TIP PROJECT: R-2303C

CONTRACT:

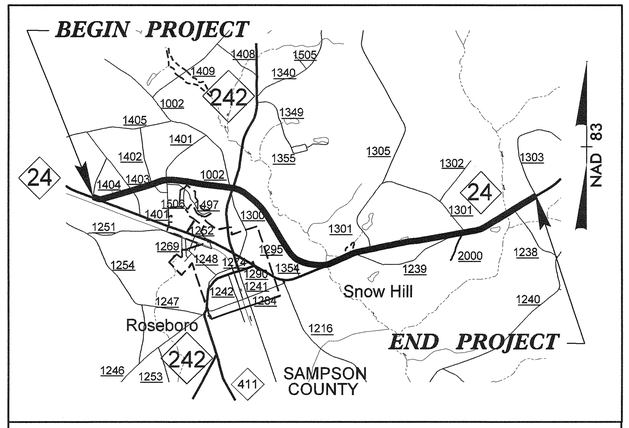
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

T.I.P. NO.	SHEET NO.
R-2303C	UC-1

UTILITIES CONSTRUCTION
SAMPSON COUNTY

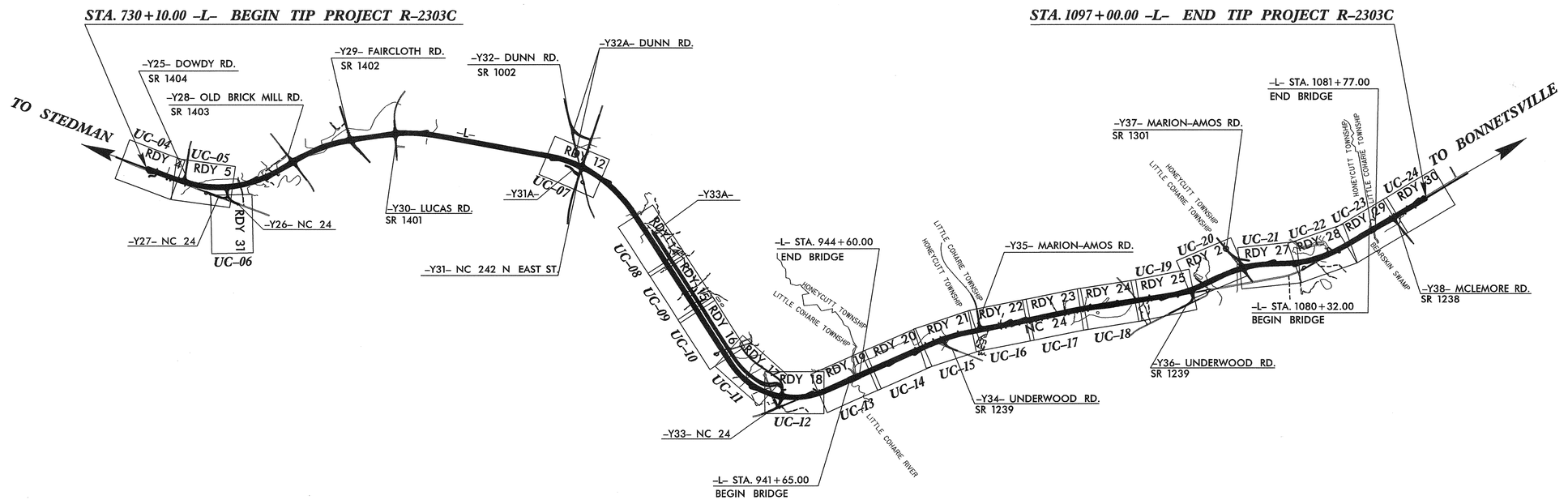
LOCATION: NC 24 FROM SR 1404 (DOWDY ROAD) TO SR 1303 (MITCHELL LOOP ROAD)

TYPE OF WORK: WATER LINE AND SEWER LINE RELOCATION



VICINITY MAP

NAD 83/ NSRS 2007



GRAPHIC SCALES

50 25 0 50 100
PLANS

20 10 0 20 40
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
UC-1	TITLE SHEET
UC-2	SYMBOLOGY SHEET
UC-3 TO UC-3G	NOTES SHEETS AND UTILITY DETAIL SHEETS
UC-4 TO UC-24	UTILITIES CONSTRUCTION PLAN SHEETS
UC-25 TO UC-56	UTILITIES CONSTRUCTION PROFILE PLAN SHEETS

UTILITY OWNERS ON PROJECT

(1) SAMPSON COUNTY PUBLIC WORKS - WATER LINE
(2) SAMPSON COUNTY PUBLIC WORKS - SEWER LINE
(3) TOWN OF ROSEBORO - WATER LINE
(4) TOWN OF ROSEBORO - SEWER LINE

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 027661 ENGINEER KEVIN C. ZOLB

2013-MAY-07

UTILITY DESIGN BY:
MA Engineering CONSULTANTS, INC.
598 East Chatham Street, Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax. 919.297.0221

NCDOT PROJECT ENGINEER:
RON WILKINS, P.E.
PREPARED FOR:
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
UTILITIES UNIT
RALEIGH, NC

09/08/99
$$$$$$$$$$CYSTIME$$$$$$$$$$
$$$$$$$$$$SCENE$$$$$$$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-2

NORTH CAROLINA PROFESSIONAL SEAL 027661 ENGINEER KEVIN C. ZOEB

2013-MAY-07

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES PLAN SHEET SYMBOLS

PROPOSED WATER SYMBOLS

- Water Line (Sized as Shown) — 12" WL
- 11¼ Degree Bend
- 22½ Degree Bend
- 45 Degree Bend
- 90 Degree Bend
- Plug
- Tee
- Cross
- Reducer
- Gate Valve — GV
- Butterfly Valve — BV
- Tapping Valve — TGV
- Line Stop — LS
- Line Stop with Bypass — LS/BP
- Blow Off — BO
- Fire Hydrant — PFH
- Relocate Fire Hydrant — RFH
- Remove Fire Hydrant — REM FH
- Water Meter — PWM
- Relocate Water Meter — RWM
- Remove Water Meter — REM WM
- Water Pump Station — PS(W)
- RPZ Backflow Preventer — PRPZ
- DCV Backflow Preventer — PBFP
- Relocate RPZ Backflow Preventer — RRPZ
- Relocate DCV Backflow Preventer — RBFP

PROPOSED SEWER SYMBOLS

- Gravity Sewer Line (Sized as Shown) — 12" SS
- Force Main Sewer Line (Sized as Shown) — 12" FSS
- Manhole (Sized per Note)
- Sewer Pump Station — PS(SS)

PROPOSED MISCELLANOUS UTILITIES SYMBOLS

- Power Pole
- Telephone Pole
- Joint Use Pole
- Telephone Pedestal — TEL PED
- Utility Line by Others (Type as Shown) — PROP O/H POW LINES
- Trenchless Installation — 12" TL INSTALL
- Encasement by Open Cut — 24" ENCAS BY OC
- Encasement — 24" ENCASEMENT
- Thrust Block
- Air Release Valve — AR
- Utility Vault — UV
- Concrete Pier — CP
- Steel Pier — SP
- Plan Note — NOTE
- Pay Item Note — PAY ITEM

EXISTING UTILITIES SYMBOLS

- Power Pole
- Telephone Pole
- Joint Use Pole
- Utility Pole
- Utility Pole with Base
- H-Frame Pole
- Power Transmission Line Tower
- Water Manhole
- Power Manhole
- Telephone Manhole
- Sanitary Sewer Manhole
- Hand Hole for Cable
- Power Transformer
- Telephone Pedestal
- CATV Pedestal
- Gas Valve
- Gas Meter
- Located Miscellaneous Utility Object
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.
- *Underground Power Line — P
- *Underground Telephone Cable — T
- *Underground Telephone Conduit — TC
- *Underground Fiber Optics Telephone Cable — T FO
- *Underground TV Cable — TV
- *Underground Fiber Optics TV Cable — TV FO
- *Underground Gas Pipeline — G
- Aboveground Gas Pipeline — A/G Gas
- *Underground Water Line — W
- Aboveground Water Line — A/G Water
- *Underground Gravity Sanitary Sewer Line — SS
- Aboveground Gravity Sanitary Sewer Line — A/G Sanitary Sewer
- *Underground SS Forced Main Line — FSS
- Underground Unknown Utility Line — ?UTL
- SUE Test Hole
- Water Meter
- Water Valve
- Fire Hydrant
- Sanitary Sewer Cleanout

*For Existing Utilities

- Utility Line Drawn from Record (Type as Shown) — W
- Designated Utility Line (Type as Shown) — W

REV: 2/1/2012

5/14/09

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-03

UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 027861 ENGINEER KEVIN C. ZDEB

2013-MAY-07

MA Engineering CONSULTANTS, INC. 598 E. Chatham Street, Suite 137 Cary, N. C. 27511

UTILITY CONSTRUCTION

GENERAL NOTES:

1. THE PROPOSED UTILITY CONSTRUCTION SHALL MEET THE APPLICABLE REQUIREMENTS OF THE NC DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" DATED JANUARY 2012.

2. THE EXISTING UTILITIES BELONG TO TOWN OF ROSEBORO AND SAMPSON COUNTY.

TOWN OF ROSEBORO
UTILITIES: 6"/8"/10"/12" WATER LINE
12"/18" GRAVITY SEWER
CONTACT: BUCK AMMONS
PHONE: 910-525-4121

SAMPSON COUNTY
UTILITIES: 4"/10"/12" WATER LINE
4"/6" FORCE MAIN SEWER
CONTACT: LEE CANNADY
PHONE: 910-592-0188

3. ALL WATER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL AND NATURAL RESOURCES, DIVISION OF ENVIRONMENTAL HEALTH. ALL SEWER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES, DIVISION OF WATER QUALITY. PERFORM ALL WORK IN ACCORDANCE WITH THE APPLICABLE PLUMBING CODES.

4. THE UTILITY OWNER OWNS THE EXISTING UTILITY FACILITIES AND WILL OWN THE NEW UTILITY FACILITIES AFTER ACCEPTANCE BY THE DEPARTMENT. THE DEPARTMENT OWNS THE CONSTRUCTION CONTRACT AND HAS ADMINISTRATIVE AUTHORITY. COMMUNICATIONS AND DECISIONS BETWEEN THE CONTRACTOR AND UTILITY OWNER ARE NOT BINDING UPON THE DEPARTMENT OR THIS CONTRACT UNLESS AUTHORIZED BY THE ENGINEER. AGREEMENTS BETWEEN THE UTILITY OWNER AND CONTRACTOR FOR THE WORK THAT IS NOT PART OF THIS CONTRACT OR IS SECONDARY TO THIS CONTRACT ARE ALLOWED, BUT ARE NOT BINDING UPON THE DEPARTMENT.

5. PROVIDE ACCESS FOR THE DEPARTMENT PERSONNEL AND THE OWNER'S REPRESENTATIVES TO ALL PHASES OF CONSTRUCTION. NOTIFY DEPARTMENT PERSONNEL AND THE UTILITY OWNER TWO WEEKS PRIOR TO COMMENCEMENT OF ANY WORK AND ONE WEEK PRIOR TO SERVICE INTERRUPTION. KEEP UTILITY OWNERS' REPRESENTATIVES INFORMED OF WORK PROGRESS AND PROVIDE OPPROTUNITY FOR INSPECTION OF CONSTRUCTION AND TESTING.

6. THE PLANS DEPICT THE BEST AVAILABLE INFORMATION FOR THE LOCATION, SIZE, AND TYPE OF MATERIAL FOR ALL EXISTING UTILITIES. MAKE INVESTIGATIONS FOR DETERMINING THE EXACT LOCATION, SIZE, AND TYPE MATERIAL OF THE EXISTING FACILITIES AS NECESSARY FOR THE CONSTRUCTION OF THE PROPOSED UTILITIES AND FOR AVOIDING DAMAGE TO EXISTING FACILITIES. REPAIR ANY DAMAGE INCURRED TO EXISTING FACILITIES TO THE ORIGINAL OR BETTER CONDITION AT NO ADDITONAL COST TO THE DEPARTMENT.

7. MAKE FINAL CONNECTIONS OF THE NEW WORK TO THE EXISTING SYSTEM WHERE INDICATED ON THE PLANS, AS REQUIRED TO FIT THE ACTUAL CONDITIONS, OR AS DIRECTED.

8. MAKE CONNECTIONS BETWEEN EXISTING AND PROPOSED UTILITIES AT TIMES MOST CONVENIENT TO THE PUBLIC, WITHOUT ENDANGERING THE UTILITY SERVICE, AND IN ACCORDANCE WITH THE UTILITY OWNER'S REQUIREMENTS. MAKE CONNECTIONS ON WEEKENDS, AT NIGHT, AND ON HOLIDAYS IF NECESSARY.

9. ALL UTILITY MATERIALS SHALL BE APPROVED PRIOR TO DELIVERY TO THE PROJECT. SEE 1500-7, " SUBMITTALS AND RECORDS" IN SECTION 1500 OF THE STANDARD SPECIFICATIONS.

PROJECT SPECIFIC NOTES:

1. ALL WATER LINE AND FORCE MAIN SEWER PIPE, 4-INCHES AND LARGER, INSTALLED BY OPEN TRENCH CONSTRUCTION SHALL BE PVC SDR-21 FOR SAMPSON COUNTY.

2. ALL WATER LINE AND FORCE MAIN SEWER PIPE, 4-INCHES AND LARGER, INSTALLED BY OPEN TRENCH CONSTRUCTION SHALL BE PVC C-900 DR-18 FOR THE TOWN OF ROSEBORO.

3. ALL WATER LINE AND FORCE MAIN SEWER PIPE TO BE INSTALLED BY HORIZONTAL DIRECTIONAL DRILL SHALL BE HDPE DR-9. HDPE PIPE SHALL BE FILLED WITH WATER AND NOT BE CONNECTED TO ANY OTHER PIPE OR FITTINGS FOR ONE WEEK FROM THE TIME OF INSTALLATION. ALL HDPE PIPE SHALL TRANSITION TO DUCTILE IRON TO TIE-IN TO PVC. REFER TO PIPE TRANSITION DETAIL ON SHEET UC-3B.

4. ALL SANITARY GRAVITY SEWER PIPE SHALL BE PVC SDR-35, EXCEPT WHERE NOTED ON THE PLANS.

5. ALL WATER LINE AND FORCE MAIN SEWER FITTINGS, 4-INCHES THROUGH 12-INCHES IN DIAMETER, SHALL BE RESTRAINED JOINT DUCTILE IRON PIPE IN ACCORDANCE WITH ANSI/AWWA C110/A21.10.

6. CONTRACTOR'S ATTENTION IS DIRECTED TO SECTIONS 102, 107, AND 1550 OF THE STANDARD SPECIFICATIONS CONCERNING TRENCHLESS INSTALLATION. IT IS CONTRACTOR'S RESPONSIBILITY TO HAVE BORE PATH DESIGNED AND SEALED BY A LICENSED NORTH CAROLINA PROFESSIONAL ENGINEER. NO DAMAGE IS ALLOWED TO RIVER, WETLANDS, OR BUFFER ZONES.

7. ANY BENDS OF PVC WATER PIPE NOT SPECIFICALLY CALLED OUT WITH A 90, 45, 22.5 OR 11.25 DEGREE BEND FITTING, SHALL BE CONSTRUCTED BY A RADIAL BEND OF THE PIPE AS NOTED ON THE PLANS OR IN ACCORDANCE WITH PIPE MANUFACTURE'S SPECIFICATIONS (WHICHEVER IS MORE STRINGENT) - OR A COMBINATION OF BEND FITTINGS AND A RADIAL BEND OF THE PIPE. DEFLECTION OF THE PIPE JOINTS ON PVC PIPE MATERIAL IS NOT AN ACCEPTABLE METHOD OF PIPE BENDING.

8. PROVIDE THRUST RESTRAINT ON THE EXISTING WATER LINE AND EXISTING FORCE MAIN SEWER LINE WHERE TIE-INS ARE MADE AS NECESSARY.

9. CONTRACTOR SHALL NOT OPERATE ANY VALVES ON THE EXISTING UTILITY SYSTEMS. CONTRACTOR SHALL CONTACT THE UTILITY OWNER TO CONDUCT STRATEGIC OPERATION OF VALVES FOR SERVICE INTERRUPTION IN ORDER TO PERFORM SPECIFIC WORK.

10. SAMPSON COUNTY SHALL SUPPLY CONTRACTOR WITH NEW WATER METERS FOR INSTALLATION. SAMPSON COUNTY SHALL RETAIN OWNERSHIP OF EXISTING WATER METERS TO BE REPLACED.

10. SAMPSON COUNTY SHALL RETAIN OWNERSHIP OF EXISTING FIRE HYDRANTS TO BE REPLACED.

11. WHERE WATERLINE AND FORCE MAIN ARE TO BE INSTALLED WITHIN A STEEL ENCASEMENT PIPE, THE CARRIER PIPE SHALL BE RESTRAINED JOINT DUCTILE IRON SUCH AS TR-FLEX OR APPROVED EQUAL.

12. ALL PIPING AT WATER METER STATION SHALL BE DUCTILE IRON PIPE AND EITHER RESTRAINED JOINT CONSTRUCTION OR FLANGED JOINTS. SEE DETAIL ON SHEET UC-3G.

13. ALL WATER SERVICE LINES SHALL BE PE CTS SDR-7 PIPE UNLESS OTHERWISE NOTED.

14. TOWN OF ROSEBORO WATER SERVICE LINES CROSSING NC-24 SHALL BE 1" PE CTS SDR-7 WITHIN A 2" PVC SCH 80 PIPE ENCASEMENT PIPE.

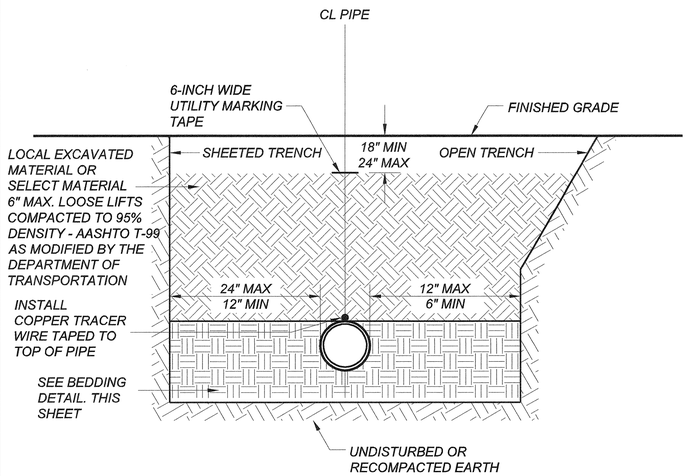
$$$$$$SYSTIME$$$$
$$$$$$$$$DGN$$$$$$$$$$$$$$$$
$$$USERNAME$$$$

UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 042861 ENGINEER KEVIN C. ZOEB

2013-MAY-07

MA Engineering CONSULTANTS, INC.
598 E. Chatham Street, Suite 137
Cary, N. C. 27511



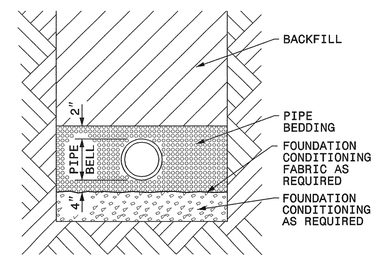
NOTES:
1. ALL SHORING & TRENCHING SHALL COMPLY WITH OSHA SAFETY STANDARDS FOR THE CONSTRUCTION INDUSTRY.
2. BELL HOLES NOT SHOWN.
3. ALL BACKFILL MATERIAL SHALL BE FREE OF ROCKS, FOREIGN MATERIAL, AND FROZEN EARTH.

GENERAL TRENCH DETAIL
NTS

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		

BEDDING DETAIL



PLACE FOUNDATION CONDITIONING MATERIAL BELOW BEDDING IF REQUIRED, AS DIRECTED BY ENGINEER. PIPE BEDDED IN SELECT MATERIAL, CLASS II (TYPE 1) OR CLASS III. 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 APPROXIMATELY 95% DENSITY IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED BY THE DEPARTMENT OF TRANSPORTATION.

TRENCH AND BEDDING DETAILS

5/28/99
5/3/2013
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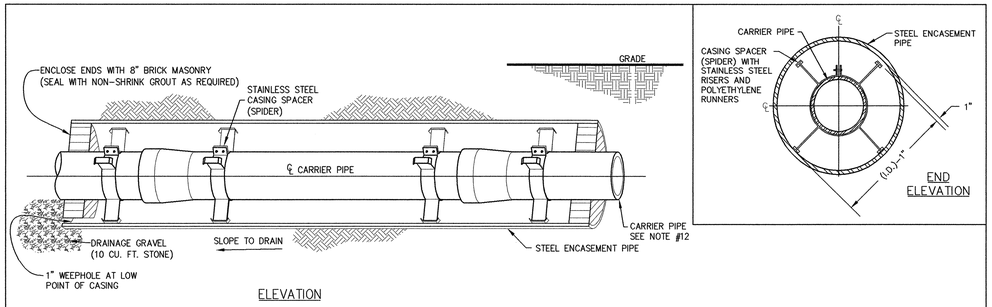
PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-3B

UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 027661 ENGINEER KEVIN C. ZOEB

2013-MAY-07

MA Engineering CONSULTANTS, INC.
598 E. Chatham Street, Suite 137
Cary, N. C. 27511



ELEVATION

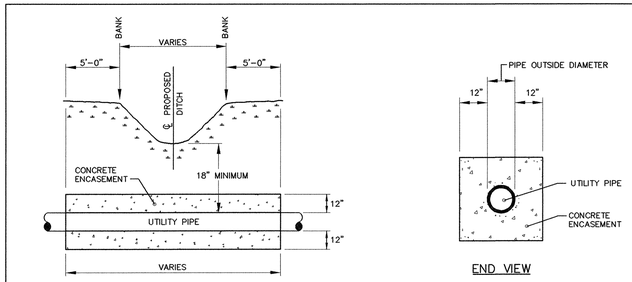
NOTES:

1. CASING SPACERS "SPIDERS" SHALL BE USED FOR SUPPORT OF THE CARRIER PIPE WITHIN THE STEEL ENCASEMENT PIPE. SPIDERS SHALL BE CENTERED AND RESTRAINED. SPIDERS SHALL HAVE A STAINLESS STEEL SHEE AND STAINLESS STEEL RISERS WITH POLYETHYLENE RUNNERS. MANUFACTURED BY CASCADE WATERWORKS MFG. COMPANY, OR APPROVED EQUAL.
2. A MINIMUM SPACING OF 2 SPIDERS PER JOINT OF CARRIER PIPE SHALL BE REQUIRED IN ORDER TO PREVENT SAGGING OF CARRIER PIPE. REFER TO THE MANUFACTURER'S RECOMMENDATIONS FOR SPACING AND SIZE OF SPACERS BASED ON THE SIZE AND TYPE OF THE CARRIER PIPE.
3. THE SPIDERS SHALL BE SPACED EVENLY ALONG THE CARRIER PIPE SUCH THAT EACH SPIDER SUPPORTS THE SAME UNIT WEIGHT OF THE CARRIER MAIN.
4. REFER TO PLAN SHEETS AND PROFILE SHEETS FOR LENGTH AND DIAMETER OF PROPOSED STEEL ENCASEMENT PIPES FOR EACH CROSSING.
5. STEEL ENCASEMENT PIPES SHALL EXTEND AS A MINIMUM: TO 3 FEET BEHIND BACK OF CURB LINES; TO 5 FEET BEYOND THE TOE OF SLOPE IN FILL SECTIONS, AND; FROM DITCH LINE TO DITCH LINE IN CUT SECTIONS.
6. THE TOP OF ENCASEMENT PIPE SHALL PROVIDE THE FOLLOWING MINIMUM BURY DEPTHS: 3 FEET BELOW THE TRAVEL SURFACE OF ROADWAYS, AND; 2 FEET BELOW PAVED OR UNPAVED DITCH ELEVATIONS; UNLESS OTHERWISE NOTED ON THE PLANS.
7. THE INSIDE DIAMETER OF THE ENCASEMENT PIPE SHALL BE AT LEAST 2 INCHES GREATER THAN THE LARGEST OUTSIDE DIAMETER OF THE CARRIER PIPE JOINTS OR COUPLINGS FOR CARRIER PIPE LESS THAN 6 INCHES IN DIAMETER; AND AT LEAST 4 INCHES GREATER FOR CARRIER PIPE 6 INCHES AND LARGER IN DIAMETER.
8. ALL JOINTS BETWEEN THE SECTIONS OF ENCASEMENT PIPE SHALL BE FULLY WELDED AROUND THE COMPLETE CIRCUMFERENCE OF THE PIPE.
9. FOR EXISTING UTILITY PIPE INSTALLATIONS, THE STEEL ENCASEMENT PIPE SHALL BE A SPLIT STEEL ENCASEMENT PIPE MADE UP OF TWO (2) SEMI-CIRCULAR SECTIONS JOINED BY A CONTINUOUS WELD FROM ONE END TO THE OTHER WITHOUT ANY TRACEABLE VOIDS. JOINTS BETWEEN HORIZONTAL SECTIONS OF ENCASEMENT PIPE SHALL BE FULLY WELDED AROUND THE COMPLETE CIRCUMFERENCE OF THE PIPE.
10. STEEL ENCASEMENT PIPES SHALL BE EITHER SMOOTH WALL OR SPIRAL WELDED AND HAVE A SPECIFIED MINIMUM YIELD STRENGTH OF AT LEAST 35,000 PSI.
11. UNCOATED AND UNPROTECTED STEEL ENCASEMENT PIPE SHALL HAVE A MINIMUM WALL THICKNESS AS NOTED BELOW FOR THE FOLLOWING OUTSIDE DIAMETER OF PIPES:

0.188 INCHES FOR 12" AND SMALLER	0.312 INCHES FOR 26"
0.250 INCHES FOR 14"	0.312 INCHES FOR 28"
0.250 INCHES FOR 16"	0.312 INCHES FOR 30"
0.250 INCHES FOR 18"	0.375 INCHES FOR 36"
0.250 INCHES FOR 20"	0.500 INCHES FOR 42"
0.250 INCHES FOR 24"	0.500 INCHES FOR 48"

12. FOR TOWN OF ROSEBORO, CARRIER PIPE SHALL BE TR-FLEX DUCTILE IRON PIPE FOR WATER LINE AND PVC SDR-35 FOR SANITARY GRAVITY SEWER. SAMPSON COUNTY CARRIER PIPE SHALL BE PVC SDR-21 WITH PIPE RESTRAINT FITTINGS FOR WATER LINES AND FORCE MAIN SEWER.

STEEL ENCASEMENT PIPE UNDER ROADS



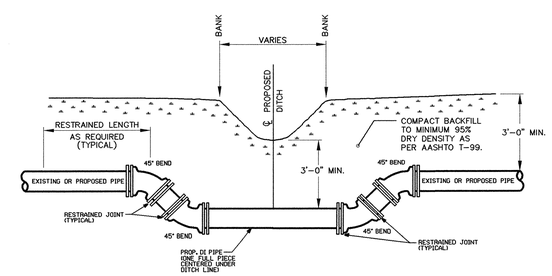
CROSS SECTION

END VIEW

NOTES:

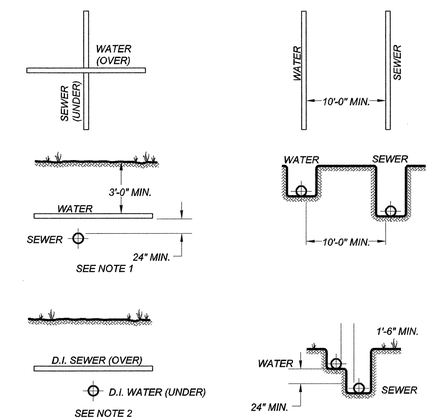
1. CONCRETE SHALL BE CLASS B – 2,500 P.S.I. MIN. COMPRESSIVE STRENGTH.
2. CONCRETE ENCASEMENT IS NOT REQUIRED WHEN PIPE IS AT LEAST THREE (3) FEET UNDER CENTERLINE OF CREEK BOTTOM.

UTILITY PIPE CONCRETE ENCASEMENT FOR DITCH/CREEK/STREAM CROSSING



CROSS SECTION

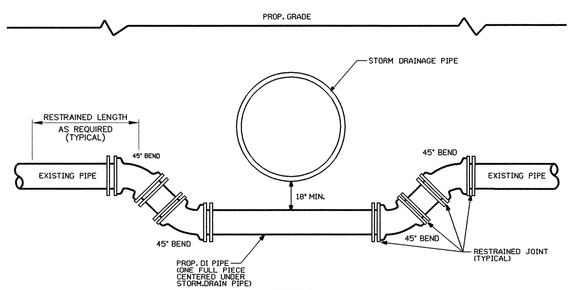
FORCE MAIN / WATER LINE AT DITCH/STREAM/CREEK CROSSING



NOTES:

1. WHERE THE WATER MAIN IS INSTALLED ABOVE THE SEWER, BUT LESS THAN 24" CLEAR, BOTH THE WATER AND THE SEWER MAINS SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE WITH WATER MAIN STANDARD JOINTS FOR A LATERAL DISTANCE OF AT LEAST 10 FEET ON EACH SIDE OF THE POINT OF CROSSING.
2. WHERE THE WATER PIPE IS LAID UNDER SEWER, BOTH THE WATER AND THE SEWER MAINS SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE WITH WATER MAIN STANDARD JOINTS FOR A LATERAL DISTANCE OF AT LEAST 10 FEET ON EACH SIDE OF THE POINT OF CROSSING.
3. "SEWER" SHALL BE CONSIDERED TO MEAN EITHER SANITARY SEWER OR STORM SEWER.

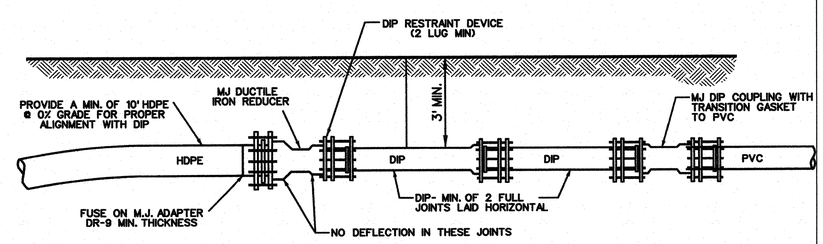
TYPICAL PIPE CROSSING AND PARALLELS
NTS



PROFILE
NTS

NOTES:
1. ALL FITTINGS AND JOINTS SHALL BE RESTRAINED JOINT DESIGN.
2. PROVIDE APPROPRIATE RESTRAINED LENGTH AS PER TABLE HEREIN.

FORCE MAIN / WATER MAIN CROSSING UNDER STORM DRAINAGE PIPE



HDPE TO D.I. PIPE TRANSITION TIE-IN DETAIL

GENERAL PIPE DETAILS

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-3C

UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 027681 ENGINEER KEVIN C. ZOLLES

2013-MAY-07

MA Engineering CONSULTANTS, INC.
598 E. Chatham Street, Suite 137
Cary, N. C. 27511

RESTRAINED JOINT DESIGN TABLE

FITTING	REQUIRED RESTRAINED LENGTH (FT) OF BARE D.I. PIPE BY DEPTH OF COVER							
HORIZONTAL BENDS	**3 FT**	**4 FT**	**5 FT**	**6 FT**	**7 FT**	**8 FT**	**9 FT**	**10 FT**
4 INCH DIA - 11.25 DEG	2	2	1	1	1	1	1	1
4 INCH DIA - 22.5 DEG	4	3	3	2	2	2	2	2
4 INCH DIA - 45 DEG	7	6	6	5	5	4	4	4
6 INCH DIA - 11.25 DEG	3	2	2	2	2	1	1	1
6 INCH DIA - 22.5 DEG	5	4	4	3	3	3	3	2
6 INCH DIA - 45 DEG	11	9	8	7	7	6	5	5
10 INCH DIA - 11.25 DEG	4	3	3	3	2	2	2	2
10 INCH DIA - 22.5 DEG	8	7	6	5	5	5	4	4
10 INCH DIA - 45 DEG	17	14	13	11	10	9	9	8
VERTICAL DOWN BENDS	**3 FT**	**4 FT**	**5 FT**	**6 FT**	**7 FT**	**8 FT**	**9 FT**	**10 FT**
4 INCH DIA - 11.25 DEG	5	4	4	3	3	3	3	2
4 INCH DIA - 22.5 DEG	10	9	8	7	6	6	5	5
4 INCH DIA - 45 DEG	22	19	16	15	13	12	11	10
6 INCH DIA - 11.25 DEG	7	6	6	5	4	4	4	3
6 INCH DIA - 22.5 DEG	15	13	11	10	9	8	8	7
6 INCH DIA - 45 DEG	31	27	23	21	19	17	16	15
10 INCH DIA - 11.25 DEG	12	10	9	8	7	7	6	6
10 INCH DIA - 22.5 DEG	23	20	18	16	14	13	12	11
10 INCH DIA - 45 DEG	49	42	37	33	30	27	25	23
VERTICAL UP BENDS	**3 FT**	**4 FT**	**5 FT**	**6 FT**	**7 FT**	**8 FT**	**9 FT**	**10 FT**
4 INCH DIA - 11.25 DEG	X	2	1	1	1	1	1	1
4 INCH DIA - 22.5 DEG	X	3	3	2	2	2	2	2
4 INCH DIA - 45 DEG	X	6	6	5	5	4	4	4
6 INCH DIA - 11.25 DEG	X	2	2	2	2	1	1	1
6 INCH DIA - 22.5 DEG	X	4	4	3	3	3	3	2
6 INCH DIA - 45 DEG	X	9	8	7	7	6	5	5
10 INCH DIA - 11.25 DEG	X	3	3	3	2	2	2	2
10 INCH DIA - 22.5 DEG	X	7	6	5	5	5	4	4
10 INCH DIA - 45 DEG	X	14	13	11	10	9	9	8

ASSUMPTIONS

LAYING CONDITION = TYPE 4
SOIL DESIGNATION = GC = COHESIVE-GRANULAR
DESIGN PRESSURE = 200 PSI (TEST PRESSURE)
SAFETY FACTOR = 1.5

NOTES

1. RESTRAINED LENGTH IS MEASURED FROM THE CENTER OF THE BEND AS FOLLOWS:
   A. HORIZONTAL AND VERTICAL BENDS: ALONG EACH SIDE OF BEND.
   B. HORIZONTAL AND VERTICAL BENDS - OFFSET OR COMBINED: ALONG THE OUTER SIDE OF EACH BEND. ALL PIPE BETWEEN THE TWO BENDS SHALL BE RESTRAINED JOINT WHEN THE DISTANCE BETWEEN THEM IS EQUAL TO OR LESS THAN THE REQUIRED RESTRAINED LENGTH. WHEN THE DISTANCE BETWEEN BENDS IS LESS THAN REQUIRED, THE BALANCE OF THE REQUIRED RESTRAINED LENGTH SHALL BE ADDED ON TO THE LENGTH ALONG THE OUTSIDE OF EACH BEND RESPECTIVELY TO MAKE UP FOR THE DEFICIENCY IN THAT DIRECTION.
   HORIZONTAL BEND EXAMPLE...
   INSTALL A 8 INCH 45 DEG BEND AND A 22.5 DEG BEND WITH 10 FEET BETWEEN BENDS AND 4 FEET OF COVER. THE CONTRACTOR SHALL PROVIDE AN ADDITIONAL 1 FOOT OF RESTRAINED LENGTH BEYOND THE 45 DEGREE BEND (FOR A TOTAL OF 13 FEET) AND AN ADDITIONAL 7 FEET OF RESTRAINED LENGTH BEYOND THE 22.5 DEGREE BEND (FOR A TOTAL OF 13 FEET).
2. WHEN IT IS NOT POSSIBLE TO INSTALL THE RESTRAINED LENGTHS AS NOTED BY THIS TABLE, THE CONTRACTOR SHALL INSTALL THE APPROPRIATE CONCRETE THRUST RESTRAINTS AS PER THE DETAILS HEREIN.

PVC PIPE RESTRAINED JOINT DESIGN TABLE

FITTING	REQUIRED RESTRAINED LENGTH (FT) OF PVC PIPE BY DEPTH OF COVER							
HORIZONTAL BENDS	**3 FT**	**4 FT**	**5 FT**	**6 FT**	**7 FT**	**8 FT**	**9 FT**	**10 FT**
4 INCH DIA - 11.25 DEG	2	2	2	1	1	1	1	1
4 INCH DIA - 22.5 DEG	4	3	3	3	2	2	2	2
4 INCH DIA - 45 DEG	7	6	5	5	4	4	4	3
4 INCH DIA - 90 DEG	16	14	12	11	10	9	8	7
6 INCH DIA - 11.25 DEG	3	2	2	2	2	2	2	1
6 INCH DIA - 22.5 DEG	5	4	4	3	3	3	3	2
6 INCH DIA - 45 DEG	10	8	7	6	6	5	5	5
6 INCH DIA - 90 DEG	22	19	17	15	13	12	11	10
10 INCH DIA - 11.25 DEG	4	3	3	3	2	2	2	2
10 INCH DIA - 22.5 DEG	7	6	6	5	5	4	4	4
10 INCH DIA - 45 DEG	15	13	11	10	9	8	7	7
10 INCH DIA - 90 DEG	35	30	26	23	21	19	17	16
VERTICAL DOWN BENDS	**3 FT**	**4 FT**	**5 FT**	**6 FT**	**7 FT**	**8 FT**	**9 FT**	**10 FT**
4 INCH DIA - 11.25 DEG	6	5	4	4	3	3	3	3
4 INCH DIA - 22.5 DEG	12	10	8	7	6	6	5	5
4 INCH DIA - 45 DEG	24	20	17	15	13	12	11	10
6 INCH DIA - 11.25 DEG	8	7	6	5	5	4	4	4
6 INCH DIA - 22.5 DEG	17	14	12	10	9	8	7	7
6 INCH DIA - 45 DEG	34	28	24	21	18	16	15	14
10 INCH DIA - 11.25 DEG	13	11	9	8	7	7	6	5
10 INCH DIA - 22.5 DEG	26	21	18	16	14	13	11	11
10 INCH DIA - 45 DEG	53	44	37	32	29	26	23	21
VERTICAL UP BENDS	**3 FT**	**4 FT**	**5 FT**	**6 FT**	**7 FT**	**8 FT**	**9 FT**	**10 FT**
4 INCH DIA - 11.25 DEG	2	2	2	1	1	1	1	1
4 INCH DIA - 22.5 DEG	4	3	3	3	2	2	2	2
4 INCH DIA - 45 DEG	7	6	5	5	4	4	4	3
6 INCH DIA - 11.25 DEG	3	2	2	2	2	2	2	1
6 INCH DIA - 22.5 DEG	5	4	4	3	3	3	3	2
6 INCH DIA - 45 DEG	10	8	7	6	6	5	5	5
10 INCH DIA - 11.25 DEG	4	3	3	3	2	2	2	2
10 INCH DIA - 22.5 DEG	7	6	6	5	5	4	4	4
10 INCH DIA - 45 DEG	15	13	11	10	9	8	7	7

ASSUMPTIONS

LAYING CONDITION = TYPE 4
SOIL DESIGNATION = GC = COHESIVE-GRANULAR
DESIGN PRESSURE = 200 PSI (TEST PRESSURE)
SAFETY FACTOR = 1.5

NOTES

1. RL = RUN LENGTH BETWEEN FIRST JOINTS OF PIPE ALONG THE RUN LINE OF TEE.
2. RESTRAINED LENGTH IS MEASURED AS FOLLOWS:
   A. HORIZONTAL/VERTICAL BENDS: ALONG EACH SIDE OF BEND.
   B. HORIZONTAL/VERTICAL BENDS - OFFSET: ALONG THE OUTER SIDE OF EACH BEND. ALL PIPE BETWEEN THE TWO BENDS SHALL BE RESTRAINED JOINT.
   C. DEAD ENDS: ALONG PIPE FROM THE PLUG.
   D. VALVES: ALONG THE PIPE IN EACH DIRECTION FROM THE VALVE .
   E. REDUCERS: ALONG THE LARGER PIPE.
   F. TEES: ALONG THE BRANCH PIPE FROM THE TEE .
3. WHEN IT IS NOT POSSIBLE TO INSTALL THE RESTRAINED LENGTHS AS NOTED BY THIS TABLE, CONTRACTOR SHALL INSTALL THE APPROPRIATE CONCRETE THRUST RESTRAINTS AS PER THE DETAILS HEREIN.

