

TIP PROJECT: U-6036

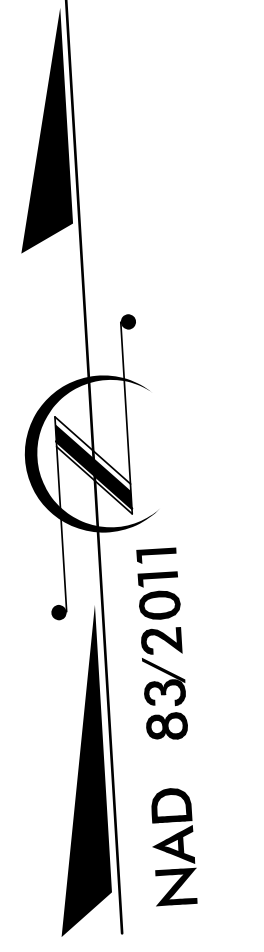
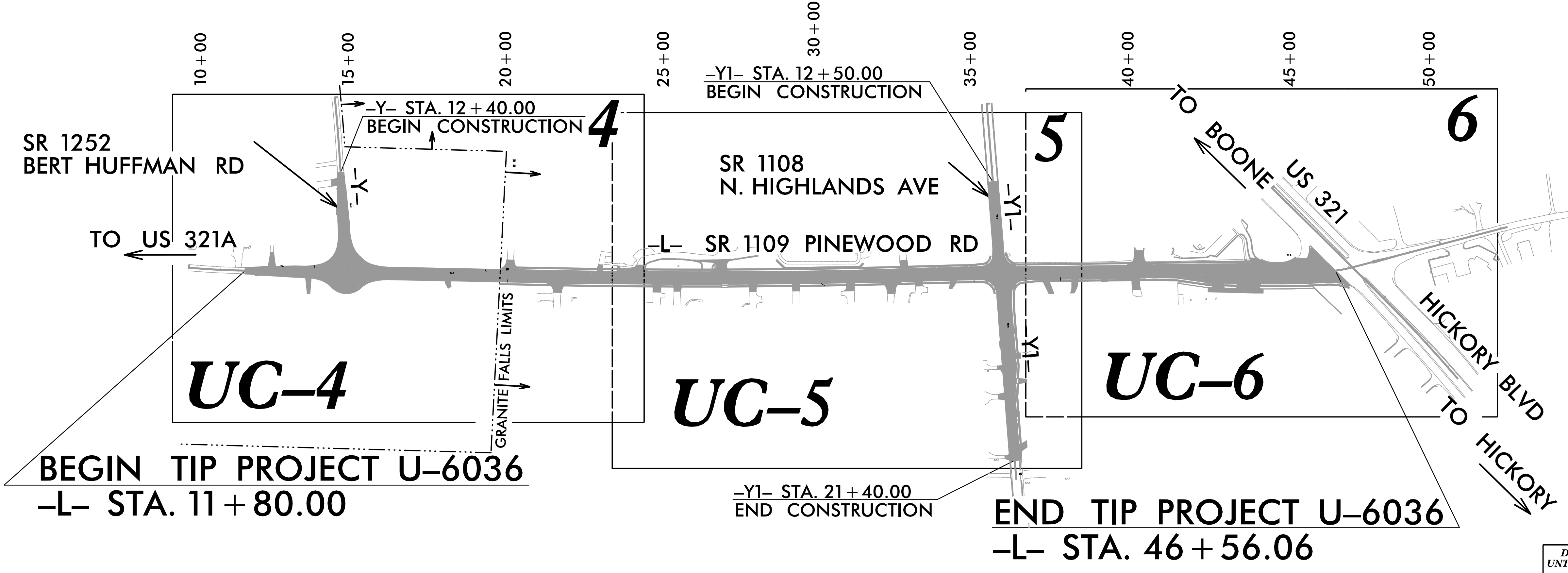
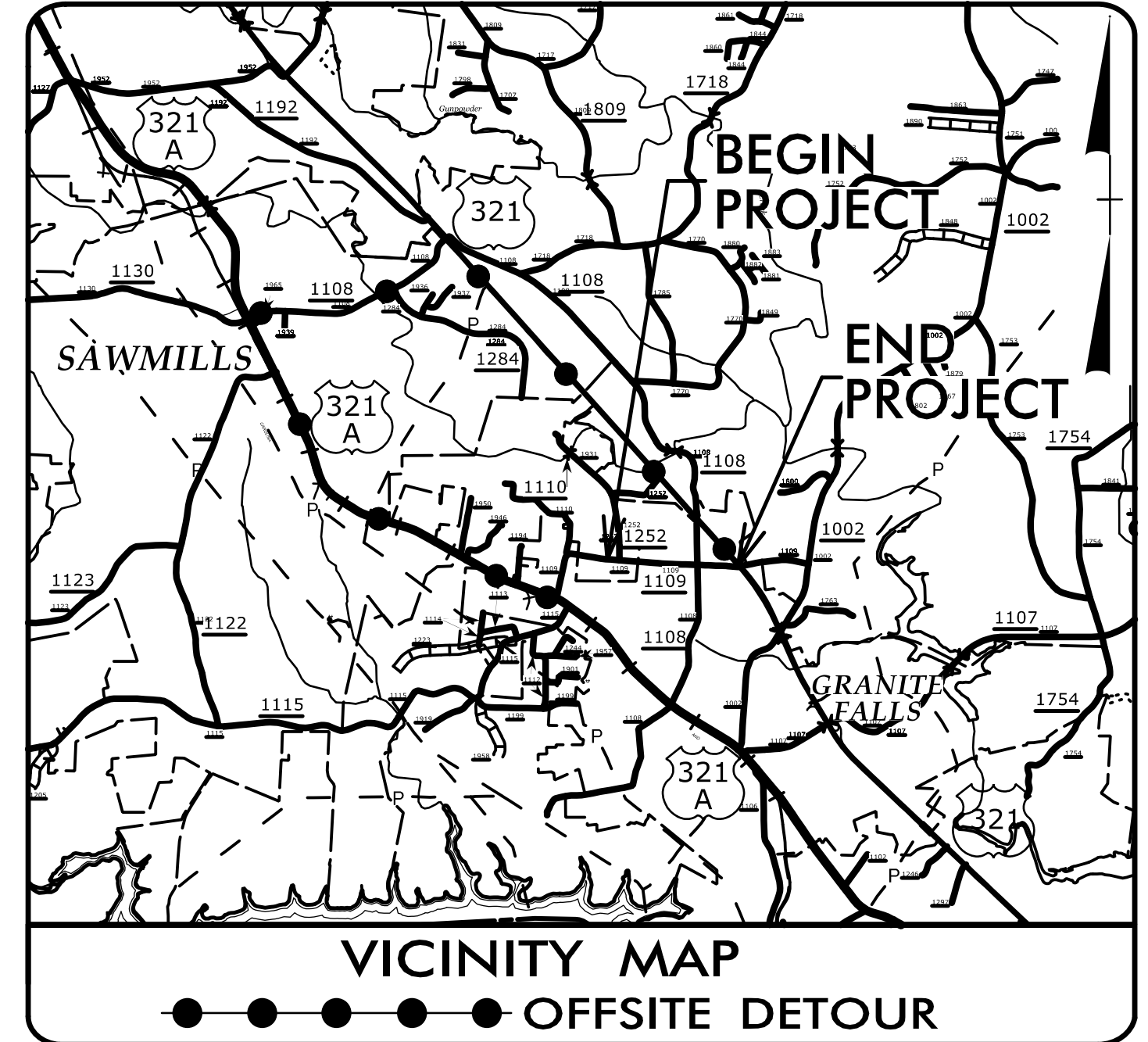
T.I.P. NO.	SHEET NO.
U-6036	UC-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

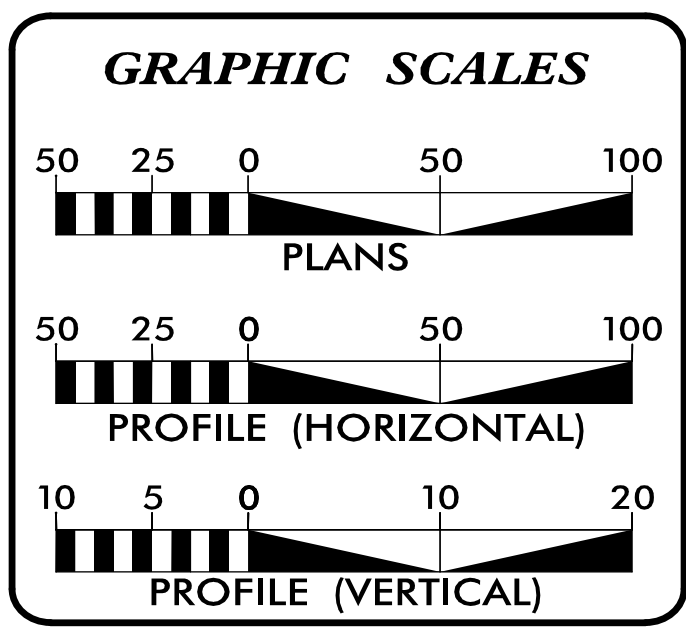
**UTILITY CONSTRUCTION PLANS
CALDWELL COUNTY**

**LOCATION: SR 1109 (PINWOOD RD) FROM US 321
TO SR 1252 (BERT HUFFMAN RD)**

TYPE OF WORK: WATER AND SEWER CONSTRUCTION



DOCUMENT NOT CONSIDERED FINAL
UNTIL ALL SIGNATURES ARE COMPLETED



SHEET NO.:	DESCRIPTION:
UC-1	TITLE SHEET
UC-2	UTILITY SYMBOLOGY
UC-3	NOTES
UC-3A	DETAILS
UC-4 THRU UC-6	UTILITY CONSTRUCTION SHEETS
UC-7 THRU UC-13	PROFILE SHEETS

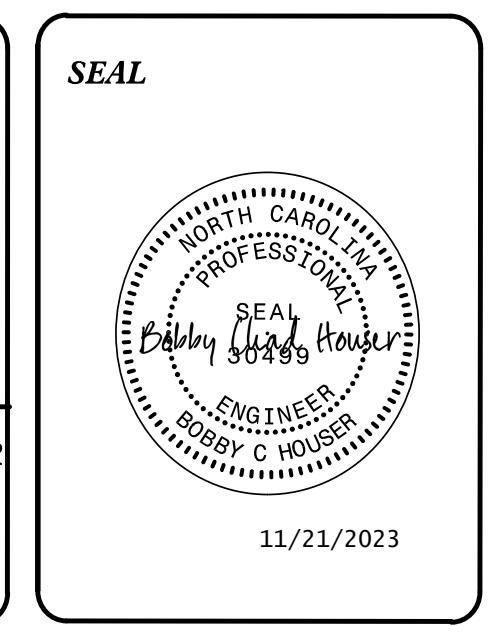
WATER AND SEWER OWNERS ON PROJECT

(A) WATER - TOWN OF GRANITE FALLS
(B) SEWER - TOWN OF GRANITE FALLS

PREPARED IN THE OFFICE OF

TGS ENGINEERS
201 W. MARION ST., STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

B. CHAD HOUSER, PE, PLS UTILITY DESIGN ENGINEER
JIMMY TERRY, PE PROJECT MANAGER



**DIVISION OF HIGHWAYS
DIVISION II**
801 STATESVILLE HIGHWAY
NORTH WILKESBORO, NC 28659
PHONE (336) 903-9101
FAX (336) 667-4549

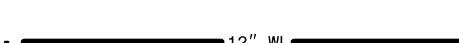





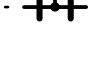

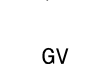


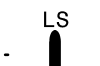












BRANDON GREER DIVISION UTILITY ENGINEER
DANIEL ADAMS, PE DIVISION PROJECT TEAM LEAD

11/21/2023

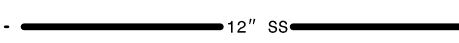
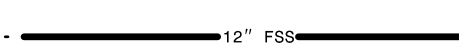

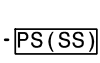
STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

UTILITIES PLAN SHEET SYMBOLS





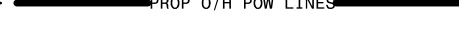
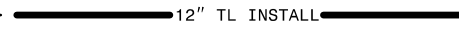
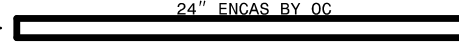
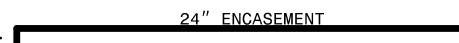
PROPOSED WATER SYMBOLS





Water Line (Sized as Shown)	
11¼ Degree Bend	
22½ 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	

Thrust Block	
Air Release Valve	
Utility Vault	
Concrete Pier	
Steel Pier	
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)

UTILITY CONSTRUCTION

GENERAL NOTES:

1. THE PROPOSED UTILITY CONSTRUCTION SHALL MEET THE APPLICABLE REQUIREMENTS OF THE NC DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" DATED JANUARY 2024.
2. THE EXISTING UTILITIES BELONG TO TOWN OF GRANITE FALLS . THE CONTACT PERSON IS RANDY SMITH - WATER RESOURCES DIRECTOR. HIS PHONE NUMBER IS 828.396.3131 AND HIS EMAIL IS smith@granitfallsonc.com.
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.

PROJECT SPECIFIC NOTES:

1. ALL PROPOSED WATER LINE 4 TO 12 INCHES IN DIAMETER, SHALL BE C-900 DR 18 PVC WITH A PRESSURE RATING OF 235 PSI AND UTILIZE FLEXIBLE PUSH-ON RESTRAINED JOINTS.

2. ALL PROPOSED STEEL ENCASEMENTS SHALL BE SMOOTH WALL WITH A MINIMUM THICKNESS OF 0.25 INCHES.

3. ALL WATER LINE FITTINGS 6 TO 12 INCHES IN DIAMETER, SHALL BE PRESSURE CLASS 350 DUCTILE IRON RESTRAINED JOINT IN ACCORDANCE WITH ANSI A21.10 / AWWA C110 AND ANSI A21.4 / AWWA C104.

