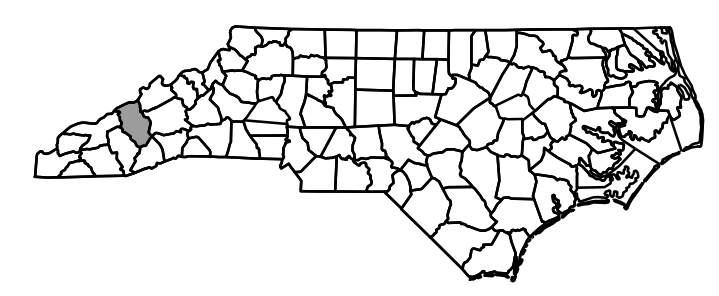


T.I.P. NO.	SHEET NO.
HB-0002	UC-1



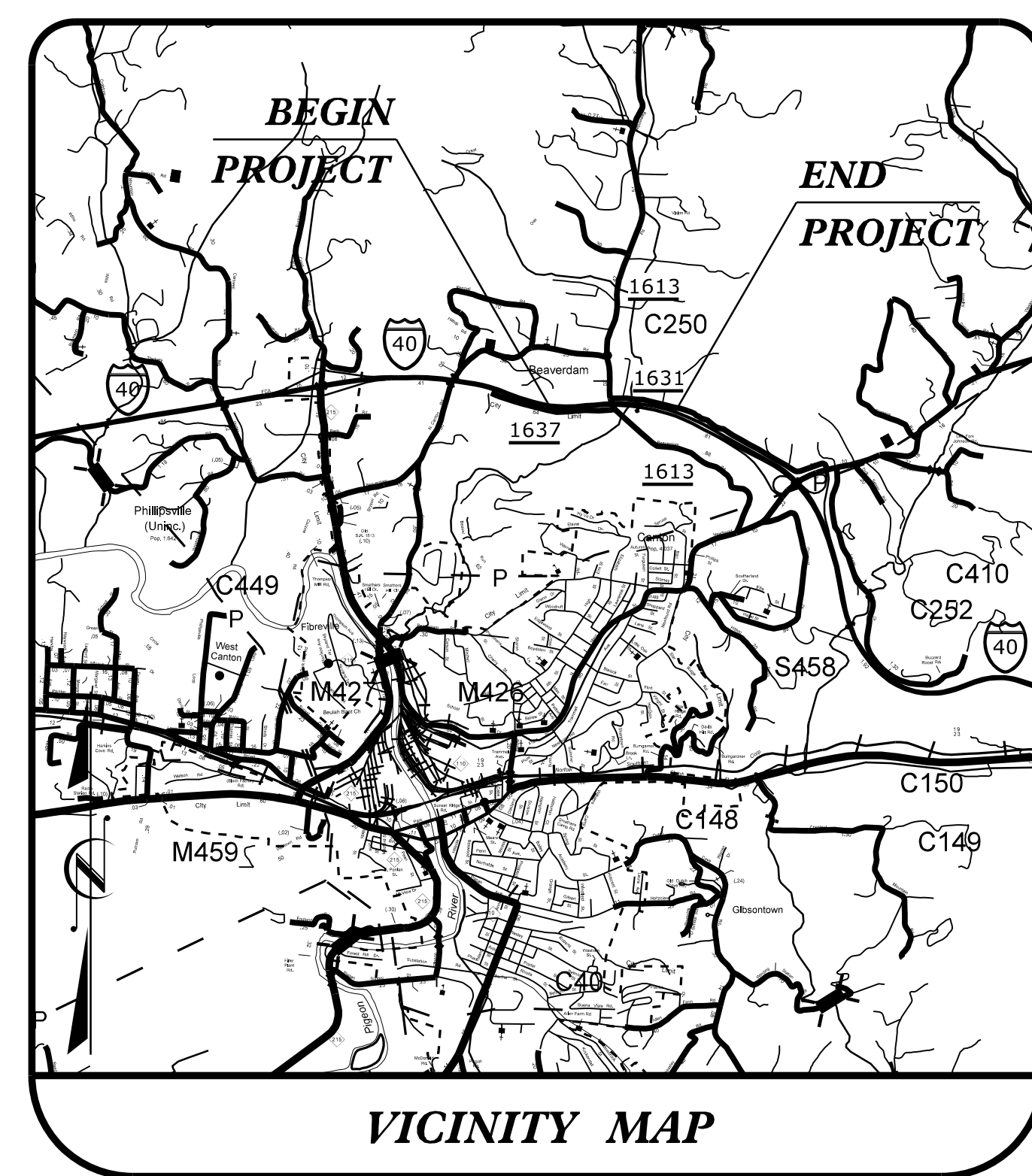
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITY CONSTRUCTION PLANS
HAYWOOD COUNTY

**LOCATION: BRIDGES 248 & 249 ON I-40 OVER
SR1613 (BEAVERDAM ROAD)**

TYPE OF WORK: WATER AND SEWER RELOCATION

TIP PROJECT: HB-0002



VICINITY MAP

BEGIN TIP PROJECT HB-0002
-L- STA. 303+00.00

BEGIN CONSTRUCTION
-Y1- STA. 7+00.00

BEGIN CONSTRUCTION
-Y2- STA. 10+00.00

BEGIN PRECAST ARCH CULVERT (55' SPAN)
-L- STA. 316+43.54

END CONSTRUCTION
-Y2- STA. 18+00.00

BEGIN PRECAST ARCH CULVERT (55' SPAN)
-L- STA. 315+81.34

END TIP PROJECT HB-0002
-L- STA. 329+50.00

BEGIN CONSTRUCTION
-Y3- STA. 18+35.00

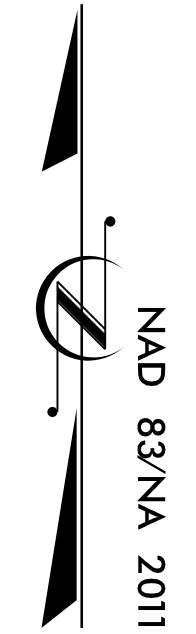
END CONSTRUCTION
-Y3- STA. 27+07.53

END CONSTRUCTION
-Y1- STA. 12+78.00

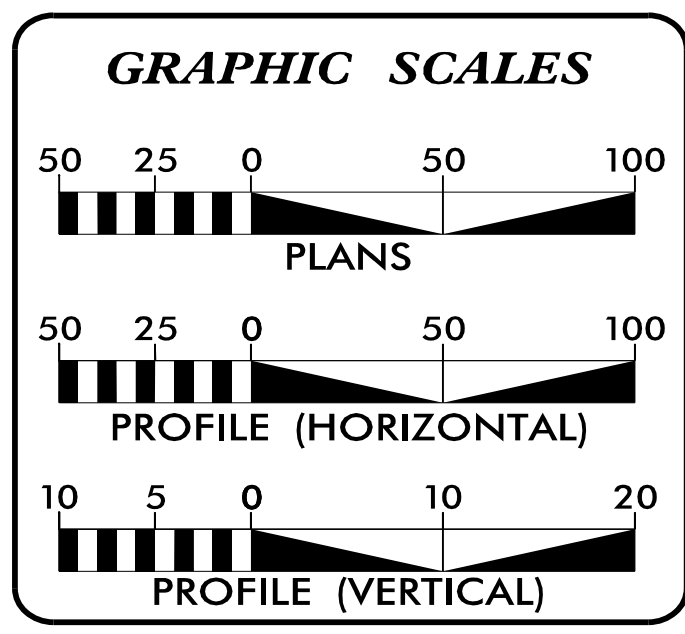
END CONSTRUCTION
-EBL- STA. 27+00.00

TO WAYNESVILLE

TO ASHEVILLE



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SHEET NO.:	DESCRIPTION:
UC-1	TITLE SHEET
UC-2	UTILITY SYMBOLOGY
UC-3	NOTES
UC-3A THRU UC-3D	DETAILS
UC-4 THRU UC-6	UTILITY CONSTRUCTION SHEETS
UC-7 THRU UC-9	PROFILE SHEETS

WATER AND SEWER OWNERS ON PROJECT

(A) WATER - TOWN OF CANTON
(B) SEWER - TOWN OF CANTON

PREPARED IN THE OFFICE OF

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PANKIL K. PATEL PROJECT MANAGER
TREVER REEVES PROJECT UTILITY COORDINATOR

SEAL 3/6/2024

EDWARD G. WETHERILL
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10773

DIVISION OF HIGHWAYS
DIVISION 14
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ZACH SHULER, PE BRIDGE PROGRAM MANAGER
ROBERT GOLDING DIVISION UTILITY ENGINEER

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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - GIS/GPS - SURVEY/SUE - UTILITIES - CONSTRUCTION OBSERVATION

PROJECT REFERENCE NO.	SHEET NO.
HB-0002	UC-2
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UTILITY CONSTRUCTION	

UTILITIES PLAN SHEET SYMBOLS

PROPOSED WATER SYMBOLS

Water Line (Sized as Shown)	
11 1/4 Degree Bend	
22 1/2 Degree Bend	
45 Degree Bend	
90 Degree Bend	
Plug	
Tee	
Cross	
Reducer	
Gate Valve	
Butterfly Valve	
Tapping Valve	
Line Stop	
Line Stop with Bypass	
Blow Off	
Fire Hydrant	
Relocate Fire Hydrant	
Remove Fire Hydrant	REM FH
Water Meter	
Relocate Water Meter	
Remove Water Meter	REM WM
Water Pump Station	
RPZ Backflow Preventer	
DCV Backflow Preventer	
Relocate RPZ Backflow Preventer	
Relocate DCV Backflow Preventer	

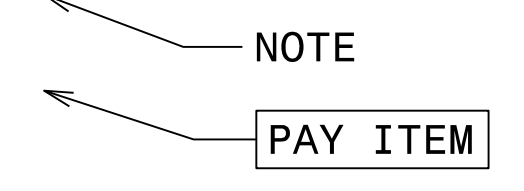
PROPOSED SEWER SYMBOLS

Gravity Sewer Line (Sized as Shown)	
Force Main Sewer Line (Sized as Shown)	
Manhole (Sized per Note)	
Sewer Pump Station	

PROPOSED MISCELLANEOUS UTILITIES SYMBOLS

Power Pole	
Telephone Pole	
Joint Use Pole	
Telephone Pedestal	
Utility Line by Others (Type as Shown)	
Trenchless Installation	
Encasement by Open Cut	
Encasement	
Directionally Drilled Conduit	

Thrust Block	
Air Release Valve	
Utility Vault	
Concrete Pier	
Steel Pier	
Remove Pole	REM
Plan Note	
Pay Item Note	



EXISTING UTILITIES SYMBOLS

Power Pole		*Underground Power Line	
Telephone Pole		*Underground Telephone Cable	
Joint Use Pole		*Underground Telephone Conduit	
Utility Pole		*Underground Fiber Optics Telephone Cable	
Utility Pole with Base		*Underground TV Cable	
H-Frame Pole		*Underground Fiber Optics TV Cable	
Power Transmission Line Tower		*Underground Gas Pipeline	
Water Manhole		Aboveground Gas Pipeline	
Power Manhole		*Underground Water Line	
Telephone Manhole		Aboveground Water Line	
Sanitary Sewer Manhole		*Underground Gravity Sanitary Sewer Line	
Hand Hole for Cable		Aboveground Gravity Sanitary Sewer Line	
Power Transformer		*Underground SS Forced Main Line	
Telephone Pedestal		Underground Unknown Utility Line	
CATV Pedestal		SUE Test Hole	
Gas Valve		Water Meter	
Gas Meter		Water Valve	
Located Miscellaneous Utility Object		Fire Hydrant	
Abandoned According to Utility Records	AATUR	Sanitary Sewer Cleanout	
End of Information	E.O.I.		

*For Existing Utilities

Utility Line Drawn from Record (Type as Shown)

Designated Utility Line (Type as Shown)

REVISIONS

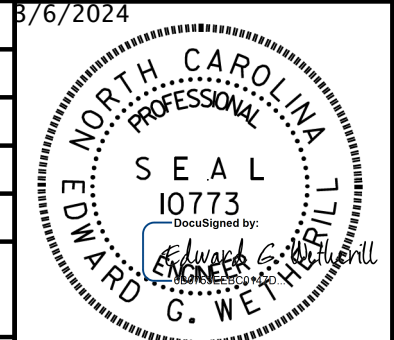
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8/17/99

UTILITY CONSTRUCTION


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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - GIS/GPS - SURVEY/SUE - UTILITIES - CONSTRUCTION OBSERVATION

PROJECT REFERENCE NO. HB-0002	SHEET NO. UC-3
DESIGNED BY: PKP	
DRAWN BY: TWR	
CHECKED BY: PKP	
APPROVED BY: SLK	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	UTILITY CONSTRUCTION PLANS ONLY
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

GENERAL NOTES:

1. THE PROPOSED UTILITY CONSTRUCTION SHALL MEET THE APPLICABLE REQUIREMENTS OF THE NC DEPARTMENT OF TRANSPORTATIONS "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" DATED JANUARY 2024.
2. THE EXISTING UTILITIES BELONG TO TOWN OF CANTON. CONTACT MICHAEL GANTT, TOWN OF CANTON WATER AND SEWER DEPARTMENT HEAD, AT 828-648-2363 OR NICK SHEUER, TOWN MANAGER, AT 828-648-2363.
3. ALL WATER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF WATER RESOURCES, PUBLIC WATER SUPPLY SECTION. ALL SEWER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT QUALITY, DIVISION OF WATER RESOURCES, WATER QUALITY SECTION. PERFORM ALL WORK IN ACCORDANCE WITH THE APPLICABLE PLUMBING CODES.
4. THE UTILITY OWNER OWNS THE EXISTING UTILITY FACILITIES AND WILL OWN THE NEW UTILITY FACILITIES AFTER ACCEPTANCE BY THE DEPARTMENT. THE DEPARTMENT OWNS THE CONSTRUCTION CONTRACT AND HAS ADMINISTRATIVE AUTHORITY. COMMUNICATIONS AND DECISIONS BETWEEN THE CONTRACTOR AND UTILITY OWNER ARE NOT BINDING UPON THE DEPARTMENT OR THIS CONTRACT UNLESS AUTHORIZED BY THE ENGINEER. AGREEMENTS BETWEEN THE UTILITY OWNER AND CONTRACTOR FOR THE WORK THAT IS NOT PART OF THIS CONTRACT OR IS SECONDARY TO THIS CONTRACT ARE ALLOWED, BUT ARE NOT BINDING UPON THE DEPARTMENT.
5. PROVIDE ACCESS FOR THE DEPARTMENT PERSONNEL AND THE OWNER'S REPRESENTATIVES TO ALL PHASES OF CONSTRUCTION. NOTIFY DEPARTMENT PERSONNEL AND THE UTILITY OWNER TWO WEEKS PRIOR TO COMMENCEMENT OF ANY WORK AND ONE WEEK PRIOR TO SERVICE INTERRUPTION. KEEP UTILITY OWNERS' REPRESENTATIVES INFORMED OF WORK PROGRESS AND PROVIDE OPPORTUNITY FOR INSPECTION OF CONSTRUCTION AND TESTING.
6. THE PLANS DEPICT THE BEST AVAILABLE INFORMATION FOR THE LOCATION, SIZE, AND TYPE OF MATERIAL FOR ALL EXISTING UTILITIES. MAKE INVESTIGATIONS FOR DETERMINING THE EXACT LOCATION, SIZE, AND TYPE MATERIAL OF THE EXISTING FACILITIES AS NECESSARY FOR THE CONSTRUCTION OF THE PROPOSED UTILITIES AND FOR AVOIDING DAMAGE TO EXISTING FACILITIES. REPAIR ANY DAMAGE INCURRED TO EXISTING FACILITIES TO THE ORIGINAL OR BETTER CONDITION AT NO ADDITIONAL COST TO THE DEPARTMENT.
7. MAKE FINAL CONNECTIONS OF THE NEW WORK TO THE EXISTING SYSTEM WHERE INDICATED ON THE PLANS, AS REQUIRED TO FIT THE ACTUAL CONDITIONS, OR AS DIRECTED.
8. MAKE CONNECTIONS BETWEEN EXISTING AND PROPOSED UTILITIES AT TIMES MOST CONVENIENT TO THE PUBLIC, WITHOUT ENDANGERING THE UTILITY SERVICE, AND IN ACCORDANCE WITH THE UTILITY OWNER'S REQUIREMENTS. MAKE CONNECTIONS ON WEEKENDS, AT NIGHT, AND ON HOLIDAYS IF NECESSARY.
9. ALL UTILITY MATERIALS SHALL BE APPROVED PRIOR TO DELIVERY TO THE PROJECT. SEE 1500-7, "SUBMITTALS AND RECORDS" IN SECTION 1500 OF THE STANDARD SPECIFICATIONS.
10. WATER MAINS SHALL BE LAID AT LEAST 10 FEET LATERALLY FROM EXISTING OR PROPOSED SEWER MAINS.

PROJECT SPECIFIC NOTES:

1. PROPOSED WATER LINES (WL-1, WL-2, & WL-5) SHALL BE 8" SDR 21 PVC, INSTALLED BY OPEN CUT METHOD.
2. PROPOSED WATER LINE (WL-3) STA. 10+00± TO 12+50± SHALL BE 8" SDR 21 PVC, INSTALLED BY OPEN CUT METHOD, AND FROM WL-3 STA. 12+50± TO STA. 15+22± SHALL BE INSTALLED BY BORE AND JACK METHOD WITHIN 16" STEEL ENCASMENT PIPE, AND FROM WL-3 STA. 15+22± TO STA. 15+49± SHALL BE 8" SDR 21 PVC, INSTALLED BY OPEN CUT METHOD.
3. PROPOSED WATER LINE (WL-4) STA. 10+00± TO 10+37± SHALL BE 8" SDR 21 PVC, INSTALLED BY OPEN CUT METHOD, AND FROM WL-4 STA. 10+37± TO 11+72± SHALL BE 8" FUSIBLE PVC C900, AND FROM WL-4 STA. 11+72± TO 12+09± SHALL BE 8" SDR 21 PVC, INSTALLED BY OPEN CUT METHOD.
4. PROPOSED SEWER LINES (SS-1, SS-2, SS-3, AND SS-4) SHALL BE 8" SDR 21 PVC, INSTALLED BY OPEN CUT METHOD.
5. PROPOSED SEWER LINE (SS-5) STA. 10+00± TO 10+34± SHALL BE 8" SDR 21 PVC, INSTALLED BY OPEN CUT METHOD, AND FROM SS-5 STA. 10+34± TO 12+44± SHALL BE 8" SDR 21 PVC, INSTALLED BY BORE AND JACK METHOD, AND FROM SS-5 STA. 12+44± TO 13+82± SHALL BE 8" SDR 21 PVC, INSTALLED BY OPEN CUT METHOD.
6. EXISTING SSMH-2, PROPOSED SSMH-3, PROPOSED SSMH-7, AND PROPOSED SSMH-9 SHALL BE RAISED TO AN ELEVATION OF 2' GREATER THAN THE 100-YEAR FLOOD ELEVATION. SEE UC-5, UC-7 AND UC-8 FOR MANHOLE ELEVATIONS.