BASED ON TEST PRESSURE OF 200 P.S.I.

HORIZONTAL RESTRAINT
(ALL AREAS GIVEN ARE IN SQUARE FEET)

PIPE SIZE	DEGREE OF BEND	LBS. STATIC THRUST *	ALLOWABLE SOIL BEARING (PSF) 1000	2000	3000	4000	5000	6000	7000	8000
4"	11/4°	616	1	1	1	1	1	1	1	1
	22 1/2°	1,226	1	1	1	1	1	1	1	1
	45°	2,405	2	2	1	1	1	1	1	1
	90°	4,444	4	2	1	1	1	1	1	1
	TEE/PLUG	1,143	3	2	1	1	1	1	1	1
6"	11/4°	1,385	2	1	1	1	1	1	1	1
	22 1/2°	2,758	3	2	1	1	1	1	1	1
	45°	5,409	5	3	2	2	1	1	1	1
	90°	9,999	10	5	3	3	2	2	1	1
	TEE/PLUG	7,068	7	4	3	2	2	1	1	1
8"	11/4°	2,464	3	1	1	1	1	1	1	1
	22 1/2°	4,904	5	3	2	1	1	1	1	1
	45°	9,618	10	5	3	2	2	1	1	1
	90°	17,773	18	9	6	4	3	3	2	2
	TEE/PLUG	12,668	13	7	4	3	3	2	2	1
10"	11/4°	3,846	4	2	1	1	1	1	1	1
	22 1/2°	7,658	8	4	3	2	2	1	1	1
	45°	15,028	15	8	5	4	3	3	2	2
	90°	27,768	28	14	9	7	5	5	4	3
	TEE/PLUG	19,636	20	10	7	5	4	3	3	2
12"	11/4°	5,535	6	3	2	2	1	1	1	1
	22 1/2°	11,032	12	6	4	3	2	2	1	1
	45°	21,652	22	11	7	5	4	3	3	2
	90°	39,987	40	20	13	10	8	6	5	5
	TEE/PLUG	28,274	28	14	9	7	6	5	4	4
14"	11/4°	7,534	8	4	3	2	2	1	1	1
	22 1/2°	15,016	15	8	5	4	3	3	2	2
	45°	29,455	29	15	10	7	6	5	4	4
	90°	54,426	54	27	18	14	11	9	8	7
	TEE/PLUG	38,486	38	19	13	10	8	6	5	5
16"	11/4°	9,854	10	5	3	3	2	2	1	1
	22 1/2°	19,616	20	10	7	5	4	3	3	2
	45°	38,471	38	19	13	10	8	6	5	5
	90°	71,085	71	36	24	18	14	12	10	9
	TEE/PLUG	50,265	50	25	17	13	10	8	7	6

* INCLUDES 1.25 SAFETY FACTOR

VERTICAL RESTRAINT
(ALL VOLUMES GIVEN ARE IN CUBIC YARDS)**

PIPE SIZE	RESTRAINING RODS NO.REQ'D	DIA.	DEGREE OF BEND 11 1/4°	22 1/2°	45°
4"	2	1/2"	0.25	0.50	0.75
6"	2	1/2"	0.50	1.0	1.75
8"	2	5/8"	0.75	1.50	3.0
10"	2	3/4"	1.25	2.25	4.50
12"	2	7/8"	1.75	3.25	6.50
14"	4	5/8"	2.25	4.50	8.75
16"	4	3/4"	3.0	6.0	11.50

**INCLUDES 1.50 SAFETY FACTOR

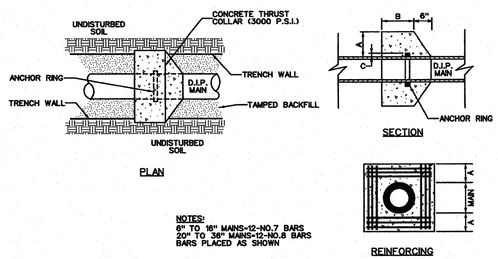
GENERAL NOTES:
1. CONCRETE SHALL BE CLASS "B".
2. CONCRETE SHALL NOT CONTACT BOLTS ENDS OF MECHANICAL JOINT FITTINGS.
3. CONSULT WITH ENGINEER FOR CONCRETE REQUIREMENTS ON MAINS LARGER THAN 16 INCHES. (FOR VERTICAL & HORIZONTAL BENDS)
4. ALLOWABLE SOIL BEARING SHALL BE DETERMINED BY THE ENGINEER.

REVISIONS		
NO.	DATE	DESCRIPTION

SHEET 2 OF 2

THRUST RESTRAINT FOR WATER MAINS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
RALEIGH, N.C.

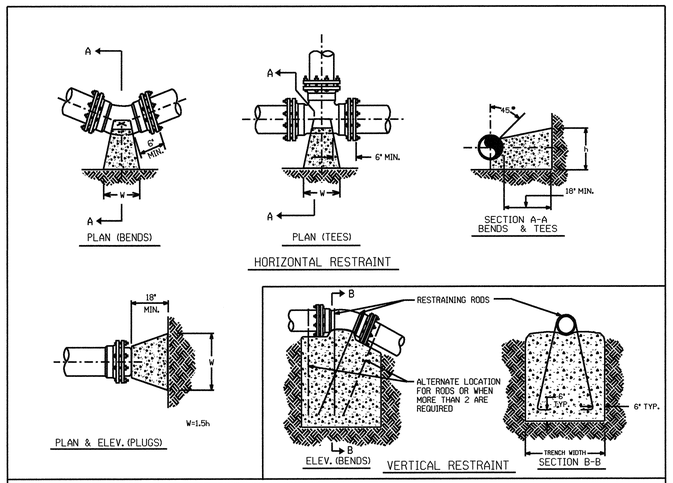


NOTES:
6" TO 16" MAINS=12-NO.7 BARS
20" TO 36" MAINS=12-NO.8 BARS
BARS PLACED AS SHOWN

SCHEDULE

PIPE DIAMETER	CONCRETE THRUST COLLAR A	B	ANCHOR RING C	RING REQUIRED
6",8",12"	1'-0"	1'-0"	2"	ONE
16"	1'-4"	1'-0"	2"	ONE
20"	1'-4"	1'-0"	3"	ONE
24"	1'-4"	1'-0"	3"	TWO
30"	1'-4"	1'-2"	4"	TWO
36"	1'-4"	1'-4"	4"	TWO

HORIZONTAL THRUST COLLAR



THRUST RESTRAINT FOR PIPE LINES

PIPE RESTRAINT DETAILS

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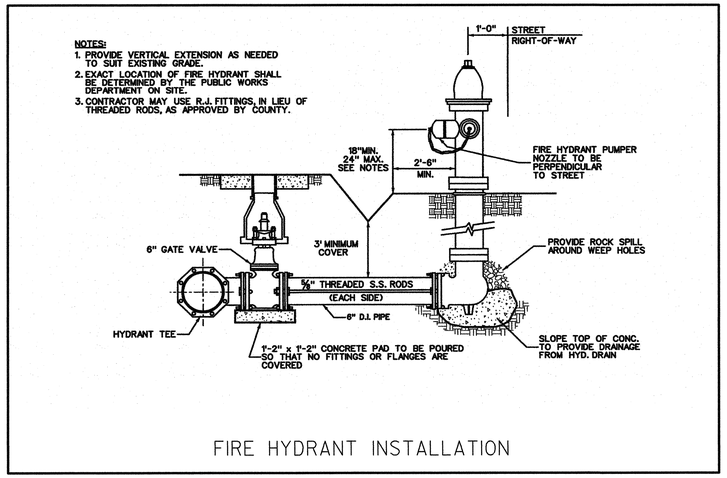
PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-3D

UTILITY DESIGN ENGINEER

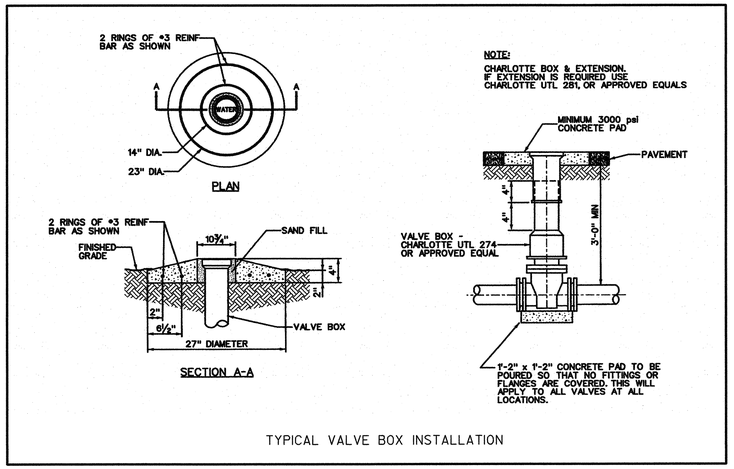
NORTH CAROLINA PROFESSIONAL SEAL 027861 ENGINEER KEVIN C. ZOBEL

2013-MAY-07

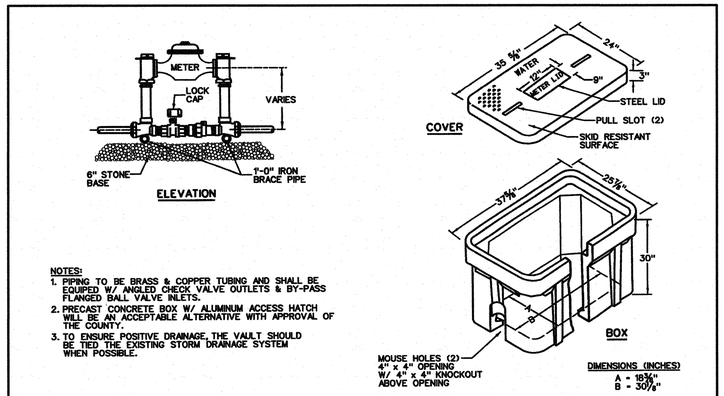
MA Engineering CONSULTANTS, INC.
598 E. Chatham Street, Suite 137
Cary, N. C. 27511



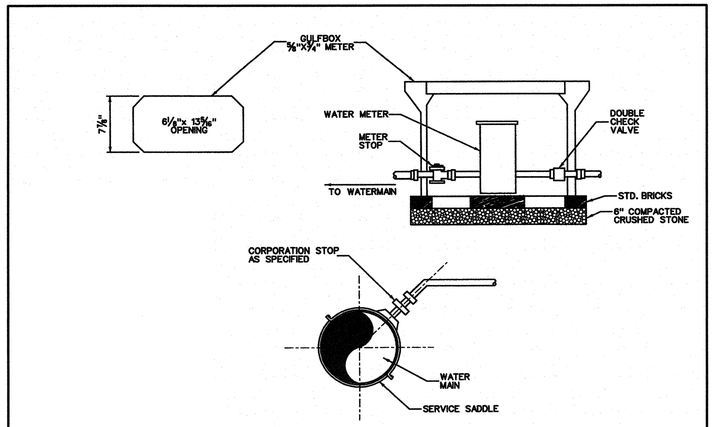
FIRE HYDRANT INSTALLATION



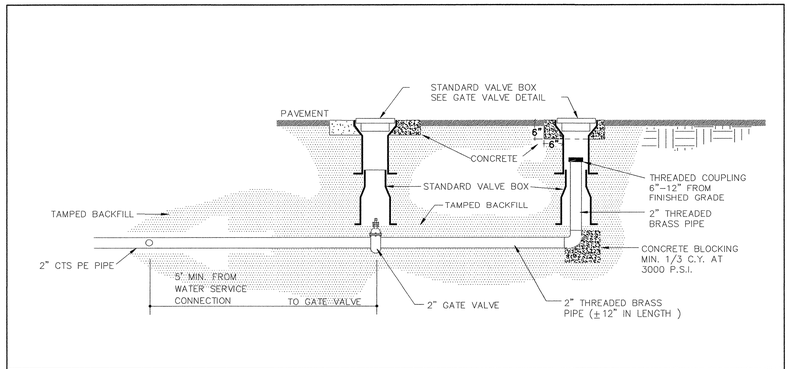
TYPICAL VALVE BOX INSTALLATION



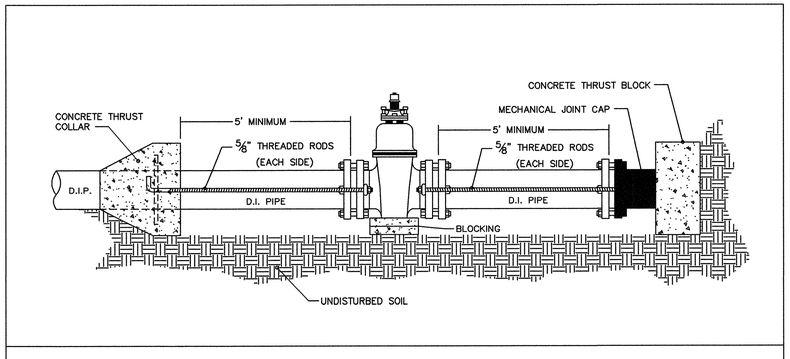
STANDARD 2" METER INSTALLATION AND VAULT



WATER SERVICE ASSEMBLY



STANDARD 2" BLOW-OFF ASSEMBLY



STANDARD CAPPING DETAIL

WATER LINE DETAILS

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5/3/2013
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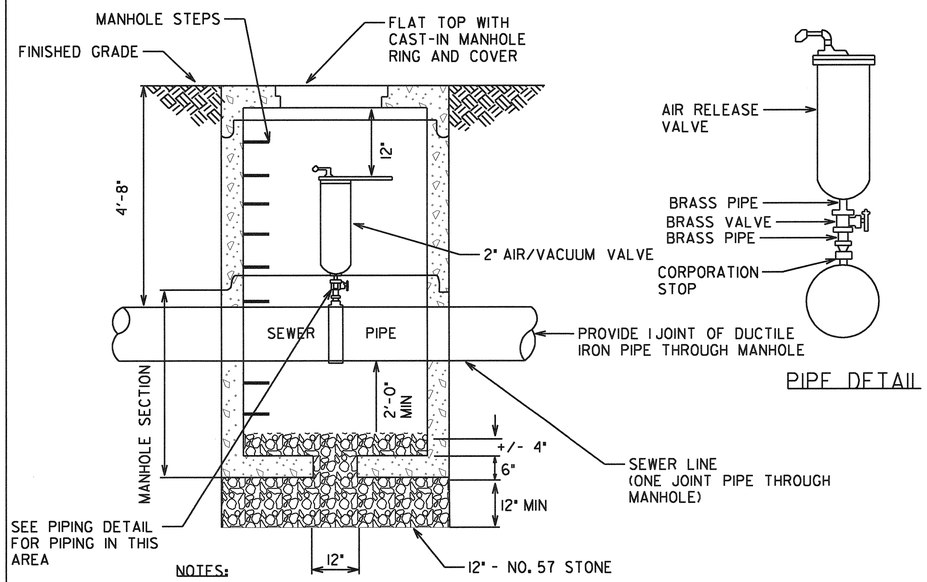


PIPE DETAIL

NOTES:

1. TAP PIPE AND ISOLATION VALVE TO BE SAME SIZE AS AIR RELEASE VALVE

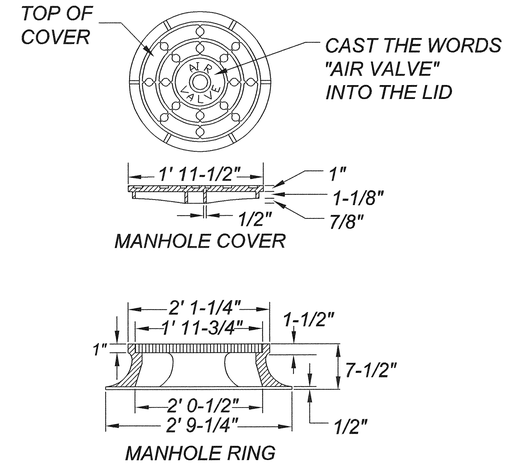
2. ALL PIPING AND FITTINGS IN THE MANHOLE, SHALL BE BRASS OR BRONZE UNLESS OTHERWISE NOTED.

3. MANHOLE STEPS SHALL BE PLACED 16" O.C. WHEN DEPTH OF MANHOLE EXCEEDS 5 FEET.

4. CENTER MANHOLE OPENING, FOR MANHOLE DEPTHS LESS THAN 5 FEET.

AIR RELEASE VALVE MANHOLE

NTS



FOR AIR RELEASE VALVES

MANHOLE RING AND COVER

NTS

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-3E

UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 027864 ENGINEER KEVIN C. ZOLEB

2013-MAY-07

MA Engineering CONSULTANTS, INC.
598 E. Chatham Street, Suite 137
Cary, N. C. 27511

SANITARY FORCE MAIN DETAILS

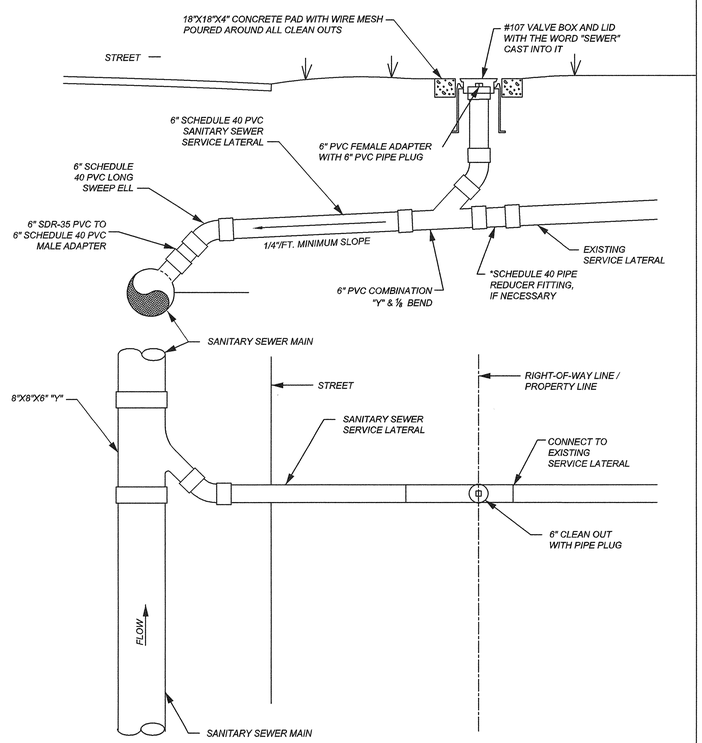
PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-3F

UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 027683 ENGINEER KEVIN C. ZDEB

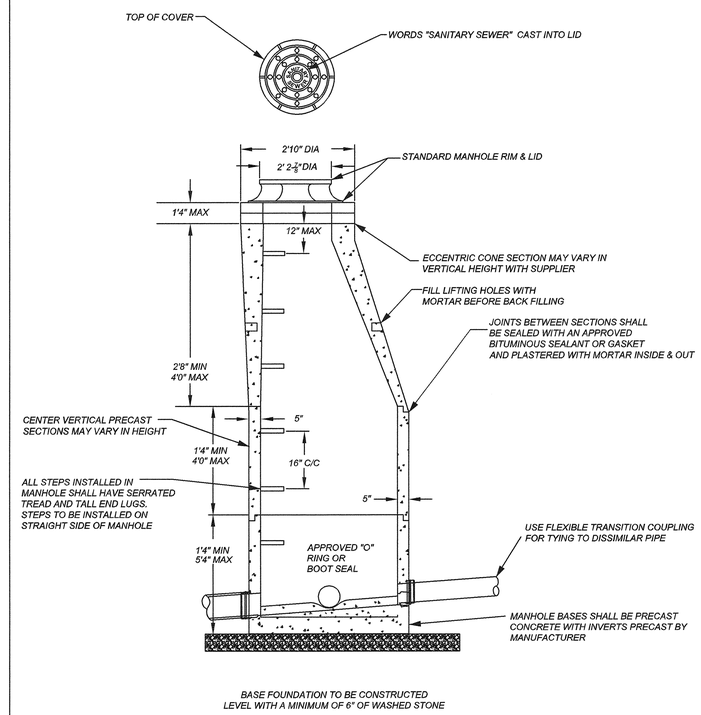
2013-MAY-07

MA Engineering CONSULTANTS, INC.
598 E. Chatham Street, Suite 137
Cary, N. C. 27511



NOTES:
1. IF THERE IS A DRAINAGE DITCH, THE CLEAN OUT SHALL BE A MINIMUM OF 3' BEHIND IT.
2. EXISTING SERVICE LATERAL MAY BE 4" OR 6". WHERE NECESSARY, THE CONTRACTOR SHALL INSTALL A 6"x4" REDUCER FITTING TO MATCH THE EXISTING LATERAL PIPE DIAMETER.

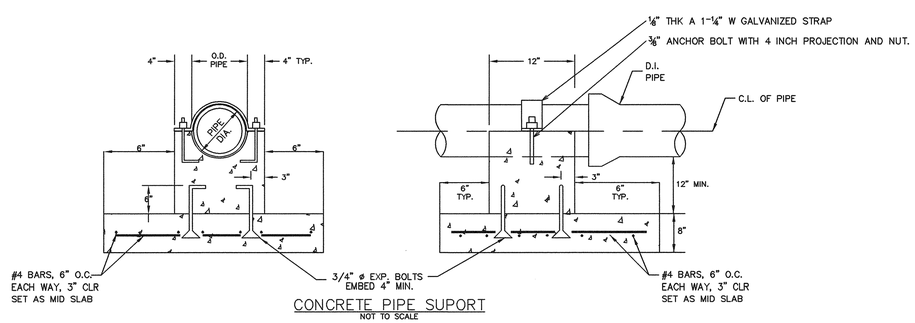
SERVICE LATERAL AND CLEANOUT
NTS



NOTE:
MANHOLES SUBJECT TO VEHICULAR TRAFFIC SHALL BE DESIGNED FOR H20 LOADING.

PRE CAST CONCRETE MANHOLE
NTS

NOTES:
1. TWO SUPPORTS PER PIPE LENGTH, EVENLY SPACED.
2. FOR USE WHERE PIPE IS TO BE ABOVE EXISTING GROUND AND WHERE PIPE WILL BE EXPOSED.



CONCRETE PIPE SUPORT
NOT TO SCALE

CONCRETE PIPE SUPPORT DETAIL

GRAVITY SANITARY SEWER DETAILS

5/28/99

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PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-3G

UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 027681 ENGINEER KEVIN C. ZOLES

2013-MAY-07

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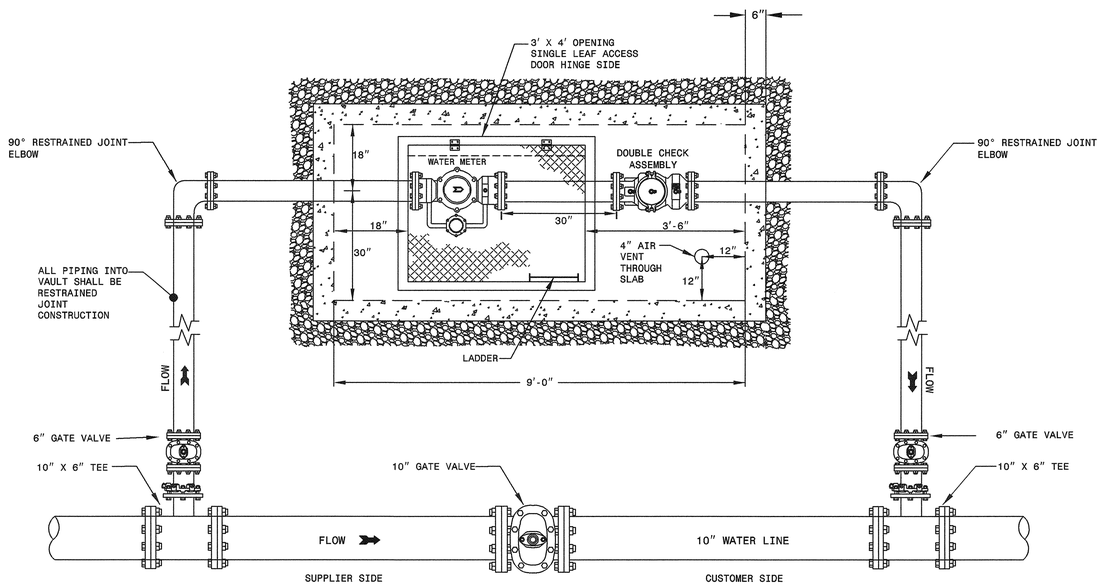
598 E. Chatham Street, Suite 137
Cary, N. C. 27511



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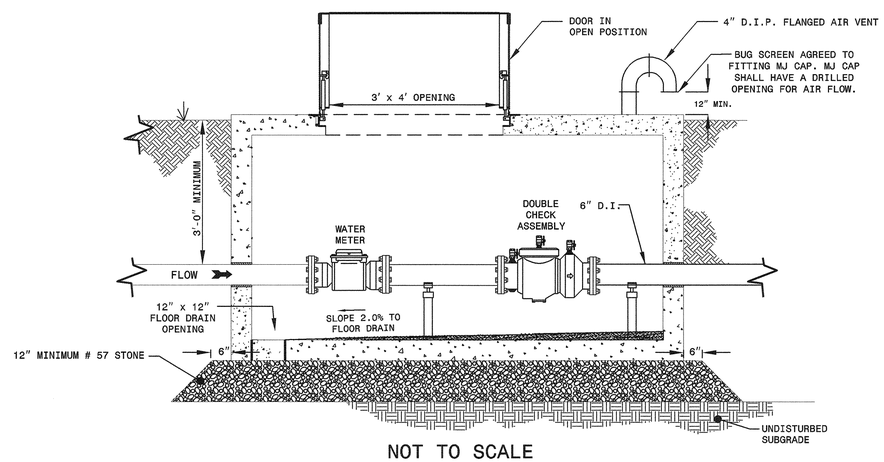
PLAN VIEW



NOT TO SCALE

VAULT CROSS SECTION

NOTES:

1. ALL PIPE BETWEEN TEE AT NEW WATER LINE AND CONNECTION TO EXISTING WATER SERVICE LINE SHALL BE RESTRAINED JOINT CONSTRUCTION.
2. ALL PIPE AND FITTINGS INSIDE VAULT SHALL BE FLANGED.
3. WATER METER SHALL BE 6" MAGNETIC DRIVE TURBINE COMPOUND METER WITH A 1" POSITIVE DISPLACEMENT BYPASS METER AS MANUFACTURED BY AMCO OR APPROVED EQUAL.
4. DOUBLE CHECK ASSEMBLY (DCA) SHALL BE 6" WITH NRS GATE VALVES COMPLIANT WITH AWWA C510 AND C550, UL CLASSIFIED, AND FM APPROVED. FLANGES SHALL MEET ANSI B16.1 CLASS 125. DCA SHALL BE MODEL 350 AS MANUFACTURED BY ZURN WILKINS OR APPROVED EQUAL.
5. SINGLE LEAF ACCESS DOOR SHALL HAVE A 3' WIDTH X 4' LENGTH OPENING, BE OF ALUMINUM CONSTRUCTION WITH A 300 PSF LOAD RATING AND A CHANNEL FRAME AS MANUFACTURED BY BILCO, HALIDAY PRODUCTS, OR APPROVED EQUAL.
6. THE WATER METER SHALL BE CENTERED AT THE HATCH OPENING AS SHOWN.
7. METER VAULT SHALL BE OF PRECAST CONCRETE CONSTRUCTION.
8. ACCESS HATCH AND VERTICAL VENT PIPE SHALL BE IN PLACE IN TOP SLAB.

WATER METER STATION ASSEMBLY

WATER DETAILS

5/28/99

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PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-04

UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 027661 ENGINEER KEVIN C. ZUPE

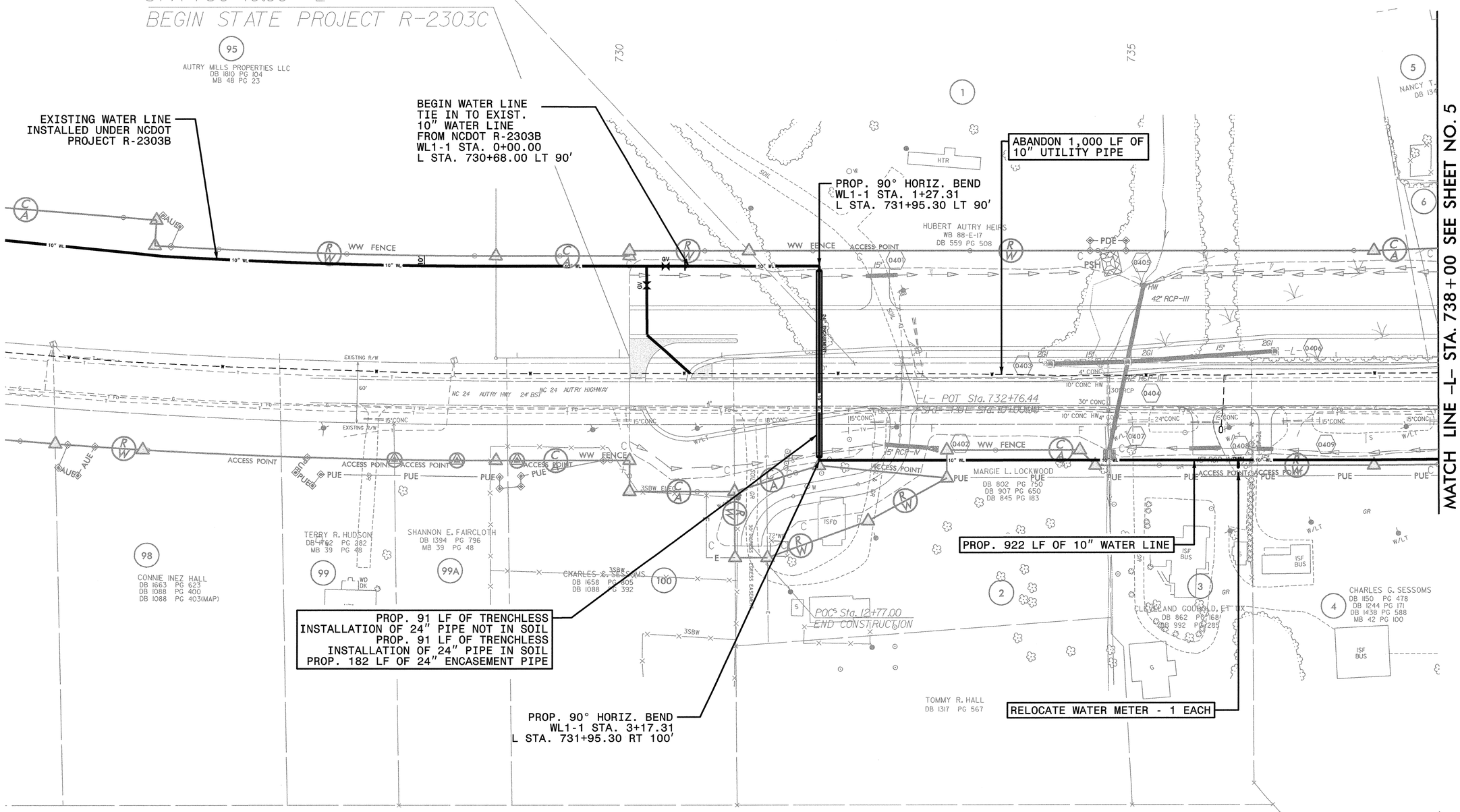
2013-MAY-07

MA Engineering CONSULTANTS, INC.
598 E. Chatham Street, Suite 137
Cary, N. C. 27511

UTILITY OWNERS ON THIS PROJECT:

1. TOWN OF ROSEBORO
UTILITY: 10" WATER LINE
CONTACT: BUCK AMMONS
PHONE: 910-525-4121

NAD 83/NSRS 2007



SEE SHEET UC-25 THRU UC-27 FOR WL1-1 PROFILE

REVISIONS

7/2/99

FILE: $FILES
DATE: $DATE$ $TIME$

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-05

UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL ENGINEER KEVIN G. ZOBB

2013-MAY-07

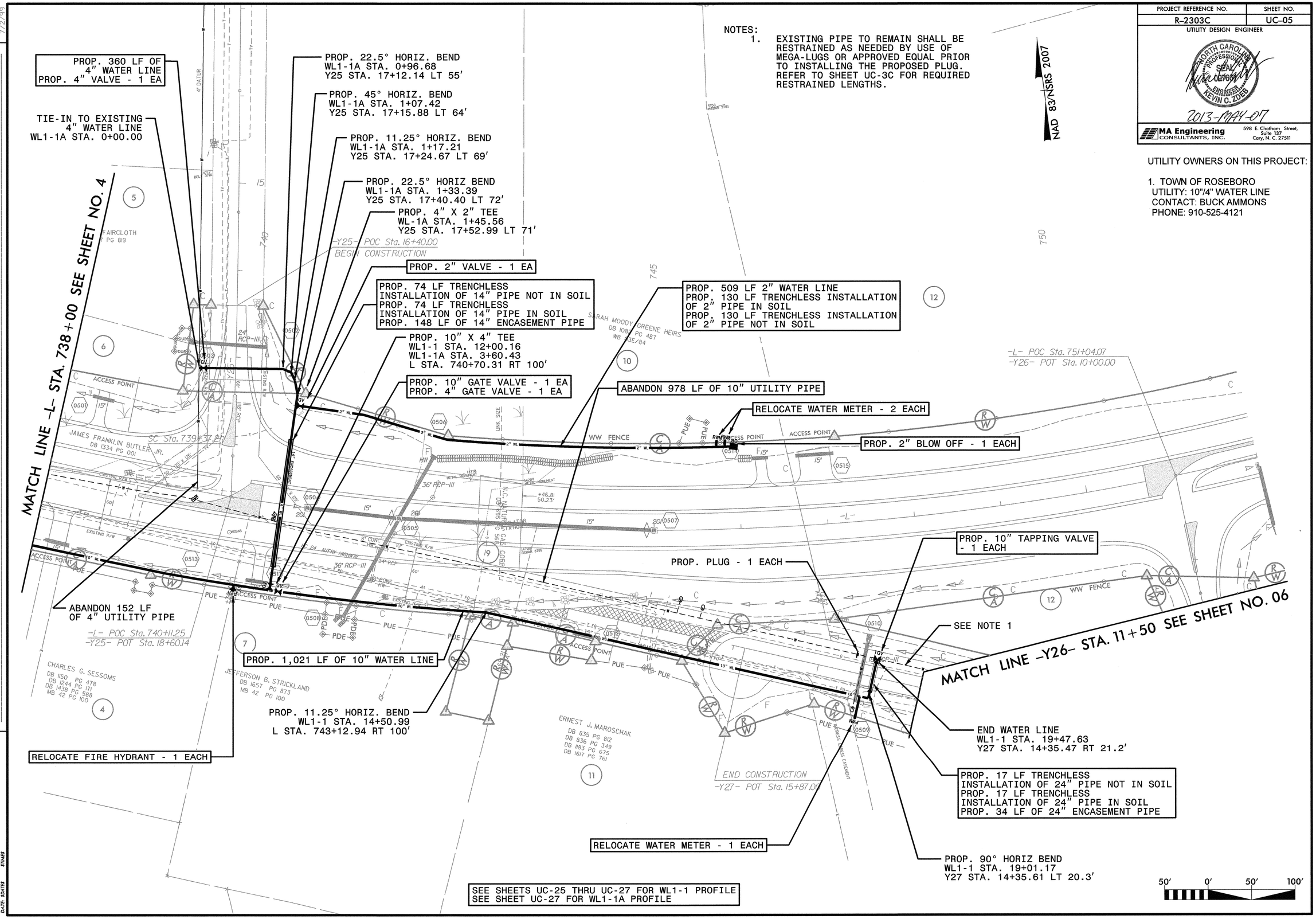
MA Engineering CONSULTANTS, INC.
598 E. Chatham Street, Suite 137
Cary, N. C. 27511

NOTES:
1. EXISTING PIPE TO REMAIN SHALL BE RESTRAINED AS NEEDED BY USE OF MEGA-LUGS OR APPROVED EQUAL PRIOR TO INSTALLING THE PROPOSED PLUG. REFER TO SHEET UC-3C FOR REQUIRED RESTRAINED LENGTHS.