4. WATER LINE UTILIZING RESTRAINED JOINTS SHALL BE TYTON JOINT, HP LOK, AMERICAN "FAST GRIP", US PIPE "FIELD-LOK" OR APPROVED EQUAL.

5. ALL WATERLINE SHALL HAVE COATED TRACER WIRE NO SMALLER THAN 12 AWG SOLID COPPER.

6. ALL VALVES - 2" THROUGH 12" SHALL BE RESILIENT WEDGE GATE, CAST IRON BODY, CONFORMING TO AWWA C509, LATEST VERSION. SEALING MECHANISM SHALL PROVIDE ZERO LEAKAGE AT THE WATER WORKING PRESSURE AGAINST THE LINE FLOW FROM EITHER DIRECTION AND BE DESIGNED SUCH THAT NO EXPOSED METAL SEAMS, EDGES, SCREWS, ETC. ARE WITHIN THE WATERWAY IN THE CLOSED POSITION. THE GATE SHALL NOT BE WEDGED INTO A POCKET NOR SLIDE ACROSS THE SEATING SURFACE TO OBTAIN TIGHT CLOSURE. ALL INTERNAL AND EXTERNAL FERROUS SURFACES OF THE VALVE, INCLUDING THE INTERIOR OF THE GATE, SHALL BE COATED WITH A PROTECTIVE COATING CONFORMING TO AWWA C550, LATEST VERSION. COATING SHALL BE APPLIED TO CASTINGS PRIOR TO ASSEMBLY TO ASSURE ALL EXPOSED AREAS WILL BE COVERED. VALVES SHALL BE RATED AT 200 PSI WORKING PRESSURE. UNLESS OTHERWISE NOTED, UNDERGROUND VALVES SHALL HAVE AN OPERATING NUT AND EXPOSED VALVES SHALL HAVE A HAND WHEEL OPERATOR. OPERATING NUT SHALL BE 2"X2", OPEN LEFT.

7. EACH VALVE BURIED IN THE GROUND SHALL BE PROVIDED WITH AN APPROVED TYPE OF VALVE BOX AND COVER. THE BOXES SHALL BE ADJUSTABLE SCREW TYPE 24-INCH OR 36-INCH.

8. ALL VALVE BOXES SHALL BE CONSTRUCTED OF CAST IRON THAT COMPLIES WITH THE REQUIREMENTS OF ASTM A48. VALVE BOXES SHALL BE THE APPROPRIATE RANGE OF ADJUSTMENT FOR THE SITE AND CONTRACTOR SHOULD MINIMIZE THE USE OF EXTENSIONS.

9. PROVIDE THRUST RESTRAINT ON THE EXISTING WATER LINE WHERE TIE-INS ARE MADE AS NECESSARY.

10. CONTRACTOR SHALL NOT OPERATE ANY VALVES ON THE EXISTING UTILITY SYSTEMS. CONTRACTOR SHALL CONTACT THE UTILITY OWNER TO CONDUCT STRATEGIC OPERATION OF VALVES FOR SERVICE INTERRUPTION IN ORDER TO PERFORM SPECIFIC WORK.


11. ANY BENDS OF PVC WATER PIPE NOT SPECIFICALLY CALLED OUT WITH A 90, 45, 22.5, OR 11.25 DEGREE BEND FITTING, SHALL BE CONSTRUCTED BY A RADIAL BEND OF THE PIPE AS NOTED ON THE PLANS OR IN ACCORDANCE WITH PIPE MANUFACTURER'S SPECIFICATIONS (WHICHEVER IS MORE STRINGENT) - OR A COMBINATION OF BEND FITTINGS AND A RADIAL BEND OF THE PIPE. DEFLECTION OF THE PIPE JOINTS ON PVC PIPE MATERIAL IS NOT AN ACCEPTABLE METHOD OF PIPE BENDING.

12. ALL MATERIALS, EQUIPMENT, LABOR, AND WORKSMANSHIP SHALL BE IN ACCORDANCE WITH NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.

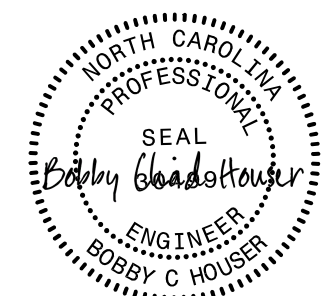
13. UTILITY OWNER MUST BE PRESENT FOR ANY TESTING OR CONNECTIONS TO THE EXISTING SYSTEM INCLUDING BUT NOT LIMITED TO ALL TAPS AND TEMPORARY CONSTRUCTION CONNECTIONS. A NOTICE OF 72 HOURS MUST BE PROVIDED.

14. ALL PROPOSED GRAVITY SEWER SHALL BE SDR-21 PVC.

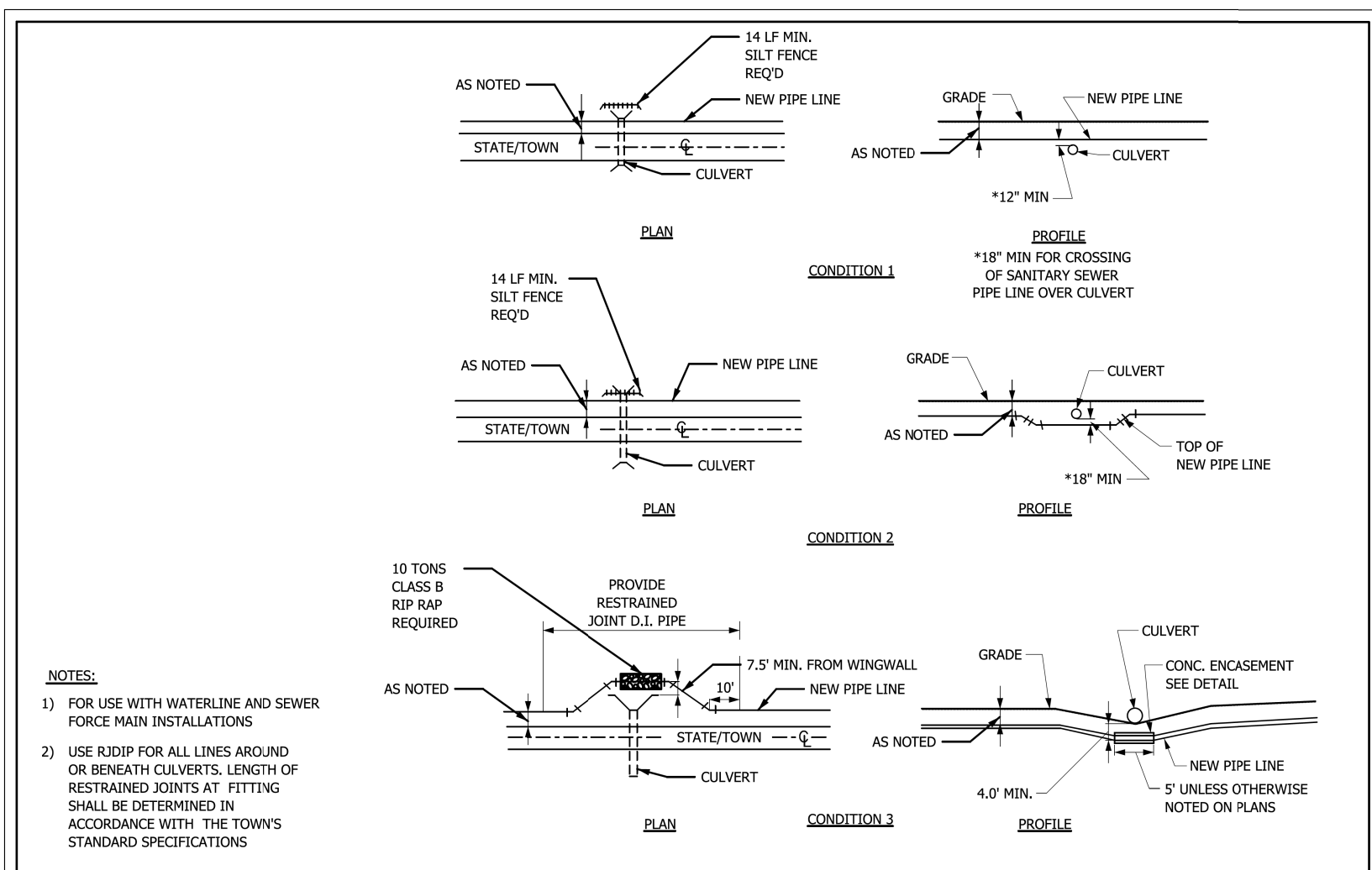
15. IF IT IS DETERMINED THAT TYING TO AN EXISTING MANHOLE SHALL CAUSE SIGNIFICANT DAMAGE OR THAT THE STRUCTURAL INTEGRITY OF A GIVEN MANHOLE IS IN QUESTION, THE CONTRACTOR SHALL NOTIFY THE OWNER IMMEDIATELY.

PROJECT REFERENCE NO.	SHEET NO.
U-6036	UC-3
DESIGNED BY: BCH	
DRAWN BY: KSA	
CHECKED BY:	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	UTILITY CONSTRUCTION PLANS ONLY
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

UTILITY CONSTRUCTION DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED


PROJECT REFERENCE NO.	SHEET NO.
U-6036	UC-3A
DESIGNED BY: BCH	
DRAWN BY: KSA	
CHECKED BY:	
APPROVED BY:	
REVISER:	11/21/2023
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	UTILITY CONSTRUCTION PLANS ONLY

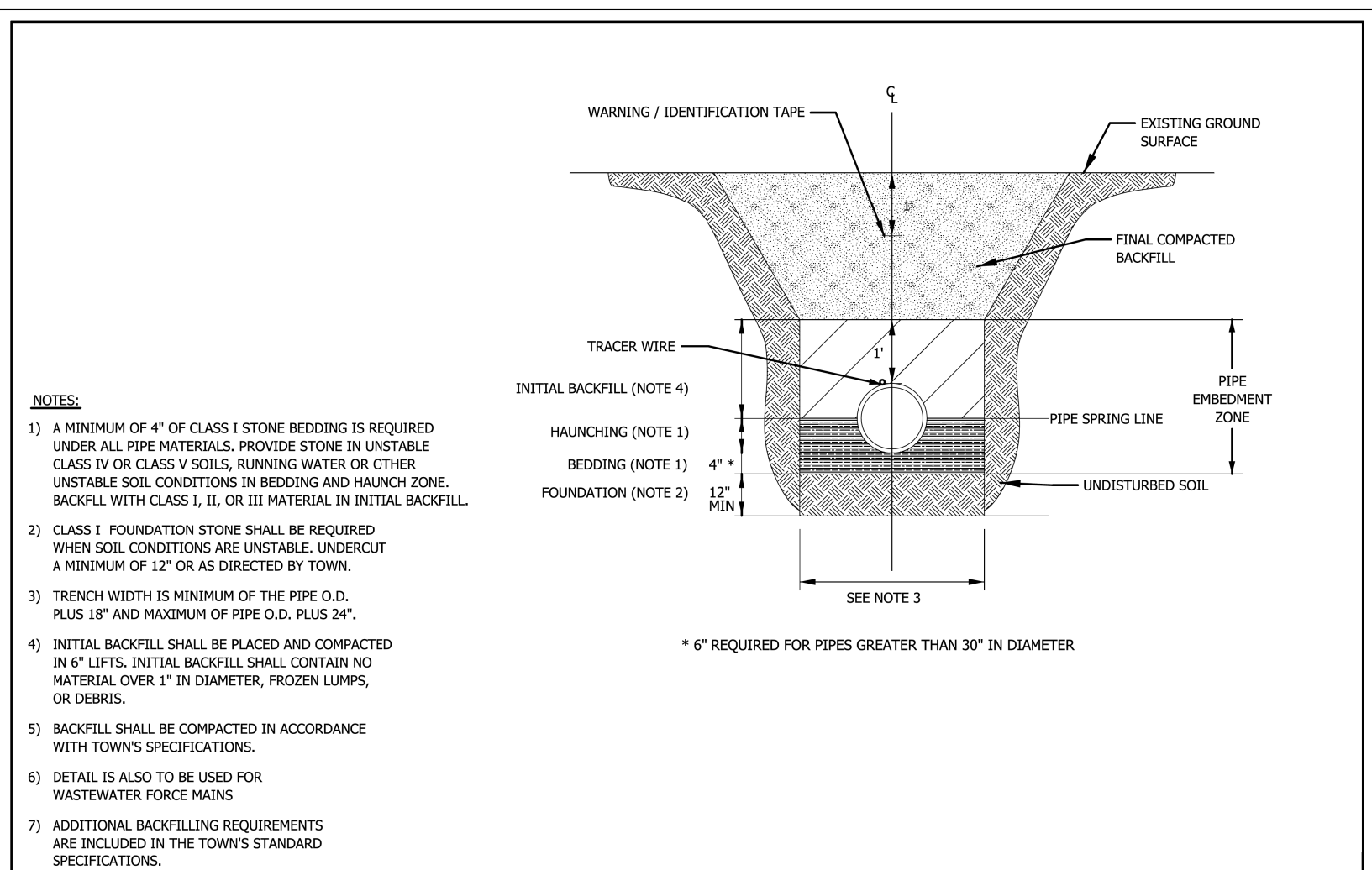
UTILITY CONSTRUCTION
DOCUMENT NOT CONSIDERED FINAL
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INSTALLATION OF PIPE LINE AT CULVERT DETAIL


