

CONTRACT: C201831 PROJECT TIP: B-4276

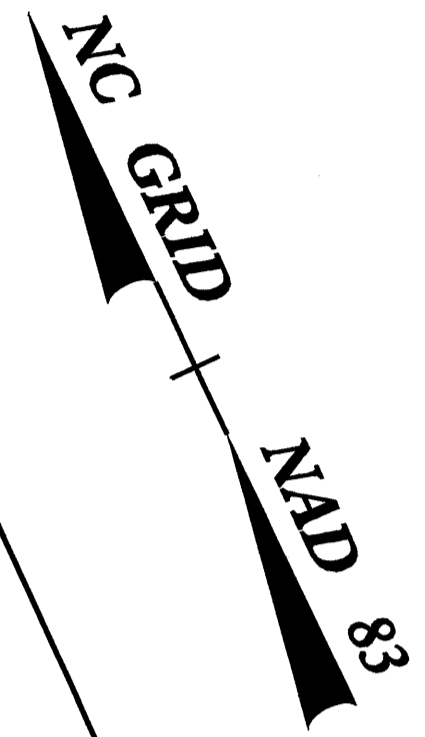
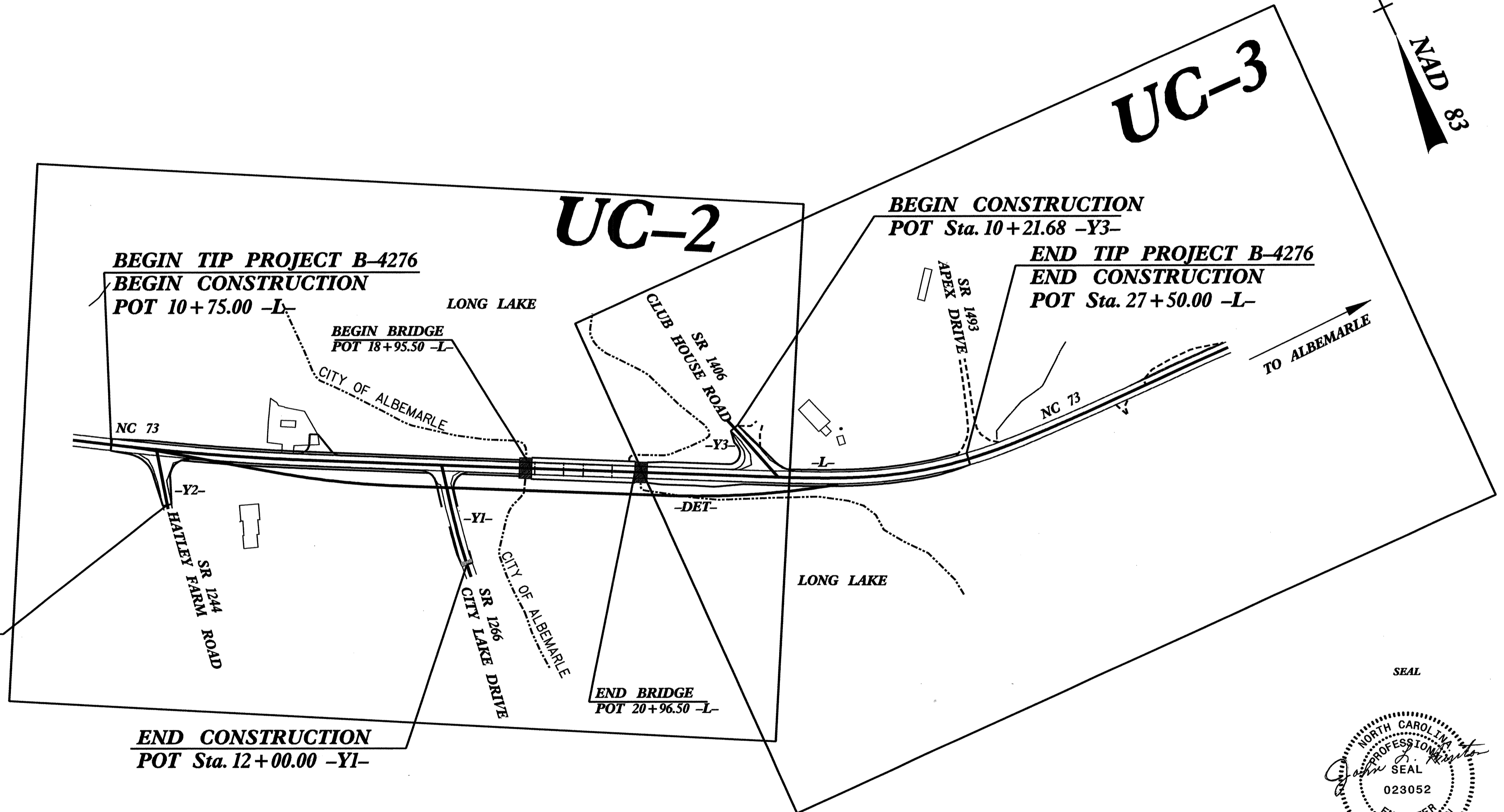
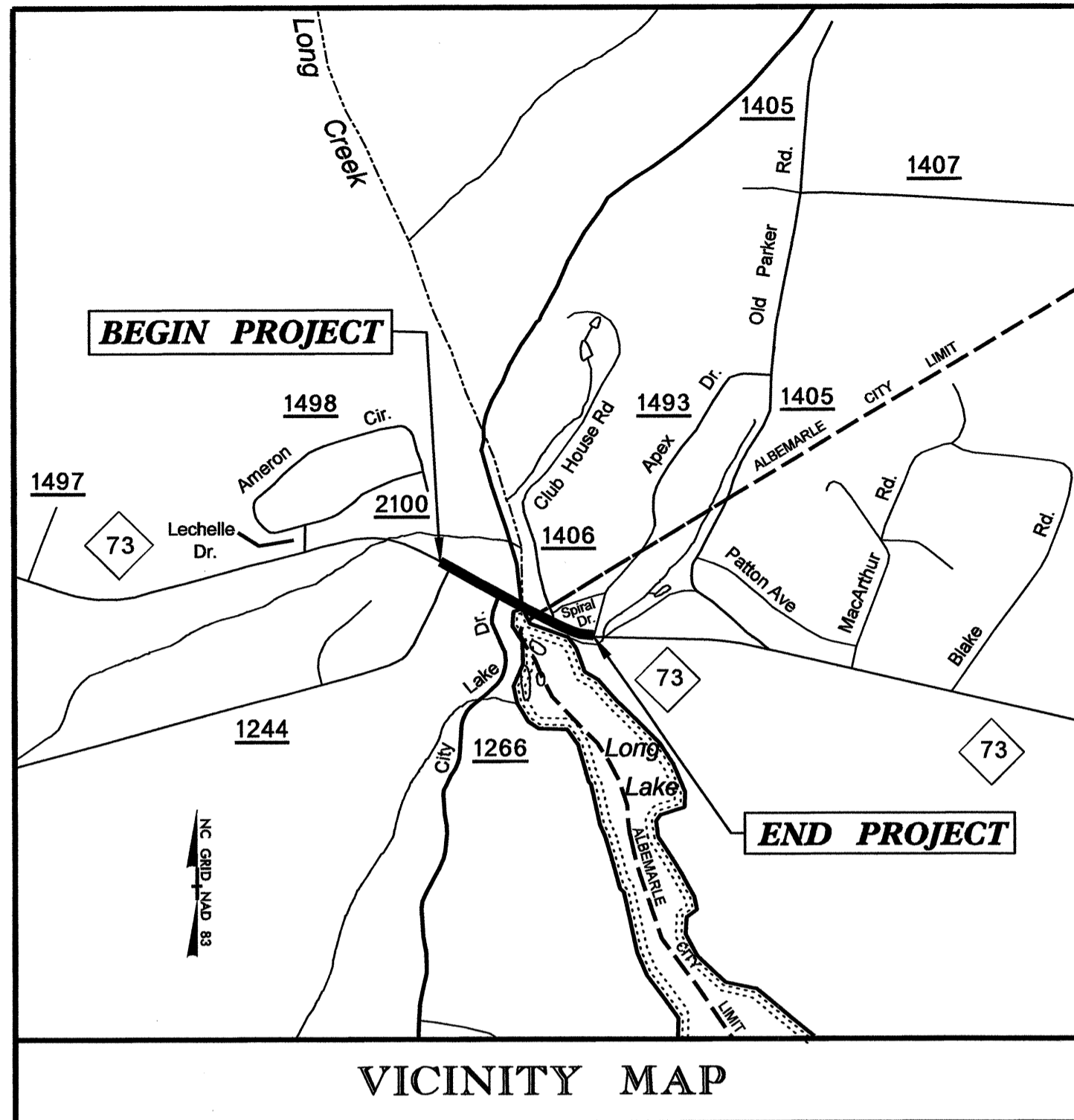
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4276	UC-1	
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	

