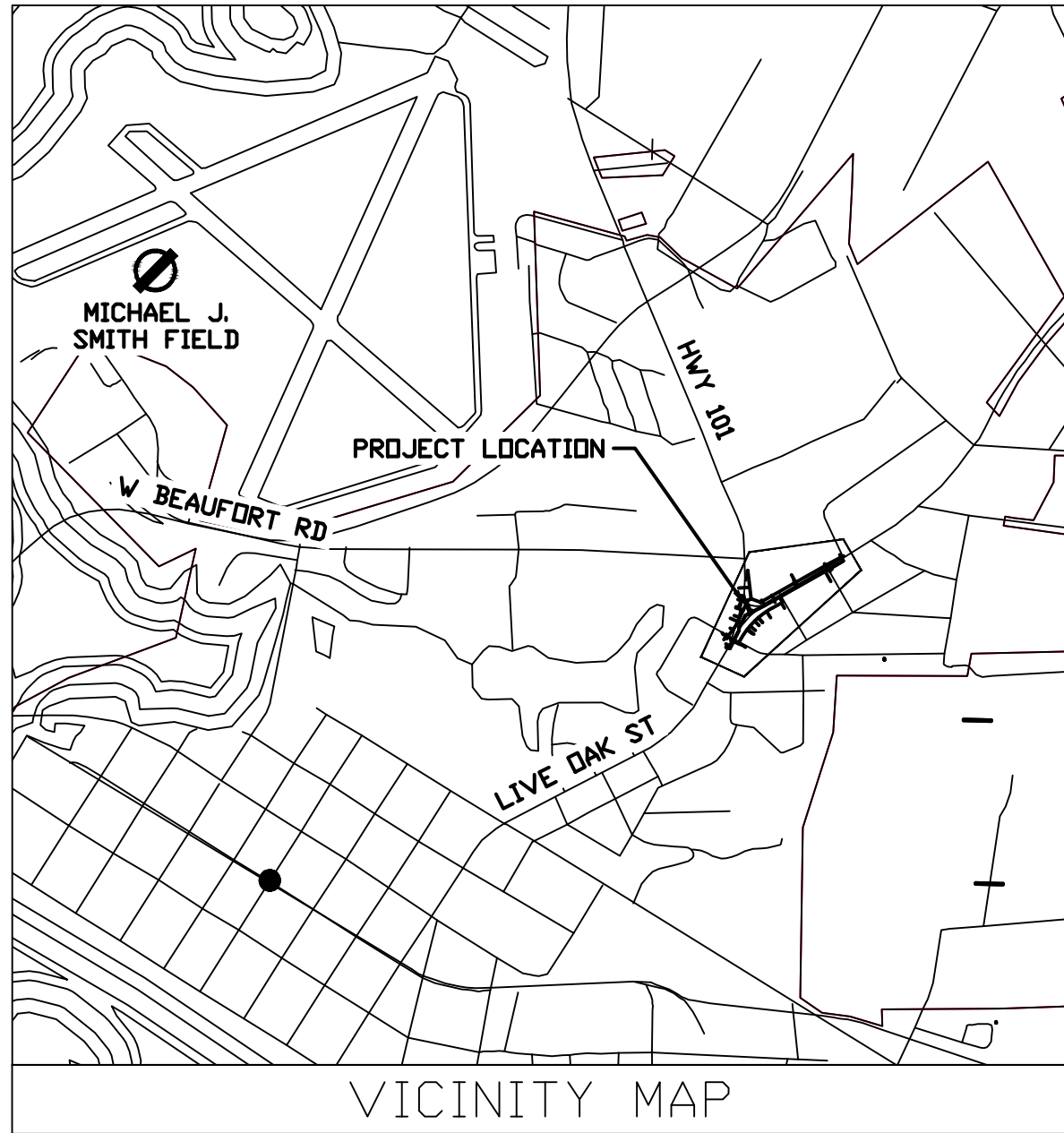


TIP PROJECT: U-6058

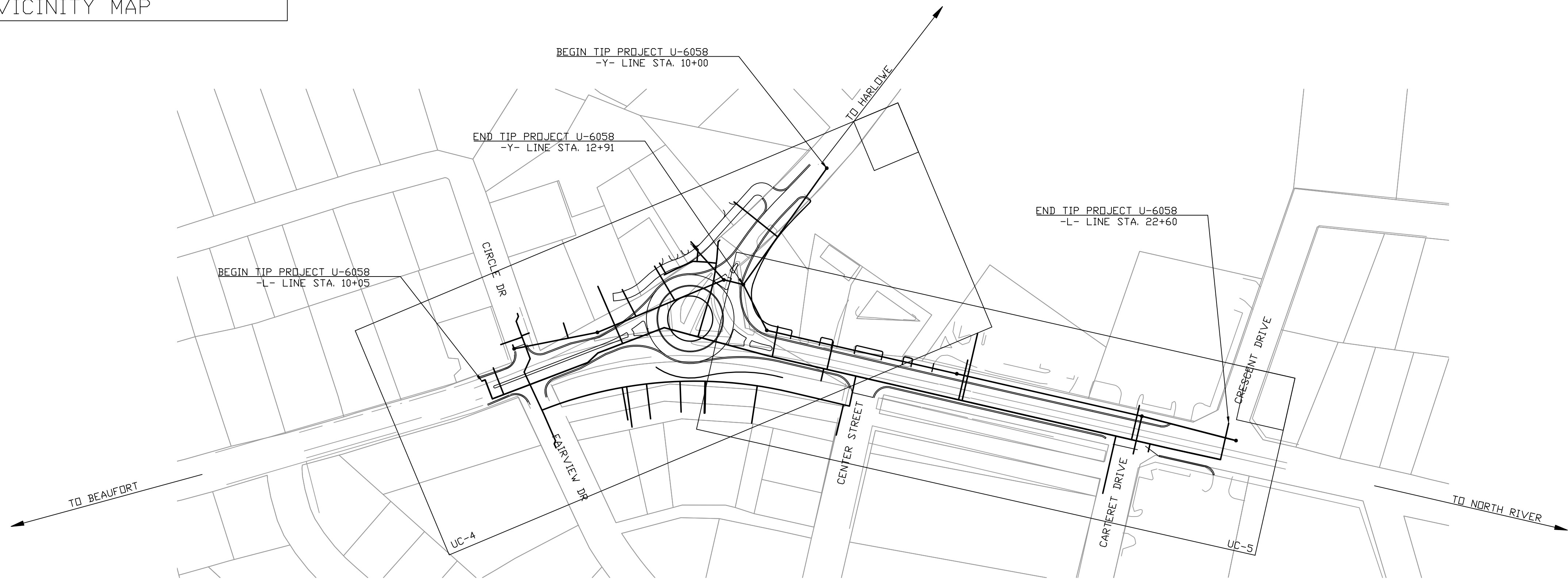


STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

UTILITY CONSTRUCTION PLANS CARTERET COUNTY

T.I.P. NO.	SHEET NO.
U-6058	UC-1

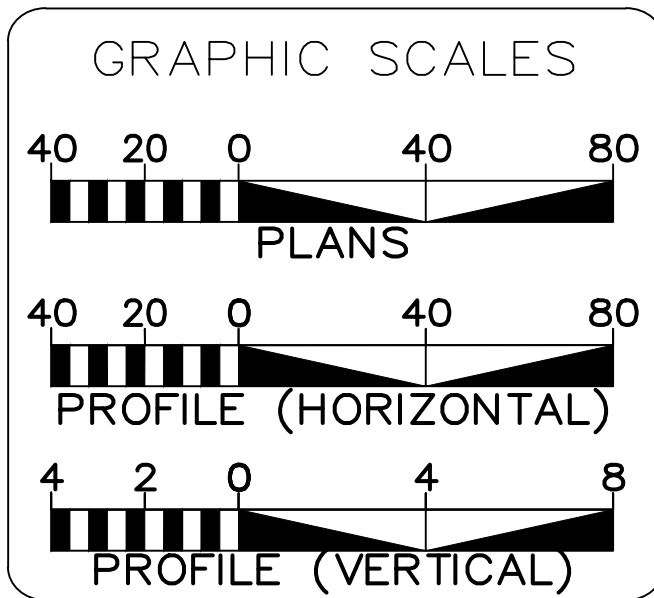
LOCATION: INTERSECTION HWY 101 AND LIVE OAK ST IN BEAUFORT
TYPE OF WORK: WATER AND SANITARY SEWER RELOCATION



100% DESIGN -- APRIL 2025
DOCUMENT NOT CONSIDERED FINAL
UNTIL ALL SIGNATURES ARE COMPLETED

ROADWAY IMPROVEMENTS BY:

TRANSYSTEMS



SHEET NO.:	DESCRIPTION:
UC-1	TITLE SHEET
UC-2	SYMBOLOLOGY SHEET
UC-3	NOTES
UC-3A THRU UC-3B	DETAILS
UC-4 THRU UC-5	UTILITY CONSTRUCTION SHEETS

WATER AND SEWER
OWNERS ON PROJECT

(A) WATER -- TOWN OF BEAUFORT

(B) SANITARY SEWER -- TOWN OF BEAUFORT

PREPARED IN THE OFFICE OF

HIGHFILL
INFRASTRUCTURE
ENGINEERING, P.C.

2703 Jones Franklin Road, Suite 201
Cary, NC 27518
Tel 919-481-4342
NC License No. C-2586

Greg Fields, PE CONSULTANT CONTACT #1
Ashlynn Frye, EI CONSULTANT CONTACT #2

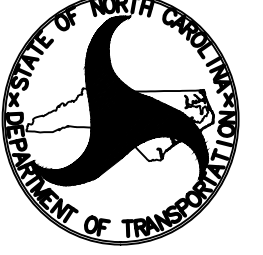
SEAL

4/11/2025

NORTH CAROLINA
PROFESSIONAL
SEAL
051959

DocuSigned by:
Greg Fields, PE
104295771

SEAL NOT VALID UNLESS SIGNED AND DATED

 DIVISION OF HIGHWAYS
UTILITIES UNIT
1555 MAIL SERVICES CENTER
RALEIGH NC 27699-1555
PHONE (919) 707-6690
FAX (919) 250-4151

David Kramer UTILITIES ENGINEER

William Pope, PE UTILITIES COORDINATOR

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES PLAN SHEET SYMBOLS

PROJECT REFERENCE NO.	SHEET NO.
U-6058	UC-2
100% DESIGN - APRIL 2025	
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PROPOSED WATER SYMBOLS

Water Line (Sized as Shown)	----- 12" WL -----
11¼ Degree Bend	----- +-----
22½ Degree Bend	----- +-----
45 Degree Bend	----- +-----
90 Degree Bend	----- +-----
Plug	----- -----
Tee	----- +-----
Cross	----- +-----
Reducer	----- ►-----
Gate Valve	----- GV -----
Butterfly Valve	----- BV -----
Tapping Valve	----- TGV -----
Line Stop	----- LS -----
Line Stop with Bypass	----- LS/BP -----
Blow Off	----- BO -----
Fire Hydrant	----- FHH -----
Relocate Fire Hydrant	----- FHH -----
Remove Fire Hydrant	----- REM FH -----
Water Meter	----- PWM -----
Relocate Water Meter	----- RWM -----
Remove Water Meter	----- REM WM -----
Water Pump Station	----- PS(W) -----
RPZ Backflow Preventer	----- RBPZ -----
DCV Backflow Preventer	----- DBFP -----
Relocate RPZ Backflow Preventer	----- RBPZ -----
Relocate DCV Backflow Preventer	----- DBFP -----

PROPOSED SEWER SYMBOLS

Gravity Sewer Line (Sized as Shown)	----- 12" SS -----
Force Main Sewer Line (Sized as Shown)	----- 12" FSS -----
Manhole (Sized per Note)	----- • -----
Sewer Pump Station	----- PS(SS) -----

PROPOSED MISCELLANEOUS UTILITIES SYMBOLS

Power Pole	----- ⚡ -----
Telephone Pole	----- ☎ -----
Joint Use Pole	----- ⚡☎ -----
Telephone Pedestal	----- TEL PED -----
Utility Line by Others (Type as Shown)	----- PROP O/H POW LINES -----
Trenchless Installation	----- 12" TL INSTALL -----
Encasement by Open Cut	----- 24" ENCAS BY OC -----
Encasement	----- 24" ENCASEMENT -----

Thrust Block	----- -----
Air Release Valve	----- AR -----
Utility Vault	----- UV -----
Concrete Pier	----- CP -----
Steel Pier	----- SP -----
Plan Note	----- NOTE -----
Pay Item Note	----- PAY ITEM -----

EXISTING UTILITIES SYMBOLS

Power Pole	----- ⚡ -----
Telephone Pole	----- ☎ -----
Joint Use Pole	----- ⚡☎ -----
Utility Pole	----- • -----
Utility Pole with Base	----- □ -----
H-Frame Pole	----- ●-----
Power Transmission Line Tower	----- ☒ -----
Water Manhole	----- Ⓜ -----
Power Manhole	----- Ⓜ -----
Telephone Manhole	----- ☎ -----
Sanitary Sewer Manhole	----- Ⓢ -----
Hand Hole for Cable	----- ☒ -----
Power Transformer	----- Ⓜ -----
Telephone Pedestal	----- ☎ -----
CATV Pedestal	----- ☎ -----
Gas Valve	----- ⬠ -----
Gas Meter	----- ⬠ -----
Located Miscellaneous Utility Object	----- • -----
Abandoned According to Utility Records	----- AATUR -----
End of Information	----- E.O.I. -----

*Underground Power Line	-----
*Underground Telephone Cable	-----
*Underground Telephone Conduit	-----
*Underground Fiber Optics Telephone Cable	-----
*Underground TV Cable	-----
*Underground Fiber Optics TV Cable	-----
*Underground Gas Pipeline	-----
Aboveground Gas Pipeline	----- A/G Gas -----
*Underground Water Line	-----
Aboveground Water Line	----- A/G Water -----
*Underground Gravity Sanitary Sewer Line	----- ss -----
Aboveground Gravity Sanitary Sewer Line	----- A/G Sanitary Sewer -----
*Underground SS Forced Main Line	-----
Underground Unknown Utility Line	-----
SUE Test Hole	----- ⚡ -----
Water Meter	----- Ⓜ -----
Water Valve	----- Ⓜ -----
Fire Hydrant	----- ⬠ -----
Sanitary Sewer Cleanout	----- Ⓢ -----

*For Existing Utilities	
Utility Line Drawn from Record (Type as Shown)	-----
Designated Utility Line (Type as Shown)	-----

GENERAL NOTES:

