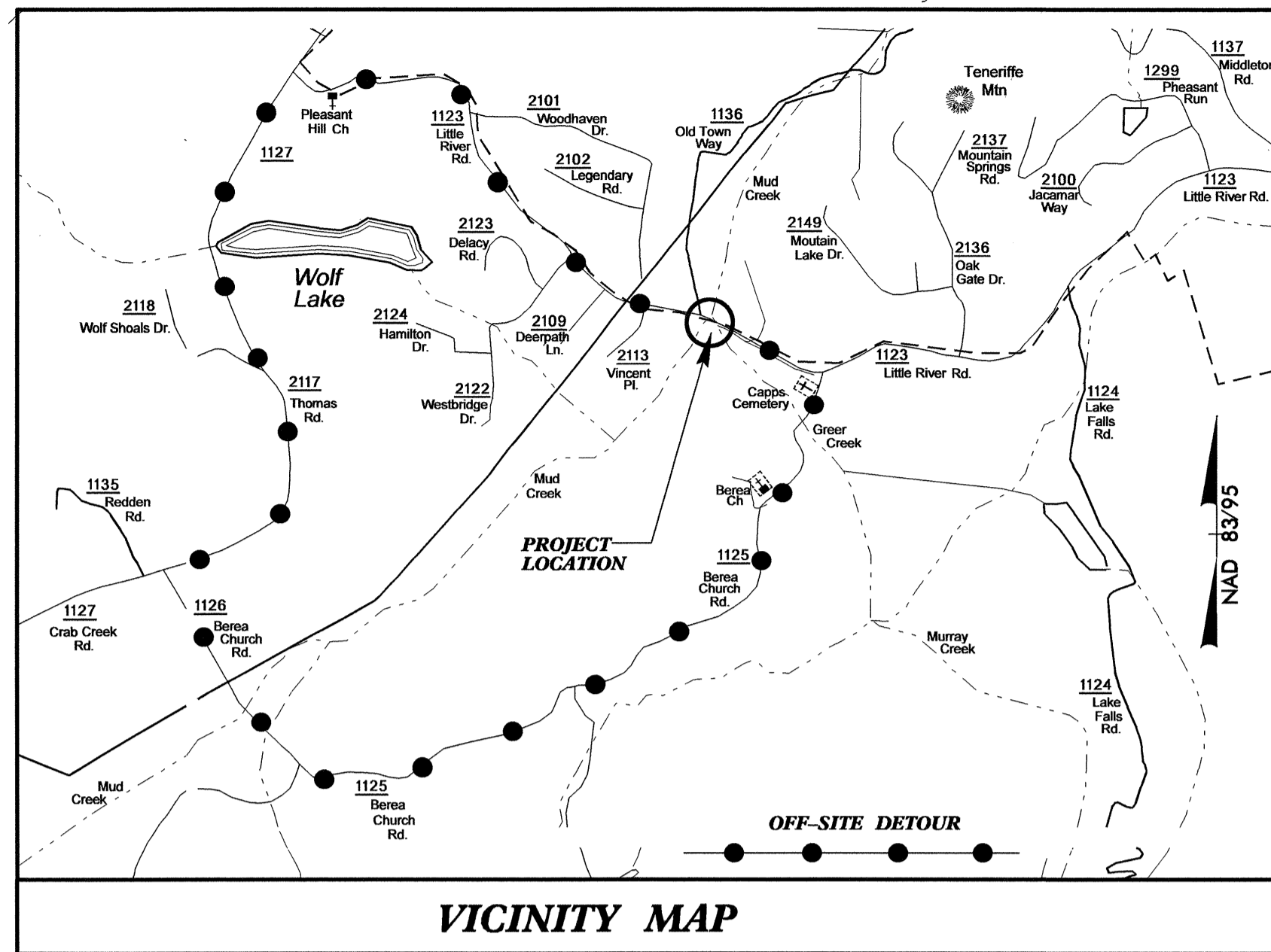


TIP PROJECT: B-4147

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Plan Sheet Symbols



VICINITY MAP

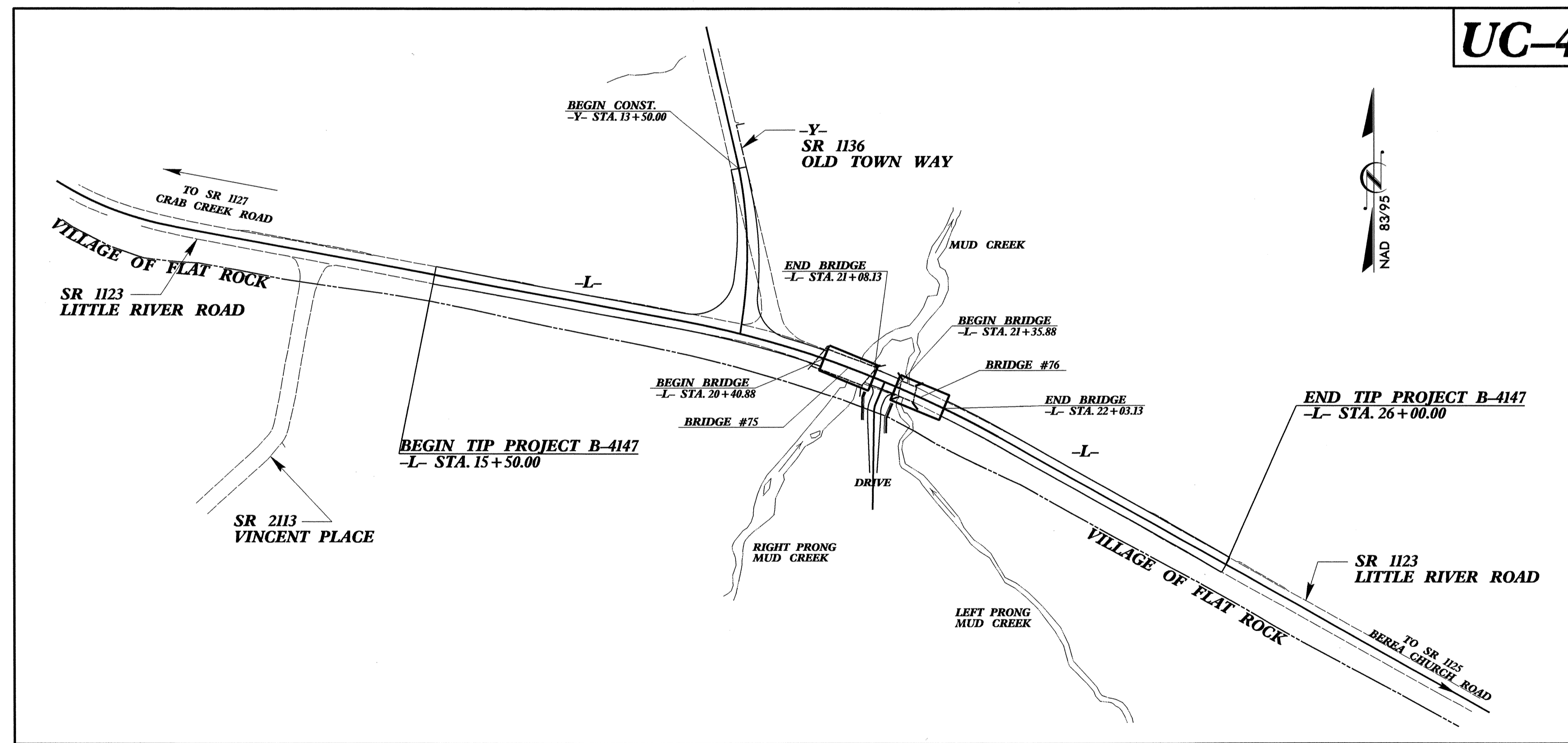
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