NAD 83/NSRS 2007

UTILITY OWNERS ON THIS PROJECT:

1. TOWN OF ROSEBORO
UTILITY: 10"/4" WATER LINE
CONTACT: BUCK AMMONS
PHONE: 910-525-4121



REVISIONS

7/2/99

FILE: $FILES
DATE: $DATES $TIMES

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-06

UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 036657 ENGINEER KEVIN C. ZUBER

2013-MAY-07

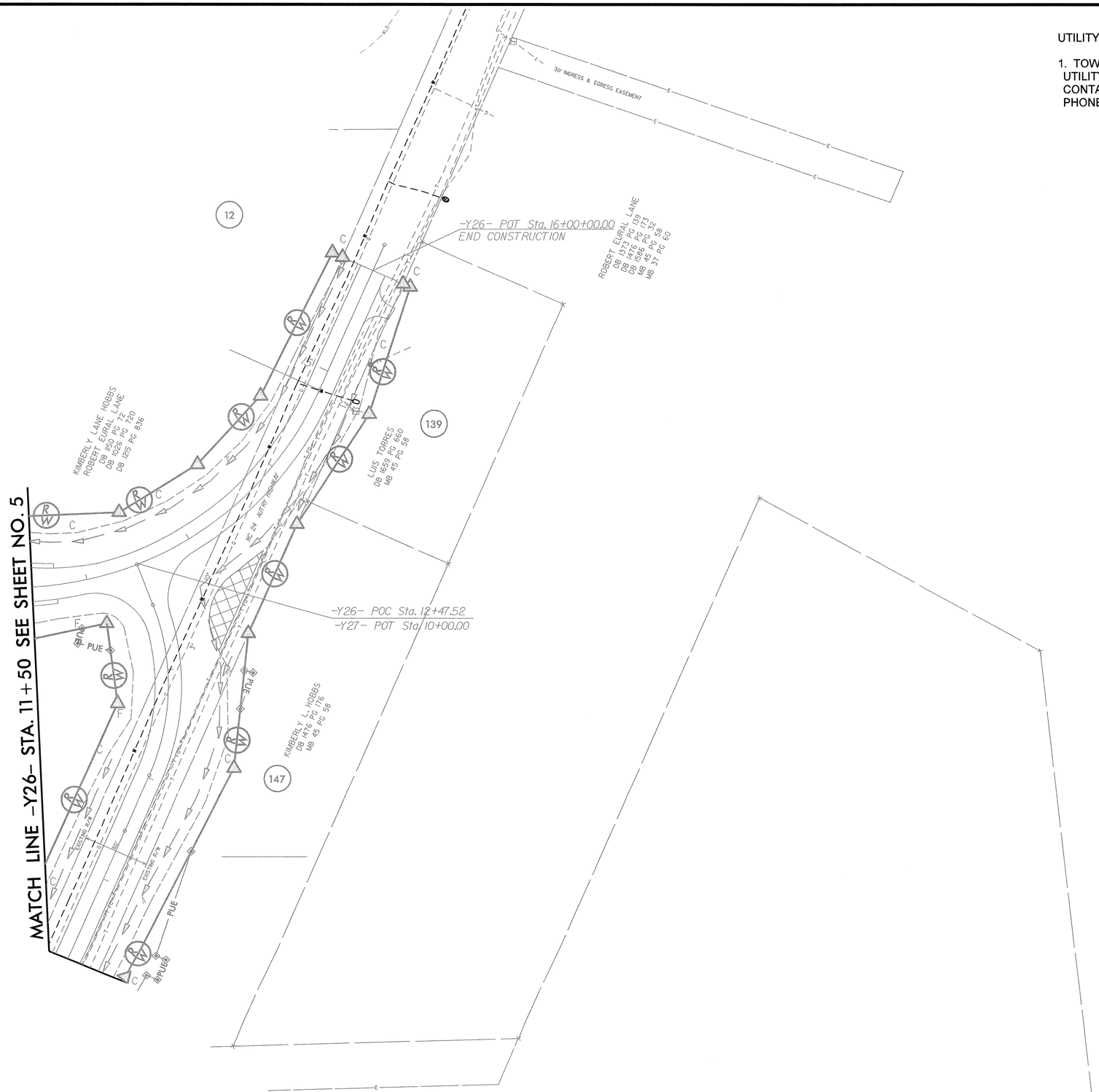
MA Engineering CONSULTANTS, INC.
598 E. Chatham Street, Suite 137
Cary, N. C. 27511

UTILITY OWNERS ON THIS PROJECT:

1. TOWN OF ROSEBORO
UTILITY: 10" WATER LINE
CONTACT: BUCK AMMONS
PHONE: 910-525-4121

NAD 83/NSRS 2007

NO CONFLICTS ANTICIPATED ON THIS SHEET



50' 0' 50' 100'

REVISIONS

7/2/99

FILE: $FILE$
DATE: $DATE$ $TIME$

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-07

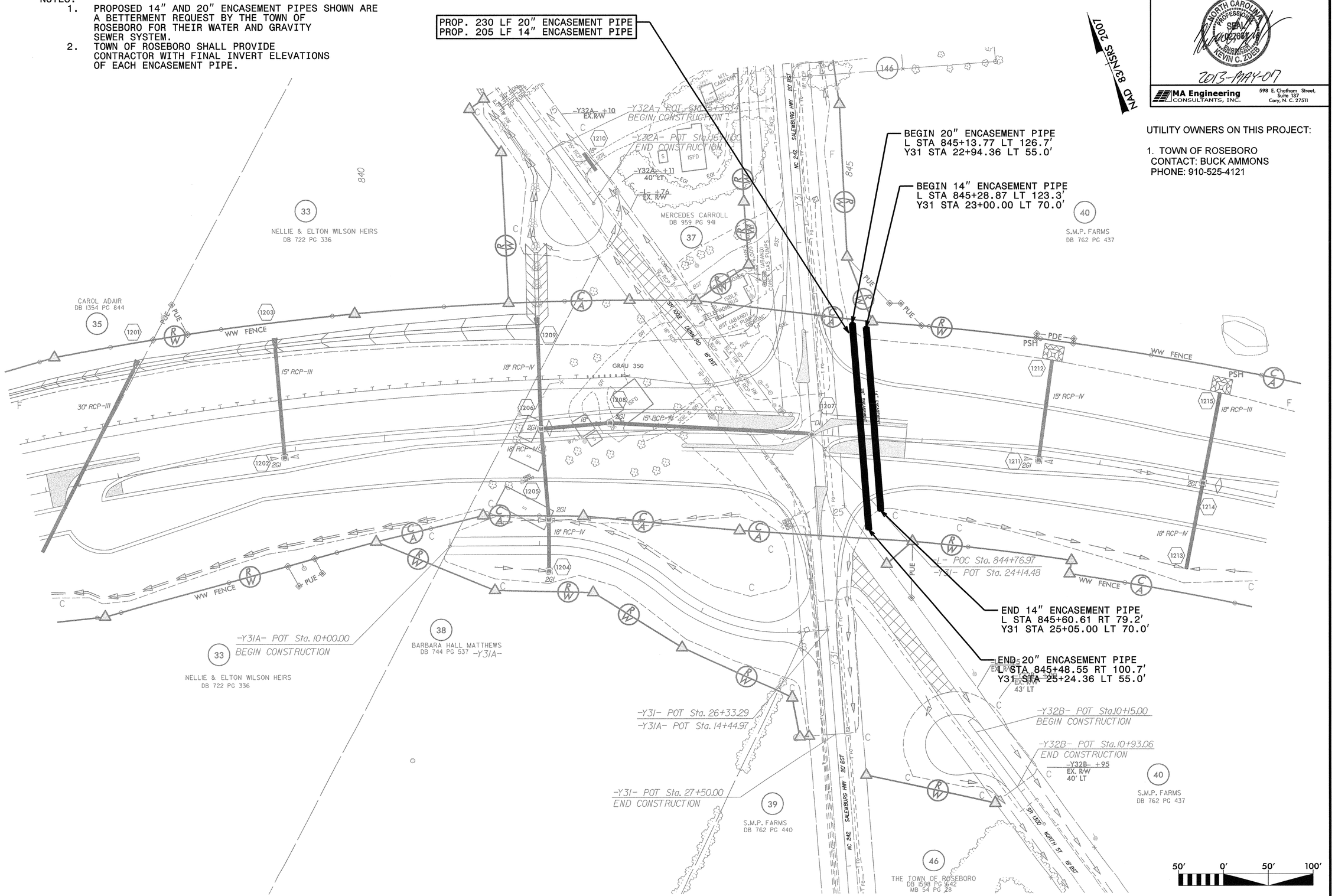
UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 027681 ENGINEER KEVIN C. ZDEB

2013-MAY-07

MA Engineering CONSULTANTS, INC.
598 E. Chatham Street, Suite 137
Cary, N. C. 27511

NOTES:
1. PROPOSED 14" AND 20" ENCASEMENT PIPES SHOWN ARE A BETTERMENT REQUEST BY THE TOWN OF ROSEBORO FOR THEIR WATER AND GRAVITY SEWER SYSTEM.
2. TOWN OF ROSEBORO SHALL PROVIDE CONTRACTOR WITH FINAL INVERT ELEVATIONS OF EACH ENCASEMENT PIPE.



UTILITY OWNERS ON THIS PROJECT:

1. TOWN OF ROSEBORO
CONTACT: BUCK AMMONS
PHONE: 910-525-4121

7/2/99

FILE: $FILES
DATE: $DATES
STAGES

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-08

UTILITY DESIGN ENGINEER

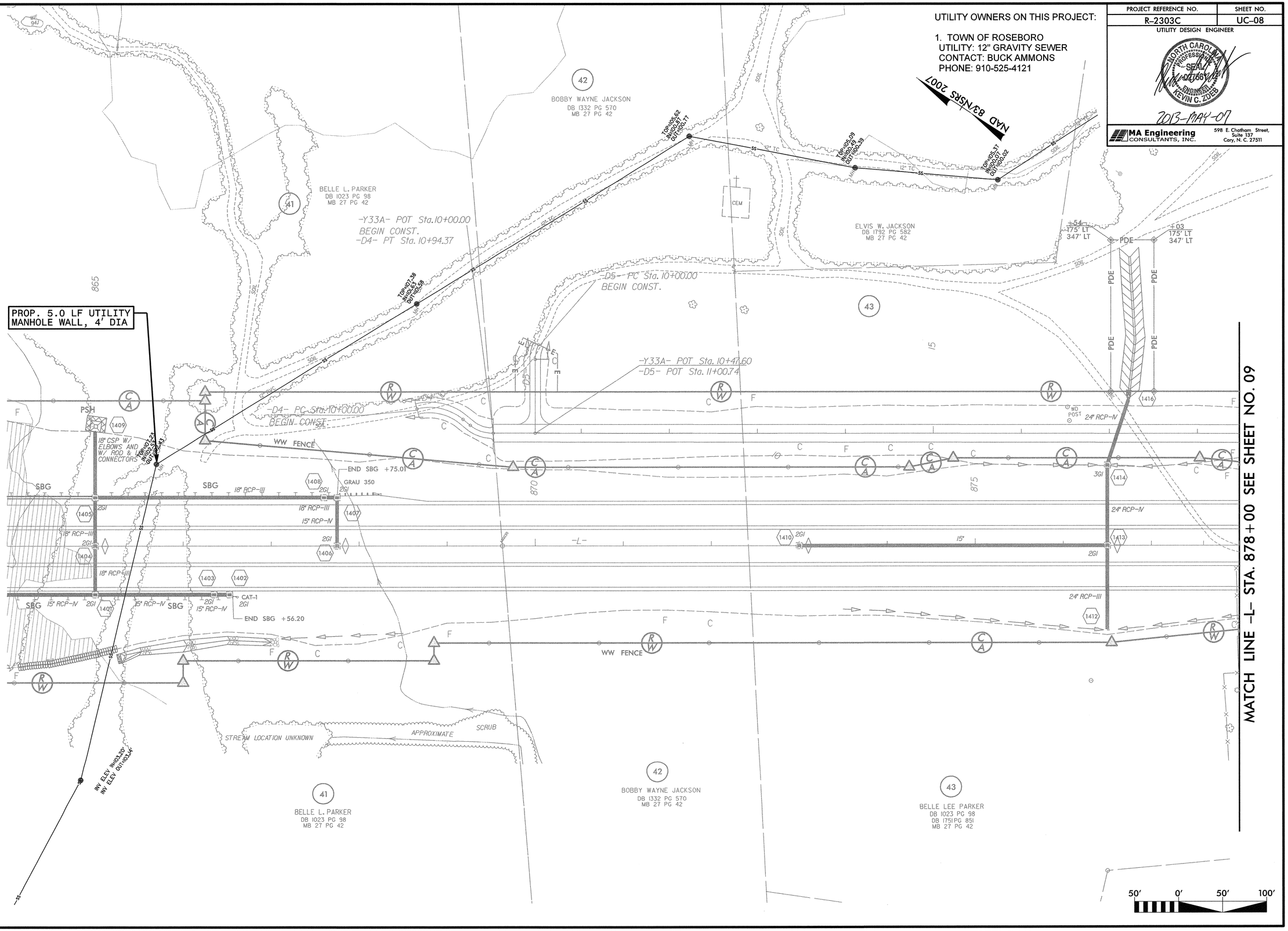
NORTH CAROLINA PROFESSIONAL SEAL 042366 ENGINEER KEVIN C. ZDEB

2013-MAY-07

MA Engineering CONSULTANTS, INC.
598 E. Chatham Street, Suite 137
Cary, N. C. 27511

UTILITY OWNERS ON THIS PROJECT:

1. TOWN OF ROSEBORO
UTILITY: 12" GRAVITY SEWER
CONTACT: BUCK AMMONS
PHONE: 910-525-4121



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DATE: $DATES $TIMES

7/2/99

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-09

UTILITY DESIGN ENGINEER

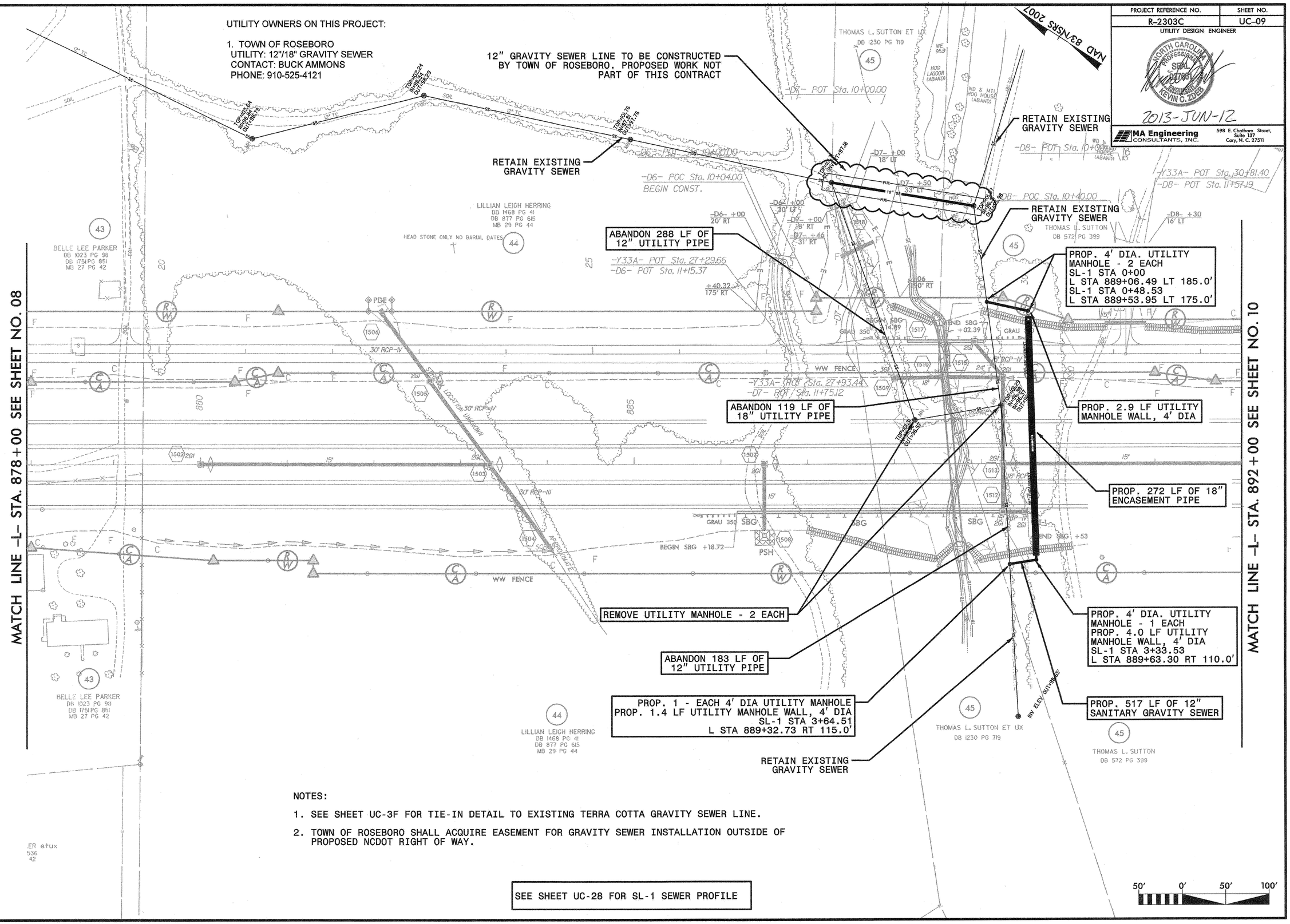
NORTH CAROLINA PROFESSIONAL SEAL 027783 ENGINEER KEVIN C. ZIEB

2013-JUN-12

MA Engineering CONSULTANTS, INC.
598 E. Chatham Street, Suite 137
Cary, N. C. 27511

UTILITY OWNERS ON THIS PROJECT:

1. TOWN OF ROSEBORO
UTILITY: 12"/18" GRAVITY SEWER
CONTACT: BUCK AMMONS
PHONE: 910-525-4121



REVISIONS

7/2/99

NOTES:

1. SEE SHEET UC-3F FOR TIE-IN DETAIL TO EXISTING TERRA COTTA GRAVITY SEWER LINE.
2. TOWN OF ROSEBORO SHALL ACQUIRE EASEMENT FOR GRAVITY SEWER INSTALLATION OUTSIDE OF PROPOSED NCDOT RIGHT OF WAY.

SEE SHEET UC-28 FOR SL-1 SEWER PROFILE

FILE: STILES
DATE: SDATES
STIMES

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-10

UTILITY DESIGN ENGINEER

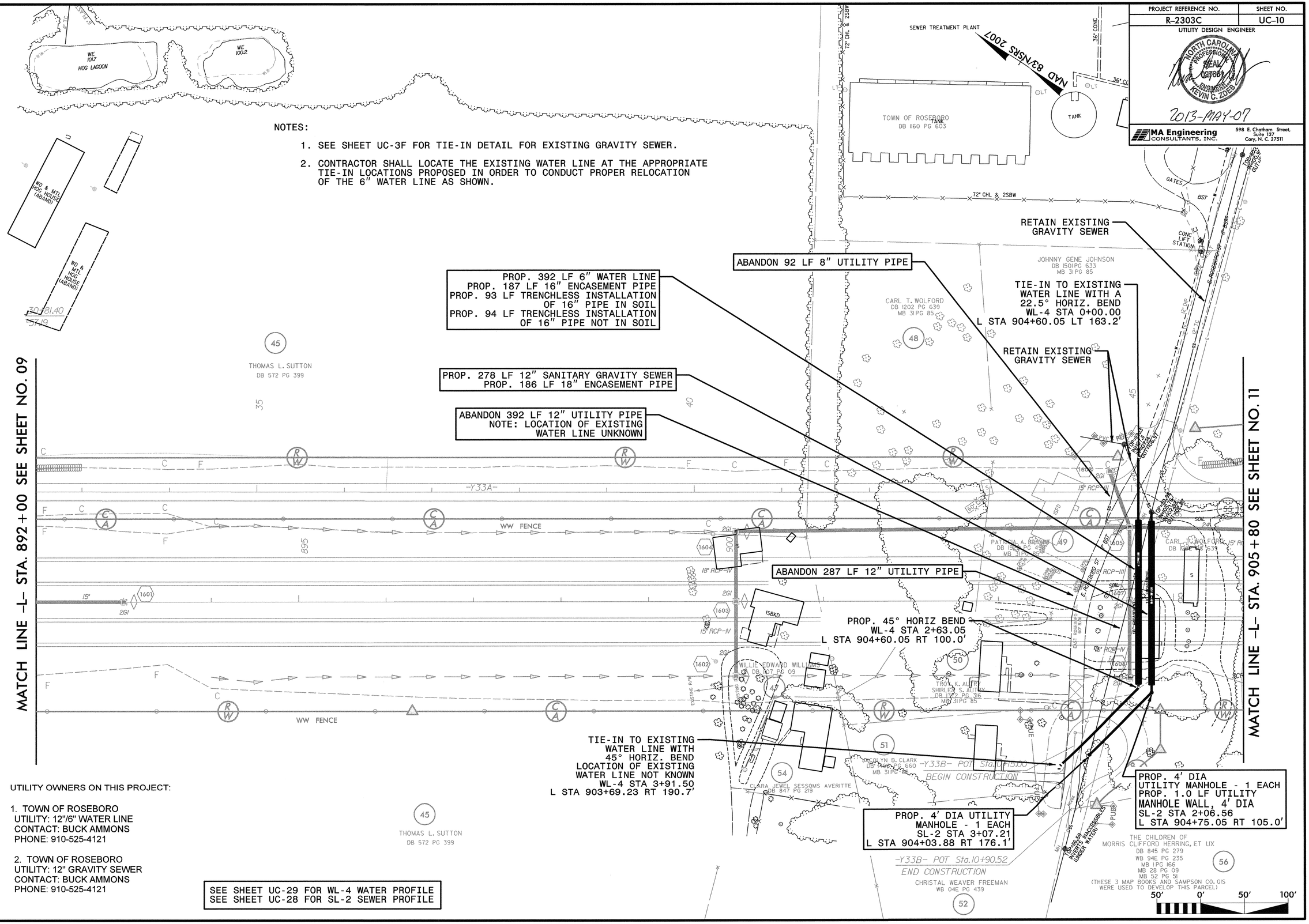
NORTH CAROLINA PROFESSIONAL SEAL 027667 ENGINEER KEVIN C. ZOLES

2013-MAY-07

MA Engineering CONSULTANTS, INC.
598 E. Chatham Street, Suite 137
Cary, N. C. 27511

NOTES:

1. SEE SHEET UC-3F FOR TIE-IN DETAIL FOR EXISTING GRAVITY SEWER.
2. CONTRACTOR SHALL LOCATE THE EXISTING WATER LINE AT THE APPROPRIATE TIE-IN LOCATIONS PROPOSED IN ORDER TO CONDUCT PROPER RELOCATION OF THE 6" WATER LINE AS SHOWN.



UTILITY OWNERS ON THIS PROJECT:

1. TOWN OF ROSEBORO
UTILITY: 12"/6" WATER LINE
CONTACT: BUCK AMMONS
PHONE: 910-525-4121

2. TOWN OF ROSEBORO
UTILITY: 12" GRAVITY SEWER
CONTACT: BUCK AMMONS
PHONE: 910-525-4121

SEE SHEET UC-29 FOR WL-4 WATER PROFILE
SEE SHEET UC-28 FOR SL-2 SEWER PROFILE

REVISIONS

7/2/99

FILE: $FILES
DATE: $DATES $TIMES

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-11

UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 027664 ENGINEER KEVIN C. ZOLES

2013-MAY-07

MA Engineering CONSULTANTS, INC.
598 E. Chatham Street, Suite 137
Cary, N. C. 27511

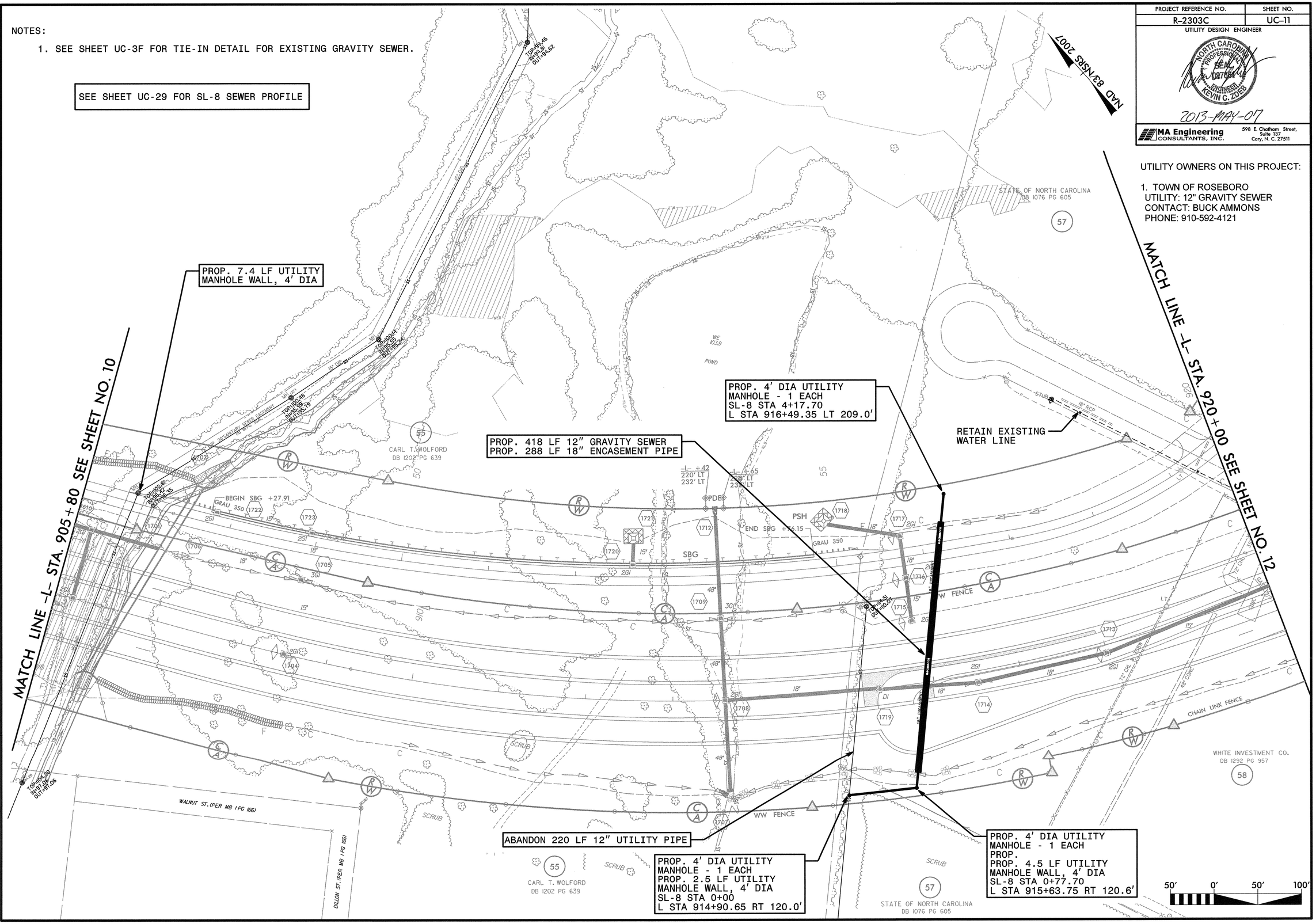
NOTES:

1. SEE SHEET UC-3F FOR TIE-IN DETAIL FOR EXISTING GRAVITY SEWER.

SEE SHEET UC-29 FOR SL-8 SEWER PROFILE

UTILITY OWNERS ON THIS PROJECT:

1. TOWN OF ROSEBORO
UTILITY: 12" GRAVITY SEWER
CONTACT: BUCK AMMONS
PHONE: 910-592-4121



REVISIONS

7/2/99

FILE: SFULES
DATE: 10/4/13
STIMES

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-12

UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 027661 ENGINEER KEVIN C. ZOLEB

2013-MAY-07

MA Engineering CONSULTANTS, INC.
598 E. Chatham Street, Suite 137
Cary, N. C. 27511

NOTES:
1. EXISTING PIPE TO REMAIN SHALL BE RESTRAINED AS NEEDED BY USE OF MEGA-LUGS OR APPROVED EQUAL PRIOR TO INSTALLING THE PROPOSED PLUG. REFER TO SHEET UC-3C FOR REQUIRED RESTRAINED LENGTHS.
2. SEE SHEET UC-3G FOR WATER METERING STATION DETAIL.
3. WATER SERVICES CROSSING PROPOSED ROADWAY SHALL BE 1" PE CTS DR-7.
4. PUE AREA FOR PROPOSED WATER METERING STATION SHALL BE DEEDED TO SAMPSON COUNTY.

UTILITY OWNERS ON THIS PROJECT:

1. TOWN OF ROSEBORO
UTILITY: 10"/8" WATER LINE
CONTACT: BUCK AMMONS
PHONE: 910-525-4121

2. SAMPSON COUNTY
UTILITY: 10" WATER LINE
4" SANITARY FORCE MAIN
CONTACT: LEE CANNADY
PHONE: 910-592-0188

NAD 83/NSRS 2007

MATCH LINE -L- STA. 920+00 SEE SHEET NO. 11

MATCH LINE -L- STA. 934+00 SEE SHEET NO. 13

PROP. 173 LF 14" ENCASEMENT PIPE

BEGIN WATER LINE
PROP. 45° HORIZ. BEND
WL-5 STA. 0+00.00
L STA. 920+16.15 LT 109.8'

PROP. 45° HORIZ. BEND
WL-5 STA. 0+21.80

REMOVE FIRE HYDRANT - 1 EACH

ABANDON 279 LF OF 8" UTILITY PIPE

END WATER LINE
TIE-IN TO EXISTING 8" WATER LINE
PROP. 90° HORIZ. BEND
WL-5 STA. 3+06.11
L STA. 921+93.76 LT 105'

PROP. 90° HORIZ. BEND
WL-5 STA. 2+86.61

PROP. 306 LF OF 8" WATER LINE
PROP. 128 LF OF TRENCHLESS INSTALLATION OF 20" PIPE NOT IN SOIL
PROP. 127 LF OF TRENCHLESS INSTALLATION OF 20" PIPE IN SOIL
PROP. 255 LF OF 20" ENCASEMENT PIPE

PROP. 860 LF OF 4" OF FORCE MAIN SEWER

PROP. 45° HORIZ. BEND
SL-3 STA 2+47.92
L STA 927+07.85 LT 135.0'

PROP. AIR RELEASE VALVE
SL-3 STA 4+78.50
L STA 929+55.90 LT 138.5'

PROP. 22.5° HORIZ. BEND
WL-2 STA. 0+05.00
L STA. 927+16.78 RT 100'

PROP. PLUG

PROP. 10" VALVE - 1 EACH

BEGIN WATER LINE
TIE-IN TO EXISTING 10" WATER LINE
PROP. 10" GATE VALVE
WL-2 STA. 0+00.00
L STA. 927+12.35 RT 102'

TIE-IN TO EXISTING 4" FSS
PROP. 45° HORIZ. BEND
SL-3 STA 0+00.00
L STA 926+14.56 RT 95.2'

RELOCATE WATER METER - 1 EACH

PROP. 45° HORIZ. BEND
SL-3 STA 8+42.98
L STA 933+21.62 LT 84.0'

PROP. 45° HORIZ. BEND
SL-3 STA 7+67.08
L STA 932+67.26 LT 140.0'

TOWN OF ROSEBORO

ABANDON 737 LF OF 4" UTILITY PIPE

PROP. 724 LF OF 10" WATER LINE

ABANDON 702 LF OF 10" UTILITY PIPE

PROP. 1 EA WATER METERING STATION

SAMPSON COUNTY

SEE SHEETS UC-31 THRU UC-36 FOR WL-2 WATER PROFILE
SEE SHEETS UC-37 THRU UC-38 FOR SL-3 SEWER PROFILE
SEE SHEET UC-30 FOR WL-5 WATER PROFILE

50' 0' 50' 100'

REVISIONS

7/2/99

FILE: $FILES
DATE: $DATES
STAKES

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-13

UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL ENGINEER KEVIN C. ZOEB

2013-MAY-07

MA Engineering CONSULTANTS, INC.
598 E. Chatham Street, Suite 137
Cary, N. C. 27511

UTILITY OWNERS ON THIS PROJECT:

1. SAMPSON COUNTY
UTILITY: 10"/12" WATER LINE
4"/6" SANITARY FORCE MAIN
CONTACT: LEE CANNADY
PHONE: 910-592-0188

NAD 83/NSRS 2007

PROP. 568 LF TRENCHLESS INSTALLATION OF 6" PIPE IN SOIL
PROP. 567 LF TRENCHLESS INSTALLATION OF 6" PIPE NOT IN SOIL
PROP. 1,135 LF 6" FORCE MAIN SEWER

BEGIN SEWER LINE 4
END SEWER LINE 3
SL-4 STA 0+00
SL-3 STA 10+92.49
L STA 935+78.06 LT 103.0'

PROP. 261 LF OF 4" FORCE MAIN SEWER

ABANDON 280 LF OF 4" UTILITY PIPE

PROP. 6X4 REDUCER
SL-4 STA 0+87.06
L STA 936+65.28 LT 105.0'

ABANDON 1,400 LF OF 10" UTILITY PIPE

PROP. 210 LF OF 10" WATER LINE

PROP. 12X10 REDUCER
WL-2 STA. 9+38.15
L STA. 936+05.15 RT 114.5'

PROP. 598 LF OF TRENCHLESS INSTALLATION OF 12" PIPE IN SOIL
PROP. 597 LF OF TRENCHLESS INSTALLATION OF 12" PIPE NOT IN SOIL
PROP. 1,195 LF OF 12" WATER LINE

MATCH LINE -L- STA. 934+00 SEE SHEET NO. 12

MATCH LINE -L- STA. 948+00 SEE SHEET NO. 14

60 BENJAMIN R. GOFF, III DB 1126 PG 466

64 RICCI TADLOCK DB 1460 PG 622

65 ANN W. WHEELER AND JANE B. SUPERLAND DB 1288 PG 843 DB 1288 PG 853 DB 1389 PG 855 DB 1389 PG 845

61 CHARLES DUBOSE DB 781 PG 153

66 CHARLES B. WILLIAMS AND LELA J. WILLIAMS DB 1548 PG 13

CLASS II RIP RAP

BEGIN BRIDGE -L- STA. 941+65.00

END BRIDGE -L- STA. 944+00.00

EXCAVATION EST. 4300 CY

BEGIN SBG +84.99

END SBG +40.00

BEGIN SBG +04.37

BEGIN SBG +85.00

END SPECIAL GRADING

SREMC 100' POWERLINE RIGHT OF WAY

SEE SHEETS UC-31 THRU UC-36 FOR WL-2 WATER PROFILE
SEE SHEETS UC-39 THRU UC-42 FOR SL-4 SEWER PROFILE
SEE SHEET UC-38 FOR SL-3 SEWER PROFILE

50' 0' 50' 100'

7/2/99

FILE: $FILES
DATE: $DATES $TIMES

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-14

UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 19861 ENGINEER KEVIN C. ZOLB

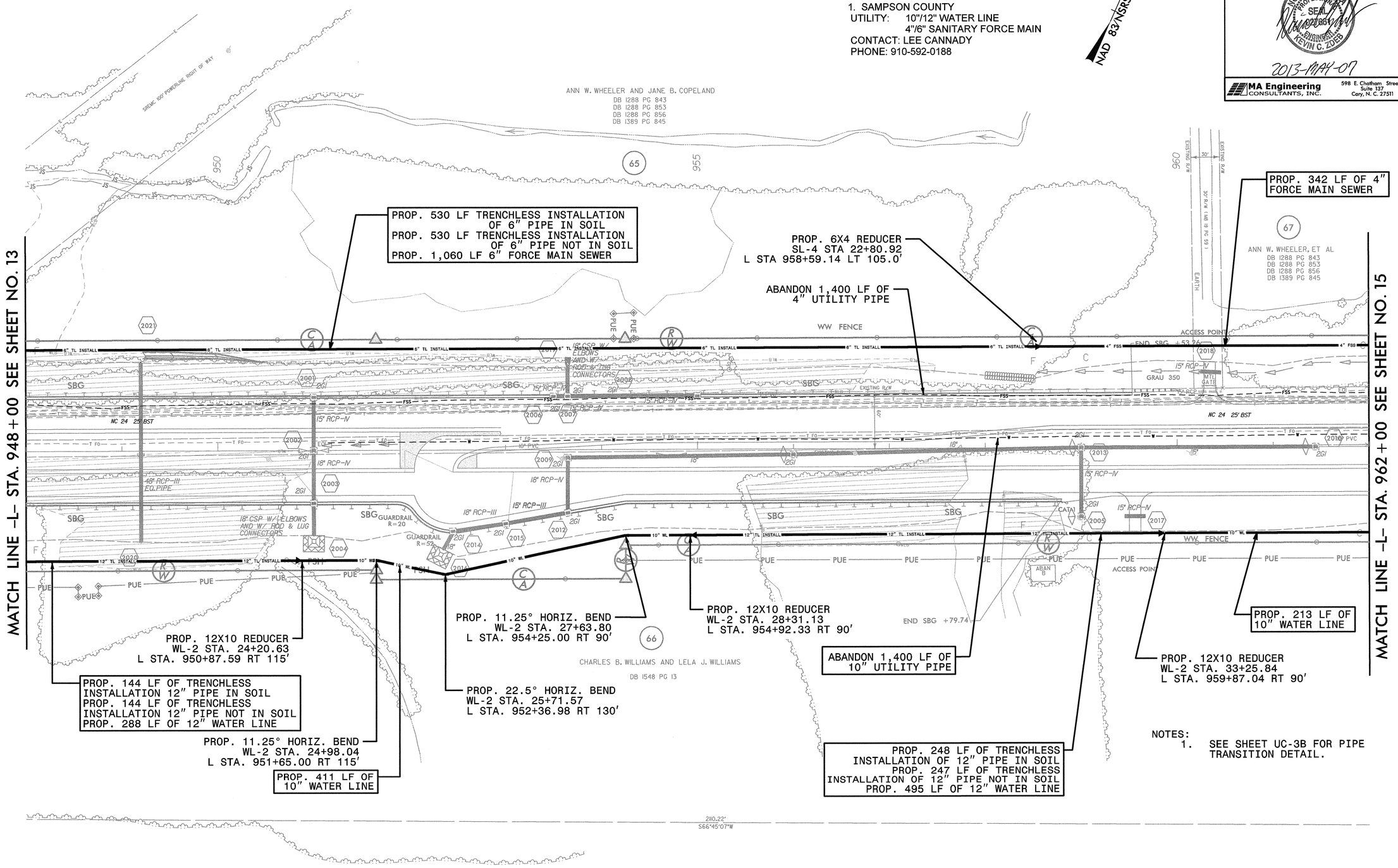
2013-MAY-07

MA Engineering CONSULTANTS, INC. 598 E. Chatham Street, Suite 137 Cary, N. C. 27511

UTILITY OWNERS ON THIS PROJECT:

1. SAMPSON COUNTY
UTILITY: 10"/12" WATER LINE
4"/6" SANITARY FORCE MAIN
CONTACT: LEE CANNADY
PHONE: 910-592-0188

NAD 83/NSRS 2007



NOTES:
1. SEE SHEET UC-3B FOR PIPE TRANSITION DETAIL.

SEE SHEETS UC-31 THRU UC-36 FOR WL-2 WATER PROFILE
SEE SHEETS UC-39 THRU UC-42 FOR SL-4 SEWER PROFILE

50' 0' 50' 100'

REVISIONS

7/2/99

FILE: $FILES
DATE: $DATES
$TIMES

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-15

UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 027864 KEVIN C. ZODIES

2013-MAY-07

MA Engineering CONSULTANTS, INC.
598 E. Chatham Street, Suite 137
Cary, N. C. 27511

UTILITY OWNERS ON THIS PROJECT:

1. SAMPSON COUNTY
UTILITY: 10"/12" WATER LINE
4" SANITARY FORCE MAIN
CONTACT: LEE CANNADY
PHONE: 910-592-0188

NAD 83/NSRS 2007

PROP. AIR RELEASE VALVE - 1 EACH
SL-4 STA 27+70.00
L STA 963+48.14 LT 109.9'

RELOCATE WATER METER - 1 EACH

PROP. 1,424 LF 4" FORCE MAIN SEWER

-L- POC Sta. 967+66.94
-Y34- POT Sta. 10+00.00

END SEWER LINE 4
BEGIN SEWER LINE 5
SL-4 STA 35+20.00
SL-5 STA 0+00.00
L STA 970+82.64 LT 104.5'

ABANDON 1,407 LF OF 4" UTILITY PIPE

PROP. 10" TAPPING VALVE - 1 EACH

ABANDON 1,189 LF OF 10" UTILITY PIPE

PROP. TIE-IN TO
PROP. 4" WATER LINE
PROP. 4" GATE VALVE
WL2B STA. 0+00.00
WL-2 STA. 41+85.66
L STA. 968+59.63 RT 105.3'

MATCH LINE -L- STA. 962+00 SEE SHEET NO. 14

MATCH LINE -L- STA. 976+00 SEE SHEET NO. 16

ABANDON 342 LF OF 4" UTILITY PIPE

PROP. 43 LF OF TRENCHLESS INSTALLATION OF 24" PIPE NOT IN SOIL
PROP. 43 LF OF TRENCHLESS INSTALLATION OF 24" PIPE IN SOIL
PROP. 203 LF OF 24" ENCASEMENT PIPE

PROP. 1,210 LF OF 10" WATER LINE

PROP. 4" VALVE - 1 EACH

PROP. 179 LF OF 4" WATER LINE

-Y34- POT Sta. 13+80.00
END CONSTRUCTION

PROP. 90° HORIZ. BEND
WL-2 STA. 46+94.80
L STA. 973+77.20 RT 108.1'

END WATER LINE
TIE-IN TO EXISTING 10" WATER LINE
PROP. 10" TAPPING VALVE
WL-2 STA. 47+47.89
L STA. 973+77.03 RT 55'

PROP. 31 LF OF TRENCHLESS INSTALLATION OF 14" PIPE NOT IN SOIL
PROP. 31 LF OF TRENCHLESS INSTALLATION OF 14" PIPE IN SOIL
PROP. 62 LF OF 14" ENCASEMENT PIPE

END WATER LINE
TIE-IN TO EXISTING 4" WATER LINE
WL-2B STA. 1+78.15
Y34 STA. 13+00.03 RT 16.9'

ANN HARPER WHEELER
DB 1389 PG 842
MB 19 PG 59
MB 38 PG 79

JANE B. COPELAND
DB 1389 PG 853

ANN W. WHEELER, ET
DB 1288 PG 843
DB 1288 PG 853
DB 1288 PG 856
DB 1389 PG 845

TODD ALLEN WHEELER
DB 1497 PG 935

CHARLES B. WILLIAMS
DB 1548 PG 13

CHARLES B. WILLIAMS AND LELA J. WILLIAMS
DB 1548 PG 13

AUBREY PAYTON CRUMPLER
DB 1199 PG 137

GEORGE HALL, JR
DB 856 PG 441

BILLY RAY HALL
DB 1361 PG 664

FULTON WAYNE BROCK
DB 1329 PG 612

SR 1239 UNDERWOOD RD

SEE SHEETS UC-31 THRU UC-36 FOR WL-2 WATER PROFILE
SEE SHEETS UC-39 THRU UC-42 FOR SL-4 SEWER PROFILE
SEE SHEETS UC-43 THRU UC-46 FOR SL-5 SEWER PROFILE
SEE SHEET UC-36 FOR WL-2B WATER PROFILE

NOTE:
1. WATER SERVICES CROSSING PROPOSED ROADWAY SHALL BE 1" PE DR-7.

50' 0' 50' 100'

REVISIONS

7/2/99

FILE: SFILES
DATE: SDATES
STIMES

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-16

UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 036661 ENGINEER KEVIN C. ZOEB

2013-MAY-07

MA Engineering CONSULTANTS, INC.
598 E. Chatham Street, Suite 137
Cary, N. C. 27511

NOTES:
1. SEE SHEET UC-3C FOR PIPE TRANSITION DETAIL.
2. WATER SERVICES CROSSING PROPOSED ROADWAY SHALL BE 1" PE DR-7.