DATE: _____ REVISIONS: _____ DATE: 07/01/19
SHEET 1 OF 1
STD. No. W-2.18



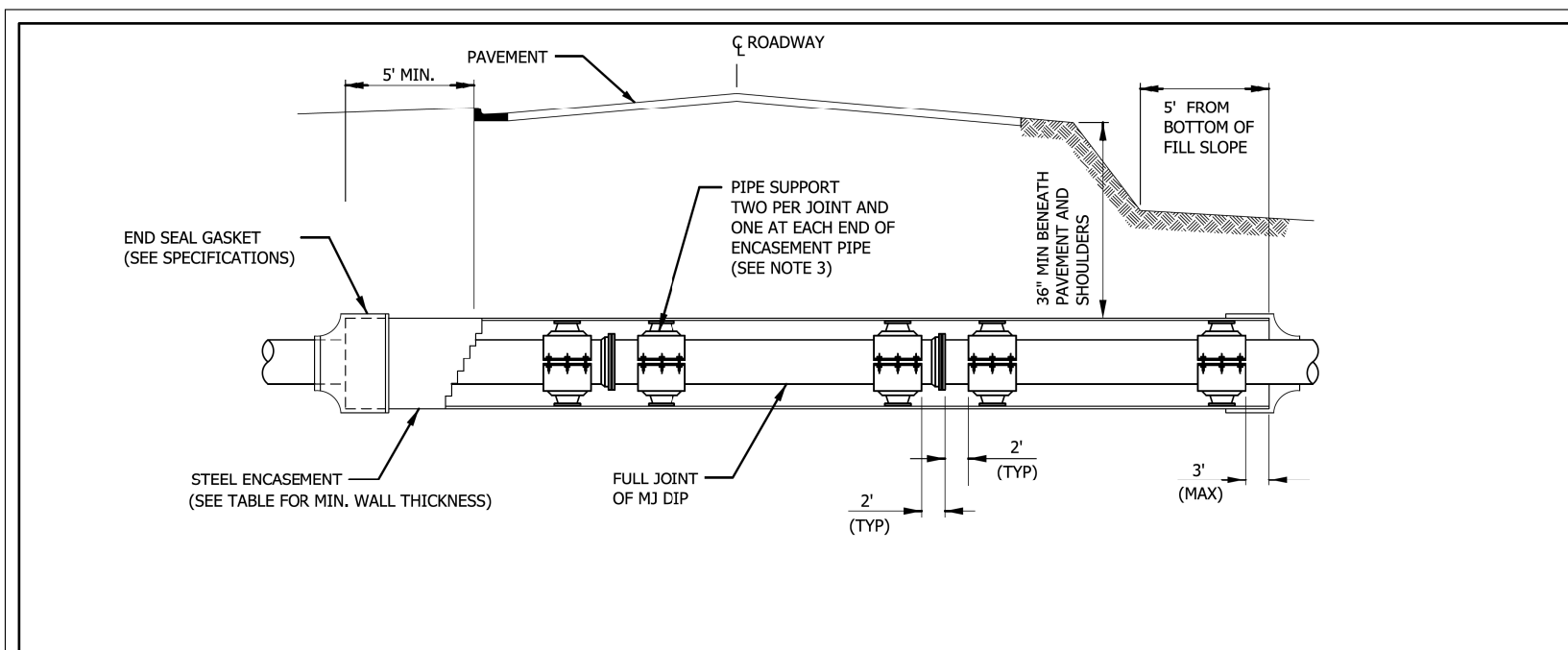


WATER LINE BACKFILLING

DATE: _____ REVISIONS: _____ DATE: 07/01/19
SHEET 1 OF 1
STD. No. W-2.16



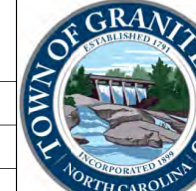
WATER TYPICAL DETAILS

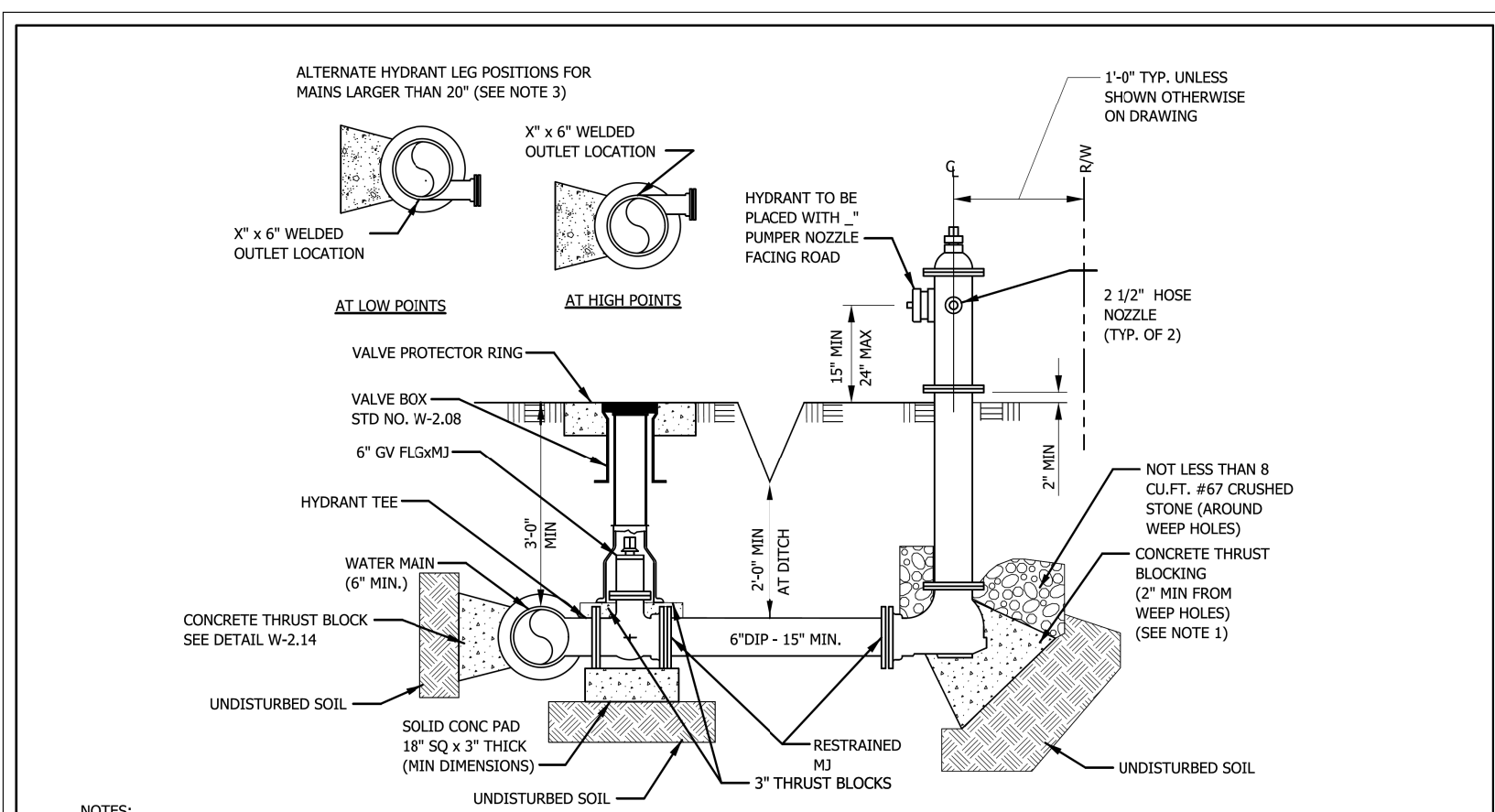


PIPE INSTALLATION IN STEEL ENCASMENT

ROADWAY		RAILROAD	
PIPE SIZE (O.D. INCHES)	WALL THICKNESS	PIPE SIZE (O.D. INCHES)	WALL THICKNESS
4 - 12 3/4	0.188	12 3/4 & UNDER	0.188
16 - 24	0.250	16	0.281
30	0.312	24	0.375
36	0.375	30	0.469
42	0.500	36	0.531
48	0.500	42	0.625
		48	0.688

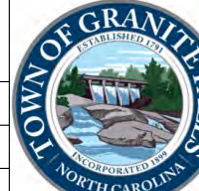
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SHEET 1 OF 1
STD. No. W-2.20

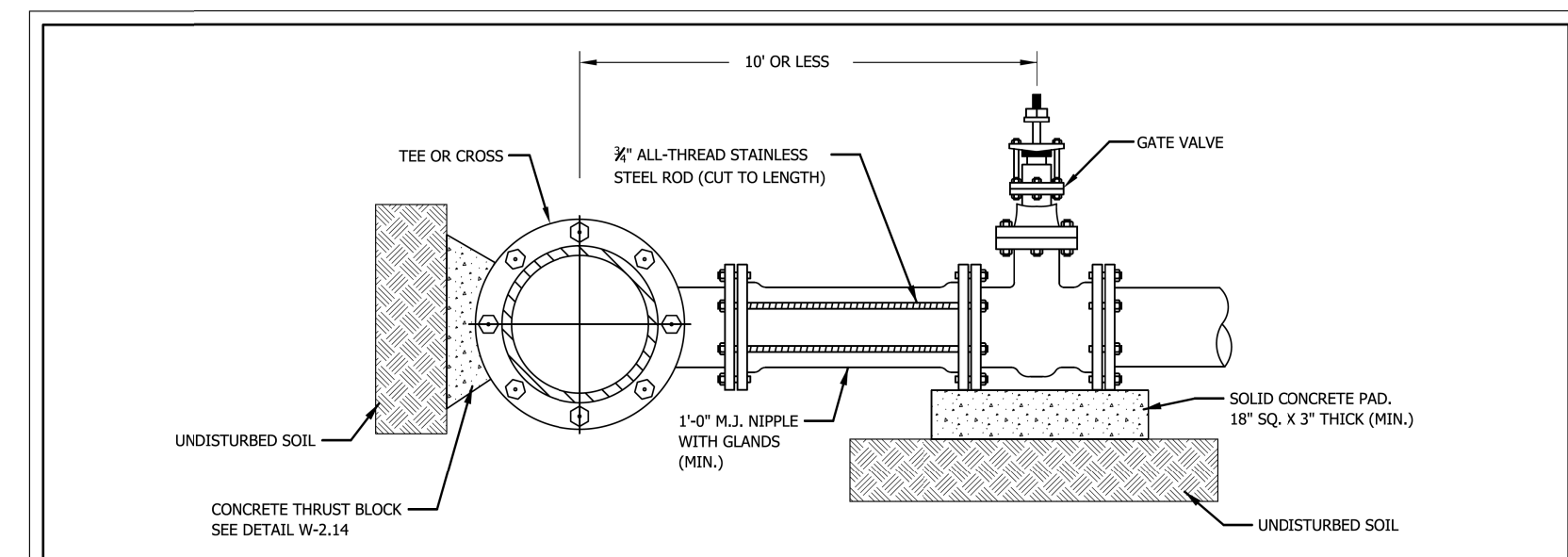




FIRE HYDRANT ASSEMBLY


DATE: _____ REVISIONS: _____ DATE: 07/01/19
SHEET 1 OF 1
STD. No. W-2.10

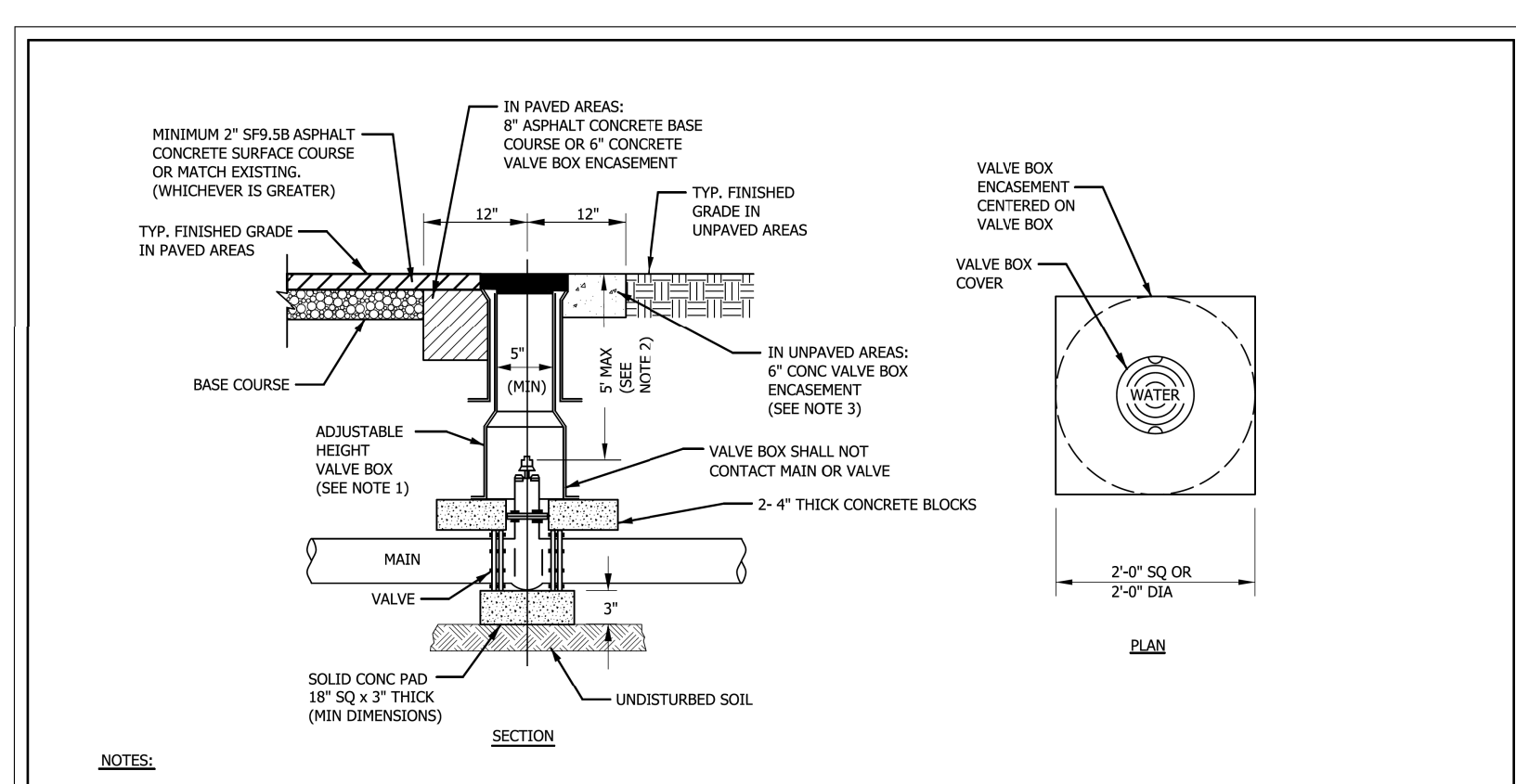




BRANCH SIZE	NO. OF RODS
4"	2
6"	2
8"	4
12"	4
16"	6
24"	6

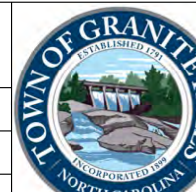
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SHEET 1 OF 1
STD. No. W-2.14

