

TIP PROJECT: B-4033

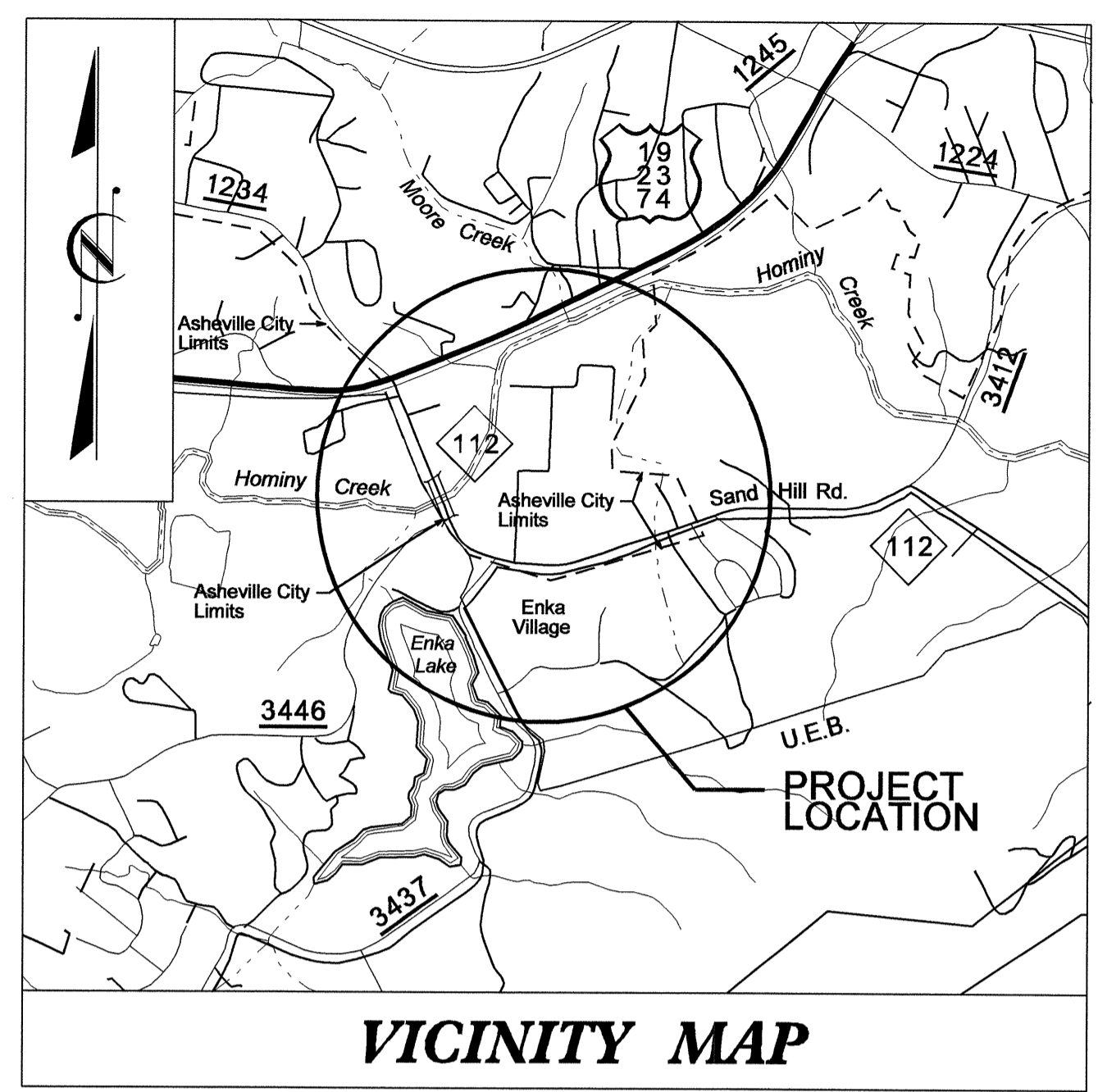
T.I.P. NO.	SHEET NO.
B-4033	UC-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

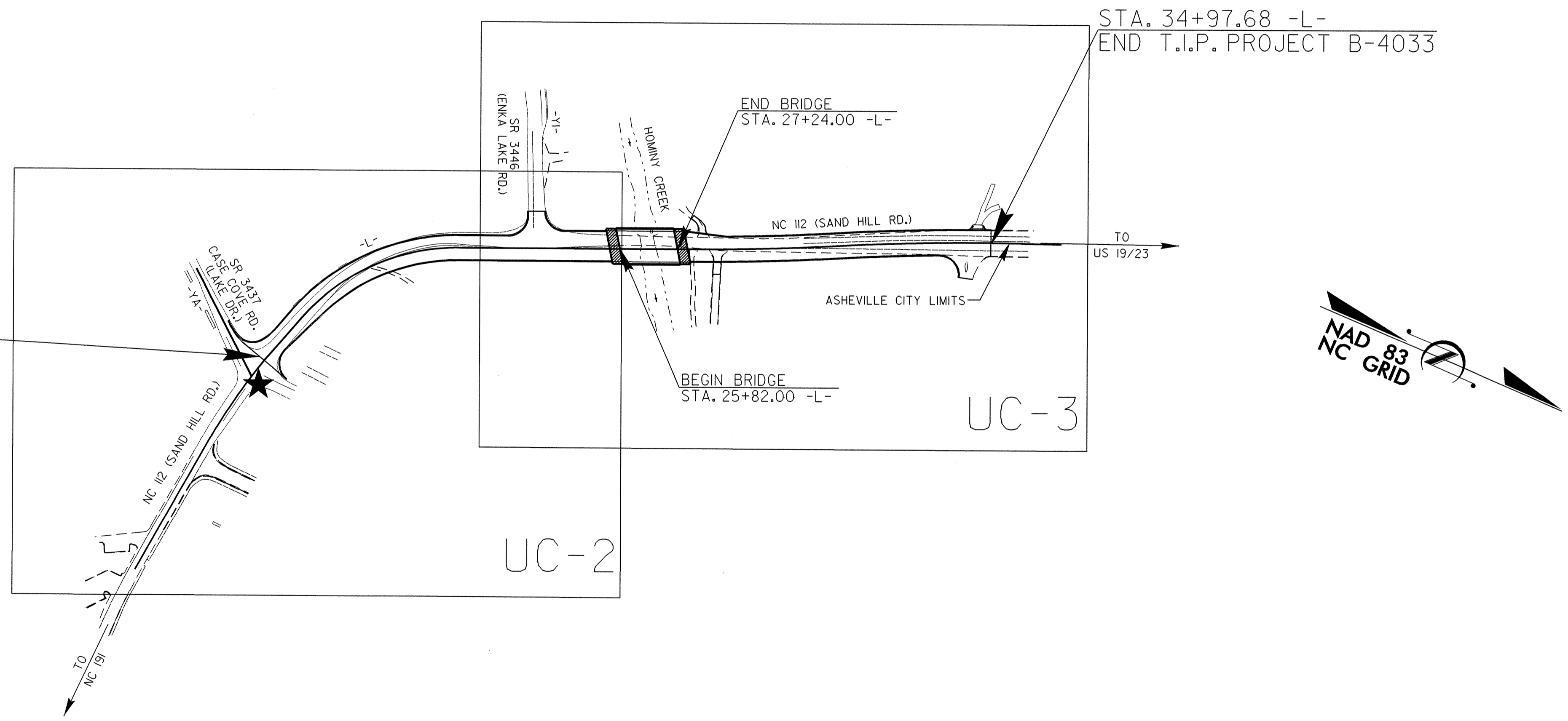
**UTILITY CONSTRUCTION PLANS
BUNCOMBE COUNTY**

LOCATION: BRIDGE NO. 85 OVER HOMINY CREEK ON NC 112

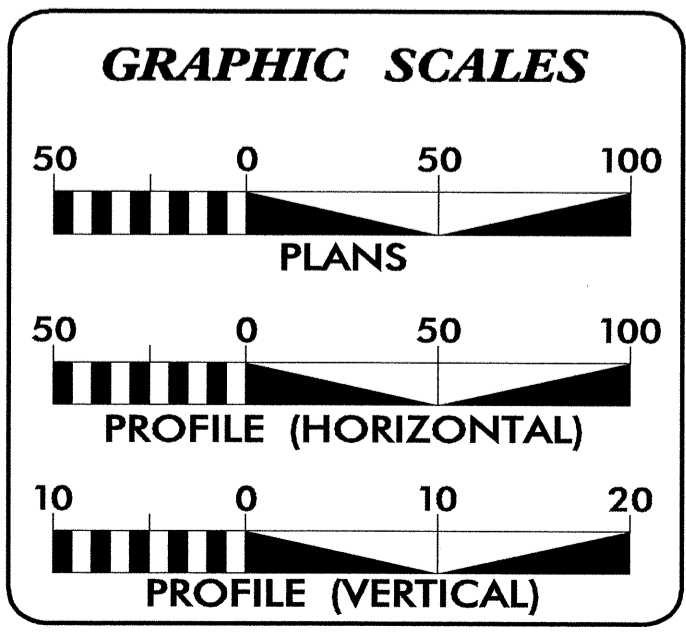
TYPE OF WORK: UTILITY CONSTRUCTION



VICINITY MAP



★ PROPOSED TRAFFIC SIGNAL



INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
UC-1	TITLE SHEET
UC-2 THRU UC-3	UTILITY CONSTRUCTION PLAN SHEETS
UC-4	PROFILE SHEET
UC-5 THRU UC-7	DETAILS SHEETS

