

WITHIN FORT BEND COUNTY, TEXAS

PLANS FOR CONSTRUCTION OF
COMMERCIAL BUILDING, PAVEMENT, DRAINAGE, DETENTION, SITE GRADING, AND UTILITIES
TO SERVE:

OREMUS PROPERTIES LLC

0 DIXON RD. – FULSHEAR, TEXAS 77441

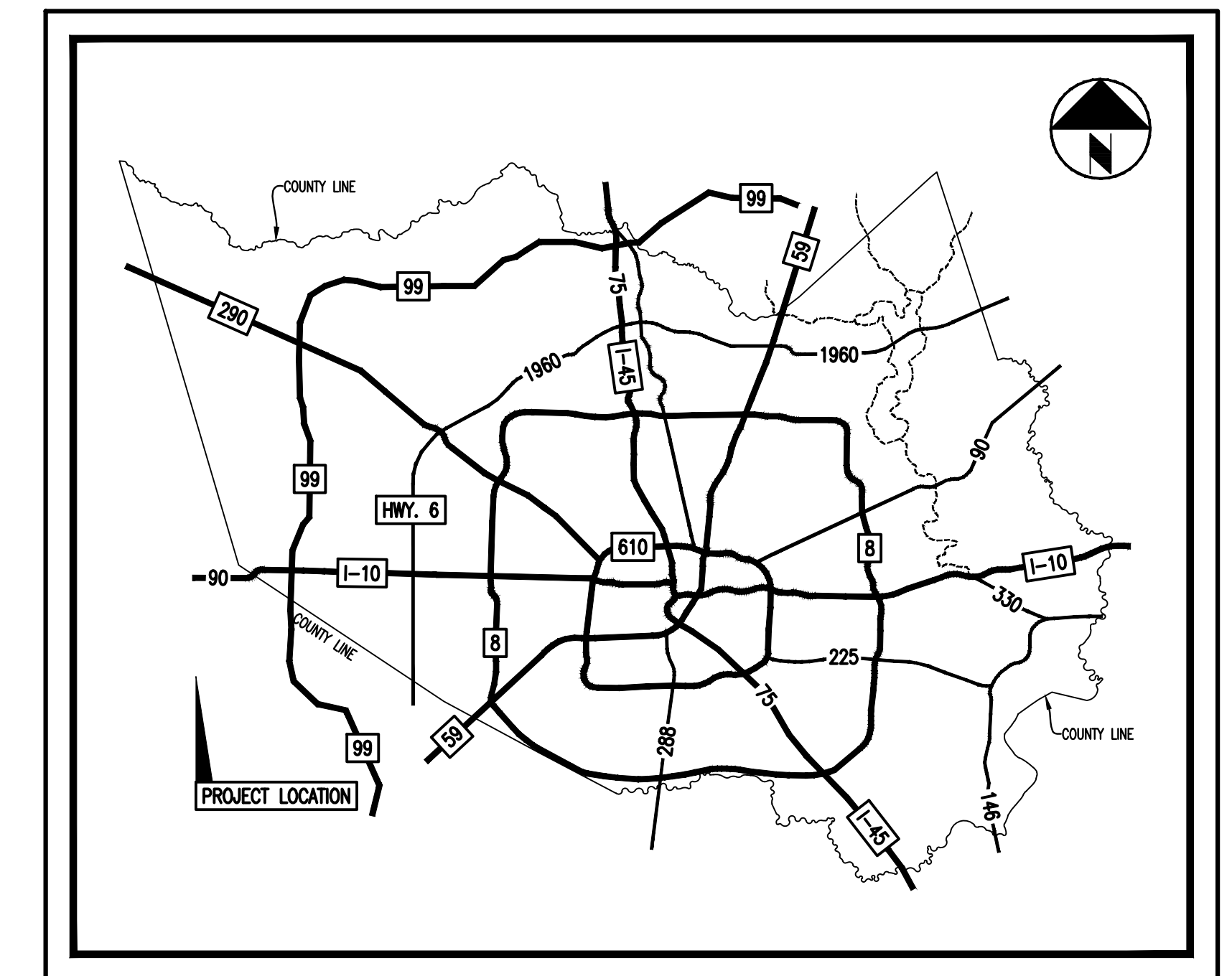
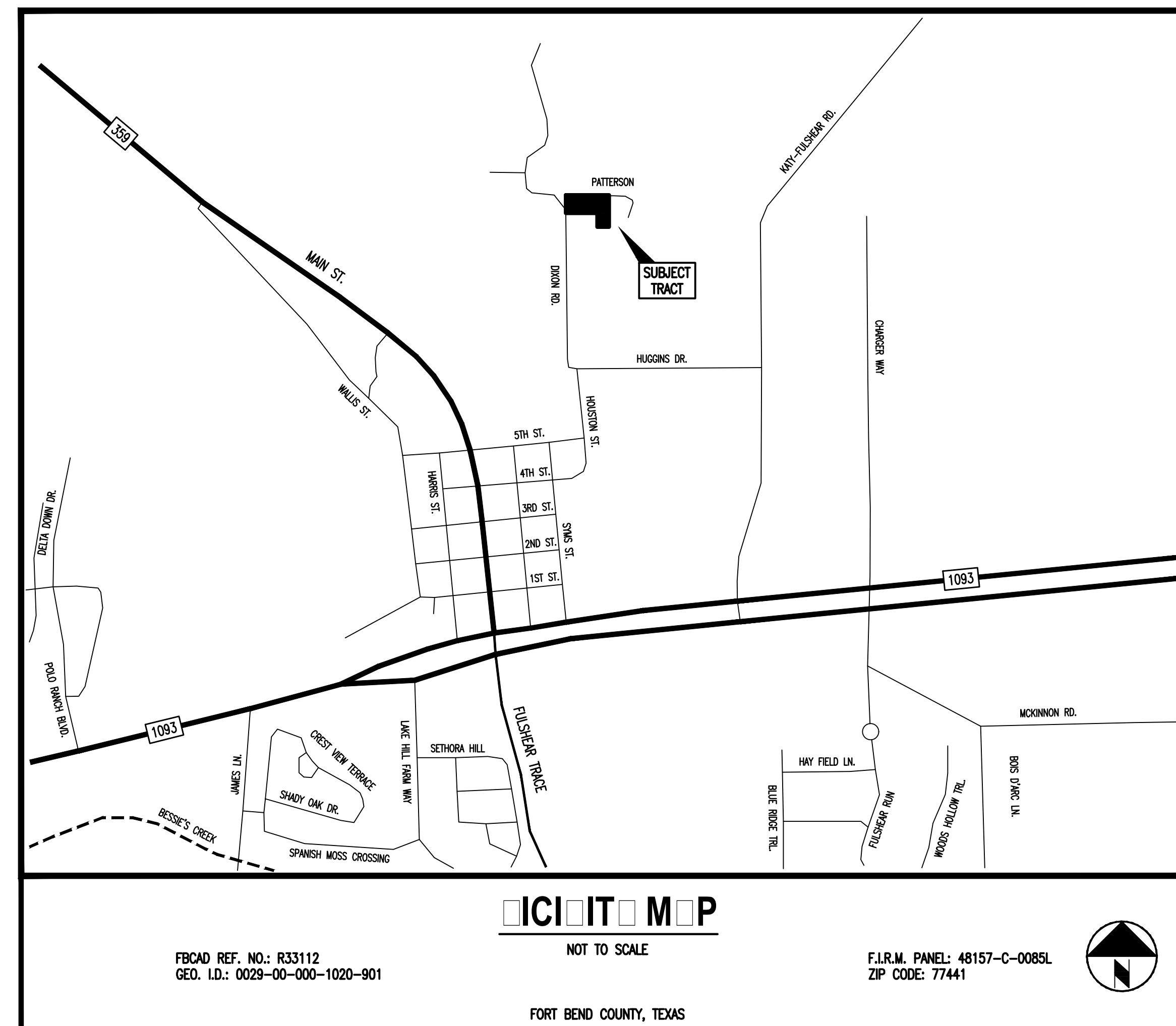
NOTE TO CONTRACTOR:
CONTRACTOR TO LOCATE ALL UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION. CALL UTILITY LOCATOR SERVICE AT LEAST 72-HOURS PRIOR TO COMMENCING WITH ANY CONSTRUCTION ACTIVITIES.

NOTE TO OWNER:
THE DESIGN WAS BASED ON SURVEYED INFORMATION PROVIDED BY FOUR POINTS SURVEYING. THE ENGINEER ACCEPTS NO RESPONSIBILITY FOR UN-MARKED PIPELINES OR EASEMENTS THAT MAY EXIST ON THIS PROPERTY. THE OWNER SHALL PROVIDE ALL EASEMENTS FOR EXISTING FEATURES THAT MAY EXIST.

48-HOUR NOTICE:
CONTRACTOR SHALL NOTIFY FORT BEND COUNTY ENGINEERING DEPARTMENT 48-HOURS PRIOR TO COMMENCING CONSTRUCTION AND/OR BACKFILLING ANY UTILITIES.

SHEET INDEX

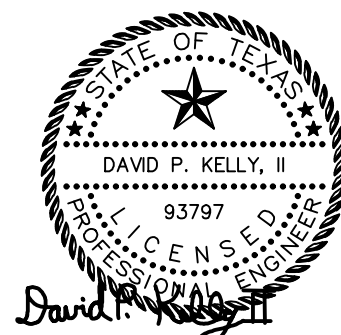
1. COVER SHEET
2. CONSTRUCTION NOTES
3. EXISTING CONDITIONS
4. DIMENSION CONTROL PLAN
5. PAVING, GRADING AND STORM SEWER PLAN
6. TYPICAL SECTIONS AND DETAILS
7. STORM LIFT STATION AND PUMP DETAILS
8. STORM WATER POLLUTION PREVENTION PLAN
9. STORM WATER POLLUTION PREVENTION DETAILS
10. SITE UTILITY PLAN
11. FIRE LANE PLAN
12. PAVEMENT DETAILS
13. STORM SEWER DETAILS
14. SANITARY SEWER DETAILS
15. WATER LINE DETAILS



PREPARED BY:
DPK Engineering LLC

LAND DEVELOPMENT – SITE DEVELOPMENT – MUNICIPAL
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Firm Registration No. F9323

AUTHORIZED SIGNATURE BY
DAVID P. KELLY II, P.E.
April 27, 2023



APRIL 2023



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Uche@SGKGlobal.com

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GENERAL NOTES

- 1. FORT BEND COUNTY MUST BE INVITED TO THE PRE-CONSTRUCTION MEETING.
2. CONTRACTOR SHALL NOTIFY FORT BEND COUNTY ENGINEERING DEPARTMENT 48-HOURS PRIOR TO COMMENCING CONSTRUCTION AND 48-HOUR NOTICE TO ANY CONSTRUCTION ACTIVITY WITHIN THE LIMITS OF THE PAVING AT CONSTRUCTION@FORTBENDCOUNTYTX.GOV.
3. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED FROM FORT BEND COUNTY PRIOR TO COMMENCING CONSTRUCTION OF ANY IMPROVEMENTS WITHIN COUNTY ROAD RIGHTS-OF-WAY.
4. ALL PAVING IMPROVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH FORT BEND COUNTY "RULES, REGULATIONS AND REQUIREMENTS" RELATING TO THE APPROVAL AND ACCEPTANCE OF IMPROVEMENTS IN SUBDIVISIONS AS CURRENTLY AMENDED.
5. ALL ROAD WIDTHS, CURB RADII AND CURB ALIGNMENT SHOWN INDICATES BACK OF CURB.
6. A CONTINUOUS LONGITUDINAL REINFORCING BAR SHALL BE USED IN THE CURBS.
7. ALL CONCRETE PAVEMENT SHALL BE 5-1/2 SACK CEMENT WITH A MINIMUM COMPRESSIVE STRENGTH OF 3,500 PSI AT 28 DAYS. TRANSVERSE EXPANSION JOINTS SHALL BE INSTALLED AT EACH CURB RETURN AND AT A MAXIMUM SPACING OF 60-FT.
8. ALL WEATHER ACCESS TO ALL EXISTING STREETS AND DRIVEWAYS SHALL BE MAINTAINED AT ALL TIMES.
9. 4" X 12" REINFORCED CONCRETE CURB SHALL BE PLACED IN FRONT OF SINGLE FAMILY LOTS ONLY. ALL OTHER AREAS SHALL BE 6" REINFORCED CONCRETE CURB.
10. AT ALL INTERSECTION LOCATIONS, TYPE 7 RAMPS SHALL BE PLACED IN ACCORDANCE WITH TxDOT PED-12A STANDARD DETAIL SHEET. A.D.A. - HANDICAP RAMPS SHALL BE INSTALLED WITH STREET PAVING AT ALL INTERSECTIONS AND COMPLY WITH CURRENT A.D.A. REGULATIONS.
11. CURB HEADERS ARE REQUIRED AT CURB CONNECTIONS TO HANDICAP RAMPS, WITH NO CONSTRUCTION JOINT WITHIN 5-FT. OF RAMPS.
12. ALL INTERSECTIONS UTILIZING TRAFFIC CONTROL MEASURES SHALL HAVE A.D.A. WHEEL CHAIR RAMPS INSTALLED.
13. GUIDELINES SET FORTH IN THE TEXAS "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", AS CURRENTLY AMENDED, SHALL BE OBSERVED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE FLAGMEN, SIGNING, STRIPING AND WARNING DEVICES, ETC., DURING CONSTRUCTION - BOTH DAY AND NIGHT.
14. ALL R1-1 STOP SIGNS SHALL BE 30" X 30" WITH DIAMOND GRADE SHEETING PER TEXAS "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".
15. STREET NAME SIGNAGE SHALL BE ON A 9-IN. HIGH SIGN FLAT BLADE W/REFLECTIVE GREEN BACKGROUND. STREET NAMES SHALL BE UPPER AND LOWERCASE LETTERING WITH UPPERCASE LETTERS OF 5-IN. MINIMUM AND LOWERCASE LETTERS OF 4.5-IN. MINIMUM. THE LETTERS SHALL BE REFLECTIVE WHITE. STREET NAME SIGNS SHALL BE MOUNTED ON STOP SIGN POST.
16. A BLUE DOUBLE REFLECTORIZED BUTTON SHALL BE PLACED AT ALL FIRE HYDRANT LOCATIONS. THE BUTTON SHALL BE PLACED 12-IN. OFF OF THE CENTERLINE OF THE STREET ON THE SAME SIDE AS THE HYDRANT.
17. THE PROJECT AND ALL PARTS THEREOF SHALL BE SUBJECT TO INSPECTION FROM TIME TO TIME BY INSPECTORS DESIGNATED BY FORT BEND COUNTY. NO SUCH INSPECTIONS SHALL RELIEVE THE CONTRACTOR OF ANY OF ITS OBLIGATIONS HEREUNDER. NEITHER FAILURE TO INSPECT NOR FAILURE TO DISCOVER OR REJECT ANY OF THE WORK AS NOT IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS, REQUIREMENTS AND SPECIFICATIONS OF FORT BEND COUNTY OR ANY PROVISION OF THIS PROJECT SHALL BE CONSIDERED TO IMPLY AN ACCEPTANCE OF SUCH WORK OR TO RELIEVE THE CONTRACTOR OF ANY OF ITS OBLIGATIONS HEREUNDER.
18. 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) 545-6005 AND LONE STAR NOTIFICATION CENTER AT (800) 669-8344 AT LEAST 48 HOURS BEFORE PROCEEDING WITH ANY EXCAVATION.
19. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGES TO EXISTING WATER, WASTEWATER, AND STORM DRAINAGE LINES AND TRAFFIC CONTROL DEVICES. DAMAGES SHALL BE REPAIRED IN ACCORDANCE WITH FORT BEND COUNTY "RULES, REGULATIONS AND REQUIREMENTS" RELATING TO THE APPROVAL AND ACCEPTANCE OF IMPROVEMENTS IN SUBDIVISIONS AS CURRENTLY AMENDED, AT NO ADDITIONAL COST.
20. 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.
21. CONTRACTOR SHALL COMPLY WITH LATEST EDITION OF OSHA REGULATIONS AND THE STATE OF TEXAS LAWS CONCERNING EXCAVATION.

UTILITY NOTES

- 1. WATER LINE SHALL BE CONSTRUCTED IN ACCORDANCE WITH FORT BEND COUNTY "RULES, REGULATIONS AND REQUIREMENTS"
2. 4" THRU 12" WATER LINES SHALL BE P.V.C. CLASS 150, DR-18, AWWA C-900 AND 1" THRU 3" WATER LINES SHALL BE PVC SCHEDULE 40. 4" THRU 54" D.I.P. WATER LINES SHALL BE AWWA C151 (ANSI A21.51) AND DOUBLE WRAPPED IN 8-MIL POLYETHYLENE. PIPE SHALL BE LINED IN ACCORDANCE WITH AWWA C104 (ANSI A21.4).
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 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 FORT BEND COUNTY "RULES, REGULATIONS AND REQUIREMENTS"
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 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" 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 FORT BEND COUNTY "RULES, REGULATIONS AND REQUIREMENTS". 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 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.

STORM SEWER NOTES

- 1. ALL SEWERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE FORT BEND COUNTY "RULES, REGULATIONS AND REQUIREMENTS" RELATING TO THE APPROVAL AND ACCEPTANCE OF IMPROVEMENTS IN SUBDIVISIONS, 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 COUNTY REQUIREMENTS ARE MORE STRINGENT.
2. SANITARY SEWERS MANHOLES WILL HAVE BEDDING AND BACKFILL PER FORT BEND COUNTY STANDARD DETAILS UNLESS OTHERWISE NOTED.
3. SANITARY SEWER PIPE 6" AND SMALLER SHALL BE SCHEDULE 40 PVC. SANITARY SEWER PIPE 8" AND LARGER SHALL BE SDR-26 PVC.
4. ALL SDR-26 PVC PIPE SHALL MEET ASTM SPECIFICATION D3034 AND USE "FULL BODIED" SDR-26 PVC FITTINGS WITH APPROPRIATE ADAPTERS AND SHALL HAVE A CELL CLASSIFICATION OF 12364-B AS DEFINED IN ASTM D-1784 AND SHALL HAVE DIP SIZE OD AND RUBBER GASKET BELL-AND-SPIGOT TYPE JOINT ENDS, UNLESS OTHERWISE NOTED.
5. AWWA C-900 DR-18 PVC PIPE USES EITHER AWWA C900 DR-18 PVC FITTINGS OR DIP FITTINGS.
6. 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 FORT BEND COUNTY STANDARDS, WITH 1-1/2 SACK CEMENT/CY STABILIZED SAND BACKFILL UP TO THE BOTTOM OF THE PAVEMENT SUBGRADE. 100 PSI PERFORMANCE RESULTS ARE STILL REQUIRED.
7. 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.
8. CONTRACTOR SHALL PROVIDE FOR A MINIMUM HORIZONTAL CLEARANCE OF 9' FEET BETWEEN WATER LINES AND SANITARY SEWER MANHOLES AND LINES.
9. 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 DRAINAGE AWAY FROM MANHOLE RIM.
10. IN WET STABLE TRENCH AREAS USE BEDDING PER FORT BEND COUNTY STANDARDS.
11. 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 MANDRELS ALLOWED.
12. INFILTRATION, EXFILTRATION OR LOW-PRESSURE AIR TEST: EITHER OF THE FOLLOWING TESTS SHALL BE PERFORMED AS PER TAC, TITLE 30 317.2 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'
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.
C. "SAN. S.E." INDICATES "SANITARY SEWER EASEMENT".
D. 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/CONTAINING 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 1/2"-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.

STORM SEWER NOTES

- 1. STORM SEWER SHALL BE REINFORCED CONCRETE PIPE (C-76, CLASS III), AND SHALL BE INSTALLED, BEDDED, AND BACK FILLED IN ACCORDANCE WITH FORT BEND COUNTY "RULES, REGULATIONS AND REQUIREMENTS" AS APPLICABLE UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
2. ALL STORM SEWER CONSTRUCTED IN SIDE LOT EASEMENT SHALL BE R.C.P. (C-76, CLASS III) AND SHALL BE EMBEDDED IN ACCORDANCE WITH FORT BEND COUNTY "RULES, REGULATIONS AND REQUIREMENTS" AS APPLICABLE.
3. ALL SEWER UNDER PROPOSED OR FUTURE PAVEMENT AND TO A POINT ONE (1) FOOT BACK OF ALL PROPOSED OR FUTURE CURBS SHALL BE BACKFILLED WITH 1-1/2 SACK CEMENT/C.Y. STABILIZED SAND TO WITHIN ONE (1) FOOT OF SUBGRADE. THE REMAINING DEPTH OF TRENCH SHALL BE BACKFILLED WITH SUITABLE EARTH MATERIAL.
4. 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).
5. CIRCULAR AND ELLIPTICAL REINFORCED CONCRETE PIPE SHALL BE INSTALLED USING RUBBER GASKET JOINT CONFORMING TO ASTM C443 AND ASTM C877 RESPECTIVELY.
6. ALL STORM SEWER PIPES AND INLET LEADS SHALL BE 24" AND LARGER R.C.P. (C-76, CLASS III).
7. ALL PROPOSED PIPE STUB-OUTS FROM MANHOLES AND INLET LEADS ARE TO BE PLUGGED WITH 8" BRICK WALLS UNLESS OTHERWISE NOTED.
8. CONTRACTOR SHALL PROVIDE 12" MINIMUM VERTICAL CLEARANCE AT STORM SEWER AND WATER LINE CROSSINGS.
9. ADJUST MANHOLE COVERS TO GRADE CONFORMING TO FORT BEND COUNTY "RULES, REGULATIONS AND REQUIREMENTS".
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING, MAINTAINING, AND RESTORING ANY BACK SLOPE DRAINAGE SYSTEM DISTURBED AS A RESULT OF THIS WORK.
11. ALL DITCHES SHALL BE GRADED TO PROPOSED ELEVATIONS TO ENSURE PROPER DRAINAGE. ALL OUTFALLS SHALL BE PROPERLY BACKFILLED AND COMPACTED. ALL DISTURBED AREA SHALL BE RE-GRADED, SEEDED, AND FERTILIZED.
12. ALL DRIVEWAYS SHALL BE LOCATED TO AVOID EXISTING CURB INLET STRUCTURES.

GRID 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.

PPP CO. STRUCTURE NOTES

- 1. 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 (SWPP) PLANS TO KEEP SILT AND/OR EXCAVATED MATERIALS FROM ENTERING INTO THE STORM WATER INLETS AND DITCHES EVENTUALLY POLLUTING THE RECEIVING STORM.
2. DURING THE EXCAVATION 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 AREA.
3. 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.
4. CONTRACTOR SHALL FOLLOW GOOD HOUSEKEEPING PRACTICES DURING THE CONSTRUCTION OF THE PROJECT, ALWAYS CLEANING UP DIRT AND LOOSE MATERIAL AS CONSTRUCTION PROGRESSES.
5. 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 A 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.
6. CONTRACTOR TO BE RESPONSIBLE TO MAINTAIN EXISTING DITCHES AND/OR CULVERTS FOR UNOBSTRUCTED DRAINAGE AT ALL TIMES. WHERE SODDING IS DISTURBED BY EXCAVATION ON BACKFILLING OPERATIONS, SUCH AREAS SHALL BE REPLACED BY SEEDING OR SODDING. SLOPES 4:1 OR STEEPER SHALL BE REPLACED BY BLOCK SODDING.

BENCHMARK: ELEVATIONS ARE DERIVED FROM GPS OBSERVATIONS FROM CORP. STATIONS OF THE TRIMBLE NETWORK (NAVD 1988, GEOID 12B).

T.B.M. 'A': RAILROAD SPIKE IN A SERVICE POLE ON EAST SIDE OF PROPERTY (LOCATED AS SHOWN).

ELEVATION = 142.02' NAVD 1988

FLOOD PLAIN STATEMENT: ACCORDING TO FEMA F.I.R.M. MAP PANEL NUMBER 48157-C-0085L WITH AN EFFECTIVE DATE OF APRIL 2, 2014, THE MAP INDICATES THIS TRACT TO BE ENTIRELY WITHIN UN-SHADED ZONE "X", AREAS DETERMINED TO BE OUTSIDE THE 100-YEAR FLOOD PLAIN.

DPK Engineering LLC
LAND DEVELOPMENT - SITE DEVELOPMENT - MUNICIPAL
P.O. Box 823
Fulshear, Texas 77441
Office and Fax: (281) 346-2616
Cell: (281) 300-1869
Firm Registration No. F9323

DATE: March, 2021
JOB NO. D20_LD_14011
DESIGNED BY: SLA
CHECKED BY: DPK

AUTHORIZED SIGNATURE BY
DAVID P. KELLY II, P.E. ON
March 10, 2021
SURVEYED BY:
FOUR POINTS SURVEYING
STATE OF TEXAS
DAVID P. KELLY II
P.E.
33797
FOUR POINTS SURVEYING
DAVID P. KELLY II

OREMUS PROPERTIES LLC
PROPOSED SITE DEVELOPMENT

CONSTRUCTION NOTES

Table with columns: FILE NO., G.F. NO., DRAWING SCALE, SHEET NUMBER, NOT TO SCALE, OF 15

BENCHMARK:
ELEVATIONS ARE DERIVED FROM GPS OBSERVATIONS FROM CORP. STATIONS OF THE TRIMBLE NETWORK (NAVD 1988, GEOID 12B).

T.B.M. 'A':
RAILROAD SPIKE IN A SERVICE POLE ON EAST SIDE OF PROPERTY (LOCATED AS SHOWN).

ELEVATION = 142.02' NAVD 1988

FLOOD PLAN STATEMENT:
ACCORDING TO FEMA F.I.R.M. MAP PANEL NUMBER 48157-C-0085L WITH AN EFFECTIVE DATE OF APRIL 2, 2014, THE MAP INDICATES THIS TRACT TO BE ENTIRELY WITHIN UN-SHADED ZONE "X", AREAS DETERMINED TO BE OUTSIDE THE 100-YEAR FLOOD PLAN.

LEGEND

- EXISTING STORM SEWER
- EXISTING SANITARY SEWER
- EXISTING WATER LINE
- EXISTING GAS LINE
- 250' EXISTING CONTOUR

CHURCHILL FULSHEAR LEAGUE SURVEY, A-29

CALLED 452.272 ACRES
HUGGINS RANCH LTD.
(F.B.C.C.F. NO. 2009007109)

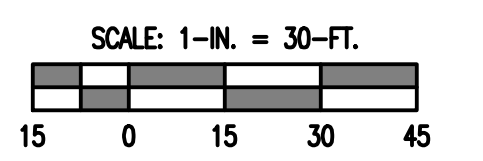
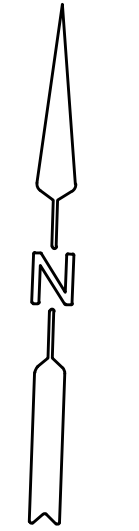
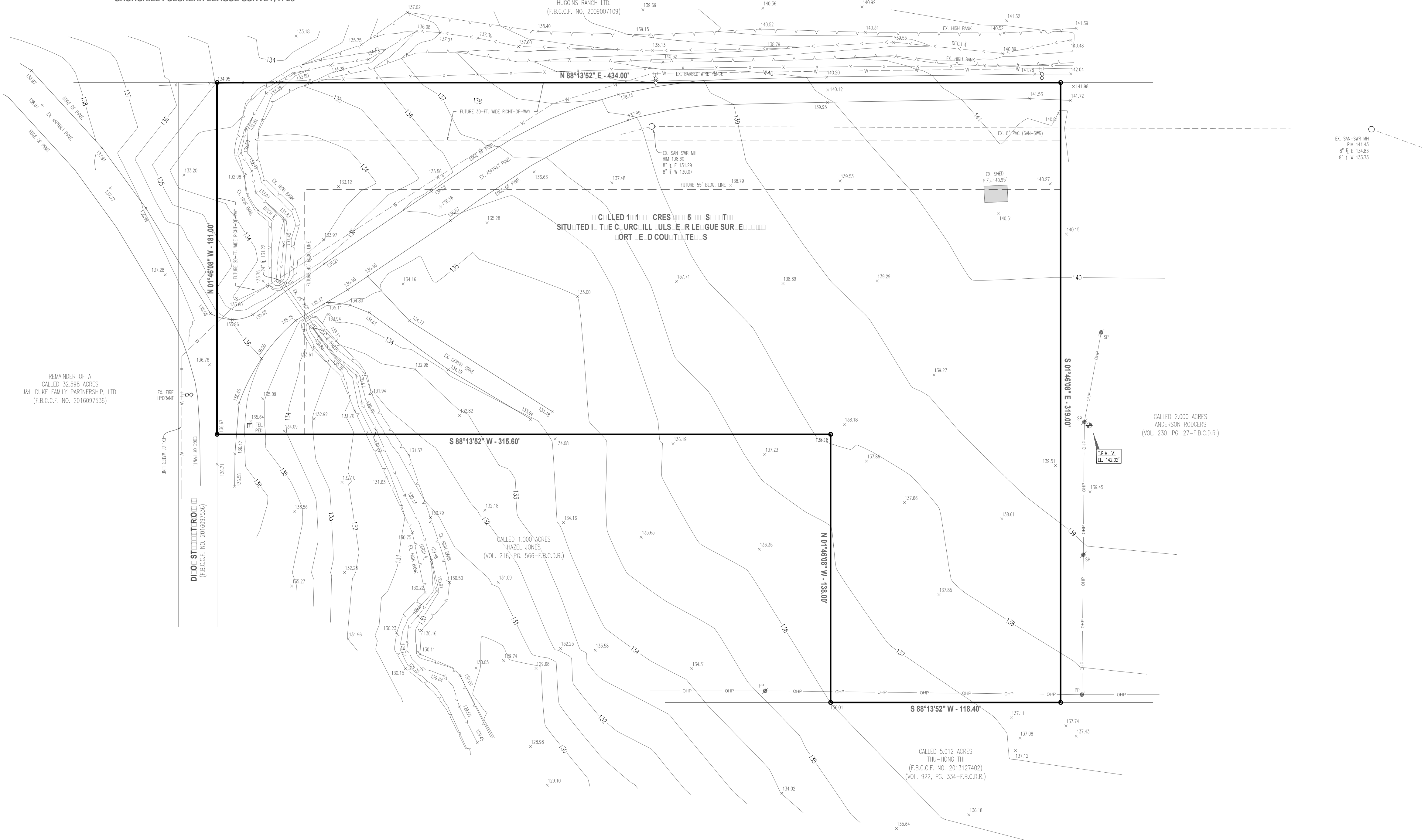
CALLED 2,000 ACRES
ANDERSON RODGERS
(VOL. 230, PG. 27-F.B.C.D.R.)

CALLED 1,000 ACRES
HAZEL JONES
(VOL. 216, PG. 566-F.B.C.D.R.)

CALLED 5,012 ACRES
THU-HONG TH
(F.B.C.C.F. NO. 2013127402)
(VOL. 922, PG. 334-F.B.C.D.R.)

REMAINDER OF A
CALLED 32,598 ACRES
J&E DUKE FAMILY PARTNERSHIP, LTD.
(F.B.C.C.F. NO. 2016097536)

DI O ST T R O
(F.B.C.C.F. NO. 2016097536)

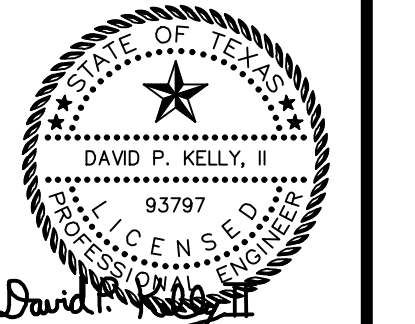


DPK Engineering LLC
LAND DEVELOPMENT - SITE DEVELOPMENT - MUNICIPAL
P.O. Box 823
Fulshear, Texas 77441
Office and Fax: (281) 348-2616
Cell: (281) 300-1869
Firm Registration No. F9323

DATE: March, 2021
JOB NO. D20_LD_14011

DESIGNED BY: SLA
CHECKED BY: DPK

AUTHORIZED SIGNATURE BY
DAVID P. KELLY II, P.E. ON
April 27, 2023



SURVEYED BY:
FOUR POINTS SURVEYING

OREMUS PROPERTIES LLC
PROPOSED SITE DEVELOPMENT

EXISTING CONDITIONS

FILE NO.:	SHEET NUMBER
G.F. NO.:	
DRAWING SCALE:	
1-IN. = 30-FT.	
	OF 15

WARNING-O/H POWER LINE
CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING IN THE VICINITY OF OVERHEAD POWER LINES. CONTACT CENTERPOINT ENERGY AT LEAST 72-HOURS PRIOR TO ANY ACTIVITY WITHIN THE LIMITS OF THE EASEMENT, OR ADJACENT TO THE FACILITY.