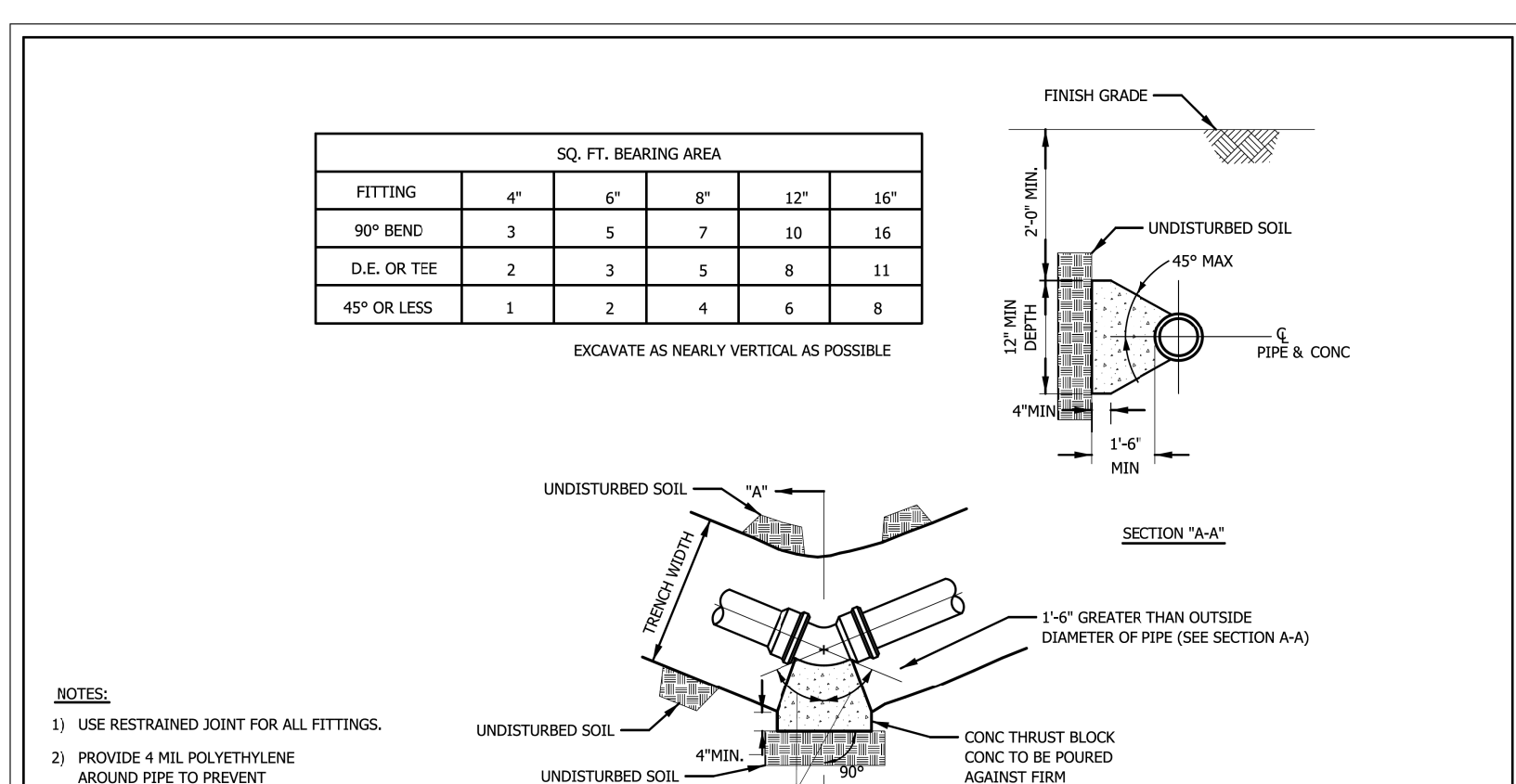




VALVE BOX INSTALLATION

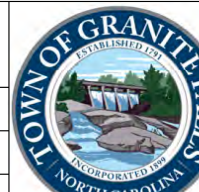
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SHEET 1 OF 1
STD. No. W-2.09

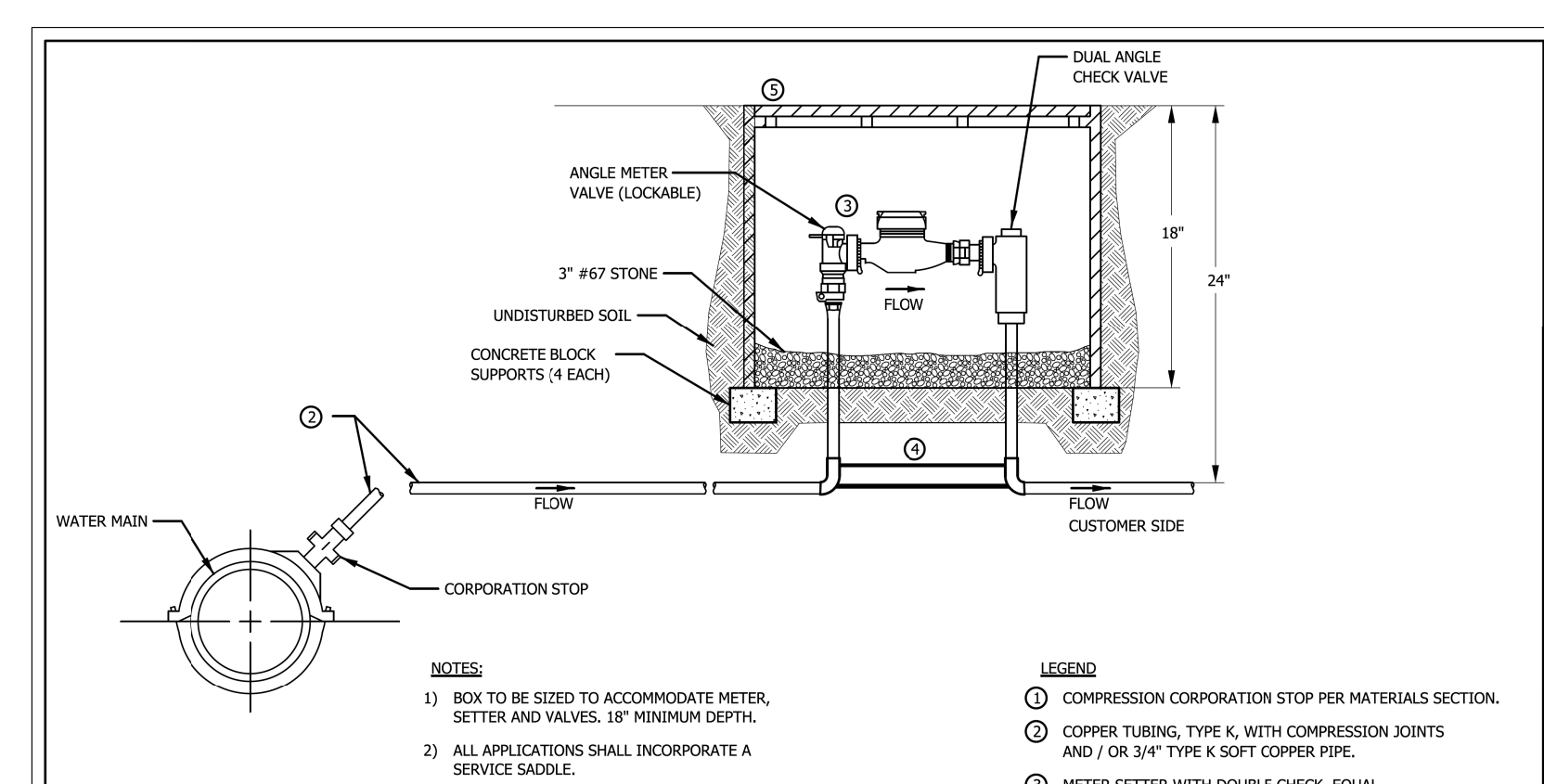




FITTING	4"	6"	8"	12"	16"
90° BEND	3	5	7	10	16
D.E. OR TEE	2	3	5	8	11
45° OR LESS	1	2	4	6	8

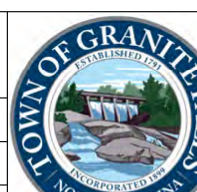
DATE: _____ REVISIONS: _____ DATE: 07/01/19
SHEET 1 OF 1
STD. No. W-2.15





STANDARD RESIDENTIAL 3/4" AND 1" WATER SERVICE

DATE: _____ REVISIONS: _____ DATE: 07/01/19
SHEET 1 OF 1
STD. No. W-2.01



PROJECT REFERENCE NO.	SHEET NO.
U-6036	UC-3B
DESIGNED BY: BCH	
DRAWN BY: KSA	
CHECKED BY:	
APPROVED BY:	
REVISED:	11/21/2023
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

UTILITY CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEWER TYPICAL DETAILS

MANHOLE RING AND COVER ANCHORING

DATE: 07/01/19
SHEET 1 OF 1
STD. No. S-1.10

PVC (FLEXIBLE) PIPE GRAVITY SEWER BACKFILLING

DATE: 07/01/19
SHEET 1 OF 1
STD. No. S-1.15

PIPE INSTALLATION IN STEEL ENCASEMENT

ENCASEMENT PIPE WALL THICKNESS			
ROADWAY		RAILROAD	
PIPE SIZE (O.D. INCHES)	WALL THICKNESS	PIPE SIZE (O.D. INCHES)	WALL THICKNESS
4 - 12 3/4	0.188	12 3/4 & UNDER	0.188
16 - 24	0.250	16	0.281
30	0.312	24	0.375
36	0.375	30	0.469
42	0.500	36	0.531
48	0.500	42	0.625
		48	0.688

DATE: 07/01/19
SHEET 1 OF 1
STD. No. S-1.17

STANDARD PRECAST CONCRETE MANHOLE

DATE: 07/01/19
SHEET 1 OF 1
STD. No. S-1.01

STANDARD "DOGHOUSE" TYPE MANHOLE

DATE: 07/01/19
SHEET 1 OF 1
STD. No. S-1.03

STANDARD SANITARY SEWER SERVICE

DATE: 07/01/19
SHEET 1 OF 1
STD. No. S-1.11

SEWER LATERAL CONNECTION TO MANHOLE

DATE: 07/01/19
SHEET 1 OF 1
STD. No. S-1.12

STANDARD INSIDE DROP MANHOLE

DATE: 07/01/19
SHEET 1 OF 1
STD. No. S-1.02

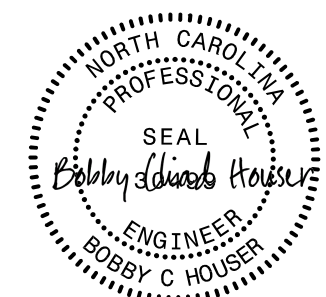
STANDARD MANHOLE RING AND COVER

DATE: 07/01/19
SHEET 1 OF 1
STD. No. S-1.06

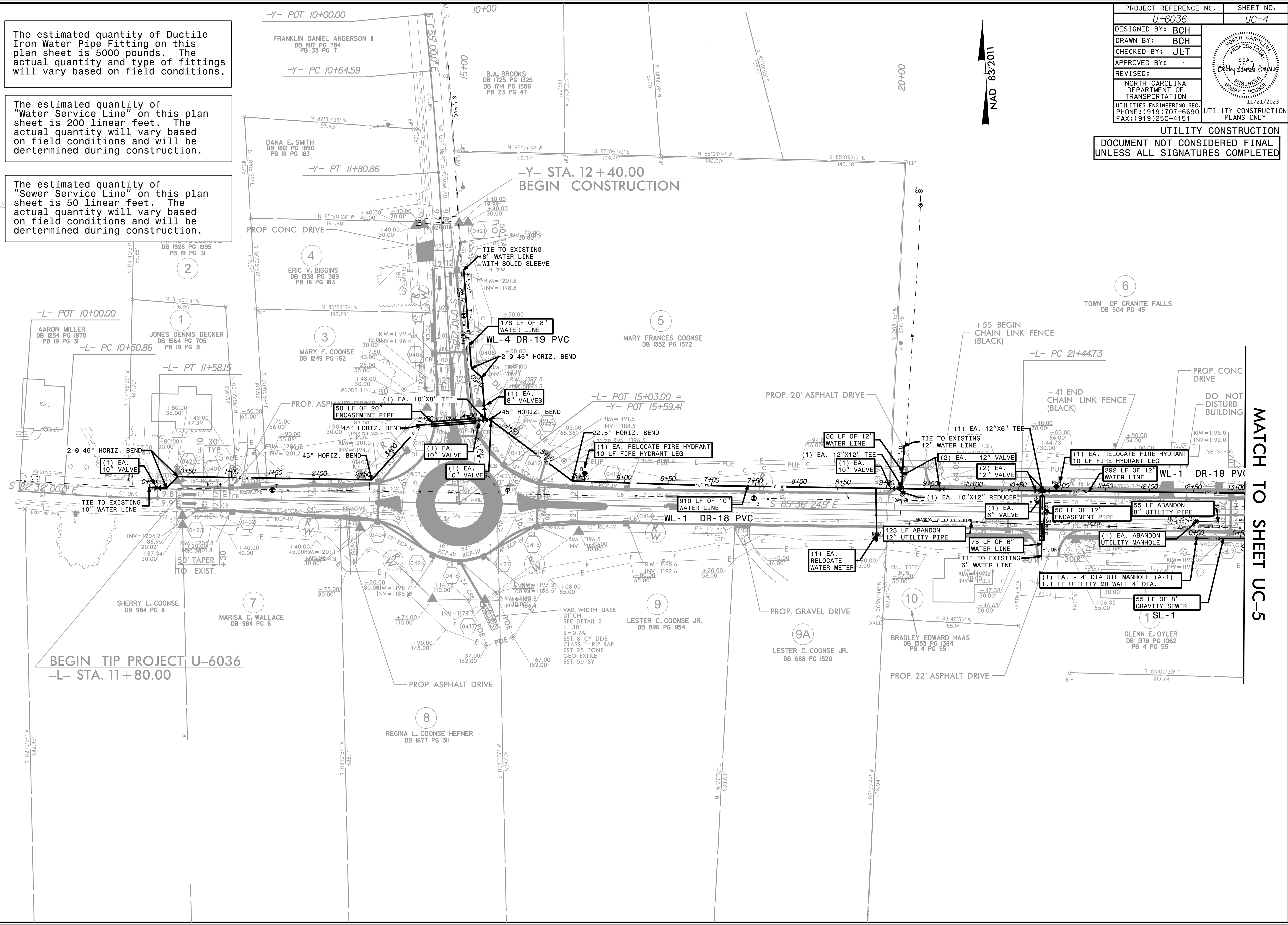
The estimated quantity of Ductile Iron Water Pipe Fitting on this plan sheet is 5000 pounds. The actual quantity and type of fittings will vary based on field conditions.

