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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

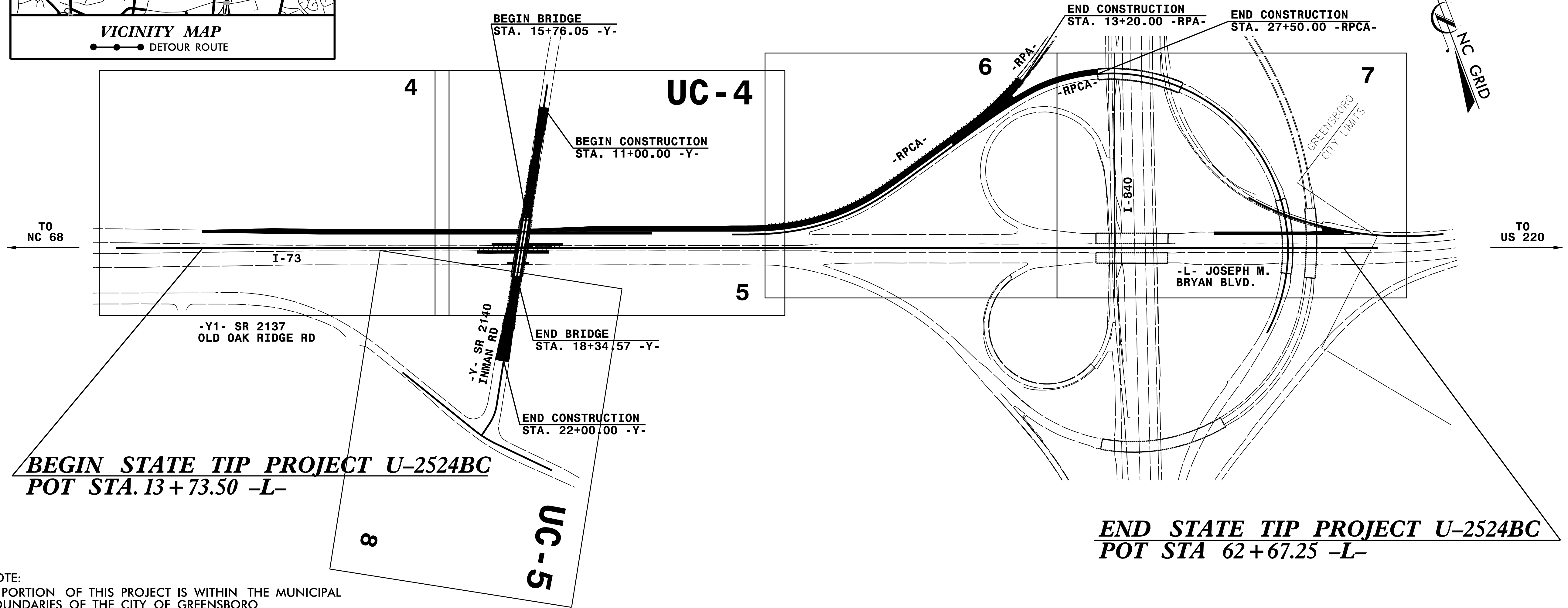
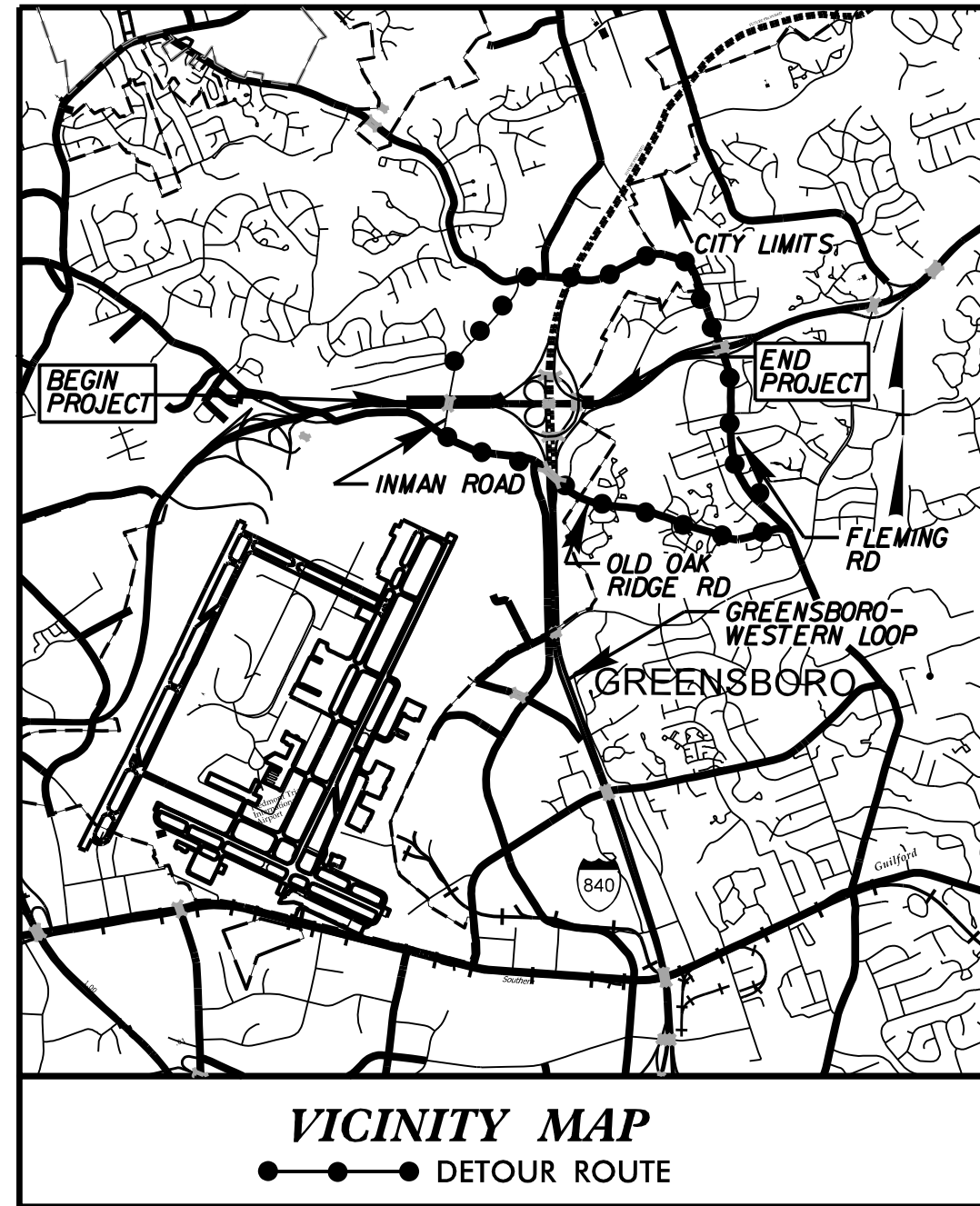
T.I.P. NO.	SHEET NO.
U-2524BC	UC-1

