CONTRACT:C201368 PROJECT TIP:R-2320G

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2320G	UC-1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITY CONSTRUCTION PLANS STANLY COUNTY

LOCATION: Albemarle – US 52 Extension from the Intersection of US 52, NC 73, NC 24–27 & NC 138 to Intersection of US 52 and SR 1785 (Johns Road)

TYPE OF WORK: UTILITIES RELOCATION

VICINITY MAP FOR TIP PROJECT R-2320G

NCDOT CONTACT: CATHY S. HOUSER, P.E.,
ROADWAY DESIGN - ENGINEERING COORDINATION

GRAPHIC SCALES

25 0 50
PLANS

25 0 50
PROFILE (HORIZONTAL)

2.5 0 5
PROFILE (VERTICAL)

INDEX OF SHEETS

SHEET No.	DESCRIPTION
UC-1	TITLE SHEET
UC-2 TO UC-5	UTILITY CONSTRUCTION PLAN SHEETS
UC-6 TO UC-9	UTILITY CONSTRUCTION PROFILE SHEETS
UC-10 TO UC-11	UTILITY CONSTRUCTION DETAIL SHEETS

UTILITY OWNERS ON PROJECT

(1.) CITY OF ALBEMARLE (WATER & SEWER)
(2.) STANLY COUNTY (WATER)

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 023052 ENGINEER JOHN LEWIS HINTON

John L. Hinton
1-9-08

PREPARED BY

Municipal Services Engineering Company, P.A.
P.O. BOX 97 GARNER, N.C. 27529 (919) 772-5393
P.O. BOX 349 BOONE, N.C. 28607 (828) 262-1767
P.O. BOX 276 MOREHEAD CITY, N.C. 28557 (252) 726-9481

UTILITY DESIGN ENGINEER JOHN L. HINTON P.E.

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PROJECT REFERENCE NO.	SHEET NO.
R-2320G	UC-2

Municipal Services Engineering Company, P.A.
P.O. BOX 97 GARNER, N.C. 27529 (919) 772-5393
P.O. BOX 349 BOONE, N.C. 28607 (828) 262-1167
P.O. BOX 276 MOREHEAD CITY, N.C. 28557 (252) 726-9481

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 023052 ENGINEER JOHN LEWIS HINTON
1-9-08

UTILITY CONSTRUCTION

NC GRID NAD 83

A.D. BURTON & WF. MABEL D. BURTON
DB 249 PG 85
DB 245 PG 23
DB 245 PG 127
DB 220 PG 435
DB 135 PG 98
PB 5 PG 260

M.T. HATLEY, VANN R. FRYE, & I.M. DICK, TRUSTEES OF BETHESDA METHODIST CHURCH AND THEIR SUCCESSORS
DB 221 PG 134
15' BK. CHURCH

HENRY E. FARMER, INC.
DB 361 PG 791

ROBERT LEE INMAN & WF. JEANETTE PARADISE INMAN
DB 697 PG 780

ESTON O. WEST & WF. JACKIE S. WEST
DB 626 PG 320
PB 5 PG 260

DEWEY D. TREECE (FOUR SEASONS MEAT CO.)
DB 310 PG 961
PB 5 PG 260

HENRY D. CLONTZ, JR. & WF. LINDA B. CLONTZ
DB 724 PG 891
PB 5 PG 260

VIRLE R. CROCKETT & WF. ALICE F. CROCKETT
DB 631 PG 376
PB 5 PG 260

WILLIAM P. SMITH & WF. LISA G. SMITH
DB 640 PG 739
PB 5 PG 260

DENNIS LAMBERT INVESTMENTS
DB 842 PG 151

COUNTY OF STANLY
DB 307 PG 440

PROP. 6" VALVE

EXIST. MANHOLE "K"
STA. 19+99.73 PROFILE 1
STA. 162+26.20, 129.30' LEFT OF LINE -L-

STA. 0+00 16"X12" TEE

-Y9- PI Sta 16+91.72
Δ = 15° 39' 53.6" (LT)
D = 28° 38' 52.4"
L = 54.68'
T = 27.51'
R = 200.00'

BY5-62
-BY5- PINC 22+..
-BY9- POT 11+62.27
-Y9- Sta 16+67.68 (37.97' RT)

11" BEND
TIE TO EXIST. 6" WATER LINE USING 45° BENDS
PROP. 217.12' OF 6" WATER LINE
PROP. RELOCATE FIRE HYDRANT
ABANDON UTILITY MANHOLE
PROP. 71.7' OF 8" DI, PC 350 SANITARY GRAVITY SEWER

PROP. MANHOLE "J"
STA. 19+27.96 PROFILE 1
STA. 162+80.94, 89.86' LEFT OF LINE -L-

PROP. 190.1' OF 8" SANITARY GRAVITY SEWER
RELOCATE ¾" WATER METER
PROP. MANHOLE "I"
STA. 17+37.90 PROFILE 1
STA. 164+56.62, 50.44' LEFT OF LINE -L-

RELOCATE 3-3/4" WATER METERS

STANDARD BASE DITCH 80' @ 0.17% DDE 23 C.Y. SEE DETAIL A

STANDARD "V" DITCH SEE DETAIL G

PROP. 5' CONC. SIDEWALK

PROP. 2'-6" C&G

GUARDRAIL BARRICADE

OUTSIDE ALBEMARLE CITY LIMITS

INSIDE ALBEMARLE CITY LIMITS

MATCH LINE - STA. 154+00

MATCH LINE - SHEET NO. UC-3 - STA. 168+00

TEMP. SLOPE STAKE

TIE TO EXIST. 12" WATER LINE

PROP. METER VAULT SEE DETAIL SHEET UC-11

-L- POC Sta.162+48.00 = -Y9- POT Sta.17+54.10

STA. 0+20 22 1/2° BEND

PROP. 16" VALVE

STA. 1+67.17 90°16"X16" TEE

ABANDON 657' OF 8" UTILITY PIPE

ABANDON 653' OF 12" UTILITY PIPE

PROP. 738' OF 16" WATER LINE

ABANDON UTILITY MANHOLE

PROP. 200.5' OF 8" SANITARY GRAVITY SEWER

PROP. MANHOLE "H"
STA. 15+37.40 PROFILE 1
STA. 166+49.70, 41.71' LEFT OF LINE -L-

RELOCATE ¾" WATER METER

PROP. 152.0' OF 8" SANITARY GRAVITY SEWER

STA. 6+88.25 16"X12" TEE & PROP. 12" WATER LINE, TIE TO EXISTING 12" WATER LINE

PROP. 1-12" VALVE

PROP. 2-16" VALVE

STA. 7+04.19 16"X16" TEE & PROP. 16" WATER LINE, TIE TO EXISTING 16" WATER LINE

ABANDON 37' OF 16" UTILITY PIPE

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 OR STANLY COUNTY

ALL WATER LINES 6" AND LARGER SHALL BE D.I. PC 350 UNLESS OTHERWISE INDICATED.

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

THE CONTRACTOR SHALL USE D.I. IN AREAS AS DESIGNATED ON THE PLANS FOR THE 8" SEWER LINES. ALL OTHER AREAS SHALL BE PVC, SDR 35.

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

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REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-2320G	UC-3

Municipal Services Engineering Company, P.A.
P.O. BOX 97 GARNER, N.C. 27529 (919) 772-5393
P.O. BOX 349 BOONE, N.C. 28607 (828) 262-1767
P.O. BOX 276 MOREHEAD CITY, N.C. 28557 (252) 726-9481

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 023052 ENGINEER JOHN LEWIS HINTON 1-9-08

UTILITY CONSTRUCTION

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

NC GRID NAD 83

MATCH LINE - SHEET UC-2 - STA. 168+00

MATCH LINE - SHEET UC-4 - STA. 182+00

PROP. 47.6' OF 8" SANITARY GRAVITY SEWER

RELOCATE ¾" WATER METER

ABANDON UTILITY MANHOLE

PROP. MANHOLE "G" STA. 13+37.81 PROFILE 1

STA. 168+47.60, 40.00' LEFT OF LINE -L-

PROP. 113.9' OF 8" DI, PC 350 SANITARY GRAVITY SEWER

5 TONS CLASS 'B' RIP RAP 14 SY. FILTER FABRIC

PROP. 1,452' OF 16" WATER LINE

PROP. RELOCATE FIRE HYDRANT

STA. 12+15 16"X6" TEE

ABANDON UTILITY MANHOLE

STA. 13+86.34 16"X6" TEE

PROP. 1-16" VALVE

8 TONS CLASS 'B' RIP RAP 21 SY. FILTER FABRIC

LATERAL BASE DITCH W/PERMANENT SOIL REINFORCEMENT MAT SEE DETAIL N

PROP. 1-6" VALVE

ABANDON UTILITY MANHOLE

PROP. 76' OF 8" DI, PC 350 SANITARY GRAVITY SEWER

PROP. 2" AIR RELEASE VALVE

ABANDON 1,400' OF 16" UTILITY PIPE

-L- POC Sta. 174+20.97 = -Y6- POT Sta. 10+00.00

TEMP. SLOPE STAKE

PROP. 5' CONC. SIDEWALK

ABANDON 2-UTILITY MANHOLE

ABANDON UTILITY MANHOLE

LATERAL BASE DITCH SEE DETAIL N

2 TONS CLASS 'B' RIP RAP 7 SY. FILTER FABRIC

TOE PROTECTION SEE DETAIL H

TOE PROTECTION - SEE DETAIL H

STA. 7+85.99 45° BEND

STA. 8+97.16 45° BEND

PROP. MANHOLE "F" STA. 12+23.88 PROFILE 1

STA. 169+26.23, 42.41' RIGHT OF LINE -L-

PROP. 200.3' OF 8" SANITARY GRAVITY SEWER

RELOCATE ¾" WATER METER

PROP. MANHOLE "E" STA. 10+23.57 PROFILE 1

STA. 171+26.54, 43.81' RIGHT OF LINE -L-

ABANDON 221' OF 6" UTILITY PIPE

TIE TO EXISTING 6" WATER LINE USING 45° BENDS

PROP. 254.4' OF 8" SANITARY GRAVITY SEWER

RELOCATE ¾" WATER METER

PROP. 192.16' OF 6" WATER LINE

EXIST. MANHOLE "B" STA. 1+13.55 PROFILE 2

STA. 174+32.05, 156.69' RIGHT OF LINE -L-

PROP. MANHOLE "D" STA. 6+93.22 PROFILE 1

PROP. MANHOLE "A" STA. 0+00 PROFILE 2

STA. 174+63.04, 46.82' RIGHT OF LINE -L-

PROPOSED 113.6' OF 8" SANITARY GRAVITY SEWER

PROPOSED 87.8' OF 8" SANITARY GRAVITY SEWER

PROP. MANHOLE "C" STA. 6+05.45 PROFILE 1

STA. 175+53.48, 40.00' RIGHT OF LINE -L-

PROPOSED 294.3' OF 8" SANITARY GRAVITY SEWER

RELOCATE ¾" WATER METER

PROP. MANHOLE "B" STA. 3+11.40 PROFILE 1

STA. 178+81, 42.90' RIGHT OF LINE -L-

RELOCATE ¾" WATER METER

RELOCATE ¾" WATER METER

PROP. 311.4' OF 8" DI, PC 350 SANITARY GRAVITY SEWER

PROP. MANHOLE "A" STA. 0+00 PROFILE 1

PROP. MANHOLE "A" STA. 0+00 PROFILE 3

PROP. MANHOLE "B" STA. 0+65 PROFILE 4

STA. 181+62.28, 42.90' RIGHT OF LINE -L-

PROP. 65.0' OF 8" DI, PC 350 SANITARY GRAVITY SEWER

PROP. MANHOLE "A" STA. 0+00 PROFILE 4

STA. 181+77.72, 106.04' RIGHT OF LINE -L-

PROP. 37.7' OF 8" DI, PC 350 SANITARY GRAVITY SEWER

END CONSTRUCTION -Y6- STA 11+50

END CONSTRUCTION -Y6- STA 11+50

MAYNOLIA R. HERRIN DB 542 PG 754

LILLIAN LEGRAND DB 123 PG 251

LEE ANN MORRIS

LUCY H. WISE DB 128 PG 640 DB 129 PG 286 PB 3 PG 135

PEGGY M. BROOME DB 492 PG 918 PB 3 PG 135

DO NOT DISTURB 15" AND 54" BRICK WALLS

300' TAPER

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PROJECT REFERENCE NO.	SHEET NO.
R-2320G	UC-4

Municipal Services Engineering Company, P.A.
P.O. BOX 97 GARNER, N.C. 27529 (919) 772-5393
P.O. BOX 349 BOONE, N.C. 28607 (828) 262-1767
P.O. BOX 276 MOREHEAD CITY, N.C. 28557 (252) 726-9161