- WORK SHALL COMPLY WITH APPLICABLE STATE, FEDERAL, AND LOCAL CODES. NECESSARY LICENSES AND PERMITS SHALL BE OBTAINED BY CONTRACTOR AT ITS EXPENSE, UNLESS PREVIOUSLY OBTAINED BY THE OWNER AND PROVIDED IN THE CONTRACT DOCUMENTS.
- WATER AND SANITARY SEWER CONSTRUCTION SHALL CONFORM TO NCDENR REGULATIONS AND TO TOWN OF BEAUFORT STANDARDS AND SPECIFICATIONS.
- CONTRACTOR SHALL KEEP A COMPLETE SET OF CONTRACT DOCUMENTS AS WELL AS PERMIT APPROVALS AND EASEMENTS ON THE JOB SITE AT ALL TIMES. OWNER WILL FURNISH DESCRIPTION OF EASEMENTS UPON REQUEST.
- CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY SHOULD ANY FIELD CONDITIONS BE ENCOUNTERED THAT VARY FROM THE INFORMATION PROVIDED IN THE CONTRACT DOCUMENTS.
- DEVIATION FROM THE CONTRACT DOCUMENTS WITHOUT THE PRIOR WRITTEN CONSENT OF THE OWNER OR THE ENGINEER MAY BE CAUSE FOR THE WORK TO BE DEEMED UNACCEPTABLE.
- AT LEAST TEN BUSINESS DAYS PRIOR TO COMMENCING CONSTRUCTION, CONTRACTOR SHALL NOTIFY ENGINEER AND APPLICABLE REGULATORY AGENCIES THAT HE IS PREPARED TO COMMENCE. NOTIFY NCDENR LAND QUALITY SECTION AT 919-791-4208.
- CONTRACTOR SHALL COORDINATE WORK WITH THE TOWN OF BEAUFORT. CONTRACTOR SHALL PLAN AND CONSTRUCT THE WORK IN A MANNER THAT CAUSES MINIMUM INCONVENIENCE TO THE OWNER AND PUBLIC.
- BURIED TELEPHONE AND CATV CABLES (FIBER OPTICS AND CONVENTIONAL) ARE KNOWN TO VARY DUE TO INSTALLATION TECHNIQUES. CONTRACTOR SHALL COORDINATE WORK WITH CONFLICTING TELEPHONE AND CATV CABLES AS NECESSARY FOR CONSTRUCTION OF THE WORK. UTILITY COORDINATION SHALL BE INCLUDED IN THE PROJECT SCHEDULE AND IT IS THE EXPLICIT RESPONSIBILITY OF CONTRACTOR TO ASSURE THAT THE PROJECT SCHEDULE INCLUDES THE NECESSARY COORDINATION. CONTRACTOR SHALL NOT BE PAID ADDITIONALLY FOR THIS COORDINATION.
- LOCATION OF EXISTING UTILITIES IS APPROXIMATE. IT IS THE RESPONSIBILITY OF CONTRACTOR TO DETERMINE THE SIZE, DEPTH, MATERIAL, AND LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION AND TO TAKE WHATEVER STEPS ARE NECESSARY TO PROVIDE FOR THEIR PROTECTION. THE ENGINEER HAS ATTEMPTED TO LOCATE AND INDICATE EXISTING UTILITIES ON THE DRAWINGS; HOWEVER, THIS INFORMATION IS SHOWN FOR CONTRACTOR'S CONVENIENCE ONLY. THE ENGINEER AND OWNER ASSUME NO RESPONSIBILITY FOR THE LOCATIONS OF UTILITIES SHOWN OR NOT SHOWN. PRIOR TO DIGGING ON OR OFF SITE, CONTRACTOR SHALL HAVE ALL UTILITIES LOCATED BY "NC 811" (1-800-632-4949). CONTRACTOR SHALL CONTACT ANY UTILITY COMPANY WHOSE UTILITIES ARE NOT LOCATED BY "NC 811" FOR EXACT LOCATION OF THEIR UTILITIES PRIOR TO STARTING CONSTRUCTION. IT SHALL BE THE SOLE RESPONSIBILITY OF CONTRACTOR TO REPAIR OR REPLACE UTILITIES DAMAGED BY CONTRACTOR TO PRECONSTRUCTION CONDITIONS AT CONTRACTOR'S EXPENSE. REPAIR OR REPLACE UTILITIES TO THE SATISFACTION OF THE UTILITY OWNER.
- BUILDING LOCATIONS ARE APPROXIMATE AND ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY. NOT ALL BUILDINGS ARE SHOWN.
- CONSTRUCTION ACTIVITY SHALL BE LIMITED TO STREET RIGHTS-OF-WAY AND TOWN EASEMENTS.
- WHERE CONTRACTOR DETERMINES THAT ENCROACHMENT ONTO PRIVATE PROPERTY IS NECESSARY, AND AN EASEMENT HAS NOT BEEN PROVIDED, CONTRACTOR SHALL CONTACT INDIVIDUAL PROPERTY OWNERS AND OBTAIN WRITTEN APPROVAL FOR THAT ENCROACHMENT. A COPY OF THIS APPROVAL SHALL BE PROVIDED TO THE OWNER AND ENGINEER.
- CONTRACTOR SHALL MAINTAIN A MEANS FOR INGRESS/EGRESS TO EACH PROPERTY AT ALL TIMES. BYPASS PIPE SHALL NOT PROHIBIT ACCESS TO PROPERTIES. PROVIDE FLOW-THROUGH ROAD RAMPS AT ROAD CROSSINGS AND DRIVEWAYS.
- CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL AND ERECT AND MAINTAIN AT ALL TIMES DURING THE PROGRESS OR TEMPORARY SUSPENSION OF WORK, SUITABLE BARRIERS, FENCES, SIGNS OR OTHER ADEQUATE PROTECTION, INCLUDING FLAG MEN AND WATCHMEN AS NECESSARY TO ENSURE THE SAFETY OF THE PUBLIC AS WELL AS THOSE ENGAGED IN THE CONSTRUCTION WORK. CONSTRUCTION SIGNAGE SHALL BE IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AS SUPPLEMENTED BY THE NCDOT SUPPLEMENT TO THE MUTCD.
- CONTRACTOR SHALL INSTALL SIGNS AS REQUIRED BY NCDOT ALONG STATE ROADWAYS AND THE TOWN OF BEAUFORT ALONG TOWN STREETS.
- CONTRACTOR SHALL MAKE EVERY EFFORT TO PRESERVE PROPERTY IRONS, MONUMENTS, OTHER PERMANENT POINTS AND LINES OF REFERENCE AND CONSTRUCTION STAKES. PROPERTY IRONS, MONUMENTS, AND OTHER PERMANENT POINTS OF REFERENCE DESTROYED BY CONTRACTOR SHALL BE REPLACED BY A PROFESSIONAL LAND SURVEYOR AT CONTRACTOR'S EXPENSE.
- EXISTING VEGETATION OUTSIDE OF THE CLEARING LIMITS SHALL BE PROTECTED FROM DAMAGE.
- UNLESS OTHERWISE INDICATED, EXISTING GRADE ELEVATIONS ARE SHOWN ALONG THE SEWER ALIGNMENT.
- PIPE LENGTHS AND DISTANCES BETWEEN STRUCTURES ARE MEASURED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE ALONG A HORIZONTAL PLANE.
- CONTRACTOR SHALL PROVIDE STAKEDOUT SURVEY. EXISTING STAKE OUT SHALL NOT BE USED BY CONTRACTOR.
- CONTRACTOR SHALL REPAIR ALL DISTURBED DRIVEWAYS, PAVED OR UNPAVED, TO EXISTING OR BETTER CONDITION. GRAVEL AND EARTHEN DRIVEWAYS SHALL BE REPAIRED WITH MINIMUM 6" COMPACTED ABC STONE OVER THE DISTURBED WIDTH.
- MATERIAL CLEARED AND GRUBBED BY CONTRACTOR IN ORDER TO CONSTRUCT THE WORK, SUCH AS TREES, VEGETATION, FENCING, ETC., SHALL BECOME THE PROPERTY OF CONTRACTOR AND SHALL BE PROPERLY DISPOSED OF OFF-SITE AT A STATE APPROVED DISPOSAL SITE. BURNING IS NOT ALLOWED.
- PAVEMENT CUTS SHALL BE SAW CUT ALONG A STRAIGHT CONTINUOUS EDGE.
- CONTRACTOR SHALL FURNISH AND INSTALL SHEETING REQUIRED FOR THE INSTALLATION OF THE UTILITY. EXCAVATIONS SHALL BE KEPT WITHIN THE DESIGNATED EASEMENT AND RIGHT-OF-WAY WIDTHS. EXCAVATION WITHIN PAVED AREAS SHALL BE KEPT TO A MINIMUM. SHEETING SHALL BE INSTALLED AS REQUIRED TO PROTECT EXISTING UTILITIES.
- MINIMUM PIPE COVER FOR SEWER IS 4 FEET UNLESS LESS COVER IS SPECIFICALLY APPROVED BY THE ENGINEER. SEWER WITH LESS THAN 3 FEET OF COVER SHALL BE CERAMIC LINED DIP. WHERE PIPE WILL HAVE LESS THAN 3 FEET OF COVER UNDER A STREAM CROSSING, PROVIDE DUCTILE IRON PIPE AND CONCRETE PIPE ENCASEMENT.
- IF TOWN OR STATE DOT ALLOWS EXCAVATED MATERIAL STORAGE ON PAVEMENT, A LAYER OF COARSE SAND, SCREENINGS OR ACCEPTABLE ALTERNATIVE SHALL BE PLACED ON THE PAVEMENT PRIOR TO DEPOSITION OF EXCAVATED MATERIAL.
- CONTRACTOR SHALL REMOVE AND REPLACE CONFLICTING MAIL BOXES, CULVERTS, HEADWALL, ORNAMENTAL STRUCTURES, ETC. WITHIN THE RIGHT-OF-WAY. CONFLICTING TREES WITHIN THE RIGHT-OF-WAY SHALL BE REMOVED BUT NOT REPLACED EXCEPT WHERE REPLACEMENT OF LANDSCAPING IS REQUIRED.
- CONTRACTOR SHALL REMOVE AND REINSTALL EXISTING FENCE AS REQUIRED FOR CONSTRUCTION. ADDITIONAL FENCE MATERIALS REQUIRED SHALL BE PROVIDED BY CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
- TRAFFIC ISLANDS, CURBS AND CONCRETE DRIVEWAYS SHALL BE REPLACED TO THE FIRST EXPANSION JOINT BEYOND THE TRENCH EXCAVATION LIMITS AND TO THE FULL WIDTH. TRAFFIC ISLANDS, CURBS, AND CONCRETE DRIVEWAYS SHALL MATCH EXISTING.
- REPLACEMENT STORM DRAIN RCP IN NCDOT RIGHT-OF-WAYS SHALL BE CLASS IV. REPLACEMENT STORM DRAIN RCP IN TOWN RIGHT-OF-WAYS SHALL BE IN ACCORDANCE WITH TOWN STANDARD SPECIFICATIONS. MINIMUM SIZE FOR REPLACEMENT OF DRIVEWAY PIPES SHALL BE 15".
- FINISHED GRADE SLOPES SHALL BE 3:1 OR FLATTER, UNLESS OTHERWISE SHOWN.
- PLACED RIP-RAP SHALL HAVE A MINIMUM DEPTH OF 1.5 TIMES THE MAXIMUM STONE DIAMETER AND SHALL HAVE A LAYER OF TYPE II GEOTEXTILE SEPARATOR PLACED BETWEEN THE SOIL AND STONE.
- GRAVITY SEWERS: DUCTILE IRON PIPE 12" DIAMETER AND LARGER SHALL BE LINED WITH PROTECTO 401.
- EMERGENCY VEHICLE ACCESS AND ACCESS TO FIRE HYDRANTS SHALL BE MAINTAINED AT ALL TIMES.
- ACCESS TO BUSINESSES AND RESIDENCES SHALL BE MAINTAINED AT ALL TIMES.
- ALL AREAS: CONTRACTOR SHALL CONFINE WORK HOURS FROM 7:00AM TO 6:00PM, MONDAY THROUGH FRIDAY, EXCLUDING TOWN HOLIDAYS.

PROJECT NOTES:

- CONTRACTOR SHALL COORDINATE OUTAGES WITH TOWN OF BEAUFORT AND ENGINEER.
- CONTRACTOR SHALL COORDINATE WITH THE TOWN OF BEAUFORT TO MINIMIZE INTERRUPTING SERVICE TO CUSTOMERS.
- USE RESTRAINT SYSTEM ON ALL BURIED FITTINGS AND VALVES.
- REPAIR ANY DISTURBED PAVEMENT TO MATCH EXISTING PAVEMENT TYPE UNLESS OTHERWISE NOTED.
- TRENCHES SHALL BE CLOSED DURING NON-WORK HOURS EXCEPT WHERE COVERING WITH STEEL PLATING IS SPECIFICALLY APPROVED BY THE ENGINEER.
- WHERE EXISTING UTILITIES CONFLICT WITH TRENCHES, CONTRACTOR SHALL SUPPORT AND PROTECT OR REMOVE AND RESTORE THOSE UTILITIES AS DIRECTED BY UTILITY OWNER.
- CLEAR EASEMENTS ONLY AS REQUIRED FOR THE WORK.

EROSION CONTROL NOTES:

- PROJECT IS LOCATED IN THE WHITE OAK RIVER BASIN.
- ALL EROSION CONTROL DEVICES SHALL CONFORM WITH THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.
- THE ESCAPE OF SEDIMENT FROM THE WATER LINE ALIGNMENT SHALL BE PREVENTED BY THE INSTALLATION OF EROSION CONTROL MEASURES AND PRACTICES PRIOR TO CONSTRUCTION.
- CONTRACTOR SHALL USE EROSION CONTROL DEVICES SHOWN AND ANY ADDITIONAL DEVICES NECESSARY TO CONTROL EROSION AND/OR OFFSITE SEDIMENTATION.
- ALL EROSION CONTROL DEVICES SHALL BE PROPERLY MAINTAINED DURING ALL PHASES OF CONSTRUCTION UNTIL THE COMPLETION OF ALL CONSTRUCTION ACTIVITIES AND ALL DISTURBED AREAS HAVE BEEN STABILIZED.
- ALL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSPECTED EVERY SEVEN DAYS OR WITHIN 24 HOURS OF EACH RAINFALL EVENT THAT EXCEEDS ONE-HALF INCH. DAMAGED OR INEFFECTIVE DEVICES SHALL BE REPAIRED OR REPLACED, AS NECESSARY.
- UPON STABILIZATION OF THE CONSTRUCTION CORRIDOR AND APPROVAL BY ENGINEER, CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF EROSION CONTROL DEVICES.
- CONTRACTOR SHALL SEED, FERTILIZE, AND MULCH (I.E. STABILIZE) ALL DISTURBED AREAS WITHIN 14 CALENDAR DAYS OF LAND DISTURBING ACTIVITIES EXCEPT AS FOLLOWS:
 - PERIMETER DIKES, SWALES, DITCHES, SLOPES AND HIGH QUALITY WATER (HQW) ZONES SHALL BE STABILIZED WITHIN 7 DAYS.
 - SLOPES STEEPER THAN 3:1 (HQW) SHALL BE STABILIZED WITHIN 7 DAYS UNLESS THEY ARE 10' OR LESS IN LENGTH AND NOT STEEPER THAN 2:1 IN WHICH CASE SHALL BE STABILIZED WITHIN 14 DAYS.
 - SLOPES BETWEEN 3:1 AND 4:1 AND GREATER THAN 50' IN LENGTH SHALL BE STABILIZED WITHIN 7 DAYS.
- CONTRACTOR SHALL PROVIDE A CONSTRUCTION ENTRANCE AND ADDITIONAL EROSION CONTROL DEVICES AS NEEDED FOR ANY MATERIAL LAY DOWN, STAGING AREA, EXCAVATED MATERIAL STORAGE OR ANY OTHER AREAS DISTURBED BY CONSTRUCTION FOR MORE THAN 7 CALENDAR DAYS.
 - DEMOLITION MATERIALS AND STOCKPILES SHALL BE NO CLOSER THAN 50' FROM STORM DRAINS AND STREAMS.
- CONCRETE MATERIALS SHALL BE CONTROLLED TO AVOID CONTACT WITH SURFACE WATERS, WETLANDS, OR BUFFERS.