**UTILITY CONSTRUCTION PLANS
HENDERSON COUNTY**

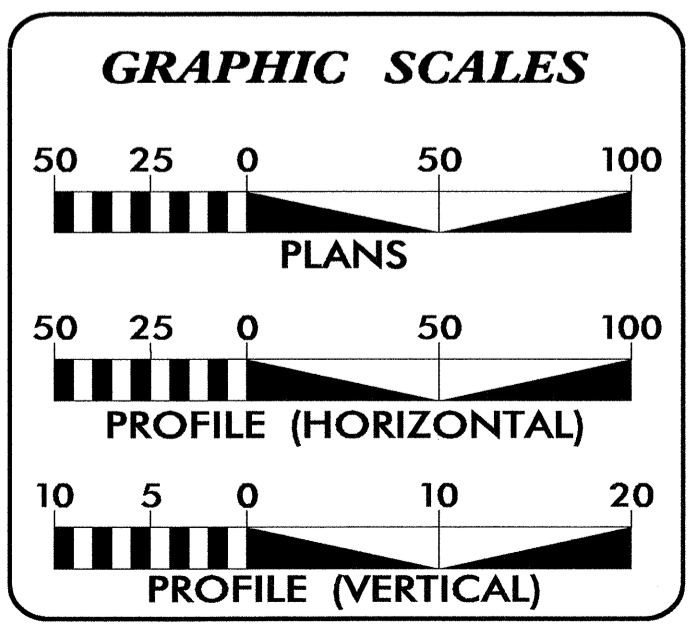
LOCATION: BRIDGES NO. 75 AND 76 OVER RIGHT PRONG MUD CREEK AND LEFT PRONG MUD CREEK ON SR 1123 (LITTLE RIVER ROAD)

TYPE OF WORK: 8" WATER MAIN RELOCATION

T.I.P. NO.	SHEET NO.
B-4147	UC-1



UC-4

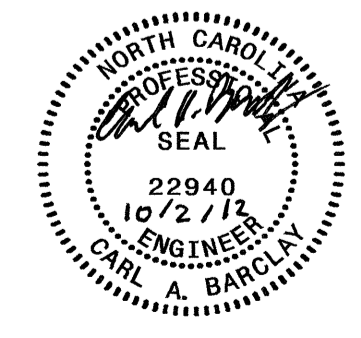


INDEX OF SHEETS

SHEET NO.	DESCRIPTION
UC-1	TITLE SHEET
UC-2	UTILTIY SYMBOLGY
UC-3	NOTES
UC-3A	DETAILS
UC-4	UTILITY CONSTRUCTION SHEET
UC-5	PROFILE SHEET

WATER OWNER ON PROJECT

(1) WATER - CITY OF HENDERSONVILLE



PREPARED IN THE OFFICE OF:
DIVISION OF HIGHWAYS
UTILITIES UNIT
UTILITIES ENGINEERING

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

Roger Worthington, P.E. UTILITIES SECTION ENGINEER
Carl A. Barclay, P.E. UTILITIES SQUAD LEADER PROJECT ENGINEER
James E. Swinson UTILITIES PROJECT DESIGNER

02-OCT-2012 10:48
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\$\$\$\$\$SERVNAME\$\$\$\$\$

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

UTILITIES PLAN SHEET SYMBOLS

PROPOSED WATER SYMBOLS

Water Line (Sized as Shown)	— 12" WL —
11¼ Degree Bend	+†
22½ Degree Bend	+∗
45 Degree Bend	+×
90 Degree Bend	+†
Plug	⊣
Tee	⊥
Cross	⊕
Reducer	▶
Gate Valve	GV
Butterfly Valve	BV
Tapping Valve	TGV
Line Stop	LS
Line Stop with Bypass	LS/BP
Blow Off	BO
Fire Hydrant	PH
Relocate Fire Hydrant	REH
Remove Fire Hydrant	REM FH
Water Meter	PWM
Relocate Water Meter	REH
Remove Water Meter	REM WM
Water Pump Station	PS(W)
RPZ Backflow Preventer	PRPZ
DCV Backflow Preventer	PBFP
Relocate RPZ Backflow Preventer	RRPZ
Relocate DCV Backflow Preventer	RBFPP

PROPOSED SEWER SYMBOLS

Gravity Sewer Line (Sized as Shown)	— 12" SS —
Force Main Sewer Line (Sized as Shown)	— 12" FSS —
Manhole (Sized per Note)	•
Sewer Pump Station	PS(SS)

PROPOSED MISCELLANEOUS UTILITIES SYMBOLS

Power Pole	⊙
Telephone Pole	⊙
Joint Use Pole	⊙
Telephone Pedestal	TEL PED
Utility Line by Others (Type as Shown)	PROJ O/H FOR LINES
Trenchless Installation	12" TL INSTALL
Encasement by Open Cut	24" ENCAS BY OC
Encasement	24" ENCASUREMENT

Thrust Block	I
Air Release Valve	AR
Utility Vault	UV
Concrete Pier	CP
Steel Pier	SP
Plan Note	NOTE
Pay Item Note	PAY ITEM

EXISTING UTILITIES SYMBOLS

Power Pole	●
Telephone Pole	●
Joint Use Pole	●
Utility Pole	●
Utility Pole with Base	□
H-Frame Pole	●—●
Power Transmission Line Tower	⊠
Water Manhole	⊙
Power Manhole	⊙
Telephone Manhole	⊙
Sanitary Sewer Manhole	⊙
Hand Hole for Cable	⊠
Power Transformer	⊠
Telephone Pedestal	⊠
CATV Pedestal	⊠
Gas Valve	◇
Gas Meter	◇
Located Miscellaneous Utility Object	⊙
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.
*Underground Power Line	—P—
*Underground Telephone Cable	—T—
*Underground Telephone Conduit	—TC—
*Underground Fiber Optics Telephone Cable	—T FO—
*Underground TV Cable	—TV—
*Underground Fiber Optics TV Cable	—TV FO—
*Underground Gas Pipeline	—G—
Aboveground Gas Pipeline	—A/G Gas—
*Underground Water Line	—W—
Aboveground Water Line	—A/G Water—
*Underground Gravity Sanitary Sewer Line	—SS—
Aboveground Gravity Sanitary Sewer Line	—A/G Sanitary Sewer—
*Underground SS Forced Main Line	—FSS—
Underground Unknown Utility Line	—?/UL—
SUE Test Hole	⊙
Water Meter	⊙
Water Valve	⊙
Fire Hydrant	⊙
Sanitary Sewer Cleanout	⊙

*For Existing Utilities
 Utility Line Drawn from Record
 (Type as Shown)
 Designated Utility Line
 (Type as Shown)

5/14/99
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 REV: 2/11/2012

UTILITY CONSTRUCTION

PROJECT REFERENCE NO.	SHEET NO.
B-4147	UC-3
DESIGNED BY: JES	
DRAWN BY: JES	
CHECKED BY: CAB	
APPROVED BY: CAB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919)707-6690 FAX: (919)250-4151	

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 UTILITIES BELONG TO THE CITY OF HENDERSONVILLE.
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 OPPROTUNITY 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. PROPOSED WATER LINE SHALL BE D.I.R.J. (DUCTILE IRON RESTRAINED JOINT) PIPE.
2. 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 PATH DESIGNED AND SEALED BY A LICENSED NORTH CAROLINA PROFESSIONAL ENGINEER. NO DAMAGE IS ALLOWED TO RIVER, WETLANDS, OR BUFFER ZONES.
3. IF HDPE PIPE IS INSTALLED BY DIRECTIONAL DRILL. IT SHALL BE FILLED WITH WATER AND NOT BE CONNECTED TO ANY OTHER PIPE OR FITTINGS FOR ONE WEEK FROM THE TIME OF INSTALLATION.