LEGAL DESCRIPTION:
 CALLED 2.1784 ACRES (94,891.10 SQ. FT.)
 SITUATED IN THE CHURCHILL FULSHEAR LEAGUE SURVEY, A-29
 FORT BEND COUNTY, TEXAS

AREA TABULATION	
EXISTING	
TOTAL SITE AREA	= 2.1784 AC. (94,891.10 SQ. FT.)
R.O.W. DEDICATION AREA	= 0.3682 AC. (16,037.90 SQ. FT.)
REMAINING SITE AREA	= 1.8102 AC. (78,853.20 SQ. FT.)
PROPOSED	
PROPOSED BUILDING AREA	= 16,084.00 SQ. FT.
PROPOSED PAVEMENT AREA	= 25,996.00 SQ. FT.
PROPOSED POND AREA	= 10,791.00 SQ. FT.
TOTAL PROP. IMPERVIOUS AREA	= 1,2138 AC. (52,871.00 SQ. FT.)
REMAINING UN-DEVELOPED AREA	= 0.5964 AC. (25,982.20 SQ. FT.)
IMPERVIOUS AREA PERCENTAGE	= 67.05%

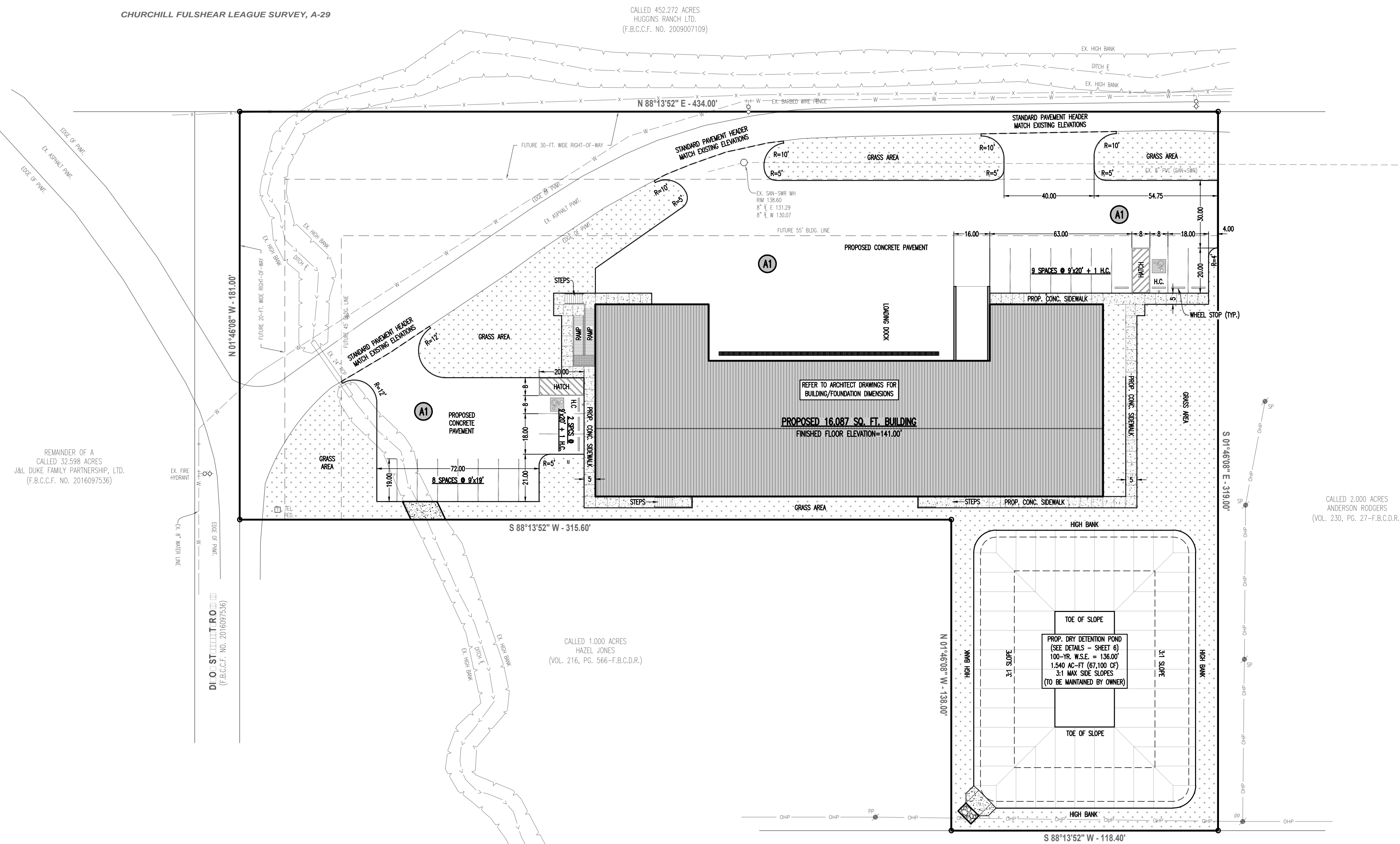
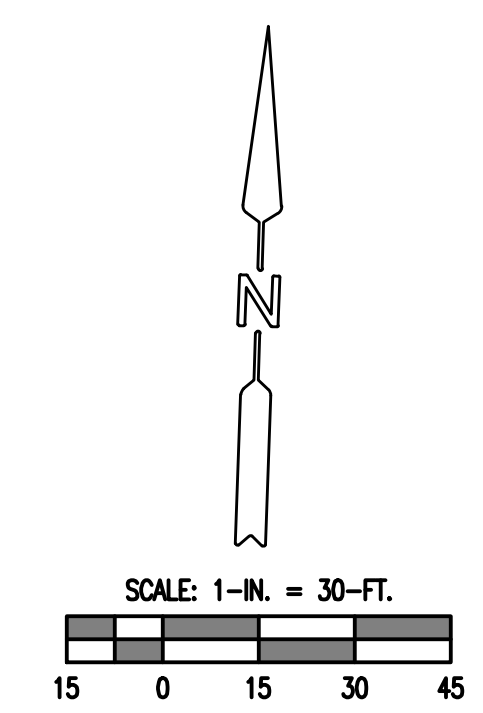
BENCHMARK:
 ELEVATIONS ARE DERIVED FROM GPS OBSERVATIONS FROM CORP. STATIONS OF THE TRIMBLE NETWORK (NAVD 1988, GEOID 12B).

T.B.M. 'A':
 RAILROAD SPIKE IN A SERVICE POLE ON EAST SIDE OF PROPERTY (LOCATED AS SHOWN).

ELEVATION = 142.02' NAVD 1988

FLOOD PLAIN STATEMENT:
 ACCORDING TO FEMA F.I.R.M. MAP PANEL NUMBER 48157-C-0085L WITH AN EFFECTIVE DATE OF APRIL 2, 2014, THE MAP INDICATES THIS TRACT TO BE ENTIRELY WITHIN UN-SHADED ZONE "X", AREAS DETERMINED TO BE OUTSIDE THE 100-YEAR FLOOD PLAN.

- LEGEND**
- EXISTING STORM SEWER
 - EXISTING SANITARY SEWER
 - EXISTING WATER LINE
 - EXISTING GAS LINE
 - EXISTING CONTOUR
 - 295 PROPOSED CONTOUR
 - PROPOSED STORM SEWER
 - PROPOSED SANITARY SEWER
 - PROPOSED WATER LINE
 - PROPOSED DRAINAGE DITCH
 - PROPOSED LANDSCAPE AREA
 - PROPOSED SIDEWALK
 - PROPOSED HATCH AREA (4-IN. WHITE PAINTED 45° STRIPES @ 24-IN. O.C.)
 - PROPOSED WHITE PAINTED HANDICAP SYMBOL W/LIGHT BLUE PAINTED BORDER
 - 6-IN. CONCRETE PVT. W/6-IN. STABILIZED SUB-GRADE & NO. 4 REBAR @ 16-IN. O.C. BOTH WAYS



- PAVEMENT NOTES:**
- PAVEMENT AND SUB-GRADE RECOMMENDATIONS ARE FOR REFERENCE ONLY. REFER TO THE SITE GEO-TECHNICAL REPORT TO VERIFY SPECIFICATIONS PRIOR TO CONSTRUCTION.
 - ALL PROPOSED CONCRETE PAVEMENT SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,500 PSI AT 28 DAYS, AND ALL REINFORCING STEEL SHALL BE GRADE 60, UNLESS OTHERWISE NOTED. SEE GEO-TECH REPORT (BY OTHERS) FOR CONTROL JOINT AND EXPANSION JOINT SPACING.

- SITE NOTES:**
- BUILDINGS, FENCES, RETAINING WALLS OR OTHER STRUCTURES SHALL NOT BE ERRECTED WITHIN PUBLIC RIGHT-OF-WAY OR DRAINAGE EASEMENTS.
 - THE LOCATION OF ALL UTILITIES PRESENTED ON THESE DRAWINGS ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION PRIOR TO COMMENCING WORK.
 - PAVEMENT DIMENSIONS AND RADII ARE TO FACE OF CURB, UNLESS OTHERWISE NOTED.
 - CONTRACTOR TO OBTAIN ALL PERMITS AND APPROVALS REQUIRED PRIOR TO CONSTRUCTION.
 - CONTRACTOR SHALL VERIFY THAT ALL A.D.A. AREAS COMPLY WITH MAXIMUM CROSS SLOPES OF 2% AND MAXIMUM RUN SLOPES OF 5%.
 - REFER TO IRRIGATION PLAN (BY OTHERS) FOR LOCATION OF IRRIGATION SLEEVES.
 - REFER TO SITE ELECTRICAL PLAN (BY OTHERS) FOR SITE LIGHTING LAYOUT.
 - REFER TO ARCHITECTURAL PLANS FOR BUILDING/FOUNDATION DIMENSIONS.

WARNING-O/H POWER LINE
 CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING IN THE VICINITY OF OVERHEAD POWER LINES. CONTACT CENTERPOINT ENERGY AT LEAST 72-HOURS PRIOR TO ANY ACTIVITY WITHIN THE LIMITS OF THE EASEMENT, OR ADJACENT TO THE FACILITY.

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AUTHORIZED SIGNATURE BY
 DAVID P. KELLY II, P.E. ON
 April 27, 2023

SURVEYED BY:
 FOUR POINTS SURVEYING

OREMUS PROPERTIES LLC
 PROPOSED SITE DEVELOPMENT

DIMENSION CONTROL PLAN

FILE NO.:	SHEET NUMBER
G.F. NO.:	
DRAWING SCALE:	OF 15
1-IN. = 30-FT.	

DETENTION SUMMARY:

TOTAL SITE AREA = 1.8102 AC. (78,853.20 SQ. FT.)
 PROP. IMPERVIOUS AREA = 1.2138 AC. (52,871 SQ. FT.)
 REMAINING UN-DEVELOPED AREA = 0.5964 AC. (25,982.20 SQ. FT.)
 IMPERVIOUS AREA PERCENTAGE = 67.05%

DETENTION REQUIREMENTS:
 0.84 AC-FIT PER ACRE OF TOTAL SITE AREA
 WEIGHTED DETENTION CO-EFFICIENT BASED ON 67.05% IMPERVIOUS AREA

DETENTION REQUIRED:
 1.8102 AC. * 0.84 = 1.521 AC-FIT (66,236 C.F.)

DETENTION PROVIDED:
 1.540 AC-FIT (67,100 C.F.) @ 11-FT. STORAGE DEPTH
 100-YR. W.S.E. (DESIGN) = 136.00'
 GRAVITY FLOW W.S.E. = 131.00'
 POND BOTTOM (AVG.) = 125.00'
 PUMPED VOLUME = 0.6045 AC-FIT (39,258)
 GRAVITY VOLUME = 0.9355 AC-FIT (60,758)

OUTFALL SUMMARY:

ALLOWABLE RELEASE RATE:
 0.125 CFS PER ACRE
 1.8102 * 0.125 = 0.226 CFS

RESTRICTOR SIZING:
 $Q = AC(2GH)^{0.5}$
 C = CONSTANT = 0.8
 G = 32.2
 H = HEAD (4.67-FT.)
 A = AREA OF RESTRICTOR (4-IN.)
 $Q = 1.210 CFS W/4-IN. RESTRICTOR (MIN.)$

NOTES:

- SEE SHEET 13 FOR STORM SEWER DETAILS AND CALCULATIONS.
- SEE SHEET 7 FOR LIFT STATION DETAILS AND ELEVATION SCHEDULE.

LIFT STATION NOTES:

THE CONTRACTOR SHALL PROVIDE "QUICK CONNECT" RECEPTACLES FOR BACKUP GENERATOR IN THE EVENT OF POWER FAILURE.

BENCHMARK:
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T.B.M. 'A':
 RAILROAD SPIKE IN A SERVICE POLE ON EAST SIDE OF PROPERTY (LOCATED AS SHOWN).

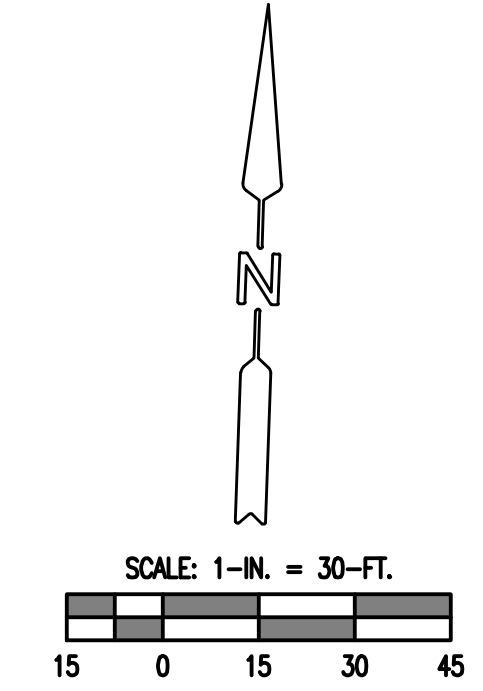
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- EXISTING STORM SEWER
 - EXISTING SANITARY SEWER
 - EXISTING WATER LINE
 - EXISTING GAS LINE
 - EXISTING CONTOUR
 - 295
 - PROPOSED CONTOUR
 - PROPOSED STORM SEWER
 - PROPOSED SANITARY SEWER
 - PROPOSED WATER LINE
 - PROPOSED DRAINAGE DITCH
 - DRAINAGE AREA BOUNDARY
 - × FG 295.00 FINISHED GRADE ELEVATION
 - × TC 295.00 TOP OF CURB ELEVATION
 - × TS 295.00 TOP OF SIDEWALK ELEVATION
 - × TP 295.00 TOP OF PAVEMENT ELEVATION
 - 0.65 DRAINAGE AREA (ACRES)
 - 2.56 INCREMENTAL FLOW (CFS) STORM EVENT
 - 100-YR
 - PROPOSED FLOW DIRECTION
 - PROPOSED FILL AREA

- GENERAL NOTES:**
- REFER TO THE SITE GEO-TECHNICAL REPORT FOR PAVEMENT AND SUB-GRADE RECOMMENDATIONS PRIOR TO CONSTRUCTION.
 - THE LOCATION OF ALL UTILITIES PRESENTED ON THESE DRAWINGS ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION PRIOR TO COMMENCING WORK.
 - CONTRACTOR TO COORDINATE WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS FOR CONNECTION AND/OR LOCATION OF ALL DOWN SPOUTS, EROSION PROTECTION (SLASH BLOCKS) AND ALL PLUMBING AND SERVICE UTILITIES.
 - DETENTION POND AND DRAINAGE CHANNELS TO BE OWNED AND MAINTAINED BY THE PROPERTY OWNER'S ASSOCIATION OF THE ADJACENT RESIDENTIAL SUBDIVISION.

- GRADING & DRAINAGE NOTES:**
- STRIP AND REMOVE ALL SURFACE ORGANICS, TOPSOIL AND UN-SUITABLE MATERIALS FROM ALL BUILDING AND PAVING AREAS. TREE STUMPS INCLUDING THE ROOT SYSTEM SHALL BE REMOVED.
 - PROOF ROLL THE SUB-GRADE TO DETECT ANY WET, SOFT OR PUMPING AREAS. TREAT THESE AREAS WITH DRYING OR STABILIZING AGENTS AS NECESSARY OR REMOVE AND REPLACE THEM WITH SUITABLE FILL MATERIAL.
 - COMPACT THE SUB-GRADE TO A MINIMUM OF NINETY-FIVE (95) PERCENT OF ITS MAX. DRY DENSITY AS DETERMINED BY THE STANDARD PROCTOR COMPACTION TEST (ASTM D 698).
 - ADDITIONAL FILL MATERIAL WITHIN THE BUILDING AREA SHOULD CONSIST OF SANDY LEAN CLAY, AND/OR CLAYEY SAND SOILS HAVING A PLASTICITY INDEX (PI) BETWEEN TEN (10) AND TWENTY (20) AND A LIQUID LIMIT LESS THAN 40. FILL MATERIALS SHOULD BE PLACED IN EIGHT (8) INCH LOOSE LIFTS AND COMPACTED TO A MINIMUM OF NINETY-FIVE (95) PERCENT STANDARD PROCTOR DENSITY (ASTM D 698) AT MOISTURE CONTENTS WITHIN THREE (3) PERCENT OF THE OPTIMUM MOISTURE CONTENT.
 - CONTRACTOR SHALL PROVIDE FOR A MINIMUM OF 6-INCHES OF CLEARANCE AT ALL SANITARY SEWER AND WATER MAIN CROSSINGS, AND 6-INCHES OF MINIMUM CLEARANCE AT ALL SANITARY AND STORM SEWER CROSSINGS.
 - PAVING CONTRACTOR TO CONFIRM AND/OR ADJUST ALL EXISTING AND PROPOSED UTILITIES AND APPURTENANCES TO FINISHED GRADE PRIOR TO PLACEMENT OF ANY PAVING.
 - CONTRACTOR TO MATCH EXISTING TOP OF PAVEMENT AND CURB ELEVATIONS.
 - INSTALL STORM DRAINAGE FEATURES AND ESTABLISH POSITIVE DRAINAGE.
 - ALL DRAINAGE FEATURES SHALL HAVE EROSION CONTROL ESTABLISHED UPON COMPLETION. CONTRACTOR TO COORDINATE WITH OWNER ON PROPOSED GRASS TYPE, APPLICATION RATE, AND METHOD FOR APPROVAL PRIOR TO COMMENCING.
 - ALL SIDEWALKS AND HANDICAP AREAS SHALL HAVE A MAXIMUM CROSS SLOPE OF 2% AND MAXIMUM RUN SLOPES OF SIX (6) CURB RAMPS SHALL HAVE A MAXIMUM SLOPE OF 1:12.
 - REFER TO ARCHITECTURAL PLANS FOR GRADES INSIDE THE BUILDING ENVELOPE.



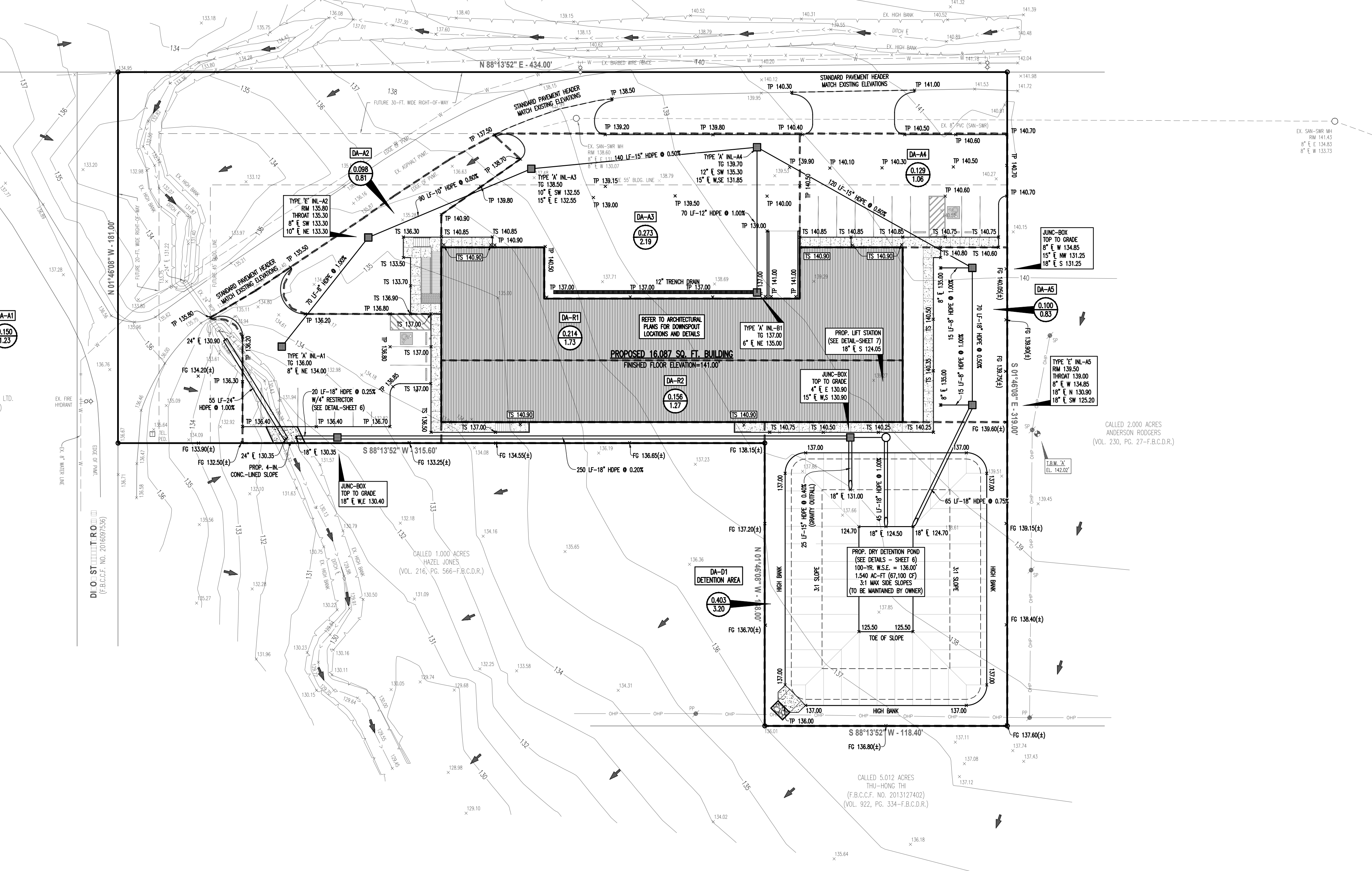
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CHURCHILL FULSHEAR LEAGUE SURVEY, A-29

CALLED 452.272 ACRES
 HUGGINS RANCH LTD.
 (F.B.C.C.F. NO. 2009007109)

CALLED 2.000 ACRES
 ANDERSON RODGERS
 (VOL. 230, PG. 27-F.B.C.D.R.)

CALLED 5.012 ACRES
 THU-HONG TH
 (F.B.C.C.F. NO. 2013127402)
 (VOL. 922, PG. 334-F.B.C.D.R.)



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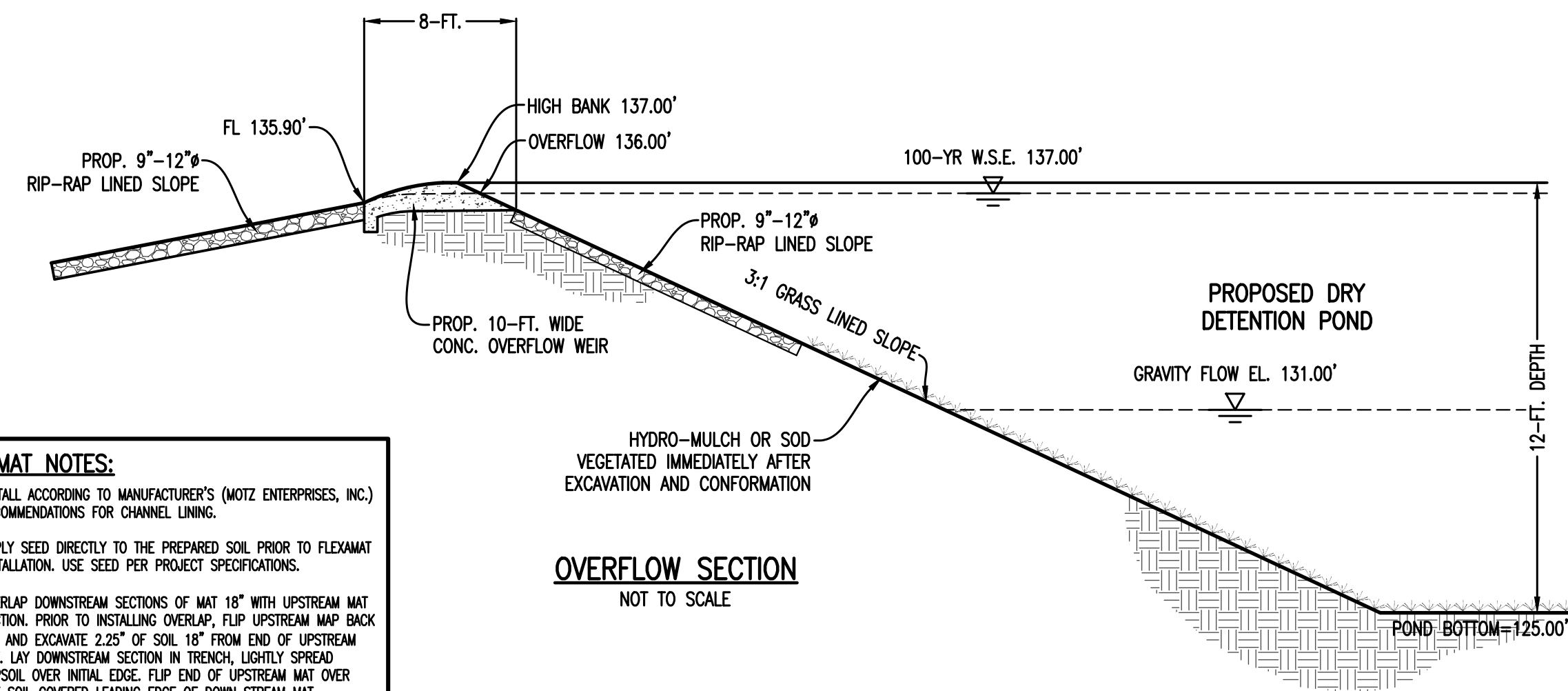
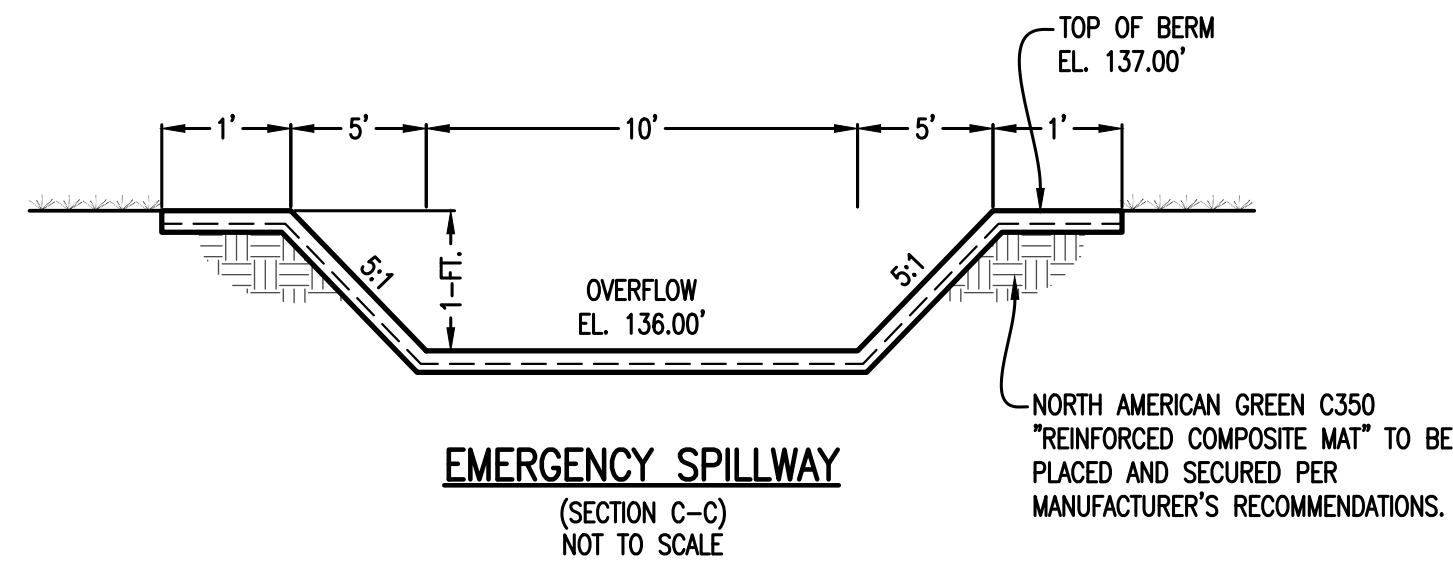
OREMUS PROPERTIES LLC
 PROPOSED SITE DEVELOPMENT

PAVING, GRADING AND
 STORM SEWER PLAN

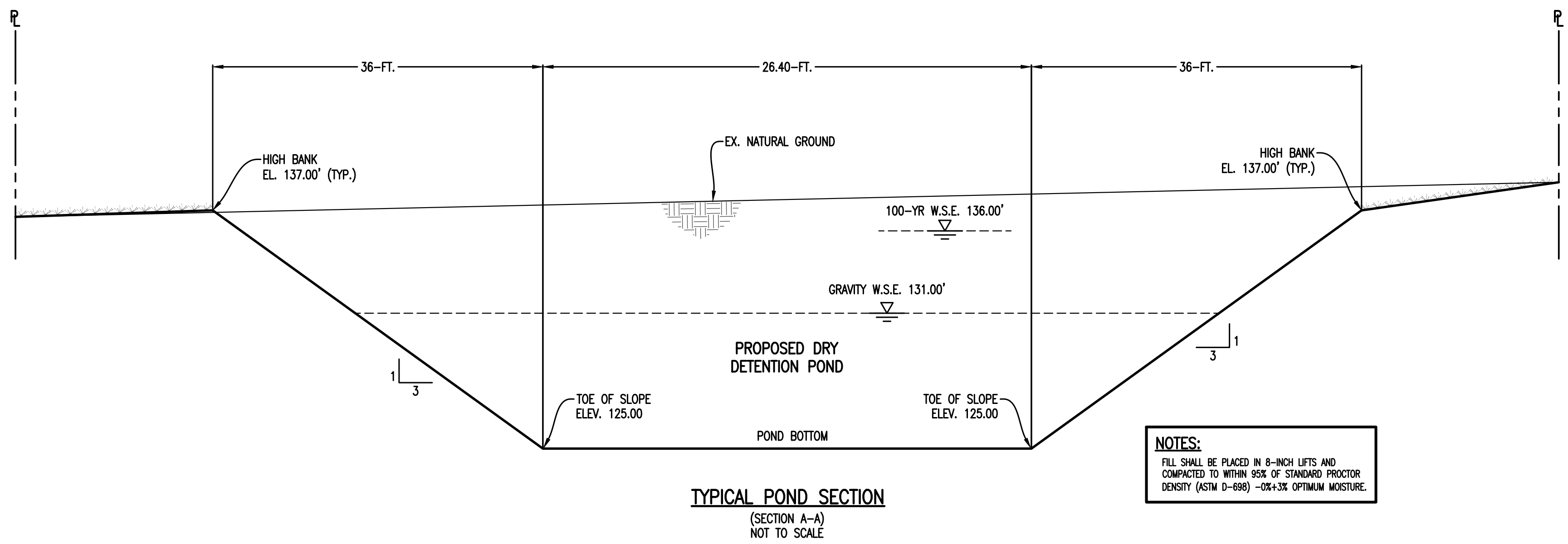
FILE NO.:
 G.F. NO.:
 DRAWING SCALE:
 1-IN. = 30-FT.