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 023052 JOHN LEWIS HINTON 5-7-08

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

UTILITY CONSTRUCTION

NC GRID NAD 83

MATCH LINE - SHEET UC-3 - STA. 182+00

MATCH LINE - STA. 195+00

TIE TO EXIST. 6" WATER LINE USING 45° BENDS

PROP. 96.0' OF 6" WATER LINE

ABANDON 110' OF 6" UTILITY PIPE

PROP. 6" VALVE

STA. 23+31.98 16"X6" TEE

PROP. 16" VALVE

RELOCATE ¾" WATER METER

PROP. RELOCATE FIRE HYDRANT

ARTHUR REID EFIRD & WF. DOROTHY LEE EFIRD DB 364 PG 618

ABANDON 1074' OF 16" UTILITY PIPE

PROPOSED 1074' OF 16" WATER LINE

DARLENE WALLER & HUS. TOMMY G. WALLER DB 506 PG 41

ABANDON 145' OF 6" UTILITY PIPE

PROP. 121.02' OF 6" WATER LINE

PROP. 6" VALVE

STA. 27+14.02 16"X6" TEE

PROP. 16" VALVE

TIE TO EXIST. 6" WATER LINE USING 45 ° BENDS

PROP. MANHOLE "D" STA. 5+55.42 PROFILE 5

STA. 10+19.05, 16.00' LEFT OF LINE -L-

PROP. 163.8' OF 8" DI, PC 350 SANITARY GRAVITY SEWER

ABANDON 2-UTILITY MANHOLES

PROP. MANHOLE "C" STA. 3+91.65 PROFILE 5

STA. 11+78.50, 47.00' LEFT OF LINE -Y11-

PROP. 93.2' OF 8" DI, PC 350 SANITARY GRAVITY SEWER

PROP. 28' TRENCHLESS INSTALLATION OF 8" IN SOIL

PROP. 28' TRENCHLESS INSTALLATION OF 8" NOT IN SOIL

PROP. RELOCATE FIRE HYDRANT

PROP. 16" VALVE

PROP. 5' CONC. SIDEWALK

RETAIN EXISTING CB

DONALD BRUCE WAYNE & WF. MELISSA ANN E DB 608 PG 203

STANLY FARM SUPPLY, INC. DB 386 PG 528

EXISTING R/W VARIABLE PER STATE PROJECTS 8.1680303, 8.2742302

PROP. 2'-6"C&G

PROP. 271.5' OF 8" DI, PC 350 SANITARY GRAVITY SEWER

ABANDON UTILITY MANHOLE

STA. 22+11.87 16"X6" TEE

PROP. MANHOLE "B" STA. 3+09.21 PROFILE 3

STA. 184+71.49, 42.96' RIGHT OF LINE -L-

PROPOSED 219.8' OF 8" SANITARY GRAVITY SEWER

RELOCATE ¾" WATER METER

NCDOT DB 168 PG 201 DB 162 PG 556 PB 3 PG 135

CLARA H. ROBERTS DB 316 PG 964 PB 3 PG 135

ABANDON UTILITY MANHOLE

PROP. MANHOLE "C" STA. 5+28.97 PROFILE 3

STA. 186+90.00, 42.99' RIGHT OF LINE -L-

RELOCATE ¾" WATER METER

JEFFREY W. PATTERSON & WF. LOIS F. PATTERSON DB 760 PG 47 PB 3 PG 135

PROP. MANHOLE "B" STA. 2+98.48 PROFILE 5

STA. 187+90.98, 42.99' RIGHT OF LINE -L-

PROP. 298.5' OF 8" DI, PC 350 SANITARY GRAVITY SEWER

RELOCATE ¾" WATER METER

I TON CLASS 'B' RIP RAP 5 SY. FILTER FABRIC

BEVERLY H. HELMS JOHNNY B. HELMS

RELOCATE ¾" WATER METER

ABANDON UTILITY MANHOLE

PROP. MANHOLE "A" STA. 0+00.00 PROFILE 5

STA. 190+89.51, 40.35' RIGHT OF LINE -L-

RELOCATE ¾" WATER METER

NCDOT DB 559 PG 422 PB 3 PG 135

DOUGLAS E. TURNER & WF. LINDA H. TURNER DB 4585 PG 325 PB 13 PG 135

HENRY E. FARMER DB 745 PG 111 PB 3 PG 135

RELOCATE ¾" WATER METER

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2320G	UC-5

Municipal Services Engineering Company, P.A.
P.O. BOX 97 GARNER, N.C. 27529 (919) 772-5393
P.O. BOX 349 BOONE, N.C. 28607 (828) 262-1767
P.O. BOX 276 MOREHEAD CITY, N.C. 28557 (252) 726-9481

NORTH CAROLINA PROFESSIONAL SEAL 023052 ENGINEER JOHN LEWIS HINTON
1-9-08

UTILITY CONSTRUCTION

NOTE: FOR THE 12" WATER LINE, THE CONTRACTOR SHALL USE PVC (C900), DR 14, 200# PIPING.

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

NC GRID NAD 83

BEGIN CONSTRUCTION -Y5- STA 10+35

-Y5- POT Sta. 10+00.00

-Y5- PC Sta. 10+73.64

TIE TO EXIST. 12" WATER LINE USING 45° BEND

45° BEND

ABANDON 266.1' OF 12" UTILITY PIPE

PROPOSED 278' OF 12" PVC WATER LINE, (C900), DR 14, 200# WP

BY5-59 POT -Y5- 3+00.00 = -Y5- STA 10+18.56 (29.03' RT)

45° BEND

TIE TO EXIST. 12" WATER LINE USING 45° BEND

N 11°06'55"W 24.1'

N03°32'28"W 36.07' EIP-EIP

N09°35'29"W 166.50' EIP-EIP

N08°48'08"W 102.12' EIP-EIP

N09°02'12"W 97.86' EIP-EIP

N08°51'10"W 100.13' EIP-EIP

N08°56'27"W 100.07' EIP-EIP

S80°27'53"W 223.59' EIP-EIP

S89°15'57"W 205.76' EIP-EIP

S89°23'57"W 282.10' EIP-EIP

REBAR & CAP

ILES MCSWAIN DB 398 PG 353 DB 609 PG 94

HAROLD MICHAEL KENDALL & WF. JOANN C. KENDALL DB 653 PG 159 DB 653 PG 161 PB 6 PG 45

NANCY L. WILSON DB 255 PG 235 PB 6 PG 45

WINFRED A. DENNIS, JR. & WF. LINDA P. DENNIS DB 335 PG 995 DB 336 PG 207 PB 6 PG 45

DAVID K. FARMER DB 598 PG 408

MICHAEL DAVID BLACK & WF. VICKI V. BLACK DB 361 PG 386 PB 6 PG 45

CAROLINE R. PORTER DB 713 PG 156 PB 6 PG 45

M.T. HATLEY, VANN R. FRYE, & LM. DICKS TRUSTEES OF BETHESDA METHODIST CHURCH AND THEIR SUCCESSORS DB 221 PG 134

NO ASSOCIATED PKING FOUND FOR THIS WM.

-Y5-
PI Sta 14+95.86
Δ = 58° 45' 18.6" (RT)
D = 7° 38' 22.0"
L = 769.10'
T = 422.22'
R = 750.00'
SUPER = 4.0%
R.O. = SEE PLANS

-Y8-
PI Sta 13+53.43
Δ = 41° 47' 27.5" (RT)
D = 19° 05' 54.9"
L = 250.23'
T = 132.91'
R = 300.00'

BEGIN CONSTRUCTION -Y8- STA 12+00

-Y8- POT Sta. 10+00.00

-Y8- PT Sta. 14+70.75

-Y8- PC Sta. 12+42.84

-Y5- POC Sta. 17+29.18 = -Y8- POT Sta. 16+69.41

-Y5- PT Sta. 13+42.75

TIE TO EXIST. 12" WATER LINE USING 45° BEND

45° BEND

ABANDON 83.8' OF 12" UTILITY PIPE

PROP. 93.9' OF 12" PVC WATER LINE, (C900), DR 14, 200# WP

PROP. 12" VALVE

PROP. 6" VALVE

TIE TO EXIST. 6" WATER LINE

PROP. 20' OF 6" WATER LINE

45° BEND

TIE TO EXIST. 12" WATER LINE USING 45° BEND

600' TAPER

11 TONS CLASS 'B' RIP RAP 28 SY. FILTER FABRIC

5 TONS CLASS 'B' RIP RAP 16 SY. FILTER FABRIC

SPECIAL CUT DITCH SEE DETAIL F

SPECIAL CUT DITCH SEE DETAIL

SPECIAL CUT DETAIL SEE DETAIL D

STANDARD 'V' DITCH SEE DETAIL G

SHEET NO. 13 – STA. 19+00

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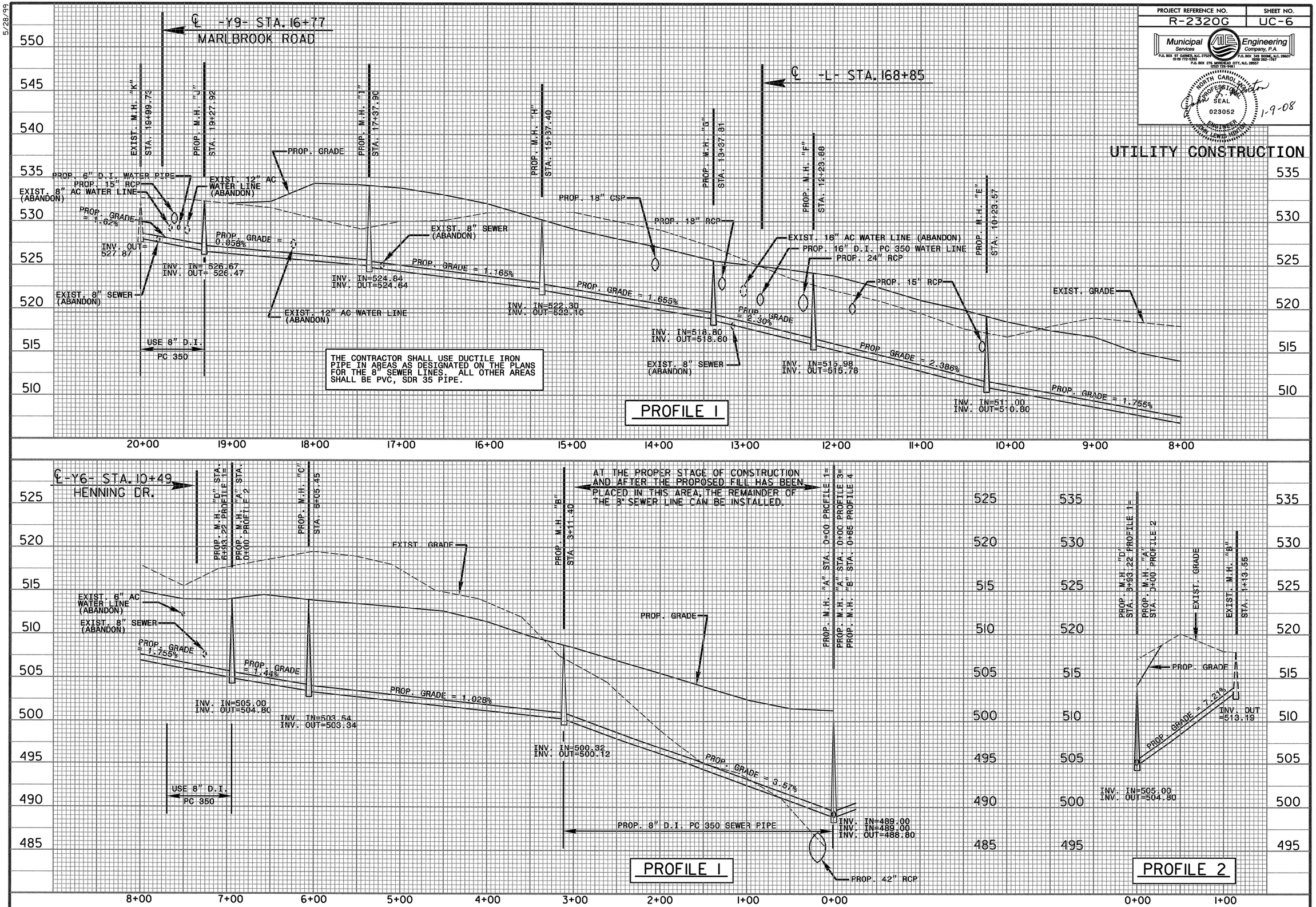

