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03/20/2019

**TIP PROJECT: U-2581BA**

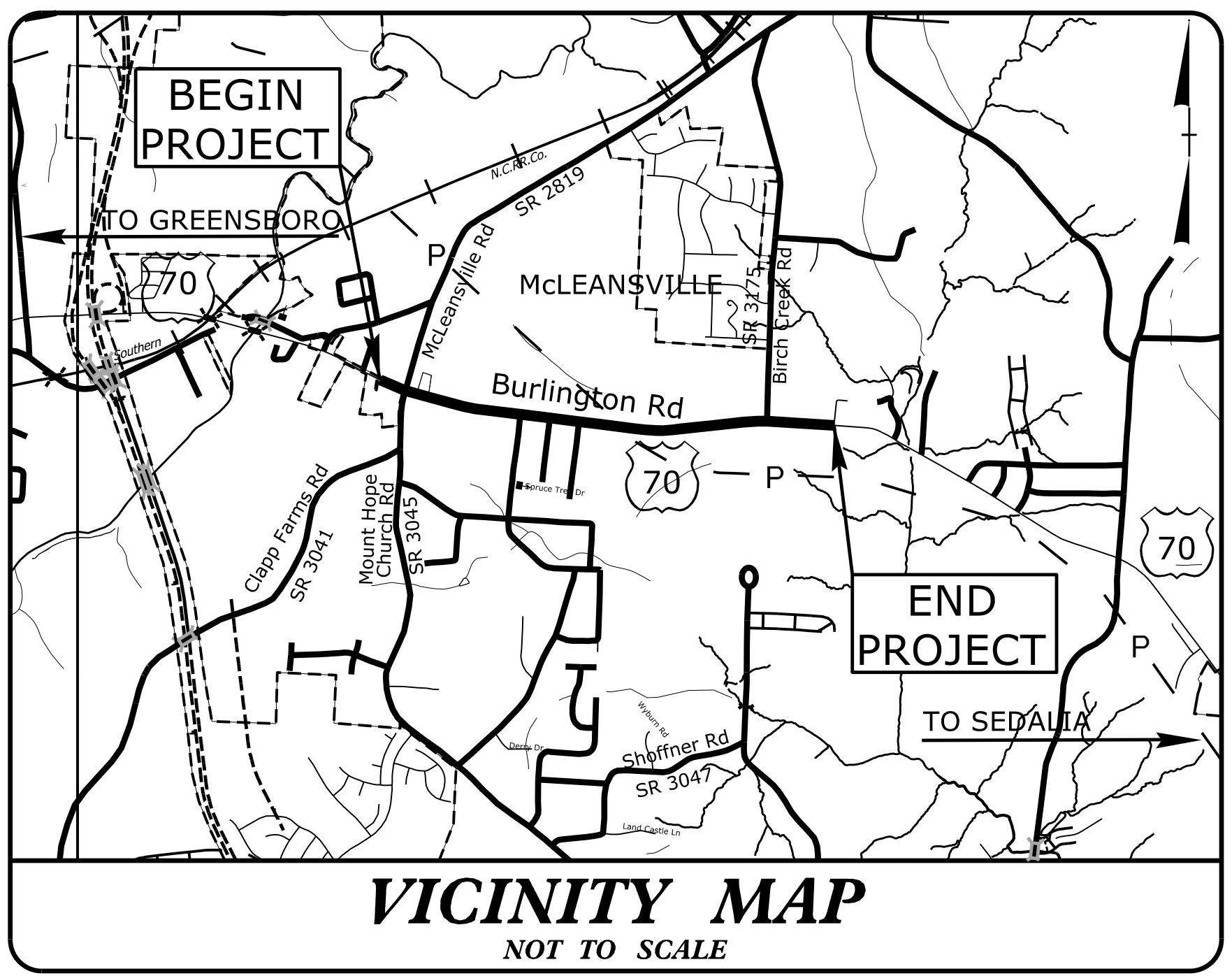
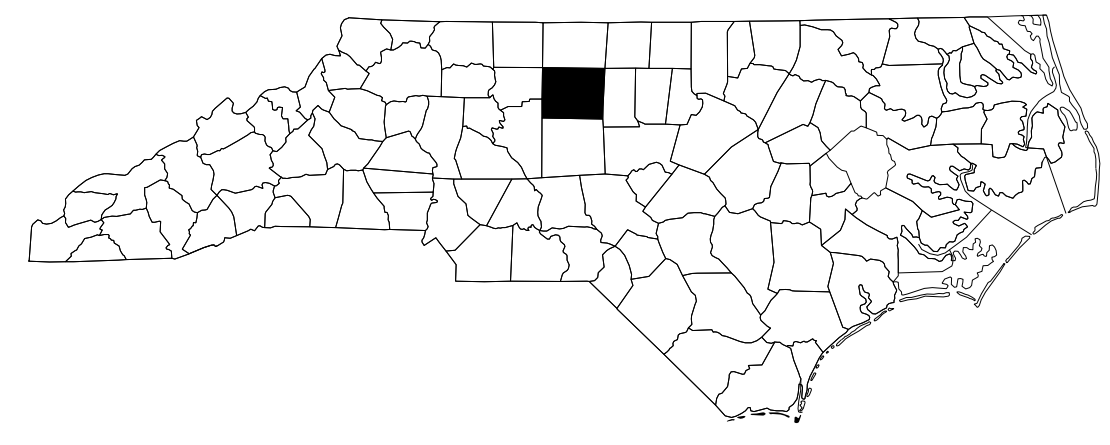
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

T.I.P. NO.	SHEET NO.
U-2581BA	UC-1

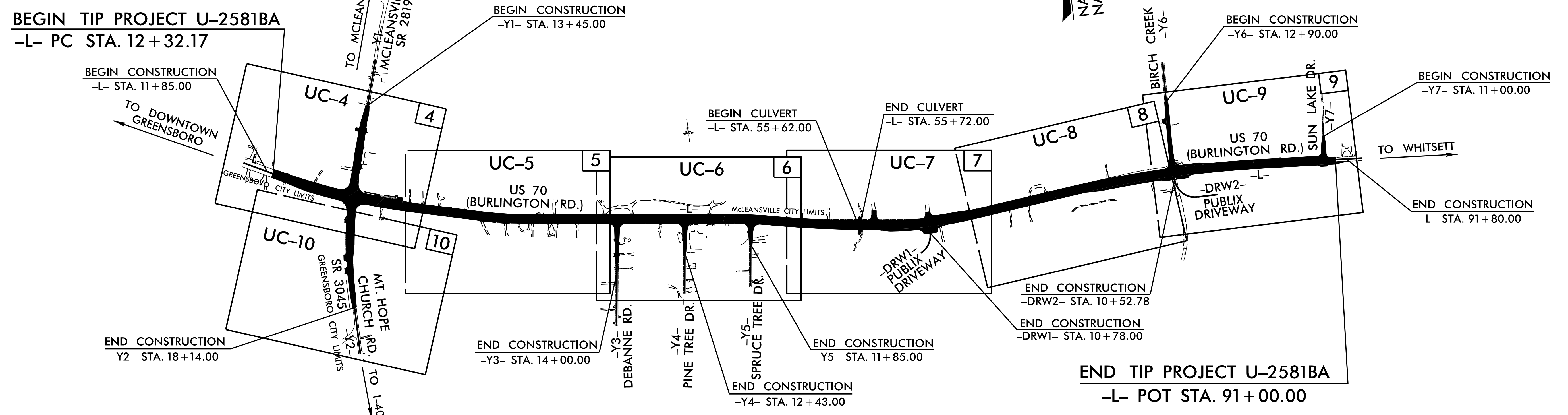
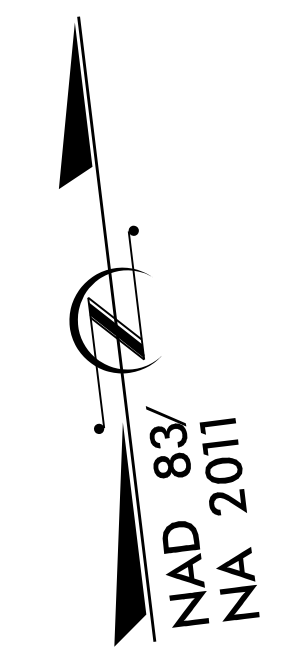
# UTILITY CONSTRUCTION PLANS GUILFORD COUNTY

**LOCATION:** US 70 (BURLINGTON ROAD) FROM WEST OF SR 3045 (MT. HOPE CHURCH ROAD) / SR 2819 (MCLEANSVILLE ROAD) TO JUST EAST OF SR 2826 (BIRCH CREEK ROAD)

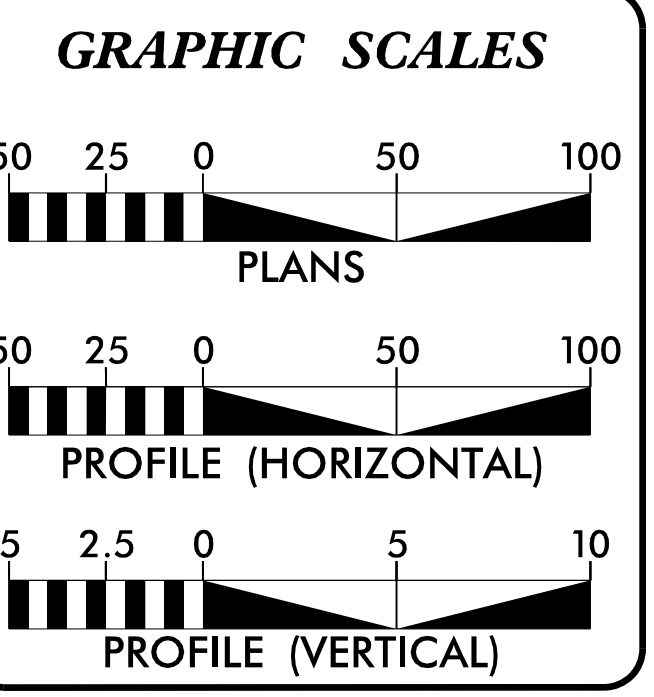
**TYPE OF WORK:** UTILITY CONSTRUCTION



- ☆ EXISTING SIGNALS TO BE MODIFIED
- ★ PROPOSED SIGNAL



DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



SHEET NO.:	DESCRIPTION:
UC-1	TITLE SHEET
UC-2	UTILITY SYMBOLOLOGY
UC-3	NOTES
UC-3A THRU UC-3B	DETAILS
UC-4 THRU UC-10	UTILITY CONSTRUCTION SHEETS
UC-11 THRU UC-12	PROFILE SHEETS

**WATER AND SEWER OWNERS ON PROJECT**

A) WATER - CITY OF GREENSBORO  
B) SEWER - CITY OF GREENSBORO

PREPARED IN THE OFFICE OF:

**DAVIS • MARTIN • POWELL**  
ENGINEERS & SURVEYORS

6415 OLD PLANK RD., HIGH POINT, NC 27265  
PHONE: (336)886-4821 FAX: (336)886-4458  
WWW.DMP-INC.COM LICENSE: F-0245

Andy Larrick, P.E. CONSULTANT CONTACT #1  
Steve McKee, P.E. CONSULTANT CONTACT #2  
Ralph Lowe CONSULTANT CONTACT #3  
Kyle Stalls CONSULTANT CONTACT #4

SEAL

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

Tucker Martin, P.E. CENTRAL UTILITIES MANAGER  
Ali Kouchehi, P.E. UTILITIES REGIONAL ENGINEER  
Jon Loughry UTILITIES ENGINEER  
Dayton Martin UTILITIES AREA COORDINATOR

\$\$\$\$\$SYTIME\$\$\$\$\$  
\$\$\$\$\$DUCN\$\$\$\$\$  
\$\$\$\$\$SERIAL\$\$\$\$\$





5/14/19

REVISIONS

# 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 2018.
2. THE EXISTING UTILITIES BELONG TO THE CITY OF GREENSBORO.
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. UNLESS OTHERWISE NOTED, FOR PROPOSED WATER MAINS, GRAVITY SEWER LINES, AND SEWER FORCE MAINS 4" THRU 12" DIAMETER, PIPE SHALL BE DUCTILE IRON, PC 350. FOR PROPOSED WATER MAINS, GRAVITY SEWER LINES, AND SEWER FORCE MAINS 16" DIAMETER AND LARGER, PIPE SHALL BE DUCTILE IRON, PC 250.
2. WATER LINE VALVES SHALL BE RESILIENT-SEAT GATE VALVES CONFORMING TO ANSI/AWWA C509, RATED FOR 200 PSI MINIMUM WORKING PRESSURE.
3. CONTRACTOR'S ATTENTION IS DIRECTED TO SECTIONS 102, 107, AND 1550 OF THE STANDARD SPECIFICATIONS CONCERNING TRENCHLESS INSTALLATION. IT IS THE 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.
4. THE CONTRACTOR SHALL CONTACT THE CITY OF GREENSBORO WATER RESOURCES DEPARTMENT AT LEAST TWO (2) WEEKS IN ADVANCE OF ANY WORK INVOLVING RELOCATION OF SEWER FORCE MAINS. SEE UTILITY CONSTRUCTION PROJECT SPECIAL PROVISIONS FOR CONTACT INFORMATION.
5. THE EXISTING 16" SEWER FORCE MAIN ALONG US 70 CARRIES WASTEWATER IN A WESTERLY DIRECTION WITHIN THE PROJECT CORRIDOR. BY APPROXIMATELY NOVEMBER 1, 2019, THE CITY OF GREENSBORO PLANS TO ABANDON THE SECTION OF 16" FORCE MAIN TO THE EAST OF BIRCH CREEK ROAD, AFTER A NEW FORCE MAIN IS PLACED INTO SERVICE FROM THE CITY'S EXISTING ROCK CREEK LIFT STATION (LOCATED SOUTHEAST OF THE PROJECT CORRIDOR). THE EXISTING 8" FORCE MAIN ALONG BIRCH CREEK ROAD, AND THE EXISTING 16" FORCE MAIN ALONG US 70 TO THE WEST OF BIRCH CREEK ROAD WILL REMAIN IN SERVICE.
6. WHEN TYING IN EACH END OF PROPOSED FORCE MAIN RELOCATIONS ON THE EXISTING 16" FORCE MAIN, THE WORK SHALL BE PERFORMED AT NIGHT DURING A PERIOD OF LOW FLOW TO THE BIRCH CREEK LIFT STATION (LOCATED NORTH OF THE PROJECT CORRIDOR). THE LIFT STATION SHALL NOT BE TAKEN OUT OF SERVICE FOR MORE THAN FOUR (4) HOURS WITHOUT PRIOR APPROVAL BY THE CITY OF GREENSBORO WATER RESOURCES DEPT. THE CONTRACTOR SHALL HAVE SUFFICIENT CREWS AND VARIETY OF MATERIALS ON HAND AND AVAILABLE TO HANDLE ANY POTENTIAL FIELD ADJUSTMENTS, AND FOR ALL WORK TO BE COMPLETED WITHIN THE ALLOTTED TIMEFRAME.