SHEET NUMBER
5
 OF 15

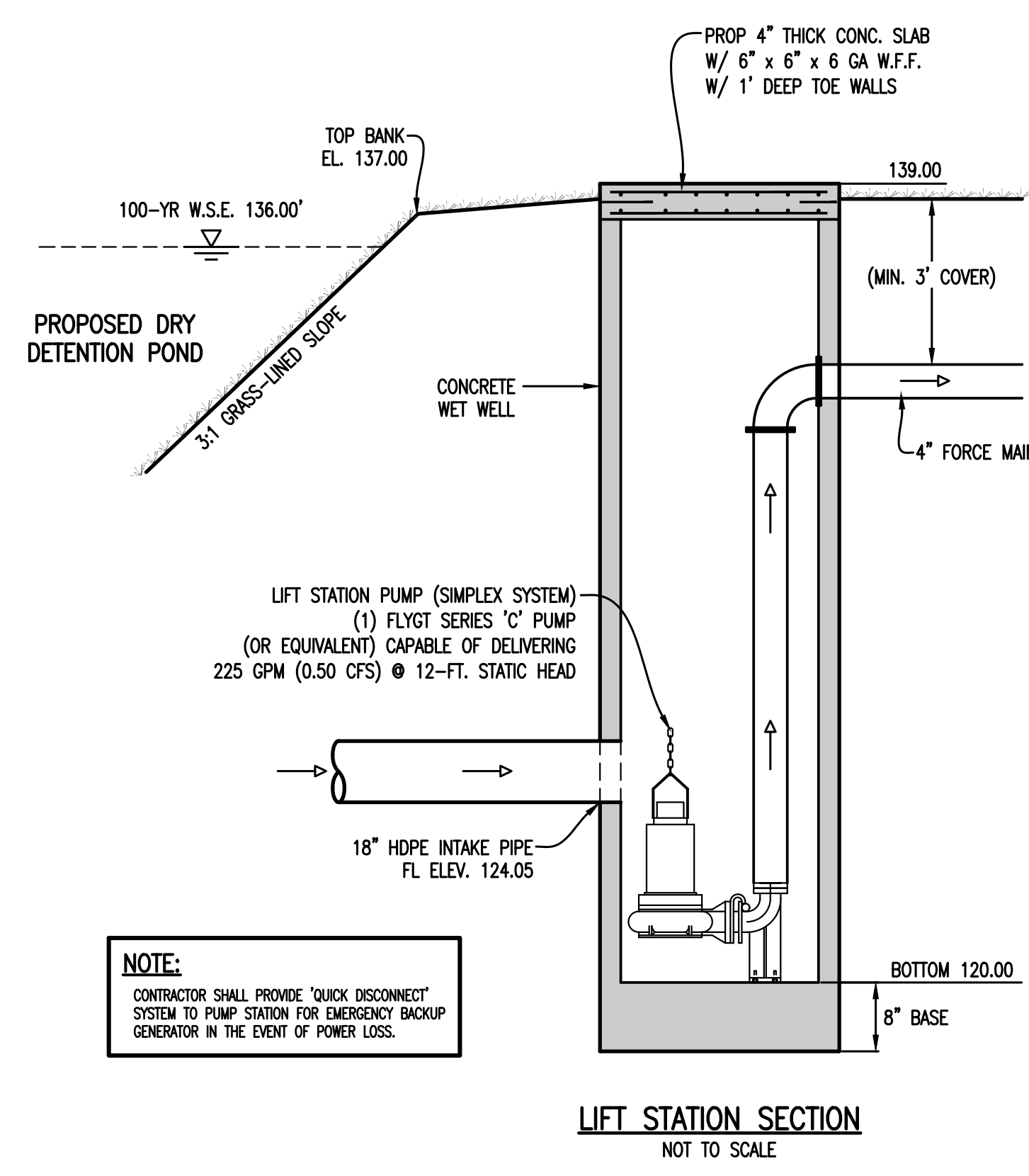
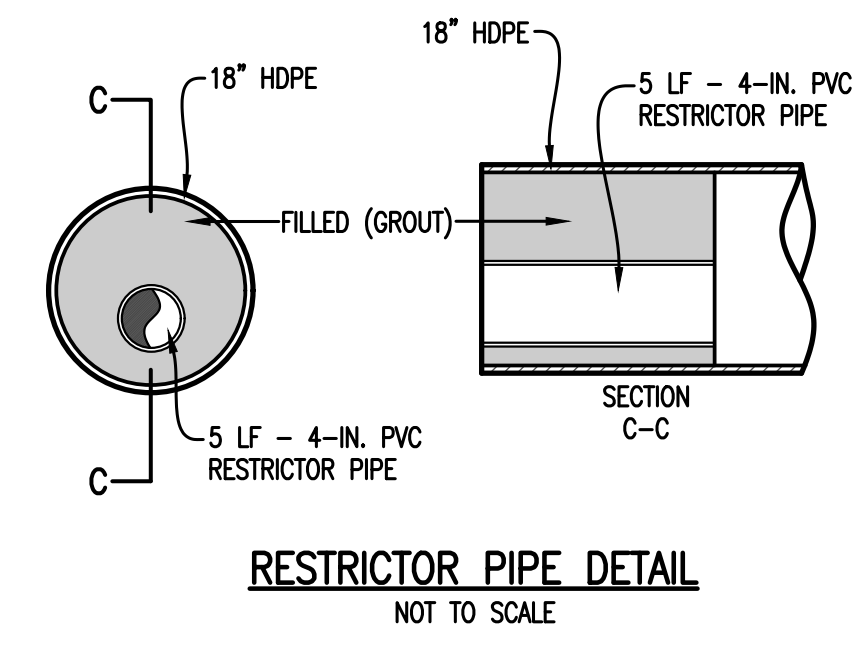
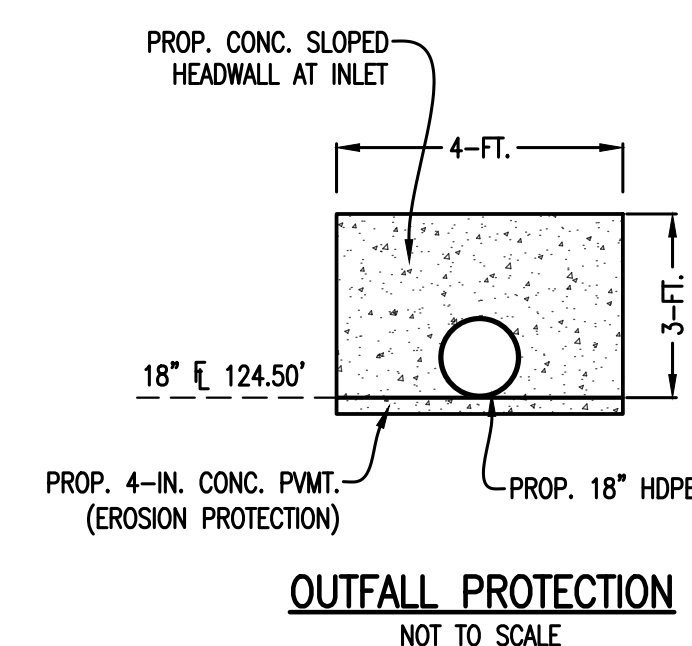
OREMUS PROPERTIES LLC



- FLEXAMAT NOTES:**
1. INSTALL ACCORDING TO MANUFACTURER'S (WOTZ ENTERPRISES, INC.) RECOMMENDATIONS FOR CHANNEL LINING.
 2. APPLY SEED DIRECTLY TO THE PREPARED SOIL PRIOR TO FLEXAMAT INSTALLATION. USE SEED PER PROJECT SPECIFICATIONS.
 3. OVERLAP DOWNSTREAM SECTIONS OF MAT 18" WITH UPSTREAM MAT SECTION. PRIOR TO INSTALLING OVERLAP, FLIP UPSTREAM MAT BACK 24" AND EXCAVATE 2.25" OF SOIL 18" FROM END OF UPSTREAM MAT. LAY DOWNSTREAM SECTION IN TRENCH, LIGHTLY SPREAD TOPSOIL OVER INITIAL EDGE. FLIP END OF UPSTREAM MAT OVER THE SOIL COVERED LEADING EDGE OF DOWN STREAM MAT.
 4. INSTALL 18" U" ANCHORS IN 24" INCREMENTS ACROSS THE OVERLAP. INSTALL ANCHORS DIRECTLY BEHIND BLOCKS. U" ANCHORS CONSIST OF NO. 3 REBAR U" ANCHOR WITH 18" LESS.



NOTES:
FILL SHALL BE PLACED IN 8-INCH LIFTS AND COMPACTED TO WITHIN 95% OF STANDARD PROCTOR DENSITY (ASTM D-698) -0%+3% OPTIMUM MOISTURE.



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<p>DATE: March, 2021 JOB NO. D20_LD_14011</p>	<p>DESIGNED BY: SLA CHECKED BY: DPK</p>
<p>AUTHORIZED SIGNATURE BY DAVID P. KELLY II, P.E. ON March 10, 2021</p>	
<p>SURVEYED BY: FOUR POINTS SURVEYING</p>	<p>David P. Kelly II</p>
<p>OREMUS PROPERTIES LLC PROPOSED SITE DEVELOPMENT</p>	
<p>TYPICAL SECTIONS AND DETAILS</p>	
<p>FILE NO.:</p>	<p>SHEET NUMBER</p>
<p>G.F. NO.:</p>	
<p>DRAWING SCALE: NOT TO SCALE</p>	<p>OF 15</p>

PUMP SPECIFICATIONS

REQUIREMENTS

Furnish and install 2 submersible non-clog wastewater pump(s). Each pump shall be equipped with a 3.0 HP submersible electric motor connected for operation on 230 volts, 1 phase, 60 hertz, 3 wire service, with 33 feet of submersible cable (SUBCAB) suitable for submersible pump applications. The power cable shall be sized according to NEC and ICEA standards and have P-MSHA approval.

PUMP DESIGN CONFIGURATION (DRY PIT INSTALLATION)

Pump shall be capable of operating in a continuous non-submerged condition in horizontal (CZ, NZ) or vertical (CT, NT) (select one) position in a dry pit installation and permanently connected to inlet and outlet pipes. Pump shall be of submersible construction and will continue to operate satisfactorily should the dry pit be subjected to flooding.

PUMP DESIGN CONFIGURATION (WET PIT INSTALLATION)

The pump shall be supplied with a mating cast iron 4 inch discharge connection and be capable of delivering 225 GPM at 15 FT. TDH. An additional point on the same curve shall be GPM at feet total head. Shut off head shall be 30 feet (minimum). The pump(s) shall be automatically and firmly connected to the discharge connection, guided by no less than two guide bars extending from the top of the station to the discharge connection. There shall be no need for personnel to enter the wet-well. Sealing of the pumping unit to the discharge connection shall be accomplished by a machined metal to metal watertight contact. Sealing of the discharge interface with a diaphragm, O-ring or profile gasket will not be acceptable. No portion of the pump shall bear directly on the sump floor. Each pump shall be fitted with 20 feet of STEEL lifting chain or stainless steel cable. The working load of the lifting system shall be 50% greater than the pump unit weight.

PUMP CONSTRUCTION

Major pump components shall be of gray cast iron, ASTM A-48, Class 35B, with smooth surfaces devoid of blow holes or other irregularities. All exposed nuts or bolts shall be ANSI type 304 stainless steel construction. All metal surfaces coming into contact with the pump, other than stainless steel or brass, shall be protected by a factory applied spray coating of acrylic dispersion zinc phosphate primer with a polyester resin paint finish on the exterior of the pump.

Sealing design shall incorporate metal-to-metal contact between machined surfaces. Critical mating surfaces where watertight sealing is required shall be machined and fitted with Nitrile or Viton rubber O-rings. Fittings will be the result of controlled compression of rubber O-rings in two planes and O-ring contact of four sides without the requirement of a specific torque limit.

Rectangular cross sectioned gaskets requiring specific torque limits to achieve compression shall not be considered as adequate or equal. No secondary sealing compounds, elliptical O-rings, grease or other devices shall be used.

COOLING SYSTEM

Motors are sufficiently cooled by the surrounding environment or pumped media. A water jacket is not required.

CABLE ENTRY SEAL

The cable entry seal design shall preclude specific torque requirements to insure a watertight and submersible seal. The cable entry shall consist of a single cylindrical elastomer grommet, flanked by washers, all having a close tolerance fit against the cable outside diameter and the entry inside diameter and compressed by the body containing a strain relief function, separate from the function of sealing the cable. The assembly shall provide ease of changing the cable when necessary using the same entry seal. The cable entry junction chamber and motor shall be separated by a stator lead sealing gland or terminal board, which shall isolate the interior from foreign material gaining access through the pump top. Epoxies, silicones, or other secondary sealing systems shall not be considered acceptable.

MOTOR

The pump motor shall be a NEMA B design, induction type with a squirrel cage rotor, shell type design, housed in an air filled, watertight chamber. The stator windings shall be insulated with moisture resistant Class H insulation rated for 180°C (356°F). The stator shall be insulated by the trickle impregnation method using Class H monomer-free polyester resin resulting in a winding fill factor of at least 95%. The motor shall be inverter duty rated in accordance with NEMA MG1, Part 31. The stator shall be heat-shrink fitted into the cast iron stator housing. The use of multiple step dip and bake-type stator insulation process is not acceptable. The use of bolts, pins or other fastening devices requiring penetration of the stator housing is not acceptable. The motor shall be designed for continuous duty handling pumped media of 40°C (104°F) and capable of up to 15 evenly spaced starts per hour. The rotor bars and short circuit rings shall be made of cast aluminum. Thermal switches set to open at 125°C (260°F) shall be embedded in the stator end coils to monitor the temperature of each phase winding. These thermal switches shall be used in conjunction with and supplemental to external motor overload protection and shall be connected to the control panel. The junction chamber containing the terminal board, shall be hermetically sealed from the motor by an elastomer compression seal. Connection between the cable conductors and stator leads shall be made with threaded compression type binding posts permanently affixed to a terminal board. The motor and the pump shall be produced by the same manufacturer.

The combined service factor (combined effect of voltage, frequency and specific gravity) shall be a minimum of 1.15. The motor shall have a voltage tolerance of plus or minus 10%. The motor shall be designed for operation up to 40°C (104°F) ambient and with a temperature rise not to exceed 80°C. A performance chart shall be provided upon request showing curves for torque, current, power factor, input/output KW and efficiency. This chart shall also include data on starting and no-load characteristics.

The power cable shall be sized according to the NEC and ICEA standards and shall be of sufficient length to reach the junction box without the need of any splices. The outer jacket of the cable shall be oil resistant chlorinated polyethylene rubber. The motor and cable shall be capable of continuous submergence underwater without loss of watertight integrity to a depth of 65-feet or greater.

The motor horsepower shall be adequate so that the pump is non-overloading throughout the entire pump performance curve from shut-off through run-out.

BEARINGS

The pump shaft shall rotate on two bearings. Motor bearings shall be permanently grease lubricated. The upper bearing shall be a single deep groove ball bearing. The lower bearing shall be a two row angular contact bearing to compensate for axial thrust and radial forces. Single row lower bearings are not acceptable.

MECHANICAL SEAL

Each pump shall be provided with a tandem mechanical shaft seal system consisting of two totally independent seal assemblies. The seals shall operate in an lubricant reservoir that hydrodynamically lubricates the lapped seal faces at a constant rate. The lower, primary seal unit, located between the pump and the lubricant chamber, shall contain one stationary and one positively driven rotating, corrosion resistant tungsten-carbide ring. The upper, secondary seal unit, located between the lubricant chamber and the motor housing, shall contain one stationary and one positively driven rotating, corrosion resistant tungsten-carbide seal ring. Each seal interface shall be held in contact by its own spring system. The seals shall require neither maintenance nor adjustment nor depend on direction of rotation for sealing. The position of both mechanical seals shall depend on the shaft. Mounting of the lower mechanical seal on the impeller hub will not be acceptable. For special applications, other seal face materials shall be available.

The following seal types shall not be considered acceptable nor equal to the dual independent seal specified: shaft seals without positively driven rotating members, or conventional double mechanical seals containing either a common single or double spring acting between the upper and lower seal faces. No system requiring a pressure differential to offset pressure and to effect sealing shall be used.

Each pump shall be provided with an lubricant chamber for the shaft sealing system. The lubricant chamber shall be designed to prevent overfilling and to provide lubricant expansion capacity. The drain and inspection plug, with positive anti-leak seal shall be easily accessible from the outside. The seal system shall not rely upon the pumped media for lubrication. The motor shall be able to operate dry without damage while pumping under load.

Seal lubricant shall be FDA Approved, nontoxic.

PUMP SHAFT

Pump and motor shaft shall be the same unit. The pump shaft is an extension of the motor shaft. Couplings shall not be acceptable. The pump shaft shall be stainless steel – ASTM A479 S43100-T.

If a shaft material of lower quality than stainless steel – ASTM A479 S43100-T is used, a shaft sleeve of stainless steel – ASTM A479 S43100-T is used to protect the shaft material. However, shaft sleeves only protect the shaft around the lower mechanical seal. No protection is provided for in the oil housing and above. Therefore, the use of stainless steel sleeves will not be considered equal to stainless steel shafts.

IMPELLER (FOR C – PUMPS)

The impeller(s) shall be of gray cast iron, Class 35B, dynamically balanced, double shrouded non-clogging design having a long throatlet without acute turns. The impeller(s) shall be capable of handling solids, fibrous materials, heavy sludge and other matter found in wastewater. When ever possible, a full vaned, not vortex, impeller shall be used for maximum hydraulic efficiency; thus, reducing operating costs. Impeller(s) shall be retained with an Allen head bolt and shall be capable of passing a minimum inch diameter solid.

WEAR RINGS (FOR C – PUMPS)

A wear ring system shall be used to provide efficient sealing between the volute and suction inlet of the impeller. Each pump shall be equipped with a brass, or nitrile rubber coated steel ring insert that is drive fitted to the volute inlet.

VOLUTE (FOR C – PUMPS)

Pump volute(s) shall be single-piece gray cast iron, Class 35B, non-concentric design with smooth passages large enough to pass any solids that may enter the impeller. Minimum inlet and discharge size shall be as specified.

IMPELLER (FOR N – PUMPS)

The impeller(s) shall be of gray cast iron, Class 35B, dynamically balanced, semi-open, multi-vane, back-swept, non-clog design. The impeller vane leading edges shall be mechanically self-cleaned upon each rotation as they pass across a spiral groove located on the volute suction which shall keep them clear of debris, maintaining an unobstructed leading edge. The impeller(s) vanes shall have screw-shaped leading edges that are hardened to RC 45 and shall be capable of handling solids, fibrous materials, heavy sludge and other matter found in waste water. The screw shape of the impeller inlet shall provide an inducing effect for the handling of sludge and rag-laden wastewater. Impellers shall be locked to the shaft and held by an impeller bolt.

VOLUTE BOTTOM/INSERT RING (FOR N – PUMPS)

The pump volute shall be of A48 Class 35B gray cast iron and shall have (an) integral spiral shaped cast groove(s) at the suction of the volute. The internal volute bottom or insert ring shall provide effective sealing between the pump volute and the multi-vane, semi-open impeller. The sharp spiral groove(s) shall provide the shearing edge(s) across which each impeller vane leading edge shall cross during its rotation in order to remain unobstructed. The clearance between the internal volute bottom and the impeller leading edges shall be adjustable.

PROTECTION

All stators shall incorporate thermal switches in series to monitor the temperature of each phase winding. The thermal switches shall open at 125°C (260°F), stop the motor and activate an alarm.

A leakage sensor shall be available as an option to detect water in the stator chamber. The Float Leakage Sensor (FLS) is a small float switch used to detect the presence of water in the stator chamber. When activated, the FLS will stop the motor and send an alarm both local and/or remote. USE OF VOLTAGE SENSITIVE SOLID STATE SENSORS AND TRIP TEMPERATURE ABOVE 125°C (260°F) SHALL NOT BE ALLOWED.

The thermal switches and FLS shall be connected to a Mini CAS (Control and Status) monitoring unit. The Mini CAS shall be designed to be mounted in any control panel.

Note: FLS not available in CZ, NZ configurations.

MODIFICATIONS

1. Explosion-proof pumps (X).
2. Warm Liquid Applications (WL).
3. Dry Pit Installations (CT).

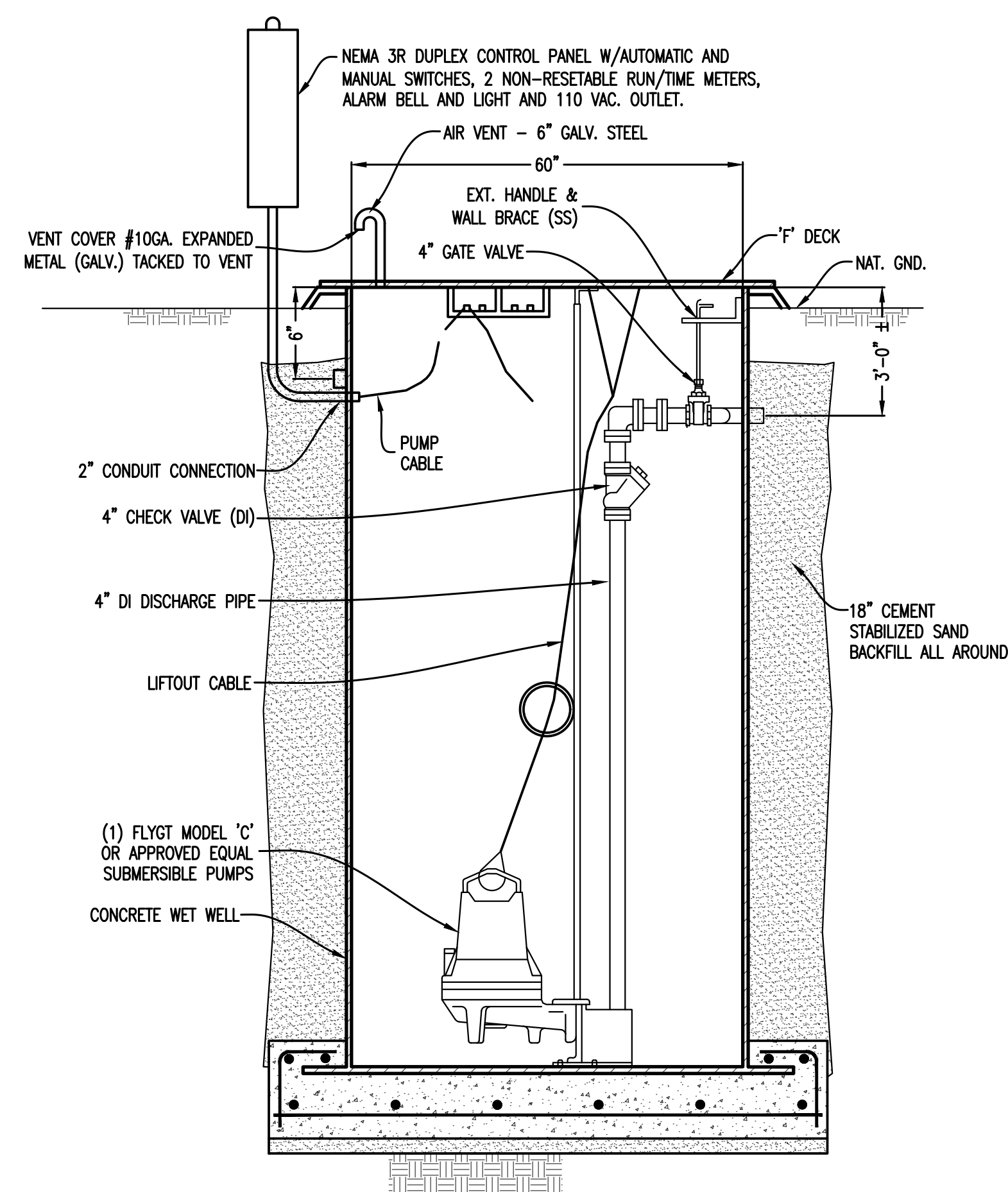
Refer to the General Guide Specifications for additional information.

LIFT STATION PUMP SCHEDULE

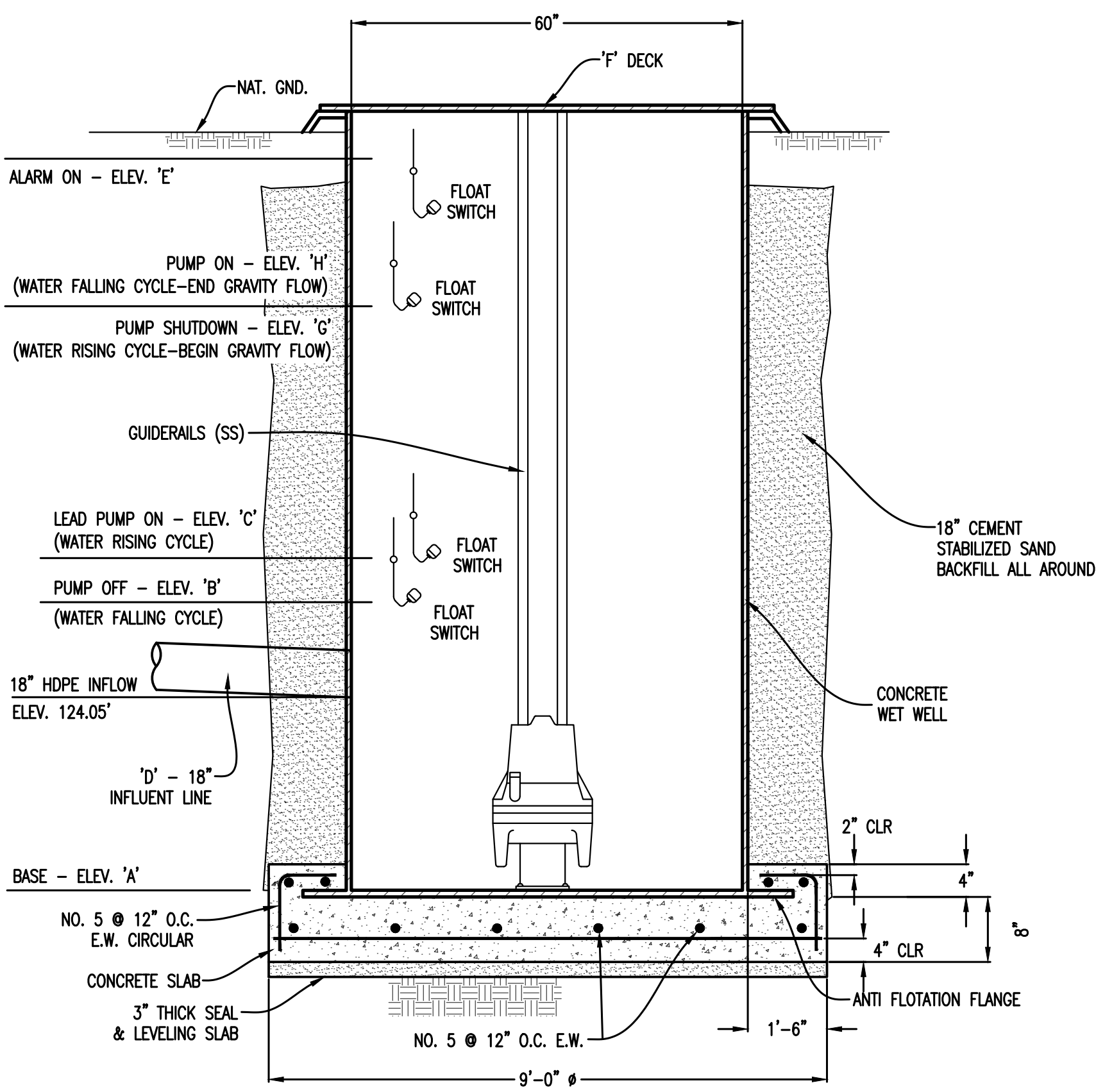
SINGLE PUMP OPERATION DATA	
RATED GPM	225
TDH	12.00
MIN. SH	13.80
RPM	1745
MIN. HP	3.0
ELECTRICAL POWER TO PUMP	230V – 1Ø

ELEVATION TABLE

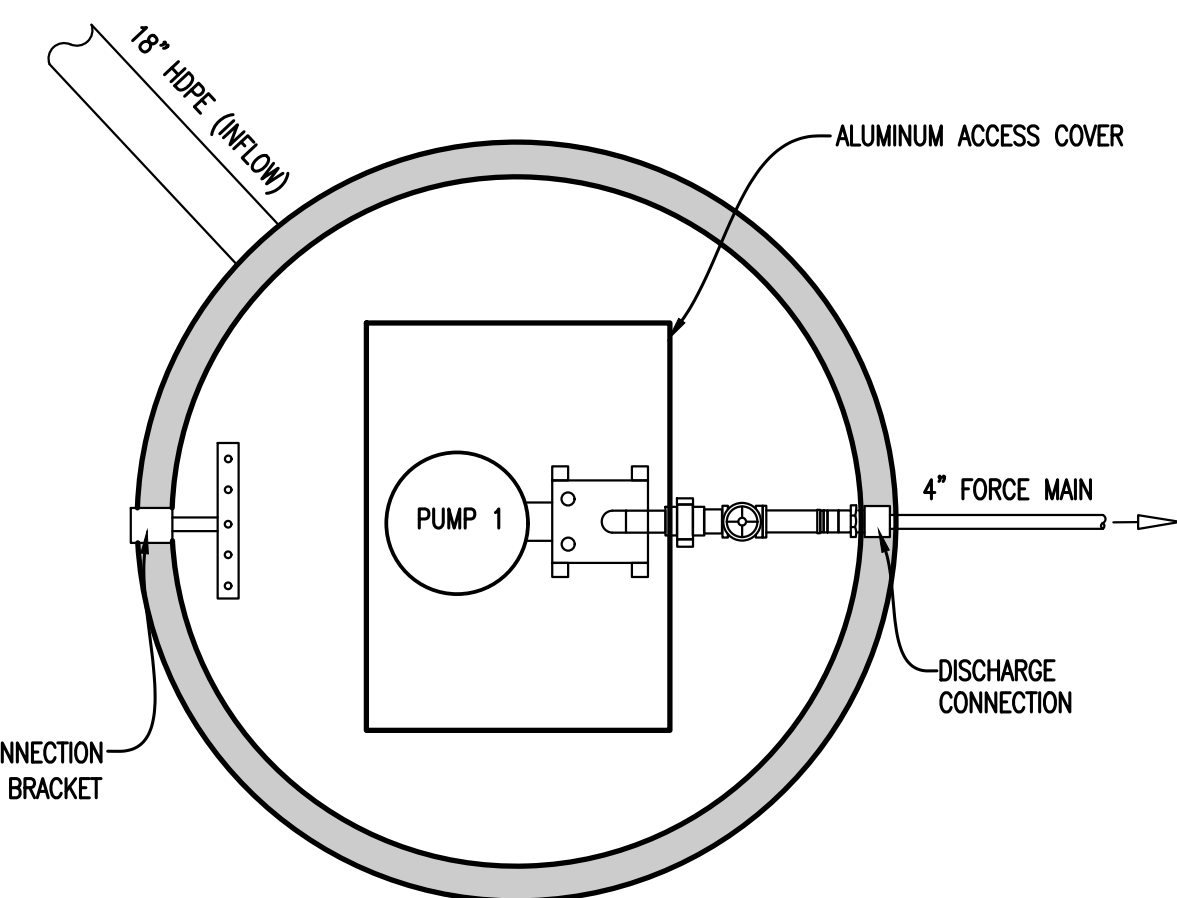
LOCATION	ELEVATION
A.) BASE	120.00'
B.) PUMP OFF	123.00'
C.) LEAD PUMP ON	124.40'
D.) INFLUENT FLOW LINE	124.05'
E.) ALARM ON	136.80'
F.) DECK	139.00'
G.) PUMP SHUTDOWN (GRAVITY FLOW)	131.00'
H.) PUMP ON (WATER FALLING CYCLE)	131.10'



WET WELL PROFILE
NOT TO SCALE



WET WELL PROFILE
NOT TO SCALE



WET WELL PLAN
NOT TO SCALE

LIFT STATION NOTES:
CONTRACTOR SHALL PROVIDE LIFT STATION WITH "QUICK CONNECT" RECEPTACLES FOR EMERGENCY BACKUP GENERATOR IN THE EVENT OF POWER FAILURE.

WET WELL NOTES:

1. CONCRETE SHALL BE CLASS 'A' AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS.
2. CONCRETE MAY BE PRECAST WITH FIBERGLASS REINFORCED WELLS PRIOR TO INSTALLATION. CONTRACTOR/MANUFACTURER IS RESPONSIBLE FOR LIFTING CALCULATIONS INCLUDING ADEQUACY OF WET WELL AND CONCRETE TO SUPPORT THE LIFTING LOADS.
3. THE FRP NET WELL ANTI-FLOATATION FLANGES SHALL BE CAPABLE OF RESISTING VERTICAL, SOIL, AND UPLIFT LOADINGS, INCLUDING BUOYANCY, WITH GROUND WATER LEVEL AT DECK ELEVATION, BELOW BOTTOM OF THE NET WELL AT ANY INTERMEDIATE ELEVATION. BUOYANCY CALCULATIONS MUST HAVE A FACTOR OF SAFETY OF 1.5 AGAINST UPLIFT.
4. ANCHOR BOLTS SHALL BE STAINLESS AND SHALL BE CAST INTO FRP NET WELL DURING MANUFACTURE.
5. ALL PIPE PROTRUDING THROUGH THE FRP NET WELL SHALL BE SEALED TO THE NET WELL BY THE MANUFACTURER.
6. CEMENT STABILIZED SAND BACKFILL (2 OR MORE SACKS PER CUBIC YARD OF SAND) TO WITHIN 1' OF NATURAL GROUND AND COMPACTED TO 95% STANDARD DENSITY.

