

See Sheet 1-A For Index of Sheets

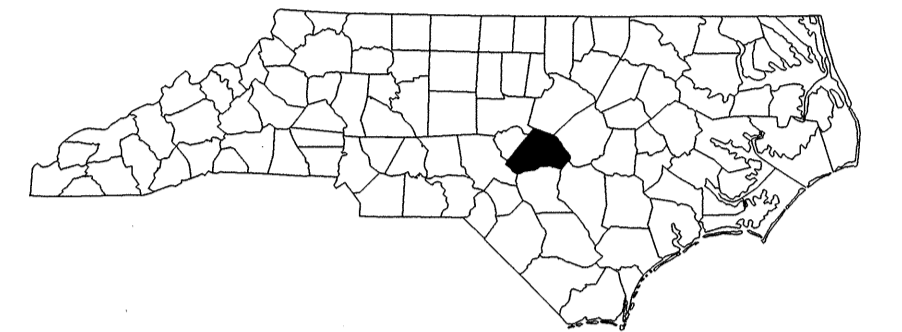
T.I.P. NO.	SHEET NO.
B-4138	UC-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

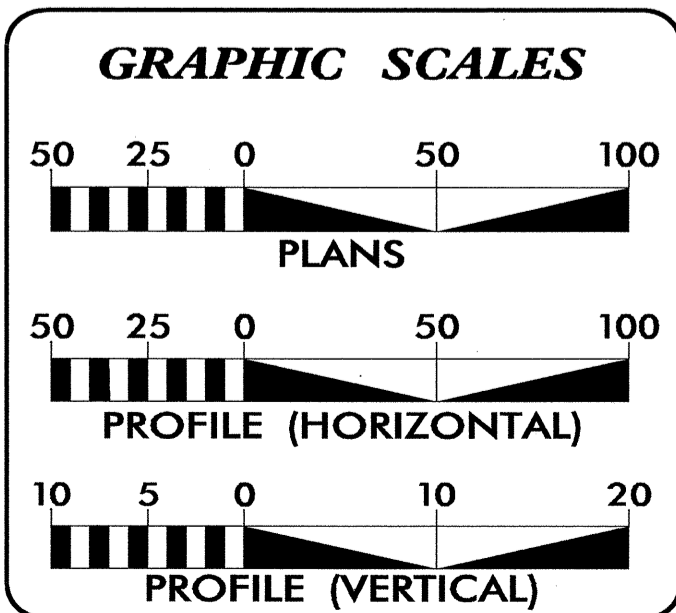
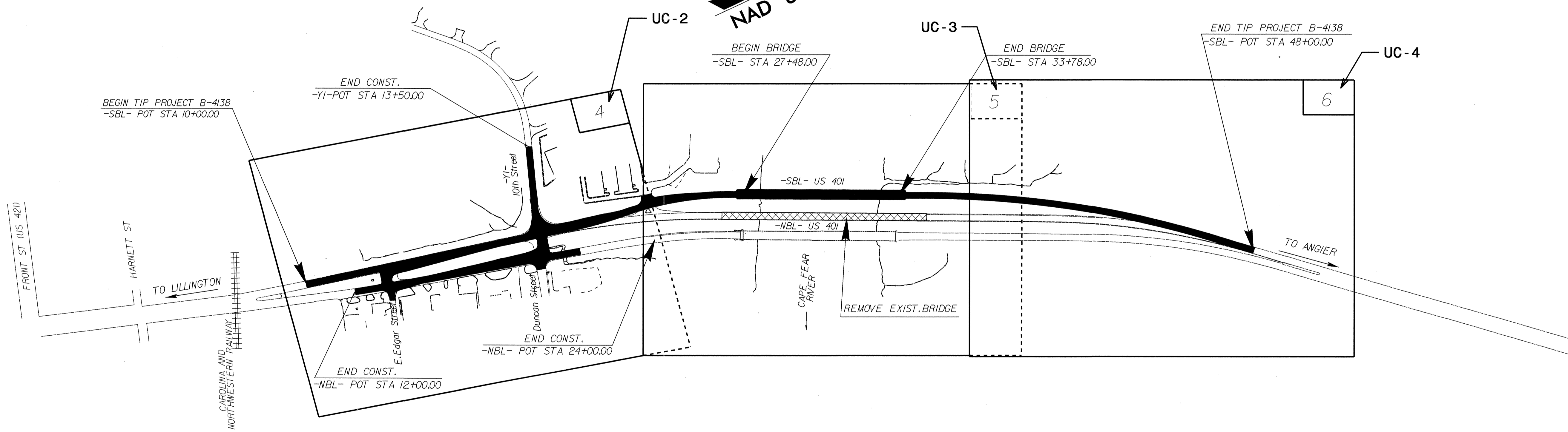
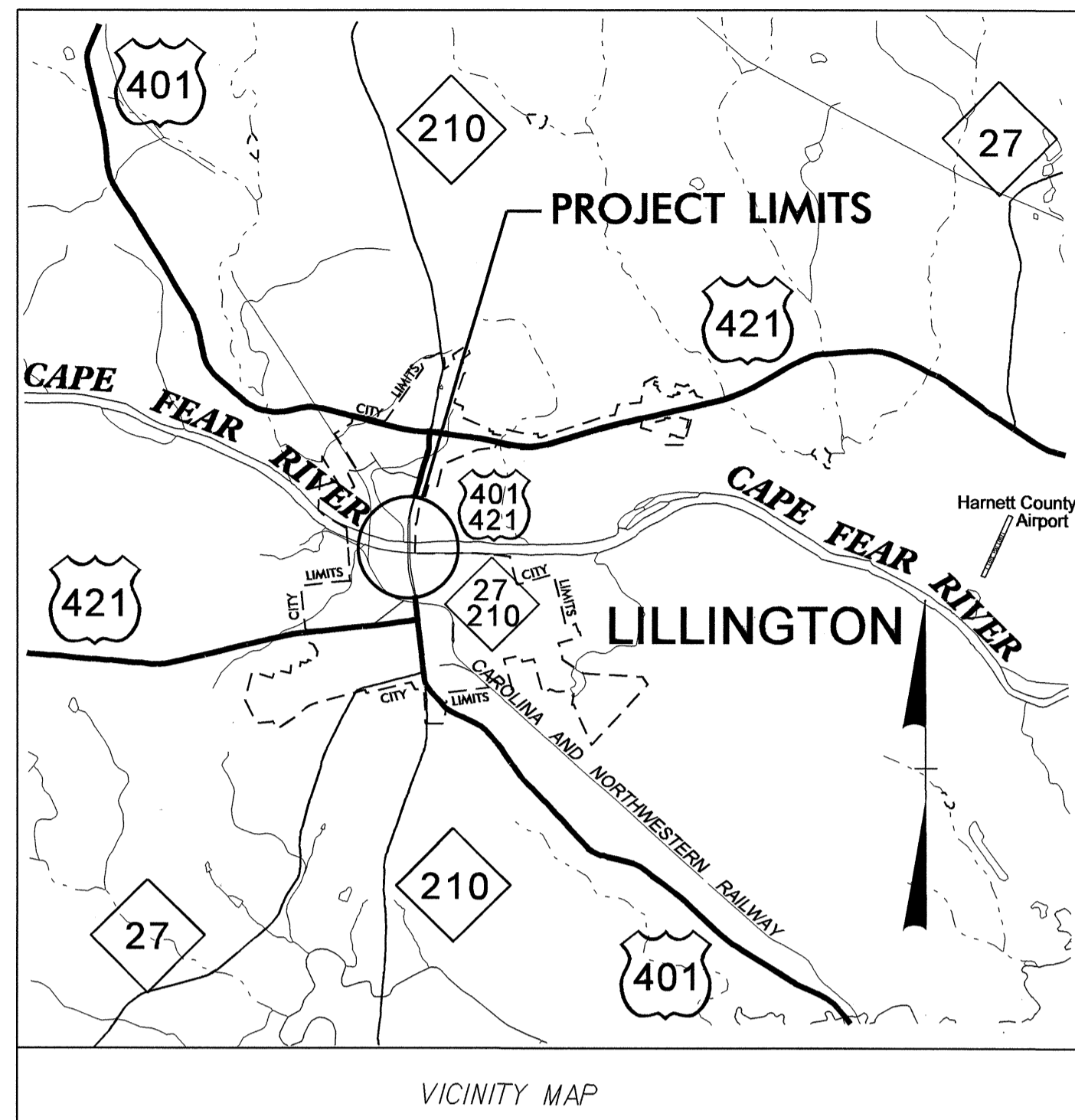
**UTILITY CONSTRUCTION PLANS
HARNETT COUNTY**

LOCATION: BRIDGE 46 OVER CAPE FEAR RIVER ON US 401

TYPE OF WORK: WATER AND SEWER RELOCATION



TIP PROJECT: B-4138

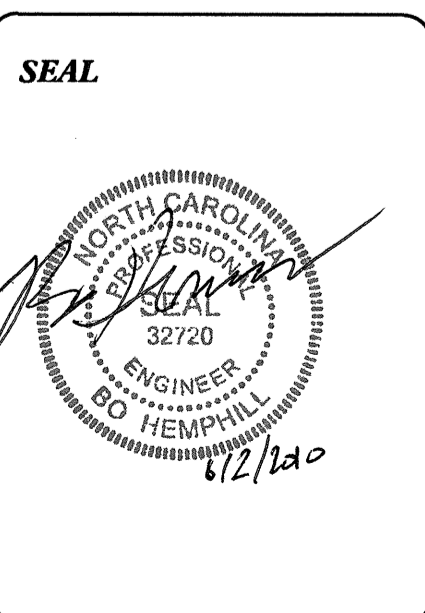


INDEX OF SHEETS

SHEET NO.	DESCRIPTION
UC-1	TITLE SHEET
UC-3 THRU UC-4	UTILITY CONSTRUCTION PLAN SHEETS
UC-5 THRU UC-6	PROFILE/DETAILS SHEETS
UC-7	DETAILS SHEET

WATER AND SEWER OWNERS ON PROJECT

(1) HARNETT COUNTY
(2) TOWN OF LILLINGTON



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

1591 MAIL SERVICES CENTER
RALEIGH, NC 27699-1591
PHONE (919) 250-4128
FAX (919) 250-4151

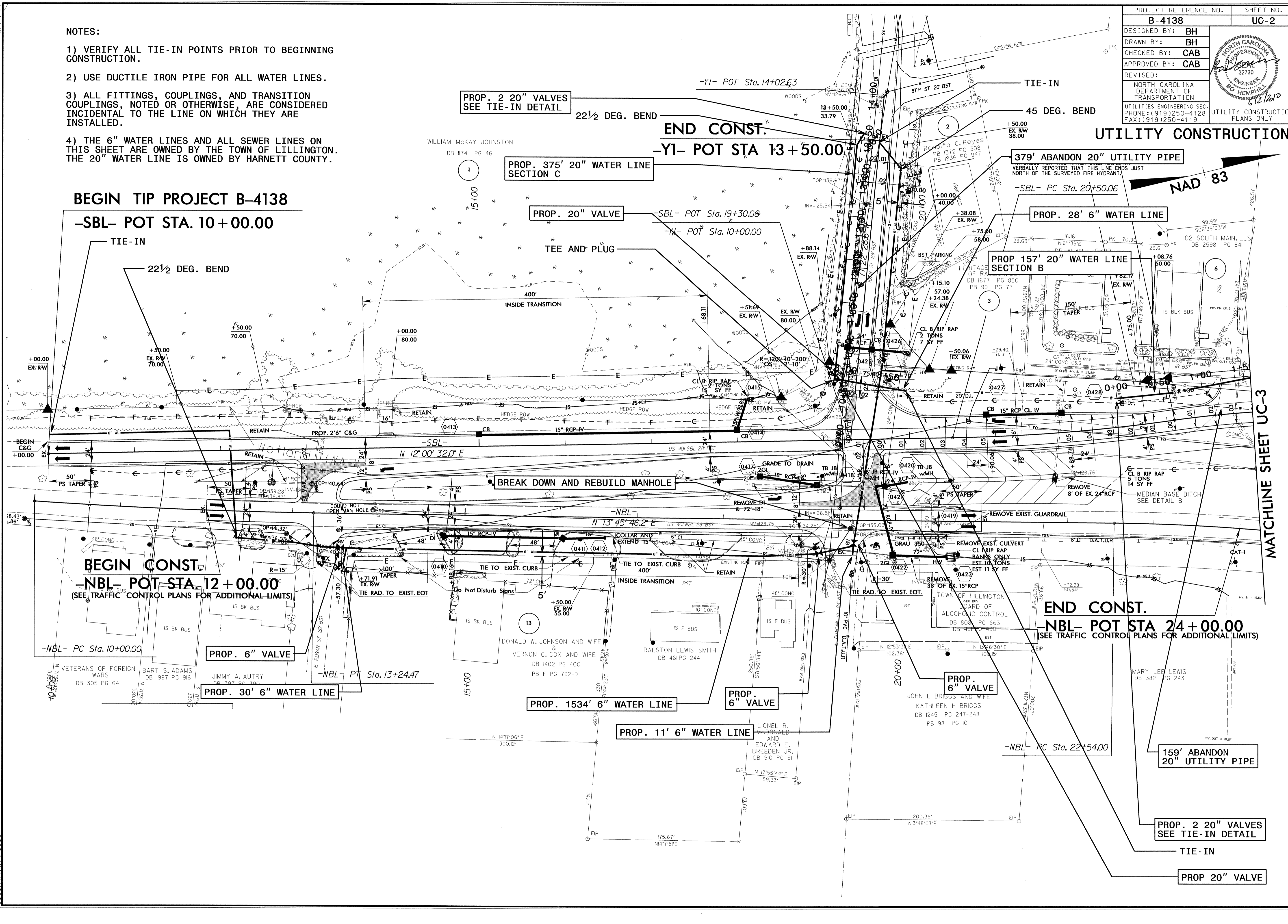
Roger Worthington, P.E. UTILITIES SECTION ENGINEER
Carl Barclay, P.E. UTILITIES SQUAD LEADER PROJECT ENGINEER
Bo Hemphill, P.E. UTILITIES PROJECT DESIGNER

30-MAY-2010 16:46 R:\Utilities\RDY_Ut\Proj\B4138_ut_title_uc1.psh.dgn \$\$\$USERNAME\$\$\$

NOTES:

- 1) VERIFY ALL TIE-IN POINTS PRIOR TO BEGINNING CONSTRUCTION.
- 2) USE DUCTILE IRON PIPE FOR ALL WATER LINES.
- 3) ALL FITTINGS, COUPLINGS, AND TRANSITION COUPLINGS, NOTED OR OTHERWISE, ARE CONSIDERED INCIDENTAL TO THE LINE ON WHICH THEY ARE INSTALLED.
- 4) THE 6" WATER LINES AND ALL SEWER LINES ON THIS SHEET ARE OWNED BY THE TOWN OF LILLINGTON. THE 20" WATER LINE IS OWNED BY HARNETT COUNTY.

5/14/99
02-JUN-2010 10:02
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BEGIN TIP PROJECT B-4138

-SBL- POT STA. 10 + 00.00

BEGIN CONST.

-NBL- POT STA. 12 + 00.00

(SEE TRAFFIC CONTROL PLANS FOR ADDITIONAL LIMITS)

END CONST.