**UTILITY CONSTRUCTION PLANS
STANLY COUNTY**

LOCATION: BRIDGE NO. 33 ON NC 73 OVER LONG CREEK
IN ALBEMARLE

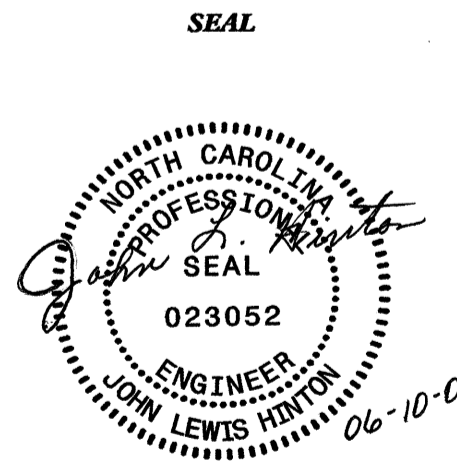
TYPE OF WORK: UTILITY RELOCATION



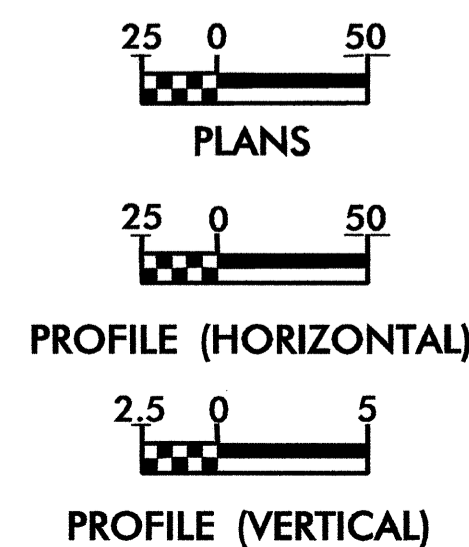
NOTES:
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III

THIS PROJECT IS PARTIALLY LOCATED WITHIN WITHIN THE BOUNDARIES OF THE CITY OF ALBEMARLE

NC DOT CONTACT: DOUG TAYLOR, P.E. - PROJECT ENGINEER - ROADWAY DESIGN



GRAPHIC SCALES



INDEX OF SHEETS

SHEET No.	DESCRIPTION
UC-1	TITLE SHEET
UC-2 TO UC-3	UTILITY CONSTRUCTION PLAN SHEETS
UC-4	UTILITY CONSTRUCTION DETAIL SHEET

UTILITY OWNERS ON PROJECT

(1.) CITY OF ALBEMARLE (WATER)

PREPARED BY

Municipal Services Engineering Company, P.A.

P.O. BOX 97 GARNER, N.C. 27529 P.O. BOX 349 BOONE, N.C. 28607
(819) 772-5393 (828) 262-1767
P.O. BOX 276 MOREHEAD CITY, N.C. 28557
(252) 726-9481

UTILITY DESIGN ENGINEER JOHN L. HINTON, P.E.