BENCHMARK:
ELEVATIONS ARE DERIVED FROM GPS OBSERVATIONS FROM CORP. STATIONS OF THE TRIMBLE NETWORK (NAVD 1988, GEOID 12B).

T.B.M. 'A':
RAILROAD SPIKE IN A SERVICE POLE ON EAST SIDE OF PROPERTY (LOCATED AS SHOWN).

ELEVATION = 142.02' NAVD 1988

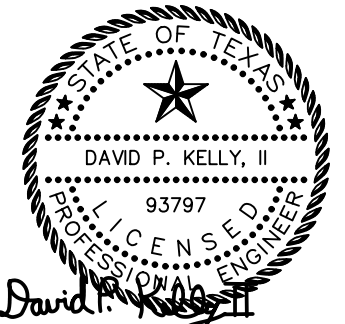
FLOOD PLAIN STATEMENT:
ACCORDING TO FEMA F.I.R.M. MAP PANEL NUMBER 48157-C-0085L WITH AN EFFECTIVE DATE OF APRIL 2, 2014, THE MAP INDICATES THIS TRACT TO BE ENTIRELY WITHIN UN-SHADED ZONE 'X', AREAS DETERMINED TO BE OUTSIDE THE 100-YEAR FLOOD PLAIN.

DPK Engineering LLC
LAND DEVELOPMENT – SITE DEVELOPMENT – MUNICIPAL
P.O. Box 823
Fulshear, Texas 77441
Office and Fax: (281) 346-2616
Cell: (281) 300-1869
Firm Registration No. F9323

DATE: March, 2021
JOB NO. D20_LD_14011

DESIGNED BY: SLA
CHECKED BY: DPK

AUTHORIZED SIGNATURE BY
DAVID P. KELLY II, P.E. ON
March 10, 2021



SURVEYED BY:
FOUR POINTS SURVEYING

OREMUS PROPERTIES LLC
PROPOSED SITE DEVELOPMENT

STORM LIFT STATION AND PUMP DETAILS

FILE NO.:	SHEET NUMBER
G.F. NO.:	
DRAWING SCALE:	
NOT TO SCALE	
	OF 15

BENCHMARK:
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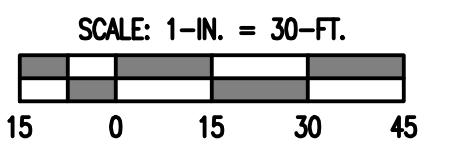
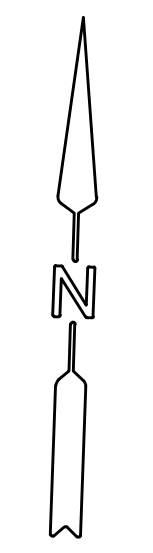
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FLOOD PLAIN STATEMENT:
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LEGEND

- EXISTING STORM SEWER
- EXISTING SANITARY SEWER
- EXISTING WATER LINE
- EXISTING GAS LINE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER
- PROPOSED WATER LINE
- PROPOSED DRAINAGE DITCH
- FILTER FABRIC FENCE
- REINFORCED FILTER FABRIC BARRIER
- STABILIZED CONSTRUCTION ENTRANCE
- INLET PROTECTION BARRIER (STAGE 1 INLETS)
- INLET PROTECTION BARRIER (STAGE 2 INLETS)
- CONCRETE TRUCK WASH-OUT AREA



- PERMIT & REGULATORY NOTES:**
- THE CONTRACTOR SHALL COMPLETE AND SIGN THE T.C.E.Q. "CONSTRUCTION SITE NOTICE" (ATTACHMENT NO. 2 OF TPDES GENERAL PERMIT TXR 150000).
 - THE CONTRACTOR SHALL POST A SIGNED COPY OF THE "CONSTRUCTION SITE NOTICE" WHERE IT IS READILY AVAILABLE FOR VIEWING BY THE GENERAL PUBLIC AND LOCAL, STATE AND FEDERAL AUTHORITIES PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES AND SHALL MAINTAIN THIS NOTICE UNTIL COMPLETION OF THE WORK.
 - THE CONTRACTOR SHALL PROVIDE A COPY OF THE SIGNED "CONSTRUCTION SITE NOTICE" TO THE OPERATOR OF ANY MUNICIPAL STORM SEWER SYSTEMS RECEIVING STORM WATER DISCHARGE FROM THE SITE AT LEAST FIVE (5) DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.

- SWPP CONSTRUCTION NOTES:**
- ALL SEDIMENT AND EROSION CONTROLS ARE SHOWN ON THE STORM WATER POLLUTION PREVENTION PLAN. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING THE STORM WATER POLLUTION PREVENTION CONTROLS PRIOR TO, AND DURING ALL CONSTRUCTION PHASES.
 - SEDIMENT SHALL BE RETAINED ON-SITE TO THE MAXIMUM EXTENT PRACTICABLE.
 - WHEN DE-WATERING (PUMPING) THE SITE, THE SEDIMENT-LADEN DISCHARGE SHALL BE DETAINED FOR A SUFFICIENT TIME TO ALLOW THE MAJORITY OF THE SEDIMENT TO SETTLE OUT. DIRECT DISCHARGE INTO STORM SEWER WILL NOT BE ALLOWED.
 - IF SEDIMENT ESCAPES FROM THE SITE, ACCUMULATION SHALL BE REMOVED TO PREVENT BECOMING A POLLUTANT SOURCE.
 - ALL OFF-SITE MATERIALS, STORAGE AREAS AND STOCKPILES OF DIRT USED BY THE CONTRACTOR ARE CONSIDERED PART OF THE PROJECT AND WILL FOLLOW THE SAME CONTROLS TO PREVENT ANY POLLUTION TO THE STORM SEWER SYSTEMS.
 - AFTER PAVING COMPLETION, ALL EXPOSED SOILS SHALL BE ADEQUATELY STABILIZED THROUGH HYDRO-MULCH SEEDING OR EQUIVALENT.
 - CONCRETE TRUCKS WILL NOT BE ALLOWED TO WASH OR DISCHARGE SURPLUS CONCRETE OR DRUM WASH WATER ON THE SITE, UNLESS A PROPERLY DESIGNED AND DESIGNATED CONCRETE WASHOUT AREA IS USED.
 - ALL WASTE MATERIALS SHALL BE COLLECTED AND STORED IN A SECURE LEADED METAL DUMPSTER FROM A LICENSED WASTE MANAGEMENT COMPANY. ALL CONSTRUCTION DEBRIS AND TRASH FROM THE SITE SHALL BE DEPOSITED IN THE DUMPSTER. NO CONSTRUCTION WASTE MATERIAL SHALL BE BURIED ON-SITE.
 - CONTRACTOR SHALL CLEAN THE PAVEMENT AREAS ADJACENT TO THE STABILIZED CONSTRUCTION ENTRANCE DAILY TO REMOVE ANY EXCESS MUD, DIRT OR ROCK TRACKED FROM THE SITE.
 - CONTRACTOR TO REMOVE ALL TEMPORARY STORM WATER POLLUTION PREVENTION MEASURES UPON COMPLETION OF CONSTRUCTION.

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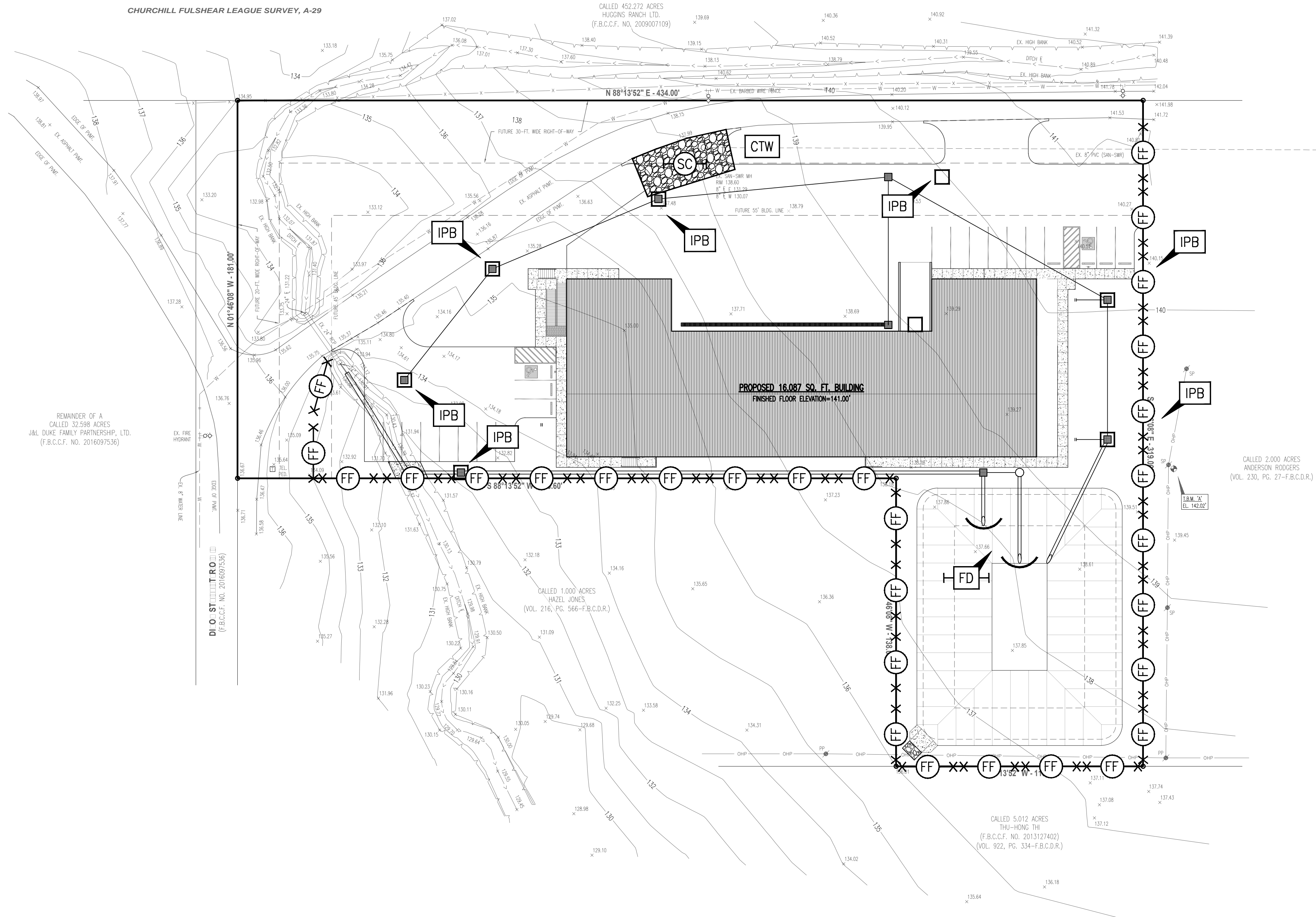
DATE: March, 2021 JOB NO. D20_LD_14011	DESIGNED BY: SLA CHECKED BY: DPK
AUTHORIZED SIGNATURE BY DAVID P. KELLY II, P.E. ON April 27, 2023	
SURVEYED BY: FOUR POINTS SURVEYING	

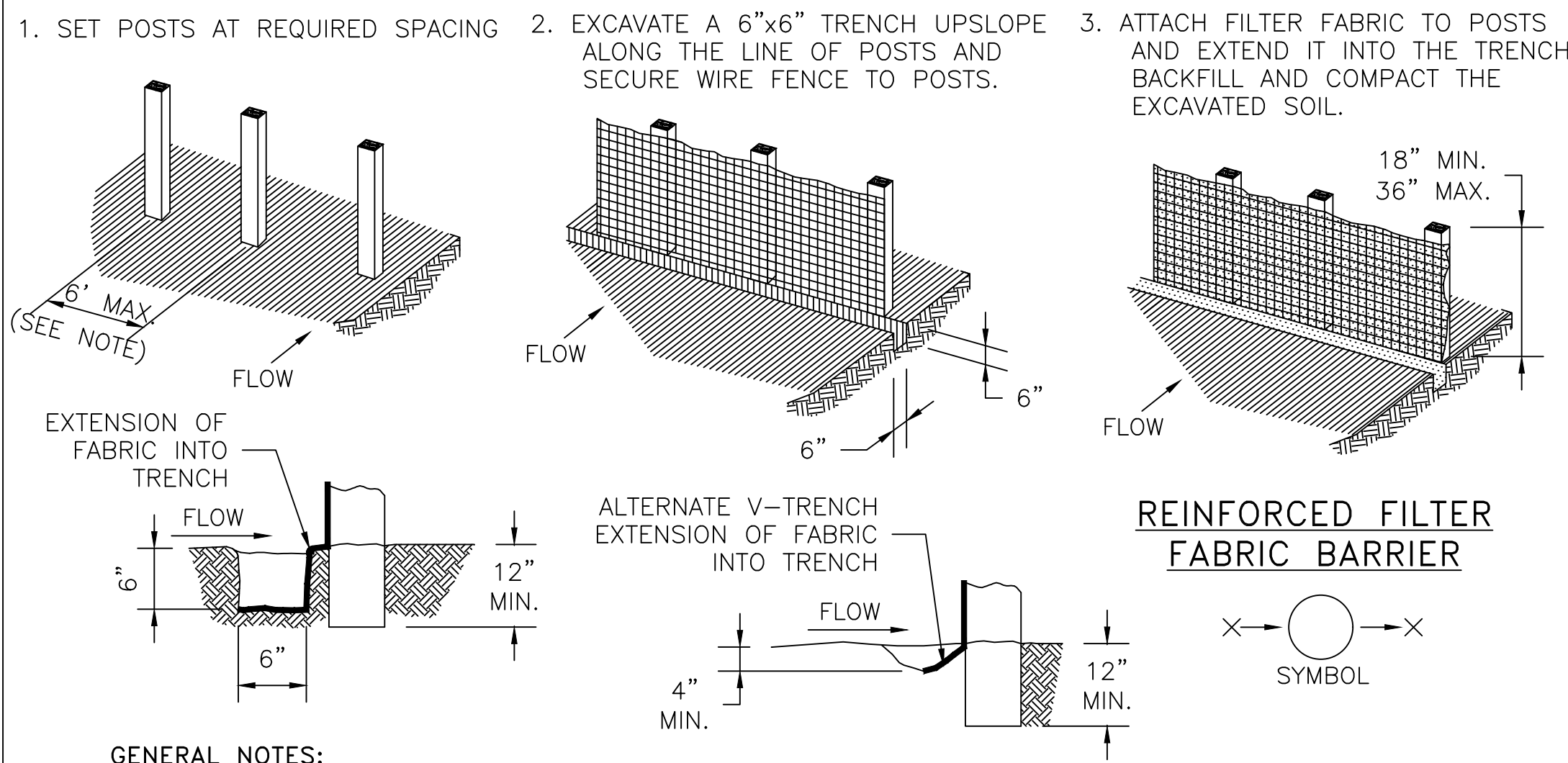
OREMUS PROPERTIES LLC
PROPOSED SITE DEVELOPMENT

**STORM WATER
POLLUTION
PREVENTION PLAN**

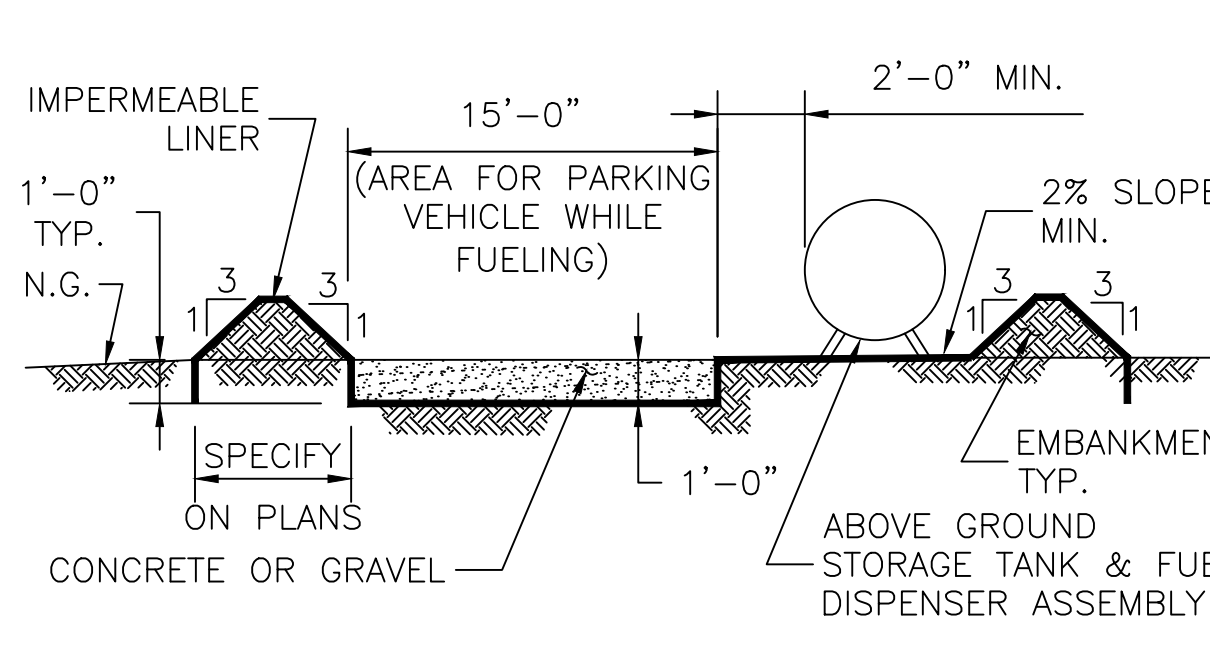
FILE NO.:	SHEET NUMBER
G.F. NO.:	
DRAWING SCALE:	OF 15
1-IN. = 30-FT.	

WARNING-O/H POWER LINE
CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING IN THE VICINITY OF OVERHEAD POWER LINES. CONTACT CENTERPOINT ENERGY AT LEAST 72-HOURS PRIOR TO ANY ACTIVITY WITHIN THE LIMITS OF THE EASEMENT, OR ADJACENT TO THE FACILITY.



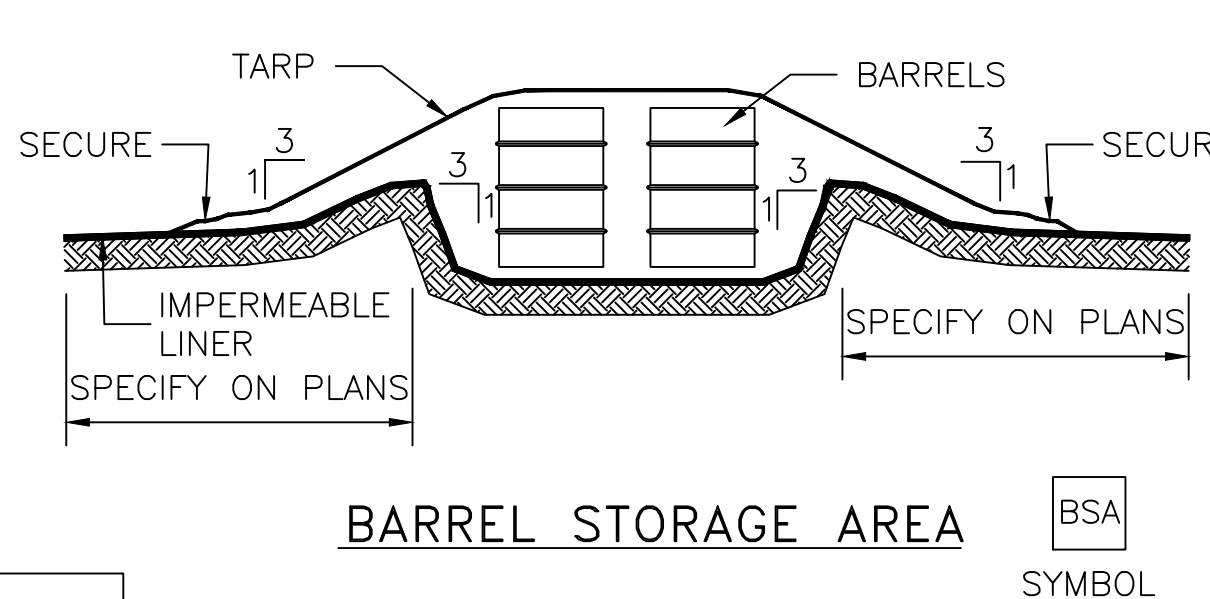


- GENERAL NOTES:**
1. SECURELY FASTEN MESH FENCING TO POSTS WITH STAPLES OR TIE WIRES.
 2. SECURELY FASTEN FILTER FABRIC TO MESH FENCING.
 3. WHEN TWO SECTIONS OF FILTER FABRIC ADJOIN EACH OTHER, OVERLAP 6 INCHES AT A POST, FOLD TOGETHER, AND ATTACH TO A POST.
 4. REMOVE SEDIMENT DEPOSITS WHEN SILT REACHES ONE-THIRD OF THE HEIGHT OF THE FENCE IN DEPTH.

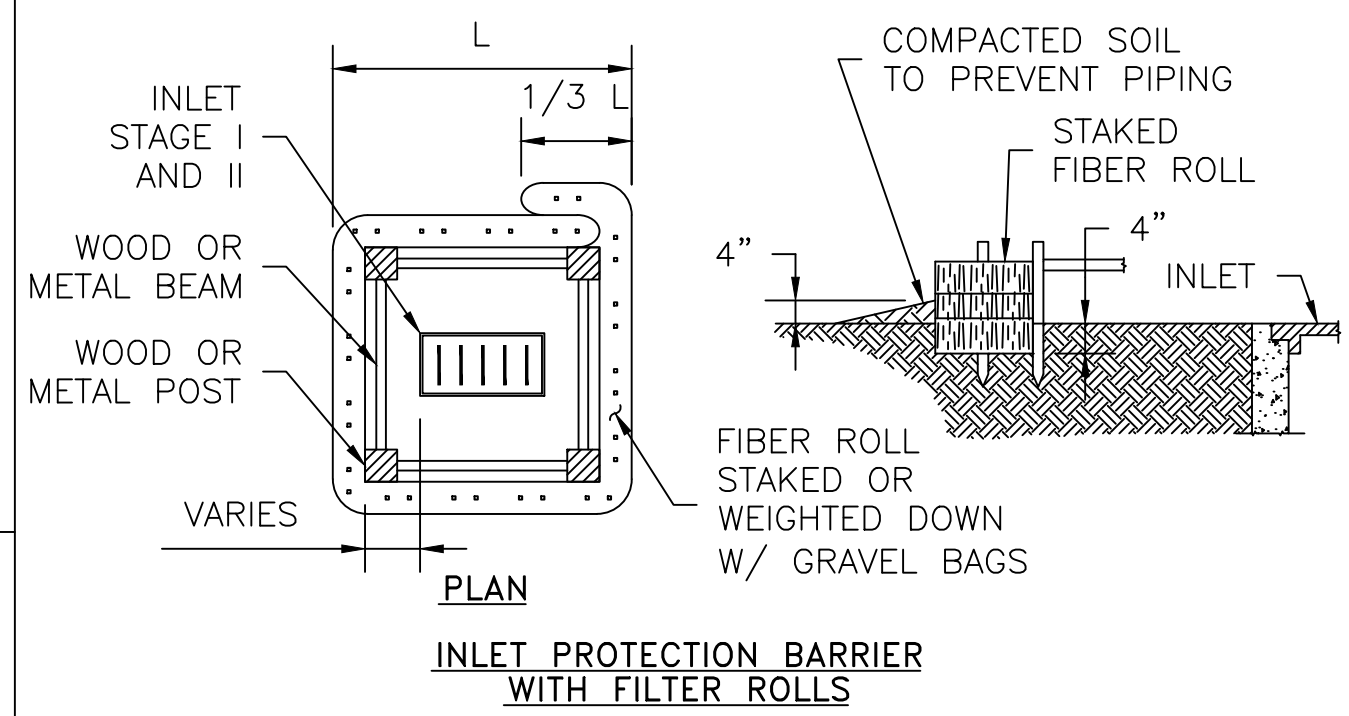
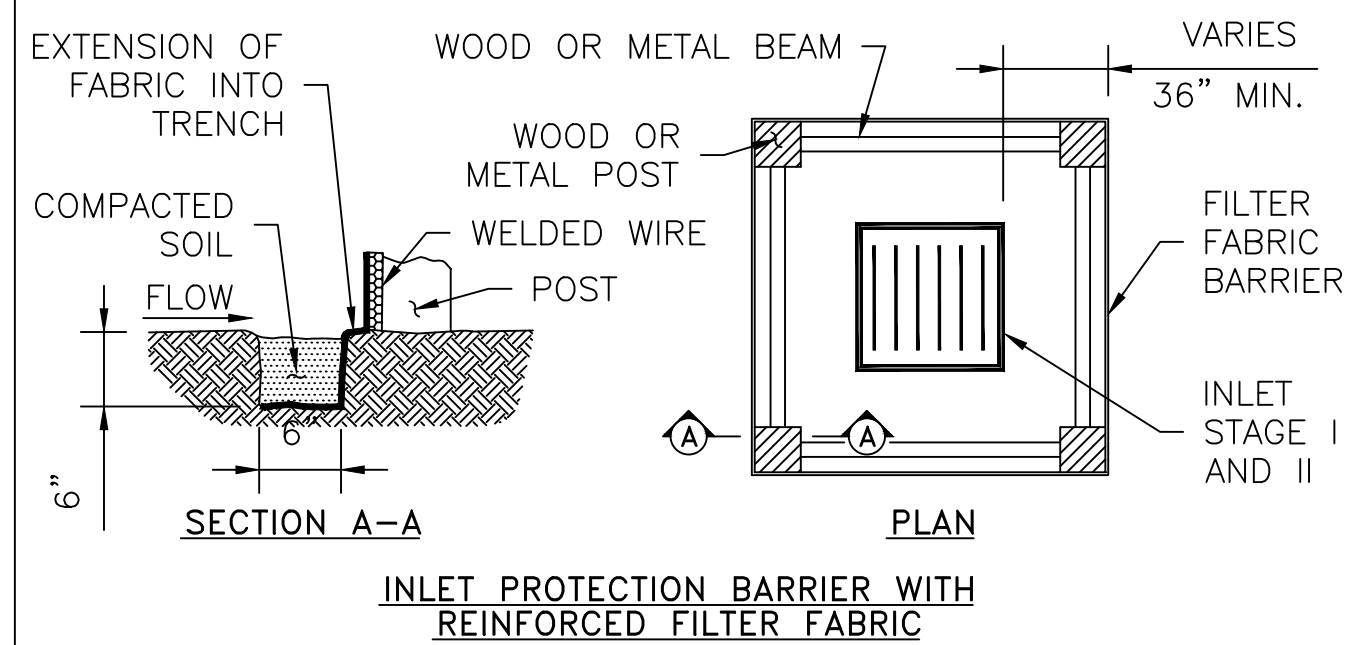


ABOVE GROUND TEMP. VEHICLE & EQUIPMENT FUELING AREA WITH TANK

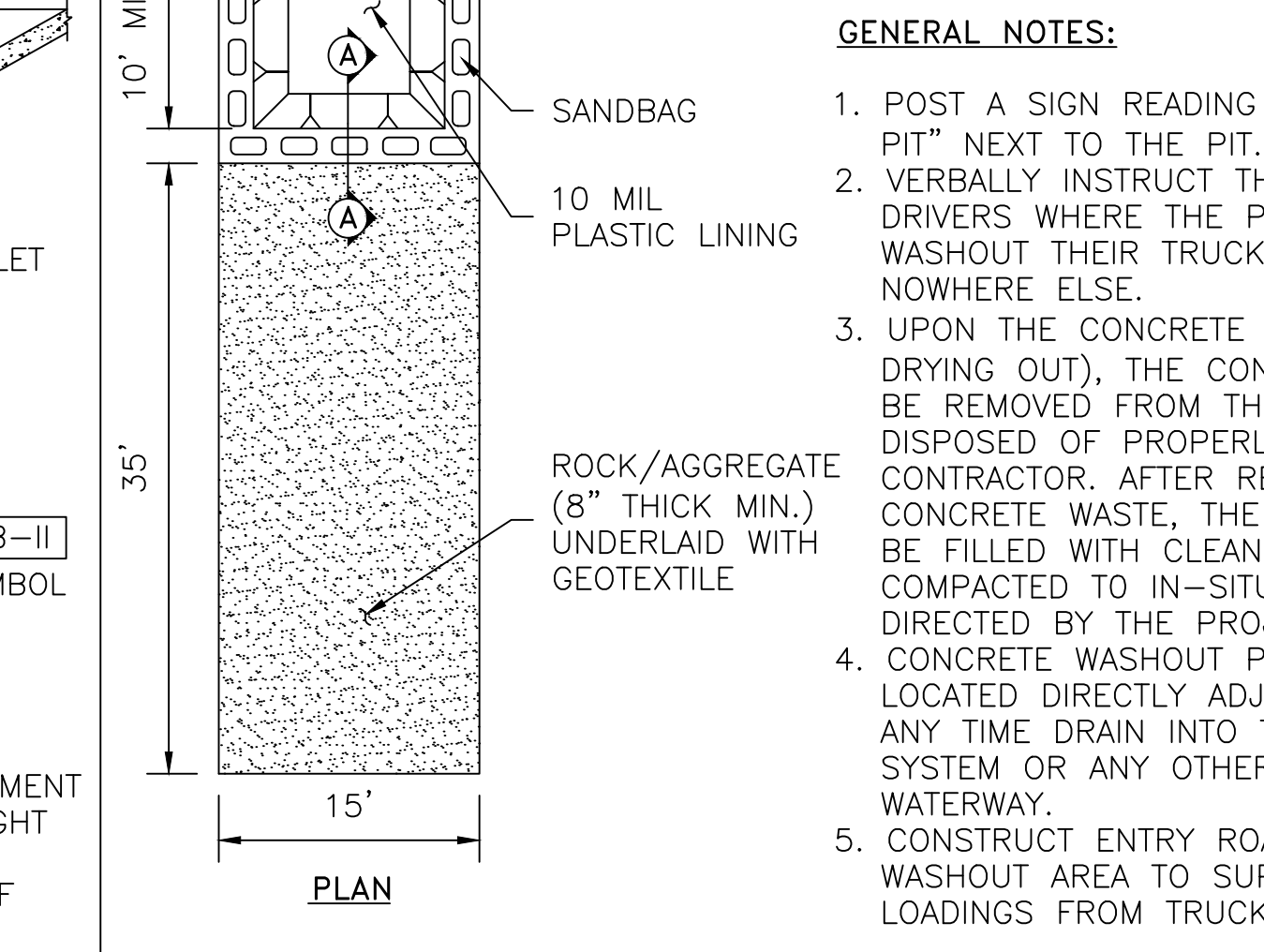
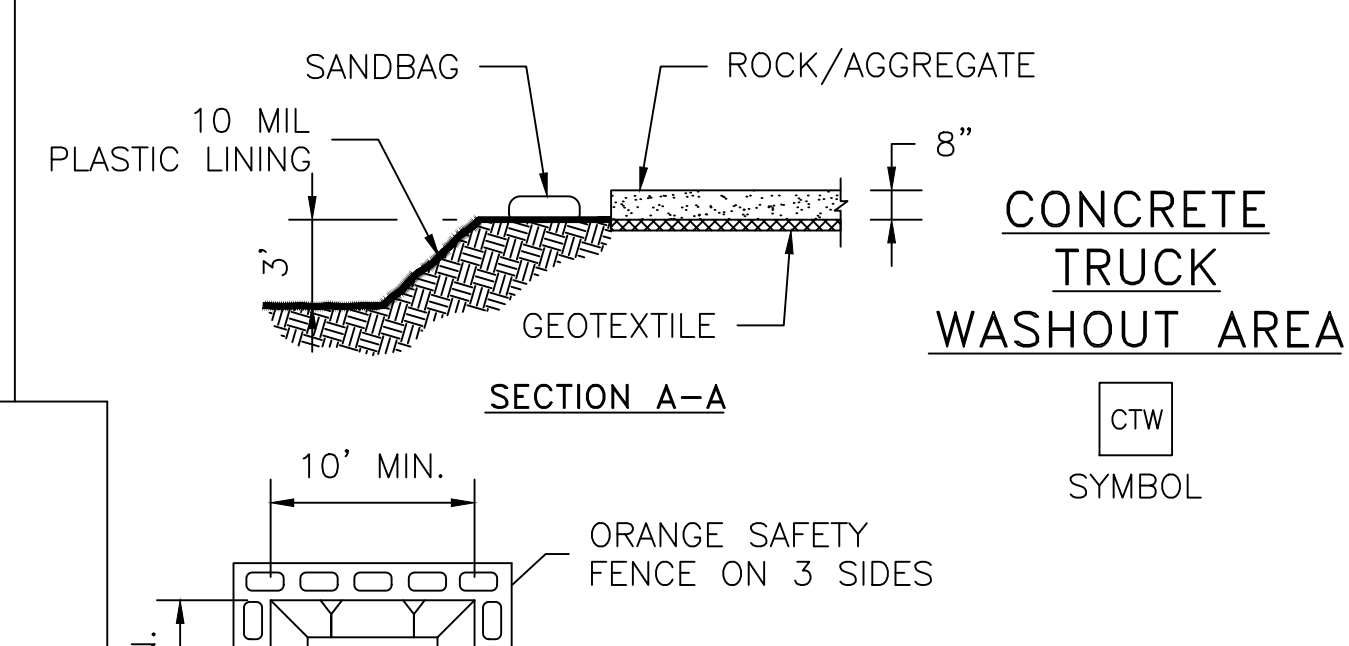
- GENERAL NOTES:**
1. THE SIZE OF TANK FOUNDATION AREA DEPENDS ON THE SIZE OF ABOVE GROUND STORAGE TANK AND DISPENSER ASSEMBLY.
 2. PROVIDE A MINIMUM SLOPE OF 2% TOWARD THE SUMP PIT.
 3. INSTALL IMPERMEABLE LINER AS PER MANUFACTURER'S RECOMMENDATIONS.



