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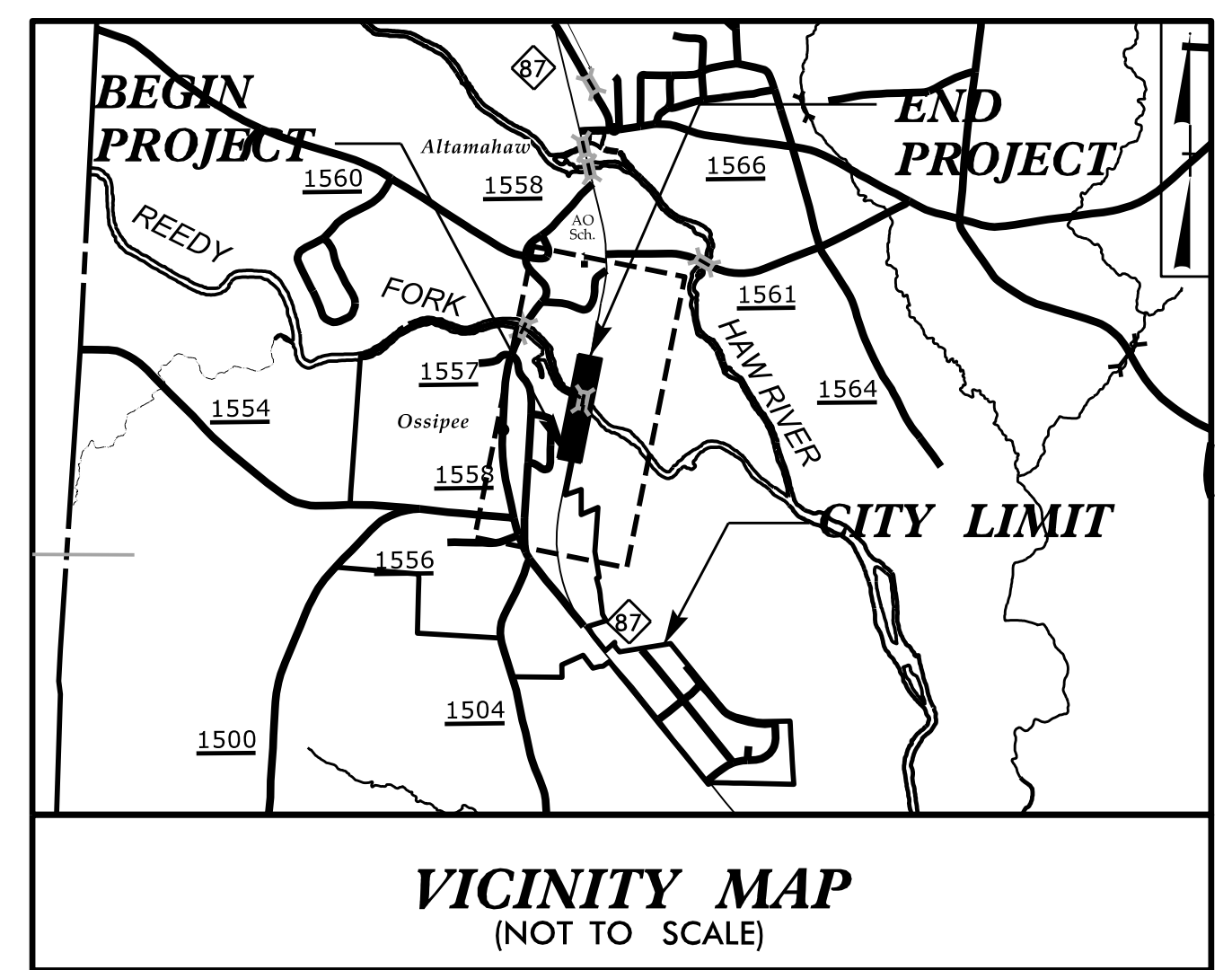
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09/08/2019

