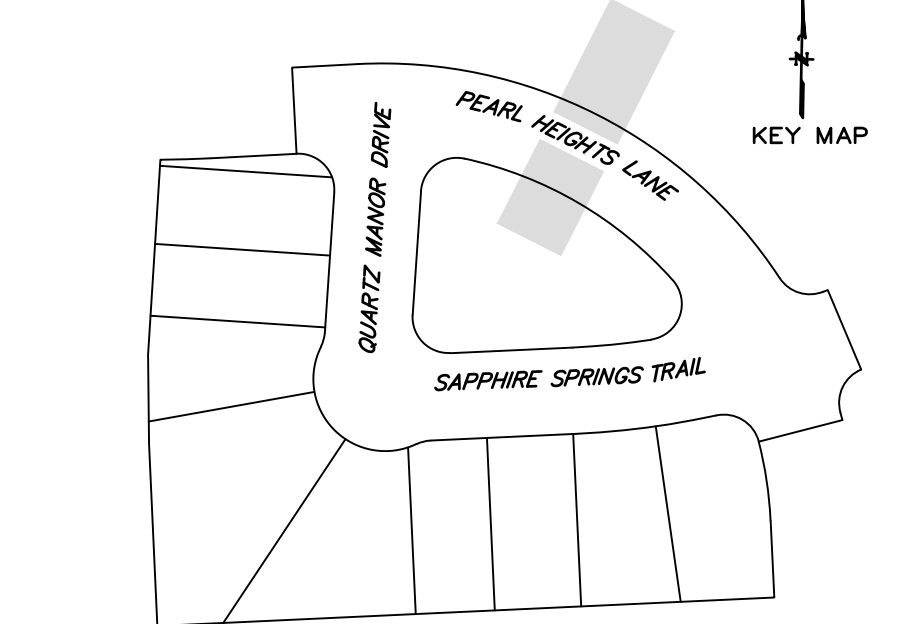
TBM B BEING A PK NAIL IN ASPHALT LOCATED ON THE EAST SIDE OF FM 521, 3130 FEET NORTH FROM THE INTERSECTION OF ANCHOR ROAD, 2.7' FROM THE EDGE OF ASPHALT AND 36' NORTHWEST FROM A POWER POLE. ELEVATION = 36.59 FEET, NAVD 88.

**FLOODPLAIN**  
 THIS TRACT LIES WITHIN ZONES "X-SHADED" OF THE FLOOD INSURANCE RATE MAP, COMMUNITY NO. 485458, MAP NUMBER 48039C0430K, PANEL 430, SUFFIX "K" DATED DECEMBER 30, 2020, FOR BRAZORIA COUNTY, TEXAS AND INCORPORATED AREAS. ZONE "X-SHADED" IS DEFINED AS AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD.