WATER AND SEWER OWNERS ON PROJECT

(1) WATER - CITY OF ASHEVILLE
(2) SANITARY SEWER - METROPOLITAN SEWERAGE DISTRICT

SEAL

PREPARED IN THE OFFICE OF:
**DIVISION OF HIGHWAYS
PROJECT SERVICES
UTILITIES SECTION**

1591 MAIL SERVICES CENTER
RALEIGH NC 27699-1591
PHONE (919) 250-4128
FAX (919) 250-4119

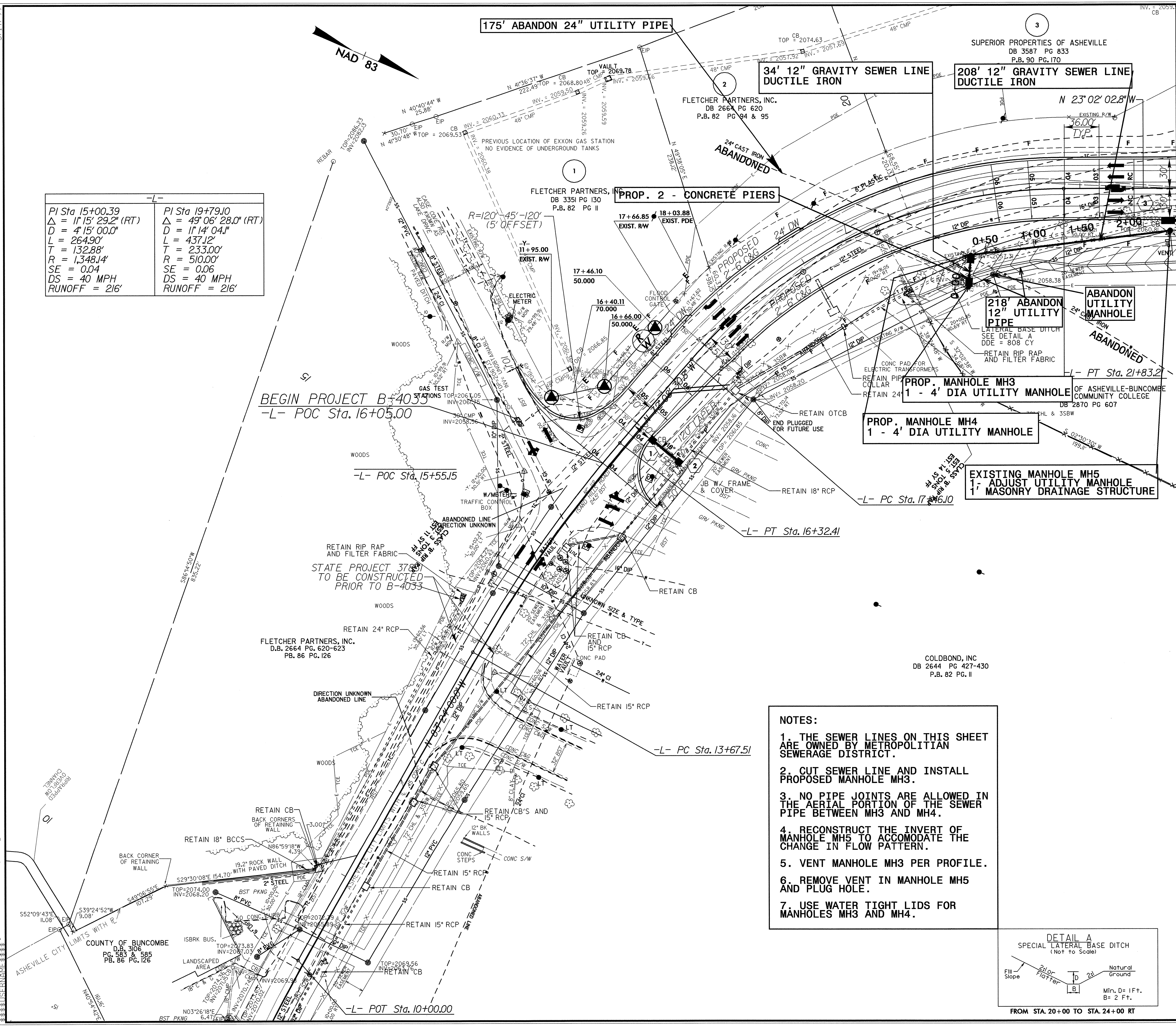
Roger Worthington, P.E. UTILITIES SECTION ENGINEER
Carl Barclay, P.E. UTILITIES SQUAD LEADER PROJECT ENGINEER
Bo Hemphill, P.E. UTILITIES PROJECT DESIGNER

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\$\$\$\$\$USER\$NAME\$\$\$\$\$

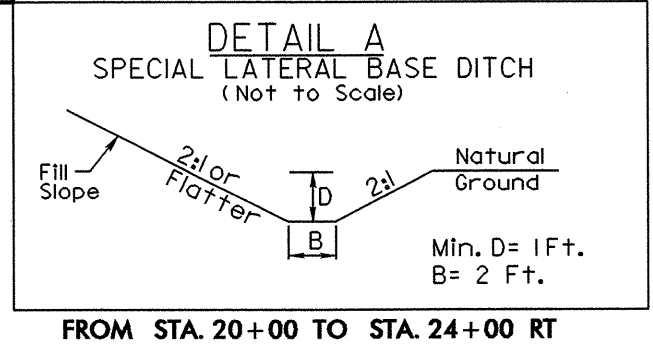
UTILITY CONSTRUCTION

MATCHLINE STA. 23+00.00
SEE SHEET NO. UC-3

PI Sta 15+00.39 $\Delta = 11' 15" 29.2" (RT)$ $D = 4' 15" 00.0"$ $L = 264.90'$ $T = 132.88'$ $R = 1,348.14'$ $SE = 0.04$ $DS = 40 MPH$ $RUNOFF = 216'$	PI Sta 19+79.10 $\Delta = 49' 06" 28.0" (RT)$ $D = 11' 14" 04.1"$ $L = 437.12'$ $T = 233.00'$ $R = 510.00'$ $SE = 0.06$ $DS = 40 MPH$ $RUNOFF = 216'$
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- NOTES:**
1. THE SEWER LINES ON THIS SHEET ARE OWNED BY METROPOLITAN SEWERAGE DISTRICT.
 2. CUT SEWER LINE AND INSTALL PROPOSED MANHOLE MH3.
 3. NO PIPE JOINTS ARE ALLOWED IN THE AERIAL PORTION OF THE SEWER PIPE BETWEEN MH3 AND MH4.
 4. RECONSTRUCT THE INVERT OF MANHOLE MH5 TO ACCOMMODATE THE CHANGE IN FLOW PATTERN.
 5. VENT MANHOLE MH3 PER PROFILE.
 6. REMOVE VENT IN MANHOLE MH5 AND PLUG HOLE.
 7. USE WATER TIGHT LIDS FOR MANHOLES MH3 AND MH4.



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PROJECT REFERENCE NO.	SHEET NO.
B-4033	UC-3
DESIGNED BY: BH	
DRAWN BY: BH	
CHECKED BY: CAB	
APPROVED BY: CAB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION PROJECT SERVICES UNIT PHONE: (919)250-4128 FAX: (919)250-4119	
UTILITY CONSTRUCTION PLANS ONLY	

UTILITY CONSTRUCTION

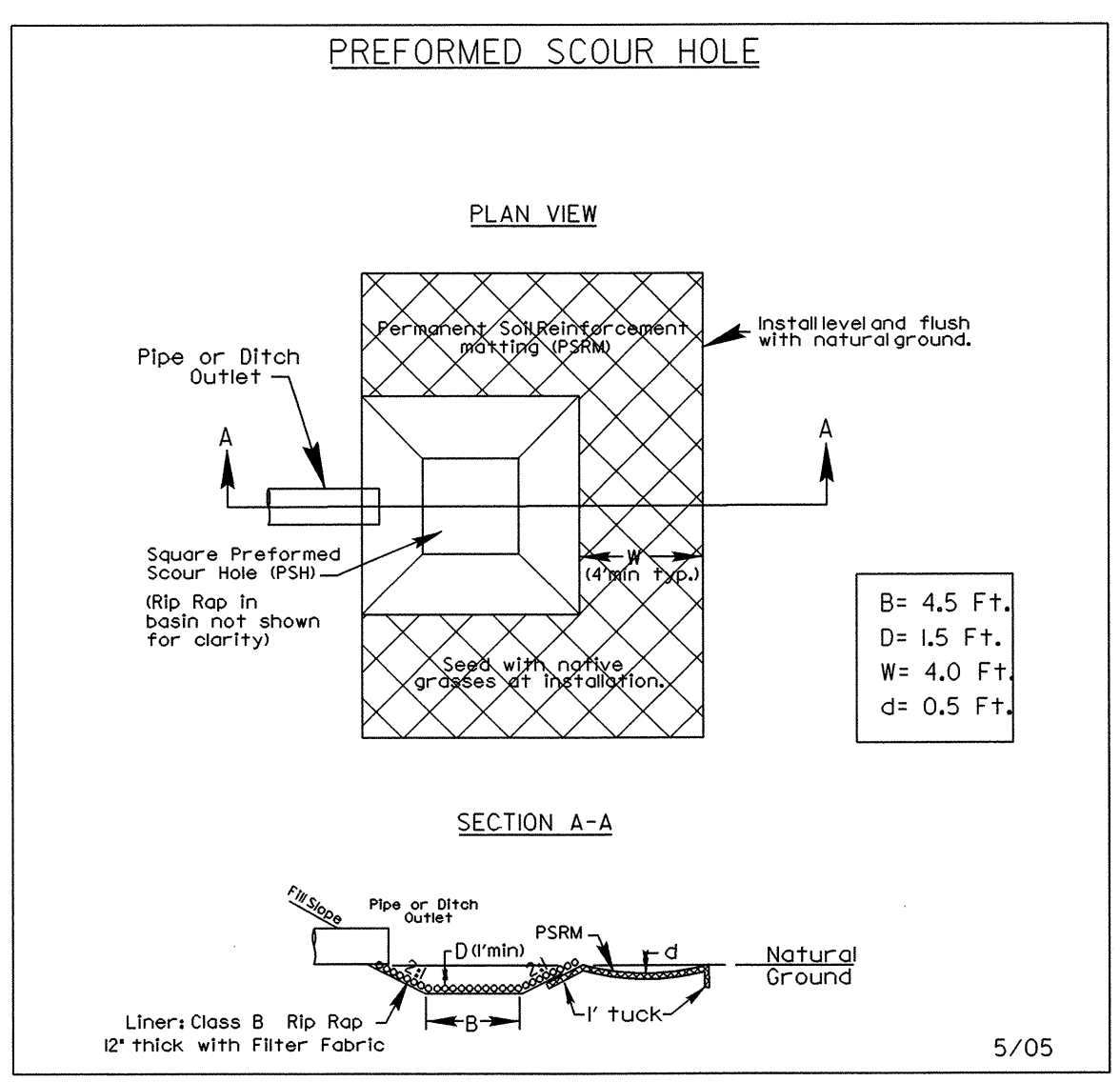
DETAIL A
SPECIAL LATERAL BASE DITCH (Not to Scale)
Min. D= 1 Ft.
B= 2 Ft.
FROM STA. 20+00 TO STA. 24+00 RT

DETAIL B
SPECIAL LATERAL BASE DITCH (Not to Scale)
Min. D= 1 Ft.
Max. d= 1 Ft.
B= 2 Ft.
FROM STA. 27+50 TO STA. 28+00 RT

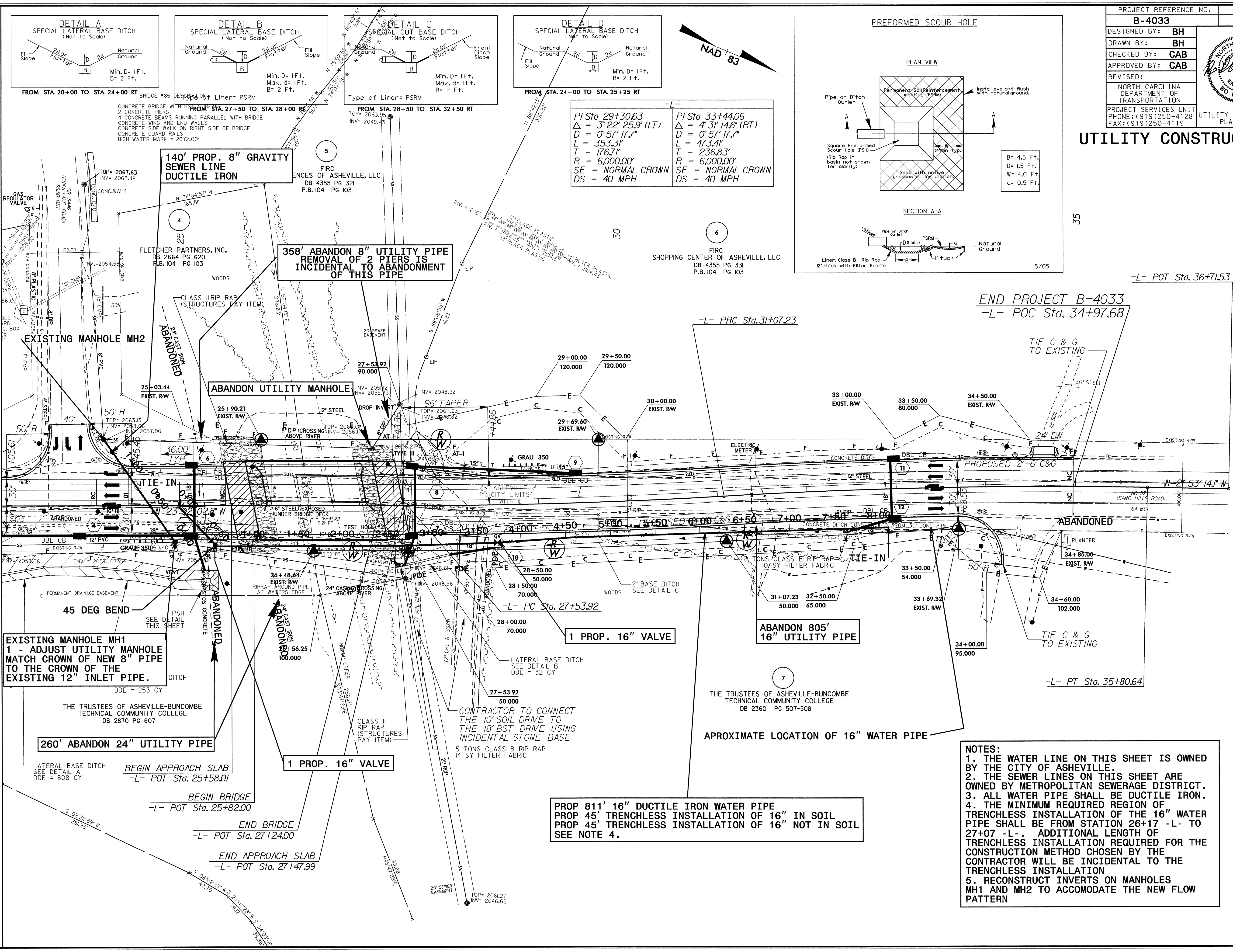
DETAIL C
SPECIAL CUT BASE DITCH (Not to Scale)
Min. D= 1 Ft.
Max. d= 1 Ft.
B= 2 Ft.
FROM STA. 28+50 TO STA. 32+50 RT