WATER NOTES:

- CONTRACTOR SHALL USE RESTRAINT SYSTEM ON ALL FITTINGS AND VALVE AS SHOWN IN THE CONSTRUCTION DRAWINGS.
- PROVIDE AND MAINTAIN ACCESS TO FIRE HYDRANTS AND CONTROL VALVES FREE OF OBSTRUCTION.
- EXISTING WATERLINE SEGMENTS TO BE REMOVED AND REPLACED SHALL BE PHYSICALLY SEPARATED FROM THE ACTIVE PIPE, DRAINED, REMOVED, AND DISPOSED OF.
- FIRE HYDRANTS SPECIFIED FOR ABANDONMENT SHALL BE REMOVED, SALVAGED, AND RETURNED TO THE TOWN OF BEAUFORT'S PUBLIC UTILITIES DEPARTMENT.

SEWER NOTES:

- A SEWER BYPASS OPERATION PLAN MUST BE SUBMITTED TO THE TOWN OF BEAUFORT AND ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION. BYPASS PIPING SHALL NOT PROHIBIT ACCESS TO PROPERTIES.
- COORDINATE TEMPORARY BYPASS PUMPING WITH OWNER AND RPR. PROVIDE 48 HOURS NOTICE PRIOR TO SYSTEM TESTING.
- ANTICIPATE SEVERE WEATHER CONDITIONS AND INCREASES IN PEAK FLOWS DURING RAIN EVENTS WHEN DESIGNING BYPASS PUMPING.






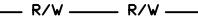
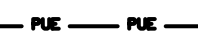

REQUIREMENTS WITHIN NCDOT R/W:

- ANY PERSONNEL OR EQUIPMENT WORKING WITHIN 5 FEET OF A TRAVEL LANE SHALL REQUIRE A FULL LANE CLOSURE. NO LANE OF TRAFFIC SHALL BE CLOSED OR RESTRICTED BETWEEN THE HOURS OF 6:00 AM TO 9:00 AM AND FROM 4:00 PM TO 7:00 PM, MONDAY THROUGH FRIDAY, DURING ANY TIME OF INCLEMENT WEATHER, OR UPON DISTRICT ENGINEERS' DIRECTIVE. TRAFFIC SHALL BE MAINTAINED AT ALL TIMES.
- SIDEWALK CLOSURES SHALL BE INSTALLED AS NECESSARY. PEDESTRIAN TRAFFIC SHALL BE DETOURED AROUND THESE CLOSURES AND SHALL BE SIGNED APPROPRIATELY AND IN ACCORDANCE WITH THE AMERICAN DISABILITIES ACT ACCESSIBILITY GUIDELINES.
- TWO-WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES.
- ALL EXCAVATIONS INSIDE THE THEORETICAL 1:1 SLOPE FROM THE EXISTING EDGE OF PAVEMENT TO THE BOTTOM OF THE NEAREST EXCAVATION WALL SHOULD BE MADE IN ACCORDANCE WITH THE FOLLOWING CONDITIONS. TRAFFIC SHOULD BE MOVED TO A TRAVEL LANE OUTSIDE THE LIMITS OF A THEORETICAL ONE-TO-ONE SLOP FROM THE BOTTOM OF THE NEAREST TRENCH WALL TO THE PAVEMENT SURFACE. ACTIVE EXCAVATION SHORING, SUCH AS SHEET PILING, SHALL BE INSTALLED. THE DESIGN OF THE SHORING SHALL INCLUDE THE EFFECTS OF TRAFFIC LOADS. THE SHORING SYSTEM SHALL BE DESIGNED AND SEALED BY AN ENGINEER REGISTERED IN NORTH CAROLINA. TRENCH BOXES SHALL NOT BE ACCEPTED AS SHORING. THE TRENCH BACKFILL MATERIAL SHOULD MEET THE STATEWIDE BORROW CRITERIA.

NOTE:

EXISTING SURVEY DATA PROVIDED BY TRANSYSTEMS FOR ENGINEERING PURPOSES ONLY, NOT FOR RECORDATION. ELEVATIONS SHOWN ARE BASED ON NAVD88. HORIZONTAL DATUM IN NAD83.

LEGEND

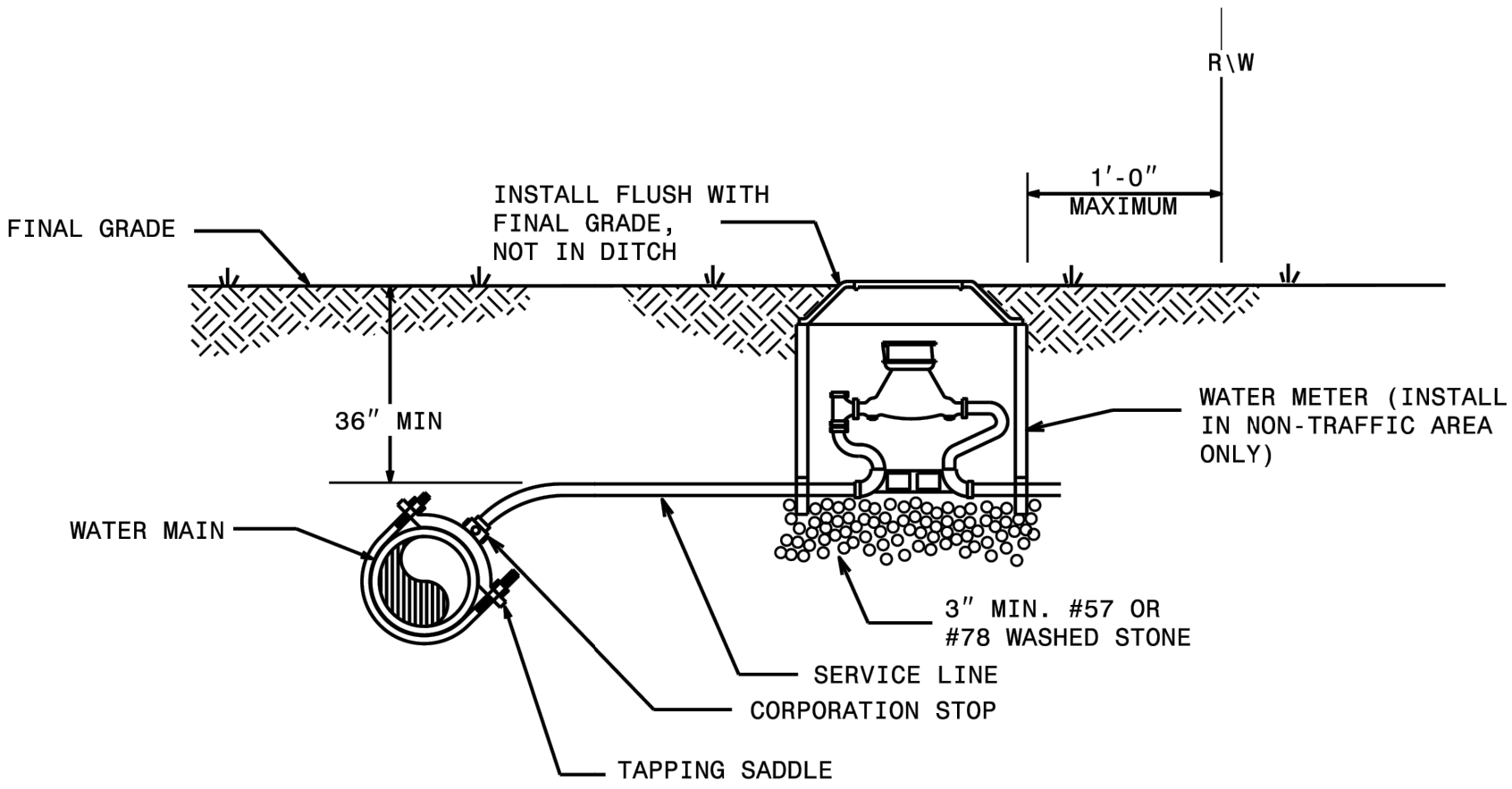
SYMBOL (NEW)	DESCRIPTION
	SEWER CLEAN-OUT
	FIRE HYDRANT ASSEMBLY
	GATE VALVE
	WATER LINE
	SEWER LINE
	PERMANENT R/W
	PERMANENT EASEMENT
	WATER METER



PROJECT REFERENCE NO.	SHEET NO.
U-6058	UC-3
DESIGNED BY: GDF	4/11/2025
DRAWN BY: AGF	NORTH CAROLINA PROFESSIONAL SEAL 051959
CHECKED BY: JCF	DocuSigned by: Gary D. Fields, Jr.
APPROVED BY: -	SEAL NOT VALID UNLESS SIGNED AND DATED
REVISED:	UTILITY CONSTRUCTION PLANS ONLY
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919)707-6690 FAX: (919)250-4151	

UTILITY CONSTRUCTION

100% DESIGN - APRIL 2025
DOCUMENT NOT CONSIDERED FINAL UNTIL ALL SIGNATURES ARE COMPLETED

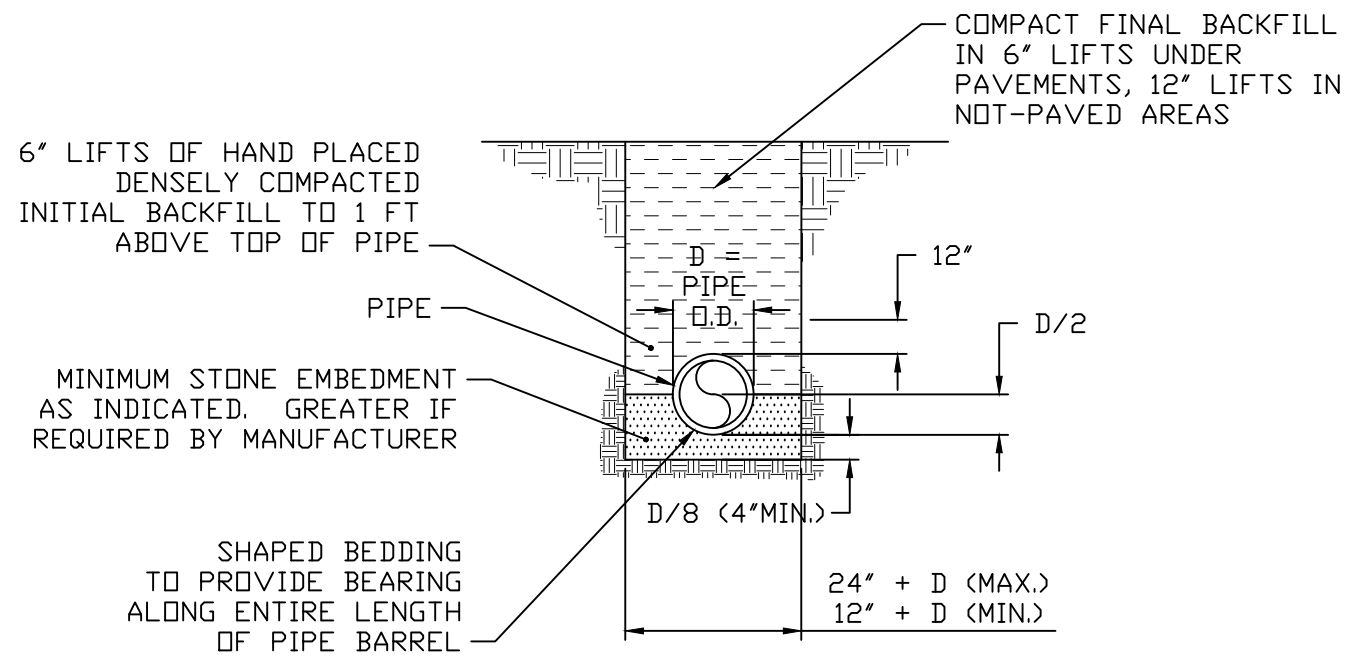


NOTES:

- THIS DETAIL SHOWS THE TYPICAL FINAL WATER METER CONFIGURATION AFTER INSTALLATION OF A PROPOSED WATER METER, RECONNECTION OF AN EXISTING WATER METER, OR RELOCATION OF A WATER METER.

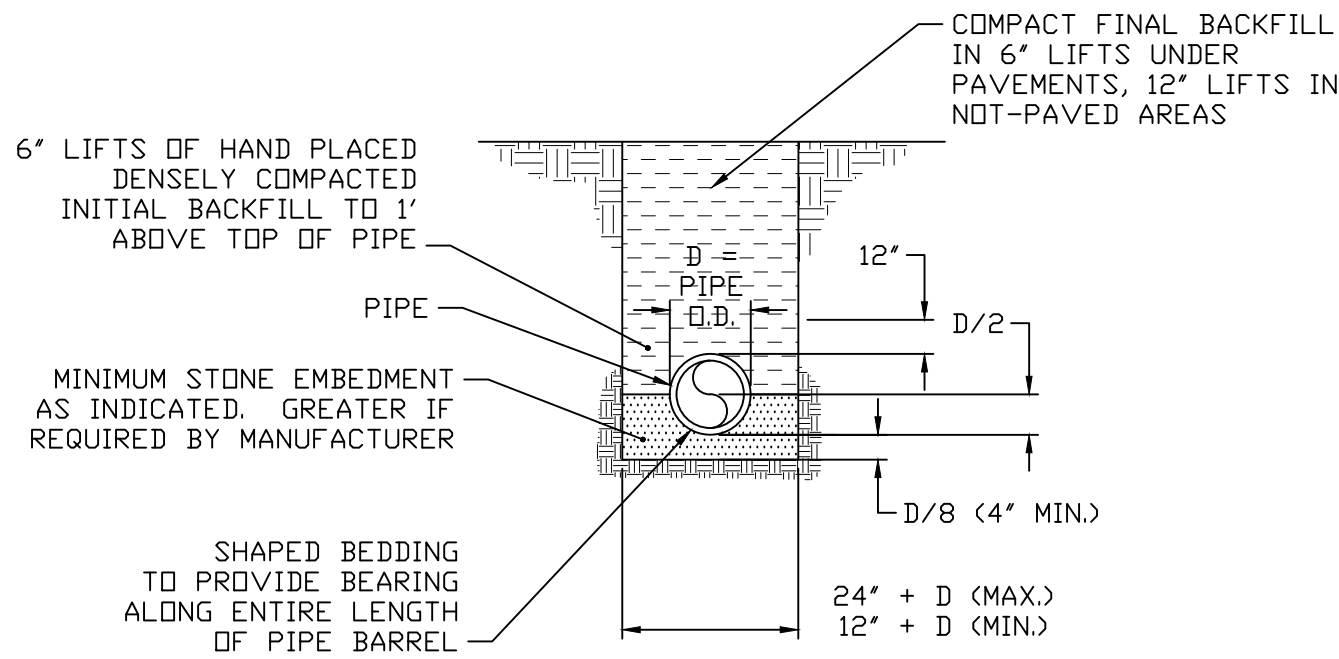
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
HALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
WATER METER