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

UTILITY CONSTRUCTION PLANS ONLY

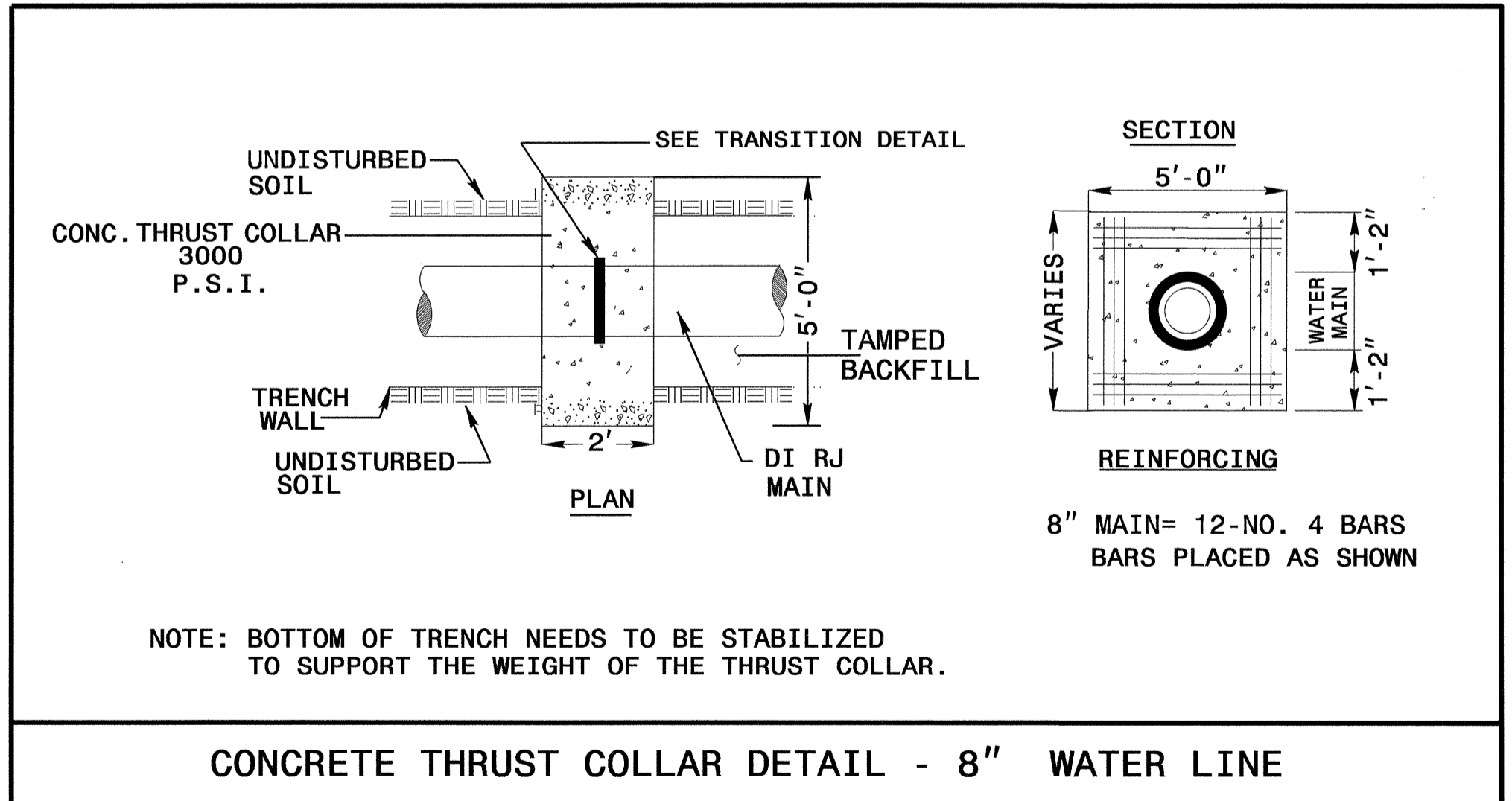
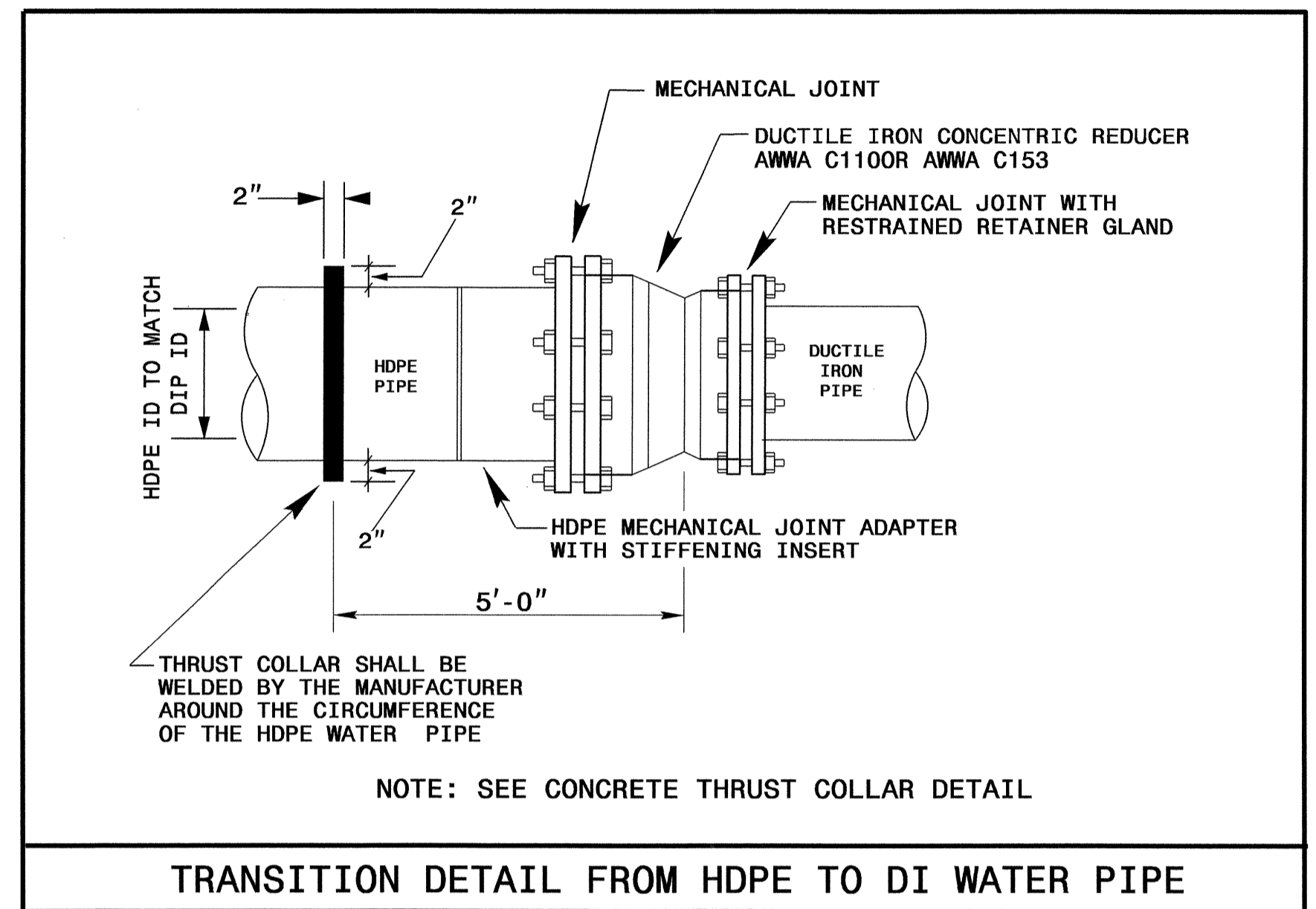