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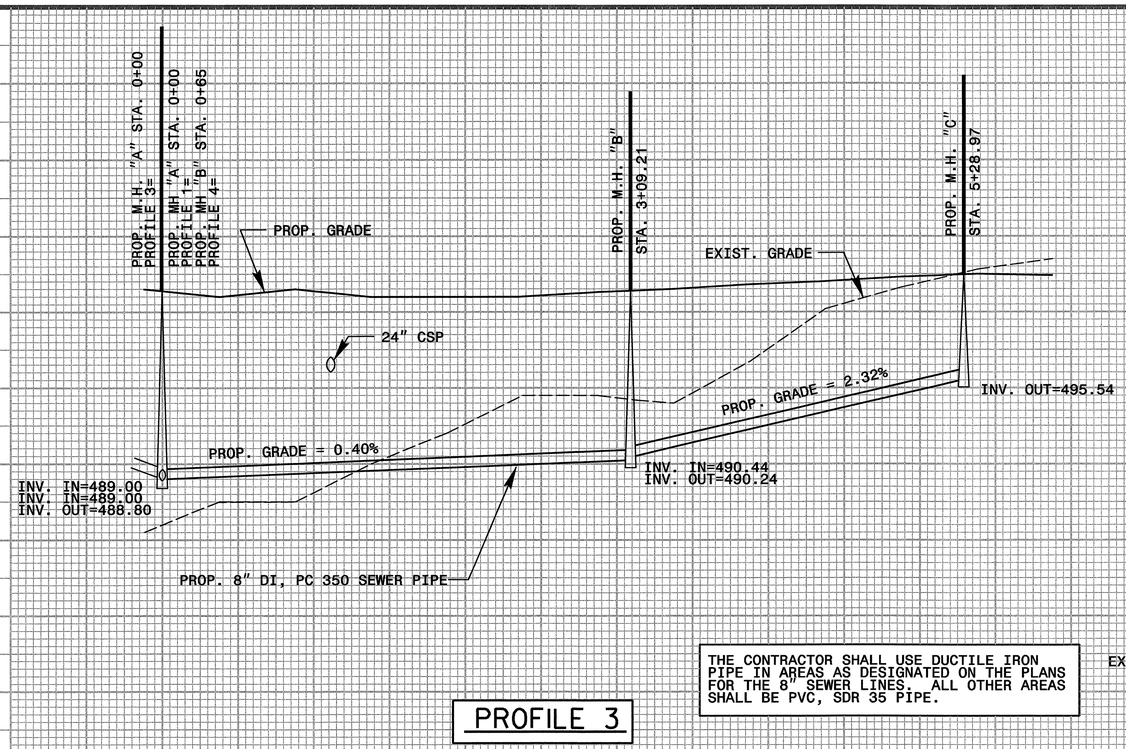
PROJECT REFERENCE NO.	SHEET NO.
R-2320G	UC-7

Municipal Services Engineering Company, P.A.
P.O. BOX 97 GARNER, N.C. 27529 (919) 772-5393
P.O. BOX 249 BOONE, N.C. 28607 (828) 262-1767
P.O. BOX 276 MOREHEAD CITY, N.C. 28557 (252) 726-9481

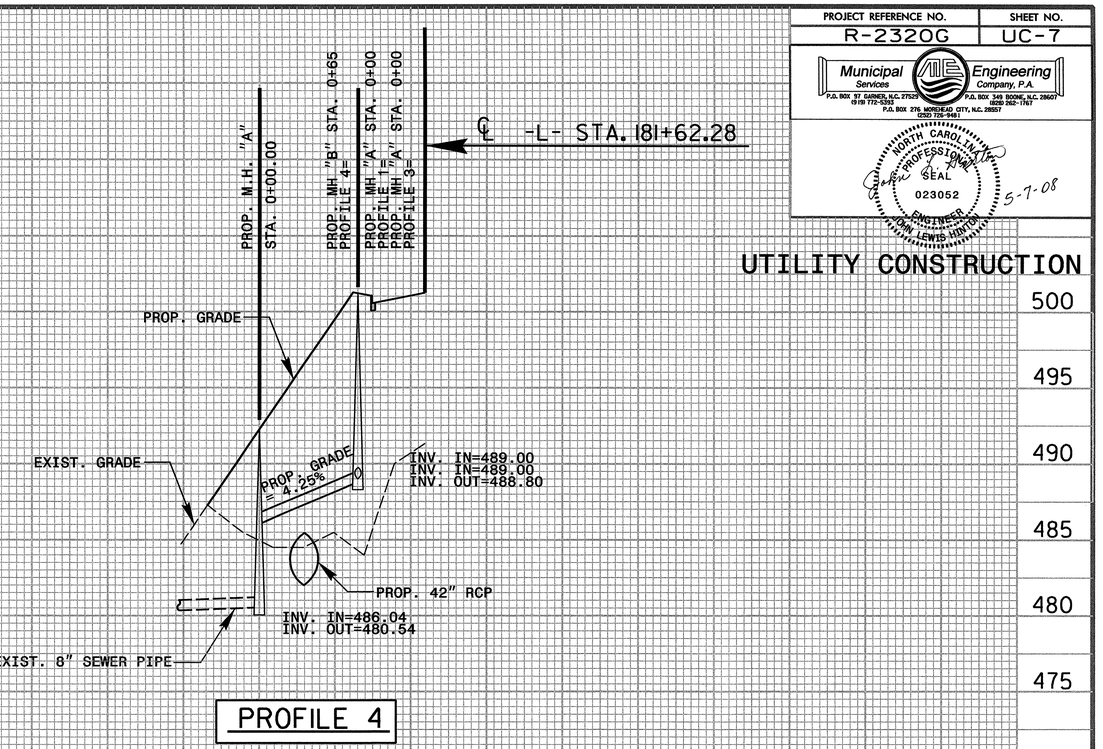
NORTH CAROLINA PROFESSIONAL SEAL 023052 ENGINEER JOHN LEWIS HINTON
5-7-08

UTILITY CONSTRUCTION

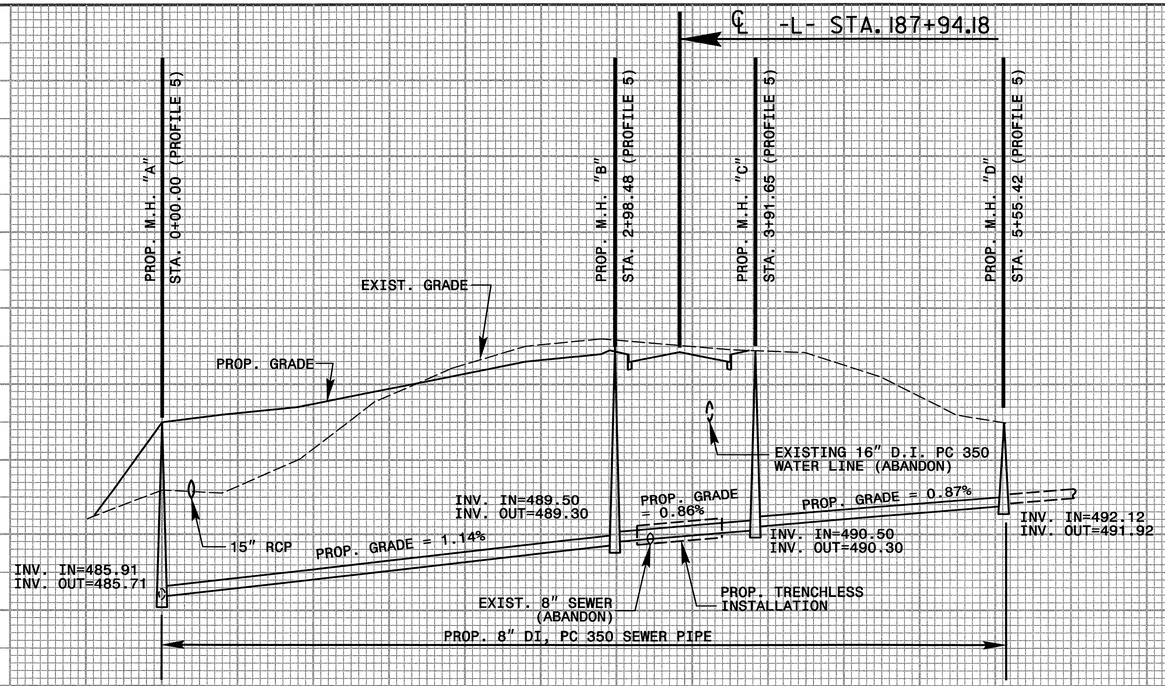


PROFILE 3

THE CONTRACTOR SHALL USE DUCTILE IRON PIPE IN AREAS AS DESIGNATED ON THE PLANS FOR THE 8" SEWER LINES. ALL OTHER AREAS SHALL BE PVC, SDR 35 PIPE.



PROFILE 4



PROFILE 5

PROJECT REFERENCE NO.	SHEET NO.
R-2320G	UC-8

Municipal Services Engineering Company, P.A.
P.O. BOX 97 GARNER, N.C. 27529 (919) 772-5393 · P.O. BOX 349 BOONE, N.C. 28607 (828) 262-1767 · P.O. BOX 276 MOREHEAD CITY, N.C. 28557 (252) 726-9481

NORTH CAROLINA PROFESSIONAL SEAL 023052 ENGINEER JOHN LEWIS HINTON
1-9-08

UTILITY CONSTRUCTION

5/28/99

$$$$SYSTIME$$$$ $$$$DGN$$$$ $$$$USERNAME$$$$

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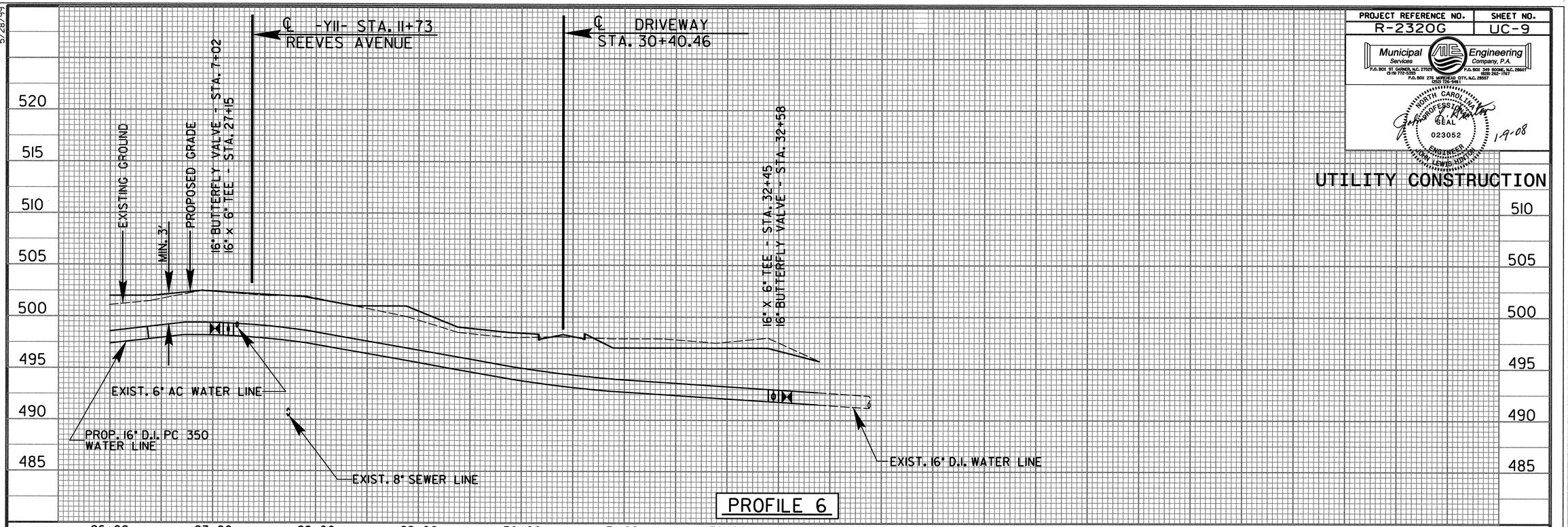
PROJECT REFERENCE NO.	SHEET NO.
R-2320G	UC-9

Municipal Services Engineering Company, P.A.
P.O. BOX 97 GARNER, N.C. 27529 (919) 772-5393
P.O. BOX 249 BOONE, N.C. 28607 (828) 262-1767
P.O. BOX 276 MOREHEAD CITY, N.C. 28557 (252) 726-5481

NORTH CAROLINA PROFESSIONAL SEAL 023052 ENGINEER JOHN LEWIS HINTON

1-9-08

UTILITY CONSTRUCTION



PROFILE 6

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-2320G	UC-10
R/W SHEET NO.	