The estimated quantity of "Water Service Line" on this plan sheet is 200 linear feet. The actual quantity will vary based on field conditions and will be determined during construction.

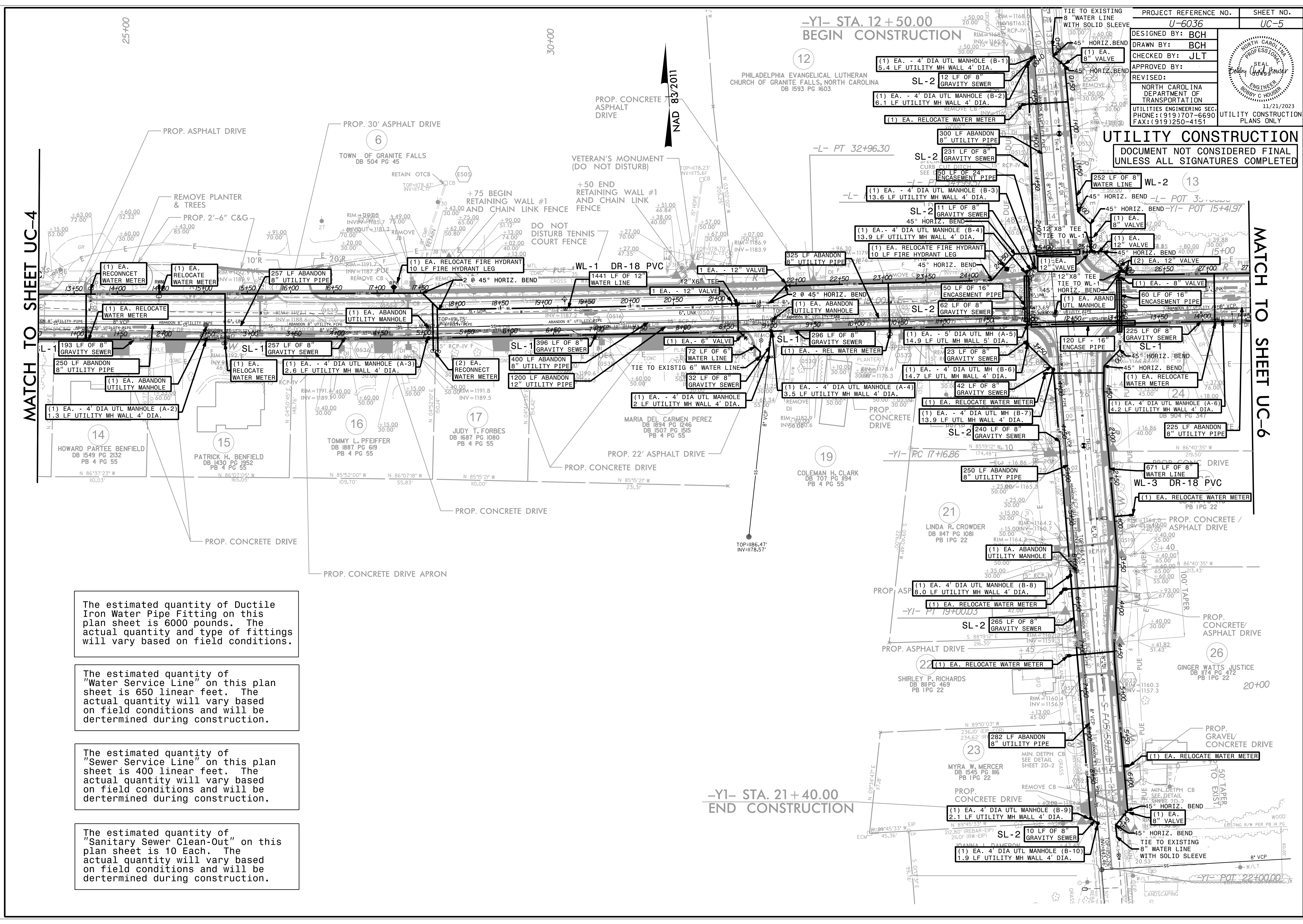
The estimated quantity of "Sewer Service Line" on this plan sheet is 50 linear feet. The actual quantity will vary based on field conditions and will be determined during construction.

PROJECT REFERENCE NO.	SHEET NO.
U-6036	UC-4
DESIGNED BY: BCH	
DRAWN BY: BCH	
CHECKED BY: JLT	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	UTILITY CONSTRUCTION PLANS ONLY
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MATCH TO SHEET UC-5



PROJECT REFERENCE NO.	U-6036
SHEET NO.	UC-5
DESIGNED BY:	BCH
DRAWN BY:	BCH
CHECKED BY:	JLT
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
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MATCH TO SHEET UC-4

MATCH TO SHEET UC-6

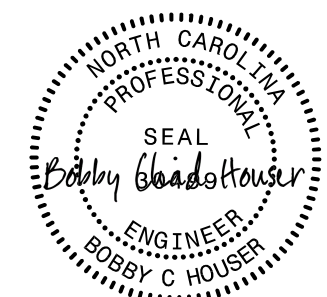
The estimated quantity of Ductile Iron Water Pipe Fitting on this plan sheet is 6000 pounds. The actual quantity and type of fittings will vary based on field conditions.

The estimated quantity of "Water Service Line" on this plan sheet is 650 linear feet. The actual quantity will vary based on field conditions and will be determined during construction.

The estimated quantity of "Sewer Service Line" on this plan sheet is 400 linear feet. The actual quantity will vary based on field conditions and will be determined during construction.

The estimated quantity of "Sanitary Sewer Clean-Out" on this plan sheet is 10 Each. The actual quantity will vary based on field conditions and will be determined during construction.