DETAIL D
SPECIAL LATERAL BASE DITCH (Not to Scale)
Min. D= 1 Ft.
B= 2 Ft.
FROM STA. 24+00 TO STA. 25+25 RT

PI Sta 29+30.63 $\Delta = 3' 22" 25.9' (LT)$ $D = 0' 57" 17.7"$ $L = 353.31'$ $R = 176.71'$ $SE = 6,000.00'$ $DS = 40 MPH$	PI Sta 33+44.06 $\Delta = 4' 31" 14.6' (RT)$ $D = 0' 57" 17.7"$ $L = 473.41'$ $R = 236.83'$ $SE = 6,000.00'$ $DS = 40 MPH$
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MATCHLINE STA. 23+00.00
SEE SHEET UC-2



END PROJECT B-4033
-L- POC Sta. 34+97.68

-L- POT Sta. 36+71.53

-L- PRC Sta. 31+07.23

-L- PC Sta. 27+53.92

-L- PT Sta. 35+80.64

EXISTING MANHOLE MH1
1 - ADJUST UTILITY MANHOLE
MATCH CROWN OF NEW 8\"/>

260' ABANDON 24\"/>

1 PROP. 16\"/>

1 PROP. 16\"/>

ABANDON 805'
16\"/>

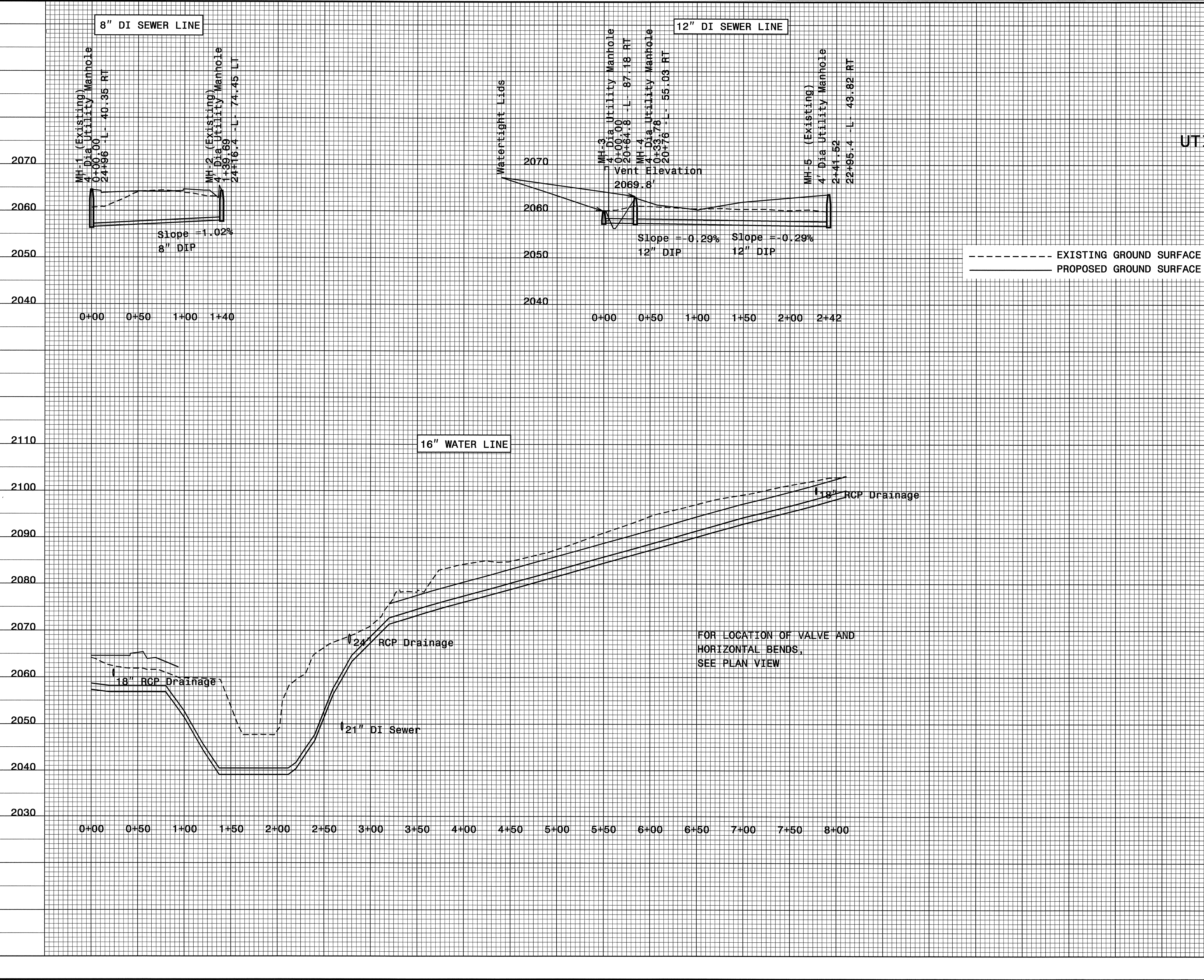
PROP 811' 16\"/>

- NOTES:**
1. THE WATER LINE ON THIS SHEET IS OWNED BY THE CITY OF ASHEVILLE.
 2. THE SEWER LINES ON THIS SHEET ARE OWNED BY METROPOLITAN SEWERAGE DISTRICT.
 3. ALL WATER PIPE SHALL BE DUCTILE IRON.
 4. THE MINIMUM REQUIRED REGION OF TRENCHLESS INSTALLATION OF THE 16\"/>

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PROJECT REFERENCE NO.	SHEET NO.
B-4033	UC-4
DESIGNED BY: BH	
DRAWN BY: BH	
CHECKED BY: CAB	
APPROVED BY: CAB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION PROJECT SERVICES UNIT PHONE: (919)250-4128 FAX: (919)250-4119	
UTILITY CONSTRUCTION PLANS ONLY	



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5/14/09

WATER DETAILS

PROJECT REFERENCE NO.	SHEET NO.
B-4033	UC-5
DESIGNED BY: BH	
DRAWN BY: BH	
CHECKED BY: CAB	
APPROVED BY: CAB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
PROJECT SERVICES UNIT PHONE: (919) 250-4128 FAX: (919) 250-4119	
UTILITY CONSTRUCTION PLANS ONLY	

UTILITY CONSTRUCTION

STANDARD EXCAVATION
 BACKFILL MATERIAL COMPACTED IN 6" LIFTS
 BACKFILL MATERIAL COMPACTED IN 3" LIFTS
 UNDISTURBED EARTH

OVERCUT EXCAVATION
 BACKFILL MATERIAL COMPACTED IN 6" LIFTS
 BACKFILL MATERIAL COMPACTED IN 3" LIFTS
 UNDISTURBED EARTH

STANDARD EXCAVATION IN WET CONDITIONS
 BACKFILL MATERIAL COMPACTED IN 6" LIFTS
 SPRING LINE OF PIPE
 WASHED STONE EMBEDMENT
 UNDISTURBED EARTH

UNDERCUT EXCAVATION IN UNSTABLE SOILS TYPES
 BACKFILL MATERIAL COMPACTED IN 6" LIFTS
 SPRING LINE OF PIPE
 WASHED STONE EMBEDMENT
 ADDITIONAL WASHED STONE FOR UNDERCUT EXCAVATION ONLY AS DIRECTED BY ENGINEER
 UNDISTURBED EARTH

NOTE: BELL HOLES NOT SHOWN

NOTES:
 1. CONSTRUCTION OF TRENCHES SHALL BE IN ACCORDANCE WITH THE LATEST OSHA REGULATIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH ALL APPLICABLE REGULATIONS.
 2. NO BOULDERS OR STONES IN EXCESS OF 4" IN SIZE SHALL BE USED AS PART OF THE INITIAL BACKFILL.
 3. PIPE BEDDING MATERIAL SHALL BE # 57 WASHED STONE.
 4. SELECT BACKFILL MATERIAL SHALL BE CLASS I OR II AS PER NC DOT STANDARD SPECIFICATIONS.

	City of Asheville, NC Transportation & Engineering Department	TYPICAL TRENCH DETAIL	<table border="1"> <thead> <tr> <th>DATE</th> <th>REVISIONS DESCRIPTION</th> <th>STD. NO.</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td>7.19</td> </tr> </tbody> </table>	DATE	REVISIONS DESCRIPTION	STD. NO.			7.19
DATE	REVISIONS DESCRIPTION	STD. NO.							
		7.19							

TYPICAL FINISHED GRADE IN UNPAVED AREAS
 24" X 24" X 6" 4000 PSI CONCRETE PAD
 GATE VALVE
 BALL VALVE
 PRESSURE GAUGE
 NEW WATER LINE
 TAPPED PLUG
 NEW WATER LINE
 STRAINER
 EXISTING WATER LINE
 WATER METER MIN 2" Ø
 PUMPS

NOTES:
 1. PRIOR TO CONNECTING TO THE EXISTING WATERLINE, THE NEW WATER LINE WILL BE PRESSURE TESTED, DISINFECTED AND A CLEAR WATER SAMPLE OBTAINED.
 2. ALL WATER FOR FILLING AND FLUSHING OF NEW WATER LINE WILL BE DRAWN THROUGH THE REDUCED PRESSURE ZONE ASSEMBLY.
 3. THE COSTS FOR PROVIDING REDUCED PRESSURE ZONE ASSEMBLY AND SLEEVE NECESSARY FOR FINAL CONNECTION WILL BE INCIDENTAL TO THE WATER LINE INSTALLATION.
 4. CONTRACTOR WILL BE REQUIRED TO HAVE WATER METER TESTED TO MEET ACCURACY STANDARDS OF AWWA C700, BY THE CITY OF ASHEVILLE WATER MAINTENANCE DIVISION ANNUALLY. METER MUST BEAR A CERTIFICATION TAG AT ALL TIMES.