## LIST OF STANDARD DRAWINGS

- 1515.01 WATER METER
- 1515.02 FIRE HYDRANT
- 1520.01 SEWER CLEAN OUT
- 1525.06 PRECAST CONCRETE SANITARY SEWER MANHOLE WITH CAST-IN-PLACE BOTTOM

PROJECT REFERENCE NO. U-2581BA	SHEET NO. UC-3
DESIGNED BY: DMP	
DRAWN BY: DMP	
CHECKED BY: DMP	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	7/22/2019
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**

7. CONTRACTOR SHALL COORDINATE WITH THE CITY OF GREENSBORO WATER RESOURCES DEPARTMENT CONCERNING THE TIMING AND SCHEDULE OF REQUIRED SHUT-DOWNS OF ANY EXISTING WATER OR SEWER MAINS. THE CONTRACTOR MAY HAVE TO PROVIDE TEMPORARY WATER SERVICE TO CUSTOMERS WHEN EXISTING WATER MAINS HAVE TO BE SHUT DOWN FOR AN EXTENDED PERIOD OF TIME.
8. THE CONTRACTOR SHALL REPLACE ANY DAMAGED SEWER LATERALS AND/OR CLEANOUTS AS DIRECTED BY THE ENGINEER. THE NECESSARY QUANTITIES HAVE BEEN ADDED TO THE CONTRACT TO FACILITATE THIS PROCEDURE.



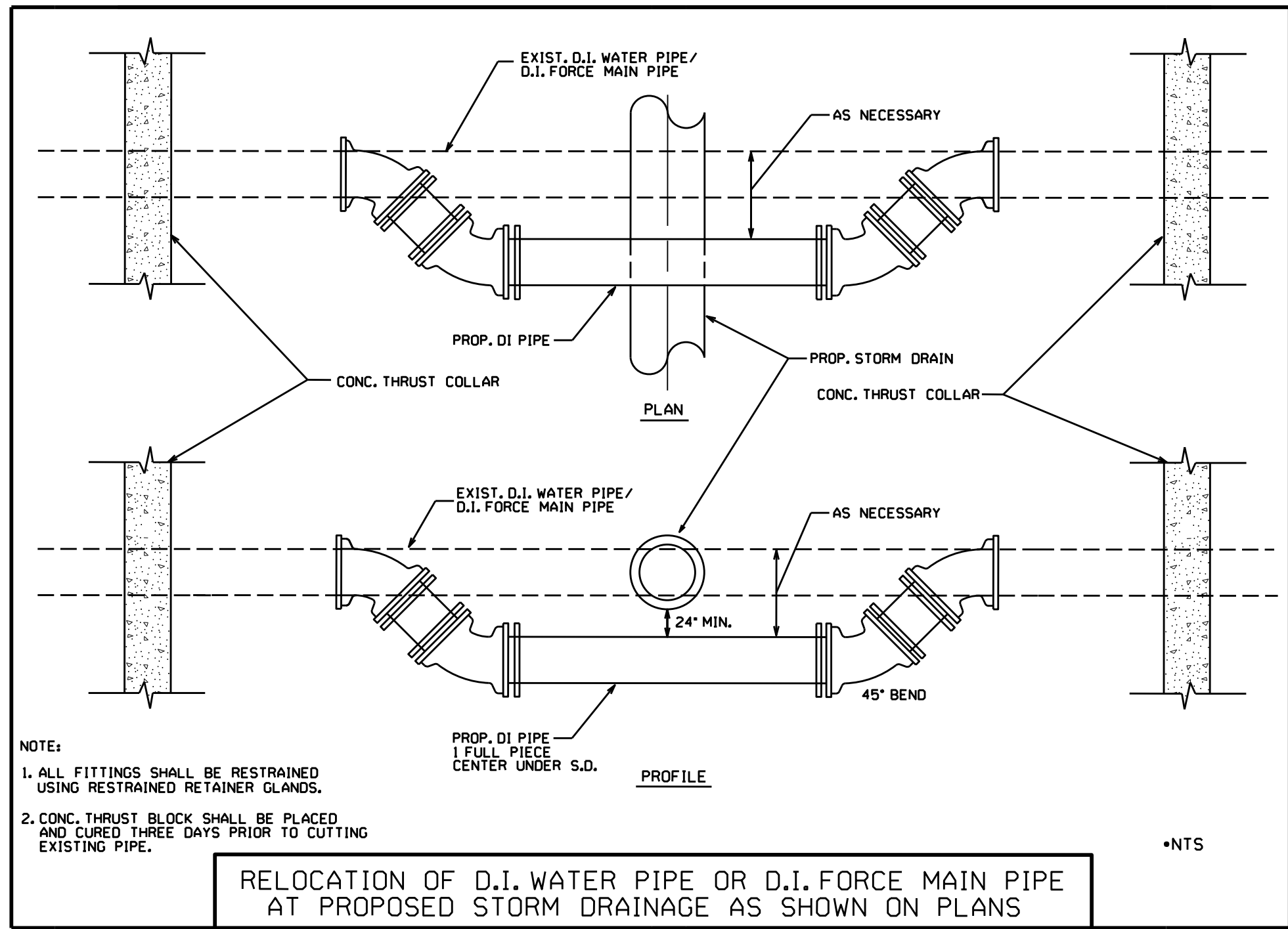
5/14/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
U-2581BA	UC-3A
DESIGNED BY: DMP	
DRAWN BY: DMP	
CHECKED BY: DMP	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151 UTILITY CONSTRUCTION PLANS ONLY	

**UTILITY CONSTRUCTION**

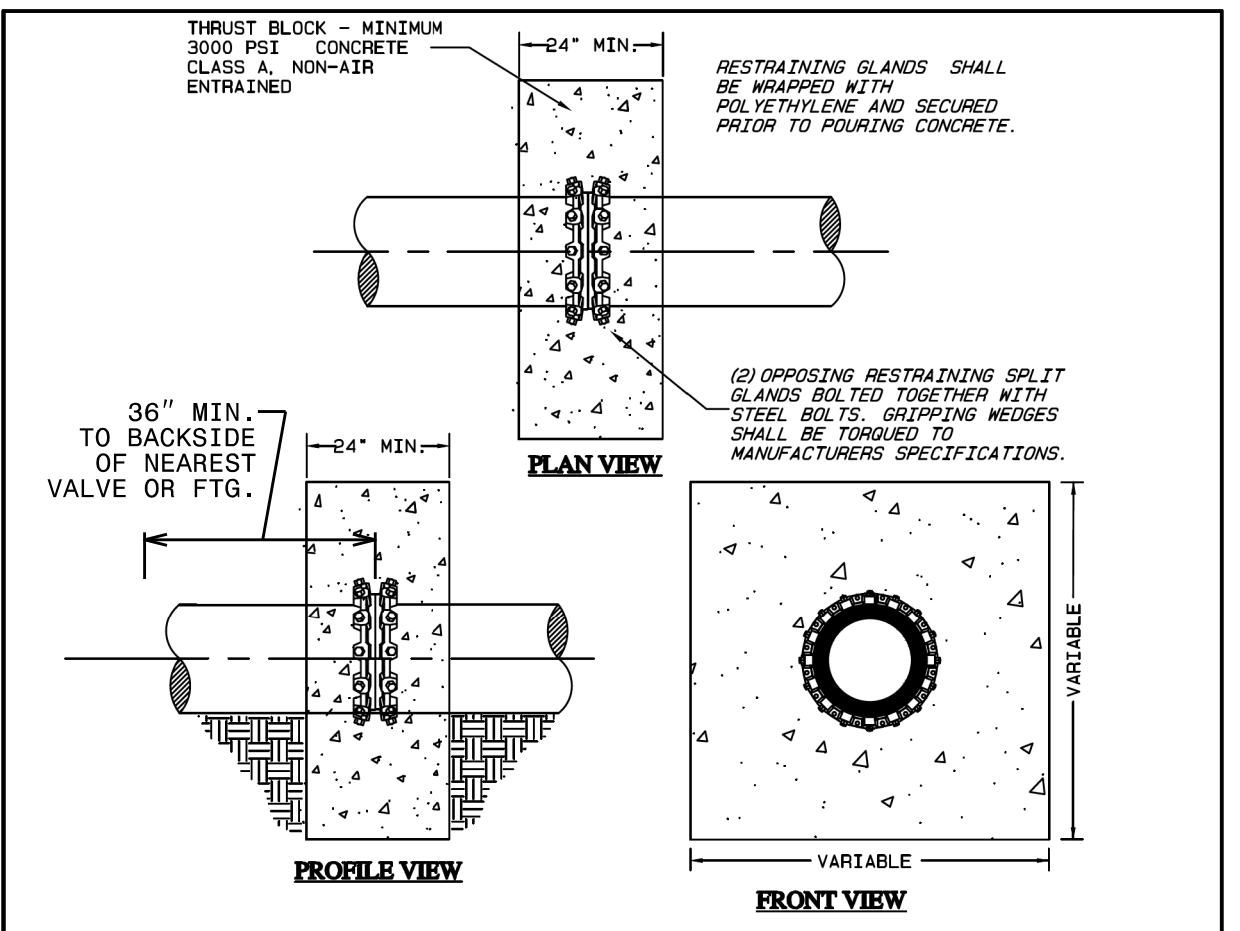
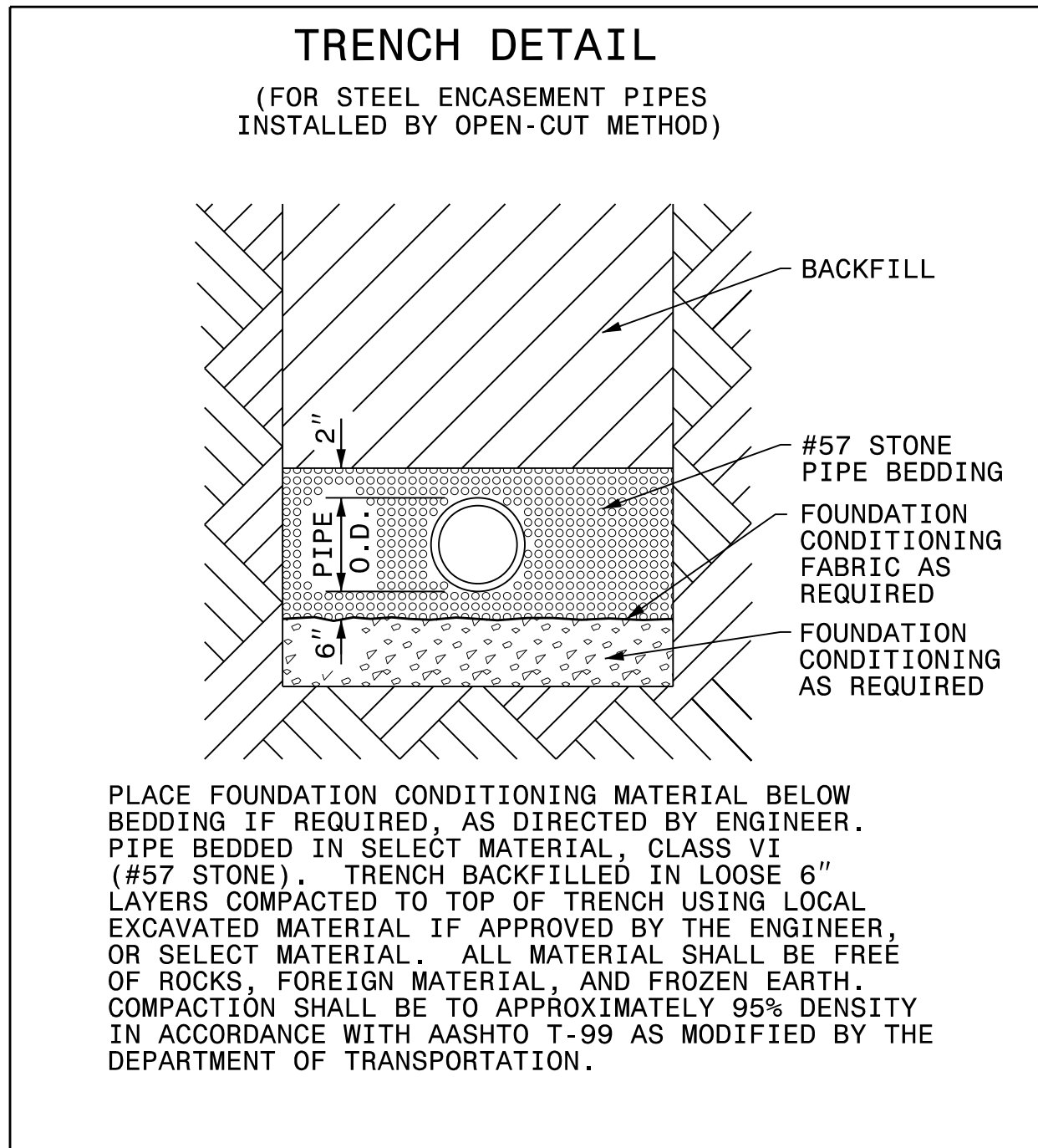
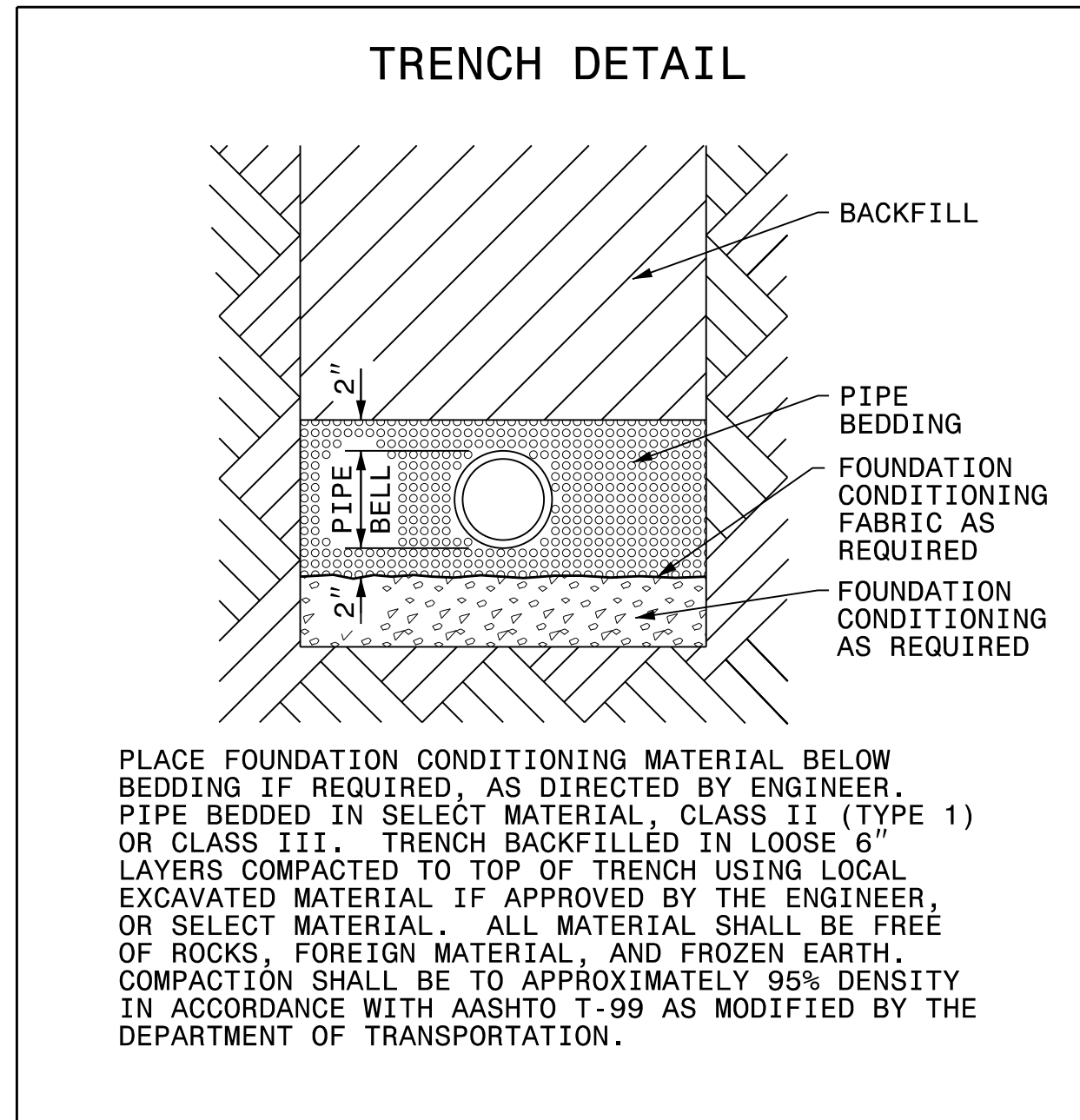
**DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED**



NOTE:  
 1. ALL FITTINGS SHALL BE RESTRAINED USING RESTRAINED RETAINER GLANDS.  
 2. CONC. THRUST BLOCK SHALL BE PLACED AND CURED THREE DAYS PRIOR TO CUTTING EXISTING PIPE.