SEWER INSTALLATION NOTES

1. CONTRACTOR SHALL FULLY INSTALL, PRESSURE & LEAKAGE TEST NEW SEWER MAIN PRIOR TO CONNECTION TO EXISTING SYSTEM.
2. ONTRACTOR SHALL PERFORM THE CONNECTION DURING OFF PEAK HOURS WITH A MAXIMUM SHUT DOWN TIME OF FIVE HOURS. (12 PM MIDNIGHT TO 5 AM)
3. ANY TEST PERFORMED WITHOUT NOTIFICATION TO TOWN SHALL BE PERFORMED AT THE CONTRACTOR'S RISK. TESTING SHALL BE PERFORMED IN THE PRESENCE OF TOWN OF CANTON PERSONNEL. CONTACT MR. MICHAEL GANTT AT 828-648-2363 OR MR. NICK SHEUER AT 828-648-2363.
4. NEW SEWER MAIN SHALL NOT BE CONNECTED TO EXISTING MAIN WITHOUT PRIOR APPROVAL AND COORDINATION WITH TOWN OF CANTON.
5. FOR NEW SEWER MAIN CONNECTIONS, USE GRIP RING PIPE RESTRAINER AS REQUIRED.

WATER INSTALLATION NOTES

1. CONTRACTOR SHALL FULLY INSTALL, PRESSURE & LEAKAGE TEST, AND CHLORINATE NEW WATER MAIN PRIOR TO CONNECTION TO EXISTING SYSTEM.
2. CONTRACTOR SHALL PERFORM THE CONNECTION DURING OFF PEAK HOURS WITH A MAXIMUM SHUT DOWN TIME OF FIVE HOURS. (12 PM MIDNIGHT TO 5 AM).
3. ANY WORK OR TEST PERFORMED WITHOUT NOTIFICATION AND CONTACT WITH TOWN OF CANTON FIELD INSPECTORS SHALL BE PERFORMED AT THE CONTRACTOR'S RISK. TESTING SHALL BE PERFORMED IN THE PRESENCE OF TOWN OF CANTON PERSONNEL.
4. OPERATION OF EXISTING GATE VALVES SHALL BE DONE BY TOWN OF CANTON OPERATIONS STAFF.
5. TIE NEW WATER MAIN INTO EXISTING. INSTALL THRUST BLOCKS AND RODDING AS REQUIRED.
6. NEW WATER MAIN SHALL NOT BE CONNECTED TO EXISTING MAIN WITHOUT PRIOR APPROVAL AND COORDINATION WITH TOWN OF CANTON.
7. NEW WATER MAIN CROSSING UNDER I-40 SHALL HAVE UTILITY MARKER POST PLACED AT CENTERLINE OF PIPE ON NORTH SIDE OF FREEDOM DRIVE AND SOUTH SIDE OF I-40.

REVISIONS

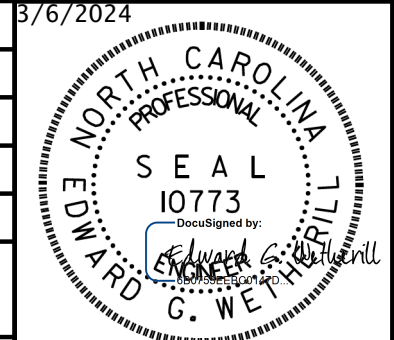
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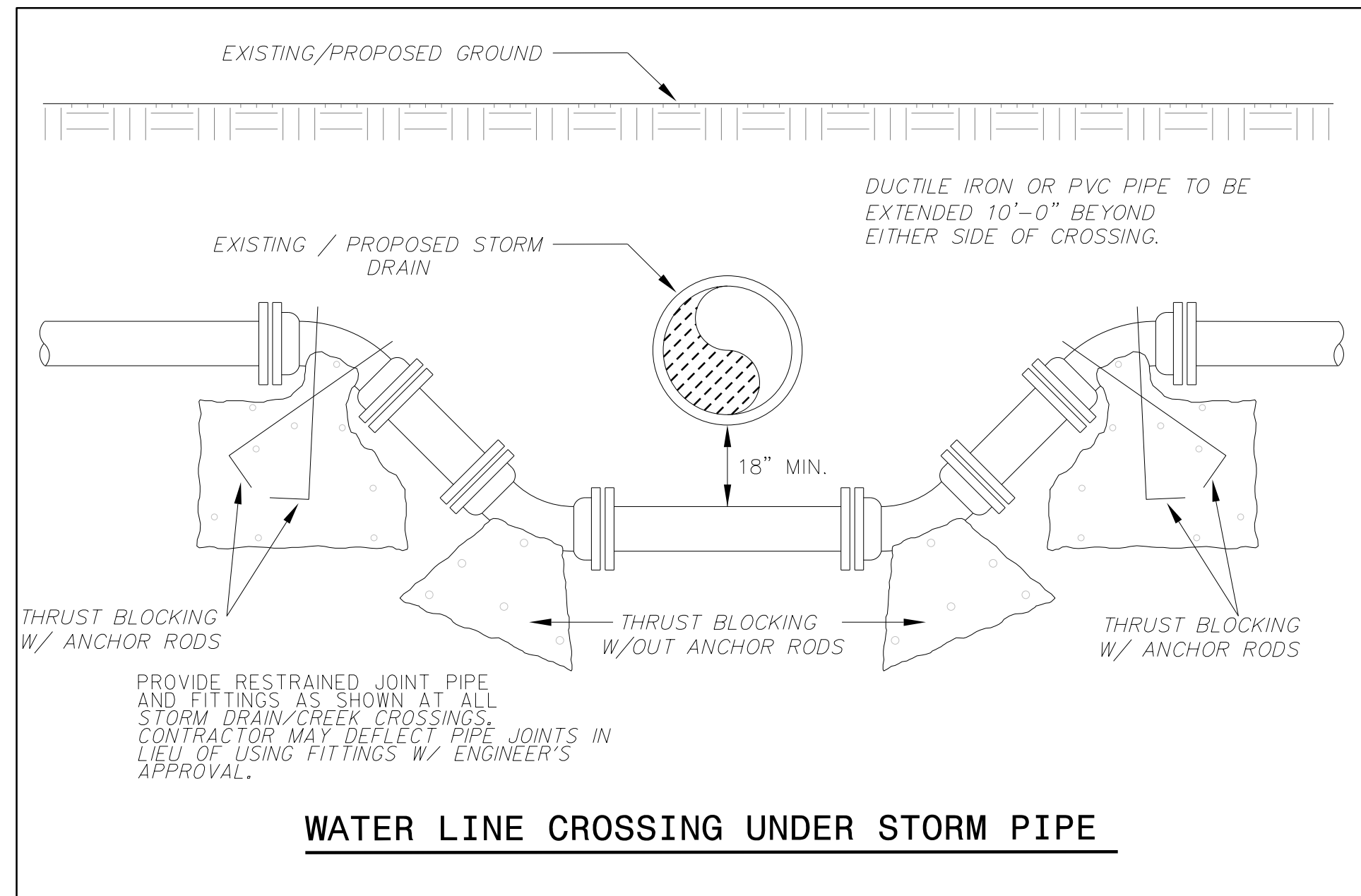
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - GIS/GPS - SURVEY/SUE - UTILITIES - CONSTRUCTION OBSERVATION

PROJECT REFERENCE NO. HB-0002	SHEET NO. UC-3A
DESIGNED BY: PKP	3/6/2024
DRAWN BY: TWR	
CHECKED BY: PKP	
APPROVED BY: SLK	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	UTILITY CONSTRUCTION PLANS ONLY
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

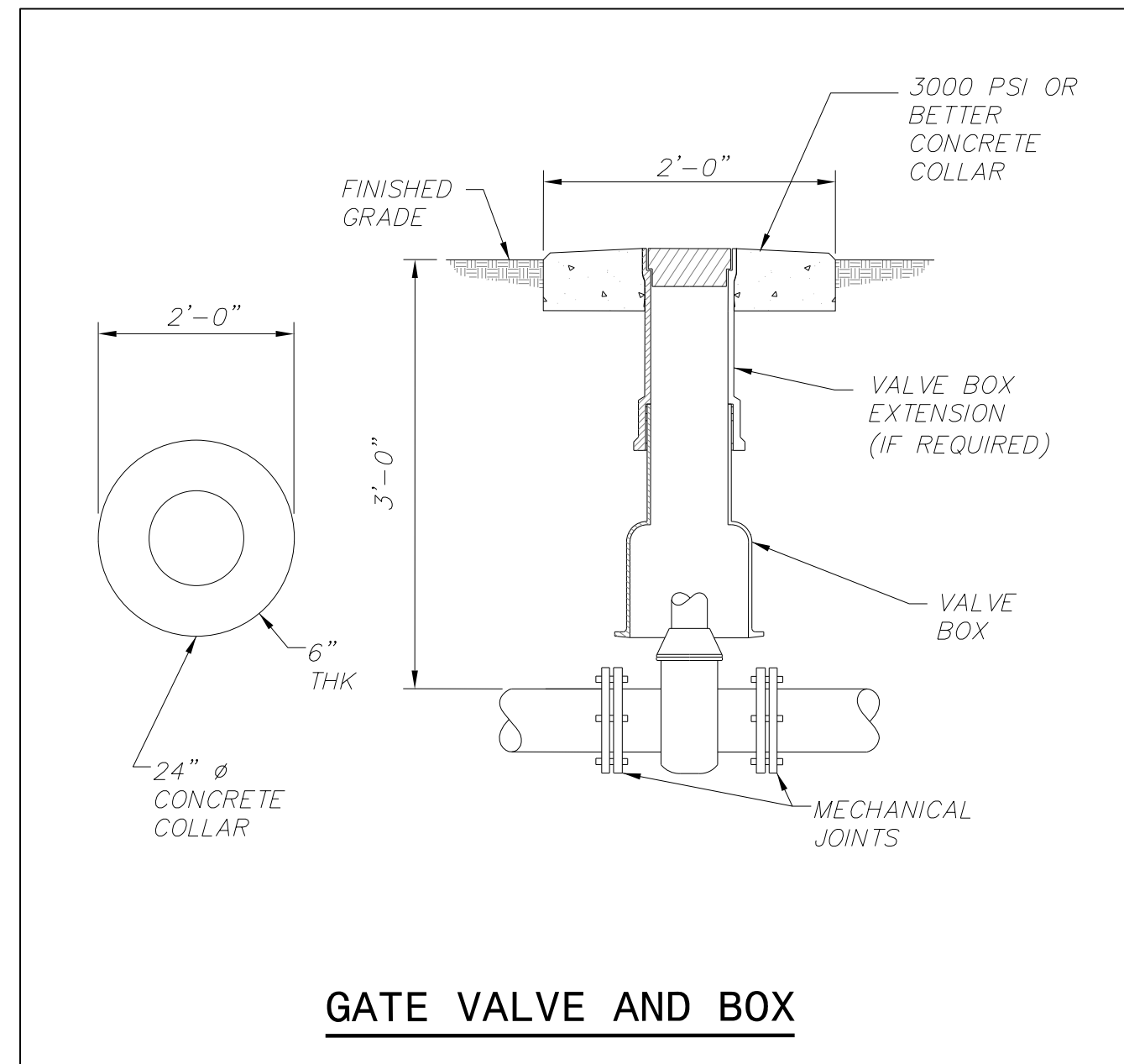


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UTILITY CONSTRUCTION

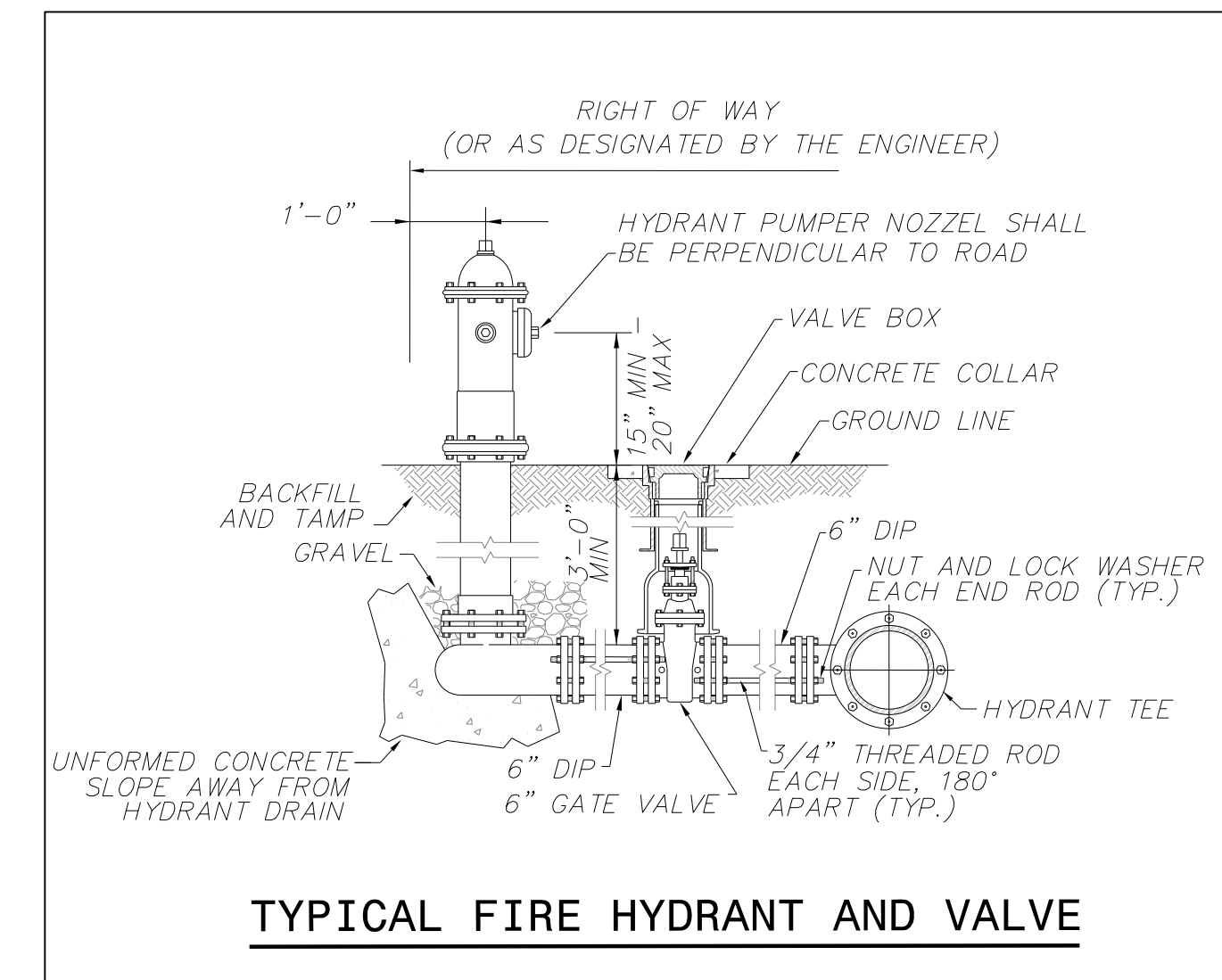
PROJECT TYPICAL DETAILS



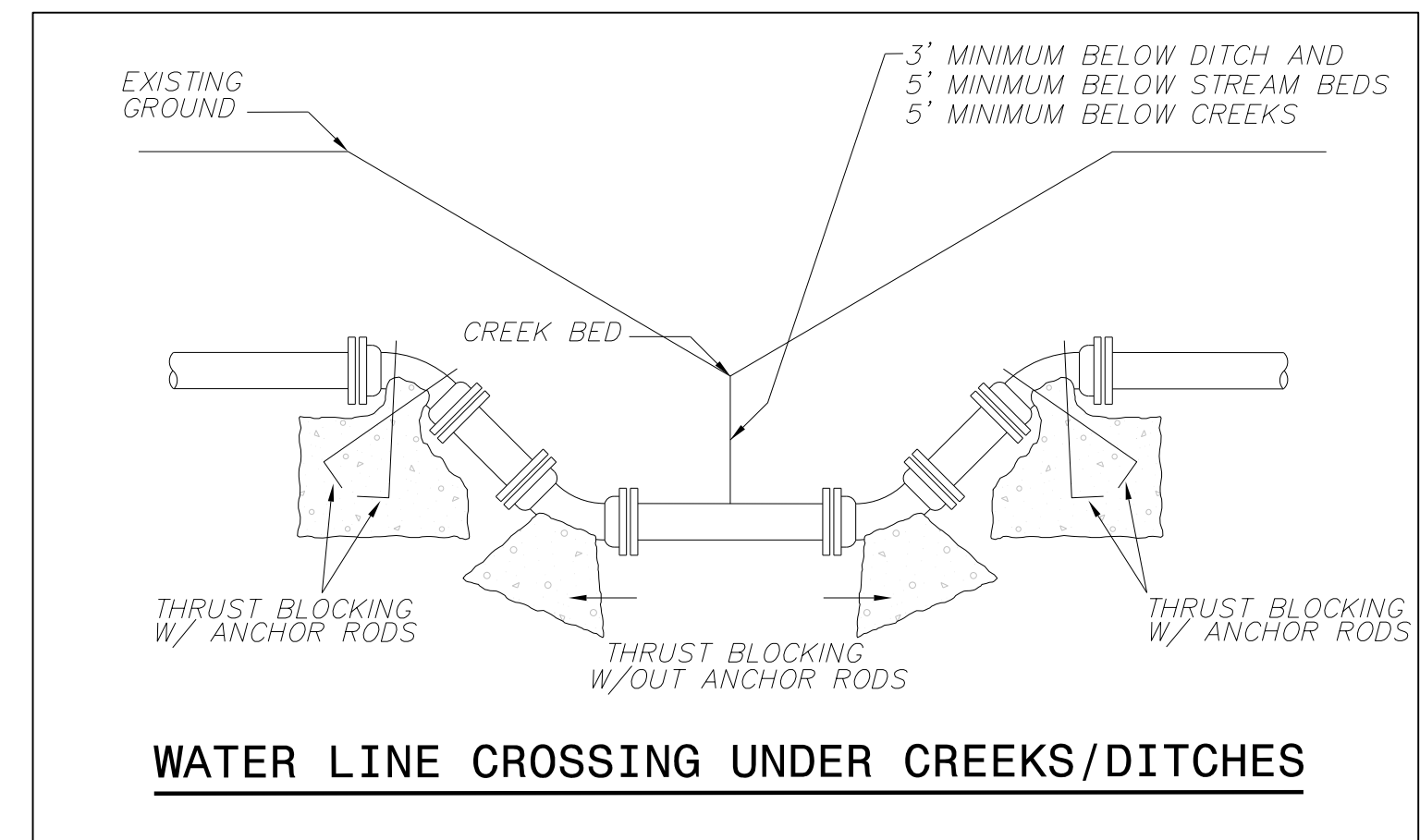
WATER LINE CROSSING UNDER STORM PIPE



GATE VALVE AND BOX



TYPICAL FIRE HYDRANT AND VALVE



WATER LINE CROSSING UNDER CREEKS/DITCHES

ROD REQUIREMENTS	
SERVICE SIZE	NO. OF RODS
4"	2
6"	2
8"	4
12"	8

GENERAL NOTES

- ONCE INSTALLED AND TIGHT, THE STEEL RODS AND BOLTS SHALL BE COATED WITH 2 COATS OF BITUMINOUS BASE PAINT.
- CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL FITTINGS.