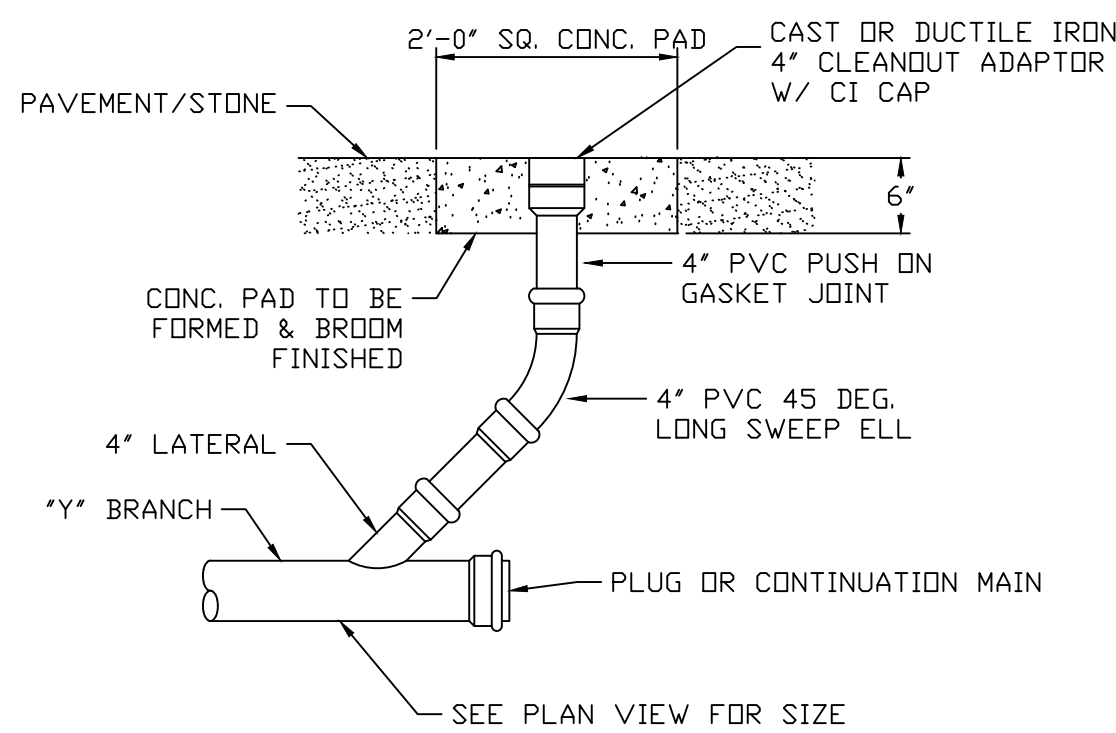
- NOTES:
1. BEDDING SHALL BE # 67 STONE.
 2. BACKFILL SHALL BE FREE OF ROCK LARGER THAN 2" IN ANY DIRECTION (NO ROCK LARGER THAN 3" WITHIN 12" OF PIPE) AND FREE OF DEBRIS AND ORGANIC MATTER. COMPACT TO 95% MAXIMUM DRY DENSITY.
 3. BEDDING DETAIL SHOWN APPLIES TO PIPE INVERT DEPTHS OF 14' OR LESS.
 4. UNLESS NOTED OTHERWISE, FOR PVC GRAVITY PIPE INSTALLED 14' - 20' DEEP, EXTEND EMBEDMENT STONE TO 6" ABOVE PIPE CROWN.
 5. WHEN ROCK IS ENCOUNTERED, INCREASE BEDDING DEPTH UNDER PIPE TO 6".

31-20 PVC GRAVITY PIPE BEDDING		
HIEPC DETAIL I.D.	DETAIL TITLE	
	11/1/2016	NO SCALE
	REVISED DATE	SCALE

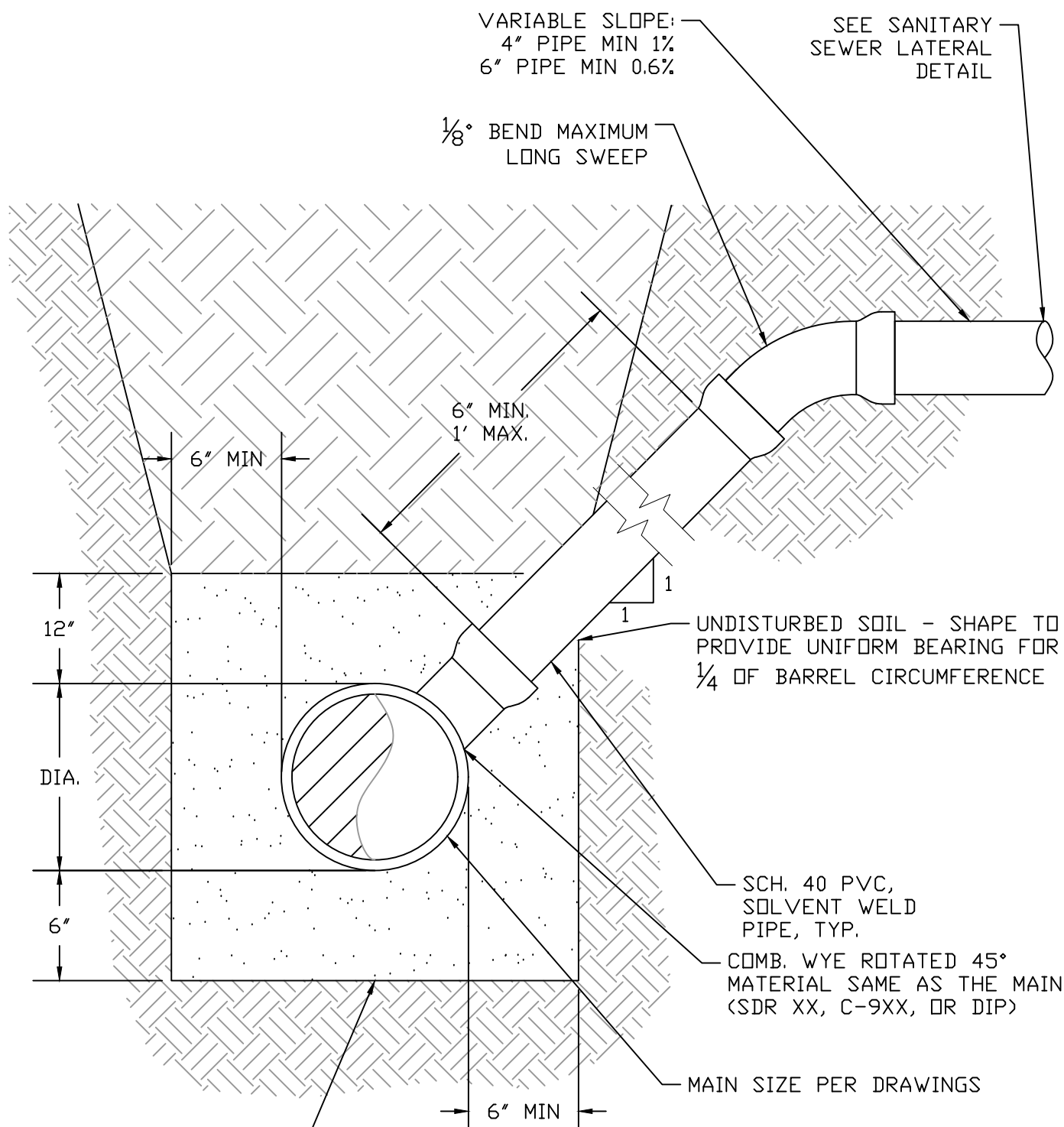


- NOTES:
1. BEDDING SHALL BE # 67 STONE.
 2. BACKFILL SHALL BE FREE OF ROCK LARGER THAN 2" IN ANY DIRECTION (NO ROCK LARGER THAN 3" WITHIN 12" OF PIPE) AND FREE OF DEBRIS AND ORGANIC MATTER. COMPACT TO 95% MAXIMUM DRY DENSITY.
 3. WHEN ROCK IS ENCOUNTERED, INCREASE BEDDING DEPTH UNDER PIPE TO 6".

31-21 PVC PRESSURE PIPE BEDDING		
HIEPC DETAIL I.D.	DETAIL TITLE	
	11/1/2016	NO SCALE
	REVISED DATE	SCALE



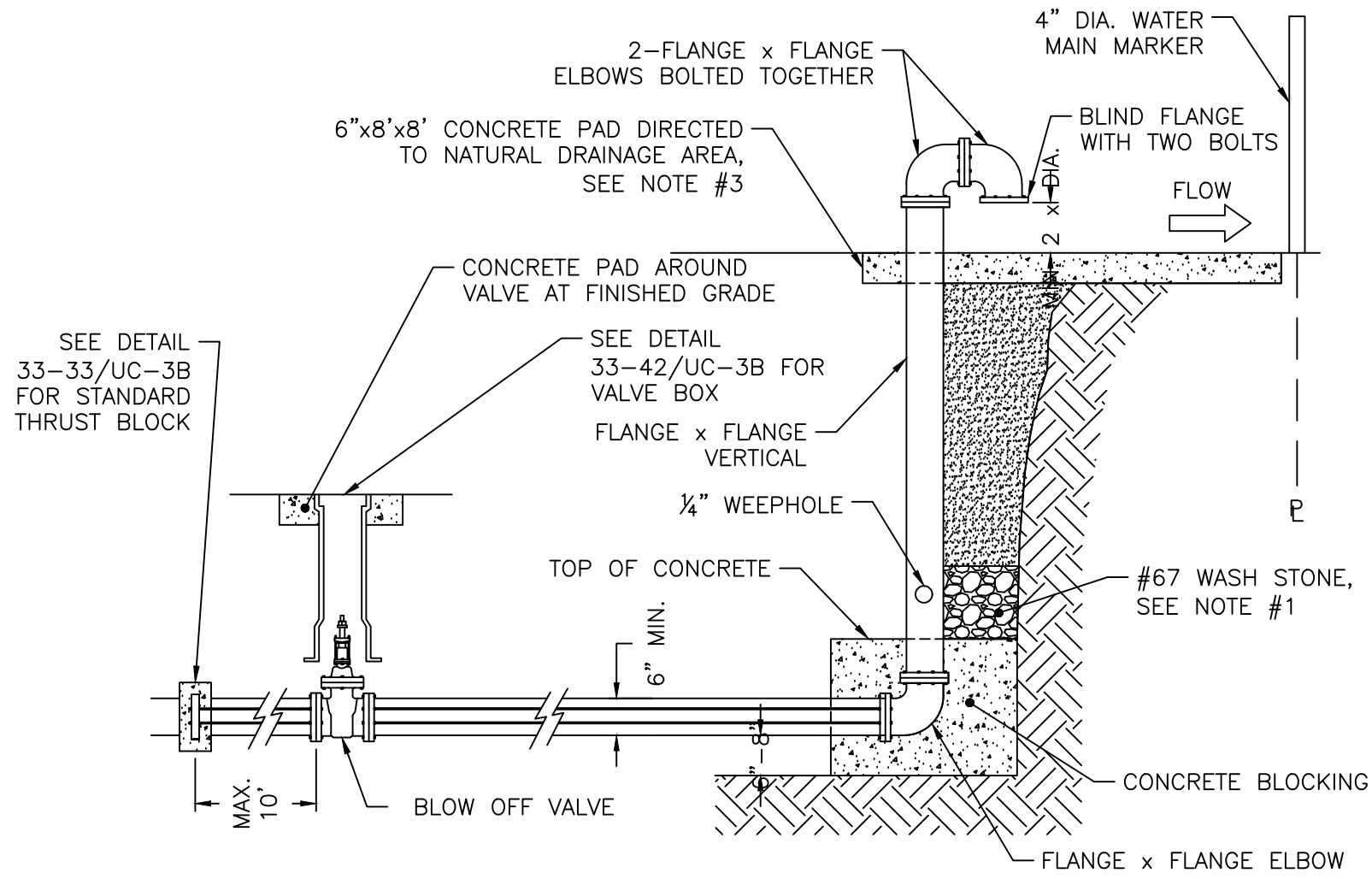
33-02 EXTERIOR CLEANOUT IN TRAFFIC AREA		
HIEPC DETAIL I.D.	DETAIL TITLE	
	11/1/2016	NO SCALE
	REVISED DATE	SCALE



- NOTE: 1. SERVICE LATERAL'S SHALL BE 4" OR 6" AS INDICATED ON THE DRAWINGS.
2. FOR MAIN DEPTH LESS THAN 8 FEET TO SEWER INVERT.

33-03 STANDARD SANITARY SEWER LATERAL CONNECTION		
HIEPC DETAIL I.D.	DETAIL TITLE	
	5/16/2018	NO SCALE
	REVISED DATE	SCALE

MAIN SIZE	END PIPE SIZE
6"-12"	6" MIN.
≥16"	APPROVED BY OWNER & ENGINEER



- NOTES:
1. DRILL 1/2" WEEP HOLE FOR STACK DRAINAGE INTO STONE.
 2. DOUBLE 3/4" BRIDLE RODS ON BOTH SIDES.
 3. A RIP-RAP SWALE FROM CONCRETE SPLASH PAD TO POSITIVE DRAINAGE AREA IS REQUIRED.
 4. BOTTOM 90° ELBOW SHALL HAVE BLIND FLANGE ATTACHED WITH TWO BOLTS.
 5. INSTALL WATER MAIN MARKER AT R/W OR P/L TO LOCATE MAIN.
 6. BURIED 3/4" RODS AND BOLTS TO BE 316 STAINLESS STEEL.
- END PIPE SIZE 6" MIN. OR AS APPROVED BY OWNER AND ENGINEER.