TIP PROJECT: B-5728

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

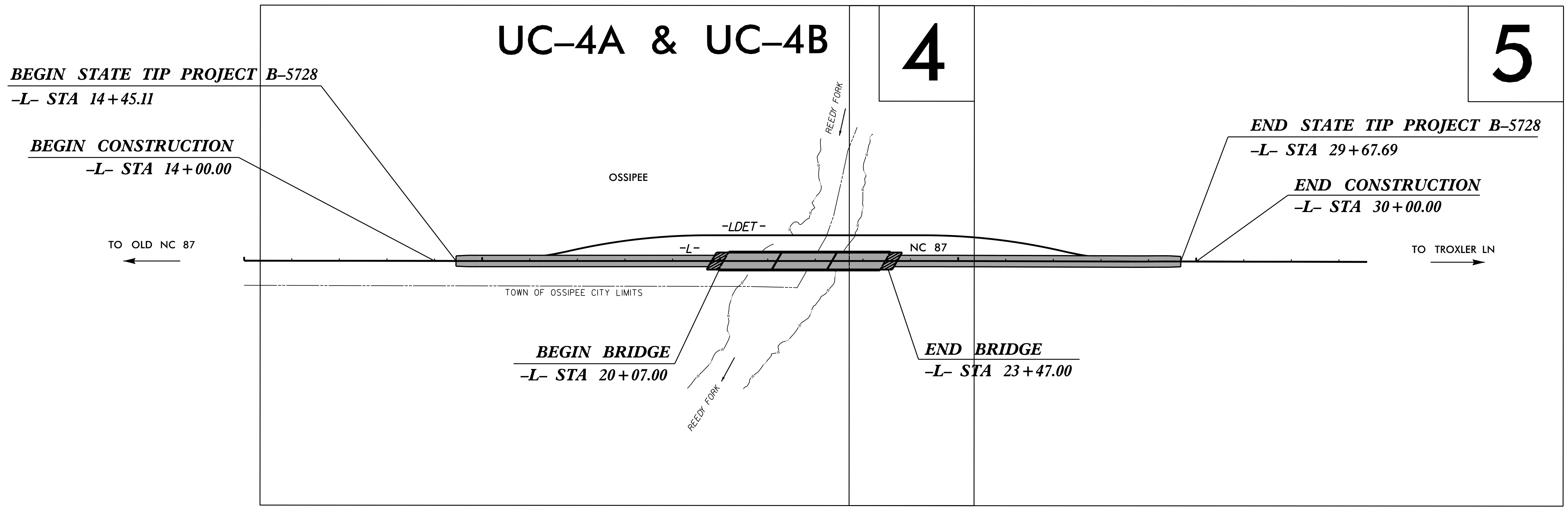
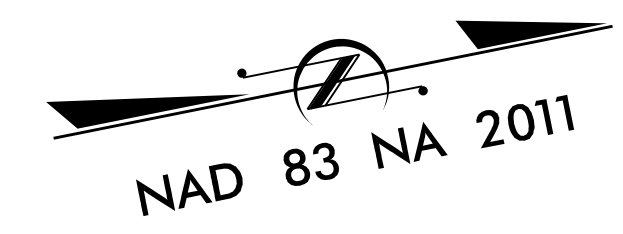
T.I.P. NO.	SHEET NO.
B-5728	UC-1



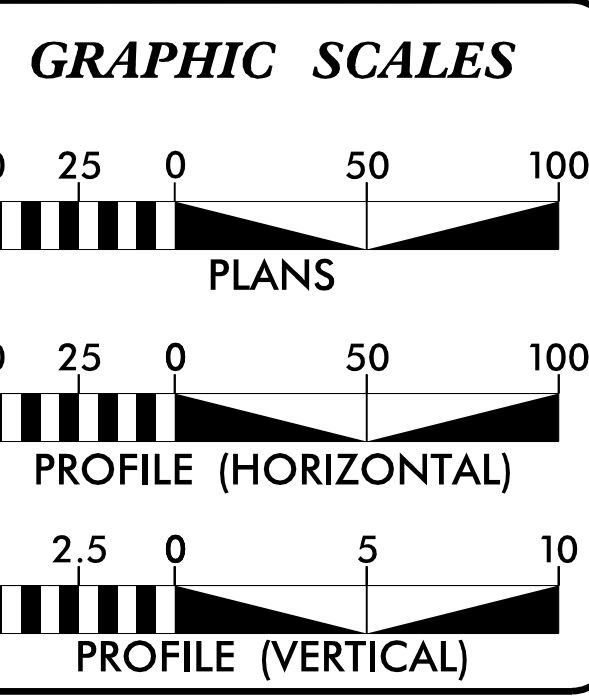
# UTILITY CONSTRUCTION PLANS ALAMANCE COUNTY

LOCATION: REPLACEMENT OF BRIDGE NO. 000112 OVER REEDY FORK  
ON NC 87

TYPE OF WORK: UTILITY CONSTRUCTION



DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



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

**WATER OWNERS ON PROJECT**

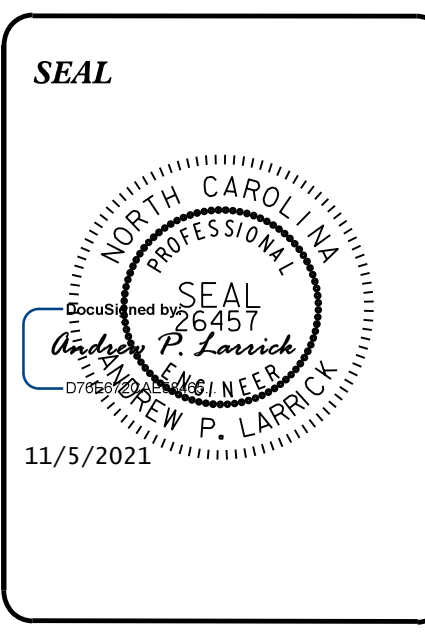
WATER - TOWN OF OSSIPEE

PREPARED IN THE OFFICE OF:

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

6415 OLD PLANK RD. HIGH POINT, NC 27285  
PHONE: (336)886-4821 FAX: (336)886-4458  
WWW.DMP-INC.COM LICENSE: F-0245

<u>Andy Larrick, P.E.</u>	CONSULTANT CONTACT #1
<u>Steve McKee, P.E.</u>	CONSULTANT CONTACT #2
<u>Ralph Lowe</u>	CONSULTANT CONTACT #3