TIP PROJECT: U-2524BC

UTILITY CONSTRUCTION PLANS GUILFORD COUNTY

LOCATION: GREENSBORO WESTERN LOOP (I-73 CONNECTOR) FROM I-73 / I-840
TO SR 2085 (JOSEPH BRYAN BLVD.) INTERCHANGE

TYPE OF WORK: UTILITY CONSTRUCTION

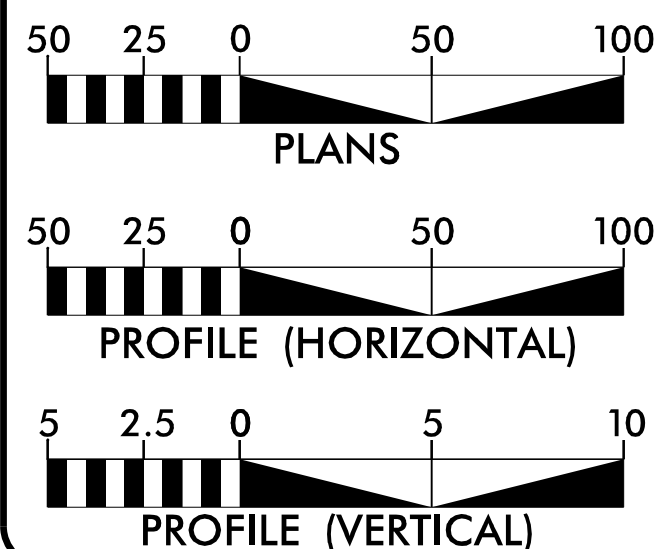


**BEGIN STATE TIP PROJECT U-2524BC
POT STA. 13 + 73.50 -L-**

**END STATE TIP PROJECT U-2524BC
POT STA. 62 + 67.25 -L-**

NOTE:
A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF GREENSBORO

GRAPHIC SCALES



INDEX OF SHEETS

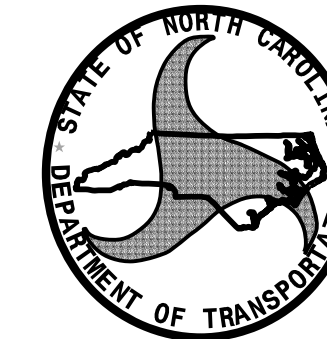
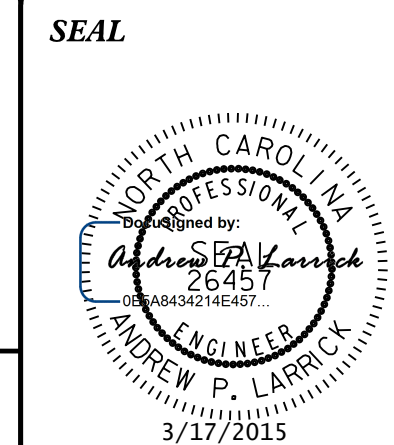
SHEET NO.	DESCRIPTION
UC-1	TITLE SHEET
UC-2	UTILITY SYMBOLOGY
UC-3	NOTES
UC-3A	DETAILS
UC-4 THRU UC-5	UTILITY CONSTRUCTION SHEETS
UC-6	PROFILE SHEET