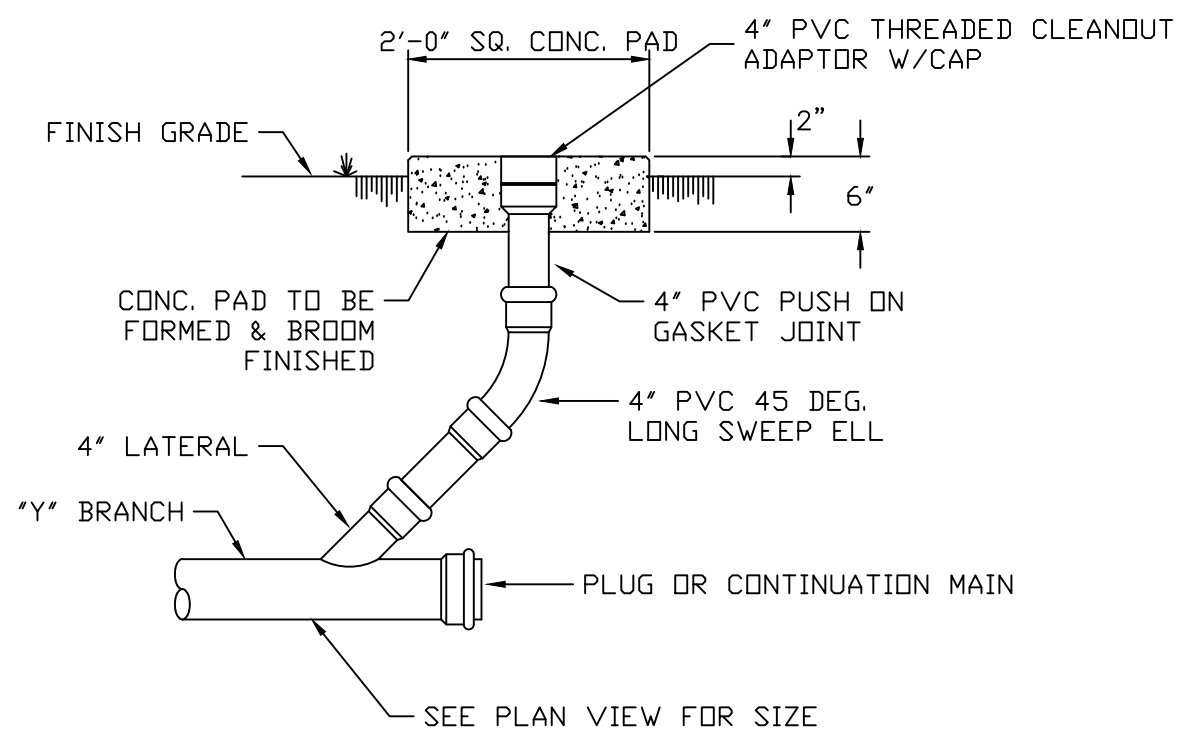
1 DETAIL - PERMANENT WATER MAIN BLOW OFF ASSEMBLY NTS



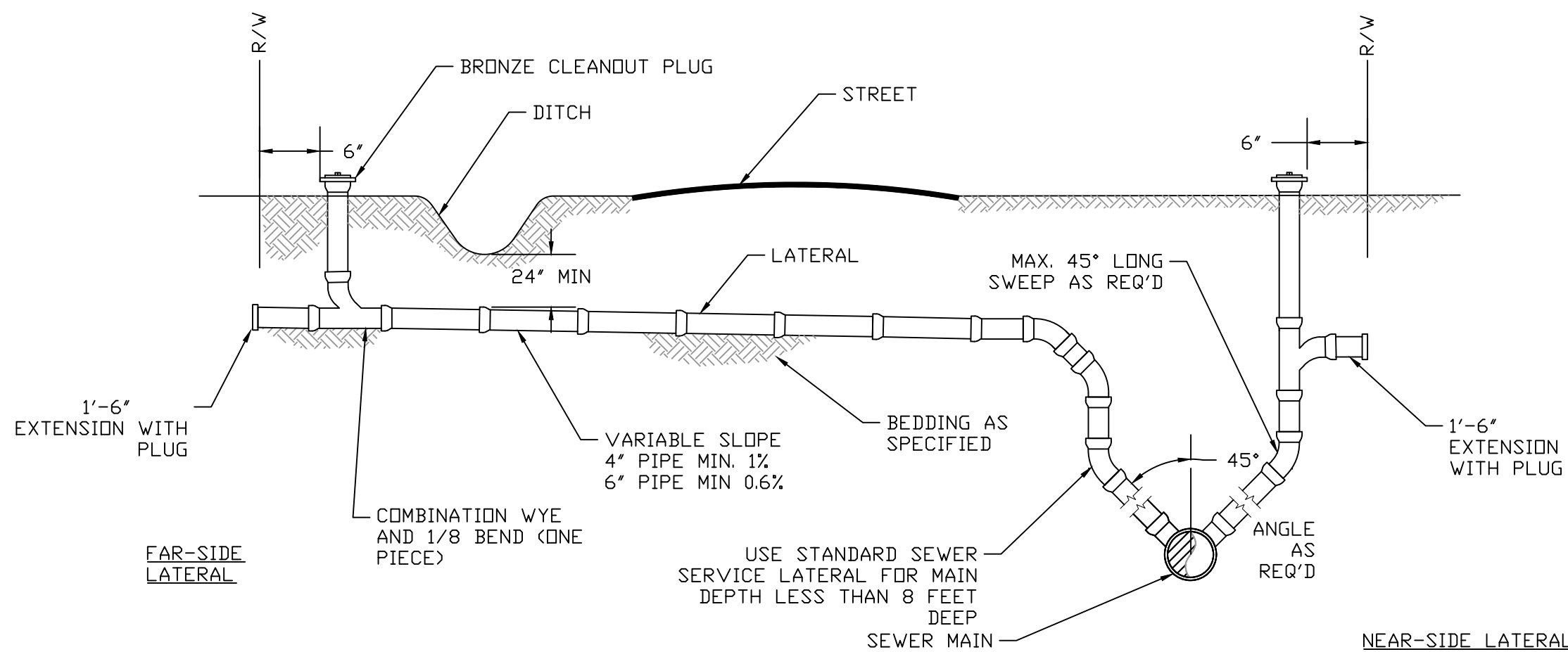
PROJECT REFERENCE NO.		SHEET NO.	
U-6058		UC-3A	
DESIGNED BY:	GDF	4/11/2025	
DRAWN BY:	AGF		
CHECKED BY:	JCF		
APPROVED BY:	-		
REVISED:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		SEAL 051959	
UTILITIES ENGINEERING SEC.		SEAL NOT VALID UNLESS SIGNED AND DATED	
PHONE: (919) 707-6690		UTILITY CONSTRUCTION PLANS ONLY	
FAX: (919) 250-4151			

UTILITY CONSTRUCTION

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DOCUMENT NOT CONSIDERED FINAL
UNTIL ALL SIGNATURES ARE COMPLETED



2 DETAIL - EXTERIOR CLEANOUT IN GRASSED AREA NTS

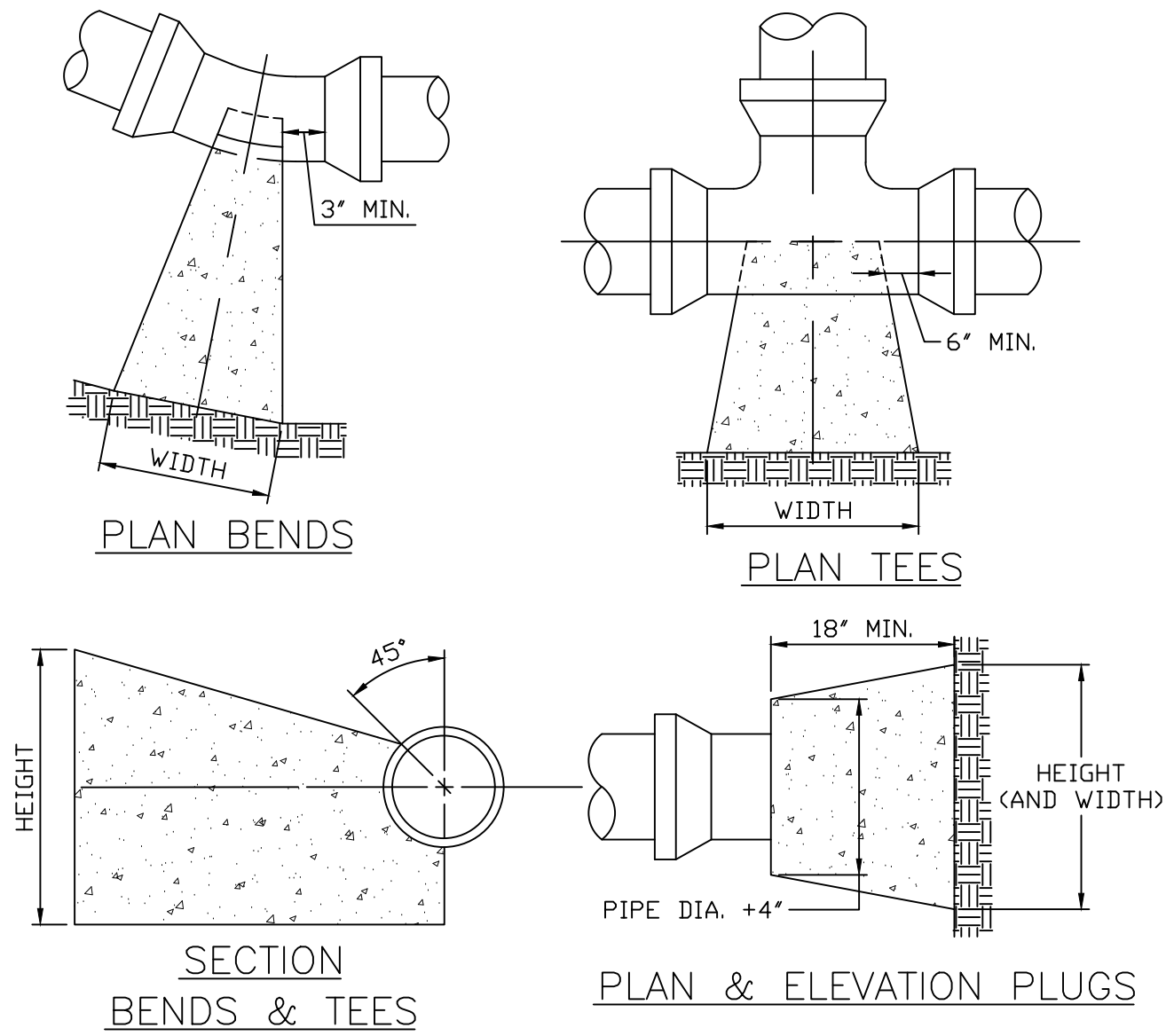


- NOTES:
1. THE FULL LENGTH OF THE SERVICE DITCH SHALL BE COMPACTED IN 6" LIFTS WITH MECHANICAL TAMP. FOR PVC INSTALLATIONS, WYE AND BEND MUST BE BEDDED IN #57 STONE.
 2. INSTALLATIONS BY UTILITY CONTRACTORS BEYOND THE PROPERTY OR EASEMENT LINE REQUIRE A PLUMBING UTILITY PERMIT AND ARE INSPECTED BY THE PLUMBING INSPECTOR. DO NOT BACKFILL PRIOR TO INSPECTION.

33-06 SANITARY SEWER LATERAL		
HIEPC DETAIL I.D.	DETAIL TITLE	
	5/16/2018	NO SCALE
	REVISED DATE	SCALE

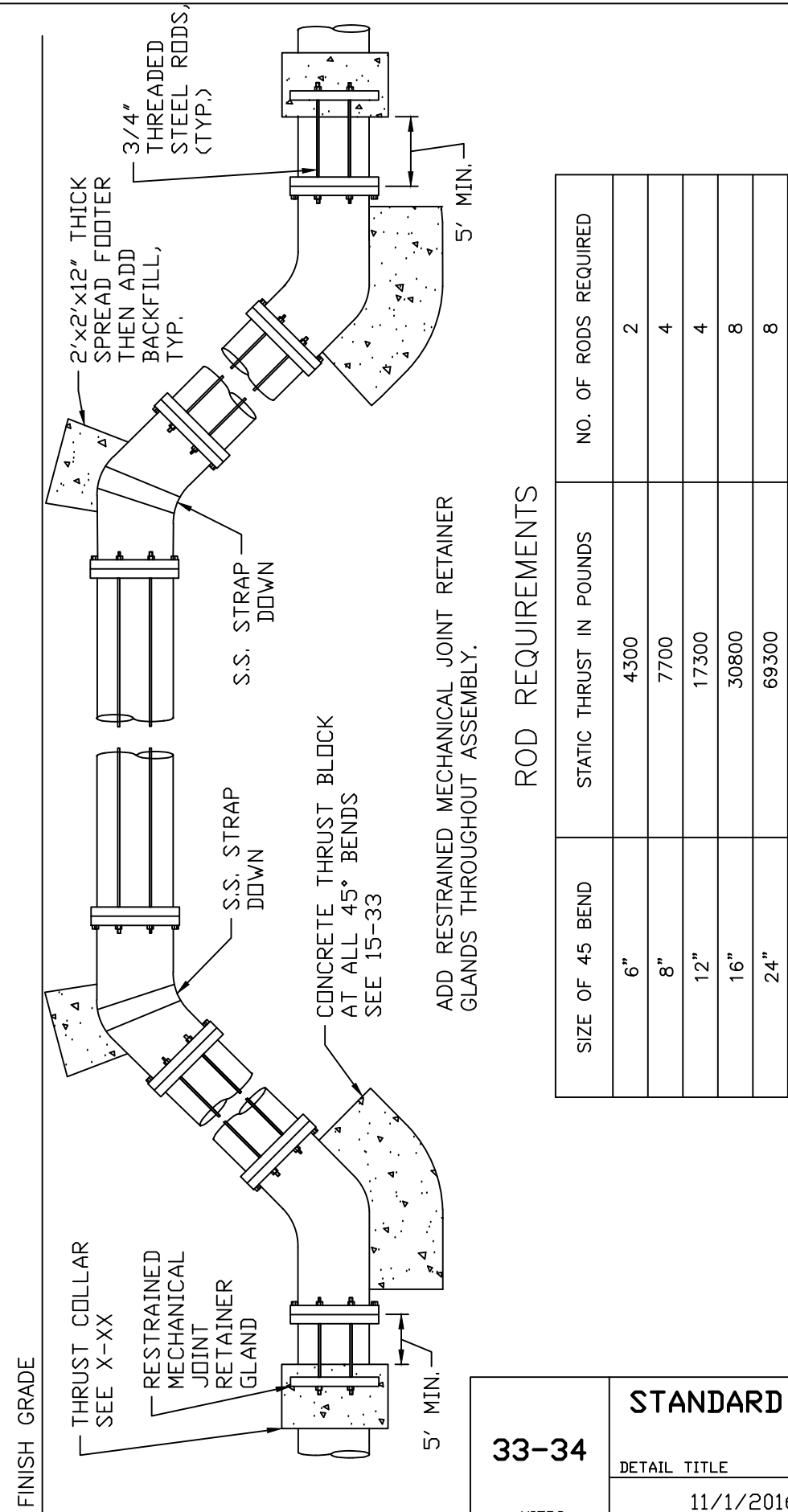
REACTION BEARING AREAS FOR HORIZONTAL PIPE BENDS							
DIA. (IN)	FITTING	REACTION AREA (SF)					
		1000 #/SF	1600 #/SF	2000 #/SF	4000 #/SF	8000 #/SF	10000 #/SF
6	11.25	2	1	1	1	1	1
	22.5	3	2	2	1	1	1
	45	5	4	3	2	1	1
	90	9	6	5	3	2	1
	PLUG/TEE	7	4	4	2	1	1
8	11.25	3	2	2	1	1	1
	22.5	5	3	3	2	1	1
	45	9	6	5	3	2	1
	90	16	10	8	4	2	2
	PLUG/TEE	12	8	6	3	2	2
12	11.25	5	4	3	2	1	1
	22.5	10	7	5	3	2	1
	45	20	13	10	5	3	2
	90	36	23	18	9	5	4
	PLUG/TEE	26	16	13	7	4	3
16	11.25	9	6	5	3	2	1
	22.5	18	12	9	5	3	2
	45	35	22	18	9	5	4
	90	64	40	32	16	8	7
	PLUG/TEE	46	29	23	12	6	5
24	11.25	20	13	10	5	3	2
	22.5	40	25	20	10	5	4
	45	78	49	39	20	10	8
	90	144	90	72	36	18	15
	PLUG/TEE	102	64	51	26	13	11
30	11.25	32	20	16	8	4	4
	22.5	63	39	32	16	8	7
	45	122	77	61	31	16	13
	90	225	141	113	57	29	23
	PLUG/TEE	160	100	80	40	20	16
36	11.25	45	29	23	12	6	5
	22.5	90	56	45	23	12	9
	45	176	110	88	44	22	18
	90	324	203	162	81	41	33
	PLUG/TEE	230	144	115	58	29	23