RESTRAINED TEE AND VALVE INSTALLATION

PLAN

ELEVATION

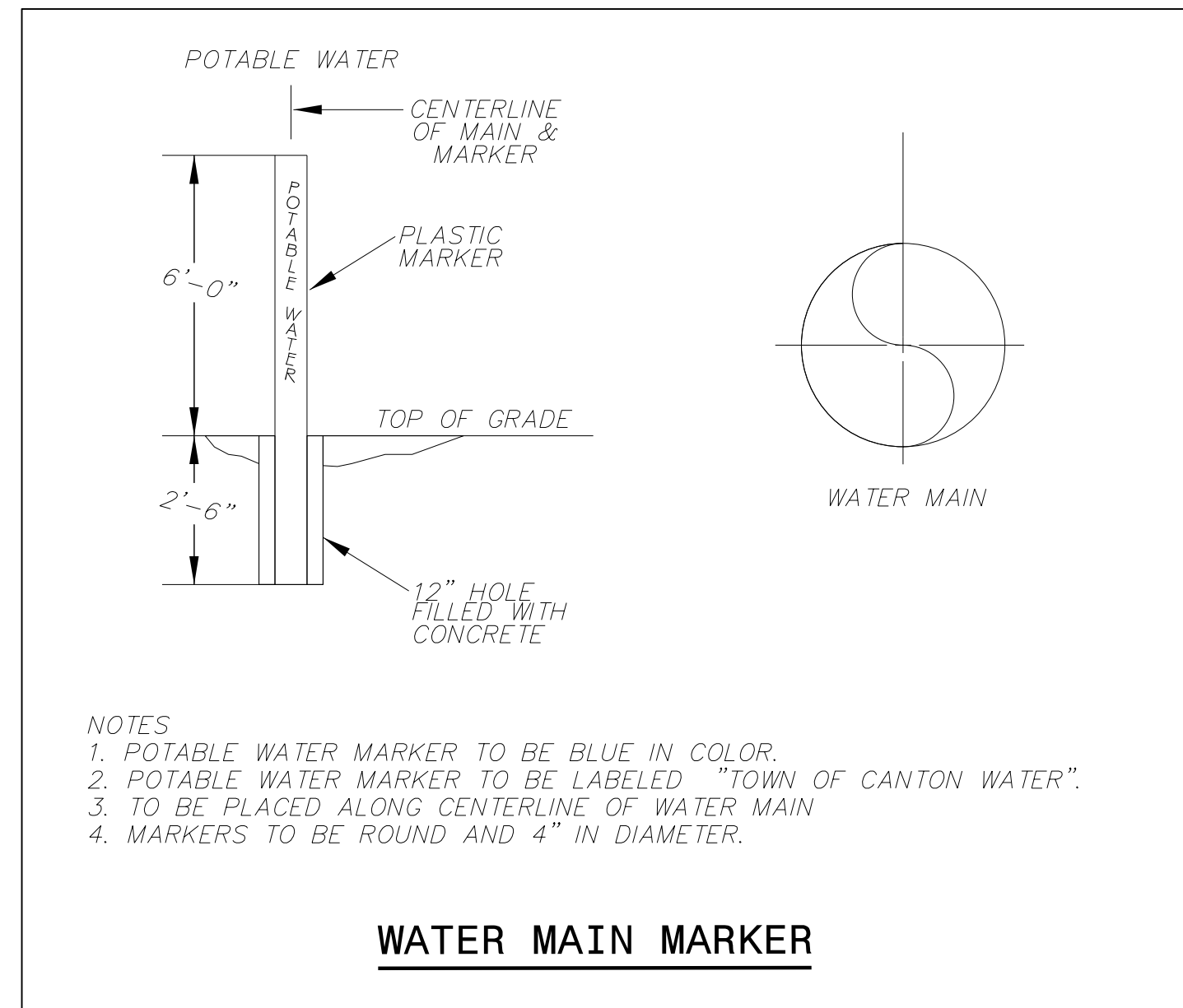
SOLID CONCRETE OR BRICK BLOCKING SHALL BE USED AS FOOTING FOR DUCTILE IRON PIPE, PVC PIPE SHALL REQUIRE A 2500 PSI CONCRETE FOOTING.

NOTE: VALVES SHALL BE AMERICAN OR MUELLER, OPEN LEFT, TAPPING SLEEVE AND VALVE OR AS OTHERWISE SPECIFIED.

NOTES

- CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL JOINT FITTINGS.

STANDARD TAPPING SLEEVE AND VALVE ASSEMBLY



WATER MAIN MARKER

REVISIONS

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PROJECT TYPICAL DETAILS

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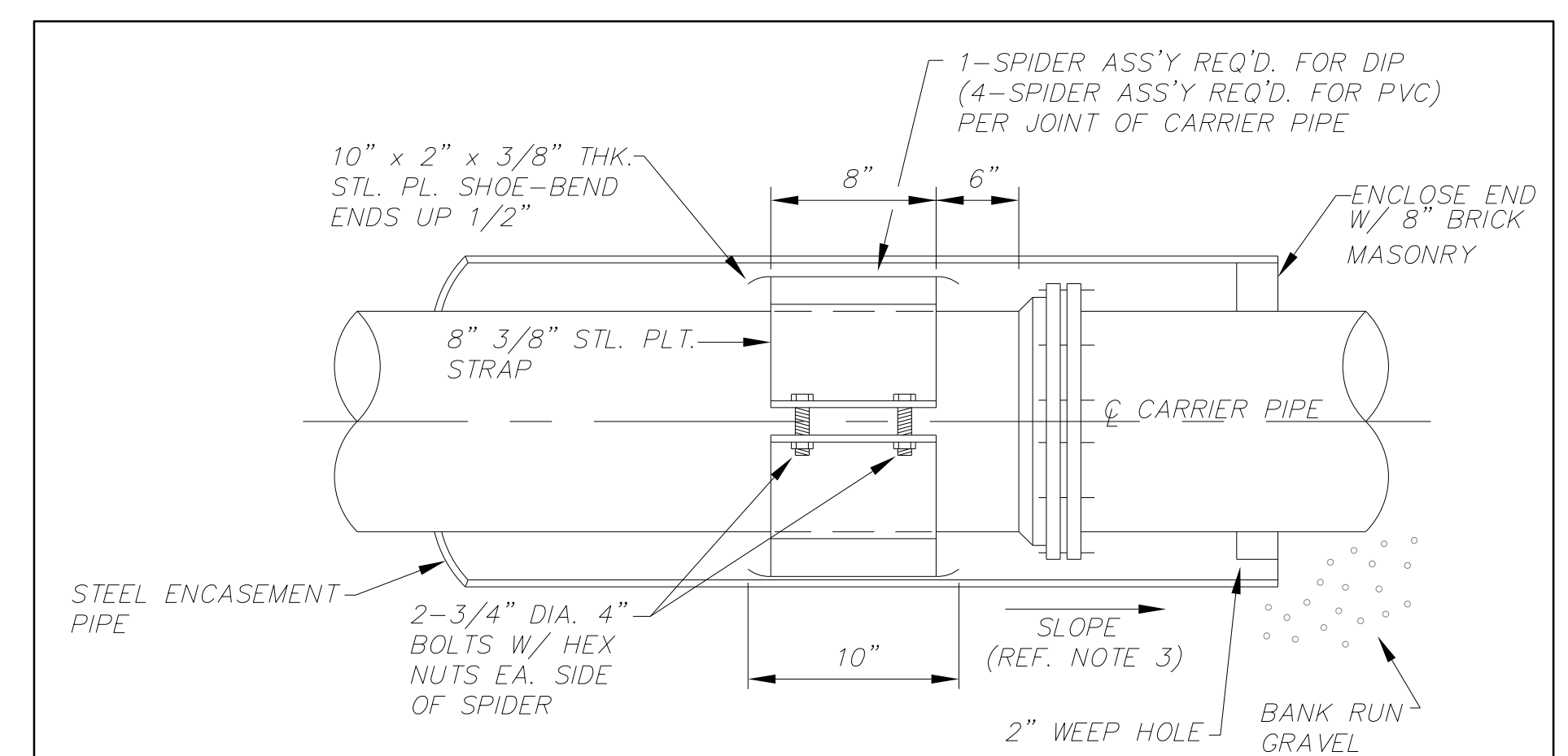
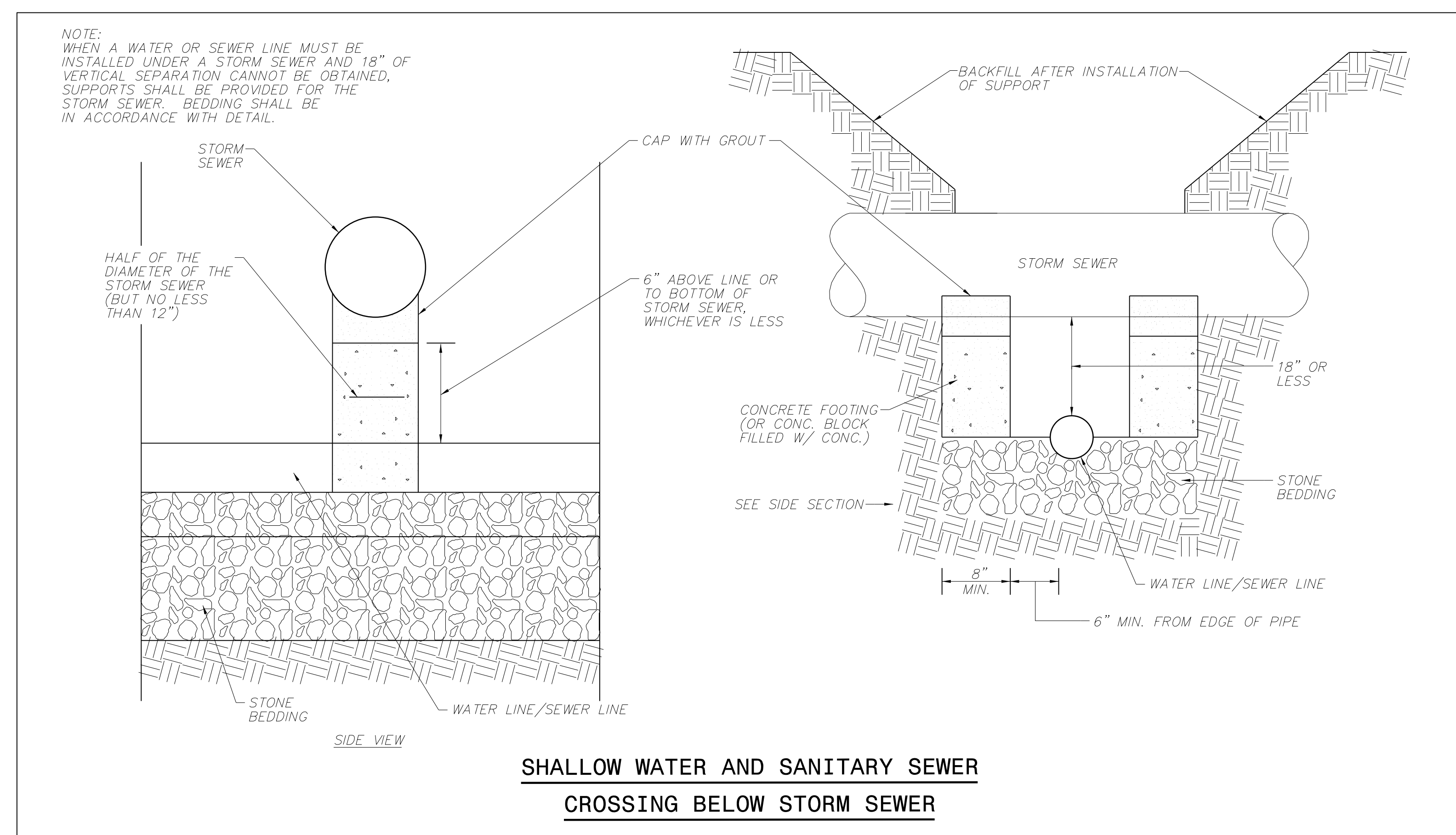
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CIVIL/SITE DESIGN - GIS/GPS - SURVEY/SUE - UTILITIES - CONSTRUCTION OBSERVATION

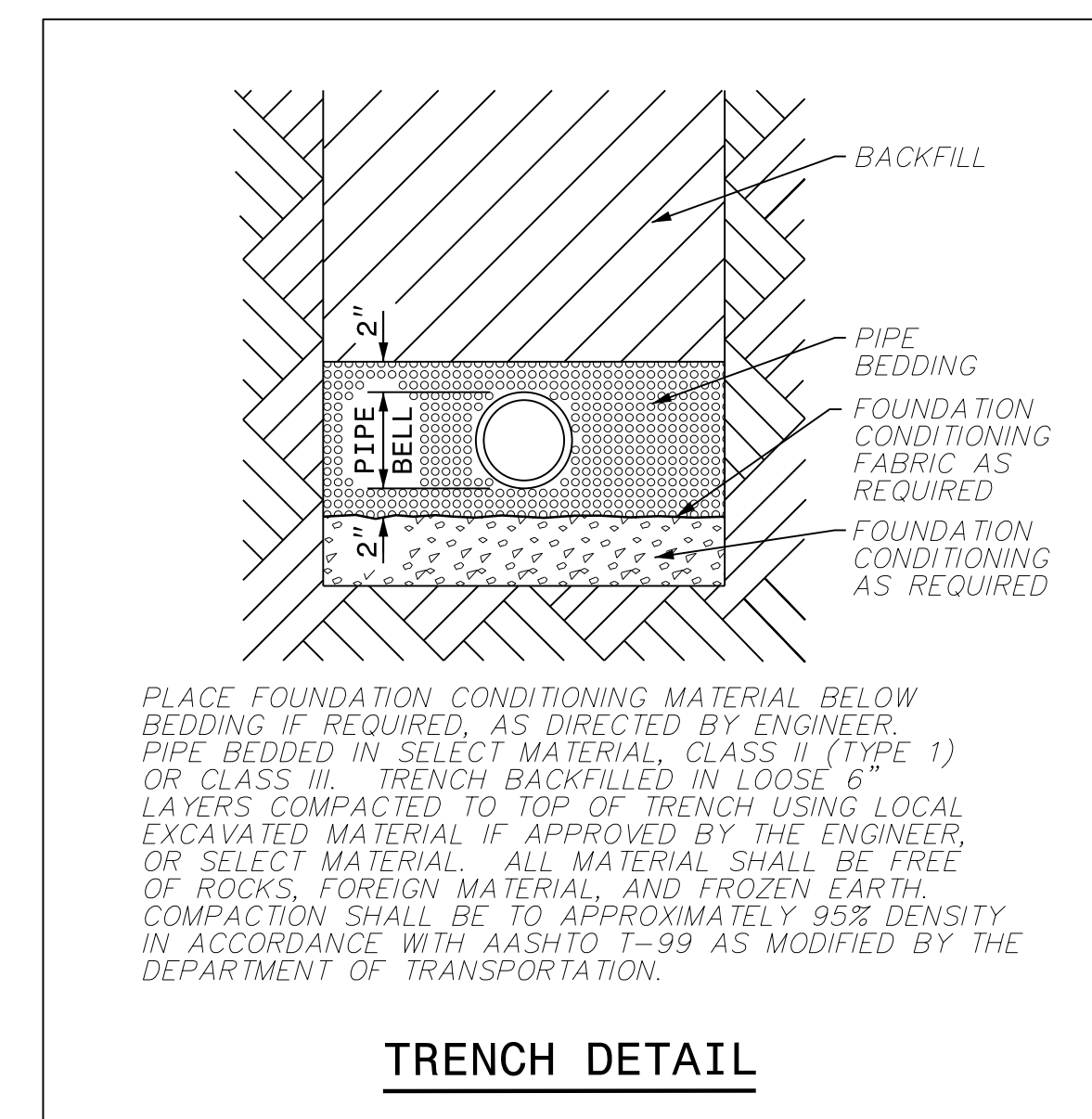
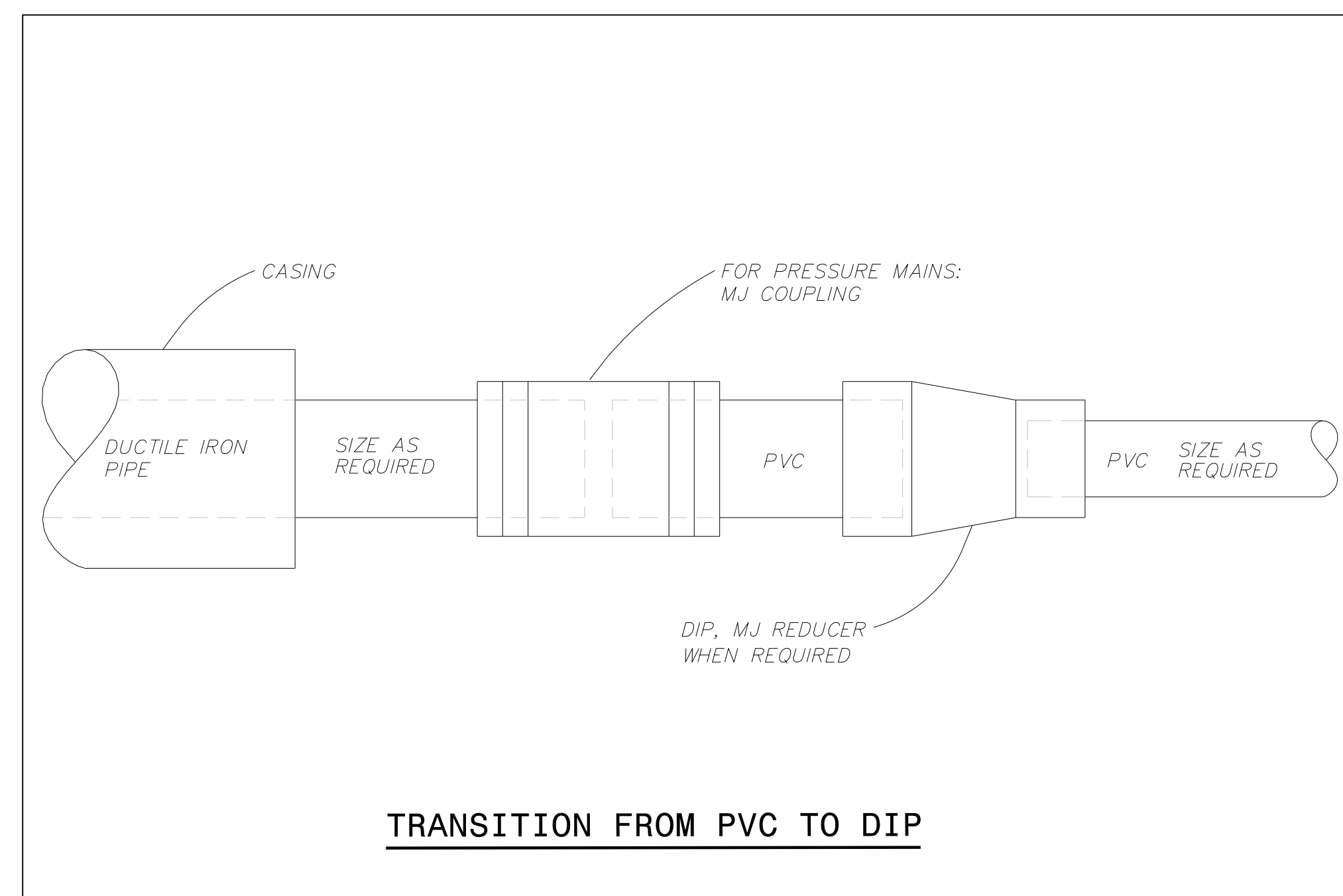
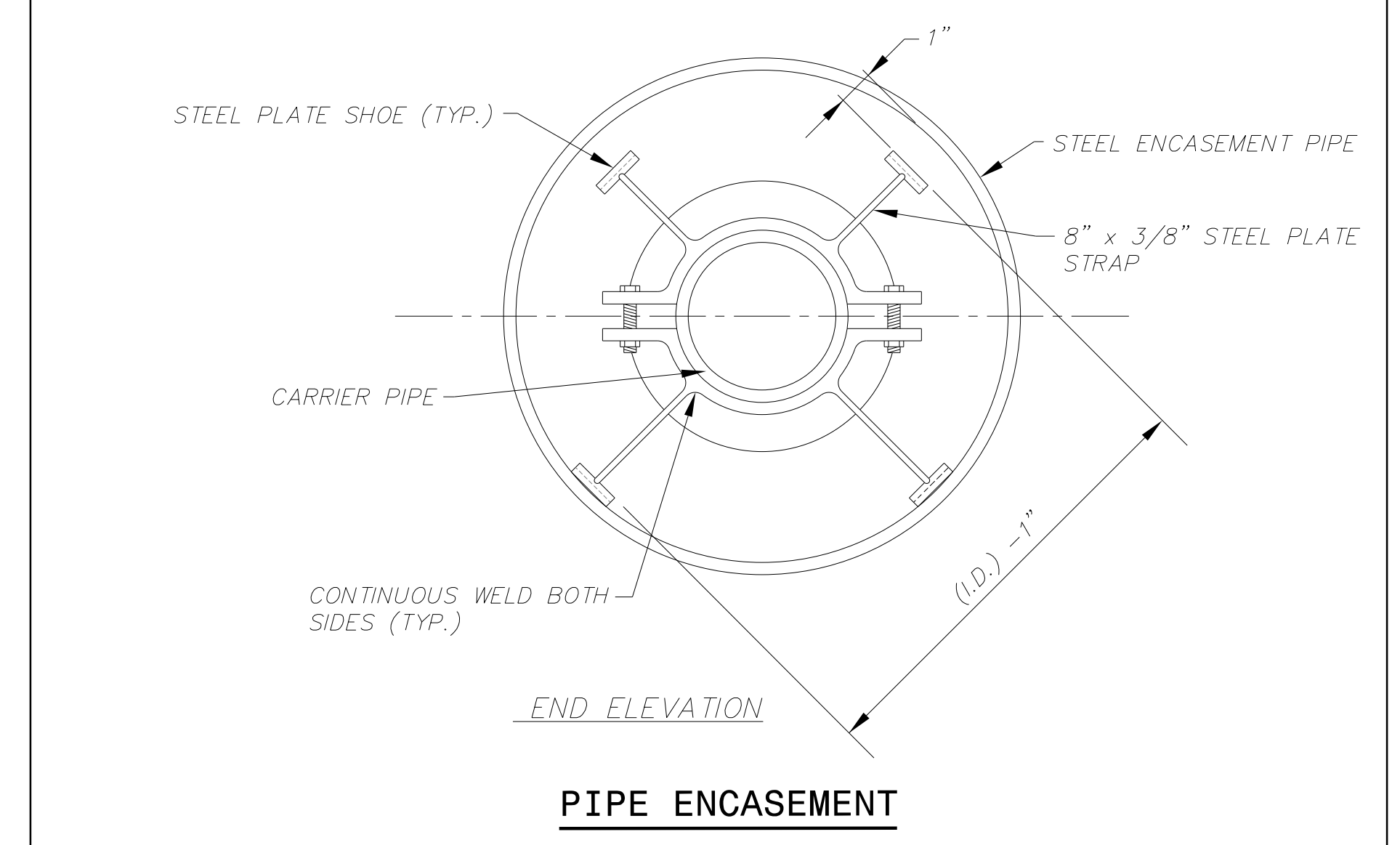
PROJECT REFERENCE NO. HB-0002	SHEET NO. UC-3B
DESIGNED BY: PKP	1/6/2024
DRAWN BY: TWR	
CHECKED BY: PKP	
APPROVED BY: SLK	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	SEAL 10773 G. WETHERILL
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	UTILITY CONSTRUCTION PLANS ONLY