Municipal Services Engineering Company, P.A.
P.O. BOX 97 GARNER, N.C. 27529 (919) 772-5393
P.O. BOX 349 BOONE, N.C. 28607 (828) 262-1767
P.O. BOX 276 MOREHEAD CITY, N.C. 28557 (252) 726-9481

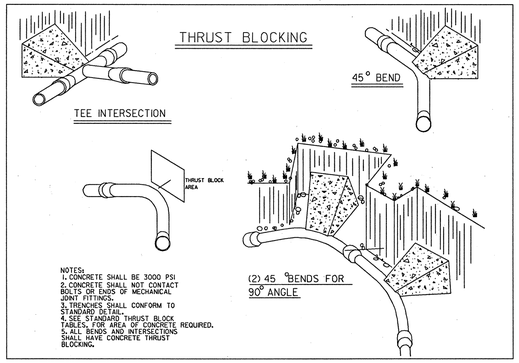
PROFESSIONAL SEAL 023052 ENGINEER JOHN LEWIS HINTON
1-9-08

UTILITY CONSTRUCTION

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		

TRENCH WIDTH DETAIL

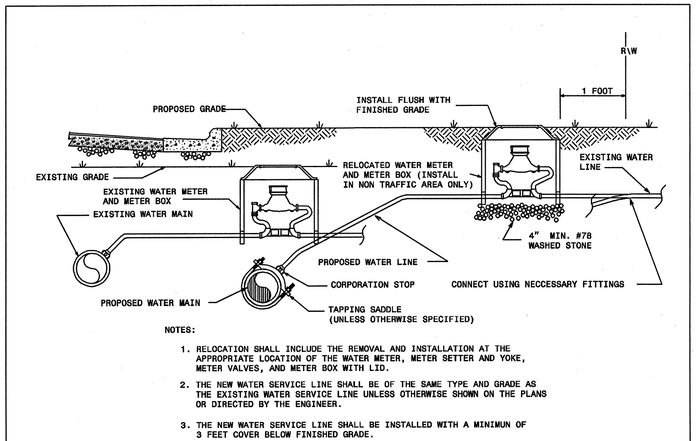


THRUST BLOCKING DETAIL

REACTION BEARING AREAS FOR HORIZONTAL WATER PIPE BENDS
BASED ON TEST PRESSURE OF 200PSI AND SAFETY FACTOR OF 1.5

	SIZE AND DEGREE OF PIPE BEND	STATIC THRUST IN POUNDS	S_b	SOFT CLAY (#/SF)	SILT (#/SF)	GRAVEL OR COURSE SAND (#/SF)	SANDY SILT (#/SF)	SAND (#/SF)	SANDY CLAY (#/SF)	HARD CLAY (#/SF)
				1,000	1,500	1,600	3,000	4,000	6,000	9,000
				BEARING AREA (A_r) IN SF						
6" PIPE	11 1/4°	1,462		2	1	1	1	1	0	0
	22 1/2°	2,911		4	3	3	1	1	1	0
	45°	5,710		9	6	5	3	2	1	1
	90°	10,550		16	11	10	5	4	3	2
	PLUG & BRANCH	7,460		11	7	7	4	3	2	1
8" PIPE	11 1/4°	2,521		4	3	2	1	1	1	0
	22 1/2°	5,018		8	5	5	3	2	1	1
	45°	9,843		15	10	9	5	4	2	2
	90°	18,187		27	18	17	9	7	5	3
	PLUG & BRANCH	12,860		19	13	12	6	5	3	2
12" PIPE	11 1/4°	3,791		6	4	4	2	1	1	1
	22 1/2°	7,546		11	8	7	4	3	2	1
	45°	14,802		22	15	14	7	6	4	2
	90°	27,351		41	27	26	14	10	7	5
	PLUG & BRANCH	19,340		29	19	18	10	7	5	3
16" PIPE	11 1/4°	11,707		18	12	11	6	4	3	2
	22 1/2°	23,302		35	23	22	12	9	6	4
	45°	45,708		69	46	43	23	17	11	8
	90°	84,457		127	84	79	42	32	21	14
	PLUG & BRANCH	59,720		90	60	56	30	22	15	10

THRUST BLOCKING TABLE

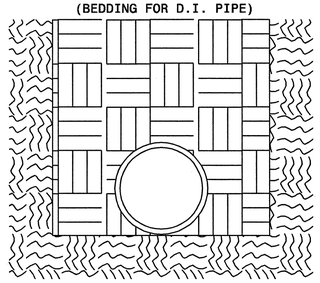


NOTES:

1. RELOCATION SHALL INCLUDE THE REMOVAL AND INSTALLATION AT THE APPROPRIATE LOCATION OF THE WATER METER, METER SETTER AND YOKE, METER VALVES, AND METER BOX WITH LID.
2. THE NEW WATER SERVICE LINE SHALL BE OF THE SAME TYPE AND GRADE AS THE EXISTING WATER SERVICE LINE UNLESS OTHERWISE SHOWN ON THE PLANS OR DIRECTED BY THE ENGINEER.
3. THE NEW WATER SERVICE LINE SHALL BE INSTALLED WITH A MINIMUN OF 3 FEET COVER BELOW FINISHED GRADE.

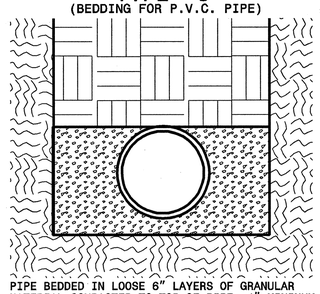
WATER METER RELOCATION DETAIL

TYPE "2"
(BEDDING FOR D.I. PIPE)



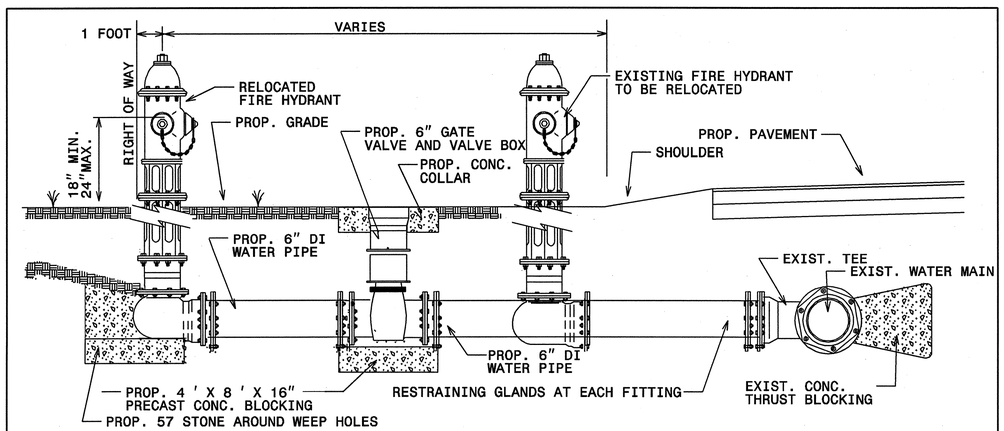
PIPE BEDDED IN FLAT-BOTTOM TRENCH. TRENCH BACKFILLED IN LOOSE 6" LAYERS COMPACTED TO TOP OF TRENCH USING LOCAL EXCAVATED MATERIAL, IF APPROVED BY THE ENGINEER, OR SELECT MATERIAL. ALL MATERIAL SHALL BE FREE OF ROCKS, FOREIGN MATERIAL, AND FROZEN EARTH. COMPACTION SHALL BE TO APPROX. 95% DENSITY IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED BY THE DEPARTMENT OF TRANSPORTATION.

TYPE "5"
(BEDDING FOR P.V.C. PIPE)



PIPE BEDDED IN LOOSE 6" LAYERS OF GRANULAR MATERIAL COMPACTED TO TOP OF PIPE, 4" MINIMUM UNDER PIPE. TRENCH BACKFILLED IN LOOSE 6" LAYERS (#67 STONE) COMPACTED TO TOP OF TRENCH USING LOCAL EXCAVATED MATERIAL, IF APPROVED BY THE ENGINEER, OR SELECT MATERIAL. ALL MATERIAL SHALL BE FREE OF ROCKS, FOREIGN MATERIAL, AND FROZEN EARTH. COMPACTION SHALL BE TO APPROX. 95% DENSITY IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED BY THE DEPARTMENT OF TRANSPORTATION.

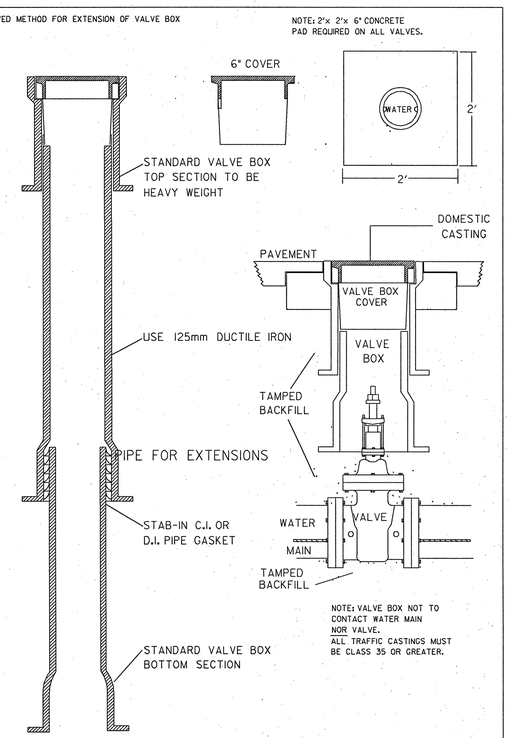
TRENCH DETAILS



FIRE HYDRANT RELOCATION DETAIL

APPROVED METHOD FOR EXTENSION OF VALVE BOX

NOTE: 2'x 2'x 6" CONCRETE PAD REQUIRED ON ALL VALVES.



GATE VALVE DETAIL

8/17/99

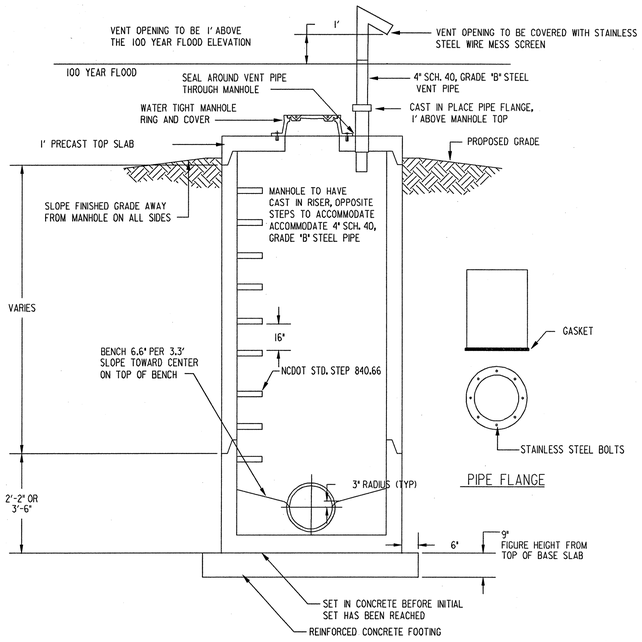
REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-2320G	UC-11

Municipal Services Engineering Company, P.A.
P.O. BOX 97 GARNER, N.C. 27529 (919) 772-5393
P.O. BOX 369 BOONE, N.C. 28607 (828) 262-1151
P.O. BOX 276 MOREHEAD CITY, N.C. 28557 (252) 726-3481

NORTH CAROLINA PROFESSIONAL SEAL 023052 ENGINEER JOHN LEWIS HINTON
1-9-08

UTILITY CONSTRUCTION

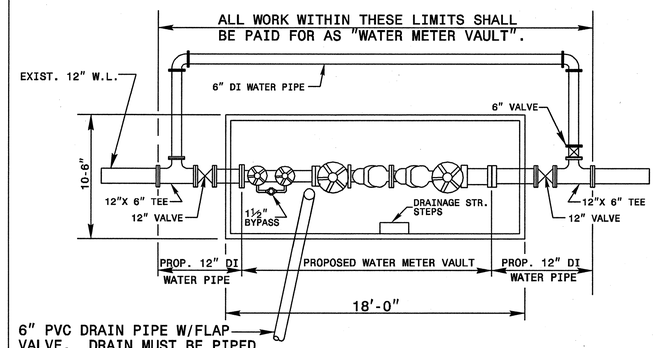


NOTES:

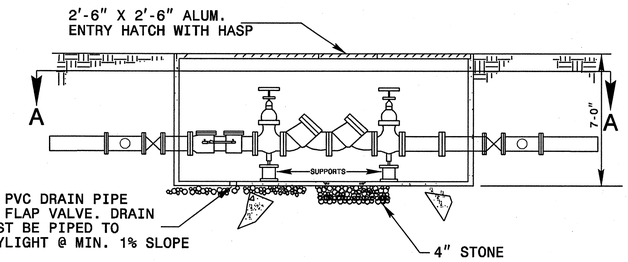
1. VENT MUST BE FACTORY WELDED, FABRICATED AND GALVANIZED.
2. MANHOLE NUMBER NEEDS TO COINCIDE WITH VENT NUMBER.
3. PRECAST MANHOLE COMPONENTS SHALL MEET REQUIREMENTS OF AASHTO M 199.
4. RISERS AND GRADE RINGS SHALL BE ASSEMBLED IN SUCH A MANNER AS TO CAUSE THE STEPS TO HAVE A SPACING OF 16" FROM THE TOP TO THE BOTTOM OF THE MANHOLE.
5. WHERE MANHOLE IS TO BE EXPOSED TO ROADWAY TRAFFIC, THE TOP OF THE MANHOLE IS TO BE FLUSH WITH THE GROUND; AND AT OTHER LOCATIONS THE TOP SHOULD BE A MINIMUM OF 9" ABOVE THE GROUND.
6. REINFORCED CONCRETE FOOTING IS REQUIRED WHEN THE MANHOLE IS OVER 12' OR ON POOR SOIL BASE. THE FOOTING AND BASE SECTION MAY BE PRECAST.

