

TIP PROJECT: R-5118

CONTRACT: C202300

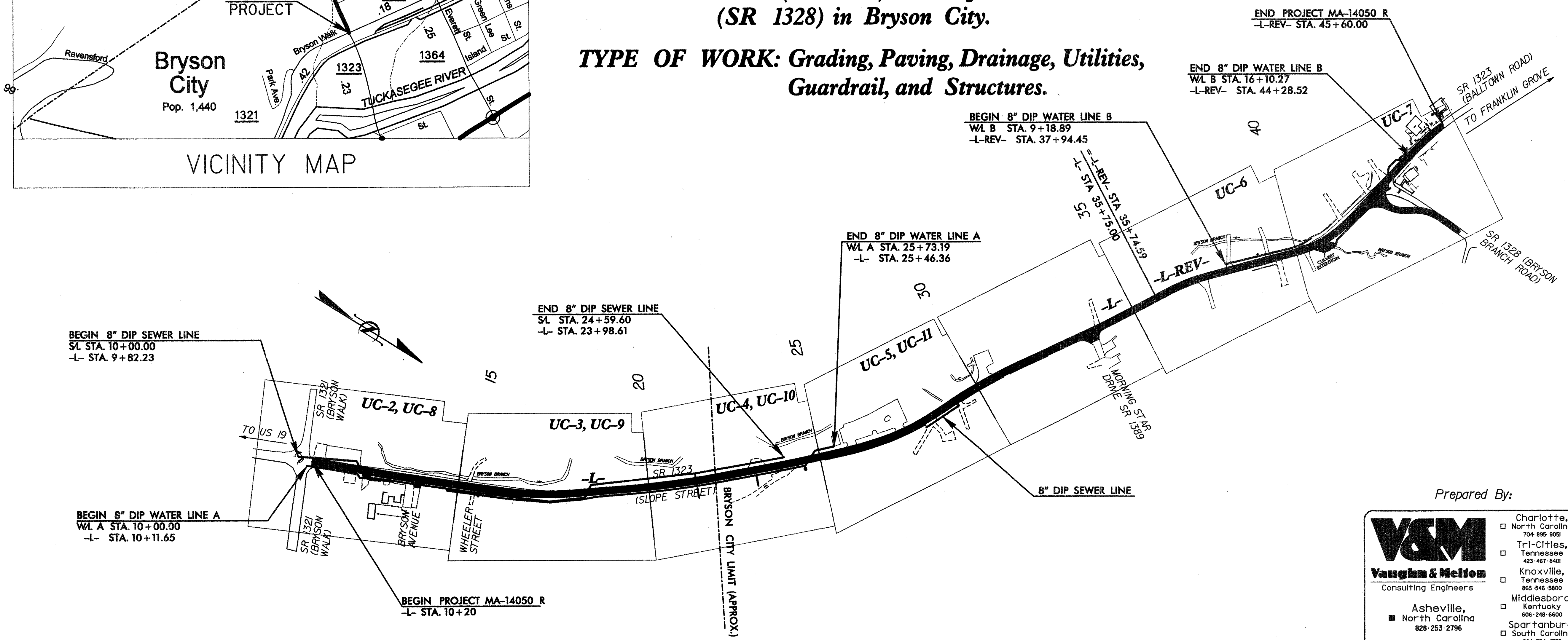
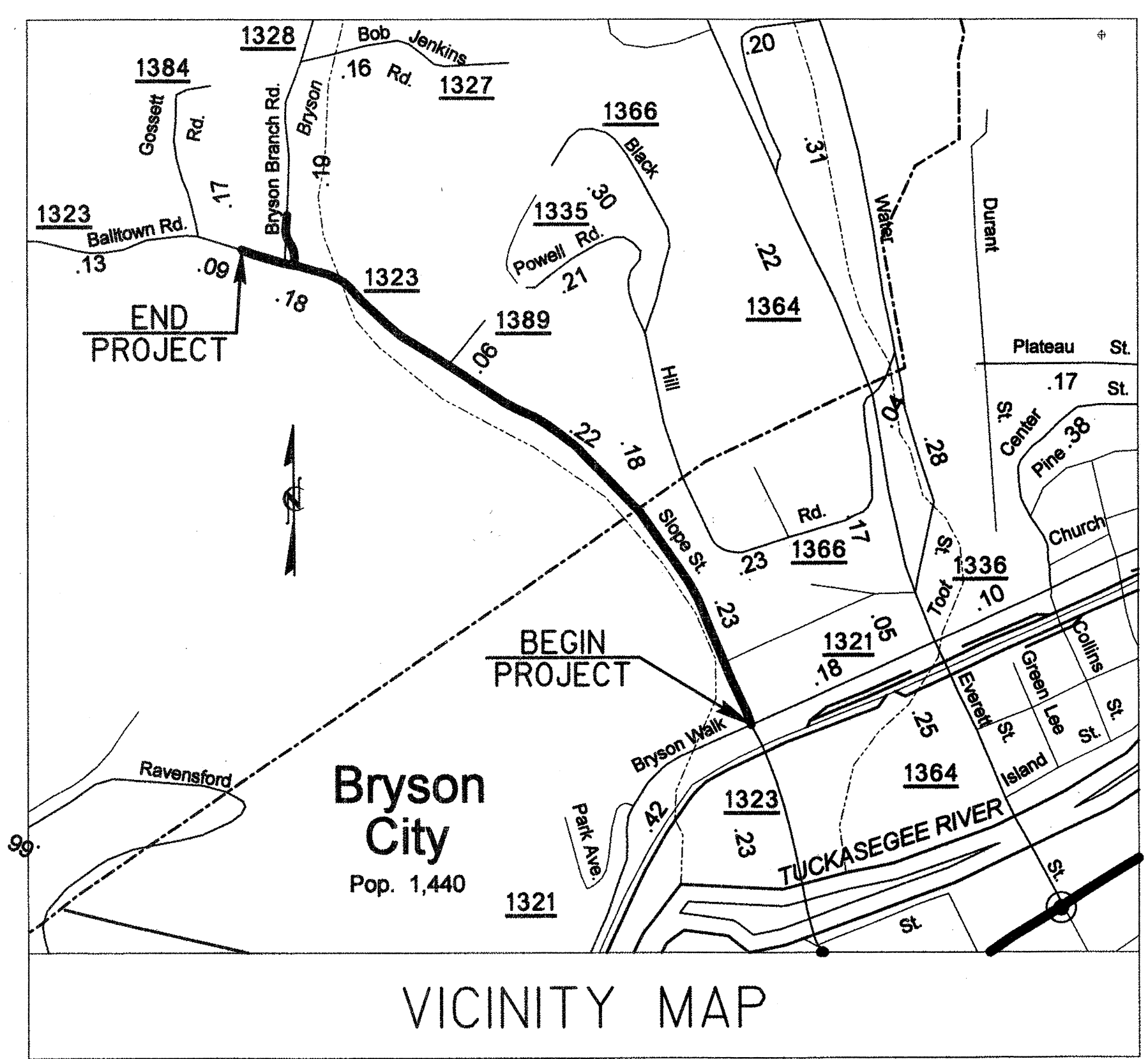
T.I.P. NO.	SHEET NO.
R-5118	UC-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

**UTILITY CONSTRUCTION PLANS
SWAIN COUNTY**

LOCATION: Slope Street (SR 1323) between Bryson Walk (SR 1321) and Bryson Branch Road (SR 1328) in Bryson City.

TYPE OF WORK: Grading, Paving, Drainage, Utilities, Guardrail, and Structures.

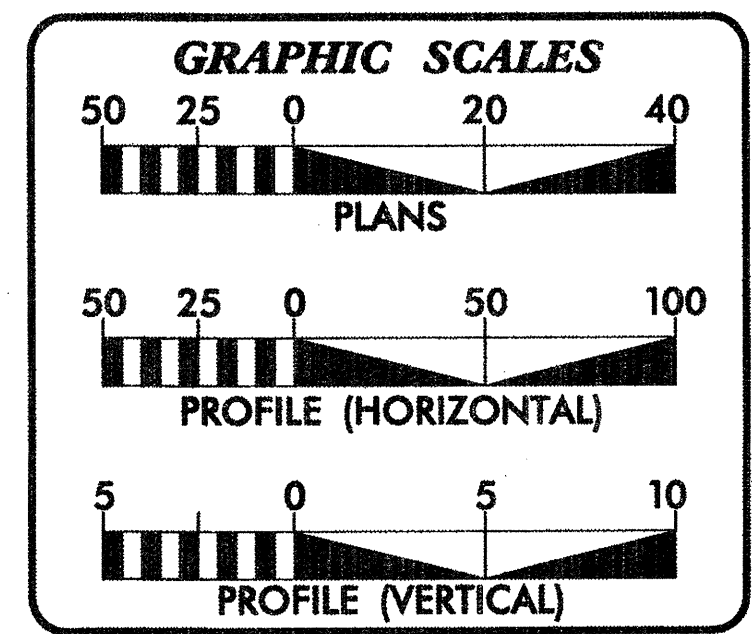


Prepared By:

V&M
Vaughn & Melton
Consulting Engineers

Charlotte, North Carolina 704-895-9051
Tri-Cities, Tennessee 423-467-8401
Knoxville, Tennessee 865-546-8900
Middlesboro, Kentucky 606-248-6600
Asheville, North Carolina 828-253-2796
Spartanburg, South Carolina 864-574-4775

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INDEX OF SHEETS

SHEET NO.	DESCRIPTION
UC-1	TITLE SHEET
UC-2 THRU UC-11	UTILITY CONSTRUCTION PLAN SHEETS
UC-12 THRU UC-13	PROFILE SHEET(S)
UC-14	DETAILS SHEET(S)

WATER AND SEWER OWNERS ON PROJECT

THE TOWN OF BRYSON CITY

SEAL

Michael A. Calhoun
10-11-10

Prepared for:

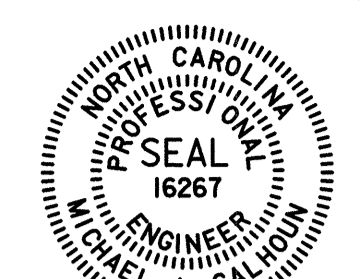
**DIVISION OF HIGHWAYS
DIVISION FOURTEEN**

2006 STANDARD SPECIFICATIONS

Michael Calhoun, PE
PROJECT ENGINEER

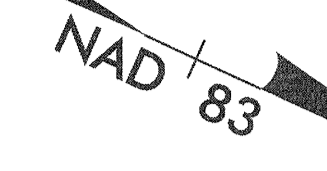
Sonia C. Salgado, PE
PROJECT DESIGN ENGINEER

8/17/99

PROJECT REFERENCE NO. R-5118	SHEET NO. UC-2
DESIGNED BY: SSK	 Michael A. Calho ENGINEER NORTH CAROLINA 16267
DRAWN BY: SSK	
CHECKED BY: LAM	
APPROVED BY: MAC	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DESIGN SERVICES UNIT PHONE: (919) 250-4128 FAX: (919) 250-4119	

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY OTHERS FOR MONUMENT "BRYSON CP2"
 WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF NORTHING: 6750607.44(1), EASTING: 639989.517(1)
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99962875
 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "BRYSON CP2" TO L- STATION 10+00.00 IS
 N 18° 30' 37.5" W 1,089.31'
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
 VERTICAL DATUM USED IS NAVD 88



UTILITY CONSTRUCTION

(NOTES CONTINUED:)

- CONSTRUCT ALL WATER MAINS USING 8 INCH DIAMETER DUCTILE IRON PIPE AND FITTINGS. USE DUCTILE IRON PIPE THAT CONFORMS TO ASTM A746 OR ANS/AWWA C151/A21.51. WATER MAIN PIPES AND FITTINGS ARE TO BE RATED CLASS 350 PSI. ALL FITTINGS, BENDS, TEES, AND CROSSES, AND ALL STRAIGHT PIPE JOINTS WITHIN ENCASEMENT ARE TO BE ADEQUATELY RESTRAINED.
- FILL OR REMOVE ABANDONED PIPE IN ACCORDANCE WITH SECTION 1530-3 OF THE NCDOT SPECIFICATIONS TO PREVENT LEAKS FROM "RUNNING" ABANDONED PIPES.
- PROVIDE WATER SERVICES FROM THE MAIN TO EACH WATER METER.
- ALL WATER SERVICE LINES ARE TO BE POLYETHYLENE (PE) PIPE IN ACCORDANCE WITH SECTION 1036-3B OF THE NCDOT SPECIFICATIONS.
- PRESSURE TEST THE NEWLY INSTALLED WATER MAIN IN ACCORDANCE TO SECTION 1510-5 PRIOR TO CONNECTING BACK INTO THE SYSTEM.
- SEE SHEET UC-14 FOR DETAILS.

BEGIN TIP PROJECT R-5118
 -L- STA. 10+20

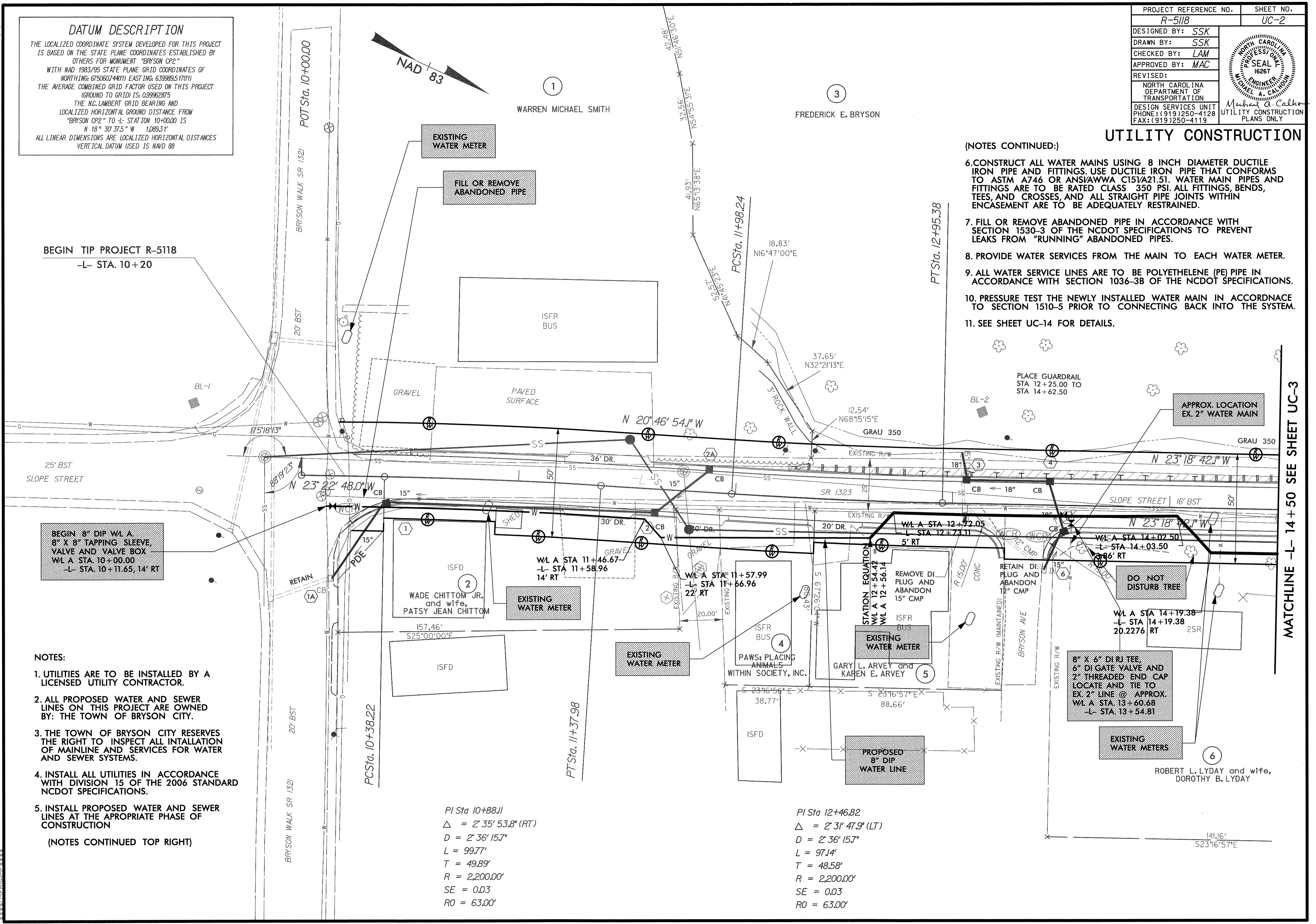
BEGIN 8" DIP WL A.
 8" X 8" TAPPING SLEEVE,
 VALVE AND VALVE BOX
 WL A STA. 10+00.00
 -L- STA. 10+11.65, 14' RT

- NOTES:
- UTILITIES ARE TO BE INSTALLED BY A LICENSED UTILITY CONTRACTOR.
 - ALL PROPOSED WATER AND SEWER LINES ON THIS PROJECT ARE OWNED BY: THE TOWN OF BRYSON CITY.
 - THE TOWN OF BRYSON CITY RESERVES THE RIGHT TO INSPECT ALL INSTALLATION OF MAINLINE AND SERVICES FOR WATER AND SEWER SYSTEMS.
 - INSTALL ALL UTILITIES IN ACCORDANCE WITH DIVISION 15 OF THE 2006 STANDARD NCDOT SPECIFICATIONS.
 - INSTALL PROPOSED WATER AND SEWER LINES AT THE APPROPRIATE PHASE OF CONSTRUCTION

(NOTES CONTINUED TOP RIGHT)

PI Sta 10+88.11
 $\Delta = 2' 35' 53.8" (RT)$
 $D = 2' 36' 15.7"$
 $L = 99.77'$
 $T = 49.89'$
 $R = 2,200.00'$
 $SE = 0.03$
 $RO = 63.00'$

PI Sta 12+46.82
 $\Delta = 2' 31' 47.9" (LT)$
 $D = 2' 36' 15.7"$
 $L = 97.14'$
 $T = 48.58'$
 $R = 2,200.00'$
 $SE = 0.03$
 $RO = 63.00'$