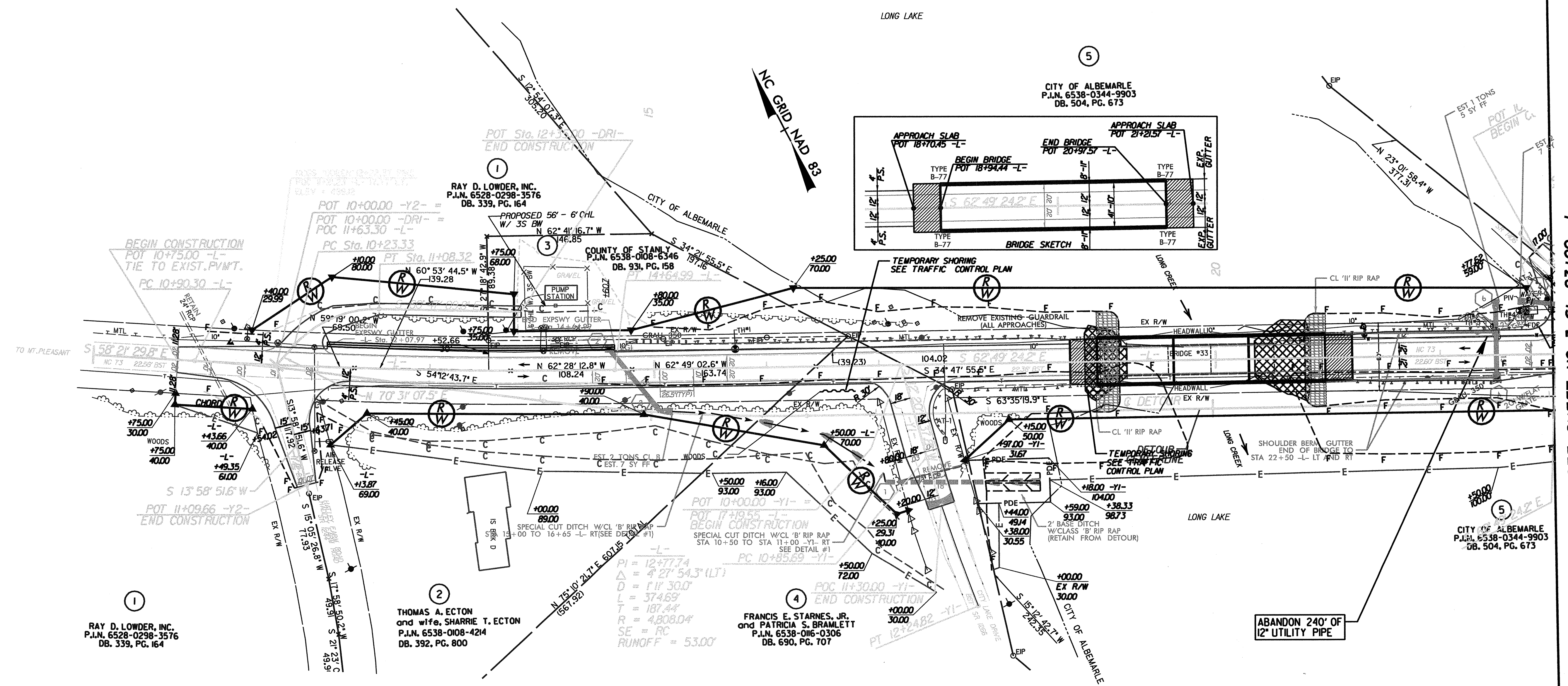
PREPARED IN THE OFFICE OF:
DIVISION OF HIGHWAYS
DESIGN SERVICES
UTILITY SECTION

1501 MAIL SERVICES CENTER
RALEIGH, NC 27699-1501
PHONE (919) 259-4128
FAX (919) 259-4119

Roger Worthington, P.E. UTILITIES SECTION ENGINEER
Steve McKee, P.E. UTILITIES SQUAD LEADER PROJECT ENGINEER
John Hinton, P.E. UTILITIES PROJECT DESIGNER

UTILITY CONSTRUCTION

NC GRID NAD 83



MATCHLINE SEE SHEET UC-3 Sta. 23+00 -L-

ALL SEWER LINES ON THIS PROJECT ARE OWNED BY THE CITY OF ALBEMARLE. ALL WATER LINES ON THIS PROJECT ARE OWNED BY THE CITY OF ALBEMARLE AND STANLY COUNTY.

ALL WATER LINES SHALL BE D.I. PC 350 UNLESS OTHERWISE INDICATED.

THE CONTRACTOR SHALL PROVIDE ALL NECESSARY FITTINGS TO MAKE CONNECTIONS TO ALL EXISTING WATER LINES.

ALL VALVES 12" OR SMALLER SHALL BE GATE VALVES. VALVES OVER 12" SHALL BE BUTTERFLY VALVES.

UTILITY CONSTRUCTION

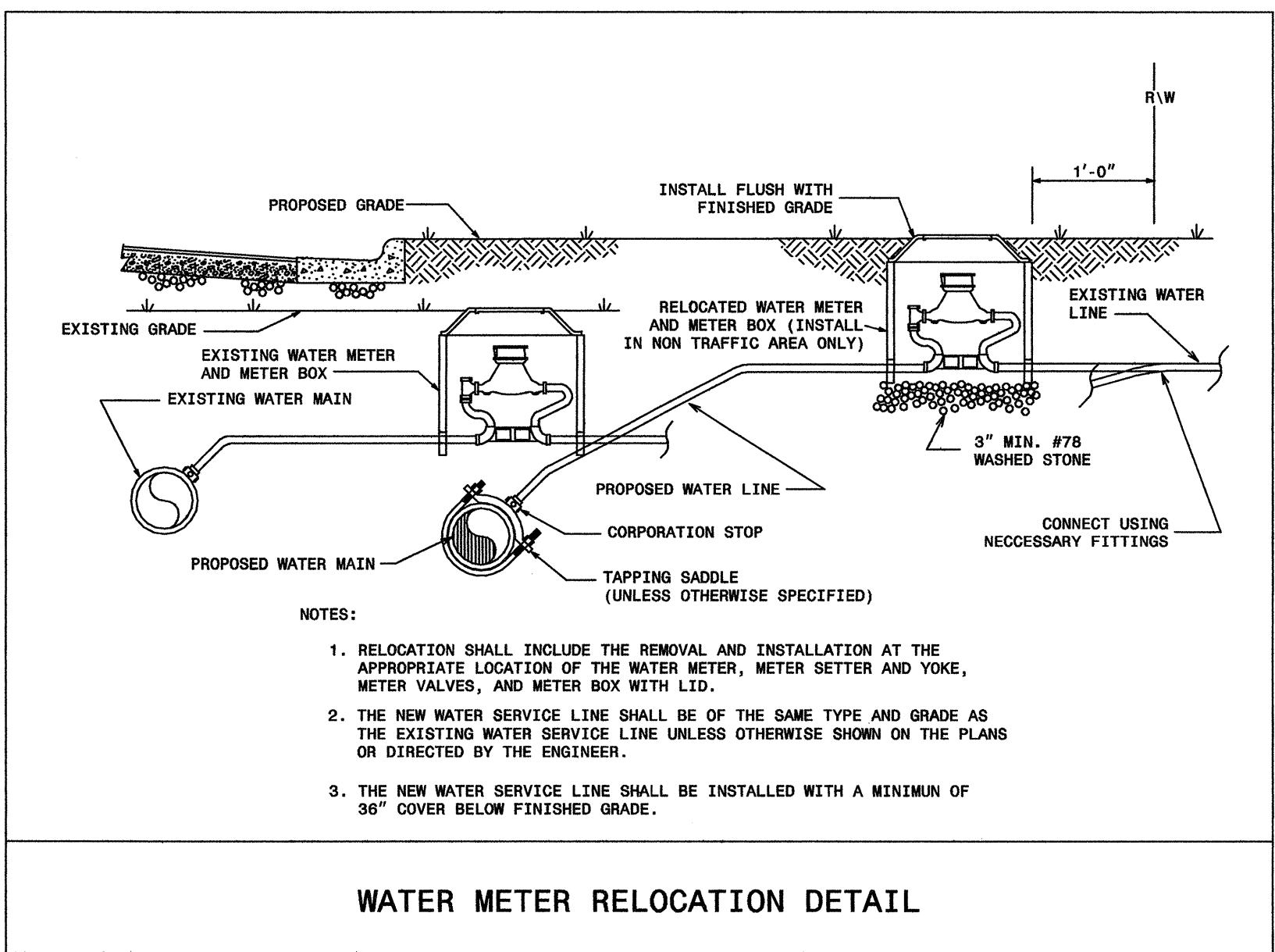
REACTION BEARING AREAS FOR HORIZONTAL WATER PIPE BENDS
 BASED ON TEST PRESSURE OF 200 P.S.I.
 ALL AREAS GIVEN IN SQUARE FEET.

