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09.08.09.99

**TIP PROJECT: I-5000**

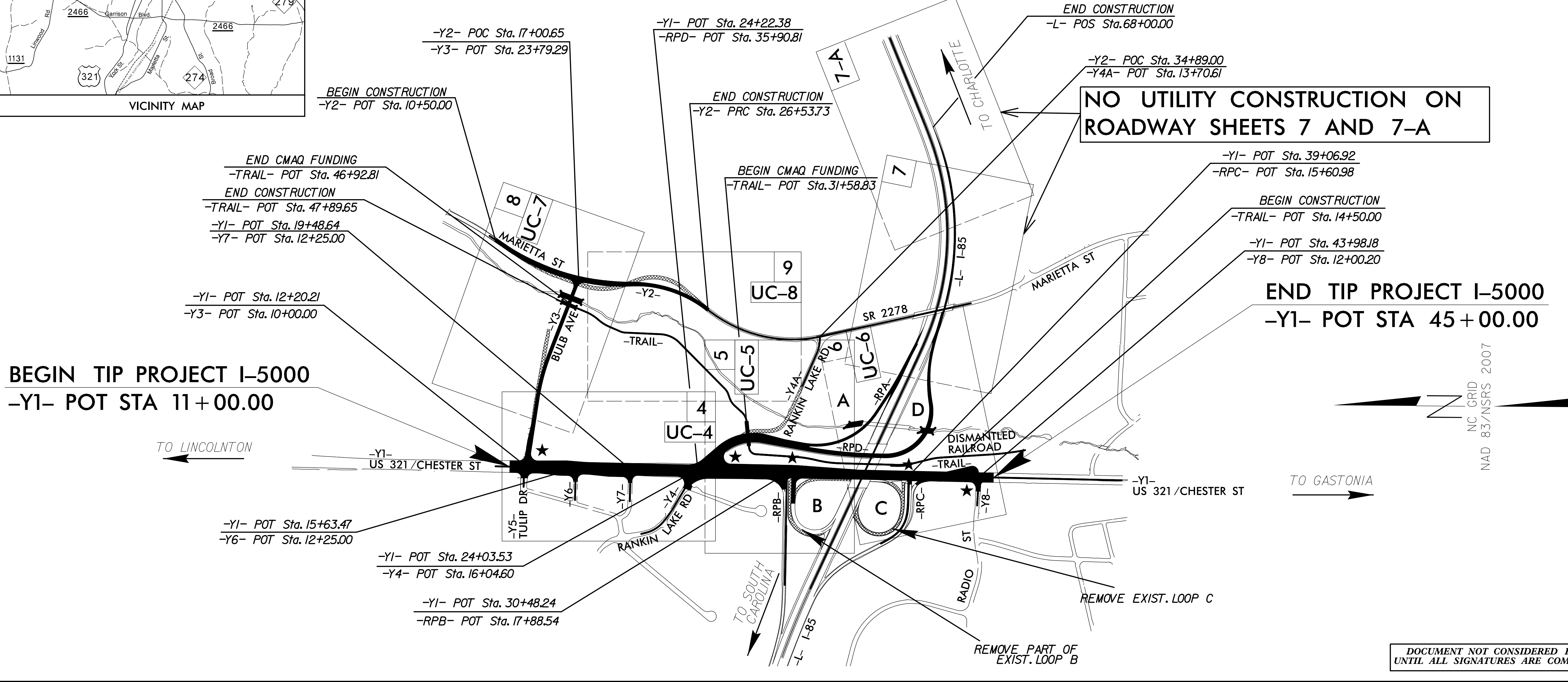
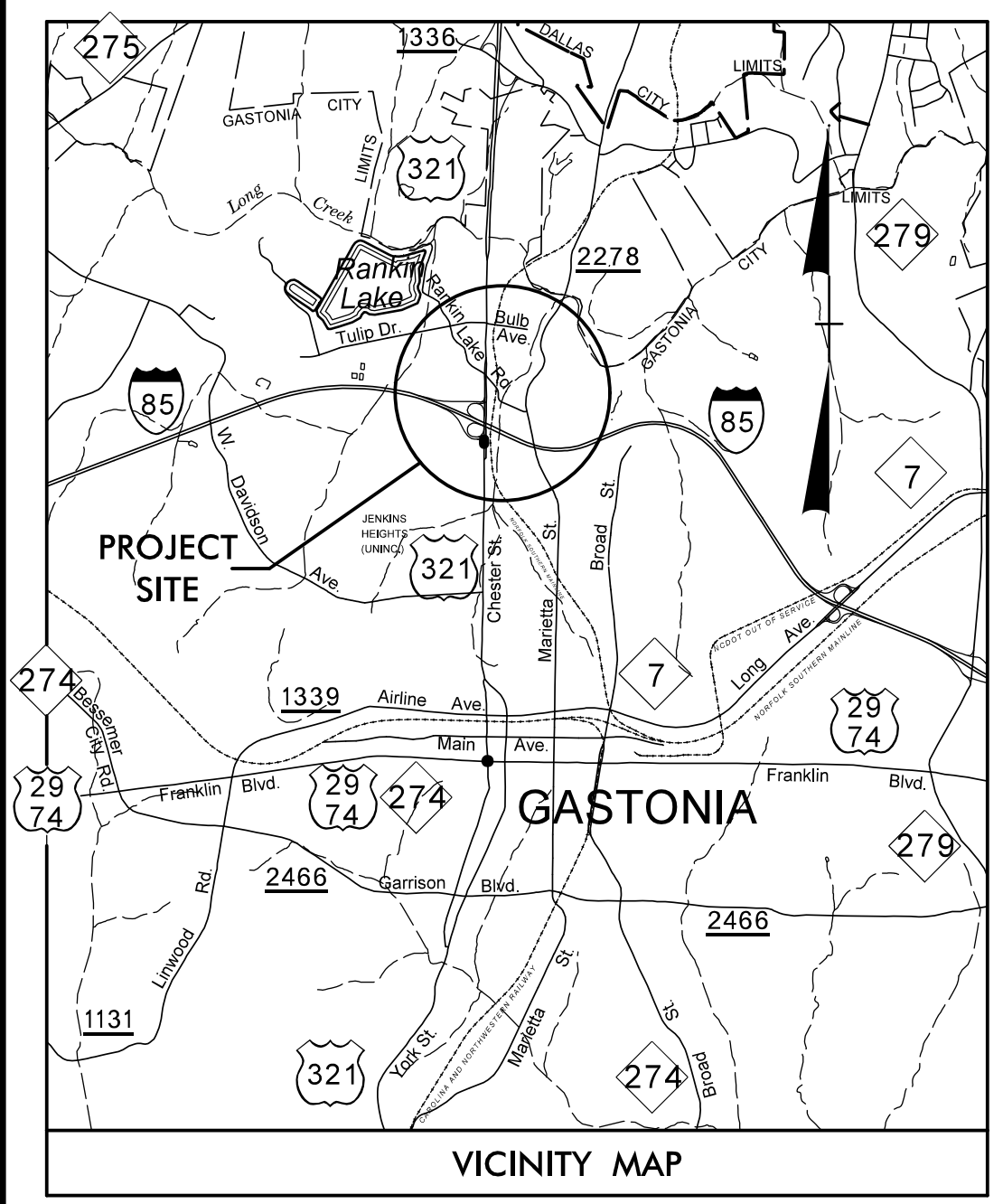
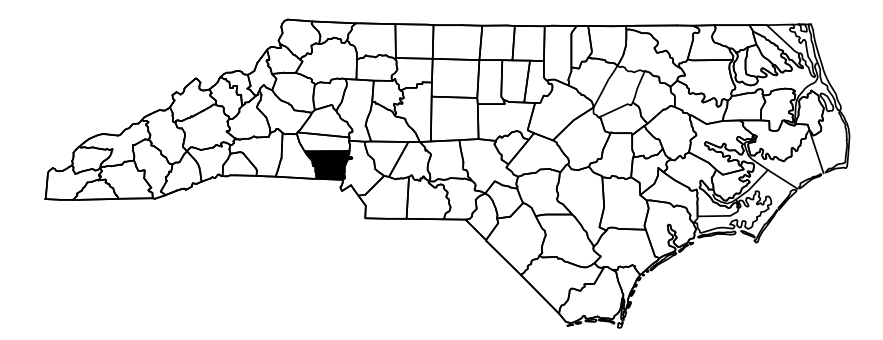
# STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

T.I.P. NO.	SHEET NO.
I-5000	UC-1

## UTILITY CONSTRUCTION PLANS GASTON COUNTY

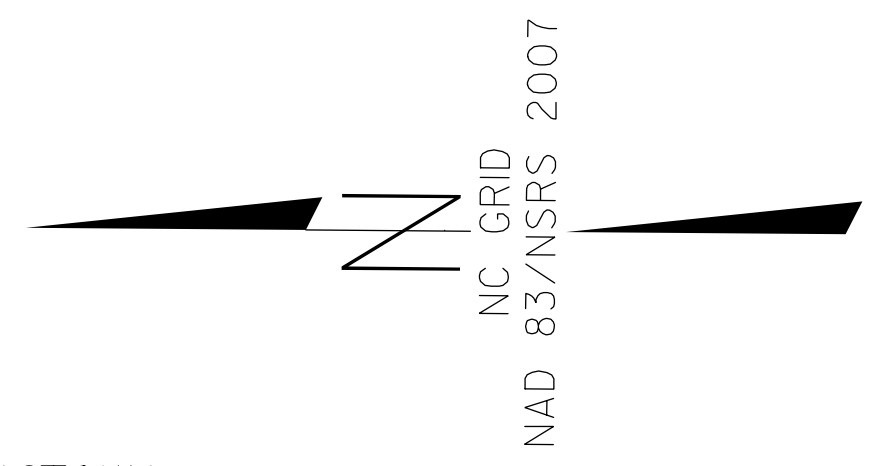
**LOCATION: I-85/US 321 GEOMETRIC SAFETY  
IMPROVEMENTS TO INTERCHANGE**

**TYPE OF WORK: WATER AND SEWER RELOCATION**

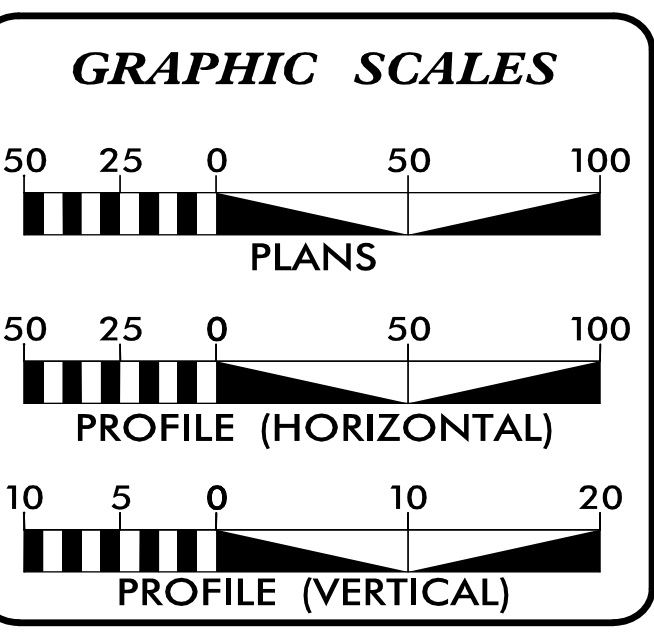


**BEGIN TIP PROJECT I-5000  
-Y1- POT STA 11+00.00**

**END TIP PROJECT I-5000  
-Y1- POT STA 45+00.00**



DOCUMENT NOT CONSIDERED FINAL  
UNTIL ALL SIGNATURES ARE COMPLETED



**INDEX OF SHEETS**

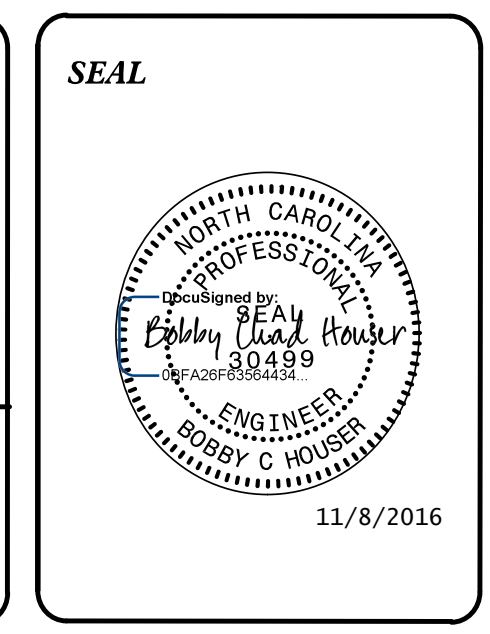
SHEET NO.:	DESCRIPTION:
UC-1	TITLE SHEET
UC-2	UTILITY SYMBOLOGY
UC-3	NOTES
UC-3A THRU UC-3B	DETAILS
UC-4 THRU UC-8	UTILITY CONSTRUCTION SHEETS
UC-9 THRU UC-11	PROFILE SHEETS

**WATER AND SEWER OWNERS ON PROJECT**

(A) WATER - CITY OF GASTONIA  
(B) SANITARY SEWER - CITY OF GASTONIA

PREPARED IN THE OFFICE OF  
**TGS ENGINEERS**  
804-C N. LAFAYETTE ST  
SHELBY, NC 28150  
PH (704) 476-0003  
CORP. LICENSE NO.: C-0275

**B. CHAD HOUSER, PE, PLS** CONSULTANT CONTACT #1  
**JIMMY TERRY, PE** CONSULTANT CONTACT #2



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

**CARL BARCLAY, PE** UTILITIES REGIONAL ENGINEER  
**JAMES SWINSON** UTILITIES ENGINEER  
**AMY DUPREE** UTILITIES AREA COORDINATOR  
**GREG SEALY** UTILITIES COORDINATOR

11/7/2016 3:41:51 PM X:\NC\0001\I-5000\Utilities\RDy\_Ut\Proj\I5000\_Ut\_tsh\_UC1\_psh.dgn

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

# 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	

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

NOTE  
PAY ITEM

## 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)

5/14/99  
REV: 2/1/2012

5/14/99  
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# UTILITY CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

PROJECT REFERENCE NO.	I-5000	SHEET NO.	UC-3
DESIGNED BY:	BCH		
DRAWN BY:	BCH		
CHECKED BY:	JLT		
APPROVED BY:	JES		
REVISED:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION			
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151			UTILITY CONSTRUCTION PLANS ONLY