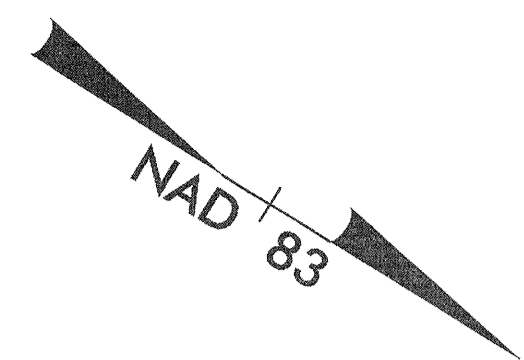
MATCHLINE -L- 14+50 SEE SHEET UC-3

8/17/99

130885-0700/UTLTY/UC-2.dwg 12/17/2010 1:21:06 PM

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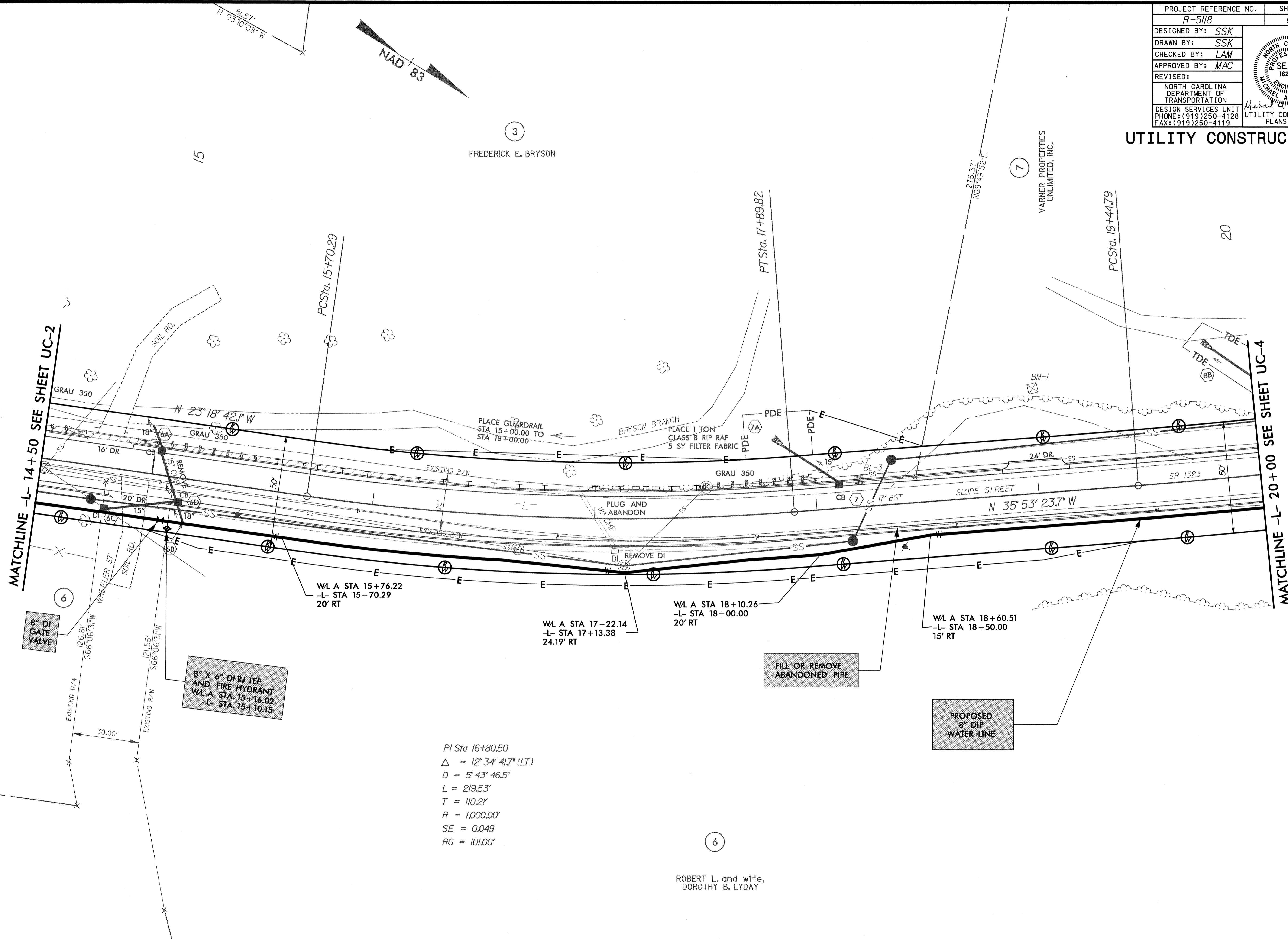
PROJECT REFERENCE NO. <i>R-5118</i>	SHEET NO. <i>UC-3</i>
DESIGNED BY: <i>SSK</i>	
DRAWN BY: <i>SSK</i>	
CHECKED BY: <i>LAM</i>	
APPROVED BY: <i>MAC</i>	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DESIGN SERVICES UNIT PHONE: (919) 250-4128 FAX: (919) 250-4119	
UTILITY CONSTRUCTION PLANS ONLY	



3
 FREDERICK E. BRYSON

7
 VARNER PROPERTIES
 UNLIMITED, INC.

20



MATCHLINE -L- 14+50 SEE SHEET UC-2

MATCHLINE -L- 20+00 SEE SHEET UC-4

WL A STA 15+76.22
 -L- STA 15+70.29
 20' RT

WL A STA 17+22.14
 -L- STA 17+13.38
 24.19' RT

WL A STA 18+10.26
 -L- STA 18+00.00
 20' RT

WL A STA 18+60.51
 -L- STA 18+50.00
 15' RT

8" DI GATE VALVE

8" X 6" DI RJ TEE
 AND FIRE HYDRANT
 WL A STA. 15+16.02
 -L- STA. 15+10.15

FILL OR REMOVE
 ABANDONED PIPE

PROPOSED
 8" DIP
 WATER LINE

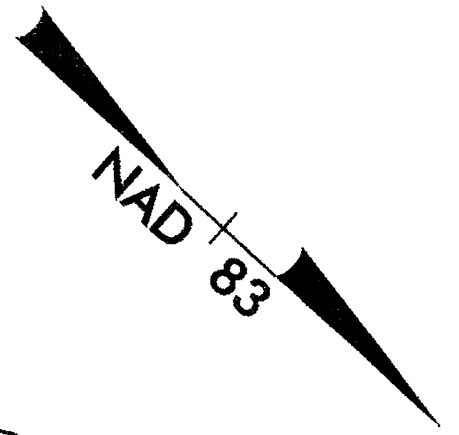
PI Sta 16+80.50
 $\Delta = 12' 34" 41.7" (LT)$
 $D = 5' 43" 46.5"$
 $L = 219.53'$
 $T = 110.21'$
 $R = 1,000.00'$
 $SE = 0.049$
 $RO = 101.00'$

6
 ROBERT L. and wife,
 DOROTHY B. LYDAY

SYSTEMS
 SECTIONS
 UTILITY
 NAME

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-5118	UC-4
DESIGNED BY: SSK	
DRAWN BY: SSK	
CHECKED BY: LAM	
APPROVED BY: MAC	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DESIGN SERVICES UNIT PHONE: (919)250-4128 FAX: (919)250-4119	
UTILITY CONSTRUCTION PLANS ONLY	

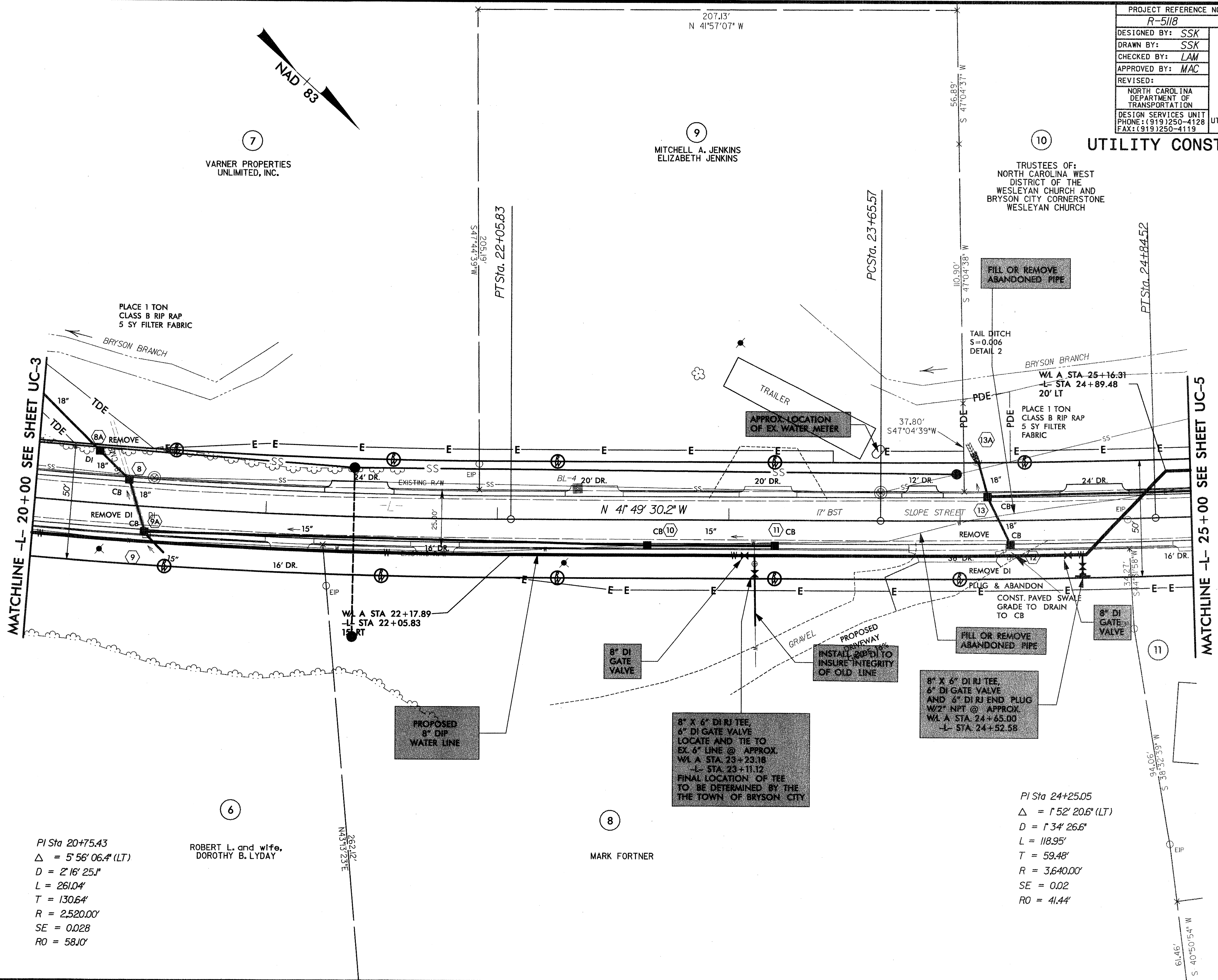


7
 VARNER PROPERTIES
 UNLIMITED, INC.

9
 MITCHELL A. JENKINS
 ELIZABETH JENKINS

10
 TRUSTEES OF:
 NORTH CAROLINA WEST
 DISTRICT OF THE
 WESLEYAN CHURCH AND
 BRYSON CITY CORNERSTONE
 WESLEYAN CHURCH

UTILITY CONSTRUCTION



MATCHLINE -L- 20+00 SEE SHEET UC-3

MATCHLINE -L- 25+00 SEE SHEET UC-5

PI Sta 20+75.43
 $\Delta = 5' 56'' 06.4''$ (LT)
 $D = 2' 16'' 25.1''$
 $L = 261.04'$
 $T = 130.64'$
 $R = 2,520.00'$
 $SE = 0.028$
 $RO = 58.10'$

6
 ROBERT L. and wife,
 DOROTHY B. LYDAY

8
 MARK FORTNER

PI Sta 24+25.05
 $\Delta = 1' 52'' 20.6''$ (LT)
 $D = 1' 34'' 26.6''$
 $L = 118.95'$
 $T = 59.48'$
 $R = 3,640.00'$
 $SE = 0.02$
 $RO = 41.44'$

SYSTEMS ENGINEERING
 CONSULTANTS
 1000 S. W. 10TH AVE
 SUITE 100
 BOCA RATON, FL 33432
 PHONE: (561) 991-1111
 FAX: (561) 991-1112
 WWW: WWW.SYS-ENG.COM

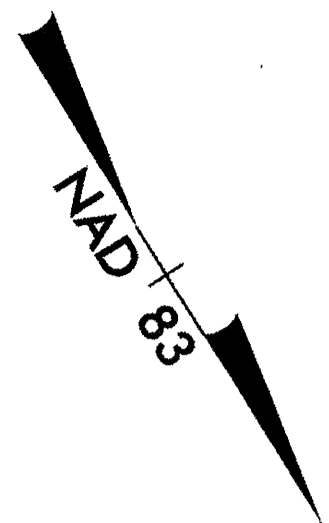
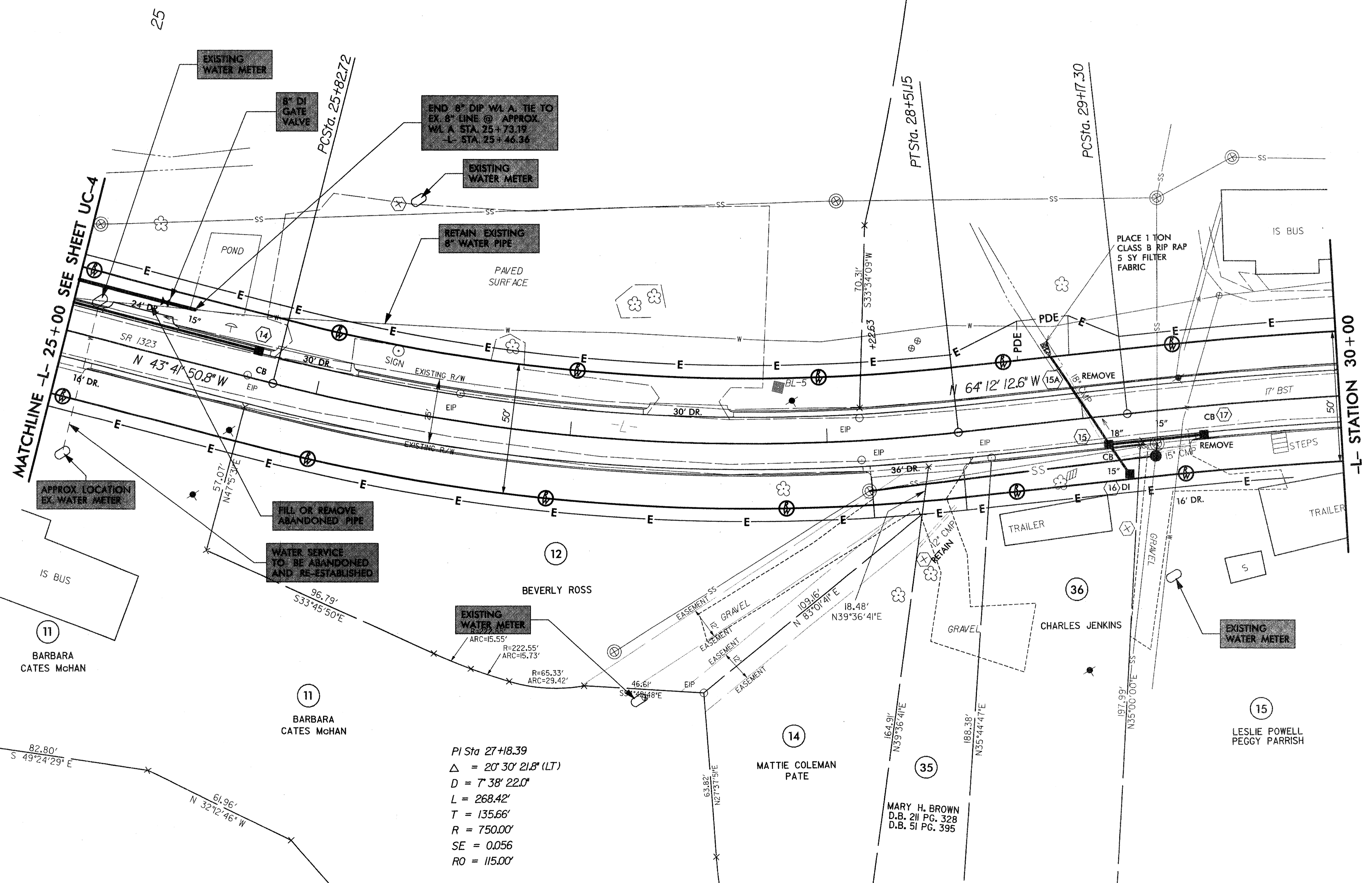
8/17/99

PROJECT REFERENCE NO. R-5118	SHEET NO. UC-5
DESIGNED BY: SSK	
DRAWN BY: SSK	
CHECKED BY: LAM	
APPROVED BY: MAC	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DESIGN SERVICES UNIT PHONE: (919)250-4128 FAX: (919)250-4119	
UTILITY CONSTRUCTION PLANS ONLY	

10
 TRUSTEES OF:
 NORTH CAROLINA WEST
 DISTRICT OF THE
 WESLEYAN CHURCH AND
 BRYSON CITY CORNERSTONE
 WESLEYAN CHURCH

13
 MOUNTAIN MORTGAGE
 INVESTMENT COMPANY

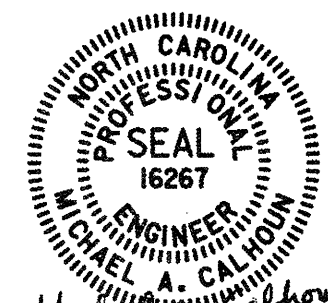
UTILITY CONSTRUCTION



PI Sta 27+18.39
 $\Delta = 20' 30' 21.8''$ (LT)
 $D = 7' 38' 22.0''$
 $L = 268.42'$
 $T = 135.66'$
 $R = 750.00'$
 $SE = 0.056$
 $RO = 115.00'$