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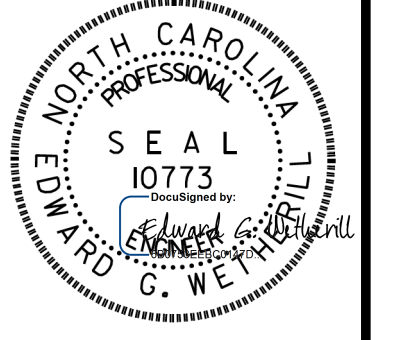
UTILITY CONSTRUCTION



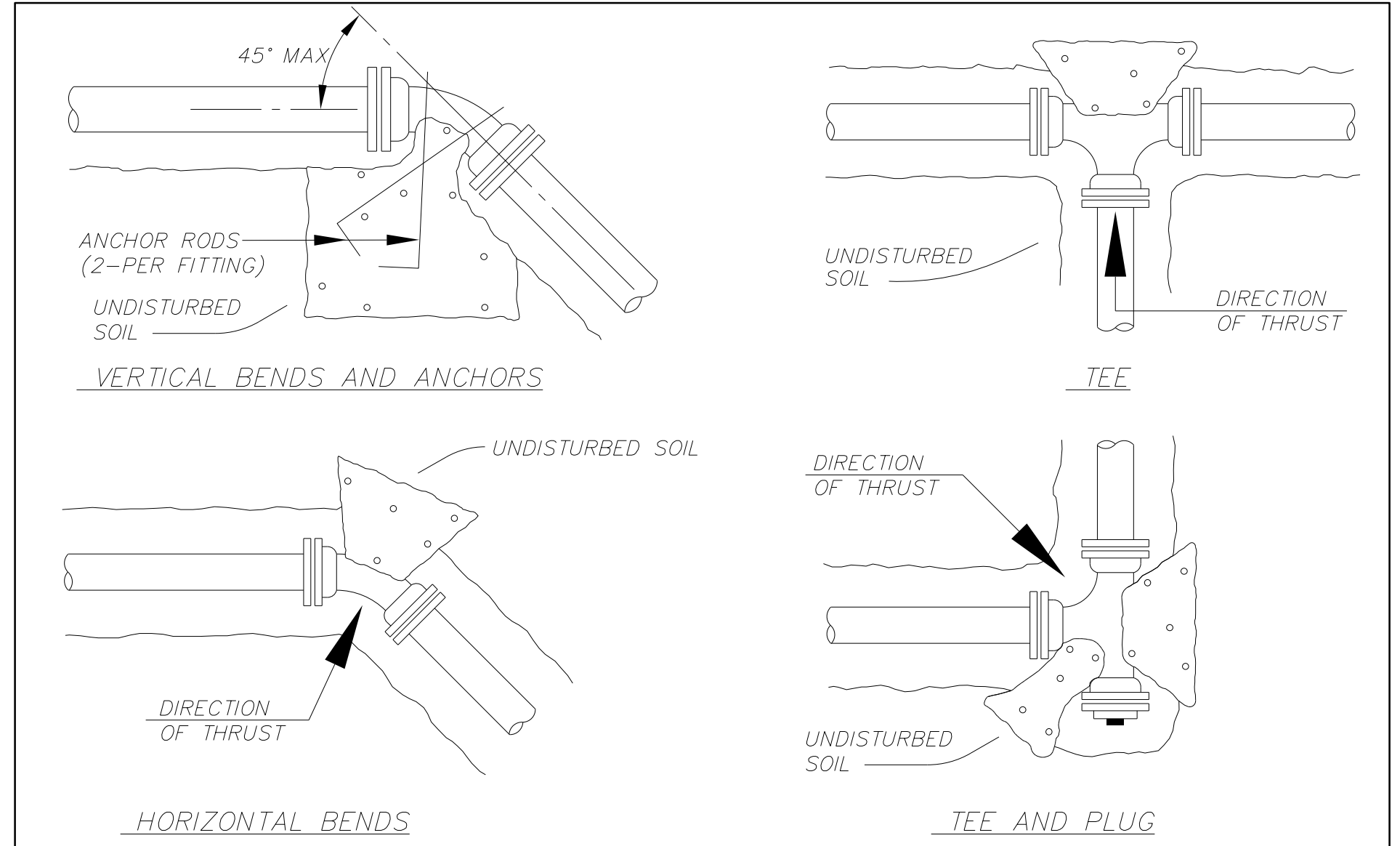
NOTE
-ENTIRE SPIDER ASSEMBLY TO BE BITUMINOUS COATED AFTER FABRICATION
-FIELD MODIFY AS REQUIRED TO PROVIDE DESIGN SLOPE IN CARRIER PIPE
-STEEL ENCASEMENT TO BE INSTALLED IN ACCORDANCE WITH DESIGN PLANS. ALL REVISIONS OR MODIFICATIONS ARE SUBJECT TO APPROVAL.



REVISIONS



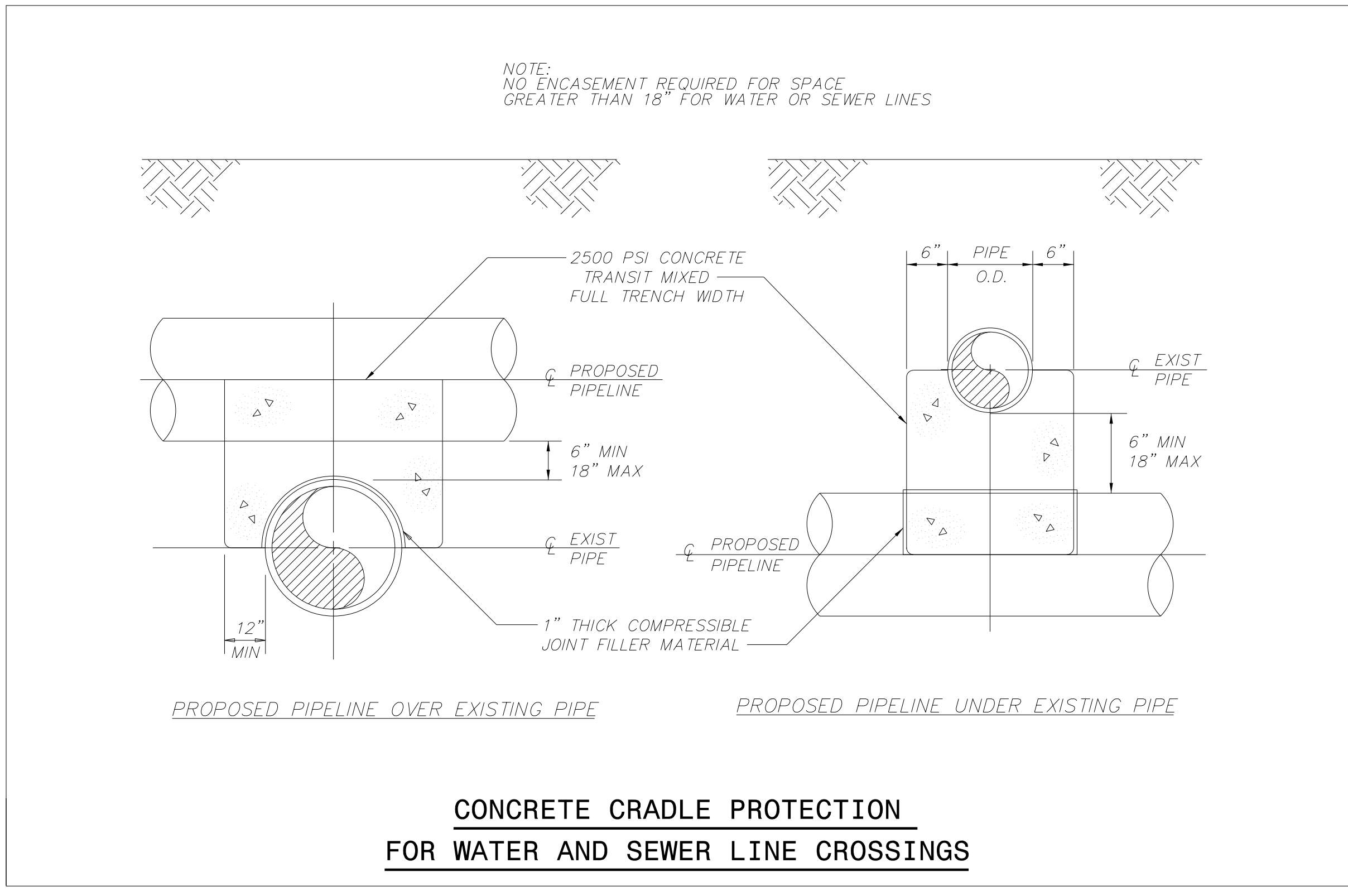
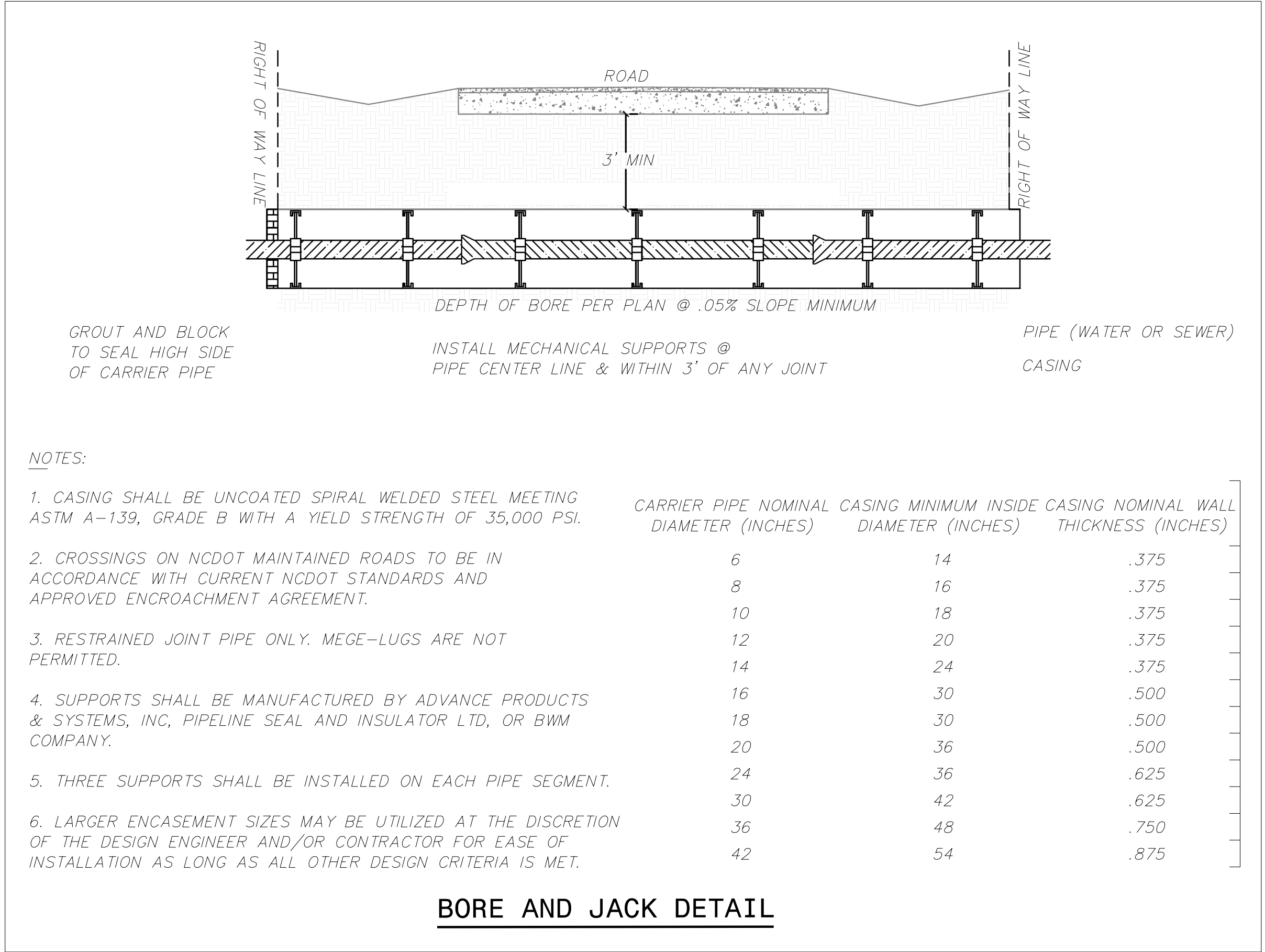
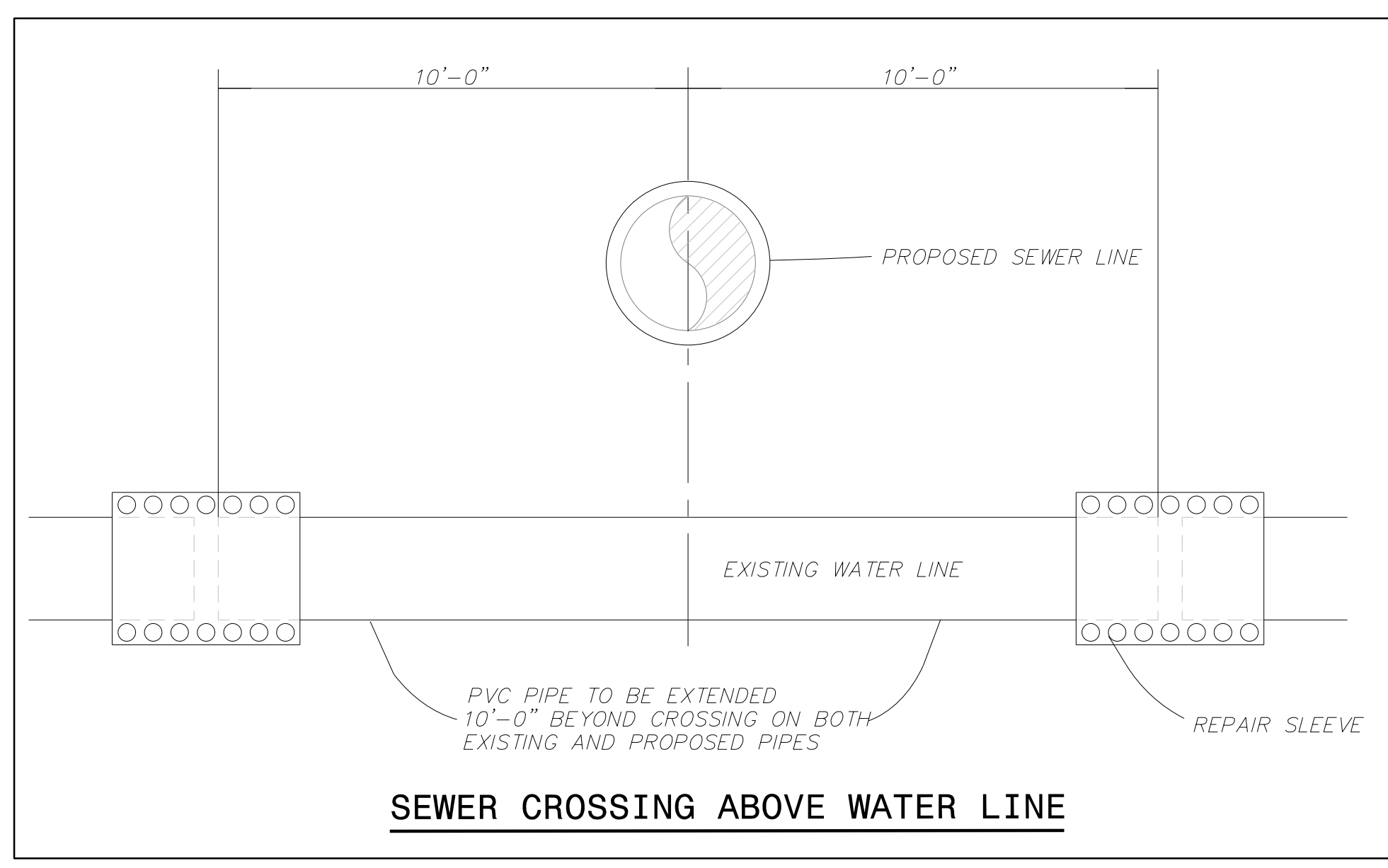
PROJECT TYPICAL DETAILS