5' PRECAST WATER TIGHT VENTED MANHOLE DETAIL

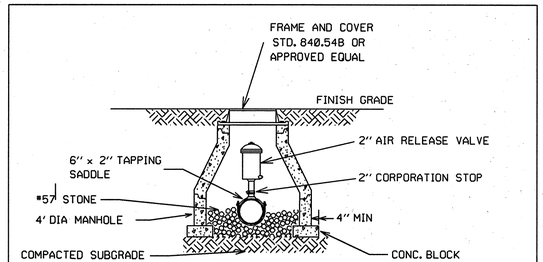
NOT TO SCALE



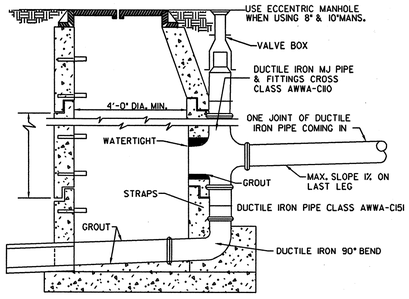
PLAN VIEW



ELEVATION VIEW - PROP. WATER METER VAULT



AIR RELEASE VALVE & MANHOLE

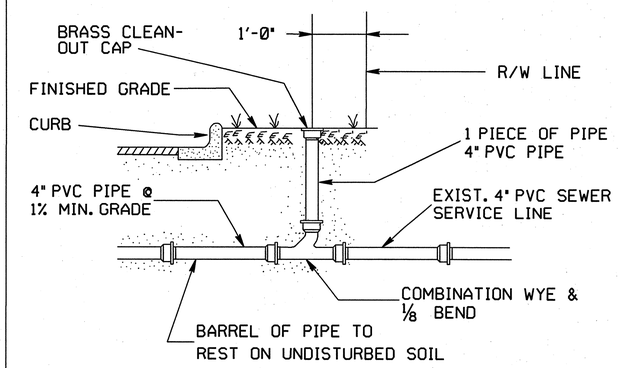


NOTES:

1. PIPE SIZE FOR DROP TO EQUAL INFLOW SEWER PIPE SIZE
2. SAW-CUT OR DRILL ALL HOLES FOR PIPE AND BOLTS.
3. DROP-MANHOLE MANDATORY WHEN DIFFERENCIAL BETWEEN INVERTS IS GREATER THAN 3'-0".
4. SEE PRECAST MANHOLE DETAIL.

STANDARD OUTSIDE DROP MANHOLE

SANITARY SEWER CLEANOUT



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STATE	STATE PROJECT REFERENCE NO.	SHEET NO.
N.C.	R-2320G	UO-1
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

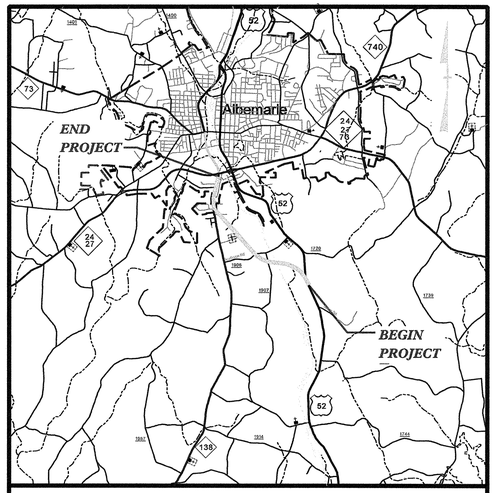
See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

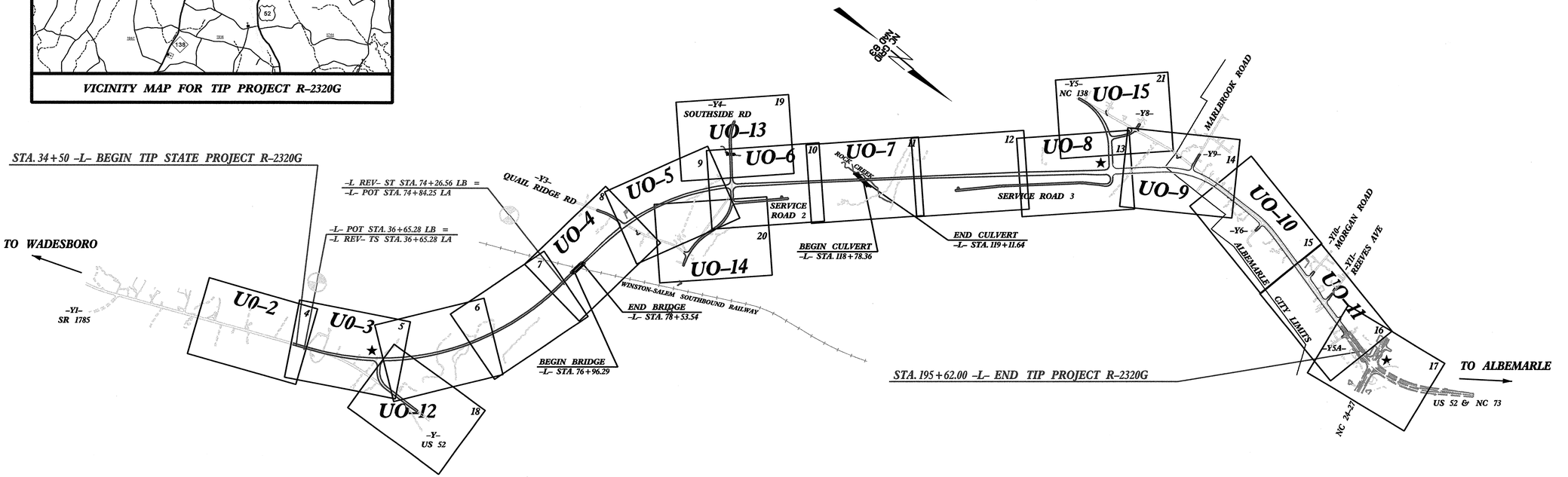
UTILITIES BY OTHERS
STANLY COUNTY

LOCATION: *Albemarle – US 52 Extension from the Intersection of US 52, NC 73, NC 24–27 & NC 138 to Intersection of US 52 and SR 1785 (Johns Road)*

TYPE OF WORK: *Utilities Relocation*



VICINITY MAP FOR TIP PROJECT R-2320G



A PORTION (0.6 MILES) OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF ALBEMARLE.

NCDOT CONTACT: CATHY S. HOUSER, P.E., ROADWAY DESIGN – ENGINEERING COORDINATION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONTRACT : C201368 TIP PROJECT : R-2320G

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

INDEX OF SHEETS

SHEET No.	DESCRIPTION
UO-1	TITLE SHEET
UO-2 THRU UO-15	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.) PIEDMONT NATURAL GAS (GAS)

PREPARED BY
Municipal Services Engineering Company, P.A.
P.O. BOX 97 GARNER, N.C. 27529 (919) 772-5393
P.O. BOX 349 BOONE, N.C. 28607 (828) 262-1767
P.O. BOX 276 MOREHEAD CITY, N.C. 28557 (252) 726-9481

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

$$$$$$SYSTIME$$$$$
$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$
$$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2320G	UO-2

UTILITIES BY OTHERS

Municipal Services Engineering Company, P.A.
P.O. BOX 97 GUNNS, N.C. 27525 (919) 772-5393
P.O. BOX 249 BOONE, N.C. 28607 (828) 262-1767
P.O. BOX 276 MOREHEAD CITY, N.C. 28557 (252) 726-9481

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

8/17/99

REVISIONS

NC GRID NAD 83

ROY H. MARBRY & WF.
TERESA MARBRY
DB 365 PG 648
PB 3 PG 300

PHYLLIS MARBRY FURR
DB 186 PG 237
PB 3 PG 300

R.C. FURR & WF.
PHYLLIS M. FURR
DB 344 PG 513
PB 3 PG 300

ROBERT C. BRASWELL & WF.
DOROTHY P. BRASWELL
DB 251 PG 584
PB 3 PG 300

ETHEL R. STILL
DB 108 PG 563

MYRTLE MARBRY
DB 259 PG 562
DB 186 PG 240
DB 251 PG 242
DB 179 PG 126
PB 3 PG 300

ROBERT NELSON RUSSELL & WF.
JAQUATTA F. RUSSELL
DB 630 PG 508
DB 713 PG 379

ABANDON TEL.

PROP. U/G TEL & FO CABLES

PROP. O/H FO & TEL LINES

BEGIN TIP PROJECT R-2320G
BEGIN CONSTRUCITON
-L- STA. 34+50

MATCH LINE - SHEET NO. UO-3 - STA. 36+00

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PROJECT REFERENCE NO.	SHEET NO.
R-2320G	UO-3

UTILITIES BY OTHERS

Municipal Services Engineering Company, P.A.
P.O. BOX 97 GARNER, N.C. 27529 (919) 772-5393
P.O. BOX 240 BOONE, N.C. 28607 (828) 262-1762
P.O. BOX 276 MOREHEAD CITY, N.C. 28557 (252) 726-5481

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

8/17/99

REVISIONS

NC GRID NAD 83

MATCH LINE SHEET UO-2 – STA. 36+00

MATCH LINE – STA. 49+00 SHEET NO. UO-12

N 24°22'49.7" W

-L- POT Sta. 36+65.28 LB = -L REV- TS Sta. 36+65.28 LA

-L REV- SC Sta. 38+90.28

-L REV- CS Sta. 46+74.27 = -Y- POT Sta. 10+41.69

-Y- PI Sta. 10+64.55

-Y- PI Sta. 12+17.00
Δ = 57° 58' 13.4" (LT)
D = 20° 50' 05.4"
L = 278.24'
T = 152.34'
R = 275.00'
SUPER = 2.0%
R.O. = 100'

-Y- PT Sta. 13+42.89

1 ETHEL R. STILL
DB 108 PG 563

2 ROBERT NELSON RUSSELL & WF. JAQUATTA F. RUSSELL
DB 630 PG 508
DB 713 PG 379

3 VONDELL BAXTER CURLEE
DB 614 PG 615
DB 330 PG 686

4 LARRY D. MABRY & SARA M. FREEDMAN
DB 534 PG 358

5 RONNIE HARWOOD, INC.
DB 615 PG 142

6 PAUL W. BREWER & WF. LOTTIE C. BREWER
DB 636 PG 414

10 REMOVE 12" CONC REPLACE W/15" RCP

PROP O/H POW TEL & CABLE LINES

PROP O/H POW LINES

PROP O/H FO & TEL LINES

PROP.O/H FO & TEL LINES

PROP O/H FO & TEL LINES RETAIN EXISTING R/W

ABANDON TEL.

REMOVE

REM.

EXISTING R/W

50.00' TYP.

SPECIAL CUT DITCH SEE DETAIL B

2' BASE DITCH SEE DETAIL A

3 TONS CLASS 'B' RIP RAP 10 SY. FILTER FABRIC

5 TONS CLASS 'B' RIP RAP 14 SY. FILTER FABRIC

20' x 10' PERMANENT SOIL REINFORCEMENT MAT

GRADE TO DRAIN

REMOVE REPLACE W/15"

REMOVE 12" REPLACE W/15" RCP

36" WW/ISBW & IS ELEC

45BW & IS ELEC

25 ELEC

S73°52'20"W 394.82' R/W BP

S76°25'09"W 2058.27' R/W COR 2052.87' MW COR

N51°52'37"E

R 75'

R 275'

PROP 5' R/W FENCE POST

EXIST 5' R/W FENCE POST

EIP

ISBKD

ISFD

WD CARPORT

MH CARPORT

CONC

BEGIN C/A & WW FENCE

END C/A & WW FENCE

12" TO 24" TAPER

TDE

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USERNAME=$$$$$$$$ SYSTIME=$$$$$$$$ DGN=$$$$$$$$$$$$$$$$$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2320G	UO-4
UTILITIES BY OTHERS	

Municipal Services Engineering Company, P.A.