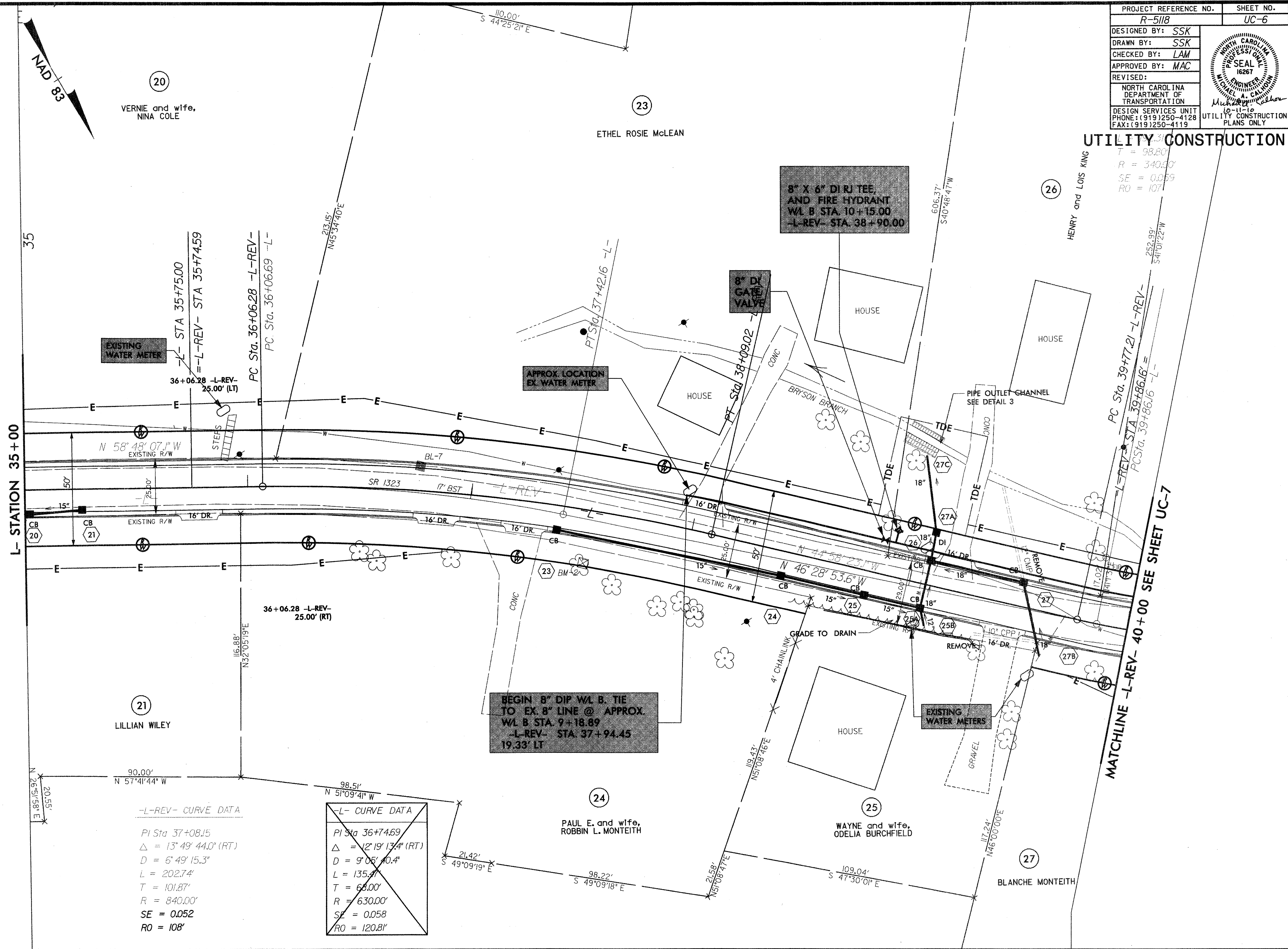
 SYSTEMS
 DESIGN

8/17/99
***** TIME *****
***** DATE *****
***** DRAWN *****
***** CHECKED *****
***** APPROVED *****
***** REVISIONS *****

PROJECT REFERENCE NO.	SHEET NO.
R-5118	UC-6
DESIGNED BY: SSK	
DRAWN BY: SSK	
CHECKED BY: LAM	
APPROVED BY: MAC	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION 10-11-10 DESIGN SERVICES UNIT PHONE: (919) 250-4128 FAX: (919) 250-4119	
MICHAEL A. CALHOUN REGISTERED PROFESSIONAL ENGINEER UTILITY CONSTRUCTION PLANS ONLY	

UTILITY CONSTRUCTION

T = 98.80'
R = 340.00'
SE = 0.059
RO = 107'



L-STATION 35+00

MATCHLINE -L-REV- 40+00 SEE SHEET UC-7

20
VERNIE and wife,
NINA COLE

23
ETHEL ROSIE McLEAN

26
HENRY and LOIS KING

21
LILLIAN WILEY

24
PAUL E. and wife,
ROBBIN L. MONTEITH

25
WAYNE and wife,
ODELIA BURCHFIELD

27
BLANCHE MONTEITH

-L-REV- CURVE DATA

PI Sta 37+08.15
$\Delta = 13^\circ 49' 44.0''$ (RT)
D = 6' 49' 15.3"
L = 202.74'
T = 101.87'
R = 840.00'
SE = 0.052
RO = 108'

-L- CURVE DATA

PI Sta 36+74.69
$\Delta = 12^\circ 19' 13.4''$ (RT)
D = 9' 05' 40.4"
L = 135.4'
T = 68.00'
R = 630.00'
SE = 0.058
RO = 120.81'

BEGIN 8" DIP WL B. TIE
TO EX. 8" LINE @ APPROX.
WL B STA. 37+18.89
-L-REV- STA. 37+94.45
19.33' LT

8" X 6" DI RJ TEE,
AND FIRE HYDRANT
WL B STA. 10+15.00
-L-REV- STA. 38+90.00

8" DI
GATE VALVE

APPROX. LOCATION
EX. WATER METER

PIPE OUTLET CHANNEL
SEE DETAIL 3

EXISTING WATER METERS

GRAVEL

GRADE TO DRAIN

4' CHAINLINK

N 46° 28' 53.6" W

N 44° 58' 23.1" W

N 58° 48' 07.1" W
EXISTING R/W

SR 1323
17' BST

BRYSON BRANCH

35

110.00'
S 44° 25' 21" E

213.15'
N 45° 34' 40" E

PT Sta. 37+42.16 -L-

606.37'
S 40° 48' 47" W

252.99'
S 47° 01' 22" W

N 26° 51' 58" E
20.55'

90.00'
N 57° 41' 44" W

98.51'
N 51° 09' 41" W

21.42'
S 49° 09' 19" E

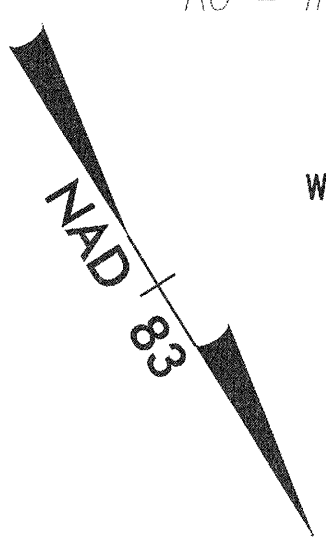
98.22'
S 49° 09' 18" E

215.8'
N 57° 08' 47" E

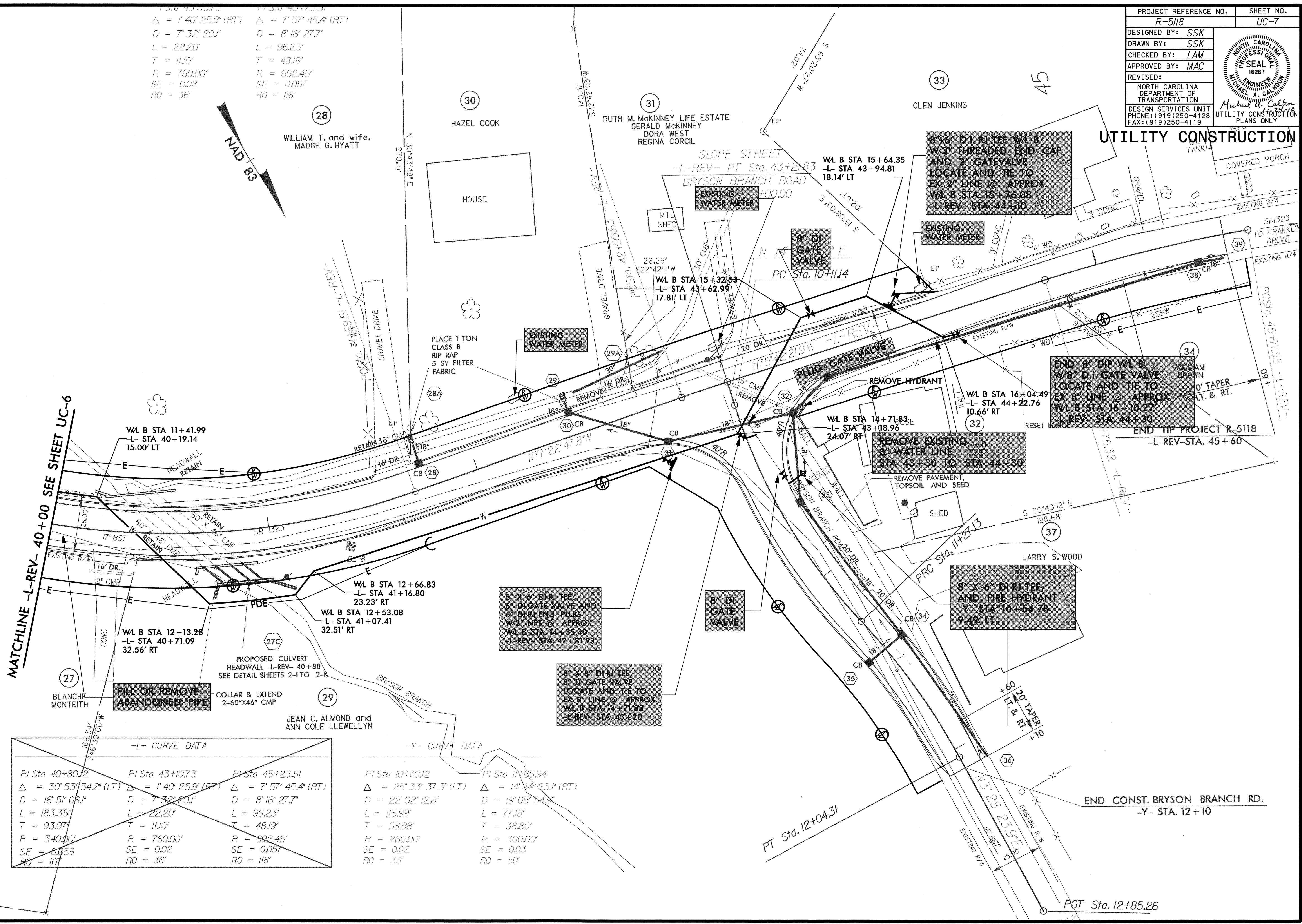
109.04'
S 47° 30' 10" E

117.24'
N 46° 00' 00" E

$\Delta = 1^{\circ} 40' 25.9" (RT)$ $D = 7^{\circ} 32' 20.1"$ $L = 22.20'$ $T = 11.10'$ $R = 760.00'$ $SE = 0.02$ $RO = 36'$	$\Delta = 7^{\circ} 57' 45.4" (RT)$ $D = 8^{\circ} 16' 27.7"$ $L = 96.23'$ $T = 48.19'$ $R = 692.45'$ $SE = 0.057$ $RO = 118'$
--	--



UTILITY CONSTRUCTION



MATCHLINE -L-REV- 40+00 SEE SHEET UC-6

-L- CURVE DATA			-Y- CURVE DATA		
PI Sta 40+80.12	PI Sta 43+10.73	PI Sta 45+23.51	PI Sta 10+70.12	PI Sta 11+85.94	
$\Delta = 30^{\circ} 53' 54.2" (LT)$	$\Delta = 1^{\circ} 40' 25.9" (RT)$	$\Delta = 7^{\circ} 57' 45.4" (RT)$	$\Delta = 25^{\circ} 33' 37.3" (LT)$	$\Delta = 14^{\circ} 44' 23.1" (RT)$	
$D = 16^{\circ} 51' 06.1"$	$D = 7^{\circ} 32' 20.1"$	$D = 8^{\circ} 16' 27.7"$	$D = 22^{\circ} 02' 12.6"$	$D = 19^{\circ} 05' 54.9"$	
$L = 183.35'$	$L = 22.20'$	$L = 96.23'$	$L = 115.99'$	$L = 77.18'$	
$T = 93.97'$	$T = 11.10'$	$T = 48.19'$	$T = 58.98'$	$T = 38.80'$	
$R = 340.00'$	$R = 760.00'$	$R = 692.45'$	$R = 260.00'$	$R = 300.00'$	
$SE = 0.059$	$SE = 0.02$	$SE = 0.057$	$SE = 0.02$	$SE = 0.03$	
$RO = 10'$	$RO = 36'$	$RO = 118'$	$RO = 33'$	$RO = 50'$	

END CONST. BRYSON BRANCH RD.
-Y- STA. 12+10

POT Sta. 12+85.26

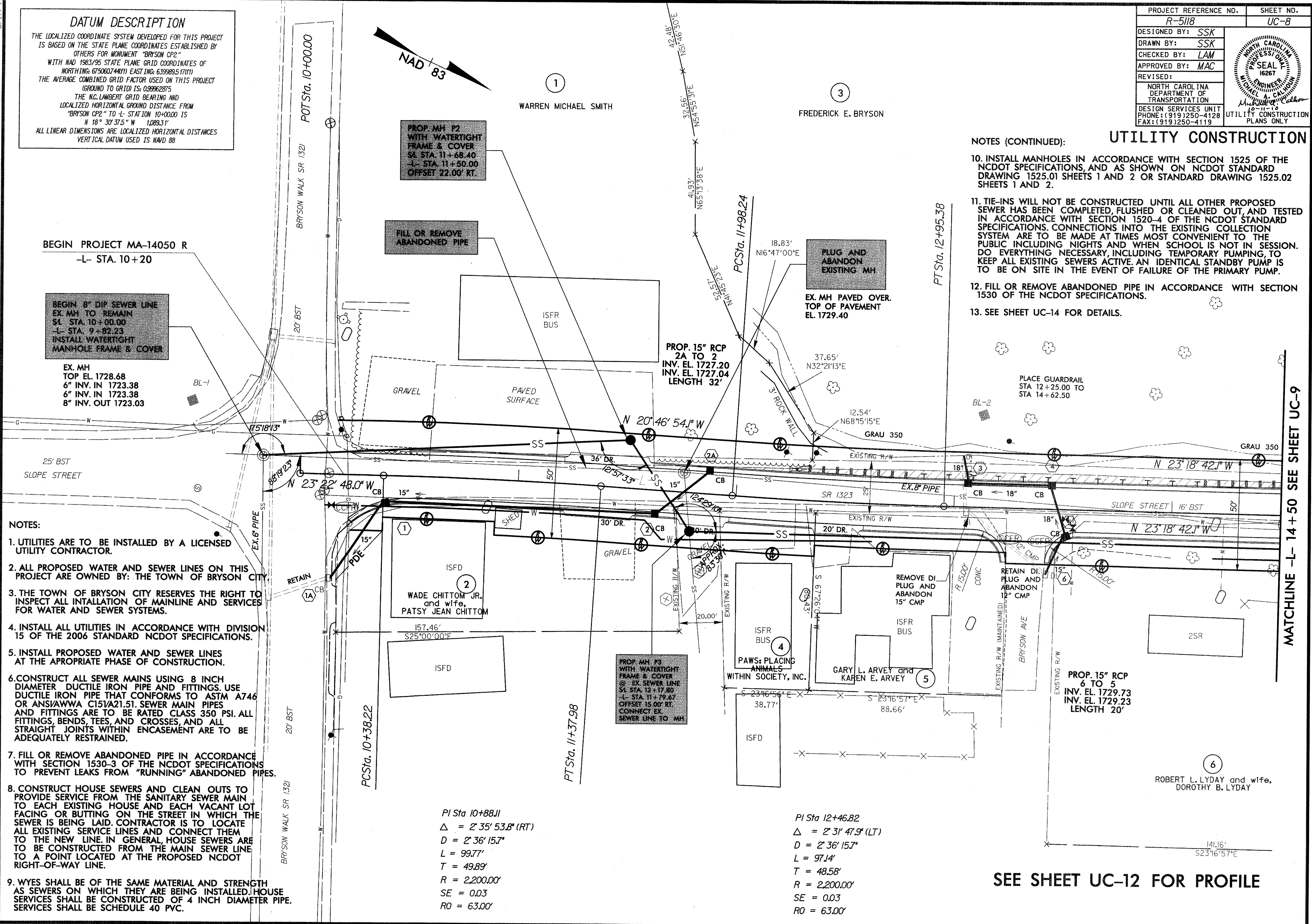
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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-5118	UC-8
DESIGNED BY: SSK	
DRAWN BY: SSK	
CHECKED BY: LAM	
APPROVED BY: MAC	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DESIGN SERVICES UNIT PHONE: (919) 250-4128 FAX: (919) 250-4119	
UTILITY CONSTRUCTION PLANS ONLY	

DATUM DESCRIPTION
 THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY OTHERS FOR MONUMENT "BRYSON CP2" WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF NORTHING: 675060744111 EASTING: 6399895171111 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99962875 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "BRYSON CP2" TO L- STATION 10+00.00 IS N 18° 30' 37.5" W 1089.31' ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88



- NOTES (CONTINUED):**
- INSTALL MANHOLES IN ACCORDANCE WITH SECTION 1525 OF THE NCDOT SPECIFICATIONS, AND AS SHOWN ON NCDOT STANDARD DRAWING 1525.01 SHEETS 1 AND 2 OR STANDARD DRAWING 1525.02 SHEETS 1 AND 2.
 - TIE-INS WILL NOT BE CONSTRUCTED UNTIL ALL OTHER PROPOSED SEWER HAS BEEN COMPLETED, FLUSHED OR CLEANED OUT, AND TESTED IN ACCORDANCE WITH SECTION 1520-4 OF THE NCDOT STANDARD SPECIFICATIONS. CONNECTIONS INTO THE EXISTING COLLECTION SYSTEM ARE TO BE MADE AT TIMES MOST CONVENIENT TO THE PUBLIC INCLUDING NIGHTS AND WHEN SCHOOL IS NOT IN SESSION. DO EVERYTHING NECESSARY, INCLUDING TEMPORARY PUMPING, TO KEEP ALL EXISTING SEWERS ACTIVE. AN IDENTICAL STANDBY PUMP IS TO BE ON SITE IN THE EVENT OF FAILURE OF THE PRIMARY PUMP.
 - FILL OR REMOVE ABANDONED PIPE IN ACCORDANCE WITH SECTION 1530 OF THE NCDOT SPECIFICATIONS.
 - SEE SHEET UC-14 FOR DETAILS.