-NBL- POT STA 24 + 00.00

(SEE TRAFFIC CONTROL PLANS FOR ADDITIONAL LIMITS)

PROP. 2 20" VALVES
SEE TIE-IN DETAIL

PROP. 375' 20" WATER LINE
SECTION C

PROP. 20" VALVE

379' ABANDON 20" UTILITY PIPE

PROP. 28' 6" WATER LINE

PROP 157' 20" WATER LINE
SECTION B

BREAK DOWN AND REBUILD MANHOLE

PROP. 6" VALVE

PROP. 30' 6" WATER LINE

PROP. 1534' 6" WATER LINE

PROP. 11' 6" WATER LINE

PROP. 6" VALVE

PROP. 6" VALVE

159' ABANDON 20" UTILITY PIPE

PROP. 2 20" VALVES
SEE TIE-IN DETAIL

PROP 20" VALVE

NAD 83

MATCHLINE SHEET UC-3

- NOTES:
- 1) VERIFY ALL TIE-IN POINTS PRIOR TO BEGINNING CONSTRUCTION.
 - 2) USE DUCTILE IRON PIPE FOR ALL WATER LINES.
 - 3) ALL FITTINGS, COUPLINGS, AND TRANSITION COUPLINGS, NOTED OR OTHERWISE, ARE CONSIDERED INCIDENTAL TO THE LINE ON WHICH THEY ARE INSTALLED.
 - 4) THE 8" FORCE SEWER MAIN IS OWNED BY THE TOWN OF LILLINGTON. ALL OTHER WATER AND SEWER LINES ON THIS SHEET ARE OWNED BY HARNETT COUNTY.

PROP. MANHOLE MH-7
 5' DIA. UTILITY MANHOLE
 5.5' UTILITY MANHOLE WALL 5' DIA.
 STA. 34+80 -SBL- LT. 250

PROP. 415' 48" GRAVITY SANITARY SEWER
 USE MATERIAL SPECIFIED ON PROFILE.

PROP. MANHOLE MH-6
 6' DIA. UTILITY MANHOLE
 5.7' UTILITY MANHOLE WALL 6' DIA.
 STA. 33+47 -SBL- LT. 142

PROP. MANHOLE MH-5
 5' DIA. UTILITY MANHOLE
 5.7' UTILITY MANHOLE WALL 5' DIA.
 STA. 33+47.7 -SBL- LT. 86

PROP. MANHOLE MH-4
 5' DIA. UTILITY MANHOLE
 5.7' UTILITY MANHOLE WALL 5' DIA.
 STA. 33+38.7 -SBL- LT. 69

PROP. 8" BLOW OFF
 LOCATE AS DIRECTED BY
 THE ENGINEER TO DRAIN
 INTO DITCH.

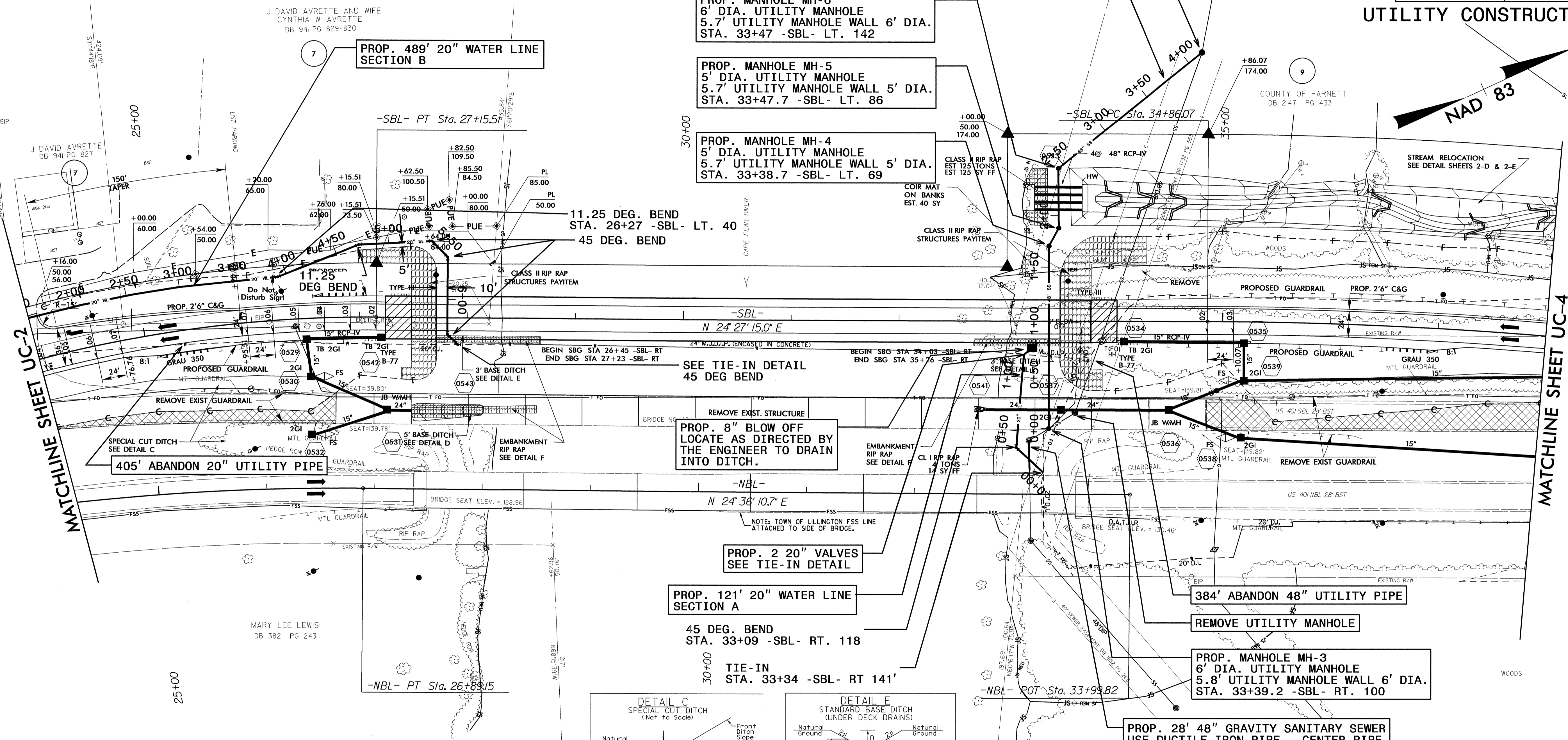
PROP. 2 20" VALVES
 SEE TIE-IN DETAIL

PROP. 121' 20" WATER LINE
 SECTION A

384' ABANDON 48" UTILITY PIPE
 REMOVE UTILITY MANHOLE

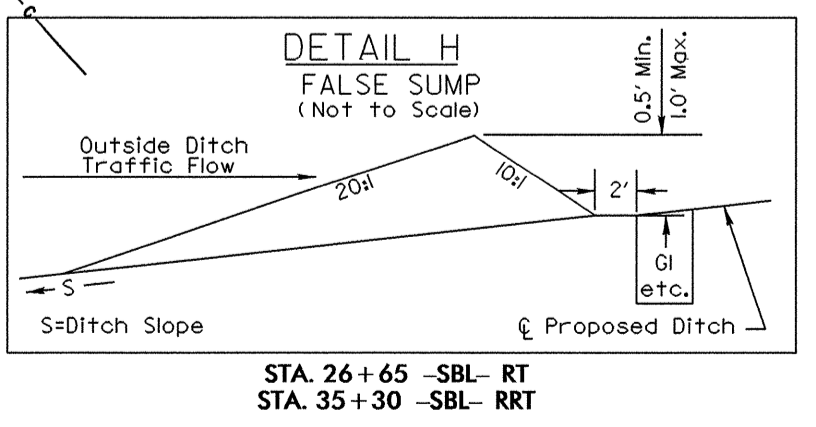
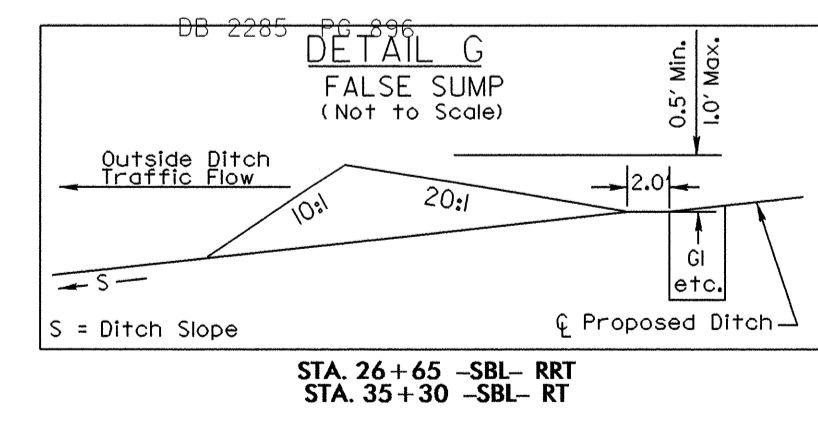
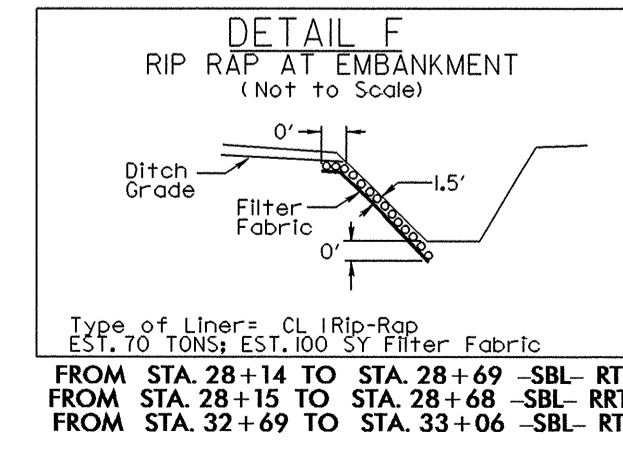
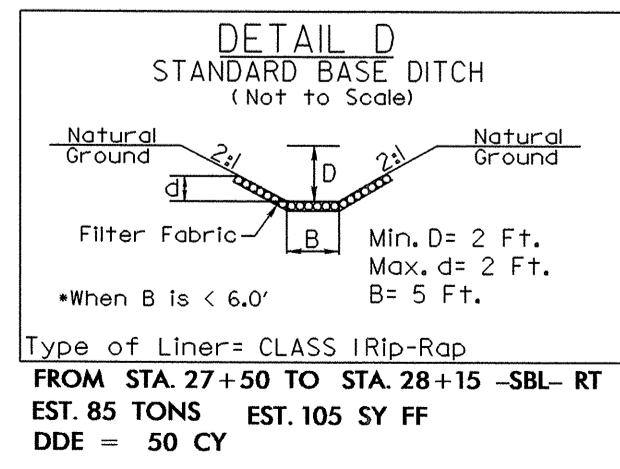
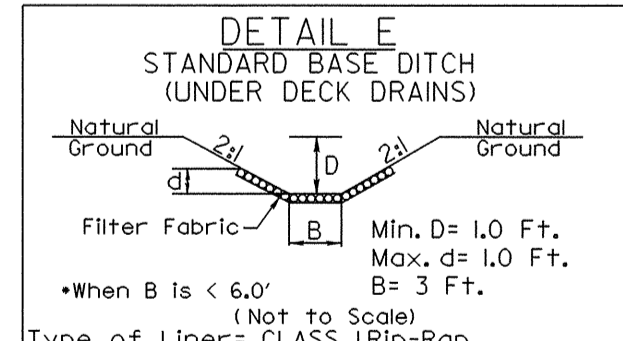
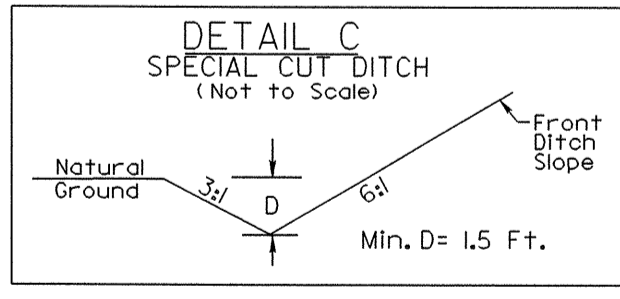
PROP. MANHOLE MH-3
 6' DIA. UTILITY MANHOLE
 5.8' UTILITY MANHOLE WALL 6' DIA.
 STA. 33+39.2 -SBL- RT. 100

PROP. 28' 48" GRAVITY SANITARY SEWER
 USE DUCTILE IRON PIPE. CENTER PIPE
 SECTION OVER WATER PIPE. REPLACE
 ON EXISTING GRADE.



-SBL-	
PI Sta 25+14.11	PI Sta 40+64.88
$\Delta = 19^{\circ} 25' 14.3''$ (RT)	$\Delta = 16^{\circ} 28' 02.4''$ (RT)
D = 446' 28.7"	D = 1' 25' 56.6"
L = 406.74'	L = 1,496.64'
T = 205.34'	T = 578.81'
R = 1,200.00'	R = 4,000.00'
SE = .07	SE = .03
V ₀ = 50mph	V ₀ = 50mph

-NBL-	
PI Sta 24+72.23	
$\Delta = 10^{\circ} 50' 24.5''$ (RT)	
D = 2' 29' 28.0"	
L = 435.15'	
T = 218.23'	
R = 2,300.00'	
SE = EXIST.	