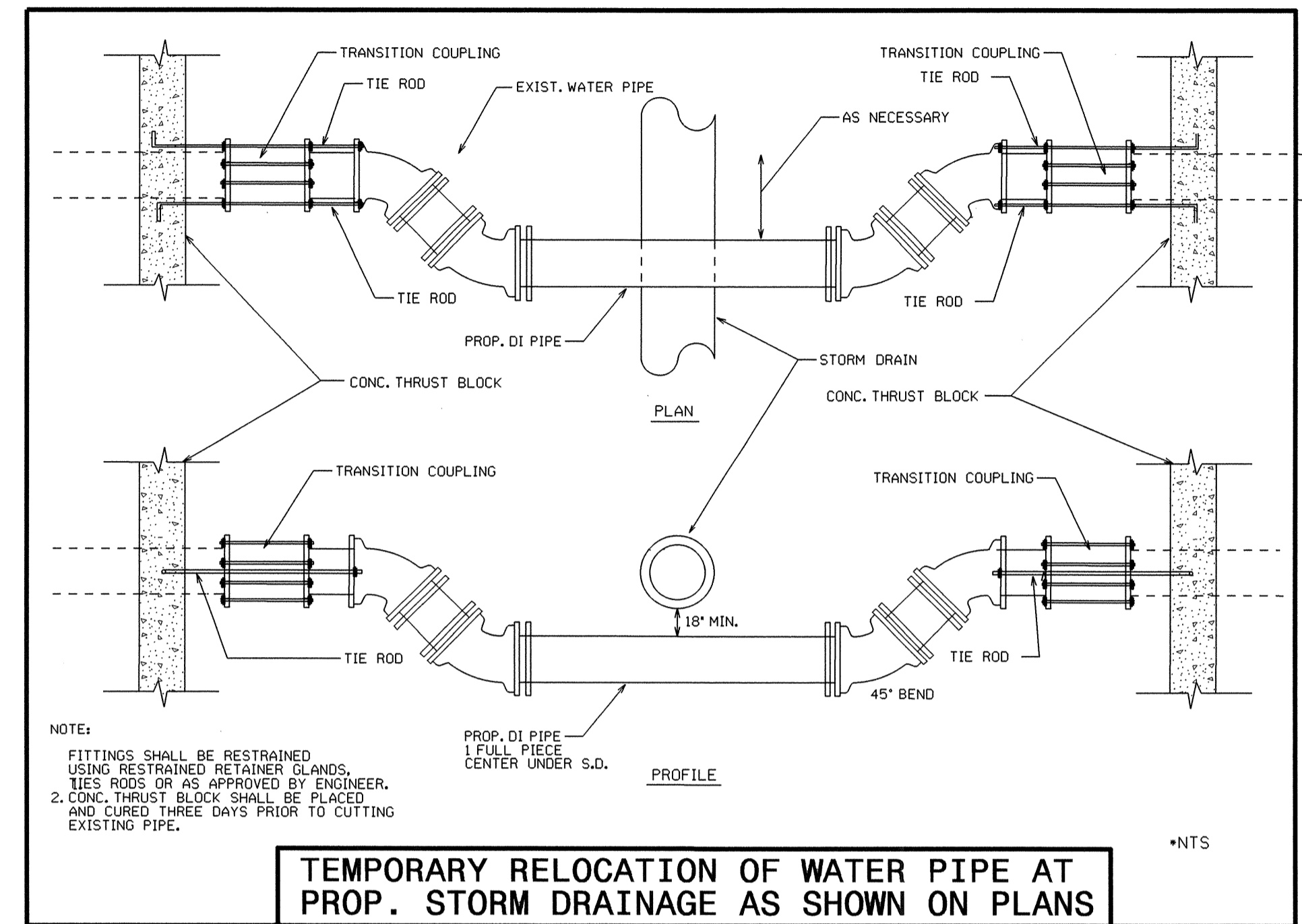
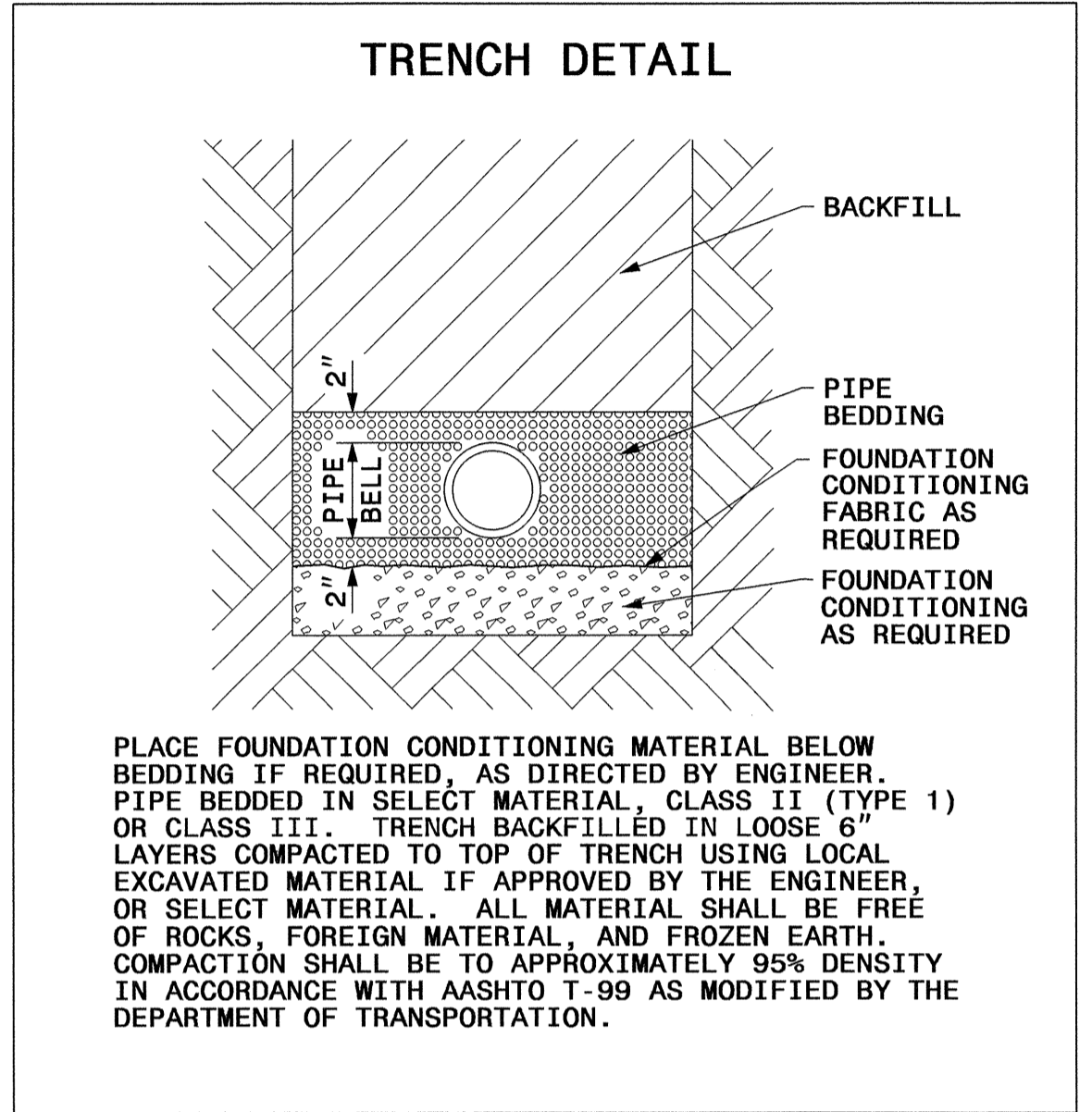
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PROJECT TYPICAL DETAILS