	City of Asheville, NC Transportation & Engineering Department	NEW WATER LINE PRESSURE TEST BACKFLOW PREVENTION ASSEMBLY	<table border="1"> <thead> <tr> <th>DATE</th> <th>REVISIONS DESCRIPTION</th> <th>STD. NO.</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td>7.18</td> </tr> </tbody> </table>	DATE	REVISIONS DESCRIPTION	STD. NO.			7.18
DATE	REVISIONS DESCRIPTION	STD. NO.							
		7.18							

RUBBER SEAL
 WATER LINE MAIN
 SHELL
 LINER
 RIBBED FLANGE
 STEEL ENCASUREMENT
 STAINLESS STEEL BANDS
 STEEL ENCASUREMENT
 RESTRAINED JOINT CARRIER PIPE

POSITIONING
 RESTRAINED: KEEPS CARRIER FROM FLOATING OR BUCKING UNDER SUDDEN PRESSURE SURGES
 STAINLESS STEEL CASING SPACER
 2 PER JOINT OF CARRIER PIPE (TYPICAL)
 MFG. BY CASCADE WATERWORKS, MFG. CO. OR APPROVED EQUAL.

NOTES:
 1. RESTRAINED POSITIONING TO BE USED AT ALL TIMES.
 2. CARRIER PIPE JOINTS SHALL BE RESTRAINED.
 3. CONTRACTOR MAY USE BRICK MASONRY AND NON-SHRINK GROUT TO SEAL ENCASUREMENT ENDS IN LIEU OF RUBBER SEAL. A 3/4" WEEP-HOLE MUST BE PROVIDED AT LOW POINT OF CASING.

	City of Asheville, NC Transportation & Engineering Department	CARRIER PIPE IN STEEL ENCASUREMENT	<table border="1"> <thead> <tr> <th>DATE</th> <th>REVISIONS DESCRIPTION</th> <th>STD. NO.</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td>7.23</td> </tr> </tbody> </table>	DATE	REVISIONS DESCRIPTION	STD. NO.			7.23
DATE	REVISIONS DESCRIPTION	STD. NO.							
		7.23							

NOTES:
 1. VALVE BOX NOT TO CONTACT WATER MAIN OR VALVE OR COMPACTED BACKFILL UNDER VALVE BOX.
 2. ALL FITTINGS AND APPURTENANCES SHALL BE RESTRAINED AS PER SPECIFICATIONS IN LIEU OF THRUST BLOCKING.

SURFACE COURSE
 TYPICAL FINISHED GRADE IN PAVED AREAS
 TYPICAL FINISHED GRADE IN UNPAVED AREAS
 CABC
 24" X 24" X 6" 4000 PSI CONCRETE PAD
 VALVE BOX
 BUTTERFLY VALVE
 DUCTILE IRON WATER MAIN
 RESTRAINED BUTTERFLY VALVE