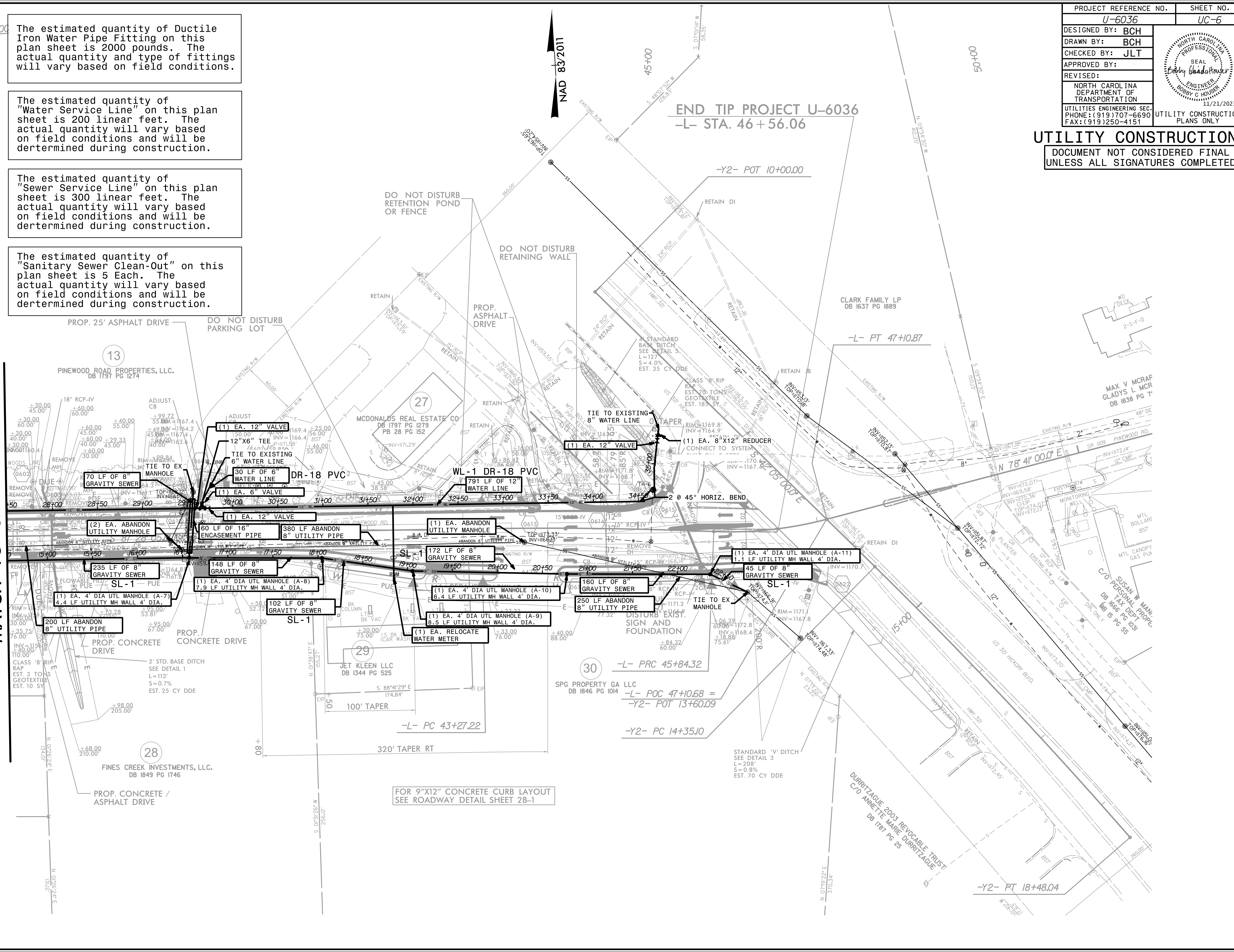
-YI- STA. 21+40.00
END CONSTRUCTION

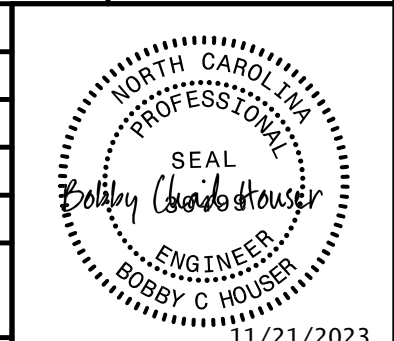
PROJECT REFERENCE NO.	SHEET NO.
U-6036	UC-6
DESIGNED BY: BCH	
DRAWN BY: BCH	
CHECKED BY: JLT	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION 11/21/2023 UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
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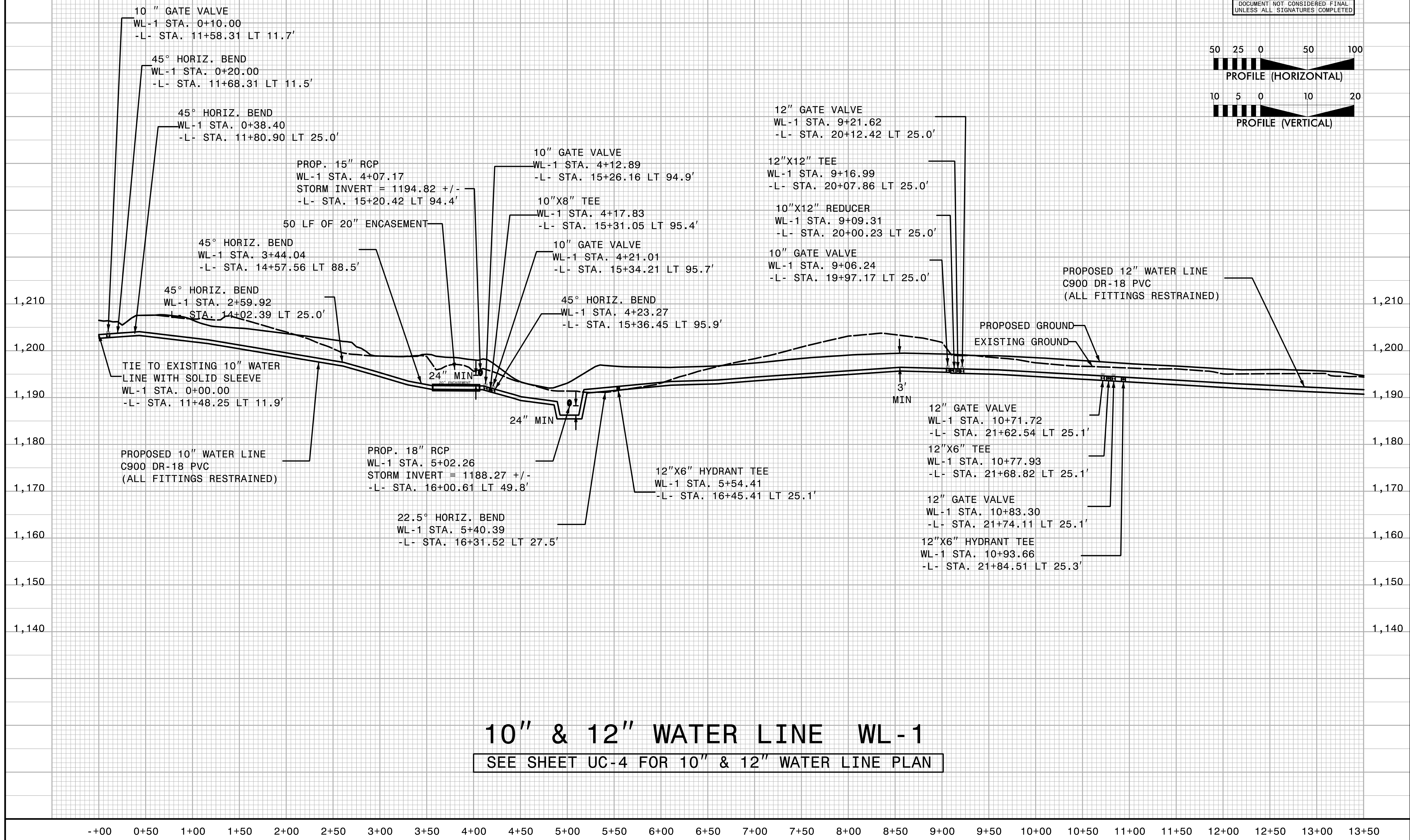
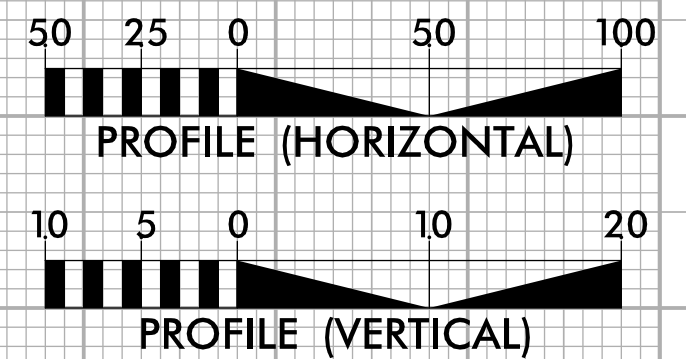
- The estimated quantity of Ductile Iron Water Pipe Fitting on this plan sheet is 2000 pounds. The actual quantity and type of fittings will vary based on field conditions.
- The estimated quantity of "Water Service Line" on this plan sheet is 200 linear feet. The actual quantity will vary based on field conditions and will be determined during construction.
- The estimated quantity of "Sewer Service Line" on this plan sheet is 300 linear feet. The actual quantity will vary based on field conditions and will be determined during construction.
- The estimated quantity of "Sanitary Sewer Clean-Out" on this plan sheet is 5 Each. The actual quantity will vary based on field conditions and will be determined during construction.

MATCH TO SHEET UC-5



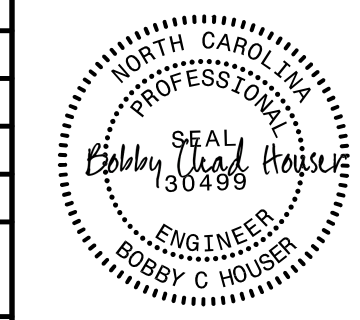
PROJECT REFERENCE NO. U-6036	SHEET NO. UC-7
DESIGNED BY: BCH	
DRAWN BY: KSA	
CHECKED BY:	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
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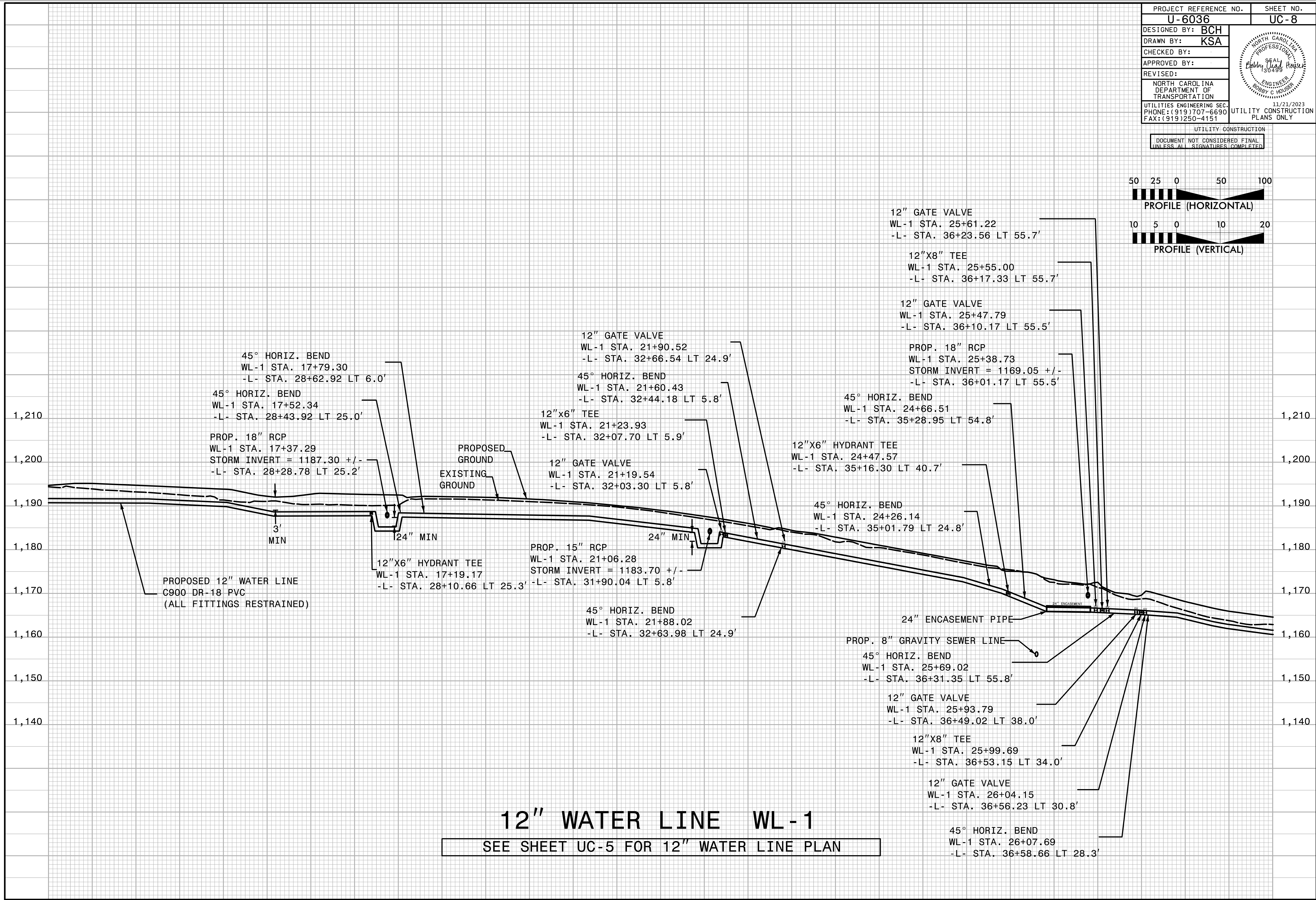
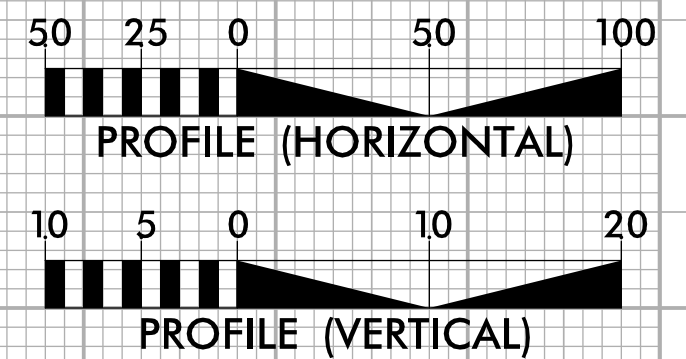



10" & 12" WATER LINE WL-1
 SEE SHEET UC-4 FOR 10" & 12" WATER LINE PLAN

-+00 0+50 1+00 1+50 2+00 2+50 3+00 3+50 4+00 4+50 5+00 5+50 6+00 6+50 7+00 7+50 8+00 8+50 9+00 9+50 10+00 10+50 11+00 11+50 12+00 12+50 13+00 13+50