WATER AND SEWER OWNERS ON PROJECT

WATER - CITY OF GREENSBORO
SEWER - NA

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

Randy McNeill, P.E. UTILITIES PROJECT MANAGER
Andy Larrick, P.E. UTILITIES PROJECT ENGINEER
Andy Larrick, P.E. UTILITIES PROJECT DESIGNER



DIVISION OF HIGHWAYS
UTILITIES UNIT
UTILITIES ENGINEERING

1555 MAIL SERVICE CENTER
RALEIGH, NC 27699-1555
PHONE (919) 707-6690
FAX (919) 250-4151

Roger Worthington, P.E. UTILITIES SECTION ENGINEER
James S. McKee, P.E. UTILITIES SQUAD LEADER PROJECT ENGINEER
Don Proper UTILITIES PROJECT DESIGN ENGINEER

\$\$\$\$\$ SYSTEM \$\$\$\$\$\$ DN \$\$\$\$\$\$ USERNAME \$\$\$\$\$\$

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	-----	

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)

8.17/99

REVISIONS

REV: 2/1/2012

UTILITY CONSTRUCTION

PROJECT REFERENCE NO.	SHEET NO.
U-2524BC	UC-3
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	

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 WATER AND SEWER 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 AND NATURAL RESOURCES, DIVISION OF ENVIRONMENTAL HEALTH. ALL SEWER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES, DIVISION OF WATER QUALITY. 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:

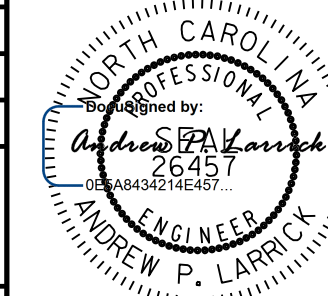
1. PIPE AND FITTINGS FOR PROPOSED WATER LINES 4" AND LARGER SHALL BE DUCTILE IRON, PC 350.
2. THE CONTRACTOR SHALL BE AWARE OF THE USE OF RESTRAINED JOINT DUCTILE IRON PIPE IN THE DESIGNATED AREAS AS SHOWN ON THE PLAN AND PROFILE SHEETS. NO ADDITIONAL COMPENSATION SHALL BE AWARDED TO THE CONTRACTOR FOR PROPOSED RESTRAINED JOINT DUCTILE IRON PIPE. THIS IS INCIDENTAL TO THE UNIT PRICE BID FOR 12" WATER LINE.
3. THE CONTRACTOR SHALL BE AWARE OF THE USE OF A PROPOSED CONCRETE THRUST COLLAR IN THE DESIGNATED AREA AS SHOWN ON THE PLAN, PROFILE, AND DETAIL SHEETS. NO ADDITIONAL COMPENSATION SHALL BE AWARDED TO THE CONTRACTOR FOR PROPOSED CONCRETE THRUST COLLAR INSTALLATION. THIS IS INCIDENTAL TO THE UNIT PRICE BID FOR 12" WATER LINE.