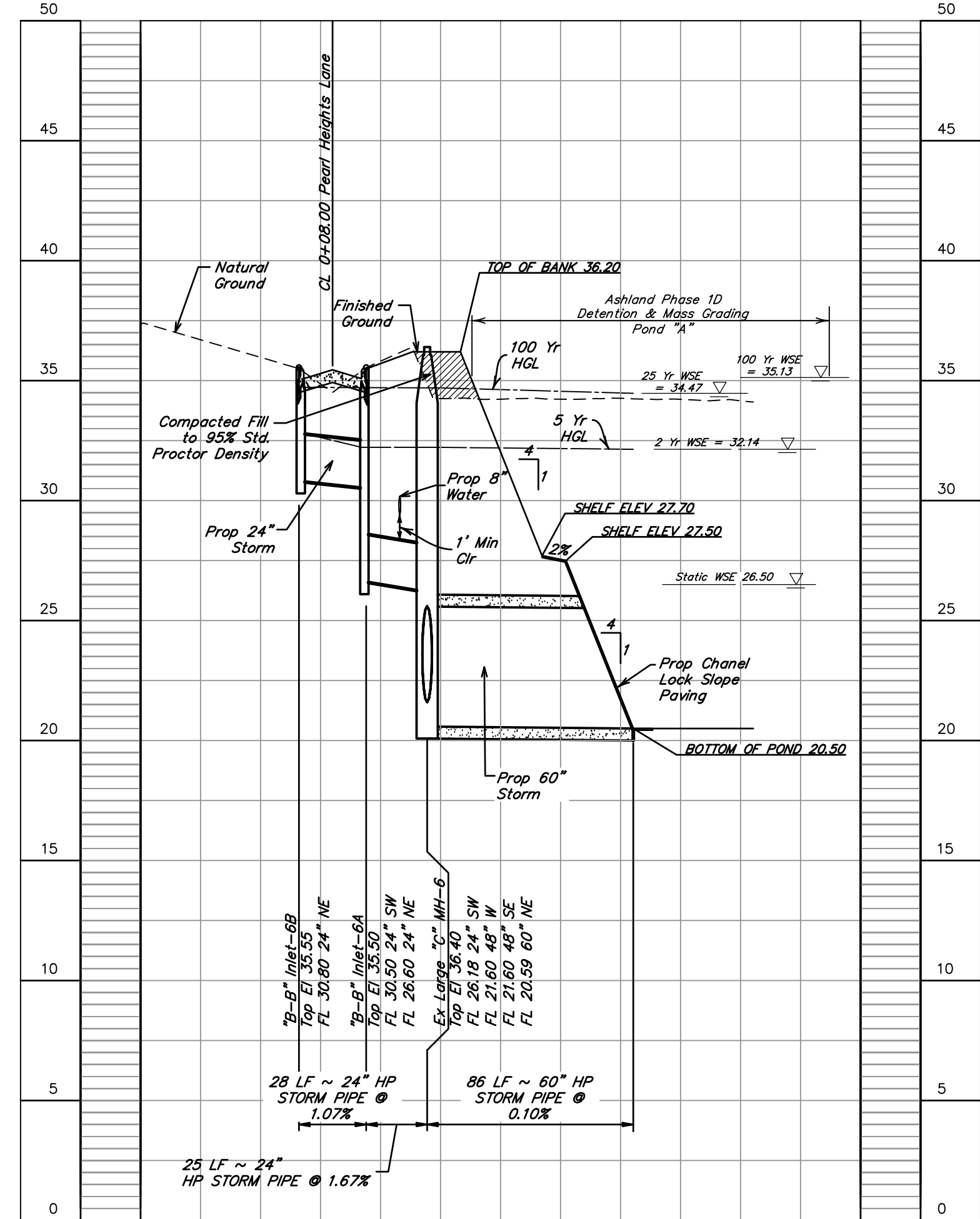
**WATER LINE-SANITARY SEWER CROSSING**  
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**SANITARY SEWER MANHOLES**  
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**SANITARY SEWER NOTE**  
 ALL GRAVITY SANITARY SEWER PIPE SHALL BE SDR 26 PVC.



OUTFALL



NO.	DATE	REVISIONS	APP.

BRAZORIA COUNTY MUD NO. 82  
 BARZORIA COUNTY, TEXAS

ASHLAND MODEL HOME PARK

OUTFALL  
 STA 0+00.00 TO 2+55.30



SCALE: 1"=50' H, 1"=5' V. DGN. BY: AHR  
 DATE: NOVEMBER 2024 DWN. BY: JWS  
 JOB NO. 16759-0010-12 DWG. NO. \_\_\_\_\_  
 SUBMITTED: SURV. BY: \_\_\_\_\_  
 F.B. NO. \_\_\_\_\_