RELOCATION OF D.I. WATER PIPE OR D.I. FORCE MAIN PIPE AT PROPOSED STORM DRAINAGE AS SHOWN ON PLANS

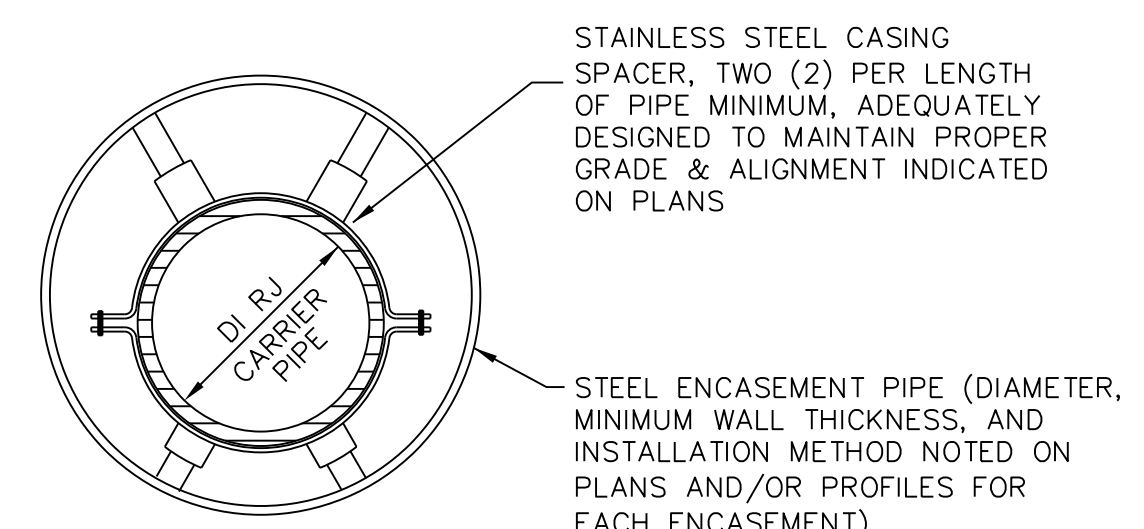
NOMINAL PIPE SIZE (INCHES)	TRENCH WIDTH (INCHES)	NOMINAL PIPE SIZE (INCHES)	TRENCH WIDTH (INCHES)
4	28	20	44
6	30	24	48
8	32	30	54
10	34	36	60
12	36	42	66
14	38	48	72
16	40	54	78
18	42		



NOTES:  
 1. SEE CITY OF GREENSBORO - WATER LINE AND SEWER LINE STANDARD CONSTRUCTION SPECIFICATIONS, SUB-ARTICLE 3.02 & 3.03 FOR (TRENCH AND BACKFILL) AND (TRENCH STABILIZATION) REQUIREMENTS.  
 2. THRUST BLOCK SHALL BE ORIENTED APPROXIMATELY CENTER OF PIPE JOINT.  
 3. OPTIONAL \* A WELDED COLLAR (INSTALLED BY PIPE MANUFACTURER) MAY BE USED IN LIEU OF RESTRAINED GLANDS. ALL OTHER DESIGN REQUIREMENTS SHALL APPLY AS SHOWN.  
 4. FOR PIPES LARGER THAN 16" DIAMETER, THE DEADMAN THRUST RESTRAINT WITH BLOCKING MUST BE DESIGNED AND SEALED BY A N.C. PROFESSIONAL ENGINEER.  
 5. ANY PROPOSED MODIFICATIONS TO THIS STANDARD BASED ON THE FIELD CONDITIONS MUST BE PRE-APPROVED BY THE CITY OF GREENSBORO FIELD INSPECTOR AND/OR THE ENGINEER OF RECORD.  
 6. QUANTITIES SHOWN BELOW ARE TO THE NEAREST QUARTER YARD AND ARE BASED ON MINIMUM MASS WEIGHT REQUIREMENTS OF THE TEST PRESSURES SHOWN.

PIPE DIAMETER	150 PSI TEST PRES.	200 PSI TEST PRES.	250 PSI TEST PRES.
6"	0.75	1.0	1.25
8"	1.5	2.0	2.25
10"	2.0	3.0	3.5
12"	3.0	4.0	5.0
16"	5.5	7.25	9.0

<b>CITY OF GREENSBORO</b>					
DEADMAN THRUST RESTRAINT WITH MASS WEIGHT BLOCKING	<table border="1"> <tr> <td>STD. NO.</td> <td>REV.</td> </tr> <tr> <td>118</td> <td>06-13 06-15</td> </tr> </table>	STD. NO.	REV.	118	06-13 06-15
STD. NO.	REV.				
118	06-13 06-15				

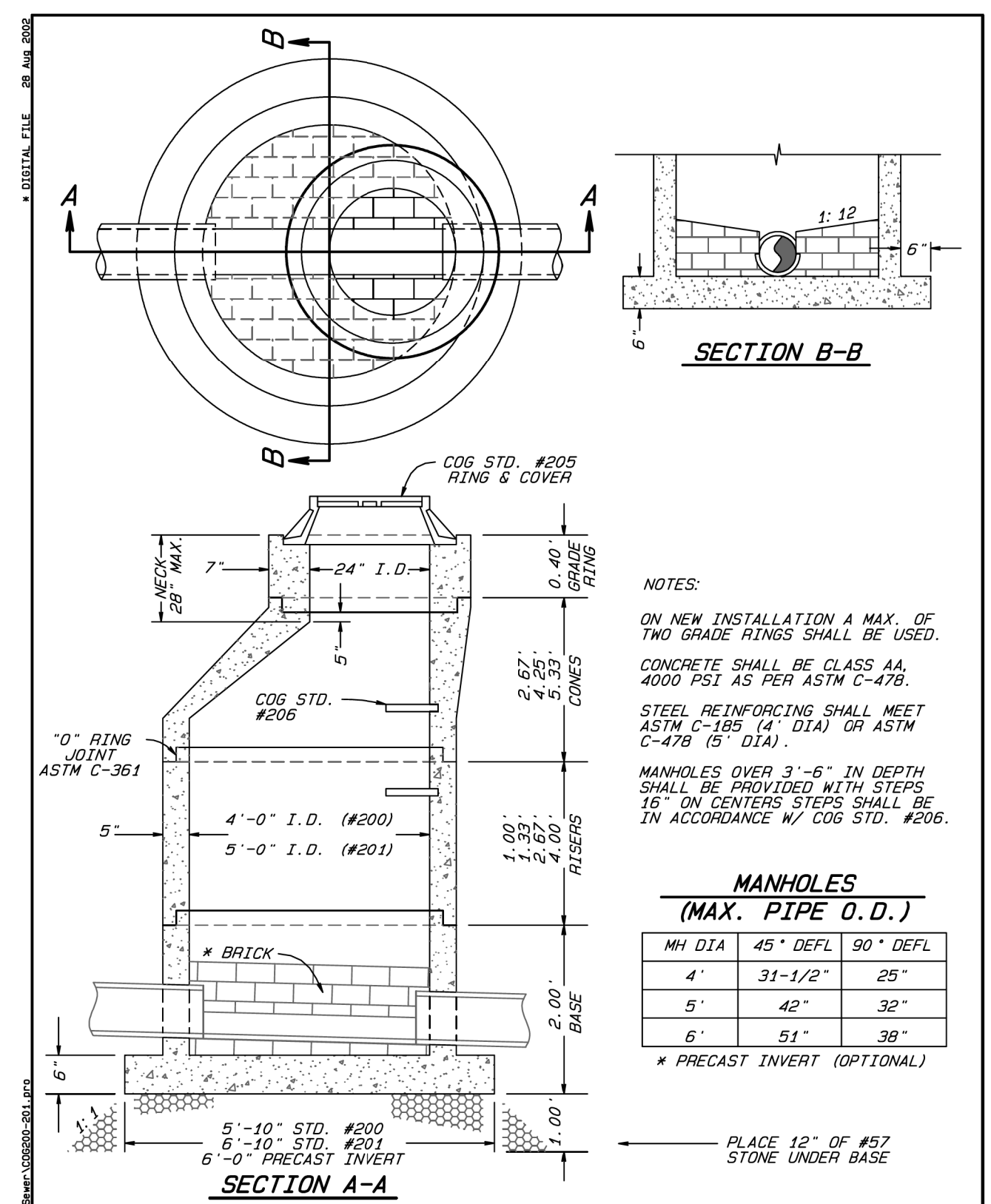


NOTES:  
 1. ENCLOSE ENDS WITH BRICK MASONRY.  
 2. PROVIDE 1" WEEP HOLE AT LOW END OF ENCASMENT.  
 3. SEE 2018 NCDOT STANDARD SPECIFICATIONS, DIVISION 15, SECTIONS 1540 AND 1550, FOR OTHER REQUIREMENTS.

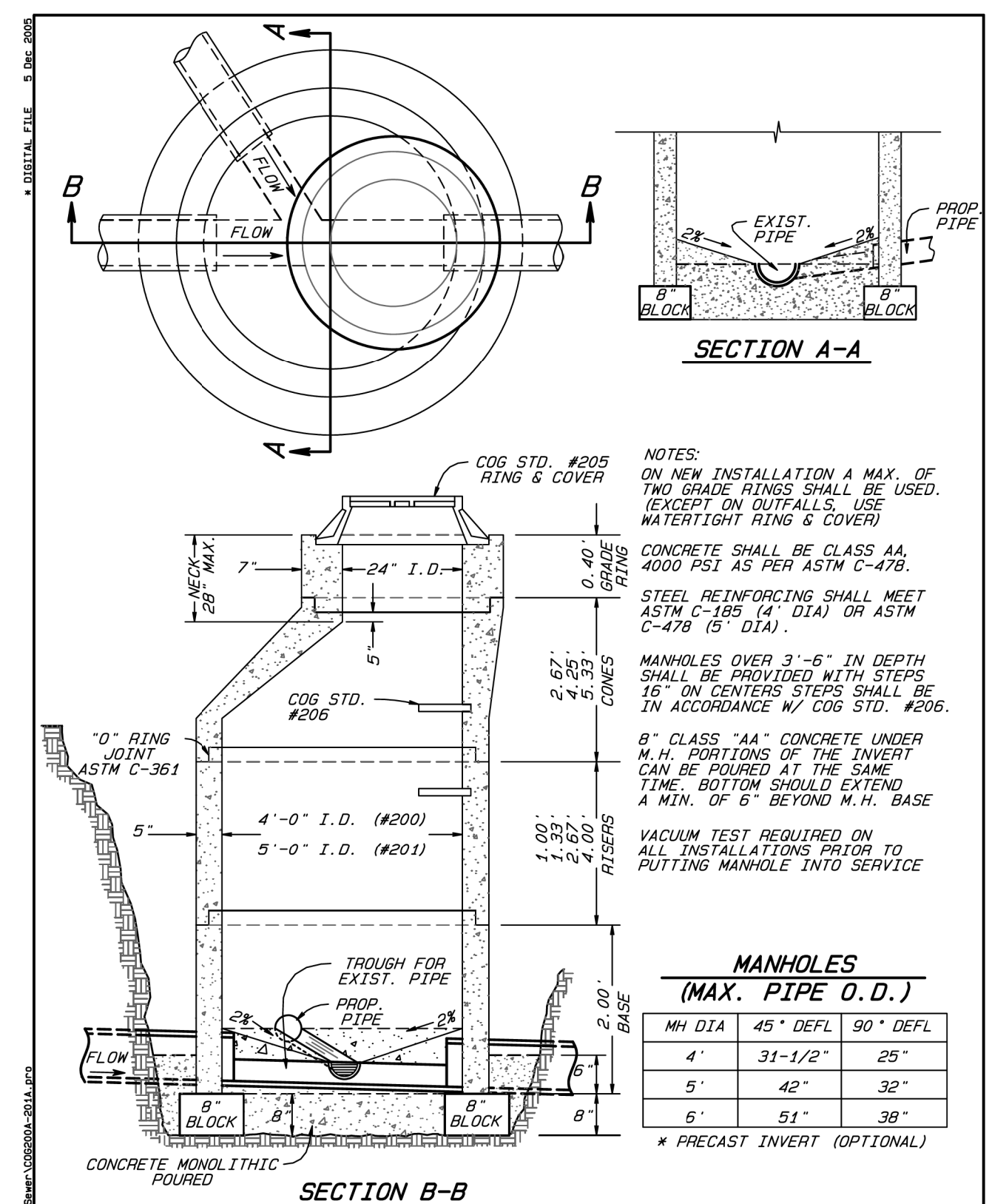
TYPICAL ENCASMENT PIPE SECTION  
N.T.S.