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

<u>Amy York</u>	CENTRAL UTILITIES MANAGER
<u>Ali Kouchehi, P.E.</u>	REGIONAL UTILITIES ENGINEER
<u>Jon Loughry</u>	SENIOR UTILITIES ENGINEER
<u>Dayton Martin</u>	REGIONAL UTILITY COORDINATOR
<u>Tanga Sampson</u>	SENIOR UTILITY COORDINATOR

\$\$\$ SYSTEM TIME \$\$\$  
\$\$\$ 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	
Water Meter	
Relocate Water Meter	
Remove Water Meter	
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		Sanitary Sewer Cleanout	
End of Information			

\*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

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 WATER SYSTEM BELONGS TO THE TOWN OF OSSIPEE.
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. 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 OWNER'S 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. LINE STOPS AND INSERT VAVLES WILL BE REQUIRED WHERE INDICATED ON THE PLANS, WHERE THE UTILITY OWNER CANNOT ISOLATE THE EXISTING LINES WITHOUT MAJOR DISRUPTION OF SERVICE TO MANY USERS.
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 AND SEWER MAINS 3" THRU 12" DIAMETER, PIPE SHALL BE DUCTILE IRON, PC 350. PROVIDE RESTRAINED-JOINT DIP WHERE INDICATED ON PROFILES.
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.
4. CONTRACTOR SHALL COORDINATE WITH THE UTILITY OWNER CONCERNING THE TIMING AND SCHEDULE OF REQUIRED SHUT-DOWNS OF ANY EXISTING WATER OR SEWER MAINS.

## LIST OF STANDARD DRAWINGS

1515.02 FIRE HYDRANT

PROJECT REFERENCE NO. B-5728	SHEET NO. UC-3
DESIGNED BY: DMP	
DRAWN BY: DMP	
CHECKED BY: DMP	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	11/5/2021
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	UTILITY CONSTRUCTION PLANS ONLY