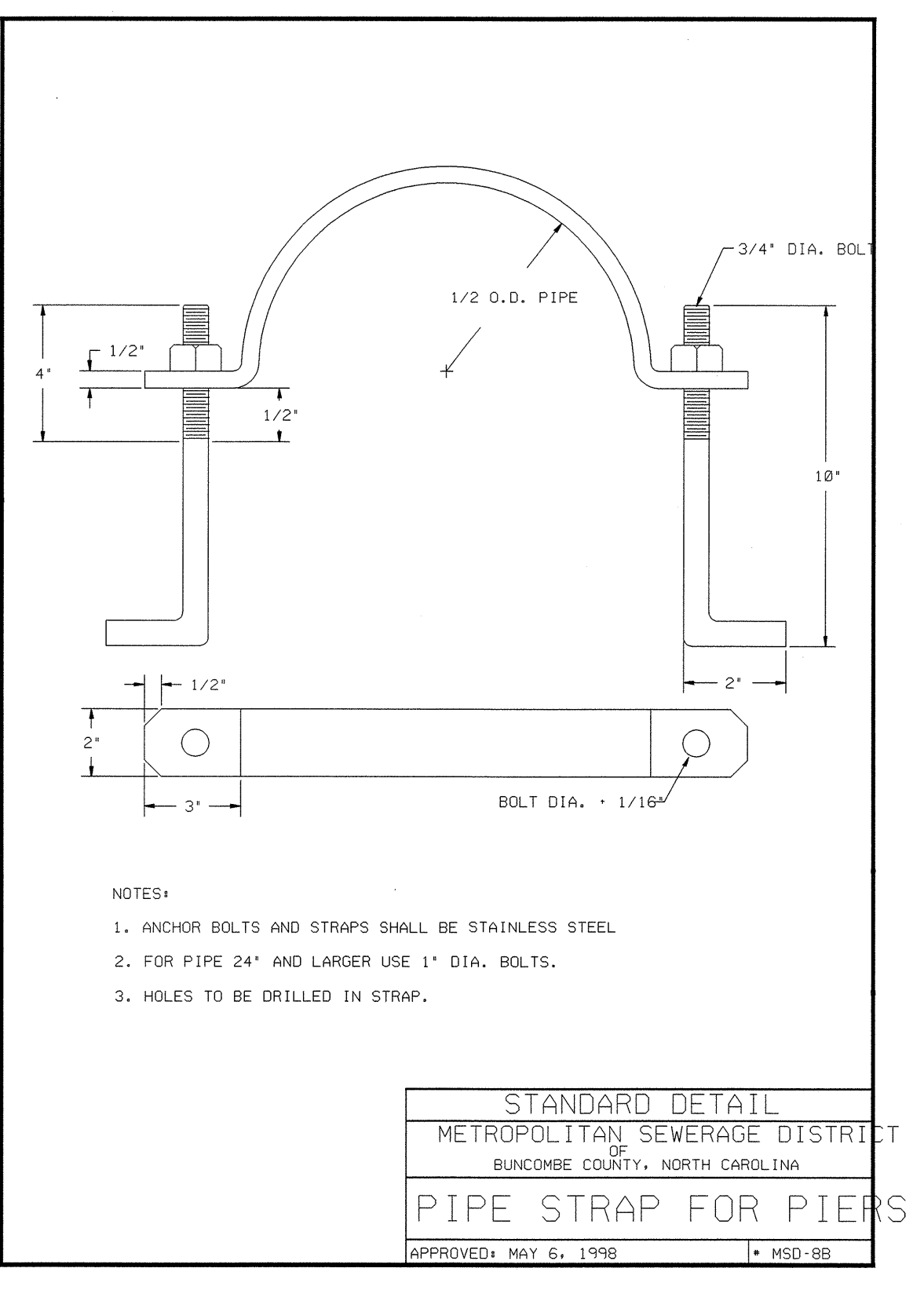
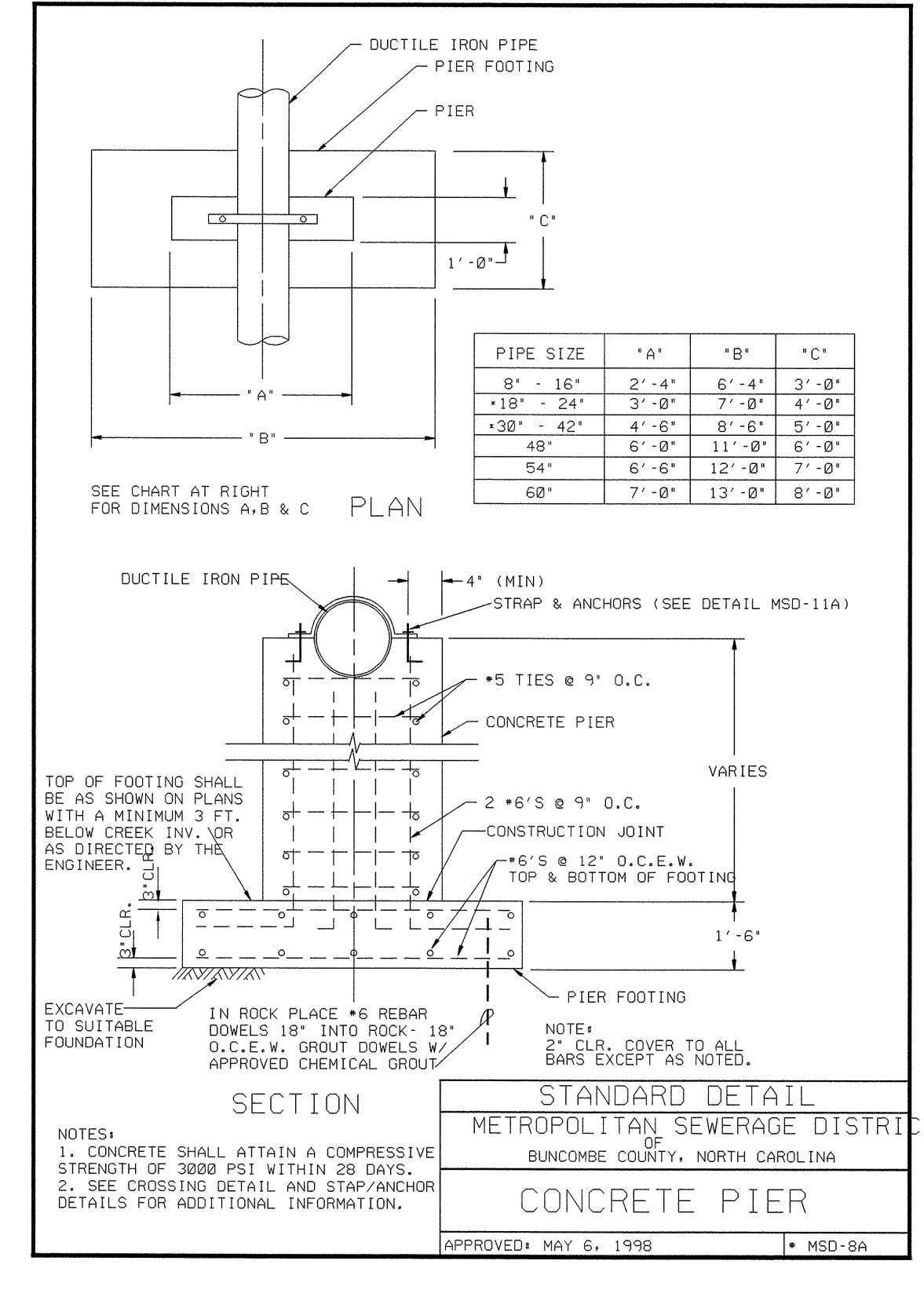
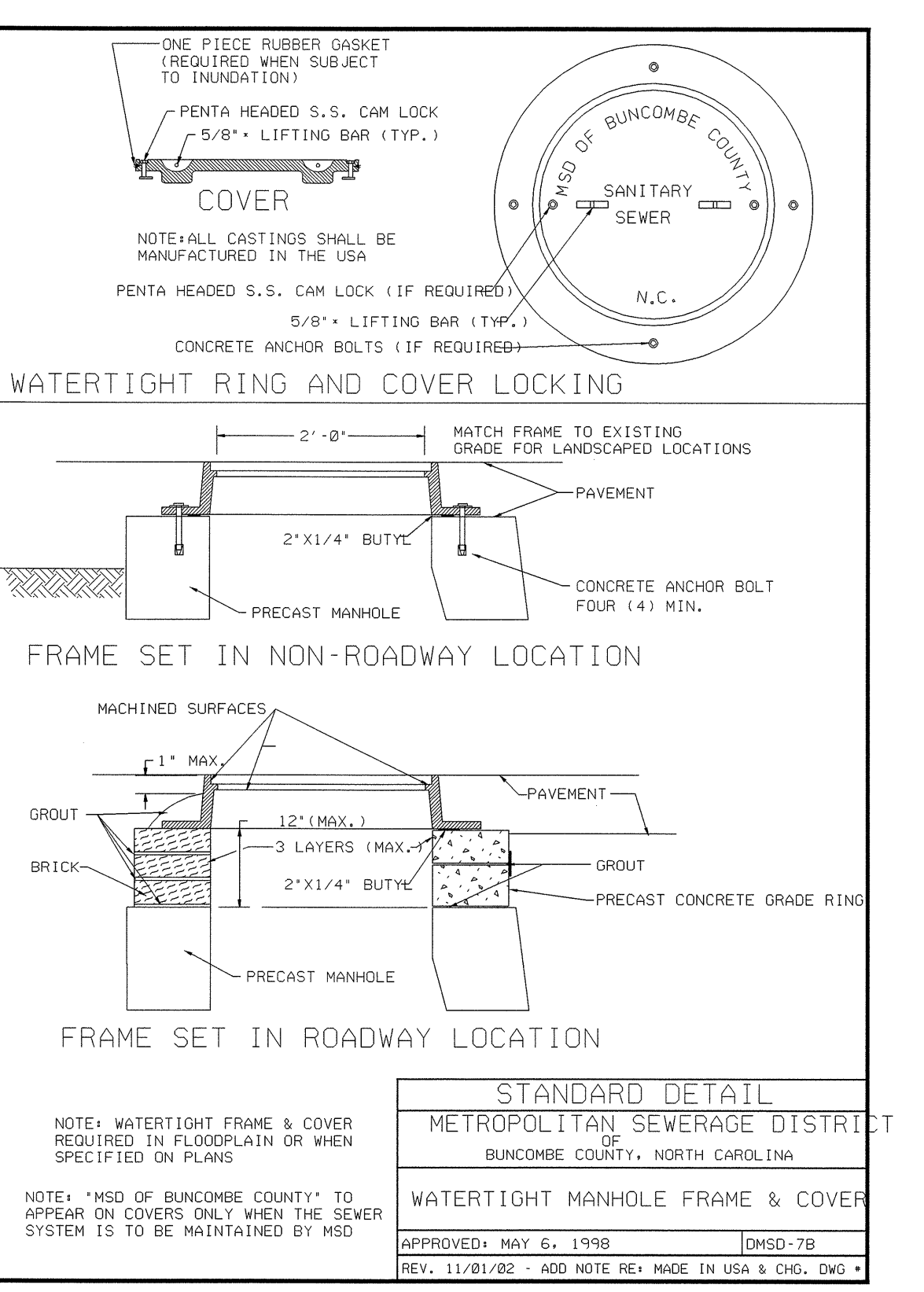
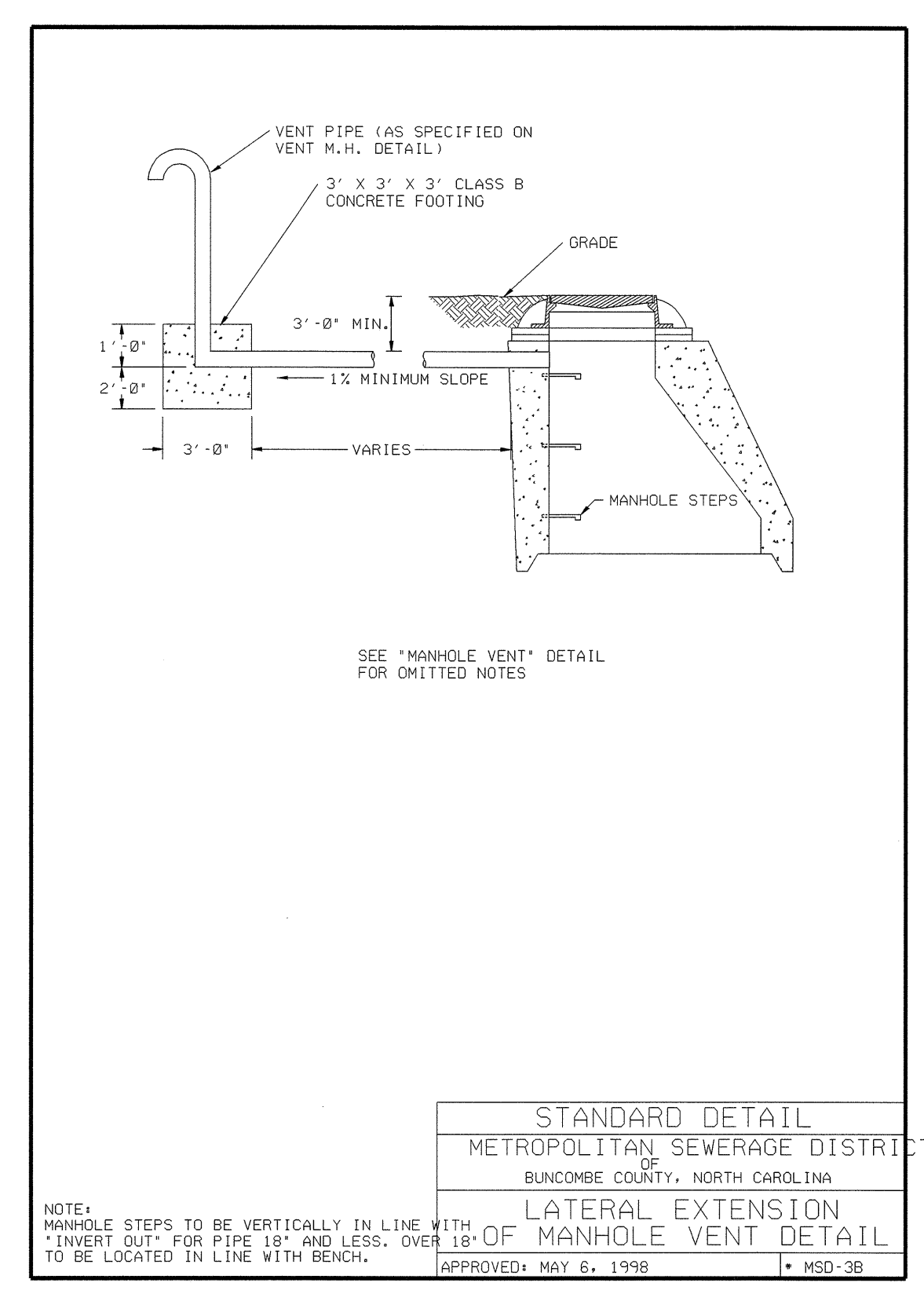
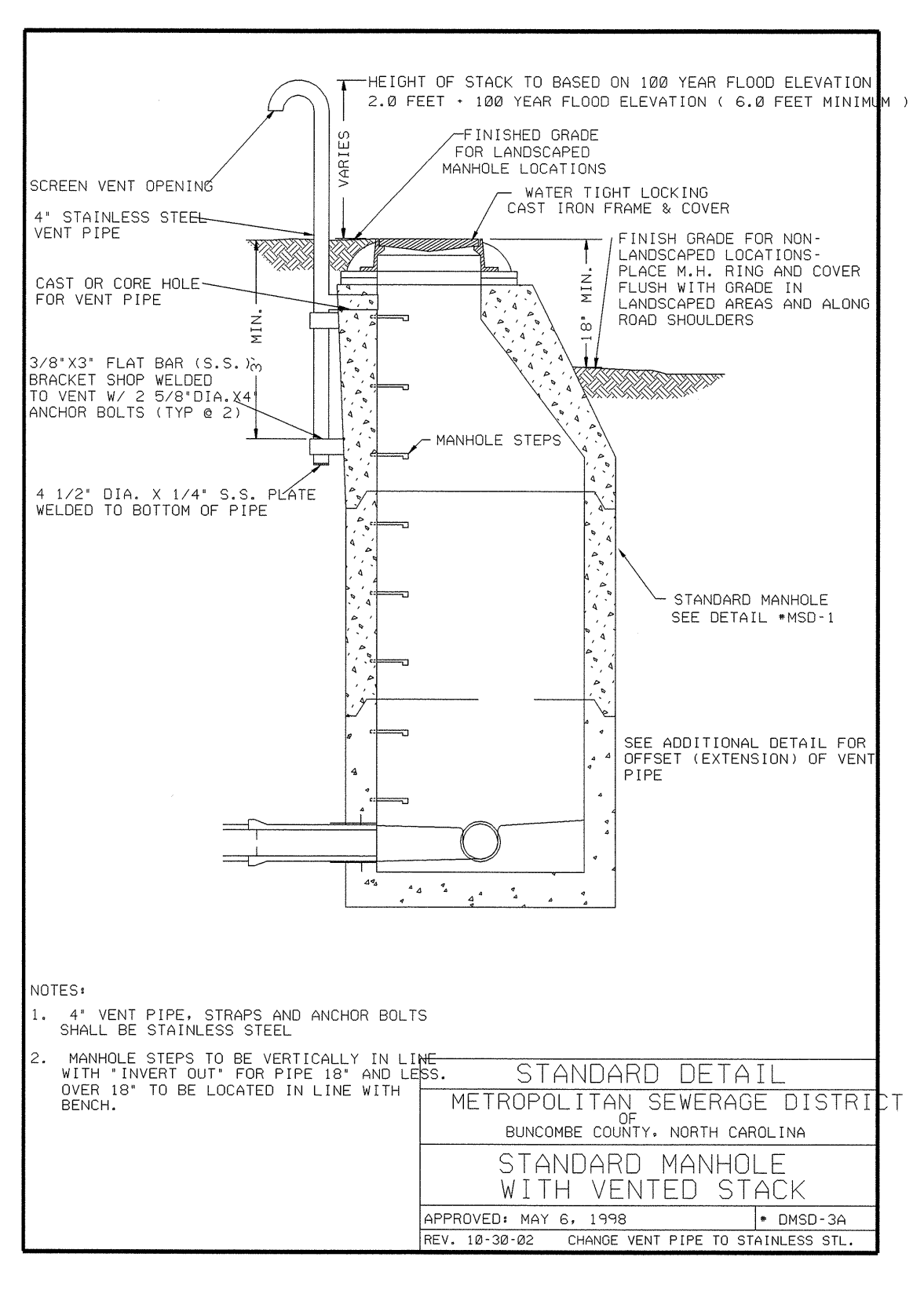
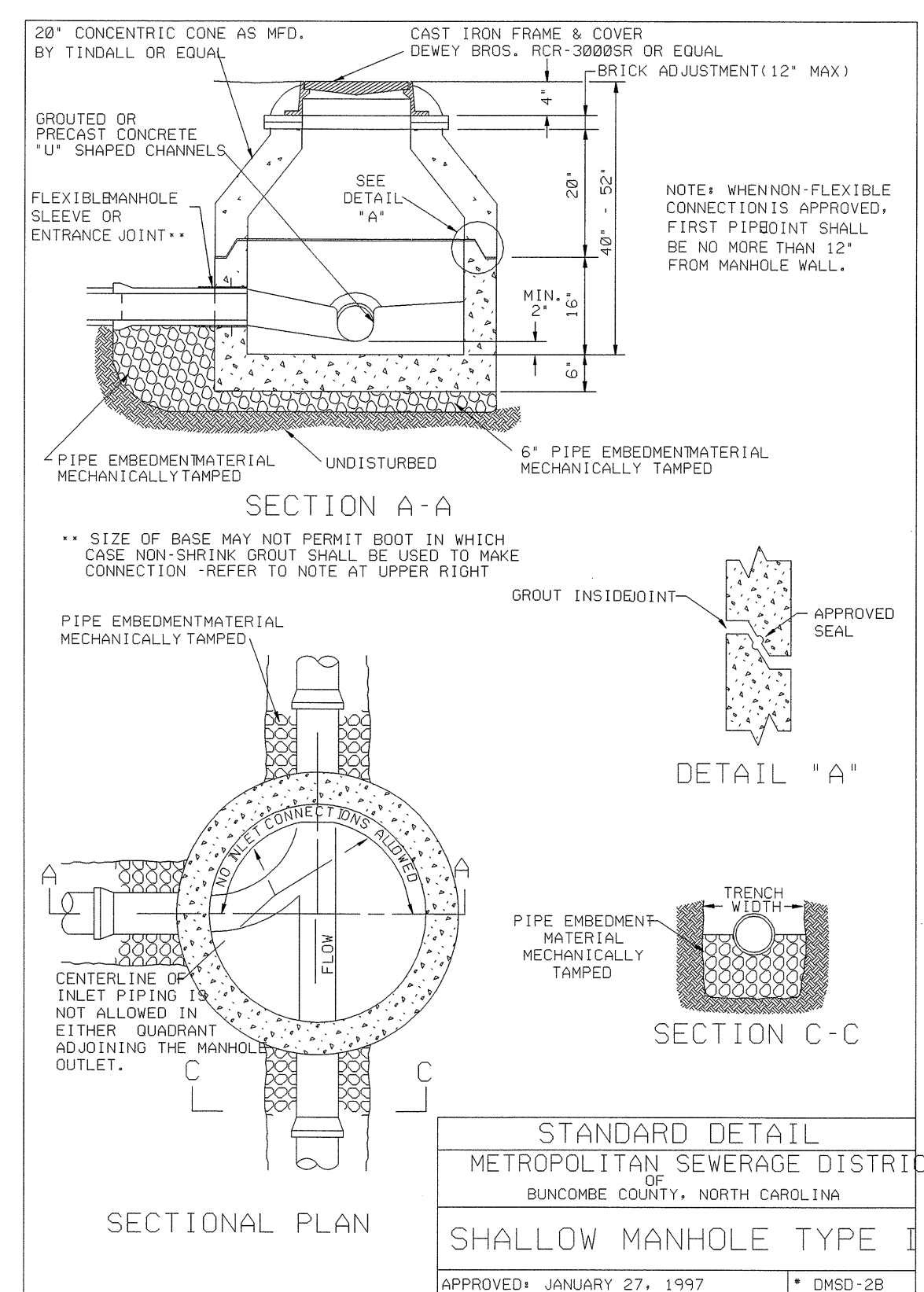
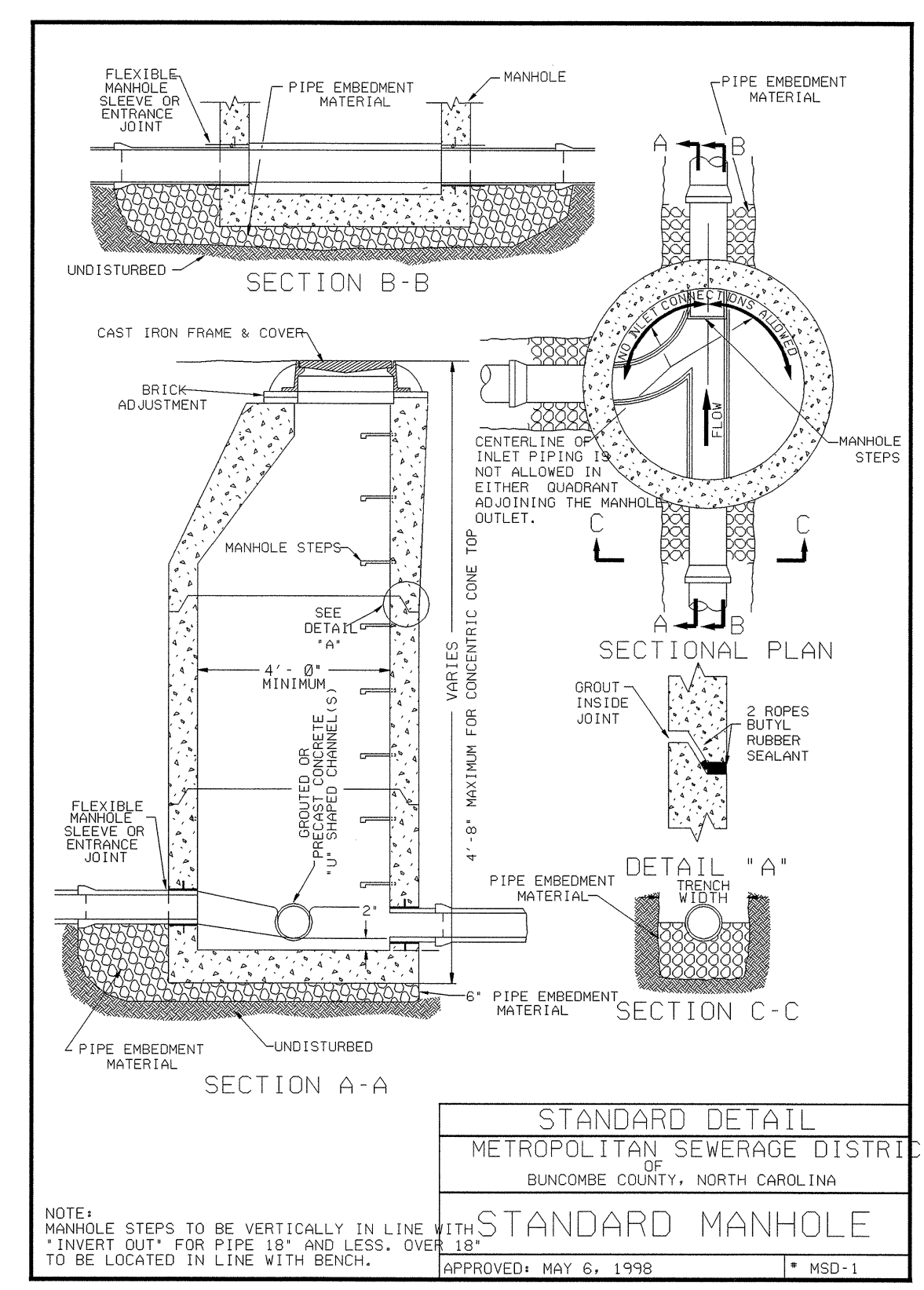
	City of Asheville, NC Transportation & Engineering Department	TYPICAL BUTTERFLY VALVE INSTALLATION	<table border="1"> <thead> <tr> <th>DATE</th> <th>REVISIONS DESCRIPTION</th> <th>STD. NO.</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td>7.14</td> </tr> </tbody> </table>	DATE	REVISIONS DESCRIPTION	STD. NO.			7.14
DATE	REVISIONS DESCRIPTION	STD. NO.							
		7.14							