## GENERAL NOTES:

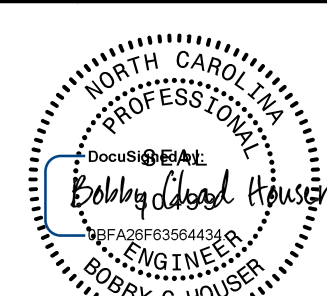
1. THE PROPOSED UTILITY CONSTRUCTION SHALL MEET THE APPLICABLE REQUIREMENTS OF THE NC DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" DATED JANUARY 2012.
2. THE EXISTING UTILITIES BELONG TO THE CITY OF GASTONIA.
3. ALL WATER LINES TO BE INSTALLED WITHIN COMPLIANCE OF 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 AND FORCE MAIN SEWER LINE 8-INCHES THROUGH 24-INCHES IN DIAMETER SHALL BE DUCTILE IRON THICKNESS CLASS 51.
2. ALL WATER LINE FITTINGS 8-INCHES THROUGH 24- 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.
3. ALL PROPOSED GRAVITY SEWER LINE 8-INCHES THROUGH 24-INCHES SHALL BE DUCTILE IRON THICKNESS CLASS 51 .
4. NITRILE GASKETS SHALL BE USED IF PETROLEUM CONTAMINATED SOILS ARE ENCOUNTERED DURING CONSTRUCTION.
5. ALL VALVES 12" AND UNDER SHALL BE RESILIENT WEDGE GATE VALVES.
6. ALL VALVES 14" AND LARGER SHALL BE BUTTERFLY VALVES.
7. ALL ENCASEMENT PIPES SHALL BE 1/2-INCH THICK STEEL.
8. CONTRACTOR'S ATTENTION IS DIRECTED TO SECTIONS 102, 107, AND 1550 OF THE STANDARD SPECIFICATIONS CONCERNING TRENCHLESS INSTALLATION. IT IS CONTRACTOR'S RESPONSIBILITY TO HAVE BORE DESIGNED AND SEALED BY A LICENSED NORTH CAROLINA PROFESSIONAL ENGINEER. NO DAMAGE IS ALLOWED TO RIVER, WETLANDS, OR BUFFER ZONES.
9. PROPOSED WATER LINES SHALL BE WRAPPED IN POLYETHYLENE ENCASEMENT FOR 10' EACH SIDE OF GAS LINE CROSSINGS AND WHERE THE WATER LINE AND GAS LINE ARE WITHIN 10 FEET OF EACH OTHER.
10. CONTRACTOR SHALL RETURN ALL REMOVED WATER METERS TO THE UTILITY OWNER.
11. PROVIDE THRUST RESTRAINT ON THE EXISTING WATER LINE WHERE TIE-INS ARE MADE AS NECESSARY.
12. 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.

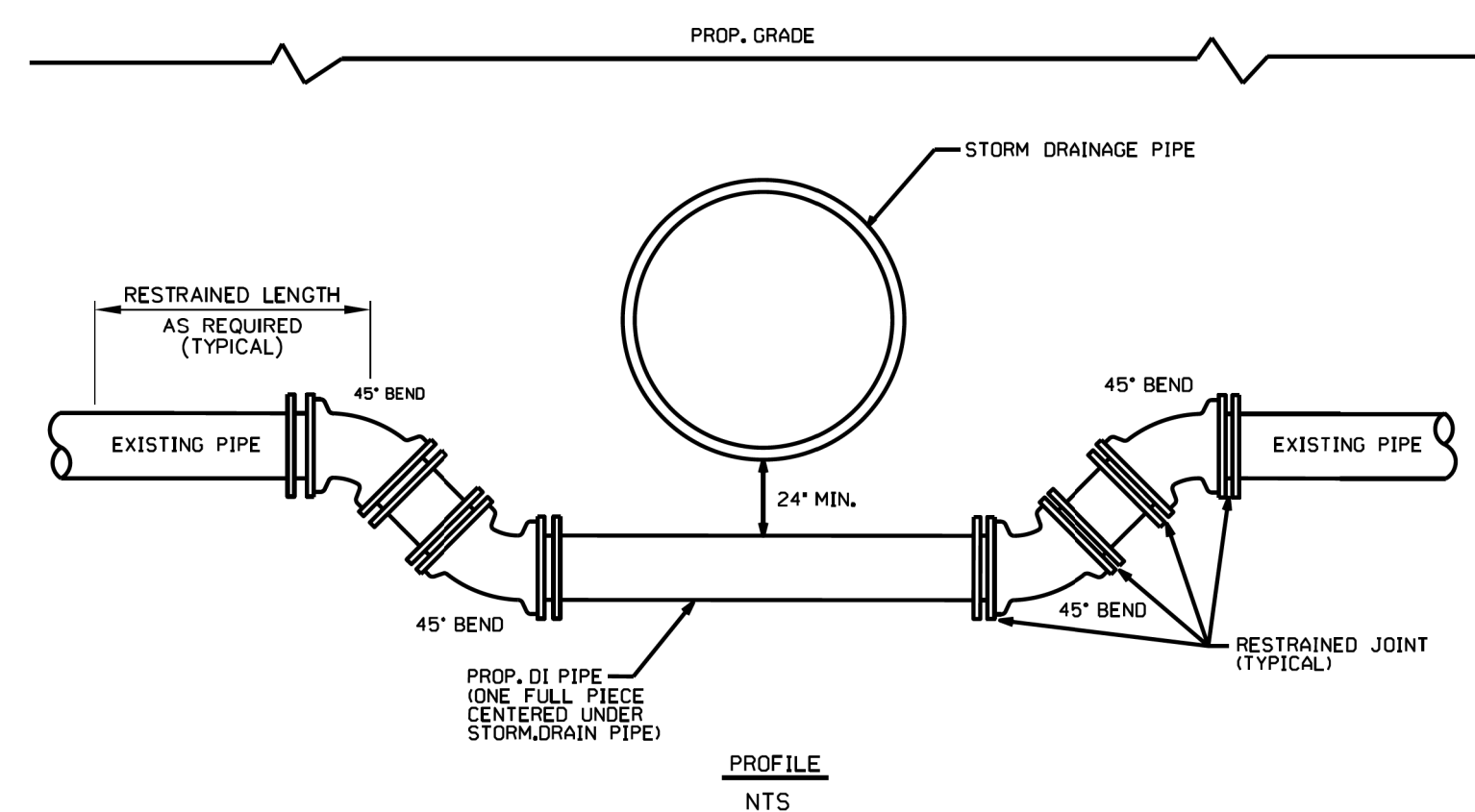
13. ANY BENDS OF PVC WATER PIPE NOT SPECIFICALLY CALLED OUT WITH A 90, 45, 22.5, OR 11.25 DEGREE BEND FITTING, SHALL BE CONSTRUCTED BY A RADIAL BEND OF THE PIPE AS NOTED ON THE PLANS OR IN ACCORDANCE WITH PIPE MANUFACTURER'S SPECIFICATIONS (WHICHEVER IS MORE STRINGENT) - OR A COMBINATION OF BEND FITTINGS AND A RADIAL BEND OF THE PIPE. DEFLECTION OF THE PIPE JOINTS ON PVC PIPE MATERIAL IS NOT AN ACCEPTABLE METHOD OF PIPE BENDING.
14. THE CONTRACTOR SHALL COORDINATE WITH THE DIVISION CONSTRUCTION ENGINEER AND THE CITY OF GASTONIA DURING CONSTRUCTION TO ENSURE ACCESS TO EXISTING AND PROPOSED SANITARY SEWER MANHOLES IS NOT RESTRICTED UPON COMPLETION OF THE PROJECT. THIS MAY INCLUDE ADJUSTING GUARDRAIL POST SPACING AT PREDETERMINED LOCATIONS.

PROJECT REFERENCE NO.	SHEET NO.
I-5000	UC-3A
DESIGNED BY: BCH	
DRAWN BY: BCH	
CHECKED BY: JLT	
APPROVED BY: JES	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
11/7/2016 UTILITY CONSTRUCTION PLANS ONLY	

# UTILITY CONSTRUCTION

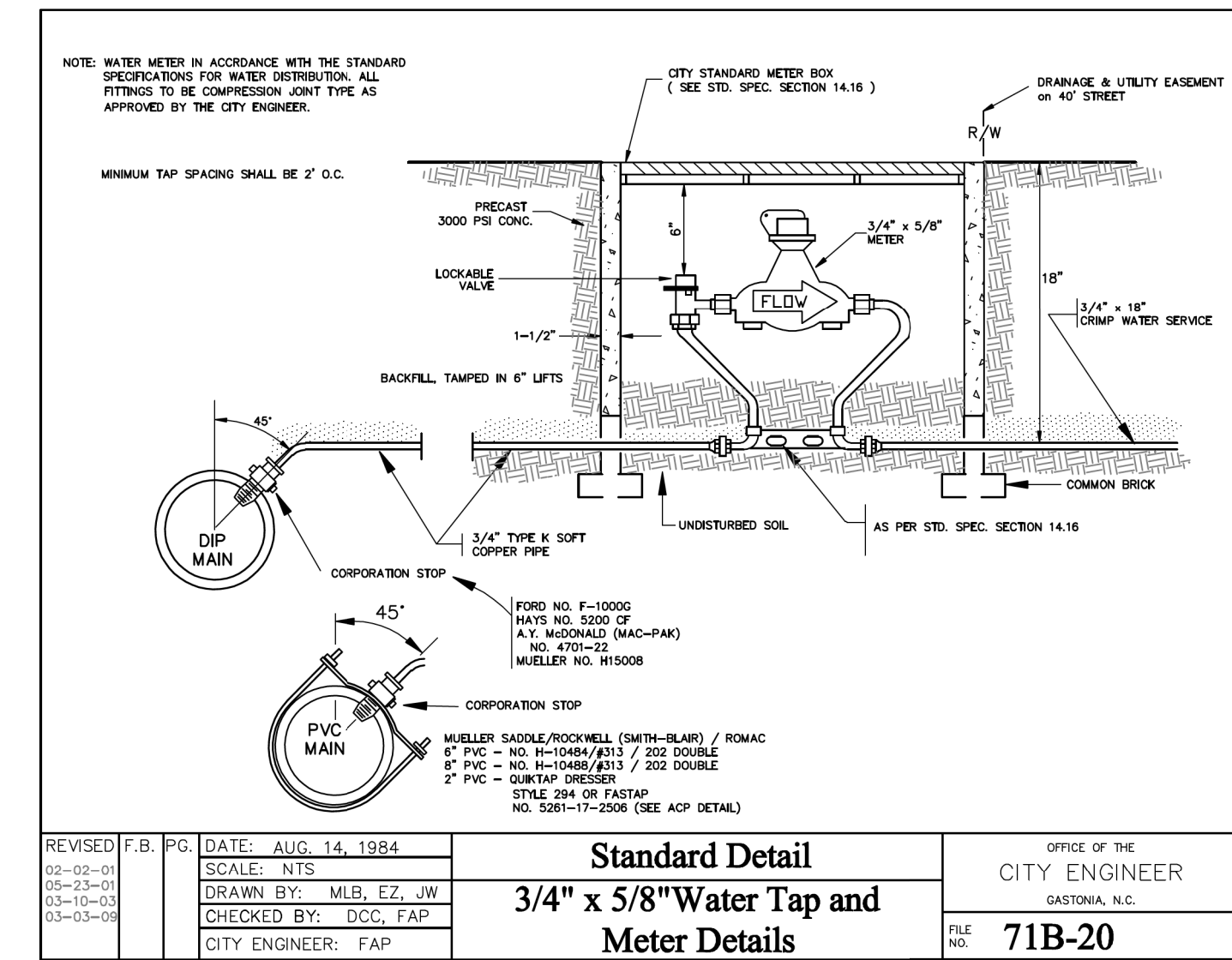
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