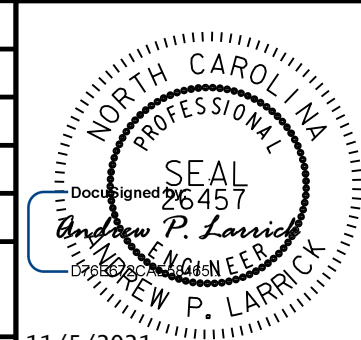
## UTILITY CONSTRUCTION

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

5/14/2021

REVISIONS

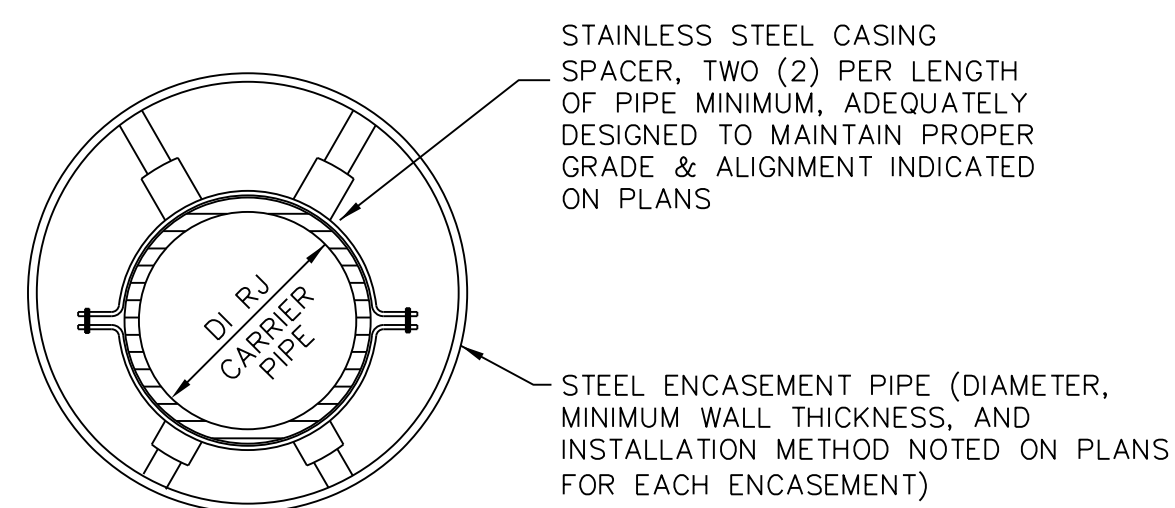
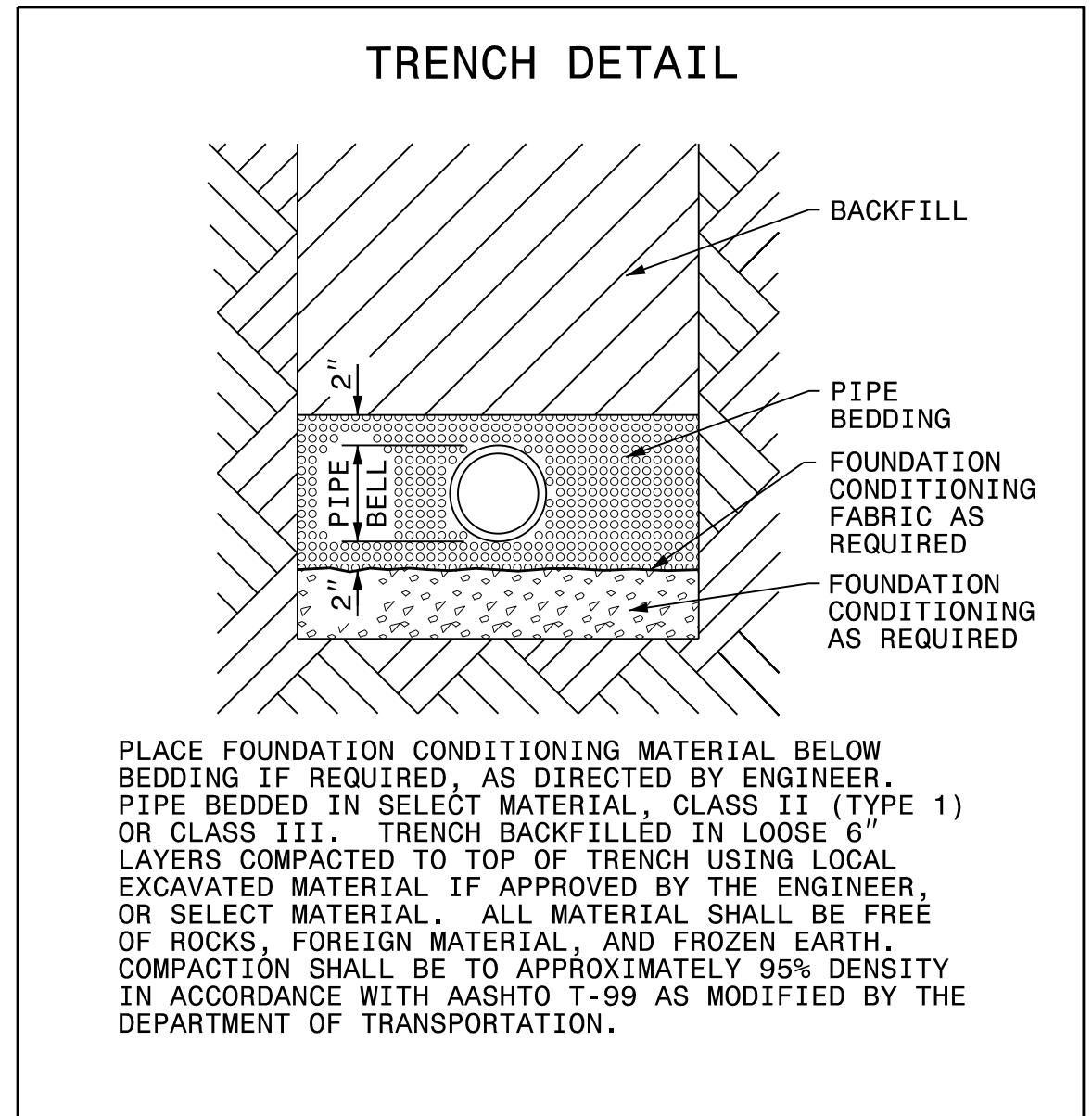
# PROJECT TYPICAL DETAILS

PROJECT REFERENCE NO.	SHEET NO.
B-5728	UC-3A
DESIGNED BY: DMP	
DRAWN BY: DMP	
CHECKED BY: DMP	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	11/5/2021
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	UTILITY CONSTRUCTION PLANS ONLY