PROJECT REFERENCE NO.	SHEET NO.
B-4147	UC-3A
DESIGNED BY: JES	
DRAWN BY: JES	
CHECKED BY: CAB	
APPROVED BY: CAB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

UTILITY CONSTRUCTION

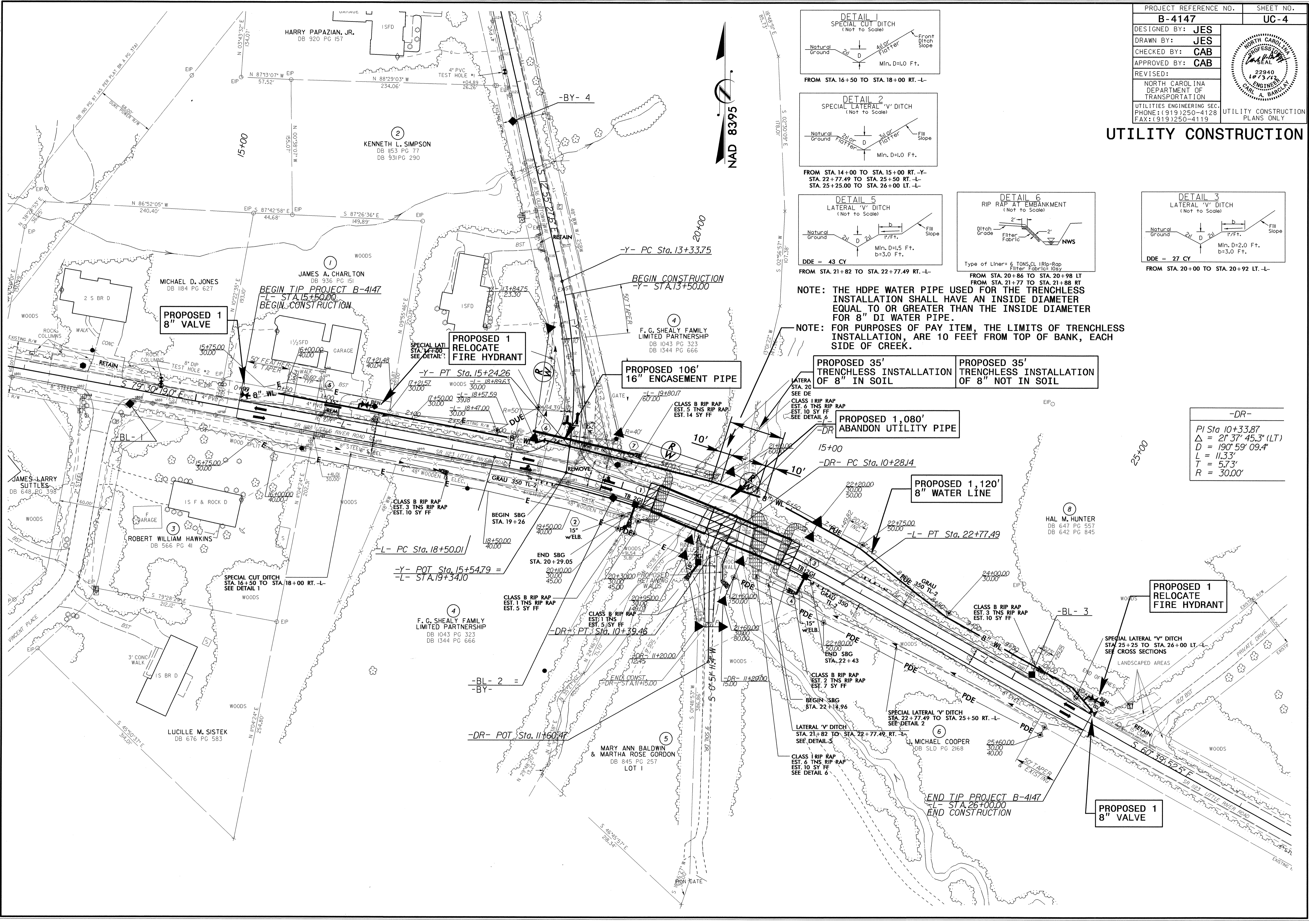


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PROJECT REFERENCE NO. B-4147	SHEET NO. UC-4
DESIGNED BY: JES	
DRAWN BY: JES	
CHECKED BY: CAB	
APPROVED BY: CAB	
REVISED:	UTILITY CONSTRUCTION PLANS ONLY
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 250-4128 FAX: (919) 250-4119	

UTILITY CONSTRUCTION

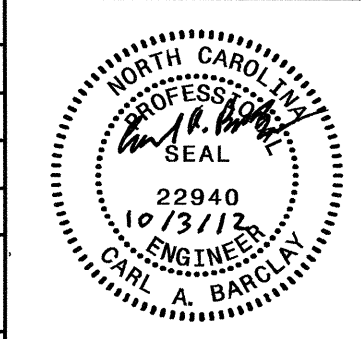


NOTE: THE HDPE WATER PIPE USED FOR THE TRENCHLESS INSTALLATION SHALL HAVE AN INSIDE DIAMETER EQUAL TO OR GREATER THAN THE INSIDE DIAMETER FOR 8" DI WATER PIPE.

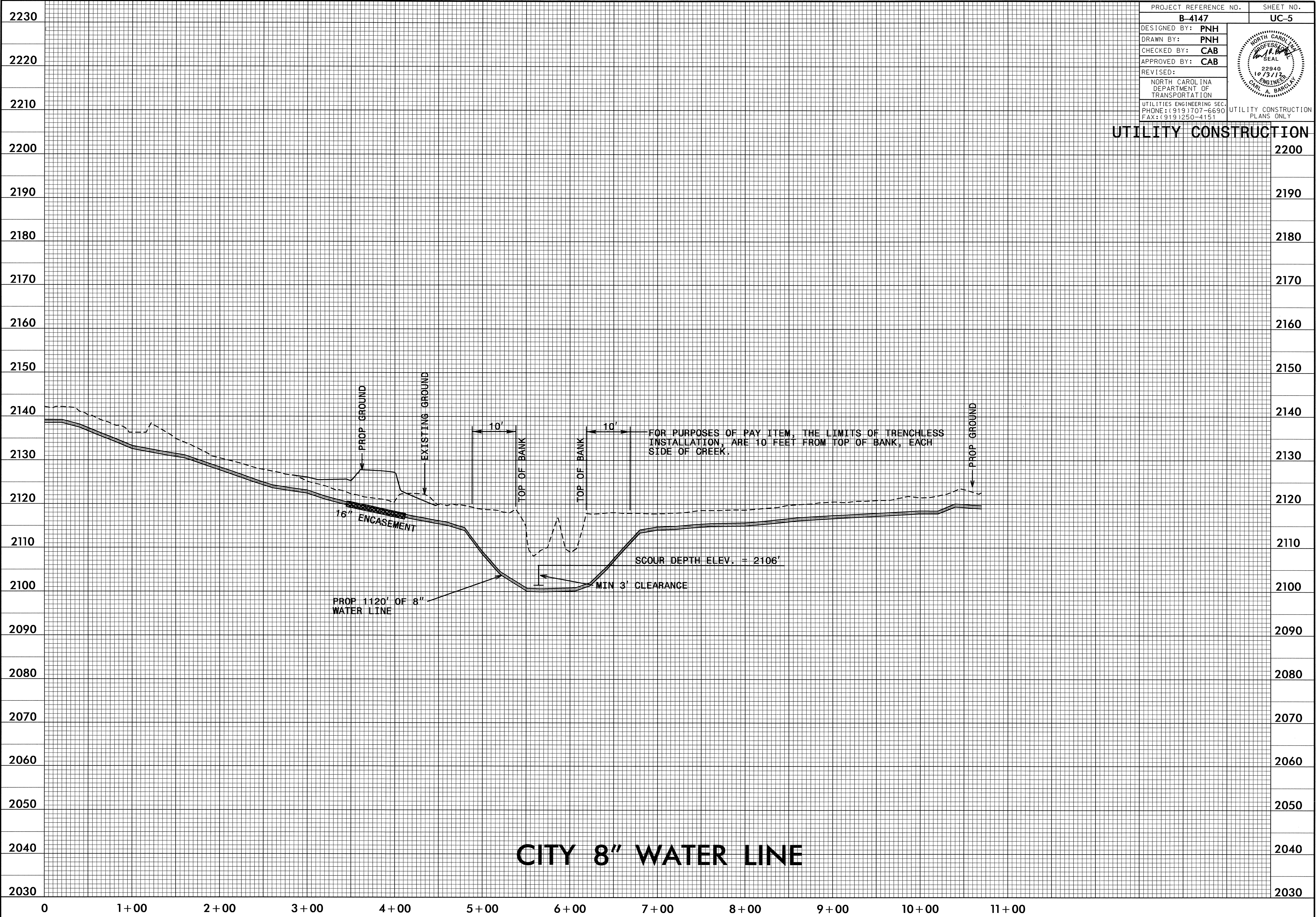
NOTE: FOR PURPOSES OF PAY ITEM, THE LIMITS OF TRENCHLESS INSTALLATION, ARE 10 FEET FROM TOP OF BANK, EACH SIDE OF CREEK.