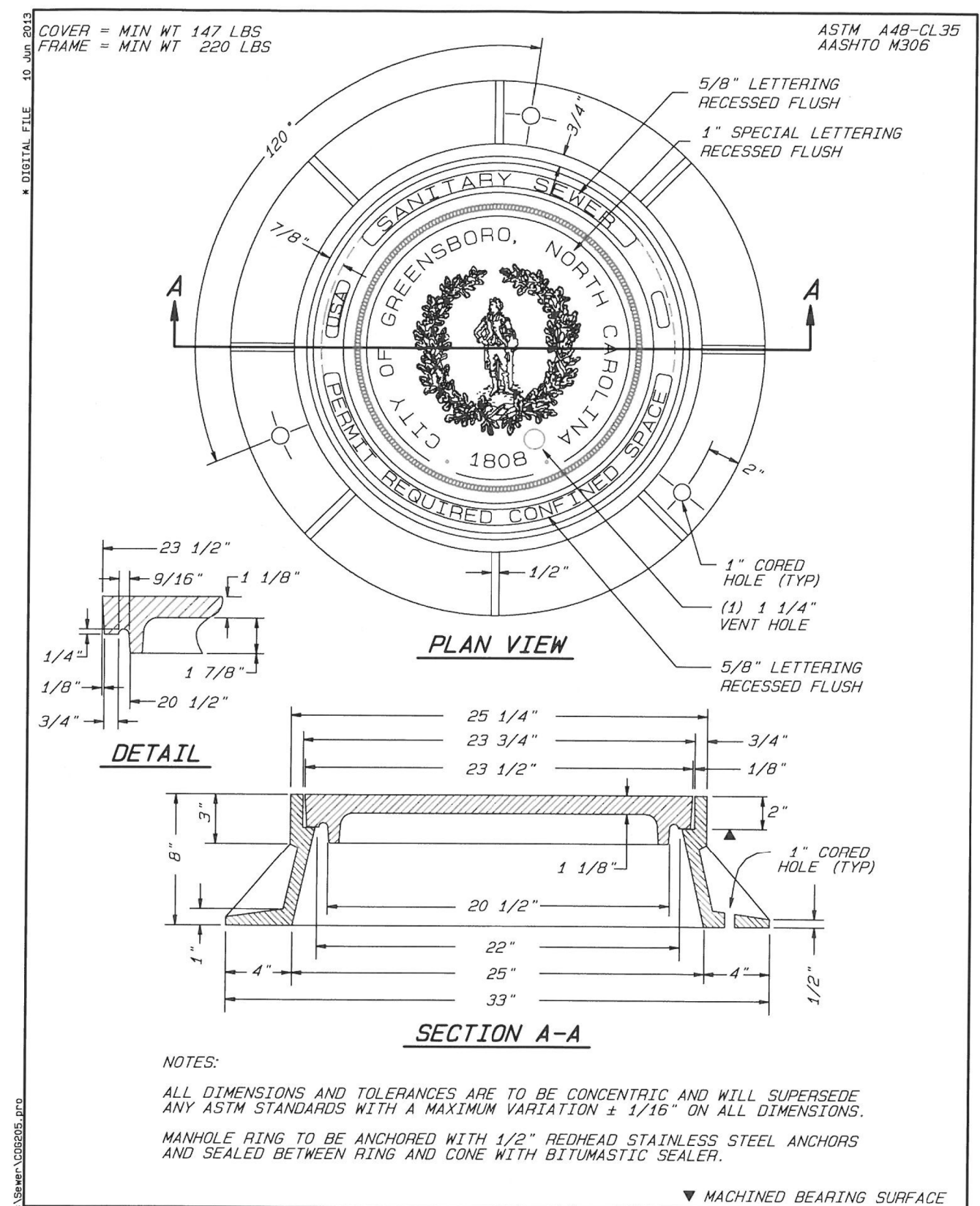
5/14/99



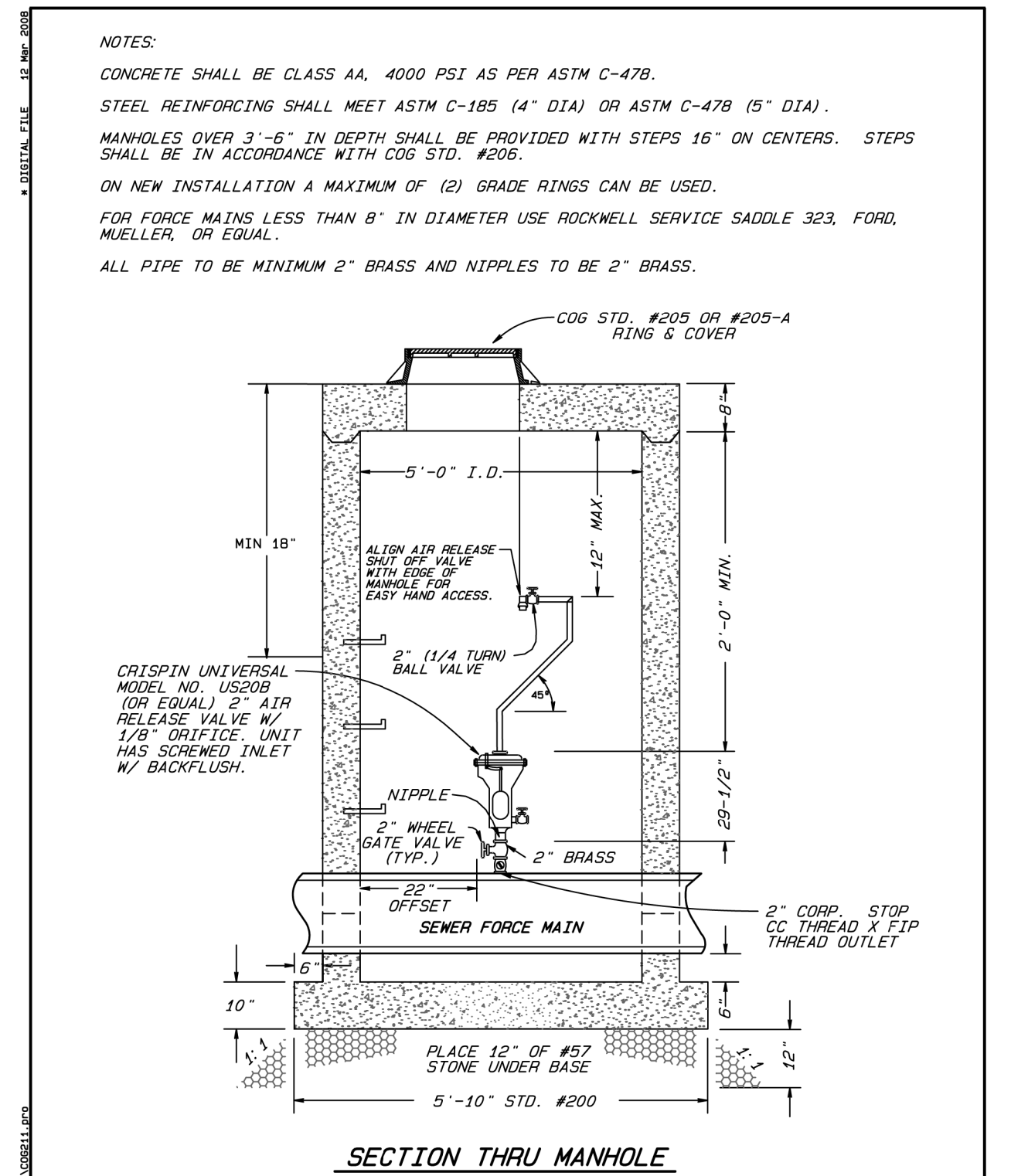
**CITY OF GREENSBORO**  
 STANDARD 4' I.D. & 5' I.D. ECCENTRIC PRECAST CONCRETE SANITARY MANHOLE WITH EXPANDED BASE  
 STD. NO. 200  
 REV. 201  
 05-88 03-98  
 11-93 08-02  
 03-95



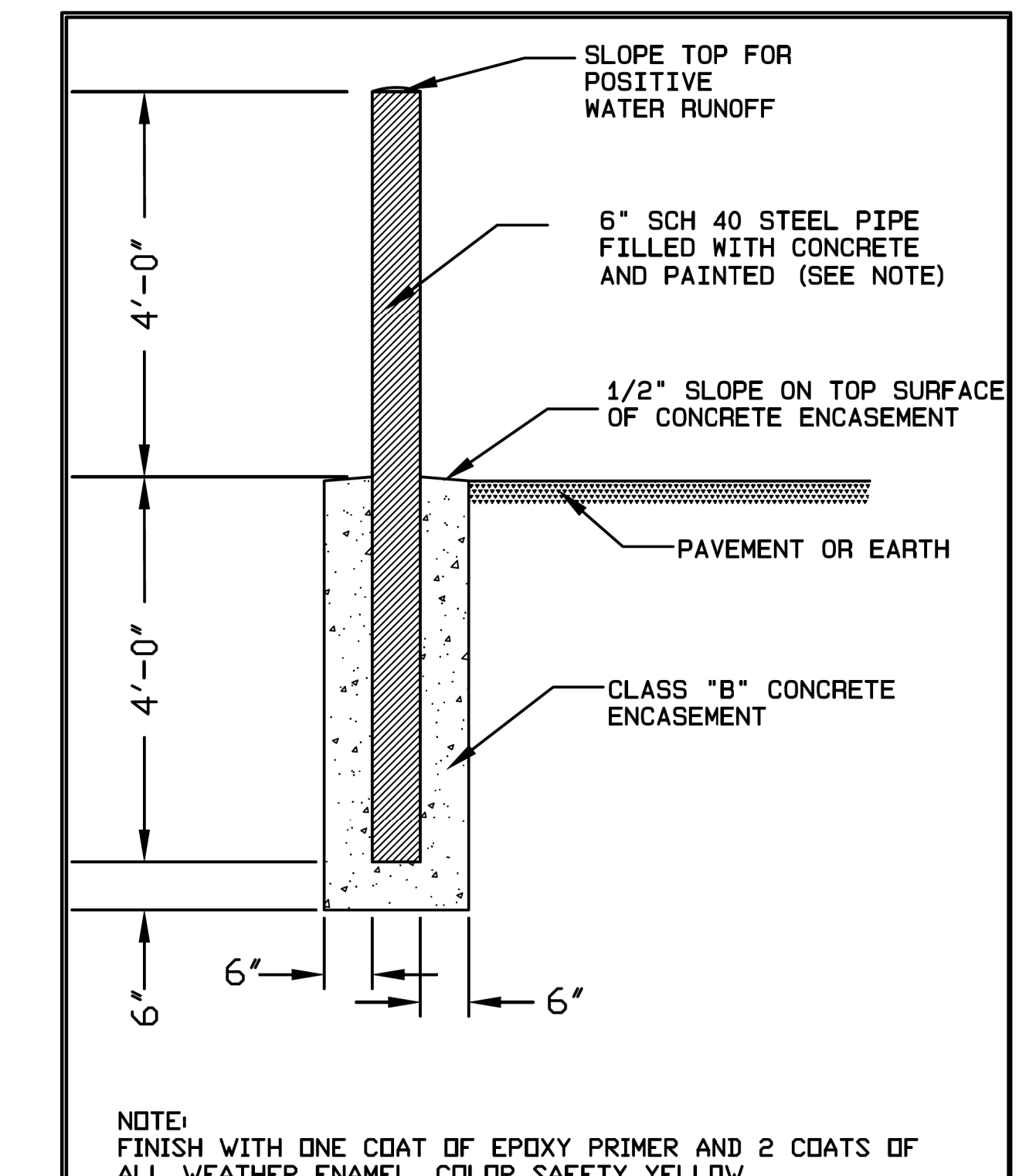
**CITY OF GREENSBORO**  
 STANDARD 4' I.D. & 5' I.D. ECCENTRIC PRECAST BOTTOMLESS MANHOLE OVER EXISTING SANITARY SEWER (DOGHOUSE MANHOLE)  
 STD. NO. 200A  
 REV. 201A  
 DEC-05



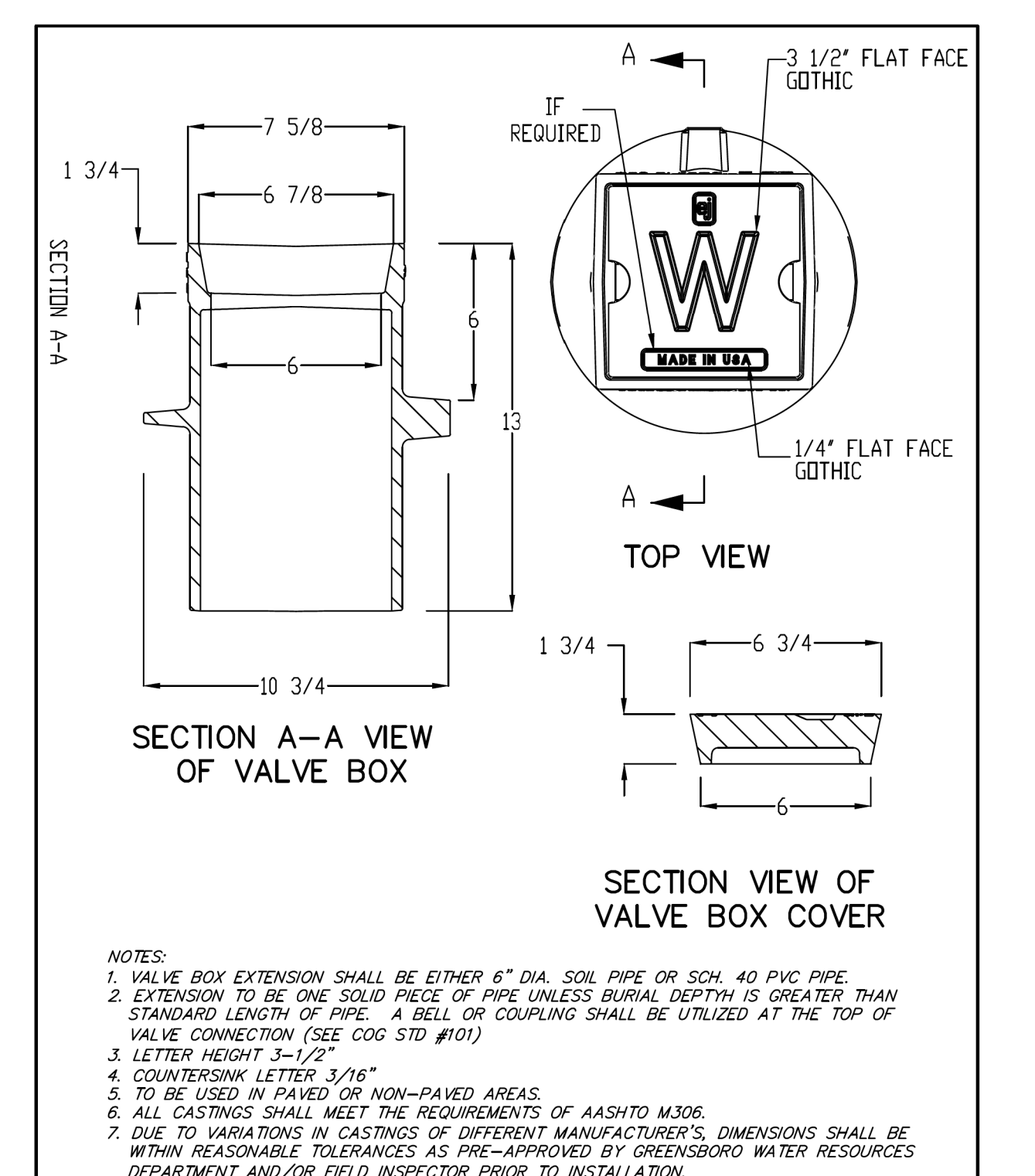
**CITY OF GREENSBORO**  
 STANDARD MANHOLE RING AND COVER  
 STD. NO. 205  
 REV. 12-05  
 06-13



**CITY OF GREENSBORO**  
 STANDARD AIR RELIEF VALVE WITH ASSEMBLY AND MANHOLE FOR SANITARY SEWER LINES  
 STD. NO. 211  
 REV. 06-99 03-03  
 08-02 06-07  
 03-08



**CITY OF GREENSBORO**  
 BOLLARD (STATIONARY)  
 STD. NO. 121  
 REV. 06/15



**CITY OF GREENSBORO**  
 WATER VALVE BOX AND EXTENSION  
 STD. NO. 102  
 REV. 03-93 03-12  
 08-02 12-12  
 08-10 03-15