## UTILITY CONSTRUCTION

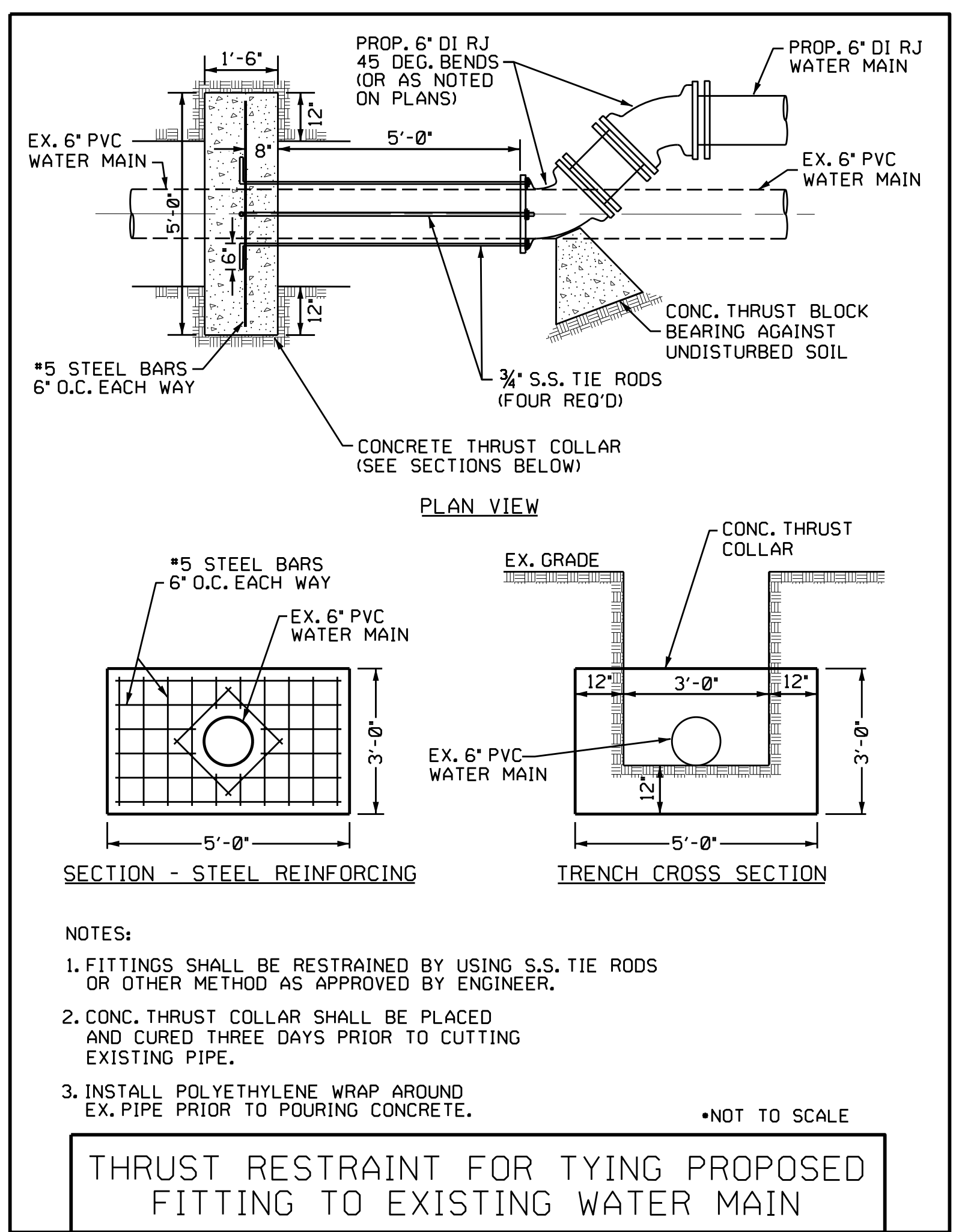
**DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED**

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		

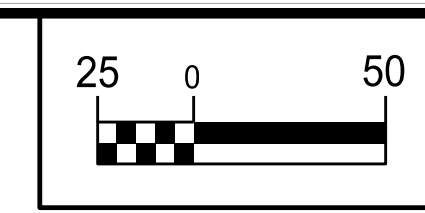


- NOTES:
1. ENCLOSE ENDS WITH BRICK MASONRY.
  2. PROVIDE 2" WEEP HOLE AT LOW END OF ENCASEMENT.
  3. SEE 2018 NCDOT STANDARD SPECIFICATIONS, DIVISION 15, SECTIONS 1540 AND 1550, FOR OTHER REQUIREMENTS.

TYPICAL ENCASEMENT PIPE SECTION  
N.T.S.



5/14/2022

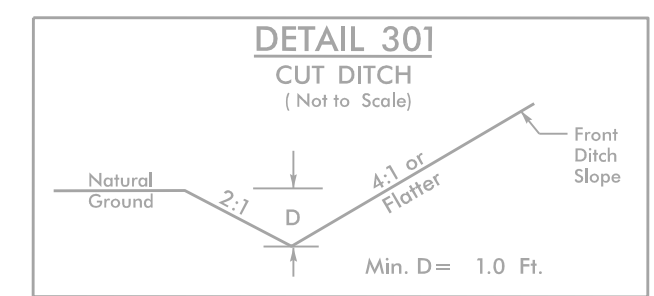


NAD 83 NA 2011

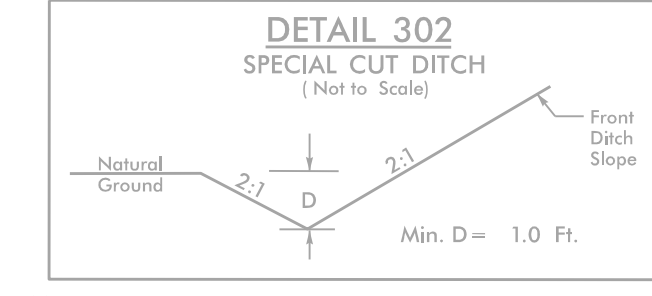
PROJECT REFERENCE NO.	SHEET NO.
B-5728	UC-4A
DESIGNED BY: DMP	
DRAWN BY: DMP	
CHECKED BY: DMP	
APPROVED BY:	
REVISED:	3/9/2022
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	UTILITY CONSTRUCTION PLANS ONLY
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**UTILITY CONSTRUCTION**