SEE SHEETS UC-43 THRU UC-46 FOR SL-5 SEWER PROFILE

UTILITY OWNERS ON THIS PROJECT:

1. SAMPSON COUNTY
UTILITY: 10" WATER LINE
4"/6" SANITARY FORCE MAIN
CONTACT: LEE CANNADY
PHONE: 910-592-0188

NAD 83/NSRS 2007

PROP. 60 LF 4" FORCE MAIN SEWER

PROP. 6X4 REDUCER
SL-5 STA 5+84.74
L STA 976+59.66 LT 99.0'

PROP. 276 LF TRENCHLESS INSTALLATION OF 6" PIPE IN SOIL
PROP. 276 LF TRENCHLESS INSTALLATION OF 6" PIPE NOT IN SOIL
PROP. 552 LF 6" FORCE MAIN SEWER

RELOCATE WATER METER - 1 EACH

ABANDON 1,400 LF OF 4" UTILITY PIPE

PROP. 789 LF 4" FORCE MAIN SEWER

PROP. 6X4 REDUCER
SL-5 STA 11+36.54
L STA 982+11.39 LT 89.8'

PROP. 45° HORIZ. BEND
SL-5 STA 19+23.48
L STA 989+88.00 LT 85.0'

PROP. 45° HORIZ. BEND
SL-5 STA 18+93.78
L STA 989+67.00 LT 106.0'

PROP. 11.25° HORIZ. BEND
SL-5 STA 18+26.78
L STA 989+00.00 LT 106.0'

PROP. 11.25° HORIZ. BEND
SL-5 STA 16+87.36
L STA 987+62.17 LT 85.0'

PROP. 80 LF 10" WATER LINE
ABANDON 68 LF 10" UTILITY PIPE

RELOCATE WATER METER - 1 EACH

RELOCATE WATER METER - 3 EACH

RELOCATE WATER METER - 2 EACH

RELOCATE WATER METER - 2 EACH

MATCH LINE -L- STA. 976+00 SEE SHEET NO. 15

MATCH LINE -L- STA. 990+00 SEE SHEET NO. 17

-Y35- POT Sta. 10+00.00
-Y35- POT Sta. 12+25.00
BEGIN CONSTRUCTION
-L- POT Sta. 977+44.76
-Y35- POT Sta. 14+88.26

CHARLES B. WILLIAMS
DB 1548 PG 13

CHARLES B. WILLIAMS AND LELA J. WILLIAMS
DB 1548 PG 13

AMANDA SCOTT STROUD
DB 1530 PG 654

ROSCOE MAURICE HOLLAND, JR.
DB 1719 PG 620

ROGER RAY ROYAL
DB 837 PG 595

ROGER RAY ROYAL
DB 835 PG 448

FRANK ARNESTE
DB 1610 PG 700

MILLARD T. OWEN III
DB 1206 PG 105

JOYCE ANN MACK JOSEPH
DB 1380 PG 690

KENNETH BETHEL WILHELMINA WILLIAMS
DB 1643 PG 872
DB 1711 PG 560

KENNETH WILLIAMS
DB 1512 PG 543

SUNRISE PROPERTIES AND RENTALS, LLC
DB 1691PG 642

KENANNA HOLDINGS, LLC
DB 1608 PG 162

ESSIE BLACKMON OATES
DB 1807 PG 665

50' 0' 50' 100'

REVISIONS

7/2/99

FILE: $FILES
DATE: $DATES $TIMES

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-17

UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 047681 ENGINEER KEVIN C. ZOBS

2013-MAY-07

MA Engineering CONSULTANTS, INC.
598 E. Chatham Street, Suite 137
Cary, N. C. 27511

SEE SHEETS UC-43 THRU UC-46 FOR SL-5 SEWER PROFILE

UTILITY OWNERS ON THIS PROJECT:

1. SAMPSON COUNTY
UTILITY: 10" WATER LINE
4"/6" SANITARY FORCE MAIN
CONTACT: LEE CANNADY
PHONE: 910-592-0188

NAD 83/NSRS 2007

MATCH LINE -L- STA. 990+00 SEE SHEET NO. 16

MATCH LINE -L- STA. 1004+00 SEE SHEET NO. 18

PROP. AIR RELEASE VALVE
SL-5 STA 19+60.00
L STA 990+24.52 LT 85.0'

ABANDON 1,400 LF OF
4" UTILITY PIPE

PROP. 897 LF OF
4" FORCE MAIN SEWER

PROP. 80 LF 10" WATER LINE
SEE DETAIL ON SHEET UC-3B
ABANDON 67 LF 10" UTILITY PIPE

PROP. 6X4 REDUCER
SL-5 STA 28+32.27
L STA 998+96.54 LT 85.2'

PROP. 253 LF TRENCHLESS INSTALLATION
OF 6" PIPE IN SOIL
PROP. 253 LF TRENCHLESS INSTALLATION
OF 6" PIPE NOT IN SOIL
PROP. 506 LF 6" FORCE MAIN SEWER

RELOCATE WATER METER - 2 EA

RELOCATE WATER METER - 1 EA

PROP. 80 LF OF
10" WATER LINE
SEE DETAIL ON
UC-3B
ABANDON 67 LF
OF 10" UTILITY
PIPE

RELOCATE WATER METER - 2 EA

DO NOT DISTURB WELL IN PUE.

ROSCOE MAURICE HOLLAND, JR.
DB 1719 PG 620
77

RICKY WALTON SESSOMS
DB 1008 PG 871
91

GWENDOLYN M. KING
DB 1379 PG 459
83

MUHAMMAD B. ABDUL-ALIM
DB 1128 PG 825
84

MICHAEL A. CORPREW
DB 1333 PG 344
85

JOHNNIE LEE WEST
DB 1059 PG 17
86

GEORGE HARRIS, SR. HEIRS
DB 1085 PG 170
87

GEORGE B. FANN
DB 750 PG 199
DB 1692 PG 526
92

JEANETTE H. WILLIAMS
DB 1605 PG 115
93

50' 0' 50' 100'

REVISIONS

7/2/99

FILE: $FILES
DATE: $DATES $TIMES

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-18

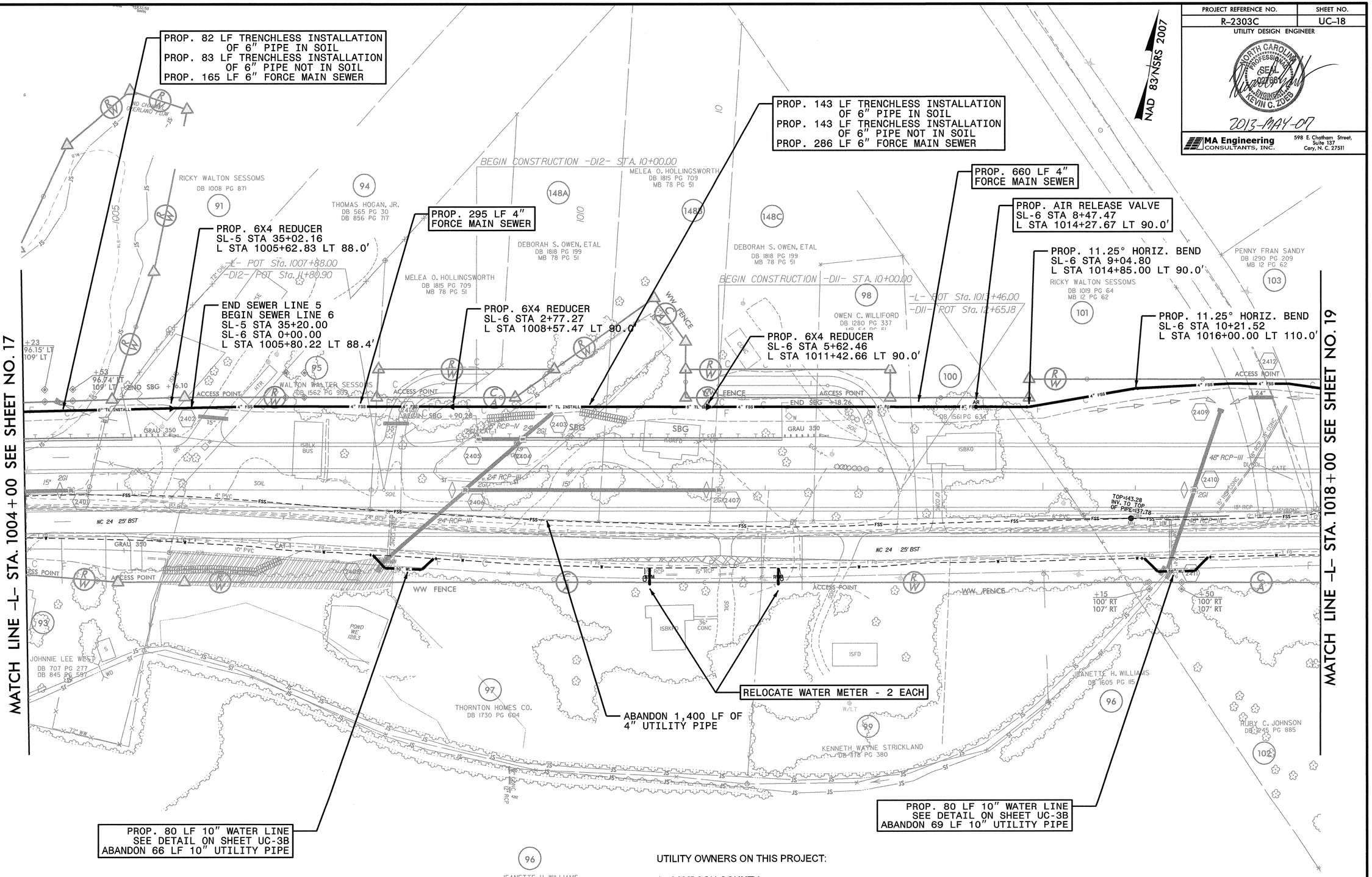
UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 027661 KEVIN C. ZUEB

2013-MAY-07

MA Engineering CONSULTANTS, INC.
598 E. Chatham Street, Suite 137
Cary, N. C. 27511

NAD 83/NSRS 2007



UTILITY OWNERS ON THIS PROJECT:

1. SAMPSON COUNTY
UTILITY: 10" WATER LINE
4"/6" SANITARY FORCE MAIN
CONTACT: LEE CANNADY
PHONE: 910-592-0188

SEE SHEETS UC-43 THRU UC-46 FOR SL-5 SEWER PROFILE
SEE SHEETS UC-47 THRU UC-50 FOR SL-6 SEWER PROFILE

REVISIONS

7/2/99

FILE: $FILES
DATE: $DATES $TIMES

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-19

UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL ENGINEER KEVIN C. ZOEB

2013-MAY-07

MA Engineering CONSULTANTS, INC.
598 E. Chatham Street, Suite 137
Cary, N. C. 27511

SEE SHEETS UC-47 THRU UC-49 FOR SL-6 SEWER PROFILE

UTILITY OWNERS ON THIS PROJECT:

1. SAMPSON COUNTY
UTILITY: 10" WATER LINE
4"/6" SANITARY FORCE MAIN
CONTACT: LEE CANNADY
PHONE: 910-592-0188

NAD 83/NSRS 2007

PROP. 45° HORIZ. BEND
SL-6 STA 15+77.01
L STA 1021+55.00 LT 110.0'

PROP. 45° HORIZ. BEND
SL-6 STA 15+91.15
L STA 1021+65.00 LT 100.0'

ABANDON 1,200 LF OF
4" UTILITY PIPE

PROP. 1,386 LF OF 4" FORCE MAIN SEWER

PROP. 1 EA REMOVE UTILITY MANHOLE

RELOCATE WATER METER - 1 EACH

RELOCATE WATER METER - 1 EACH

REMOVE WATER METER - 1 EACH

MATCH LINE -L- STA. 1018+00 SEE SHEET NO. 18

MATCH LINE -L- STA. 1032+00 SEE SHEET NO. 20

PENNY FRAN SANDY
DB 1290 PG 209
MB 12 PG 62

JOHN KEITH HOBBS, ETUX
AND
THOMAS DALE HOBBS, JR., ETUX
DB 1690 PG 33
MB 10 PG 80

DAN BENJAMIN
DB 1060 PG 284

WILLIAM H. HARRIS
DB 1702 PG 806

RUBY C. JOHNSON
DB 1245 PG 885

GEORGE FRANKLIN MURPHY
DB 1093 PG 892

GEORGE F. MURPHY
DB 1353 PG 838

ELIZABETH B. PARKER
GEORGE L. PARKER
DB 1309 PG 575
DB 1309 PG 577

-Y36- POT Sta. 16+15.00
END CONSTRUCTION

-Y36- POT Sta. 19+75.04

MATTHEW D. NEAL, ETUX
AND
PATRICK G. NEAL, ETUX
DB 1740 PG 423
MB 10 PG 80

MATTHEW NEAL
DB 1693 PG 713

SR 1239 UNDERWOOD RD

50' 0' 50' 100'

REVISIONS

7/2/99

FILE: $FILES
DATE: $DATE$ $TIME$

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-20

UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 027687 ENGINEER KEVIN C. ZDEB

2013-MAY-07

MA Engineering CONSULTANTS, INC.
598 E. Chatham Street, Suite 137
Cary, N. C. 27511

50' 0' 50' 100'

SEE SHEETS UC-47 THRU UC-50 FOR SL-6 SEWER PROFILE

UTILITY OWNERS ON THIS PROJECT:

1. SAMPSON COUNTY
UTILITY: 10" WATER LINE
4" SANITARY FORCE MAIN
CONTACT: LEE CANNADY
PHONE: 910-592-0188

PROP. 90° HORIZ. BEND
SL-6 STA 26+83.55
L STA 1032+80.98 LT 105.0'

PROP. 257 LF 4" FORCE MAIN SEWER
PROP. 158.3 LF 14" ENCASEMENT PIPE

TIE-IN TO EXISTING 4" FSS
PROP. 90° HORIZ. BEND
SL-6 STA 28+61.07
L STA 1032+84.67 RT 72.5'

ABANDON 266 LF
4" UTILITY PIPE

MATCH LINE -L- STA. 1032+00 SEE SHEET NO. 19

MATCH LINE -L- STA. 1046+00 SEE SHEET NO. 21

NAD 83/NSRS 2007

-L- POC Sta. 1032+15.99
-Y36- POT Sta. 10+00.00

-Y37- POT Sta. 12+60.00
BEGIN CONSTRUCTION

-Y37-POC Sta. 18+11.46
-SR2- POT Sta. 12+86.38

-D3-POT Sta. 10+00.00
BEGIN CONSTRUCTION

-D3-POT Sta. 12+12.92

-Y36A- POT Sta. 10+20.00
BEGIN CONSTRUCTION

-Y36A- POT Sta. 10+94.65
END CONSTRUCTION

JOHN KEITH HOBBS, ETUX
AND
THOMAS DALE HOBBS, JR., ETUX
DB 1690 PG 33
MB 10 PG 80

AMOS BUTLER HEIRS
DB 162 PG 381
DB 284 PG 60
MB 25 PG 58

JAMES GODWIN
DB 1378 PG 168

FOREST MONK
DB 1212 PG 820

BERLENE MONK BUTLER
DB 955 PG 551

JAMES EARL SAMPSON
DB 762 PG 273

MATTHEW D. NEAL, ETUX
AND
PATRICK G. NEAL, ETUX
DB 1740 PG 423
MB 10 PG 80

REMOVE ASPHALT IN ABANDONMENT AREA

SR 1530 MARSON ADAMS RD 20' BST

SR 1539 UNDERWOOD RD 27' BST

REVISIONS

7/2/99

FILE: SFILES
DATE: SDATES STAGES

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-21

UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 026786 ENGINEER KEVIN C. ZDEB

2013-MAY-07

MA Engineering CONSULTANTS, INC.
598 E. Chatham Street, Suite 137
Cary, N. C. 27511

UTILITY OWNERS ON THIS PROJECT:

1. SAMPSON COUNTY
UTILITY: 10" WATER LINE
4"/6" GRAVITY SEWER
CONTACT: LEE CANNADY
PHONE: 910-592-0188

NAD 83/NSRS 2007

NOTE:

1. NO CONFLICTS ANTICIPATED ON THIS SHEET

MATCH LINE -L- STA. 1046+00 SEE SHEET NO. 20

MATCH LINE -L- STA. 1060+00 SEE SHEET NO. 22

ROGER R. ROYAL
DB 1314 PG 218

TERA CULBRETH
DB 967 PG 995
MB. 14 PAGE 15

HAROLD T. CULBRETH
DB 1434 PG 195

WILMA FOWLER
DB 1304 PG 483

SAMPSON COUNTY
DB 933 PG 606

-SR2- POT Sta. 10+04.30
BEGIN CONSTRUCTION

-L- POC Sta. 1046+24.39
-L- POT Sta. 20+28.30

WW FENCE

15" RCP-IV

18" RCP-IV

LUTRELL BUTLER JR.
DB 768 PG 829

SUDIE MAE BETHEA JOHNSON
DB 933 PG 765
DB 720 PG 423

RETHA BETHEA
DB 842 PG 841

CHRIS DESERT
DB 1568 PG 745

JUDITH ANN BETHEA
DB 1145 PG 724

VALERIE LIPSCHAW ELMAR CAIN
DB 1467 PG 578

-Y37- POT Sta. 23+00.00
END CONSTRUCTION

TERA CLYDE CULBRETH
DB 1181 PG 250

ELLA MAE WHITEHEAD & BRENDA TATUM
DB 640 PG 258

WILLIAM HALLETT
DB 1357 PG 729

MINNIE ANNETA BENNET
DB 1261 PG 449

EDWARD PARKER
DB 862 PG 650

JIMMY L. COOPER
DB 862 PG 539

CLARA PARKER
DB 526 PG 426

WENDELL W. BUTLER
DB 768 PG 371

JOHNNY C. BASS
DB 931 PG 331

JOHNNY C. BASS
DB 1221 PG 166

GILBERT L. OATES
DB 1058 PG 246

SR 1301 MARION ADAMS RD
NC 24 25' BST

TOP=144.38
INV. TO TOP OF PIPE=138.88

50' 0' 50' 100'

REVISIONS

7/2/99

FILE: SFILES
DATE: SDATES
STAGES

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-22

UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 027861 ENGINEER KEVIN C. ZOLES

2013-MAY-07

MA Engineering CONSULTANTS, INC.
598 E. Chatham Street, Suite 137
Cary, N. C. 27511

NOTE:
1. WATER SERVICES CROSSING PROPOSED ROADWAY SHALL BE 1" PE DR-7.

UTILITY OWNERS ON THIS PROJECT:

1. SAMPSON COUNTY
UTILITY: 10"/12" WATER LINE
4"/6" SANITARY FORCE MAIN
CONTACT: LEE CANNADY
PHONE: 910-592-0188

NAD 83/NSRS 2007

PROP. 183 LF 14" ENCASEMENT PIPE
PROP. 343 LF 4" FORCE MAIN SEWER

ABANDON 626 LF OF 4" UTILITY PIPE

PROP. 237 LF TRENCHLESS INSTALLATION OF 6" PIPE IN SOIL
PROP. 236 LF TRENCHLESS INSTALLATION OF 6" PIPE NOT IN SOIL
PROP. 473 LF 6" FORCE MAIN SEWER

RELOCATE WATER METER - 1 EACH

PROP. 90° HORIZ. BEND
SL-7 STA 2+27.09
L STA 1062+32.94 LT 95.0'

PROP. 6X4 REDUCER
SL-7 STA 6+58.90
L STA 1066+79.06 LT 95.0'

PROP. AIR RELEASE VALVE
SL-7 STA 2+70.00
L STA 1062+77.27 LT 95.0'

PROP. AIR RELEASE VALVE
SL-7 STA 7+10.00
L STA 1067+31.86 LT 95.0'

PROP. 6X4 REDUCER
SL-7 STA 3+42.64
L STA 1063+52.32 LT 95.0'

PROP. 156 LF 4" FORCE MAIN SEWER

TIE-IN TO EXISTING 4" FSS
PROP. 45° HORIZ. BEND
SL-7 STA 8+14.90
L STA 1068+40.24 LT 95.0'

MATCH LINE -L- STA. 1060+00 SEE SHEET NO. 21

MATCH LINE -L- STA. 1074+00 SEE SHEET NO. 23

PROP. 22.5° HORIZ. BEND
WL-3 STA. 0+05.00
L STA. 1063+69.45 RT 124.2'

PROP. 22.5° HORIZ. BEND
SL-7 STA 0+20.09
L STA 1062+24.47 RT 112.0'

PROP. 12X10 REDUCER
WL-3 STA. 0+80.03
L STA. 1064+41.46 RT 123'

RELOCATE FIRE HYDRANT - 1 EACH

PROP. 12X10 REDUCER
WL-3 STA. 5+18.39
L STA. 1068+62.28 RT 121'

TIE-IN TO EXISTING 4" FSS
PROP. 45° HORIZ. BEND
SL-7 STA 0+00
L STA 333+36.68 RT 130.0'

BEGIN WATER LINE
TIE-IN TO EXISTING 10" WATER LINE
PROP. 10" GATE VALVE
WL-3 STA. 0+00
-L- STA. 1063+64.86 RT 125.6'

PROP. 223 LF OF TRENCHLESS INSTALLATION OF 12" PIPE NOT IN SOIL
PROP. 222 LF OF TRENCHLESS INSTALLATION OF 12" PIPE IN SOIL
PROP. 445 LF OF 12" WATER LINE

PROP. 1,073 LF OF 10" WATER LINE

PROP. 10" VALVE - 1 EACH

ABANDON 1,056 LF OF 10" UTILITY PIPE

-DRIO- POT Sta. 10+25.48
BEGIN CONST.

-Y36B- POC StaJ0+25.00
BEGIN CONSTRUCTION

-DRIO- END PROFILE

-DRIO- POT Sta. 14+21.42

-Y36B- POC Sta. 10+96.95
END CONSTRUCTION

TIE TO EXISTING DRIVEWAY

DB 1058 PG 246

SEE SHEETS UC-52 THRU UC-56 FOR WL-3 WATER PROFILE
SEE SHEETS UC-51 FOR SL-7 SEWER PROFILE

50' 0' 50' 100'

REVISIONS

7/2/99

FILE: $FILES
DATE: $DATES
$TIMES

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-23

UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 038084 KEVIN C. ZDES

2013-MAY-07

MA Engineering CONSULTANTS, INC.
598 E. Chatham Street, Suite 137
Cary, N. C. 27511

UTILITY OWNERS ON THIS PROJECT:

1. SAMPSON COUNTY
UTILITY: 10"/12" WATER LINE
CONTACT: LEE CANNADY
PHONE: 910-592-0188

SEE SHEETS UC-52 THRU UC-56 FOR WL-3 WATER PROFILE
SEE SHEETS UC-36 FOR WL-3B WATER PROFILE

NAD 83/NSRS 2007

MATCH LINE -L- STA. 1074+00 SEE SHEET NO. 22

MATCH LINE -L- STA. 1088+00 SEE SHEET NO. 24

ABANDON 1,425 LF OF 10" UTILITY PIPE

PROP. 17 LF OF TRENCHLESS INSTALLATION OF 24" PIPE NOT IN SOIL
PROP. 17 LF OF TRENCHLESS INSTALLATION OF 24" PIPE IN SOIL
PROP. 116 LF OF 24" ENCASEMENT PIPE

PROP. 426 LF OF 10" WATER LINE

PROP. 12X10 REDUCER
WL-3 STA. 11+30.00
L STA. 1074+52.32 RT 95.3'

PROP. 487 LF OF TRENCHLESS INSTALLATION OF 12" PIPE NOT IN SOIL
PROP. 487 LF OF TRENCHLESS INSTALLATION OF 12" PIPE IN SOIL
PROP. 974 LF OF 12" WATER LINE

PROP. 12X10 REDUCER
WL-3 STA. 21+03.88
L STA. 1084+26.06 RT 102.9'

RELOCATE FIRE HYDRANT - 1 EACH

ABANDON 190 LF OF 10" UTILITY PIPE

PROP. 95 LF OF 10" WATER LINE

END WATER LINE
TIE-IN TO EXISTING 10" WATER LINE
WL-3B STA. 1+03.82
Y38 STA. 11+91.99 LT 15'

124 SAMPSON COUNTY DB 933 PG 606

126 WASTE INDUSTRIES, LLC DB 1659 PG 416 DB 1659 PG 419

128 T&W DEVELOPMENT DB 1369 PG 743

129 BARON M. VAN LIEW DB 1209 PG 765

130 BERTHILDA BARBOZA ROBLES DB 1367 PG 770

BEGIN BRIDGE -L- STA.1080+32.00

END BRIDGE -L- STA.1081+77.00

-L- POT Sta. 1087+13.09
-Y38- POT Sta. 10+00.00

-Y38- POT Sta. 12+50.00 END CONSTRUCTION

BEGIN SPECIAL GRADING -L- POT STA.1077+98.00

END SPECIAL GRADING -L- POT STA.1084+08.00

BEGIN SBG +53.56
END SBG +06.74
BEGIN SBG +02.00
END SBG +07.00
BEGIN SBG +02.00
END SBG +94.47
END SBG +75.00

CLASS II RIP RAP

EXCAVATION EST. 1100 CY

WW FENCE

12" TL INSTALL

10" WL

24" ENCASEMENT

18" CSP W/ ELBOWS AND W/ ROD & LUG CONNECTORS

SR 1238 MCLEMORE RD 18' BST

50' 0' 50' 100'

REVISIONS

7/2/99

FILE: $FILES
DATE: $DATES
STAGES

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-24

UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024864 ENGINEER KEVIN C. ZUBER

2013-MAY-07

MA Engineering CONSULTANTS, INC.
598 E. Chatham Street, Suite 137
Cary, N. C. 27511

UTILITY OWNERS ON THIS PROJECT:

1. SAMPSON COUNTY
UTILITY: 10" WATER LINE
CONTACT: LEE CANNADY
PHONE: 910-592-0188

NAD 83/NSRS 2007

FROM -L- STA. 1095+47.50 LT
TO -L- STA. 1098+58.46 LT
THE R/W WILL BE PURCHASED
UNDER R-2303C

RELOCATE WATER METER - 1 EACH

BEGIN 10" WATER LINE
TIE-IN TO PROP.
10" WATER LINE
WL-3B STA. 0+00.00
WL-3 STA. 24+89.49
L STA. 1088+11.75 RT 106.5'

ABANDON 912 LF OF
10" UTILITY PIPE

PROP. 90° HORIZ. BEND
WL-3 STA. 33+82.98
L STA. 1095+00.00 LT 110'

PROP. 45 LF OF 24"
ENCASEMENT BY TRENCHLESS
INSTALLATION IN SOIL
PROP. 45 LF OF 24"
ENCASEMENT BY TRENCHLESS
INSTALLATION IN SOIL
PROP. 89 LF OF 24"
ENCASEMENT PIPE

PROP. 45° HORIZ. BEND
WL-3 STA. 35+84.18
L STA. 1096+95.00 LT 95'

PROP. 45° HORIZ. BEND
WL-3 STA. 35+62.97
L STA. 1096+80.00 LT 110'

END WATER LINE
TIE-IN TO PROP.
10" X 10" TEE
WL-3E STA. 1+09.63
WL-3 STA. 34+01.87
L STA. 1097+23.90 RT 95'

PROP. 10" VALVE - 2 EACH

END WATER LINE
TIE IN TO PROP.
10" WATER LINE
ON NCDOT R-2303D
WL-3 STA. 36+22.97
L STA. 1097+33.89 LT 95'

PROP. 38 LF OF 24"
ENCASEMENT BY TRENCHLESS
INSTALLATION IN SOIL
PROP. 38 LF OF 24"
ENCASEMENT BY TRENCHLESS
INSTALLATION IN SOIL
PROP. 76 LF OF 24"
ENCASEMENT PIPE

END 10" WATER LINE
TIE-IN TO EXISTING
10" WATER LINE
WL-3E STA. 1+10.37
L STA. 1097+37.57 RT 95'

PROP. 10" TAPPING VALVE - 1 EACH

PROP. 90° HORIZ. BEND
WL-3E STA. 0+90.37
L STA. 1097+23.90 RT 5'

PROP. 10 LF OF TRENCHLESS
INSTALLATION OF 24" PIPE
NOT IN SOIL
PROP. 9 LF OF TRENCHLESS
INSTALLATION OF 24" PIPE
IN SOIL
PROP. 19 LF OF 24"
ENCASEMENT PIPE

REMOVE WATER METER - 1 EACH

RELOCATE WATER METER - 1 EACH

PROP. 1,285 LF OF 10" WATER LINE

PROP. 90° HORIZ. BEND
WL-3 STA. 31+72.97
L STA. 1095+00.00 RT 95'

PROP. 90° HORIZ. BEND
WL-3E STA. 1+00.37
L STA. 1097+33.90 RT 5'

PROP. 10" VALVE - 2 EACH

PROP. 45° HORIZ. BEND
WL-3B STA. 0+11.44
L STA. 1088+11.64 RT 118'

STA. 1097+00.00 -L-
END STATE PROJECT R-2303C

MATCH LINE -L- STA. 1088+00 SEE SHEET NO. 23

SEE SHEETS UC-52 THRU UC-56 FOR WL-3 WATER PROFILE
SEE SHEET UC-56 FOR WL-3C WATER PROFILE
SEE SHEET UC-56 FOR WL-3E WATER PROFILE

50' 0' 50' 100'

REVISIONS

7/2/99

FILE: $FILES
DATE: $DATE$
$TIMES

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-25

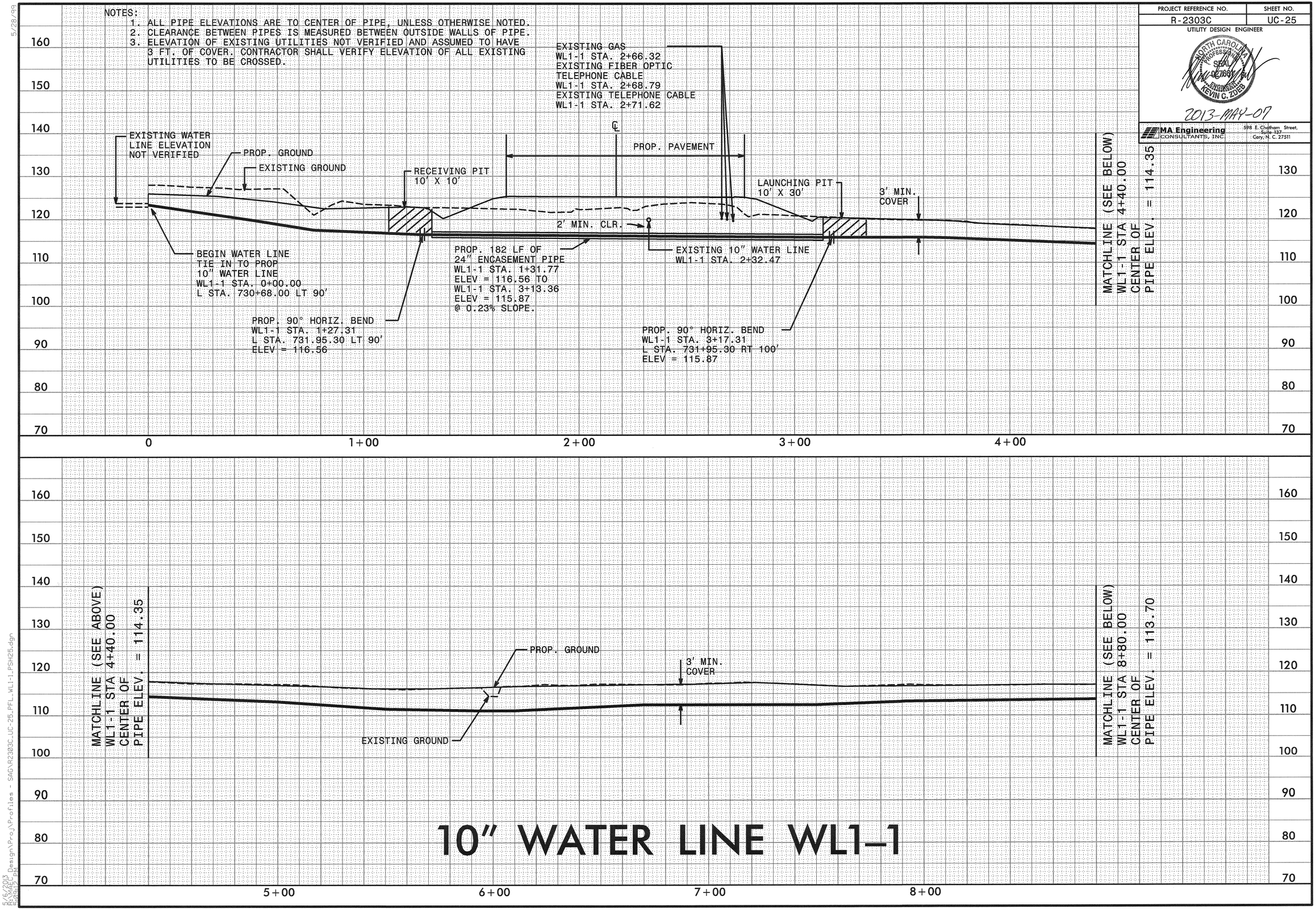
UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 025768 ENGINEER KEVIN C. ZUEG

2013-MAY-07

MA Engineering CONSULTANTS, INC. 598 E. Chatham Street, Suite-137 Cary, N. C. 27511

NOTES:
1. ALL PIPE ELEVATIONS ARE TO CENTER OF PIPE, UNLESS OTHERWISE NOTED.
2. CLEARANCE BETWEEN PIPES IS MEASURED BETWEEN OUTSIDE WALLS OF PIPE.
3. ELEVATION OF EXISTING UTILITIES NOT VERIFIED AND ASSUMED TO HAVE 3 FT. OF COVER. CONTRACTOR SHALL VERIFY ELEVATION OF ALL EXISTING UTILITIES TO BE CROSSED.



10" WATER LINE WL1-1

5/28/99

5/6/2013
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PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-26

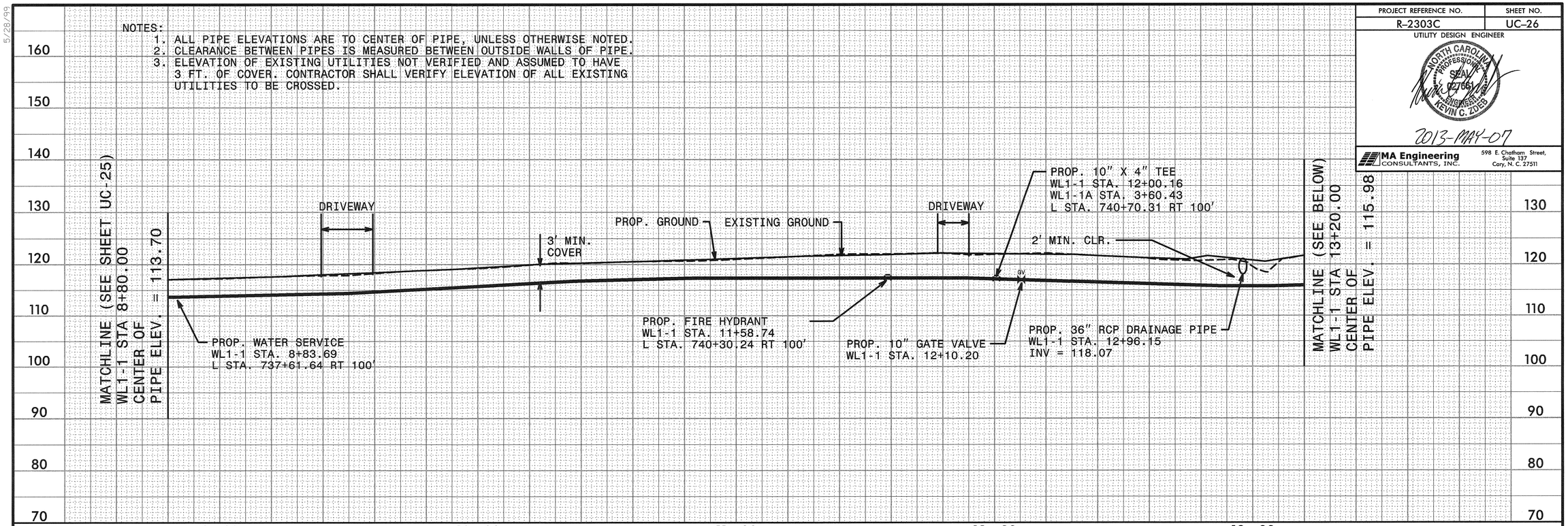
UTILITY DESIGN ENGINEER

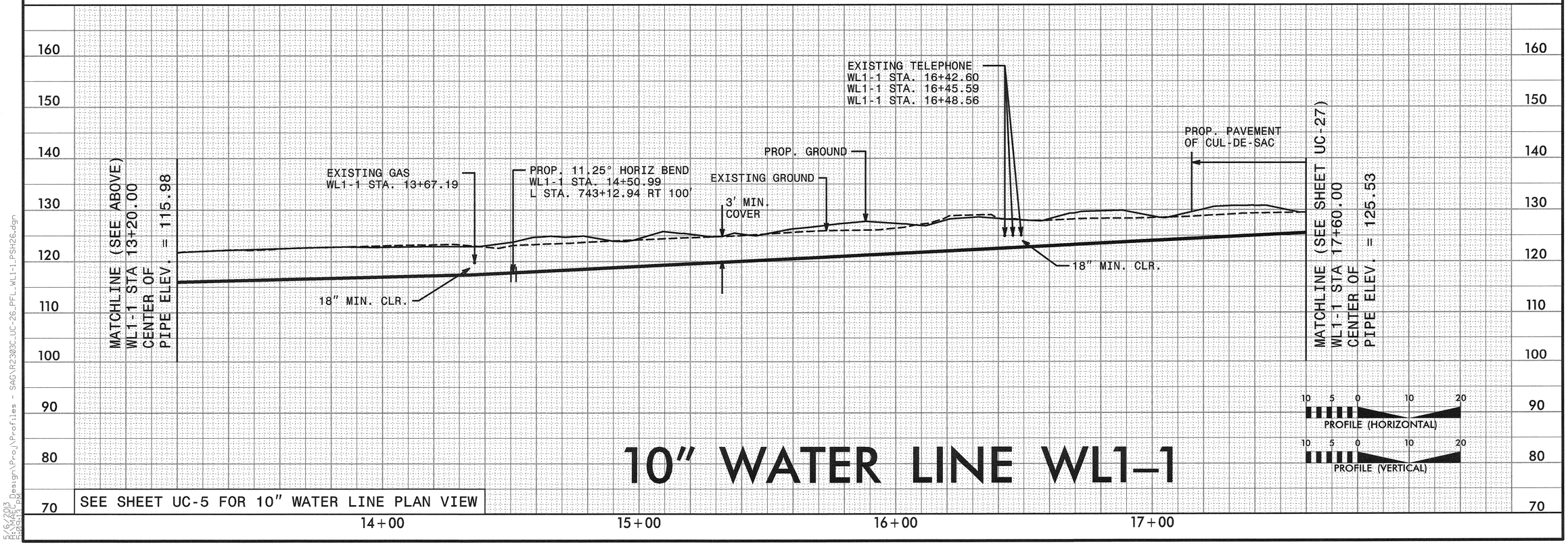
NORTH CAROLINA PROFESSIONAL SEAL 027661 ENGINEER KEVIN C. ZDEB

2013-MAY-07

MA Engineering CONSULTANTS, INC. 598 E. Chatham Street, Suite 137 Cary, N. C. 27511

NOTES:
1. ALL PIPE ELEVATIONS ARE TO CENTER OF PIPE, UNLESS OTHERWISE NOTED.
2. CLEARANCE BETWEEN PIPES IS MEASURED BETWEEN OUTSIDE WALLS OF PIPE.
3. ELEVATION OF EXISTING UTILITIES NOT VERIFIED AND ASSUMED TO HAVE 3 FT. OF COVER. CONTRACTOR SHALL VERIFY ELEVATION OF ALL EXISTING UTILITIES TO BE CROSSED.