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SEWER DETAILS

PROJECT REFERENCE NO.	SHEET NO.
B-4033	UC-6
DESIGNED BY: BH	
DRAWN BY: BH	
CHECKED BY: CAB	
APPROVED BY: CAB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
PROJECT SERVICES UNIT PHONE: (919)250-4128 FAX: (919)250-4119	UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

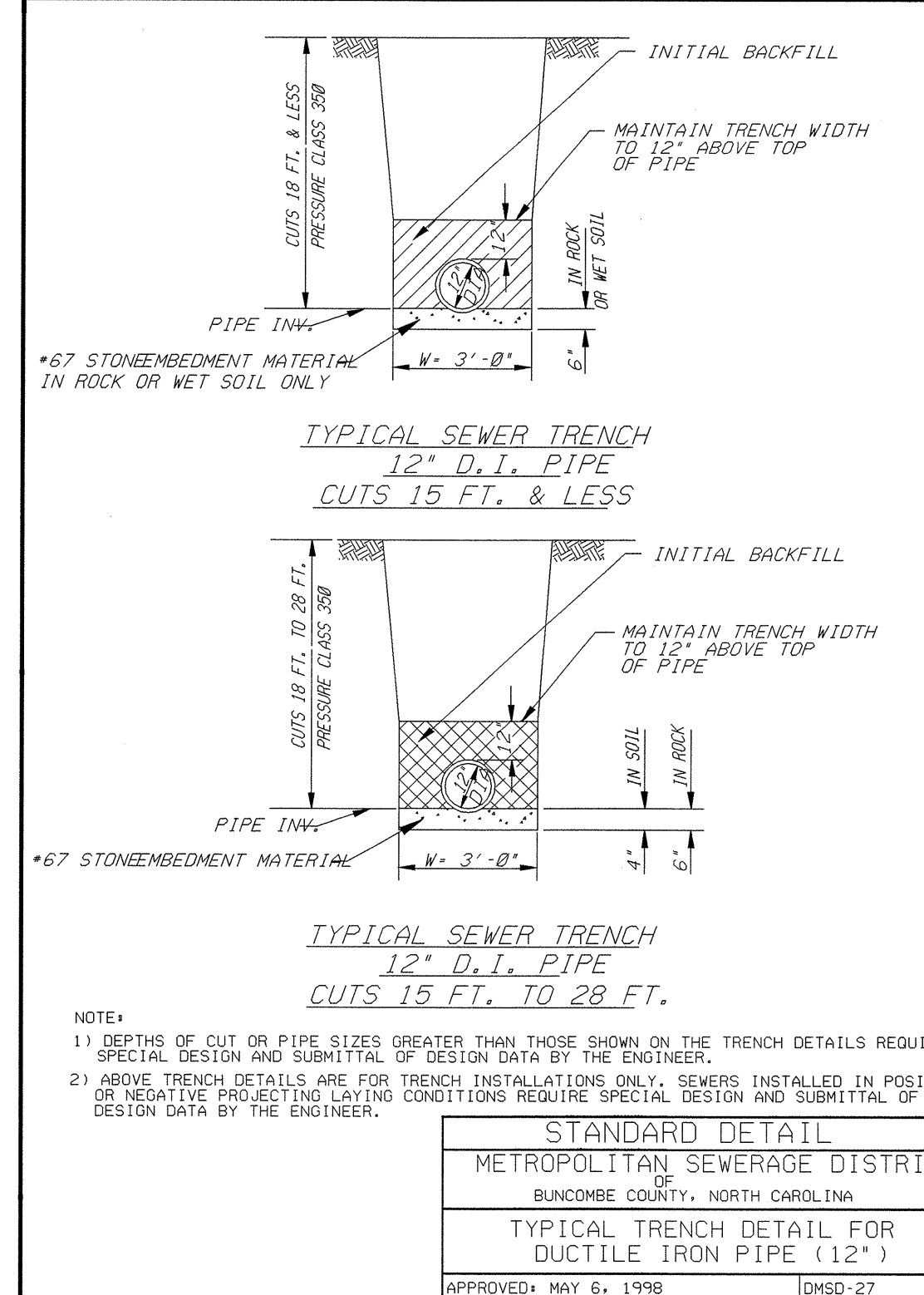
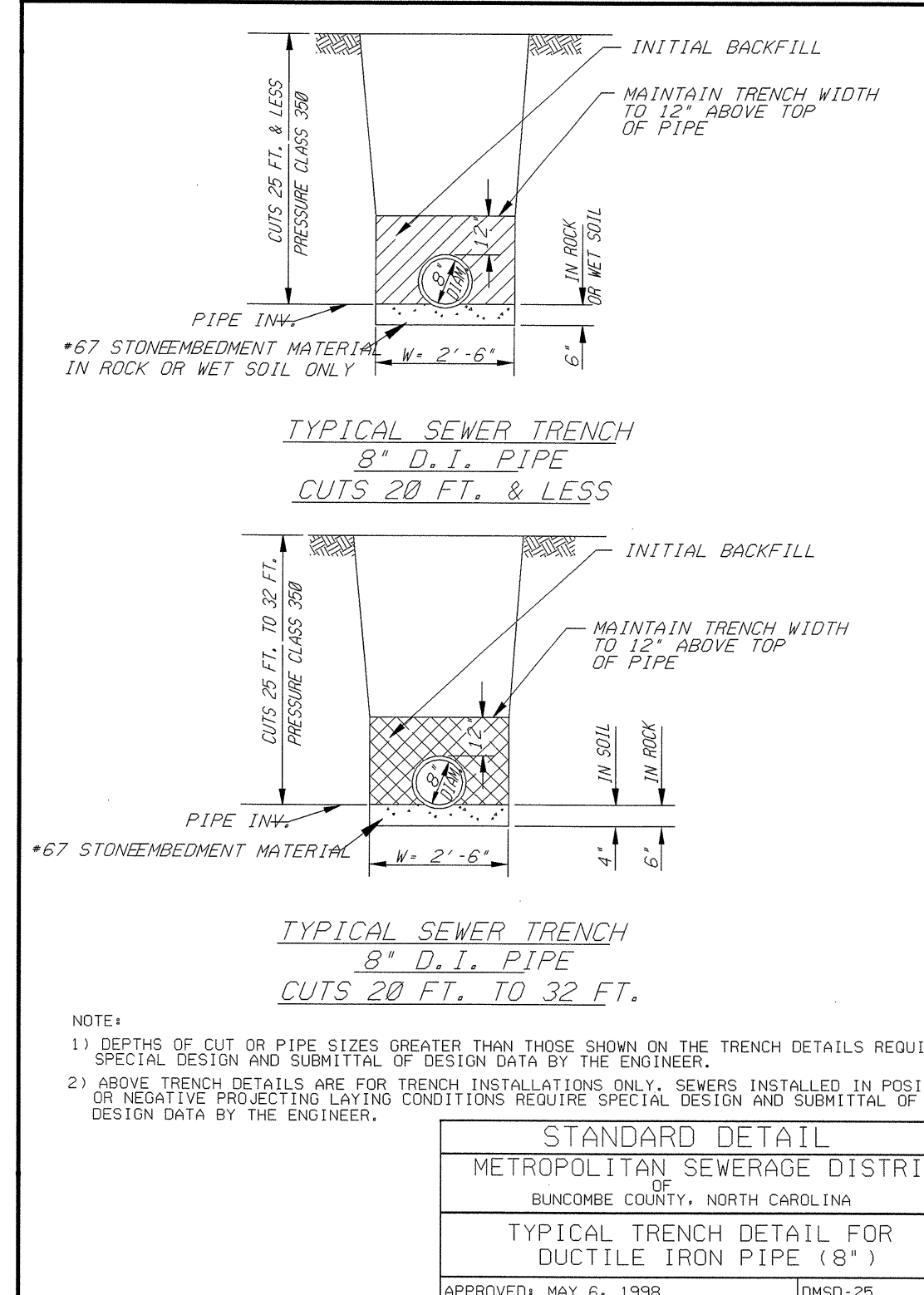