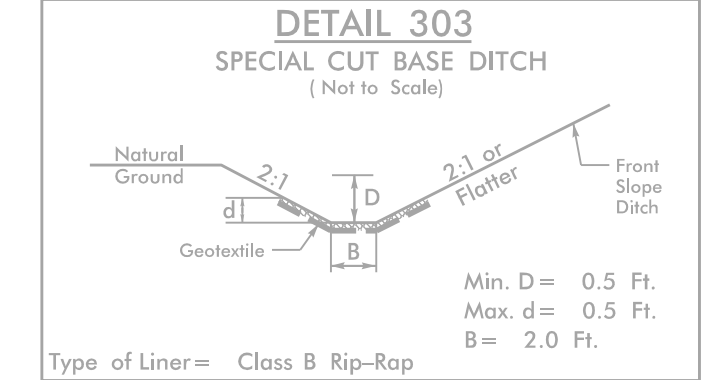
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FROM STA. -LDET- 14+75 LT TO STA. -LDET- 14+94.62 LT  
 FROM STA. -LDET- 14+94.62 LT TO STA. -LDET- 16+00 LT  
 FROM STA. -LDET- 28+40 LT TO STA. -LDET- 29+75.91 LT

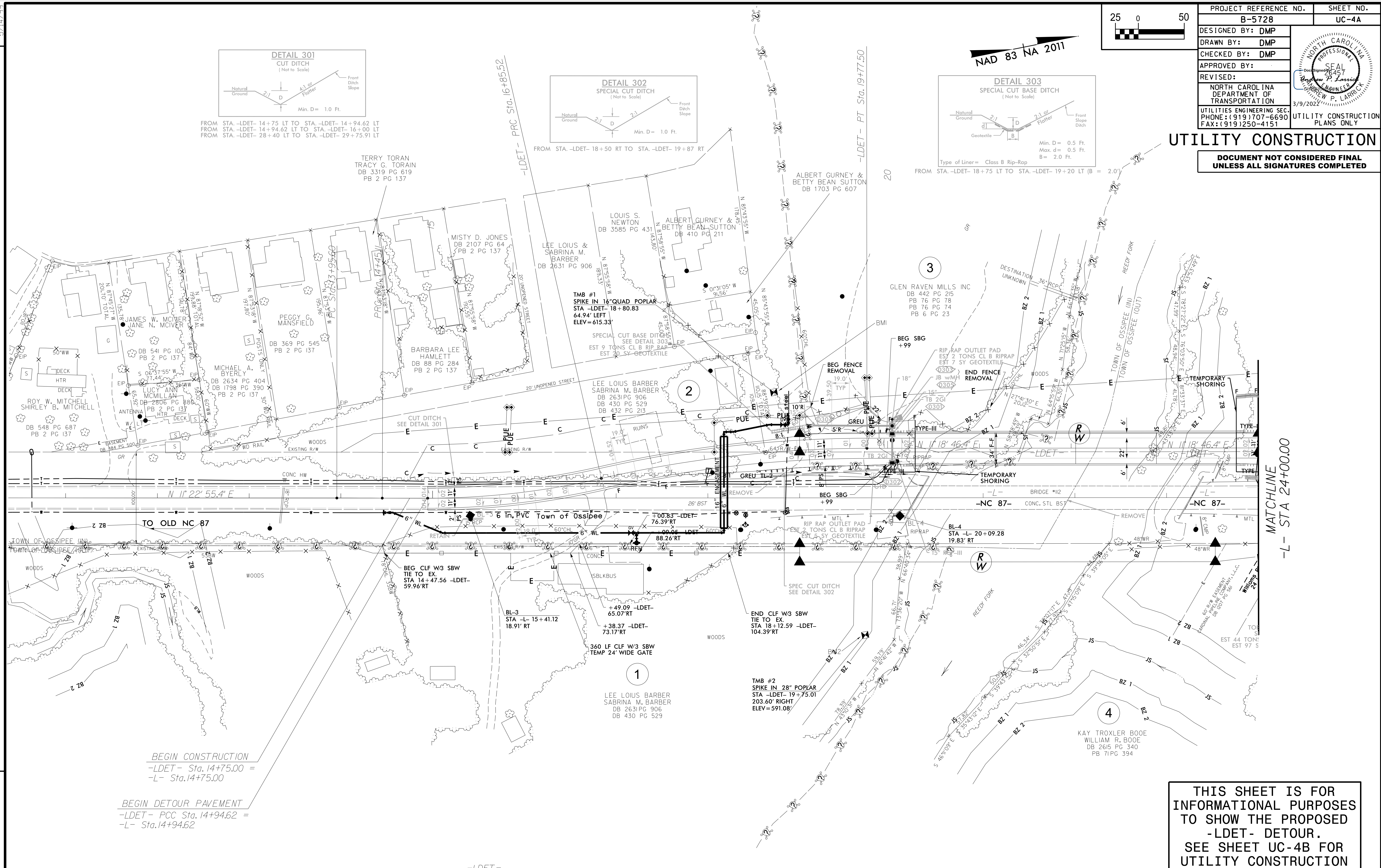


FROM STA. -LDET- 18+50 RT TO STA. -LDET- 19+87 RT



FROM STA. -LDET- 18+75 LT TO STA. -LDET- 19+20 LT (B = 2.0')

REVISIONS  
 1. 3/9/2022 - UPDATED ROADWAY REFERENCE FILES.