SIZE AND DEGREE OF BEND	STATIC THRUST IN POUNDS	MODERATELY DRY CLAY 4000 LBS/FT ²	SOFT CLAY 2000 LBS/FT ²	GRAVEL - COARSE SAND 1500 LBS/FT ²	DRY CLAY - ALWAYS DRY 8000 LBS/FT ²	SAND - COMPACT FIRM 8000 LBS/FT ²	SAND - CLEAN DRY 4000 LBS/FT ²	QUICKSAND - VERY DRY STILL 1000 LBS/FT ²	ROCK - 10,000 LBS/FT ²
6"									
11 1/4°	1,108	1	1	1	1	1	2	1	
22 1/2°	2,207	1	2	2	1	1	3	1	
45°	4,328	2	3	3	1	1	5	1	
90°	7,996	2	4	5	1	1	8	1	
PLUG	5,655	2	3	4	1	1	6	1	
8"									
11 1/4°	1,970	1	1	2	1	1	2	1	
22 1/2°	3,922	1	2	3	1	1	4	1	
45°	7,694	2	4	5	1	1	8	1	
90°	14,215	4	8	9	2	2	15	2	
PLUG	10,053	3	5	6	2	2	10	1	
12"									
11 1/4°	4,433	2	3	3	1	1	5	1	
22 1/2°	8,826	3	5	6	2	2	9	1	
45°	17,312	5	9	11	3	3	18	2	
90°	31,983	8	16	19	4	4	32	4	
PLUG	22,619	6	12	14	3	3	23	3	
16"									
11 1/4°	7,881	2	4	5	1	1	8	1	
22 1/2°	15,691	4	8	10	2	2	16	2	
45°	30,779	8	16	19	4	4	31	4	
90°	56,861	15	29	35	8	8	57	6	
PLUG	40,213	10	21	25	5	5	41	5	

REACTION BEARING AREAS ARE IN SQUARE FEET MEASURED IN A VERTICAL PLANE IN THE TRENCH SIDE AT AN ANGLE OF 90° TO THE THRUST VECTOR.
 USE 6" - 90° BEND VALUE FOR HYDRANTS FOR ADDITIONAL SAFETY FACTOR.