UTILITY CONSTRUCTION

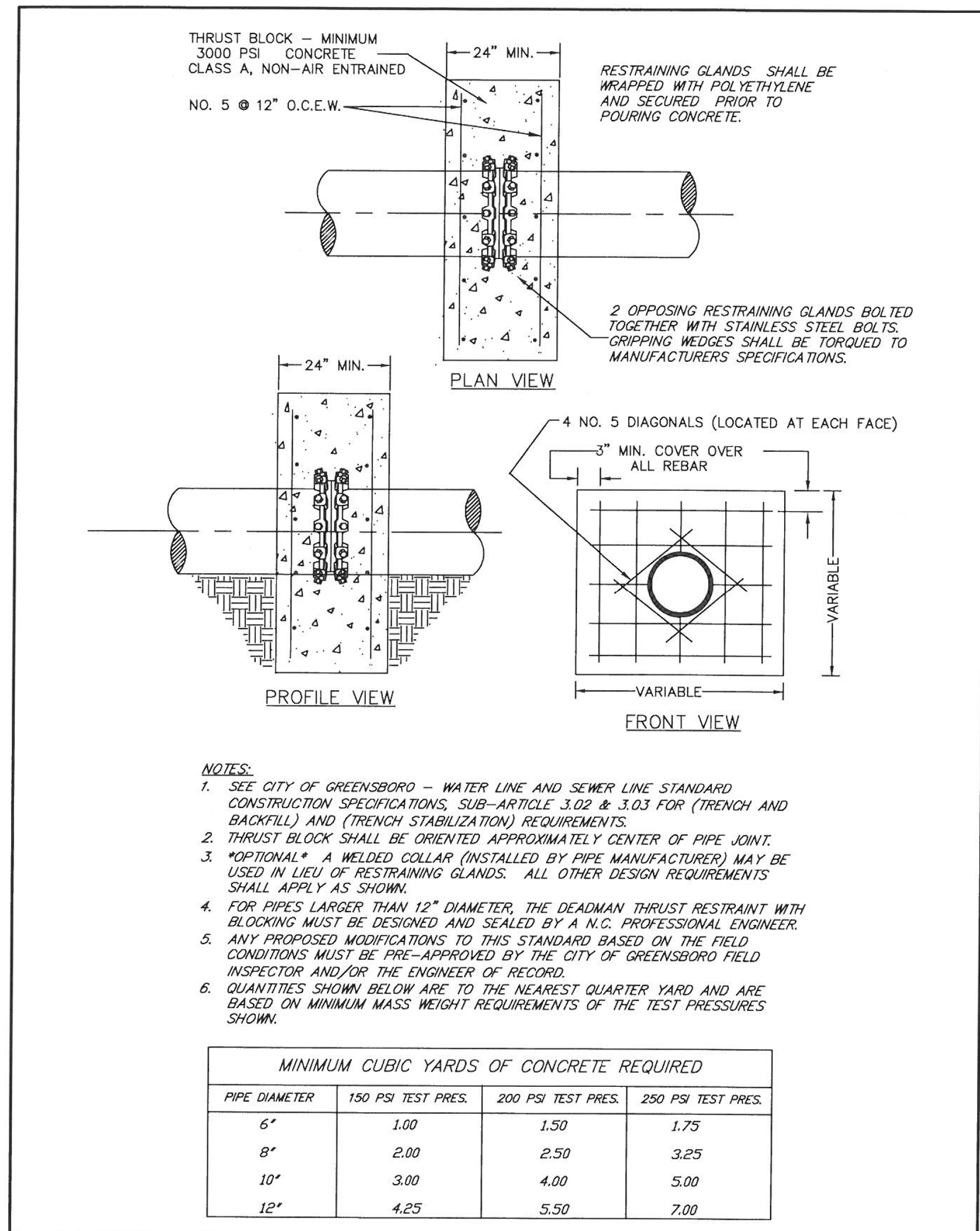
REVISIONS

LIST OF STANDARD DRAWINGS

N/A

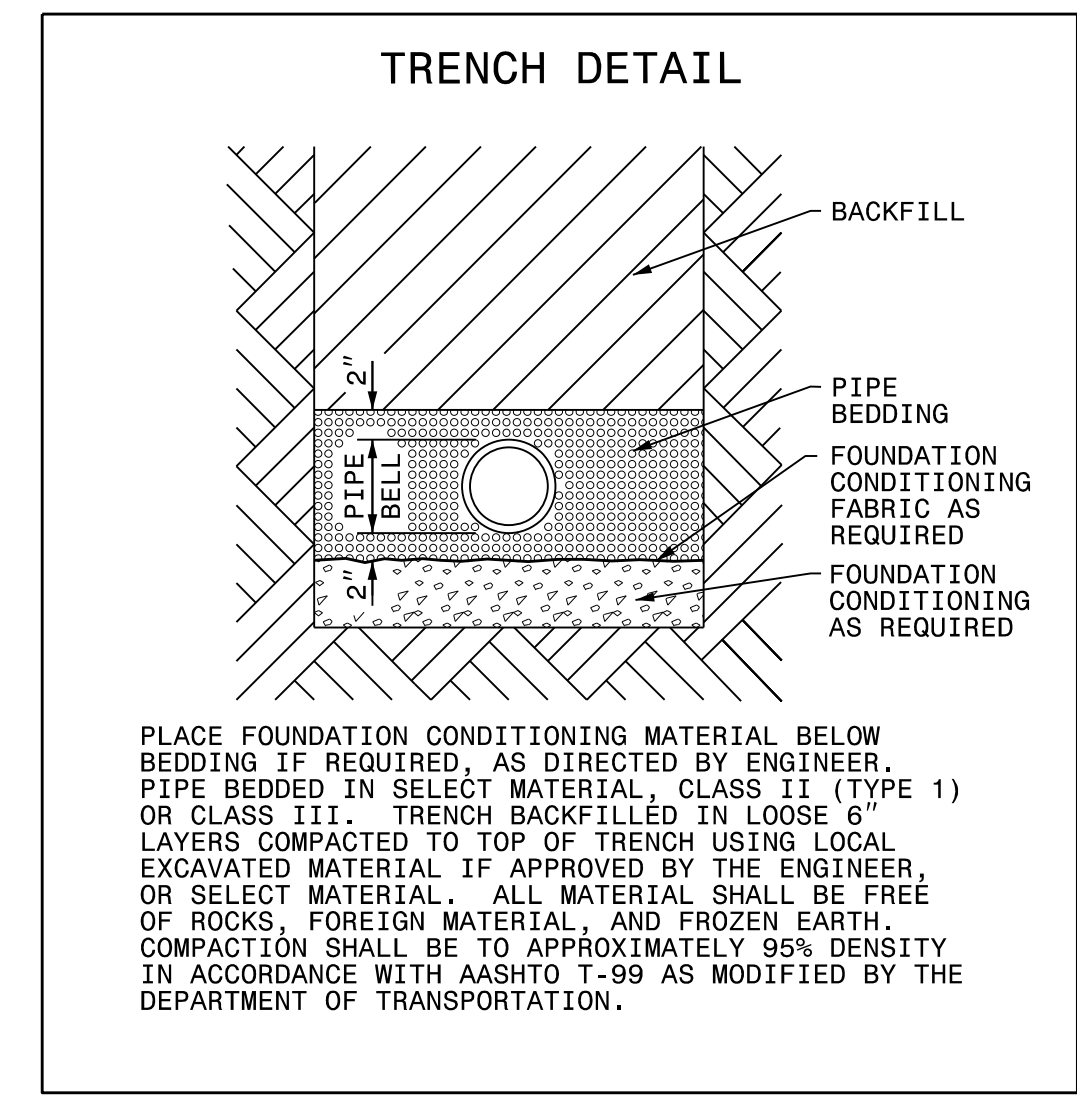
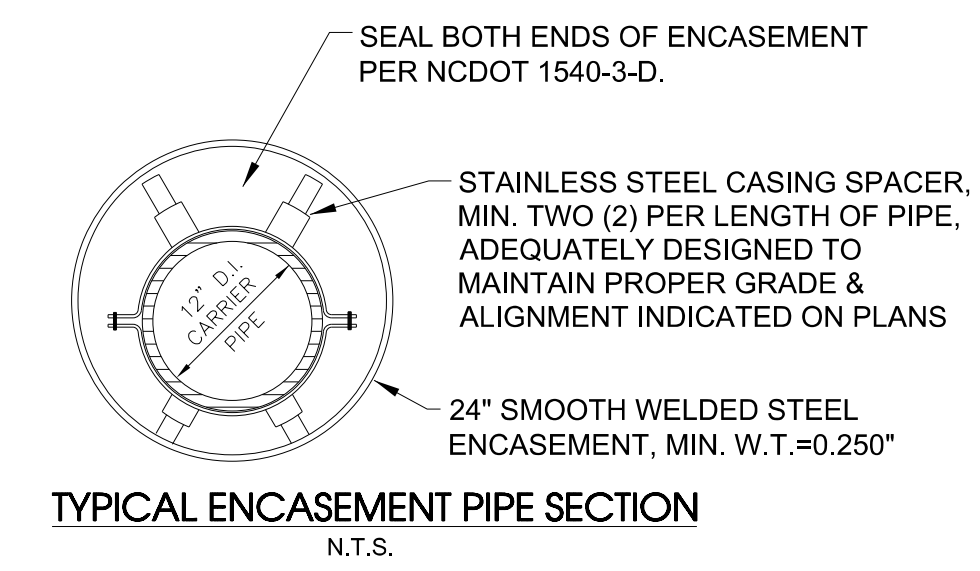
PROJECT REFERENCE NO.	SHEET NO.
U-2524BC	UC-3A
DESIGNED BY: DMP	
DRAWN BY: DMP	
CHECKED BY: DMP	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