## PROJECT TYPICAL DETAILS

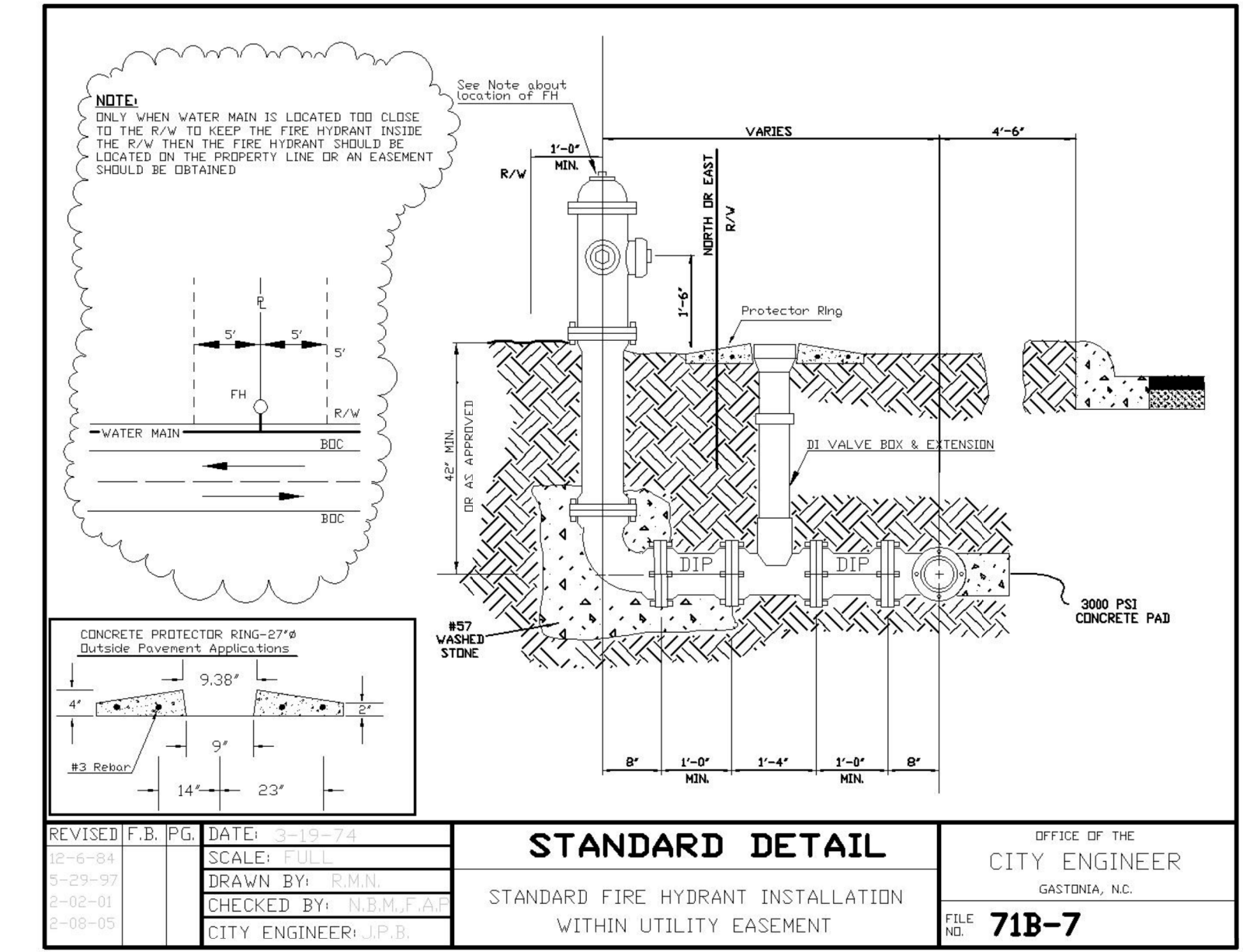
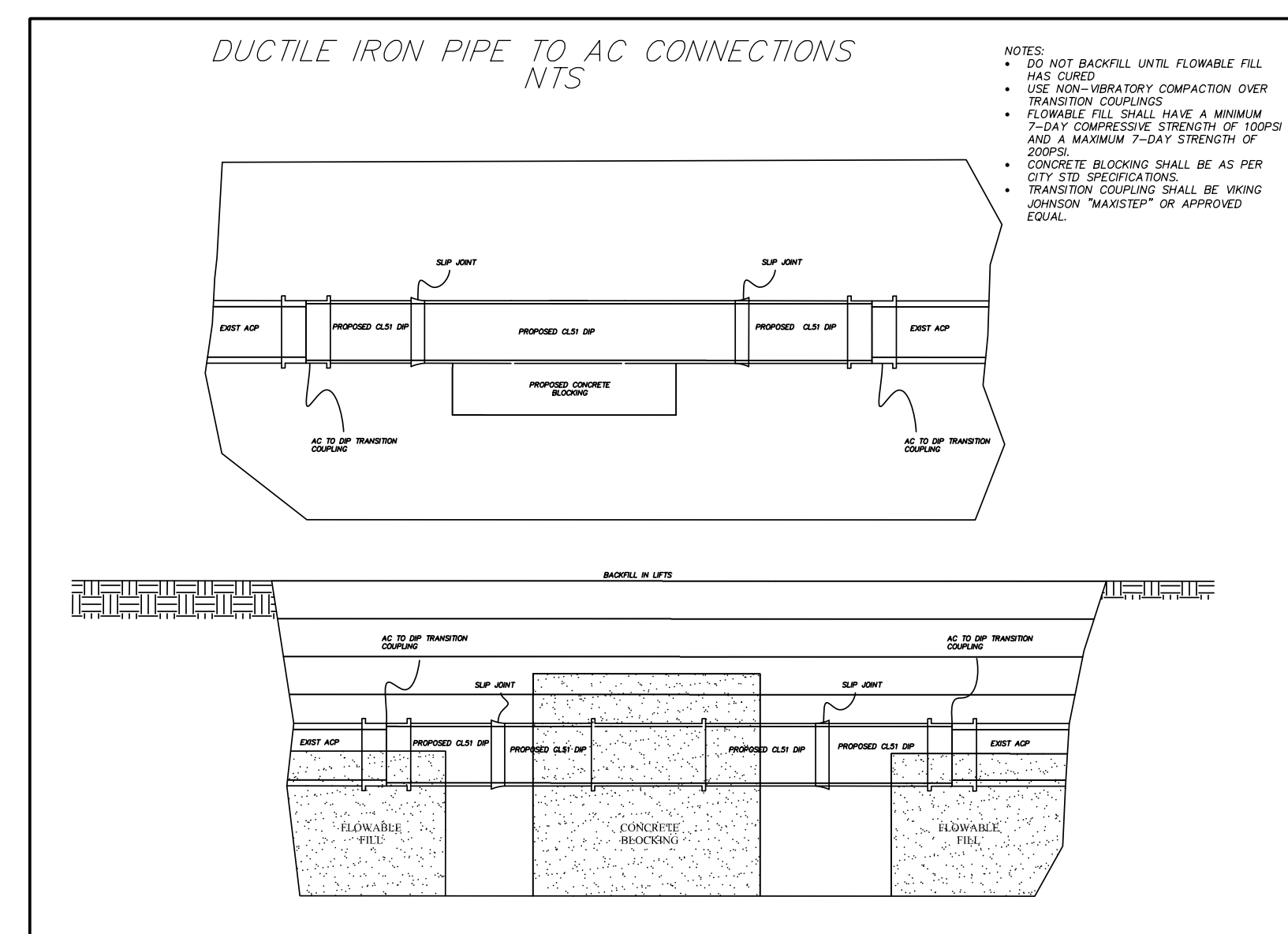
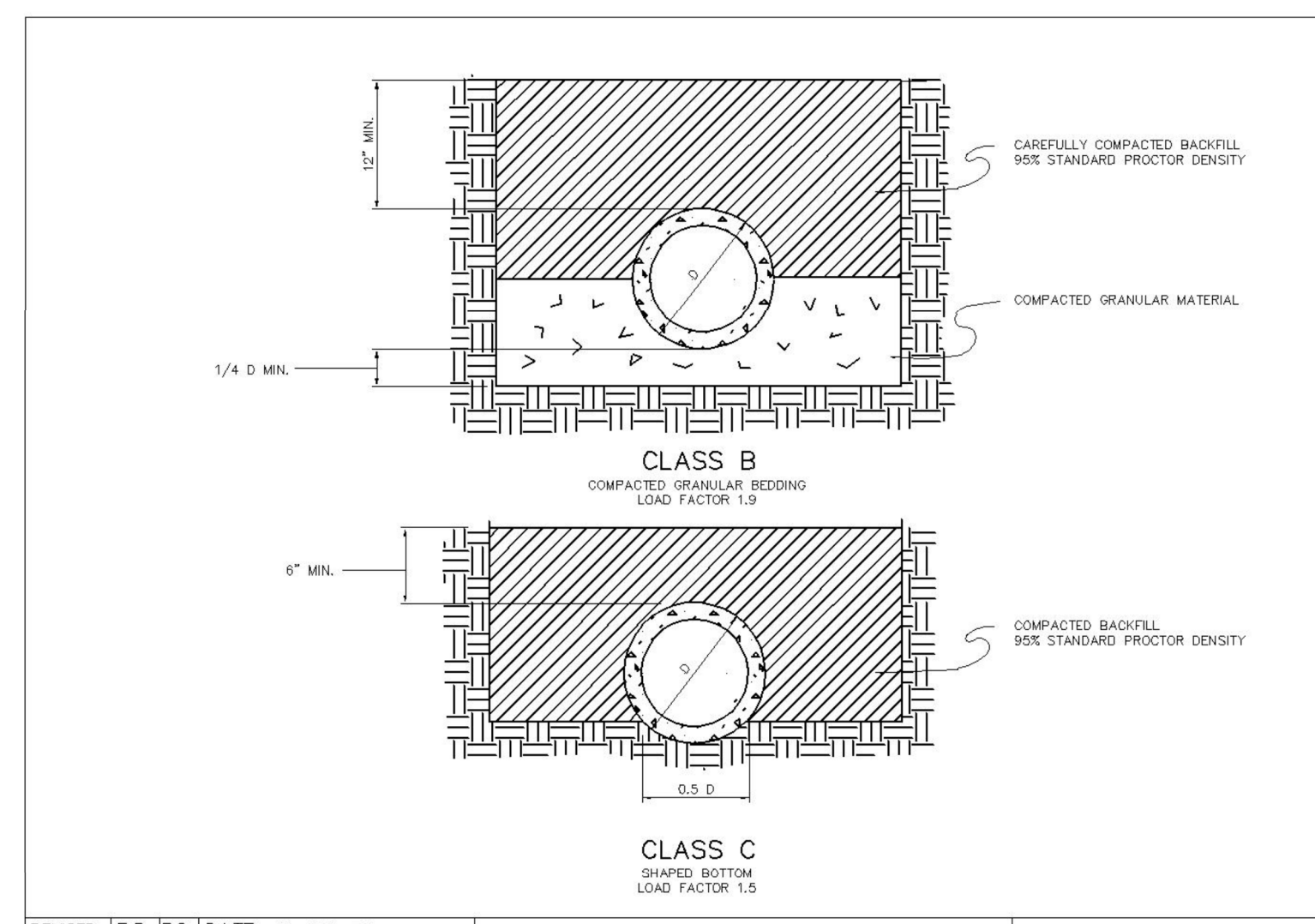


NOTES:  
 1. ALL FITTINGS AND JOINTS SHALL BE RESTRAINED JOINT DESIGN.  
 2. PROVIDE APPROPRIATE RESTRAINED LENGTH AS PER TABLE HEREIN.

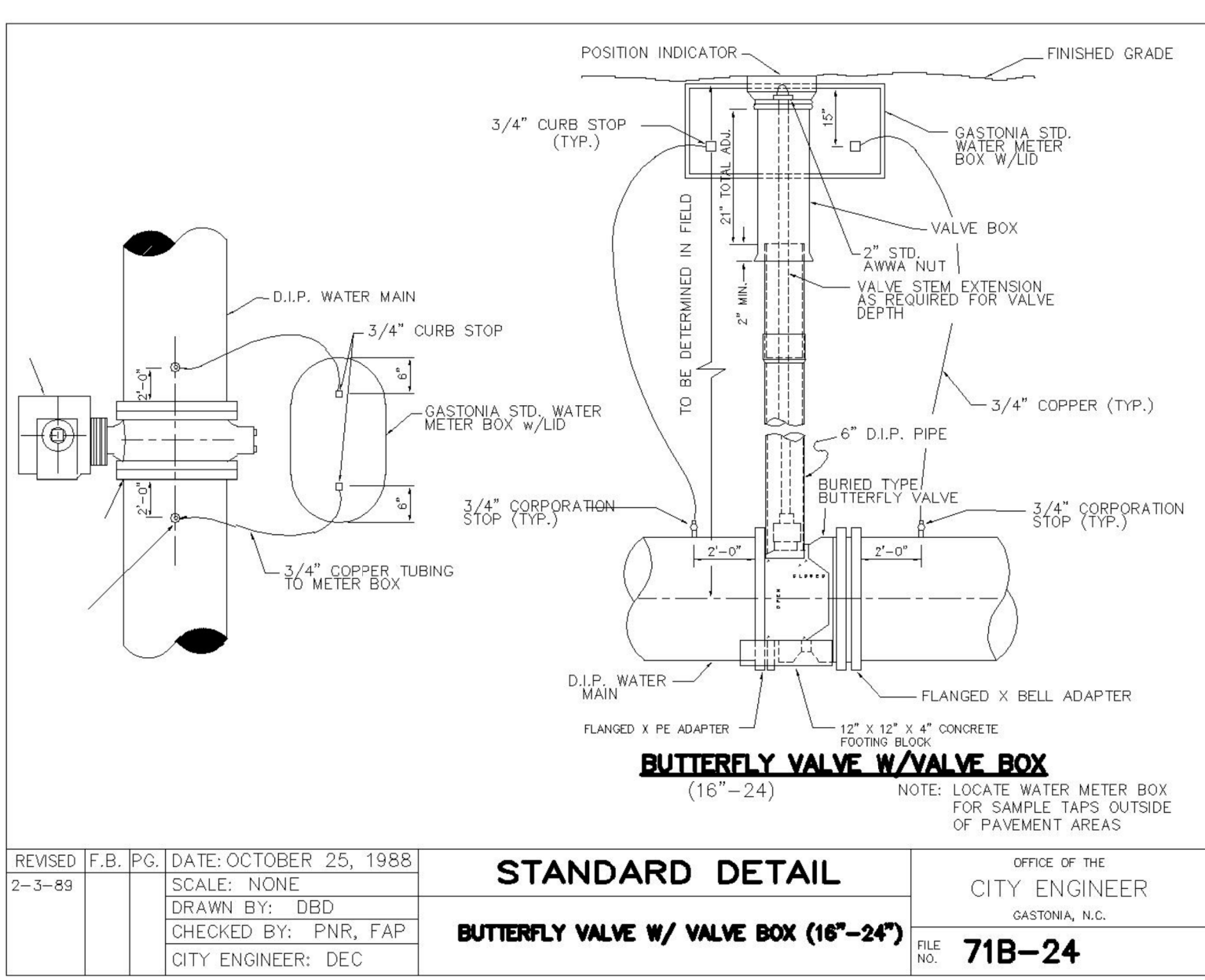
### FORCE MAIN / WATER MAIN CROSSING UNDER STORM DRAINAGE PIPE



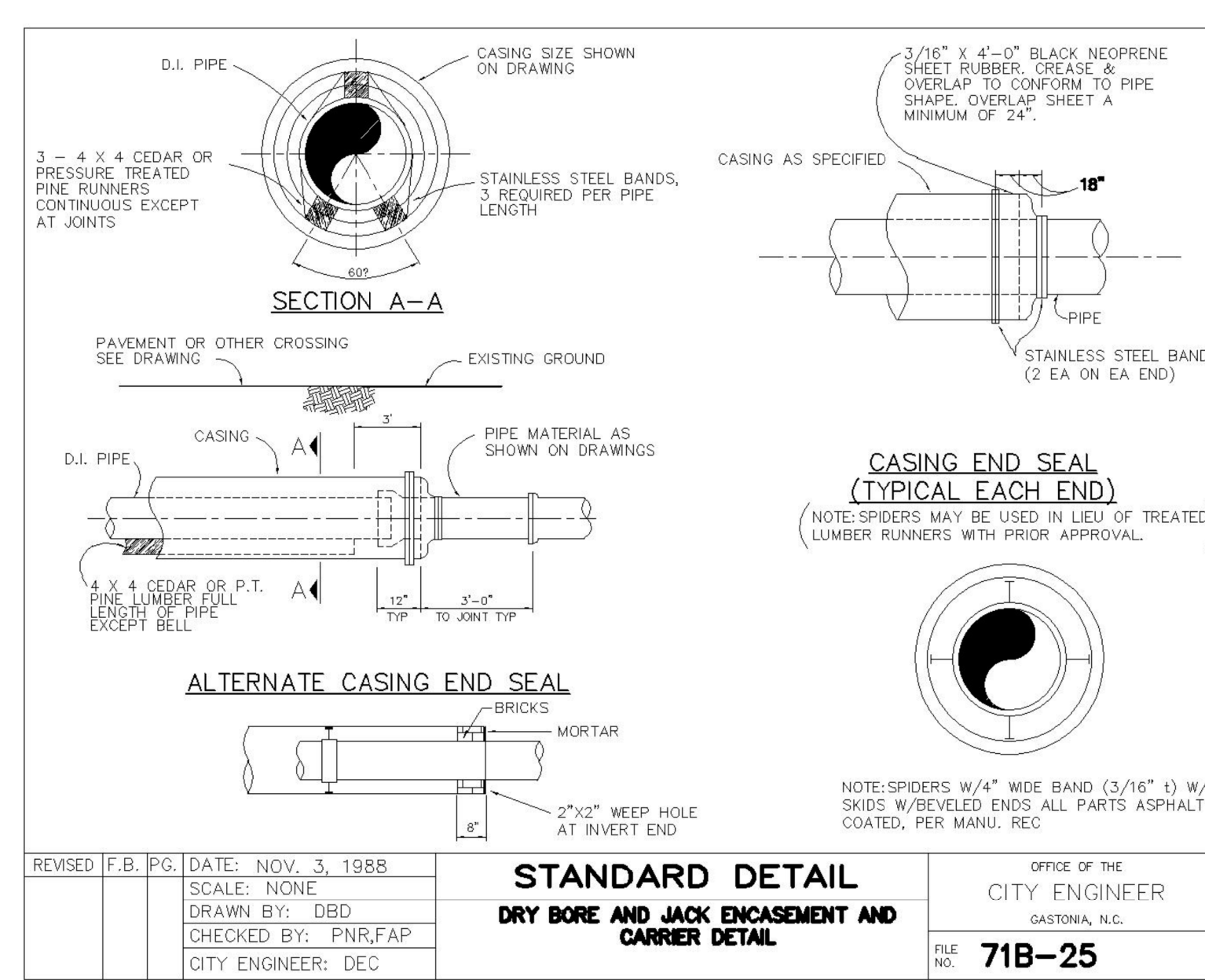
REVISED	F.B.	PG.	DATE: AUG. 14, 1984	Standard Detail	OFFICE OF THE CITY ENGINEER
02-02-01			SCALE: NTS	3/4" x 5/8" Water Tap and Meter Details	GASTONIA, N.C.
02-23-01			DRAWN BY: M.B., E.Z., J.W.		
03-10-01			CHECKED BY: DCC, FAP		
03-13-02			CITY ENGINEER: FAP		FILE NO. 71B-20