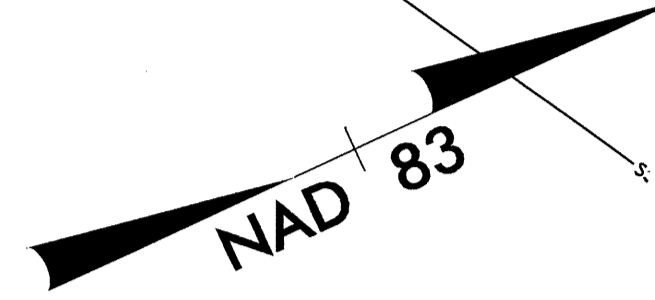


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 J. David Avrette
 DB 941 PG 827
 MARY LEE LEWIS
 DB 382 PG 243

MATCHLINE SHEET UC-4

MATCHLINE SHEET UC-2

UTILITY CONSTRUCTION



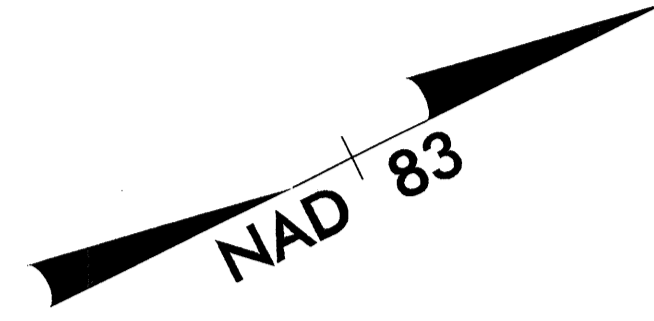
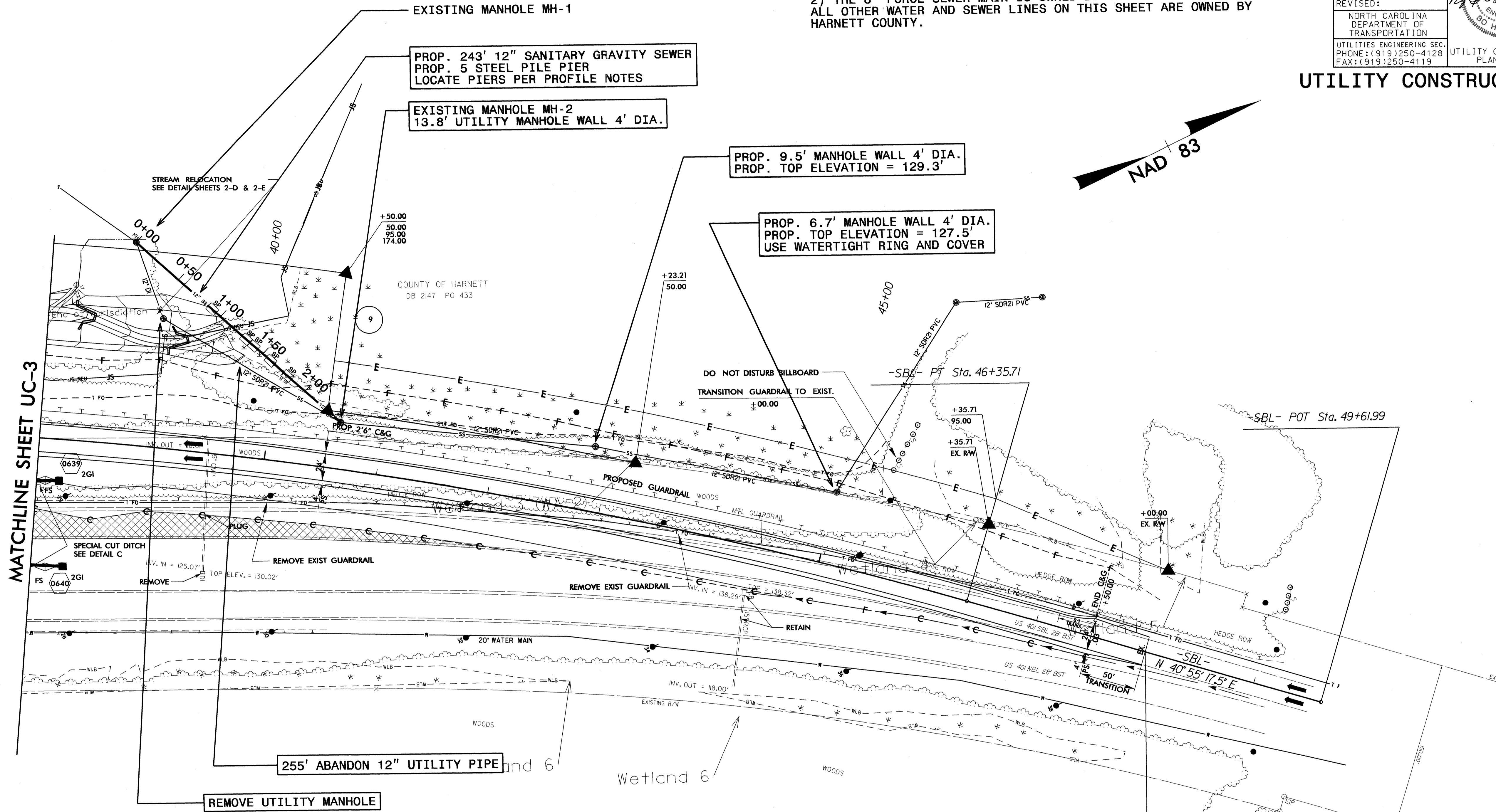
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PROJECT REFERENCE NO.	SHEET NO.
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DESIGNED BY: BH	
DRAWN BY: BH	
CHECKED BY: CAB	
APPROVED BY: CAB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 250-4128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

UTILITY CONSTRUCTION

NOTES:

- 1) ALL FITTINGS, COUPLINGS, AND TRANSITION COUPLINGS, NOTED OR OTHERWISE, ARE CONSIDERED INCIDENTAL TO THE LINE ON WHICH THEY ARE INSTALLED.
- 2) THE 8" FORCE SEWER MAIN IS OWNED BY THE TOWN OF LILLINGTON. ALL OTHER WATER AND SEWER LINES ON THIS SHEET ARE OWNED BY HARNETT COUNTY.

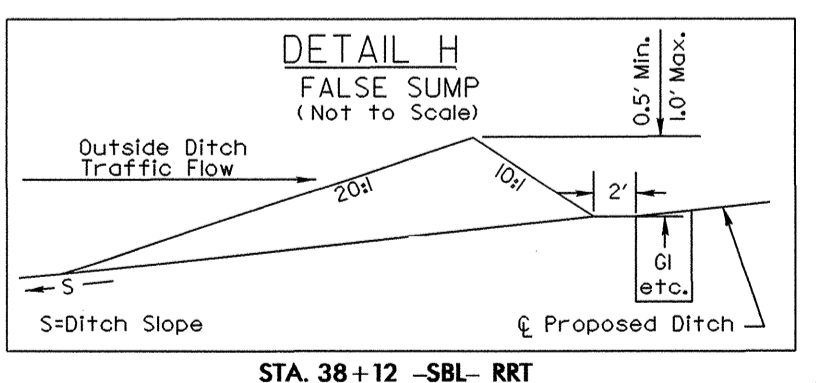
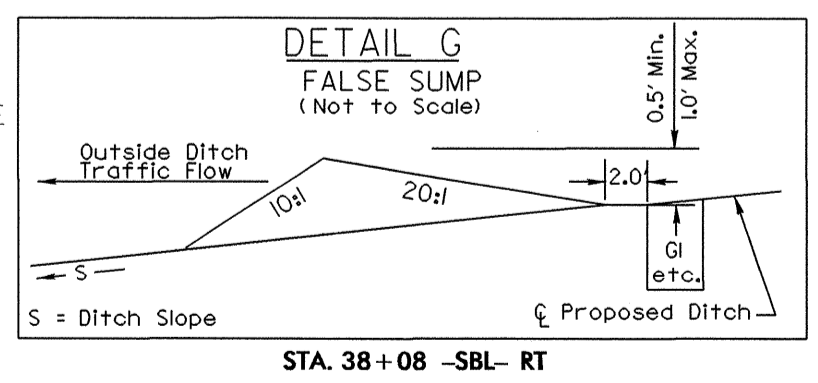


MATCHLINE SHEET UC-3

255' ABANDON 12" UTILITY PIPE

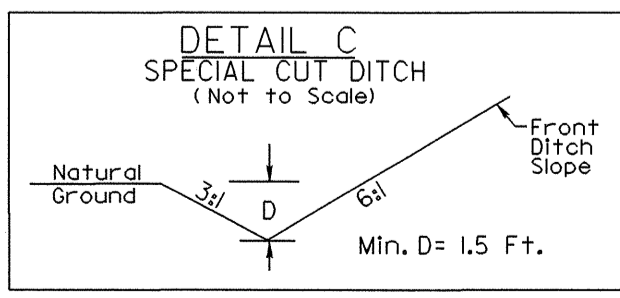
REMOVE UTILITY MANHOLE

H. LEIGH BALLANCE
DB 2285 PG 896



-SBL-

PI Sta 40+64.88
 $\Delta = 16' 28' 02.4''$ (RT)
 $D = 1' 25' 56.6''$
 $L = 149.64'$
 $T = 578.81'$
 $R = 4,000.00'$
 $SE = .03$
 $V_0 = 50\text{mph}$

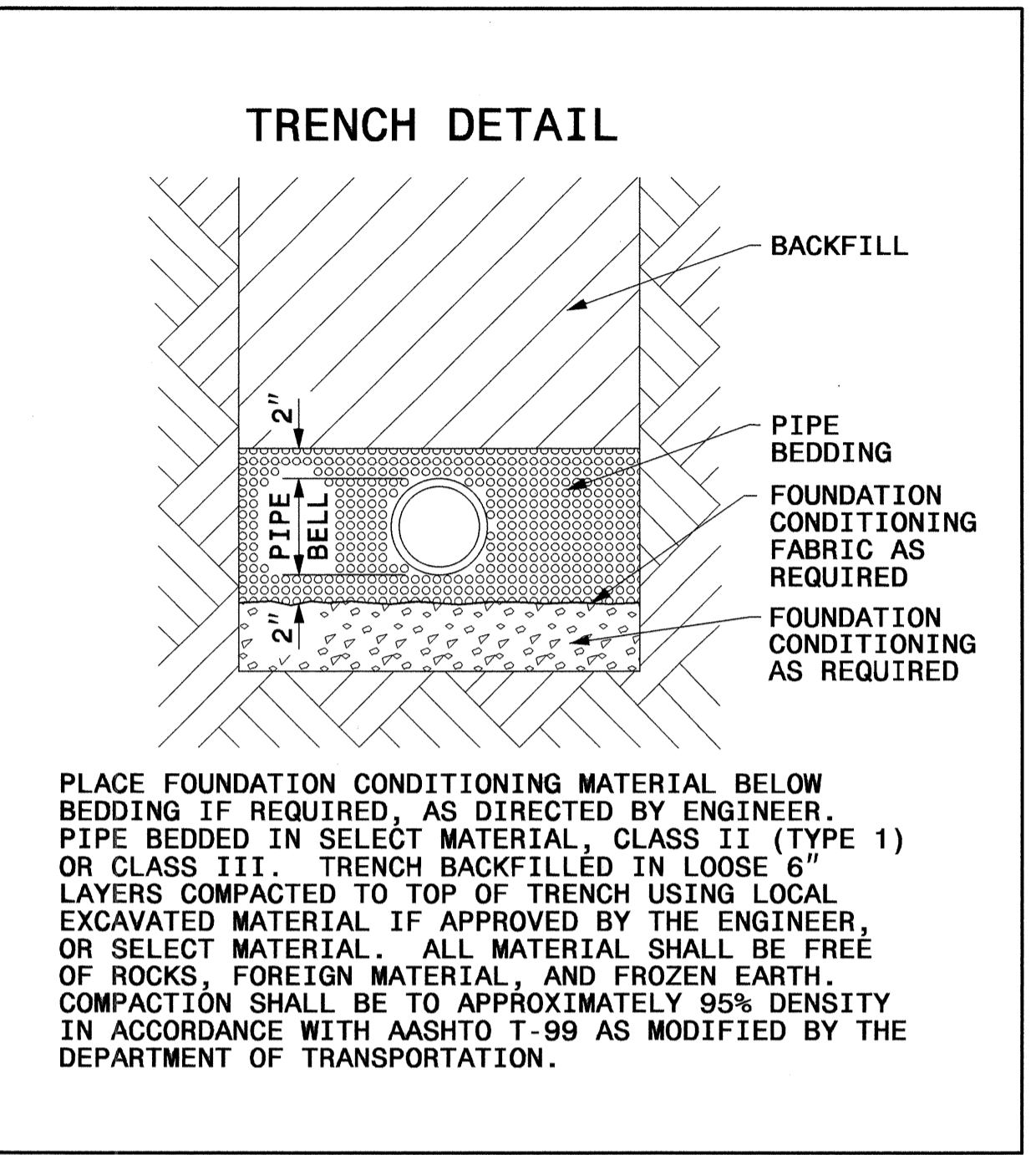
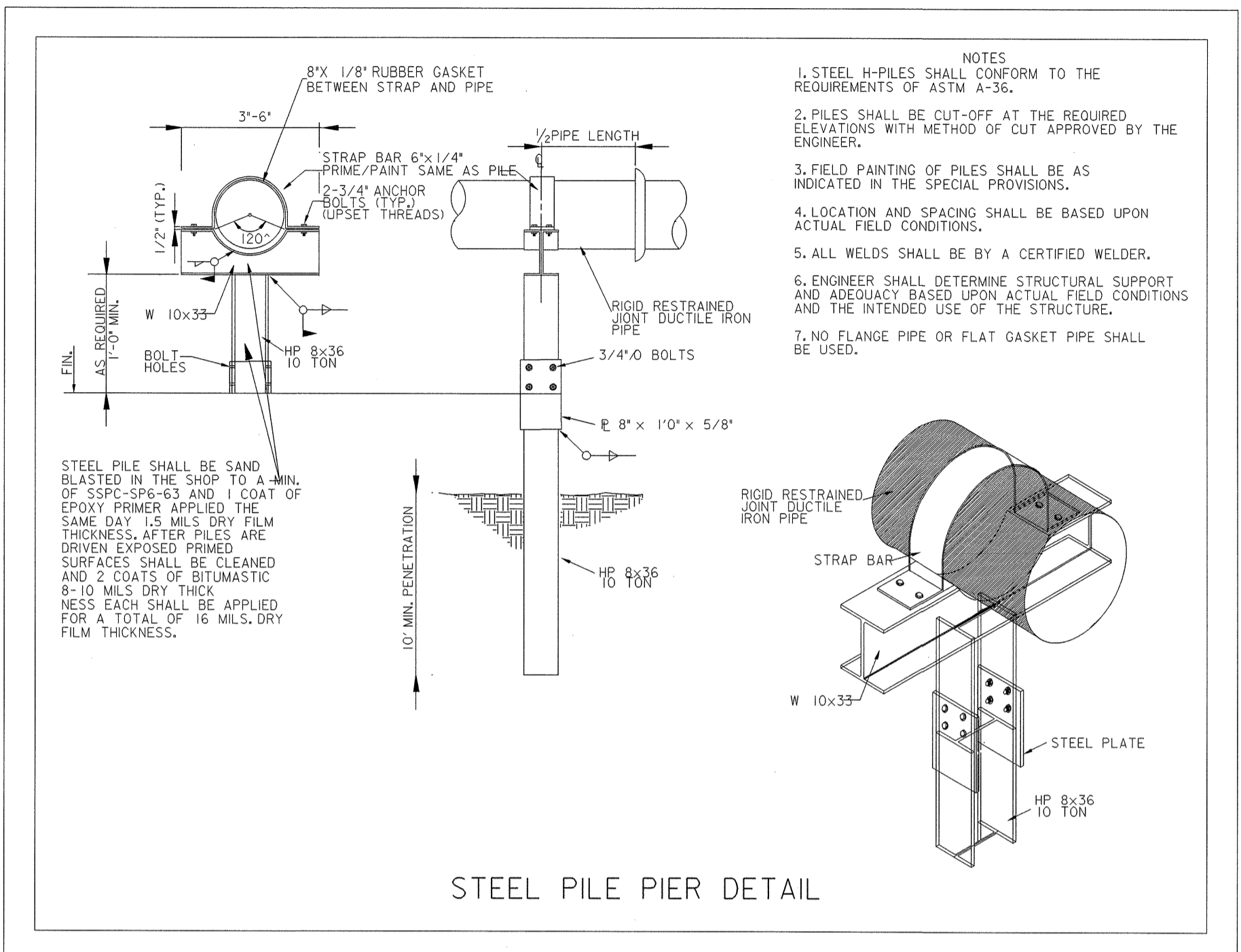


FROM STA. 22+00 TO STA. 26+30 -SBL- RT
 FROM STA. 24+30 TO STA. 26+30 -NBL- LT
 FROM STA. 35+20 TO STA. 45+00 -SBL- RT
 FROM STA. 35+00 TO STA. 39+30 -NBL- LT

END TIP PROJECT B-4138
-SBL- POT 48+00.00
 (SEE TRAFFIC CONTROL PLANS FOR ADDITIONAL LIMITS)

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UTILITY CONSTRUCTION



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		

REVISIONS

12" SEWER LINE NOTES:

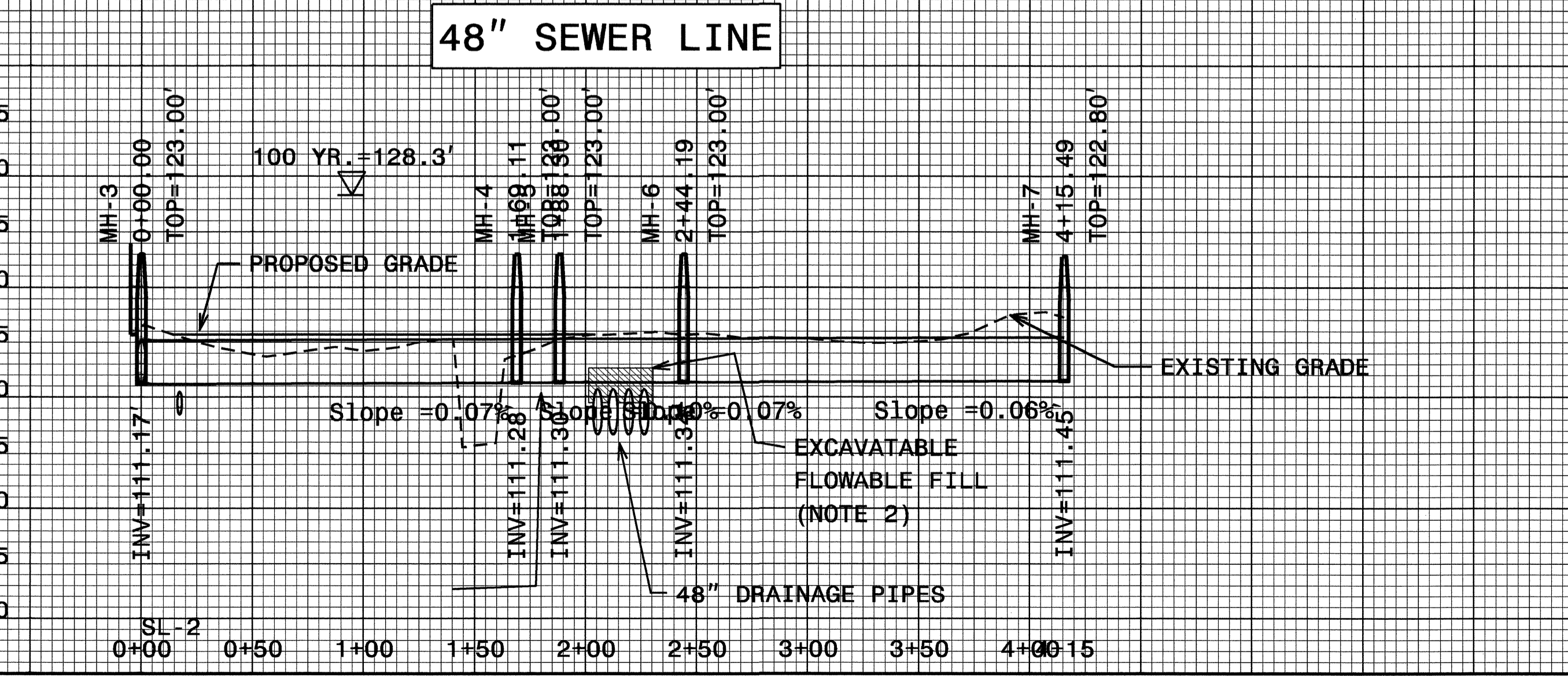
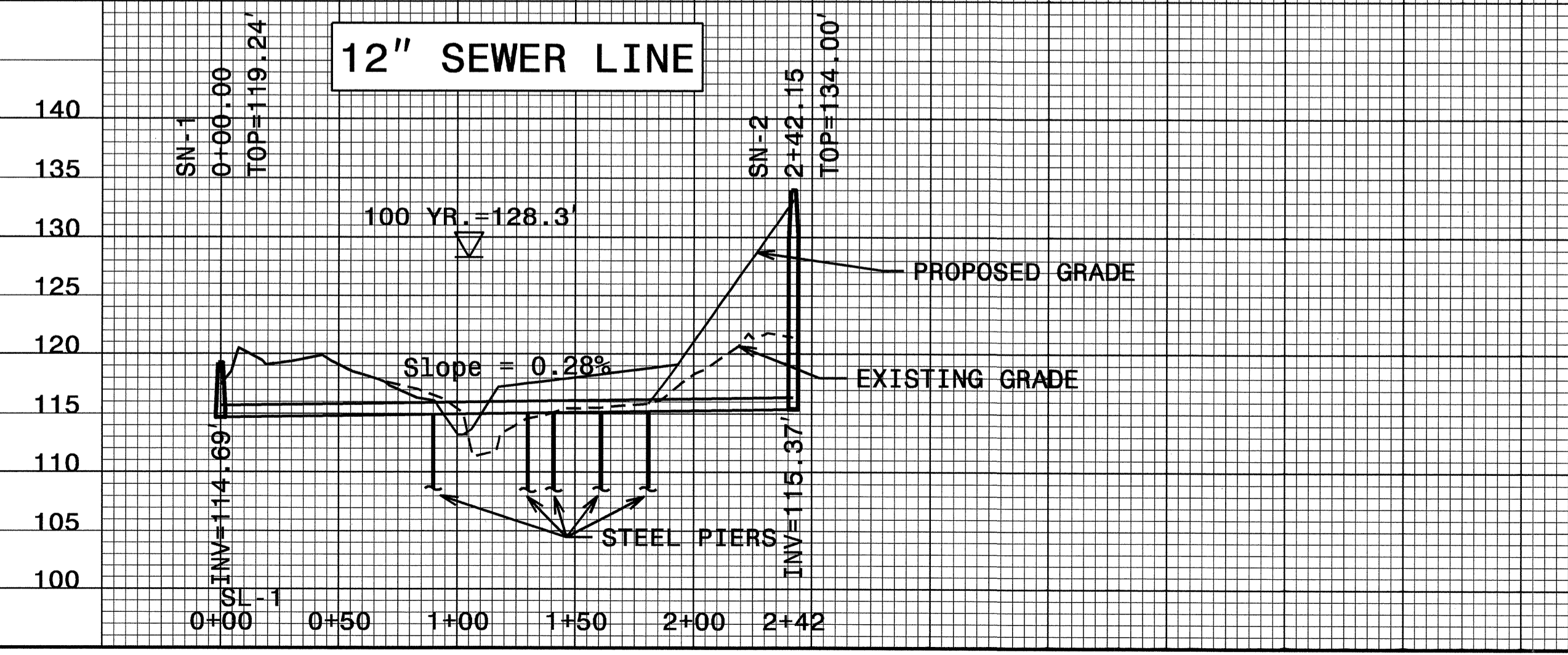
- 1) USE RESTRAINED JOINT DUCTILE IRON PIPE.
- 2) USE RIGID RESTRAINED JOINT DUCTILE IRON PIPE, ALLOWING NO DEFLECTION, FROM STATION 0+80 TO STATION 1+20.
- 3) LOCATE THE PIERS FOR THE AERIAL STREAM CROSSING AT STATIONS 0+90 AND 1+30, OR AS DIRECTED BY THE ENGINEER. CENTER A JOINT OF PIPE OVER EACH PIER.
- 4) LOCATE PIERS AT STATIONS 1+41, 1+61, AND 1+81, 1' BEHIND THE BELLS OF THE PIPE.

48" SEWER LINE NOTES:

- 1) USE PIPE MEETING THE FOLLOWING MATERIAL REQUIREMENTS:
 MH-3 TO MH-5 - DUCTILE IRON PIPE
 MH-5 TO MH-6 - RESTRAINED JOINT DUCTILE IRON PIPE
 MH-6 TO MH-7 - EPOXY COATED CONCRETE SEWER PIPE WITH TYPE R-4 JOINT

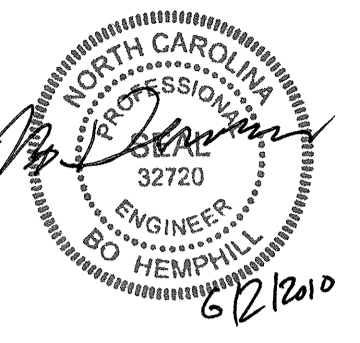
DUCTILE IRON PIPE MAY BE USED WHERE CONCRETE PIPE IS ALLOWED. RESTRAINED JOINT DUCTILE IRON PIPE MAY BE USED WHERE DUCTILE IRON PIPE IS REQUIRED OR ALLOWED.

- 2) BETWEEN STATIONS 2+00 AND 2+30, BED SEWER PIPE IN EXCAVATABLE FLOWABLE FILL Poured 1/3 THE WAY DOWN THE SIDES OF THE 48" DRAINAGE PIPES AND 1/3 THE WAY UP THE SIDES OF THE SEWER PIPE. THIS WORK WILL BE CONSIDERED INCIDENTAL TO THE CONSTRUCTION OF THE PIPE.
- 3) PLACE FILL MATERIAL AND GRADE OVER PIPE AS DIRECTED BY THE ENGINEER TO FACILITATE DRAINAGE.
- 4) MAINTAIN SEWER FLOW DURING ALL PHASES OF CONSTRUCTION. PUMP OR OTHERWISE TRANSPORT SEWERAGE AS REQUIRED DURING TIE-INS OR OTHER SERVICE DISRUPTIONS.
- 5) USE WATER-TIGHT RING AND COVERS ON ALL MANHOLES.

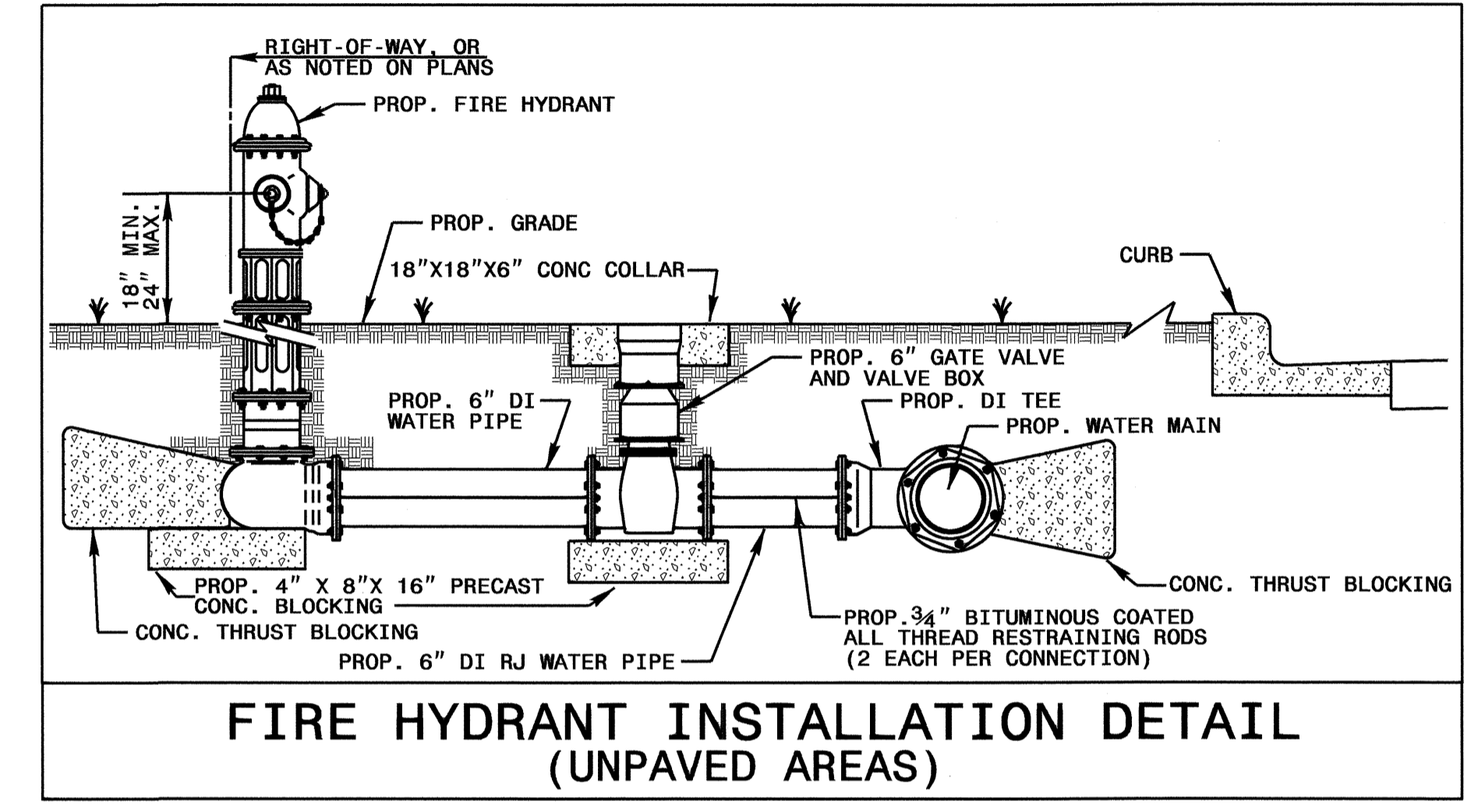
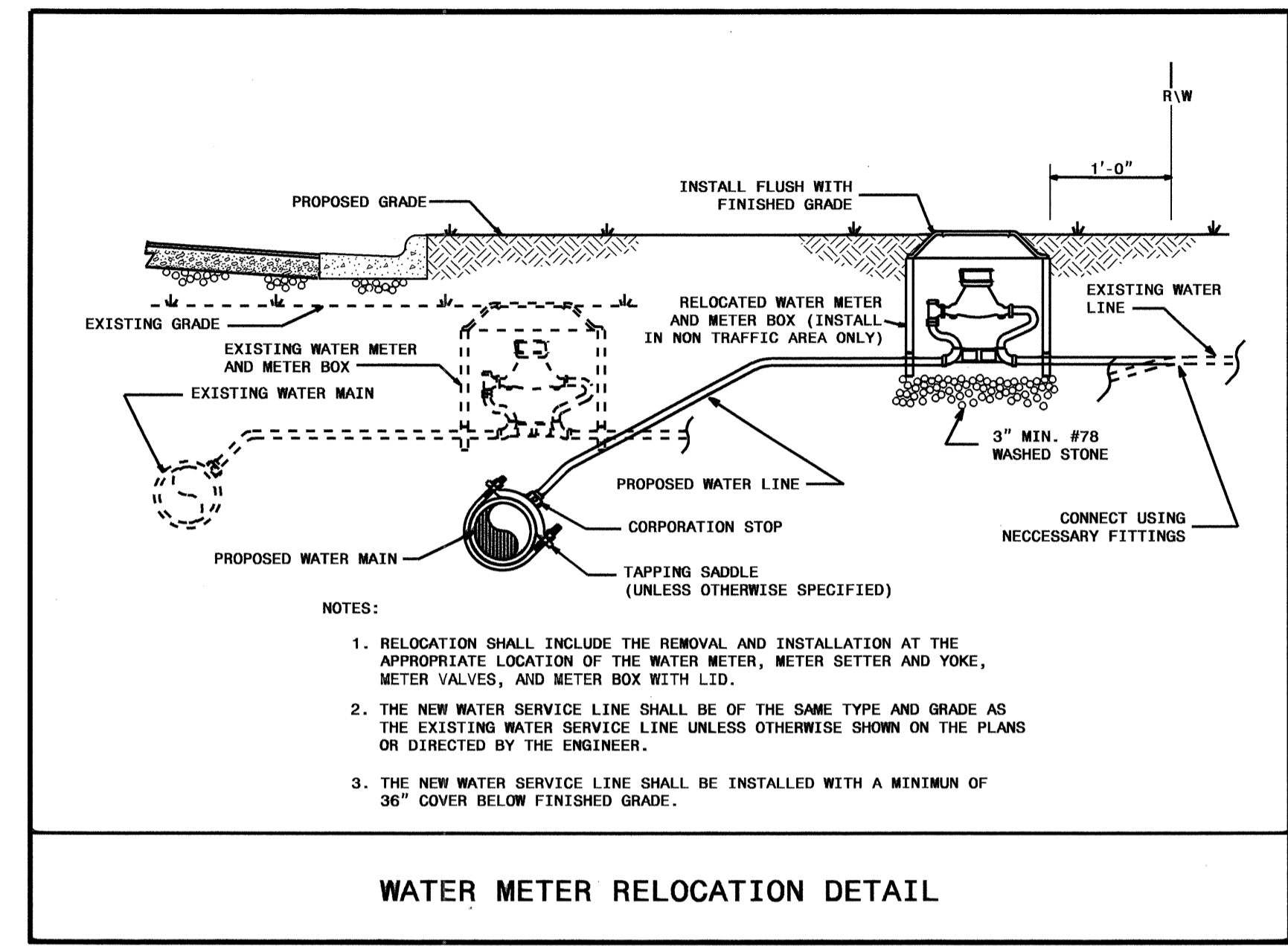
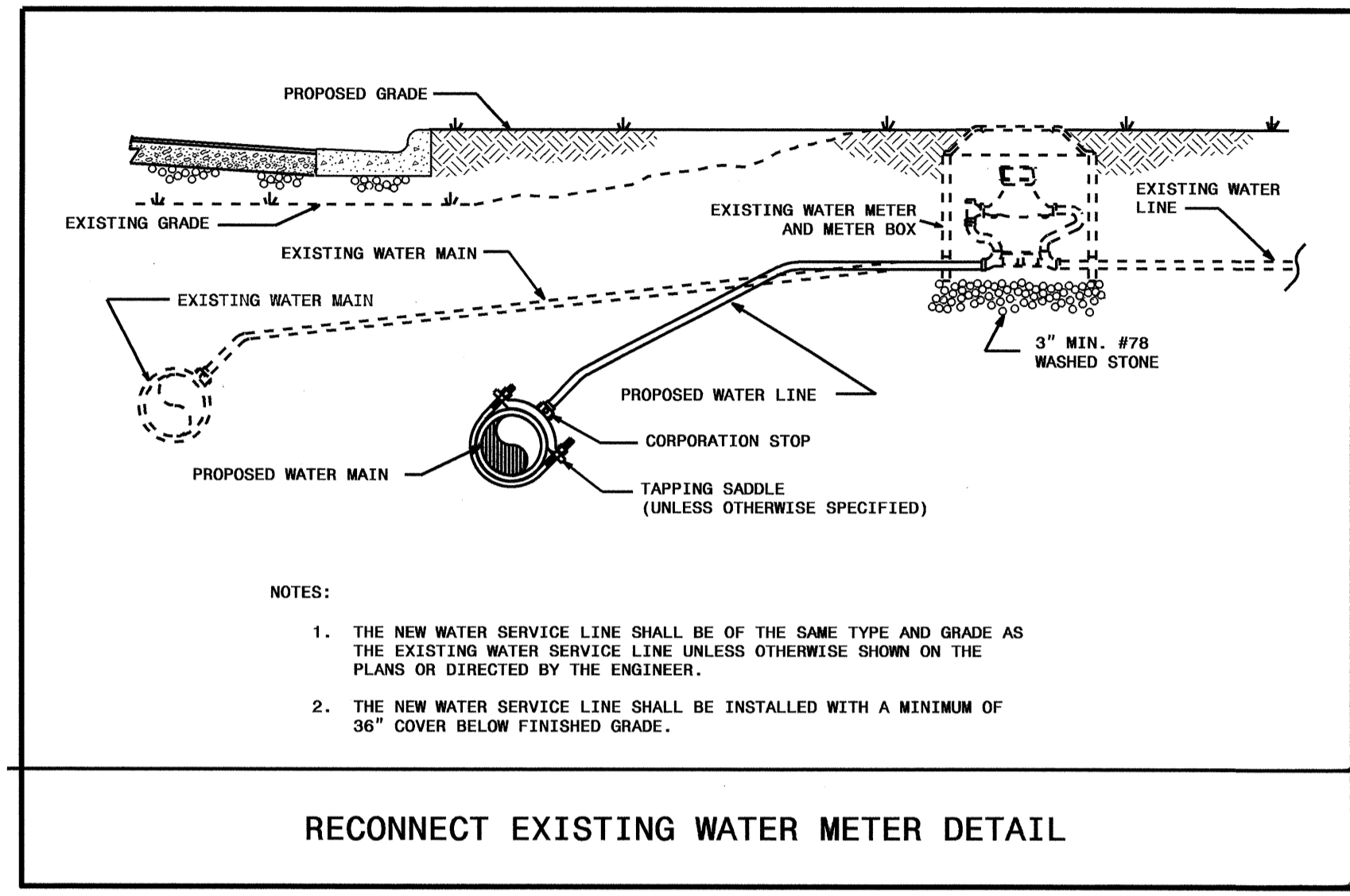