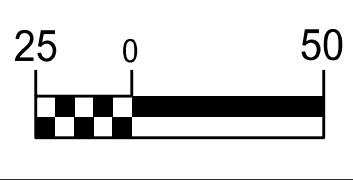


MINIMUM CUBIC YARDS OF CONCRETE REQUIRED			
PIPE DIAMETER	150 PSI TEST PRES.	200 PSI TEST PRES.	250 PSI TEST PRES.
6"	1.00	1.50	1.75
8"	2.00	2.50	3.25
10"	3.00	4.00	5.00
12"	4.25	5.50	7.00

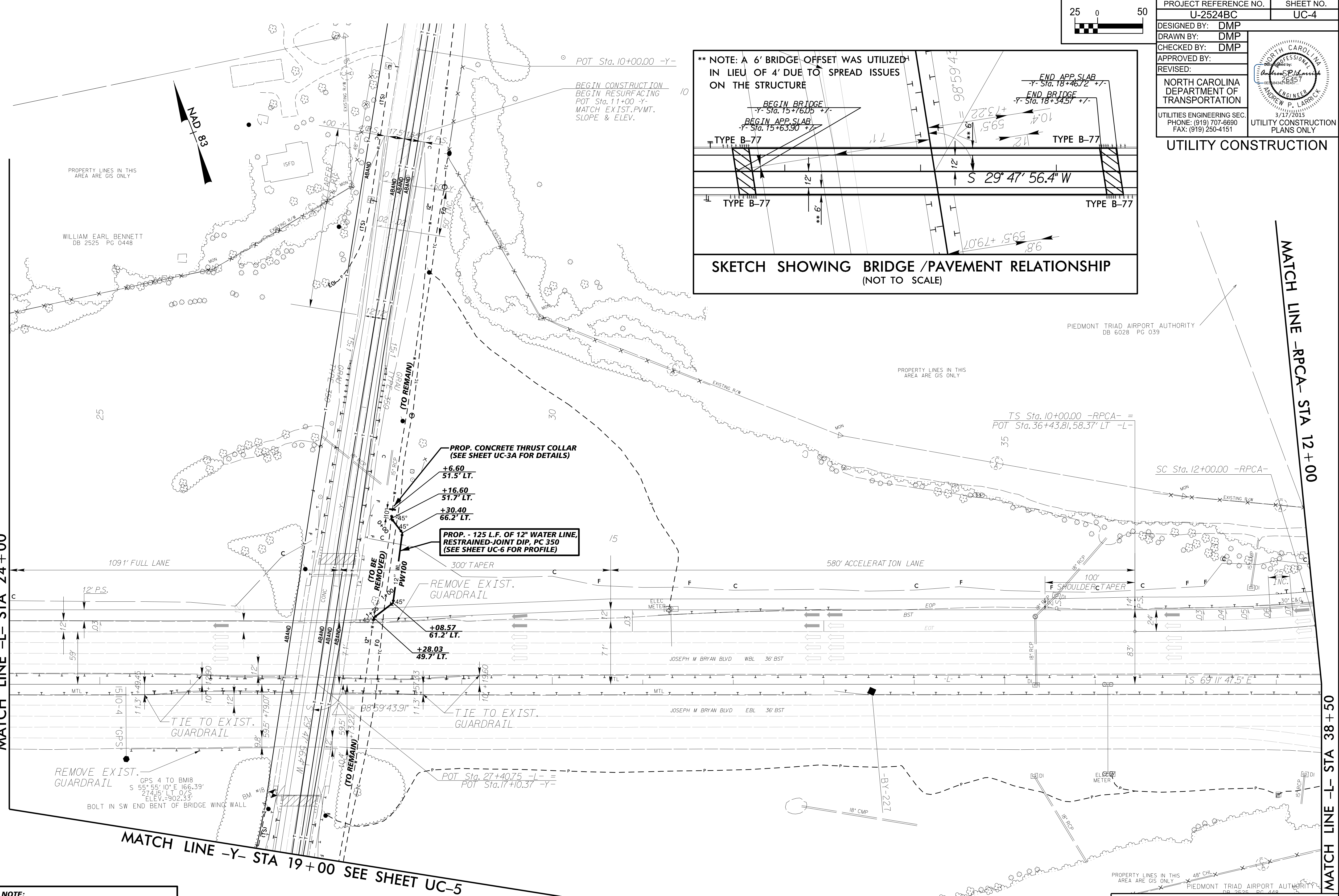
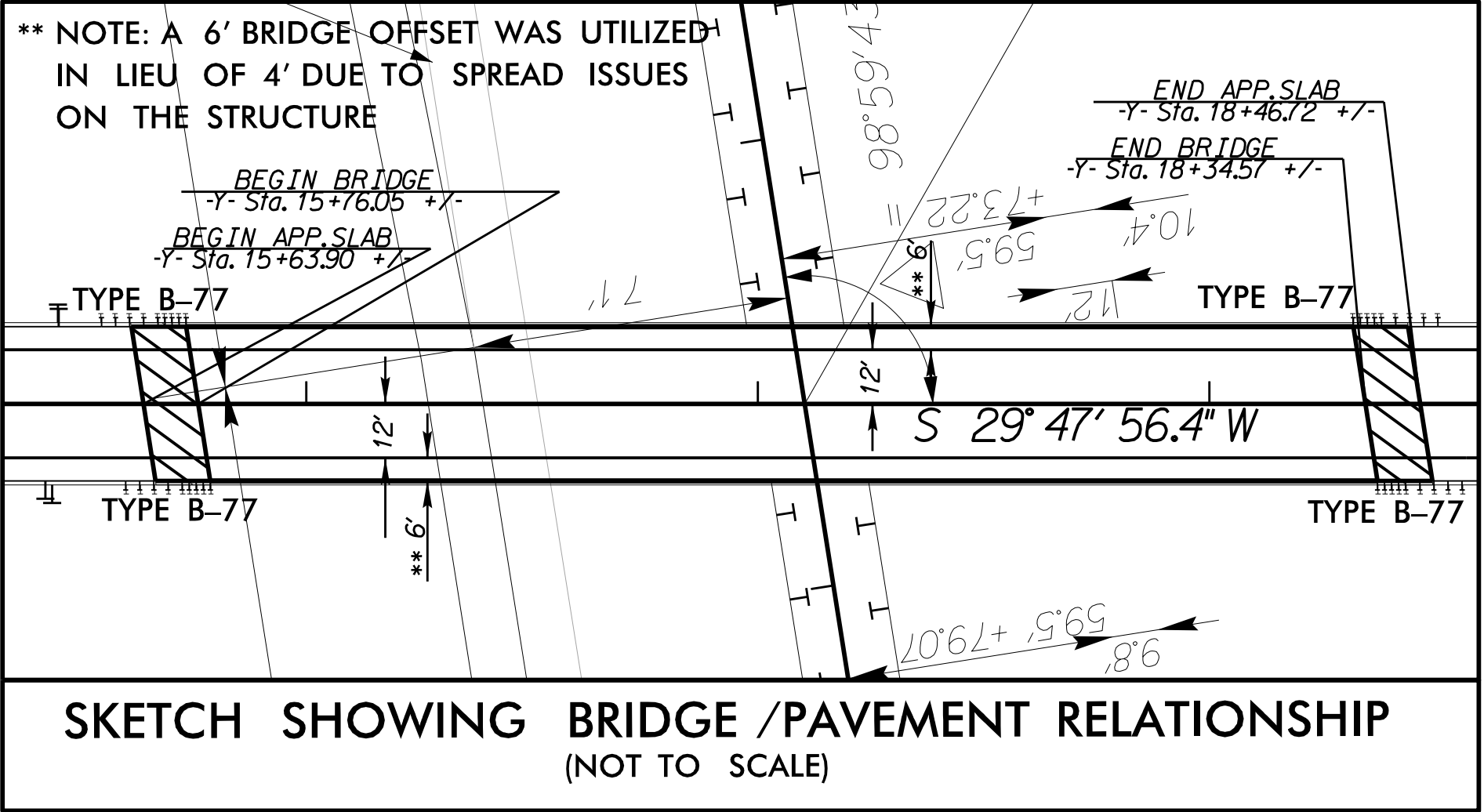
CITY OF GREENSBORO		
DEADMAN THRUST RESTRAINT WITH MASS WEIGHT BLOCKING FOR DUCTILE IRON PIPE	STD. NO.	REV.
	118	06/13