- NOTES:**
- UTILITIES ARE TO BE INSTALLED BY A LICENSED UTILITY CONTRACTOR.
 - ALL PROPOSED WATER AND SEWER LINES ON THIS PROJECT ARE OWNED BY: THE TOWN OF BRYSON CITY.
 - THE TOWN OF BRYSON CITY RESERVES THE RIGHT TO INSPECT ALL INSTALLATION OF MAINLINE AND SERVICES FOR WATER AND SEWER SYSTEMS.
 - INSTALL ALL UTILITIES IN ACCORDANCE WITH DIVISION 15 OF THE 2006 STANDARD NCDOT SPECIFICATIONS.
 - INSTALL PROPOSED WATER AND SEWER LINES AT THE APPROPRIATE PHASE OF CONSTRUCTION.
 - CONSTRUCT ALL SEWER MAINS USING 8 INCH DIAMETER DUCTILE IRON PIPE AND FITTINGS. USE DUCTILE IRON PIPE THAT CONFORMS TO ASTM A746 OR ANS/AWWA C151/A21.51. SEWER MAIN PIPES AND FITTINGS ARE TO BE RATED CLASS 350 PSI. ALL FITTINGS, BENDS, TEES, AND CROSSES, AND ALL STRAIGHT JOINTS WITHIN ENCASUREMENT ARE TO BE ADEQUATELY RESTRAINED.
 - FILL OR REMOVE ABANDONED PIPE IN ACCORDANCE WITH SECTION 1530-3 OF THE NCDOT SPECIFICATIONS TO PREVENT LEAKS FROM "RUNNING" ABANDONED PIPES.
 - CONSTRUCT HOUSE SEWERS AND CLEAN OUTS TO PROVIDE SERVICE FROM THE SANITARY SEWER MAIN TO EACH EXISTING HOUSE AND EACH VACANT LOT FACING OR BUTTING ON THE STREET IN WHICH THE SEWER IS BEING LAID. CONTRACTOR IS TO LOCATE ALL EXISTING SERVICE LINES AND CONNECT THEM TO THE NEW LINE. IN GENERAL, HOUSE SEWERS ARE TO BE CONSTRUCTED FROM THE MAIN SEWER LINE TO A POINT LOCATED AT THE PROPOSED NCDOT RIGHT-OF-WAY LINE.
 - WYES SHALL BE OF THE SAME MATERIAL AND STRENGTH AS SEWERS ON WHICH THEY ARE BEING INSTALLED. HOUSE SERVICES SHALL BE CONSTRUCTED OF 4 INCH DIAMETER PIPE. SERVICES SHALL BE SCHEDULE 40 PVC.

PI Sta 10+88.11
 $\Delta = 2' 35' 53.8" (RT)$
 $D = 2' 36' 15.7"$
 $L = 99.77'$
 $T = 49.89'$
 $R = 2,200.00'$
 $SE = 0.03$
 $RO = 63.00'$

PI Sta 12+46.82
 $\Delta = 2' 31' 47.9" (LT)$
 $D = 2' 36' 15.7"$
 $L = 97.14'$
 $T = 48.58'$
 $R = 2,200.00'$
 $SE = 0.03$
 $RO = 63.00'$

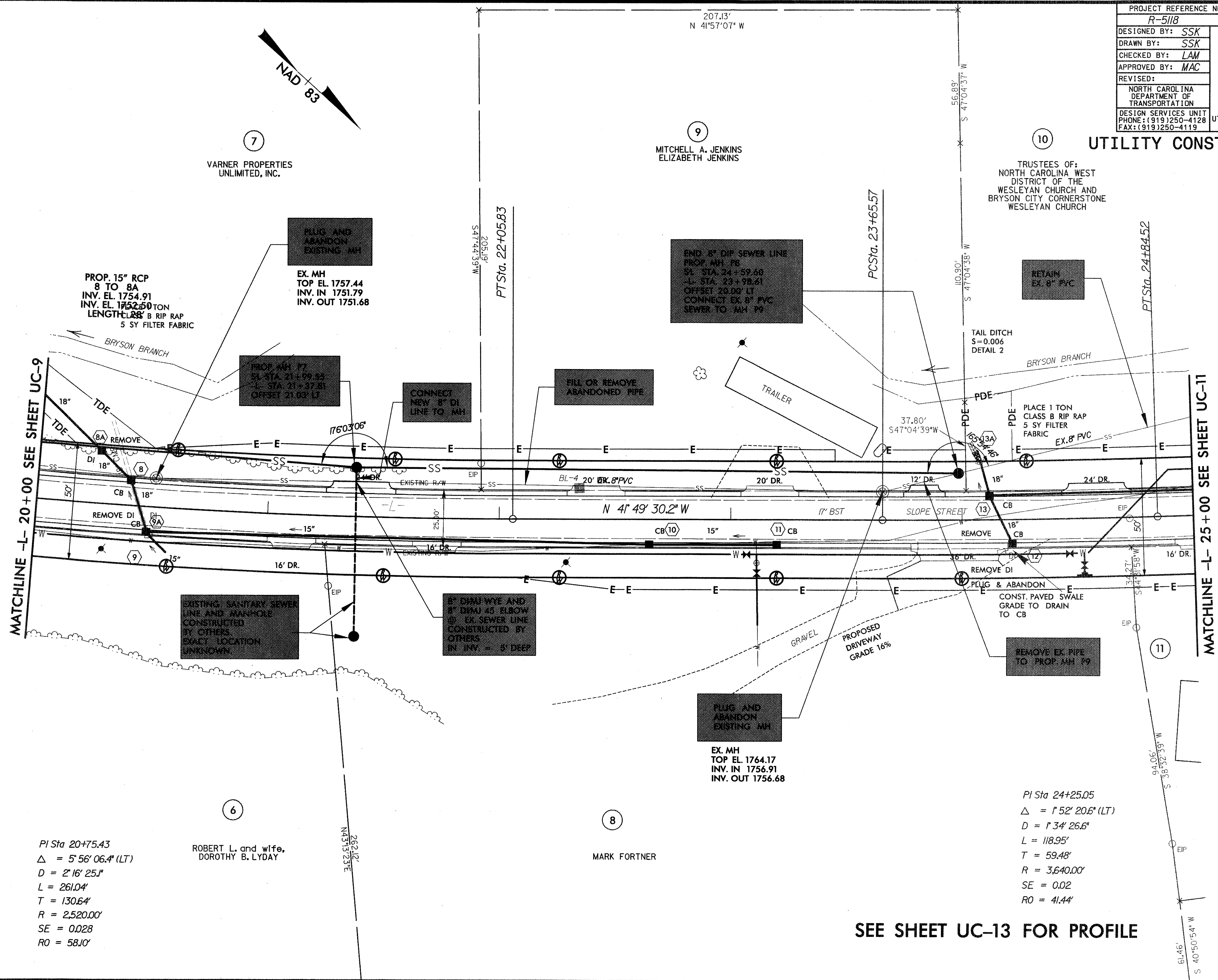
SEE SHEET UC-12 FOR PROFILE

MATCHLINE -L- 14 + 50 SEE SHEET UC-9

8/17/99

PROJECT REFERENCE NO. R-5118	SHEET NO. UC-10
DESIGNED BY: SSK	
DRAWN BY: SSK	
CHECKED BY: LAM	
APPROVED BY: MAC	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DESIGN SERVICES UNIT PHONE: (919) 250-4128 FAX: (919) 250-4119	

UTILITY CONSTRUCTION



PI Sta 20+75.43
 $\Delta = 5' 56'' 06.4'' (LT)$
 $D = 2' 16'' 25.1''$
 $L = 261.04'$
 $T = 130.64'$
 $R = 2,520.00'$
 $SE = 0.028$
 $RO = 58.10'$

ROBERT L. and wife,
 DOROTHY B. LYDAY

MARK FORTNER

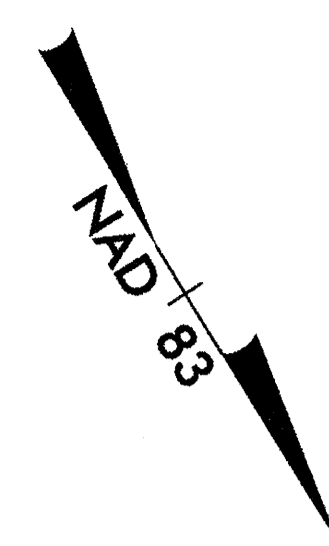
PI Sta 24+25.05
 $\Delta = 1' 52'' 20.6'' (LT)$
 $D = 1' 34'' 26.6''$
 $L = 118.95'$
 $T = 59.48'$
 $R = 3,640.00'$
 $SE = 0.02$
 $RO = 41.44'$

SEE SHEET UC-13 FOR PROFILE

 SYSTEMS

8/17/99

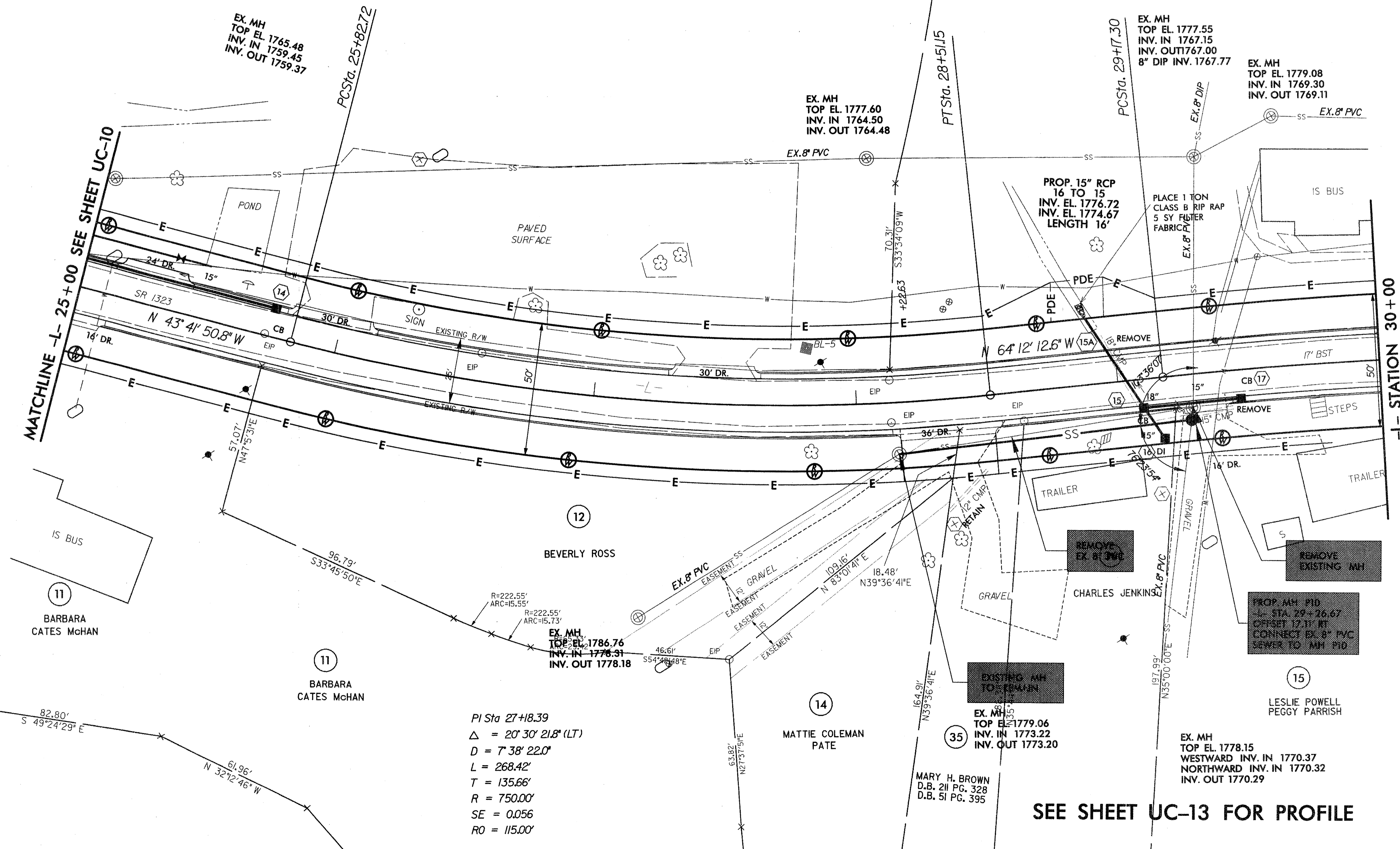
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R-5118	UC-11
DESIGNED BY: SSK	
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APPROVED BY: MAC	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DESIGN SERVICES UNIT PHONE: (919) 250-4128 FAX: (919) 250-4119	
UTILITY CONSTRUCTION PLANS ONLY	



10
 TRUSTEES OF:
 NORTH CAROLINA WEST
 DISTRICT OF THE
 WESLEYAN CHURCH AND
 BRYSON CITY CORNERSTONE
 WESLEYAN CHURCH

13
 MOUNTAIN MORTGAGE
 INVESTMENT COMPANY

UTILITY CONSTRUCTION



MATCHLINE -L- 25+00 SEE SHEET UC-10

-L- STATION 30+00

PI Sta 27+18.39
 $\Delta = 20^\circ 30' 21.8''$ (LT)
 $D = 7' 38'' 22.0''$
 $L = 268.42'$
 $T = 135.66'$
 $R = 750.00'$
 $SE = 0.056$
 $RO = 115.00'$

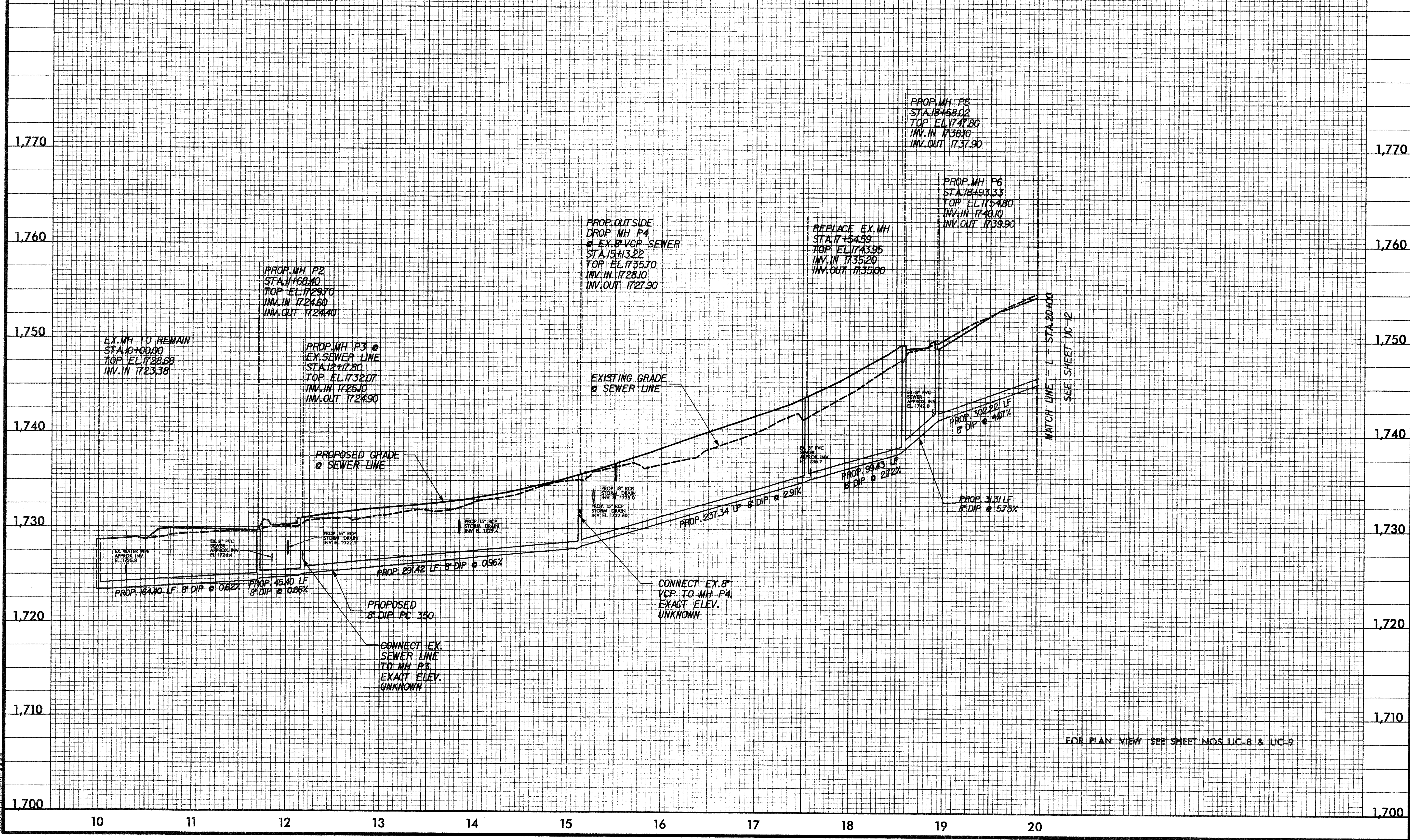
SEE SHEET UC-13 FOR PROFILE

SYSTEMS TIME DESIGN CONSULTANTS
 1000 W. HARRIS STREET
 RALEIGH, NC 27601
 TEL: (919) 871-1111
 FAX: (919) 871-1112
 WWW: www.systemstime.com

5/14/99

PROJECT REFERENCE NO. R-5118	SHEET NO. UC-12
DESIGNED BY: SSK	
DRAWN BY: SSK	
CHECKED BY: LAM	
APPROVED BY: MAC	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DESIGN SERVICES UNIT PHONE: (919) 250-4128 FAX: (919) 250-4119	