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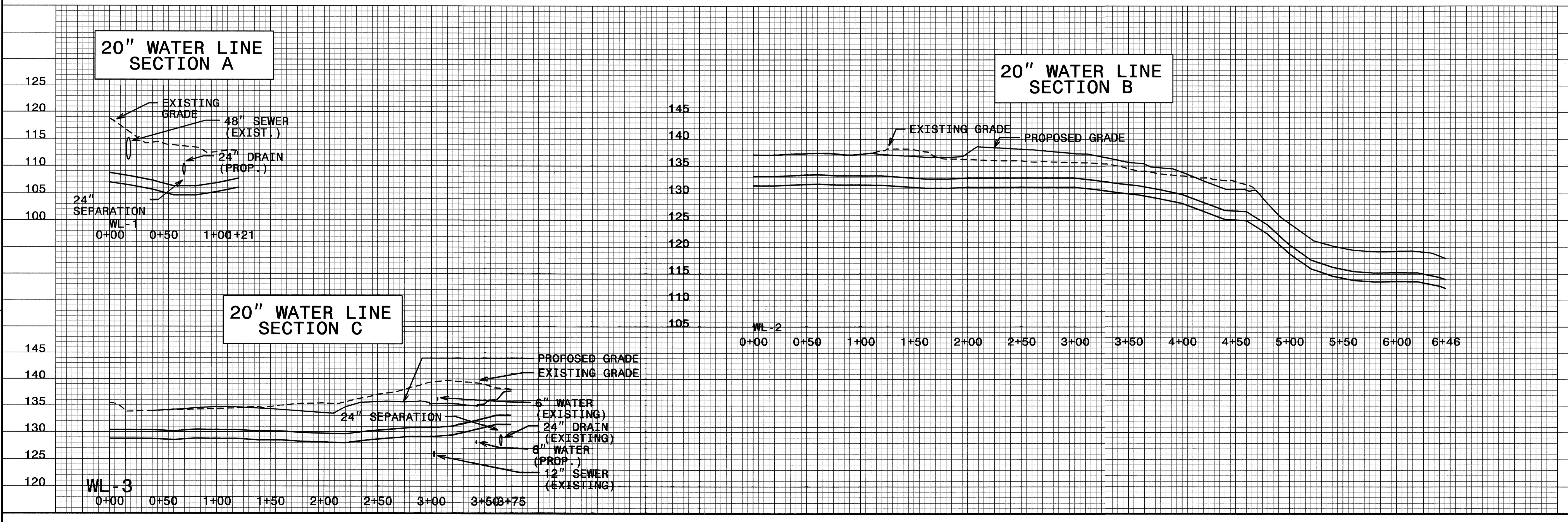
PROJECT REFERENCE NO.	SHEET NO.
B-4138	UC-6
DESIGNED BY: BH	
DRAWN BY: BH	
CHECKED BY: CAB	
APPROVED BY: CAB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 250-4128 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	