MAXIMUM TRENCH WIDTH AT TOP OF PIPE			
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		



PROJECT REFERENCE NO.	SHEET NO.
U-2524BC	UC-4
DESIGNED BY: DMP	
DRAWN BY: DMP	
CHECKED BY: DMP	
APPROVED BY:	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
REVISED:	UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151
UTILITY CONSTRUCTION PLANS ONLY	



REVISIONS

MATCH LINE -RPCA- STA 12+00

MATCH LINE -L- STA 38+50

MATCH LINE -L- STA 24+00

MATCH LINE -Y- STA 19+00 SEE SHEET UC-5

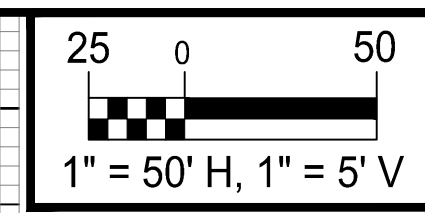
NOTE: PIPE AND FITTINGS FOR WATER LINES 4" AND LARGER SHALL BE DUCTILE IRON, PC 350.

UTILITY CONSTRUCTION PLANS PREPARED BY:

DAVIS • MARTIN • POWELL
ENGINEERS & SURVEYORS

6415 OLD PLANK RD., HIGH POINT, NC 27265
PHONE: (336) 886-4821 FAX: (336) 886-4458
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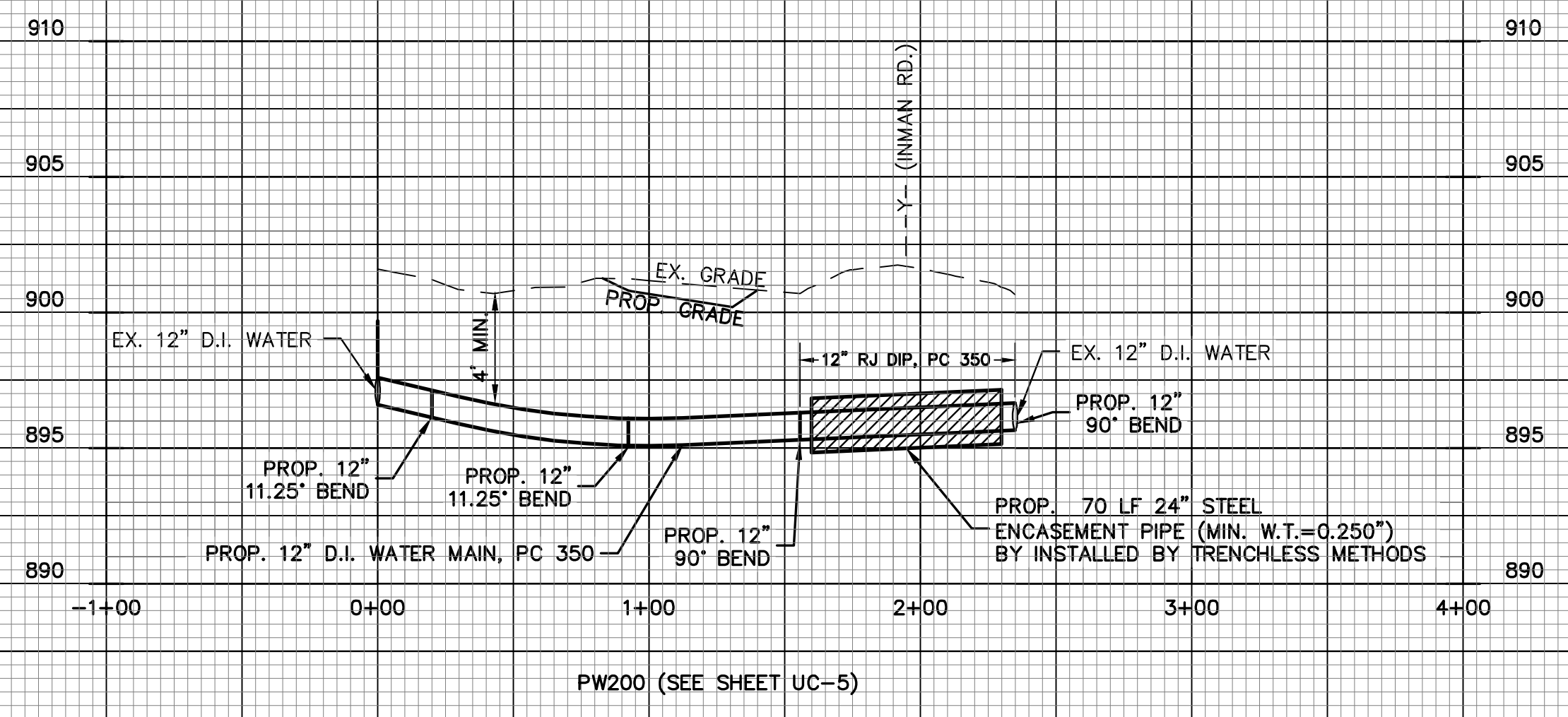
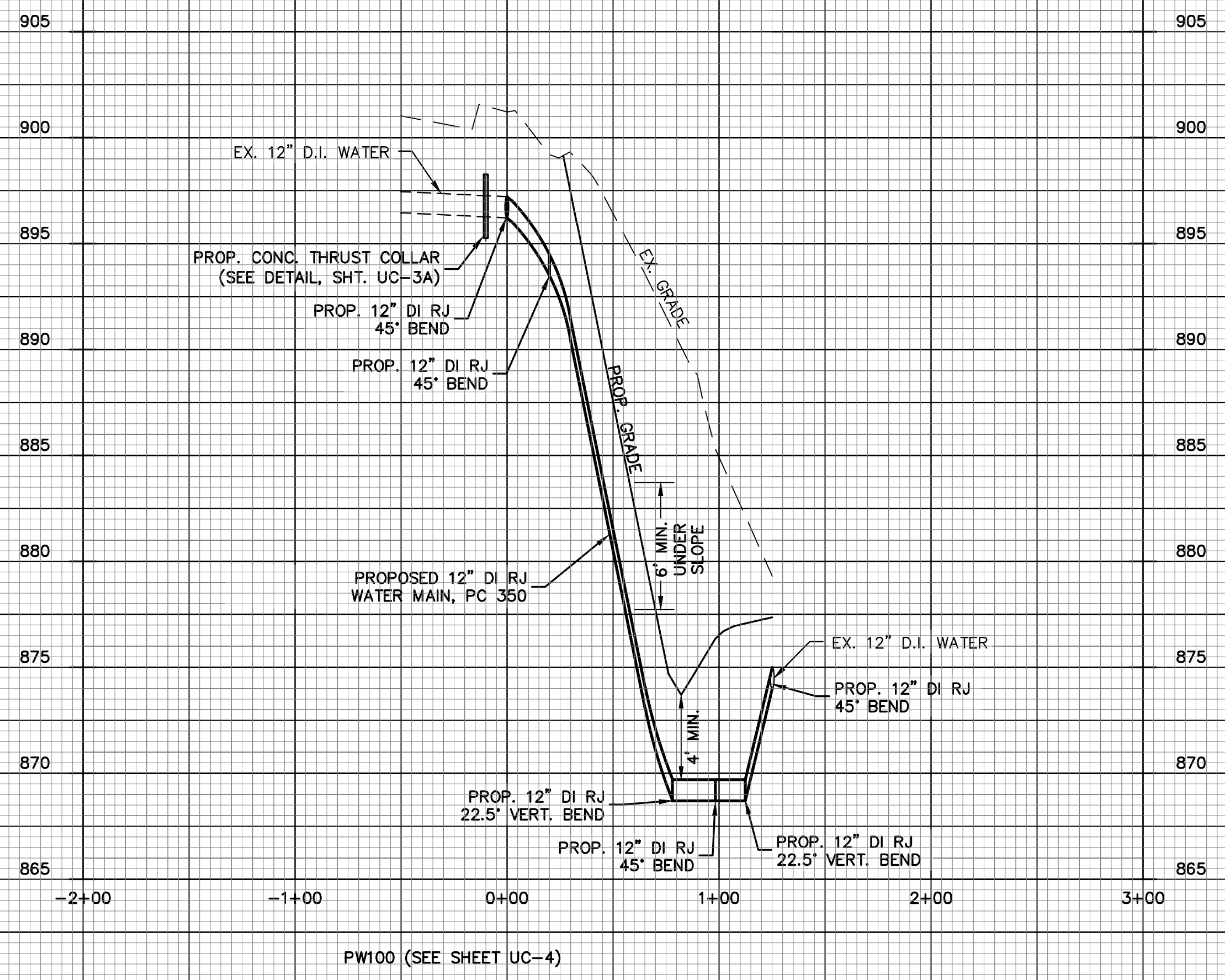
8/17/99



PROJECT REFERENCE NO.	SHEET NO.
U-2524BC	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

REVISIONS



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 Davis-Martin-Powell & Associates