SHEET NO.  
 13  
 OF 18

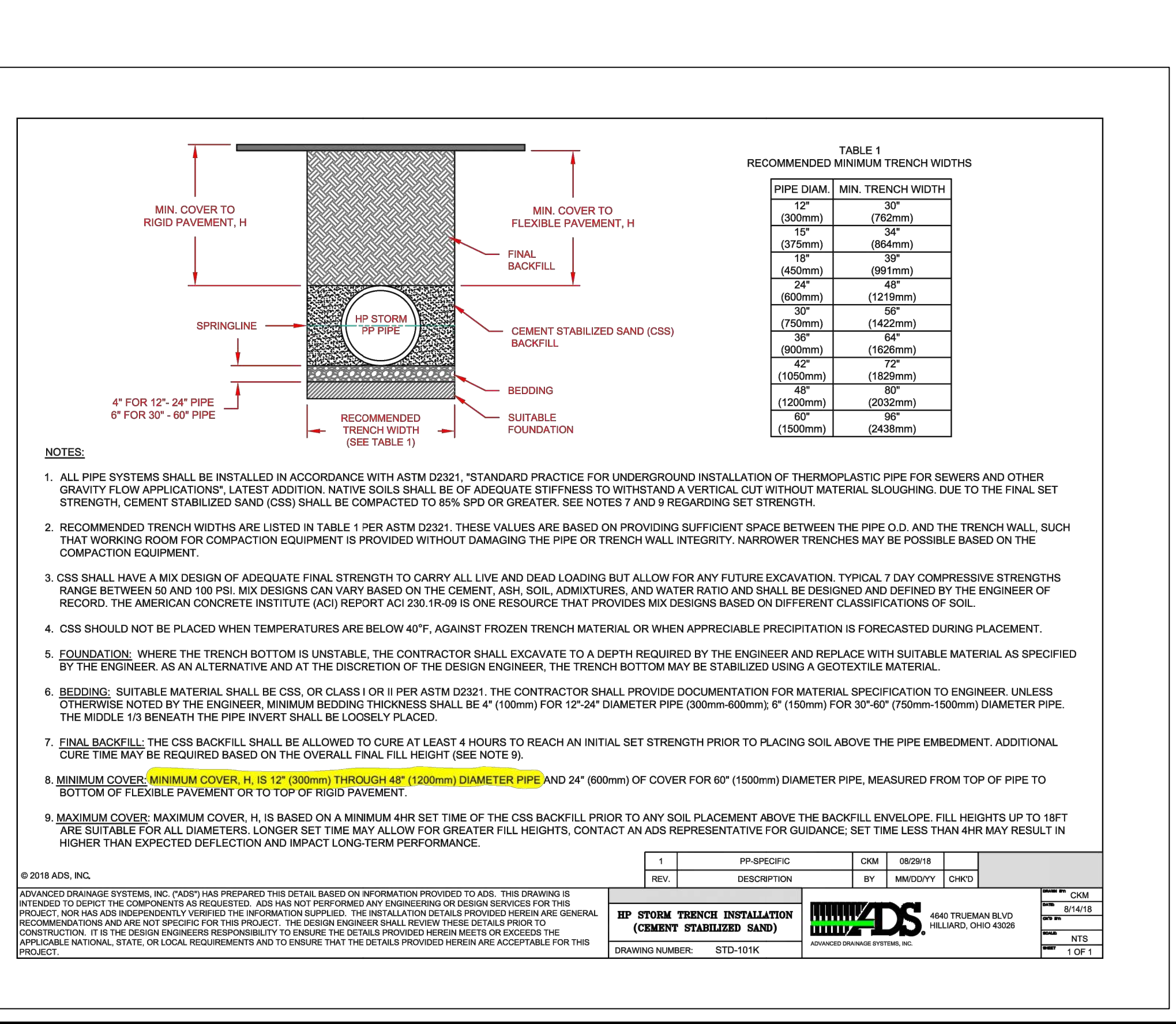