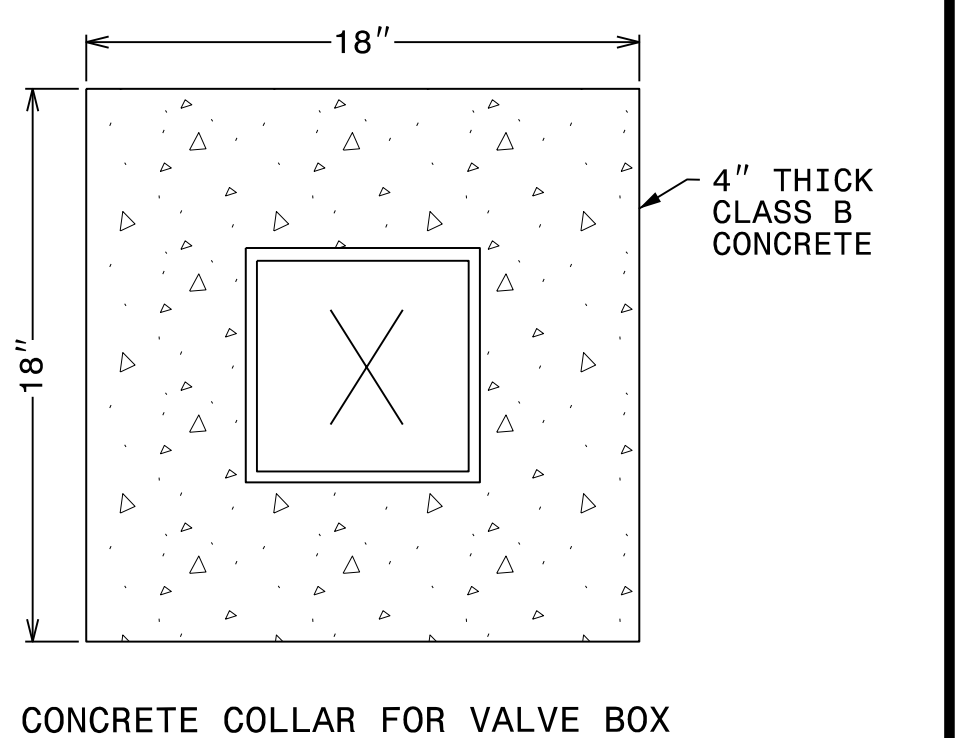
PROJECT REFERENCE NO. U-2581BA SHEET NO. UC-3B

DESIGNED BY: DMP  
 DRAWN BY: DMP  
 CHECKED BY: DMP  
 APPROVED BY:  
 REVISED:

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
 UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151  
 UTILITY CONSTRUCTION PLANS ONLY

SEAL  
 NORTH CAROLINA PROFESSIONAL ENGINEER  
 Andrew P. Larrick  
 01063  
 7/22/2019  
 P. LARRICK

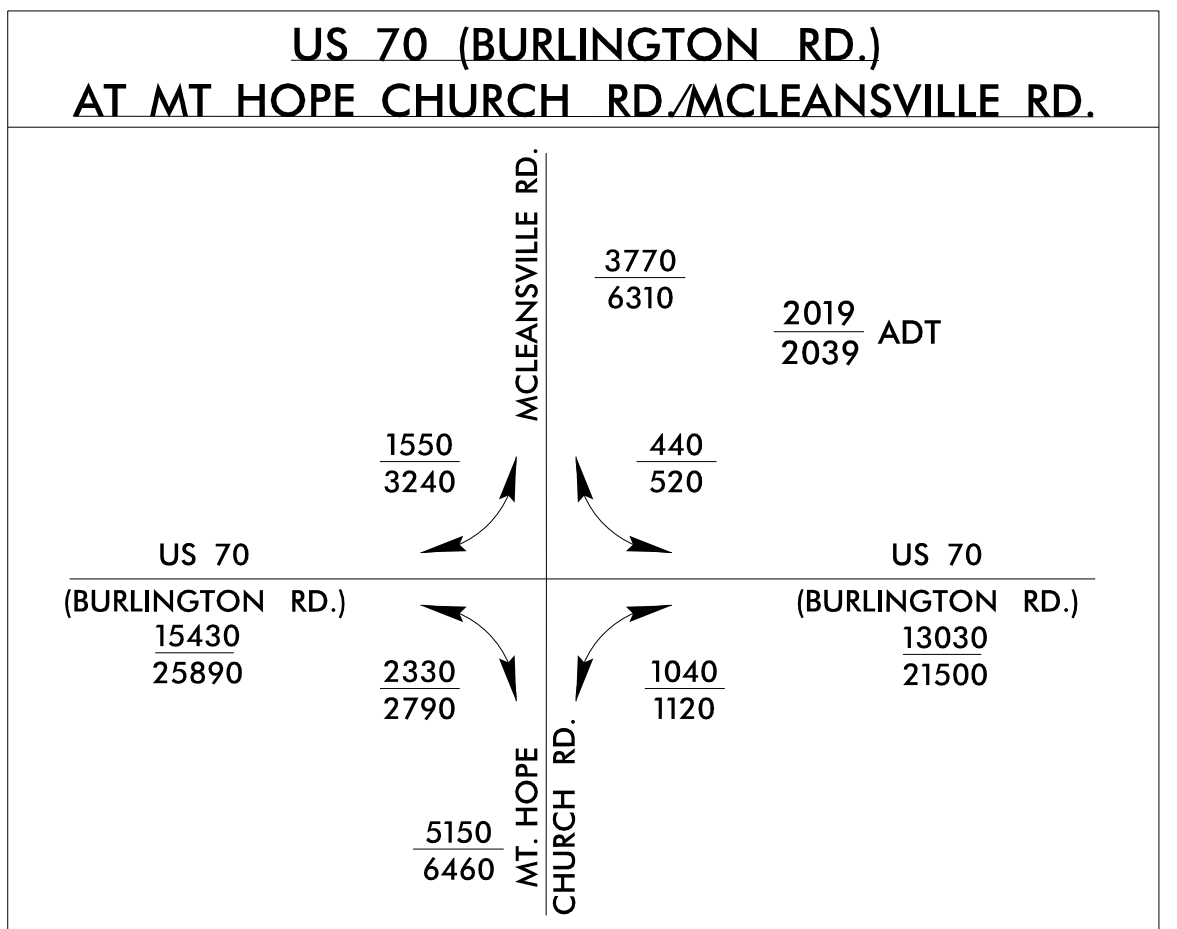
**UTILITY CONSTRUCTION**  
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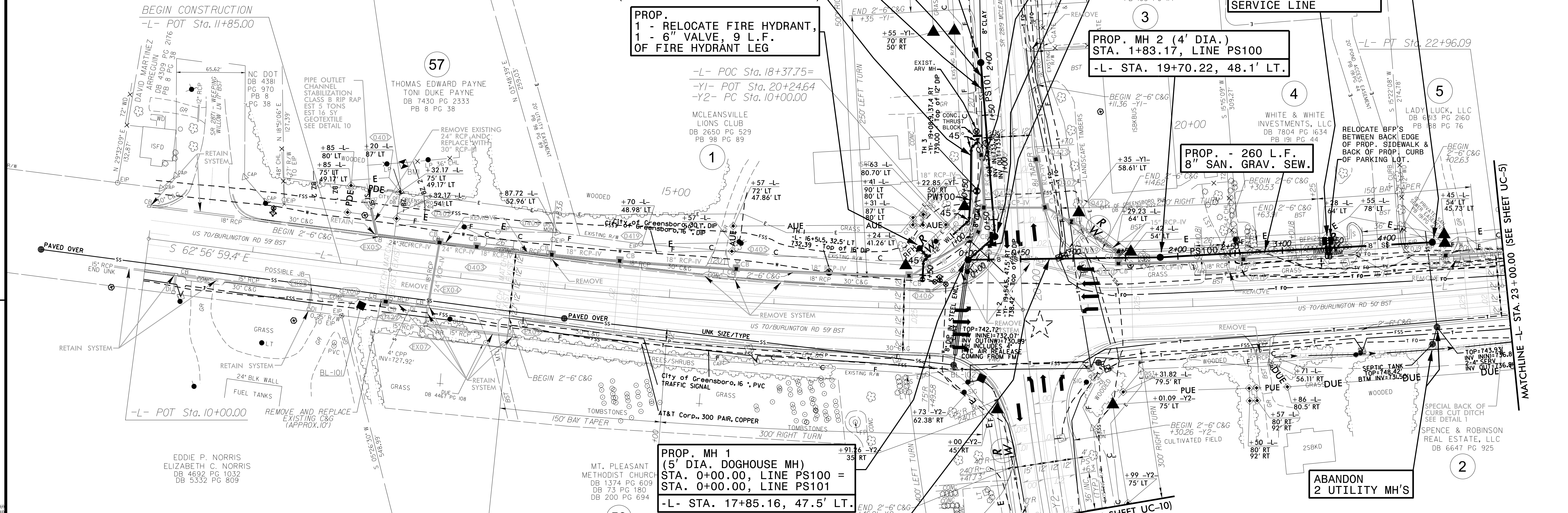
**CITY OF GREENSBORO**  
 CONCRETE COLLAR FOR VALVE BOX  
 NOTES:  
 1. PROVIDE CONCRETE COLLARS FOR ALL VALVE BOXES THAT ARE NOT IN PAVED AREAS.  
 2. VALVE BOX LIDS SHALL HAVE THE LETTER "W" FOR WATER VALVES, OR "S" FOR SEWER VALVES.



-L- CURVE DATA	-Y2- CURVE DATA
PI Sta 17+66.41	PI Sta 13+49.93
$\Delta = 12' 58" 11.1" (LT)$	$\Delta = 14' 39" 42.3" (LT)$
$D = 1' 13" 08.6"$	$D = 2' 06" 23.3"$
$L = 1,063.91'$	$L = 696.04'$
$T = 534.24'$	$T = 349.93'$
$R = 4,700.00'$	$R = 2,720.00'$
$SE = 0.025$	$SE = 0.04$
$RO = 105'$	$RO = 144'$
$INC = 42'$	



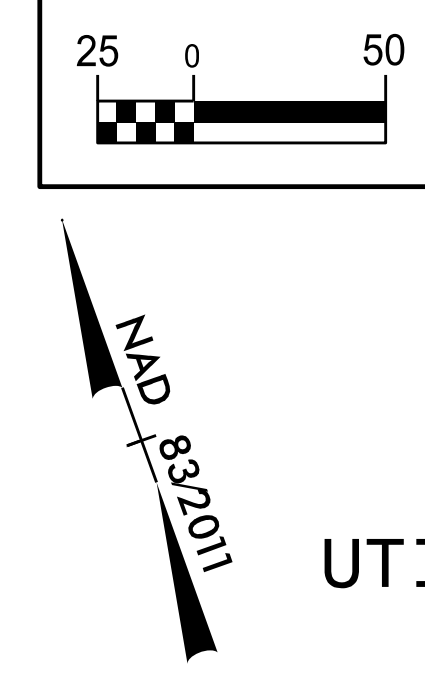
**BEGIN TIP PROJECT U-2581BA**  
**-L- PC STA. 12+32.17**  
 BEGIN MILL/RESURFACE  
 BEGIN WIDENING (LT SIDE ONLY)



THE ESTIMATED QUANTITY OF D.I. WATER PIPE FITTINGS ON THIS PLAN SHEET IS 1,185 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

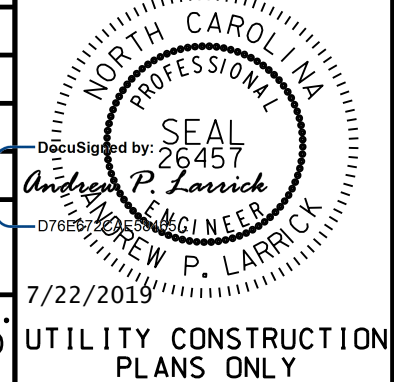
**BEGIN GRADE**  
 END MILL/RESURFACE  
 -L- POC STA. 13+50.00

**PROJ. - 183 L.F. OF 8" SANITARY GRAVITY SEWER**



PROJECT REFERENCE NO.	SHEET NO.
U-2581BA	UC-4
DESIGNED BY: DMP	
DRAWN BY: DMP	
CHECKED BY: DMP	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	7/22/2019
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	UTILITY CONSTRUCTION PLANS ONLY

**UTILITY CONSTRUCTION**  
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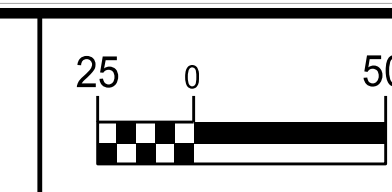


REVISIONS

5/14/19

MATCHLINE -L- STA. 23+00.00 (SEE SHEET UC-5)





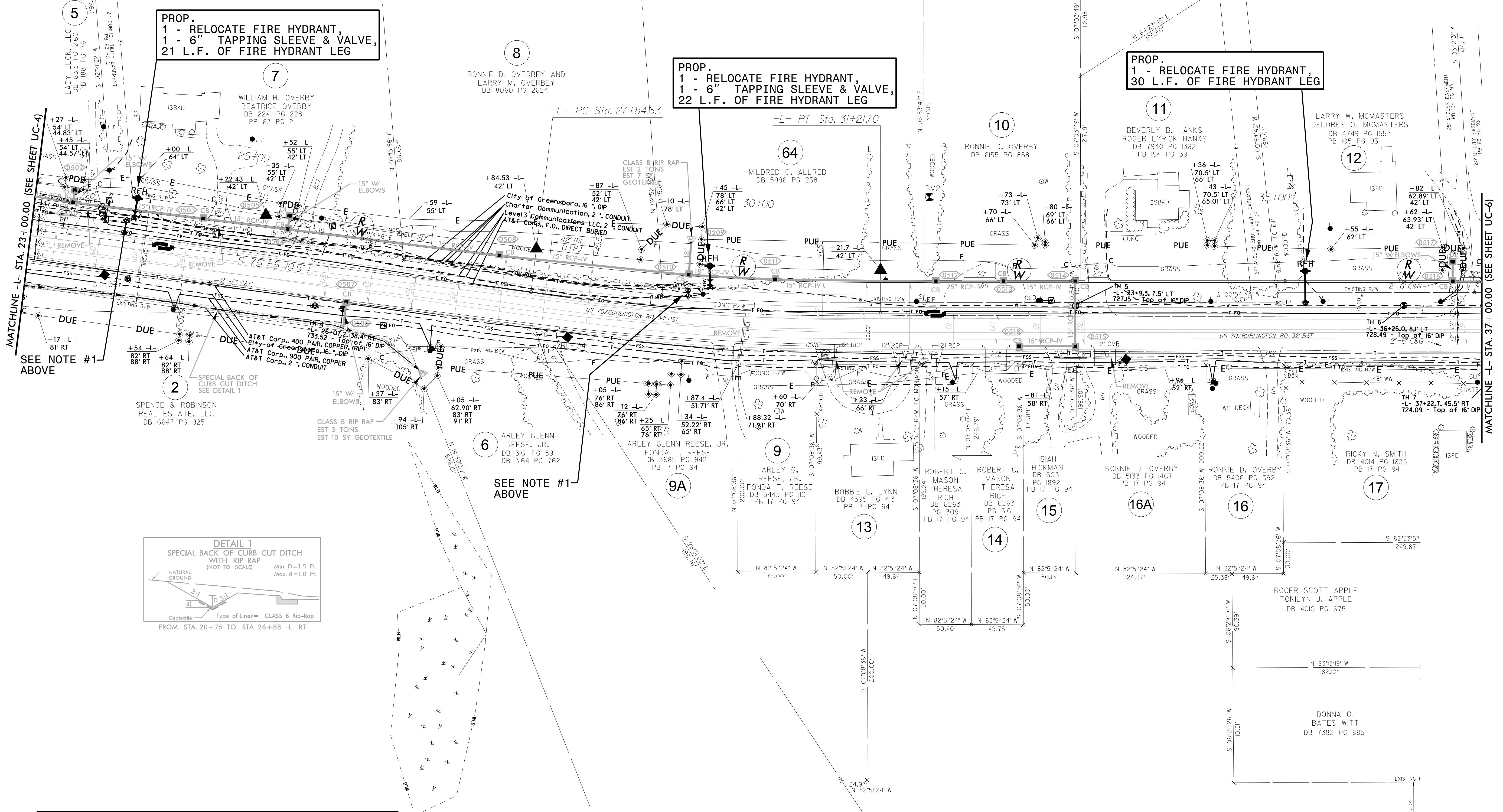
PROJECT REFERENCE NO.	SHEET NO.
U-2581BA	UC-5
DESIGNED BY: DMP	
DRAWN BY: DMP	
CHECKED BY: DMP	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	7/22/2019
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	UTILITY CONSTRUCTION PLANS ONLY

# UTILITY CONSTRUCTION

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NOTE:  
 1. SHUT EX. 6" VALVE ON HYDRANT LEG, RELOCATE FIRE HYDRANT, AND INSTALL 6" D.I. PLUG ON OUTLET SIDE OF EX. 6" VALVE. THE EX. 6" VALVE WILL REMAIN SHUT PERMANENTLY, AND EX. VALVE BOX SHOULD BE REMOVED.