G:\Projects\z_Design Info\Restaint\Thrust Block Calculator.xls

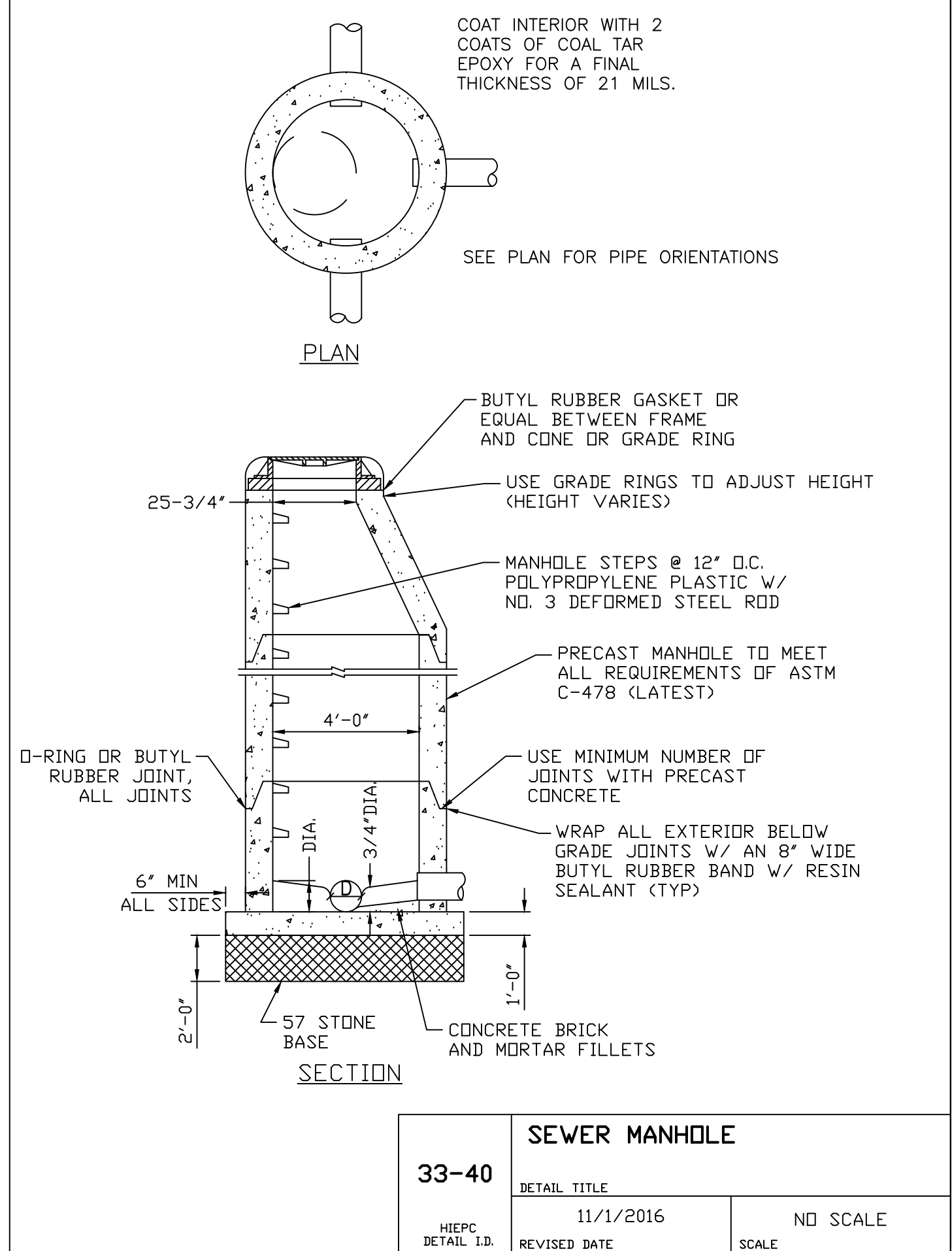


- NOTES:
- REACTION BEARING AREAS ARE IN SQUARE FEET MEASURED IN A VERTICAL PLANE IN THE TRENCH SIDE AT AN ANGLE OF 90° TO THE THRUST VECTOR.
 - REACTION AREA CALCULATED BASED ON 150 PSI TEST PRESSURE AND 1.5 SAFETY FACTOR.
 - GENERAL SOIL PROPERTIES: QUICKSAND = 1,000 #/SF; GRAVEL/CODARSE SAND = 1,600 #/SF; SDFT CLAY = 2,000 #/SF; MODERATELY DRY CLAY, SAND-CLEAN DRY = 4,000 #/SF; DRY CLAY, SAND-COMPACT FIRM = 8,000 #/SF; ROCK = 10,000 #/SF.
 - USE 6° - 90° BEND VALUE FOR HYDRANTS.
 - WIDTH OF BLOCK SHOULD BE BETWEEN 1X AND 2X BLOCK HEIGHT.
 - CONSULT ENGINEER FOR FITTING OR SIZES NOT SHOWN.
 - CONCRETE SHALL BE 3000 PSI.
 - CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL JOINT FITTINGS.
 - ALL FITTINGS SHALL HAVE CONCRETE THRUST BLOCKING UNLESS NOTED OTHERWISE.

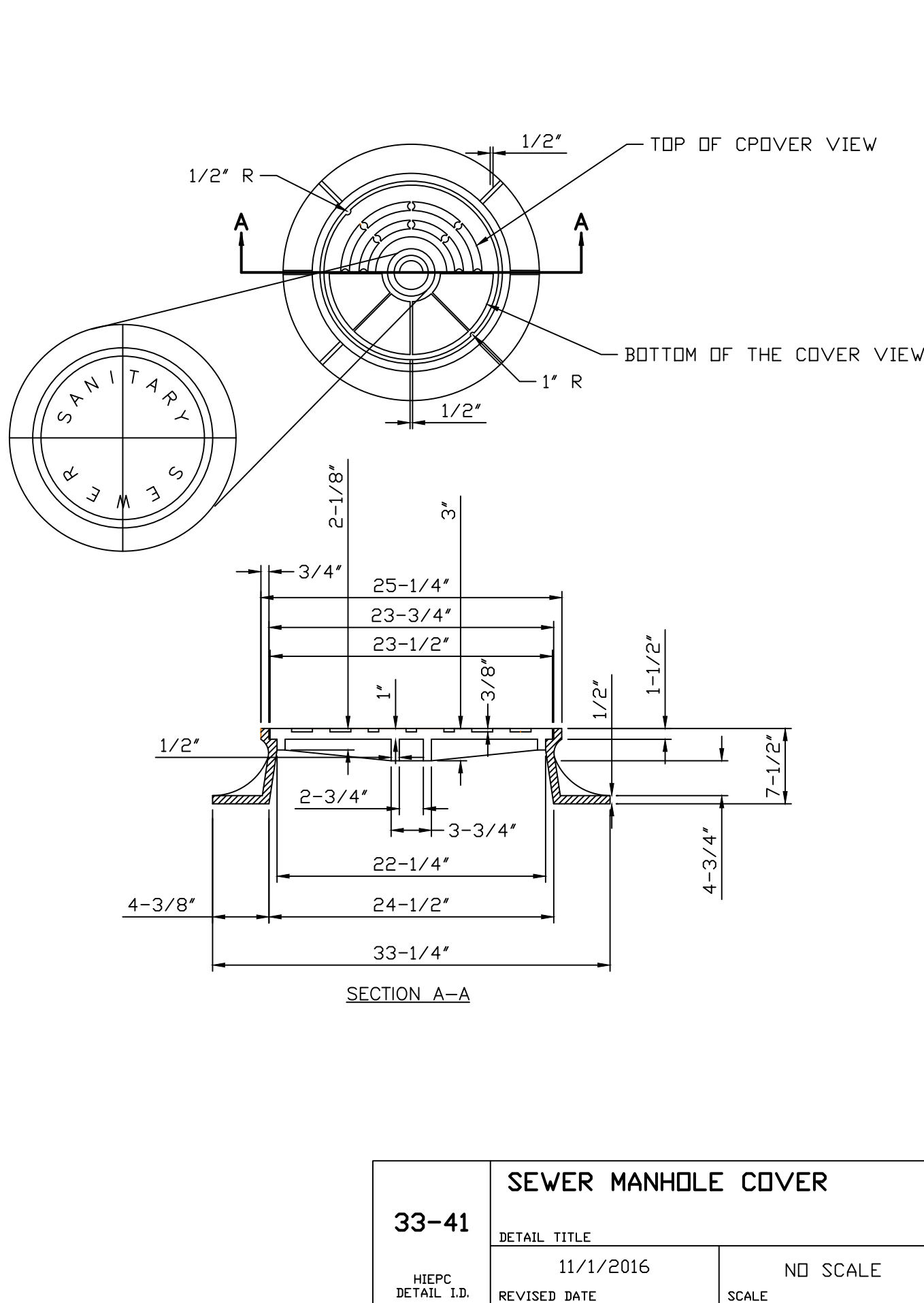
33-33	STANDARD THRUST BLOCKING	
DETAIL TITLE	11/1/2016	NO SCALE
HIIPC DETAIL I.D.	REVISED DATE	SCALE



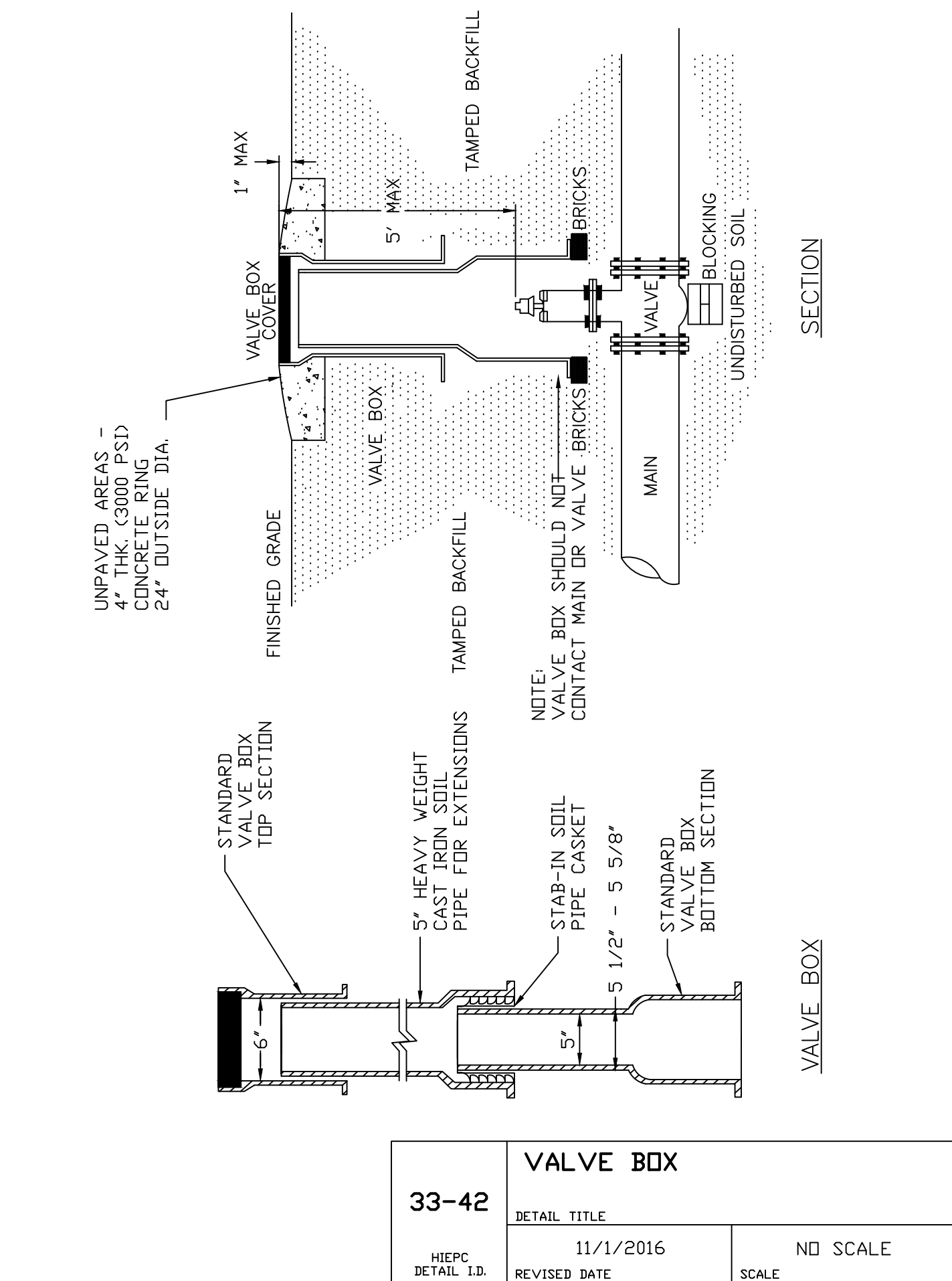
33-34	STANDARD VERTICAL BEND	
DETAIL TITLE	11/1/2016	NO SCALE
HIIPC DETAIL I.D.	REVISED DATE	SCALE