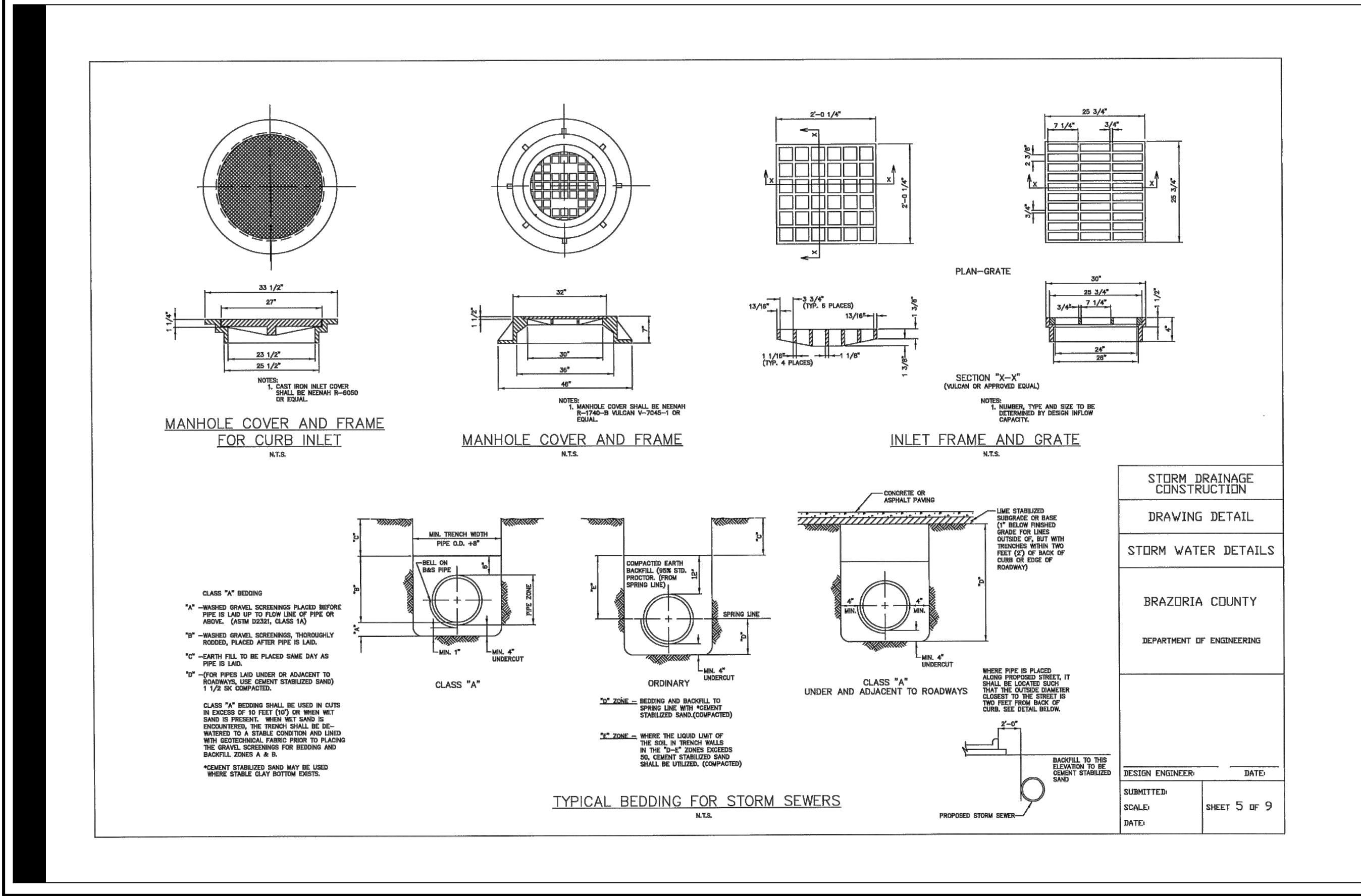
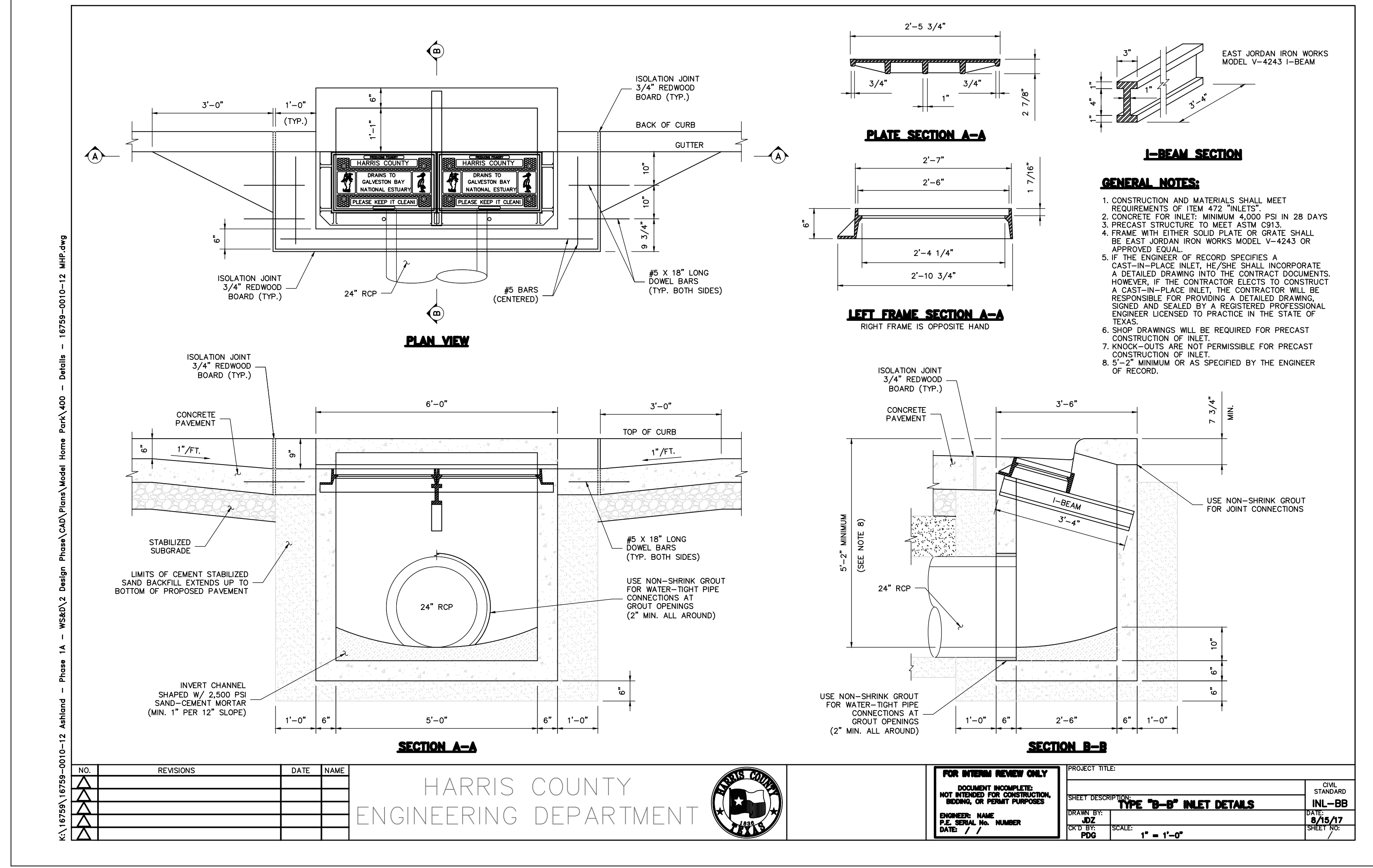