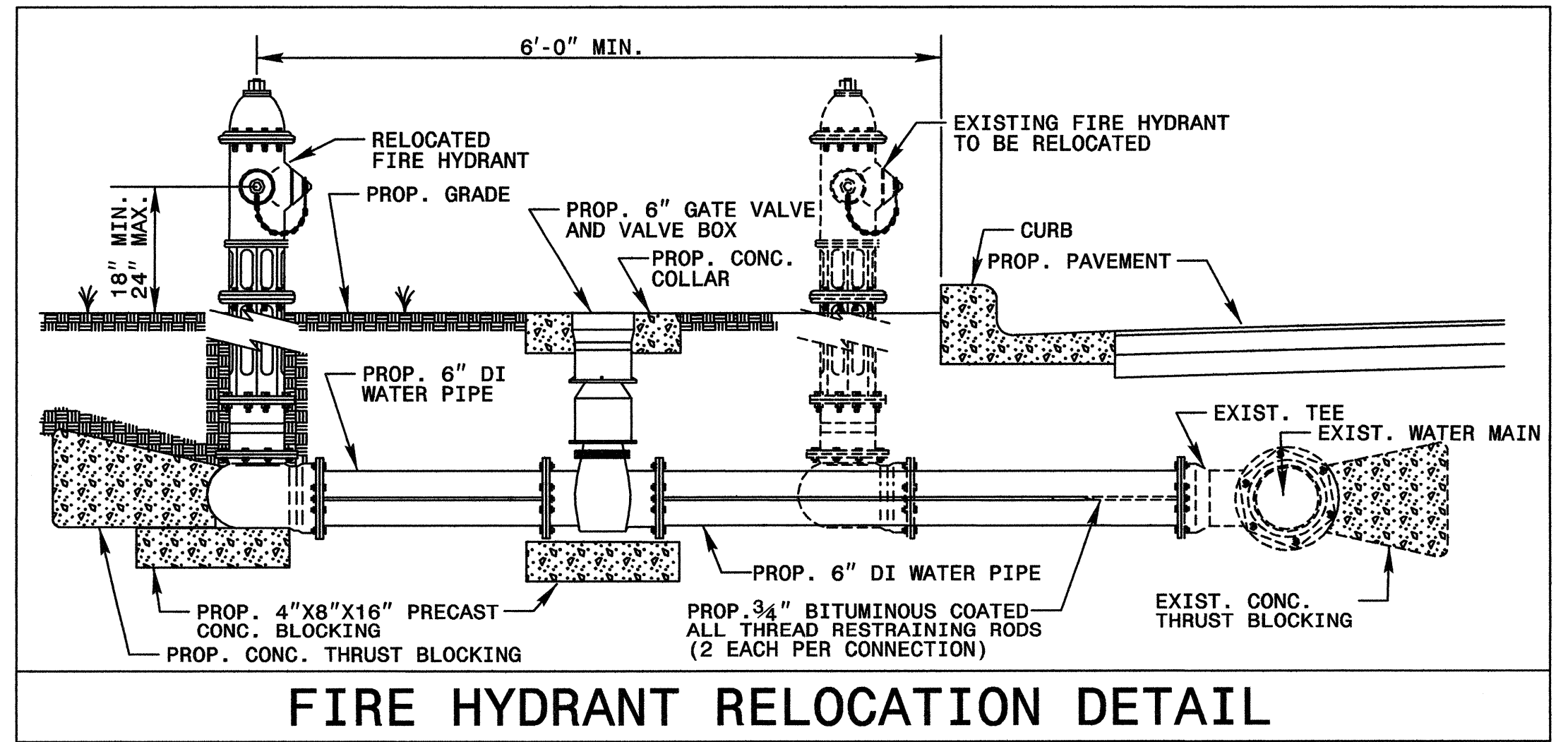
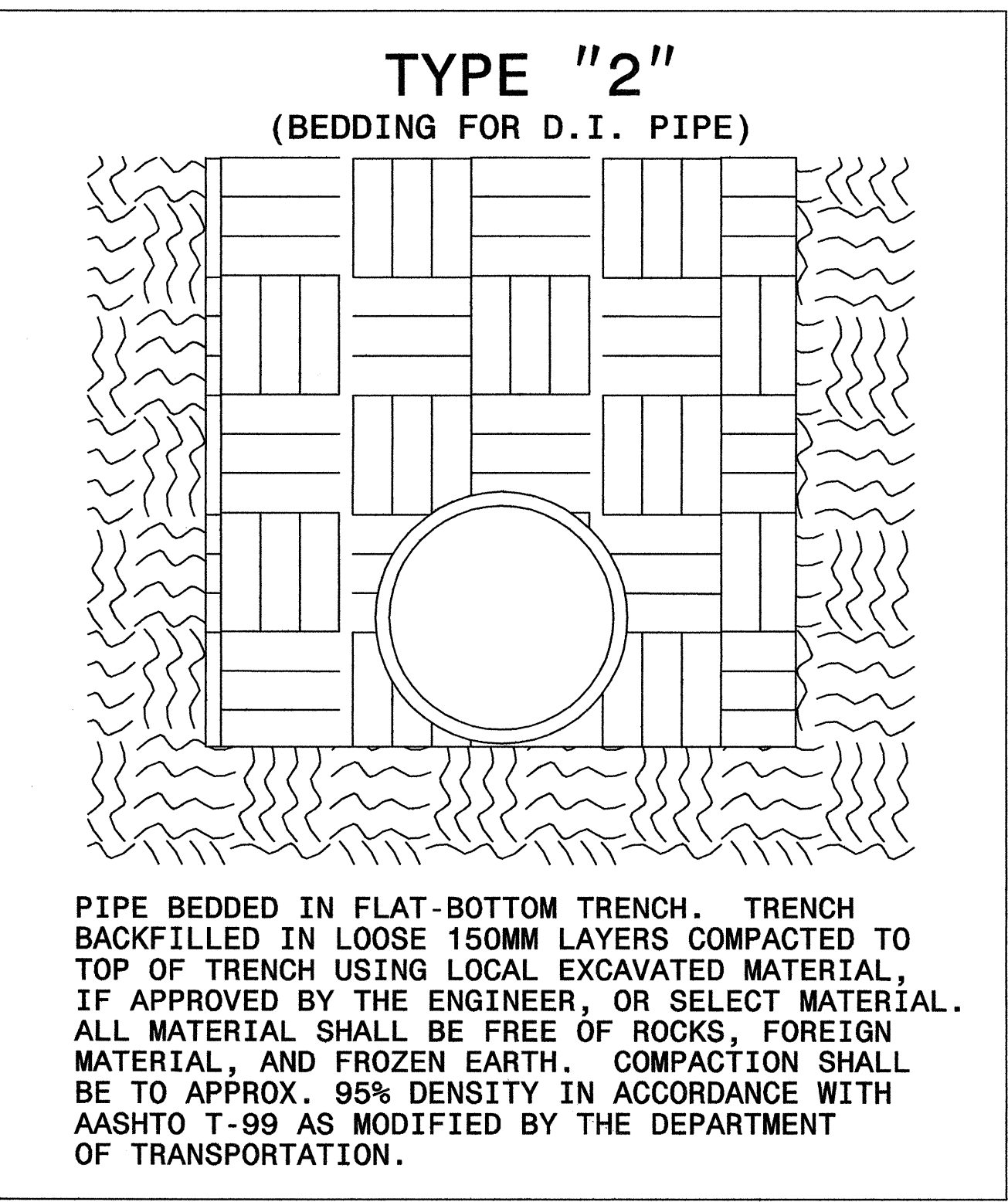
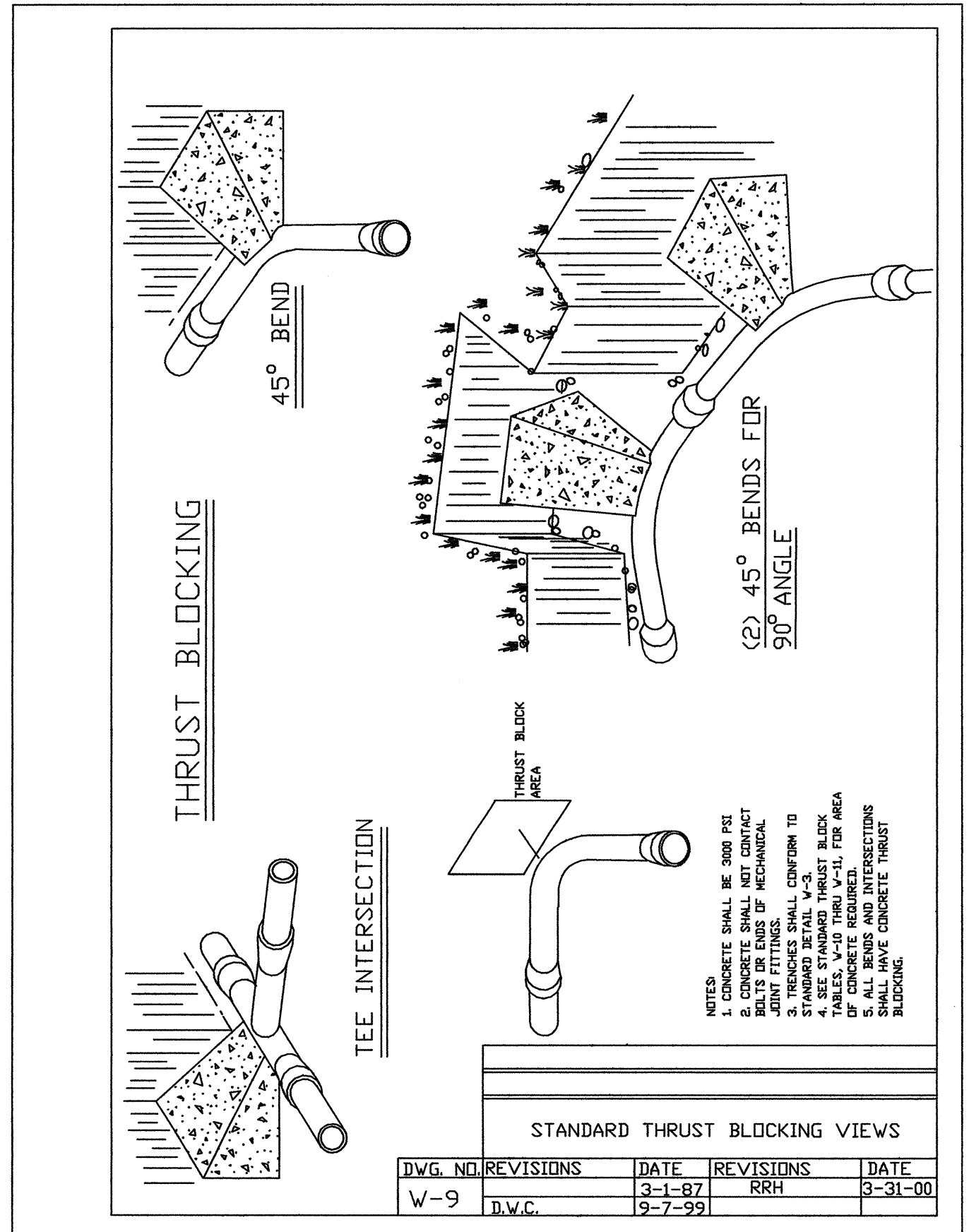
THRUST BLOCKING DESIGN QUANTITY TABLE