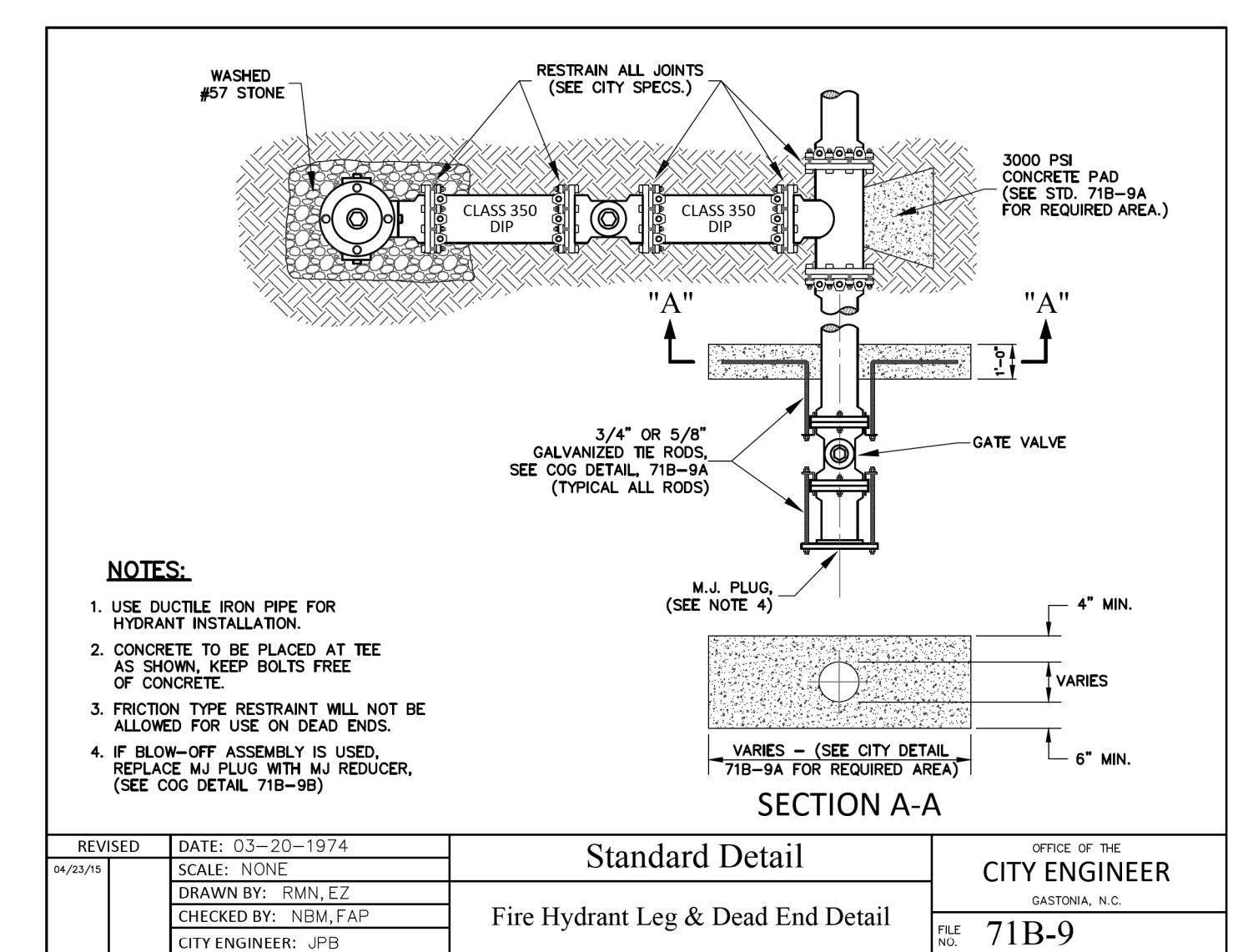
REVISED	F.B.	PG.	DATE: 11/16/94	STANDARD DETAIL	OFFICE OF THE CITY ENGINEER
02-06-94			SCALE: NONE	STANDARD FIRE HYDRANT INSTALLATION WITHIN UTILITY EASEMENT	GASTONIA, N.C.
02-29-99			DRAWN BY: RMN, EZ		
03-02-01			CHECKED BY: PNR, FAP		
03-08-05			CITY ENGINEER: JPB		FILE NO. 71B-7



REVISED	F.B.	PG.	DATE: OCTOBER 25, 1988	STANDARD DETAIL	OFFICE OF THE CITY ENGINEER
2-3-89			SCALE: NONE	BUTTERFLY VALVE W/ VALVE BOX (16"-24")	GASTONIA, N.C.
			DRAWN BY: DBD		
			CHECKED BY: PNR, FAP		
			CITY ENGINEER: DEC		FILE NO. 71B-24



REVISED	F.B.	PG.	DATE: NOV. 3, 1988	STANDARD DETAIL	OFFICE OF THE CITY ENGINEER
			SCALE: NONE	DRY BORE AND JACK ENCASUREMENT AND CARRIER DETAIL	GASTONIA, N.C.
			DRAWN BY: DBD		
			CHECKED BY: PNR, FAP		
			CITY ENGINEER: DEC		FILE NO. 71B-25



REVISED	DATE: 03-20-1974	Standard Detail	OFFICE OF THE CITY ENGINEER
04/29/75	SCALE: NONE	Fire Hydrant Leg & Dead End Detail	GASTONIA, N.C.
	DRAWN BY: RMN, EZ		
	CHECKED BY: NBM, FAP		
	CITY ENGINEER: JPB		FILE NO. 71B-9

PROJECT REFERENCE NO.	SHEET NO.	
I-5000	UC-3B	
DESIGNED BY: BCH		
DRAWN BY: BCH		
CHECKED BY: JLT		
APPROVED BY: JES		
REVISED:	11/7/2016	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151		UTILITY CONSTRUCTION PLANS ONLY TGS ENGINEERS 804-C N. LAFAYETTE ST SHELBY, NC 28150 PH (704) 476-0003 CORP. LICENSE NO.: C-0275

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# PROJECT TYPICAL DETAILS

**NOTES:**

1. 6" MIN. CONCRETE SLAB TO BE POURED TO GROUND CUT.
2. INVERTS TO IN & OUT PIPES TO BE BUILT AFTER MANHOLE HAS BEEN SET SO AS TO EVENLY DISTRIBUTE BEARING LOAD.
3. MANHOLE TO BE LEVELLED & ASSEMBLED SO AS TO EVENLY DISTRIBUTE BEARING LOAD.
4. SEE DETAIL 71B-2 FOR REINFORCING DETAILS AND STEP DETAILS.
5. 6" MIN. EXTENSION BEYOND EXTERIOR WALL OF MANHOLE.
6. PRECAST MANHOLE JOINTS TO BE SEALED WITH "O" RING JOINT-ASTM C-443 OR WITH APPROVED BUTYL RUBBER SEALANT.
7. CONCRETE SLAB SHALL EXTEND A MIN. OF 3" ABOVE BOTTOM OF FIRST MANHOLE SECTION.
8. ALL LIFT HOLES TO BE SEALED WITH TAPERED NEOPRENE PLUGS OR OTHER APPROVED EQUAL. LIFT HOLES TO BE SEALED FROM OUTSIDE.

**STANDARD DETAIL**  
 PRECAST CONCRETE MANHOLE

REVISED	F.B.	P.G.	DATE:	FEB. 1, 1974
3-13-74			SCALE:	NTS
12/13/84			DRAWN BY:	NBM
3/15/88			CHECKED BY:	RED, FAP
2/7/05			CITY ENGINEER:	DEC

OFFICE OF THE CITY ENGINEER  
 GASTONIA, N.C.  
 FILE NO. **71B-4**

**STANDARD DETAIL**  
 STANDARD FIRE HYDRANT INSTALLATION FOR WATER MAIN IN STREET

REVISED	F.B.	P.G.	DATE:	
12-6-84			SCALE:	NTS
3-29-87			DRAWN BY:	...
3-28-88			CHECKED BY:	...
08-08-09			CITY ENGINEER:	...

OFFICE OF THE CITY ENGINEER  
 GASTONIA, N.C.  
 FILE NO. **71B-8**

**Standard Detail**  
 Outside Drop Detail

REVISED	DATE:	02-02-2015
	SCALE:	NONE
	DRAWN BY:	BJP, MGB
	CHECKED BY:	GVS, BJP
	CITY ENGINEER:	CCB

OFFICE OF THE CITY ENGINEER  
 GASTONIA, N.C.  
 FILE NO. **71B-3**

**STANDARD DETAIL**  
 SANITARY SEWER LATERAL CONNECTION

REVISED	F.B.	P.G.	DATE:	6-7-84
04L 5/96			SCALE:	NONE
02 2-1-87			DRAWN BY:	KAB
02 3-17-86			CHECKED BY:	DCC, FAP
02 7-18-96			CITY ENGINEER:	DEC, JPB
02 9-21-99				
10-08-02				

OFFICE OF THE CITY ENGINEER  
 GASTONIA, N.C.  
 FILE NO. **71B-19**

**Standard Detail**  
 Plastic Manhole Step Detail

REVISED	DATE:	01-25-16
	SCALE:	NONE
	DRAWN BY:	MGB
	CHECKED BY:	JB
	CITY ENGINEER:	CCB

OFFICE OF THE CITY ENGINEER  
 GASTONIA, N.C.  
 FILE NO. **71B-2A**

**Standard Detail**  
 Manhole Steel Reinforcing & Assembly Detail

REVISED	DATE:	MARCH 13, 1974	
12/13/84		SCALE:	NONE
03/15/88		DRAWN BY:	NBM, MGB
01/25/16		CHECKED BY:	RED, FAP, JPB
		CITY ENGINEER:	DEC, CCB

OFFICE OF THE CITY ENGINEER  
 GASTONIA, N.C.  
 FILE NO. **71B-2**

**Standard Detail**  
 Cast Iron Frame and Cover For Manhole

REVISED	DATE:	6/08/81	
1/27/82		SCALE:	NTS
4/20/89		DRAWN BY:	PNR, EZ
11/18/99		CHECKED BY:	FAP
2/05/01		CITY ENGINEER:	JPB
2/20/04			
3/04/05			

OFFICE OF THE CITY ENGINEER  
 GASTONIA, N.C.  
 FILE NO. **71B-1**

**STANDARD DETAIL**  
 STANDARD STREET X-SECTION SHOWING WATER TAP DEPTH

REVISED	F.B.	P.G.	DATE:	AUG. 14, 1984
			SCALE:	NTS
			DRAWN BY:	MLB
			CHECKED BY:	DCC/FAP
			CITY ENGINEER:	DEC

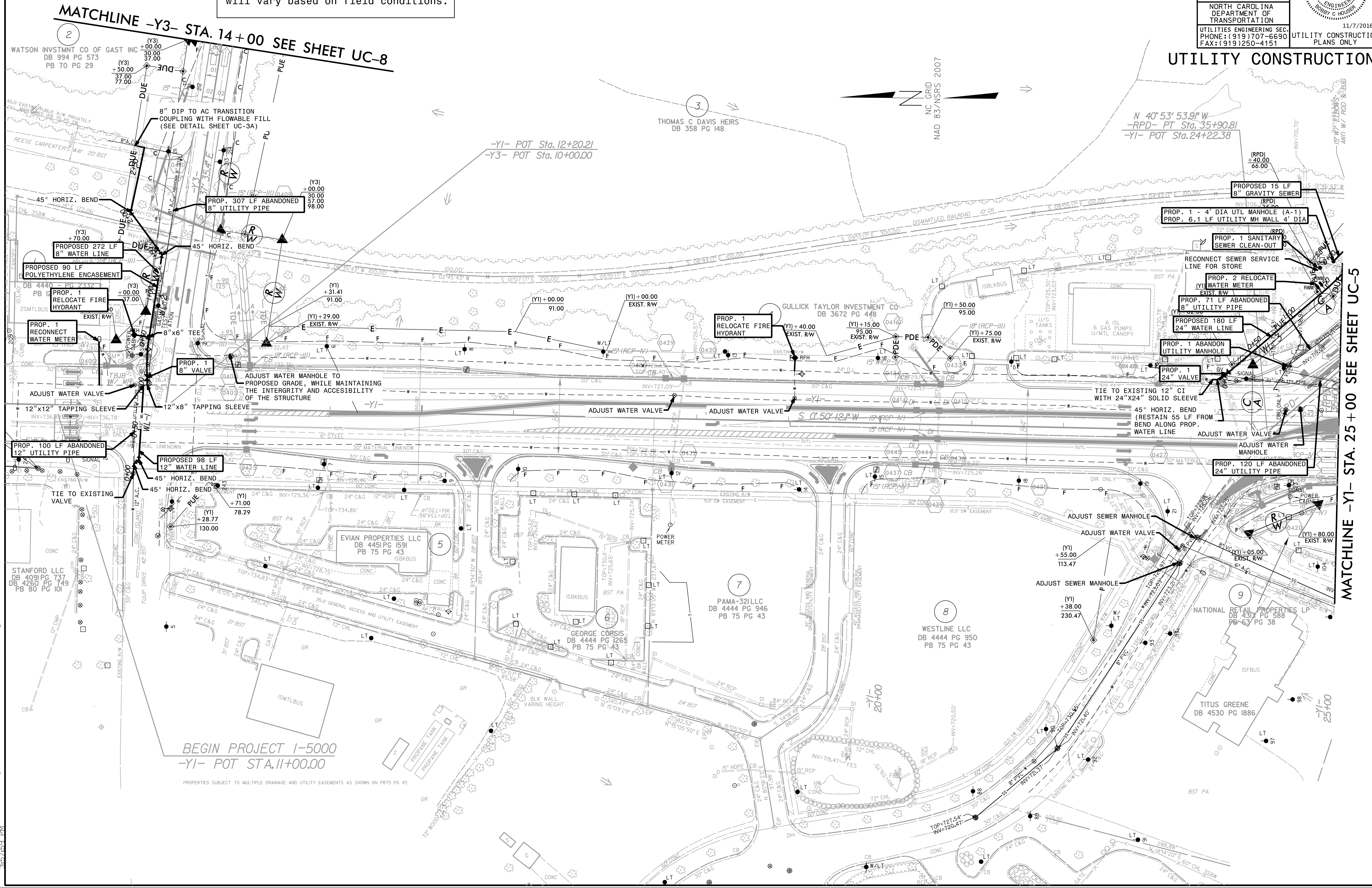
OFFICE OF THE CITY ENGINEER  
 GASTONIA, N.C.  
 FILE NO. **71B-21**

5/14/99  
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The estimated quantity of Ductile Iron Water Pipe Fitting on this plan sheet is 3270 pounds. The actual quantity and type of fittings will vary based on field conditions.