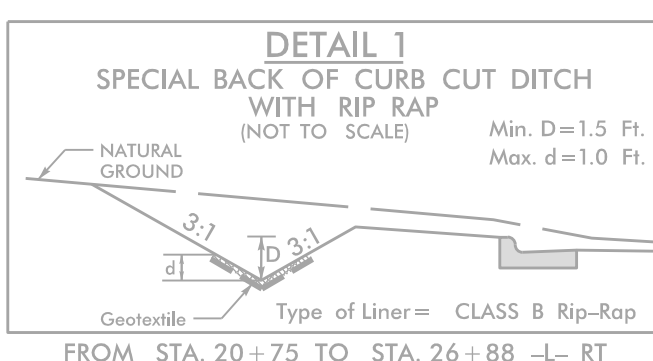
-L- CURVE DATA  
 PI Sta. 29+53.33  
 $\Delta = 7^{\circ}06'08.9"$  (LT)  
 $D = 2^{\circ}06'23.3"$   
 $L = 337.17'$   
 $T = 168.80'$   
 $R = 2720.00'$   
 $SE = 0.04$   
 $RO = 168'$



PROP.  
 1 - RELOCATE FIRE HYDRANT,  
 1 - 6" TAPPING SLEEVE & VALVE,  
 21 L.F. OF FIRE HYDRANT LEG

PROP.  
 1 - RELOCATE FIRE HYDRANT,  
 1 - 6" TAPPING SLEEVE & VALVE,  
 22 L.F. OF FIRE HYDRANT LEG

PROP.  
 1 - RELOCATE FIRE HYDRANT,  
 30 L.F. OF FIRE HYDRANT LEG



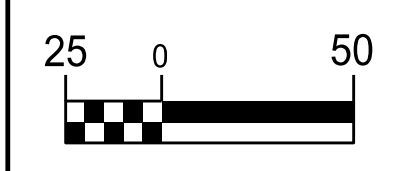
THE ESTIMATED QUANTITY OF D.I. WATER PIPE FITTINGS ON THIS PLAN SHEET IS 50 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.



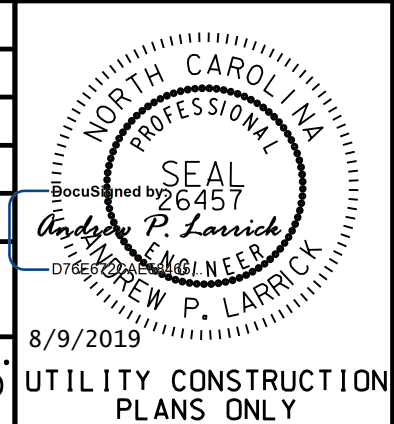
THE ESTIMATED QUANTITY OF D.I. WATER PIPE FITTINGS ON THIS PLAN SHEET IS 1,615 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

THE ESTIMATED QUANTITY OF D.I. SEWER PIPE FITTINGS ON THIS PLAN SHEET IS 940 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

NOTE:  
1. SHUT EX. 6" VALVE ON HYDRANT LEG, RELOCATE FIRE HYDRANT, AND INSTALL 6" D.I. PLUG ON OUTLET SIDE OF EX. 6" VALVE. THE EX. 6" VALVE WILL REMAIN SHUT PERMANENTLY, AND EX. VALVE BOX SHOULD BE REMOVED.

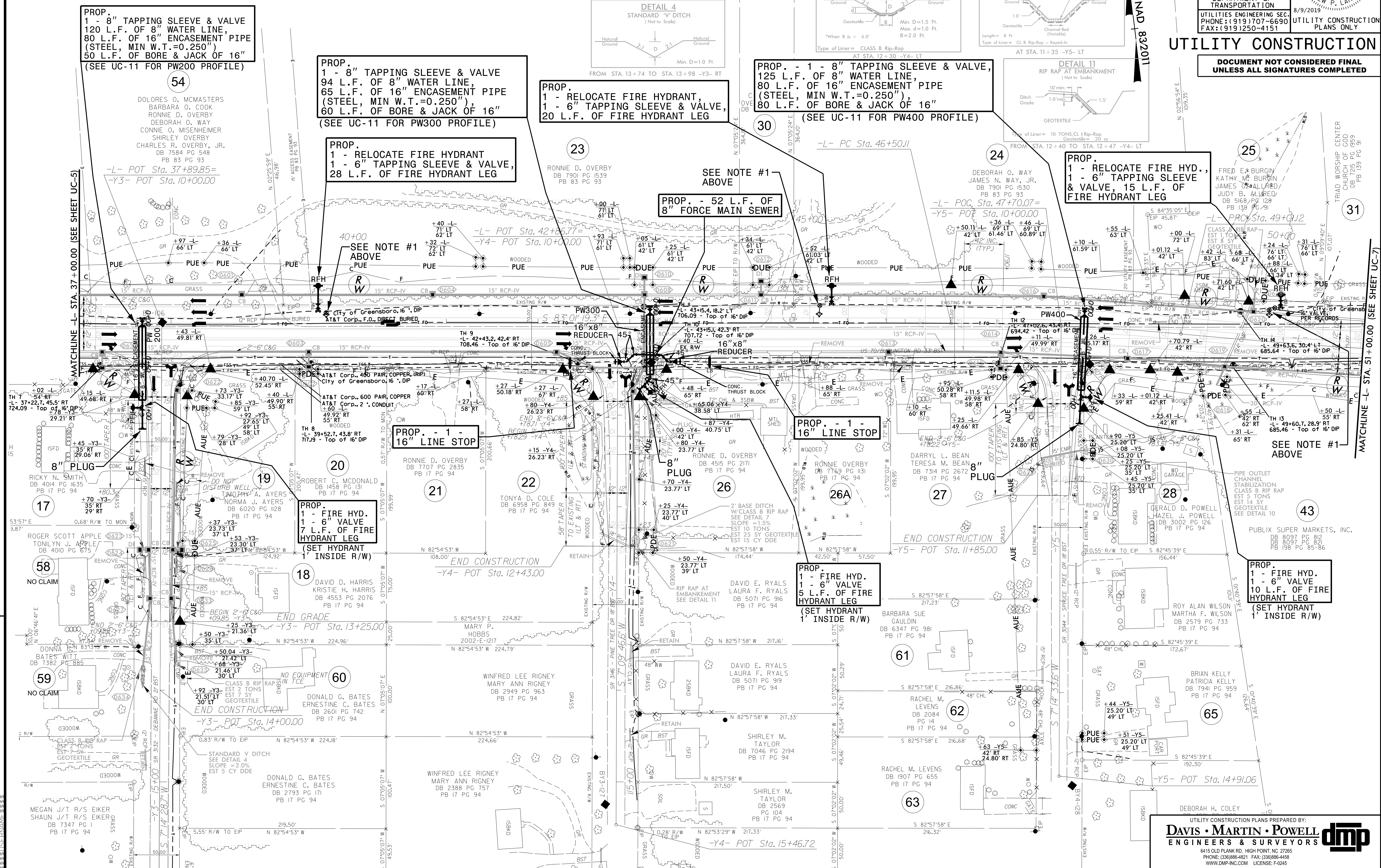


PROJECT REFERENCE NO.	U-2581BA
SHEET NO.	UC-6
DESIGNED BY:	DMP
DRAWN BY:	DMP
CHECKED BY:	DMP
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	



### UTILITY CONSTRUCTION

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PROP. 1 - 8" TAPPING SLEEVE & VALVE  
120 L.F. OF 8" WATER LINE,  
80 L.F. OF 16" ENCASEMENT PIPE  
(STEEL, MIN W.T.=0.250")  
50 L.F. OF BORE & JACK OF 16"  
(SEE UC-11 FOR PW200 PROFILE)

PROP. 1 - 8" TAPPING SLEEVE & VALVE  
94 L.F. OF 8" WATER LINE,  
65 L.F. OF 16" ENCASEMENT PIPE  
(STEEL, MIN W.T.=0.250")  
60 L.F. OF BORE & JACK OF 16"  
(SEE UC-11 FOR PW300 PROFILE)

PROP. 1 - RELOCATE FIRE HYDRANT,  
1 - 6" TAPPING SLEEVE & VALVE,  
20 L.F. OF FIRE HYDRANT LEG

PROP. 1 - 8" TAPPING SLEEVE & VALVE,  
125 L.F. OF 8" WATER LINE,  
80 L.F. OF 16" ENCASEMENT PIPE  
(STEEL, MIN W.T.=0.250")  
80 L.F. OF BORE & JACK OF 16"  
(SEE UC-11 FOR PW400 PROFILE)

PROP. 1 - RELOCATE FIRE HYD.,  
1 - 6" TAPPING SLEEVE &  
VALVE, 15 L.F. OF  
FIRE HYDRANT LEG

PROP. - 52 L.F. OF  
8" FORCE MAIN SEWER

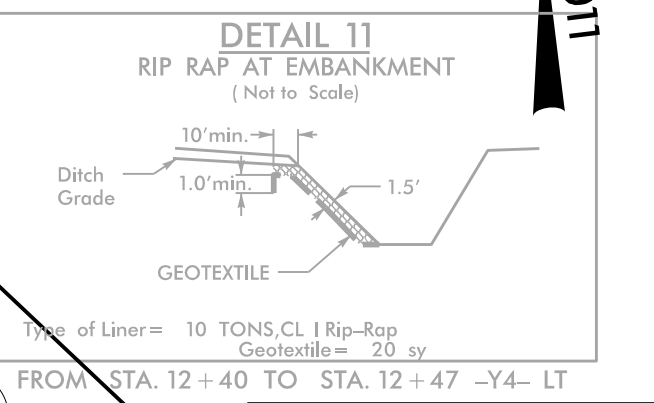
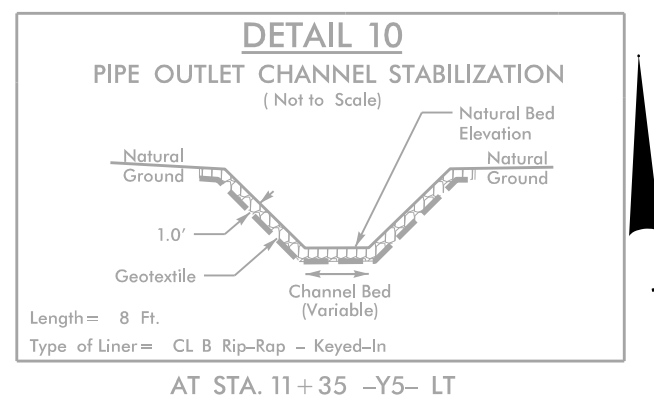
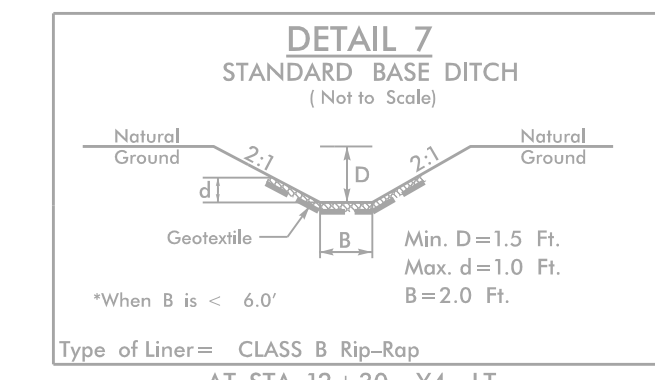
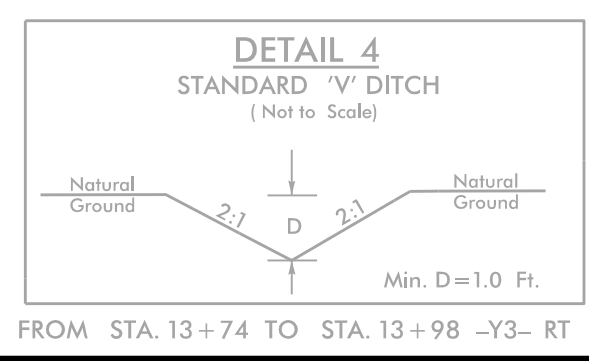
PROP. - 1 -  
16" LINE STOP

PROP. - 1 -  
16" LINE STOP

PROP. 1 - FIRE HYD.  
1 - 6" VALVE  
7 L.F. OF FIRE  
HYDRANT LEG  
(SET HYDRANT  
1' INSIDE R/W)

PROP. 1 - FIRE HYD.  
1 - 6" VALVE  
5 L.F. OF FIRE  
HYDRANT LEG  
(SET HYDRANT  
1' INSIDE R/W)

PROP. 1 - FIRE HYD.  
1 - 6" VALVE  
10 L.F. OF FIRE  
HYDRANT LEG  
(SET HYDRANT  
1' INSIDE R/W)



REVISIONS

MATCHLINE - STA. 37+00.00 (SEE SHEET UC-5) MATCHLINE - STA. 51+00.00 (SEE SHEET UC-7)