BEGIN CONSTRUCTION  
 -LDET- Sta. 14+75.00 =  
 -L- Sta. 14+75.00

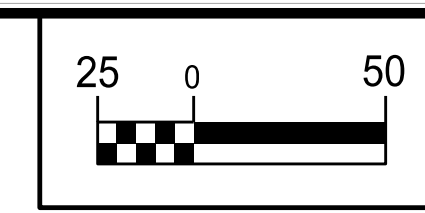
BEGIN DETOUR PAVEMENT  
 -LDET- PCC Sta. 14+94.62 =  
 -L- Sta. 14+94.62

-LDET-

PI Sta 15+90.47	PI Sta 18+32.13	PI Sta 25+79.59	PI Sta 28+26.12
$\Delta = 12' 52'' 06.7''$ (LT)	$\Delta = 12' 52'' 06.6''$ (RT)	$\Delta = 12' 59'' 48.5''$ (RT)	$\Delta = 13' 22'' 56.0''$ (LT)
D = 6' 44' 26.4"	D = 4' 24' 26.5"	D = 4' 24' 26.5"	D = 6' 44' 26.4"
L = 190.91'	L = 291.98'	L = 294.89'	L = 198.53'
T = 95.86'	T = 146.61'	T = 148.08'	T = 99.72'
R = 850.00'	R = 1,300.00'	R = 1,300.00'	R = 850.00'
DS = 40 mph	DS = 40 mph	DS = 40 mph	
	e = 0.04	e = 0.04	
	Ro = 76.00'	Ro = 76.00'	

**THIS SHEET IS FOR INFORMATIONAL PURPOSES TO SHOW THE PROPOSED -LDET- DETOUR. SEE SHEET UC-4B FOR UTILITY CONSTRUCTION PAY ITEM NOTES.**

5/14/2022



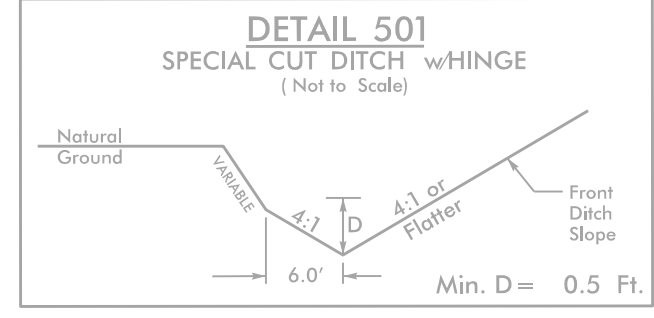
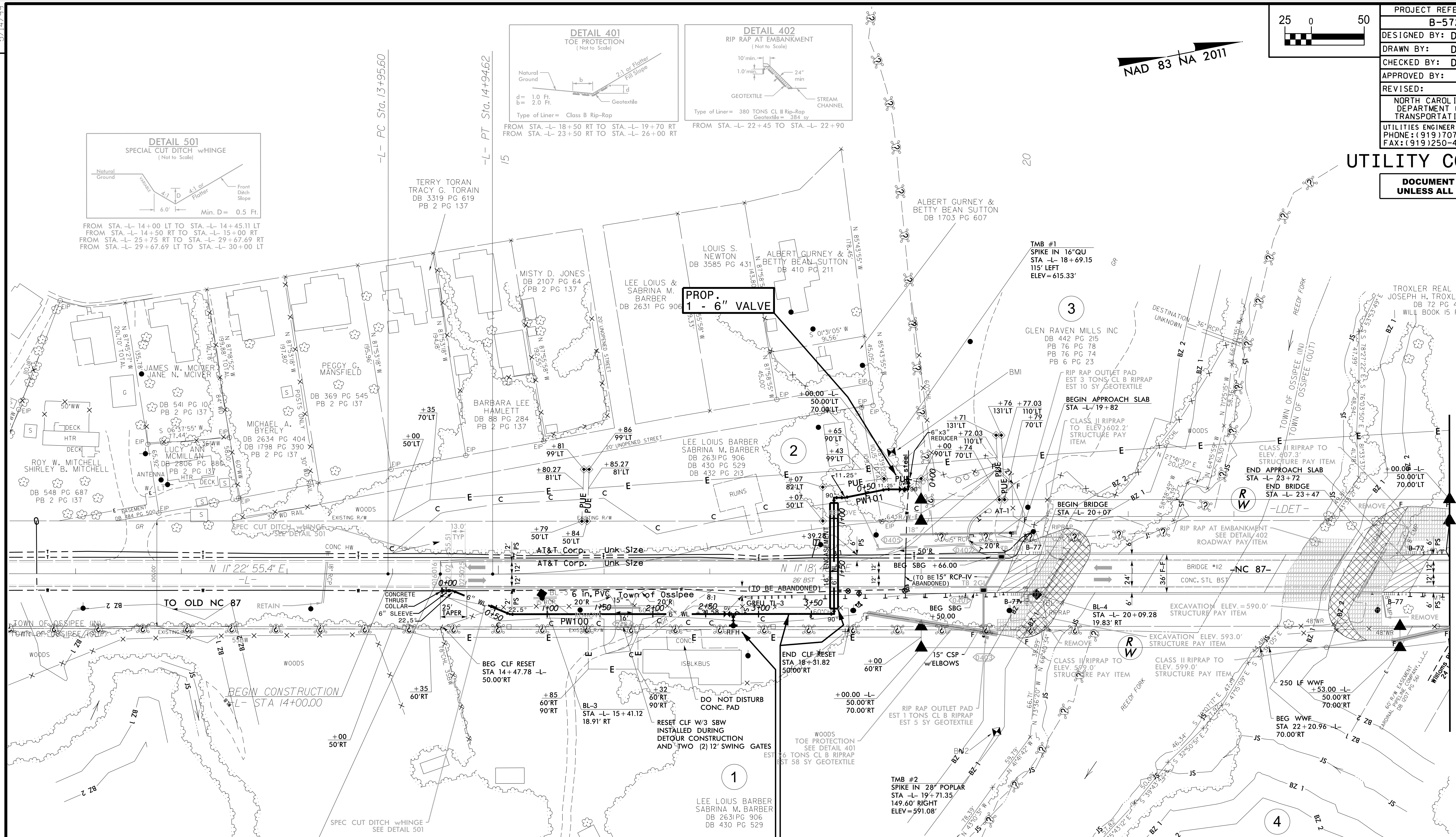
NAD 83 NA 2011