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-10	D.W.C.	8-23-99		



MAXIMUM TRENCH WIDTH AT TOP OF PIPE

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		



TIP PROJECT: B-4276

CONTRACT: C201831

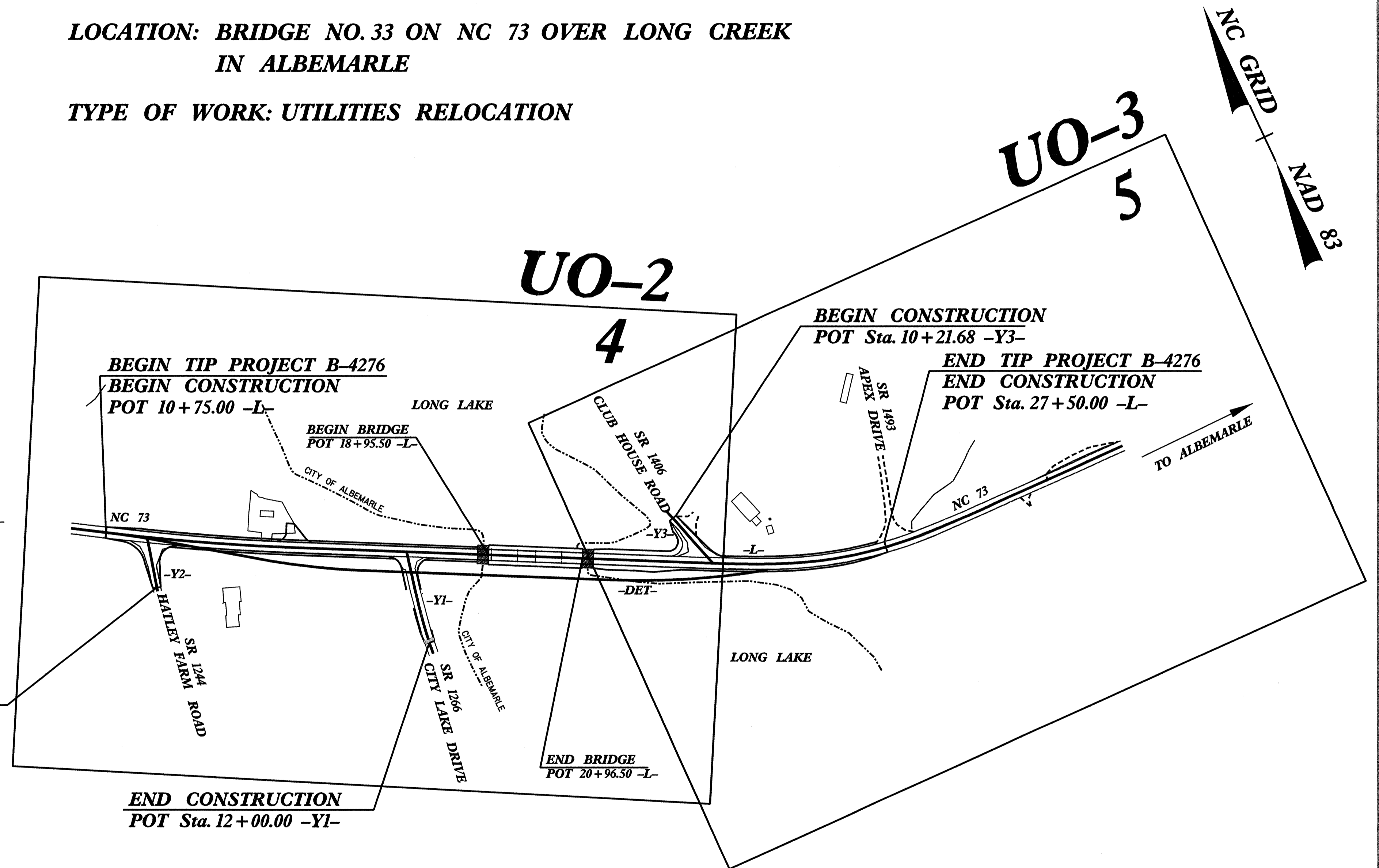
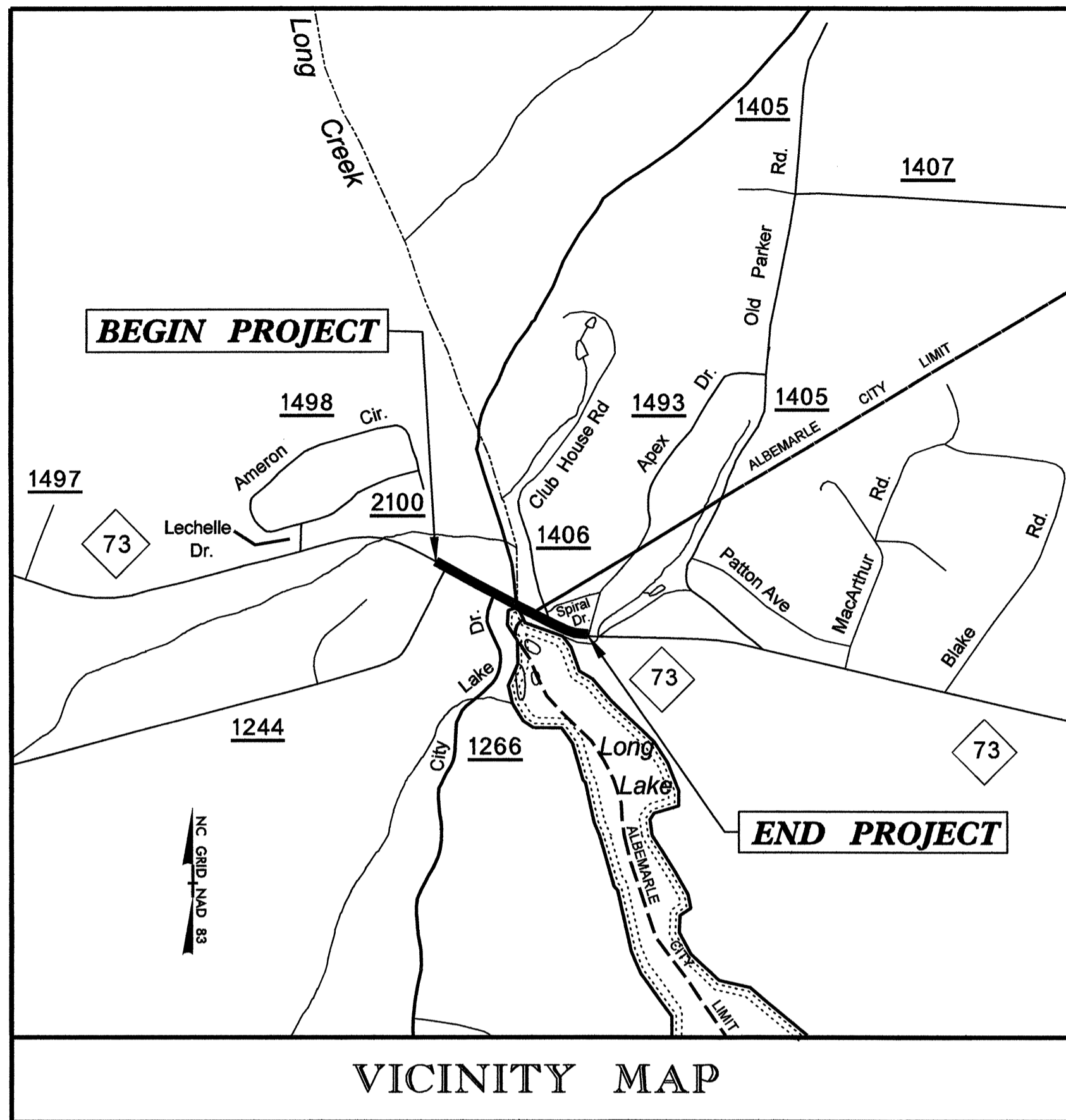
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.
N.C.	B-4276	UO-1
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