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SEWER DETAILS

PROJECT REFERENCE NO.	SHEET NO.
B-4033	UC-7
DESIGNED BY: BH	
DRAWN BY: BH	
CHECKED BY: CAB	
APPROVED BY: CAB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
PROJECT SERVICES UNIT PHONE: (919) 250-4128 FAX: (919) 250-4119	UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION



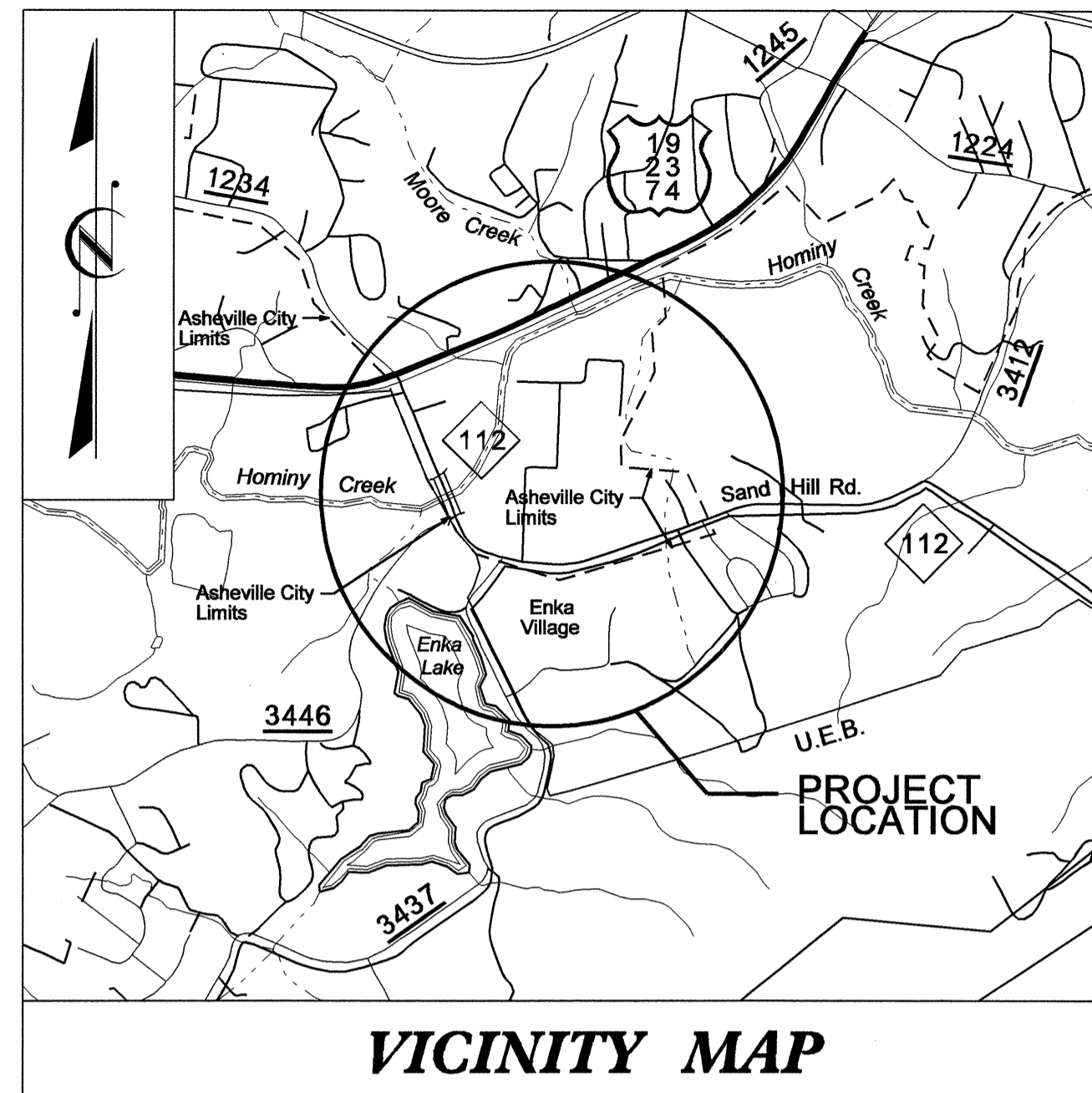
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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