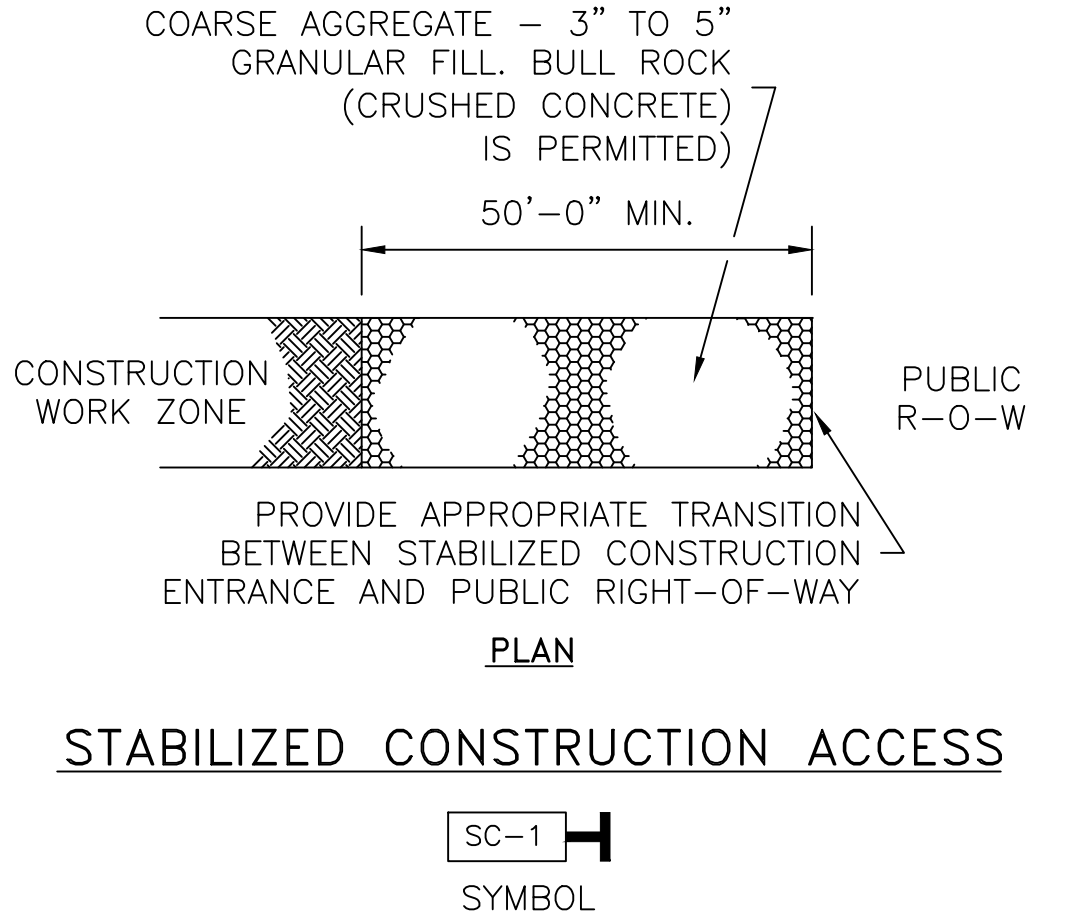
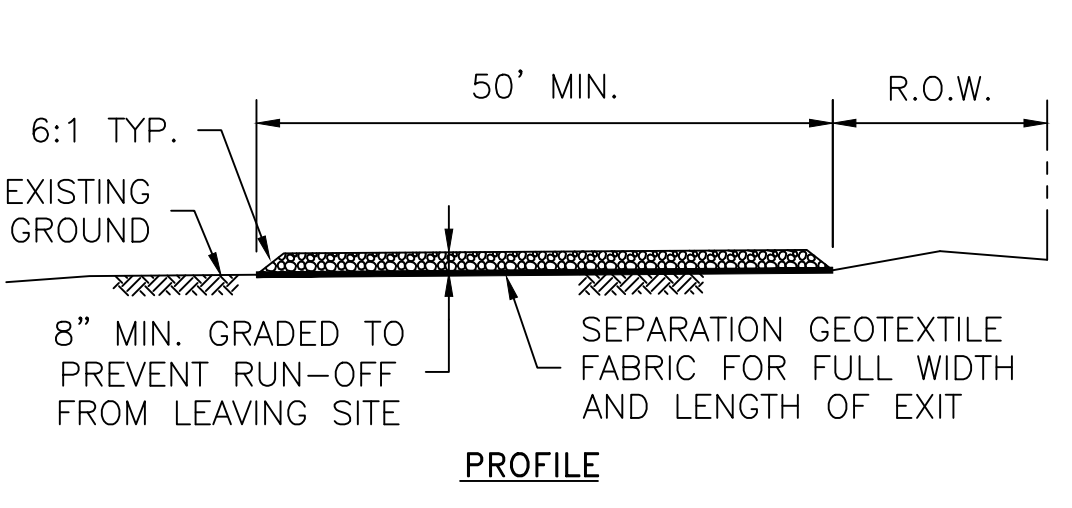
- GENERAL NOTES:**
1. ALTERNATIVELY, STORE BARRELS IN AN ENCLOSED BUILDING OR SHED.
 2. INSTALL IMPERMEABLE LINER AS PER MANUFACTURER'S RECOMMENDATIONS. 60 mil MINIMUM.
 3. CONSTRUCT BERMED AREA WITH VOLUME GREATER THAN OR EQUAL TO 110% VOLUME OF BARRELS.



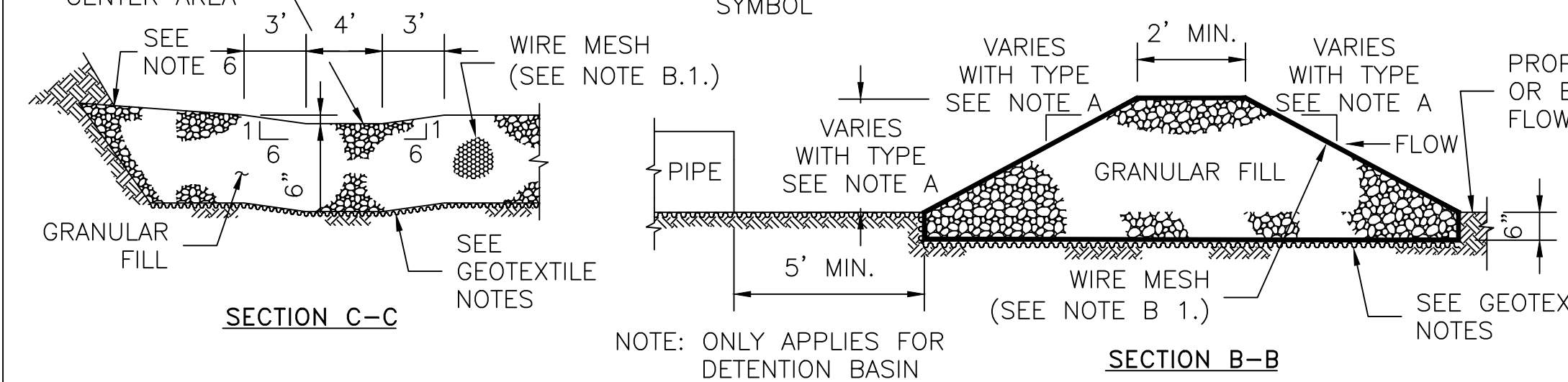
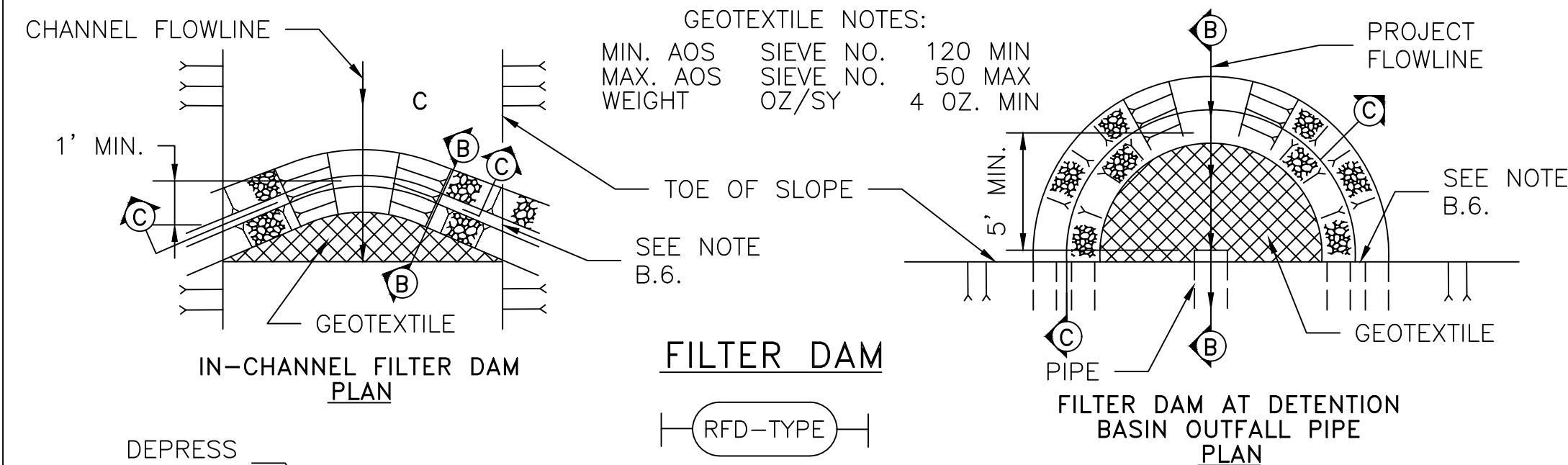
- GENERAL NOTES:**
1. FIBER ROLLS WILL BE UTILIZED ONLY WHEN SITE CONDITIONS DO NOT PERMIT THE USE OF FILTER FABRIC BARRIER, AND AS APPROVED BY THE ENGINEER.



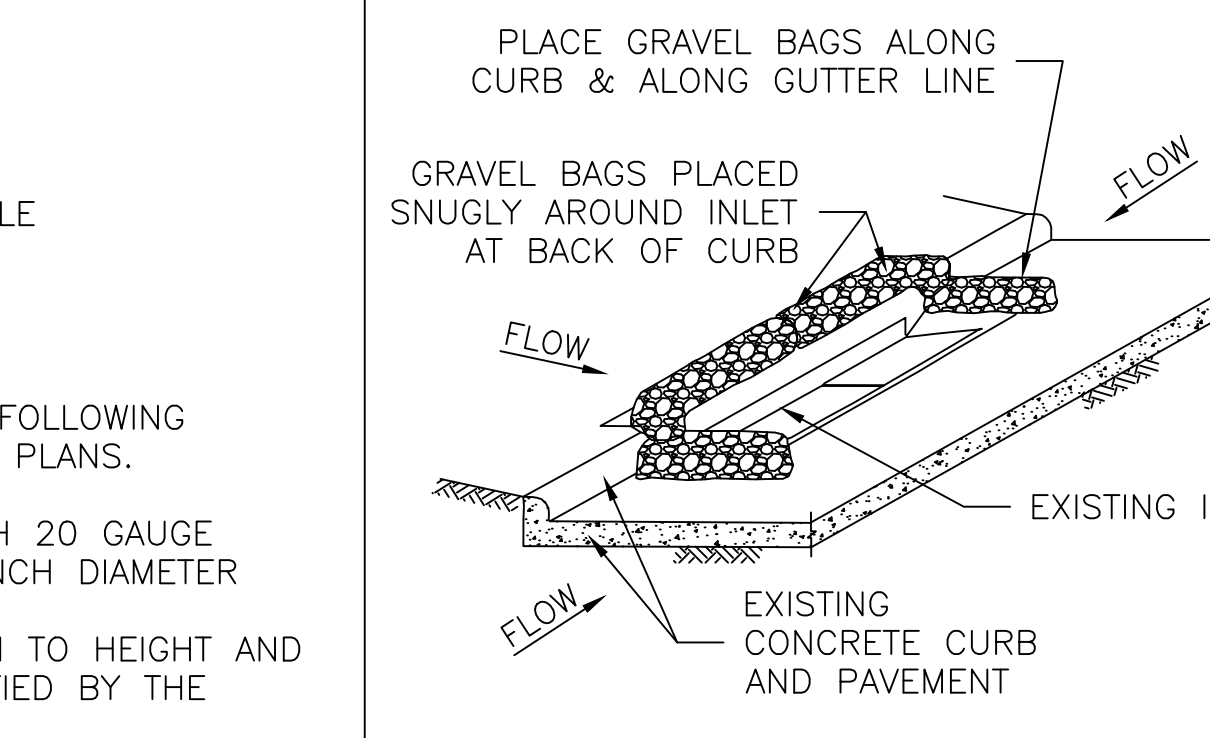
- GENERAL NOTES:**
1. REMOVE SEDIMENT DEPOSIT WHEN THE SEDIMENT HAS ACCUMULATED TO ONE-THIRD THE HEIGHT OF THE BARRIER.
 2. GRAVEL BAGS SHALL NOT BLOCK THROAT OF INLET UNLESS DIRECTED BY ENGINEER.



- 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.

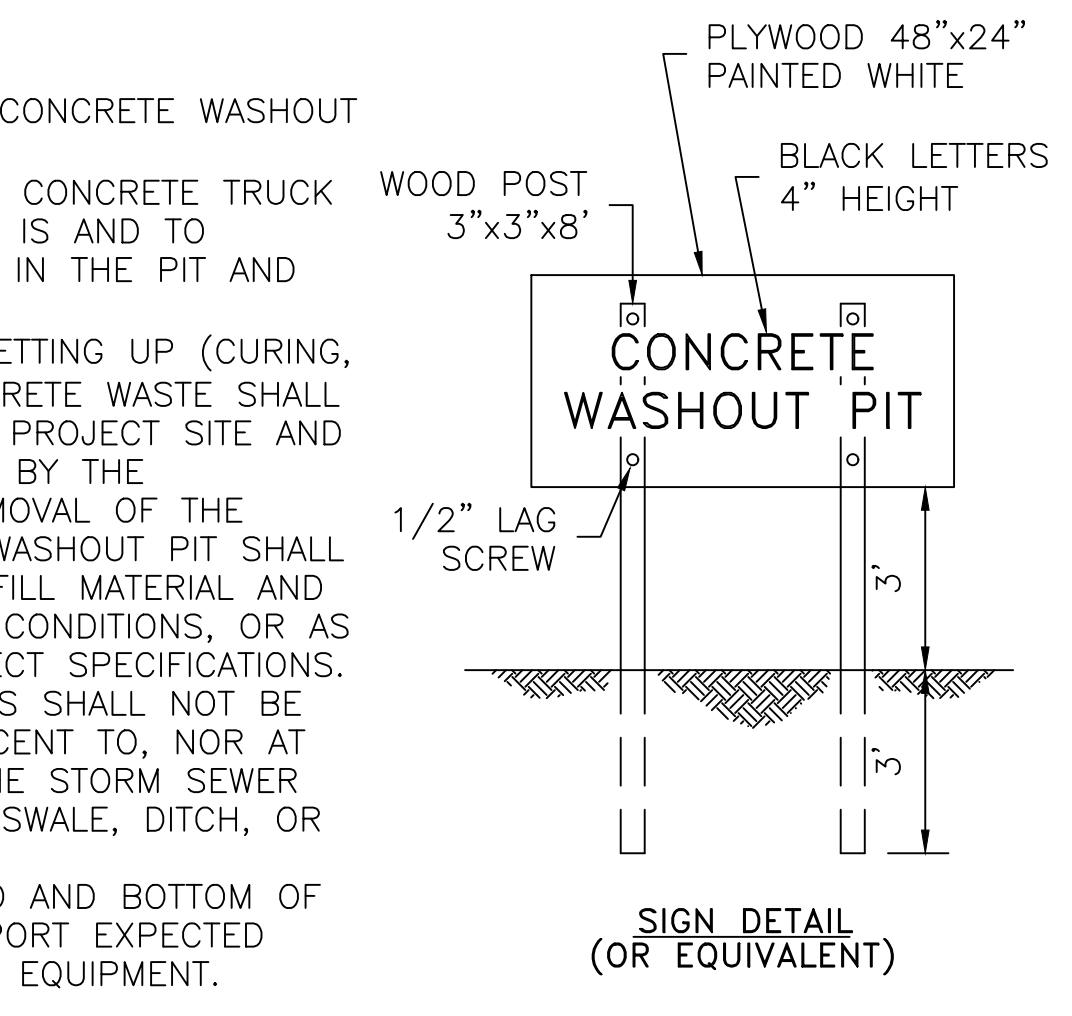


- A. TYPES OF FILTER DAMS**
1. TYPE 1 (NON-REINFORCED)
 - a. HEIGHT - 18-24 INCHES. MEASURE VERTICALLY FROM EXISTING GROUND TO TOP OF FILTER DAM.
 - b. TOP WIDTH - 2 FEET (MINIMUM)
 - c. SLOPES - 2:1 (MAXIMUM).
 2. TYPE 2 (REINFORCED)
 - a. HEIGHT - 18-36 INCHES. MEASURE VERTICALLY FROM EXISTING GROUND 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. SEE HCFCD SPECIFICATION SECTION NO. 02364-FILTER DAMS.
 6. EMBED ONE FOOT MINIMUM INTO SLOPE AND RAISE ONE FOOT HIGHER THAN CENTER OF DEPRESSED AREA AT SLOPE.



INLET PROTECTION BARRIERS FOR STAGE II INLETS

- 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.



- GENERAL NOTES:**
1. POST A SIGN READING "CONCRETE WASHOUT PIT" NEXT TO THE PIT.
 2. VERBALLY INSTRUCT THE CONCRETE TRUCK DRIVERS WHERE THE PIT IS AND TO WASHOUT THEIR TRUCKS IN THE PIT AND NOWHERE ELSE.
 3. 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 WASHOUT PIT SHALL BE FILLED WITH CLEAN FILL MATERIAL AND COMPACTED TO IN-SITU CONDITIONS, OR AS DIRECTED BY THE PROJECT SPECIFICATIONS.
 4. CONCRETE WASHOUT 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.
 5. CONSTRUCT ENTRY ROAD AND BOTTOM OF WASHOUT AREA TO SUPPORT EXPECTED LOADINGS FROM TRUCKS EQUIPMENT.

BENCHMARK:
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T.B.M. 'A':
RAILROAD SPIKE IN A SERVICE POLE ON EAST SIDE OF PROPERTY (LOCATED AS SHOWN).
ELEVATION = 142.02' NAVD 1988

FLOOD PLAN STATEMENT:
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AUTHORIZED SIGNATURE BY
DAVID P. KELLY II, P.E. ON
March 10, 2021

OREMUS PROPERTIES LLC
PROPOSED SITE DEVELOPMENT

STORM WATER POLLUTION PREVENTION DETAILS

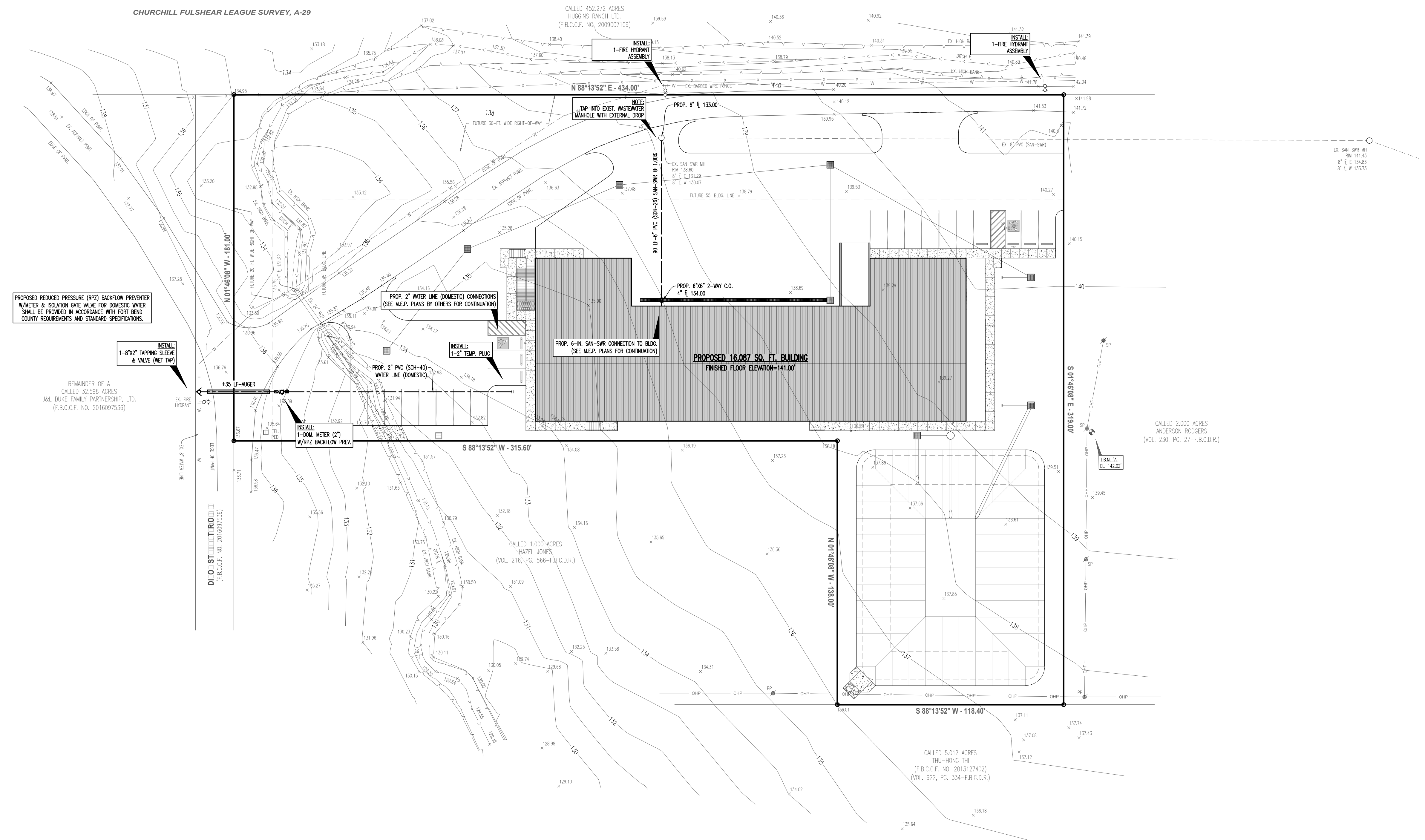
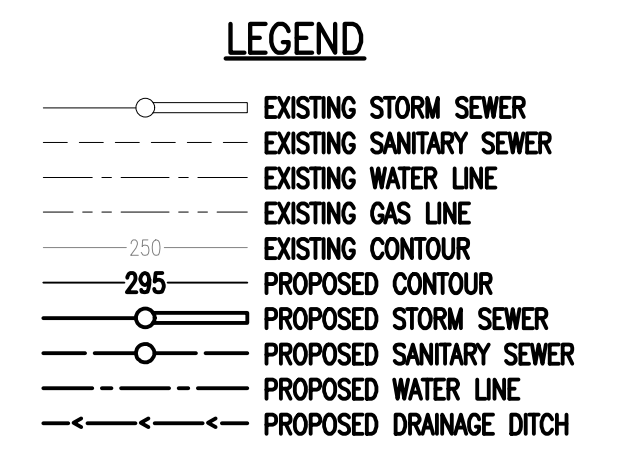
FILE NO.:	SHEET NUMBER
G.F. NO.:	
DRAWING SCALE:	OF 15
NOT TO SCALE	

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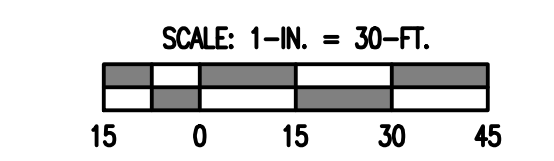
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- WATER & SANITARY SEWER NOTES:**
- REFERENCE SANITARY SEWER AND WATER LINE NOTES (SHEET 2) FOR PIPE MATERIAL REQUIREMENTS.
 - CONTRACTOR SHALL PROVIDE FOR A MINIMUM OF 24-INCHES OF CLEARANCE AT ALL SANITARY SEWER AND WATER MAN CROSSINGS, AND 6-INCHES OF MINIMUM CLEARANCE AT ALL SANITARY AND STORM SEWER CROSSINGS.
 - REFERENCE M.E.P. PLANS (BY OTHERS) FOR CONTINUATION OF SANITARY AND WATER FACILITIES INSIDE THE BUILDING.
 - ALL CLEANOUTS LOCATED WITHIN CONCRETE PAVEMENT TO BE TRAFFIC RATED.
 - SANITARY SEWER PIPE SHALL HAVE 6" WIDE CONTINUOUS METALLIC DETECTABLE WARNING TAPE ATTACHED TO THE PIPE @ 10" MAXIMUM.
 - ALL SANITARY SEWER MAINS SHALL HAVE A MINIMUM OF THREE FEET COVER.
 - PROPOSED WATER LINE SHALL BE INSTALLED A MINIMUM OF TWO (2) FEET (VERTICAL DISTANCE) BELOW WHERE IT CROSSES PROPOSED SANITARY SEWER LINE.
 - CONTRACTOR SHALL INSTALL ONE FULL SECTION (MIN. 20 FEET) OF NEW WATER LINE CENTERED ON SANITARY SEWER CROSSING.
 - WHEN CROSSING A SANITARY SEWER LINE, THE PROPOSED WATER LINE SHALL BE ENCASED IN A 20 FEET LONG, 8 INCH SCHEDULE 80 PVC PIPE. THE SPACE AROUND CARRIER PIPE SHALL BE SUPPORTED AT FIVE-FOOT INTERVALS WITH SPIKERS OR SHALL BE FILLED TO THE SPRINGLINE WITH WASHED SAND. THE ENCASEMENT PIPE SHALL BE CENTERED ON THE CROSSING AND BOTH ENDS SEALED WITH CEMENT GROUT OR MANUFACTURED SEALANT.
 - PROVIDE INSULATED HOT BOX OR INSULATE ALL ABOVE GROUND PIPES AND FITTINGS OF REDUCED PRESSURE BACK FLOW PREVENTER IN ACCORDANCE WITH CITY OF TOMBALL REQUIREMENTS.
 - DOMESTIC WATER AND FIRE WATER PIPES SHALL HAVE 6" WIDE CONTINUOUS METALLIC DETECTABLE WARNING TAPE ATTACHED TO THE PIPE @ 10" MAXIMUM.
 - RPTZ BACKFLOW PREVENTER SHALL BE SUPPORTED ON FOUNDATION SLAB. FOUNDATION SLAB SHALL BE 4,000 PSI CONCRETE 8" THICK, REINFORCED WITH NO. 4 REBAR @ 8" BOTH WAYS, TOP AND BOTTOM. PROVIDE GEOTEXTILE FABRIC (MIRAFI 600X) BETWEEN SLAB AND COMPACTED SUB-BASE.
 - DOUBLE DETECTOR CHECK BACKFLOW PREVENTER SHALL BE LOCATED INSIDE UNDERGROUND VAULT. BACKFLOW PREVENTION VAULT AND ENCLOSURE SHALL BE AS MANUFACTURED BY PARK-USA OF HOUSTON, TEXAS OR APPROVED EQUAL. ENCLOSURE SHALL HAVE ACCESS PANELS PLACED SO THAT INDIVIDUAL COMPONENTS CAN BE ACCESSED FOR MAINTENANCE.



DPK Engineering LLC
LAND DEVELOPMENT - SITE DEVELOPMENT - MUNICIPAL
P.O. Box 823
Fulshear, Texas 77441
Office and Fax: (281) 346-2616
Cell: (281) 300-1869
Firm Registration No. F9323

DATE: March, 2021
JOB NO. D20_LD_14011

DESIGNED BY: SLA
CHECKED BY: DPK

AUTHORIZED SIGNATURE BY
DAVID P. KELLY II, P.E. ON
April 27, 2023

SURVEYED BY:
FOUR POINTS SURVEYING

OREMUS PROPERTIES LLC
PROPOSED SITE DEVELOPMENT

SITE UTILITY PLAN

FILE NO.:	SHEET NUMBER
G.F. NO.:	
DRAWING SCALE:	1 OF 15
1-IN. = 30-FT.	

WARNING-O/H POWER LINE
CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING IN THE VICINITY OF OVERHEAD POWER LINES. CONTACT CENTERPOINT ENERGY AT LEAST 72-HOURS PRIOR TO ANY ACTIVITY WITHIN THE LIMITS OF THE EASEMENT, OR ADJACENT TO THE FACILITY.

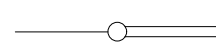
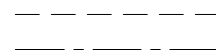


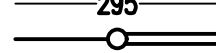
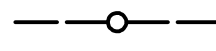
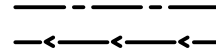





BENCHMARK:
ELEVATIONS ARE DERIVED FROM GPS OBSERVATIONS FROM CORP. STATIONS OF THE TRIMBLE NETWORK (NAVD 1988, GEOID 12B).

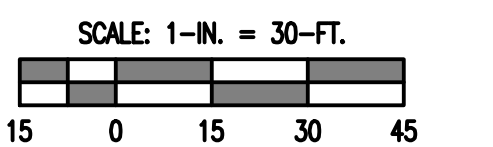
T.B.M. 'A':
RAILROAD SPIKE IN A SERVICE POLE ON EAST SIDE OF PROPERTY (LOCATED AS SHOWN).

ELEVATION = 142.02' NAVD 1988

FLOOD PLAN STATEMENT:
ACCORDING TO FEMA F.I.R.M. MAP PANEL NUMBER 48157-C-0085L WITH AN EFFECTIVE DATE OF APRIL 2, 2014, THE MAP INDICATES THIS TRACT TO BE ENTIRELY WITHIN UN-SHADED ZONE "X", AREAS DETERMINED TO BE OUTSIDE THE 100-YEAR FLOOD PLAN.

LEGEND

-  EXISTING STORM SEWER
-  EXISTING SANITARY SEWER
-  EXISTING WATER LINE
-  EXISTING GAS LINE
-  EXISTING CONTOUR
-  PROPOSED CONTOUR
-  PROPOSED STORM SEWER
-  PROPOSED SANITARY SEWER
-  PROPOSED WATER LINE
-  PROPOSED DRAINAGE DITCH
-  PROPOSED FIRE LANE STRIPING
-  PROPOSED FIRE LANE

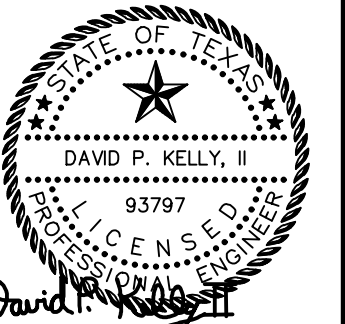


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April 27, 2023



SURVEYED BY:
FOUR POINTS SURVEYING

OREMUS PROPERTIES LLC
PROPOSED SITE DEVELOPMENT

FIRE LANE PLAN

FILE NO.:
G.F. NO.:
DRAWING SCALE:
1-IN. = 30-FT.