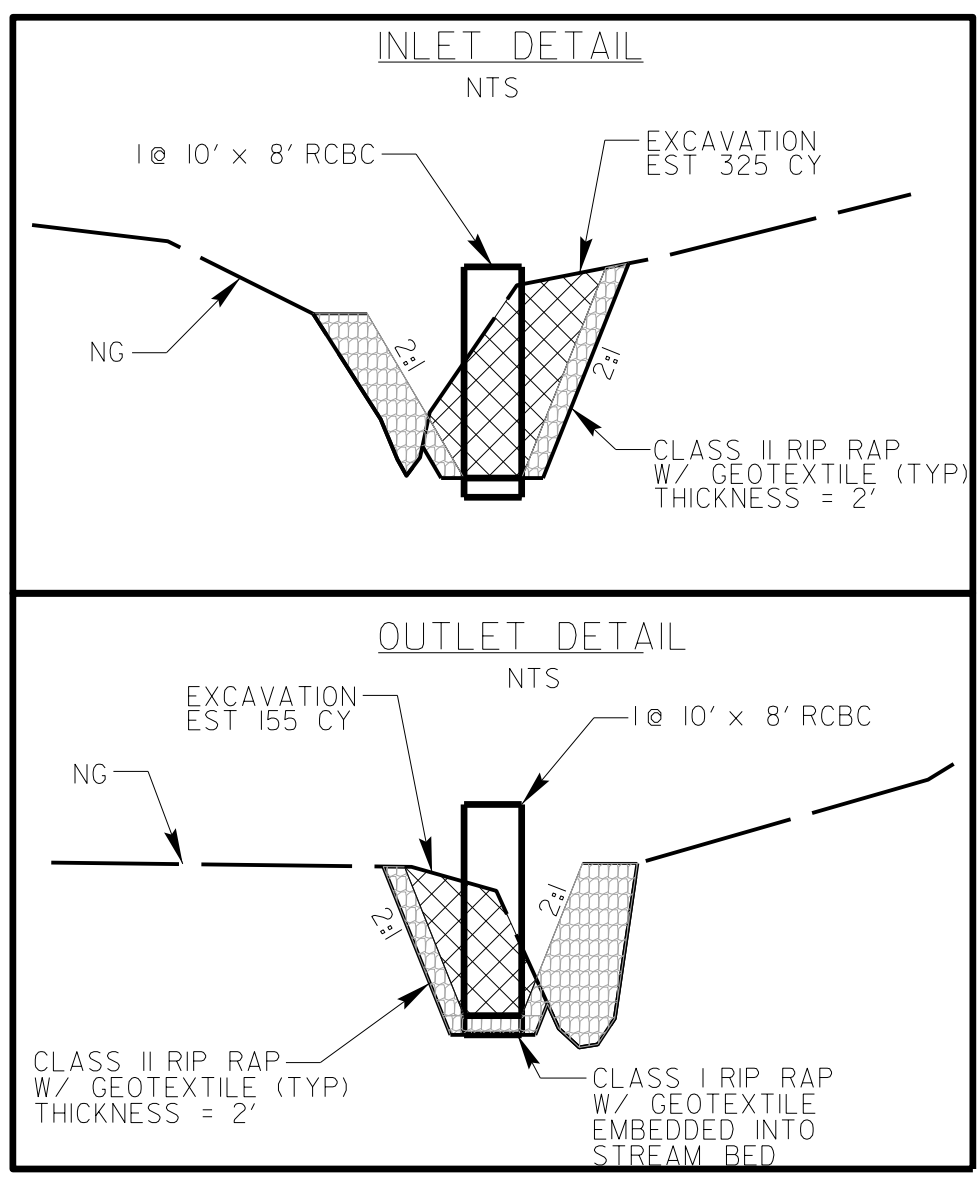
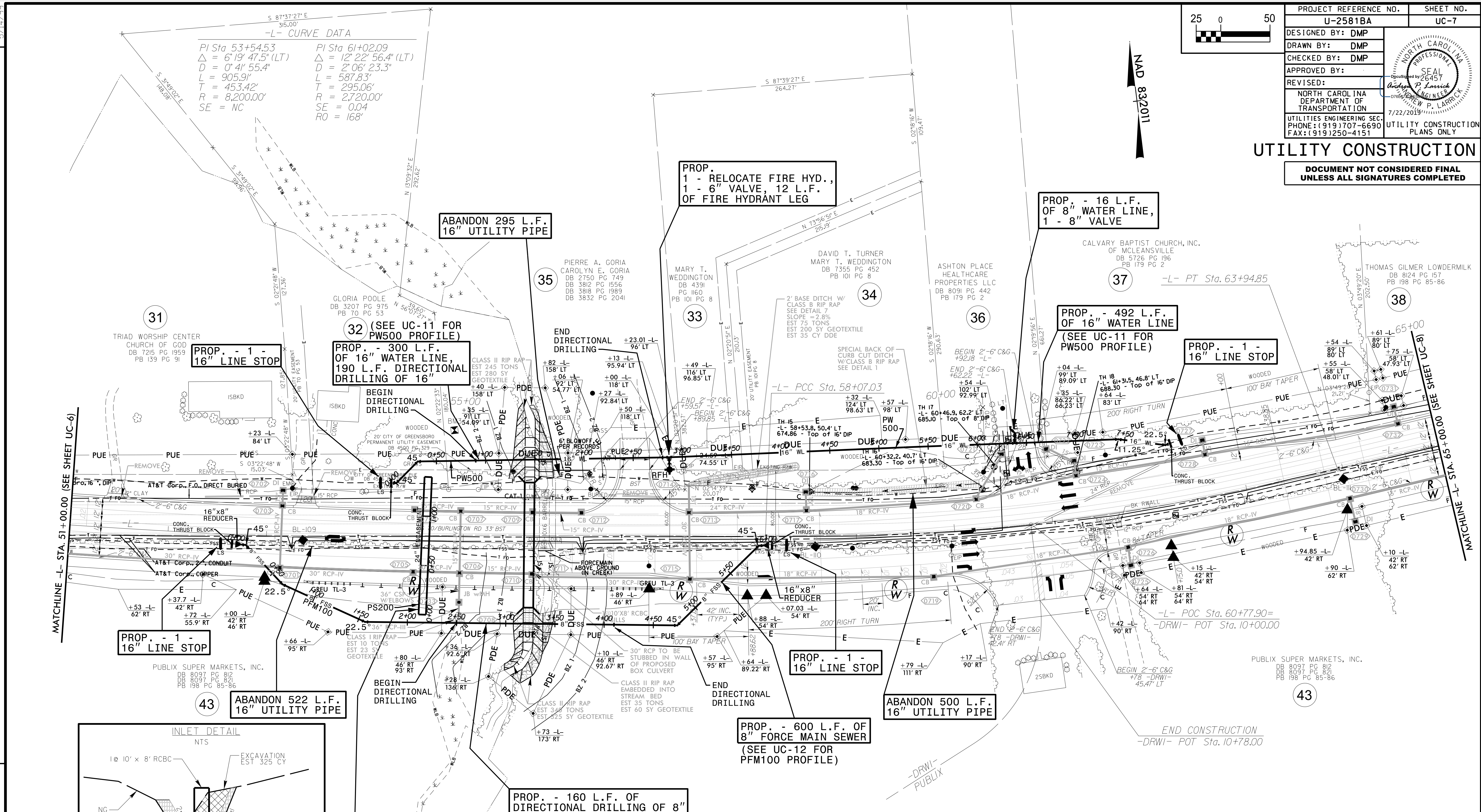




PROJECT REFERENCE NO.	U-2581BA	SHEET NO.	UC-7
DESIGNED BY:	DMP		
DRAWN BY:	DMP		
CHECKED BY:	DMP		
APPROVED BY:	DMP		
REVISED:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		7/22/2019	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151		UTILITY CONSTRUCTION PLANS ONLY	

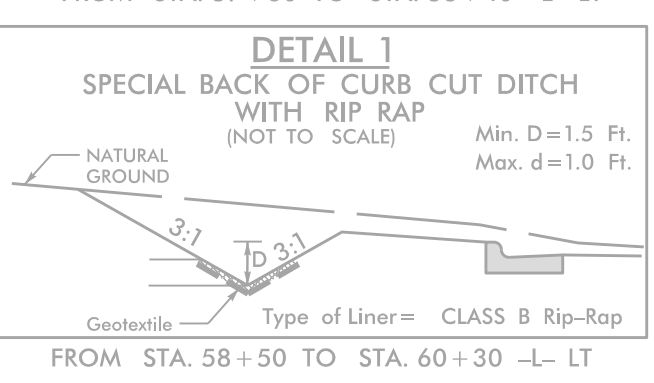
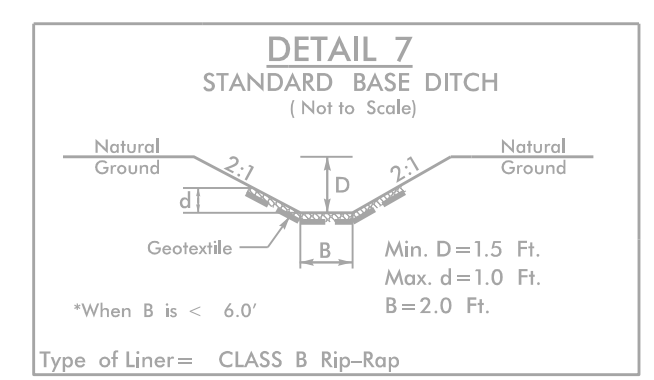
### UTILITY CONSTRUCTION

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**PROP. 140 L.F. OF 24" ENCASUREMENT PIPE (STEEL, MIN W.T.=0.250") (FOR FUTURE GRAVITY SEWER LINE TO BE INSTALLED BY OTHERS) 100 L.F. OF BORE & JACK OF 24" (SEE UC-12 FOR PS200 PROFILE)**

**NOTE: AFTER INSTALLING THE ENCASUREMENT PIPE NEAR -L- STA. 54+60, PLACE A BOLLARD AT EACH END OF THE ENCASUREMENT PIPE, PER COG STD. DETAIL 121 ON SHEET UC-3B. THE COST FOR FURNISHING & INSTALLING THE BOLLARDS SHALL BE INCIDENTAL TO THE CONTRACT.**

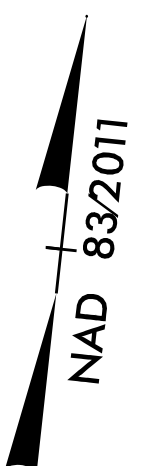
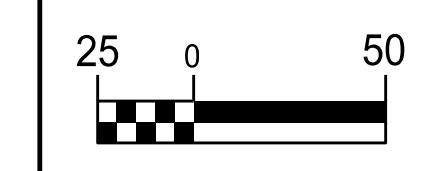


THE ESTIMATED QUANTITY OF D.I. SEWER PIPE FITTINGS ON THIS PLAN SHEET IS 1,050 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

THE ESTIMATED QUANTITY OF D.I. WATER PIPE FITTINGS ON THIS PLAN SHEET IS 3,370 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

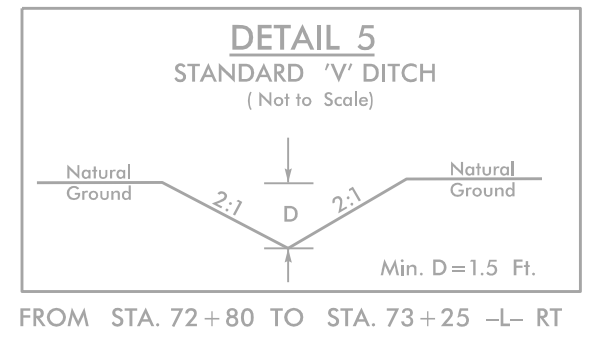


5/14/99

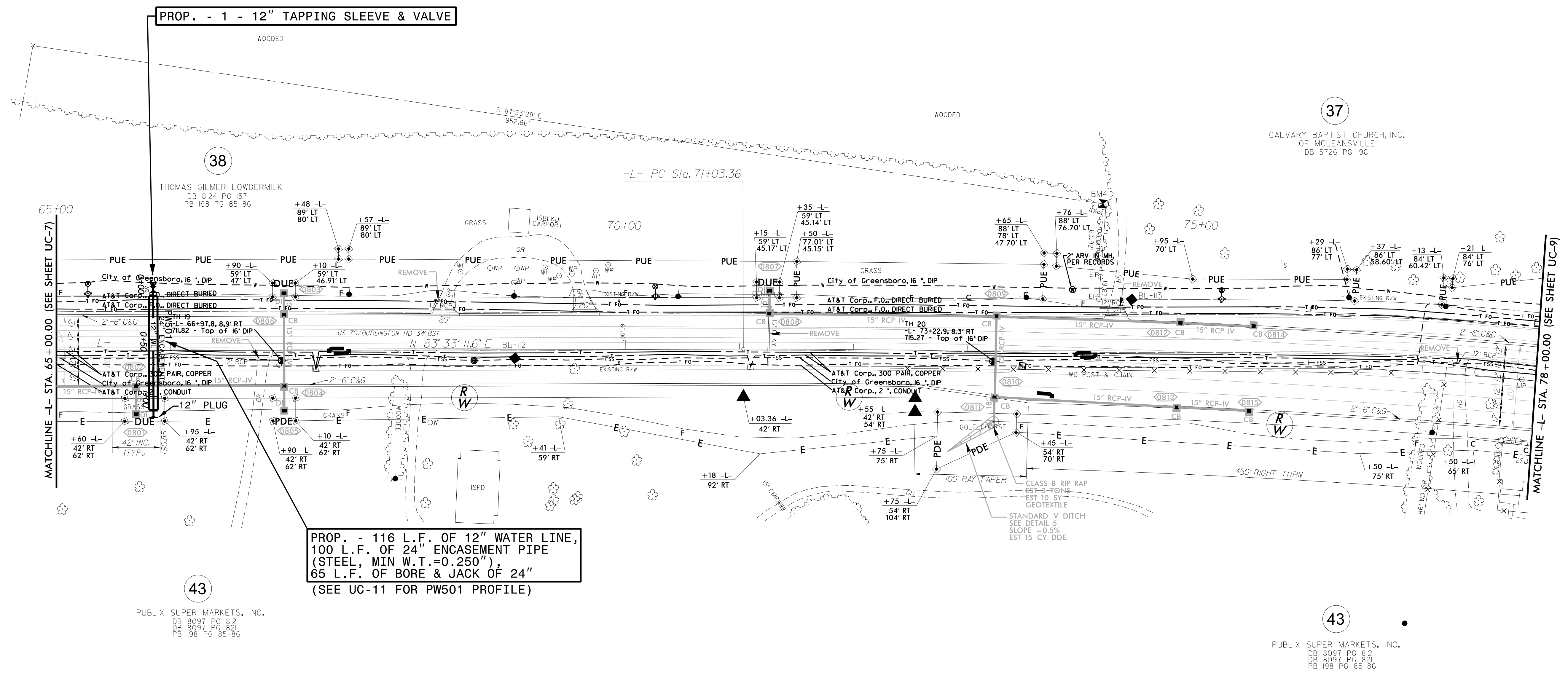


PROJECT REFERENCE NO. U-2581BA	SHEET NO. UC-8
DESIGNED BY: DMP	
DRAWN BY: DMP	
CHECKED BY: DMP	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151 UTILITY CONSTRUCTION PLANS ONLY	

**UTILITY CONSTRUCTION**  
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**-L- CURVE DATA**  
 PI Sta 78+31.90  
 $\Delta = 101^{\circ}12'58.5''$  (RT)  
 $D = 0^{\circ}42'10.9''$   
 $L = 1,453.20'$   
 $T = 728.53'$   
 $R = 8,150.00'$   
 SE = NC



PROP. - 1 - 12" TAPPING SLEEVE & VALVE

PROP. - 116 L.F. OF 12" WATER LINE,  
 100 L.F. OF 24" ENCASUREMENT PIPE  
 (STEEL, MIN W.T.=0.250"),  
 65 L.F. OF BORE & JACK OF 24"  
 (SEE UC-11 FOR PW501 PROFILE)

THE ESTIMATED QUANTITY OF D.I. WATER PIPE FITTINGS  
 ON THIS PLAN SHEET IS 85 POUNDS. THE ACTUAL  
 QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON  
 FIELD CONDITIONS.