UTILITY CONSTRUCTION



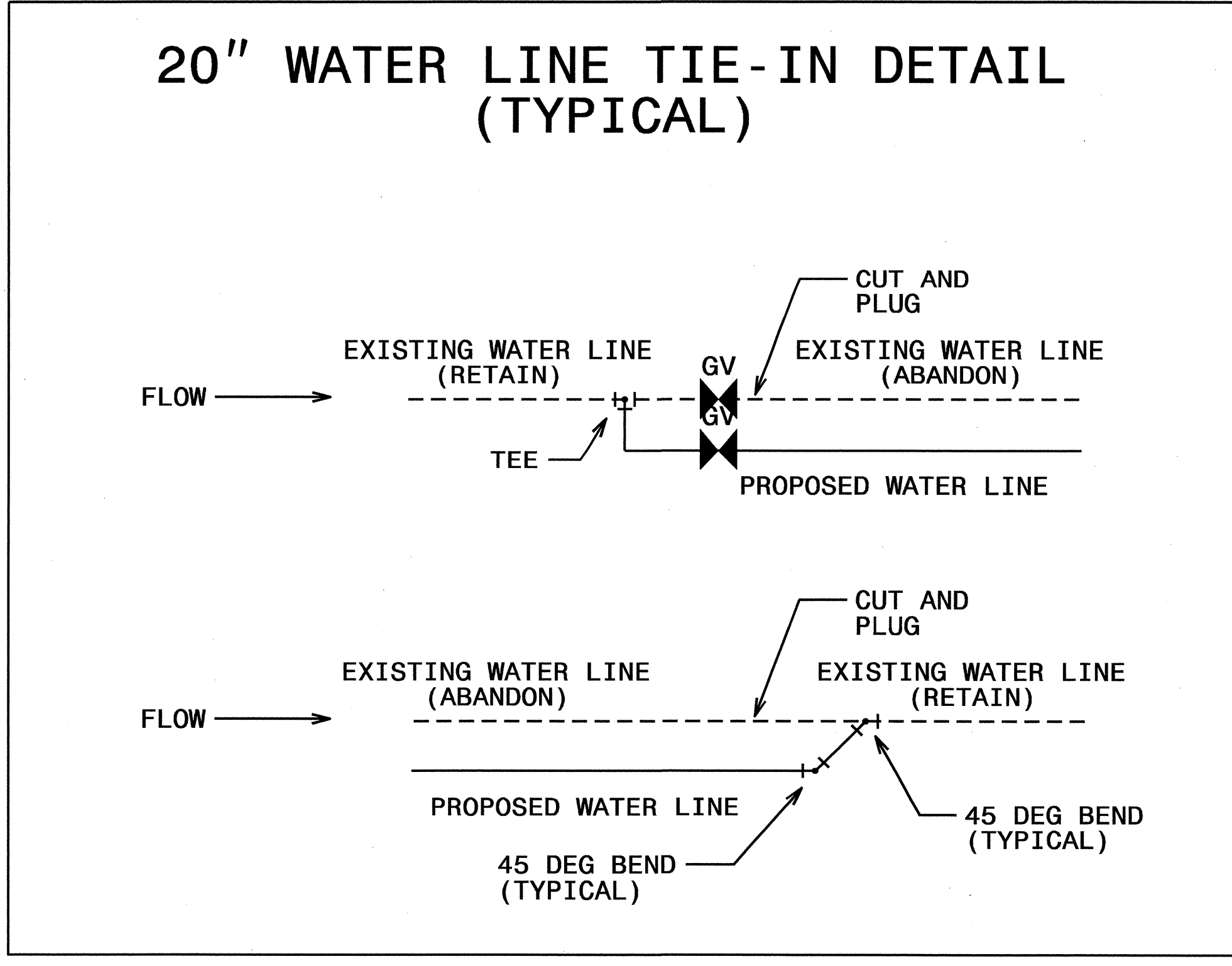
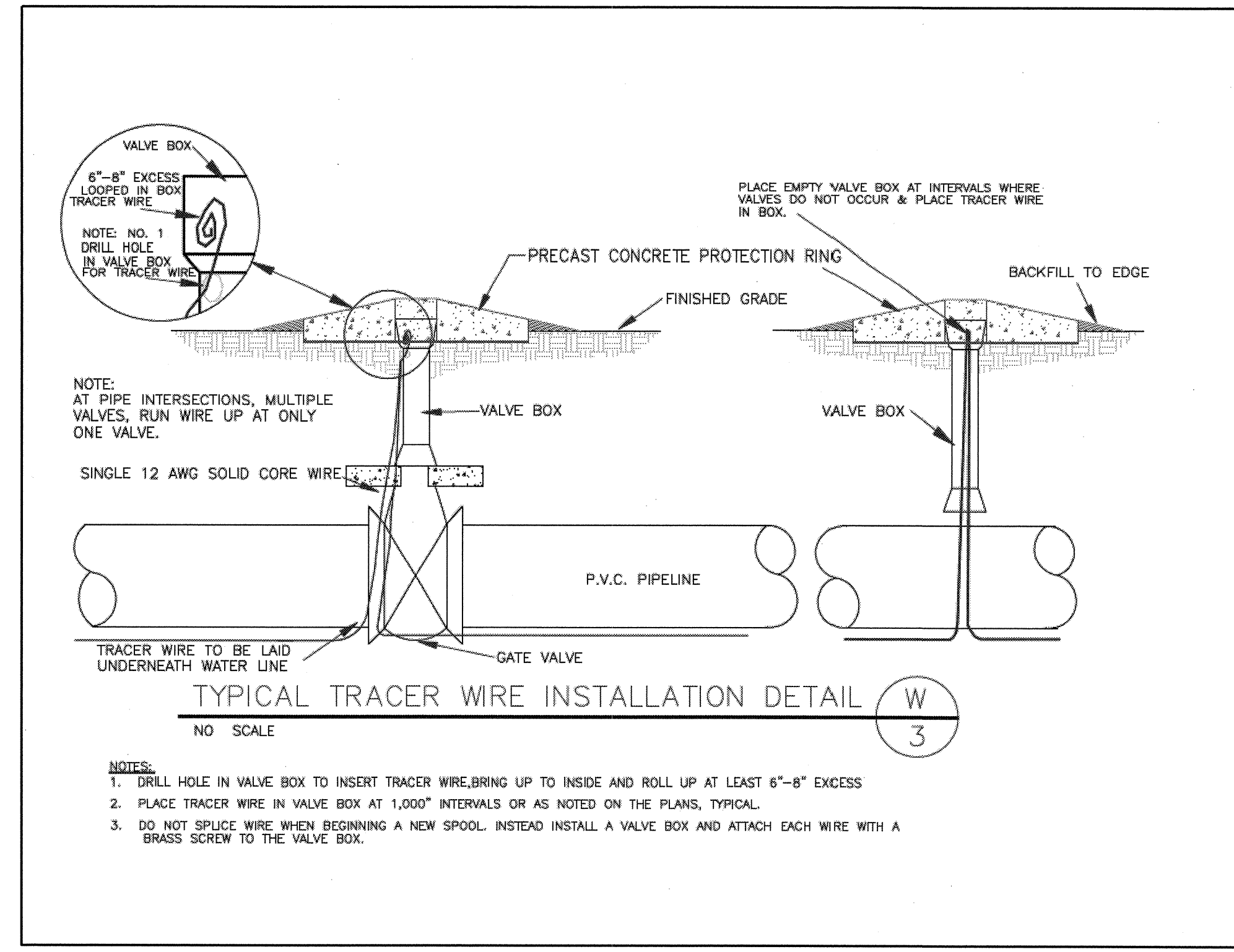
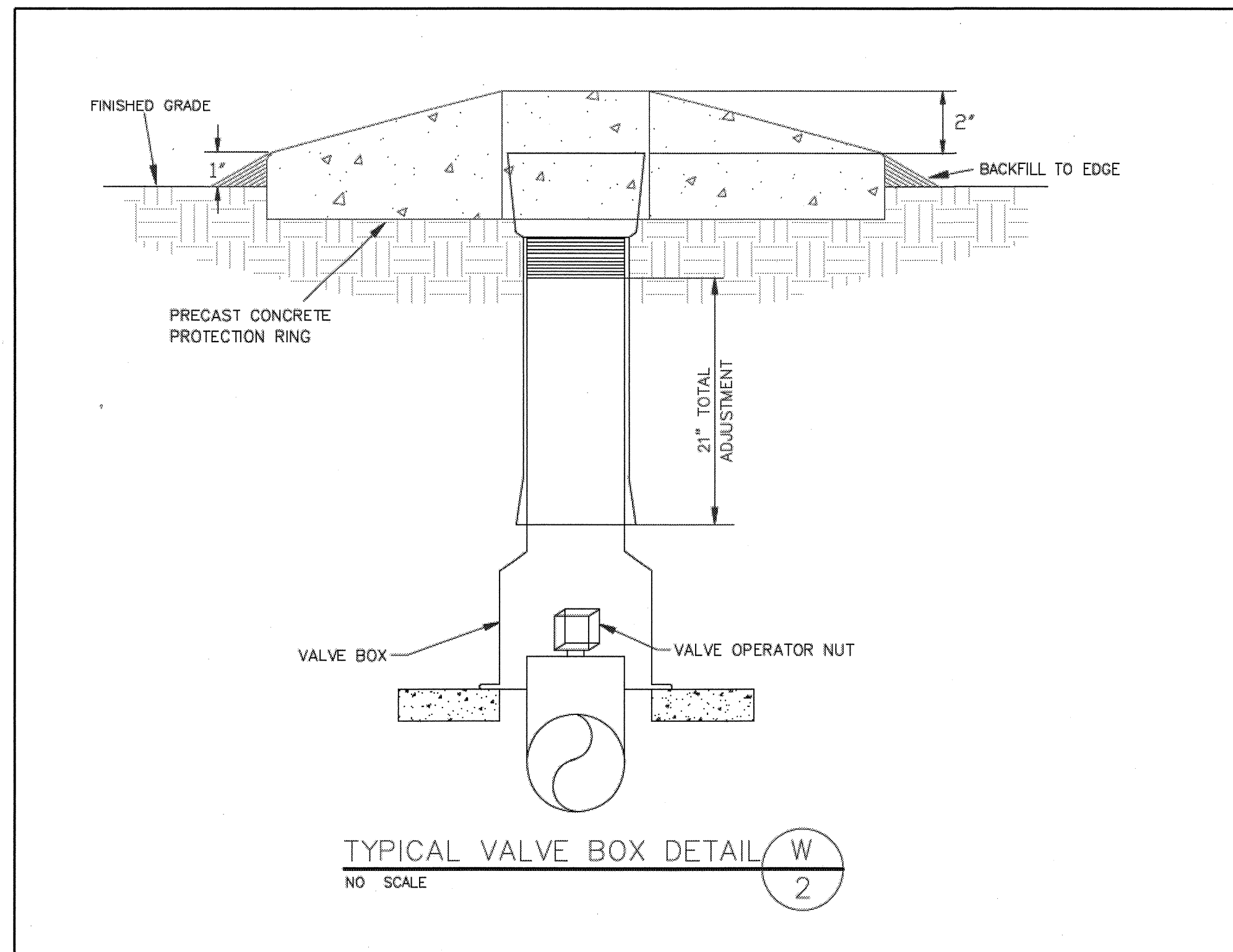
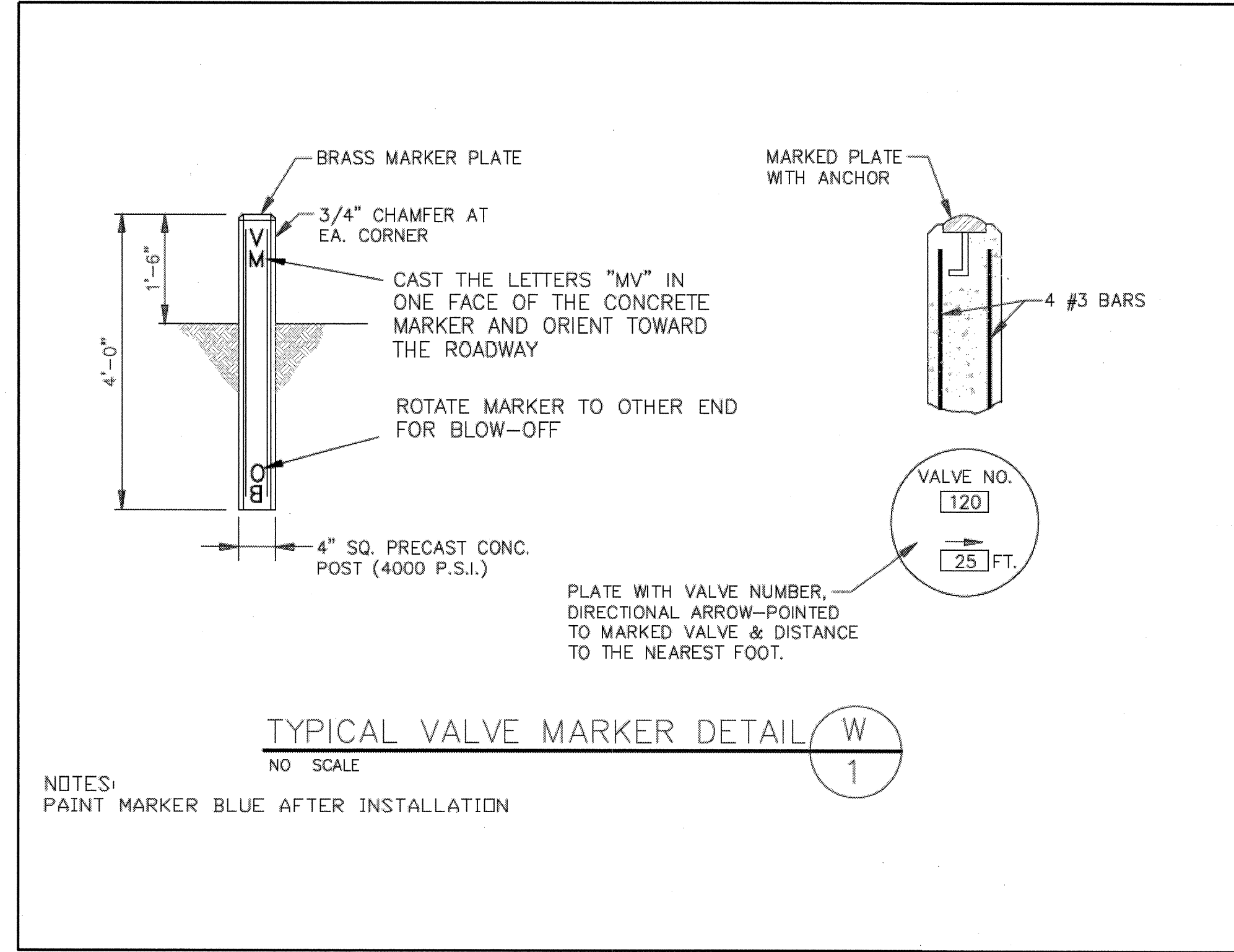
REVISIONS



5/14/99

PROJECT REFERENCE NO.	SHEET NO.
B-4138	UC-7
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DRAWN BY: BH	
CHECKED BY: CAB	
APPROVED BY: CAB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919)250-4128 FAX: (919)250-4119	
UTILITY CONSTRUCTION PLANS ONLY	

UTILITY CONSTRUCTION

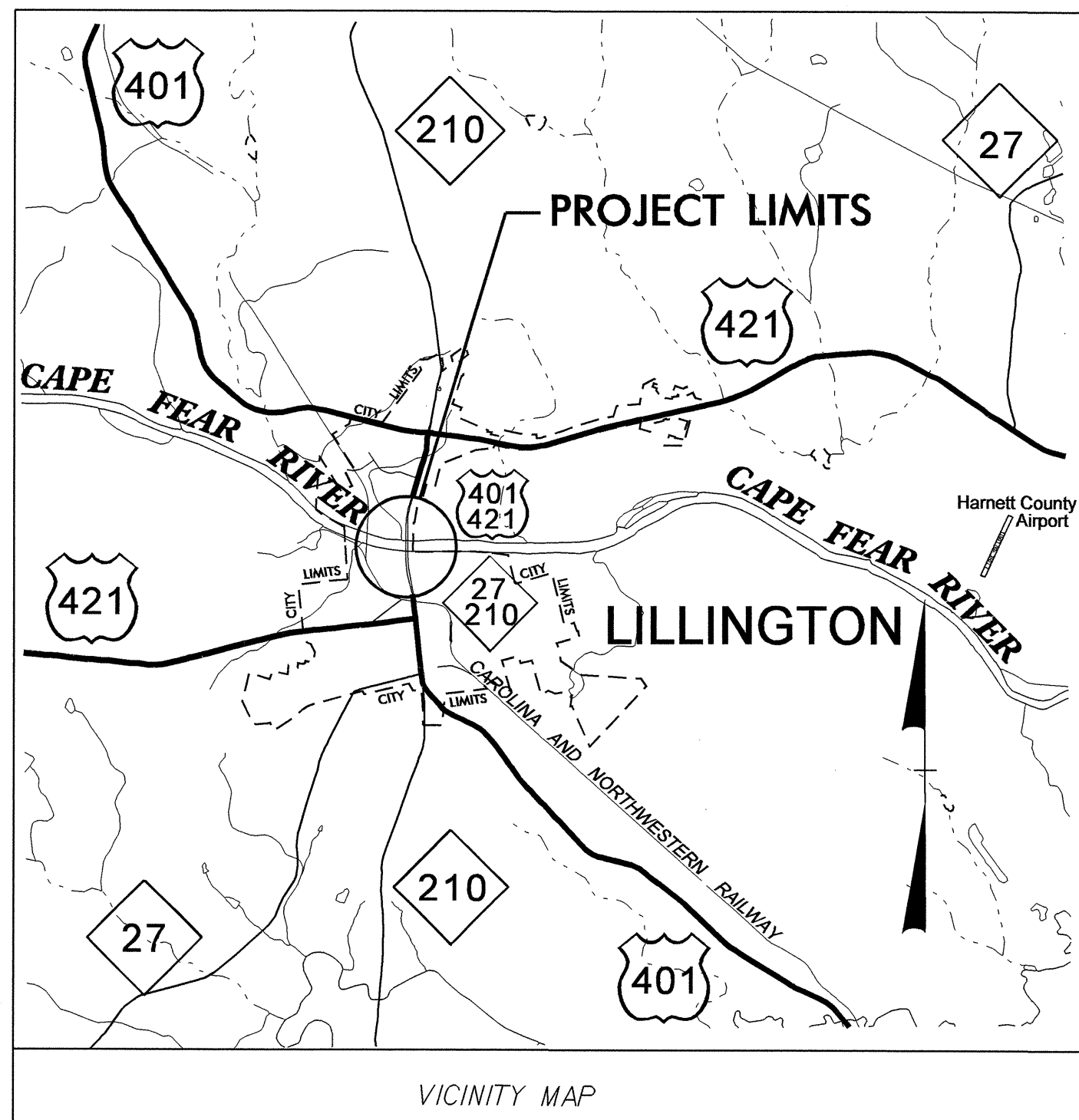


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 11:33:33 AM

See Sheet 1-A For Index of Sheets

T.I.P. NO.	SHEET NO.
B-4138	UO-1

TIP PROJECT: B-4138

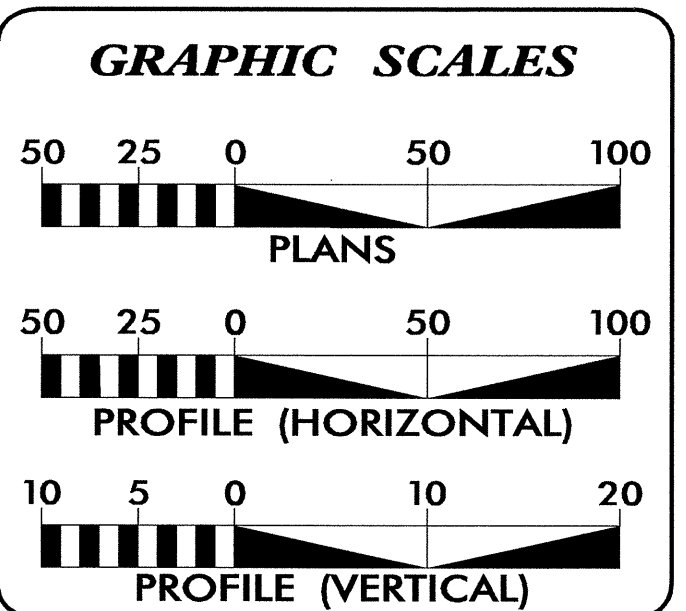
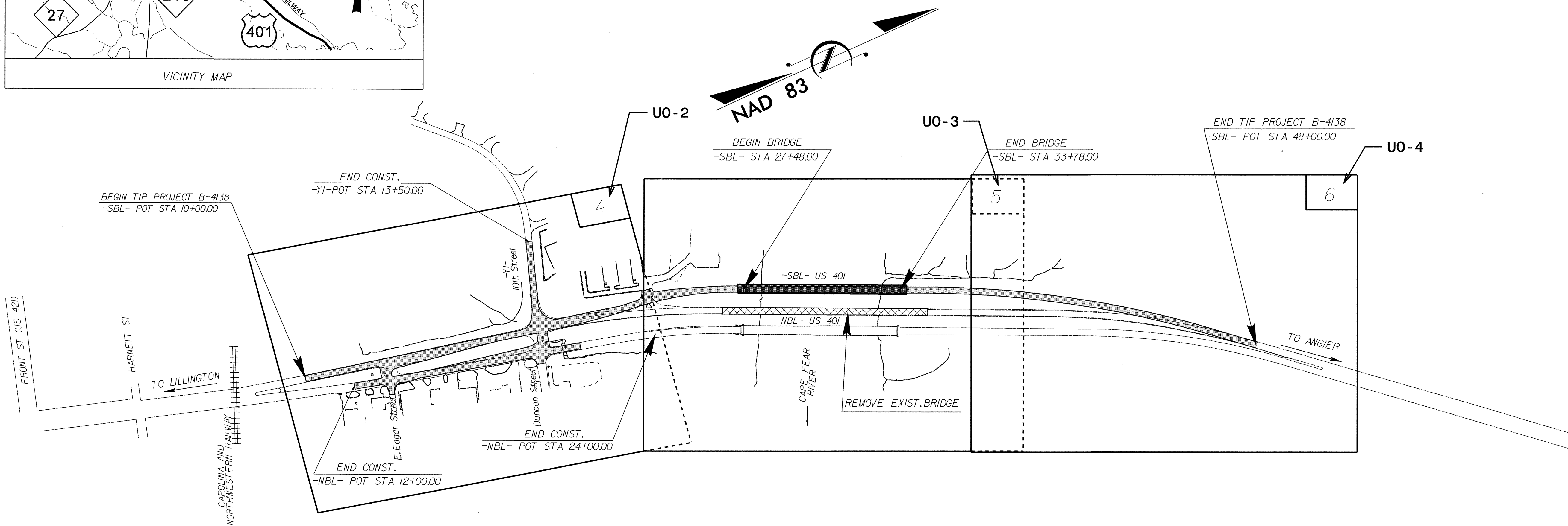
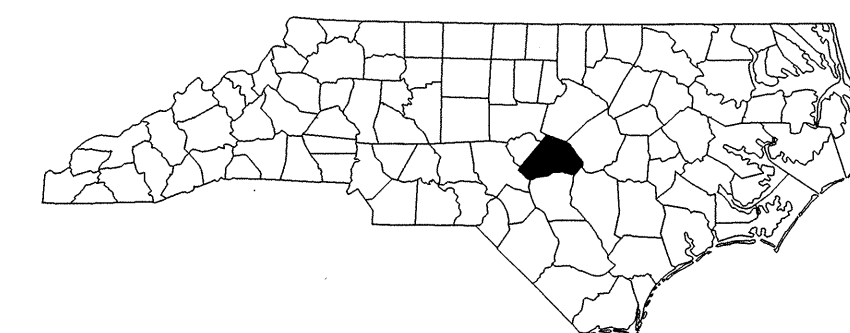