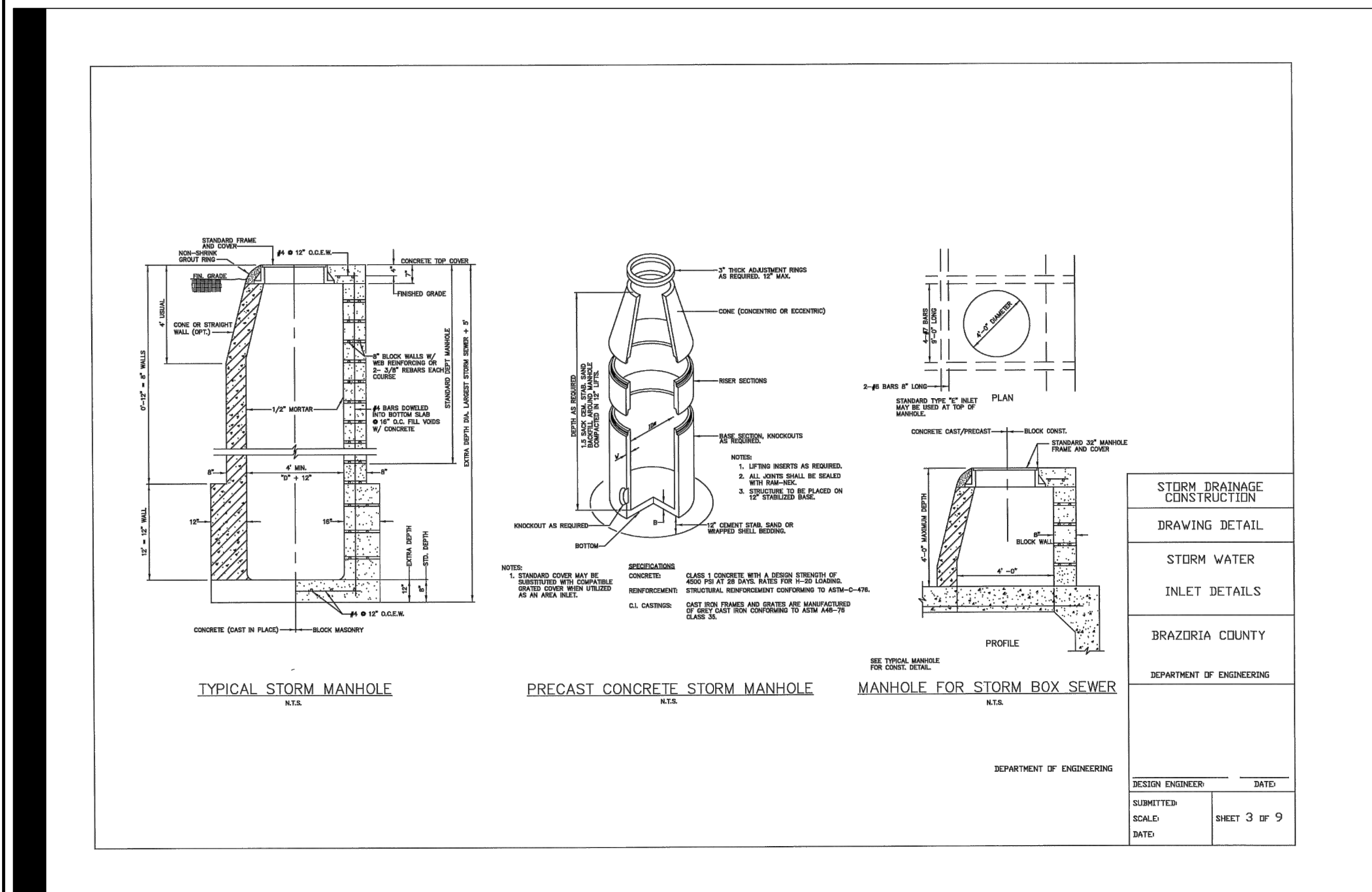