UTILITY CONSTRUCTION

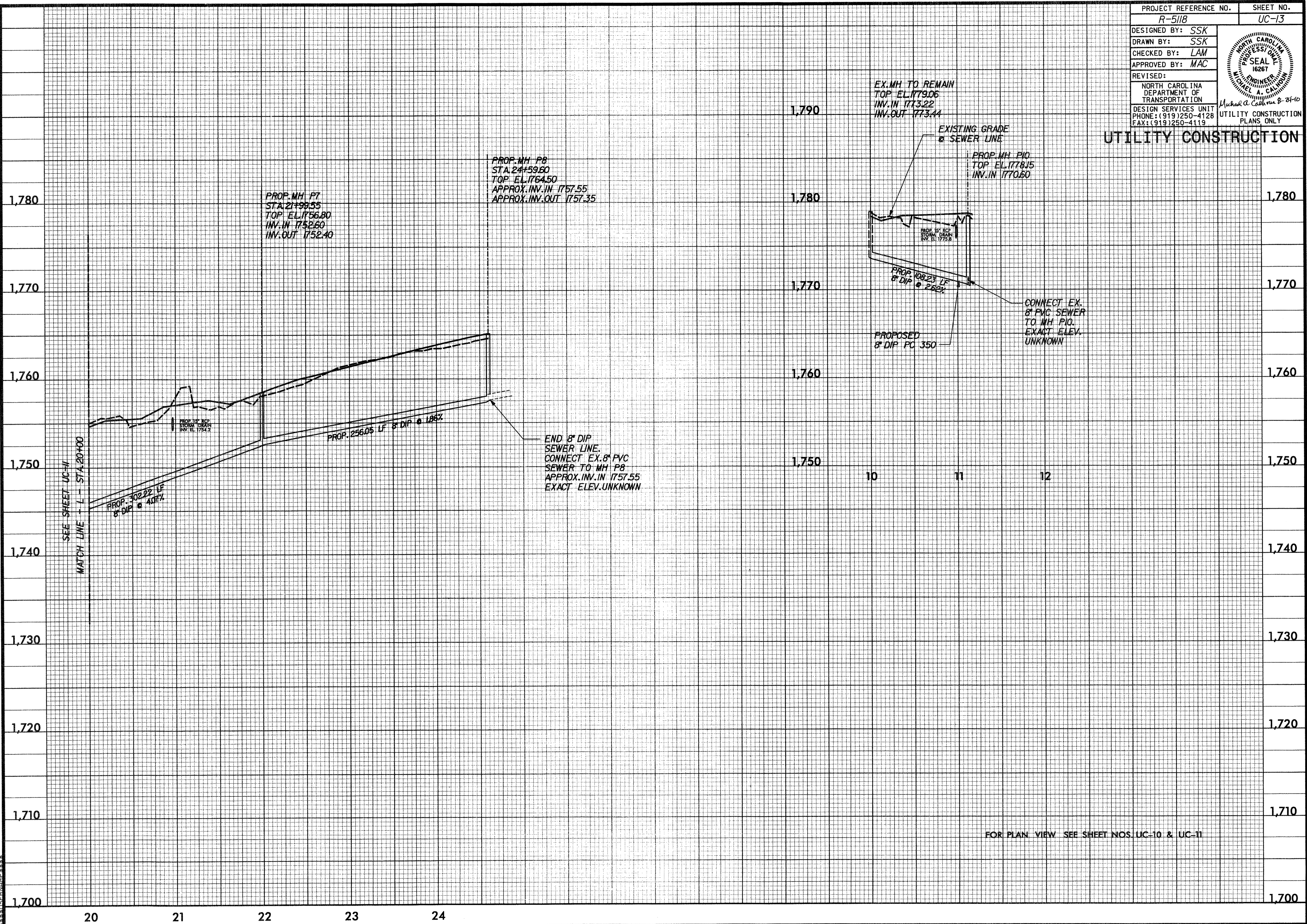


FOR PLAN VIEW SEE SHEET NOS. UC-8 & UC-9

SYSTEMS DESIGN CONSULTANTS

5/14/99

PROJECT REFERENCE NO. R-5118	SHEET NO. UC-13
DESIGNED BY: SSK	
DRAWN BY: SSK	
CHECKED BY: LAM	
APPROVED BY: MAC	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DESIGN SERVICES UNIT PHONE: (919) 250-4128 FAX: (919) 250-4119	
Michael A. Colburn E-2410 UTILITY CONSTRUCTION PLANS ONLY	



UTILITY CONSTRUCTION

FOR PLAN VIEW SEE SHEET NOS. UC-10 & UC-11

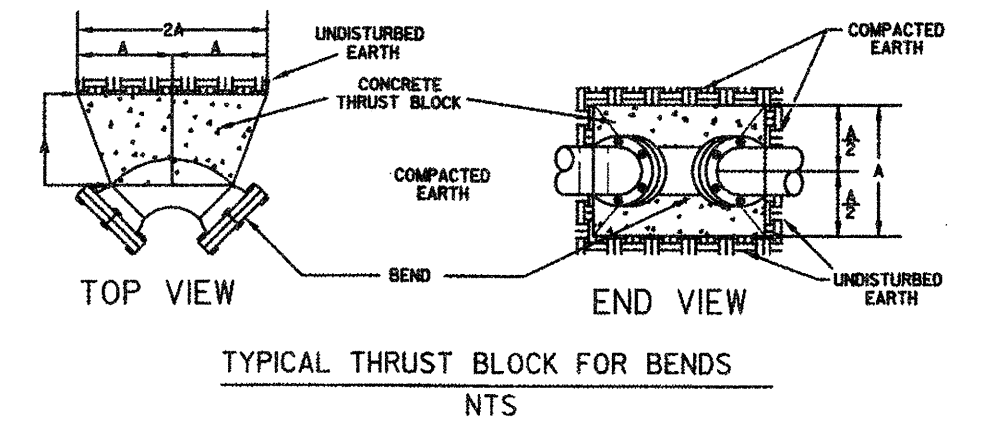
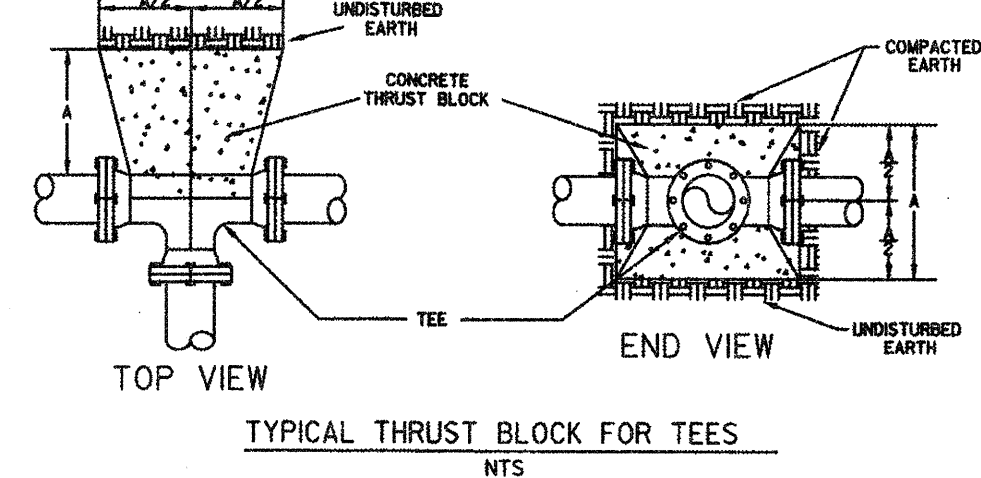
6.417/99

PROJECT REFERENCE NO. R-5118	SHEET NO. UC-14
DESIGNED BY: SSK	
DRAWN BY: SSK	
CHECKED BY: MAC	
APPROVED BY: MAC	
REVISED BY:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DESIGN SERVICES UNIT PHONE: (919) 250-4128 FAX: (919) 250-4119	

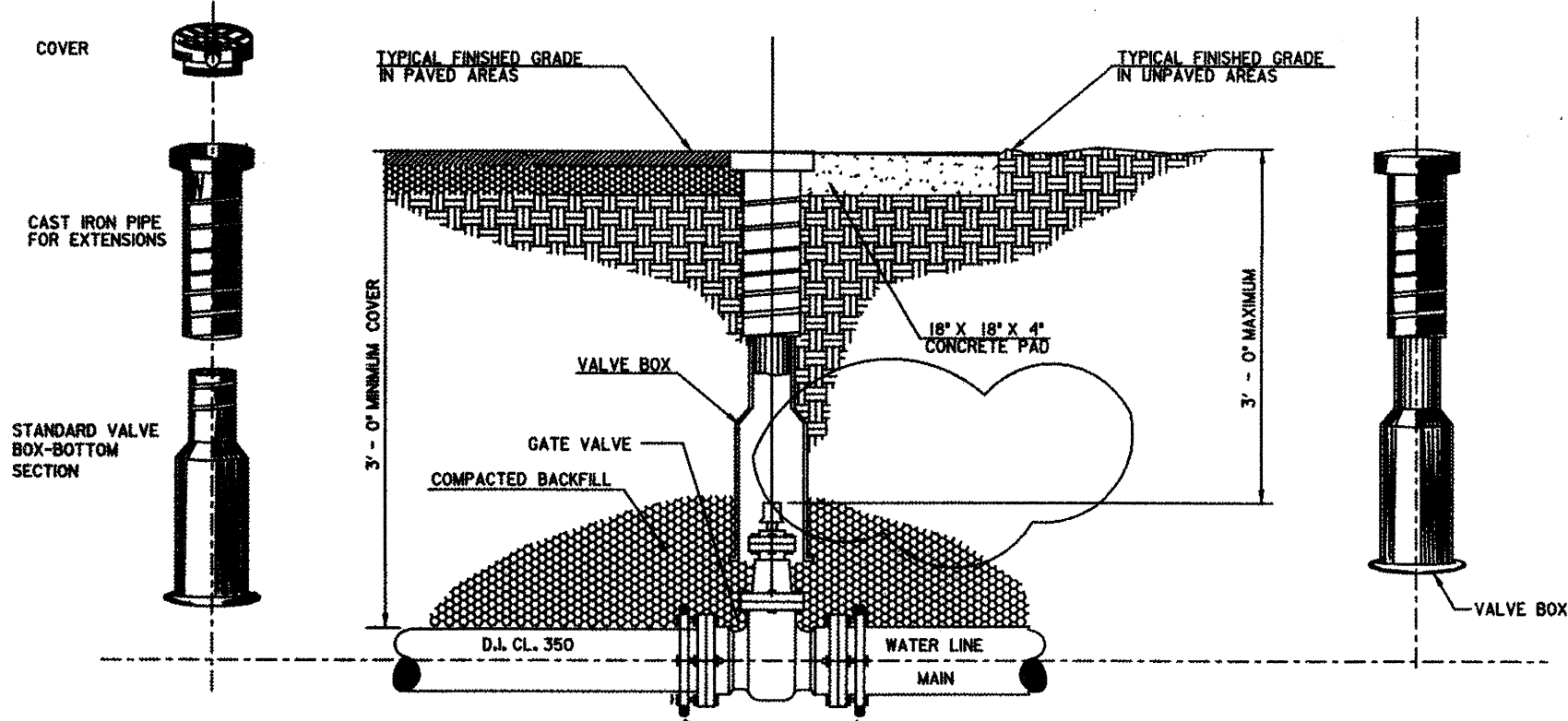
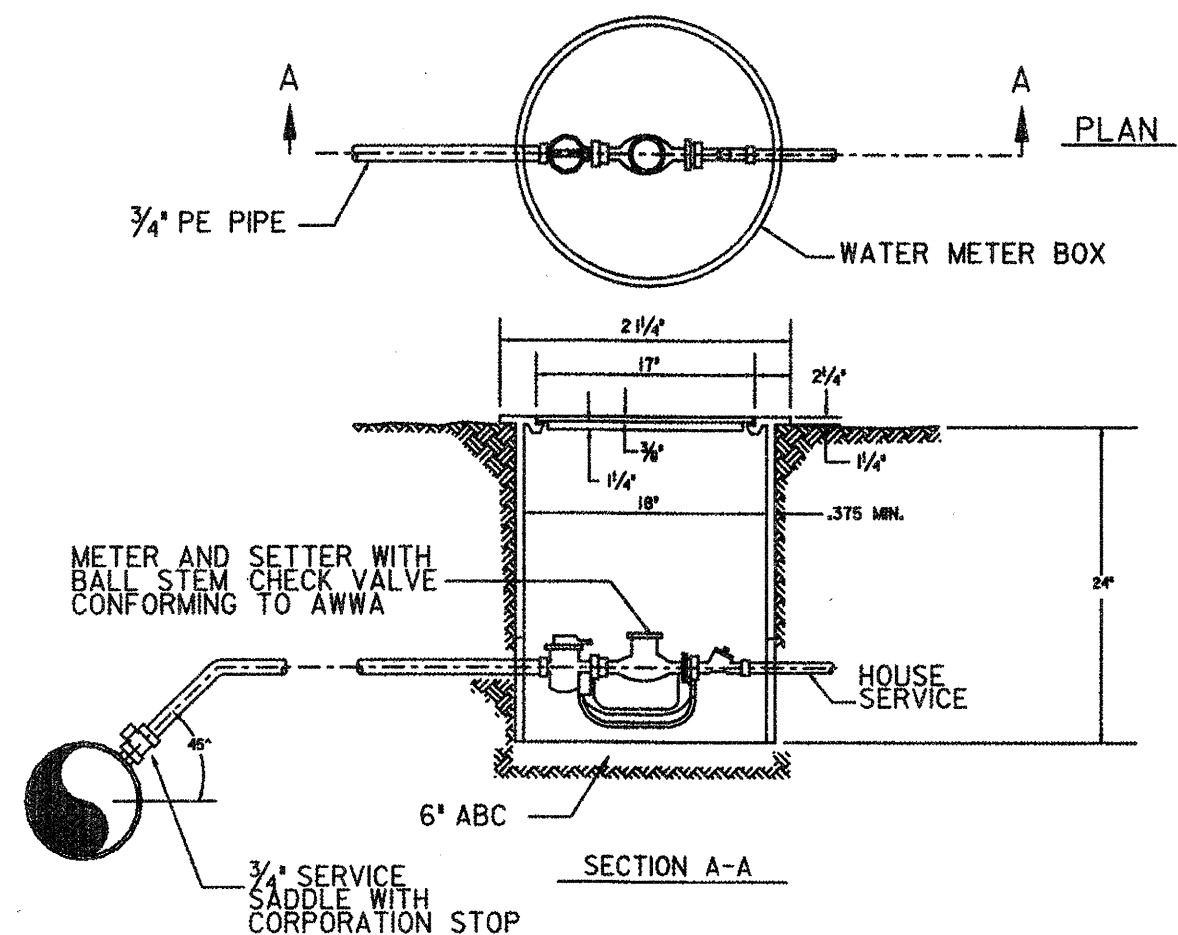
UTILITY CONSTRUCTION

NOTES:
1. MECHANICAL JOINT RESTRAINTS ARE MANDATORY ON ALL BENDS.
1. CONCRETE SHALL HAVE 3000 P.S.I. COMPRESSIVE STRENGTH.
2. FITTING JOINTS SHALL BE KEPT FREE OF CONCRETE. A LAYER OF POLYETHYLENE PLASTIC SHALL BE PLACED BETWEEN THE FITTING AND THE CONCRETE.

BEND	90	45	22 1/2	11 1/4	TEE
6	1.4	1.1	1.0	1.0	1.2
8	1.9	1.5	1.5	1.5	1.6
10	2.4	1.8	1.8	1.8	2.0
12	2.8	2.1	2.0	2.0	2.4
16	3.8	2.8	2.5	2.5	2.8
24	5.6	4.2	3.0	3.0	4.5