-DR-
PI Sta 10+33.87
Δ = 2° 37' 45.3" (LT)
D = 190° 59' 09.4"
L = 11.33'
T = 5.73'
R = 30.00'

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PROJECT REFERENCE NO. B-4147	SHEET NO. UC-5
DESIGNED BY: PNH	
DRAWN BY: PNH	
CHECKED BY: CAB	
APPROVED BY: CAB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

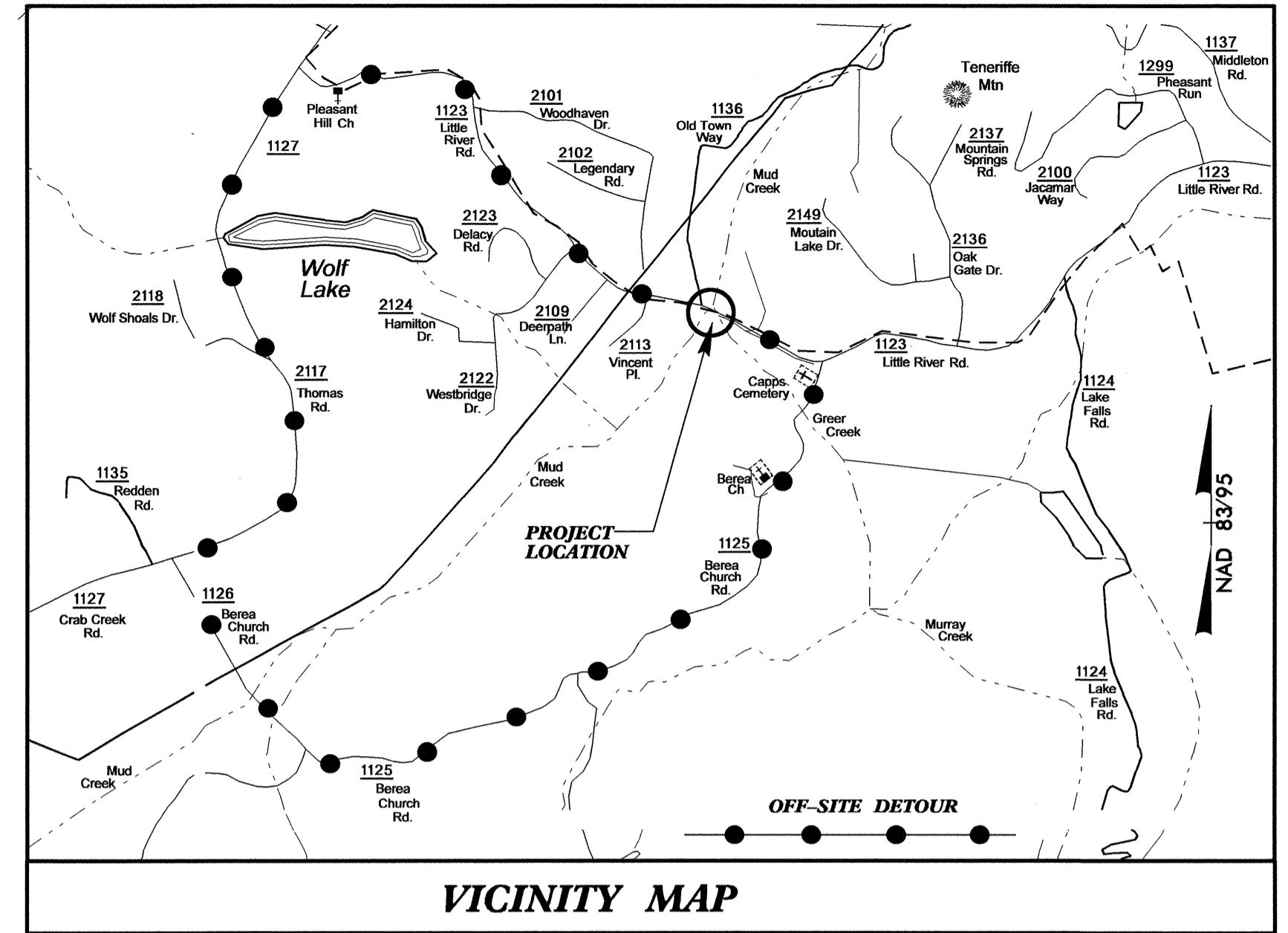
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TIP PROJECT: B-4147