P.O. BOX 97 GARNER, N.C. 27529 (919) 772-5393 — P.O. BOX 249 BOONE, N.C. 28607 (828) 262-1767 — P.O. BOX 276 MOREHEAD CITY, N.C. 28557 (252) 726-9481

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

8/17/99

REVISIONS

RAMONA H. SPEIGHT
DB 158 PG 202
DB 357 PG 705

BETTY PENNINGTON MASON
DB 582 PG 554

HERMAN MASON & WF.
ELSIE W. MASON
DB 265 PG 382

ROY JUNIOR MASON & WF.
RUBY BARNES MASON
DB 265 PG 382

RONNIE HARWOOD, INC.
DB 615 PG 142

DENNIS LAMBERT INVESTMENTS
DB 842 PG 151

HENRY F. LISK
DB 270 PG 994
DB 319 PG 718

RAMONA H. SPEIGHT
DB 700 PG 144
DB 357 PC 705

WINSTON-SALEM SOUTHBOUND RAILWAY COMPANY
DB 34 PG 85,89,351,353,418

N.C. GRID NAD 83

S89°50'05"W
828.52' COR-R/W
843.83' EIP-EIP

N87°16'56"W
823.55' COR-R/W
838.81' EIP-EIP

S85°59'09"W
783.68' COR-R/W
806.58' EIP-EIP

N86°41'43"W
721.06' COR-R/W
771.24' EIP-R/R SPIKE

-Y2-
PI Sta 12+38.80
Δ = 2°02' 06.4" (LT)
D = 0°28' 38.9"
L = 426.23'
T = 213.14'
R = 12,000.00'

-Y3-
PI Sta 15+43.64
Δ = 2°3' 29.7" (RT)
D = 1°38' 22.0"
L = 301.83'
T = 152.99'
R = 750.00'
SUPER = 4.0%
R.O. = 100'

BEGIN CONSTRUCTION
-Y3- STA 13+00

END BRIDGE
-L- STA 78+53.54

BEGIN BRIDGE
-L- STA 76+96.29

-L- POT Sta. 77+90.57 =
-Y2- POC Sta. 13+52.82
Δ = 56°24' 04.3"

-Y2- PT Sta. 14+51.90

-L- REV- ST Sta. 74+26.56 LB =
-L- POT Sta. 74+84.25 LA

-L- TS Sta. 81+00.09

-L- SC Sta. 83+25.09

-L- POC Sta. 86+00.00
-Y3- POT Sta. 17+59.34

-L- PI Sta 82+50.00
θs = 2°15' 42.0"
Ls = 225.00'
LT = 150.01'
ST = 75.01'

-L- PI Sta 92+81.15
Δ = 37°05' 21.1" (RT)
D = 2°00' 37.4"
L = 1,844.89'
T = 956.06'
R = 2,850.00'
SUPER = 5.2%

MATCH LINE - STA. 74+00

MATCH LINE - SHEET UO-5 - STA. 87+00

PROP. OHP TO R/W

PROP. OHP TO R/W & TEL. LINES

PROP. OHP, POW LINES

ABANDON TEL.

REMOVE 12" REPLACE W/15"

SPECIAL CUT DITCH SEE DETAIL R

SPECIAL CUT DITCH W/PSRM SEE DETAIL V

BERM DITCH W/CL 'B' RIP RAP SEE DETAIL

MODIFIED FLUME

PSRM 10' x 6'

LAT. 2' BASE DITCH SEE DETAIL R

LATERAL 2' BASE DITCH W/CL 'B' RIP RAP SEE DETAIL O

TOE PROTECTION W/PRSM SEE DETAIL H SHEET 9

TOE PROTECTION W/CL 'B' RIP RAP SEE DETAIL P

10 STONS CLASS 'B' RIP RAP 10 SY FILTER FABRIC

100' (50' EACH SIDE OF RAILROAD ℄) OWNERSHIP IN FEE SIMPLE

TO MILEPOST 82

TO MILEPOST 81

2GI W/FLAT GRATE

GRAU 350

TYP.

43.27'

+00.00 30.00'

+00.00 40.00'

+90.65 40.00'

+00.00 40.00'

+75.00 100.00'

+72.18 118.87'

+52.21 120.00'

+26.56 (-LREV-) 110.00'

+31.60 120.00'

+00.09 105.00'

+25.09 105.00'

+14.29 125.00'

+26.56 (-LREV-) 125.00'

+79.86 28.56'

+71.41 131.50'

+48.46 142.02'

+71.47 187.07'

+94.96 176.26'

R 50'

R 20'

(CHORD)

HTR

WD

CARPORT

WOOD FENCE

CONC

WALK

W/LT

INV=532.18

36" WW & ISBW

36" WW

5SBW

48" RCP

MATL

B

$SYSTIMEJGN$ $USERNAME$ $IGSFNAME$

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PROJECT REFERENCE NO.	SHEET NO.
R-2320G	UO-5

UTILITIES BY OTHERS

Municipal Services · Engineering Company, P.A.
P.O. BOX 97 GARNER, N.C. 27529 (919) 772-5393 · P.O. BOX 349 BOONE, N.C. 28607 (828) 262-1767 · P.O. BOX 276 MOREHEAD CITY, N.C. 28557 (252) 726-9481

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

REVISIONS

8/17/99

$$$$SYSTIME$$$$ $$$$DGN$$$$ $$$$USERNAME$$$$

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PROJECT REFERENCE NO.	SHEET NO.
R-2320G	UO-6
UTILITIES BY OTHERS	

Municipal Services Engineering Company, P.A.
P.O. BOX 97 GARNER, N.C. 27529 (919) 772-5393
P.O. BOX 245 ROME, N.C. 28907 (828) 262-1767
P.O. BOX 276 MOREHEAD CITY, N.C. 28557 (252) 726-9481

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

REVISIONS 8/17/99

MATCH LINE - SHEET UO-13 - STA. 10+00

MATCH LINE - SHEET UO-5 - STA. 99+00

MATCH LINE - SHEET UO-7 - STA. 112+00

MATCH LINE - SHEET UO-14 - STA. 17+00

NC GRID NAD 83

JAMES CONRAD TRULL, ET AL DB 361 PG 930 (12)

CECILLE M. NASH DB 130 PG 174 WB 82 PG 125 (13)

LORENA H. LOWDER DB 141 PG 90 (14)

JAMES RICHARD RUMMAGE DB 110 PG 442 (15)

BARRETT DEE EATMAN & WF. JEANETTE RUMMAGE EATMAN DB 897 PG 468 (15A)

-L- PI Sta 82+81.15
Δ = 37° 05' 21" (RT)
D = 2° 00' 37.4"
L = 1,844.89
T = 956.06'
R = 2,850.00'
SUPER = 5.2%

-L- PIs Sta 102+44.99
θs = 2° 15' 42.0"
Ls = 225.00'
LT = 150.01'
ST = 75.01'

-Y4- PI Sta 17+44.14
Δ = 58° 38' 00.1" (RT)
D = 11° 27' 33.0"
L = 511.67'
T = 280.78'
R = 500.00'
SUPER = 6.0%
R.O. = 150'

-Y4- POC Sta.14+63.36

-Y4- POC Sta.15+66.55 = SR 2 POT Sta.10+00.00

-SR 2- N 44° 42' 04.5" W

END CONSTRUCTION -SR 2- STA 17+55

LATERAL BASE DITCH SEE DETAIL O

STANDARD "V" DITCH SEE DETAIL G

SPECIAL CUT DITCH SEE DETAIL C

SPECIAL CUT DITCH SEE DETAIL B

SPECIAL CUT 2' BASE DITCH SEE DETAIL S

STD BERM DITCH SEE DETAIL F

FALSE SUMP SEE DETAIL 3

2' BASE DITCH W/PSRM SEE DETAIL D

SPECIAL CUT 2' BASE DITCH W/PSRM SEE DETAIL S

17 TONS CLASS 'B' RIP RAP 32 SY. FILTER FABRIC

20 TONS CLASS 'A' RIP RAP (58' x 6' x 1') 45 SY. FILTER FABRIC

SPECIAL LATERAL "V" DITCH SEE DETAIL J

5 TONS CLASS 'B' RIP RAP 14 SY. FILTER FABRIC

3 TONS CLASS 'B' RIP RAP 10 SY. FILTER FABRIC

1 TON CLASS 'B' RIP RAP 5 SY. FILTER FABRIC

PROP O/H POW LINES

PROP U/G (FO) TEL CABLES

PROP O/H POW LINES & PROP U/G (FO) TEL CABLES

PROP O/H POW LINES & PROP U/G (FO) TEL CABLES

EXISTING O/H POW LINES

EXISTING 24" RCP

PROP O/H POW LINES & EXISTING 24" RCP

15" CSP W/ELBOWS

24" RCP

BDO

BERM DRAIN OUTLET

20' x15' PERMANENT SOIL REINFORCEMENT MAT

9'4.12' WELL CORE-COR S42°00'19"E

S46°E 4'+/-BM 3WOTS -3WOTS MON -29'W

N16°01'-33"W WELLBORE-REBAR

REBAR

+00.00 75.00'

+67.75 80.00'

+59.93 110.46'

+00.00 100.00'

+98.2

+48.2

+76.51 104.88'

+00.00 165.00'

+33.12 136.64'

+13.74 150.34'

+00.00 40.00'

+50.00 40.00'

+62.69 40.00'

+20.00 120.00'

+30.00 90.12'

STA.15+50 END BERM DITCH

43.27' TYP.

P.S.

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$$SYSTIME$$$$DGN$$$$USERNAME$$

PROJECT REFERENCE NO.	SHEET NO.
R-2320G	U0-7

UTILITIES BY OTHERS

Municipal Services Engineering Company, P.A.
P.O. BOX 97 GARNER, N.C. 27529 (919) 772-5393
P.O. BOX 369 BOONE, N.C. 28607 (828) 262-1767
P.O. BOX 276 MOREHEAD CITY, N.C. 28557 (252) 726-5981

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

8/17/99

REVISIONS

MATCH LINE - SHEET NO. U0-6 - STA. 112+00

MATCH LINE - STA. 126+00

NC GRID NAD 83

15 JAMES RICHARD RUMMAGE DB 110 PG 442

16 JOHN FRANK RUMMAGE & WF. GLADYS V. RUMMAGE DB 549 PG 388 DB 266 PG 42 DB 223 PG 34

18 PAUL WAYNE MORRIS & WF. SANDRA POPLIN MORRIS DB 308 PG 63

17 BARRETT D. EATMAN & WF. JEANETTE R. EATMAN DB 561 PG 476

15A JOHN FRANK RUMMAGE & WF. GLADYS V. RUMMAGE DB 549 PG 388 DB 266 PG 42 DB 223 PG 34

489.34' CGR-REBAR S62°54'08"W

SPECIAL CUT DITCH SEE DETAIL C

1 TON CLASS 'B' RIP RAP 5 SY. FILTER FABRIC

GRAU 350

4' P.S.

END CULVERT -L- STA 119+11.64

BEGIN CULVERT -L- STA 118+78.36

2GI W/FLAT GRATE

2' SILL

INLET CHANNEL 40 LF @ 0.61% SEE DETAIL

LATERAL BASE DITCH SEE DETAIL O

15" CSP W/2 ELBOWS ROD & LUG CONNECTORS

LATERAL BASE DITCH SEE DETAIL N

FALSE SUMP SEE DETAIL 3

15" CSP W/ELBOWS

STD BERM DITCH SEE DETAIL F

BERM DRAIN OUTLET

TOE PROTECTION W/CL 'B' RIP RAP SEE DETAIL P

SPRING BOX

8" CSP

LAT. 2' BASE DITCH W/ CL 'B' RIP RAP SEE DETAIL O

LAT. 2' BASE DITCH W/PSRM SEE DETAIL N

2' BASE DITCH W/CL 'B' RIP RAP SEE DETAIL O

PROP O/H POW LINES

PROP U/G (FO) TEL CABLES

PROP O/H POW, TEL & FO LINES

INV.= 459.18 (BURIED 1')

50 LF OF CLASS I RIPRAP W/ FILTER FABRIC

FILL EXIST. CHANNEL 280 CY.