**UTILITIES BY OTHERS
STANLY COUNTY**

LOCATION: BRIDGE NO. 33 ON NC 73 OVER LONG CREEK
IN ALBEMARLE

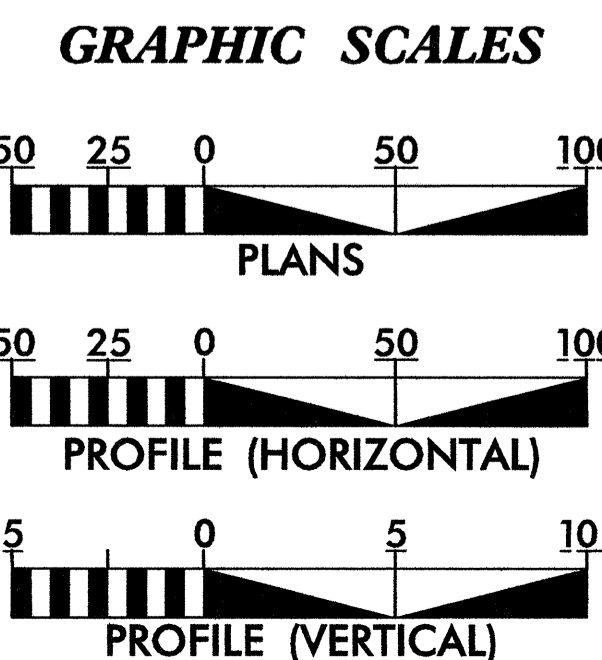
TYPE OF WORK: UTILITIES RELOCATION



NOTES:
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NCDOT CONTACT: DOUG TAYLOR, P.E. - PROJECT ENGINEER - ROADWAY DESIGN



INDEX OF SHEETS

SHEET No.	DESCRIPTION
UO-1	TITLE SHEET
UO-2 THRU UO-3	UTILITIES BY OTHERS PLAN SHEETS

- UTILITY OWNERS ON PROJECT
- (1.) CITY OF ALBEMARLE ELECTRIC DEPT. (POWER)
 - (2.) WINDSTREAM CONCORD (TELEPHONE)
 - (3.) TIME WARNER CABLE (CATV)
 - (4.) STANLY COUNTY (SEWER)
 - (5.) STANLY COUNTY (WATER)

PREPARED BY

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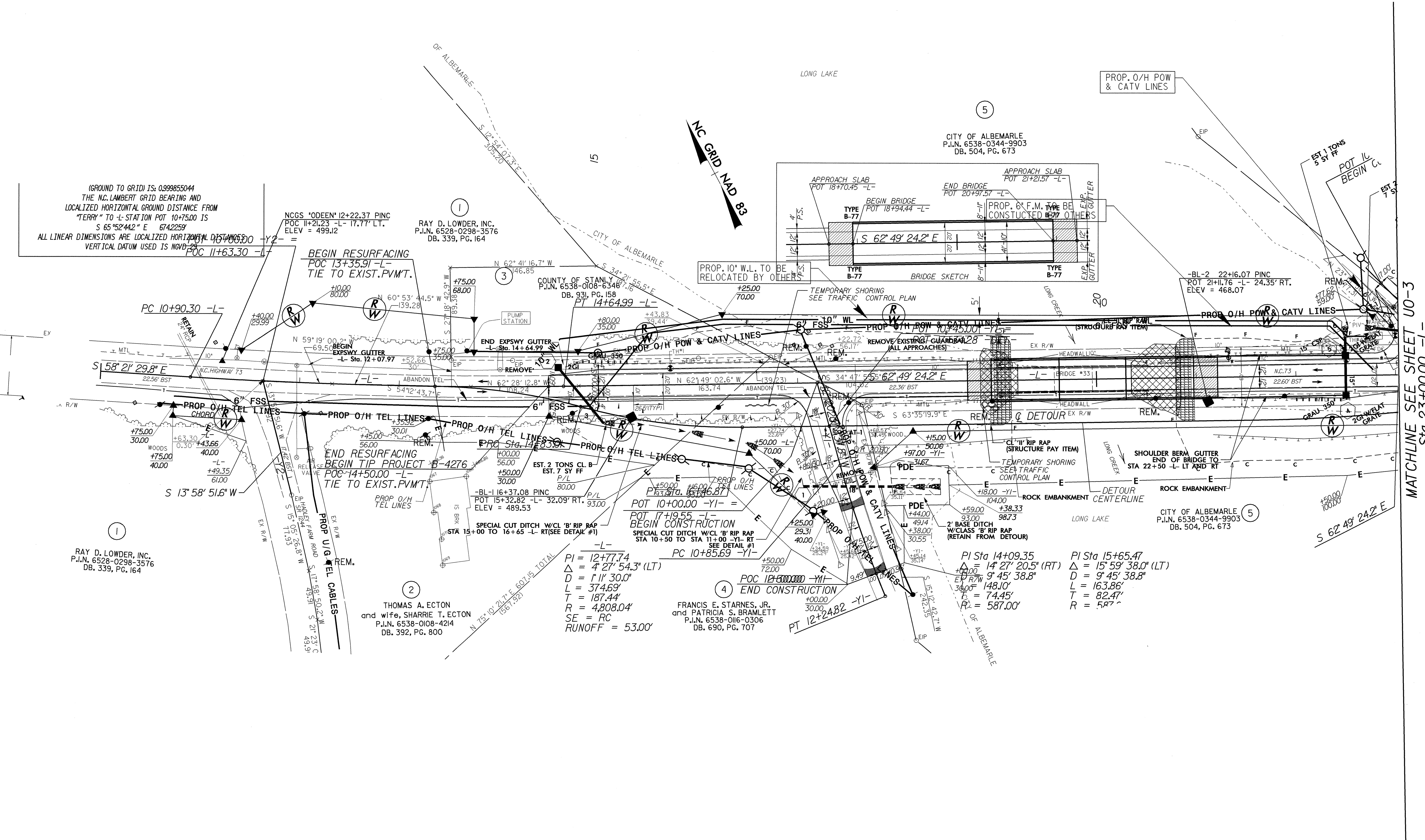
PREPARED IN THE OFFICE OF:

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DESIGN SERVICES
UTILITY SECTION**

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Steve McKee, P.E. UTILITIES SQUAD LEADER PROJECT ENGINEER
Don Propper UTILITIES PROJECT DESIGNER