PROJECT REFERENCE NO.	SHEET NO.
B-5728	UC-4B
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CHECKED BY: DMP	
APPROVED BY:	
REVISED:	3/9/2022
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	UTILITY CONSTRUCTION PLANS ONLY

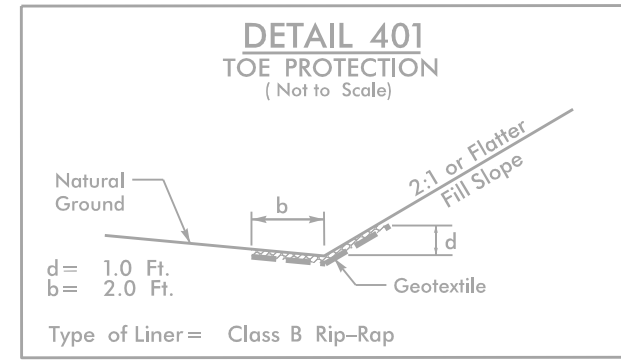
**UTILITY CONSTRUCTION**

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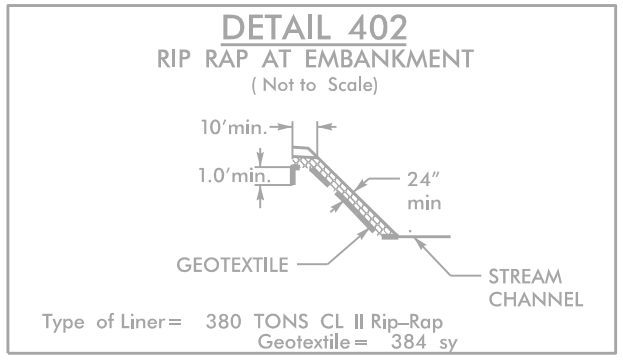
REVISIONS  
 1. 3/9/2022 - UPDATED ROADWAY REFERENCE FILES AND MOVED UC PAY ITEM NOTES.



FROM STA. -L 14+00 LT TO STA. -L 14+45.11 LT  
 FROM STA. -L 14+50 RT TO STA. -L 15+00 RT  
 FROM STA. -L 25+75 RT TO STA. -L 29+67.69 RT  
 FROM STA. -L 29+67.69 LT TO STA. -L 30+00 LT



FROM STA. -L 18+50 RT TO STA. -L 19+70 RT  
 FROM STA. -L 23+50 RT TO STA. -L 26+00 RT



FROM STA. -L 22+45 TO STA. -L 22+90

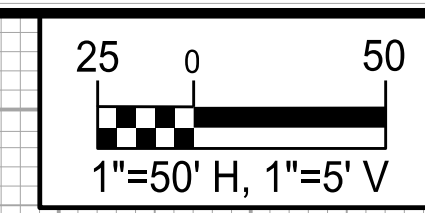
PROP. - 1 - 6" VALVE

PROP. - 2 - 6" VALVES,  
 1 - RELOCATE FIRE HYDRANT,  
 11 LF OF FIRE HYDRANT LEG

PROP. - 560 L.F. OF 6" WATER LINE,  
 100 L.F. OF 16" ENCASEMENT  
 (STEEL, MIN. W.T.=0.250"),  
 100 L.F. - BORE & JACK OF 16"  
 (SEE SHEET UC-5 FOR PROFILES)

THE ESTIMATED QUANTITY OF D.I. WATER PIPE FITTINGS ON THIS PLAN SHEET IS 800 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

5/14/2021



PROJECT REFERENCE NO.	SHEET NO.
B-5728	UC-5
DESIGNED BY: DMP	
DRAWN BY: DMP	
CHECKED BY: DMP	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	11/5/2021
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	UTILITY CONSTRUCTION PLANS ONLY

### UTILITY CONSTRUCTION

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