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

**UTILITIES BY OTHERS PLANS
HARNETT COUNTY**

LOCATION: BRIDGE 46 OVER CAPE FEAR RIVER ON US 401

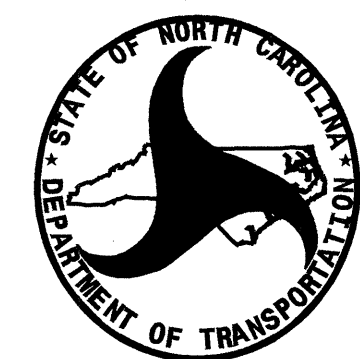
TYPE OF WORK: TELEPHONE, POWER DISTRIBUTION, GAS, CATV



INDEX OF SHEETS

SHEET NO.	DESCRIPTION
UO-1	TITLE SHEET
UO-2 THRU UO-4	UTILITIES BY OTHERS PLAN SHEETS

- UTILITY OWNERS ON PROJECT**
- (1) Power Distribution - Progress Energy
 - (2) Telephone - CenturyLink
 - (3) Gas - Piedmont Natural Gas
 - (4) CATV - Time Warner Cable
 - (5) Communications - Harnett County



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

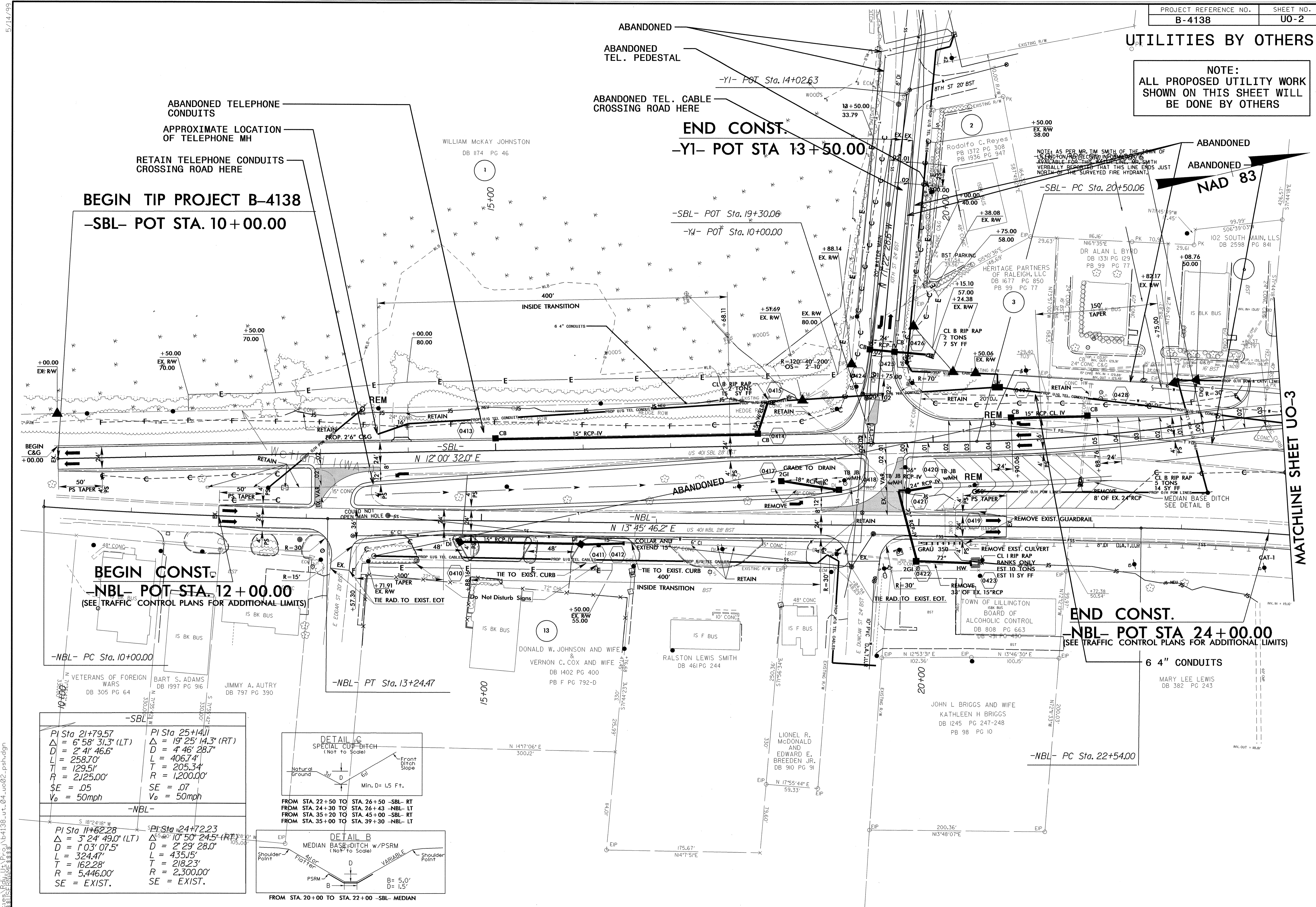
1591 MAIL SERVICES CENTER
RALEIGH NC 27699-1591
PHONE (919) 250-4128
FAX (919) 250-4151

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

10-MAR-2010 17:37 R:\Utilities\rdv\ut\proj\b4138\ut_title_uo1_psh.dgn \$\$\$USERNAME\$\$\$

UTILITIES BY OTHERS

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



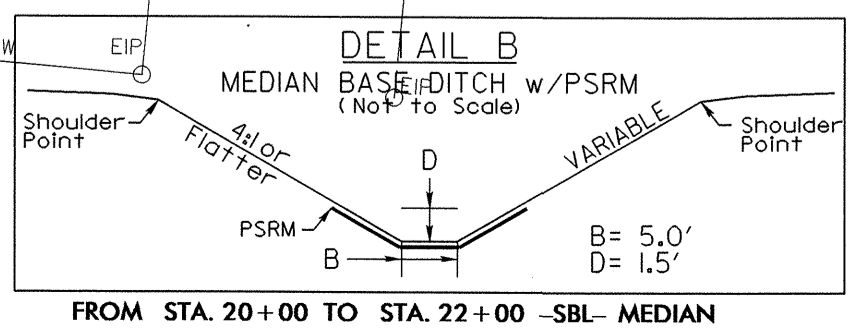
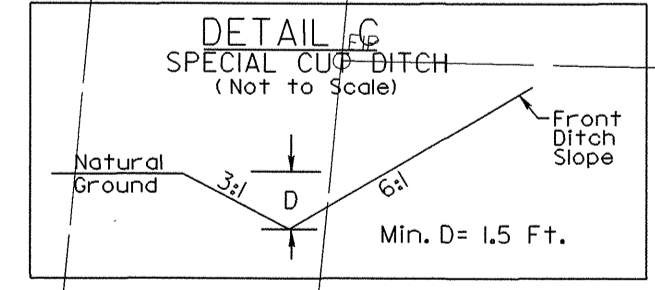
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-SBL- POT STA. 10+00.00

BEGIN CONST.
-NBL- POT STA. 12+00.00
(SEE TRAFFIC CONTROL PLANS FOR ADDITIONAL LIMITS)

END CONST.
-NBL- POT STA. 24+00.00
(SEE TRAFFIC CONTROL PLANS FOR ADDITIONAL LIMITS)

<p>-SBL-</p> <p>PI Sta 21+79.57 Δ = 6° 58' 31.3" (LT) D = 2' 41' 46.6" L = 258.70' T = 129.51' R = 2125.00' SE = .05 V_o = 50mph</p>	<p>PI Sta 25+1411 Δ = 19° 25' 14.3" (RT) D = 4' 46' 28.7" L = 406.74' T = 205.34' R = 1,200.00' SE = .07 V_o = 50mph</p>
--	--

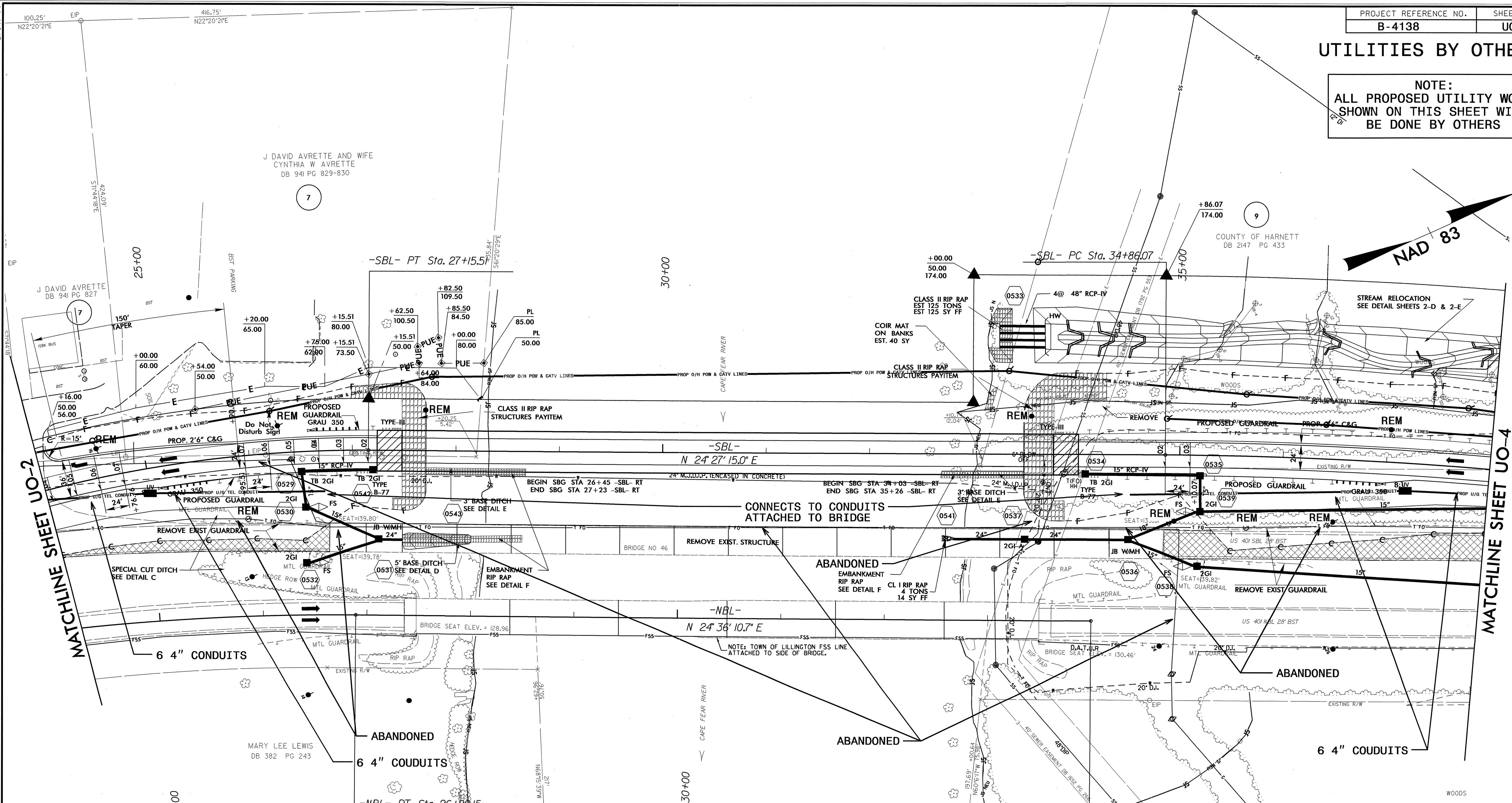
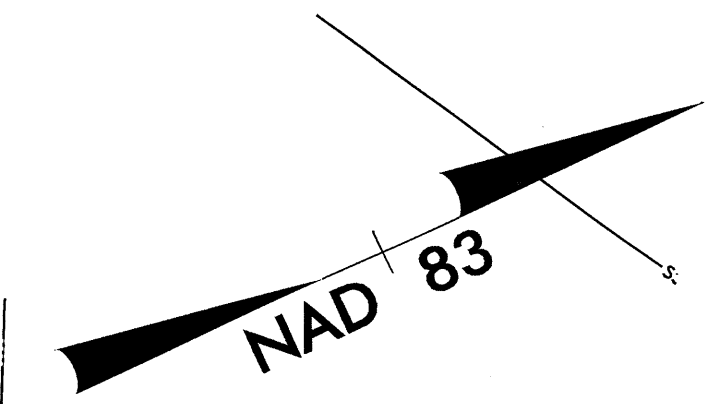
<p>-NBL-</p> <p>PI Sta 11+62.28 Δ = 3° 24' 49.0" (LT) D = 1' 03' 07.5" L = 324.47' T = 162.28' R = 5,446.00' SE = EXIST.</p>	<p>PI Sta 24+72.23 Δ = 5° 40' 10.50" (RT) D = 2' 29' 28.0" L = 435.15' T = 218.23' R = 2,300.00' SE = EXIST.</p>
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5/14/99
26-APR-2010 16:03
B-4138-ut-04-uo02-pshdgn