- NOTES
- FOR PROFILE OF: SEE SHEET:
- L- 6
 - Y1- 6
 - Y2- 7
2. FOR CROSS SECTIONS OF: SEE SHEET:
- L- X-2 THRU X-5
 - Y1- X-8
 - Y2- X-16
3. STA 11+30.00 TO STA 12+00.00 -Y1-(TEMP) TO REMAIN & TIE W/ -Y1- AFTER DETOUR REMOVAL



(GROUND TO GRID) IS: 0.998855044
 THE N.C. LAMBERT GRID BEARING AND
 LOCALIZED HORIZONTAL GROUND DISTANCE FROM
 "TERRY" TO -L- STATION POT 10+75.00 IS
 S 65°52'44.2" E 674.2259'
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
 VERTICAL DATUM USED IS NAVD83

RAY D. LOWDER, INC.
 P.I.N. 6528-0298-3576
 DB. 339, PG. 164

THOMAS A. ECTON
 and wife, SHARRIE T. ECTON
 P.I.N. 6538-0108-4214
 DB. 392, PG. 800

PI = 12+77.74
 $\Delta = 4' 27" 54.3" (LT)$
 D = 11' 30.0"
 L = 374.69'
 T = 187.44'
 R = 4,808.04'
 SE = RC
 RUNOFF = 53.00'


FRANCIS E. STARNES, JR.
 and PATRICIA S. BRAMLETT
 P.I.N. 6538-0116-0306
 DB. 690, PG. 707

PI Sta 14+09.35
 $\Delta = 14' 27" 20.5" (RT)$
 D = 9' 45' 38.8"
 L = 163.86'
 T = 82.47'
 R = 587.00'

CITY OF ALBEMARLE
 P.I.N. 6538-0344-9903
 DB. 504, PG. 673

MATCHLINE SEE SHEET U0-3
 Sta. 23+00.00 -L-

8/17/99

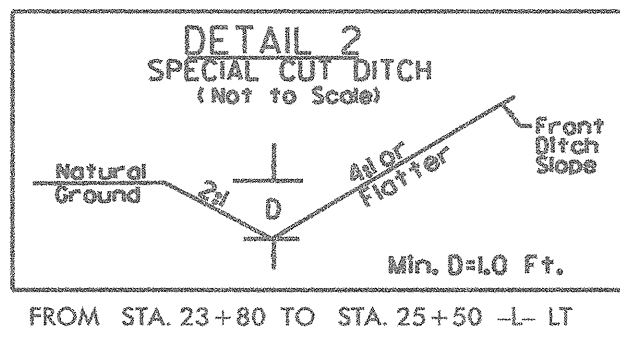
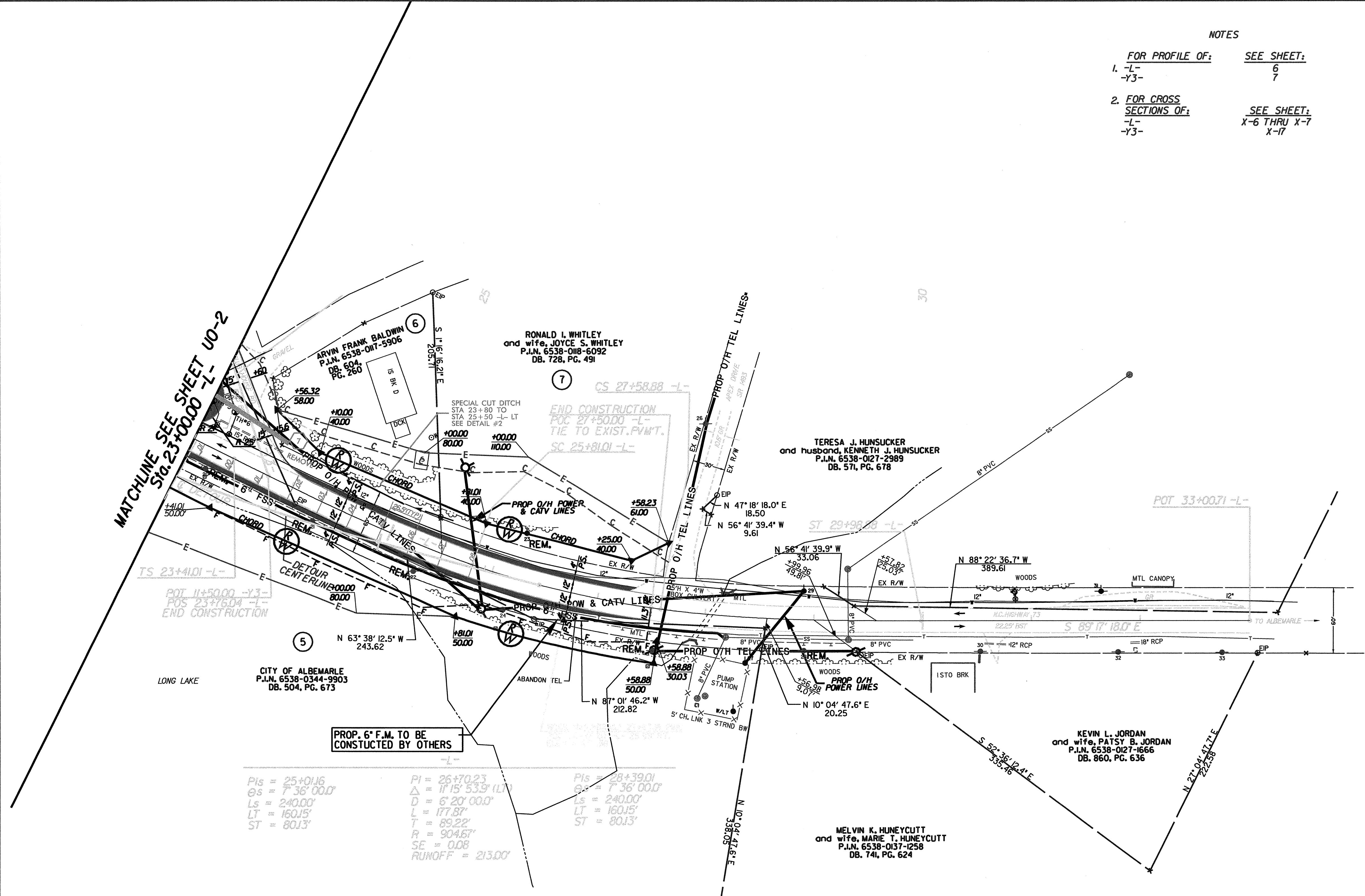
PROJECT REFERENCE NO.	SHEET NO.
B-4276	UO-3
UTILITIES BY OTHERS	
	
<p>NOTE: ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS</p>	

NOTES

1. FOR PROFILE OF:
-L- SEE SHEET: 6
-Y3- 7

2. FOR CROSS SECTIONS OF:
-L- SEE SHEET: X-6 THRU X-7
-Y3- X-7

MATCHLINE SEE SHEET UO-2
Sta. 23+00.00 -L-



SEE SHEET 7 FOR PROFILE