10" WATER LINE WL1-1

SEE SHEET UC-5 FOR 10" WATER LINE PLAN VIEW

5/28/99

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PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-27

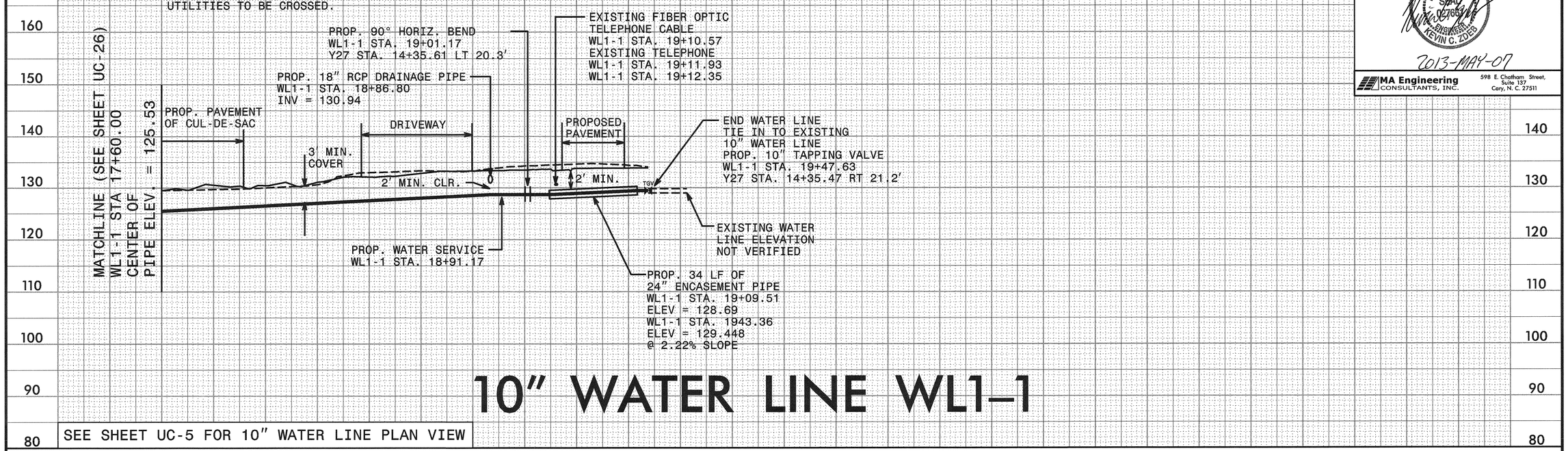
UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 027665 ENGINEER KEVIN C. ZDES

2013-MAY-07

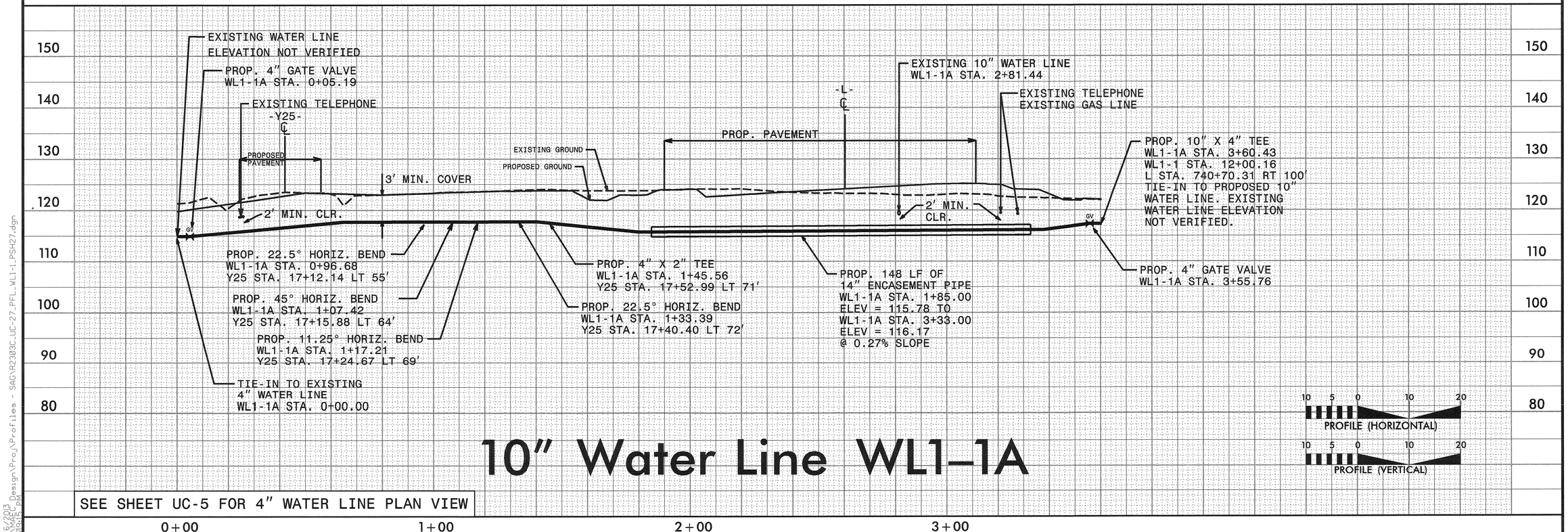
MA Engineering CONSULTANTS, INC.
598 E. Chatham Street, Suite 137
Cary, N. C. 27511

NOTES:
1. ALL PIPE ELEVATIONS ARE TO CENTER OF PIPE, UNLESS OTHERWISE NOTED.
2. CLEARANCE BETWEEN PIPES IS MEASURED BETWEEN OUTSIDE WALLS OF PIPE.
3. ELEVATION OF EXISTING UTILITIES NOT VERIFIED AND ASSUMED TO HAVE 3 FT. OF COVER. CONTRACTOR SHALL VERIFY ELEVATION OF ALL EXISTING UTILITIES TO BE CROSSED.



10" WATER LINE WL1-1

SEE SHEET UC-5 FOR 10" WATER LINE PLAN VIEW



10" Water Line WL1-1A

SEE SHEET UC-5 FOR 4" WATER LINE PLAN VIEW

5/28/99

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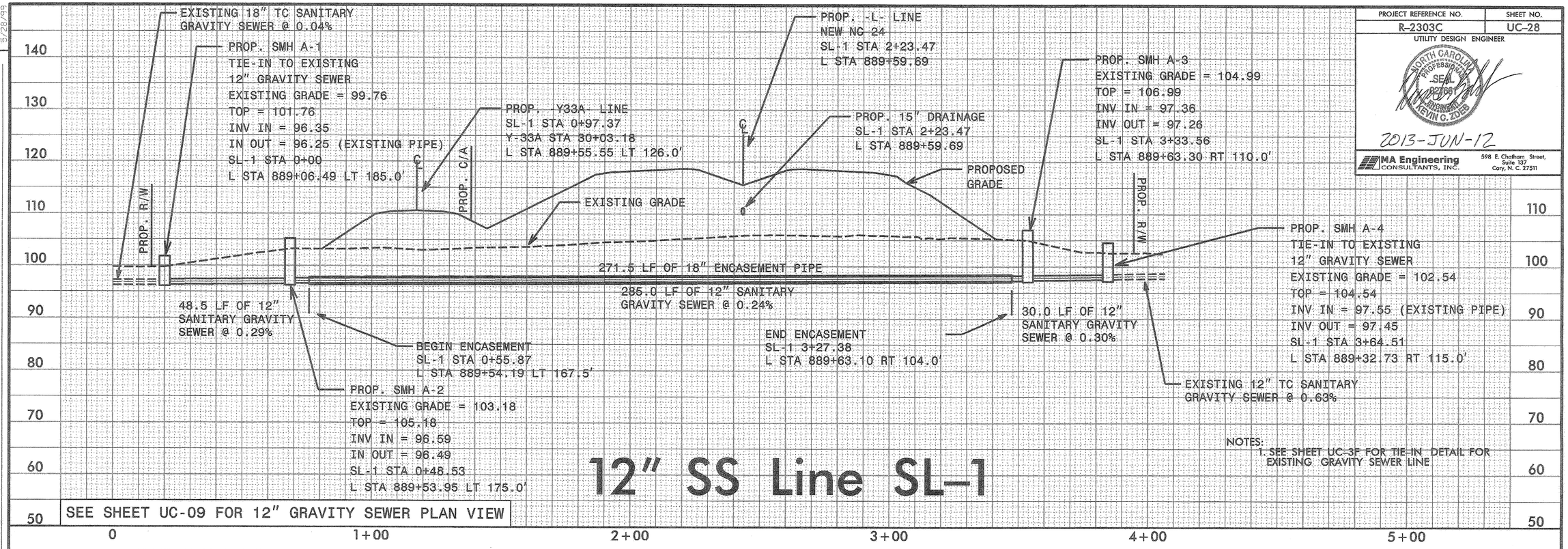
PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-28

UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 021661 ENGINEER KEVIN C. ZUBER

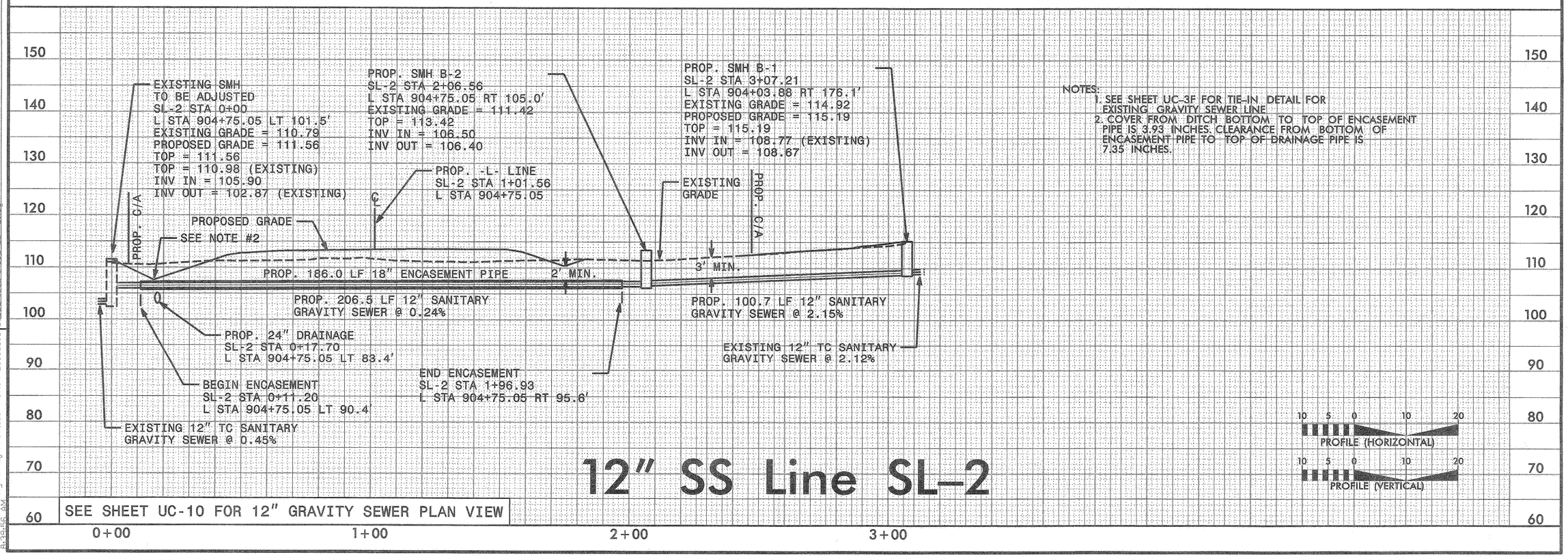
2013-JUN-12

MA Engineering CONSULTANTS, INC. 598 E. Chatham Street, Suite 137 Cary, N. C. 27511



12" SS Line SL-1

NOTES:
1. SEE SHEET UC-3F FOR TIE-IN DETAIL FOR EXISTING GRAVITY SEWER LINE



12" SS Line SL-2

NOTES:
1. SEE SHEET UC-3F FOR TIE-IN DETAIL FOR EXISTING GRAVITY SEWER LINE
2. COVER FROM DITCH BOTTOM TO TOP OF ENCASEMENT PIPE IS 3.93 INCHES. CLEARANCE FROM BOTTOM OF ENCASEMENT PIPE TO TOP OF DRAINAGE PIPE IS 7.35 INCHES.

REVISIONS

5/28/99

6/12/2013 8:36:40 AM
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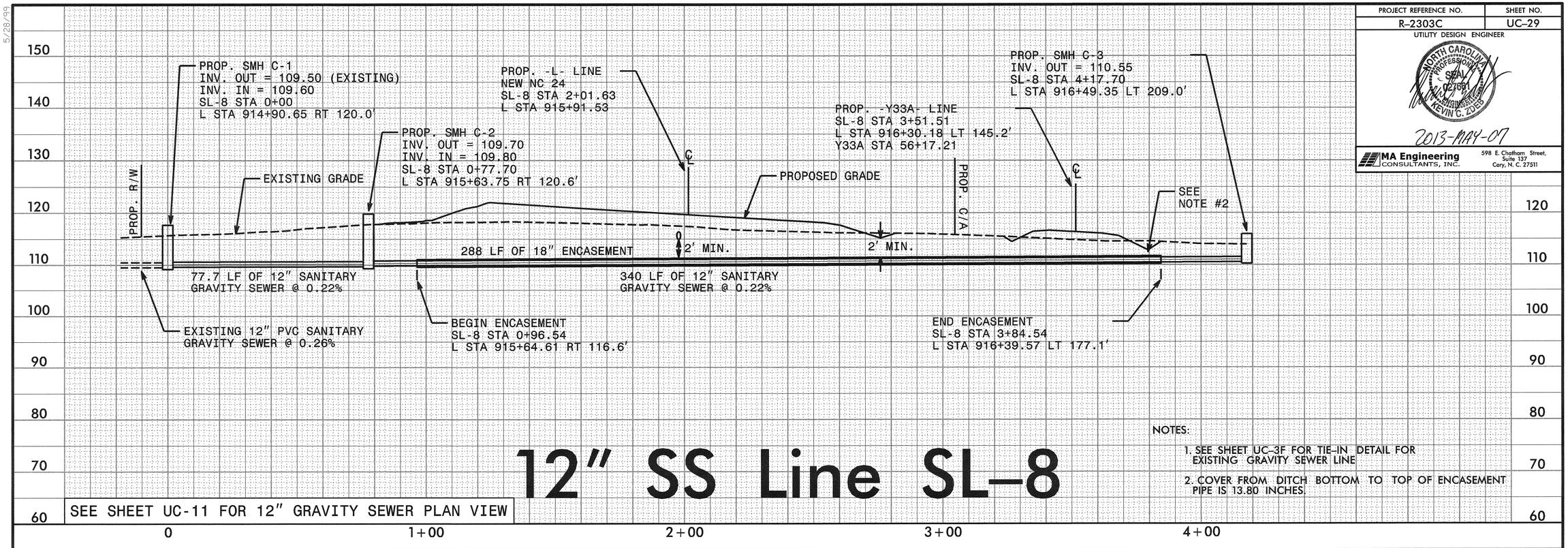
PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-29

UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 027681 ENGINEER KEVIN C. ZIDEK

2013-MAY-07

MA Engineering CONSULTANTS, INC.
598 E. Chatham Street, Suite 137
Cary, N. C. 27511

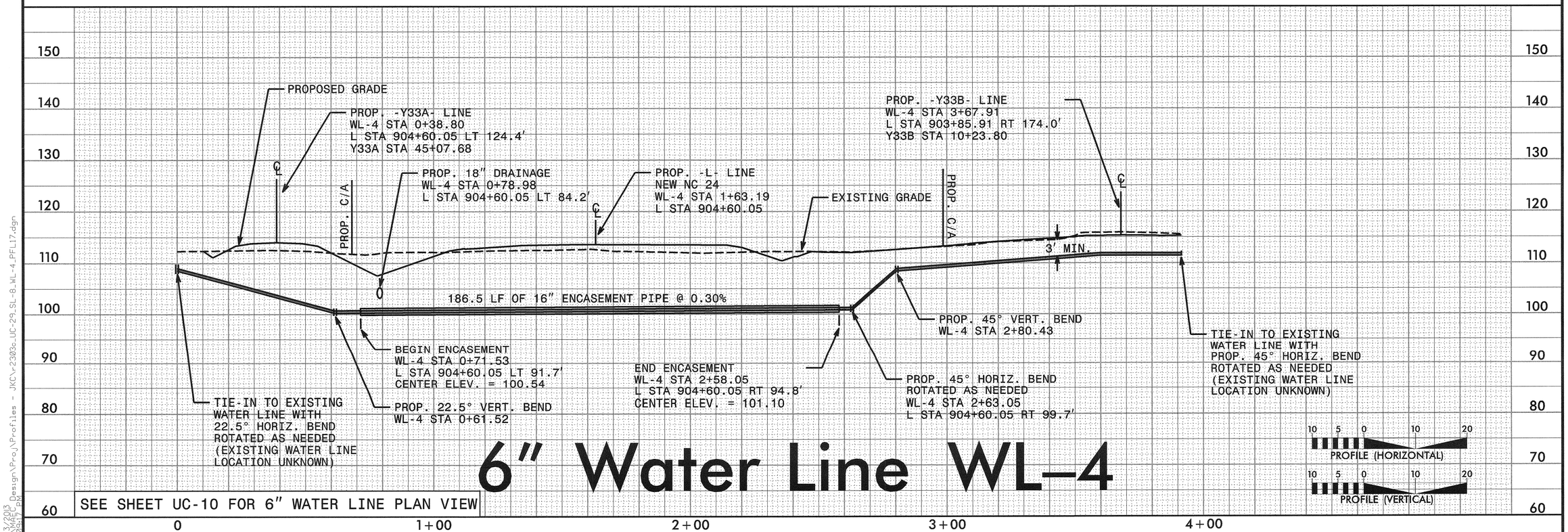


12" SS Line SL-8

SEE SHEET UC-11 FOR 12" GRAVITY SEWER PLAN VIEW

NOTES:

1. SEE SHEET UC-3F FOR TIE-IN DETAIL FOR EXISTING GRAVITY SEWER LINE
2. COVER FROM DITCH BOTTOM TO TOP OF ENCASEMENT PIPE IS 13.80 INCHES.



6" Water Line WL-4

SEE SHEET UC-10 FOR 6" WATER LINE PLAN VIEW

5/28/99

5/3/2013
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PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-30

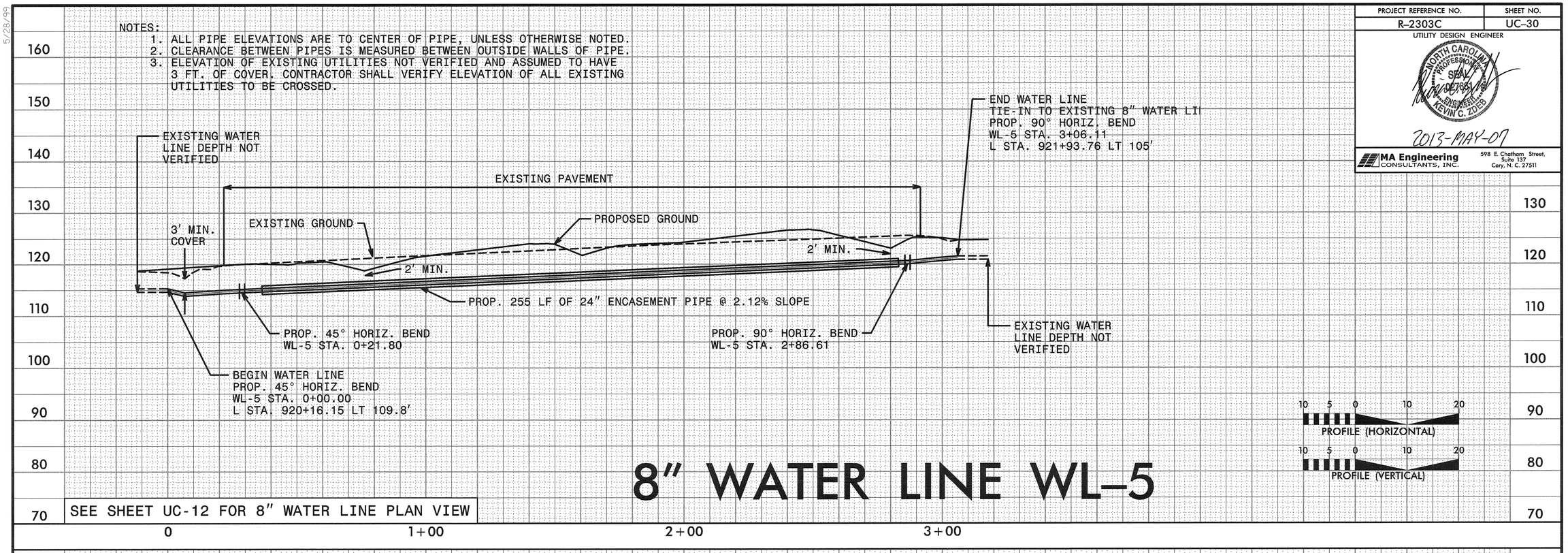
UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 027851 KEVIN C. ZDEB

2013-MAY-07

MA Engineering CONSULTANTS, INC.
598 E. Chatham Street, Suite 137
Cary, N. C. 27511

NOTES:
1. ALL PIPE ELEVATIONS ARE TO CENTER OF PIPE, UNLESS OTHERWISE NOTED.
2. CLEARANCE BETWEEN PIPES IS MEASURED BETWEEN OUTSIDE WALLS OF PIPE.
3. ELEVATION OF EXISTING UTILITIES NOT VERIFIED AND ASSUMED TO HAVE 3 FT. OF COVER. CONTRACTOR SHALL VERIFY ELEVATION OF ALL EXISTING UTILITIES TO BE CROSSED.



8" WATER LINE WL-5

SEE SHEET UC-12 FOR 8" WATER LINE PLAN VIEW

5/28/99

5/6/2013
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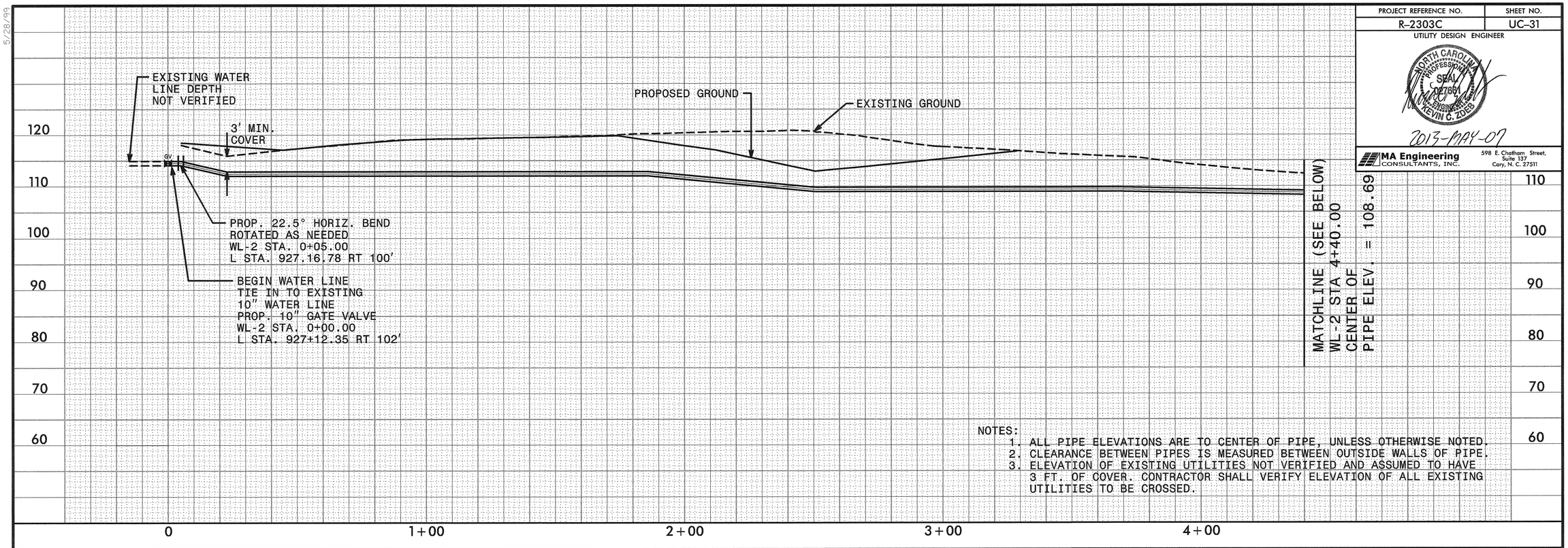
PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-31

UTILITY DESIGN ENGINEER

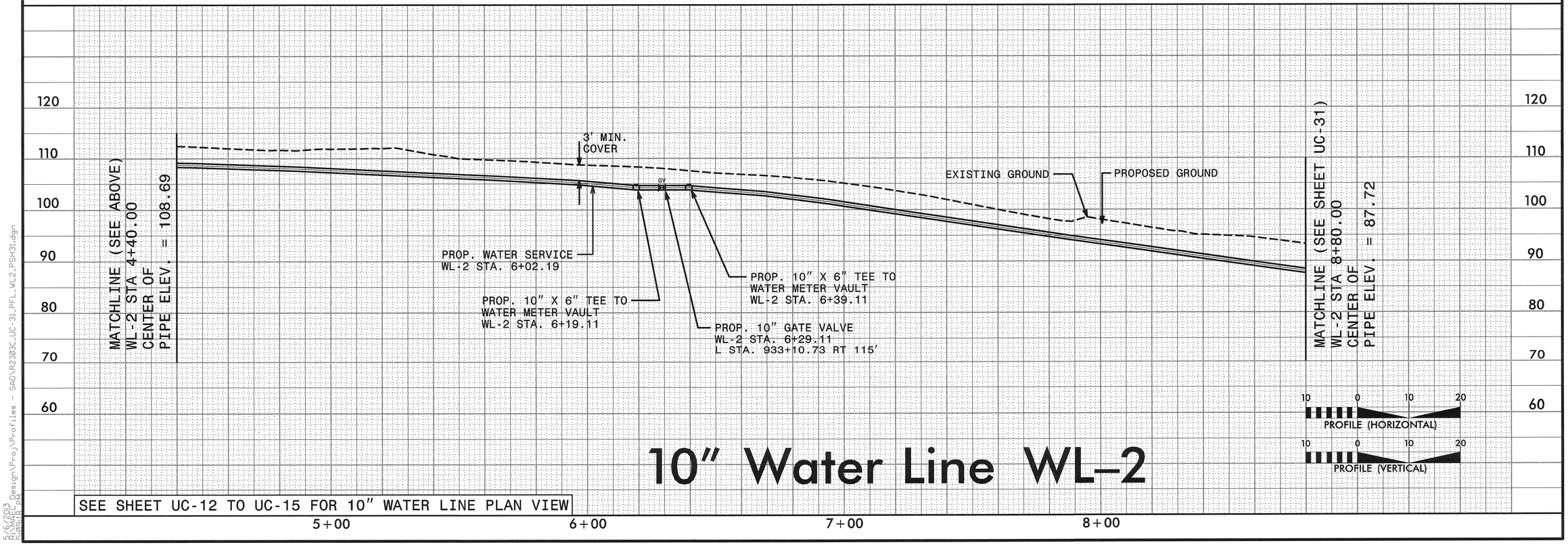
NORTH CAROLINA PROFESSIONAL SEAL 022661 ENGINEER KEVIN C. ZUEB

2013-MAY-07

MA Engineering CONSULTANTS, INC.
598 E. Chatham Street, Suite 137, Cary, N. C. 27511



NOTES:
1. ALL PIPE ELEVATIONS ARE TO CENTER OF PIPE, UNLESS OTHERWISE NOTED.
2. CLEARANCE BETWEEN PIPES IS MEASURED BETWEEN OUTSIDE WALLS OF PIPE.
3. ELEVATION OF EXISTING UTILITIES NOT VERIFIED AND ASSUMED TO HAVE 3 FT. OF COVER. CONTRACTOR SHALL VERIFY ELEVATION OF ALL EXISTING UTILITIES TO BE CROSSED.



10" Water Line WL-2

SEE SHEET UC-12 TO UC-15 FOR 10" WATER LINE PLAN VIEW

5/6/2013
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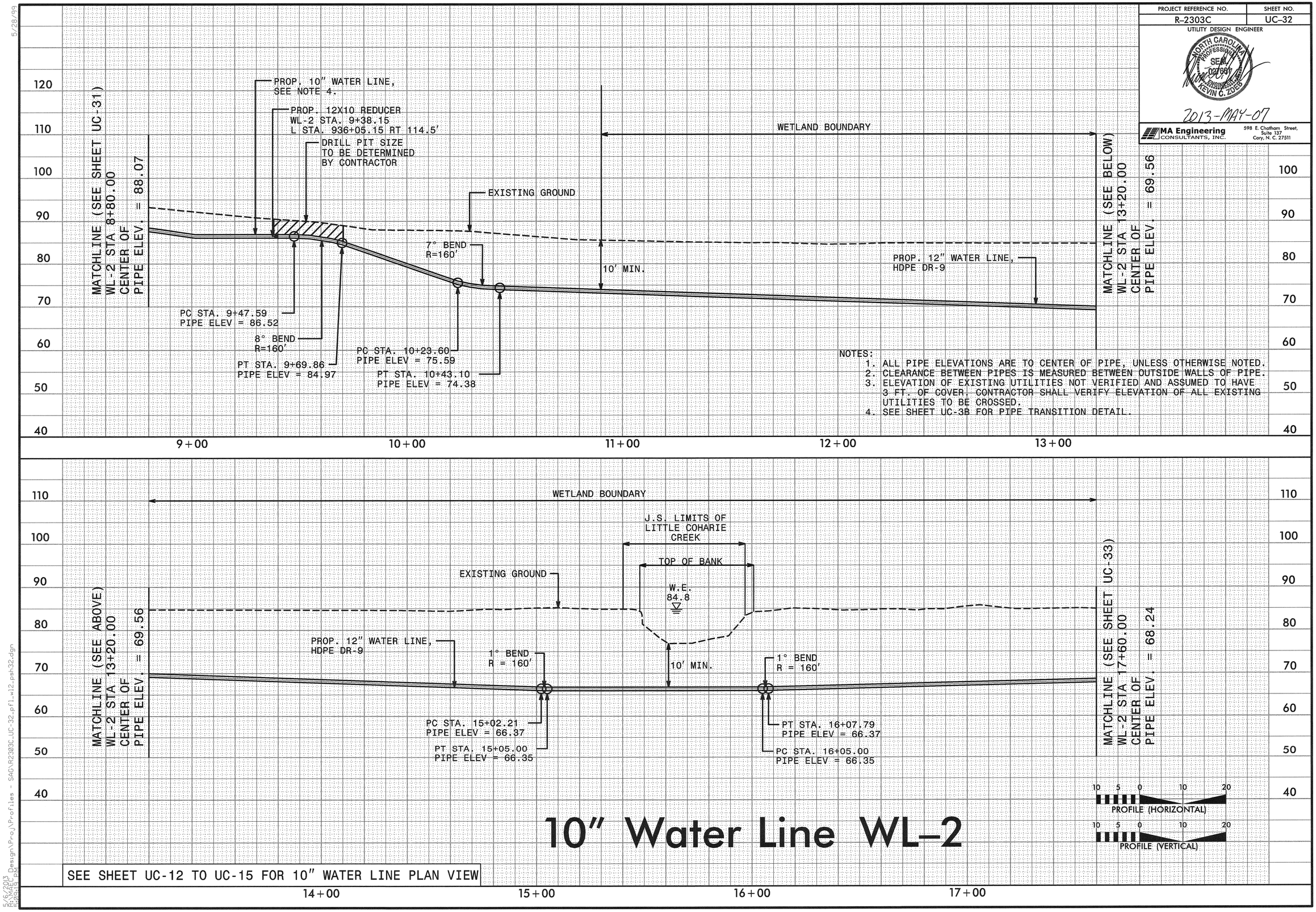
PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-32

UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022667 ENGINEER KEVIN C. ZDERIC

2013-MAY-07

MA Engineering CONSULTANTS, INC.
598 E. Chatham Street, Suite 137
Cary, N. C. 27511



NOTES:
1. ALL PIPE ELEVATIONS ARE TO CENTER OF PIPE, UNLESS OTHERWISE NOTED.
2. CLEARANCE BETWEEN PIPES IS MEASURED BETWEEN OUTSIDE WALLS OF PIPE.
3. ELEVATION OF EXISTING UTILITIES NOT VERIFIED AND ASSUMED TO HAVE 3 FT. OF COVER. CONTRACTOR SHALL VERIFY ELEVATION OF ALL EXISTING UTILITIES TO BE CROSSED.
4. SEE SHEET UC-3B FOR PIPE TRANSITION DETAIL.

10" Water Line WL-2

SEE SHEET UC-12 TO UC-15 FOR 10" WATER LINE PLAN VIEW

5/28/99

5/6/2013
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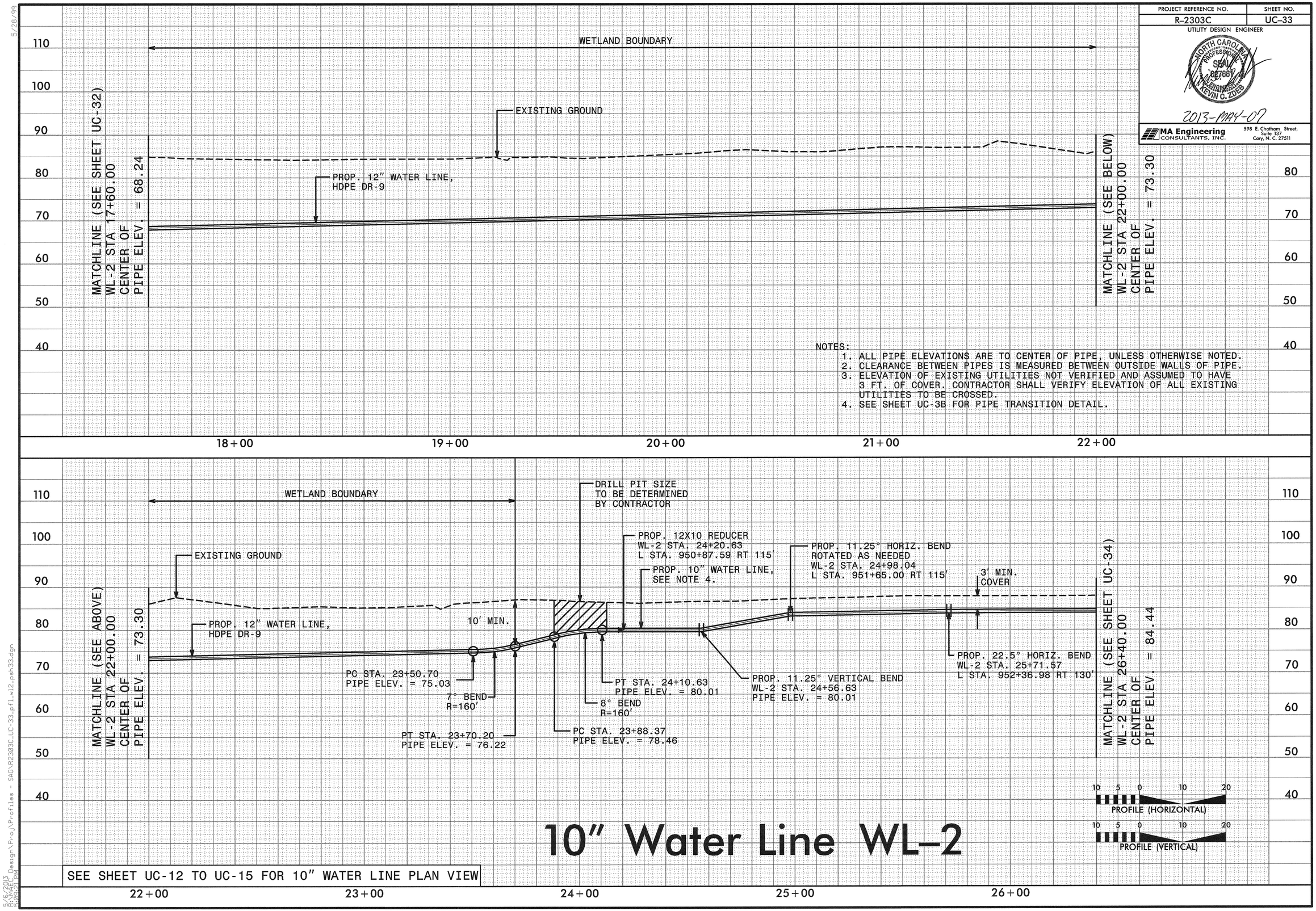
PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-33

UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 047667 ENGINEER KEVIN C. ZICEB

2013-MAY-07

MA Engineering CONSULTANTS, INC.
598 E. Chatham Street, Suite 137
Cary, N. C. 27511



10" Water Line WL-2

SEE SHEET UC-12 TO UC-15 FOR 10" WATER LINE PLAN VIEW

NOTES:
1. ALL PIPE ELEVATIONS ARE TO CENTER OF PIPE, UNLESS OTHERWISE NOTED.
2. CLEARANCE BETWEEN PIPES IS MEASURED BETWEEN OUTSIDE WALLS OF PIPE.
3. ELEVATION OF EXISTING UTILITIES NOT VERIFIED AND ASSUMED TO HAVE 3 FT. OF COVER. CONTRACTOR SHALL VERIFY ELEVATION OF ALL EXISTING UTILITIES TO BE CROSSED.
4. SEE SHEET UC-3B FOR PIPE TRANSITION DETAIL.

5/28/99

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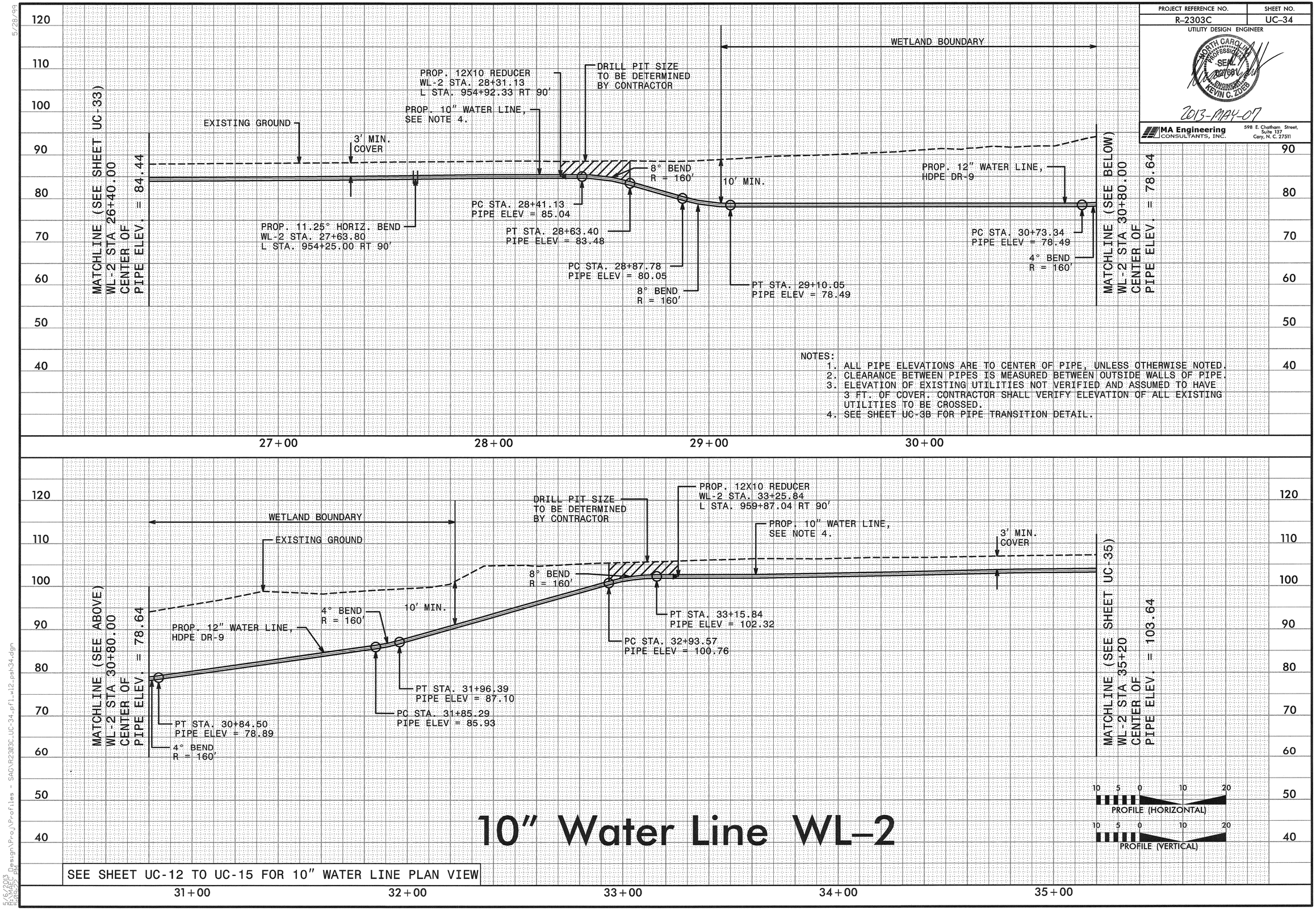
PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-34

UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022689 ENGINEER KEVIN C. ZOEB

2013-MAY-07

MA Engineering CONSULTANTS, INC. 598 E. Chatham Street, Suite 137 Cary, N. C. 27511



NOTES:
1. ALL PIPE ELEVATIONS ARE TO CENTER OF PIPE, UNLESS OTHERWISE NOTED.
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3. ELEVATION OF EXISTING UTILITIES NOT VERIFIED AND ASSUMED TO HAVE 3 FT. OF COVER. CONTRACTOR SHALL VERIFY ELEVATION OF ALL EXISTING UTILITIES TO BE CROSSED.
4. SEE SHEET UC-3B FOR PIPE TRANSITION DETAIL.