REVISIONS

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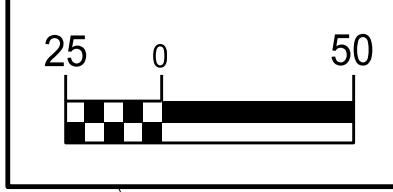


PROJECT REFERENCE NO.	SHEET NO.
U-2581BA	UC-9
DESIGNED BY: DMP	
DRAWN BY: DMP	
CHECKED BY: DMP	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	7/22/2019
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	UTILITY CONSTRUCTION PLANS ONLY

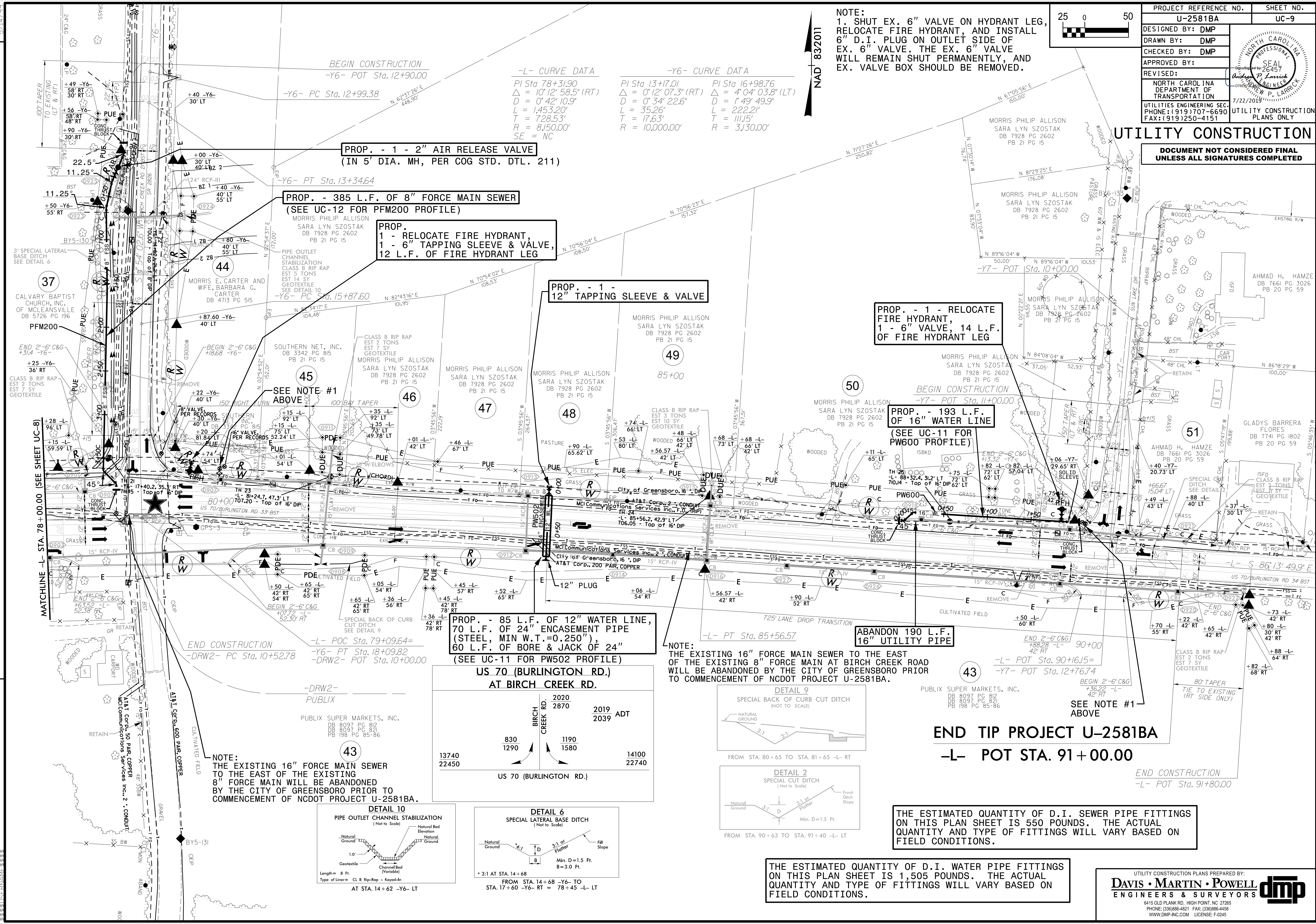
**UTILITY CONSTRUCTION**

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

NOTE:  
 1. SHUT EX. 6" VALVE ON HYDRANT LEG, RELOCATE FIRE HYDRANT, AND INSTALL 6" D.I. PLUG ON OUTLET SIDE OF EX. 6" VALVE. THE EX. 6" VALVE WILL REMAIN SHUT PERMANENTLY, AND EX. VALVE BOX SHOULD BE REMOVED.



NAD 83/2011

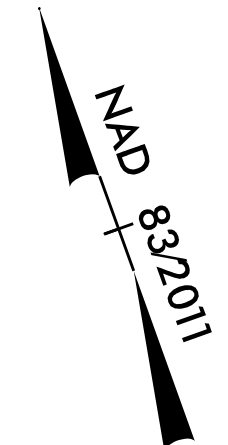
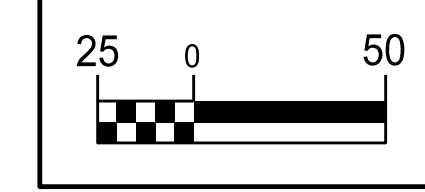


**END TIP PROJECT U-2581BA**  
 -L- POT STA. 91+00.00

END CONSTRUCTION  
 -L- POT Sta. 91+80.00



5/14/19

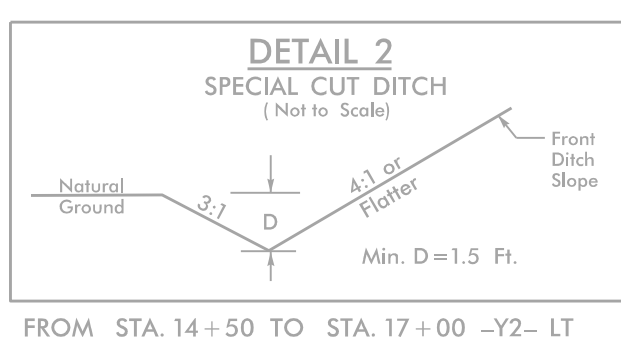


PROJECT REFERENCE NO.	SHEET NO.
U-2581BA	UC-10
DESIGNED BY: DMP	
DRAWN BY: DMP	
CHECKED BY: DMP	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	7/22/2019
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	UTILITY CONSTRUCTION PLANS ONLY

# UTILITY CONSTRUCTION

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**NOTE:**  
 FROM APPROXIMATELY -Y2- STA 12+75± TO -Y2- STA. 13+75±, THE CONTRACTOR SHALL USE CAUTION WHEN GRADING THE PROPOSED DITCH. THE EXISTING 30" DIP FORCE MAIN WILL ONLY HAVE APPROXIMATELY 2.5 TO 3 FEET OF COVER FROM PROPOSED FINISHED GRADE TO THE TOP OF THE EXISTING PIPE ALONG THIS STRETCH.

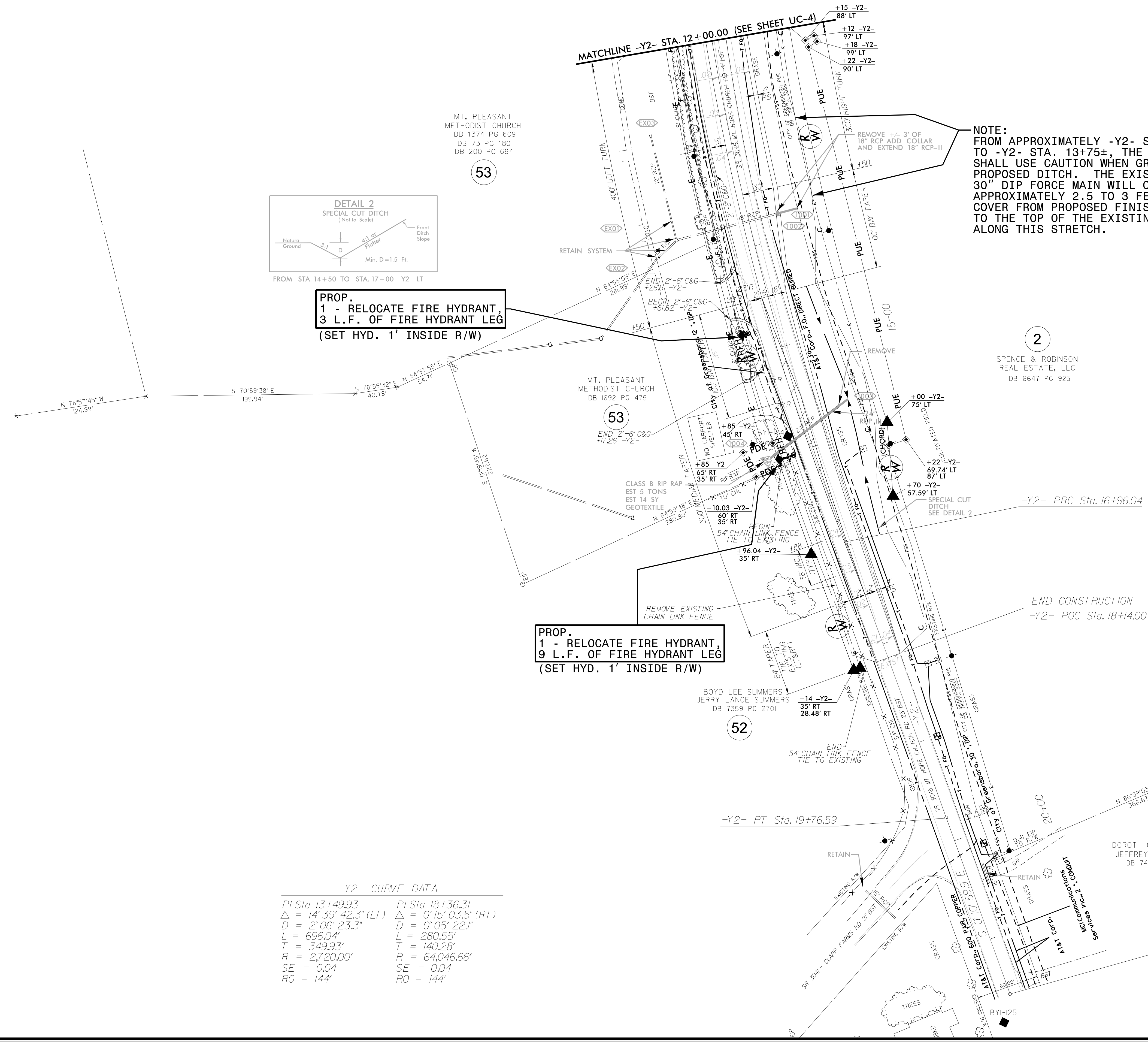


**PROP. 1 - RELOCATE FIRE HYDRANT, 3 L.F. OF FIRE HYDRANT LEG (SET HYD. 1' INSIDE R/W)**

**PROP. 1 - RELOCATE FIRE HYDRANT, 9 L.F. OF FIRE HYDRANT LEG (SET HYD. 1' INSIDE R/W)**

-Y2- CURVE DATA

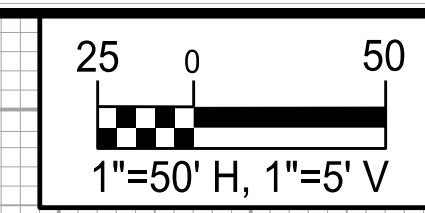
PI Sta 13+49.93	PI Sta 18+36.31
Δ = 14° 39' 42.3" (LT)	Δ = 0° 15' 03.5" (RT)
D = 2° 06' 23.3"	D = 0° 05' 22.1"
L = 696.04'	L = 280.55'
T = 349.93'	T = 140.28'
R = 2,720.00'	R = 64,046.66'
SE = 0.04	SE = 0.04
RO = 144'	RO = 144'



REVISIONS

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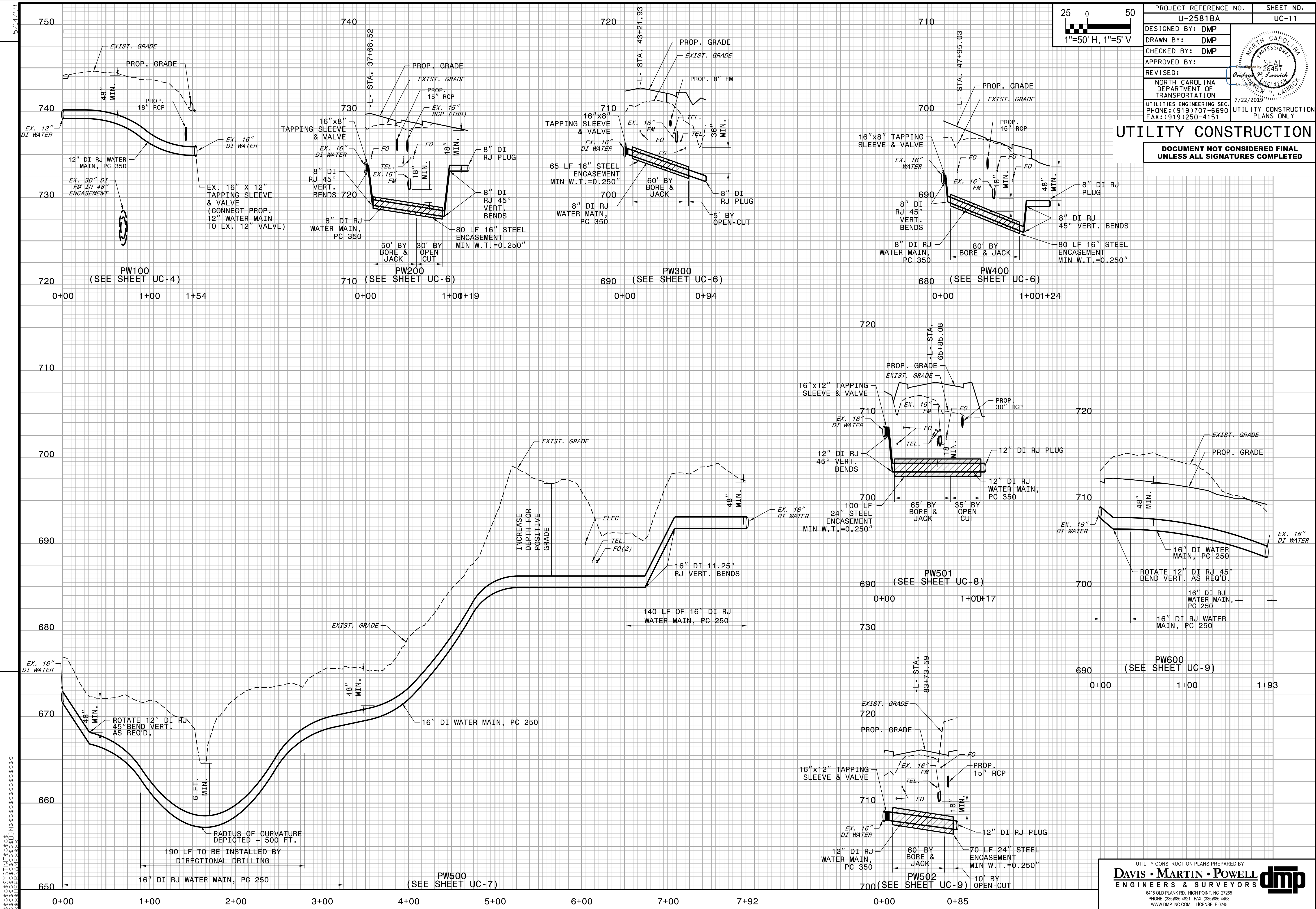


PROJECT REFERENCE NO.	SHEET NO.
U-2581BA	UC-11
DESIGNED BY: DMP	
DRAWN BY: DMP	
CHECKED BY: DMP	
APPROVED BY:	
REVISED:	
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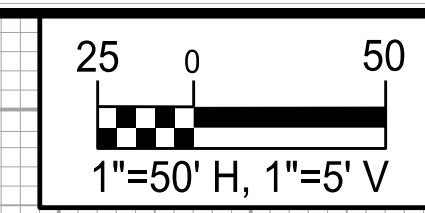
# UTILITY CONSTRUCTION

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REVISIONS







PROJECT REFERENCE NO. U-2581BA	SHEET NO. UC-12
DESIGNED BY: DMP	
DRAWN BY: DMP	
CHECKED BY: DMP	
APPROVED BY:	
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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REVISIONS