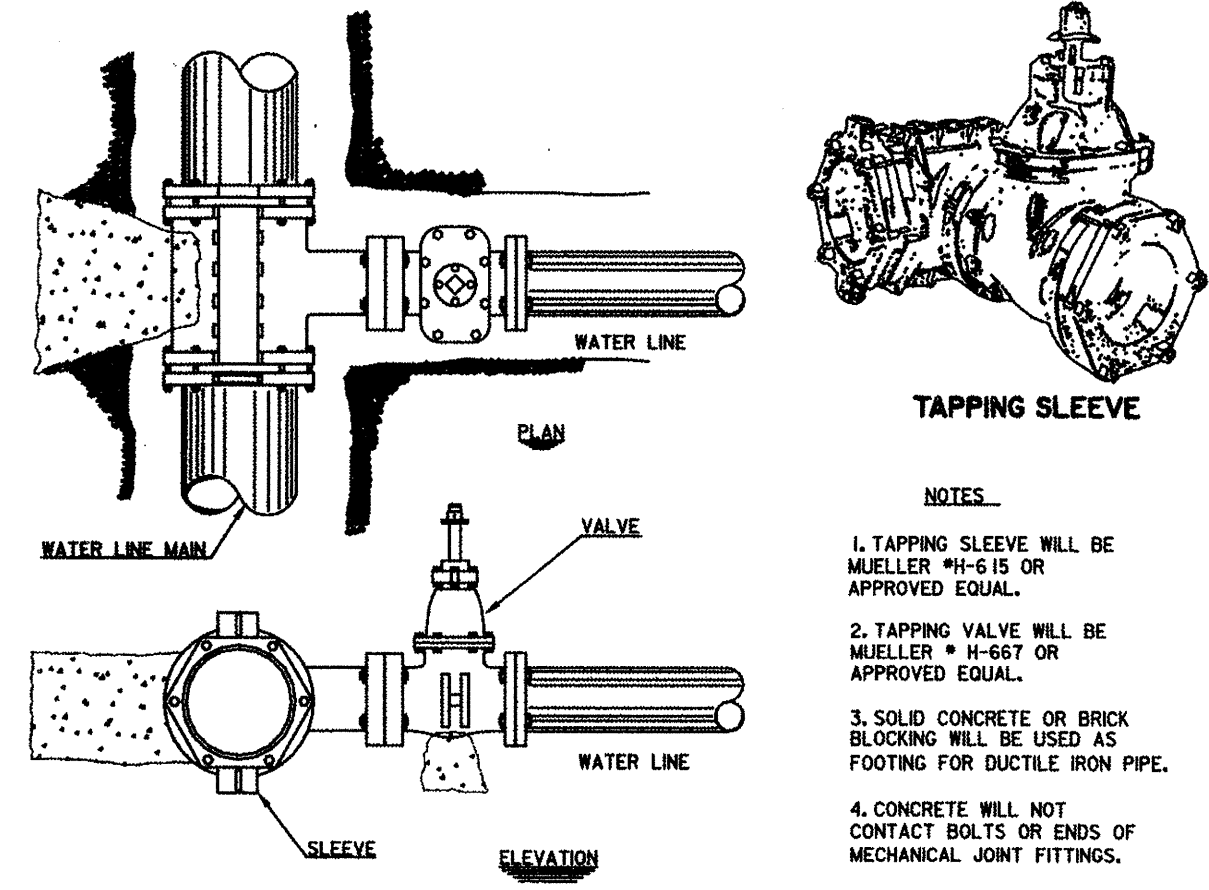


THRUST BLOCKS FOR FITTINGS

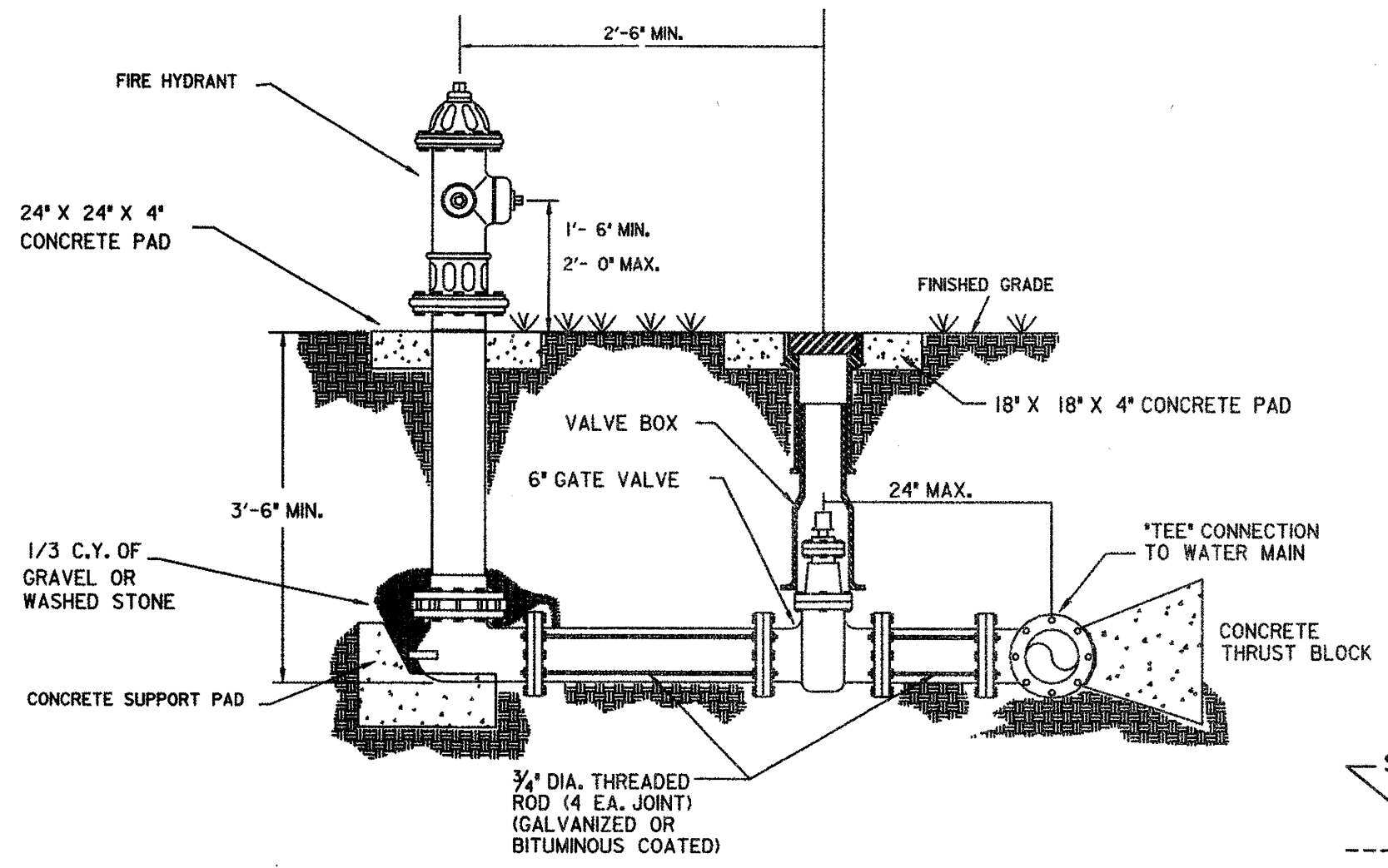


- GENERAL NOTES:
1. SEE STANDARD THRUST BLOCK DIMENSIONS.
2. CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL FITTINGS.

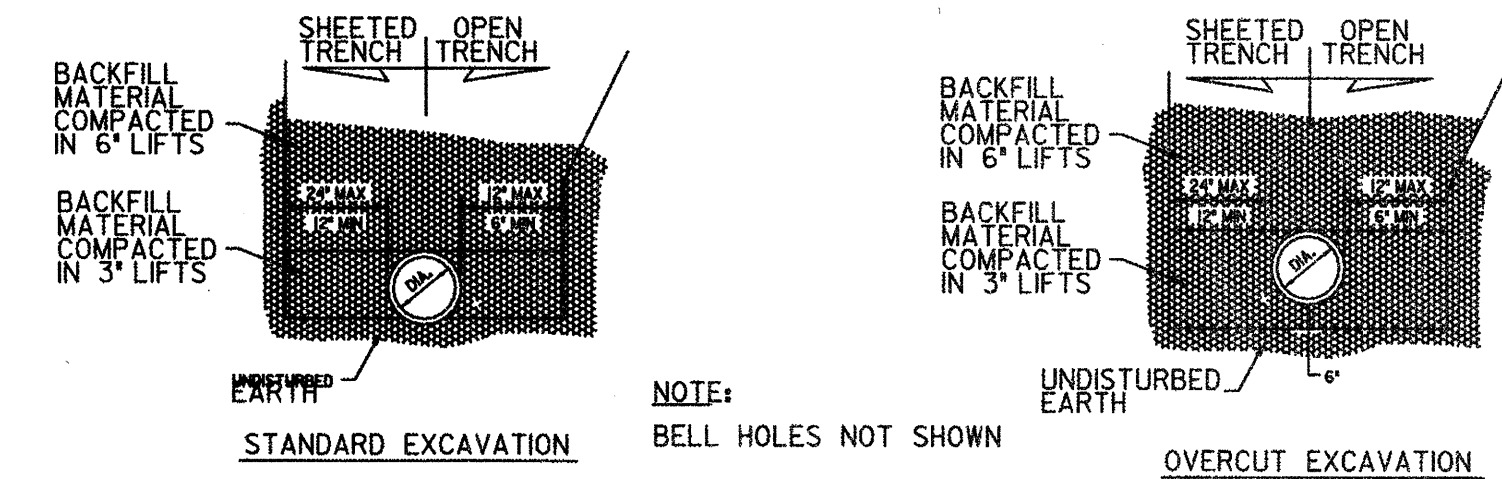
TAPPING SLEEVE AND VALVE ASSEMBLY



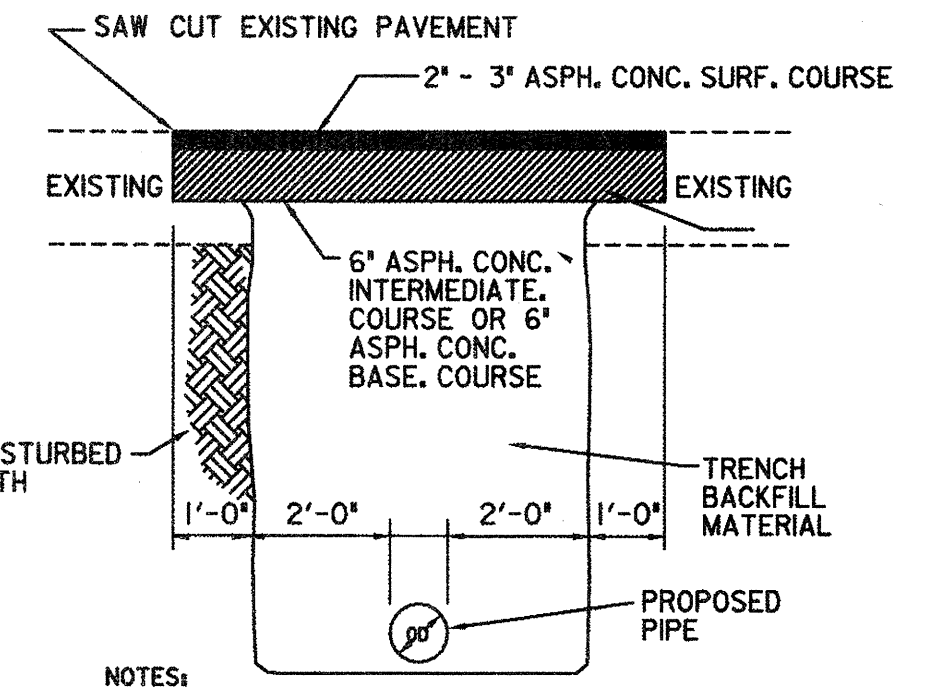
- NOTES:
1. TAPPING SLEEVE WILL BE MUELLER #H-615 OR APPROVED EQUAL.
2. TAPPING VALVE WILL BE MUELLER #H-667 OR APPROVED EQUAL.
3. SOLID CONCRETE OR BRICK BLOCKING WILL BE USED AS FOOTING FOR DUCTILE IRON PIPE.
4. CONCRETE WILL NOT CONTACT BOLTS OR ENDS OF MECHANICAL JOINT FITTINGS.
5. SEE APPROPRIATE STANDARD DETAIL FOR THRUST BLOCK AND THRUST BLOCK DIMENSIONS.



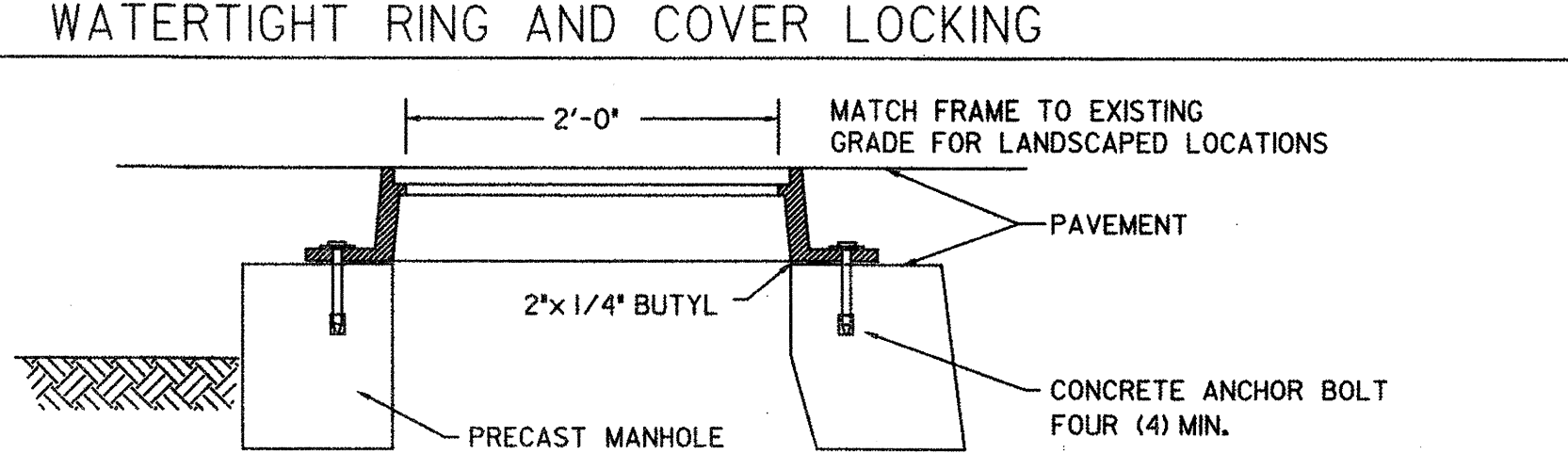
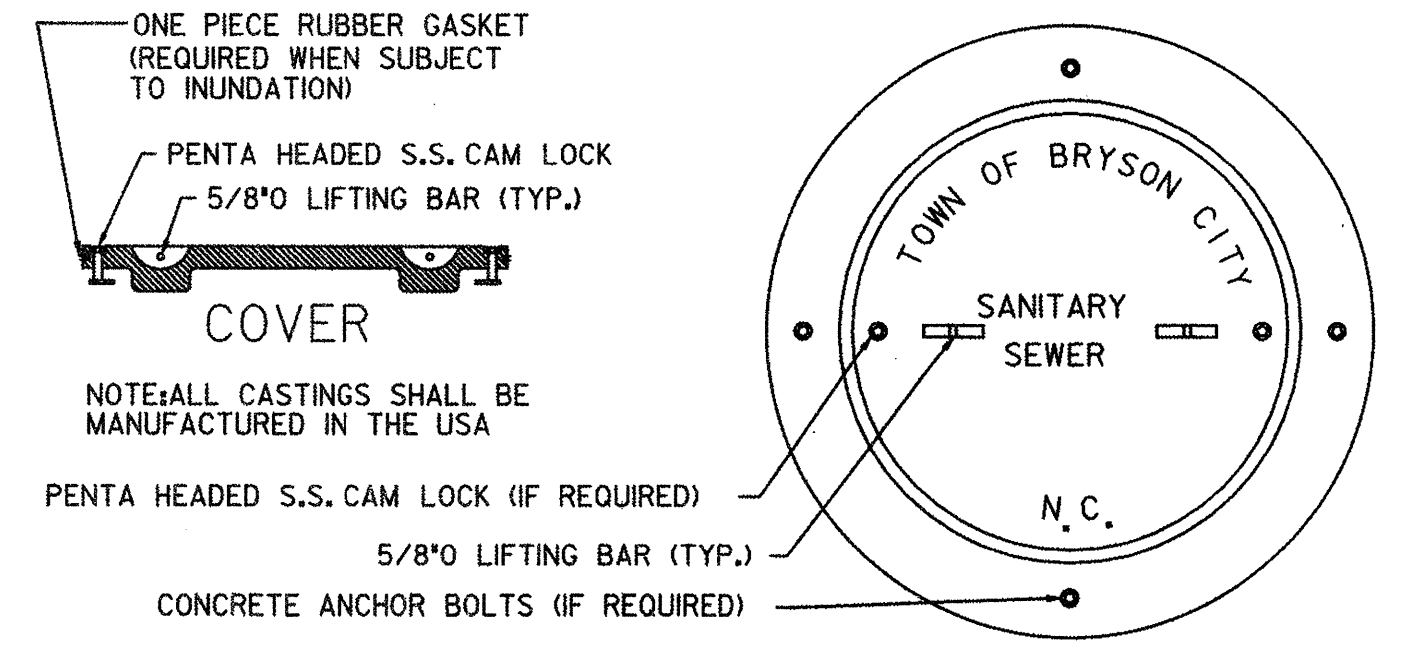
TYPICAL TRENCH DETAIL



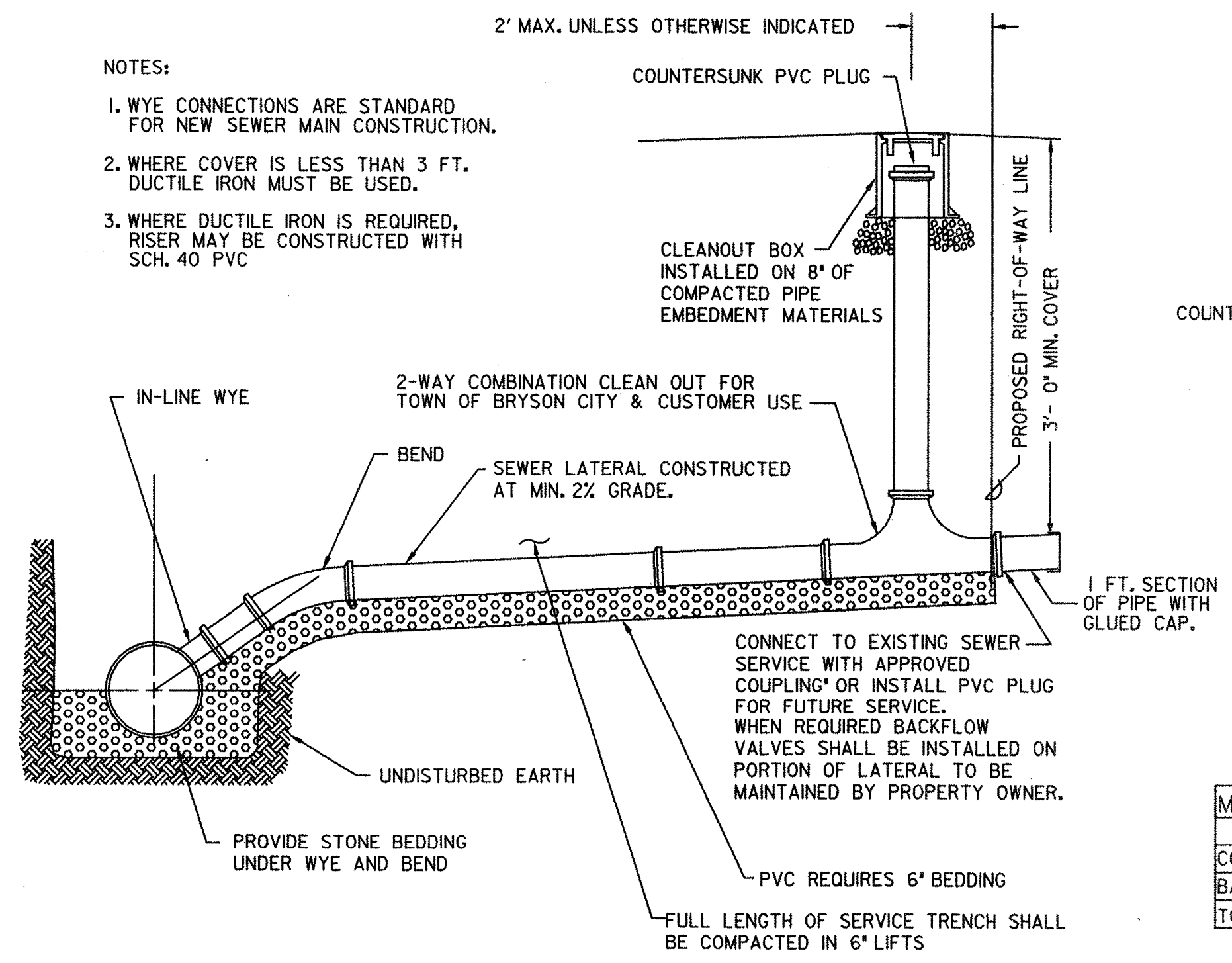
- NOTES:
CONSTRUCTION OF TRENCHES SHALL BE IN ACCORDANCE WITH THE LATEST OSHA REGULATIONS. CONTRACTOR COMPLIANCE WITH ALL APPLICABLE REGULATIONS.
NO BOULDERS OR STONES IN EXCESS OF 4" IN SIZE SHALL BE USED AS PART OF THE INITIAL BACKFILL.



- NOTES:
1. EDGES ARE TO BE SAWED WITH A CONCRETE SAW TO A NEAT SQUARED EDGE, AND BROOMED CLEAN OF DUST PRIOR TO APPLICATION OF TACK COAT.