GRADE TO DRAIN

INV=458.98

OUTLET CHANNEL 308' LF @ 0.61% SEE DETAIL

15' EASEMENT FOR INGRESS, EGRESS, & REGRESS DB 561 PG 476

15" PVC

FALSE SUMP SEE DETAIL I

2 TONS CLASS 'B' RIP RAP 5 SY. FILTER FABRIC

AXLE

N 200.00' 283.52'

N1°16'22"E 268.67' REBAR-REBAR

N4°36'50"W 385.22' REBAR-REBAR

N83°17'32"E 272.98' REBAR-COR

N14°17'43"W 291.39' REBAR-COR

S73°43'05"W 178' MON-COR

CONC

CARPORT

WD. DK.

2SLOGD

REBAR & CAP

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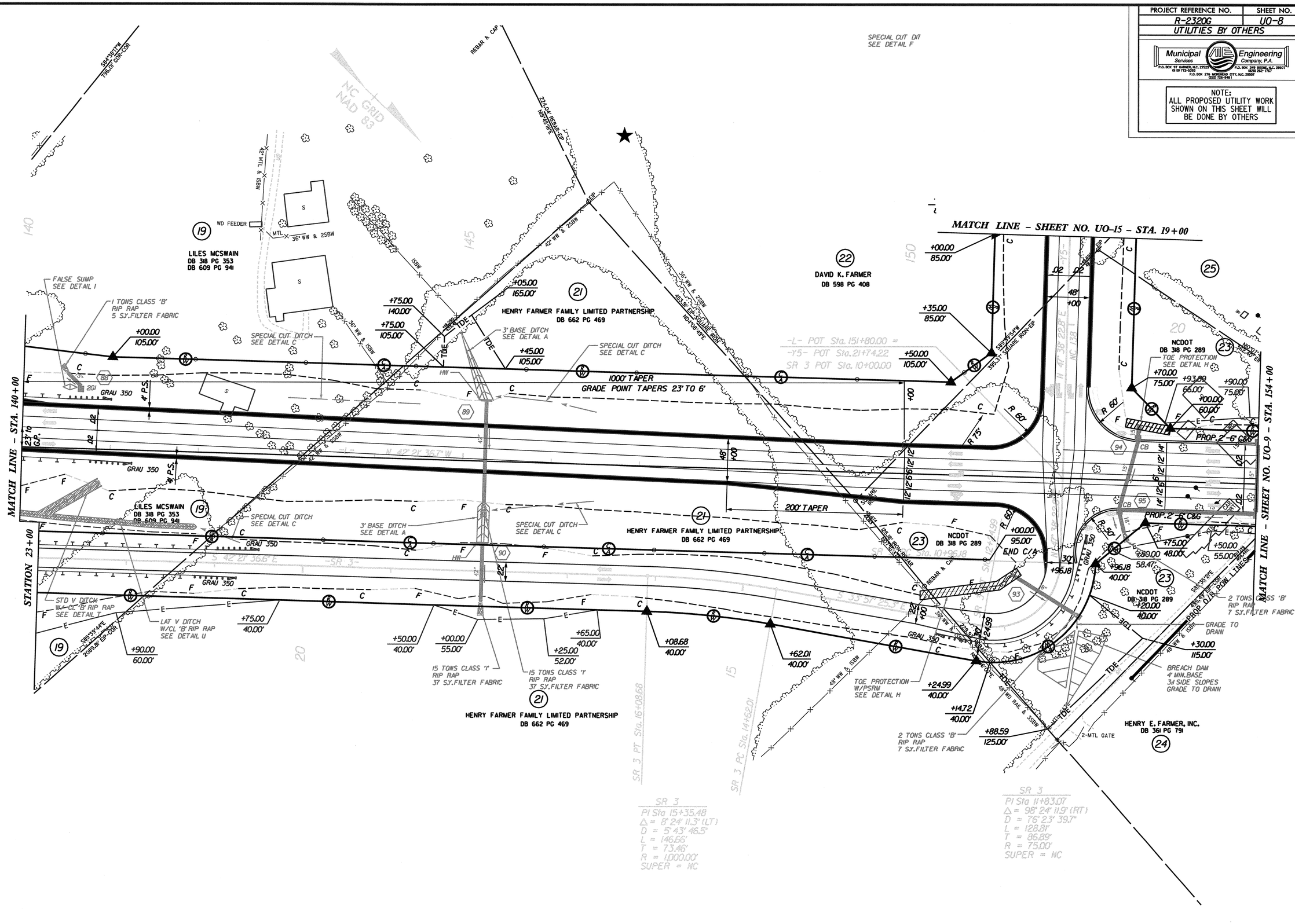
PROJECT REFERENCE NO.	SHEET NO.
R-2320G	UO-8

UTILITIES BY OTHERS

Municipal Services Engineering Company, P.A.

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



REVISIONS

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
R-2320G	U0-9
UTILITIES BY OTHERS	

Municipal Services Engineering Company, P.A.
P.O. BOX 97 GARNER, N.C. 27529 (919) 772-5393
P.O. BOX 245 BOONE, N.C. 28607 (828) 262-1767
P.O. BOX 276 MOREHEAD CITY, N.C. 28557 (252) 726-9461

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

8/17/99

REVISIONS

NC GRID NAD 83

MATCH LINE - SHEET NO. U0-8 - STA. 154+00

MATCH LINE - SHEET NO. U0-10 - STA. 168+00

A.D. BURTON & WF.
MABEL D. BURTON
DB 249 PG 85
DB 245 PG 23
DB 245 PG 127
DB 220 PG 435
DB 135 PG 98
PB 5 PG 260

M.T. HATLEY, VANN R. FRYE, & I.M. DICK; TRUSTEES OF BETHESDA METHODIST CHURCH AND THEIR SUCCESSORS
DB 221 PG 134

HENRY E. FARMER, INC.
DB 361 PG 791

ROBERT LEE INMAN & WF.
JEANETTE PARADISE INMAN
DB 697 PG 780

MOIR L. JONES & WF.
LOIS DIANE M. JONES
DB 369 PG 325
PB 5 PG 260

ESTRON (D-WEST) & WF.
JACKIE S. WEST
DB 626 PG 320
PB 5 PG 260

DEWEY D. TREECE
(FOUR SEASONS REALTY)
DB 310 PG 961
PB 5 PG 260

HENRY D. CLONTZ, JR. & WF.
LINDA B. CLONTZ
DB 724 PG 891
PB 5 PG 260

VIRLE R. CROCKETT & WF.
ALICE F. CROCKETT
DB 631 PG 376
PB 5 PG 260

WILLIAM P. SMITH & WF.
LISA G. SMITH
DB 640 PG 739
PB 5 PG 260

DENNIS LAMBERT INVESTMENTS
DB [illegible] PG [illegible]

COUNTY OF STANLY
DB 307 PG 440

-Y9-
PI Sta 16+91.72
Δ = 15° 39' 53.6" (LT)
D = 28° 38' 52"
L = 54.68'
T = 27.51'
R = 200.00'

-L- POC Sta.162+45.00 =
-Y9- POT Sta.17+94.10

-L- TS Sta.157+48.93

-L- SC Sta.159+73.93

-L-
PI Sta 158+99.00
Δs = 5° 27' 45.1"
Ls = 225.00'
LT = 150.07'
ST = 75.06'

-L-
PI Sta 162+85.73
Δ = 29° 36' 09.5" (RT)
D = 4° 51' 20.1"
L = 609.68'
T = 311.80'
R = 1180.00'
SUPER = 5.6%

-L-
PI Sta 166+58.66
Δs = 5° 27' 45.1"
Ls = 225.00'
LT = 150.07'
ST = 75.06'

BEGIN CONSTRUCTION
-Y9- STA 15+91.72

TEMP. SLOPE STAKE

STANDARD BASE DITCH
80' @ OUTX
DDE 23 CY.
SEE DETAIL A

STANDARD "V" DITCH
SEE DETAILS

PROP. O/H FO & TEL LINES

PROP. 2'-6" C&G

SPECIAL SIDEWALK BERM DETAIL

SPECIAL PROTECTION SEE DETAIL H

300' TAPER

REMOVE

RETAIN

EXISTING R/W

ANGLE IRON

165.00' ANGLE IRON-COR. N62°48'47"E

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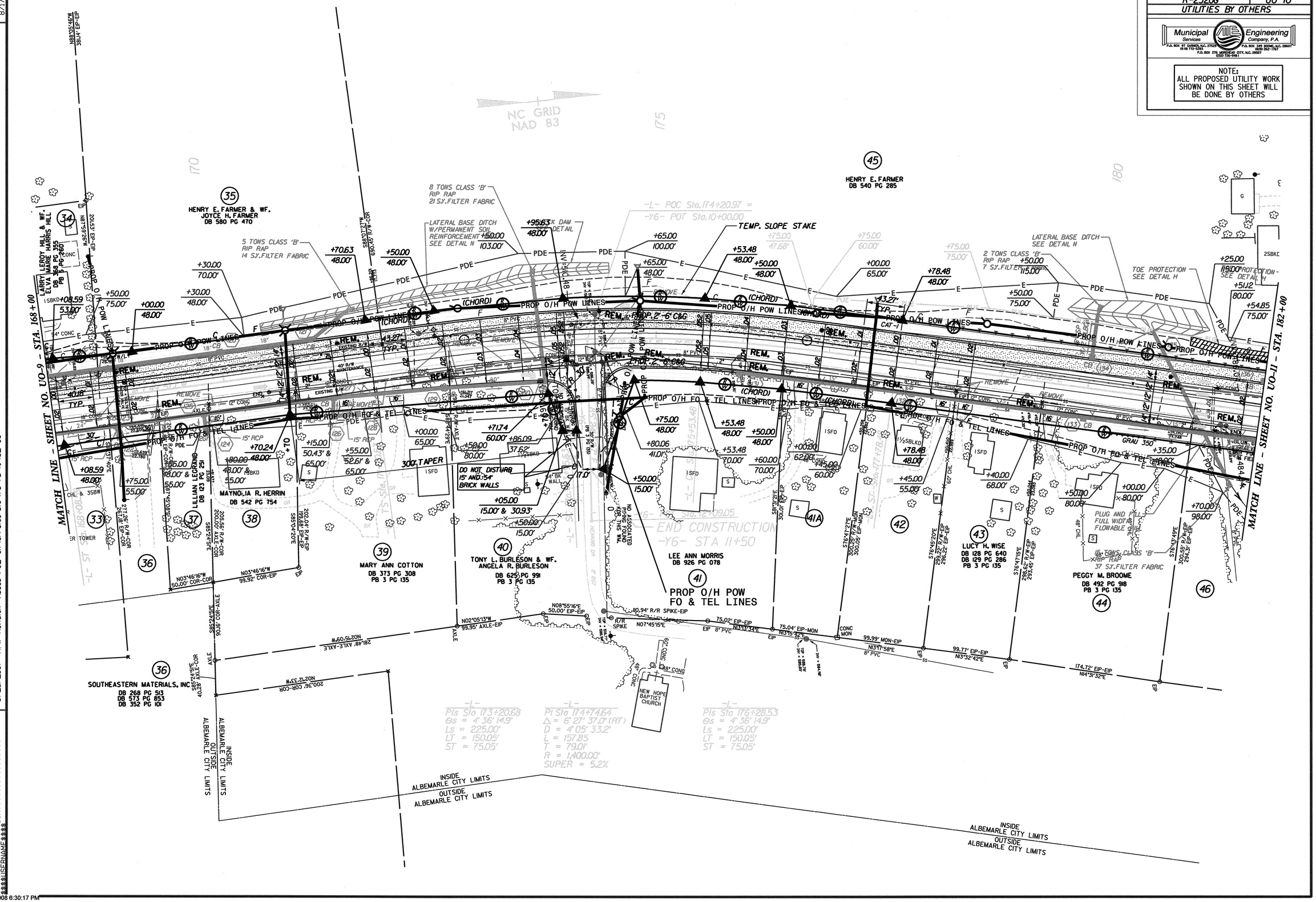
PROJECT REFERENCE NO.	SHEET NO.
R-2320G	UO-10
UTILITIES BY OTHERS	

Municipal Services Engineering Company, P.A.

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



REVISIONS

7/15/2004 R/W Revision Parcel 41 Name change and added Parcel 41A
2/22/2005 R/W Revision Revised R/W and Easement on Parcel 40
3/26/2007 R/W Revision Added PUE on left side Sta 176+75 to 182+00

8/17/99

$$$$$$$$SYSTIME$$$$
$$$$$$$$DGN$$$$$$$$
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PROJECT REFERENCE NO.	SHEET NO.
R-2320G	U0-11

UTILITIES BY OTHERS

Municipal Services Engineering Company, P.A.