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

PROJECT REFERENCE NO.	SHEET NO.
I-5000	UC-4
DESIGNED BY: BCH	
DRAWN BY: BCH	
CHECKED BY: JLT	
APPROVED BY: JES	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	



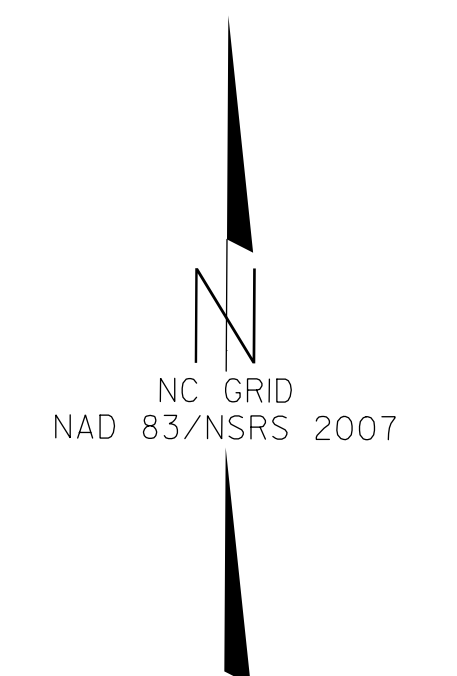
BEGIN PROJECT I-5000  
-Y1- POT STA. 11+00.00

MATCHLINE -Y1- STA. 25+00 SEE SHEET UC-5

PROJECT REFERENCE NO.	SHEET NO.
1-5000	UC-5
DESIGNED BY: BCH	
DRAWN BY: BCH	
CHECKED BY: JLT	
APPROVED BY: JES	
REVISED:	11/7/2016
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	UTILITY CONSTRUCTION PLANS ONLY
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

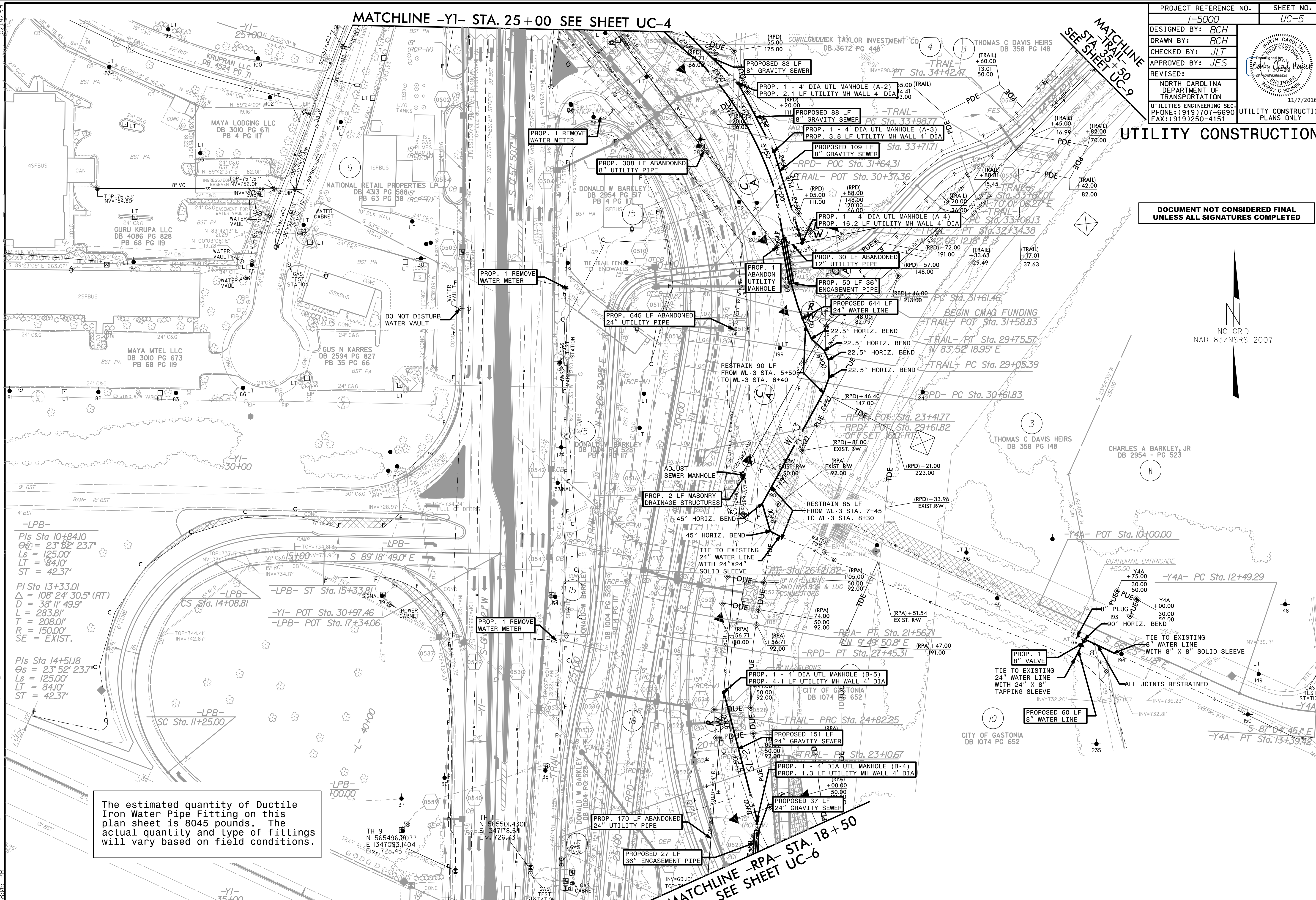
**UTILITY CONSTRUCTION**

**DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED**



MATCHLINE -Y1- STA. 25+00 SEE SHEET UC-4

MATCHLINE SEE STA. 32+50 SEE SHEET UC-9



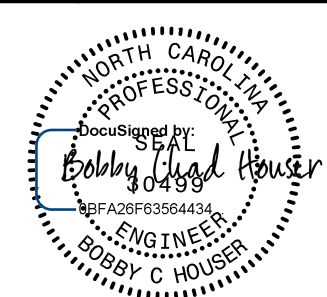
The estimated quantity of Ductile Iron Water Pipe Fitting on this plan sheet is 8045 pounds. The actual quantity and type of fittings will vary based on field conditions.

MATCHLINE -Y1- STA. 35+00

MATCHLINE -RPA- STA. 18+50 SEE SHEET UC-6

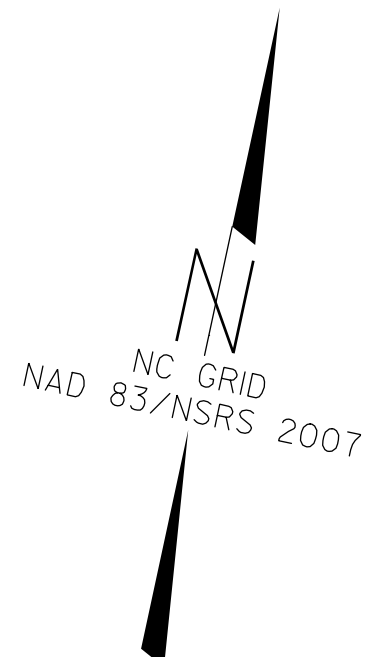
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 11/7/2016 15:00:00



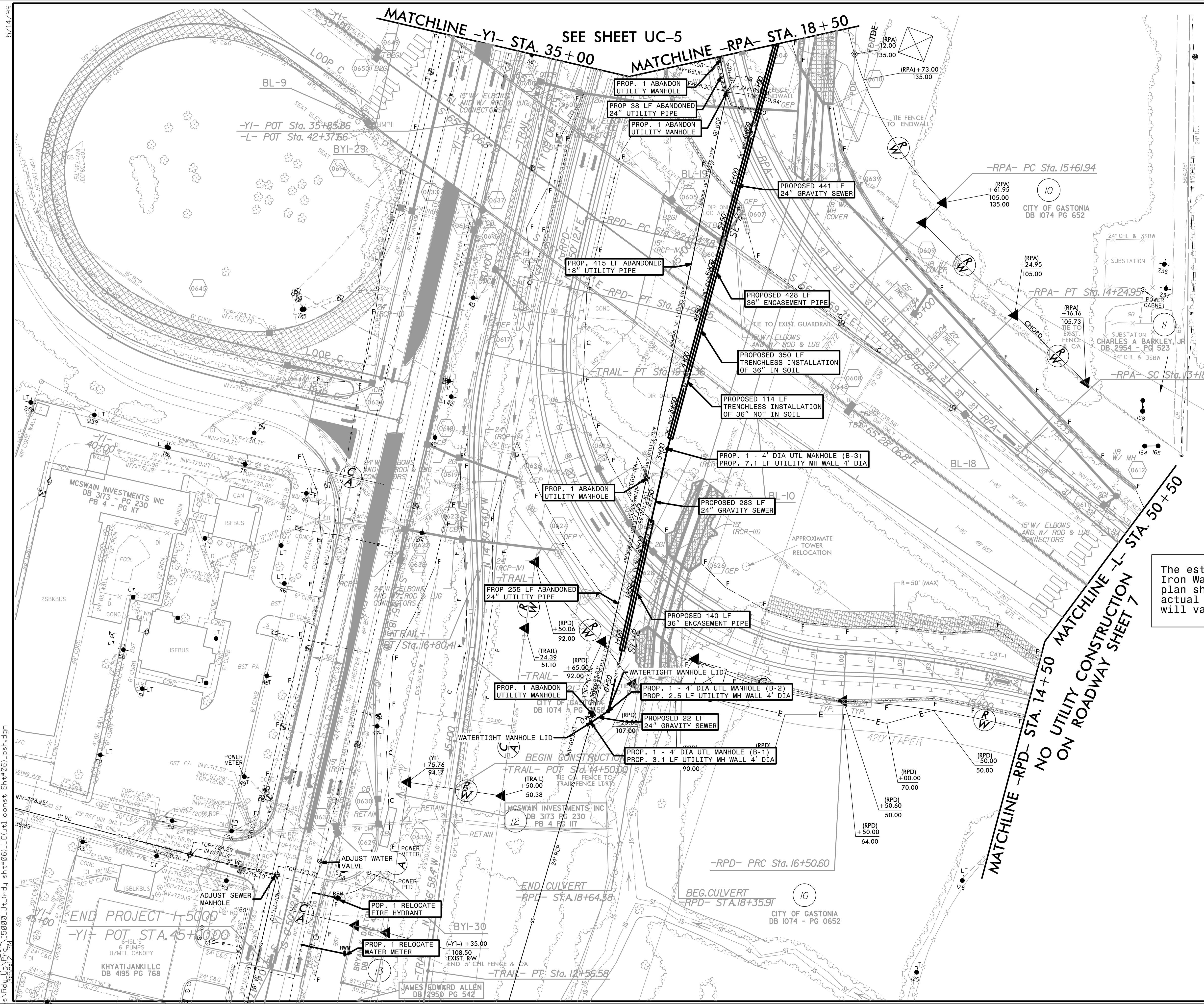
PROJECT REFERENCE NO.	SHEET NO.
I-5000	UC-6
DESIGNED BY: BCH	
DRAWN BY: BCH	
CHECKED BY: JLT	
APPROVED BY: JES	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	11/7/2016
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	UTILITY CONSTRUCTION PLANS ONLY

# UTILITY CONSTRUCTION

**DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED**



The estimated quantity of Ductile Iron Water Pipe Fittings on this plan sheet is 400 pounds. The actual quantity and type of fittings will vary based on field conditions.