10" Water Line WL-2

SEE SHEET UC-12 TO UC-15 FOR 10" WATER LINE PLAN VIEW

5/28/99

5/6/2013
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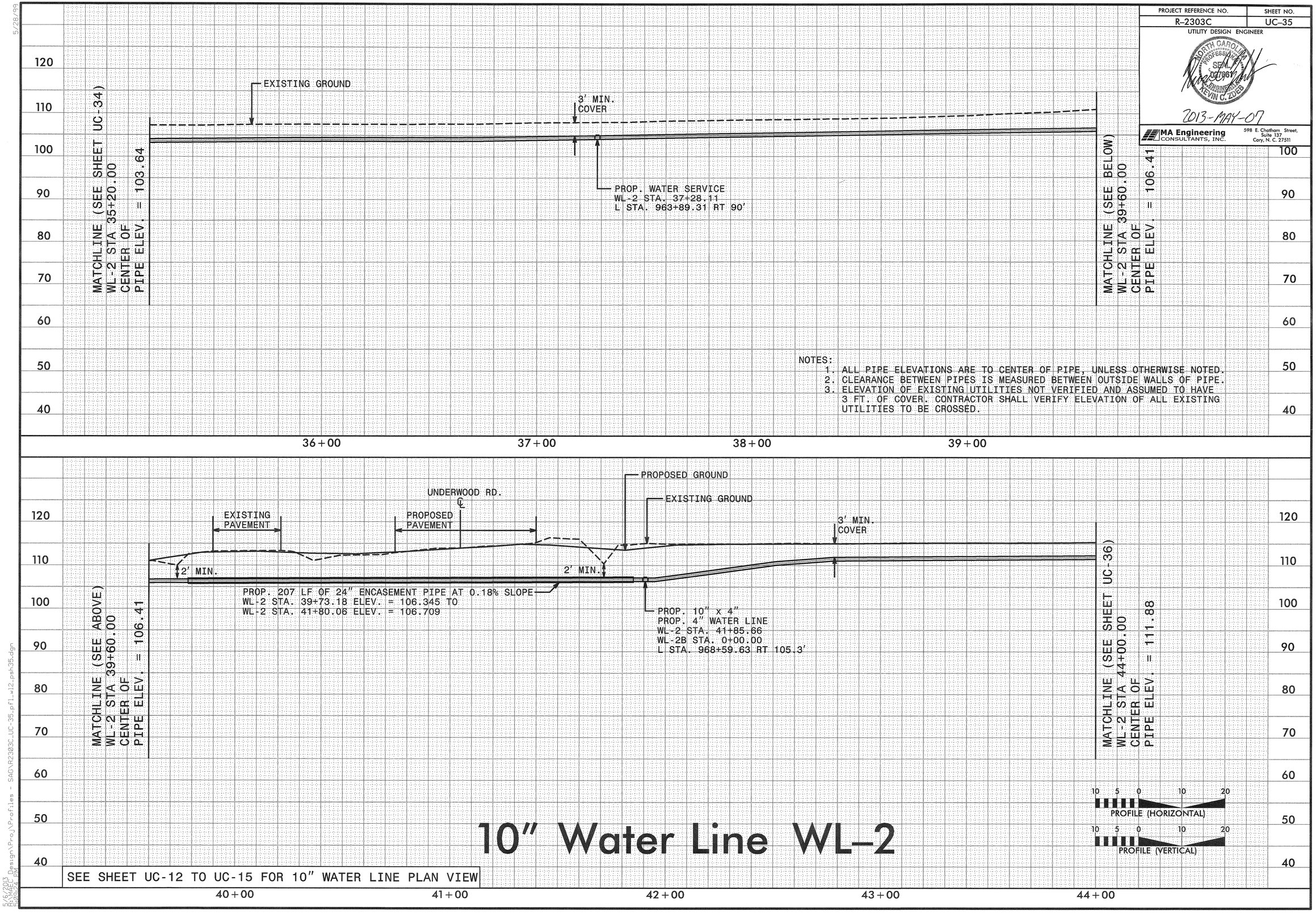
PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-35

UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 027861 ENGINEER KEVIN C. ZUEB

2013-MAY-07

MA Engineering CONSULTANTS, INC.
598 E. Chatham Street, Suite 137
Cary, N. C. 27511



NOTES:
1. ALL PIPE ELEVATIONS ARE TO CENTER OF PIPE, UNLESS OTHERWISE NOTED.
2. CLEARANCE BETWEEN PIPES IS MEASURED BETWEEN OUTSIDE WALLS OF PIPE.
3. ELEVATION OF EXISTING UTILITIES NOT VERIFIED AND ASSUMED TO HAVE 3 FT. OF COVER. CONTRACTOR SHALL VERIFY ELEVATION OF ALL EXISTING UTILITIES TO BE CROSSED.

10" Water Line WL-2

SEE SHEET UC-12 TO UC-15 FOR 10" WATER LINE PLAN VIEW

5/28/99
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PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-36

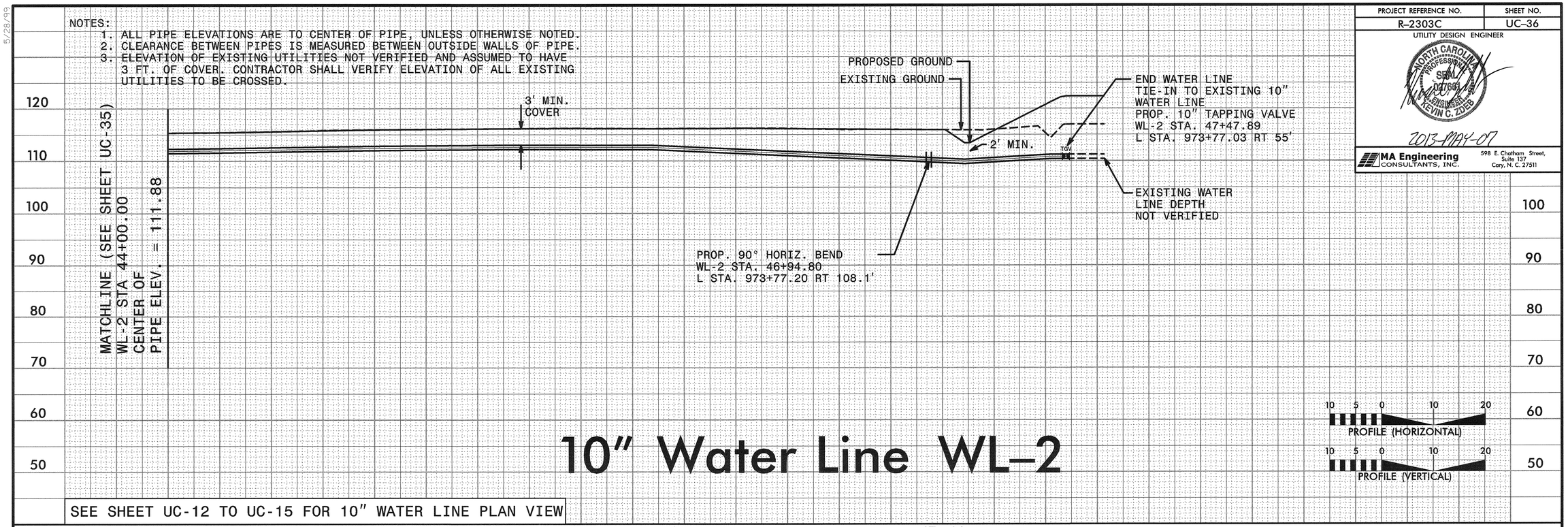
UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 027661 ENGINEER KEVIN C. ZOBS

2013-MAY-07

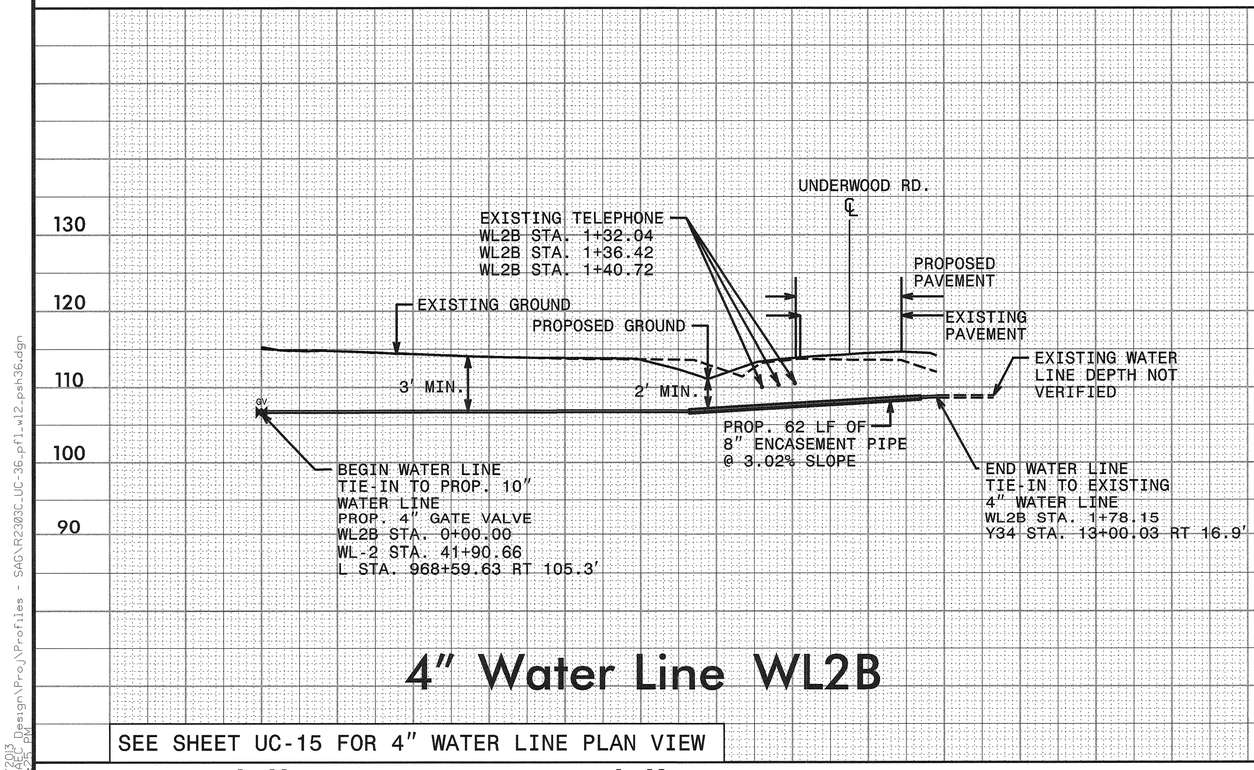
MA Engineering CONSULTANTS, INC. 598 E. Chatham Street, Suite 137 Cary, N. C. 27511

NOTES:
1. ALL PIPE ELEVATIONS ARE TO CENTER OF PIPE, UNLESS OTHERWISE NOTED.
2. CLEARANCE BETWEEN PIPES IS MEASURED BETWEEN OUTSIDE WALLS OF PIPE.
3. ELEVATION OF EXISTING UTILITIES NOT VERIFIED AND ASSUMED TO HAVE 3 FT. OF COVER. CONTRACTOR SHALL VERIFY ELEVATION OF ALL EXISTING UTILITIES TO BE CROSSED.



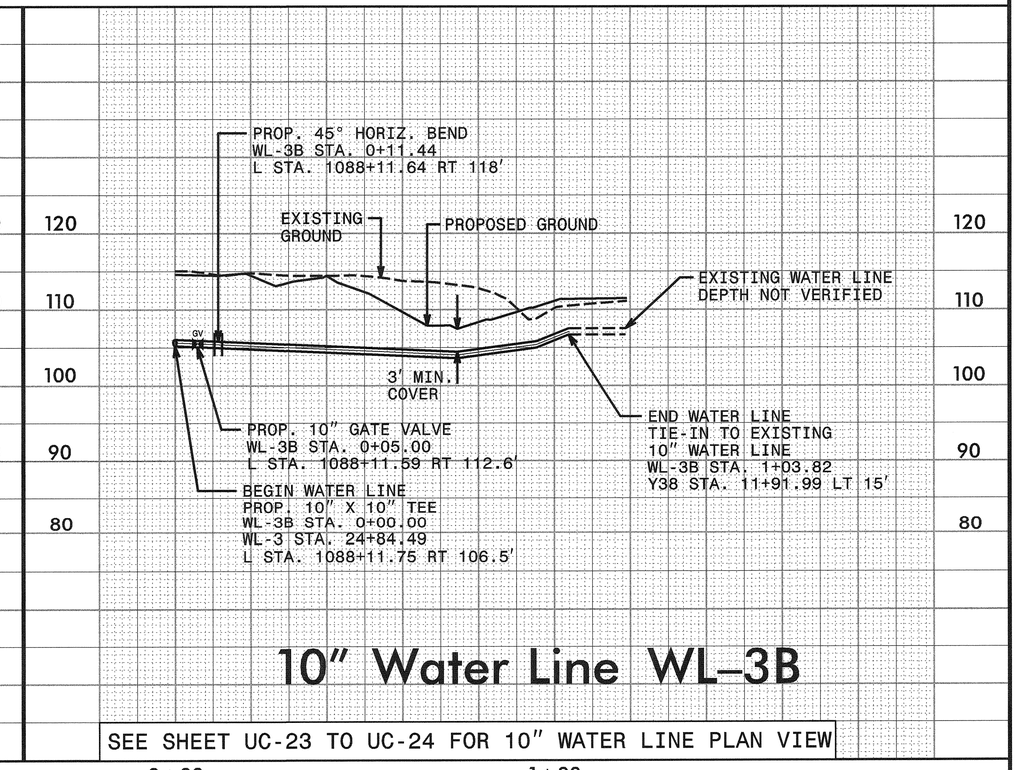
10" Water Line WL-2

SEE SHEET UC-12 TO UC-15 FOR 10" WATER LINE PLAN VIEW



4" Water Line WL2B

SEE SHEET UC-15 FOR 4" WATER LINE PLAN VIEW



10" Water Line WL-3B

SEE SHEET UC-23 TO UC-24 FOR 10" WATER LINE PLAN VIEW

5/28/99

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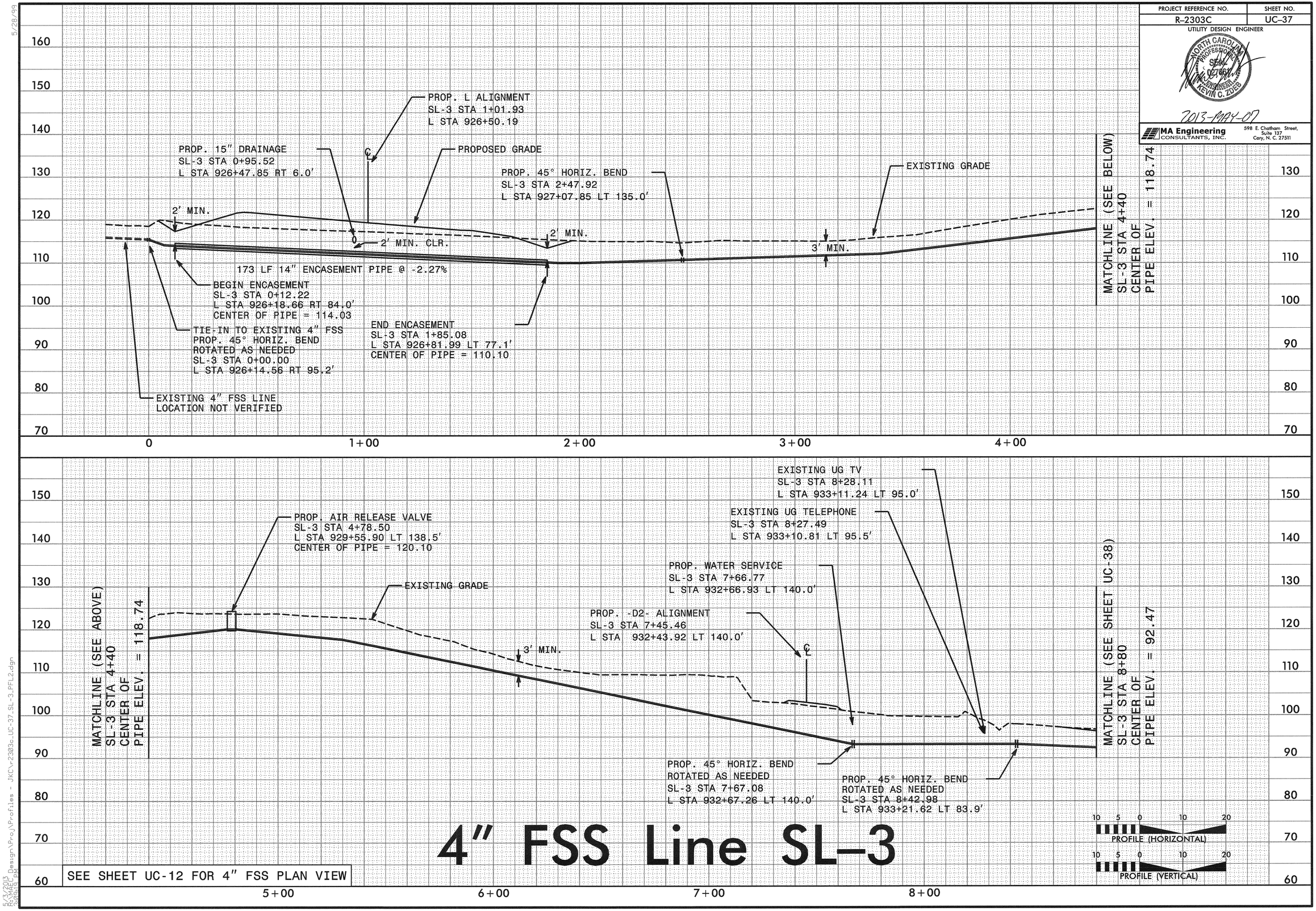
PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-37

UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 027641 ENGINEER KEVIN C. ZDEB

2013-MAY-07

MA Engineering CONSULTANTS, INC.
598 E. Chatham Street, Suite 137
Cary, N. C. 27511



4" FSS Line SL-3

5/28/99

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Sheet 1 of 1

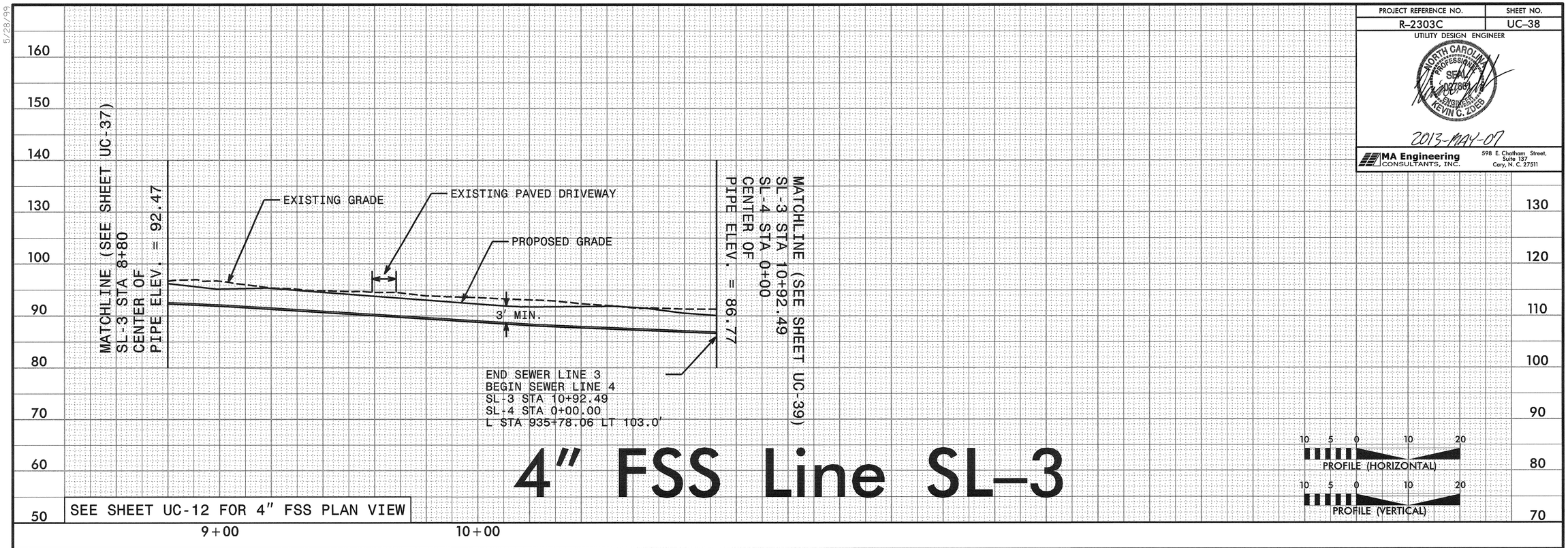
PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-38

UTILITY DESIGN ENGINEER

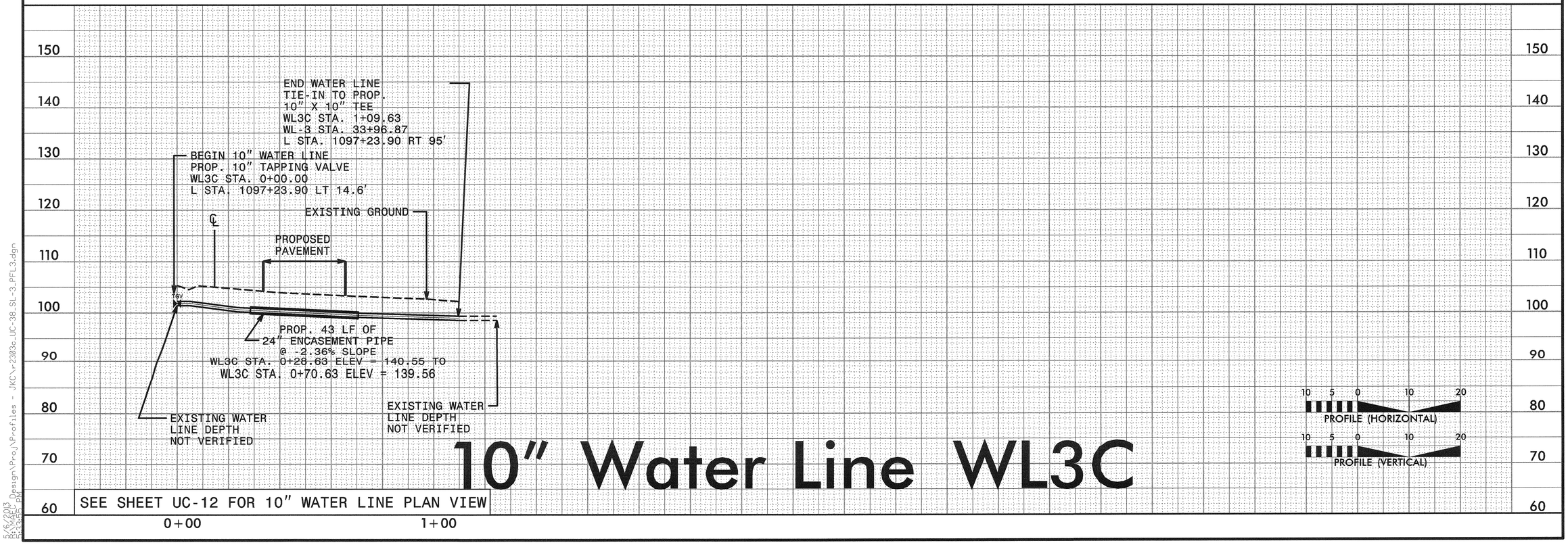
NORTH CAROLINA PROFESSIONAL SEAL 027186 ENGINEER KEVIN C. ZOES

2013-MAY-07

MA Engineering CONSULTANTS, INC.
598 E. Chatham Street, Suite 137
Cary, N. C. 27511



4" FSS Line SL-3



10" Water Line WL3C

5/28/99

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R-2303C - PK

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-39

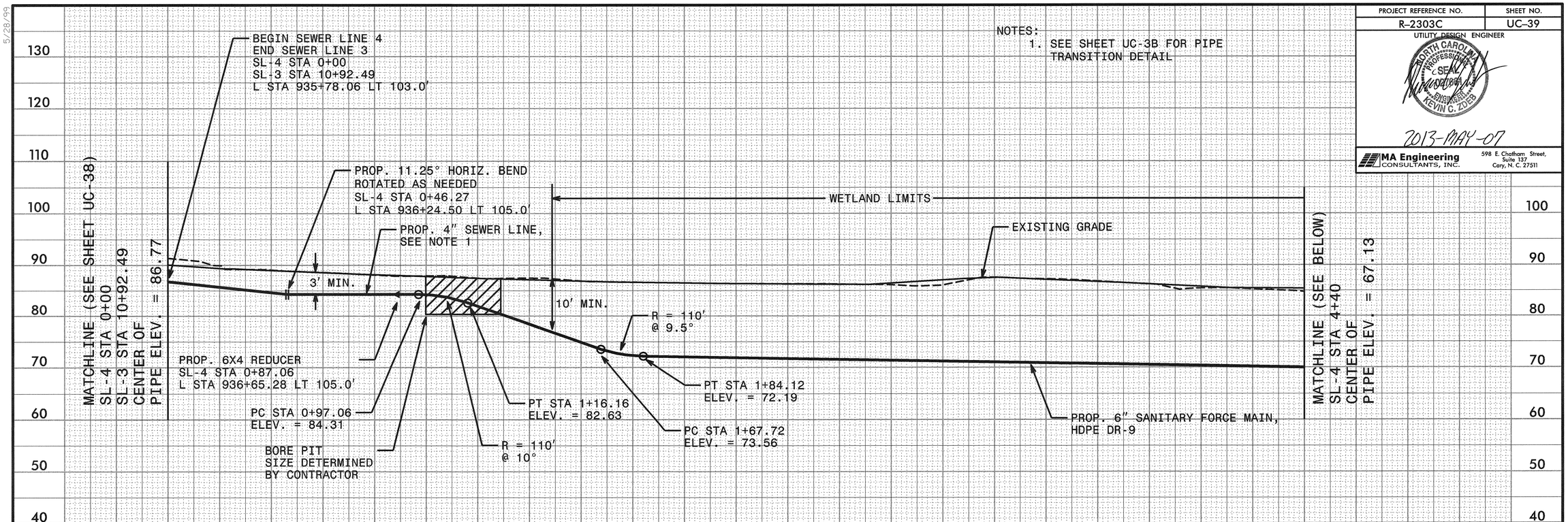
UTILITY DESIGN ENGINEER

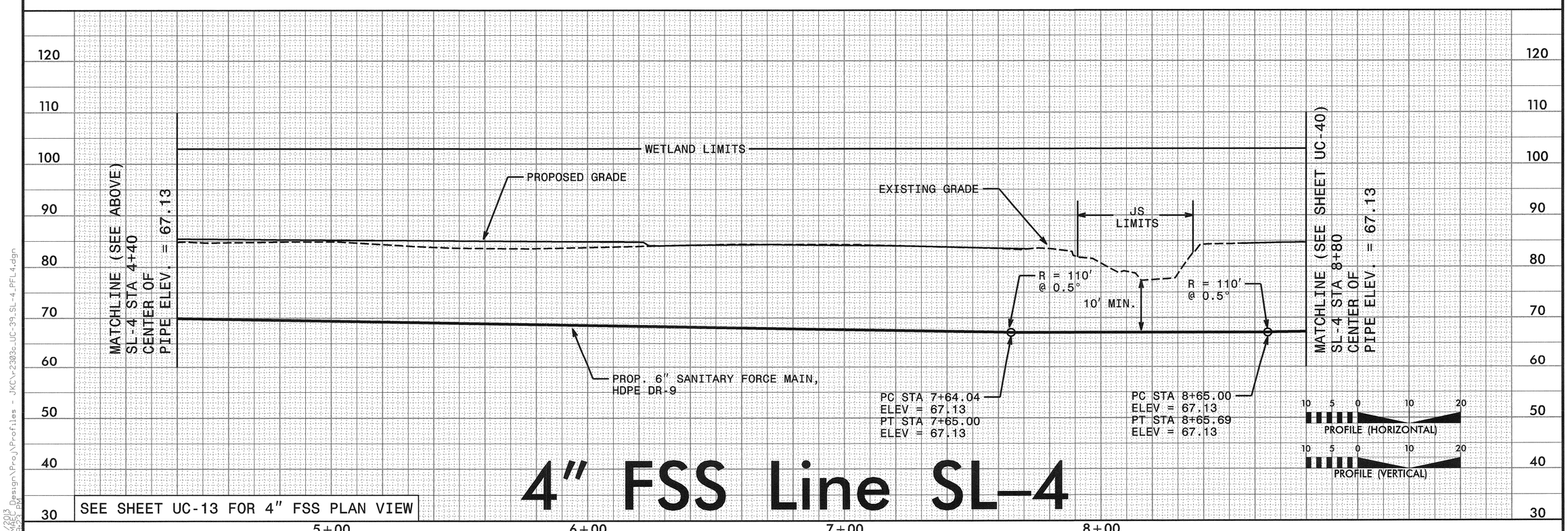
NORTH CAROLINA PROFESSIONAL SEAL 030393 ENGINEER KEVIN C. ZDEB

2013-MAY-07

MA Engineering CONSULTANTS, INC.
598 E. Chatham Street, Suite 137
Cary, N. C. 27511

NOTES:
1. SEE SHEET UC-3B FOR PIPE TRANSITION DETAIL





SEE SHEET UC-13 FOR 4" FSS PLAN VIEW

4" FSS Line SL-4

5/28/99

5/3/2013
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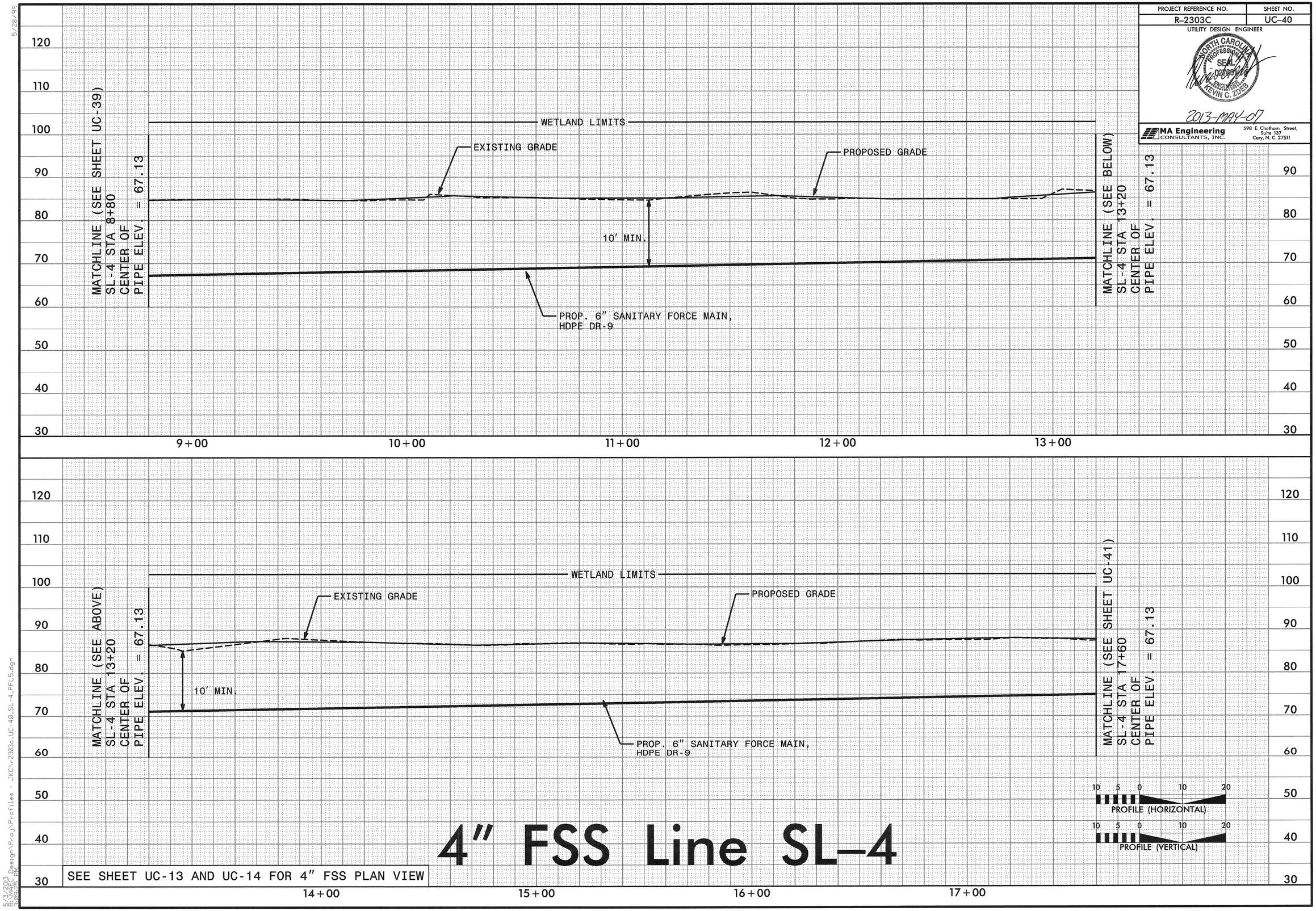
PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-40

UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL ENGINEER KEVIN C. ZOEB

2013-MAY-07

MA Engineering CONSULTANTS, INC.
598 E. Chatham Street, Suite 137
Cary, N. C. 27511



4" FSS Line SL-4

SEE SHEET UC-13 AND UC-14 FOR 4" FSS PLAN VIEW

5/28/99

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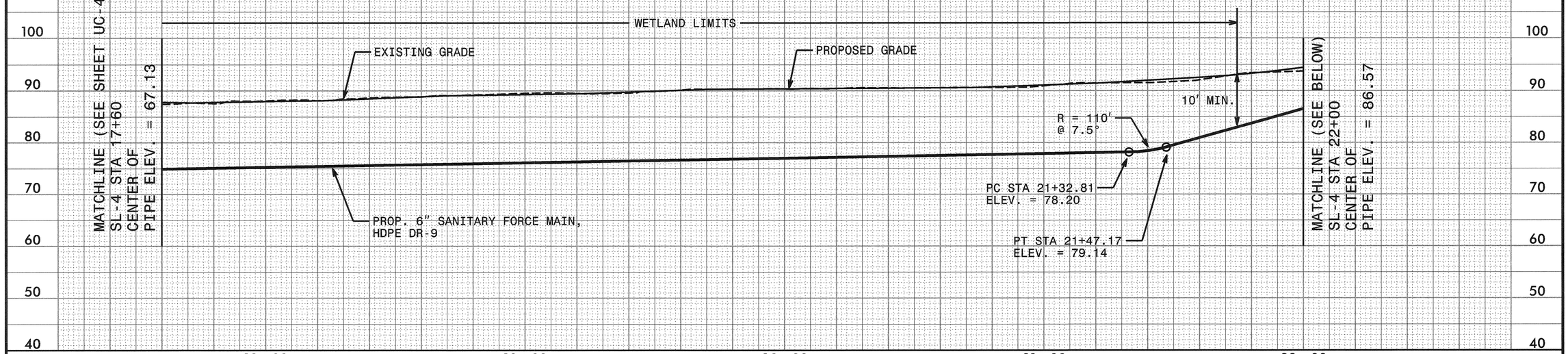
PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-41

UTILITY DESIGN ENGINEER

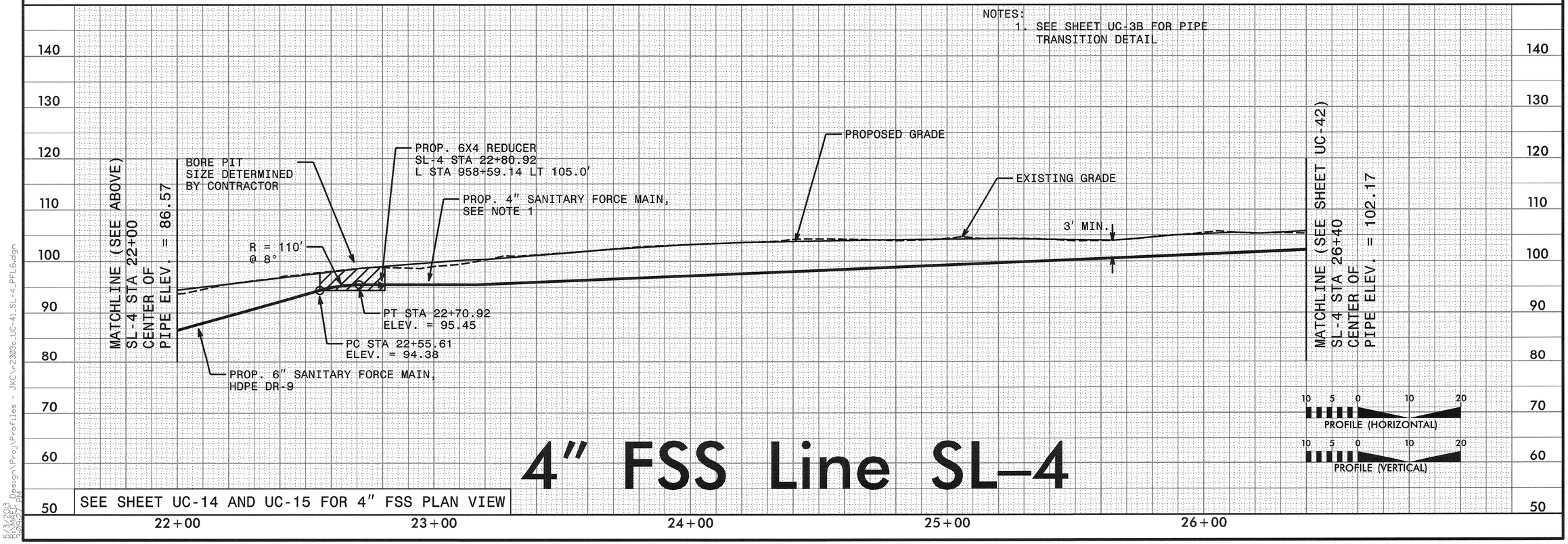
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 024860 KEVIN C. ZOERB

2013-MAY-07

MA Engineering CONSULTANTS, INC.
598 E. Chatham Street, Suite 137
Cary, N. C. 27511