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Plan Sheet Symbols



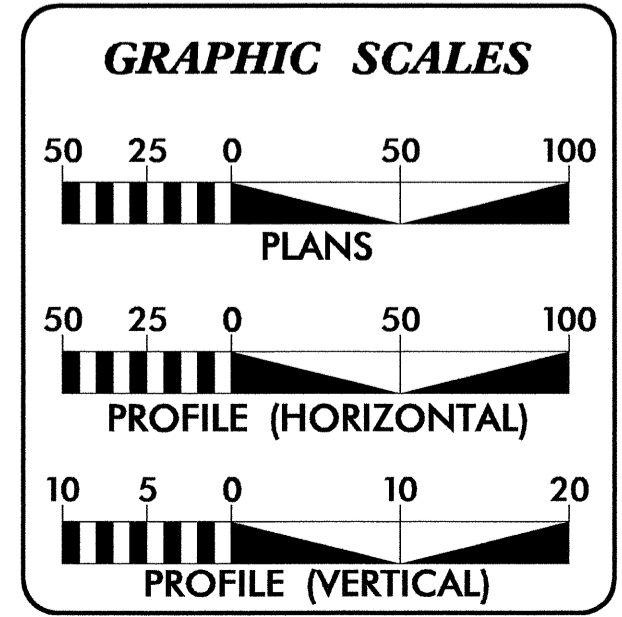
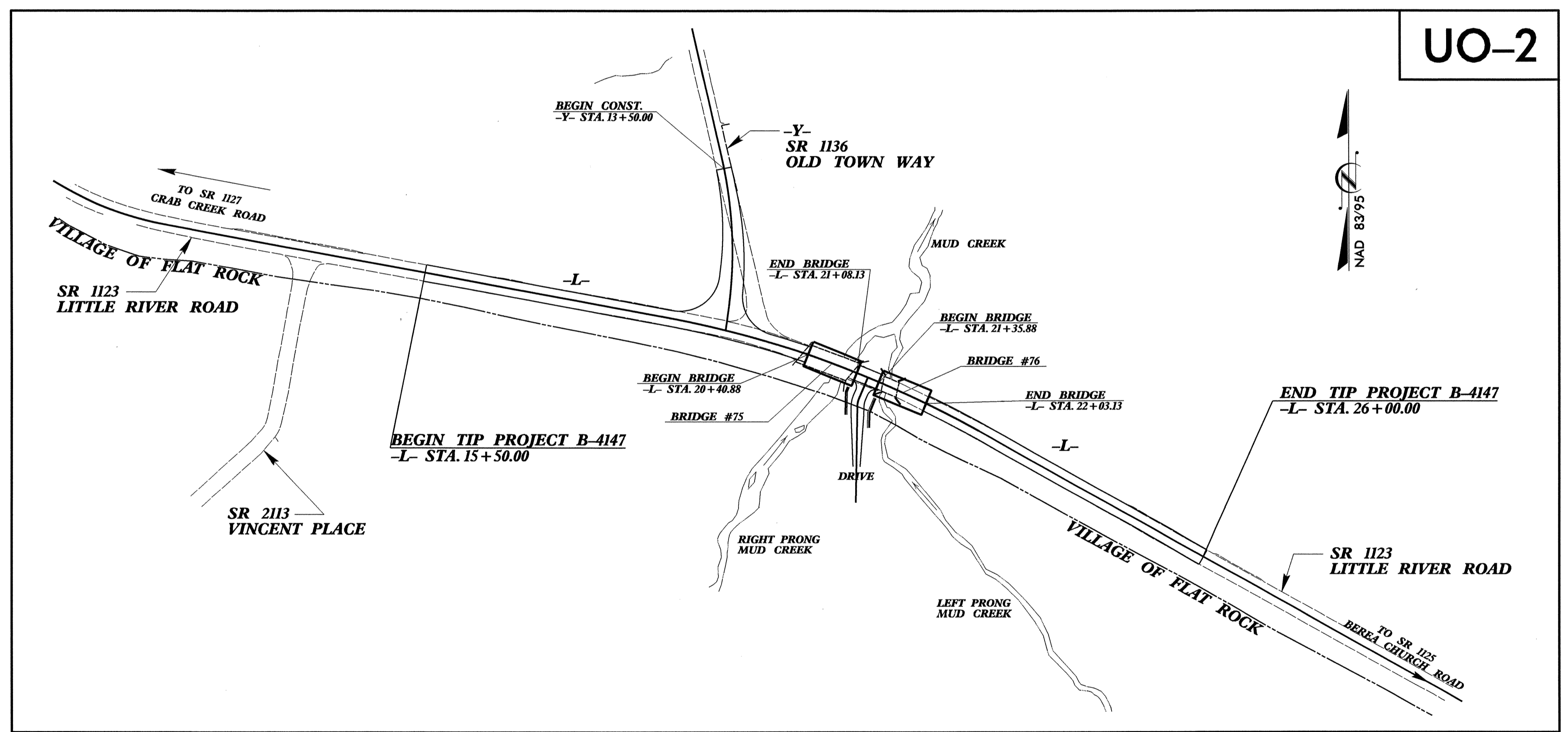
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

**UTILITIES BY OTHERS PLANS
HENDERSON COUNTY**

LOCATION: BRIDGES NO. 75 AND 76 OVER RIGHT PRONG MUD CREEK AND LEFT PRONG MUD CREEK ON SR 1123 (LITTLE RIVER ROAD)

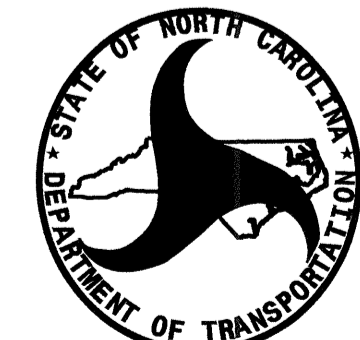
TYPE OF WORK: POWER, GAS, TELEPHONE, CATV AND WATER

T.I.P. NO.	SHEET NO.
B-4147	UO-1



INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
UO-1	TITLE SHEET
UO-2	UTILITIES BY OTHERS PLAN SHEETS

UTILITY OWNERS ON PROJECT
(1) TELEPHONE - AT&T
(2) DUKE ENERGY - POWER DISTRIBUTION
(3) MEDIACOM /MORRIS BROADBAND - CATV
(4) PNSC - GAS
(5) UTILITIES, INC. - WATER



PREPARED IN THE OFFICE OF:
**DIVISION OF HIGHWAYS
UTILITIES UNIT
UTILITIES ENGINEERING**

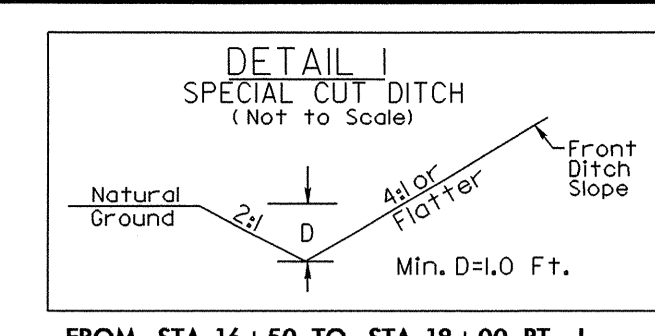
1555 MAIL SERVICES CENTER
RALEIGH NC 27699-1555
PHONE (919) 707-6690
FAX (919) 250-4151

Roger Worthington, P.E.	UTILITIES SECTION ENGINEER
Carl A. Barclay, P.E.	UTILITIES SQUAD LEADER PROJECT ENGINEER
James E. Swinson	UTILITIES PROJECT DESIGNER

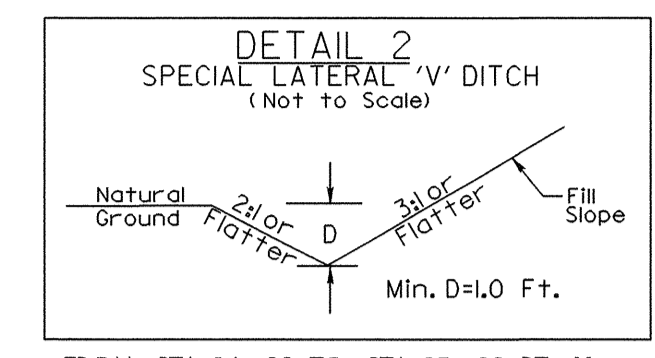
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UTILITIES BY OTHERS