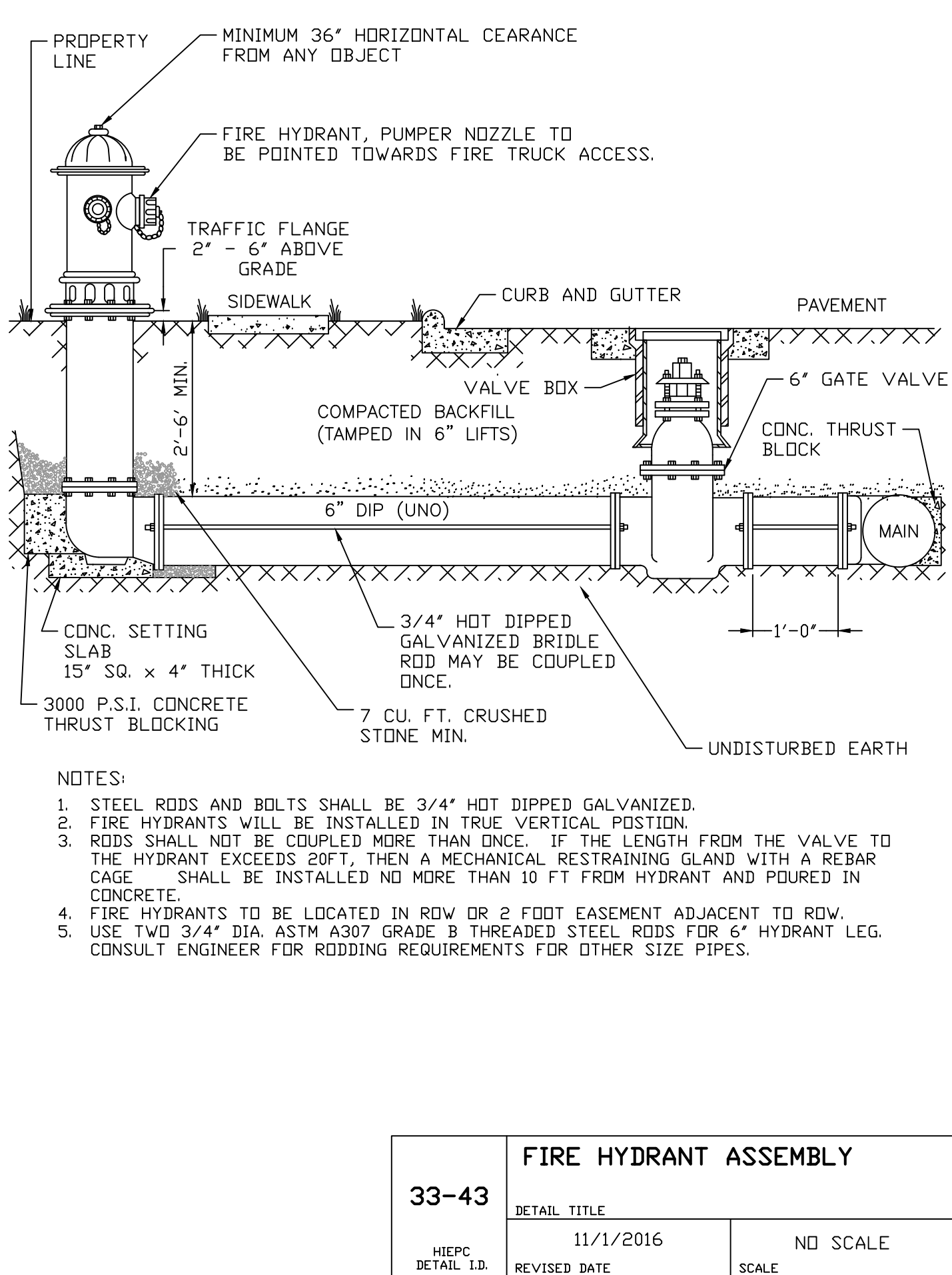
33-40	SEWER MANHOLE	
DETAIL TITLE	11/1/2016	NO SCALE
HIIPC DETAIL I.D.	REVISED DATE	SCALE



33-41	SEWER MANHOLE COVER	
DETAIL TITLE	11/1/2016	NO SCALE
HIIPC DETAIL I.D.	REVISED DATE	SCALE



33-42	VALVE BOX	
DETAIL TITLE	11/1/2016	NO SCALE
HIIPC DETAIL I.D.	REVISED DATE	SCALE



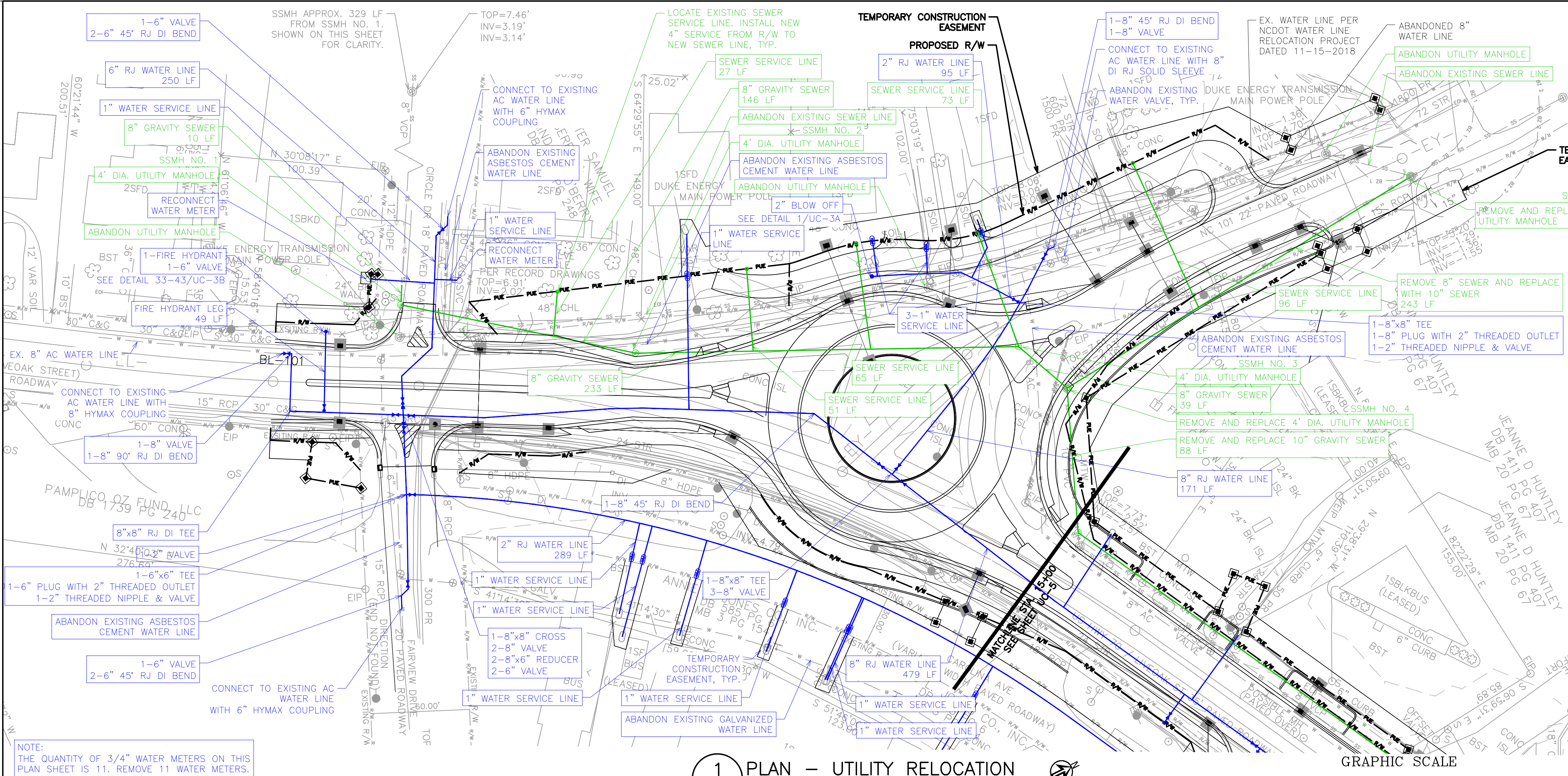
33-43	FIRE HYDRANT ASSEMBLY	
DETAIL TITLE	11/1/2016	NO SCALE
HIIPC DETAIL I.D.	REVISED DATE	SCALE



PROJECT REFERENCE NO.	SHEET NO.
U-6058	UC-3B
DESIGNED BY: GDF	4/11/2025
DRAWN BY: AGF	NORTH CAROLINA PROFESSIONAL
CHECKED BY: JCF	SEAL 051959
APPROVED BY: -	DocuSigned by: Open Engineer
REVISED:	SEAL NOT VALID UNLESS SIGNED AND DATED
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	UTILITY CONSTRUCTION PLANS ONLY
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

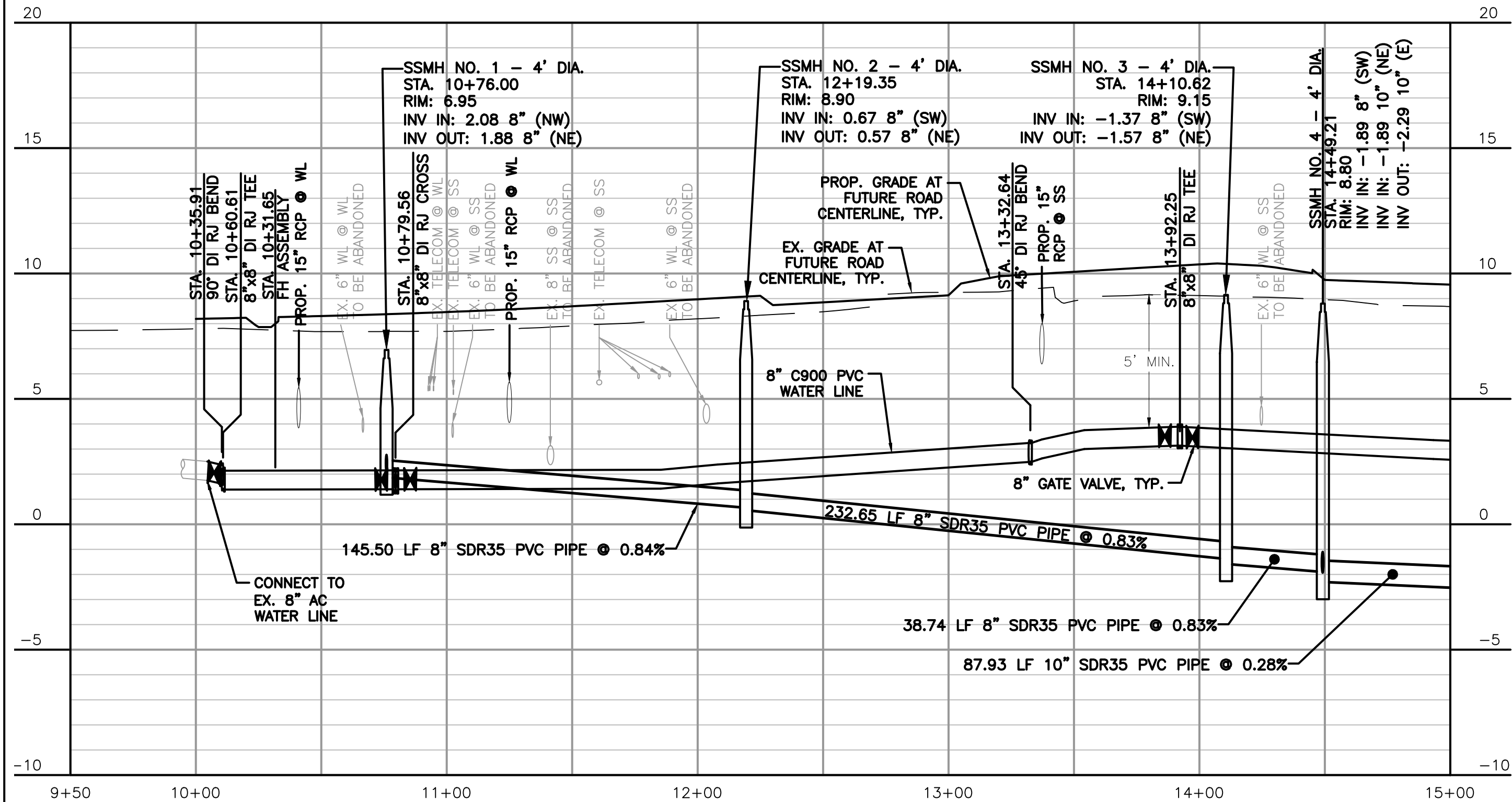
UTILITY CONSTRUCTION

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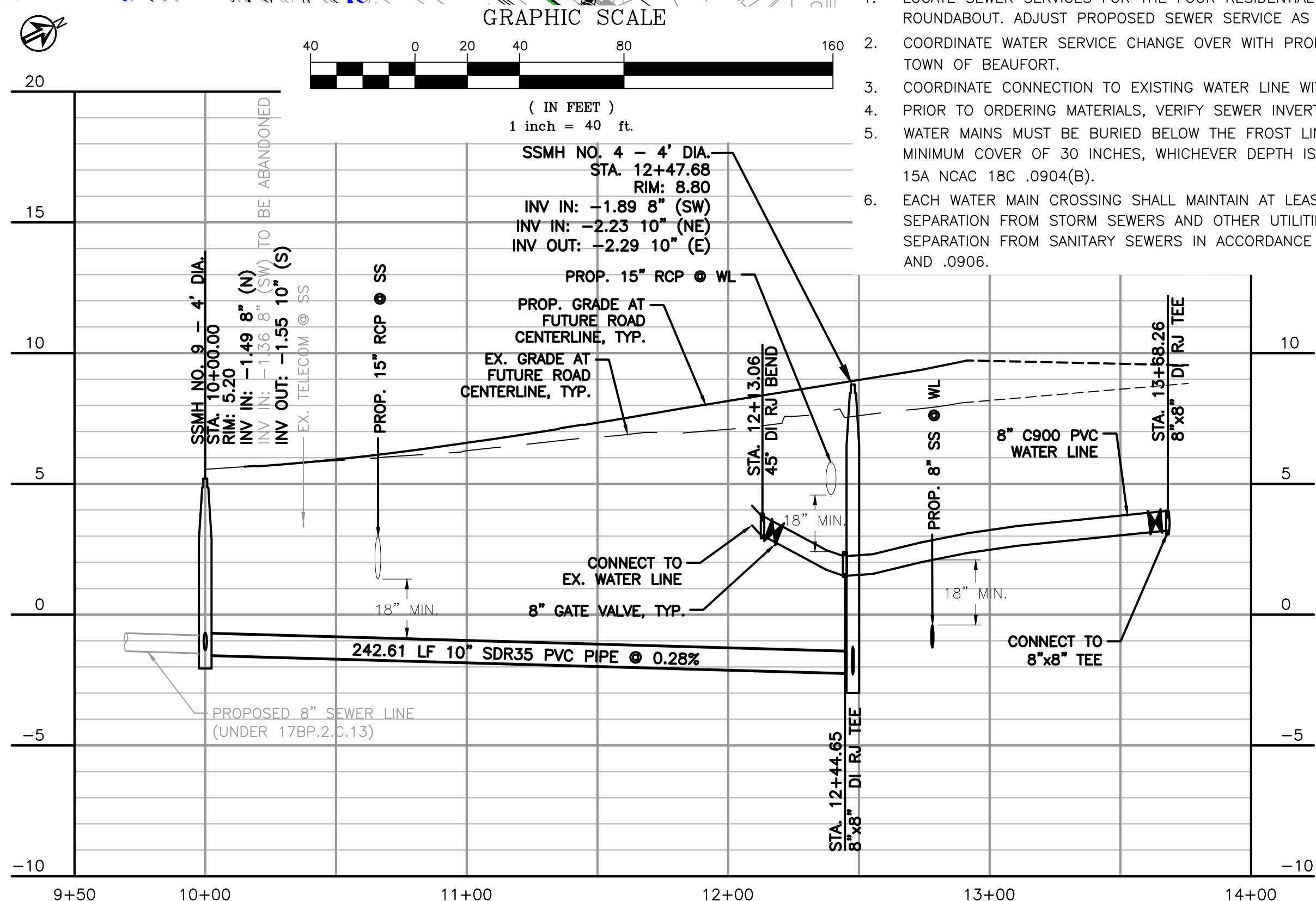
1 PLAN - UTILITY RELOCATION