SHEET NUMBER
11
OF 15

- FIRE LANE NOTES:**
1. FIRE APPROPRIATE ACCESS ROADS SHALL BE MARKED BY PAINTED LINES OF RED TRAFFIC PAINT SIX INCHES (6") IN WIDTH TO SHOW THE BOUNDARIES OF THE LANE. THE WORDS LETTERED "FIRE LANE - NO PARKING - TOW AWAY ZONE" SHALL APPEAR IN FOUR INCH (4") WHITE LETTER AT 25 FEET INTERVALS ON THE RED BORDER MARKINGS ALONG BOTH SIDES OF THE FIRE LANES. WHERE A CURB IS AVAILABLE, THE STRIPING SHALL BE ON THE VERTICAL FACE OF THE CURB.
 2. SIGNS SHALL READ "NO PARKING FIRE LANE" OR "FIRE LANE NO PARKING" AND SHALL BE 12-IN. WIDE AND 18-IN. HIGH. SIGNS SHALL BE PAINTED ON A WHITE BACKGROUND WITH LETTERS AND BORDERS IN RED, USING NOT LESS THAN 2-IN. LETTERING. SIGNS SHALL BE PERMANENTLY AFFIXED TO A STATIONARY POST AND THE BOTTOM OF THE SIGN SHALL BE SIX FEET, SIX INCHES (6'6") ABOVE FINISHED GRADE. SIGNS SHALL BE SPACED NOT MORE THAN FIFTY FEET (50') APART. SIGNS MAY BE INSTALLED ON PERMANENT BUILDINGS OR WALLS OR AS APPROVED BY THE FIRE MARSHAL.

CHURCHILL FULSHEAR LEAGUE SURVEY, A-29

CALLED 452.272 ACRES
HUGGINS RANCH LTD.
(F.B.C.C.F. NO. 2009007109)

CALLED 2.000 ACRES
ANDERSON RODGERS
(VOL. 230, PG. 27-F.B.C.D.R.)

CALLED 1.000 ACRES
HAZEL JONES
(VOL. 216, PG. 566-F.B.C.D.R.)

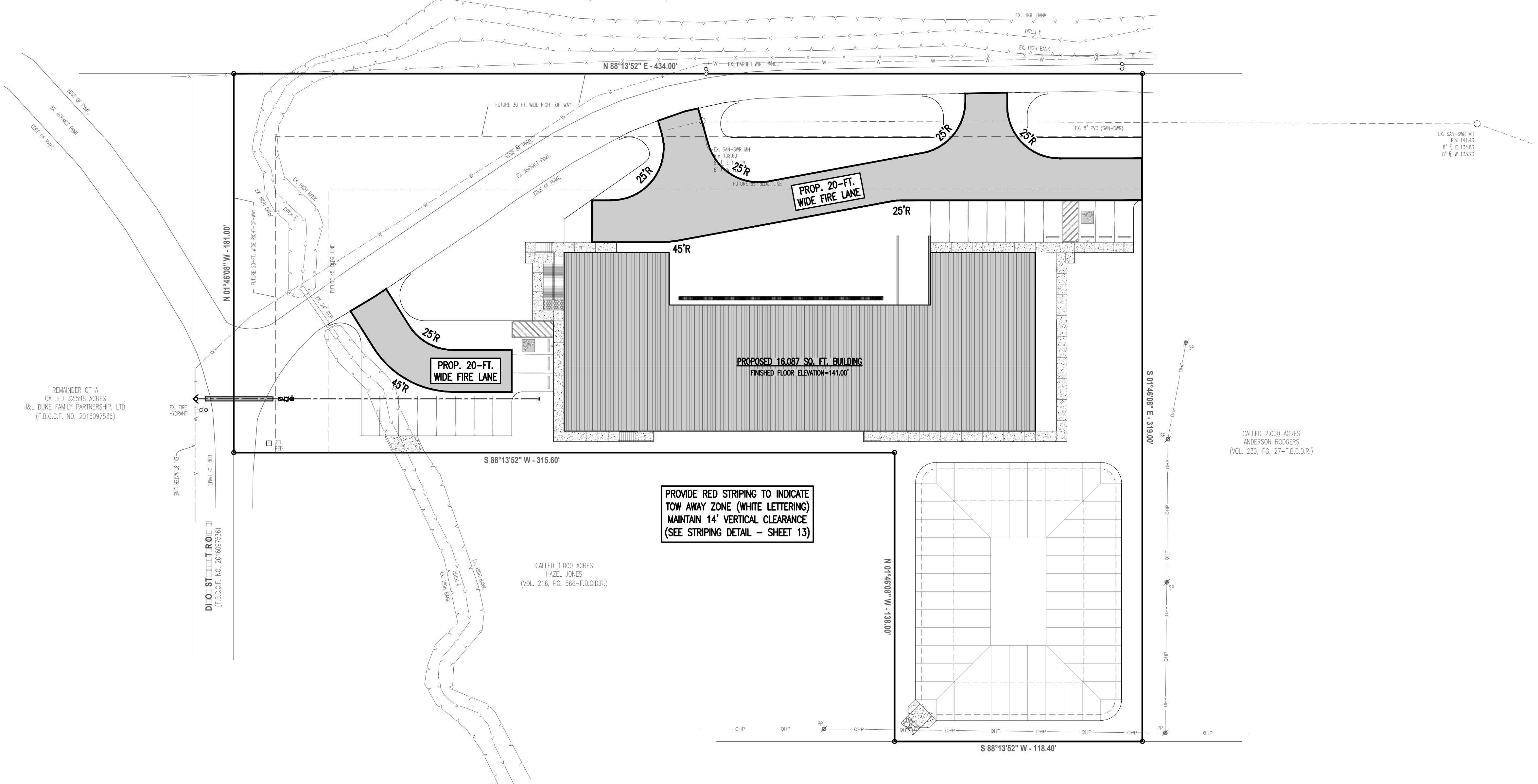
CALLED 5.012 ACRES
THU-HONG TH
(F.B.C.C.F. NO. 2013127402)
(VOL. 922, PG. 334-F.B.C.D.R.)

REMAINDER OF A
CALLED 32.598 ACRES
J&E DUKE FAMILY PARTNERSHIP, LTD.
(F.B.C.C.F. NO. 2016097536)

D.I.O. STUBBINS & CO.
(F.B.C.C.F. NO. 2016097536)

PROVIDE RED STRIPING TO INDICATE
TOW AWAY ZONE (WHITE LETTERING)
MAINTAIN 14' VERTICAL CLEARANCE
(SEE STRIPING DETAIL - SHEET 13)

WARNING-O/H POWER LINE
CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING IN THE VICINITY OF OVERHEAD POWER LINES. CONTACT CENTERPOINT ENERGY AT LEAST 72-HOURS PRIOR TO ANY ACTIVITY WITHIN THE LIMITS OF THE EASEMENT, OR ADJACENT TO THE FACILITY.



BENCHMARK:
ELEVATIONS ARE DERIVED FROM GPS OBSERVATIONS FROM CORP. STATIONS OF THE TRIMBLE NETWORK (NAVD 1988, GEOID 12B).

T.B.M. 'A':
RAILROAD SPIKE IN A SERVICE POLE ON EAST SIDE OF PROPERTY (LOCATED AS SHOWN).

ELEVATION = 142.02' NAVD 1988

FLOOD PLAN STATEMENT:
ACCORDING TO FEMA F.I.R.M. MAP PANEL NUMBER 48157-C-0085L WITH AN EFFECTIVE DATE OF APRIL 2, 2014, THE MAP INDICATES THIS TRACT TO BE ENTIRELY WITHIN UN-SHADED ZONE "X", AREAS DETERMINED TO BE OUTSIDE THE 100-YEAR FLOOD PLAN.

WHEN A COMMERCIAL SIDEWALK, DRIVEWAY, CURB OR GUTTER IS CONSTRUCTED, RECONSTRUCTED, REPAIRED OR REGRADED ON COUNTY RIGHT-OF-WAY. FOR USE WITH CONCRETE OR ASPHALT CURB TYPE STREETS, USE SECTIONS APPLICABLE.

A. USE FOR ALL PROPOSED EXISTING CURB REMOVAL FOR DRIVEWAYS (PLAN VIEW NOT TO SCALE)

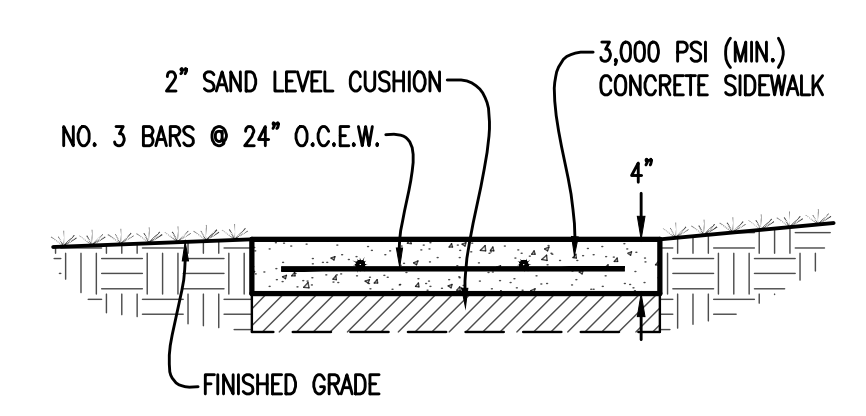
B. USE FOR ALL PROPOSED DRIVES ON CURBED TYPE STREETS

GENERAL NOTES:

1. COMPACT SUBGRADE FOR PROPOSED DRIVEWAY CONNECTION FROM PROPOSED SAW CUT AT EXISTING PAVEMENT TO R.O.W. LINE. COMPACT TO 95% OF STANDARD PROCTER DENSITY (+/- 2% OPT. MOISTURE). THE COUNTY ENGINEER RESERVES THE RIGHT TO REQUIRE LABORATORY TESTS TO BE CONDUCTED.
2. PROPOSED DRIVEWAY REINFORCING STEEL IS TO BE #4 DEFORMED REINFORCING BARS (ASTM A615, GRADE 60, UNLESS NOTED) SPACED AT 24" C.C., EACH WAY, WITH 12" MINIMUM LAP FROM PROPOSED SAW CUT TO R.O.W. LINE.
3. PROPOSED DRIVEWAY SHALL BE CONSTRUCTED WITH PORTLAND CEMENT (5 SACKS (900 LBS) OF CEMENT PER CUBIC YARD OF CONCRETE, CLASS "A" STRUCTURAL (REFER TO SPECIFICATION 03301), 7" THICK, FROM PROPOSED SAW CUT TO R.O.W. LINE.
4. PROPOSED SIDEWALK SHALL BE CONSTRUCTED WITH PORTLAND CEMENT (5 SACKS (900 LBS) OF CEMENT PER CUBIC YARD OF CONCRETE, CLASS "A" STRUCTURAL (REFER TO SPECIFICATION 03301), 4" THICK.
5. FOR TYPICAL SIDEWALK DETAIL, SEE FBC-01.

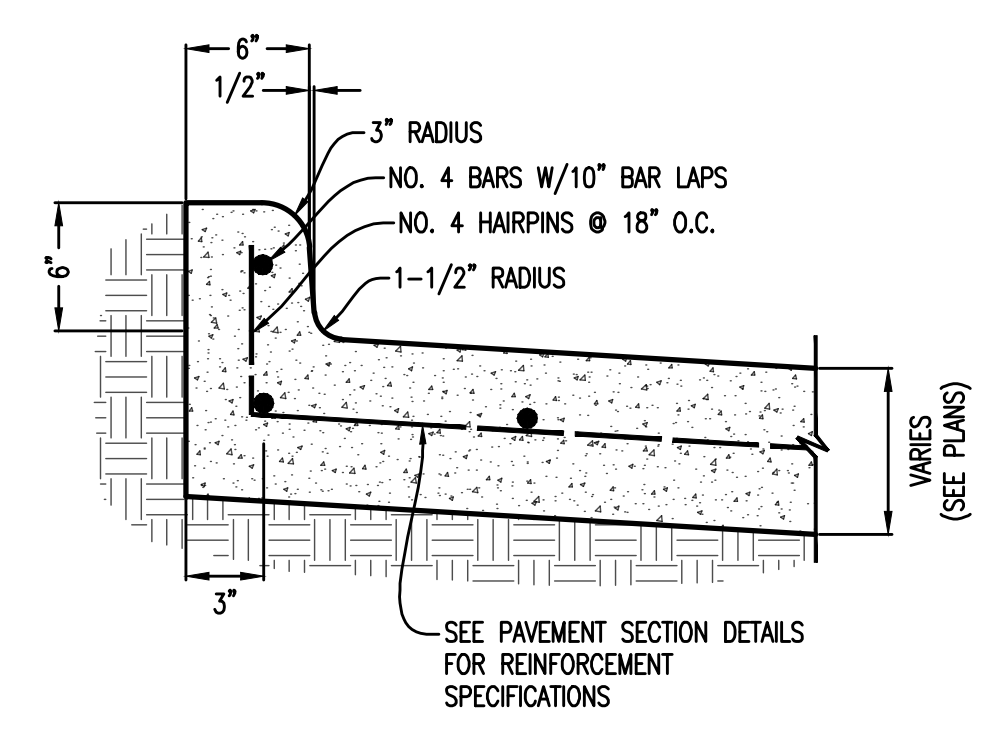
SIDEWALKS & DRIVEWAYS ON CURB TYPE STREETS COMMERCIAL AREA	DRAWN BY: L. BRDECKA DATE DRAWN: 2-1-94	REVISED BY: J. NETARDUS DATE REVISED: 4-7-09
	APPROVED BY: L. HOOD DATE: 2-1-94	DRAWING NO. FBC-025A

FORT BEND COUNTY ENGINEERING DEPARTMENT



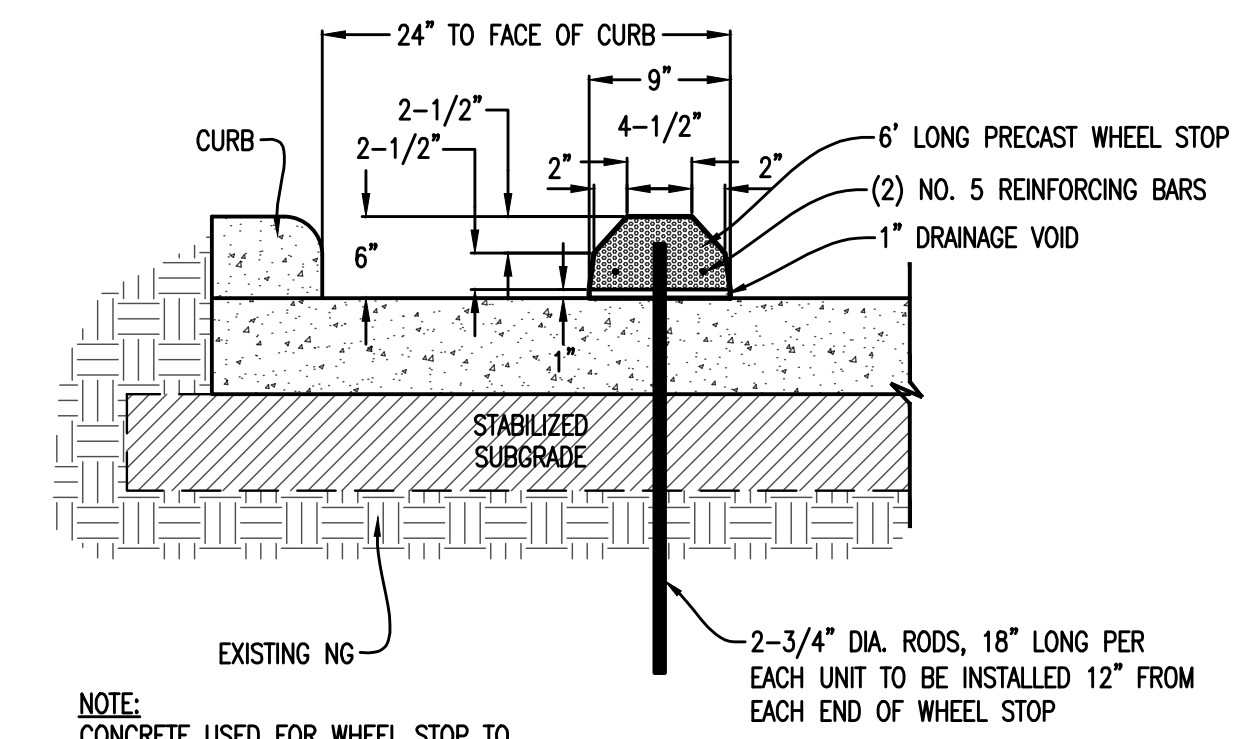
- NOTES:**
1. PROVIDE 3/8" GROOVED CONTROL JOINTS AT 5' CENTERS.
 2. PROVIDE 1/2" EXPANSION JOINTS AT 25' MAXIMUM SPACING, FILLED WITH PRE-MOLDED BITUMINOUS EXPANSION JOINT FILLER MATERIAL OR REDWOOD. EXPANSION JOINTS SHALL HAVE NO. 4 DOWELS, LUBRICATED, 18" LONG @ 12" CENTERS, 6" FROM EDGE.
 3. PROVIDE 1/2" BITUMINOUS EXPANSION JOINT FILLER MATERIAL WHERE WALK ABUTS EXISTING IMPROVEMENTS AND AT ALL CHANGES IN GRADE.
 4. REFER TO CITY OR COUNTY DETAILS FOR ALL PUBLIC SIDEWALKS.
 5. SIDEWALK SHALL NEVER EXCEED 2% CROSS SLOPE OR 5% LONGITUDINAL SLOPE.

CONCRETE SIDEWALK
NOT TO SCALE

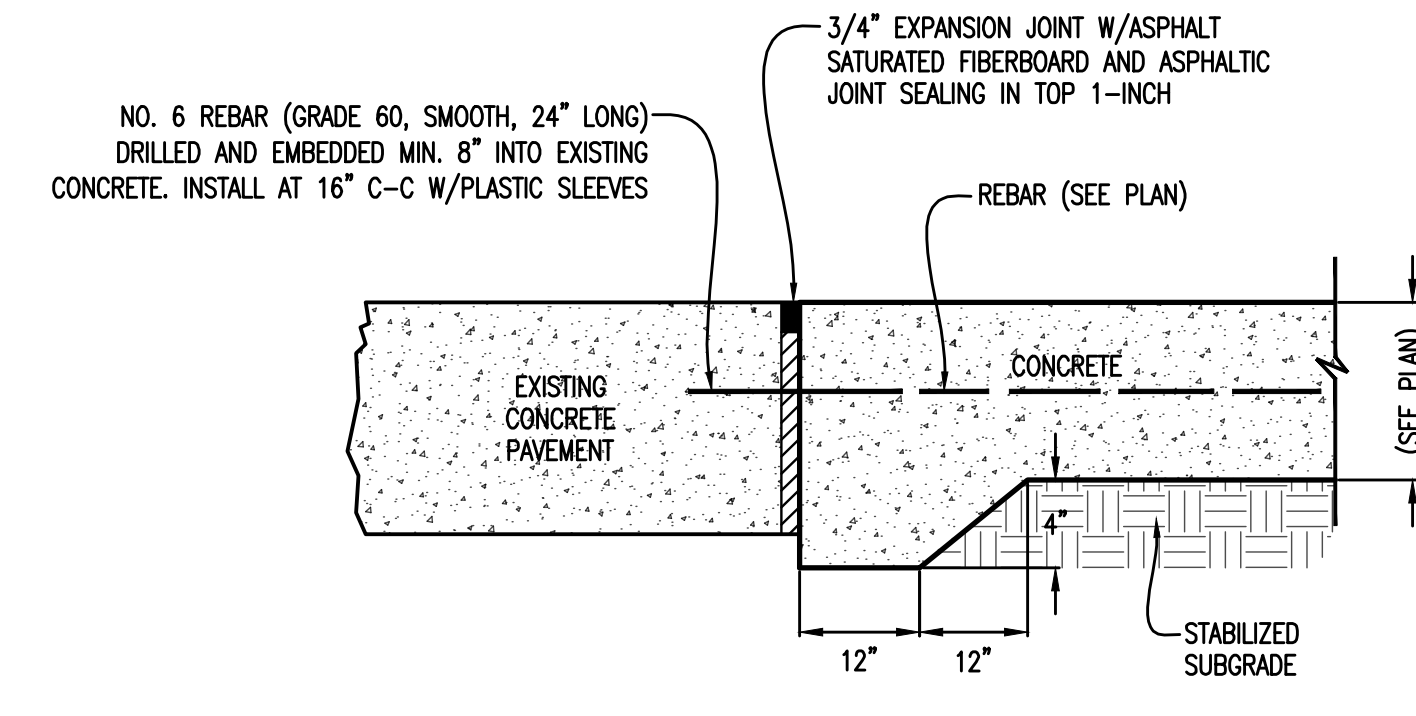


- NOTES:**
1. SUBGRADE TO EXTEND 24" PAST BACK OF CURB.
 2. SACK FINISH EXPOSED SURFACES.
 3. FINISH TO BE ACCOMPLISHED BY FLOATING, STEEL TROWELING AND THEN BRUSHING.

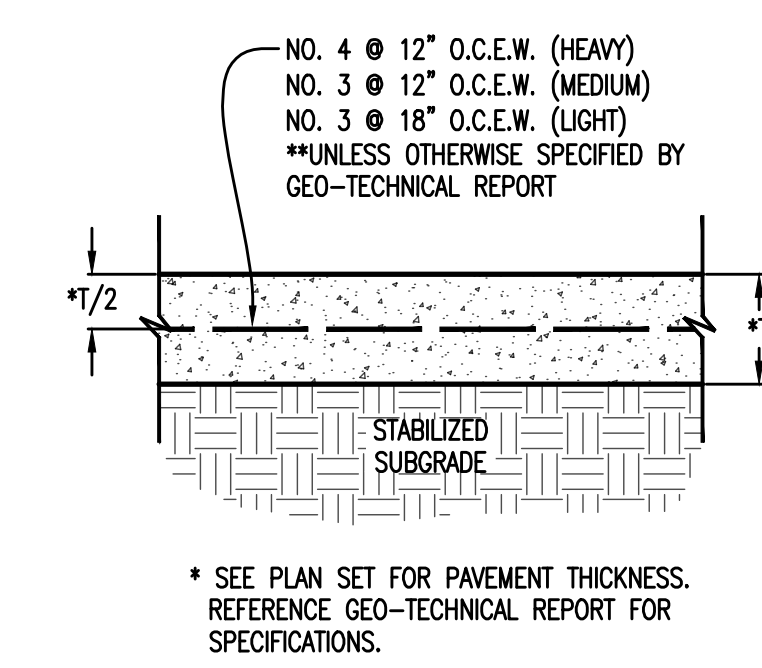
6" MONOLITHIC CONCRETE CURB
NOT TO SCALE



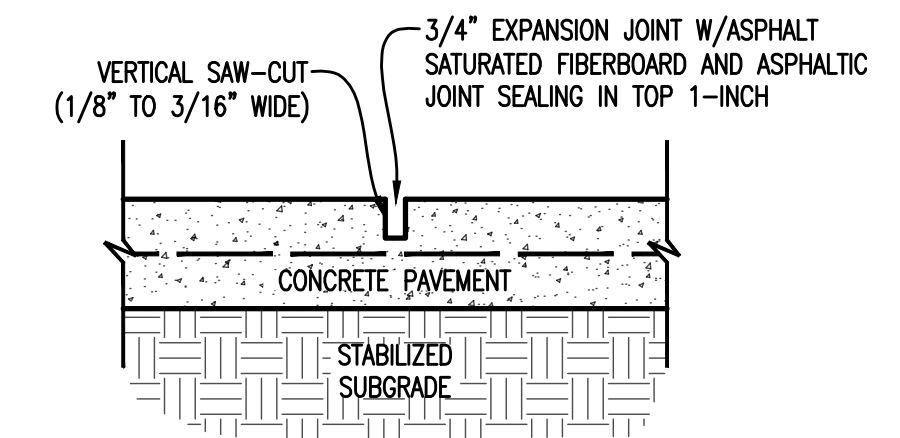
- NOTE:**
CONCRETE USED FOR WHEEL STOP TO HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2,500 PSI.
- WHEEL STOP**
NOT TO SCALE



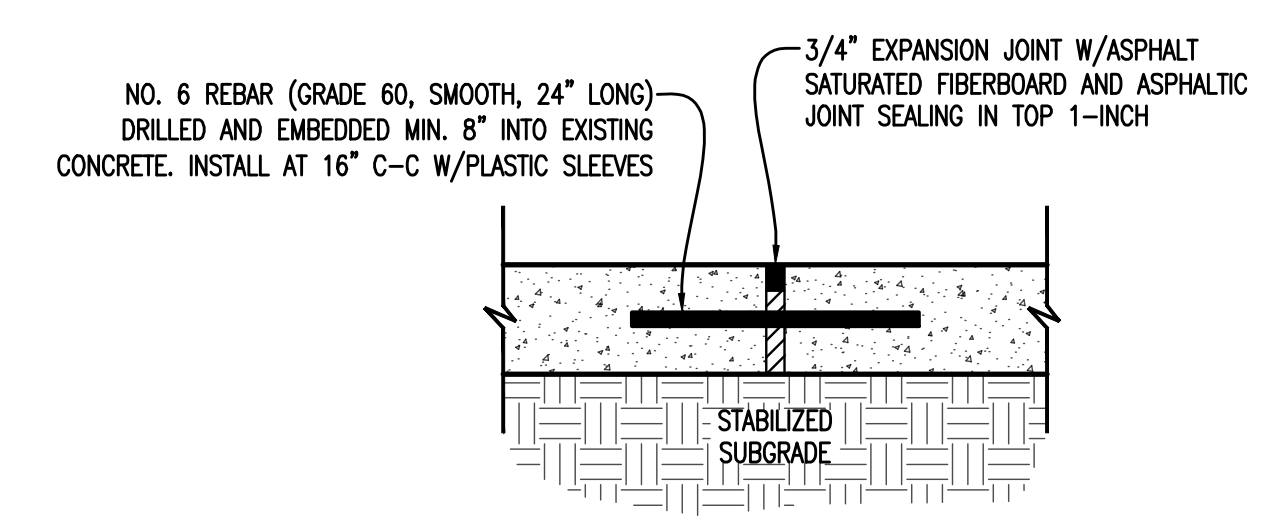
STANDARD PAVEMENT HEADER
NOT TO SCALE



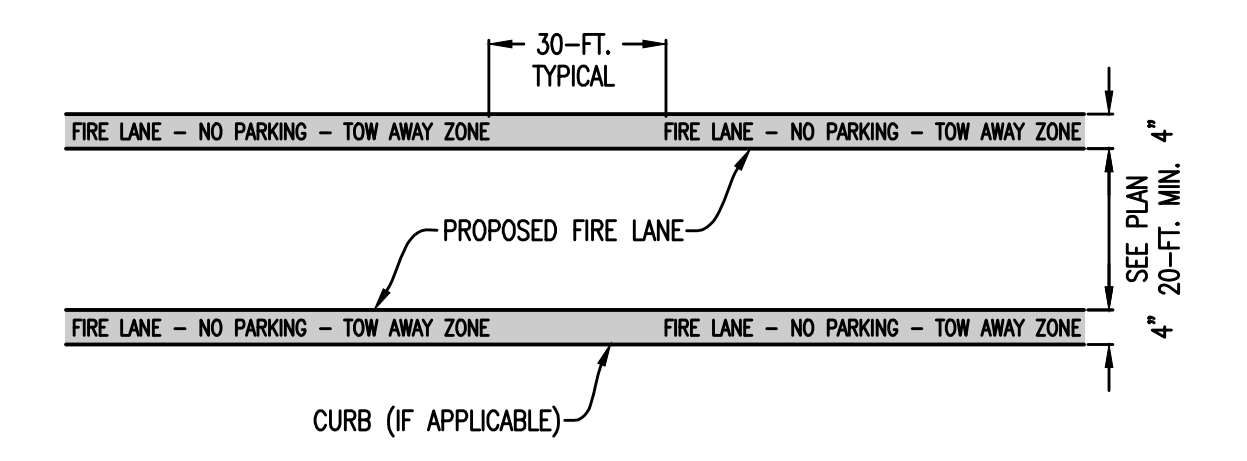
CONCRETE PAVEMENT SECTION
NOT TO SCALE



CONTRACTION JOINT
NOT TO SCALE



EXPANSION JOINT
NOT TO SCALE



FIRE LANE STRIPING DETAIL
NOT TO SCALE

- STRIPING NOTES:**
1. THE PAVEMENT MARKINGS SHALL BE FROM THE TOP OF THE SEAM OF THE CURB TO A POINT EVEN WITH THE DRIVING SURFACE.
 2. STRIPES SHALL BE FOUR (4) INCHES WIDE, PAINTED WITH AN EXTERIOR ACRYLIC LATEX PAINT, COLOR SHALL BE "TRAFFIC RED" GULDEN NO. 63251 OR EQUAL.
 3. LETTERS SHALL BE THREE (3) INCHES HIGH, PAINTED WITH AN EXTERIOR ACRYLIC LATEX PAINT, LETTERS TO BE ONE (1) INCH STROKE, COLOR SHALL BE "TRAFFIC RED" GULDEN NO. 563245 OR EQUAL.
 4. APPLICATION: STRIPES MAY BE BRUSHED OR SPRAYED, ONE COAT TO FINISH. LETTERS SHALL BE STENCIL FORMED, BRUSH APPLIED AND SPACED AS DETAILED ON THIS SHEET.

GENERAL NOTES FOR SIDEWALKS AND DRIVEWAYS

1. SAW CUT EXISTING CURB AT EACH END AND KNOCK OUT CURB FROM BEGINNING TO END OF PROPOSED DRIVEWAY.
2. SAW CUT EXISTING PAVEMENT A MINIMUM OF 18" INCHES AWAY FROM BACK OF CURB (GUTTER LINE) AND BREAK OUT TO EXPOSE EXISTING REINFORCEMENT STEEL.
3. COMPACT SUBGRADE FOR PROPOSED DRIVEWAY CONNECTION FROM PROPOSED SAW CUT AT EXISTING PAVEMENT TO RIGHT-OF-WAY LINE, COMPACT TO 95% OF STANDARD PROCTER DENSITY (+/- 2% OPT. MOISTURE). THE COUNTY ENGINEER RESERVES THE RIGHT TO REQUIRE LABORATORY TESTS TO BE CONDUCTED.
4. PLACE AND COMPACT 4" CLEAN BANK SAND.
5. MAINTAIN CUTTER LINE WITH FACE OF EXISTING CURB.
6. PROPOSED DRIVEWAY REINFORCING STEEL IS TO BE TIED TO EXISTING ROADWAY REINFORCING STEEL WITH A MINIMUM LAP OF 12 INCHES.
7. PROPOSED DRIVEWAY REINFORCING STEEL IS TO BE #4 DEFORMED REINFORCING BARS (ASTM A615, GRADE 60, UNLESS NOTED) SPACED AT 24 INCHES C.C., EACH WAY, WITH 12 INCHES MINIMUM LAP (6" x 6" W6 x W6 AS ALTERNATE) FROM PROPOSED SAW CUT TO RIGHT-OF-WAY LINE.
8. PROPOSED DRIVEWAY, CURB, GUTTER LINE, AND GRADE SHALL MATCH EXISTING STREET.
9. PROPOSED DRIVEWAY SHALL BE CONSTRUCTED WITH PORTLAND CEMENT CONCRETE, CLASS "A" STRUCTURAL (REFER TO SPECIFICATION 03301), 7 INCHES THICK, FROM PROPOSED SAW CUT TO RIGHT-OF-WAY LINE (PROPERTY LINE).
10. PROPOSED SIDEWALK SHALL BE CONSTRUCTED WITH PORTLAND CEMENT CONCRETE, CLASS "A" STRUCTURAL (REFER TO SPECIFICATION 03301), 4 INCHES THICK AND 4 FEET MINIMUM WIDTH. SEE DRAWING NO. FBC 24A FOR ADDITIONAL INFORMATION AND DETAILS.