FITTING SIZE	BEARING AREA IN SQUARE FEET					CONCRETE SCHEDULE VERTICAL BENDS					ANCHOR ROD SIZE FOR VERTICAL BEND AND ANCHORS
	TEE/PLUG	90°	45°	22-1/2'	11-1/4'	90°	45°	22-1/2'	11-1/2'	MIN. CU. YARDS CONCRETE	
4"	1	2	1	1	1	1	1	1	1	1	1/2"
6"	3	3	2	1	1	1	1	1	1	1	3/4"
8"	4	6	3	2	1	2	2	1	1	1	3/4"
10"	7	9	5	3	2	3	3	2	1	1	3/4"
12"	9	12	7	4	2	5	3	2	1	1	7/8"
14"	12	17	9	5	3	6	4	3	2	1	7/8"
16"	16	22	12	6	3	8	6	3	2	1	7/8"
18"	20	27	15	8	4	10	7	4	2	1	1-1/8"
20"	24	34	18	10	5	12	9	5	3	1	1-1/8"
24"	34	48	26	14	7	17	12	7	4	1	1-1/8"
30"	53	75	41	21	11	27	19	10	5	1	1-3/8"
36"	77	108	59	30	15	38	27	15	8	1	1-3/8"

- NOTES:**
- MINIMUM BEARING AREA (IN SQUARE FEET) AGAINST UNDISTURBED TRENCH WALL OF SAND.
 - AREAS SHOWN ARE FOR 150 PSI TEST PRESSURE. IF TEST PRESSURE IS OTHER THAN 150 PSI, ADJUST AREA OF REACTION BACKING IN DIRECT PROPORTION.
 - OTHER SOIL CONDITIONS CEMENTED SAND OR HARDPAN - MULTIPLY ABOVE BY 0.5
 GRAVEL OR HARD DRY CLAY - MULTIPLY ABOVE BY 0.7
 SOFT CLAY - MULTIPLY ABOVE BY 2.0
 MUCK: SECURE ALL FITTINGS WITH APPROVED HARNESS OR TIE ROD CLAMPS, WITH CONCRETE REACTION BACKING THE SAME AS LISTED FOR SAND CONDITIONS.

THRUST BLOCKING AND ANCHORING



REVISIONS

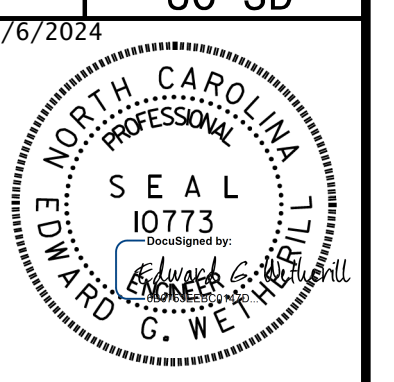
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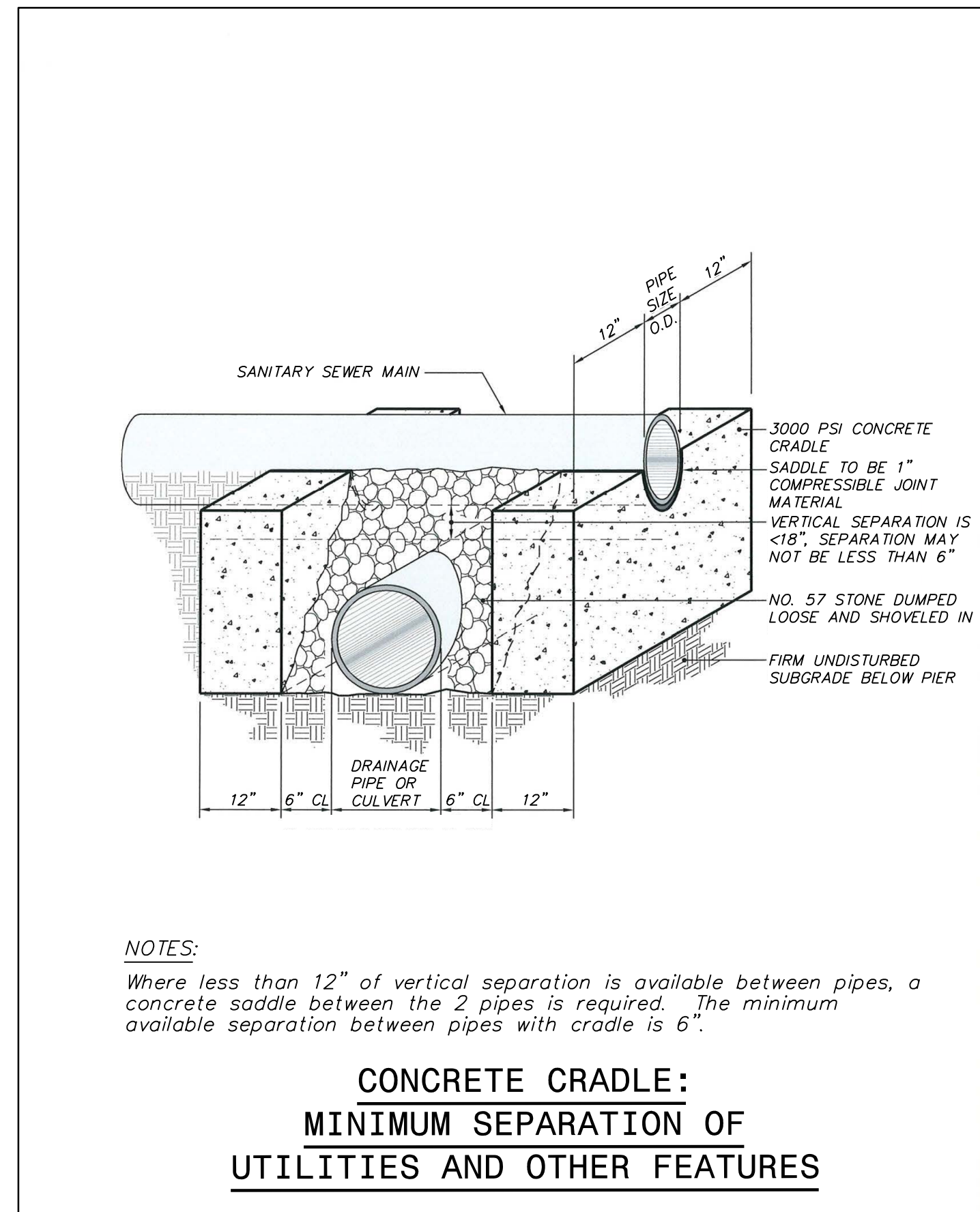
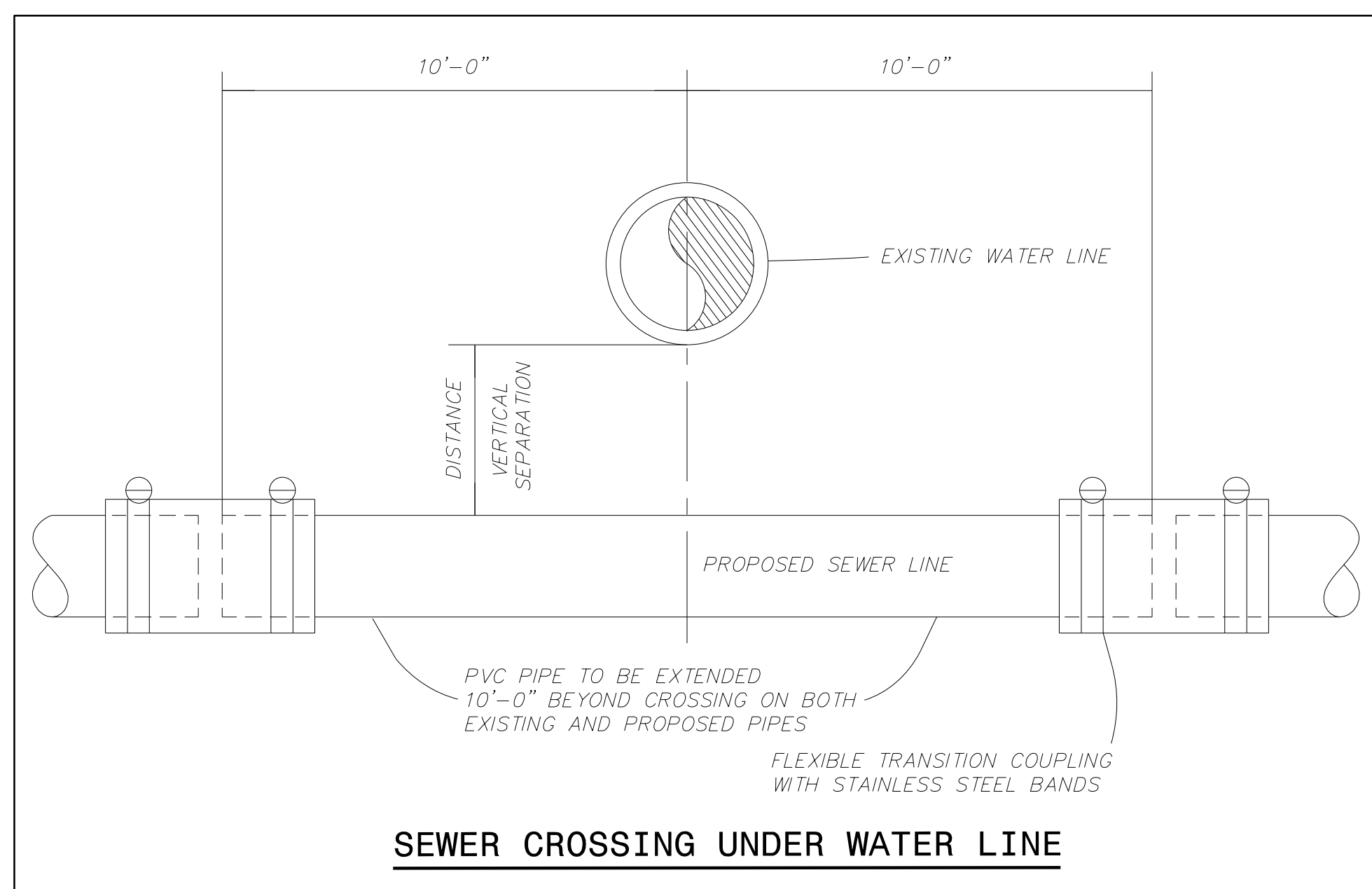
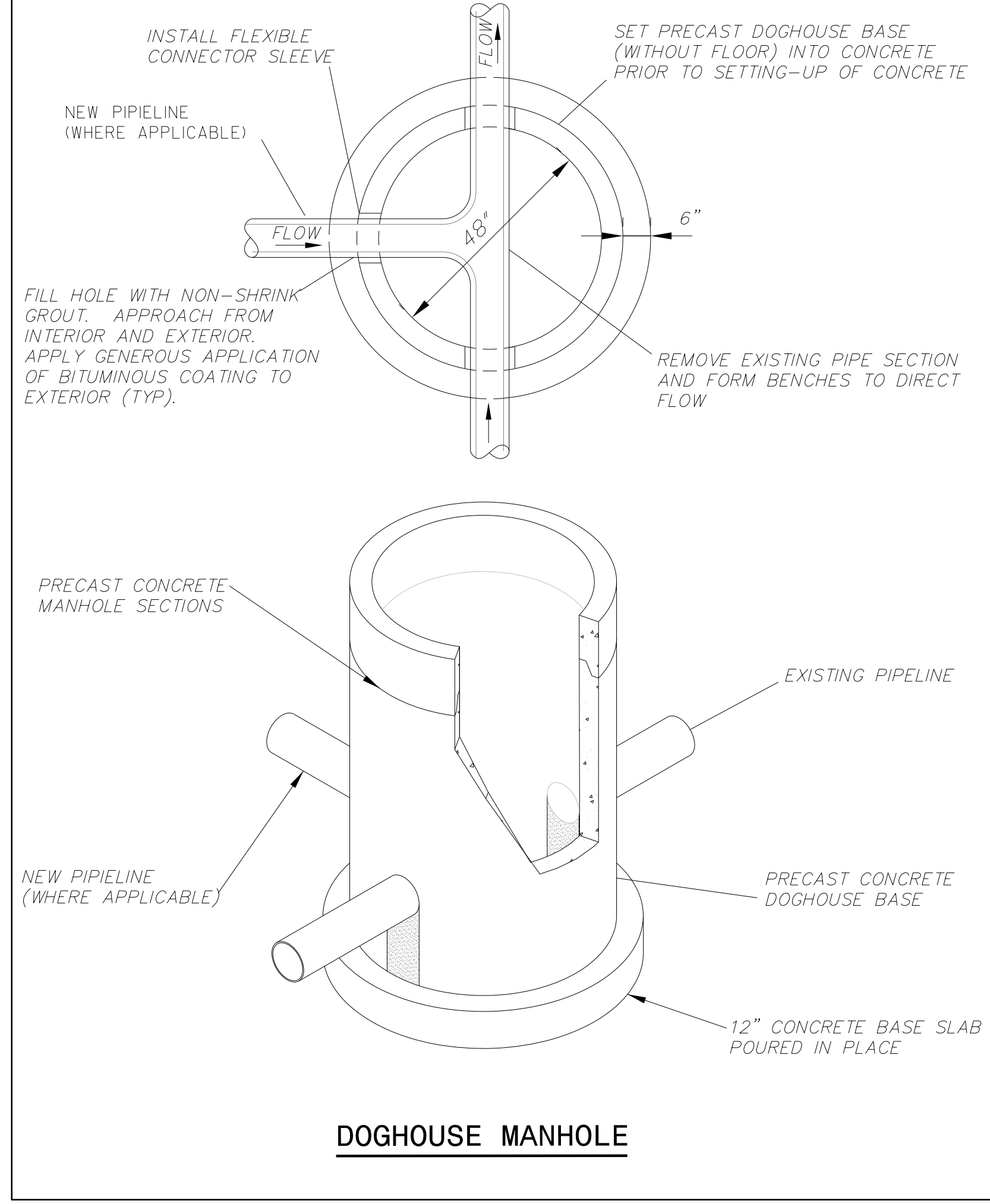
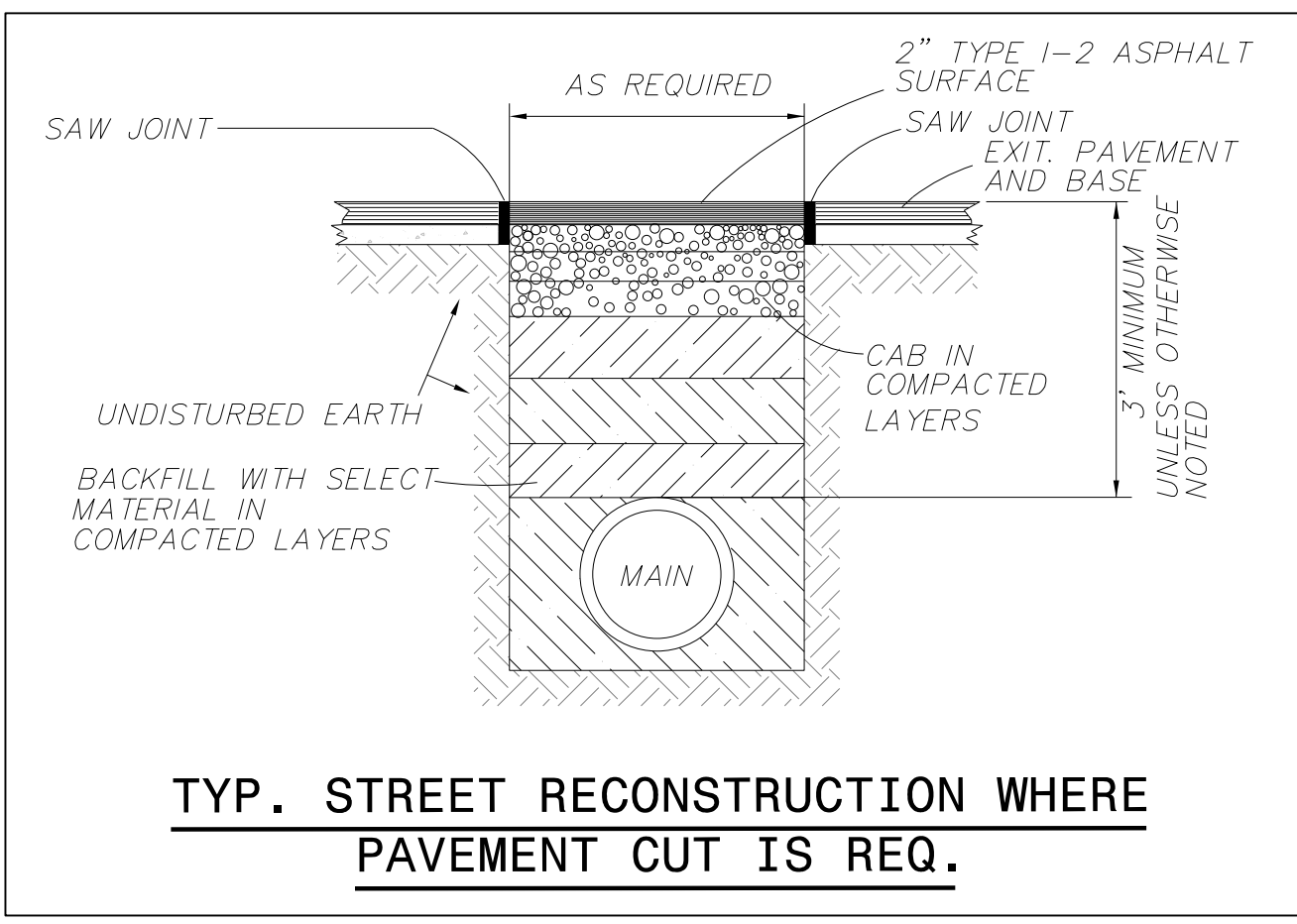
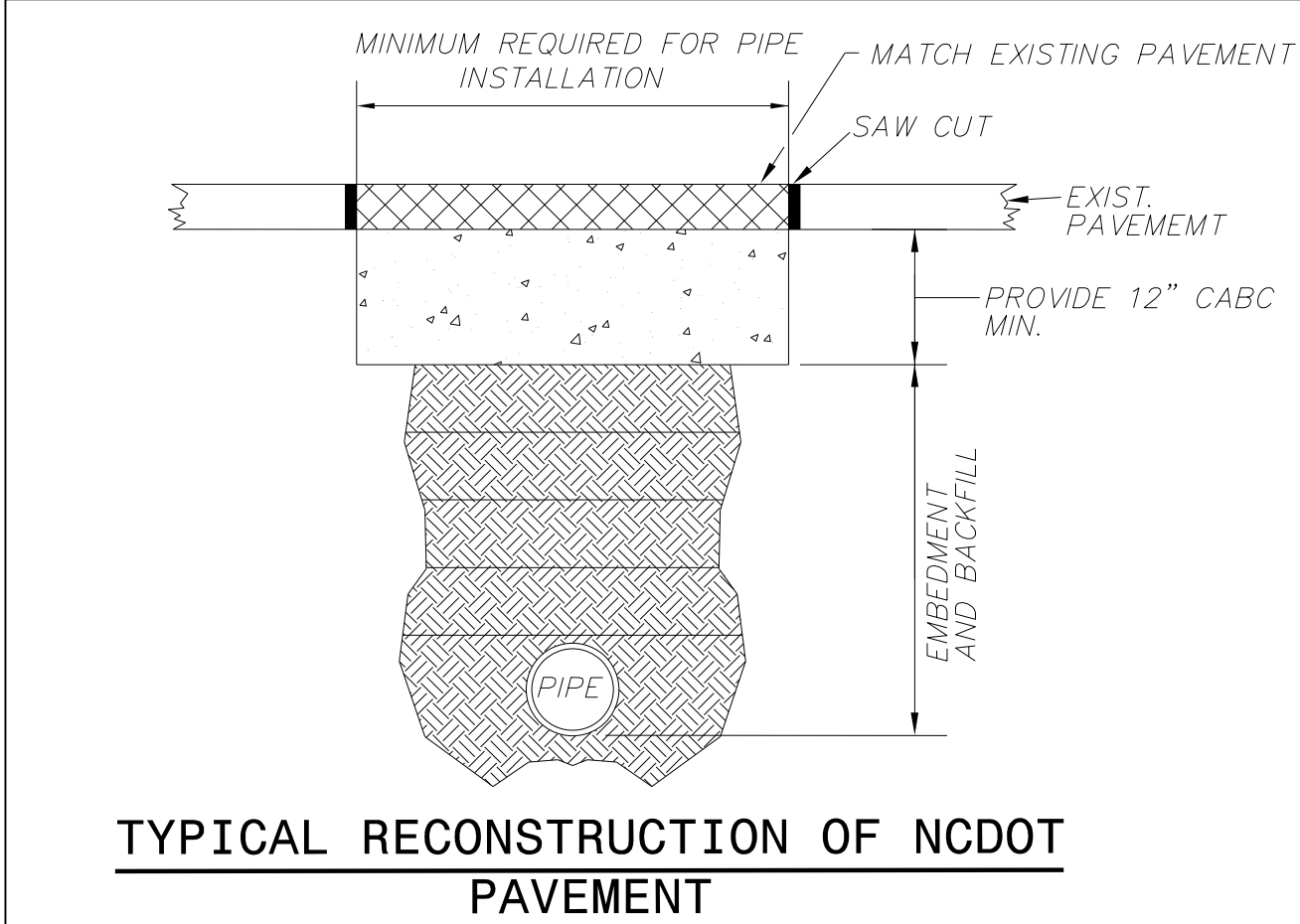
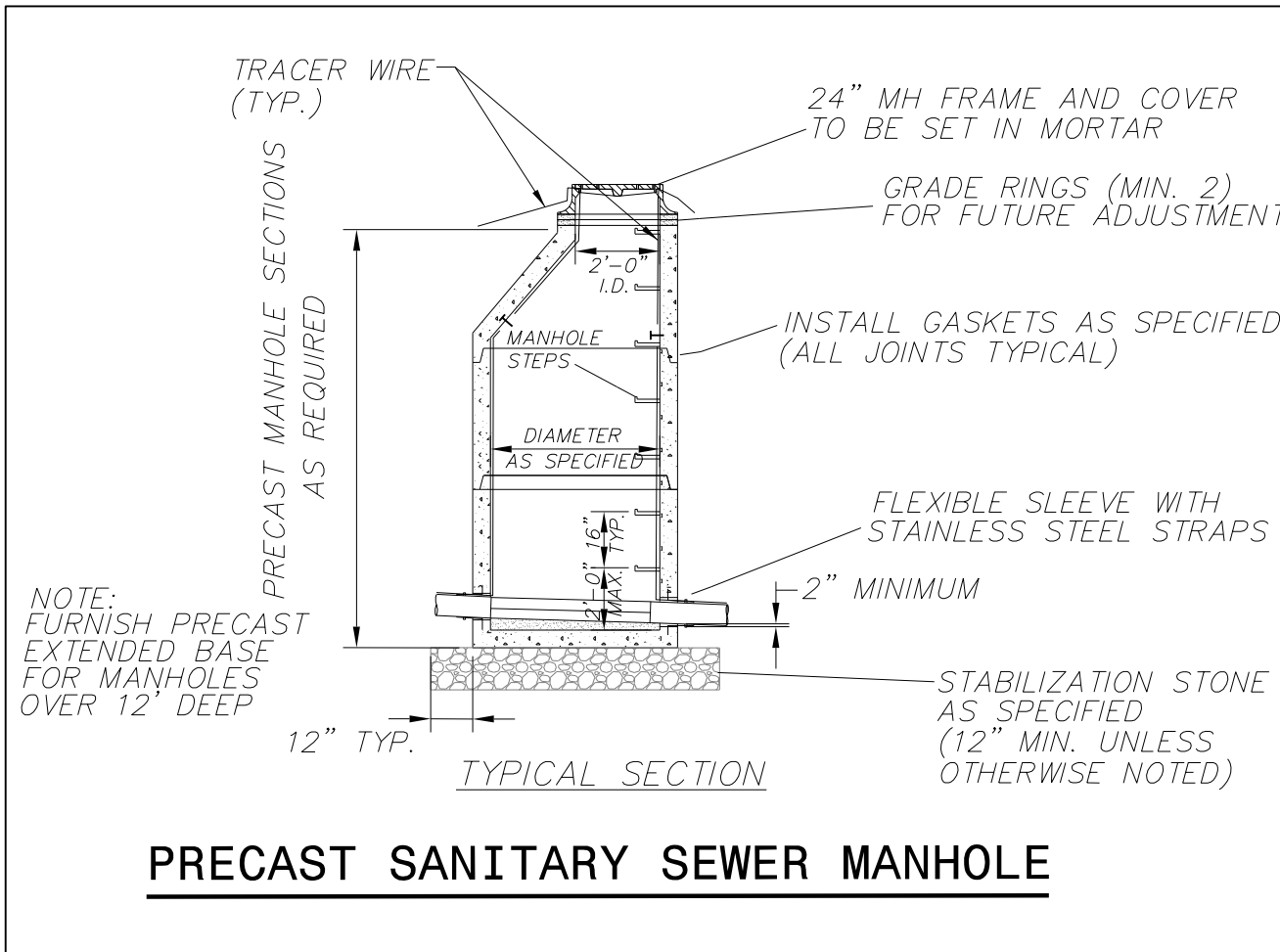
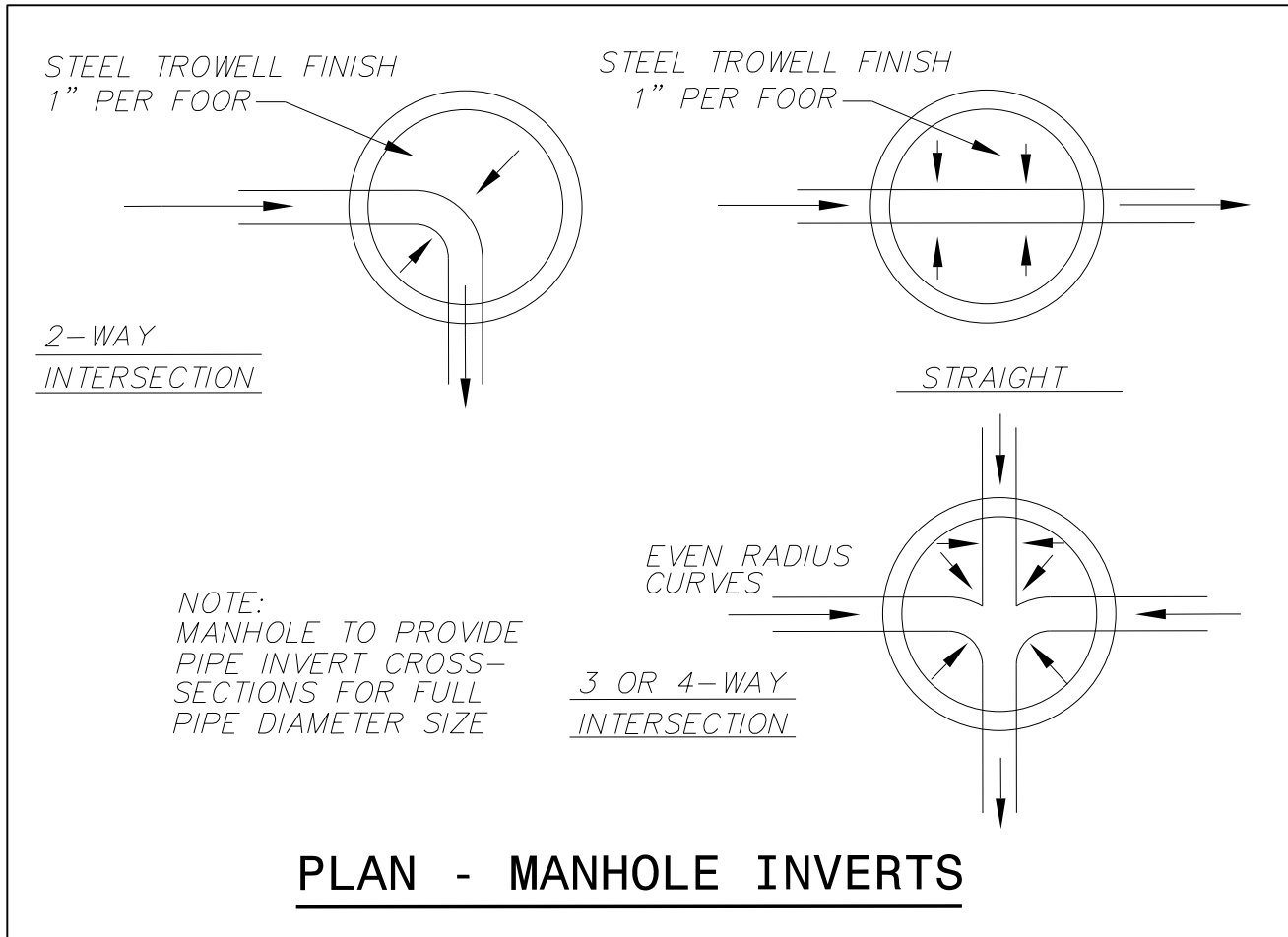
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - GIS/GPS - SURVEY/SUE - UTILITIES - CONSTRUCTION OBSERVATION