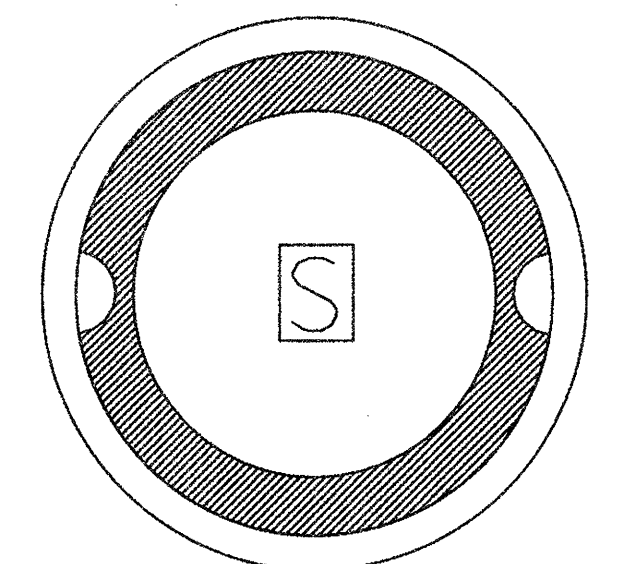


NOTE: WATERTIGHT FRAME & COVER REQUIRED IN FLOODPLAIN OR WHEN SPECIFIED ON PLANS. FOR STANDARD MANHOLE FRAME & COVER, SEE NCDOT STANDARD DRAWING 840.54.



- NOTES:
1. WYE CONNECTIONS ARE STANDARD FOR NEW SEWER MAIN CONSTRUCTION.
2. WHERE COVER IS LESS THAN 3 FT. DUCTILE IRON MUST BE USED.
3. WHERE DUCTILE IRON IS REQUIRED, RISER MAY BE CONSTRUCTED WITH SCH. 40 PVC

	MIN. WEIGHT-LBS.
COVER	25
BASE	40
TOTAL UNIT	65

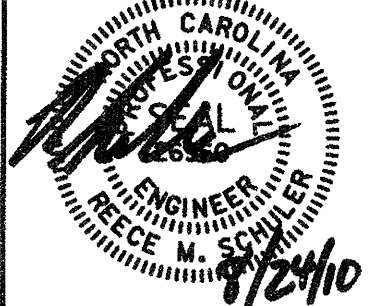


- NOTE:
1. ALL SANITARY SEWER CLEAN OUT BOXES AND COVERS SHALL BE MANUFACTURED FROM GRAY IRON (CAST IRON MEETING THE REQUIREMENTS OF AWWA C110 AND ASTM A536).
2. ALL SANITARY SEWER CLEAN OUT BOXES AND COVERS SHALL CONFORM TO PARAGRAPH 2.0 (d) OF ITEM II, SECTION VI OF MSD'S TECHNICAL SPECIFICATIONS (MADE IN THE U.S.A.).

8/17/99

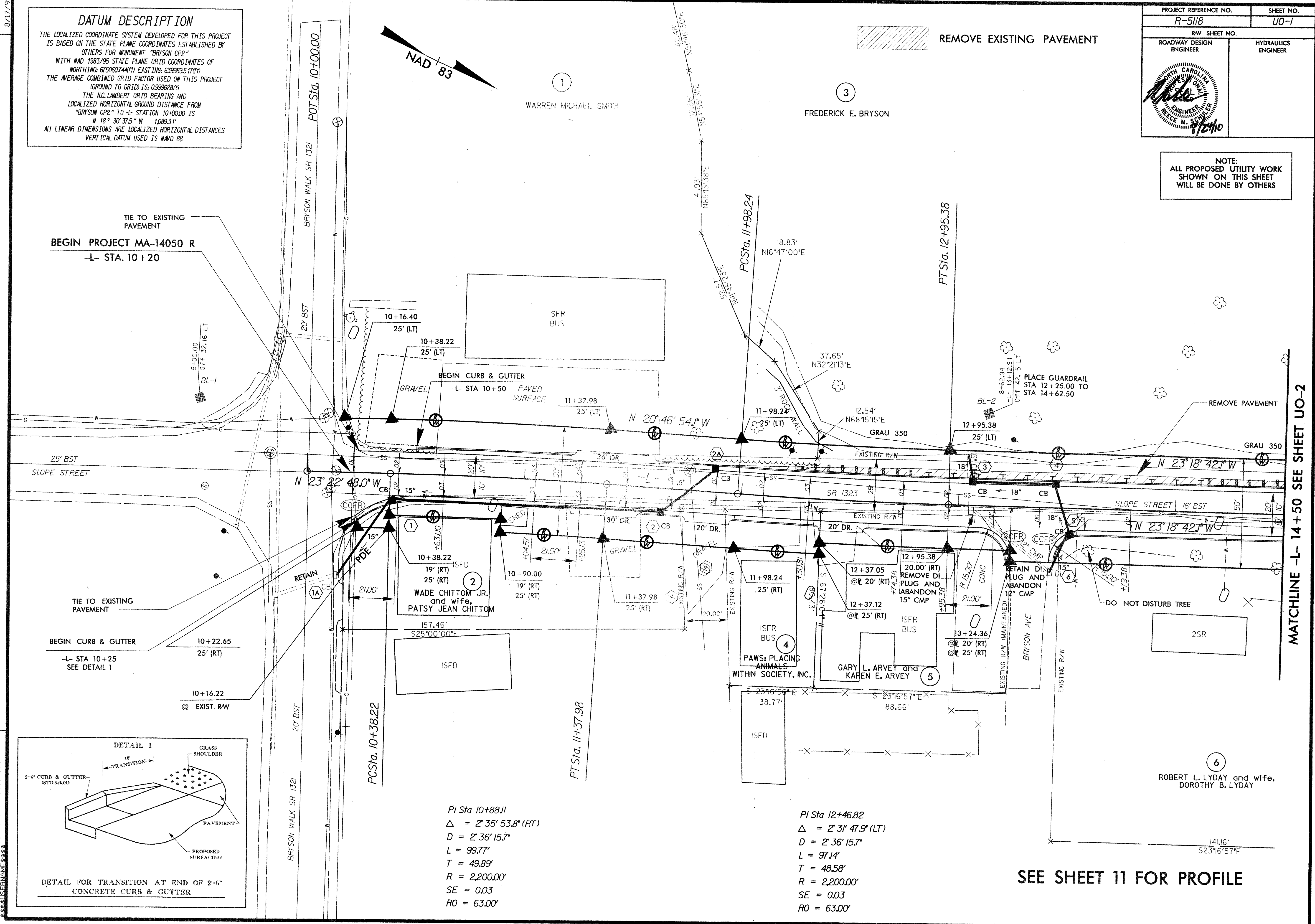
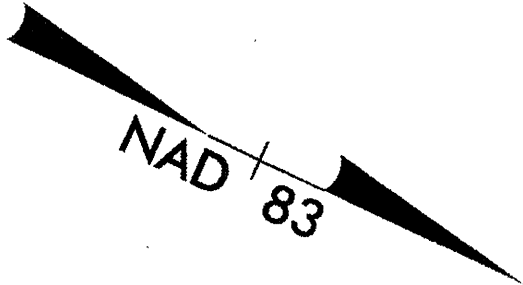
DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY OTHERS FOR MONUMENT "BRYSON CP2" WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF NORTHING: 6750602.44(F1) EASTING: 6399895.17(F1) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99962875 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "BRYSON CP2" TO ± STATION 10+00.00 IS N 18° 30' 37.5" W 1,089.31' ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

PROJECT REFERENCE NO. R-5118		SHEET NO. U0-1	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
			

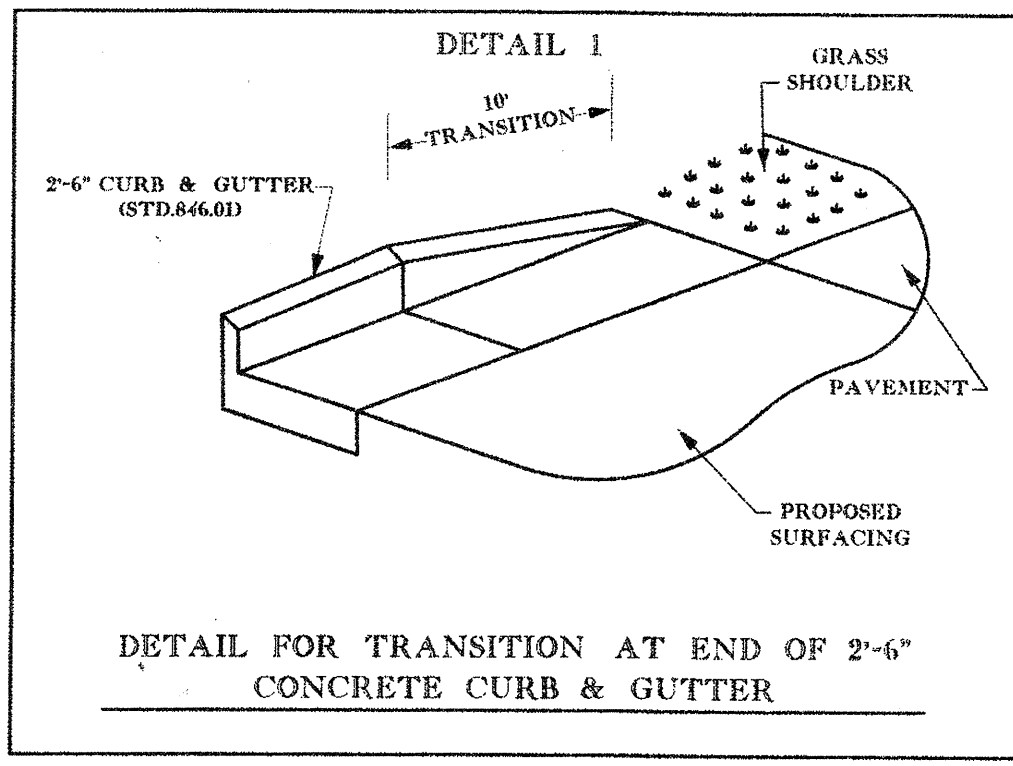
NOTE:
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS

REMOVE EXISTING PAVEMENT



TIE TO EXISTING PAVEMENT
BEGIN PROJECT MA-14050 R
-L- STA. 10+20

TIE TO EXISTING PAVEMENT
BEGIN CURB & GUTTER
-L- STA 10+25
SEE DETAIL 1



PI Sta 10+88.11
 $\Delta = 2' 35' 53.8" (RT)$
 $D = 2' 36' 15.7"$
 $L = 99.77'$
 $T = 49.89'$
 $R = 2,200.00'$
 $SE = 0.03$
 $RO = 63.00'$

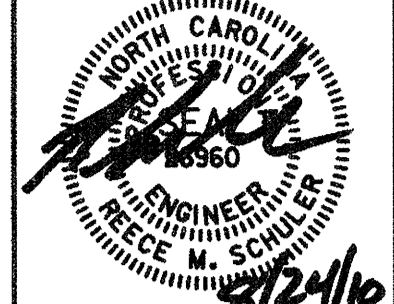
PI Sta 12+46.82
 $\Delta = 2' 31' 47.9" (LT)$
 $D = 2' 36' 15.7"$
 $L = 97.14'$
 $T = 48.58'$
 $R = 2,200.00'$
 $SE = 0.03$
 $RO = 63.00'$

SEE SHEET 11 FOR PROFILE

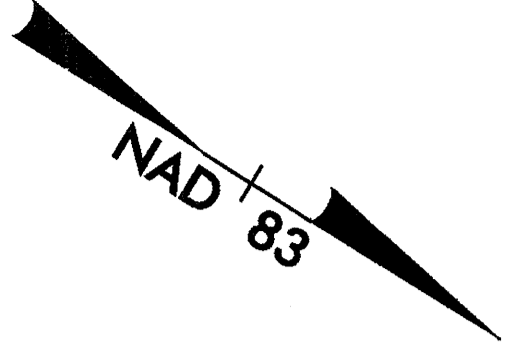
MATCHLINE -L- 14+50 SEE SHEET UO-2

REVISIONS

DATE PLOTTED: 08/17/99 11:58 AM

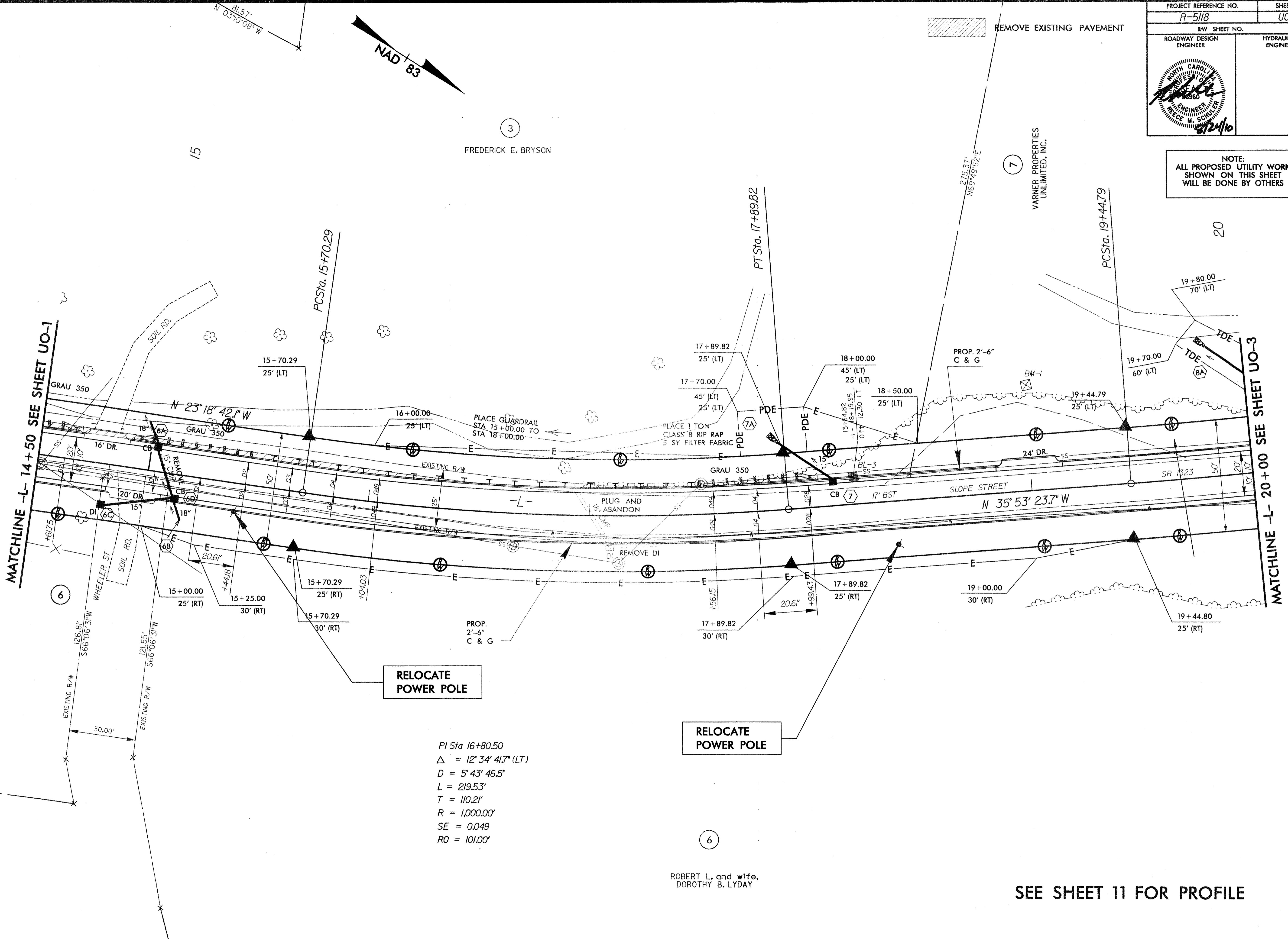
PROJECT REFERENCE NO. R-5118	SHEET NO. UO-2
RAW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
	

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



3
FREDERICK E. BRYSON

7
VARNER PROPERTIES
UNLIMITED, INC.



RELOCATE
POWER POLE

RELOCATE
POWER POLE

PI Sta 16+80.50
 $\Delta = 12' 34" 41.7" (LT)$
 $D = 5' 43" 46.5"$
 $L = 219.53'$
 $T = 110.21'$
 $R = 1,000.00'$
 $SE = 0.049$
 $RO = 101.00'$

6
ROBERT L. and wife,
DOROTHY B. LYDAY

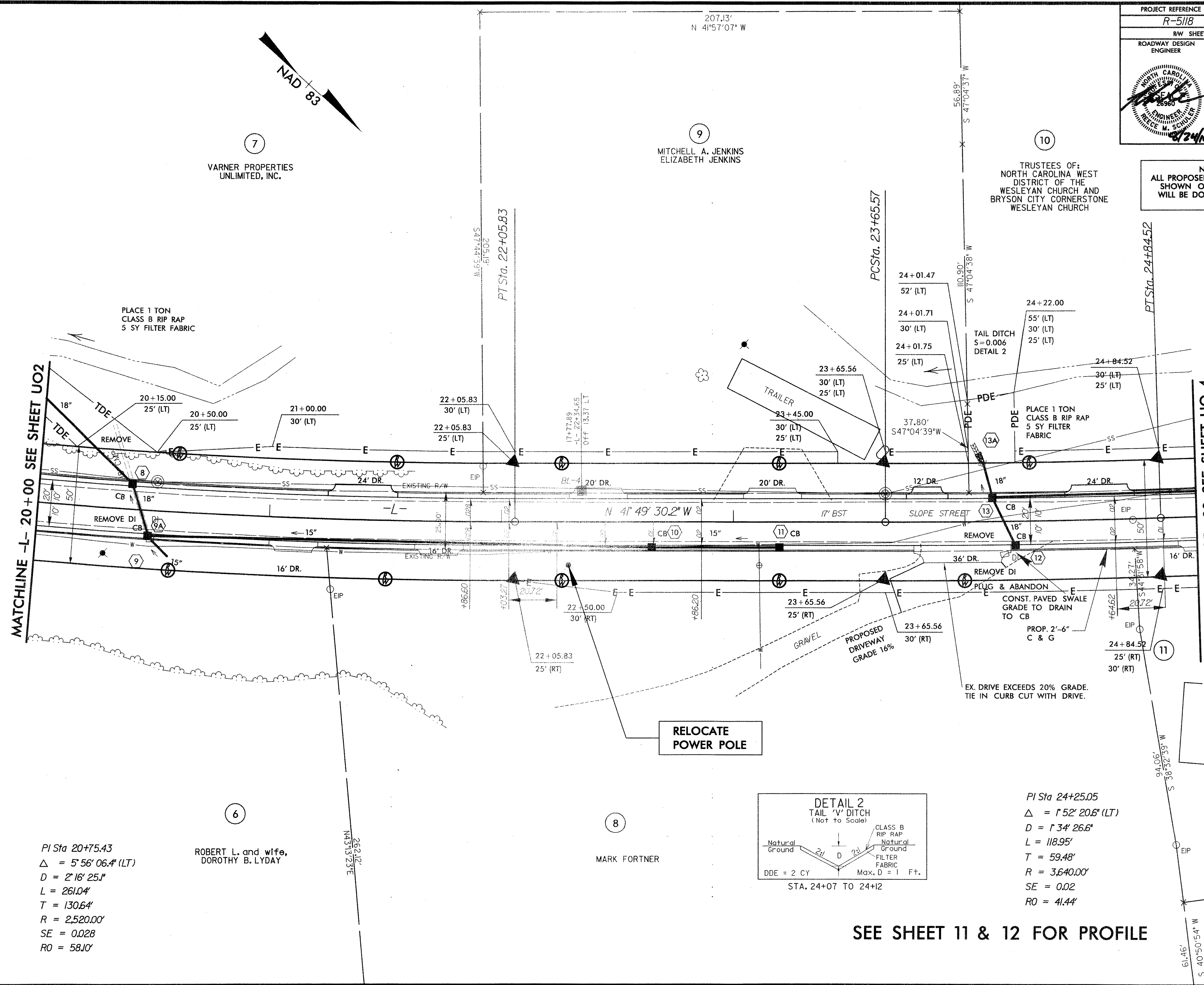
SEE SHEET 11 FOR PROFILE

REVISIONS

8/17/99

PROJECT REFERENCE NO. R-5118	SHEET NO. UO-3
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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