CONSTRUCTION NOTES FOR SIDEWALKS & DRIVEWAYS WITH CURB TYPE STREETS COMMERCIAL AREA	DRAWN BY: L. BRDECKA DATE DRAWN: 2-1-94	REVISED BY: L. BRDECKA DATE REVISED: 3-10-05
	APPROVED BY: L. HOOD DATE: 2-1-94	DRAWING NO. FBC-025B

FORT BEND COUNTY ENGINEERING DEPARTMENT

DPK Engineering LLC
LAND DEVELOPMENT - SITE DEVELOPMENT - MUNICIPAL
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DATE: March, 2021
JOB NO. D20_LD_14011

DESIGNED BY: SLA
CHECKED BY: DPK

AUTHORIZED SIGNATURE BY
DAVID P. KELLY II, P.E. ON
September 28, 2022

SURVEYED BY:
FOUR POINTS SURVEYING

OREMUS PROPERTIES LLC
PROPOSED SITE DEVELOPMENT

PAVEMENT DETAILS

FILE NO.:	SHEET NUMBER
G.F. NO.:	
DRAWING SCALE: NOT TO SCALE	1
	OF 15

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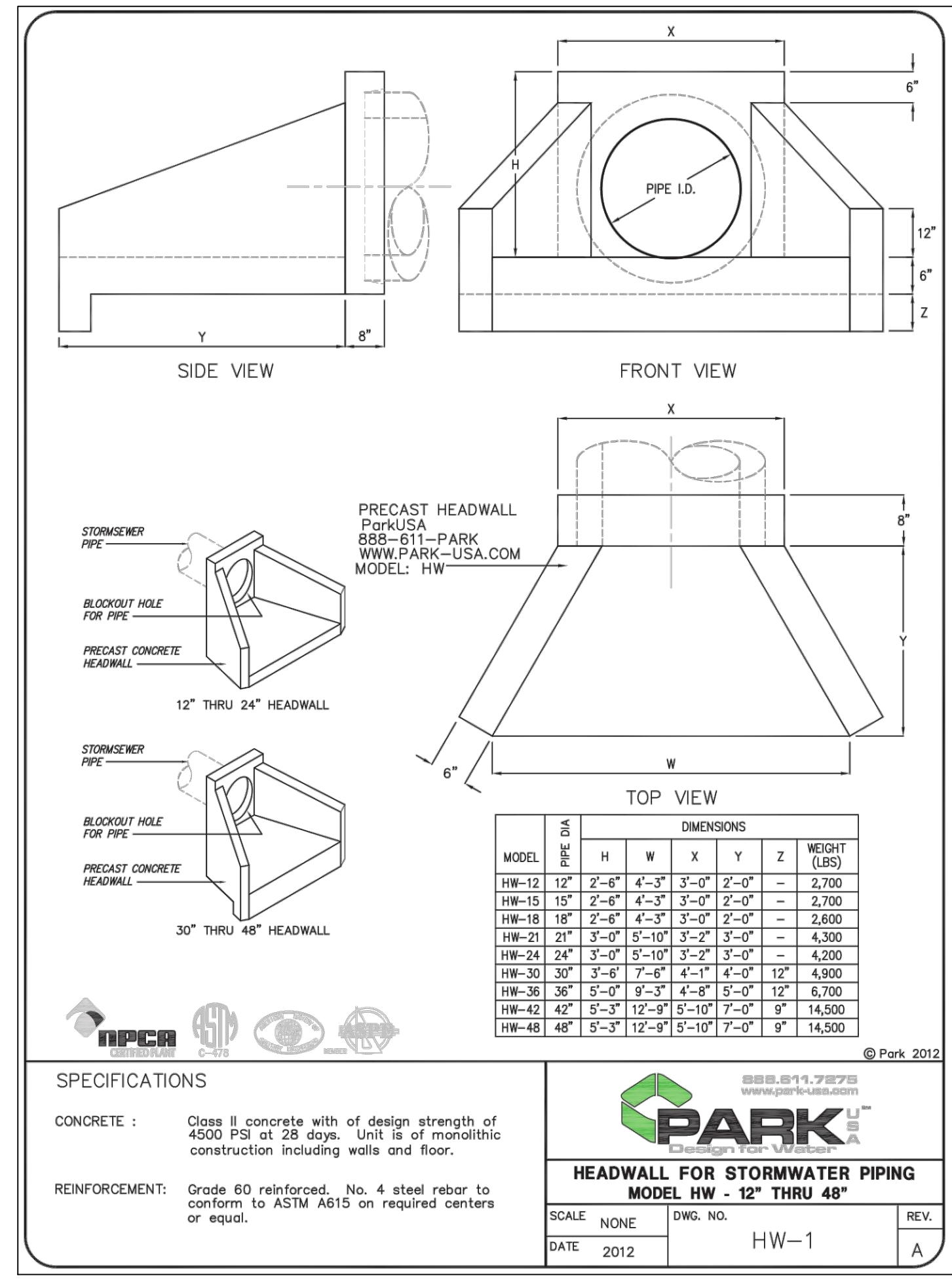
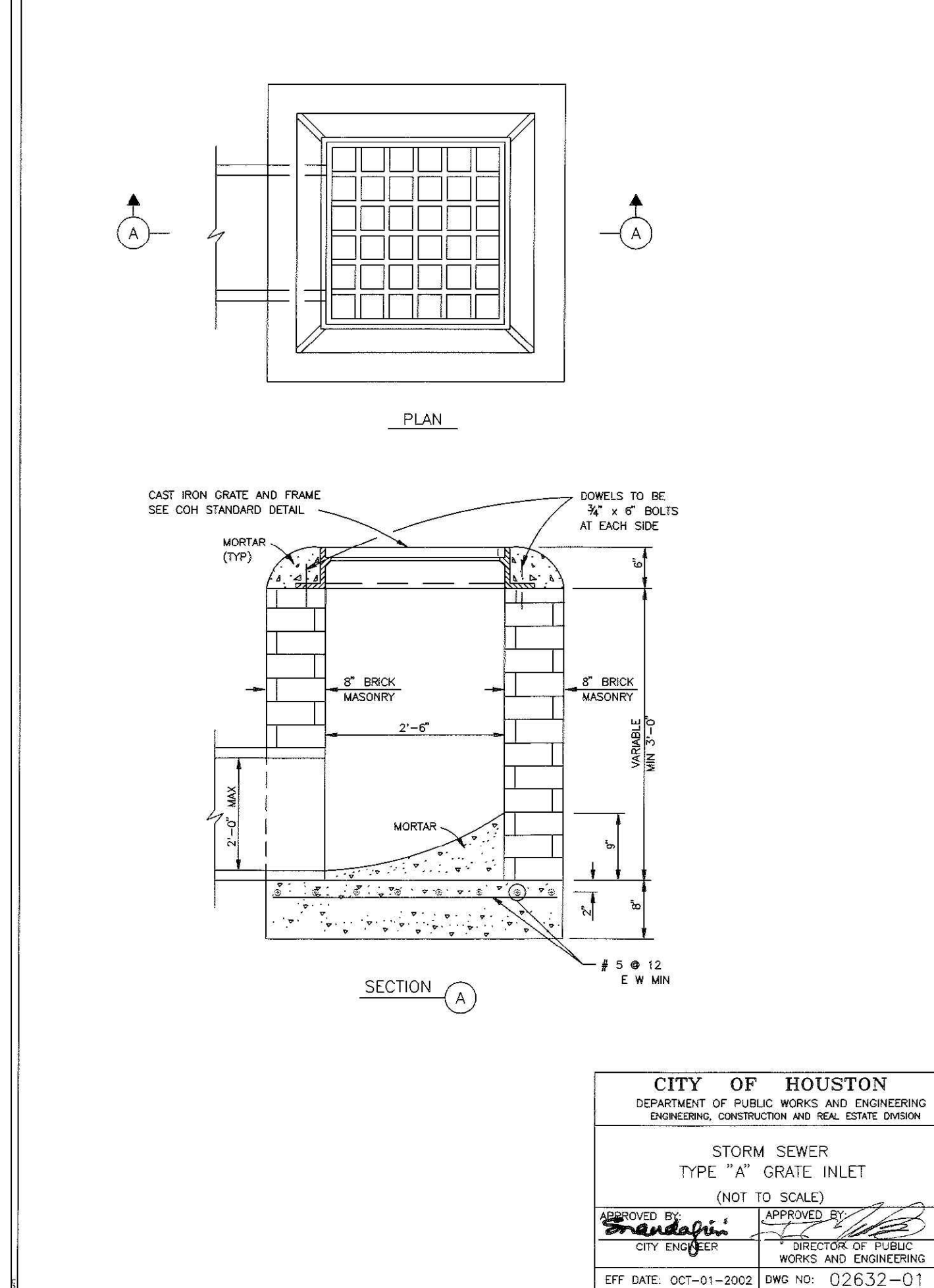
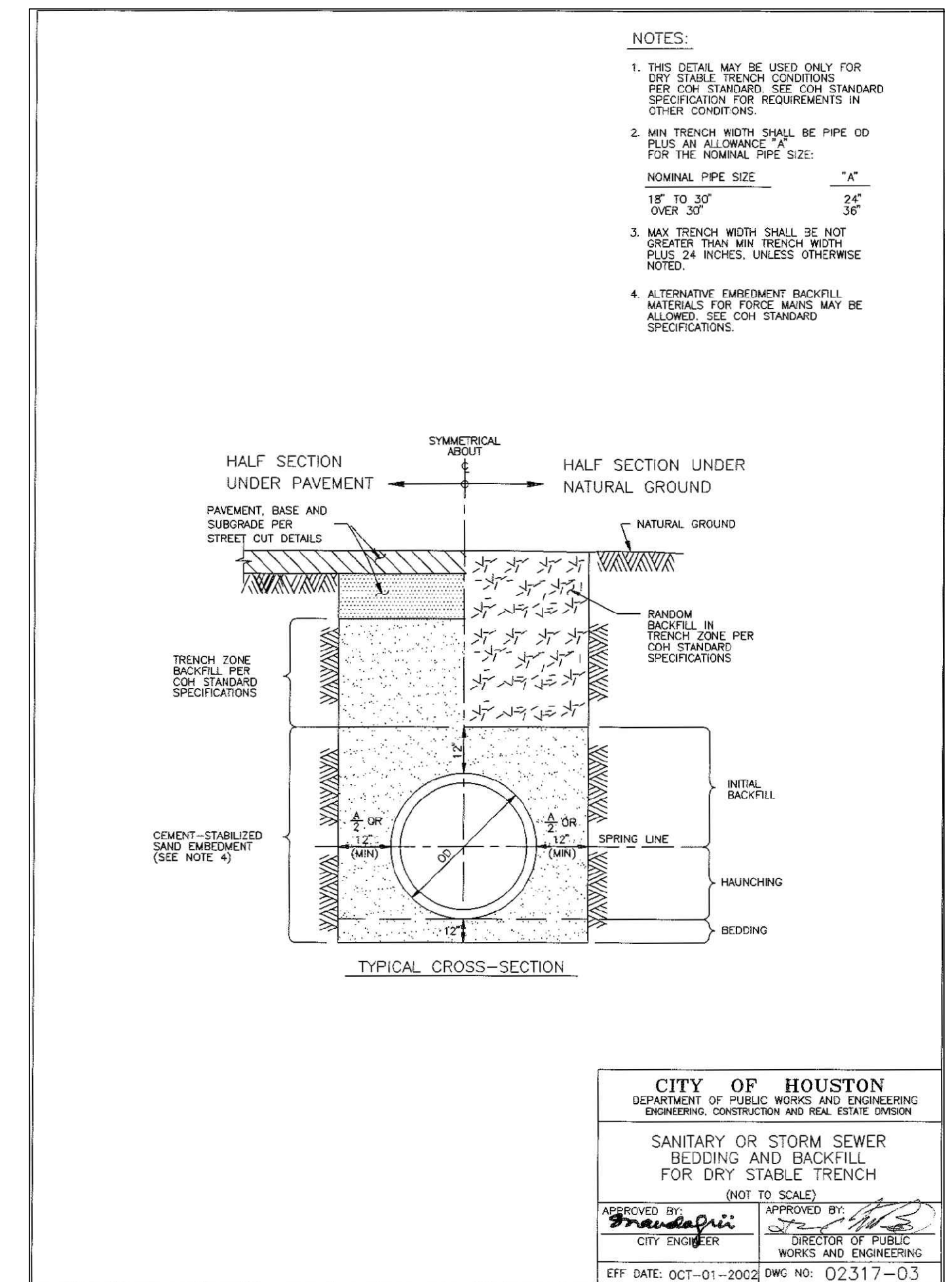
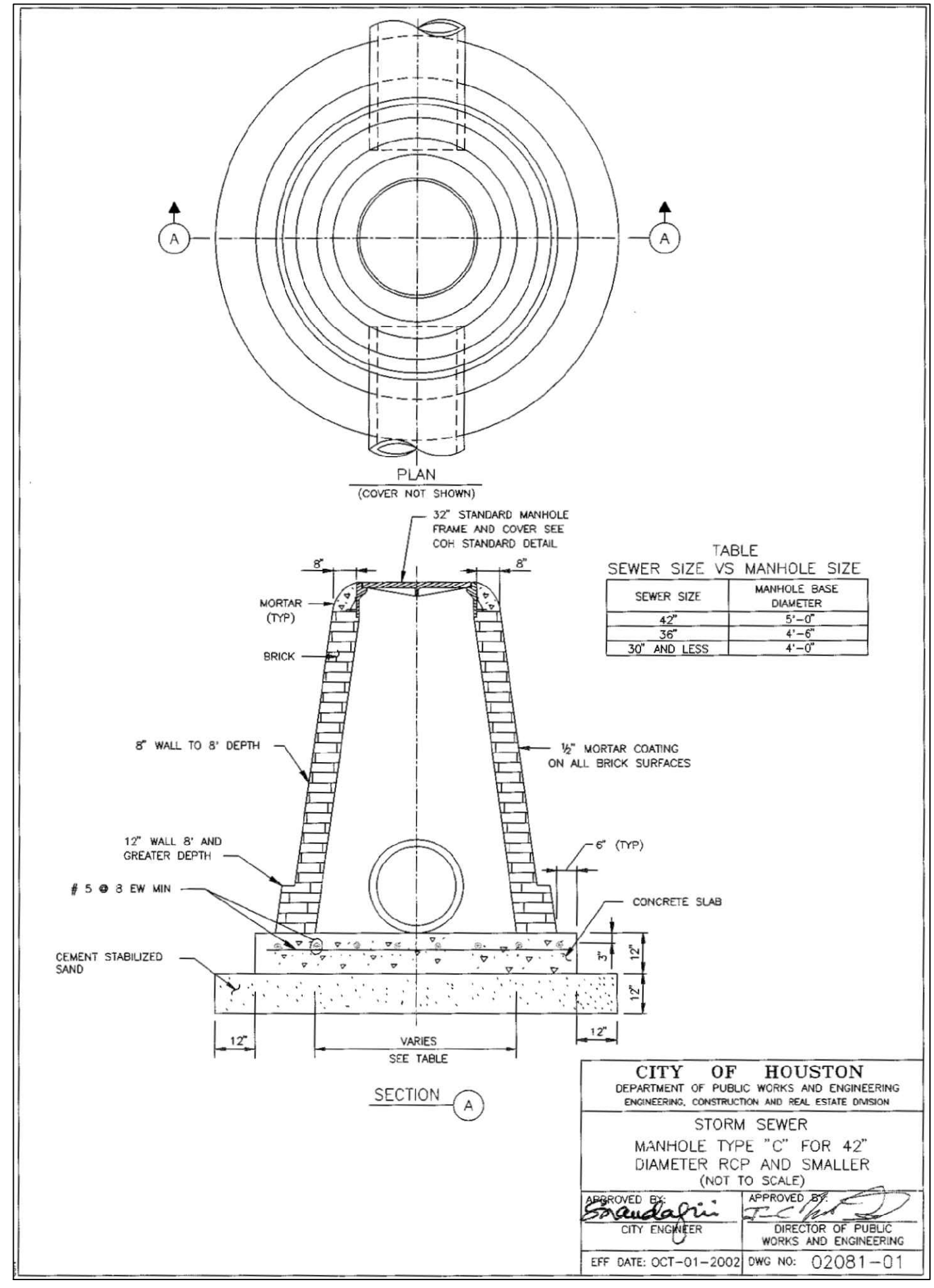
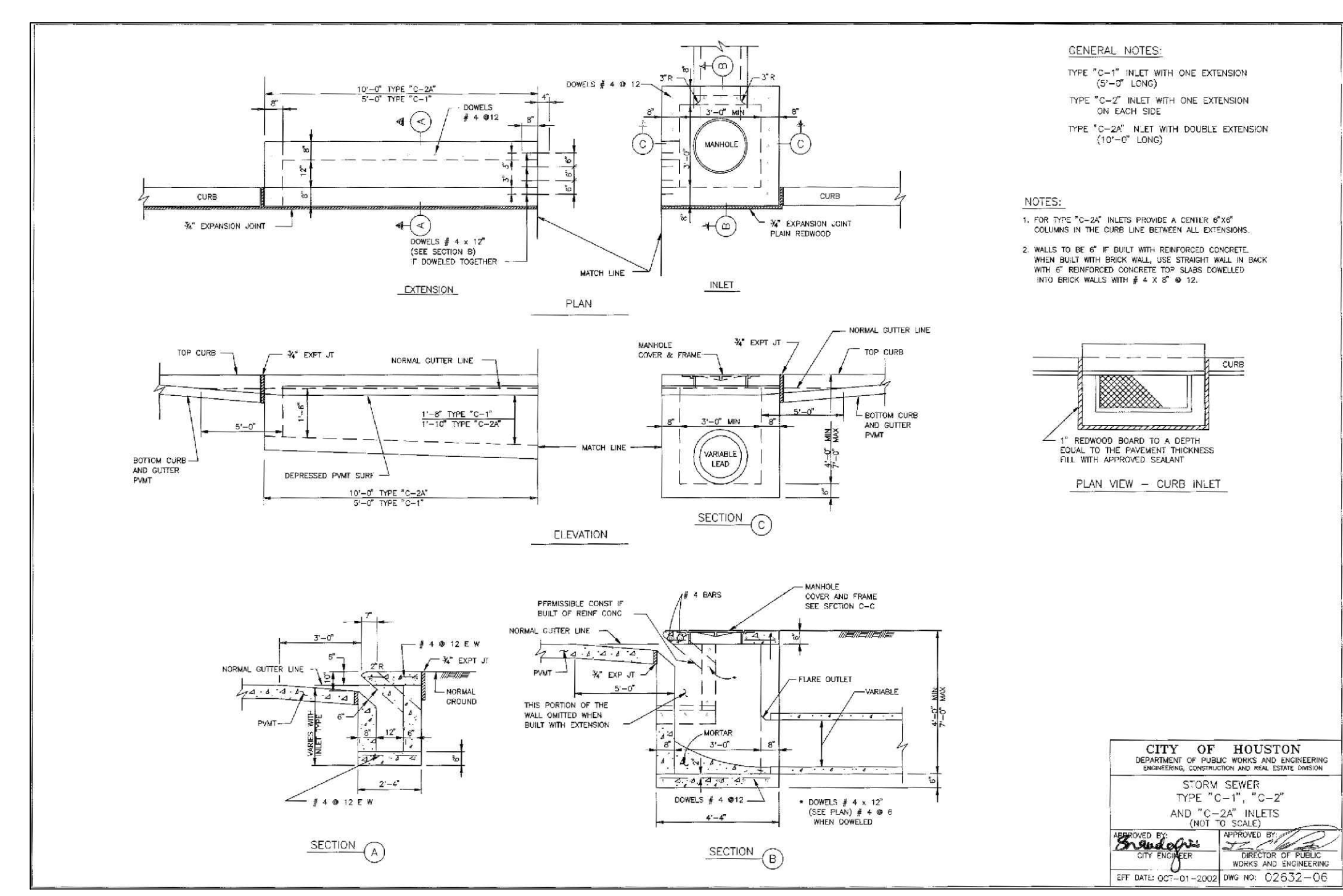
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RAILROAD SPIKE IN A SERVICE POLE ON EAST SIDE OF PROPERTY (LOCATED AS SHOWN).

ELEVATION = 142.02' NAVD 1988

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PROJECT: UCHE JOB #: [Redacted] Governing Agency: Fort Bend County		Equations: Shallow concentrated Flow Method $V=16.134(S)^{0.5}$ $T=460V$ $D=$ Overland Flow Distance $S=$ Land Slope (feet per foot)		*K* Values 0.1 Same Pipe Size Straight thru 0.2 Change Pipe Size 0.3 One Lateral Pipe 0.4 Two or More Lateral Pipes	
BY: DPK DATE: [Redacted]		DATE: 3/3/2021 0:00			
CHK BY: [Redacted]		DATE: 3/3/2021 0:00			
Last Revised: [Redacted]		DATE: 3/3/2021 0:00			
100 year: [Redacted]		0.5274			

Drainage Area	From	To	Delta Area (acres)	Time Con. (minutes)	Runoff Coefficient	Storm Freq.	Frequency Factor (Cf)	Intensity I (in/hr)	Incremental Flow (cfs)	Total Flow Q (cfs)	Manning's "n"	length (ft)	# of pipe (qty)	Dia (in.)	Rise (in.)	Slope (ft./ft.)	Design Velocity (ft/s)	Design Capacity (cfs)	Fall (ft.)	FL Elev. Upstream (ft.)	FL Elev. Downstream (ft.)	Actual Velocity (ft/s)	Hydr. Grad. In Head (ft./ft.)	Change In Head (ft.)	Upstream Hydr. Elev. (ft.)	Downstream Hydr. Elev. (ft.)	Upstream NG Elev. (ft.)	Downstream NG Elev. (ft.)
A1	INLET A1	INLET A2	0.150	22.16	0.80	100	1.25	8.18	1.23	1.23	0.011	70	1	8	0.0100	4.10	1.43	0.00	100.00	100.00	3.52	0.0073	0.514	101.09	100.57	100.00	100.00	
A2	INLET A2	INLET A3	0.098	21.64	0.80	100	1.25	8.28	0.81	2.04	0.011	90	1	10	0.0080	4.28	2.32	0.00	100.00	100.00	3.74	0.0062	0.555	101.29	100.73	100.00	100.00	
A3	INLET A3	INLET A4	0.273	22.96	0.80	100	1.25	8.04	2.19	4.23	0.011	140	1	15	0.0050	4.41	8.41	0.00	100.00	100.00	3.45	0.0031	0.428	101.41	100.98	100.00	100.00	
A4	INLET A4	JUNC. BOX	0.129	21.97	0.80	100	1.25	8.22	1.06	5.29	0.011	100	1	15	0.0060	4.83	5.93	0.00	100.00	100.00	4.31	0.0048	0.478	101.59	101.12	100.00	100.00	
R1	ROOF DRAINS	JUNC. BOX	0.214	22.62	0.80	100	1.25	8.10	1.73	1.73	0.011	15	1	8	0.0100	4.10	1.43	0.00	100.00	100.00	4.98	0.0146	0.220	101.03	100.81	100.00	100.00	
NA	JUNC. BOX	INLET A5	0.000	15.00	0.80	100	1.25	9.94	0.00	7.03	0.011	70	1	18	0.0050	4.98	8.80	0.00	100.00	100.00	3.98	0.0032	0.223	101.42	101.20	100.00	100.00	
R2	ROOF DRAINS	INLET A5	0.156	22.21	0.80	100	1.25	8.10	1.27	1.27	0.011	15	1	8	0.0100	4.10	1.43	0.00	100.00	100.00	3.65	0.0079	0.119	100.71	100.59	100.00	100.00	
A5	INLET A5	POND	0.100	1.120	21.67	0.80	100	1.25	8.27	9.13	0.011	65	1	18	0.0075	6.10	10.78	0.00	100.00	100.00	5.17	0.0054	0.350	101.62	101.27	100.00	100.00	
D1	POND	AREA	0.403	0.403	23.52	0.80	100	1.25	7.94	3.20																		

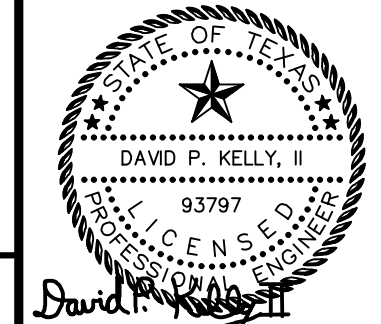


DPK Engineering LLC
 LAND DEVELOPMENT - SITE DEVELOPMENT - MUNICIPAL
 P.O. Box 823
 Fulshear, Texas 77441
 Office and Fax: (281) 348-2616
 Cell: (281) 300-1869
 Firm Registration No. F9323