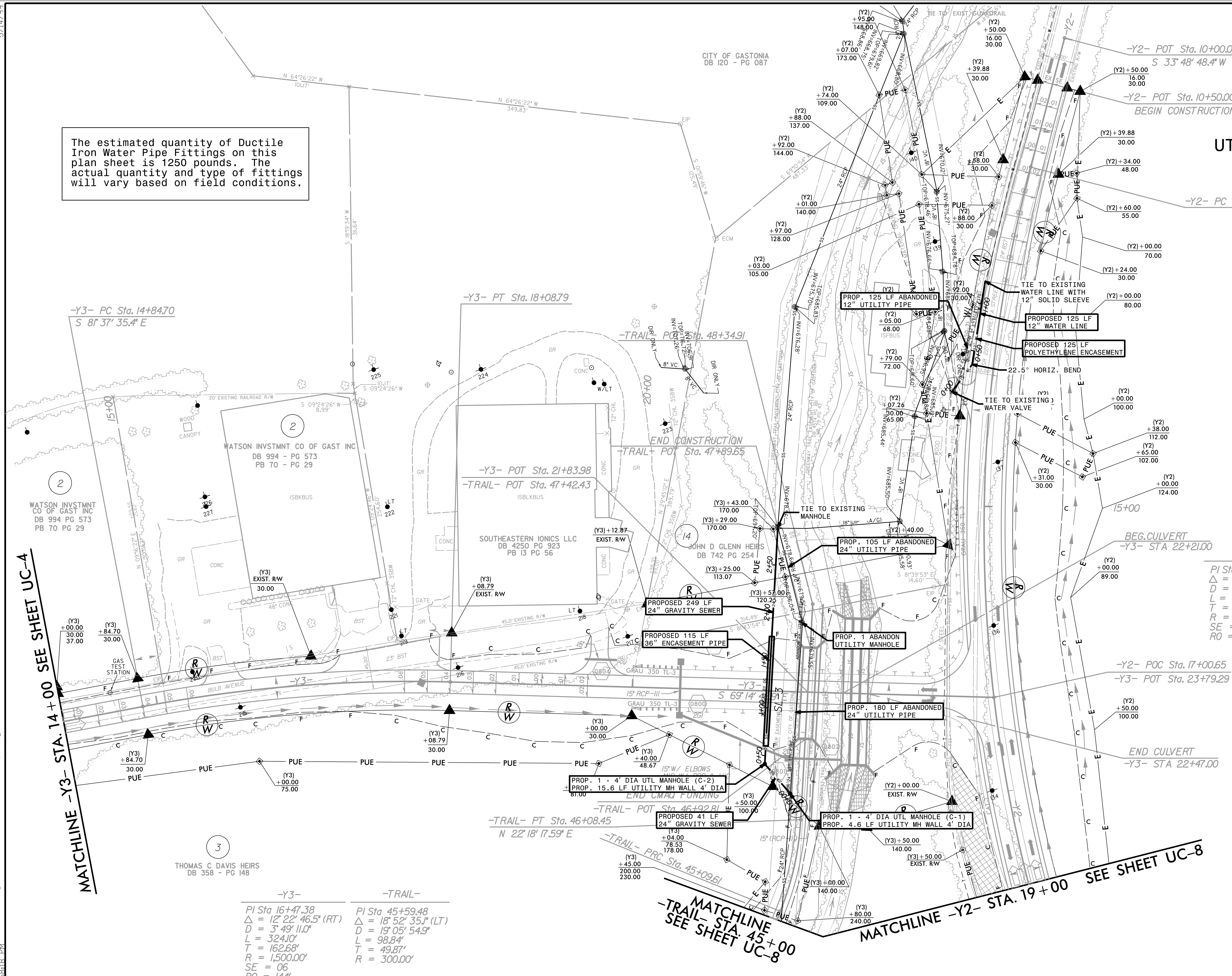


5/14/99  
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# UTILITY CONSTRUCTION

**DOCUMENT NOT CONSIDERED FINAL  
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The estimated quantity of Ductile Iron Water Pipe Fittings on this plan sheet is 1250 pounds. The actual quantity and type of fittings will vary based on field conditions.



MATCHLINE -Y3- STA. 14+00 SEE SHEET UC-4

MATCHLINE -Y2- STA. 19+00 SEE SHEET UC-8

-Y3-	-TRAIL-
PI Sta 16+47.38	PI Sta 45+59.48
$\Delta = 12^\circ 22' 46.5''$ (RT)	$\Delta = 18^\circ 52' 35.1''$ (LT)
D = 3' 49' 11.0"	D = 19' 05' 54.9"
L = 324.10'	L = 98.84'
T = 162.68'	T = 49.87'
R = 1,500.00'	R = 300.00'
SE = 06	
RO = 144'	

-Y2-  
PI Sta 16+22.15  
 $\Delta = 35^\circ 38' 48.0''$  (LT)  
D = 3' 49' 11.0"  
L = 933.23'  
T = 482.27'  
R = 1,500.00'  
SE = 06  
RO = 144'

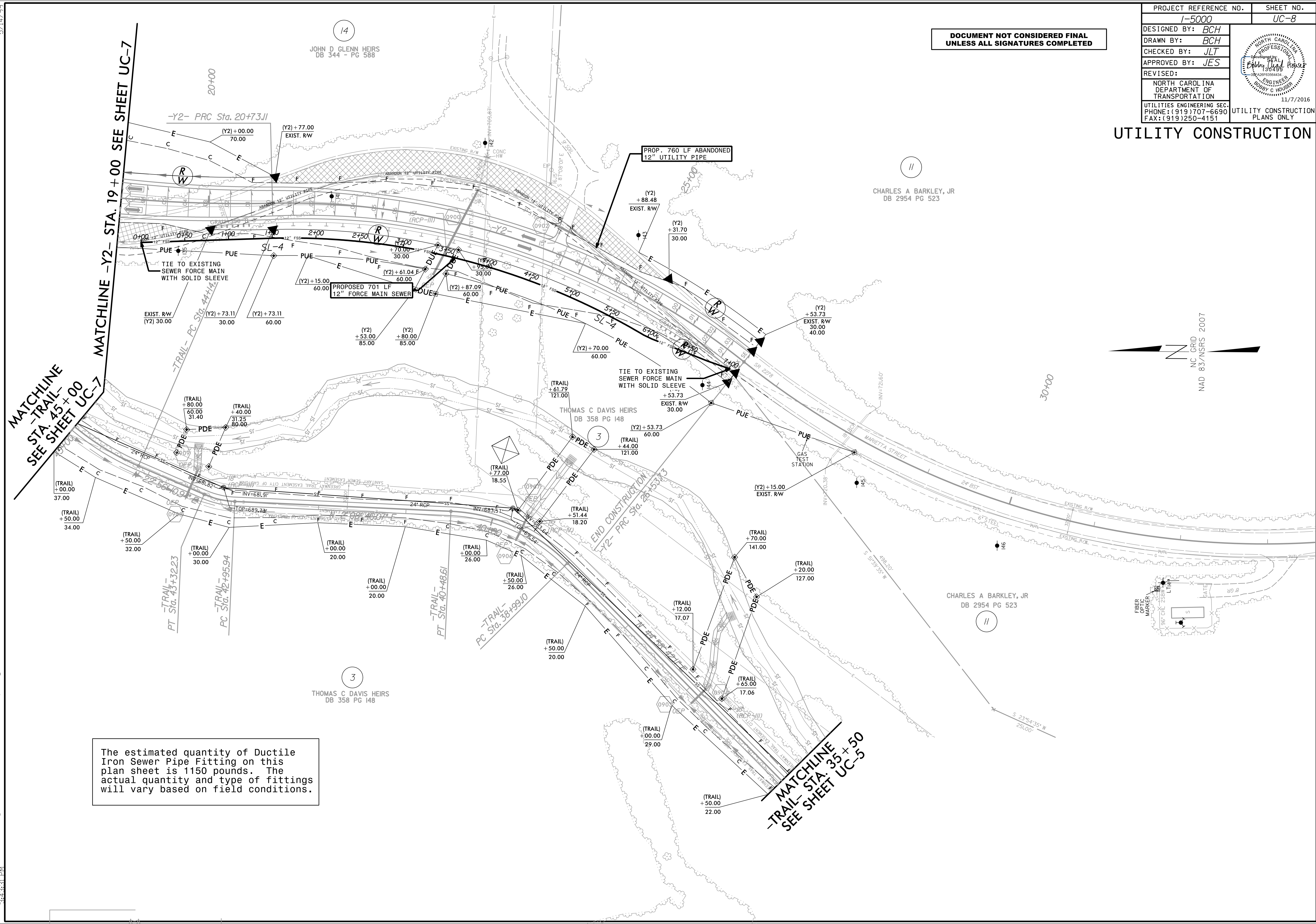


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PROJECT REFERENCE NO.	SHEET NO.
I-5000	UC-8
DESIGNED BY: BCH	
DRAWN BY: BCH	
CHECKED BY: JLT	
APPROVED BY: JES	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
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**UTILITY CONSTRUCTION**



MATCHLINE -Y2- STA. 19+00 SEE SHEET UC-7  
 MATCHLINE -TRAIL- STA. 45+00 SEE SHEET UC-7

MATCHLINE -TRAIL- STA. 35+50 SEE SHEET UC-5

The estimated quantity of Ductile Iron Sewer Pipe Fitting on this plan sheet is 1150 pounds. The actual quantity and type of fittings will vary based on field conditions.

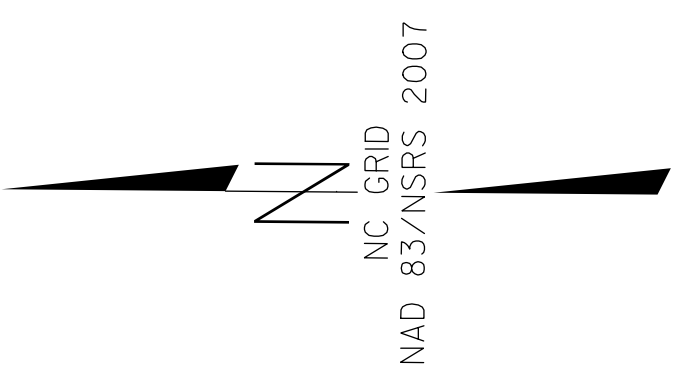
14  
JOHN D GLENN HEIRS  
DB 344 - PG 588

11  
CHARLES A BARKLEY, JR  
DB 2954 PG 523

3  
THOMAS C DAVIS HEIRS  
DB 358 PG 148

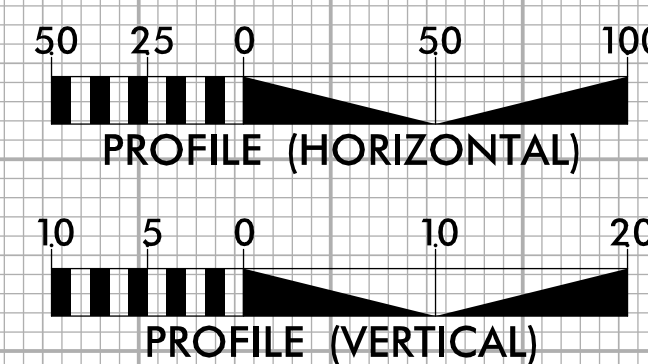
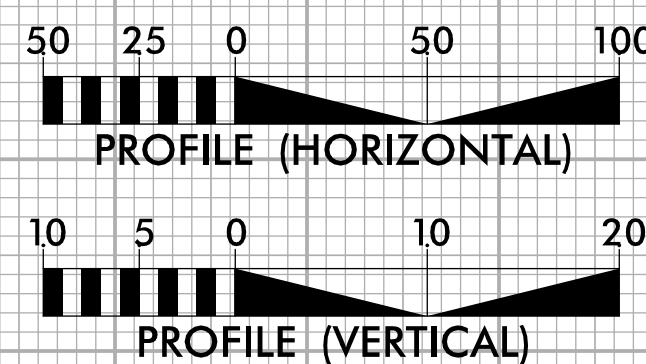
11  
CHARLES A BARKLEY, JR  
DB 2954 PG 523