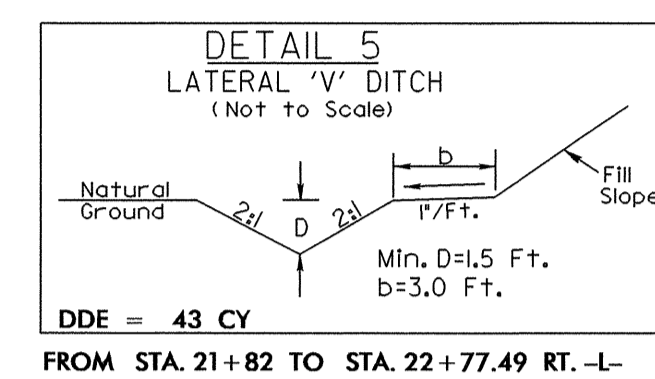
NOTE:
 ALL PROPOSED UTILITY WORK
 SHOWN ON THIS SHEET WILL
 BE DONE BY OTHERS



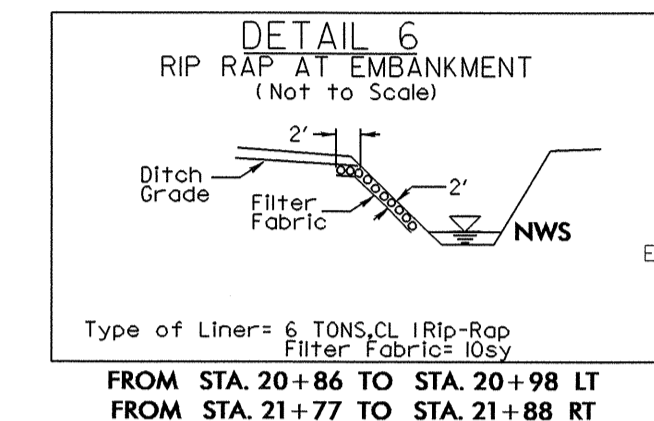
FROM STA. 16+50 TO STA. 18+00 RT. -L-



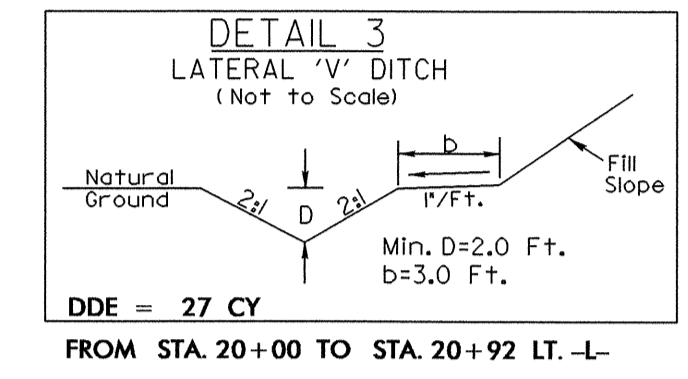
FROM STA. 14+00 TO STA. 15+00 RT. -Y-
 STA. 22+77.49 TO STA. 25+50 RT. -L-
 STA. 25+25.00 TO STA. 26+00 LT. -L-



DDE = 43 CY
 FROM STA. 21+82 TO STA. 22+77.49 RT. -L-



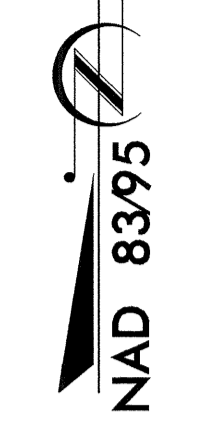
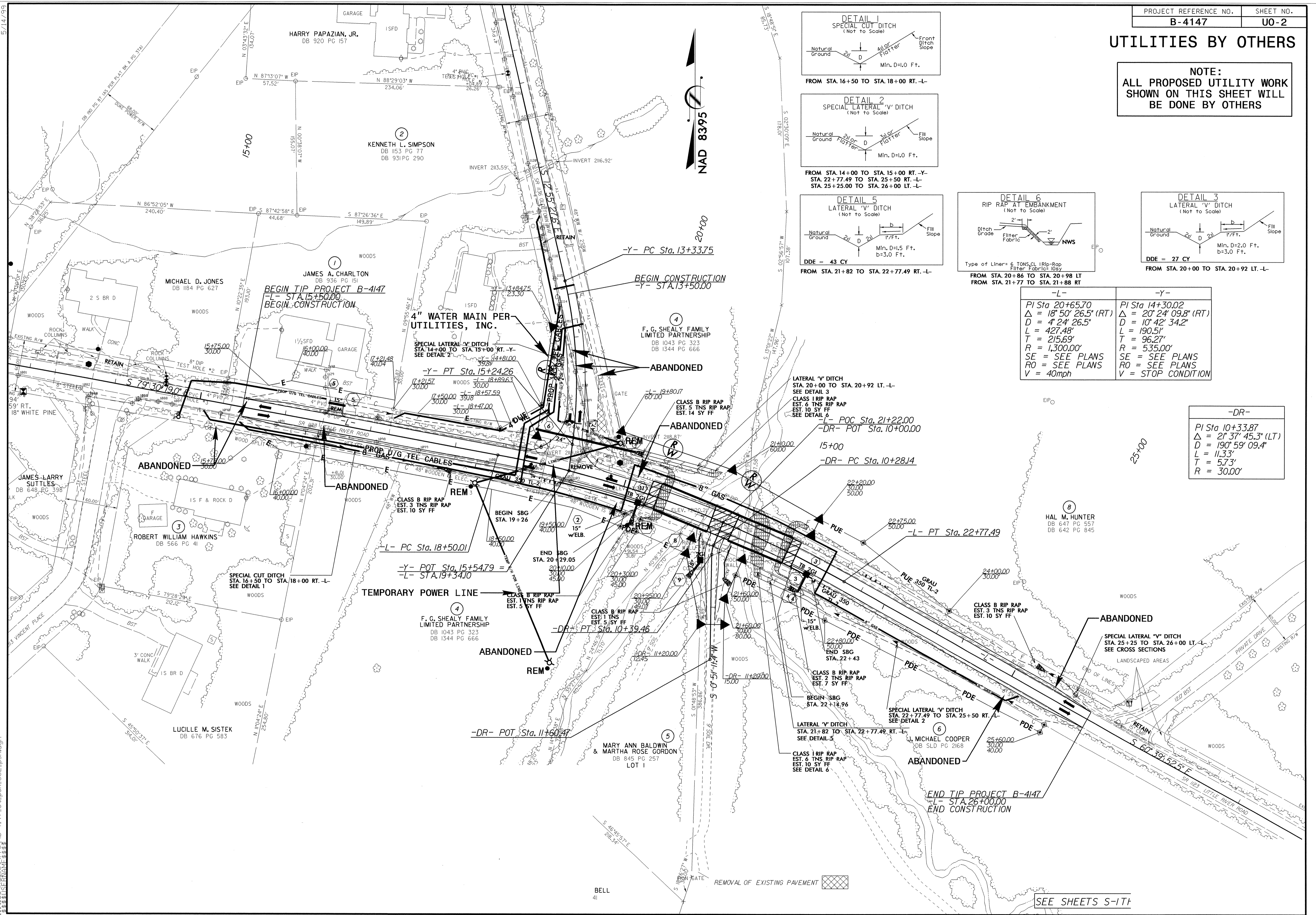
FROM STA. 20+86 TO STA. 20+98 LT
 FROM STA. 21+77 TO STA. 21+88 RT



DDE = 27 CY
 FROM STA. 20+00 TO STA. 20+92 LT. -L-

-L-	-Y-
PI Sta 20+65.70	PI Sta 14+30.02
Δ = 18° 50' 26.5" (RT)	Δ = 20° 24' 09.8" (RT)
D = 4' 24' 26.5"	D = 10' 42' 34.2"
L = 427.48'	L = 190.51'
T = 215.69'	T = 96.27'
R = 1,300.00'	R = 535.00'
SE = SEE PLANS	SE = SEE PLANS
RO = SEE PLANS	RO = SEE PLANS
V = 40mph	V = STOP CONDITION

-DR-
PI Sta 10+33.87
Δ = 2° 37' 45.3" (LT)
D = 190' 59' 09.4"
L = 11.33'
T = 5.73'
R = 30.00'



SEE SHEETS S-111