DATE: March, 2021
 JOB NO. D20_1D_14011

DESIGNED BY: SLA
 CHECKED BY: DPK

AUTHORIZED SIGNATURE BY:
 DAVID P. KELLY II, P.E. ON
 September 28, 2022



OREMUS PROPERTIES LLC
 PROPOSED SITE DEVELOPMENT

STORM SEWER DETAILS

FILE NO.:
 G.F. NO.:
 DRAWING SCALE:
 NOT TO SCALE

SHEET NUMBER
1

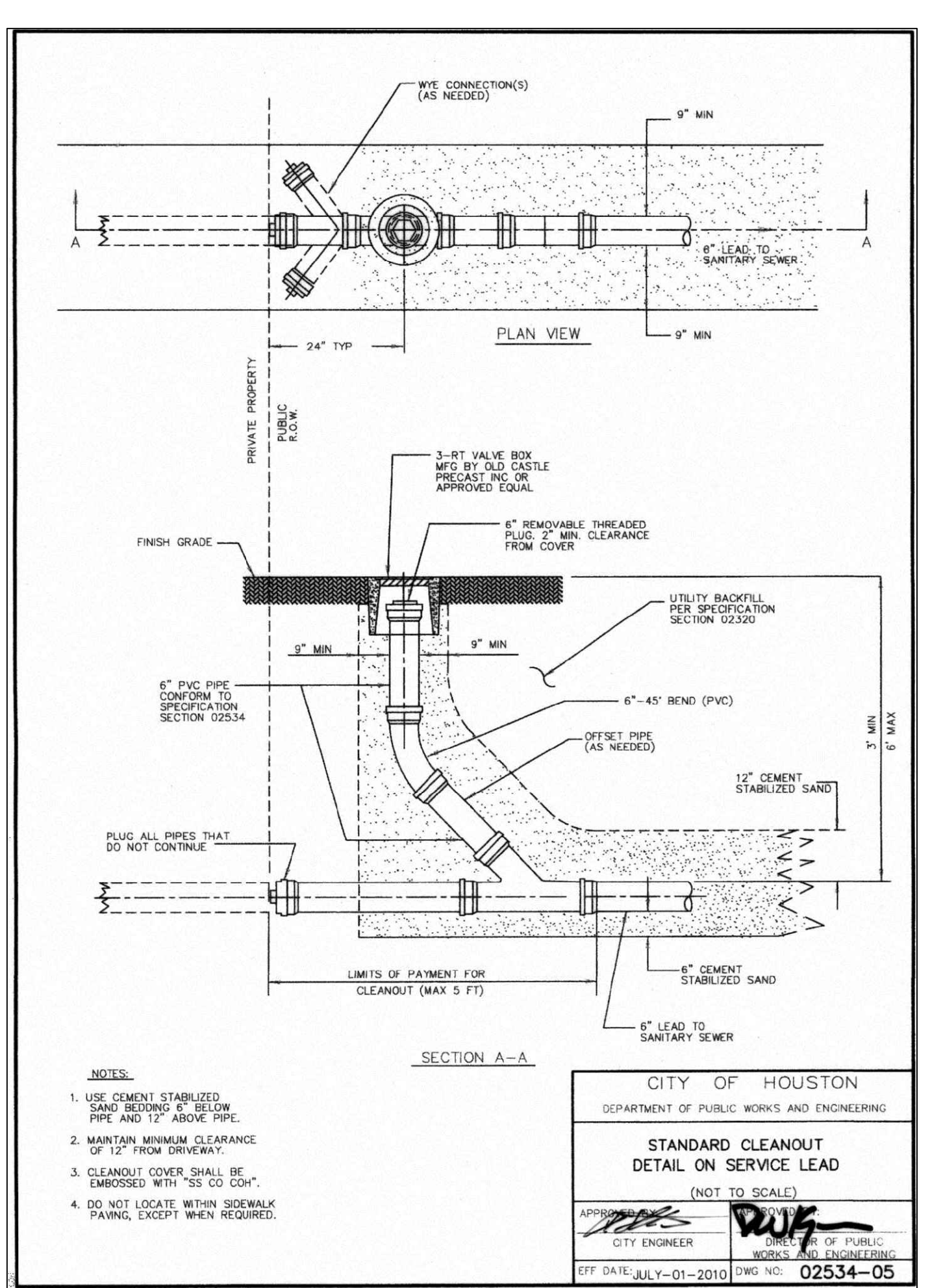
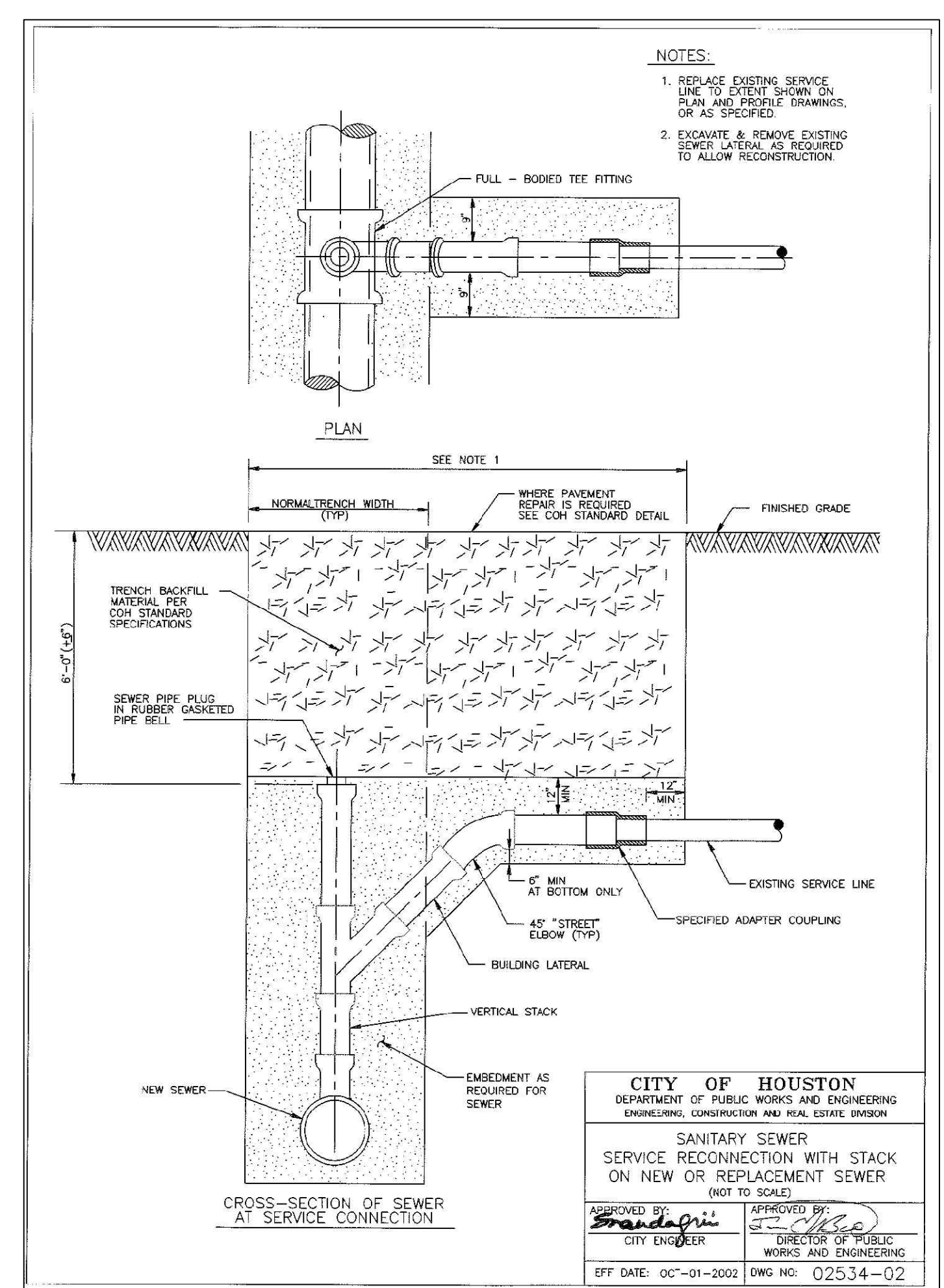
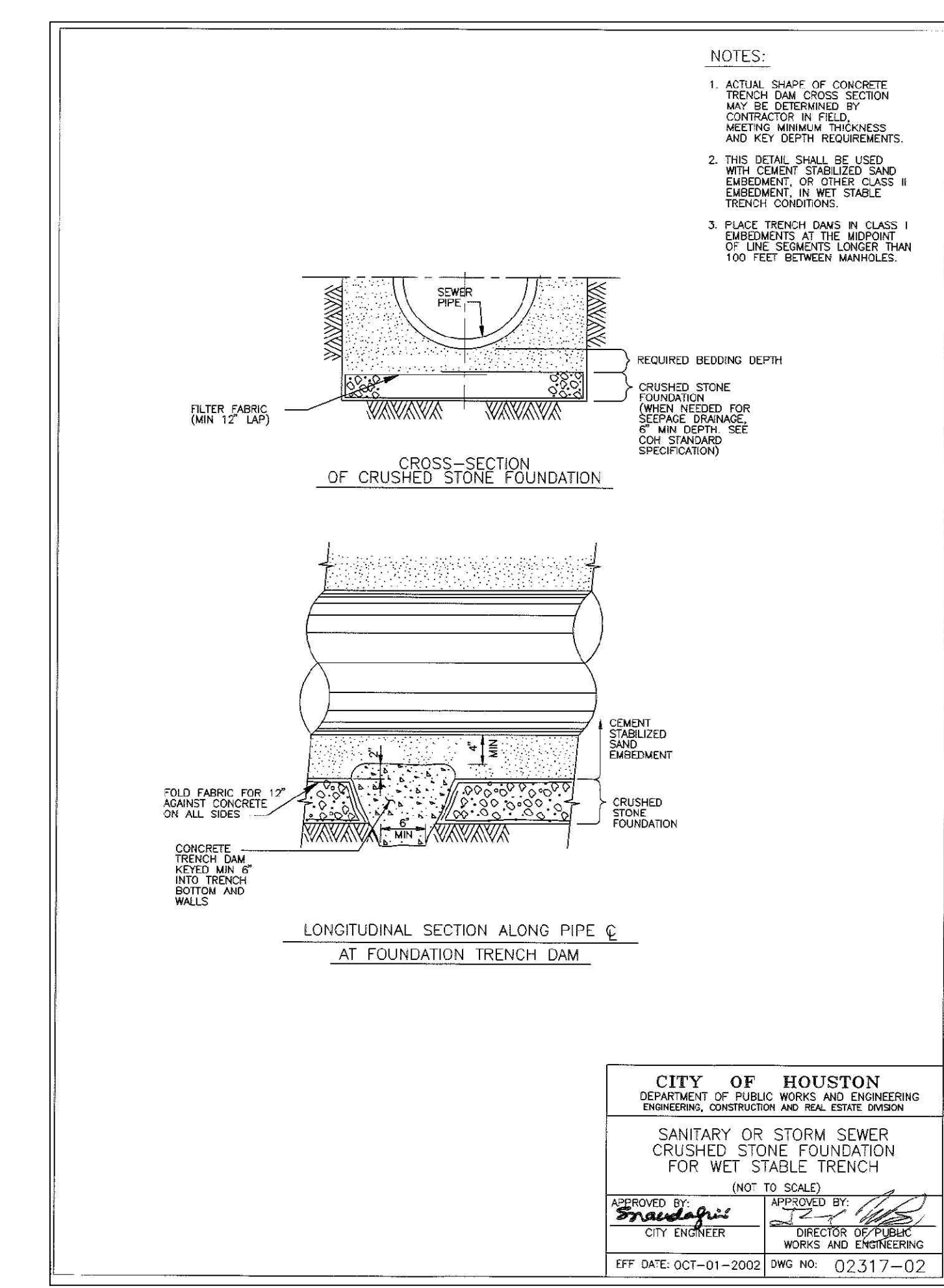
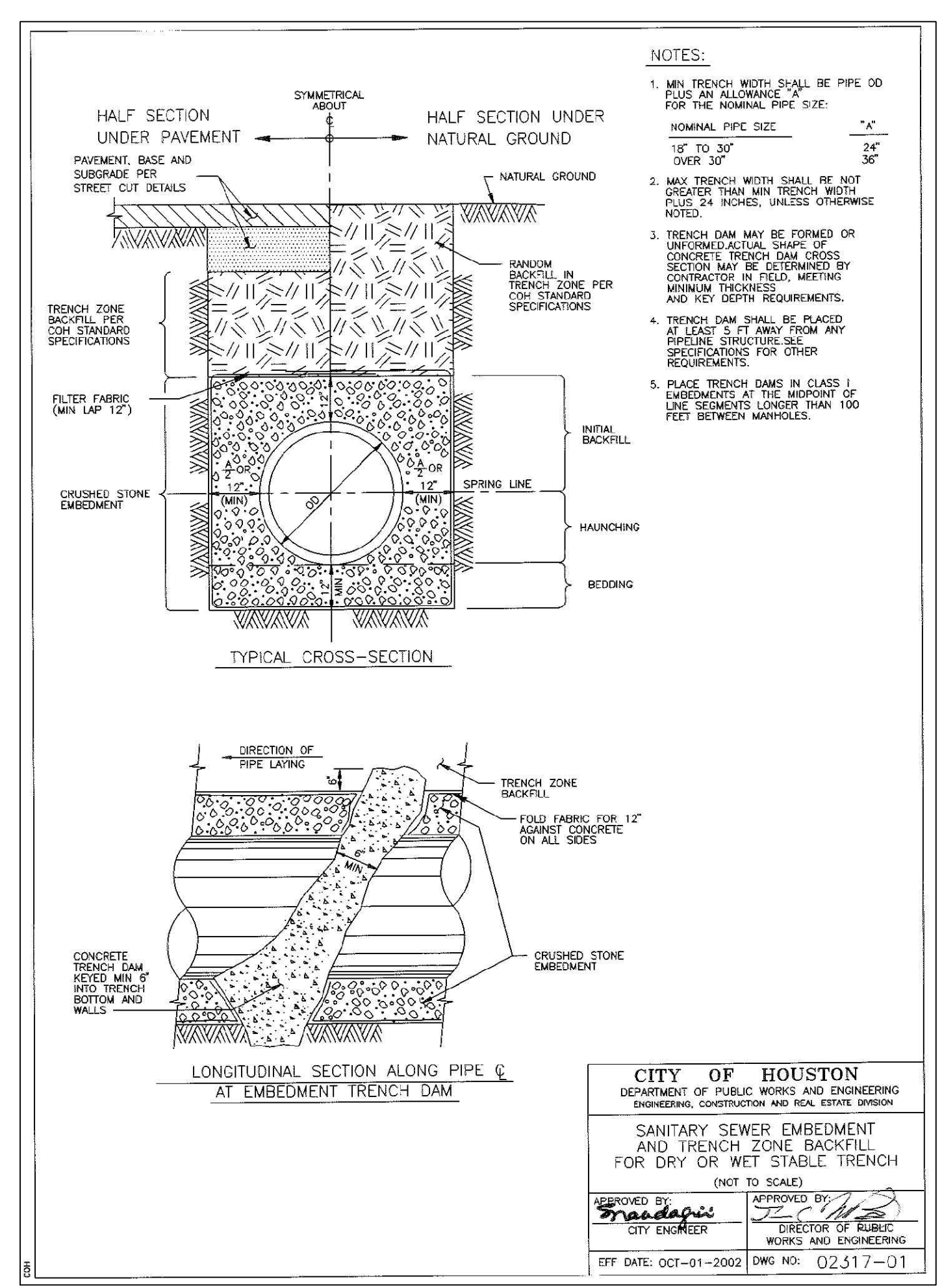
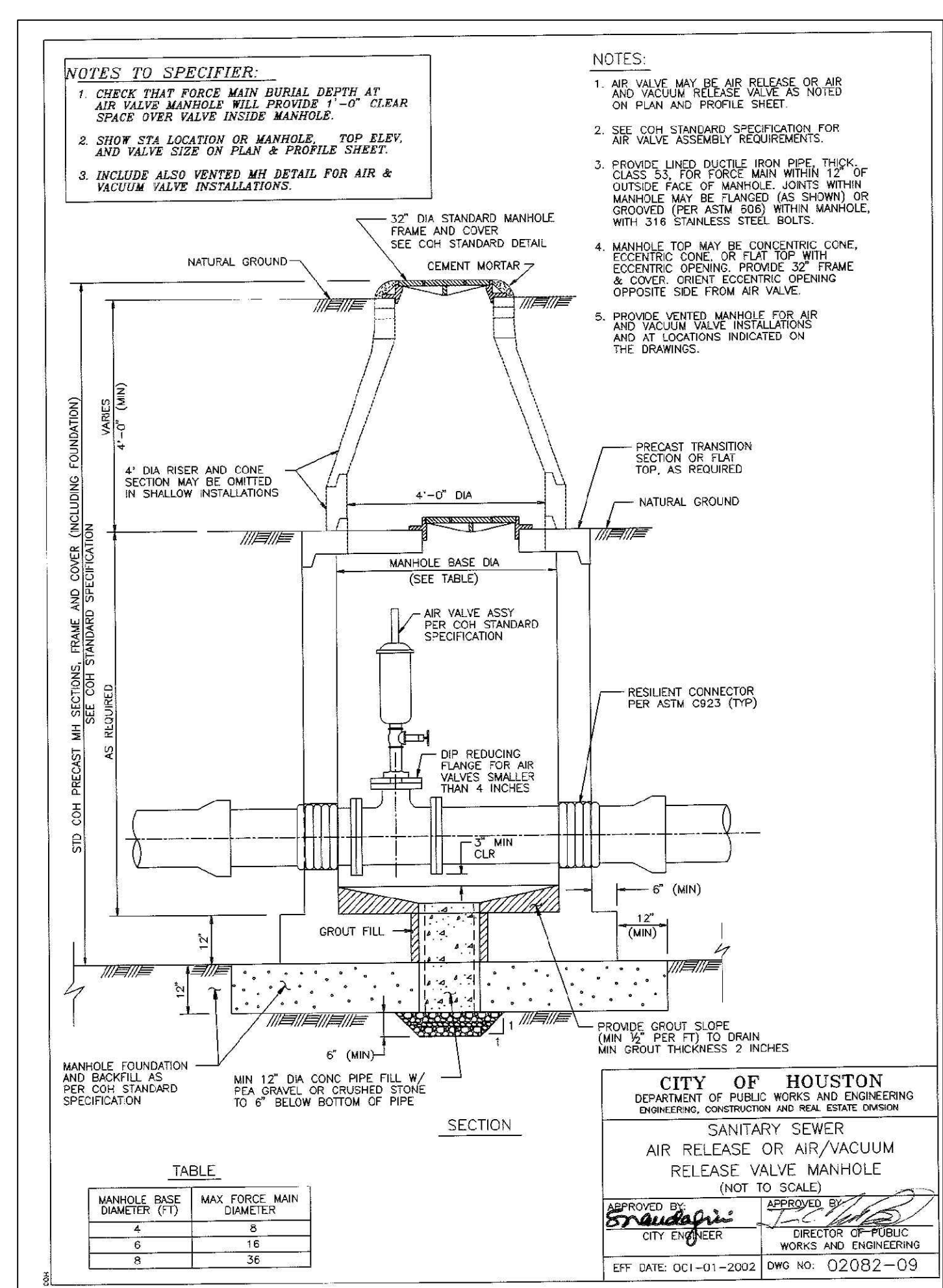
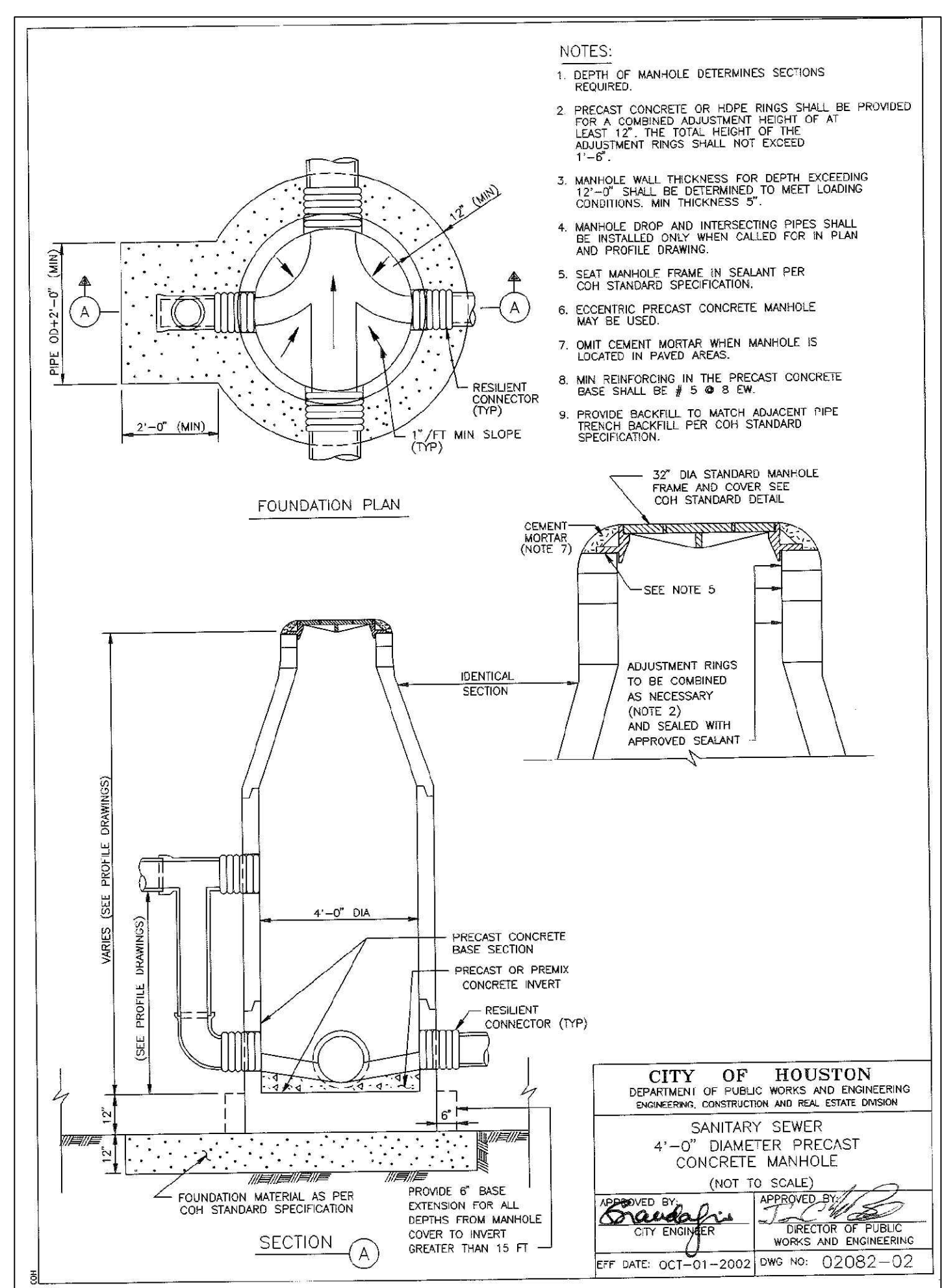
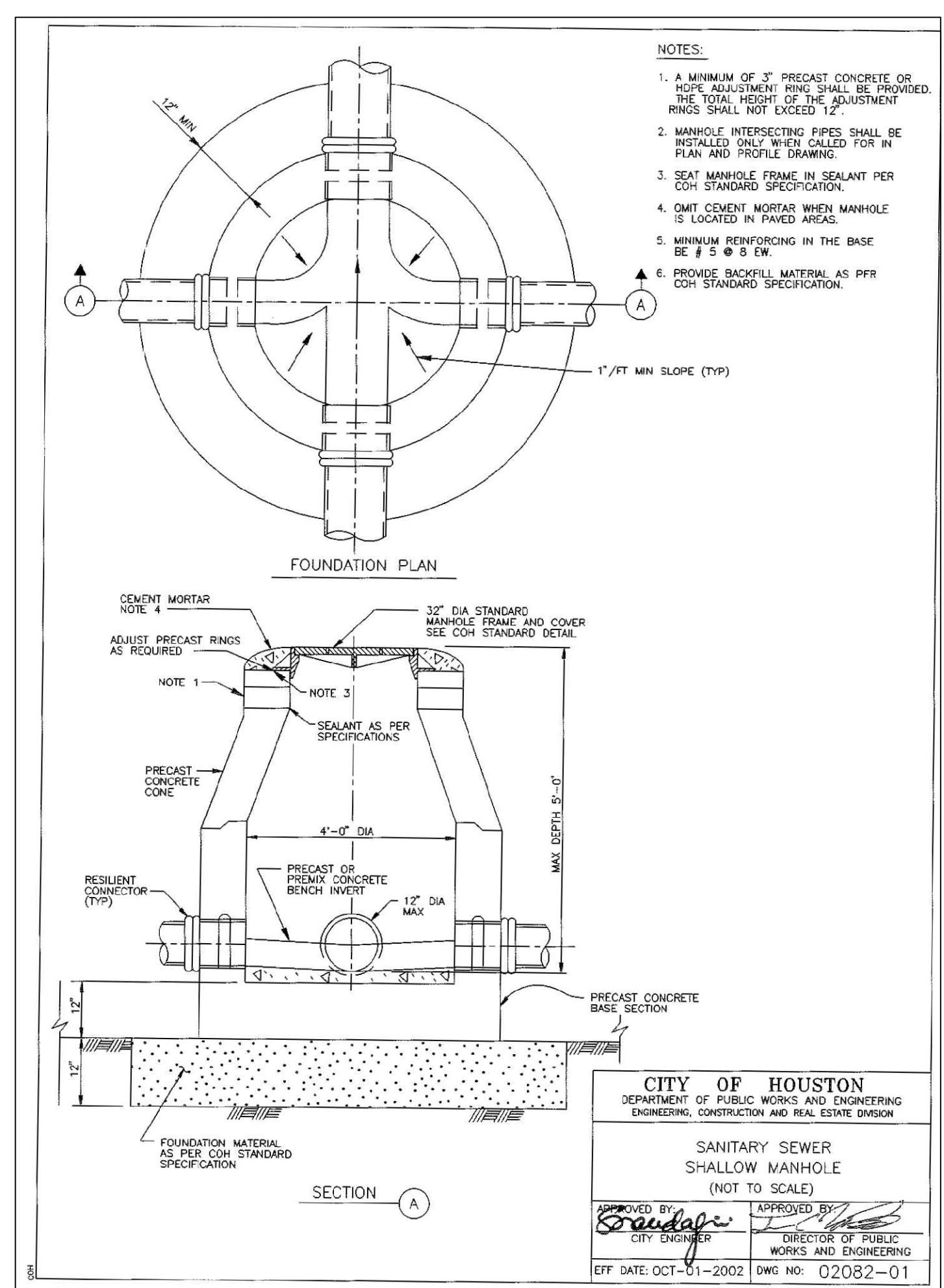
OF 15

BENCHMARK:
ELEVATIONS ARE DERIVED FROM GPS OBSERVATIONS FROM CORP. STATIONS OF THE TRIMBLE NETWORK (NAVD 1988, GEOID 12B).

T.B.M. 'A':
RAILROAD SPIKE IN A SERVICE POLE ON EAST SIDE OF PROPERTY (LOCATED AS SHOWN).

FLOOD PLAN STATEMENT:
ACCORDING TO FEMA F.I.R.M. MAP PANEL NUMBER 48157-C-0083L WITH AN EFFECTIVE DATE OF APRIL 2, 2014, THE MAP INDICATES THIS TRACT TO BE ENTIRELY WITHIN UN-SHADED ZONE "X", AREAS DETERMINED TO BE OUTSIDE THE 100-YEAR FLOOD PLAN.

ELEVATION = 142.02' NAVD 1988



DPK Engineering LLC
LAND DEVELOPMENT - SITE DEVELOPMENT - MUNICIPAL
P.O. Box 823
Fulshear, Texas 77441
Office and Fax: (281) 346-2616
Cell: (281) 300-1869
Firm Registration No. F9323

DATE: March, 2021
JOB NO. D20_LD_14011

DESIGNED BY: SLA
CHECKED BY: DPK

AUTHORIZED SIGNATURE BY:
DAVID P. KELLY II, P.E. ON
September 28, 2022

SURVEYED BY:
FOUR POINTS SURVEYING

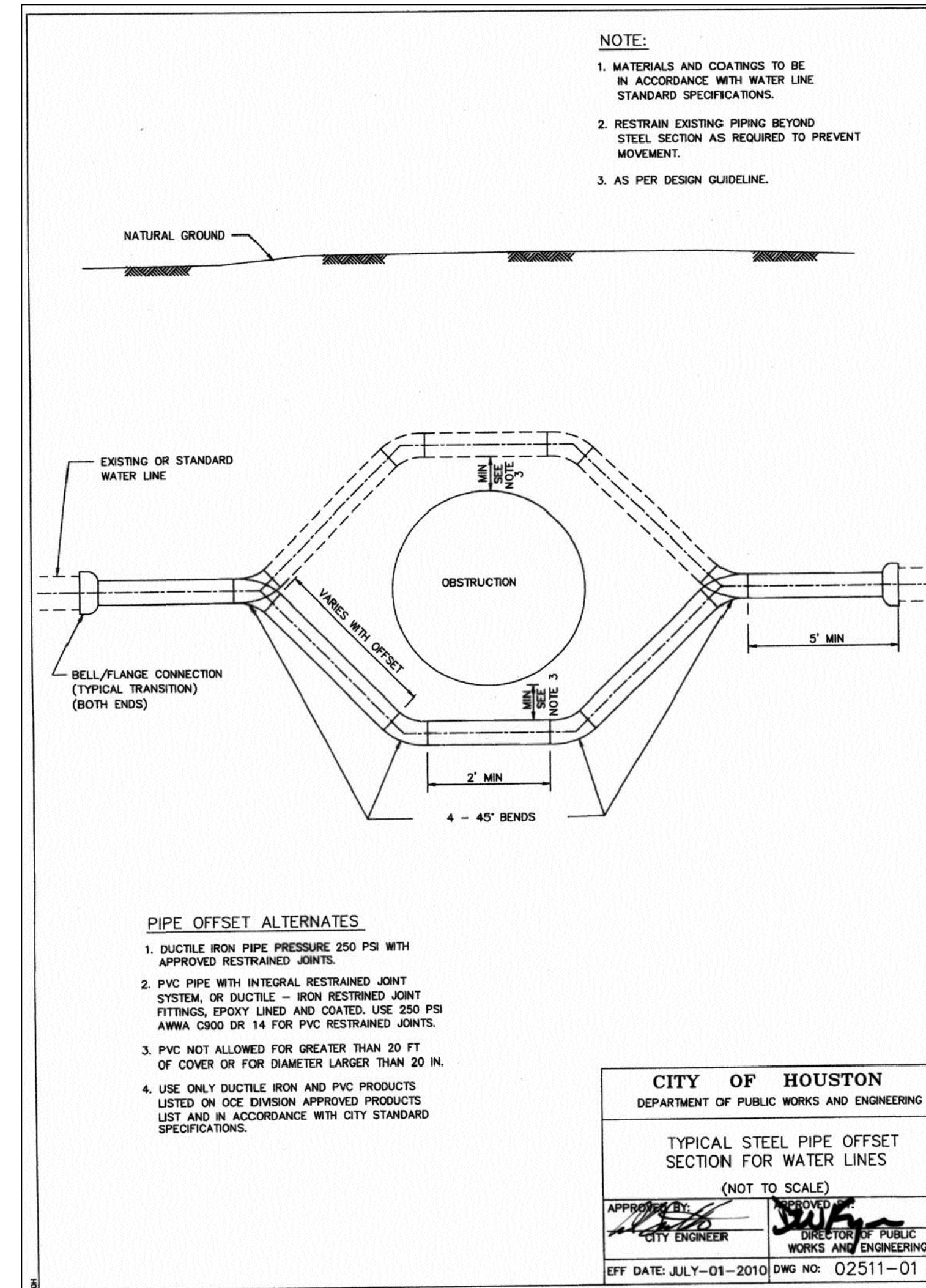
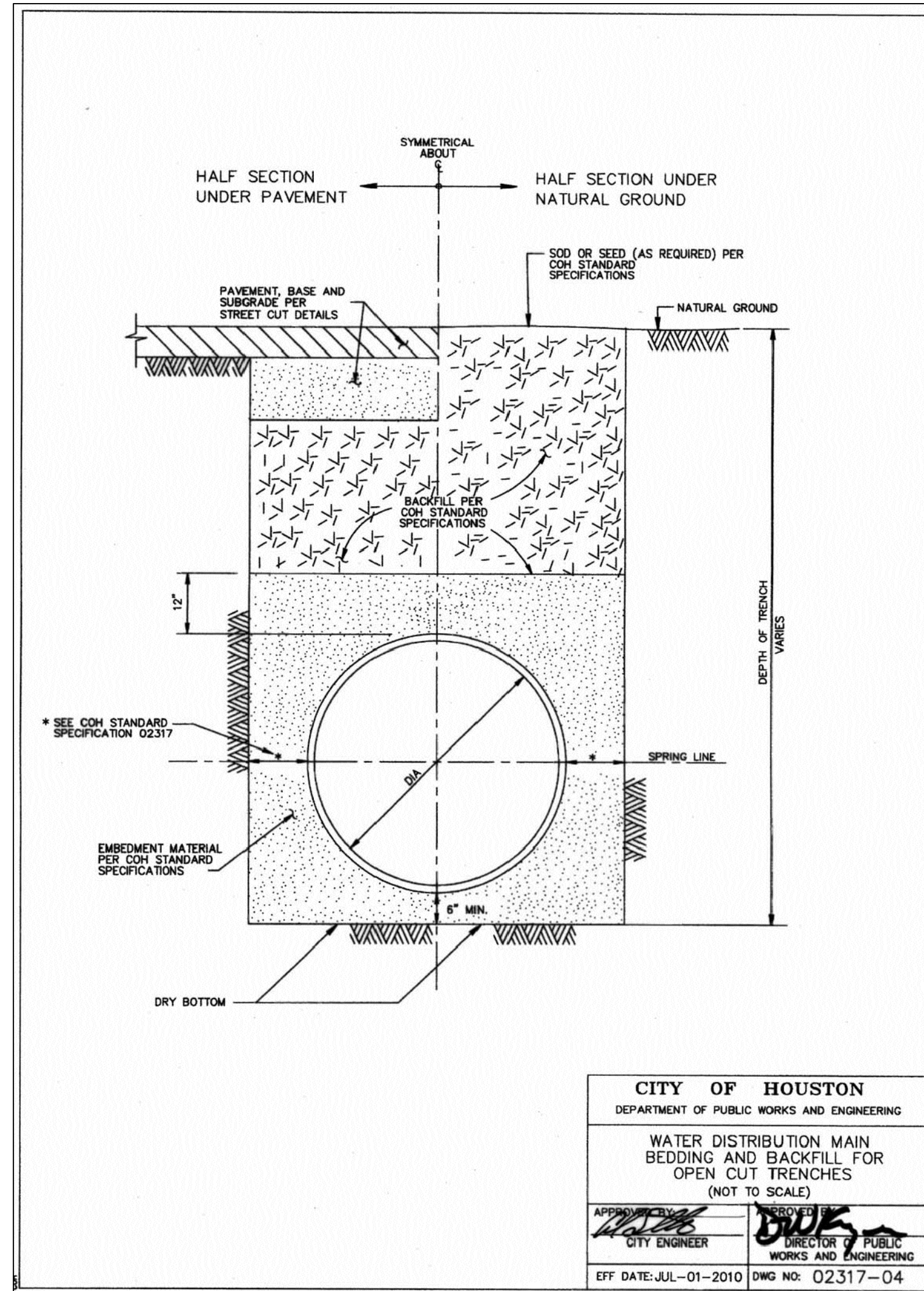
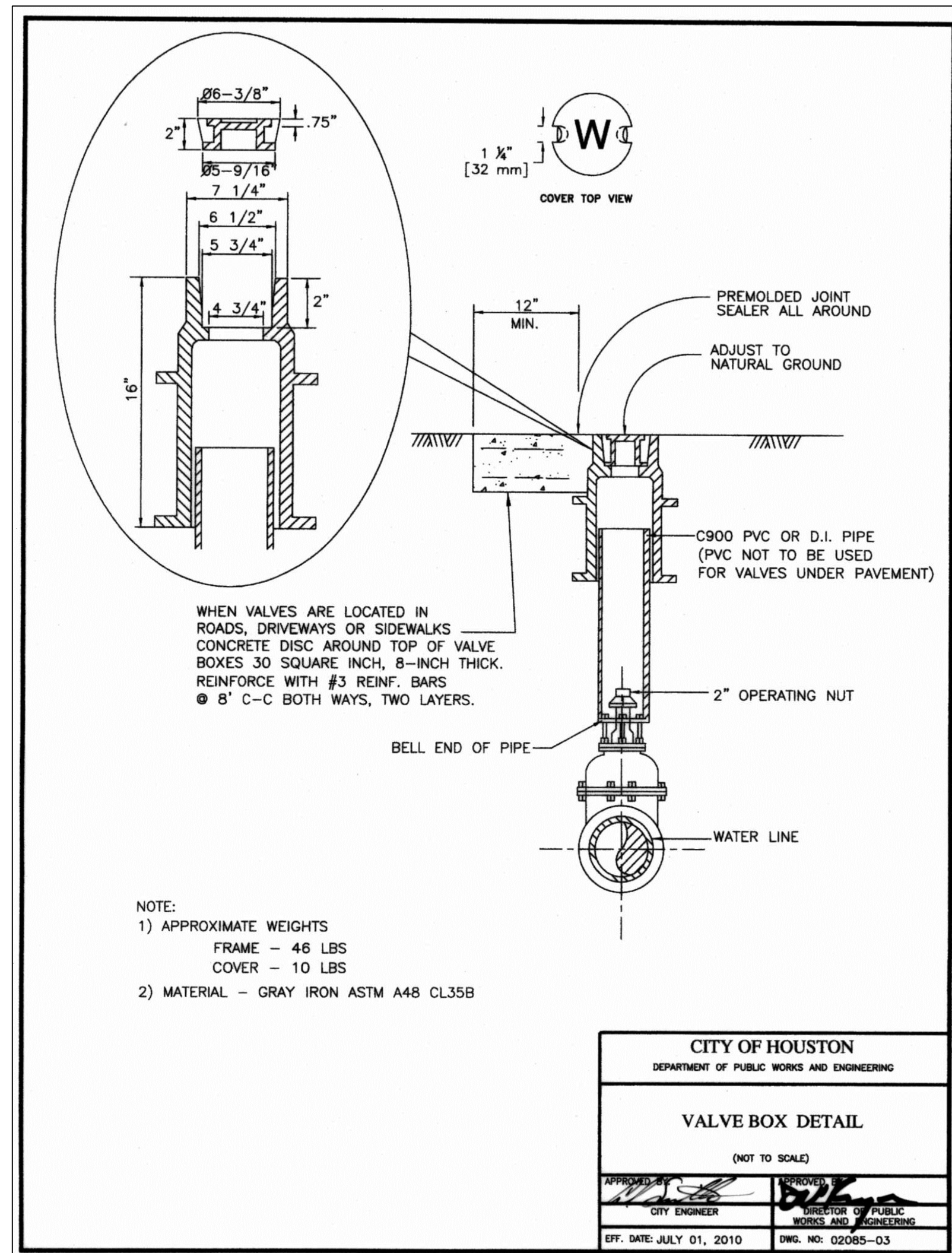
OREMUS PROPERTIES LLC
PROPOSED SITE DEVELOPMENT

SANITARY SEWER DETAILS

FILE NO.:
G.F. NO.:
DRAWING SCALE:
NOT TO SCALE

SHEET NUMBER
1

OF 15



BENCHMARK:
 ELEVATIONS ARE DERIVED FROM GPS OBSERVATIONS FROM CORP. STATIONS OF THE TRIMBLE NETWORK (NAVD 1988, GEOID 12B).

T.B.M. 'A':
 RAILROAD SPIKE IN A SERVICE POLE ON EAST SIDE OF PROPERTY (LOCATED AS SHOWN).

ELEVATION = 142.02' NAVD 1988

FLOOD PLAIN STATEMENT:
 ACCORDING TO FEMA F.I.R.M. MAP PANEL NUMBER 48157-C-0085L WITH AN EFFECTIVE DATE OF APRIL 2, 2014, THE MAP INDICATES THIS TRACT TO BE ENTIRELY WITHIN UN-SHADED ZONE 'X', AREAS DETERMINED TO BE OUTSIDE THE 100-YEAR FLOOD PLAIN.

DPK Engineering LLC
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 Cell: (281) 300-1869
 Firm Registration No. F9323

DATE: March, 2021
 JOB NO. D20_LD_14011

DESIGNED BY: SLA
 CHECKED BY: DPK

AUTHORIZED SIGNATURE BY
 DAVID P. KELLY II, P.E. ON
 March 10, 2021

SURVEYED BY:
 FOUR POINTS SURVEYING

STATE OF TEXAS
 PROFESSIONAL ENGINEER
 DAVID P. KELLY II
 83797

OREMUS PROPERTIES LLC
 PROPOSED SITE DEVELOPMENT

WATER LINE DETAILS

FILE NO.:	SHEET NUMBER 15 OF 15
G.F. NO.:	
DRAWING SCALE: NOT TO SCALE	