**FOR INTERNAL REVIEW ONLY**  
 DOCUMENT INCOMPLETE:  
 NOT INTENDED FOR CONSTRUCTION,  
 BIDDING, OR PERMIT PURPOSES

**ENGINEER NAME:** \_\_\_\_\_  
**ENGINEER NUMBER:** \_\_\_\_\_  
**DATE:** 11/11/2024

**PROJECT TITLE:** \_\_\_\_\_  
**SHEET DESCRIPTION:** TYPE "B-B" INLET DETAILS

**DRAWN BY:** \_\_\_\_\_  
**CHECKED BY:** \_\_\_\_\_  
**DATE:** \_\_\_\_\_

**SCALE:** 1" = 1'-0"

**NO.** **DATE** **REVISIONS** **APP.**

**BRAZORIA COUNTY MUD NO. 82**  
 BARZORIA COUNTY, TEXAS

**ASHLAND MODEL HOME PARK**

**STORM WATER DRAINAGE DETAILS**

**QUIDDITY**  
 TEXAS Registration Nos. F-23290 & 13046100  
 601 Northwest Loop 410, Suite 413 • San Antonio, Texas 78216 • 210.494.5511

**SCALE:** NTS **DGN. BY:** AHR  
**DATE:** NOVEMBER 2024 **DWN. BY:** JWS  
**JOB NO. 16759-0010-12** **DWG. NO.:** \_\_\_\_\_  
**SUBMITTED:** \_\_\_\_\_ **SURV. BY:** \_\_\_\_\_  
 \_\_\_\_\_ **F.B. NO.:** \_\_\_\_\_

**Darren J. McAffee**  
 11/11/2024  
 137808  
 LICENSED PROFESSIONAL ENGINEER

**SHEET NO. 16 OF 18**