UTILITIES BY OTHERS

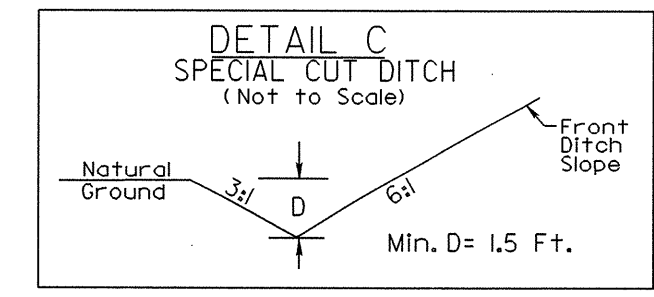
NOTE:
 ALL PROPOSED UTILITY WORK
 SHOWN ON THIS SHEET WILL
 BE DONE BY OTHERS



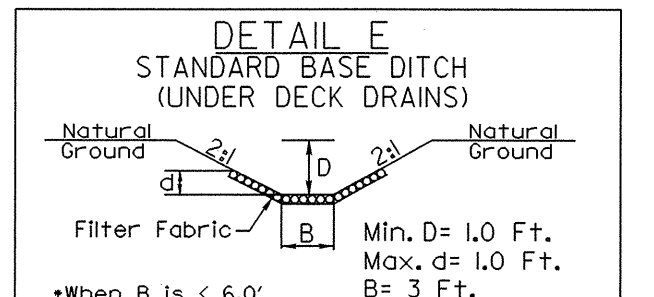
MATCHLINE SHEET UO-2

MATCHLINE SHEET UO-4

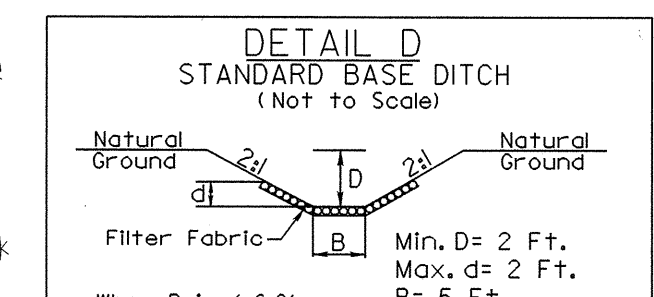
-SBL-	
PI Sta 25+14.11	PI Sta 40+64.88
$\Delta = 19^{\circ} 25' 14.3" (RT)$	$\Delta = 16^{\circ} 28' 02.4" (RT)$
$D = 4' 46" 28.7"$	$D = 1' 25" 56.6"$
$L = 406.74'$	$L = 1,149.64'$
$T = 205.34'$	$T = 578.81'$
$R = 1,200.00'$	$R = 4,000.00'$
$SE = .07$	$SE = .03$
$V_0 = 50\text{mph}$	$V_0 = 50\text{mph}$
-NBL-	
PI Sta 24+72.23	
$\Delta = 10^{\circ} 50' 24.5" (RT)$	
$D = 2' 29" 28.0"$	
$L = 435.15'$	
$T = 218.23'$	
$R = 2,300.00'$	
$SE = EXIST.$	



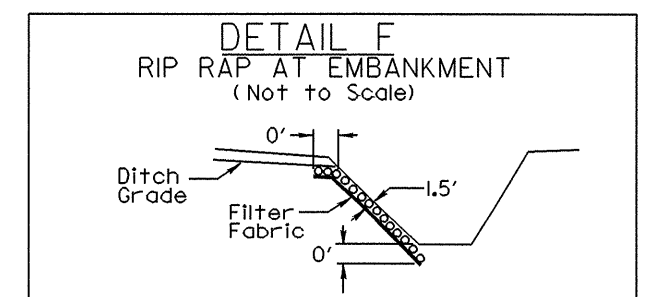
FROM STA. 22+00 TO STA. 26+30 -SBL- RT
 FROM STA. 24+30 TO STA. 26+30 -NBL- LT
 FROM STA. 35+20 TO STA. 45+00 -SBL- RT
 FROM STA. 35+00 TO STA. 39+30 -NBL- LT



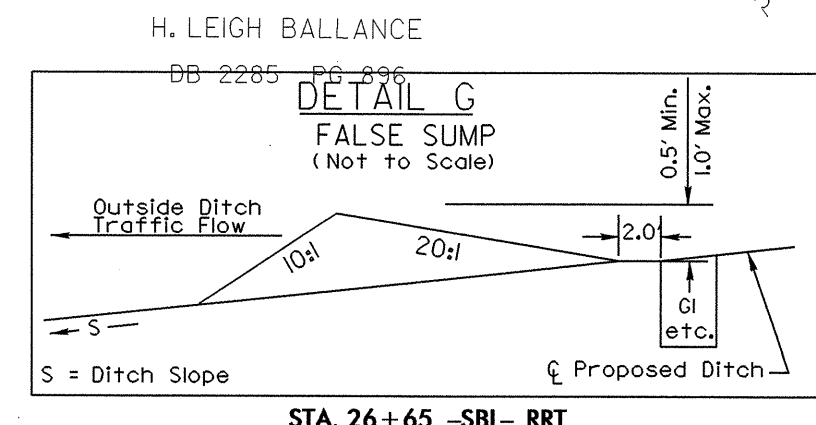
When B is < 6.0' (Not to Scale)
 Type of Liner = CLASS I Rip-Rap
 FROM STA. 27+71 TO STA. 28+14 -SBL- RT
 FROM STA. 33+06 TO STA. 33+50 -SBL- RT
 EST. 50 TONS EST. 80 SY FF
 DDE = 12 CY



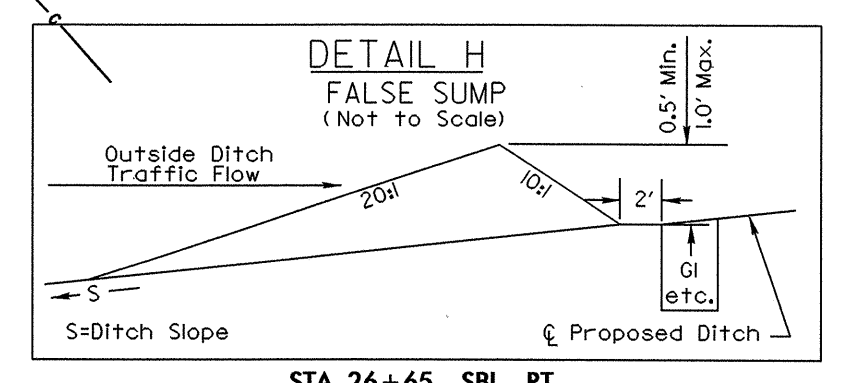
When B is < 6.0' (Not to Scale)
 Type of Liner = CLASS I Rip-Rap
 FROM STA. 27+50 TO STA. 28+15 -SBL- RT
 FROM STA. 28+15 TO STA. 28+68 -SBL- RRT
 FROM STA. 32+69 TO STA. 33+06 -SBL- RT
 EST. 85 TONS EST. 105 SY FF
 DDE = 50 CY



Type of Liner = CL I Rip-Rap
 EST. 10 TONS EST. 100 SY Filter Fabric
 FROM STA. 28+14 TO STA. 28+69 -SBL- RT
 FROM STA. 28+15 TO STA. 28+68 -SBL- RRT
 FROM STA. 32+69 TO STA. 33+06 -SBL- RT



STA. 26+65 -SBL- RRT
 STA. 35+30 -SBL- RT

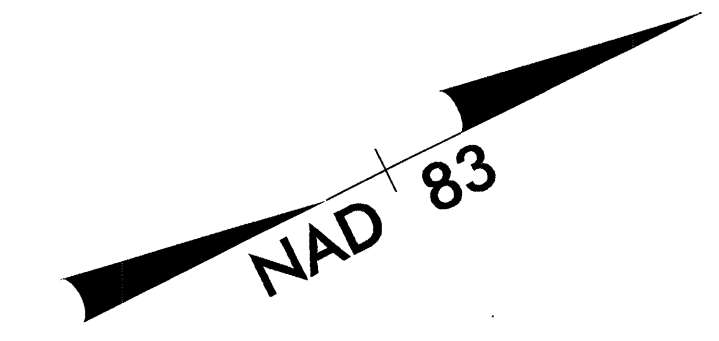
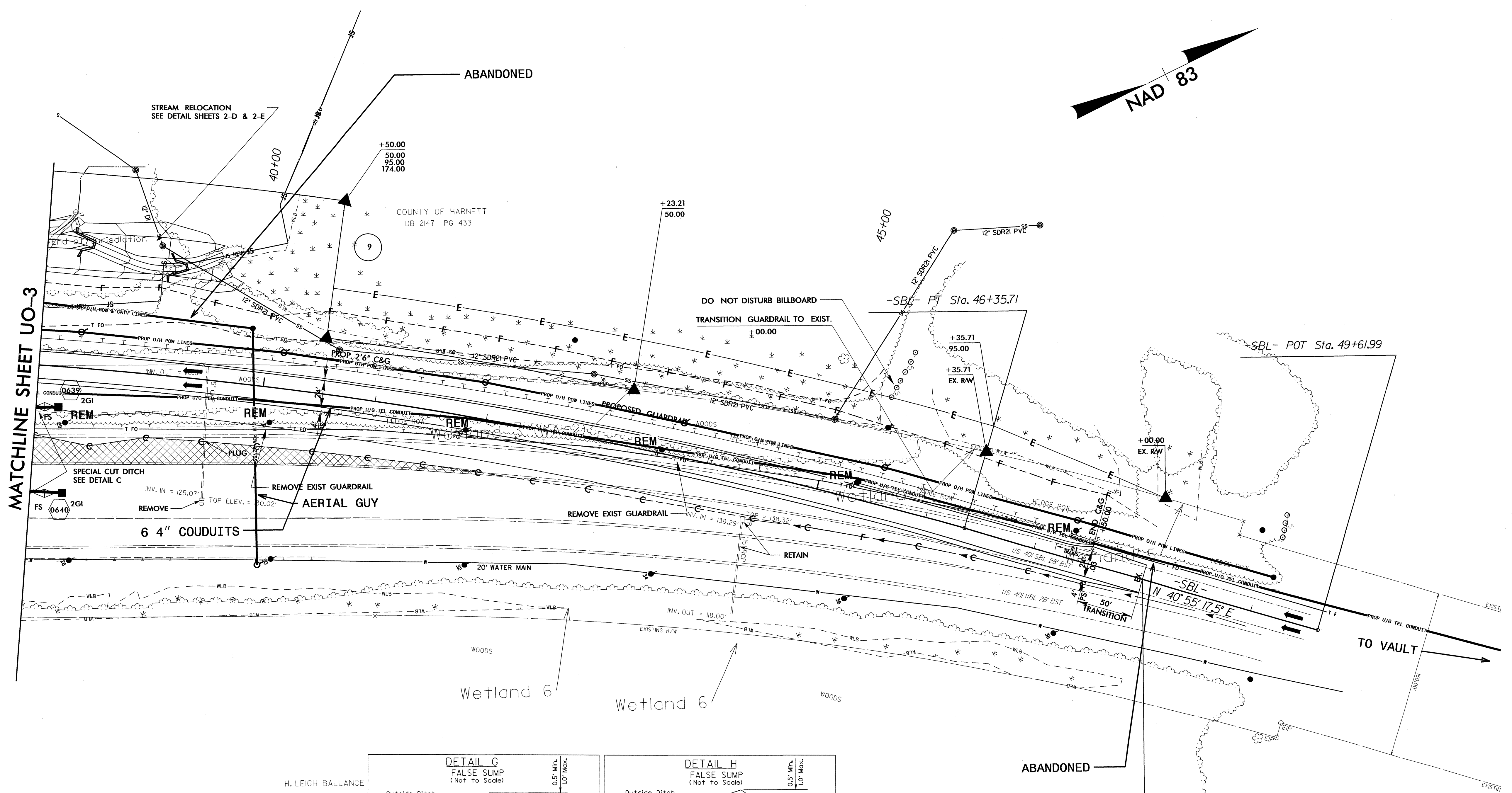


STA. 26+65 -SBL- RT
 STA. 35+30 -SBL- RRT

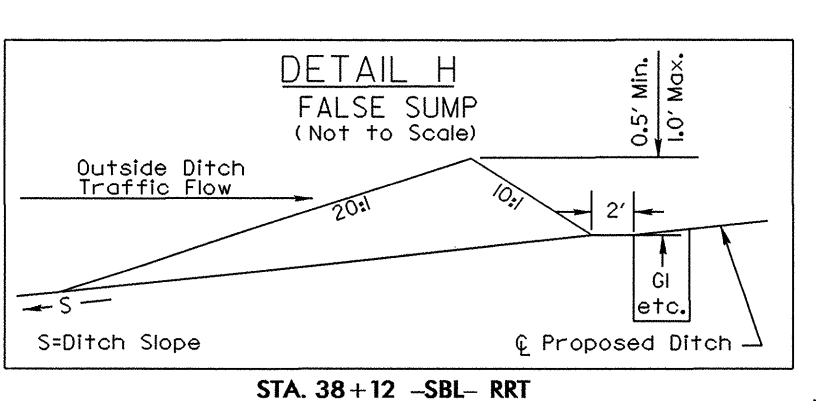
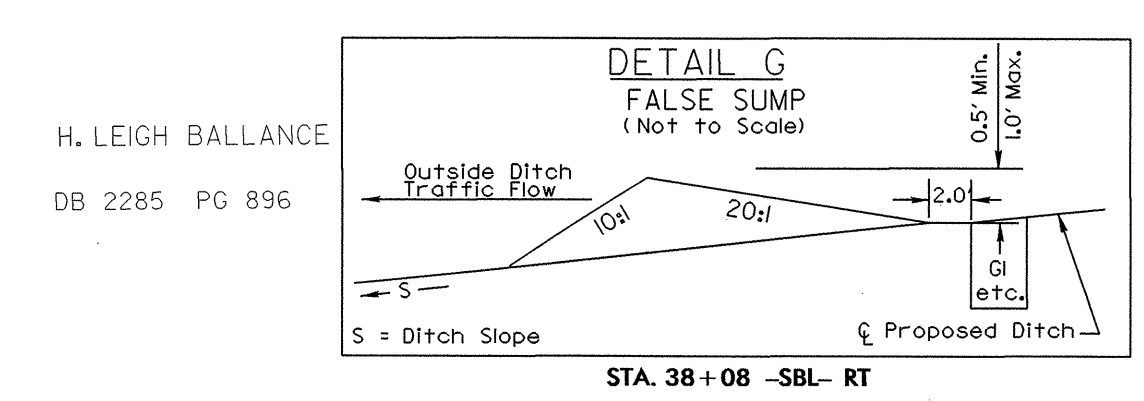
01-JUN-2000 16:02
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 \$\$\$\$

UTILITIES BY OTHERS

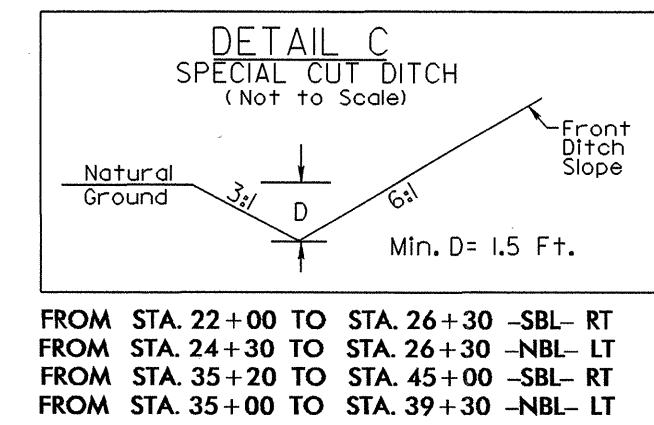
NOTE:
 ALL PROPOSED UTILITY WORK
 SHOWN ON THIS SHEET WILL
 BE DONE BY OTHERS



MATCHLINE SHEET UO-3



-SBL-
 PI Sta 40+64.88
 $\Delta = 16^{\circ} 28' 02.4''$ (RT)
 $D = 1^{\circ} 25' 56.6''$
 $L = 1,149.64'$
 $T = 578.81'$
 $R = 4,000.00'$
 $SE = .03$
 $V_b = 50\text{mph}$



END TIP PROJECT B-4138
-SBL- POT 48+00.00
 (SEE TRAFFIC CONTROL PLANS FOR ADDITIONAL LIMITS)

5/14/09
 01-JUN-2010 16:03
 R:\Utilities\Bdr\U0\proj\B-4138.ut_06_uo04_psh.dgn
 \$\$\$USPENWME\$\$\$