3  
THOMAS C DAVIS HEIRS  
DB 358 PG 148



5/14/99  
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 3/23/16

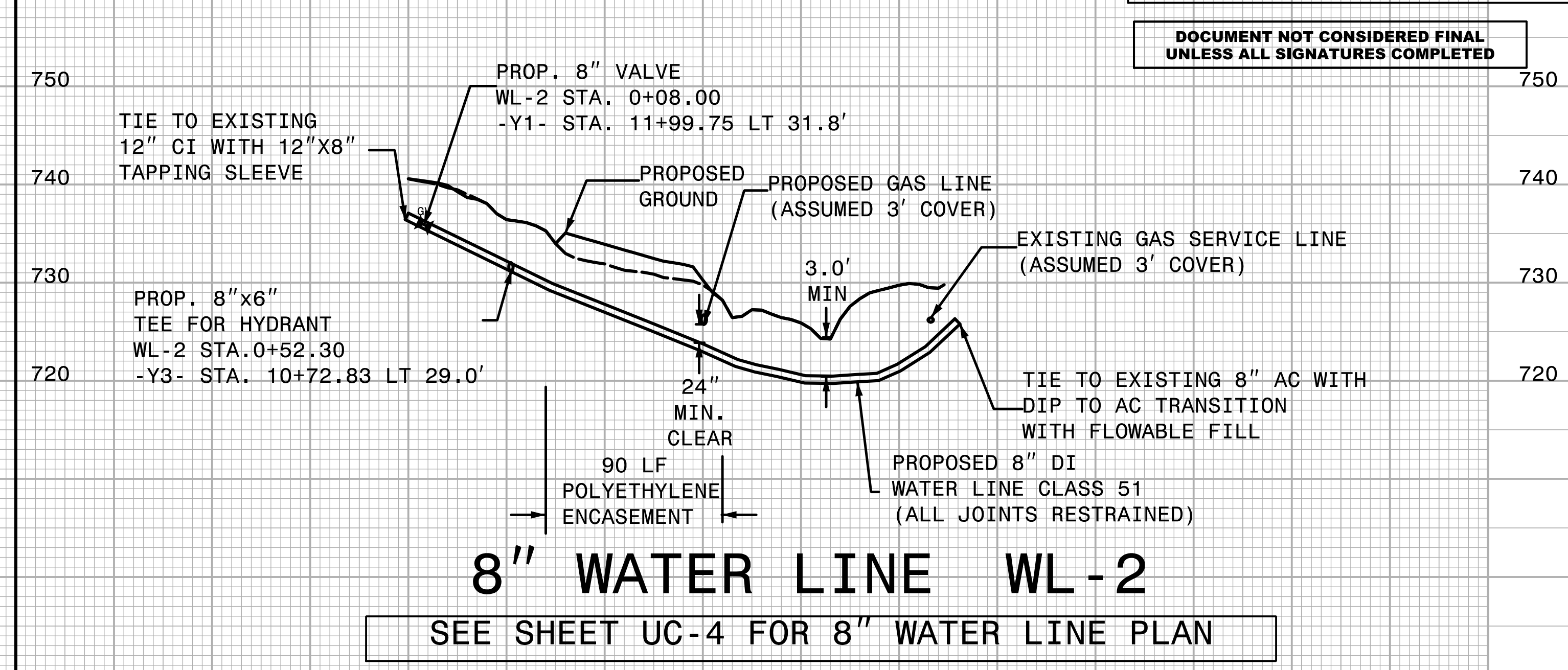
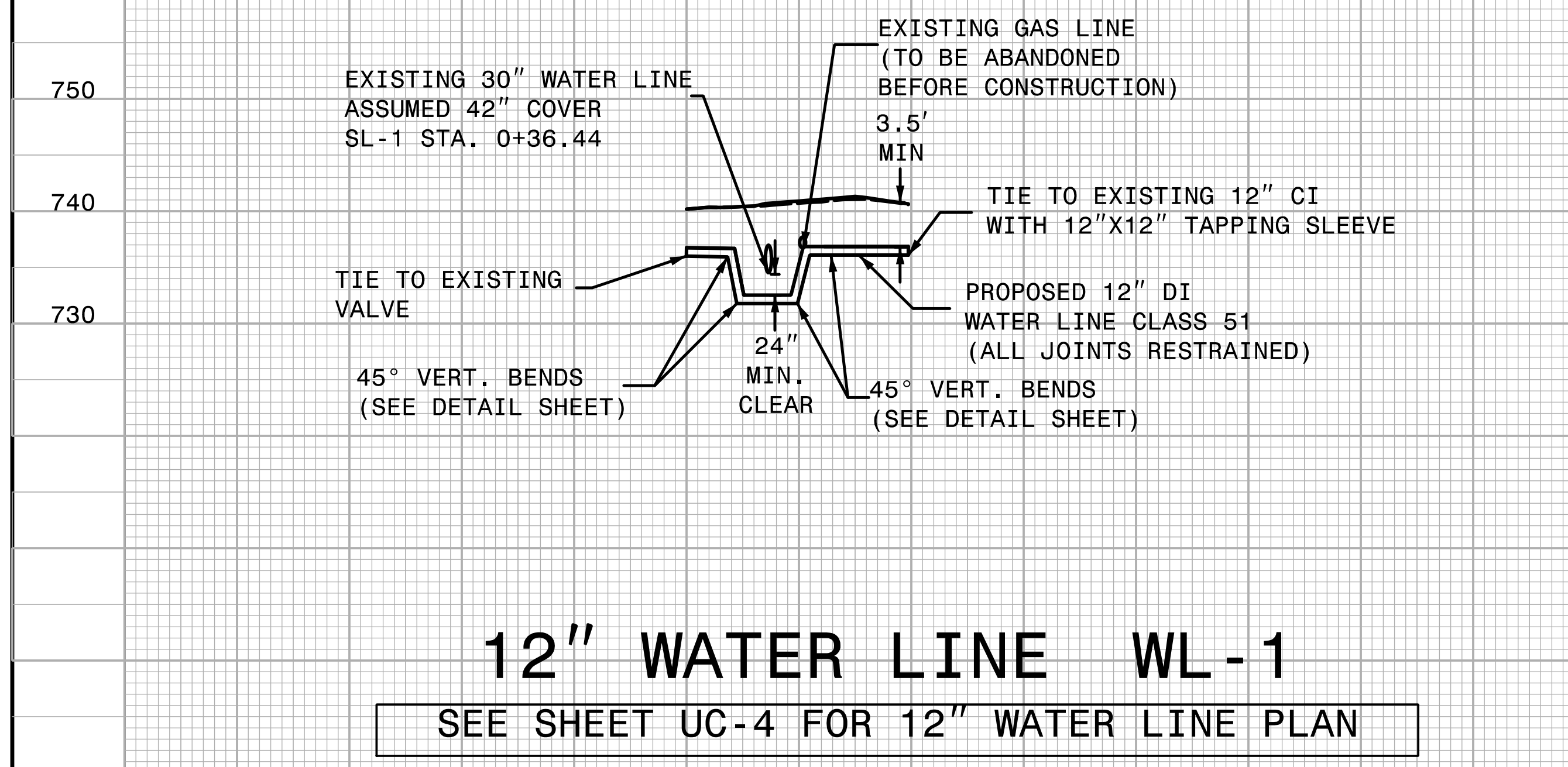
5/28/99



PROJECT REFERENCE NO. <b>I-5000</b>	SHEET NO. <b>UC-9</b>
DESIGNED BY: BCH	
DRAWN BY: BCH	
CHECKED BY: JLT	
APPROVED BY: JES	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
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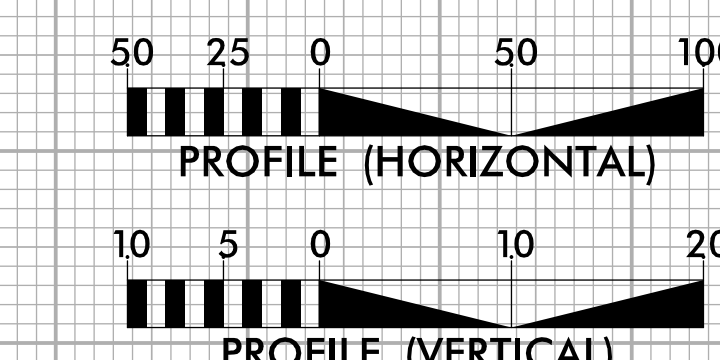
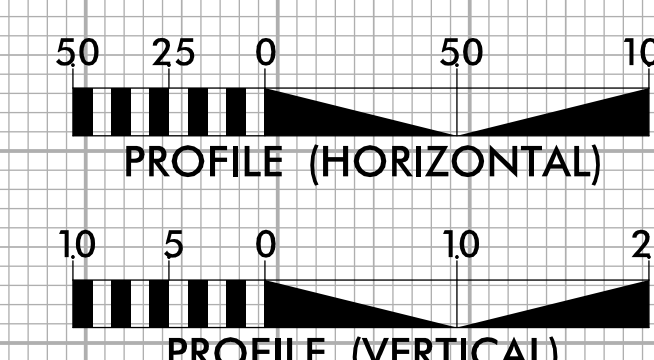
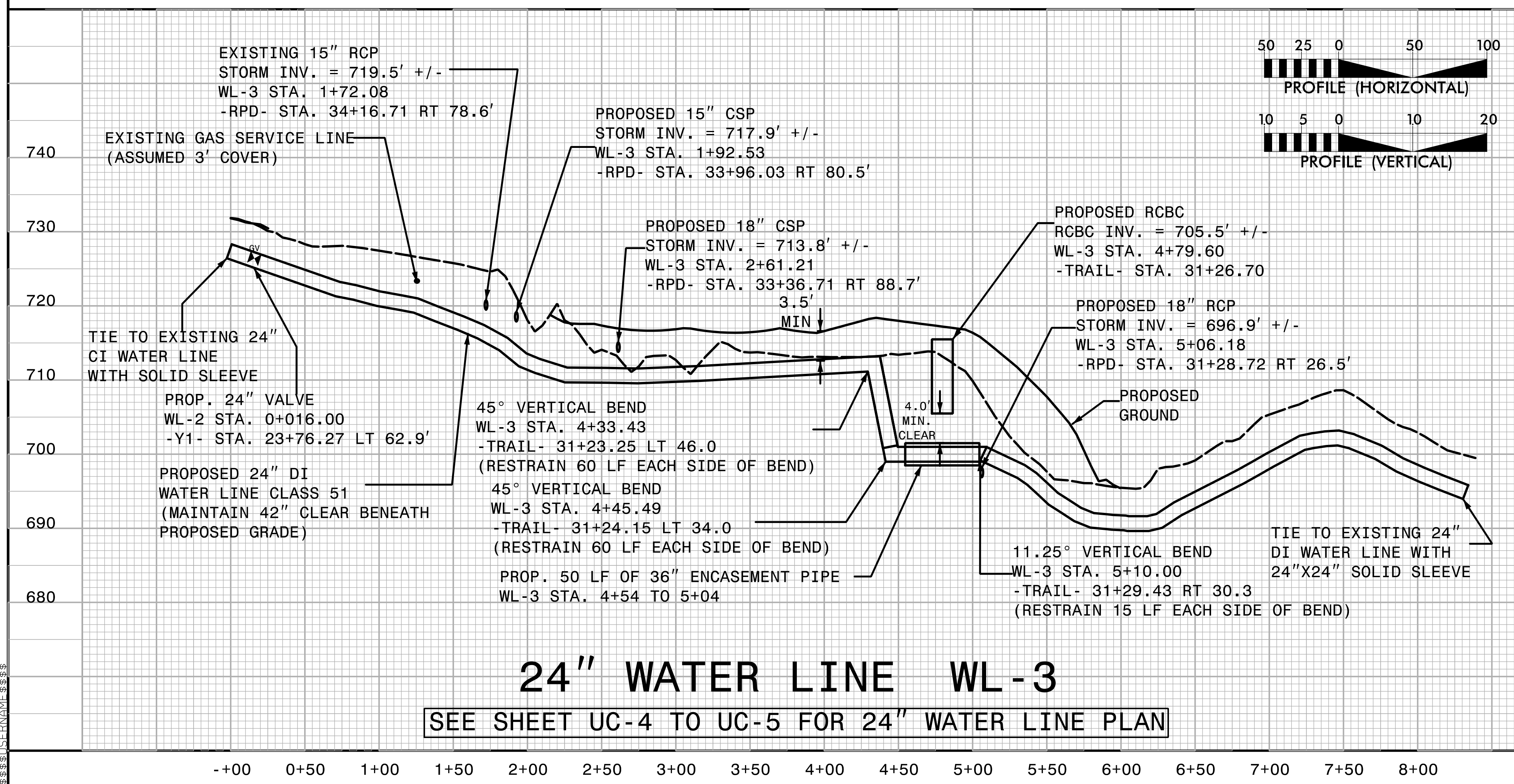
**UTILITY CONSTRUCTION**

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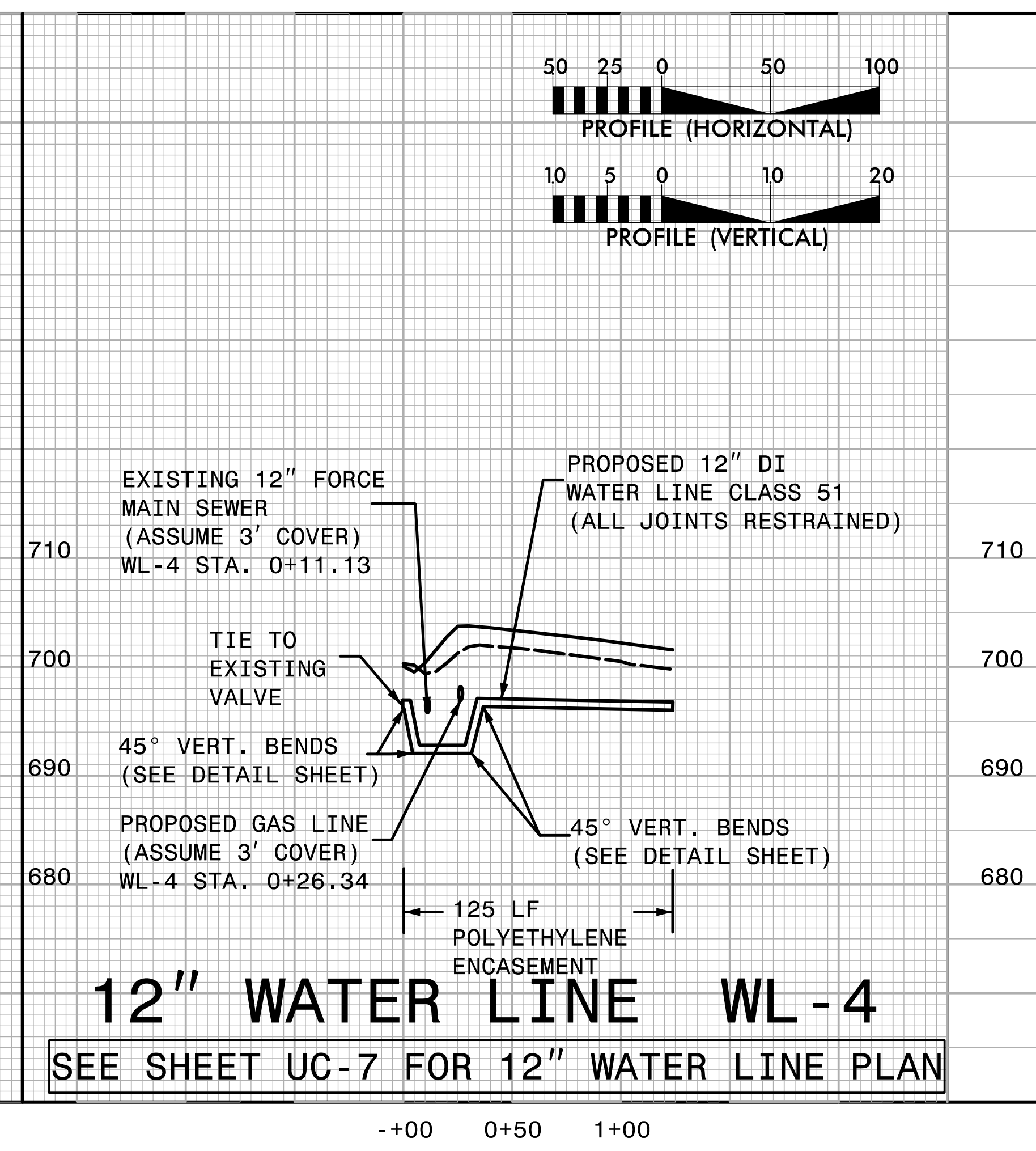
-+00 0+50

0+50 1+00 1+50 2+00 2+50



-+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

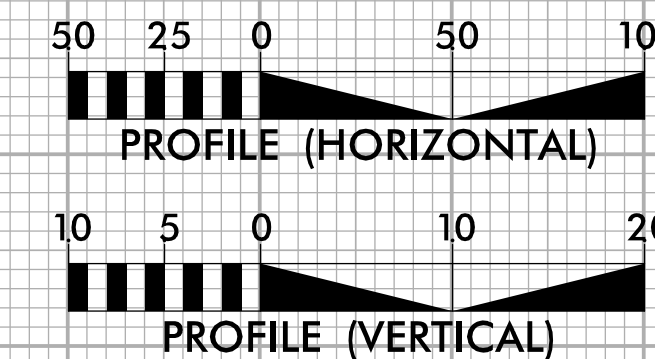
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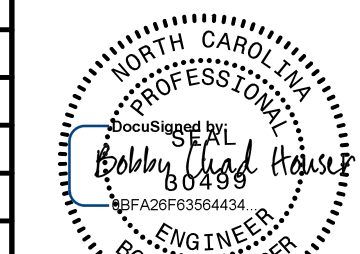