**UTILITIES BY OTHERS PLANS
BUNCOMBE COUNTY**

LOCATION: BRIDGE NO. 85 OVER HOMINY CREEK ON NC 112

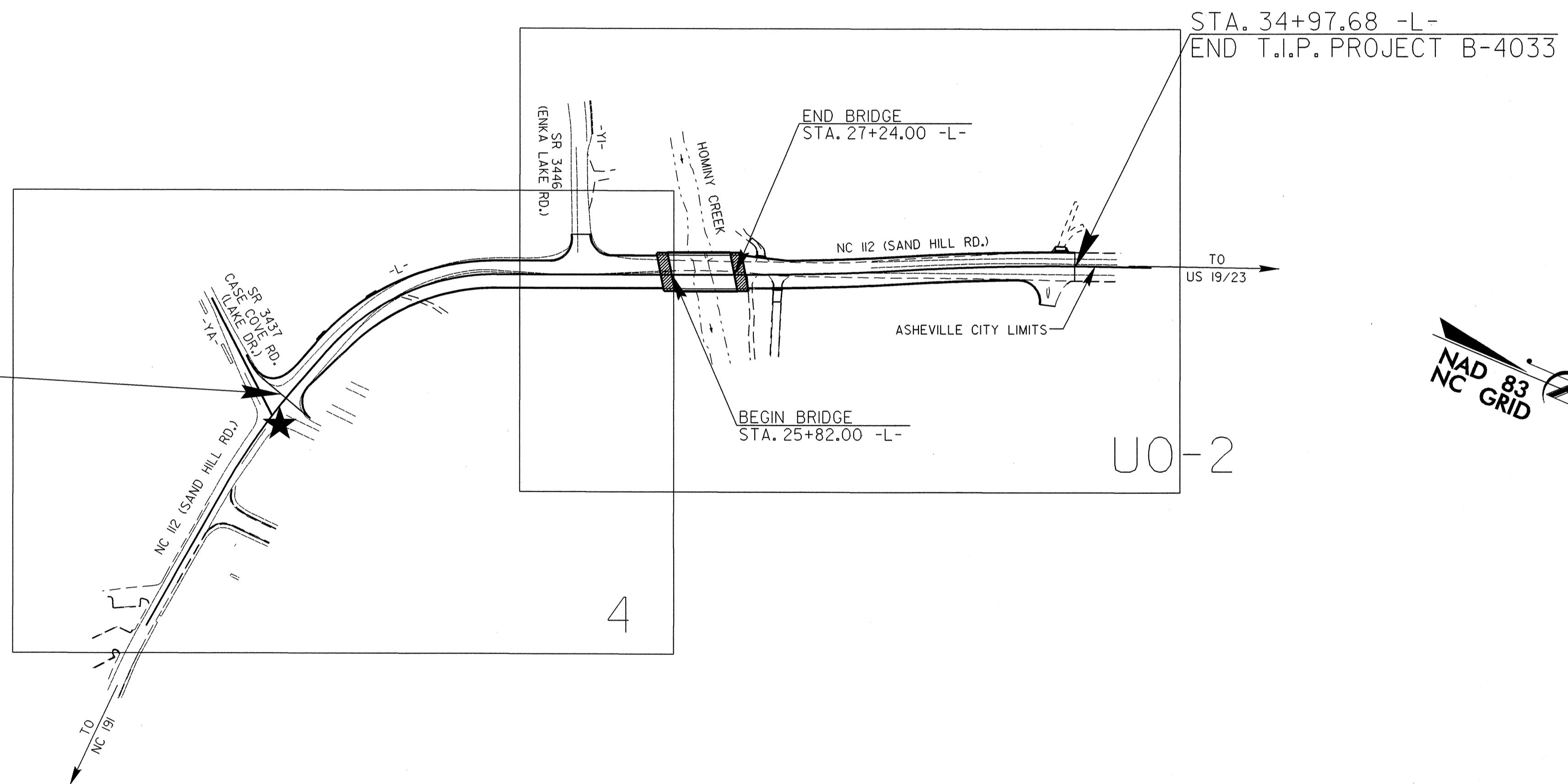
TYPE OF WORK: UTILITIES CONFLICTS



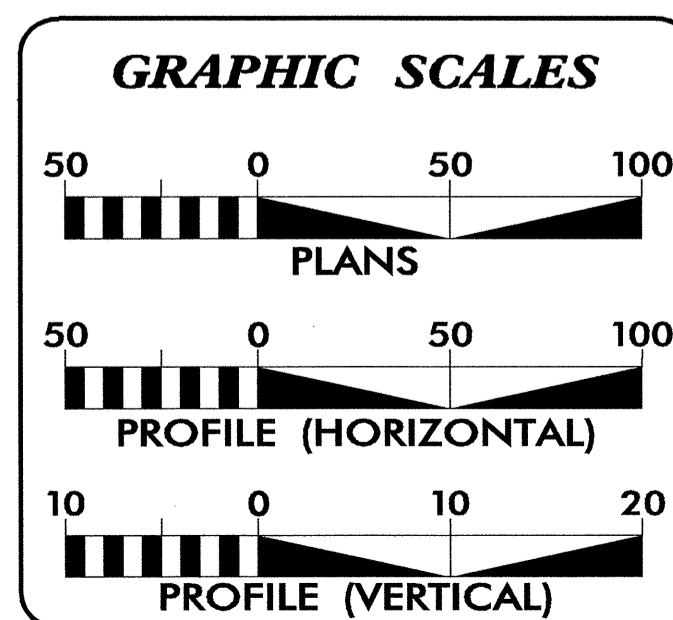
VICINITY MAP

TIP PROJECT: B-4033

STA. 16+05.00 -L-
BEGIN T.I.P. PROJECT B-4033



★ PROPOSED TRAFFIC SIGNAL



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

UTILITY OWNERS ON PROJECT
(1) PROGRESS ENERGY
(2) AT&T

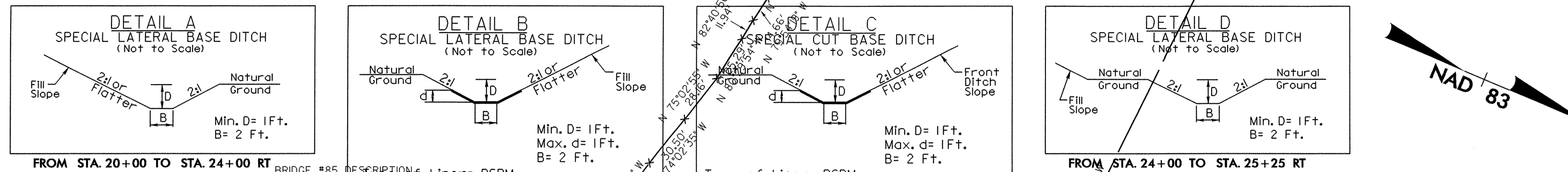
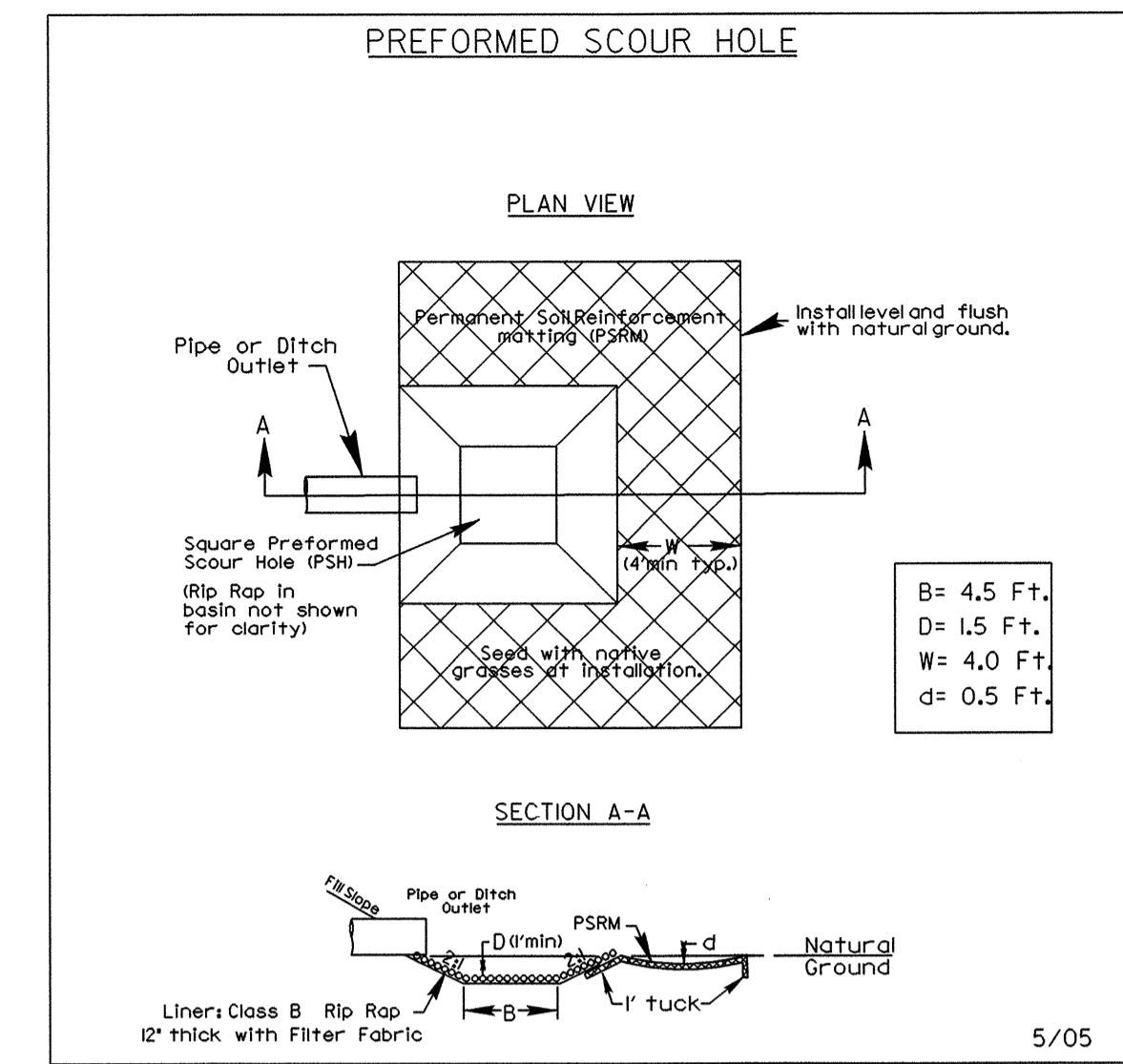
PREPARED IN THE OFFICE OF:
**DIVISION OF HIGHWAYS
PROJECT SERVICES
UTILITIES SECTION**

1591 MAIL SERVICES CENTER
RALLEIGH, NC 27699-1591
PHONE (919) 250-4128
FAX (919) 250-4119

<u>Roger Worthington, P.E.</u>	UTILITIES SECTION ENGINEER
<u>Carl Barclay, P.E.</u>	UTILITIES SQUAD LEADER PROJECT ENGINEER
<u>Bo Hemphill, P.E.</u>	UTILITIES PROJECT DESIGNER

UTILITIES BY OTHERS

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

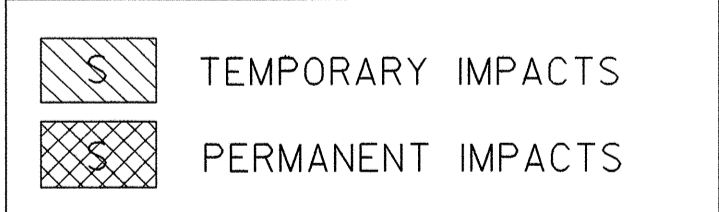
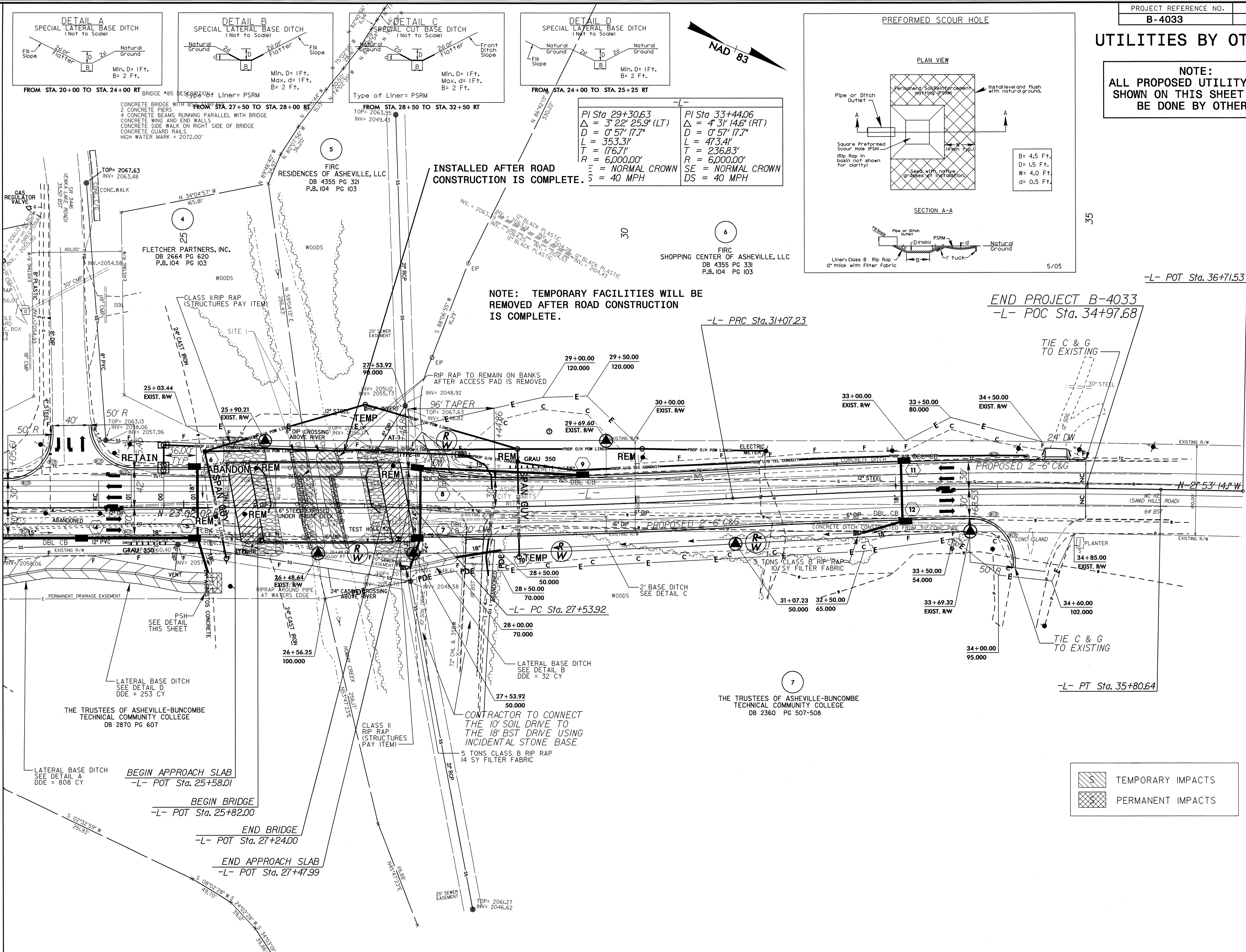


PI Sta	PI Sta
29+30.63	33+44.06
$\Delta = 3' 22' 25.9''$ (LT)	$\Delta = 4' 31' 14.6''$ (RT)
$D = 0' 57' 17.7''$	$D = 0' 57' 17.7''$
$L = 353.31'$	$L = 473.41'$
$T = 176.71'$	$T = 236.83'$
$R = 6,000.00'$	$R = 6,000.00'$
$SE = NORMAL CROWN$	$SE = NORMAL CROWN$
$DS = 40 MPH$	$DS = 40 MPH$

INSTALLED AFTER ROAD
CONSTRUCTION IS COMPLETE.

NOTE: TEMPORARY FACILITIES WILL BE
REMOVED AFTER ROAD CONSTRUCTION
IS COMPLETE.

MATCHLINE STA. 23+00.00
SEE SHEET NO. 4



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29-AUG-2008 14:59
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