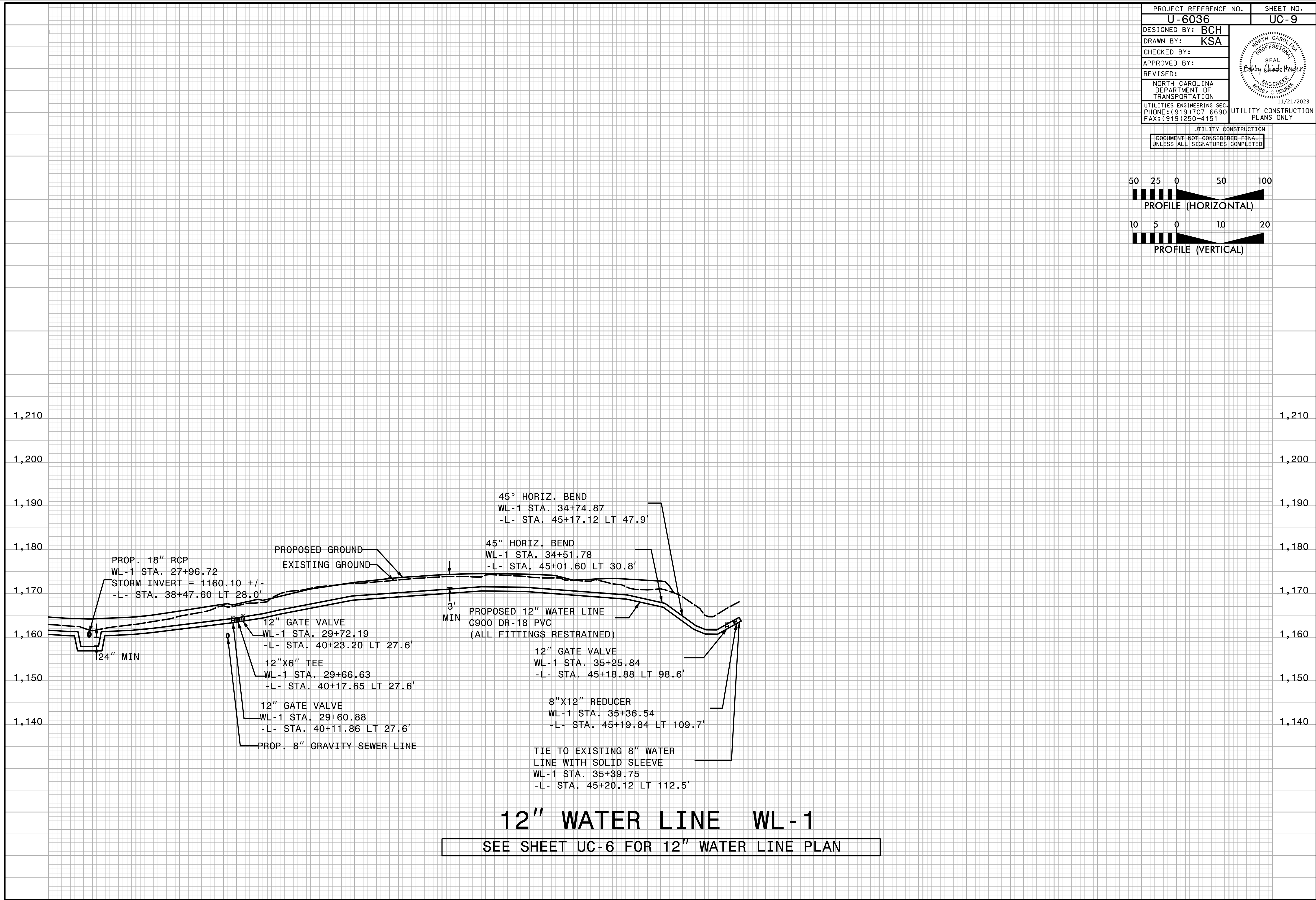
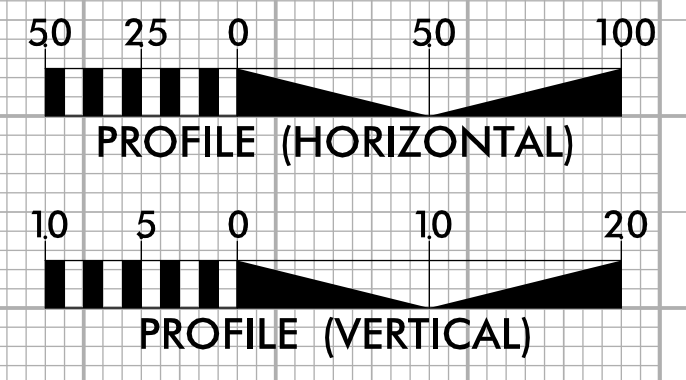
PROJECT REFERENCE NO. U-6036	SHEET NO. UC-8
DESIGNED BY: BCH	
DRAWN BY: KSA	
CHECKED BY:	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
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PROJECT REFERENCE NO. U-6036	SHEET NO. UC-9
DESIGNED BY: BCH	
DRAWN BY: KSA	
CHECKED BY:	
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
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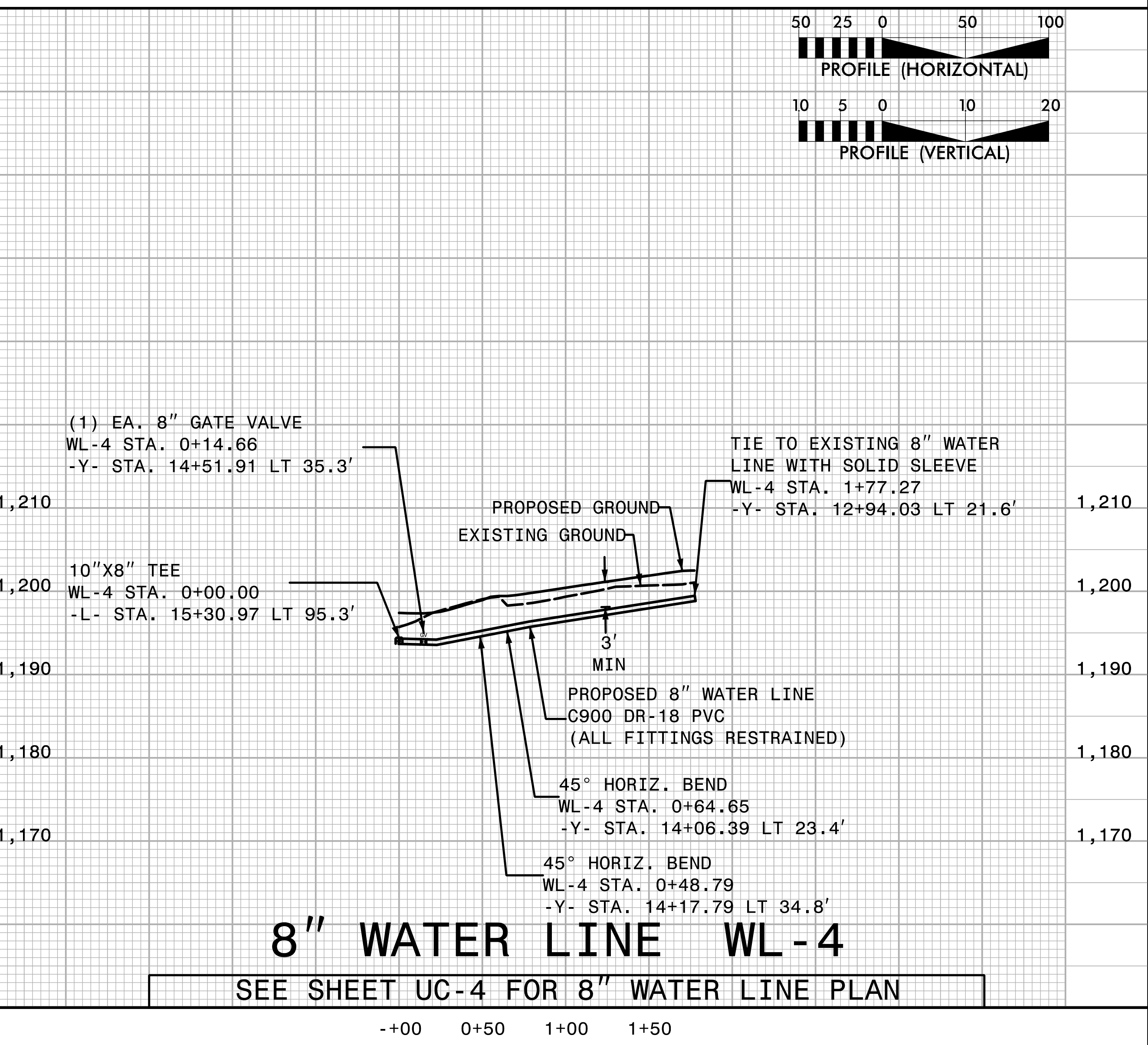
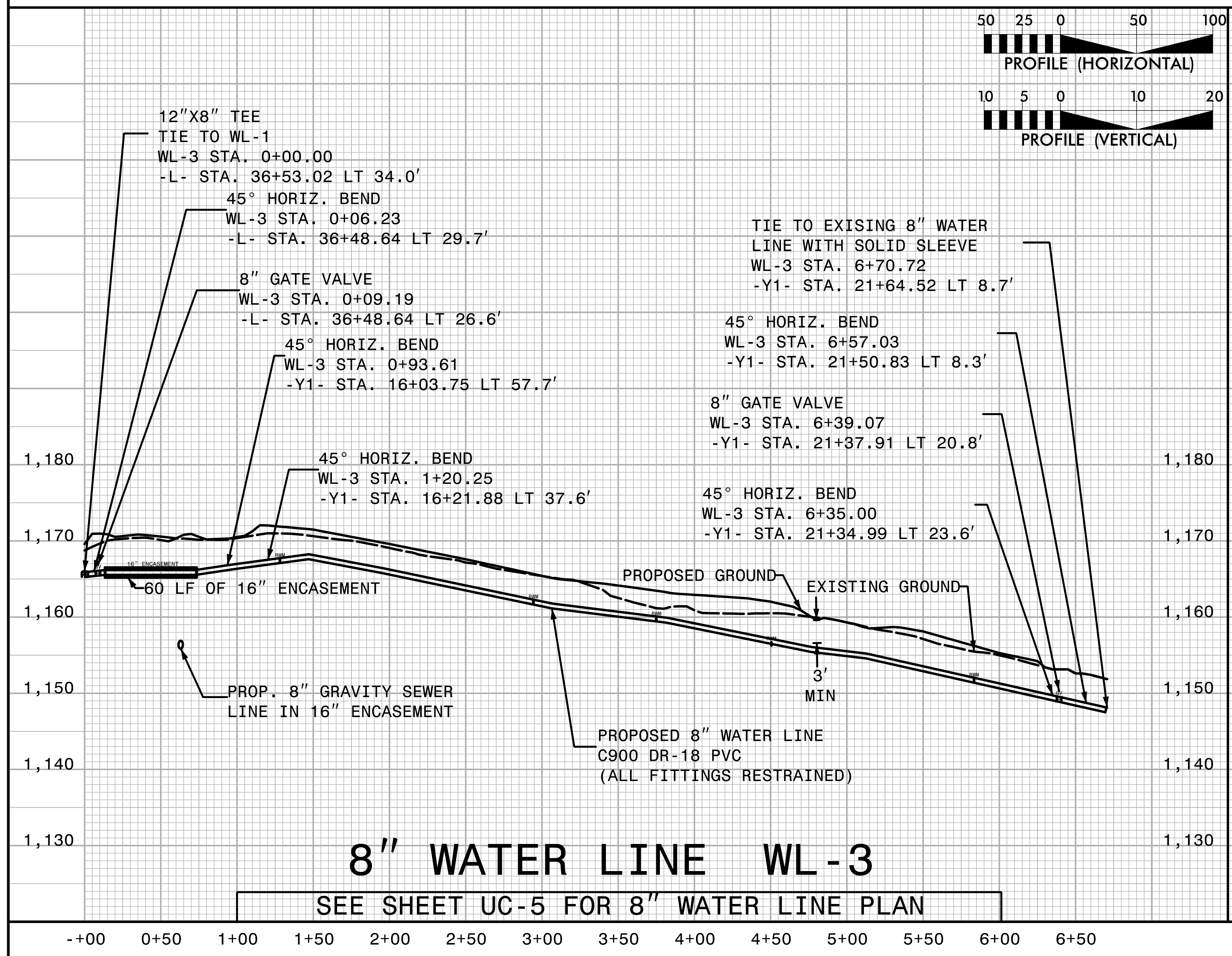
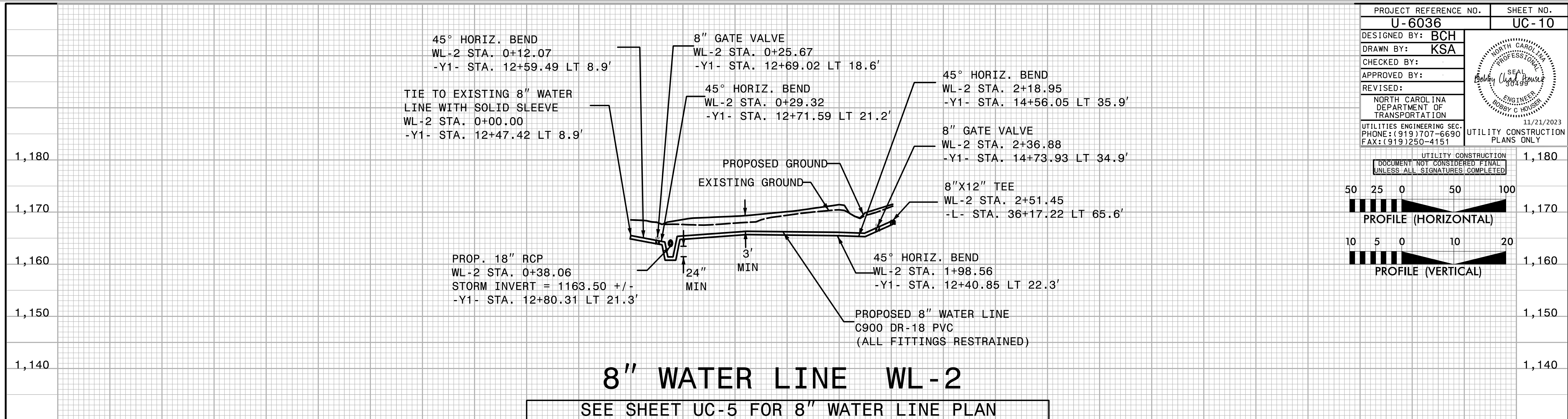
UTILITY CONSTRUCTION
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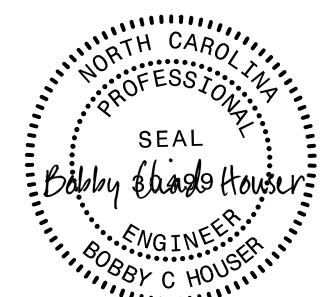


12" WATER LINE WL-1

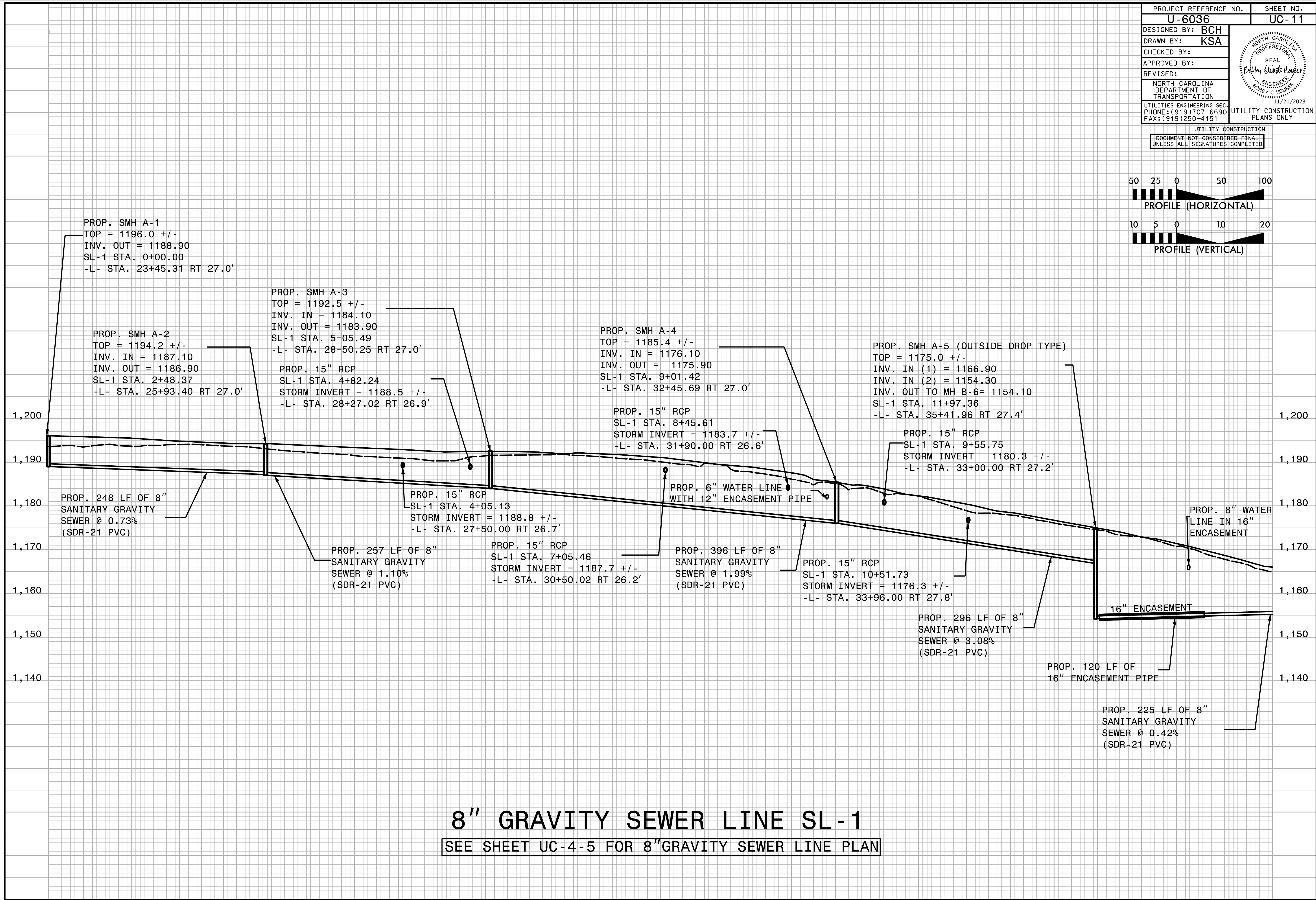
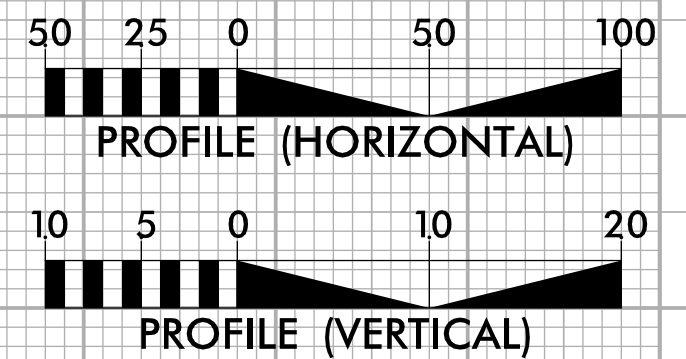
SEE SHEET UC-6 FOR 12" WATER LINE PLAN