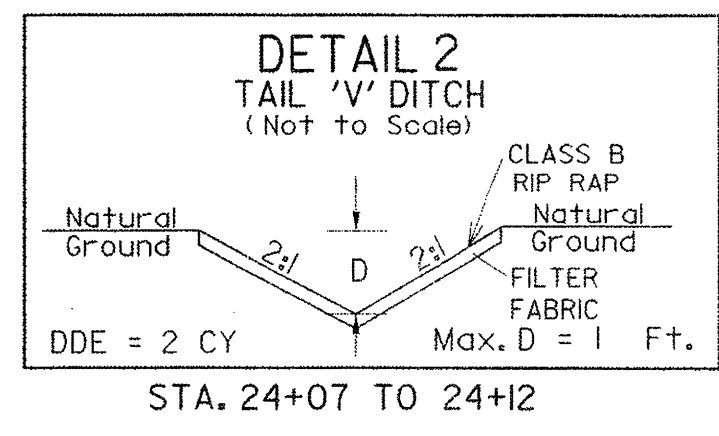
MATCHLINE -L- 20+00 SEE SHEET UO2

MATCHLINE -L- 25+00 SEE SHEET UO-4

PI Sta 20+75.43
 $\Delta = 5' 56'' 06.4''$ (LT)
 $D = 2' 16'' 25.1''$
 $L = 261.04'$
 $T = 130.64'$
 $R = 2,520.00'$
 $SE = 0.028$
 $RO = 58.10'$

ROBERT L. and wife,
DOROTHY B. LYDAY

MARK FORTNER



PI Sta 24+25.05
 $\Delta = 1' 52'' 20.6''$ (LT)
 $D = 1' 34'' 26.6''$
 $L = 118.95'$
 $T = 59.48'$
 $R = 3,640.00'$
 $SE = 0.02$
 $RO = 41.44'$

SEE SHEET 11 & 12 FOR PROFILE

REVISIONS

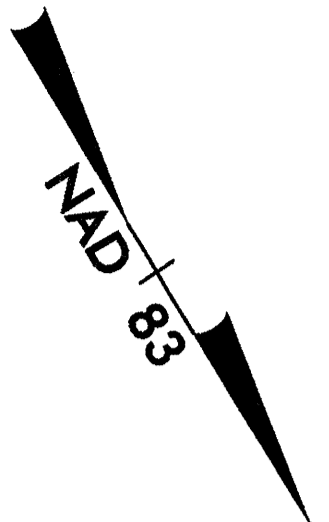
 SYSTEMS DESIGN

8/17/99

PROJECT REFERENCE NO. R-5118	SHEET NO. UO-4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

8/24/10

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



10
TRUSTEES OF:
NORTH CAROLINA WEST
DISTRICT OF THE
WESLEYAN CHURCH AND
BRYSON CITY CORNERSTONE
WESLEYAN CHURCH

CHORD BEARING = N39°26'39"E
CHORD DISTANCE=194.47
RADIUS=950.00
ARC LENGTH=194.81

13
MOUNTAIN MORTGAGE
INVESTMENT COMPANY

RELOCATE
POWER POLE

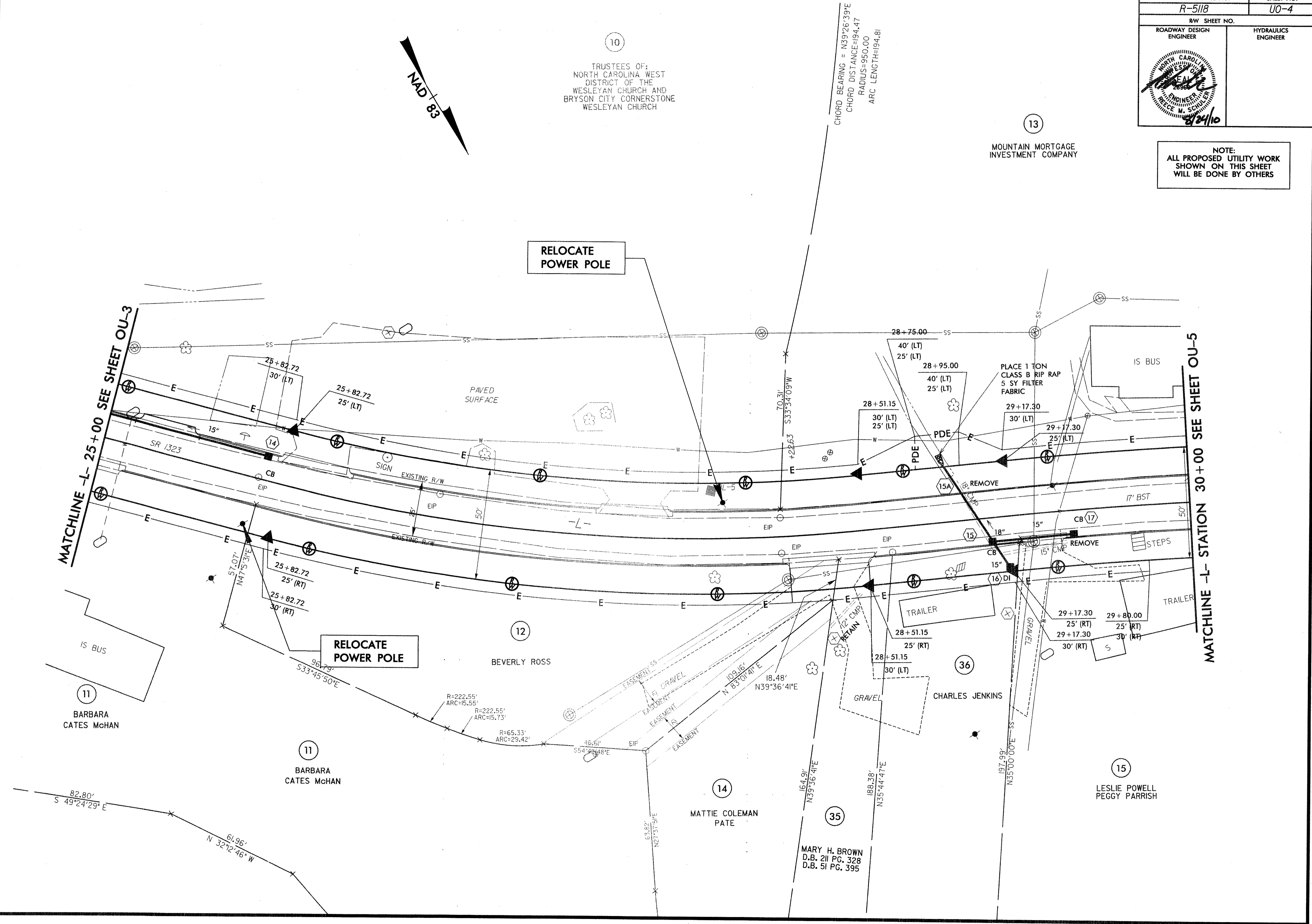
RELOCATE
POWER POLE

MATCHLINE -L- 25+00 SEE SHEET OU-3

MATCHLINE -L- STATION 30+00 SEE SHEET OU-5

REVISIONS

SYTIME
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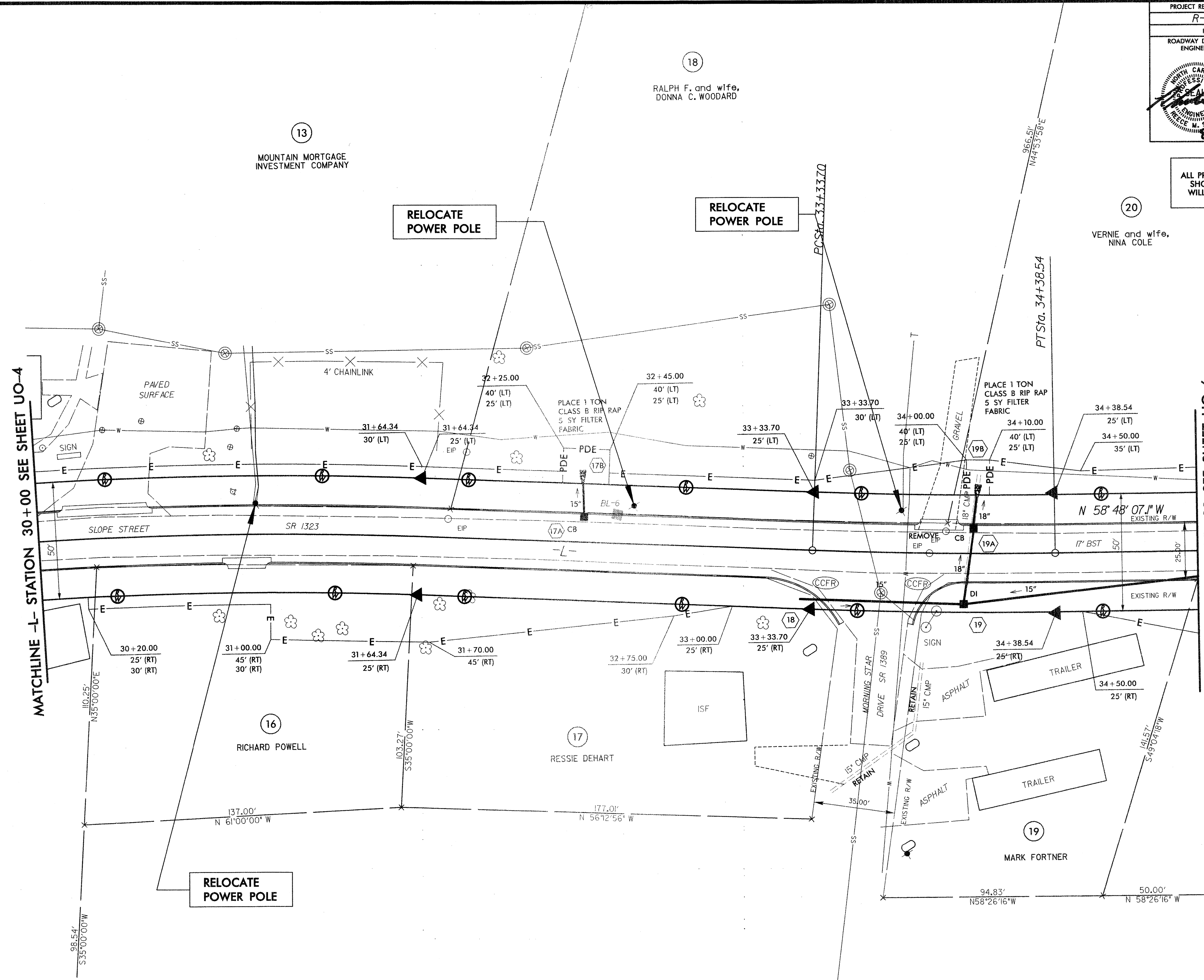


DATE PLOTTED: 11-18-2010 11:48:23 AM

8/17/99

PROJECT REFERENCE NO. R-5118	SHEET NO. UO-5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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



REVISIONS

MATCHLINE -L- STATION 30+00 SEE SHEET UO-4

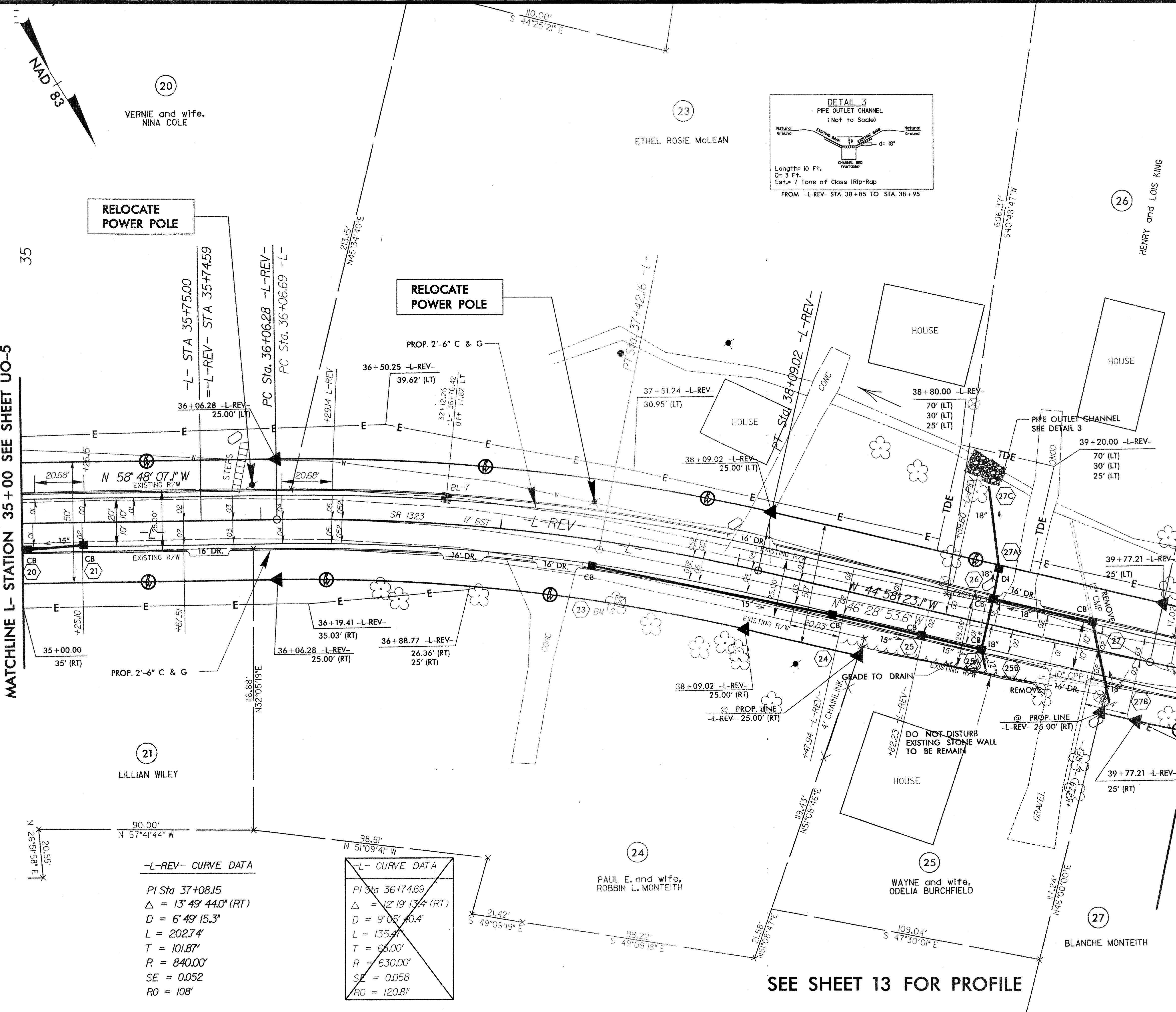
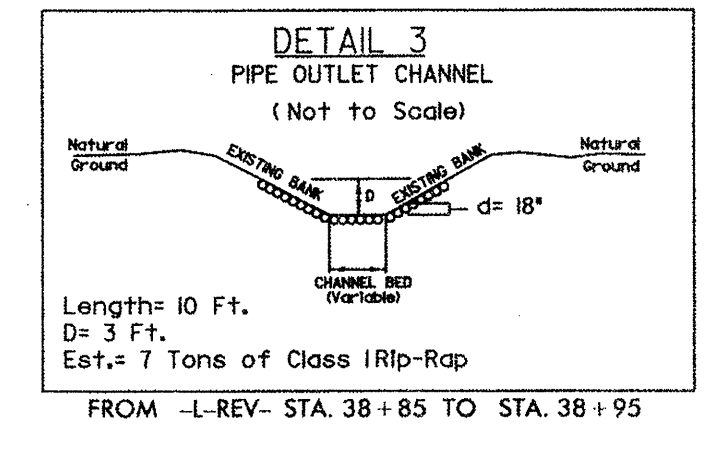
MATCHLINE L- STATION 35+00 SEE SHEET UO-6

 SYSTEMS

8/17/99

PROJECT REFERENCE NO. R-5118	SHEET NO. U0-6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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



MATCHLINE L- STATION 35+00 SEE SHEET UO-5

MATCHLINE -L-REV- 40+00 SEE SHEET UO-7

-L-REV- CURVE DATA

PI Sta 37+08.15
$\Delta = 13^\circ 49' 44.0''$ (RT)
$D = 6^\circ 49' 15.3''$
$L = 202.74'$
$T = 101.87'$
$R = 840.00'$
$SE = 0.052$
$RO = 108'$

-L- CURVE DATA

PI Sta 36+74.69
$\Delta = 12^\circ 19' 13.4''$ (RT)
$D = 9^\circ 05' 40.4''$
$L = 135.41'$
$T = 68.00'$
$R = 630.00'$
$SE = 0.058$
$RO = 120.81'$

SEE SHEET 13 FOR PROFILE

SYSTEMS DESIGN CONSULTANTS