PROJECT REFERENCE NO.	HB-0002	SHEET NO.	UC-3D
DESIGNED BY:	PKP	DATE	8/6/2024
DRAWN BY:	TWR		
CHECKED BY:	PKP		
APPROVED BY:	SLK		
REVISED:			
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UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151			

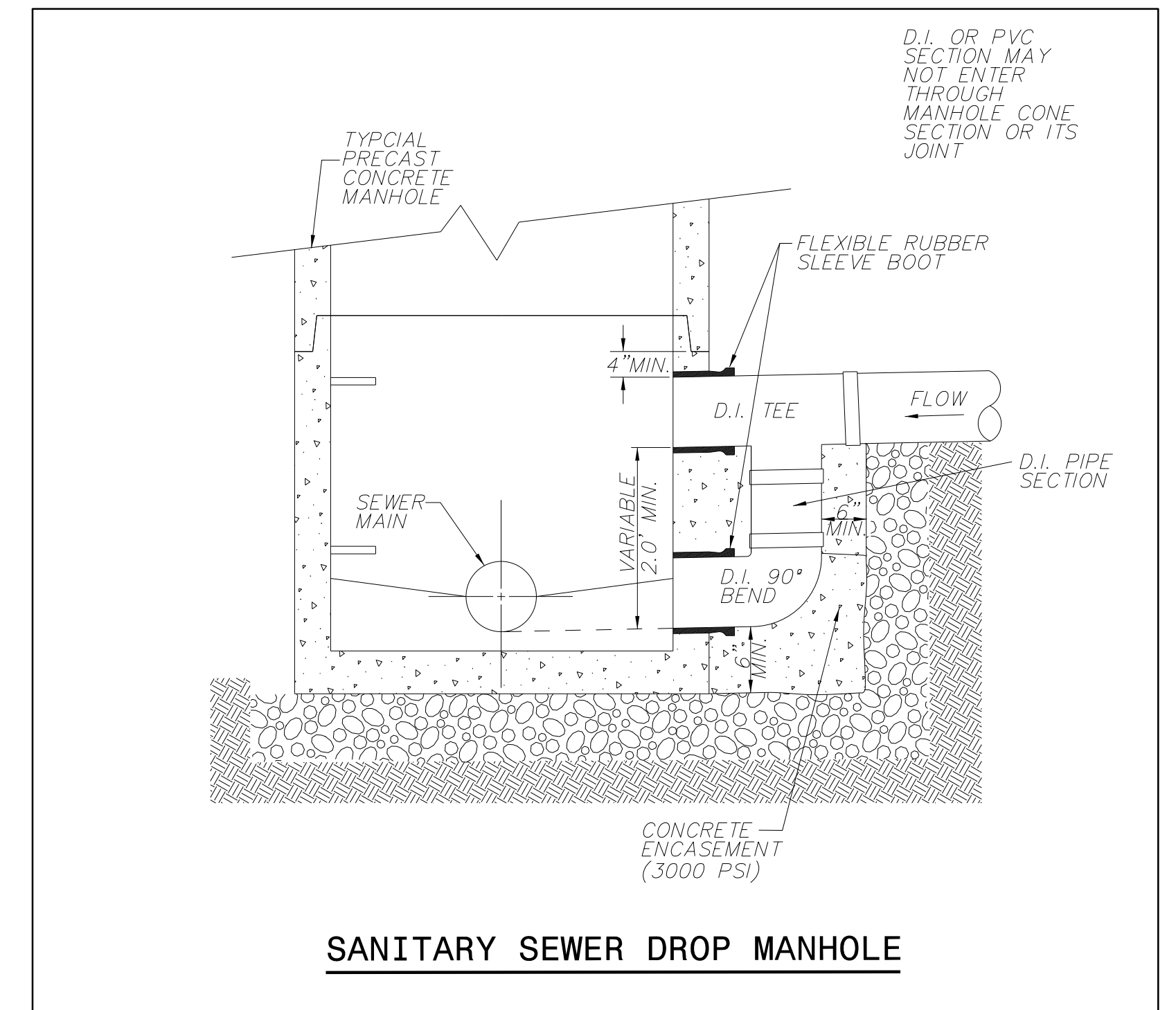


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UTILITY CONSTRUCTION

PROJECT TYPICAL DETAILS



NOTES:
 Where less than 12" of vertical separation is available between pipes, a concrete saddle between the 2 pipes is required. The minimum available separation between pipes with cradle is 6".



REVISIONS

8/16/2023
 HB0002 ut_uc_notes-details.dgn
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8/17/99

NOTES:

- SSMH-2, SSMH-3, SSMH-7, AND SSMH-9 WILL BE RAISED TO 2' ABOVE 100-YEAR FLOOD ELEVATION. SEE UC-7 AND UC-8 FOR PROFILES. (100-YEAR FLOOD ELEVATIONS: SSMH-2,3,7=2639.85' / SSMH-9=2630.05')
- NCDOT FIBER CONDUIT TO BE BORED AT A 4' DEPTH THROUGHOUT PROJECT LIMITS.
- NCDOT FIBER TRANSITIONS FROM IN FRONT OF THE GUARD RAIL TO BEHIND THE GUARD RAIL AT -L- STATION 321+65 +/-.

WATER METER
24 LF WATER SERVICE LINE

REMOVE WATER METER

49 LF 8" SANITARY GRAVITY SEWER
SS-2; PVC SDR21

4' DIA UTILITY MANHOLE
6 LF UTILITY MANHOLE WALL 4' DIA
SSMH-7: TOP=2641.85'
EX. GROUND=2639.26'
INVERT IN=2631.85' (SS-1)
INVERT IN=2632.09' (SS-2)
INVERT IN=2631.81' (SS-3)
INVERT IN=2630.04' (SS-4)
INVERT OUT=2629.84' (SS-5)

91 LF 8" SANITARY GRAVITY SEWER
SS-1; PVC SDR21

4' DIA UTILITY MANHOLE (EXISTING)
4 LF UTILITY MANHOLE WALL 4' DIA
SSMH-1: TOP=2644.93'
SSMH-1: EX. TOP=2640.68'
(RAISE 4' TO MATCH PROPOSED GRADE)
INVERT IN=2633.42' (EXIST.)
INVERT OUT=2633.42' (SS-1)

NCDOT JUNCTION BOX

MATCHLINE -L- STA. 312+00 SEE SHEET UC-4

4' DIA UTILITY MANHOLE (DOGHOUSE)
2 LF UTILITY MANHOLE WALL 4' DIA
SSMH-9: TOP=2632.05'
INVERT IN=2624.49' (SS-5)
INVERT OUT=2624.29' (EXIST.)