SCALE: 1" = 40'



2 L-LINE: LIVE OAK STREET UTILITIES PROFILE

SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'



3 Y-LINE: HIGHWAY 101 UTILITIES PROFILE

SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'



PROJECT REFERENCE NO.	SHEET NO.
U-6058	UC-4
DESIGNED BY: GDF	4/11/2025
DRAWN BY: AGF	NORTH CAROLINA PROFESSIONAL SEAL 051959
CHECKED BY: JCF	SEAL NOT VALID UNLESS SIGNED AND DATED
APPROVED BY: -	UTILITY CONSTRUCTION PLANS ONLY
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC.	
PHONE: (919)707-6690	
FAX: (919)250-4151	

UTILITY CONSTRUCTION

100% DESIGN - APRIL 2025
DOCUMENT NOT CONSIDERED FINAL
UNTIL ALL SIGNATURES ARE COMPLETED

WATERLINE SEQUENCING:

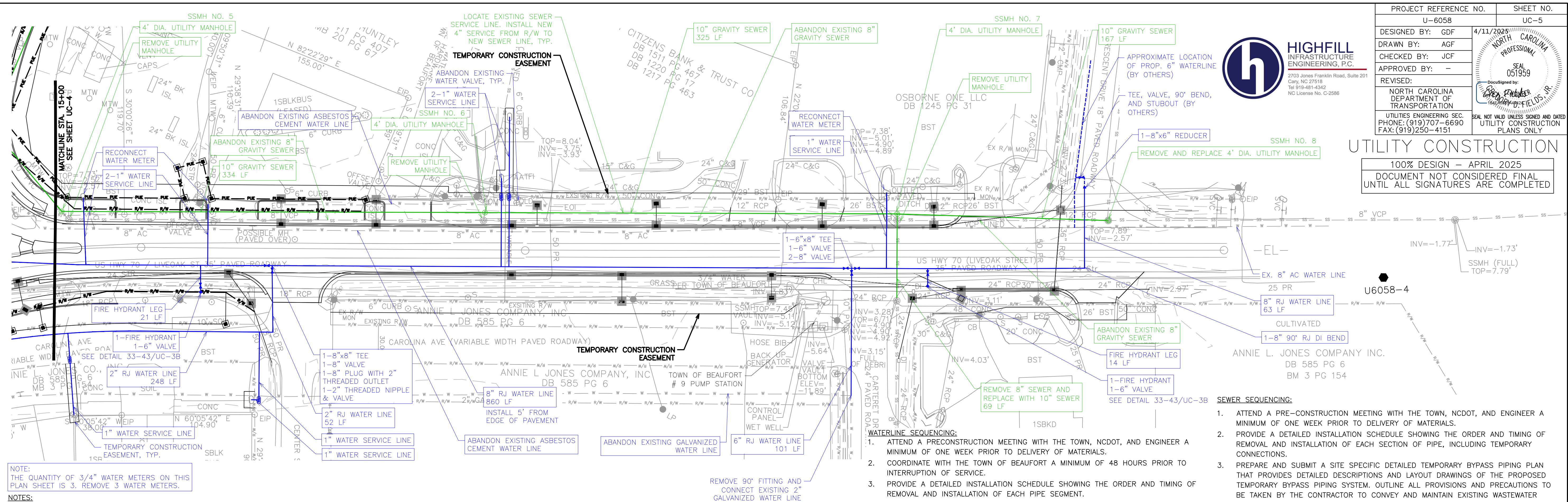
- ATTEND A PRECONSTRUCTION MEETING WITH THE TOWN, NCDOT, AND ENGINEER A MINIMUM OF ONE WEEK PRIOR TO DELIVERY OF MATERIALS.
- COORDINATE WITH THE TOWN OF BEAUFORT A MINIMUM OF 48 HOURS PRIOR TO INTERRUPTION OF SERVICE.
- PROVIDE A DETAILED INSTALLATION SCHEDULE SHOWING THE ORDER AND TIMING OF REMOVAL AND INSTALLATION OF EACH PIPE SEGMENT.
- ESTABLISH TRAFFIC CONTROL IN ACCORDANCE WITH MUTCD, NCDOT, AND TOWN OF BEAUFORT REQUIREMENTS.
- CONSTRUCT WATERLINE, FITTINGS, VALVES, AND RESTRAINTS IN ACCORDANCE WITH THE CONSTRUCTION PLANS.
- CLOSE VALVES EITHER END OF ACTIVE PIPE SEGMENTS TO BE REMOVED AND REPLACED. DRAIN WATER FROM PIPE SEGMENTS.
- INSTALL, TEST, AND DISINFECT NEW WORK PRIOR TO PLACING IN SERVICE.
- CONNECT PROPOSED WATERLINE TO ACTIVE WATERLINE. REMOVE AND DISPOSE OF WATERLINE, FITTINGS, AND VALVES BEING REPLACED. CAP INACTIVE BRANCHES OF TEES.

SEWER SEQUENCING:

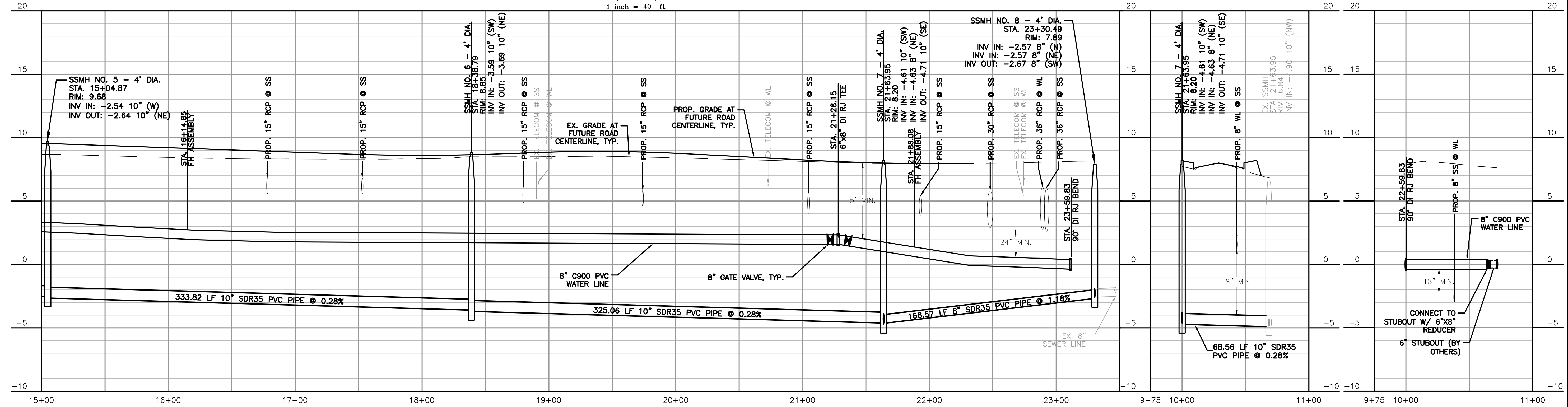
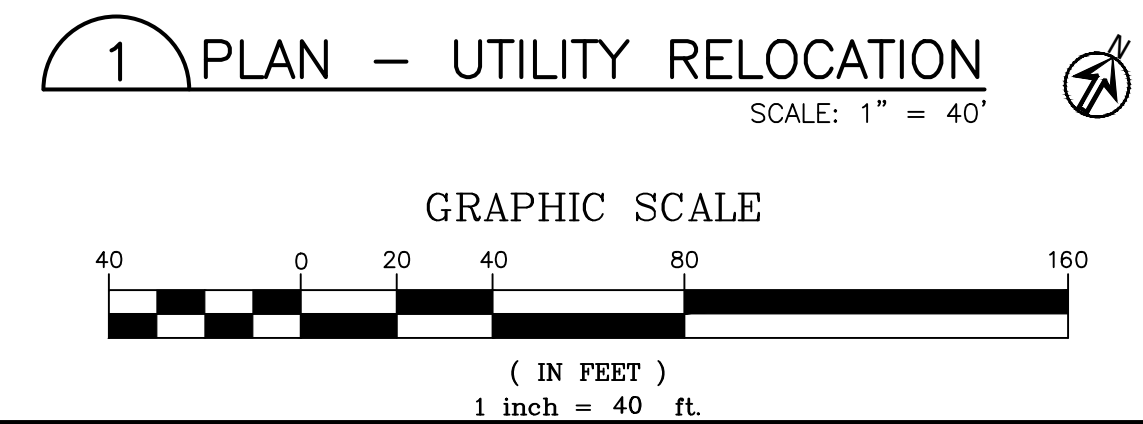
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- PROVIDE A DETAILED INSTALLATION SCHEDULE SHOWING THE ORDER AND TIMING OF REMOVAL AND INSTALLATION OF EACH SECTION OF PIPE, INCLUDING TEMPORARY CONNECTIONS.
- PREPARE AND SUBMIT A SITE SPECIFIC DETAILED TEMPORARY BYPASS PIPING PLAN THAT PROVIDES DETAILED DESCRIPTIONS AND LAYOUT DRAWINGS OF THE PROPOSED TEMPORARY BYPASS PIPING SYSTEM. OUTLINE ALL PROVISIONS AND PRECAUTIONS TO BE TAKEN BY THE CONTRACTOR TO CONVEY AND MAINTAIN EXISTING WASTEWATER FLOWS DURING CONSTRUCTION.
- IMMEDIATELY NOTIFY THE OWNER SHOULD A SANITARY SEWER OVERFLOW OCCUR. TAKE NECESSARY ACTION TO CLEAN UP AND DISINFECT THE SPILLAGE TO THE SATISFACTION OF THE OWNER AND OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION.
- UPON COMPLETION OF BYPASS PUMPING OPERATIONS, ALL BYPASS PIPING SHALL BE FLUSHED WITH FRESH WATER AND DRAINED INTO THE WASTEWATER COLLECTION SYSTEM PRIOR TO DISASSEMBLY. PIPING SHALL BE DISASSEMBLED IN A MANNER TO PREVENT A SANITARY SEWER OVERFLOW (SSO).
- INSTALL AND TEST NEW WORK PRIOR TO PLACING IN SERVICE.

NOTES:

- LOCATE SEWER SERVICES FOR THE FOUR RESIDENTIAL HOMES NORTH OF THE ROUNDABOUT. ADJUST PROPOSED SEWER SERVICE AS NECESSARY TO SERVE EACH HOME.
- COORDINATE WATER SERVICE CHANGE OVER WITH PROPERTY/BUSINESS OWNER AND THE TOWN OF BEAUFORT.
- COORDINATE CONNECTION TO EXISTING WATER LINE WITH TOWN OF BEAUFORT.
- PRIOR TO ORDERING MATERIALS, VERIFY SEWER INVERTS.
- WATER MAINS MUST BE BURIED BELOW THE FROST LINE OR TO A DEPTH PROVIDING A MINIMUM COVER OF 30 INCHES, WHICHEVER DEPTH IS GREATER, IN ACCORDANCE WITH 15A NCAC 18C .0904(B).
- EACH WATER MAIN CROSSING SHALL MAINTAIN AT LEAST 12 INCHES OF VERTICAL SEPARATION FROM STORM SEWERS AND OTHER UTILITIES, AND 18 INCHES OF VERTICAL SEPARATION FROM SANITARY SEWERS IN ACCORDANCE WITH RULES 15A NCAC 18C .0904 AND .0906.



- NOTES:
- COORDINATE WATER SERVICE CHANGE OVER WITH PROPERTY/BUSINESS OWNER AND THE TOWN OF BEAUFORT.
 - COORDINATE CONNECTION TO EXISTING WATER LINE WITH TOWN OF BEAUFORT.
 - PRIOR TO ORDERING MATERIALS, VERIFY SEWER INVERTS.
 - WATER MAINS MUST BE BURIED BELOW THE FROST LINE OR TO A DEPTH PROVIDING A MINIMUM COVER OF 30 INCHES, WHICHEVER DEPTH IS GREATER, IN ACCORDANCE WITH 15A NCAC 18C .0904(B).
 - EACH WATER MAIN CROSSING SHALL MAINTAIN AT LEAST 12 INCHES OF VERTICAL SEPARATION FROM STORM SEWERS AND OTHER UTILITIES, AND 18 INCHES OF VERTICAL SEPARATION FROM SANITARY SEWERS IN ACCORDANCE WITH RULES 15A NCAC 18C .0904 AND .0906.



2 L-LINE: LIVE OAK STREET UTILITIES PROFILE

SCALE: 1" = 40'

VERTICAL SCALE: 1" = 4'

PROJECT REFERENCE NO.		SHEET NO.	
U-6058		UC-5	
DESIGNED BY: GDF	4/11/2025		
DRAWN BY: AGF			
CHECKED BY: JCF			
APPROVED BY: -		REVISIONS:	
REVISED:		NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919)707-6690 FAX: (919)250-4151		SEAL NOT VALID UNLESS SIGNED AND DATED UTILITY CONSTRUCTION PLANS ONLY	

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DOCUMENT NOT CONSIDERED FINAL UNTIL ALL SIGNATURES ARE COMPLETED



- SEWER SEQUENCING:
- ATTEND A PRE-CONSTRUCTION MEETING WITH THE TOWN, NCDOT, AND ENGINEER A MINIMUM OF ONE WEEK PRIOR TO DELIVERY OF MATERIALS.
 - PROVIDE A DETAILED INSTALLATION SCHEDULE SHOWING THE ORDER AND TIMING OF REMOVAL AND INSTALLATION OF EACH SECTION OF PIPE, INCLUDING TEMPORARY CONNECTIONS.
 - PREPARE AND SUBMIT A SITE SPECIFIC DETAILED TEMPORARY BYPASS PIPING PLAN THAT PROVIDES DETAILED DESCRIPTIONS AND LAYOUT DRAWINGS OF THE PROPOSED TEMPORARY BYPASS PIPING SYSTEM. OUTLINE ALL PROVISIONS AND PRECAUTIONS TO BE TAKEN BY THE CONTRACTOR TO CONVEY AND MAINTAIN EXISTING WASTEWATER FLOWS DURING CONSTRUCTION.
 - IMMEDIATELY NOTIFY THE OWNER SHOULD A SANITARY SEWER OVERFLOW OCCUR. TAKE NECESSARY ACTION TO CLEAN UP AND DISINFECT THE SPILLAGE TO THE SATISFACTION OF THE OWNER AND OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION.
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- INSTALL AND TEST NEW WORK PRIOR TO PLACING IN SERVICE.

- WATERLINE SEQUENCING:
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