PROJECT REFERENCE NO. U-6036	SHEET NO. UC-10
DESIGNED BY: BCH	
DRAWN BY: KSA	
CHECKED BY:	
APPROVED BY:	
REVISED:	
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PROJECT REFERENCE NO. U-6036	SHEET NO. UC-11
DESIGNED BY: BCH	
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APPROVED BY:	
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PROP. SMH A-1
 TOP = 1196.0 +/-
 INV. OUT = 1188.90
 SL-1 STA. 0+00.00
 -L- STA. 23+45.31 RT 27.0'

PROP. SMH A-2
 TOP = 1194.2 +/-
 INV. IN = 1187.10
 INV. OUT = 1186.90
 SL-1 STA. 2+48.37
 -L- STA. 25+93.40 RT 27.0'

PROP. SMH A-3
 TOP = 1192.5 +/-
 INV. IN = 1184.10
 INV. OUT = 1183.90
 SL-1 STA. 5+05.49
 -L- STA. 28+50.25 RT 27.0'

PROP. 15" RCP
 SL-1 STA. 4+82.24
 STORM INVERT = 1188.5 +/-
 -L- STA. 28+27.02 RT 26.9'

PROP. SMH A-4
 TOP = 1185.4 +/-
 INV. IN = 1176.10
 INV. OUT = 1175.90
 SL-1 STA. 9+01.42
 -L- STA. 32+45.69 RT 27.0'

PROP. 15" RCP
 SL-1 STA. 8+45.61
 STORM INVERT = 1183.7 +/-
 -L- STA. 31+90.00 RT 26.6'

PROP. SMH A-5 (OUTSIDE DROP TYPE)
 TOP = 1175.0 +/-
 INV. IN (1) = 1166.90
 INV. IN (2) = 1154.30
 INV. OUT TO MH B-6= 1154.10
 SL-1 STA. 11+97.36
 -L- STA. 35+41.96 RT 27.4'

PROP. 15" RCP
 SL-1 STA. 9+55.75
 STORM INVERT = 1180.3 +/-
 -L- STA. 33+00.00 RT 27.2'

PROP. 248 LF OF 8" SANITARY GRAVITY SEWER @ 0.73% (SDR-21 PVC)

PROP. 15" RCP
 SL-1 STA. 4+05.13
 STORM INVERT = 1188.8 +/-
 -L- STA. 27+50.00 RT 26.7'

PROP. 6" WATER LINE WITH 12" ENCASEMENT PIPE

PROP. 257 LF OF 8" SANITARY GRAVITY SEWER @ 1.10% (SDR-21 PVC)

PROP. 15" RCP
 SL-1 STA. 7+05.46
 STORM INVERT = 1187.7 +/-
 -L- STA. 30+50.02 RT 26.2'

PROP. 396 LF OF 8" SANITARY GRAVITY SEWER @ 1.99% (SDR-21 PVC)

PROP. 15" RCP
 SL-1 STA. 10+51.73
 STORM INVERT = 1176.3 +/-
 -L- STA. 33+96.00 RT 27.8'

PROP. 8" WATER LINE IN 16" ENCASEMENT


PROP. 296 LF OF 8" SANITARY GRAVITY SEWER @ 3.08% (SDR-21 PVC)

PROP. 120 LF OF 16" ENCASEMENT PIPE

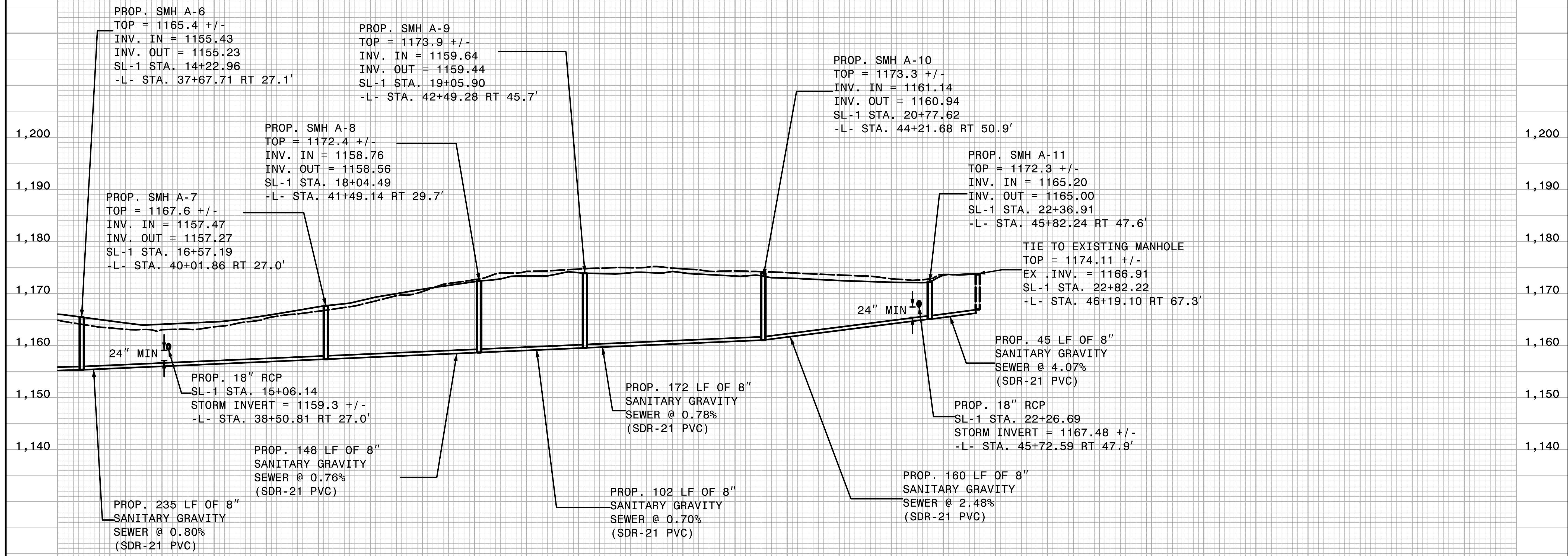
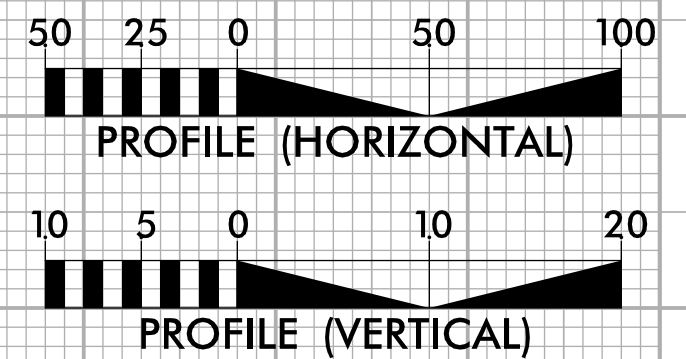
PROP. 225 LF OF 8" SANITARY GRAVITY SEWER @ 0.42% (SDR-21 PVC)

8" GRAVITY SEWER LINE SL-1
 SEE SHEET UC-4-5 FOR 8" GRAVITY SEWER LINE PLAN

+00 0+50 1+00 1+50 2+00 2+50 3+00 3+50 4+00 4+50 5+00 5+50 6+00 6+50 7+00 7+50 8+00 8+50 9+00 9+50 10+00 10+50 11+00 11+50 12+00 12+50 13+00 13+50 14+00

PROJECT REFERENCE NO. U-6036	SHEET NO. UC-12
DESIGNED BY: BCH	
DRAWN BY: KSA	
CHECKED BY:	
APPROVED BY:	
REVISER:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
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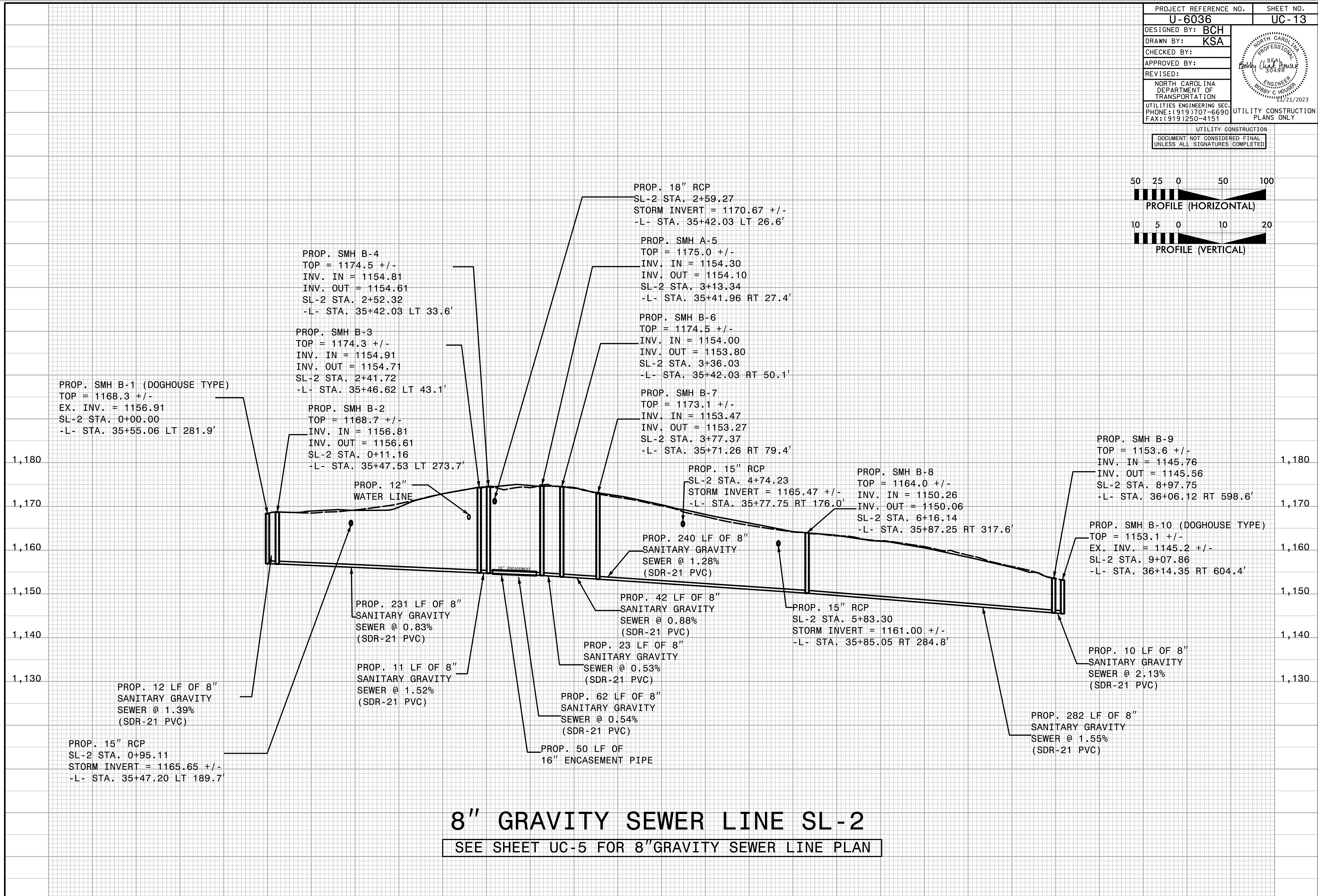
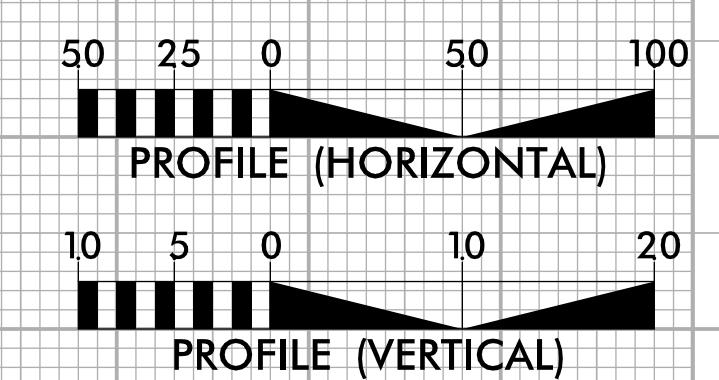


8" GRAVITY SEWER LINE SL-1
 SEE SHEET UC-5-6 FOR 8" GRAVITY SEWER LINE PLAN

14+00 14+50 15+00 15+50 16+00 16+50 17+00 17+50 18+00 18+50 19+00 19+50 20+00 20+50 21+00 21+50 22+00 22+50

PROJECT REFERENCE NO. U-6036	SHEET NO. UC-13
DESIGNED BY: BCH	
DRAWN BY: KSA	
CHECKED BY:	
APPROVED BY:	
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0+50 1+00 1+50 2+00 2+50 3+00 3+50 4+00 4+50 5+00 5+50 6+00 6+50 7+00 7+50 8+00 8+50