5/28/99

# 8" GRAVITY SEWER LINE SL-1

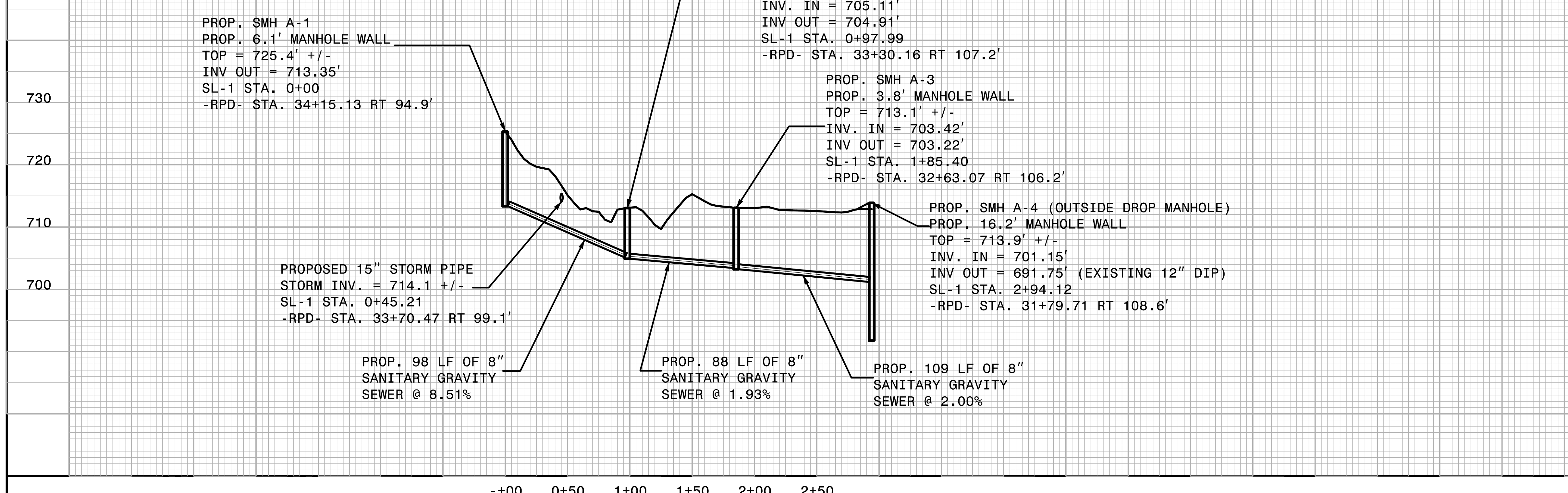
SEE SHEET UC-4 TO UC-5 FOR 8" GRAVITY SEWER PLAN



PROJECT REFERENCE NO. <b>I-5000</b>	SHEET NO. <b>UC-10</b>
DESIGNED BY: BCH	
DRAWN BY: BCH	
CHECKED BY: JLT	
APPROVED BY: JES	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
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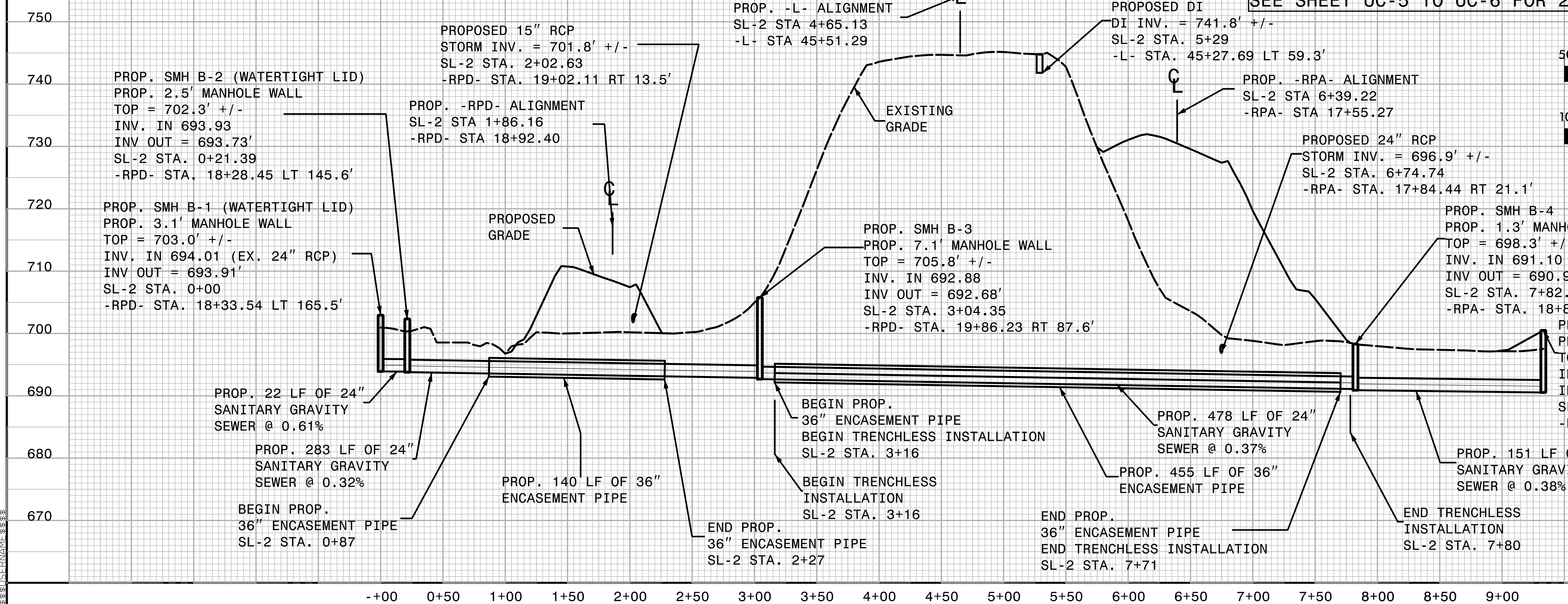
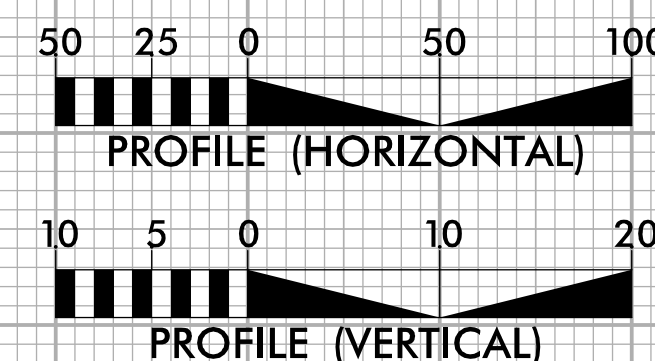
**UTILITY CONSTRUCTION**

**DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED**

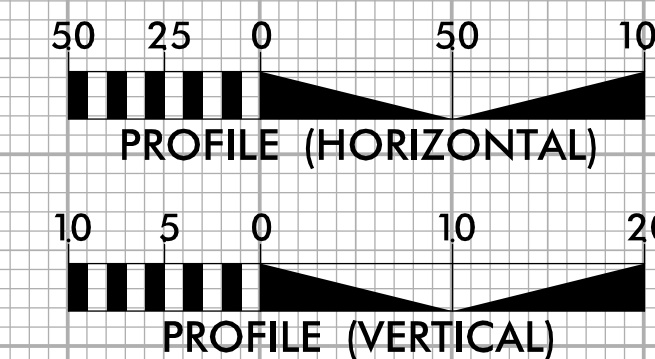


# 24" GRAVITY SEWER LINE SL-2

SEE SHEET UC-5 TO UC-6 FOR 24" GRAVITY SEWER PLAN



5/28/99

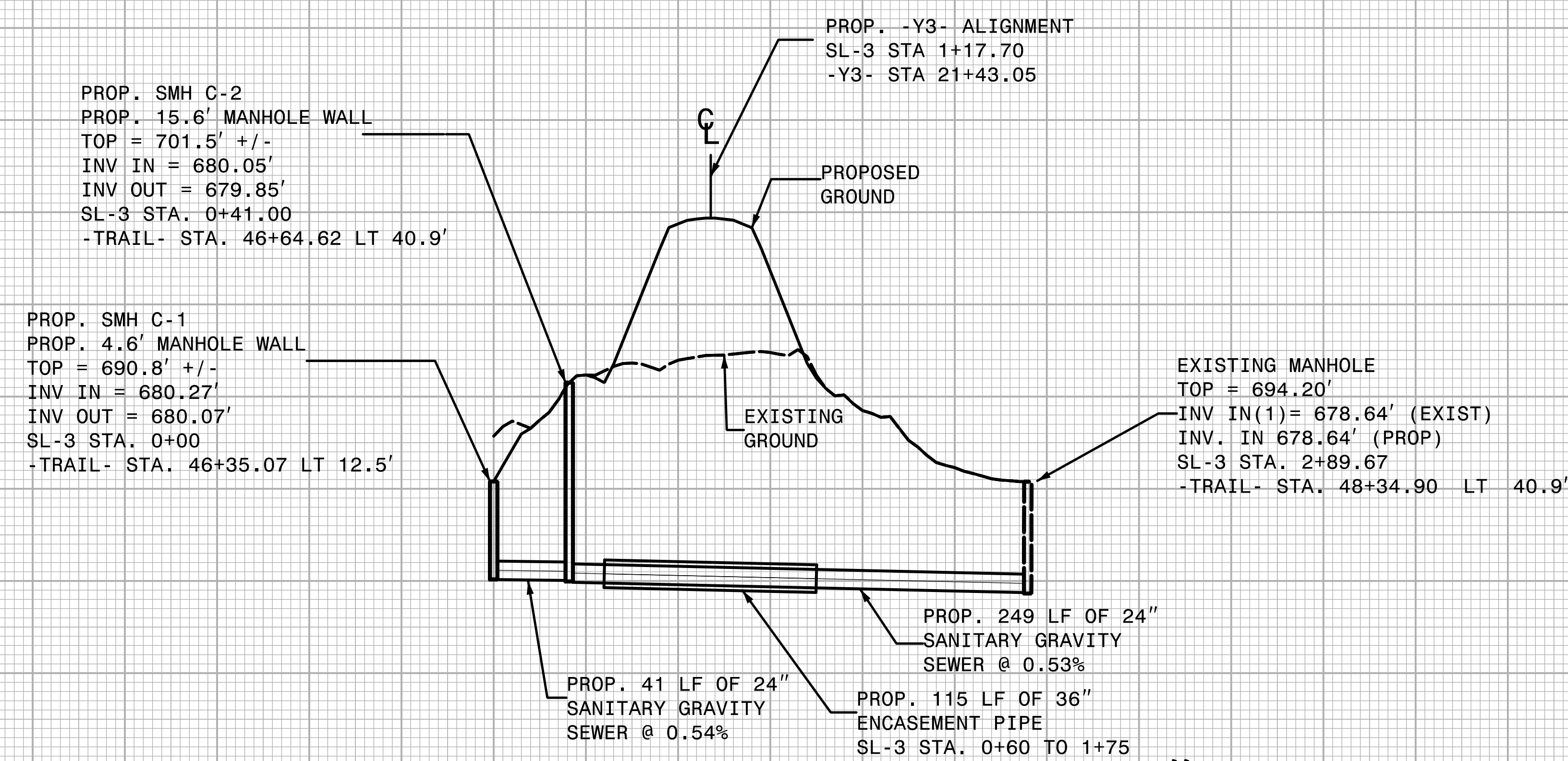


PROJECT REFERENCE NO. <b>I-5000</b>	SHEET NO. <b>UC-11</b>
DESIGNED BY: BCH	
DRAWN BY: BCH	
CHECKED BY: JLT	
APPROVED BY: JES	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
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### UTILITY CONSTRUCTION

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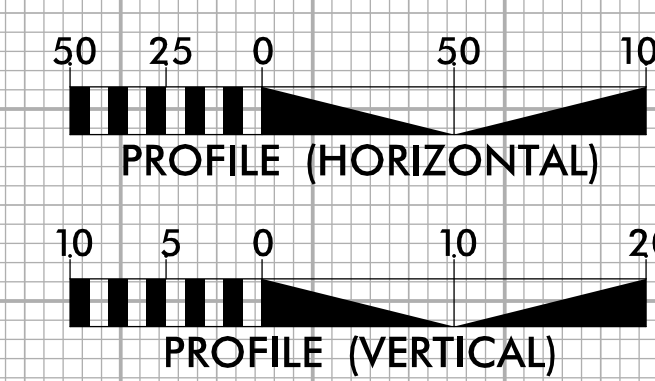
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700  
690  
680



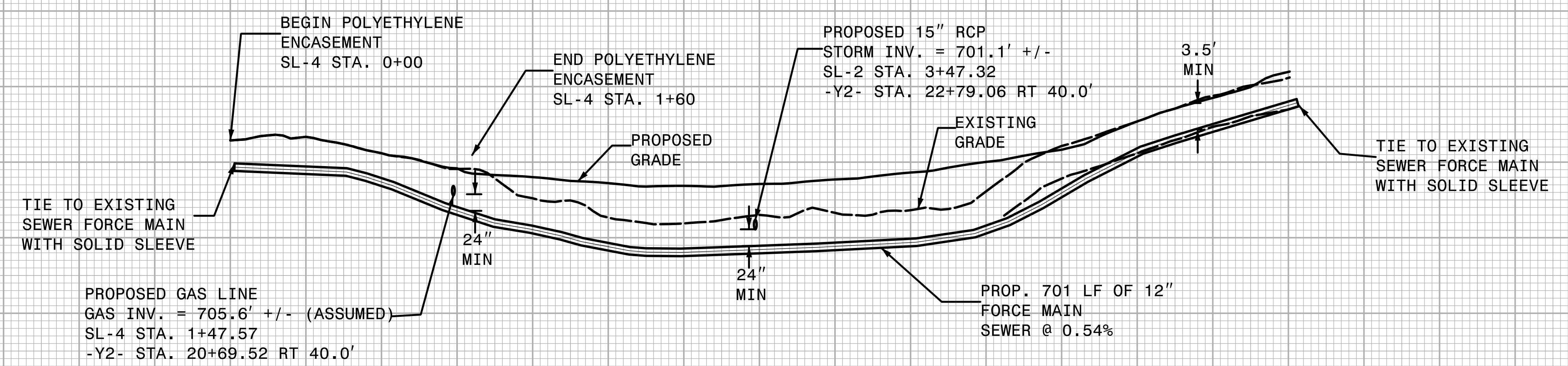
## 24" GRAVITY SEWER LINE SL-3

SEE SHEET UC-7 FOR 24" GRAVITY SEWER PLAN

-+00 0+50 1+00 1+50 2+00 2+50



730  
720  
710  
700  
690



## 12" FORCEMAIN SEWER LINE SL-4

SEE SHEET UC-8 FOR 12" FORCE MAIN SEWER 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

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