4' DIA UTILITY MANHOLE (EXISTING)
3 LF UTILITY MANHOLE WALL 4' DIA
SSMH-2: TOP=2641.85'
EX. TOP=2639.92'
INVERT IN=2634.55' (EXIST.)
INVERT OUT=2634.47' (SS-2)

8" VALVE
15 LF 8" WATER LINE
PVC SDR21

95 LF 8" SANITARY GRAVITY SEWER
SS-3; PVC SDR21

4' DIA UTILITY MANHOLE (DOGHOUSE)
SSMH-3: TOP=2641.85'
EX. GROUND=2636.35'
INVERT IN=2632.54' (EXIST.)
INVERT OUT=2632.34' (SS-3)

ABANDON 102 LF 8" UTILITY PIPE

ABANDON 122 LF 8" UTILITY PIPE

411 LF 8" SANITARY GRAVITY SEWER
SS-4; PVC SDR21

NCDOT JUNCTION BOX

ABANDON UTILITY MANHOLE

ABANDON 450 LF 8" UTILITY PIPE

8" VALVE

RELOCATE WATER METER
26 LF WATER SERVICE LINE
REMOVE WATER METER

BEGIN CONSTRUCTION
-Y2- STA. 10+00

ABANDON 119 LF 8" UTILITY PIPE

REMOVE UTILITY MANHOLE

ABANDON 280 LF 8" UTILITY PIPE

225 LF BORE AND JACK OF 16"
273 LF 16" ENCASUREMENT PIPE
0.31" WALL THICKNESS

25' X 25' BORE PIT

127 LF 8" SANITARY GRAVITY SEWER
SS-5; PVC SDR21

8" X 8" TEE (WL-2)

20' X 20' BORE PIT

30 LF 16" ENCASUREMENT PIPE
0.31" WALL THICKNESS

147 LF 8" WATER LINE
WL-1; PVC SDR21

8" VALVE

FIRE HYDRANT
RELOCATE WATER METER
16 LF FIRE HYDRANT LEG
6" VALVE
8" X 6" TEE
REMOVE FIRE HYDRANT

8" VALVE

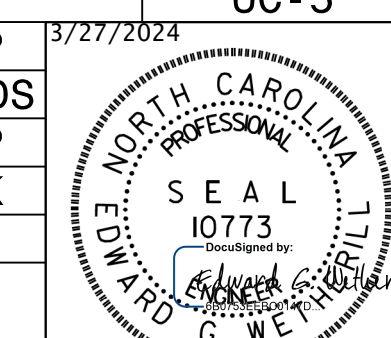


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CIVIL/SITE DESIGN - GIS/GPS - SURVEY/SUE - UTILITIES - CONSTRUCTION OBSERVATION

PROJECT REFERENCE NO.	HB-0002	SHEET NO.	UC-5
DESIGNED BY:	PKP	DATE	3/27/2024
DRAWN BY:	TWR/JDS		
CHECKED BY:	PKP		
APPROVED BY:	SLK		
REVISED:			
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UTILITY CONSTRUCTION

ABANDON 205 LF 8" UTILITY PIPE

10' X 15' BORE PIT

4' DIA UTILITY MANHOLE
SSMH-6: TOP=2637.67'
INVERT IN=2634.00' (SS-4)
INVERT OUT=2632.10' (SS-4)

3000 PSI CONCRETE CRADLE
(SEE SHEET UC-3D FOR DETAIL)

408 LF 8" SANITARY GRAVITY SEWER
SS-4; PVC SDR21

222 LF 8" WATER LINE
WL-4; 72 LF PVC SDR21
WL-4; 150 LF PVC C900 BORED UNDER CREEK AT 5' CLEARANCE

20' X 20' BORE PIT

10' X 15' BORE PIT

8" VALVE

4' DIA UTILITY MANHOLE (EXISTING)
SSMH-4: TOP=2644.40'
INVERT IN=2637.65' (EXIST.)
INVERT OUT=2637.65' (SS-4)

43 LF 8" SANITARY GRAVITY SEWER
SS-4; PVC SDR21

4' DIA UTILITY MANHOLE
3 LF UTILITY MANHOLE WALL 4' DIA
SSMH-5: TOP=2645.34'
INVERT IN=2637.22' (SS-4)
INVERT OUT=2637.02' (SS-4)

2886 LF DIRECTIONAL DRILL (1) 2" HDPE
1443 LF TRACER WIRE
(2) POLYETHYLENE CONDUITS

ABANDON 209 LF 8" UTILITY PIPE

ABANDON UTILITY MANHOLE

8" VALVE

550 LF 8" WATER LINE
WL-3; PVC SDR21

8" VALVE

WATER MARKER
UTILITY POST

20' X 20' BORE PIT

30 LF 16" ENCASUREMENT PIPE
0.31" WALL THICKNESS

147 LF 8" WATER LINE
WL-1; PVC SDR21

8" VALVE

30 LF 16" ENCASUREMENT PIPE
0.31" WALL THICKNESS

(2) 8" VALVES
30 LF 8" WATER LINE
WL-5; PVC SDR21
8" X 8" TEE

8" VALVE

8" VALVE

8" VALVE

8" VALVE

NOTE:
THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 2600 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

MATCHLINE -L- STA. 325+00 SEE SHEET UC-6

REVISIONS

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8/17/24

NOTES:

- 1. NCDOT FIBER CONDUIT TO BE BORED AT A 4' DEPTH THROUGHOUT PROJECT LIMITS.
- 2. NCDOT FIBER TRANSITIONS FROM IN FRONT OF THE GUARD RAIL TO BEHIND THE GUARD RAIL AT -L- STATION 321+65 +/-.

**END PROPOSED GRADE
BEGIN MILLING,
RESURFACING,
AND WIDENING
-L- STA. 325+60.00**

1400 LF DIRECTIONAL DRILL (1) 2" HDPE
700 LF TRACER WIRE
(2) POLYETHYLENE CONDUITS

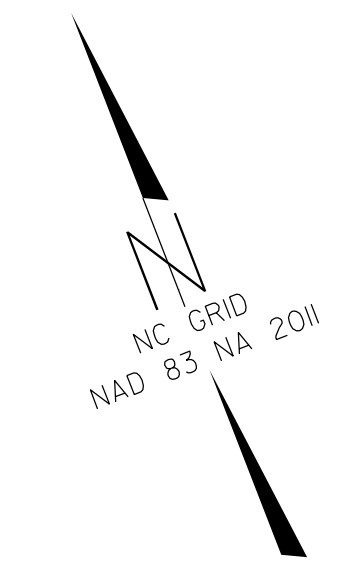
**END TIP PROJECT HB-0002
-L- STA. 331+50.00**

**END PROPOSED
WOVEN WIRE FENCE (47")
-L- STA. 329+50.00**

NCDOT JUNCTION BOX

TIE INTO EXISTING FIBER OPTIC CABLE
(NCDOT)

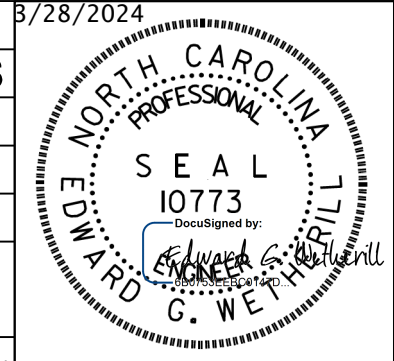
**END CONSTRUCTION
-EBL- STA. 29+25.00**



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CIVIL/SITE DESIGN - GIS/GPS - SURVEY/SUE - UTILITIES - CONSTRUCTION OBSERVATION

PROJECT REFERENCE NO. HB-0002	SHEET NO. UC-6
DESIGNED BY: PKP	DATE: 8/28/2024
DRAWN BY: TWR/JDS	
CHECKED BY: PKP	
APPROVED BY: SLK	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
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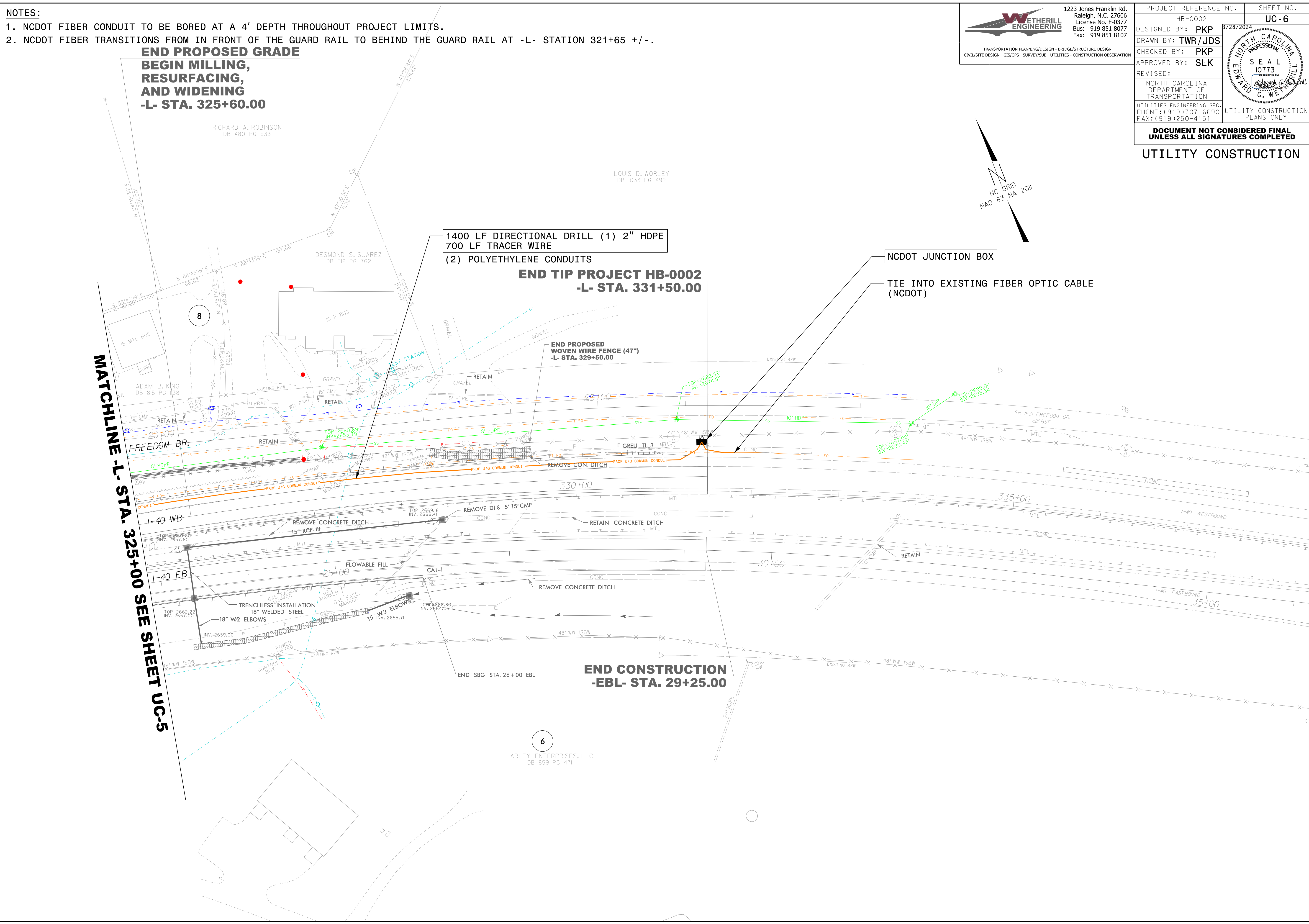
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UTILITY CONSTRUCTION

MATCHLINE -L- STA. 325+00 SEE SHEET UC-5

REVISIONS

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6
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DB 859 PG 471

RICHARD A. ROBINSON
DB 480 PG 933

LOUIS D. WORLEY
DB 1033 PG 492

DESMOND S. SUAREZ
DB 519 PG 762

8

6

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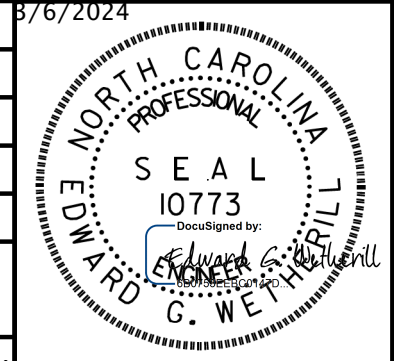
NOTES:

1. SSMH-2, SSMH-3, SSMH-7, AND SSMH-9 WILL BE RAISED TO 2' ABOVE 100-YEAR FLOOD ELEVATION. SEE UC-7 AND UC-8 FOR PROFILES. (100-YEAR FLOOD ELEVATIONS: SSMH-2,3,7=2639.85' / SSMH-9=2630.05')

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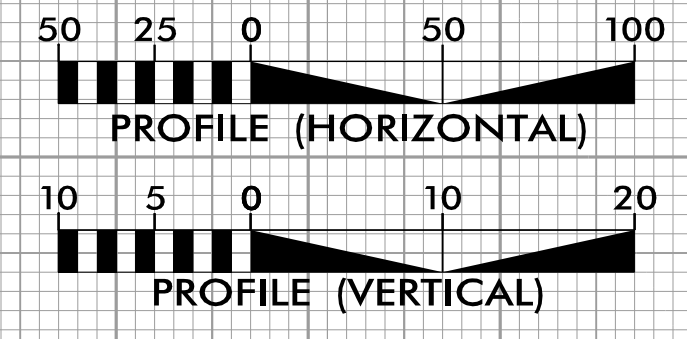
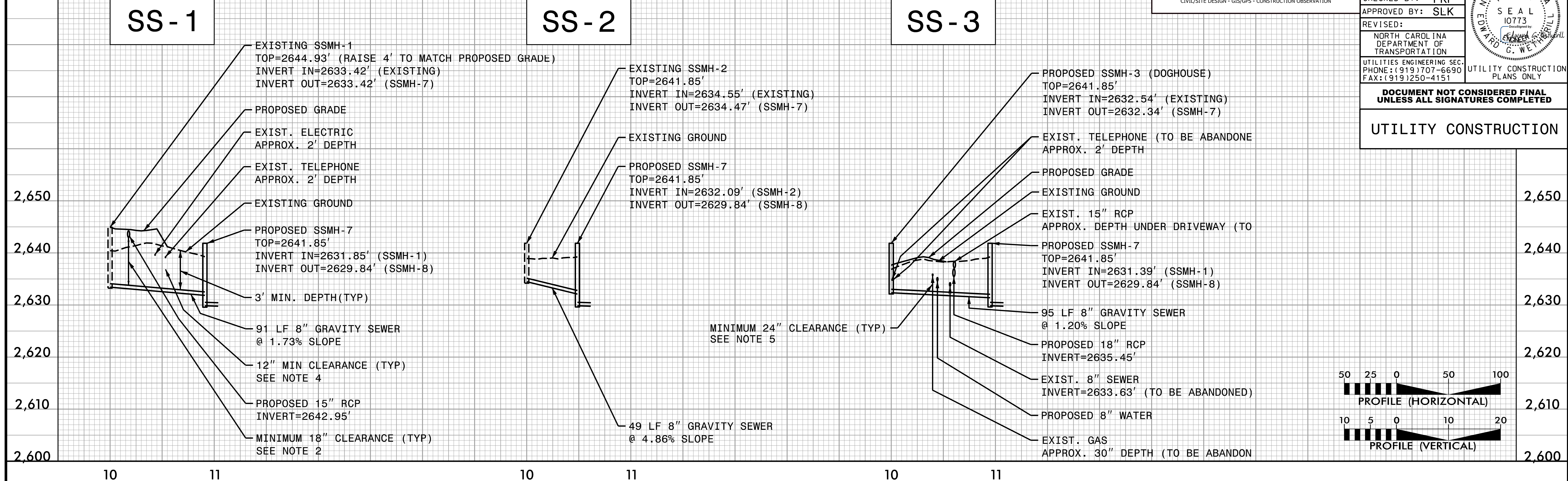
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 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

PROJECT REFERENCE NO. HB-0002	SHEET NO. UC-7
DESIGNED BY: PKP	DATE: 3/6/2024
DRAWN BY: TWR	
CHECKED BY: PKP	
APPROVED BY: SLK	
REVISED:	
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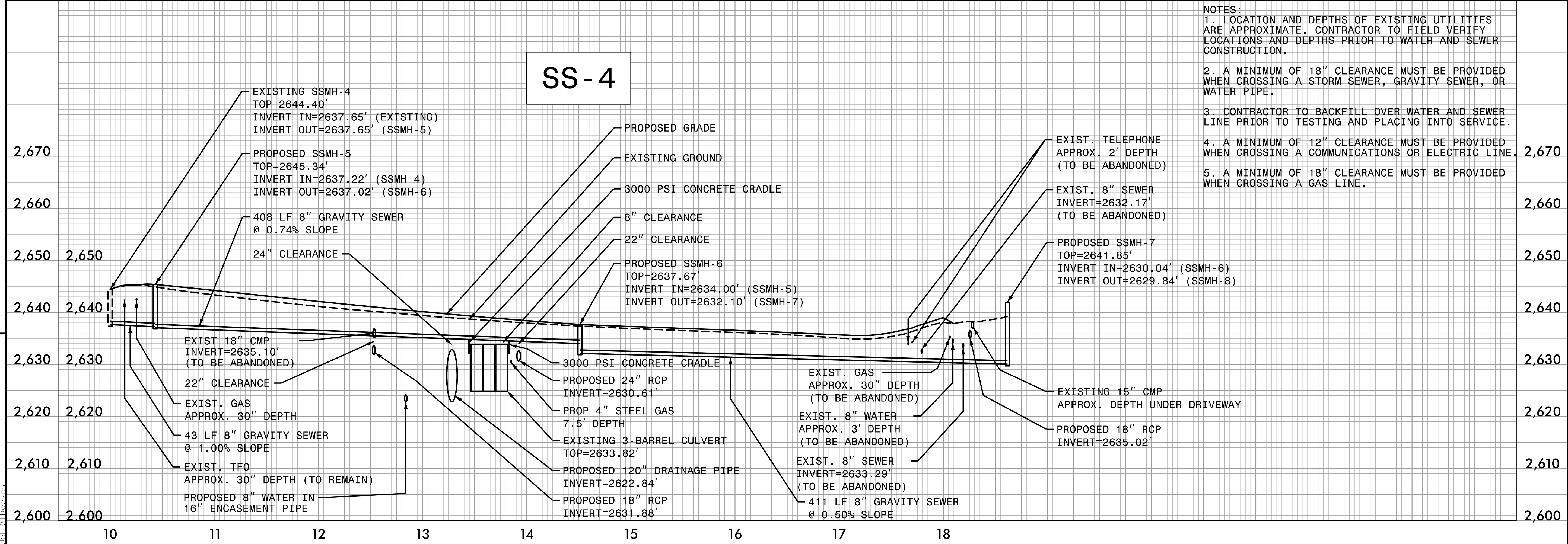


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NOTES:

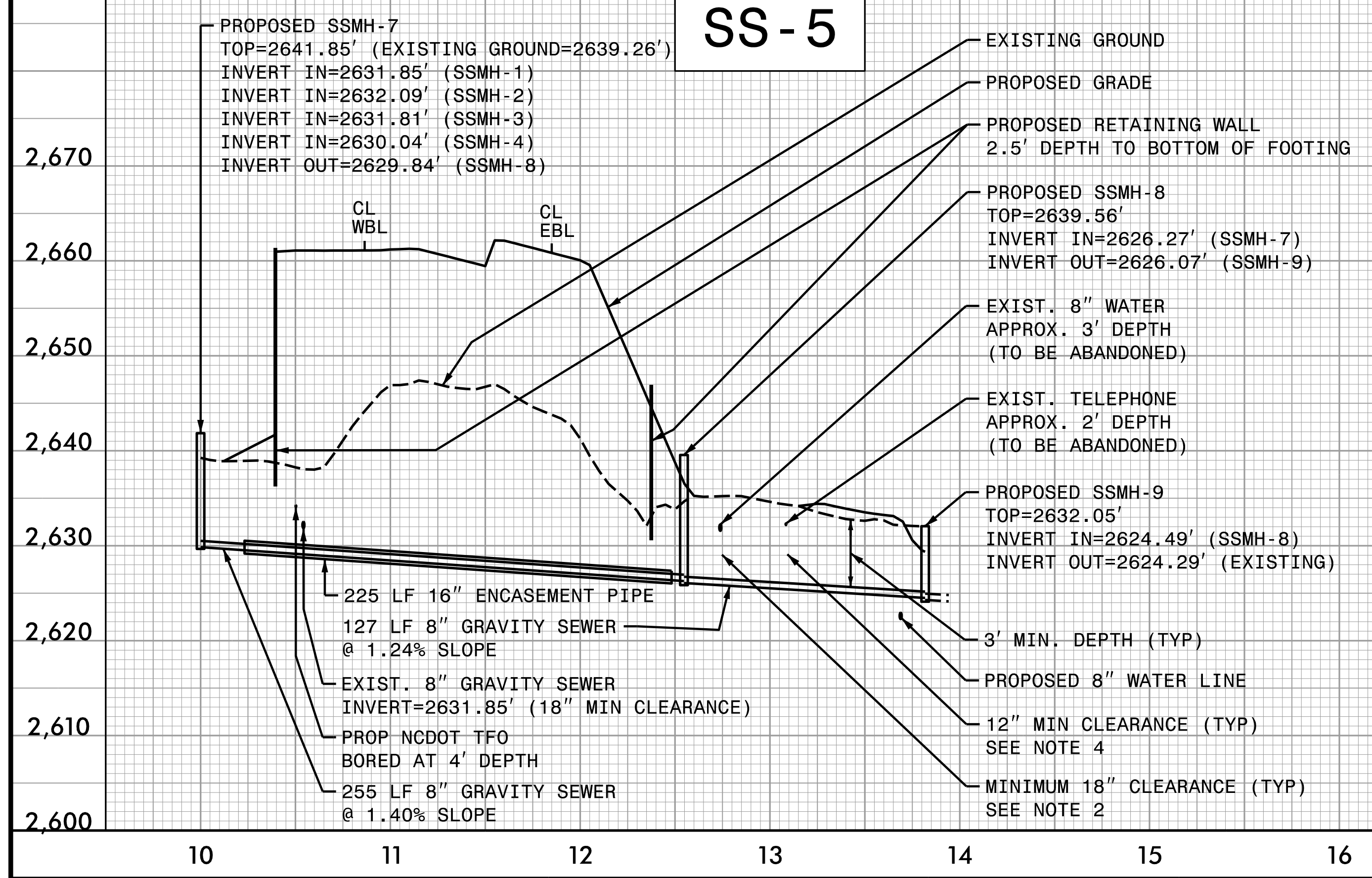
1. LOCATION AND DEPTHS OF EXISTING UTILITIES ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY LOCATIONS AND DEPTHS PRIOR TO WATER AND SEWER CONSTRUCTION.
2. A MINIMUM OF 18" CLEARANCE MUST BE PROVIDED WHEN CROSSING A STORM SEWER, GRAVITY SEWER, OR WATER PIPE.
3. CONTRACTOR TO BACKFILL OVER WATER AND SEWER LINE PRIOR TO TESTING AND PLACING INTO SERVICE.
4. A MINIMUM OF 12" CLEARANCE MUST BE PROVIDED WHEN CROSSING A COMMUNICATIONS OR ELECTRIC LINE.
5. A MINIMUM OF 18" CLEARANCE MUST BE PROVIDED WHEN CROSSING A GAS LINE.

3/5/2024 HB0002-ut.uc_psh_07.dgn

8/17/99

NOTES:

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NOTES:

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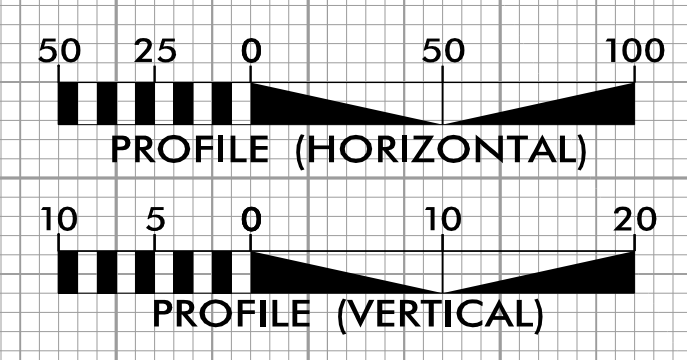
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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
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PROJECT REFERENCE NO. HB-0002	SHEET NO. UC-8
DESIGNED BY: PKP	3/6/2024
DRAWN BY: TWR/JDS	
CHECKED BY: PKP	NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 10773 EDWARD G. WETHERILL
APPROVED BY: SLK	
REVISED:	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	UTILITY CONSTRUCTION PLANS ONLY

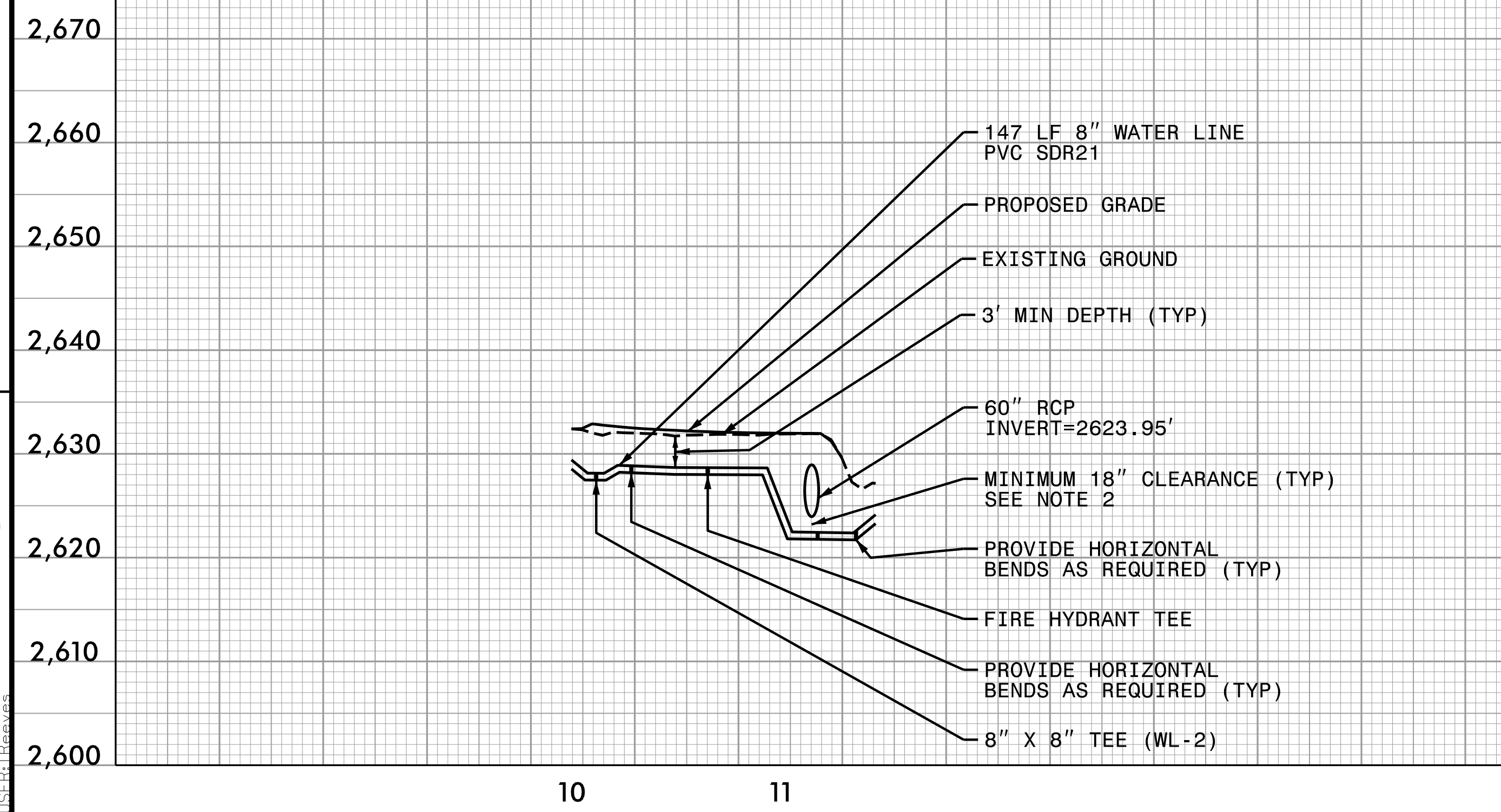
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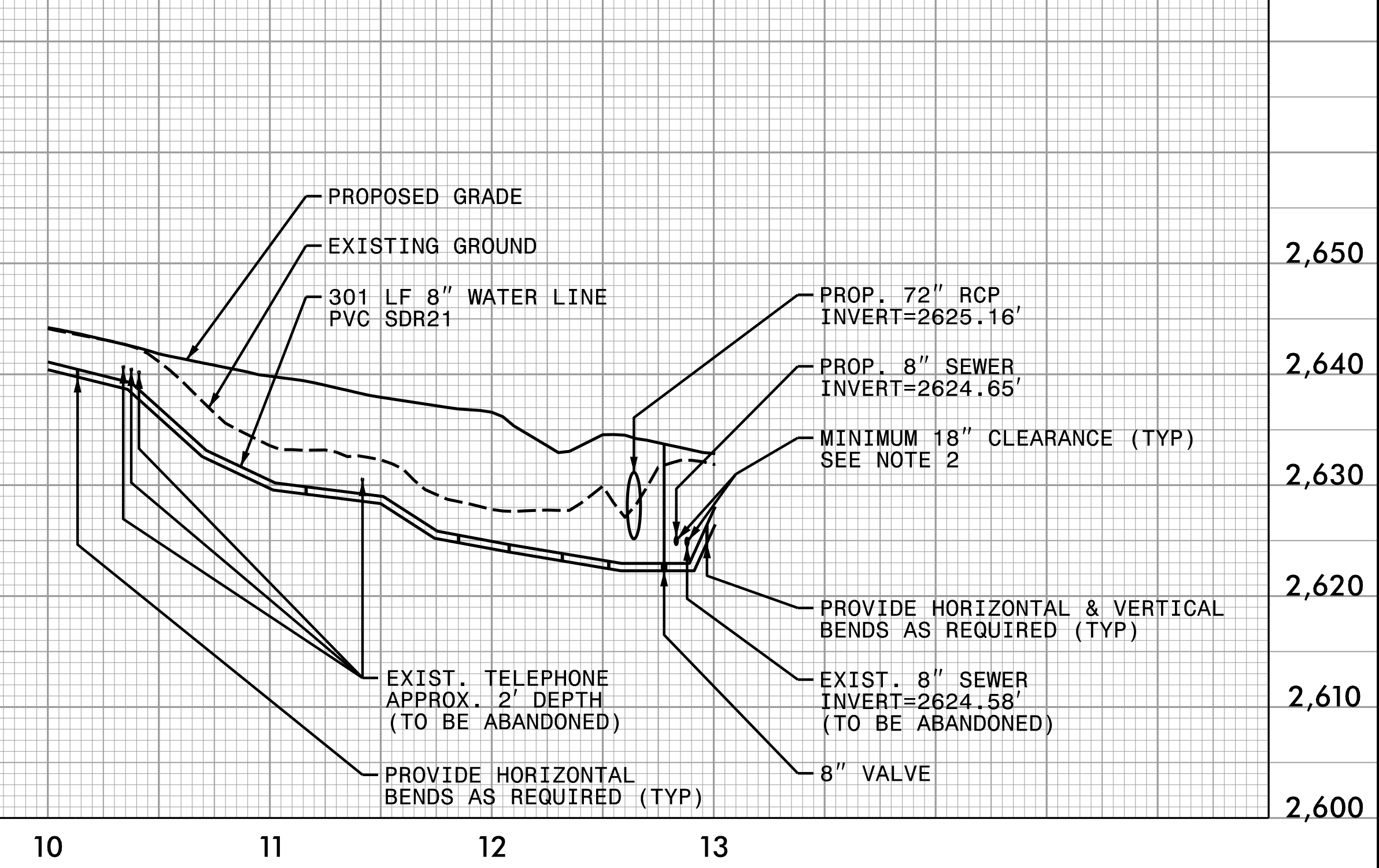


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WL - 2

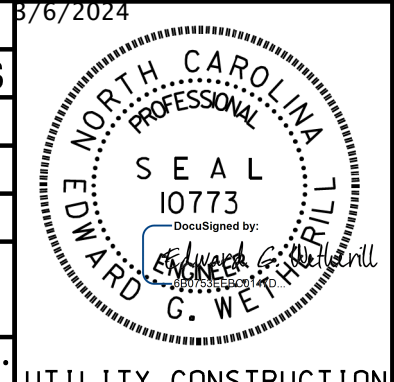


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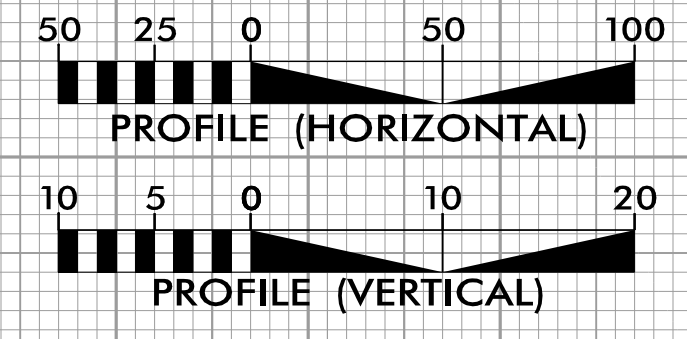
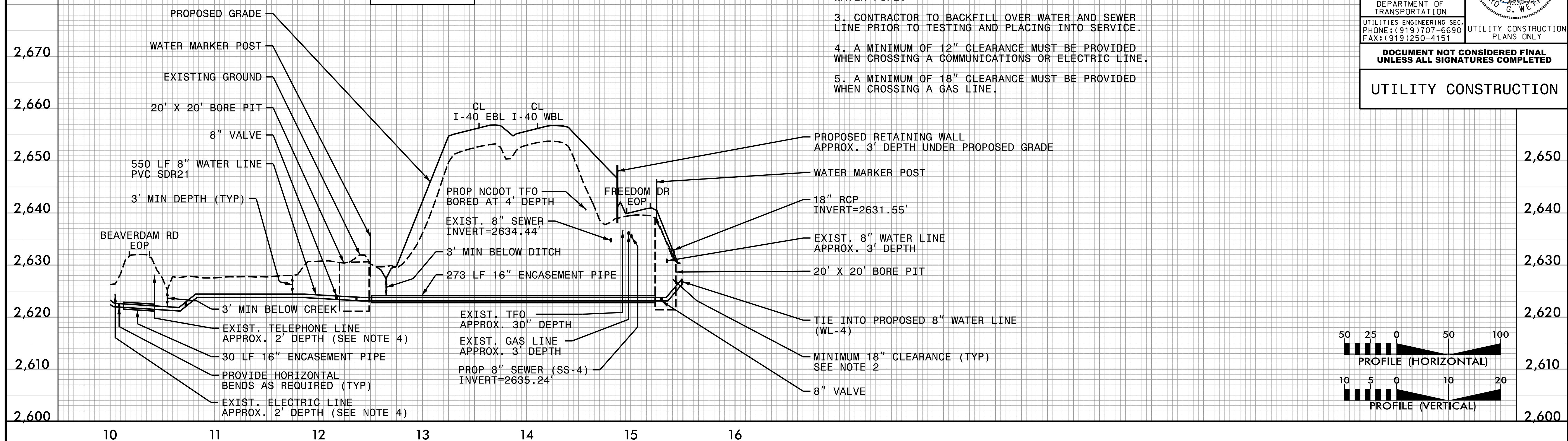
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PROJECT REFERENCE NO. HB-0002	SHEET NO. UC-9
DESIGNED BY: PKP DRAWN BY: TWR/JDS CHECKED BY: PKP APPROVED BY: SLK	3/6/2024 
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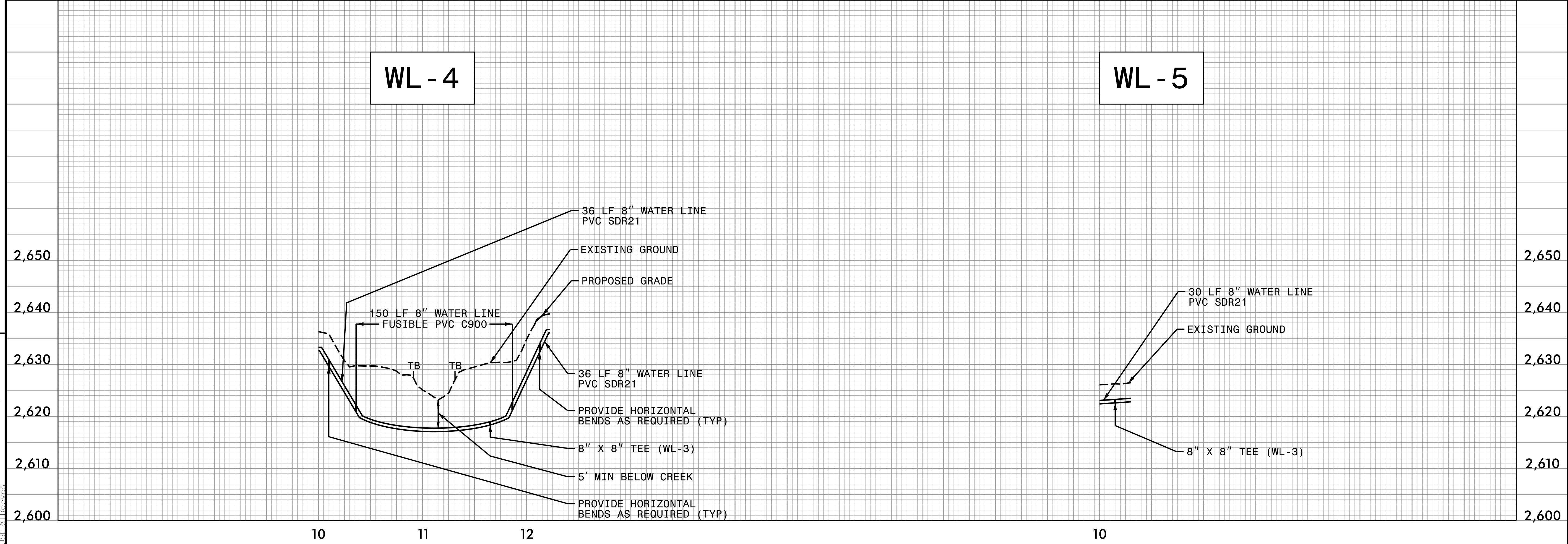
- NOTES:**
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