P.O. BOX 87 GARNER, N.C. 27529 (919) 772-5393 | P.O. BOX 249 SCONE, N.C. 28607 (828) 262-1767 | P.O. BOX 276 MOREHEAD CITY, N.C. 28557 (252) 726-9481

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

8/17/99

REVISIONS

12/14/04	Revised Sta/Off at 184+00 RT to +00.00/80.00'
2/22/2005	Added Drive Sta.190+50 Left and Revised R/W and Easement 190+00 LT to 190+60 LT
11/17/2005	Changed Owner Names on Parcels 47, 52 and 53.
3/26/2007	R/W Revision Added PUE on left side Sta 182+00 to Sta 183+14 and Sta 188+00 to Sta 192+60
7/20/2007	R/W Revision Removed PUE, Removed Right turn lane and Added TCE on Parcel 59

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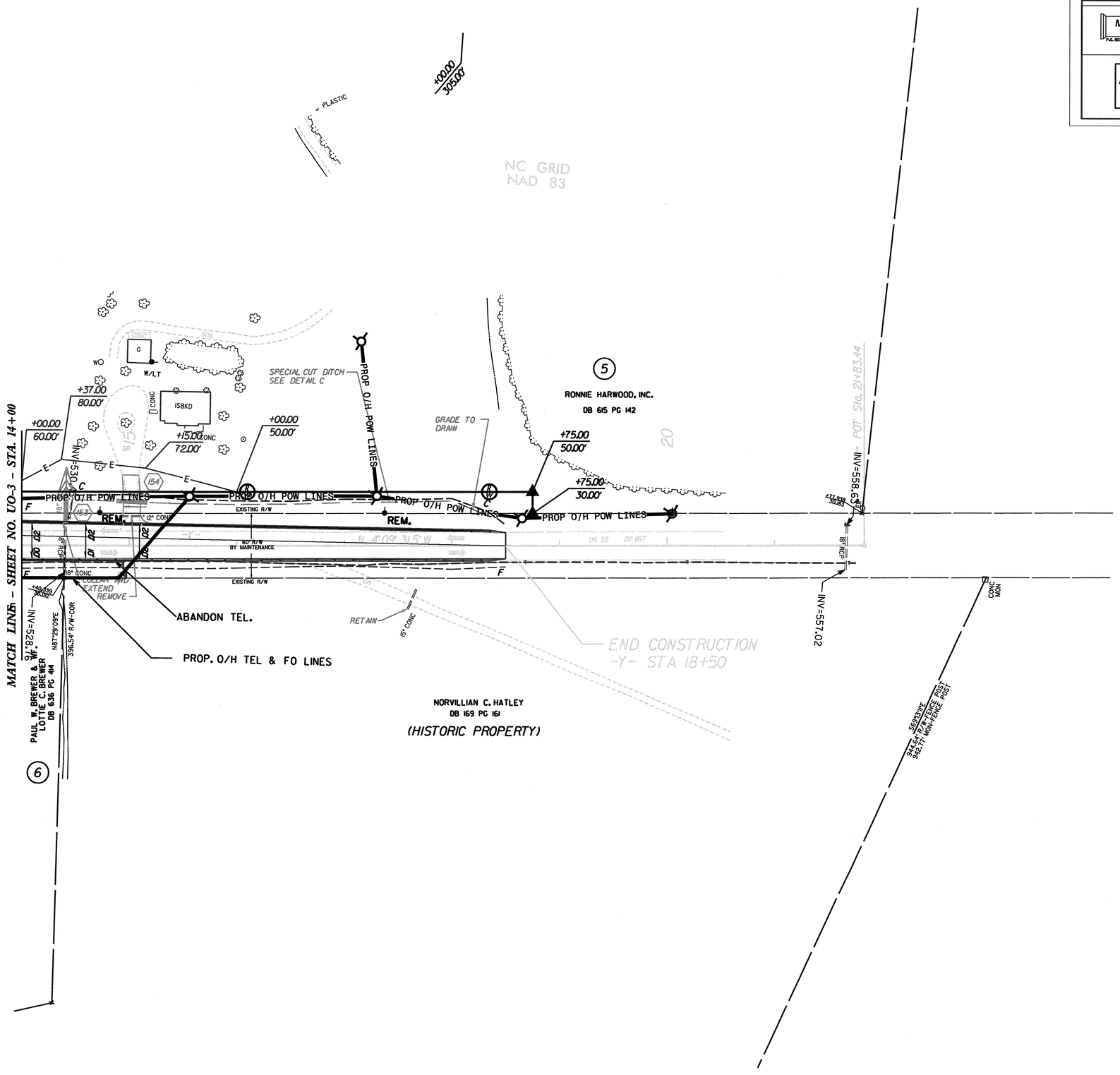
PROJECT REFERENCE NO.	SHEET NO.
R-2320G	UO-12

UTILITIES BY OTHERS

Municipal Services Engineering Company, P.A.

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



REVISIONS

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
R-2320G	UO-13
UTILITIES BY OTHERS	

Municipal Services Engineering Company, P.A.
P.O. BOX 97 GARNER, N.C. 27529 (919) 772-5393
P.O. BOX 349 BOONE, N.C. 28607 (828) 262-1767
P.O. BOX 276 MOREHEAD CITY, N.C. 28557 (252) 726-9481

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

REVISIONS

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
R-2320G	UO-14

UTILITIES BY OTHERS

Municipal Services
P.O. BOX 87 GARNER, N.C. 27529 (919) 772-5393
Engineering Company, P.A.
P.O. BOX 249 BOONE, N.C. 28607 (828) 262-1767
P.O. BOX 276 MOREHEAD CITY, N.C. 28557 (252) 726-9481

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

8/17/99

REVISIONS

NC GRID NAD 83

MATCH LINE - SHEET UO-6 - STA. 17+00

-Y4- PT Sta 19+75.00

-Y4- PI Sta 17+44.14
Δ = 58° 38' 00.1" (RT)
D = 11° 27' 33.0"
L = 511.67'
T = 280.78'
R = 500.00'
SUPER = 6.0%
R.D. = 150'

-Y4- PI Sta 23+82.44
Δ = 39° 29' 55.6" (LT)
D = 7° 09' 43.1"
L = 551.51'
T = 287.22'
R = 800.00'
SUPER = 6.0%
R.D. = 150'

-Y4- PT Sta 26+46.72

-Y4- PI NC Sta 27+07.02

-Y4- PI Sta 20+95.22

END CONSTRUCTION
-Y4- STA 26+50

(12) JAMES CONRAD TRULL, ET AL
DB 361 PG 930

(13) CECILLE M. NASH
DB 130 PG 174
WB 82 PG 125

(60) JAMES CONRAD TRULL & WF.
RICKIE T. TRULL
DB 259 PG 438

(8) HENRY F. LISK
DB 270 PG 994
DB 319 PG 718

ALTON L. SHARPE & WF.
JACQUELINE A. SHARPE
DB 685 PG 614

(61) CECILLE MOOSE NASH & HUS.
WILLIAM BOYD NASH
DB 288 PG 198

WILLIAM BOYD NASH & WF.
GENNA MOOSE NASH
DB 295 PG 113

ROWENA CHRISTINE MOOSE
DB 288 PG 867

REM.

2 TONS CLASS 'B' RIP RAP
7 SY. FILTER FABRIC

+35.00
62.52'

+00.00
70.00'

+00.00
85.00'

+00.00
75.00'

+00.00
75.00'

+00.00
50.00'

+75.00
45.00'

+60.91
40.00'

+20.96
35.00'

+09.06
35.00'

+46.72
50.00'

+46.72
20.00'

PROP O/H POW LINES

PROP U/G TEL & FO CABLES

(TEMP.) PROP O/H POW LINES

PROP U/G TEL & FO CABLES

PROP O/H POW LINES

PROP U/G TEL & FO CABLES

PROP O/H POW LINES

PROP O/H POW LINES

PROP O/H POW LINES

N16°52'25"W
376.87' R/W-EIP

N23°24'51"W
462.06' EIP-EIP
462.39' R/W-EIP

N16°26'19"W
246.64' EIP-R/W
236.02' EIP-EIP

S75°38'27"W
135.12' EIP-EIP

N23°36'33"W
223.11' EIP-R/W
214.38' EIP-EIP

S66°45'54"W
200.00' CGR-CGR

N20°05'43"W
260.00' CGR-CGR

S71°28'53"E
199.91' R/W-EIP

N30°00'04"E
194.71' EIP-EIP

GRADE TO DRAIN

RETAIN

12' CONC

36" CONC

60" WW

24" WW & 35SW

35SW

45SW

55SW

MTL

WD

ISSD

HTR

OHL

SR

GR

BR

EP

EIP

PP

PROP

EXISTING R/W

BY MISCELLANEOUS

QUAIL RIDGE RD SR 1307

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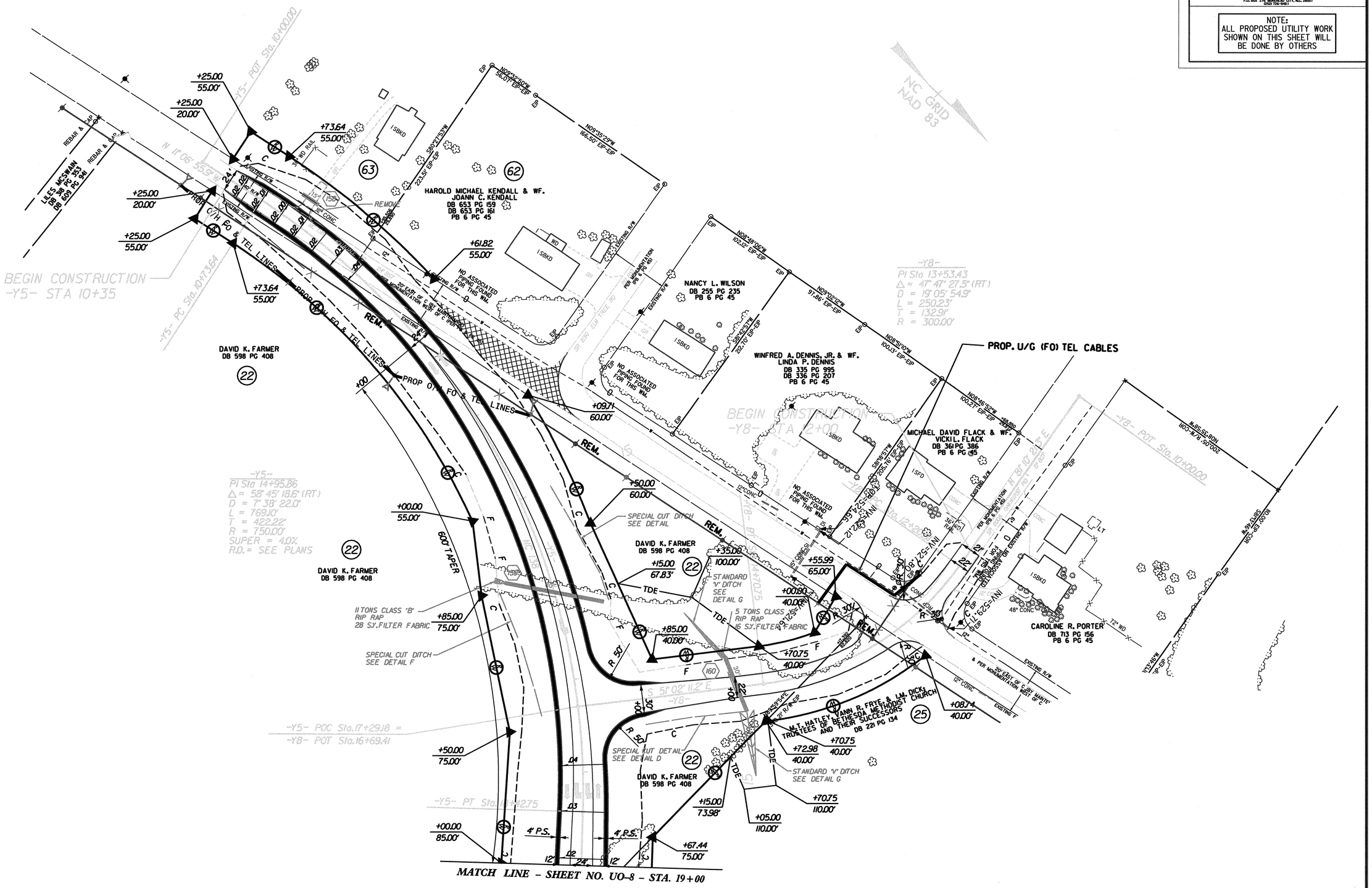
PROJECT REFERENCE NO.	SHEET NO.
R-2320G	UO-15

UTILITIES BY OTHERS

Municipal Services Engineering Company, P.A.

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



REVISIONS

8/17/99

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