NOTES:
1. SEE SHEET UC-3B FOR PIPE TRANSITION DETAIL



4" FSS Line SL-4

SEE SHEET UC-14 AND UC-15 FOR 4" FSS PLAN VIEW

R-2303C
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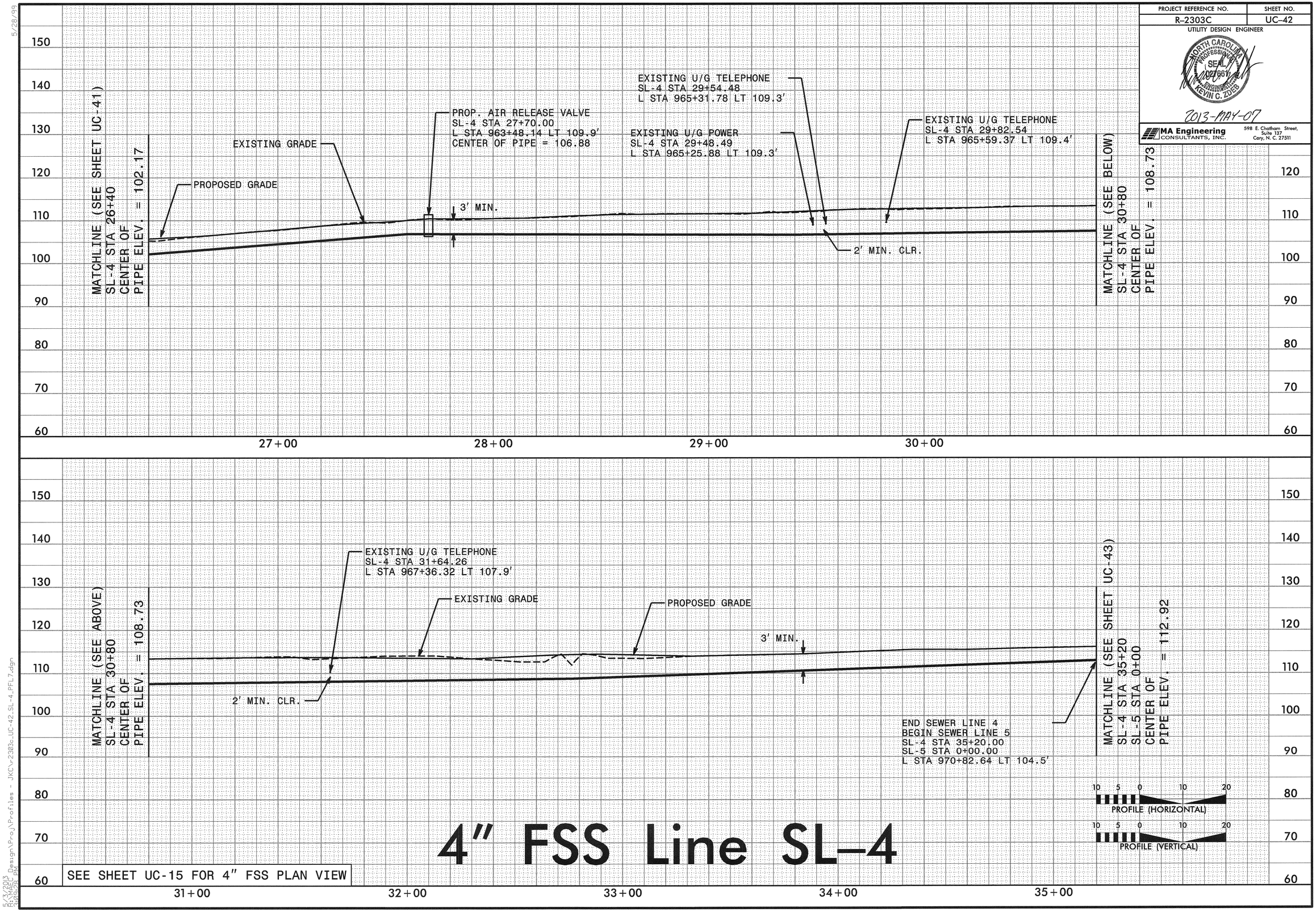
PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-42

UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 027661 ENGINEER KEVIN C. ZOES

2013-MAY-07

MA Engineering CONSULTANTS, INC.
598 E. Chatham Street, Suite 137
Cary, N. C. 27511



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kevin.zoes.pw

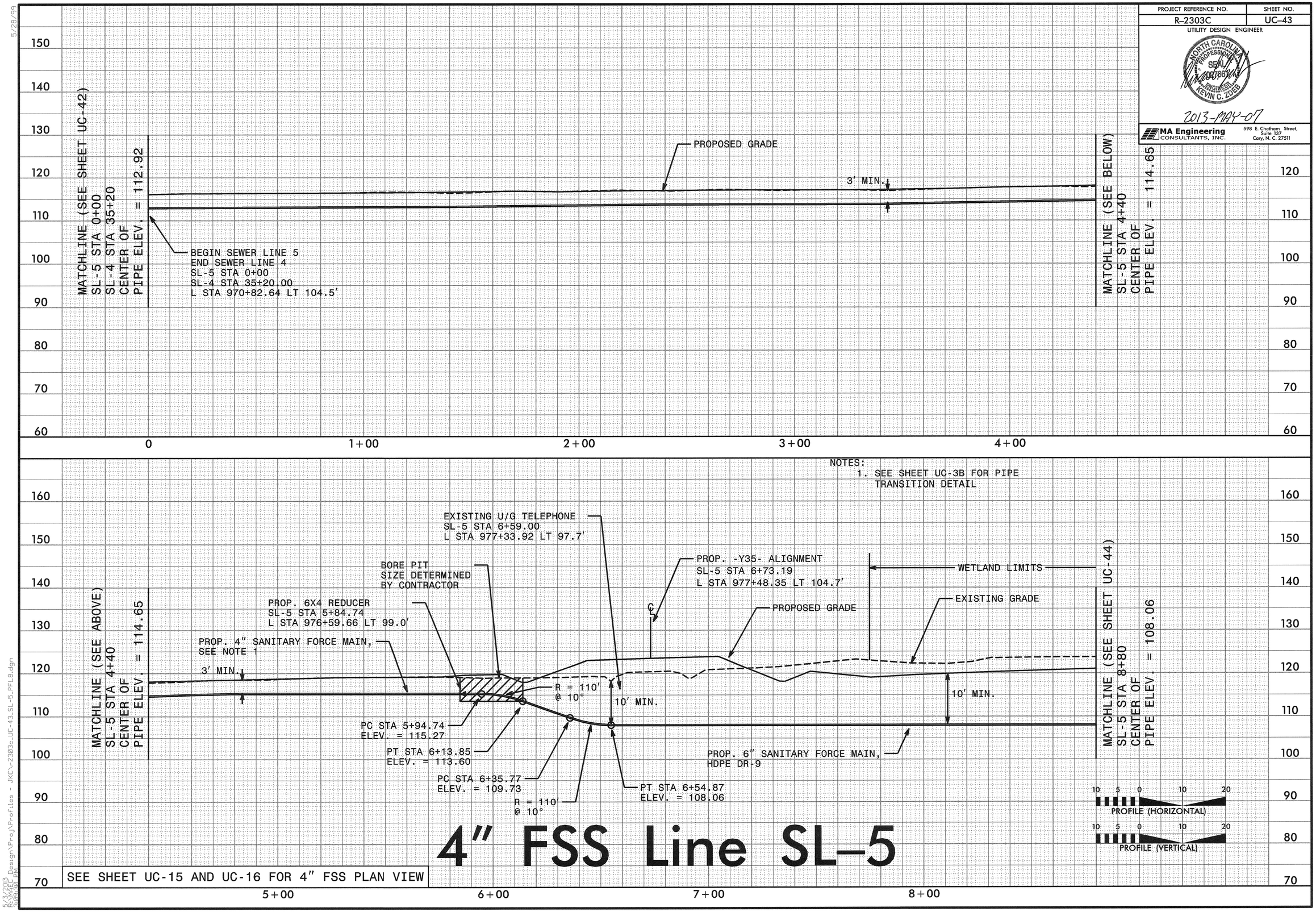
PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-43

UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 041866 ENGINEER KEVIN C. ZOLES

2013-MAY-07

MA Engineering CONSULTANTS, INC.
598 E. Chatham Street, Suite 137
Cary, N. C. 27511



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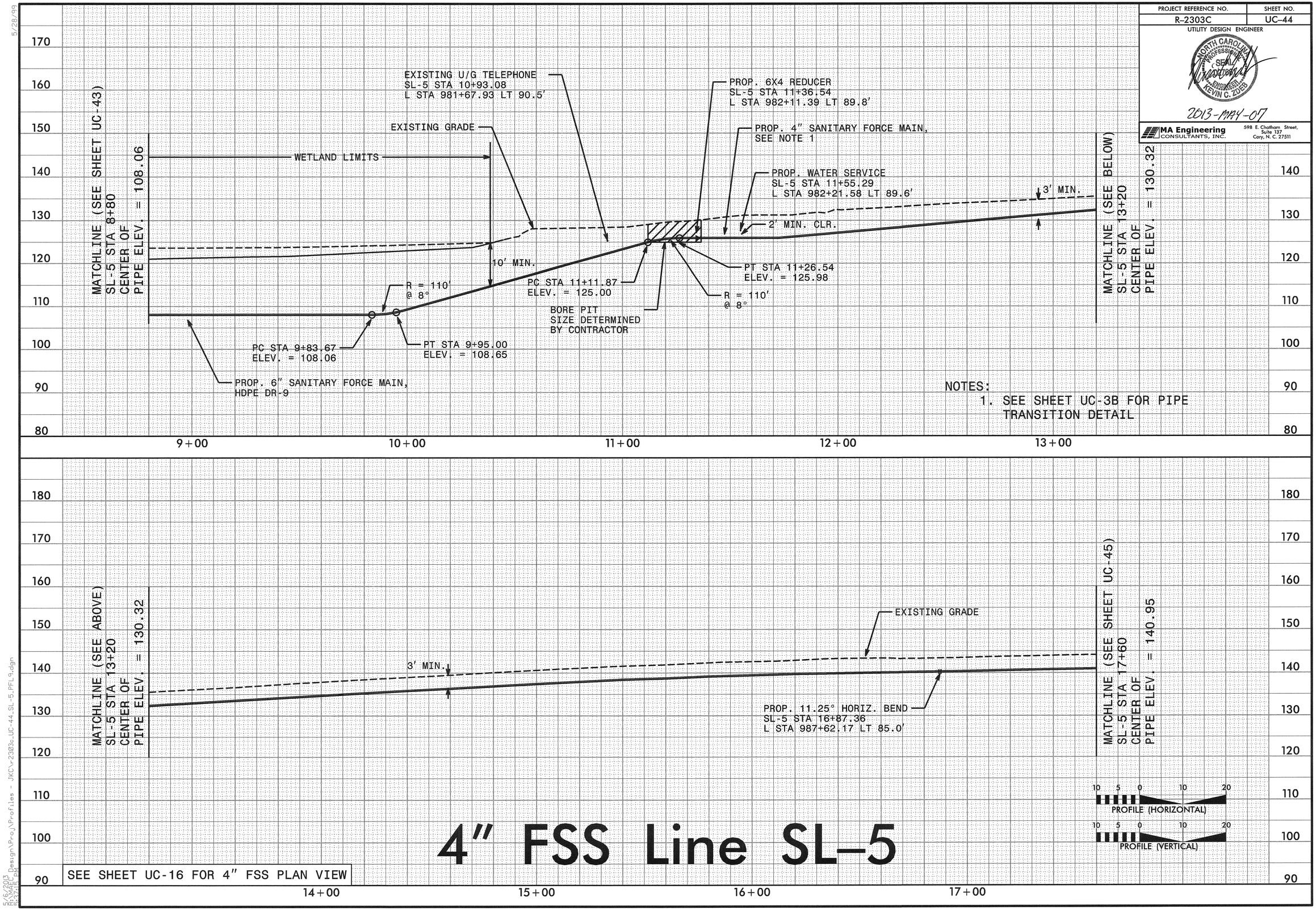
PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-44

UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL ENGINEER KEVIN C. ZOES

2013-MAY-07

MA Engineering CONSULTANTS, INC.
598 E. Chatham Street, Suite 137
Cary, N. C. 27511



NOTES:

1. SEE SHEET UC-3B FOR PIPE TRANSITION DETAIL

4" FSS Line SL-5

5/28/99

5/6/2013
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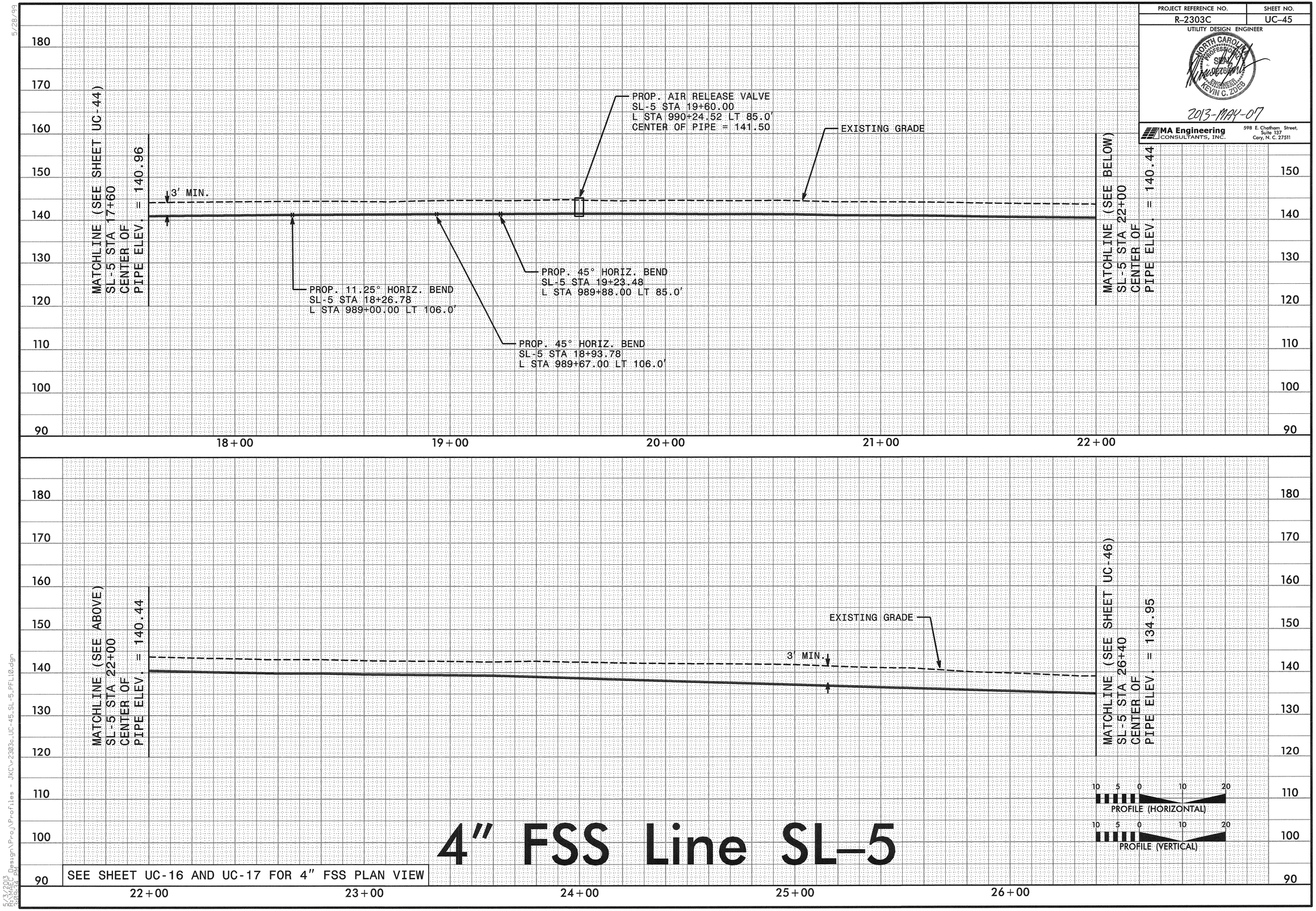
PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-45

UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL ENGINEER KEVIN C. ZUEB

2013-MAY-07

MA Engineering CONSULTANTS, INC.
598 E. Chatham Street, Suite 137
Cary, N. C. 27511



4" FSS Line SL-5

5/28/99

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PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-46

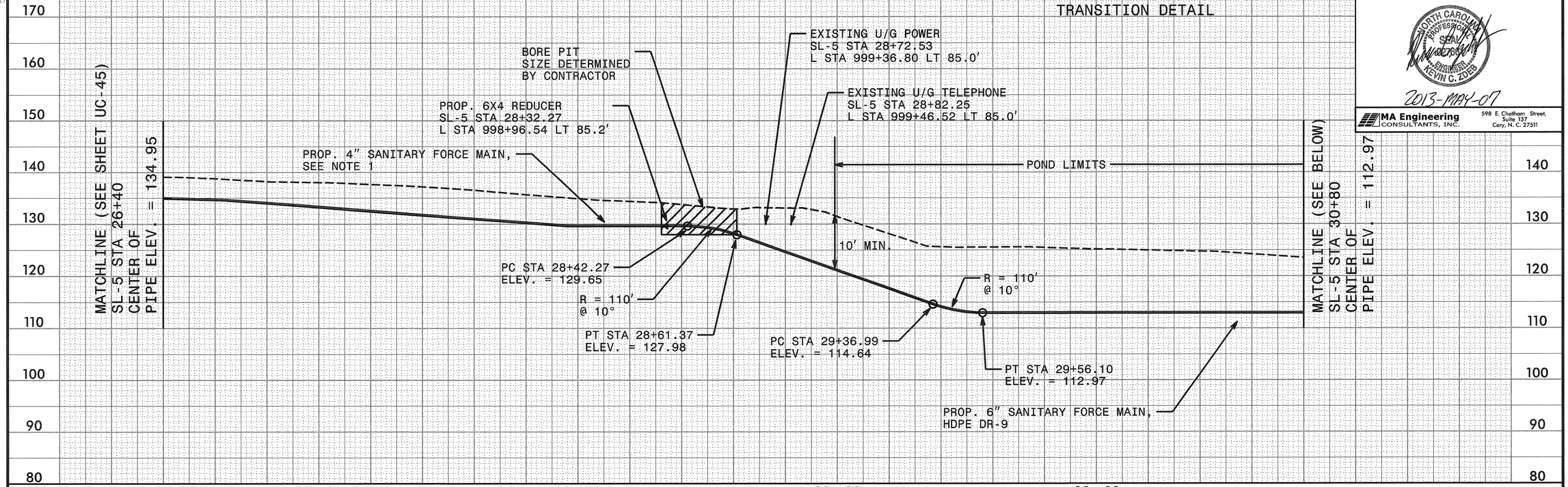
UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL ENGINEER KEVIN C. ZDEB

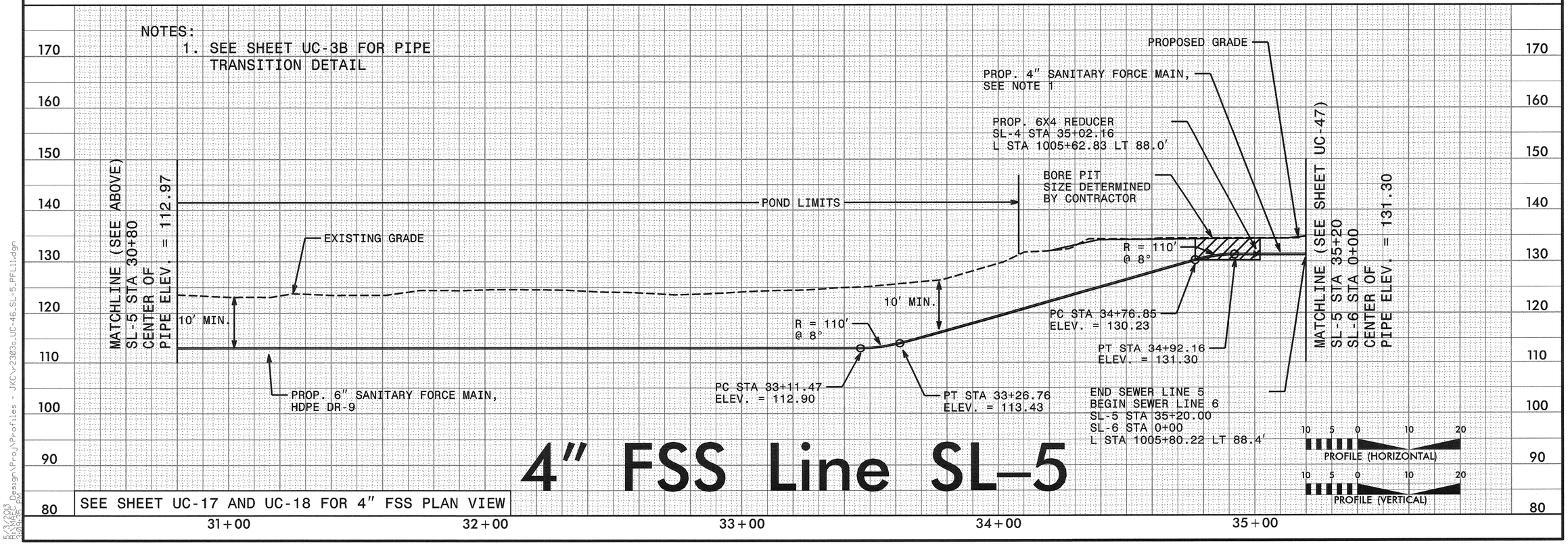
2013-MAY-07

MA Engineering CONSULTANTS, INC. 598 E. Chatham Street, Suite 137 Cary, N. C. 27511

NOTES:
1. SEE SHEET UC-3B FOR PIPE TRANSITION DETAIL



NOTES:
1. SEE SHEET UC-3B FOR PIPE TRANSITION DETAIL



SEE SHEET UC-17 AND UC-18 FOR 4" FSS PLAN VIEW

4" FSS Line SL-5

5/28/99

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PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-47

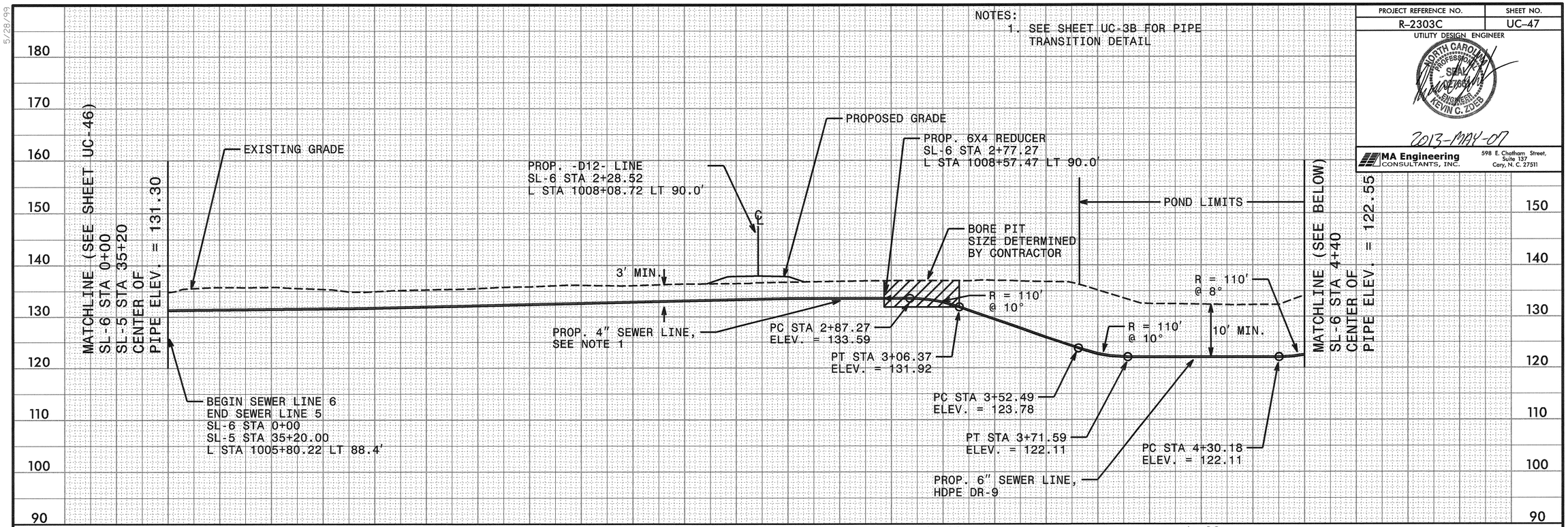
UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL ENGINEER KEVIN C. ZDEB

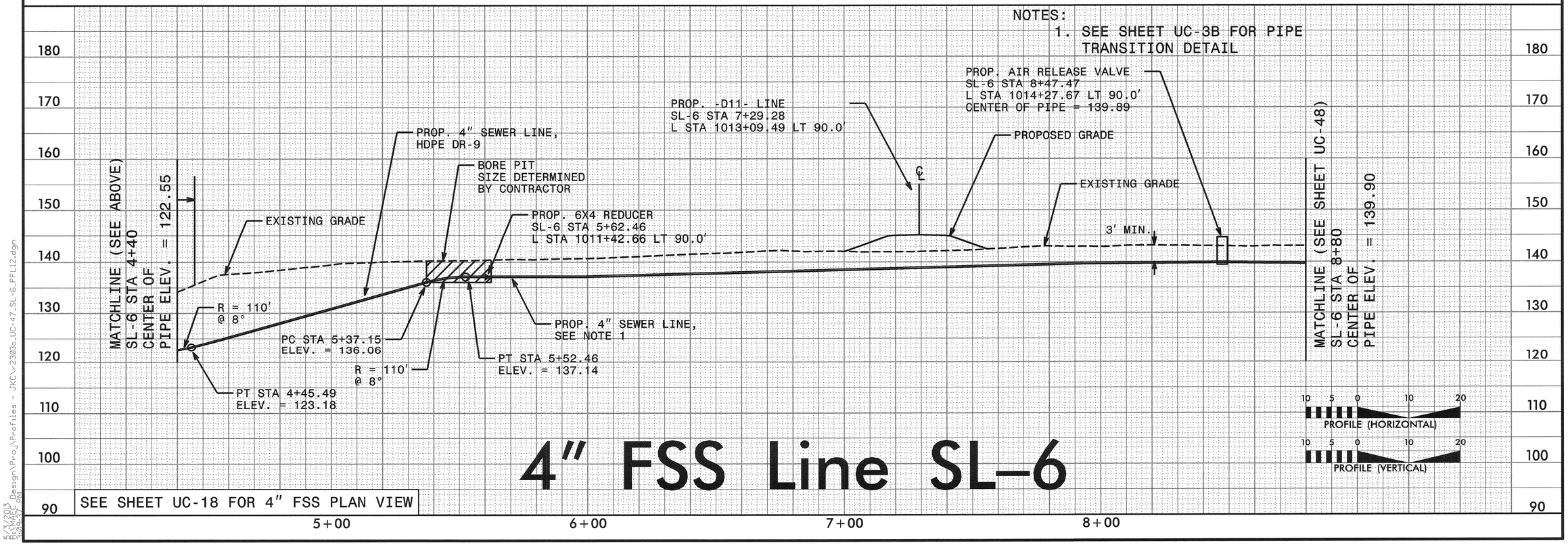
2013-MAY-07

MA Engineering CONSULTANTS, INC. 598 E. Chatham Street, Suite 137 Cary, N. C. 27511

NOTES:
1. SEE SHEET UC-3B FOR PIPE TRANSITION DETAIL



NOTES:
1. SEE SHEET UC-3B FOR PIPE TRANSITION DETAIL



4" FSS Line SL-6

SEE SHEET UC-18 FOR 4" FSS PLAN VIEW

5/28/99

5/3/2013
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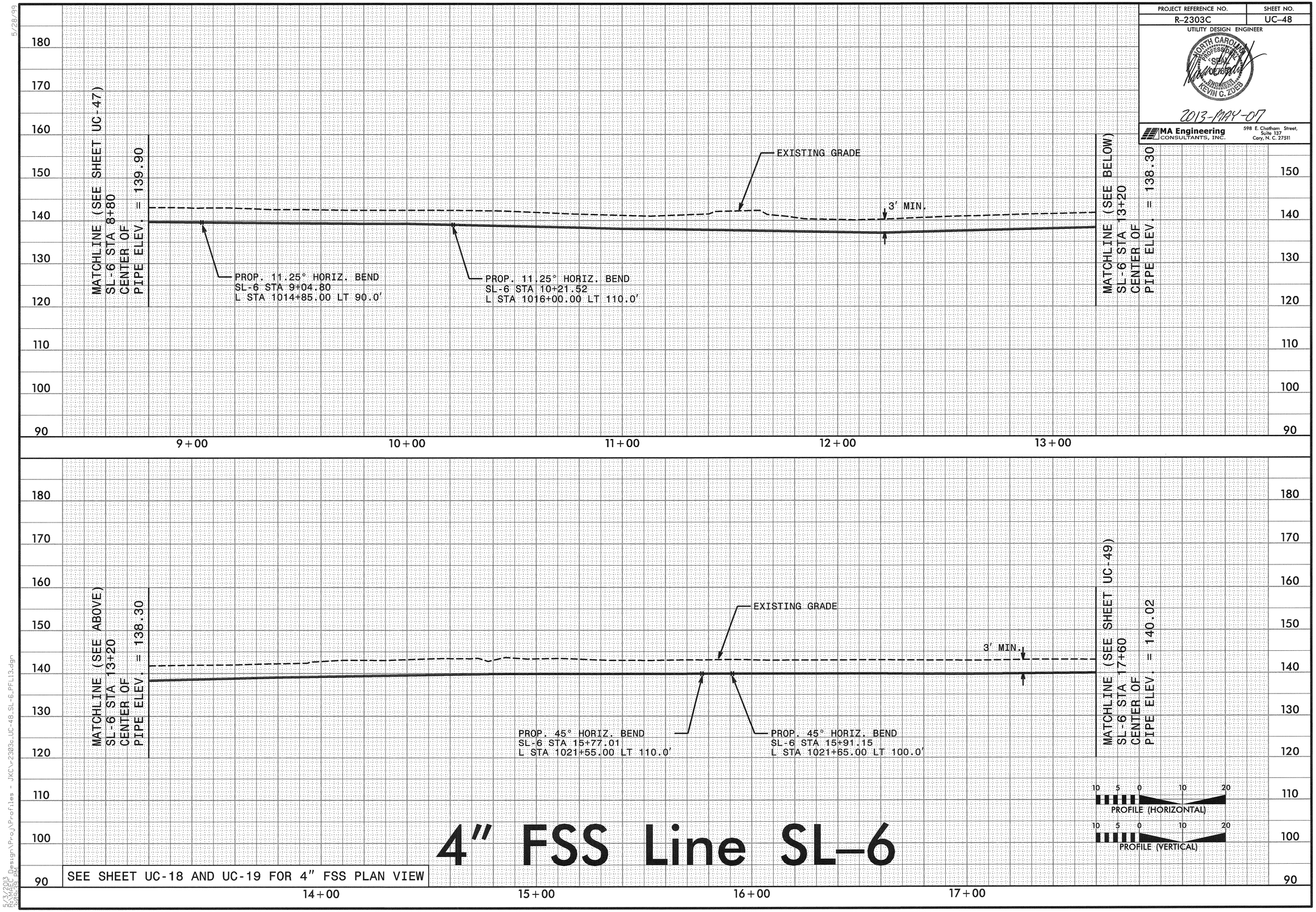
PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-48

UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL ENGINEER KEVIN C. ZOEB

2013-MAY-07

MA Engineering CONSULTANTS, INC.
598 E. Chatham Street, Suite 137
Cary, N. C. 27511



4" FSS Line SL-6

5/28/99

R:\3\2303_Design\Proj\Profiles - JKC\r-2303c_UC-48_SL-6_PFL13.dgn
5/7/2013 3:09:39 PM

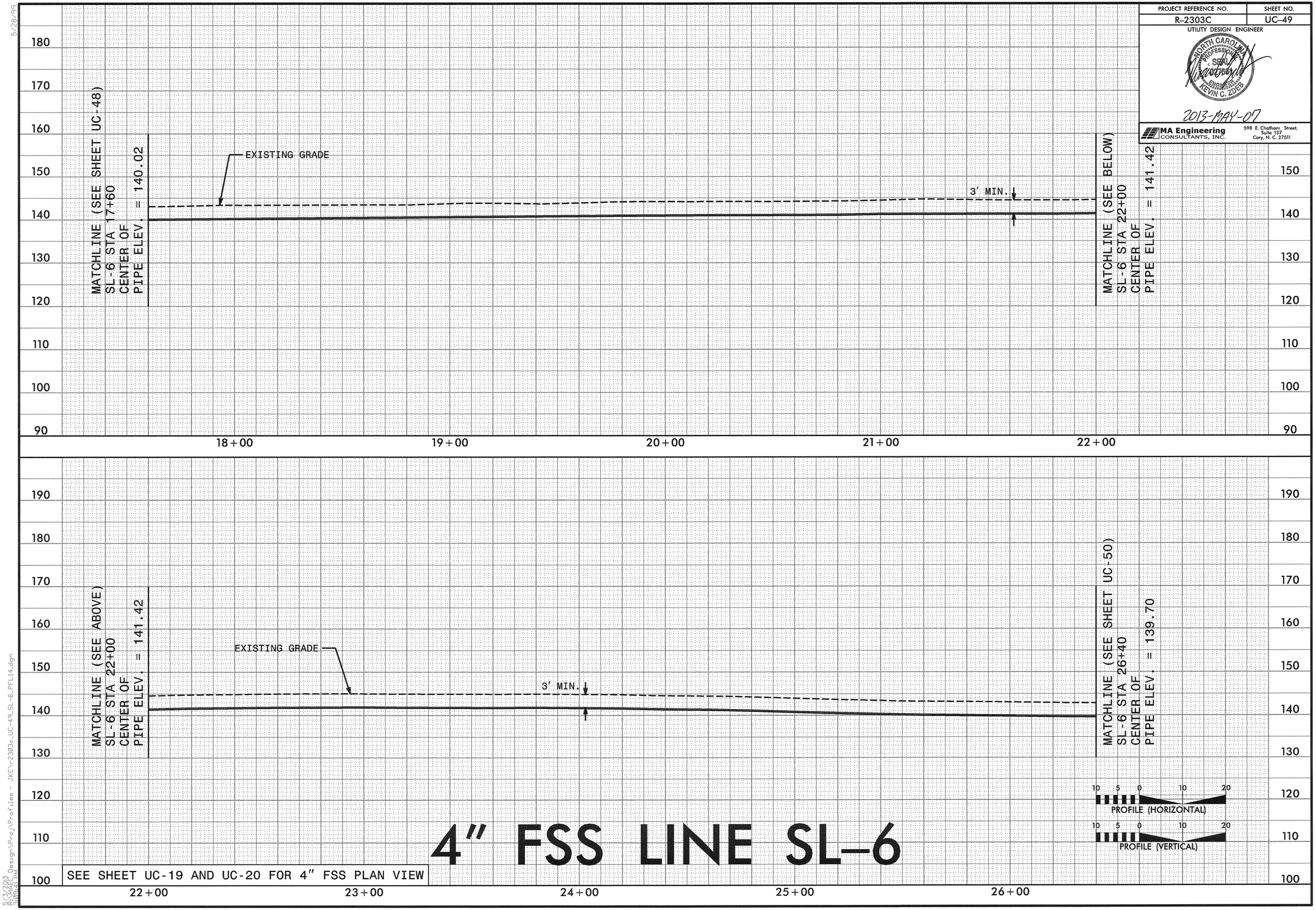
PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-49

UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL KEVIN C. ZDEB

2013-MAY-07

MA Engineering CONSULTANTS, INC.
598 E. Chatham Street, Suite 137
Cary, N. C. 27511



4" FSS LINE SL-6

5/28/99

R-2303C
JKC\r2303c_UC-49_SL-6_PFL14.dgn
5/30/13 3:09:41 PM

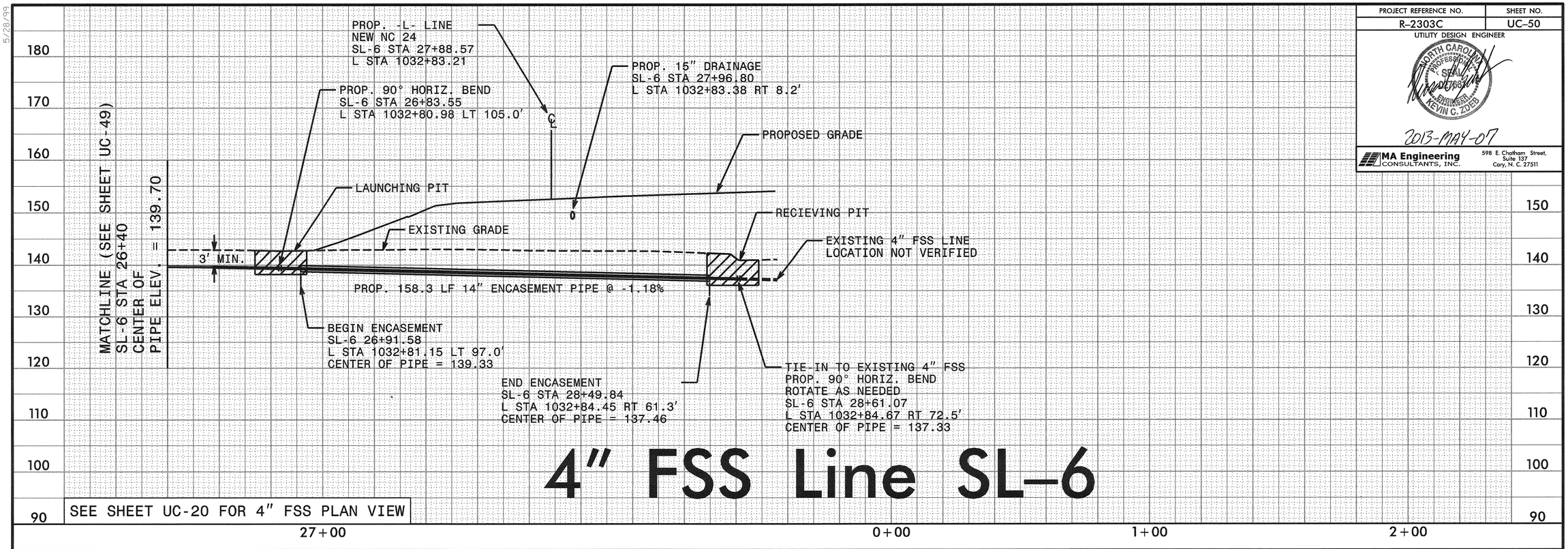
PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-50

UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 038863 ENGINEER KEVIN C. ZOEB

2013-MAY-07

MA Engineering CONSULTANTS, INC.
598 E. Chatham Street, Suite 137
Cary, N. C. 27511



4" FSS Line SL-6

SEE SHEET UC-20 FOR 4" FSS PLAN VIEW

5/28/99

8/3/2013
R:\Wake\Design\Proj\Profiles - JKC\r-2303c_UC-50_SL-6_PFL15.dgn

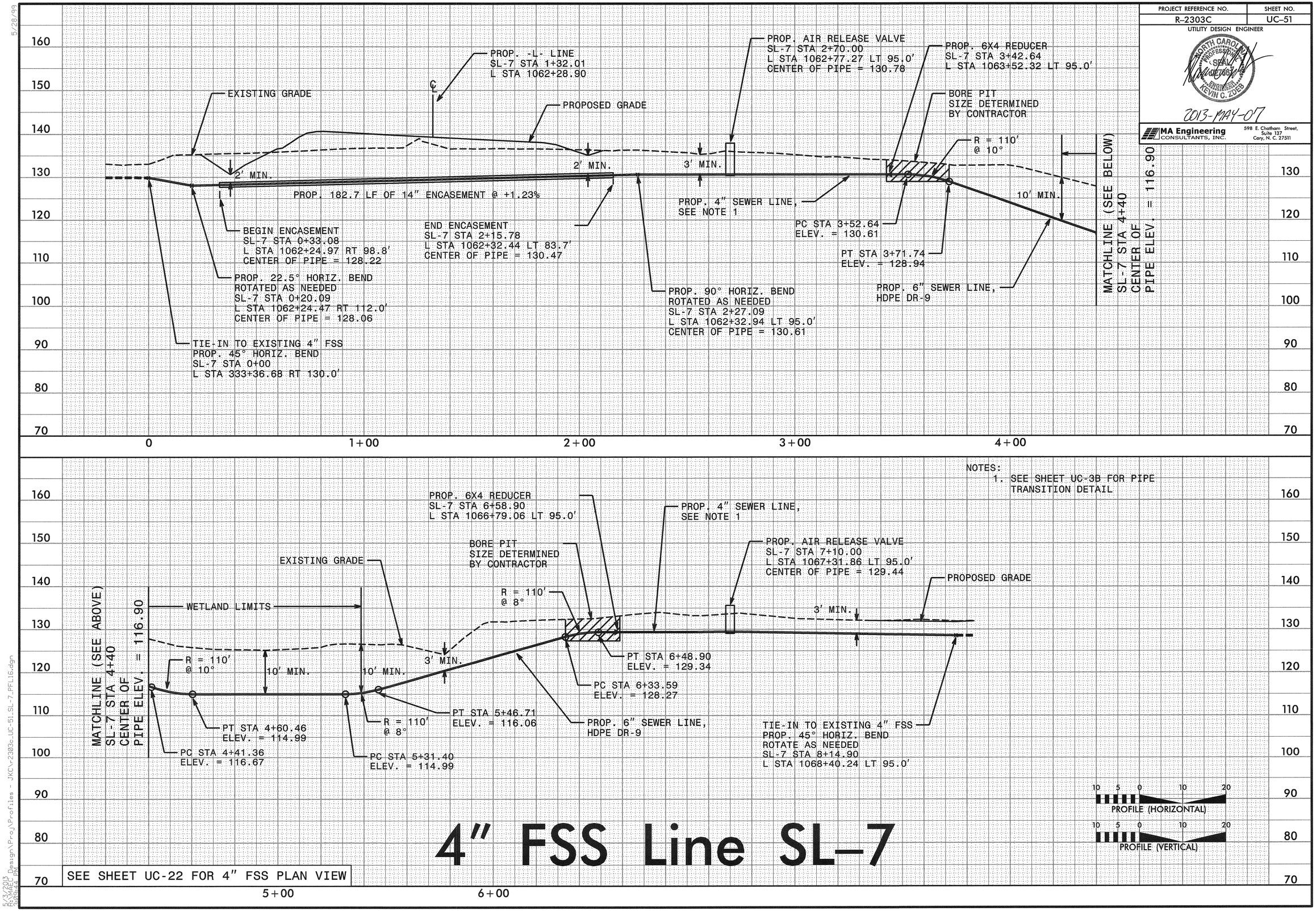
PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-51

UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL ENGINEER KEVIN C. ZIDES

2013-MAY-07

MA Engineering CONSULTANTS, INC.
598 E. Chatham Street, Suite 137
Cary, N. C. 27511



4" FSS Line SL-7

5/28/99

5/31/2013
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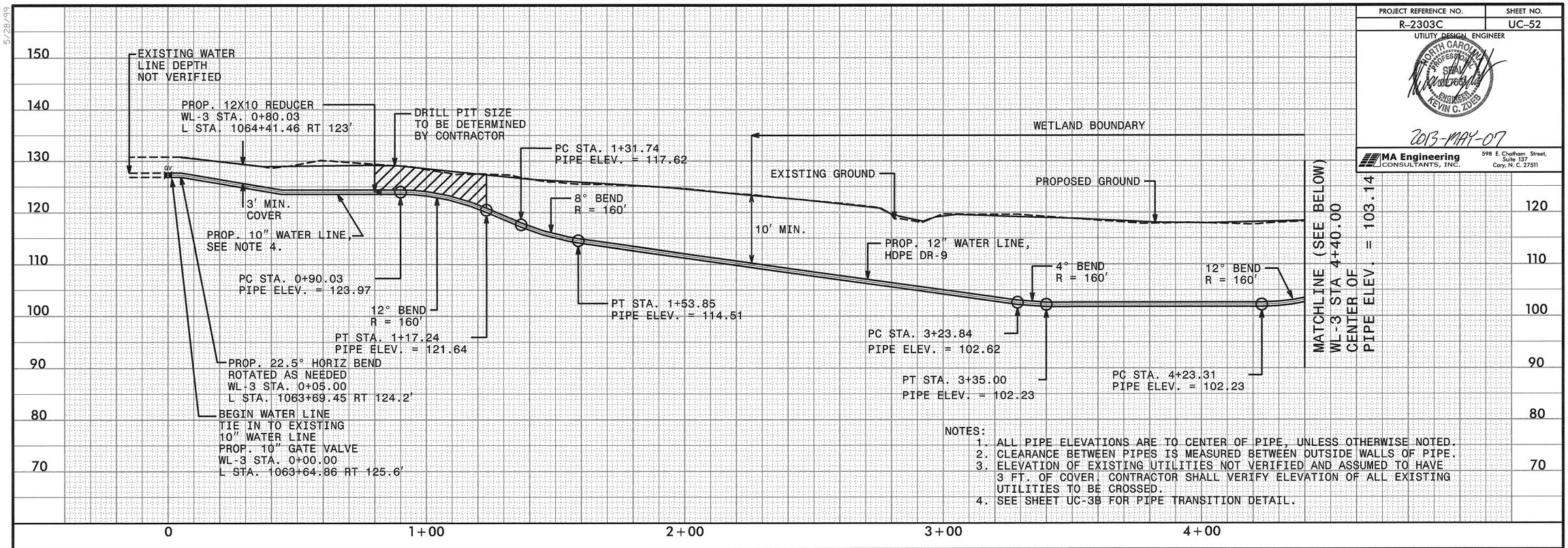
PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-52

UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL ENGINEER KEVIN C. ZOEB

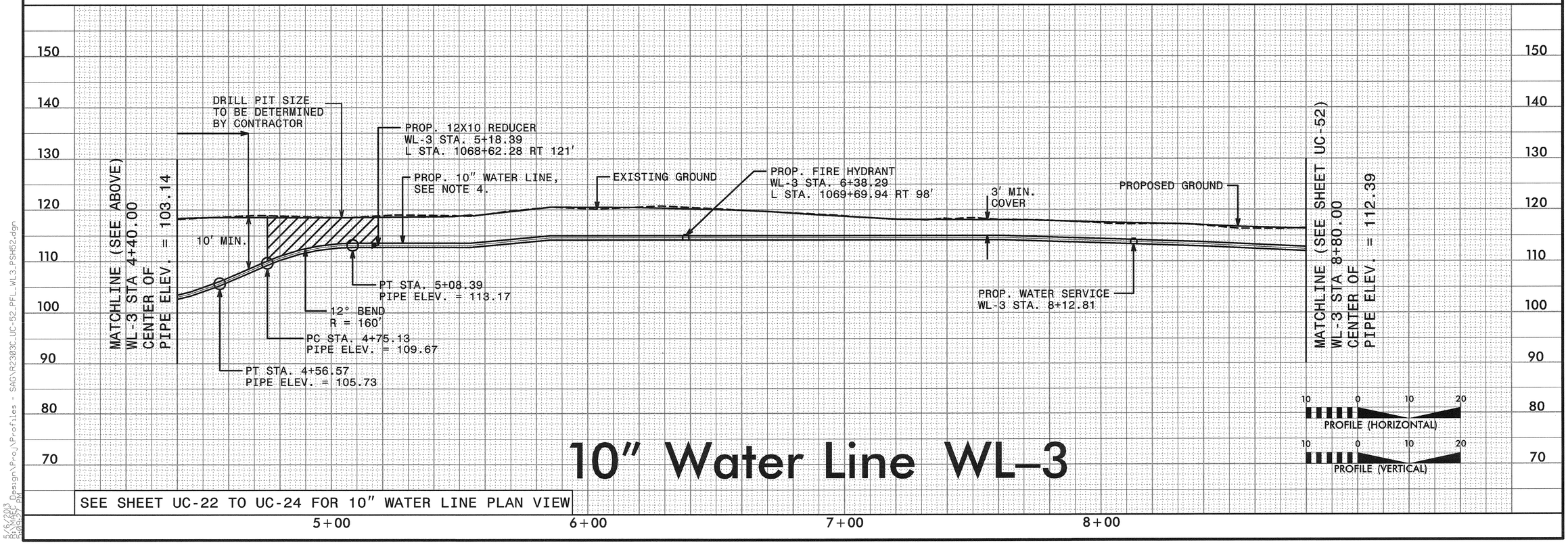
2013-MAY-07

MA Engineering CONSULTANTS, INC. 598 E. Chatham Street, Suite 137 Cary, N. C. 27511



NOTES:

1. ALL PIPE ELEVATIONS ARE TO CENTER OF PIPE, UNLESS OTHERWISE NOTED.
2. CLEARANCE BETWEEN PIPES IS MEASURED BETWEEN OUTSIDE WALLS OF PIPE.
3. ELEVATION OF EXISTING UTILITIES NOT VERIFIED AND ASSUMED TO HAVE 3 FT. OF COVER. CONTRACTOR SHALL VERIFY ELEVATION OF ALL EXISTING UTILITIES TO BE CROSSED.
4. SEE SHEET UC-3B FOR PIPE TRANSITION DETAIL.



10" Water Line WL-3

SEE SHEET UC-22 TO UC-24 FOR 10" WATER LINE PLAN VIEW

5/28/99

5/6/2013 8:30:57 AM
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PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-53

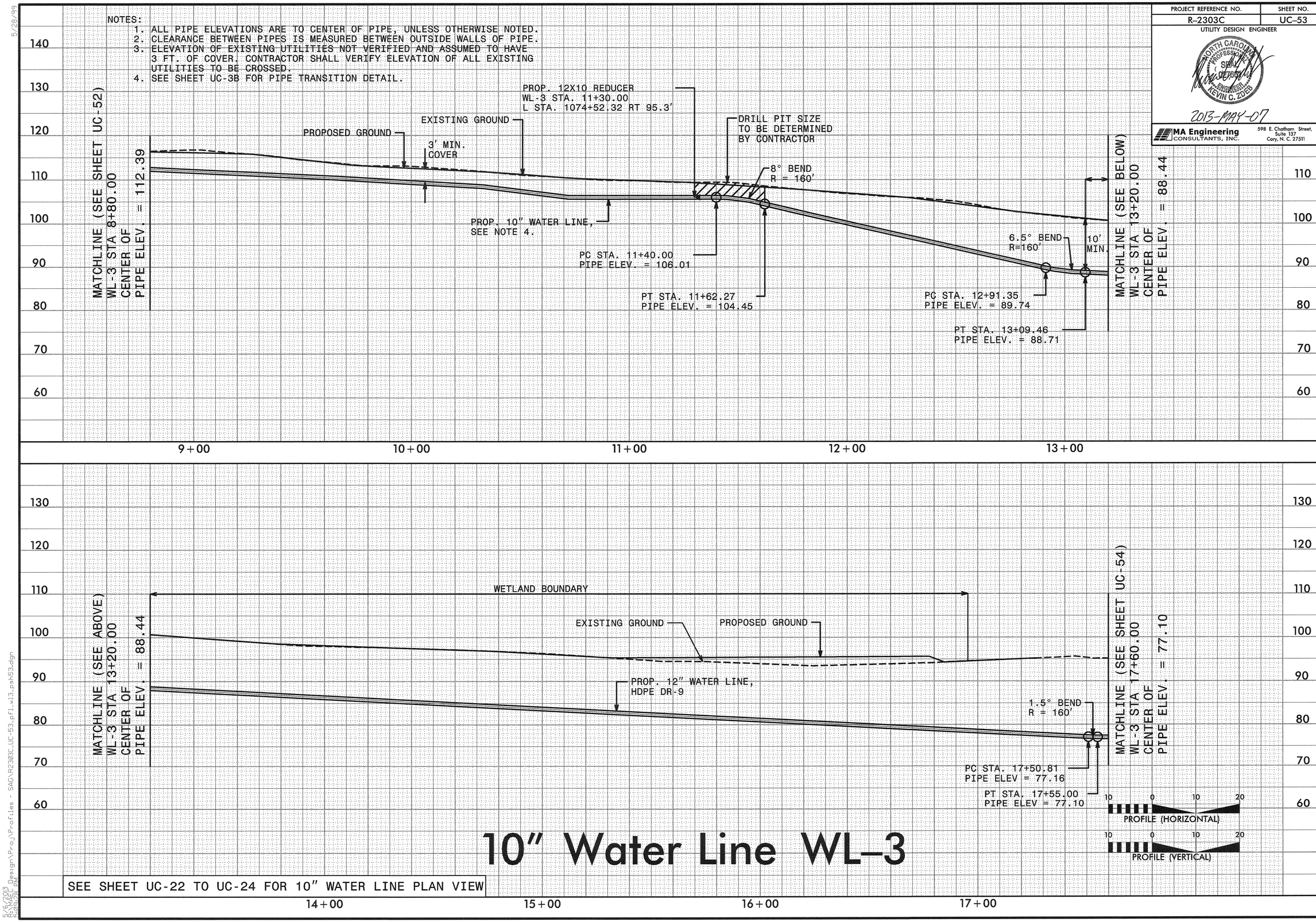
UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL ENGINEER KEVIN C. ZOLES

2013-MAY-07

MA Engineering CONSULTANTS, INC. 598 E. Chatham Street, Suite 137 Cary, N. C. 27511

NOTES:
1. ALL PIPE ELEVATIONS ARE TO CENTER OF PIPE, UNLESS OTHERWISE NOTED.
2. CLEARANCE BETWEEN PIPES IS MEASURED BETWEEN OUTSIDE WALLS OF PIPE.
3. ELEVATION OF EXISTING UTILITIES NOT VERIFIED AND ASSUMED TO HAVE 3 FT. OF COVER. CONTRACTOR SHALL VERIFY ELEVATION OF ALL EXISTING UTILITIES TO BE CROSSED.
4. SEE SHEET UC-3B FOR PIPE TRANSITION DETAIL.



10" Water Line WL-3

SEE SHEET UC-22 TO UC-24 FOR 10" WATER LINE PLAN VIEW

5/28/99

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5/06/13 8:09:58 PM

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-54

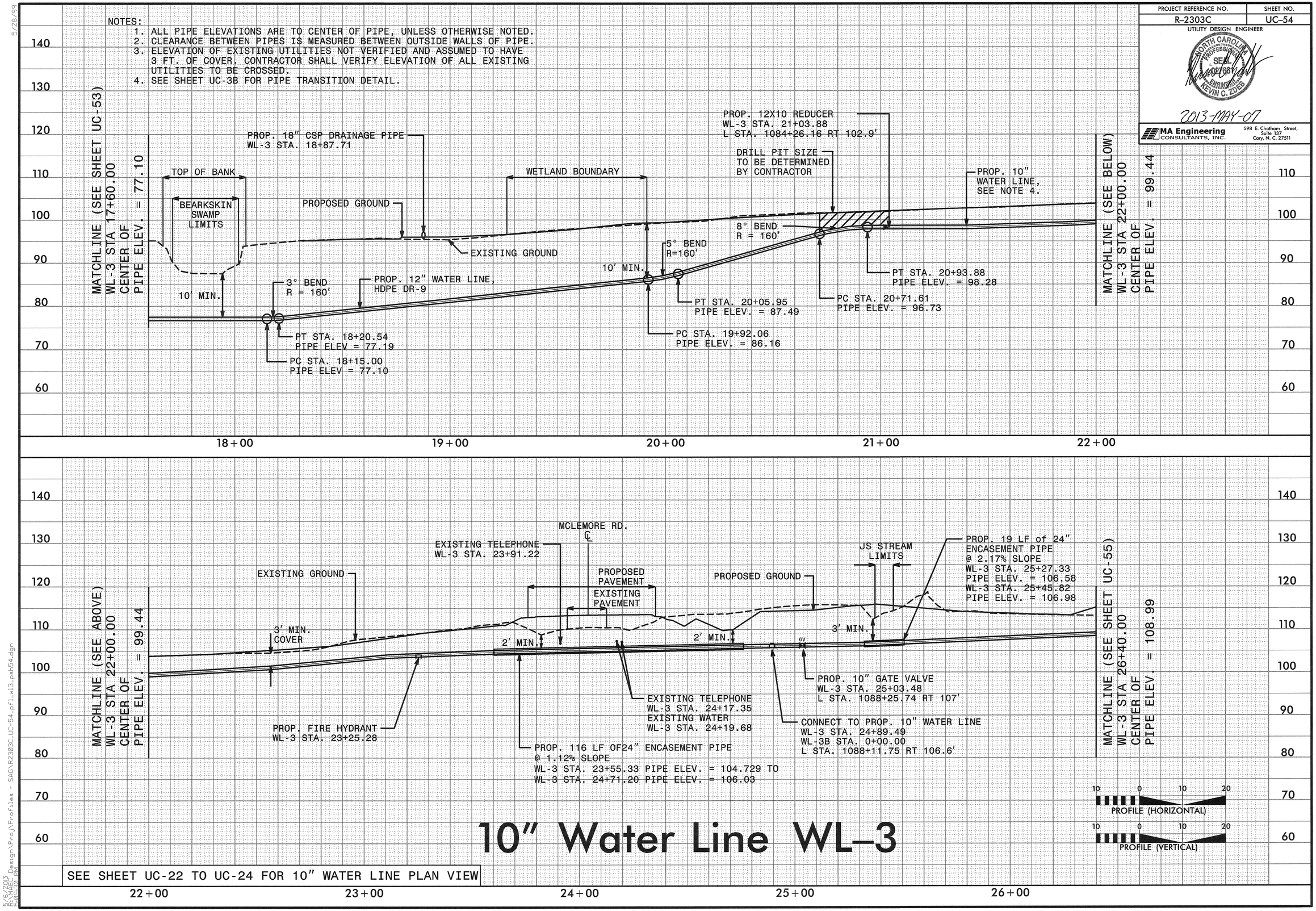
UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 19681 ENGINEER KEVIN C. ZOES

2013-MAY-07

MA Engineering CONSULTANTS, INC.
598 E. Chatham Street, Suite 137
Cary, N. C. 27511

NOTES:
1. ALL PIPE ELEVATIONS ARE TO CENTER OF PIPE, UNLESS OTHERWISE NOTED.
2. CLEARANCE BETWEEN PIPES IS MEASURED BETWEEN OUTSIDE WALLS OF PIPE.
3. ELEVATION OF EXISTING UTILITIES NOT VERIFIED AND ASSUMED TO HAVE 3 FT. OF COVER. CONTRACTOR SHALL VERIFY ELEVATION OF ALL EXISTING UTILITIES TO BE CROSSED.
4. SEE SHEET UC-3B FOR PIPE TRANSITION DETAIL.



10" Water Line WL-3

SEE SHEET UC-22 TO UC-24 FOR 10" WATER LINE PLAN VIEW

5/28/99

R/6/2013 Design\Proj\Profiles - SAG\R2303C_UC-54_pfl_wl3_psh54.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-55

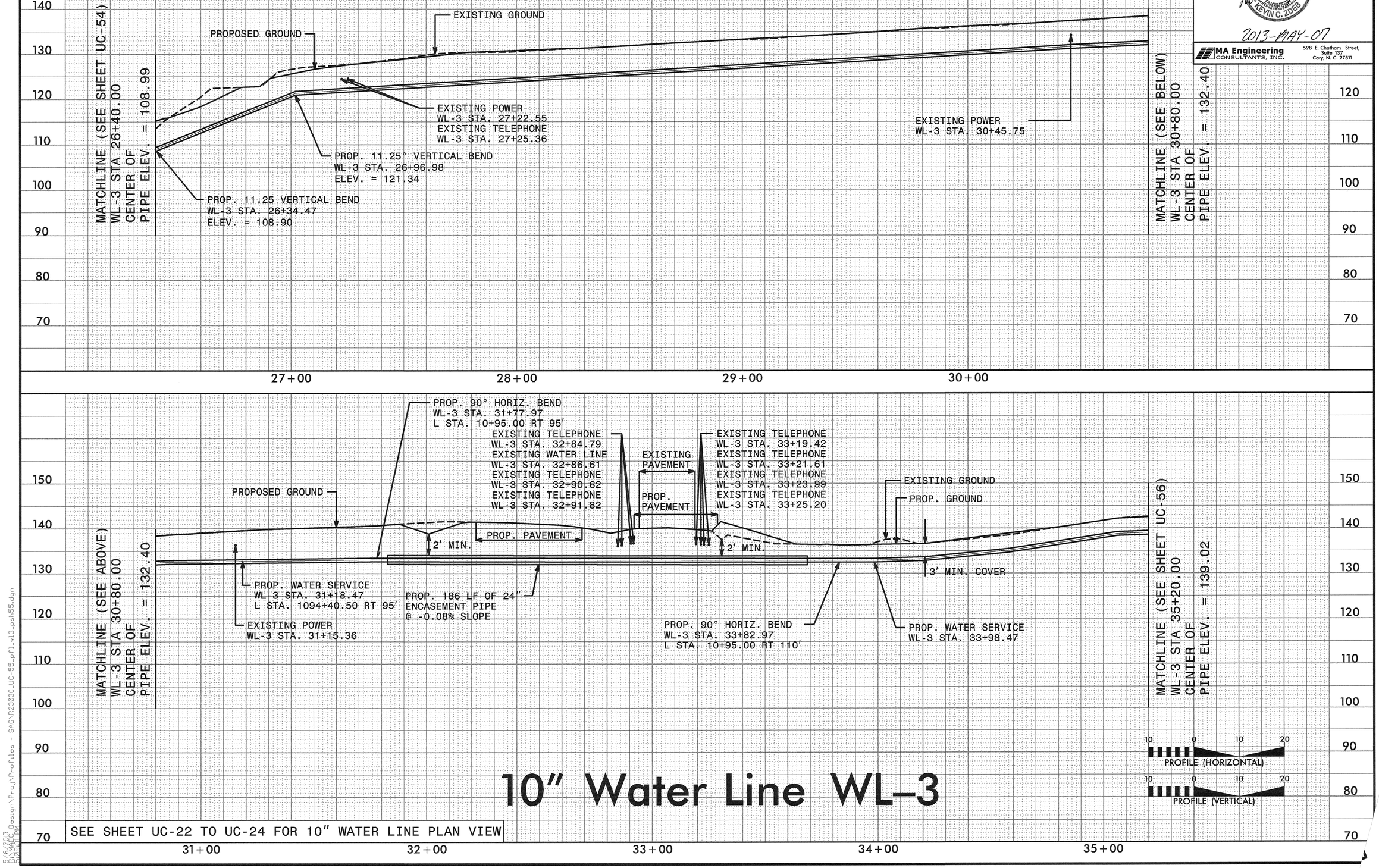
UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 030661 ENGINEER KEVIN C. ZODIS

2013-MAY-07

MA Engineering CONSULTANTS, INC.
598 E. Chatham Street, Suite 137
Cary, N. C. 27511

NOTES:
1. ALL PIPE ELEVATIONS ARE TO CENTER OF PIPE, UNLESS OTHERWISE NOTED.
2. CLEARANCE BETWEEN PIPES IS MEASURED BETWEEN OUTSIDE WALLS OF PIPE.
3. ELEVATION OF EXISTING UTILITIES NOT VERIFIED AND ASSUMED TO HAVE 3 FT. OF COVER. CONTRACTOR SHALL VERIFY ELEVATION OF ALL EXISTING UTILITIES TO BE CROSSED.



10" Water Line WL-3

SEE SHEET UC-22 TO UC-24 FOR 10" WATER LINE PLAN VIEW

5/28/99

5/6/2013
R:\MAE Design\Proj\Profiles - SAG\R2303C_UC-55_pfl_wl3_psh55.dgn
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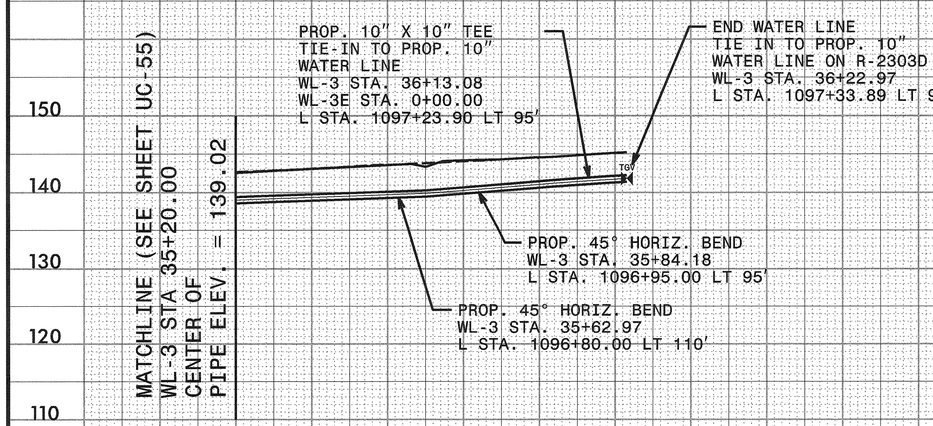
PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UC-56

UTILITY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022661 ENGINEER KEVIN C. ZUBB

2013-MAY-07

MA Engineering CONSULTANTS, INC.
598 E. Chatham Street, Suite 137
Cary, N. C. 27511

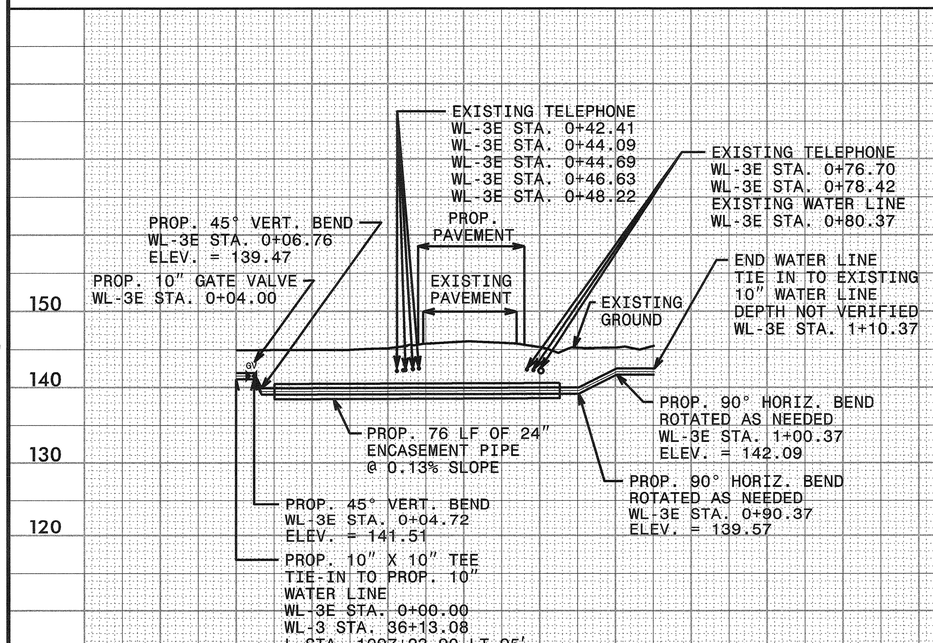


NOTES:
1. ALL PIPE ELEVATIONS ARE TO CENTER OF PIPE, UNLESS OTHERWISE NOTED.
2. CLEARANCE BETWEEN PIPES IS MEASURED BETWEEN OUTSIDE WALLS OF PIPE.
3. ELEVATION OF EXISTING UTILITIES NOT VERIFIED AND ASSUMED TO HAVE 3 FT. OF COVER. CONTRACTOR SHALL VERIFY ELEVATION OF ALL EXISTING UTILITIES TO BE CROSSED.

10" Water Line WL-3

SEE SHEET UC-22 THRU UC-24 FOR 10" WATER LINE PLAN VIEW

36+00 37+00



10" Water Line WL-3E

SEE SHEET UC-24 FOR 10" WATER LINE PLAN VIEW

0+00 1+00

5/28/99

5/6/2013
R:\Roadway\Design\Proj\Profiles - SAG\R2303C_UC-56_pfl_wl3_psh56.dgn
8:04:43 PM

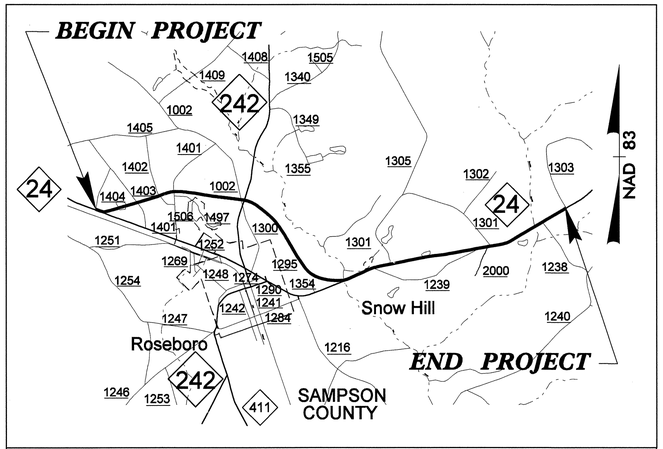
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

T.I.P. NO.	SHEET NO.
R-2303C	UO-1

UTILITIES BY OTHERS PLAN
SAMPSON COUNTY

LOCATION: NC 24 FROM SR 1404 (DOWDY ROAD) TO SR 1303 (MITCHELL LOOP ROAD)

TYPE OF WORK: UTILITY RELOCATION WORK

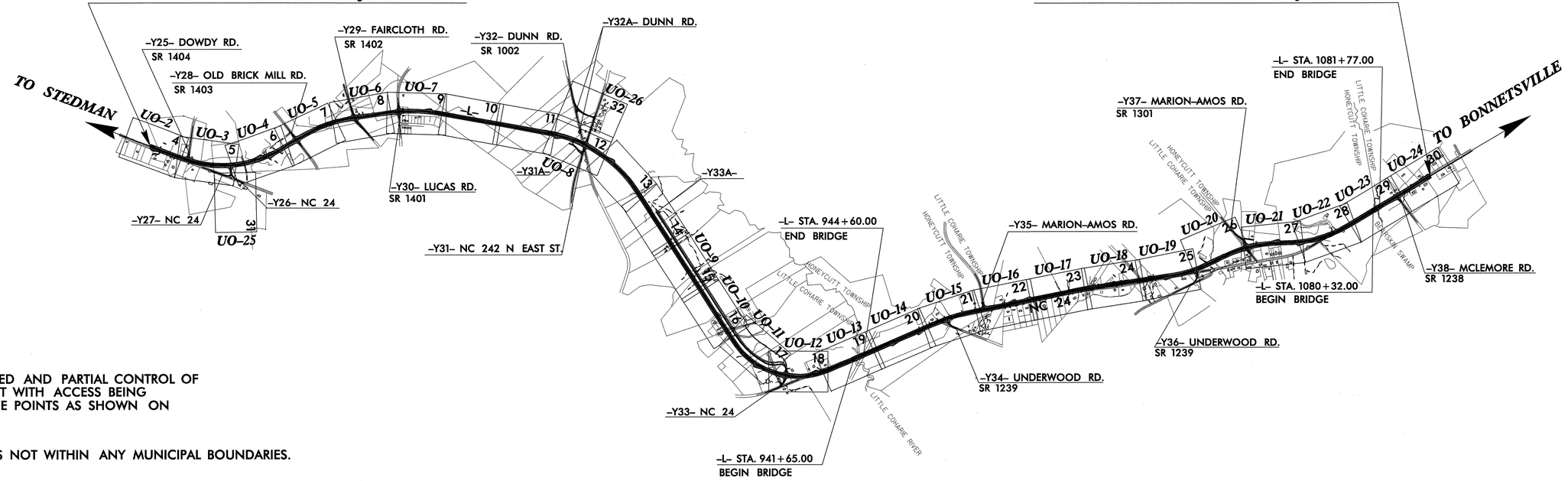


VICINITY MAP

NAD 83/ NSRS 2007

STA. 730+10.00 -L- BEGIN TIP PROJECT R-2303C

STA. 1097+00.00 -L- END TIP PROJECT R-2303C



THIS IS A LIMITED AND PARTIAL CONTROL OF ACCESS PROJECT WITH ACCESS BEING LIMITED TO THE POINTS AS SHOWN ON THE PLANS.

THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.

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 TO UO-26	UTILITIES BY OTHERS PLAN SHEETS

UTILITY OWNERS ON PROJECT

(A) Progress Energy (Power Distribution)
(B) South River EMC (Power Transmission)
(C) South River EMC (Power Distribution)
(D) Century Link (Telecommunications)
(E) Star Vision (Cable Television)
(F) Piedmont Natural Gas (Distribution Gas)

PREPARED IN THE OFFICE OF:
DIVISION OF HIGHWAYS
UTILITIES ENGINEERING SECTION
1591 MAIL SERVICES CENTER
RALEIGH NC 27699-1555
PHONE (919) 707-6690
FAX (919) 250-4151

Roger Worthington, P.E. — UTILITIES SECTION ENGINEER
Ron Wilkins, P.E. — UTILITIES SQUAD LEADER PROJECT ENGI
Brandy Creech — UTILITIES COORDINATION CONSULTANT

TIP PROJECT: R-2303C

CONTRACT:

07-MAY-2013 12:06
Y:\Projects\NCDOT\NCDOT_Utility On-Call Contract\R-2303C Sampson County\Utilities\r2303c_rdy_tsh_UB0.dgn
CNewsome AT RALEWCNEWSOME
09/08/99

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	U0-2
R/W SHEET NO.	4

THE LPA GROUP
TRANSPORTATION CONSULTANTS

UTILITIES BY OTHERS

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

NAD 83/NSRS 2007

-SRI-

PI Sta 12+49.88	PI Sta 11+15.88
△ = 80° 09' 41.8" (LT)	△ = 78° 00' 40.1" (RT)
D = 114° 35' 29.6"	D = 114° 35' 29.6"
L = 69.95'	L = 68.08'
T = 42.08'	T = 40.50'
R = 50.00'	R = 50.00'
SE = SEE PLANS	SE = SEE PLANS

STA 730+10.00 -L-
BEGIN STATE PROJECT R-2303C

ROBIE BRANDON FAIRCLOTH
DB 1529 PG 346
MB 48 PG 23

R/W ACQUIRED UNDER R-2303B

POT Sta. 728+79.38

EXIST. PE OH LINES TO REMAIN

EXIST. 3" STEEL GAS LINE

EXIST. PE OH LINES TO BE REMOVED

-L- +26.63
105' LT
TIE TO R-2303B

+80
BEGIN FENCE

TIE IN EXIST DITCH

+20
END FENCE
END FULL C/A
BEGIN PARTIAL C/A

WW FENCE

ACCESS POINT

LATERAL 'V' DITCH
SEE DETAIL 1
SHEET 2-F

EXIST. PE OH LINES TO BE REMOVED

HUBERT AUTRY
WB 88-E-17
DB 559 PG 508

PREFORMED SCOUR HOLE
OUTLET PROTECTION
CLASS 'B' RIP RAP
EST 8 TONS
EST 16 SY FF
EST 25 SY PSRM
SEE DETAIL 2
SHEET 2-F

+95
105' LT
115' LT

+60
105' LT
115' LT

PDE

PSH

PROP. UG TEL LINE
DIRECTIONAL BORE
1' INSIDE ROW

TS Sta. 737+37.21

NANCY T.
DB 134

+37.21
105' LT

4' BASE DITCH
SEE DETAIL 4
SHEET 2-F

150' TAPER

12' DR.

REM.

S 69° 33' 44.4" E

42" RCP-III

-L- POT Sta. 732+76.44

-SRI- POT Sta. 10+00.00

BEARING AH =
S 22° 08' 01.8" W

PC Sta. 10+75.39

CHL FENCE

MARGIE L. AMAN
DB 802 PG 650
DB 907 PG 650

+95
105' RT
END CHL FENCE

+95
END FENCE
END FULL C/A
BEGIN PARTIAL C/A
105' RT

-L- +12.54
130' RT
TIE TO R-2303B

N 79° 51' 18.1" W
-SRI-

+20
90' RT
117' RT

+04
BEGIN CHL FENCE

PT Sta. 11+43.46

-L- +43
159' RT

-L- +44.72
195' RT

-L- +13.05
195' RT
TIE TO R-2303B

LATERAL 'V' DITCH
SEE DETAIL 1
SHEET 2-F

CONNIE INEZ HALL
DB 1663 PG 623
DB 1088 PG 400
DB 1088 PG 403(MAP)

TERRY R. HUDSON
DB 1462 PG 282
MB 39 PG 48

SHANNON E. FAIRCLOTH
DB 1394 PG 796
MB 39 PG 48

CHARLES G. SESSOMS
DB 1658 PG 805
DB 1088 PG 392

PC Sta. 12+07.80

REMOVE/ABANDON
UG TEL LINES

POC Sta. 12+77.00
END CONSTRUCTION

PT Sta. 12+77.76

EXIST. PE OH LINES TO REMAIN

R/W ACQUIRED UNDER R-2303B

EXIST. PE OH LINES TO BE REMOVED

TOMMY R. HALL
DB 1317 PG 567

PROP. 4" STEEL GAS LINE
DIRECTIONAL BORE
7' INSIDE ROW

+50
90' RT

+65
105' RT

OUTLET PROTECTION
CLASS 'B' RIP RAP
EST 3 TONS
EST 7 SY FF

OUTLET PROTECTION
CLASS 'B' RIPRAP
STREAM BANKS ONLY
EST 10 TONS
EXT 28 SY FF

UNNAMED TRIB.
TO BIG SWAMP (B54)
INTERMITTANT
JURISDICTIONAL STREAM

+50
END CHL FENCE

+37.21
105' RT

+78
BEGIN CHL FENCE

LATERAL 'V' DITCH
SEE DETAIL 1
SHEET 2-F

PROP. UG TEL LINE
DIRECTIONAL BORE
1' INSIDE ROW

EXIST. PE OH LINES TO REMAIN

MATCH LINE -L- STA. 738+00 SEE UO-3

REVISIONS

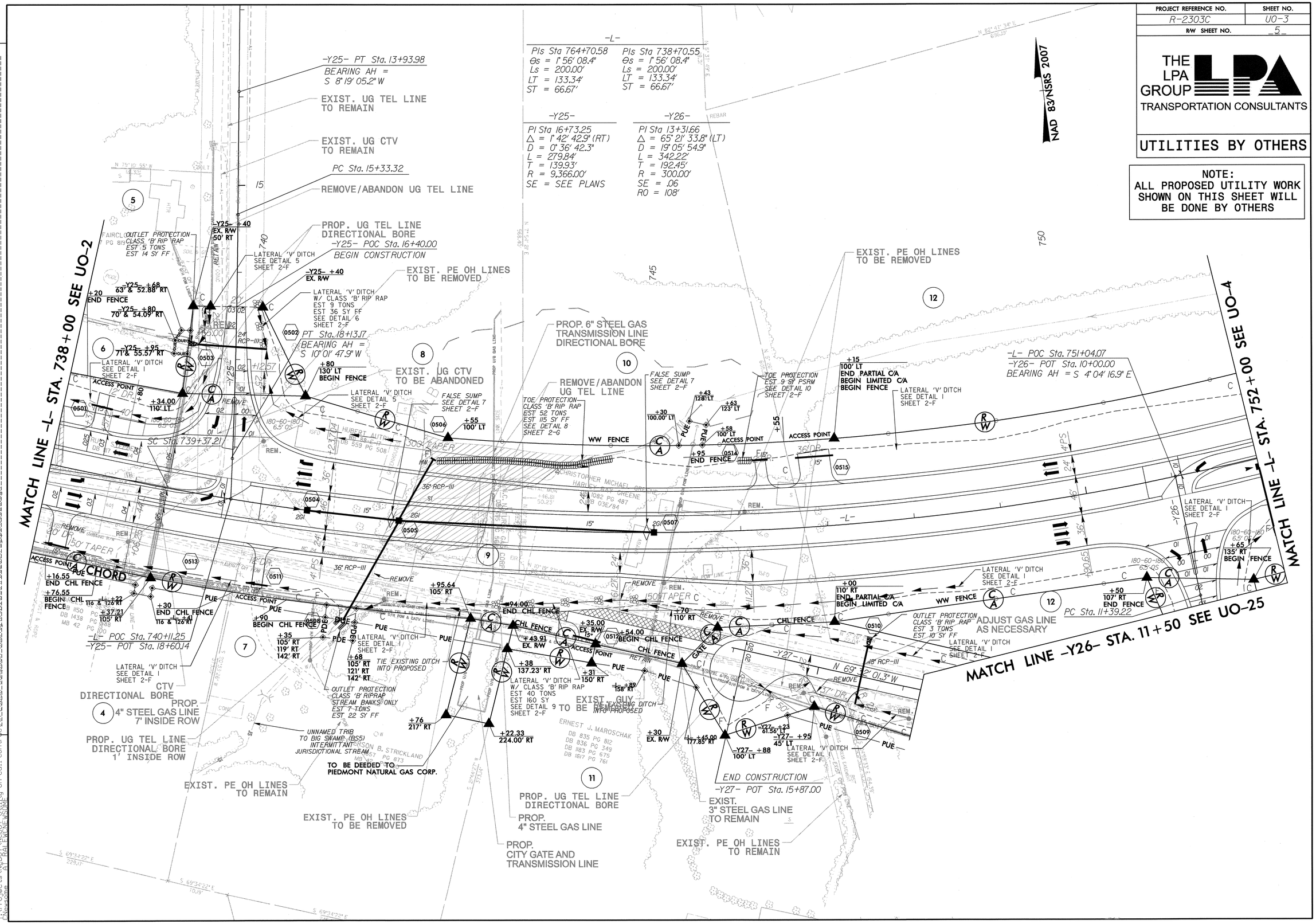
07-MAY-2013 12:06
Projects AECOM NCDOT Utility On-Call Contract\R-2303C_Sampson_County\Utilities\r2303c_rdy_psh_U002.dgn
CNewsome

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	U0-3
R/W SHEET NO.	5

THE LPA GROUP
TRANSPORTATION CONSULTANTS

UTILITIES BY OTHERS

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



REVISIONS

07-MAY-2013 12:14
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CNewsome
AT RAILROAD WSDOT

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	U0-4
R/W SHEET NO.	6

THE LPA GROUP
TRANSPORTATION CONSULTANTS

UTILITIES BY OTHERS

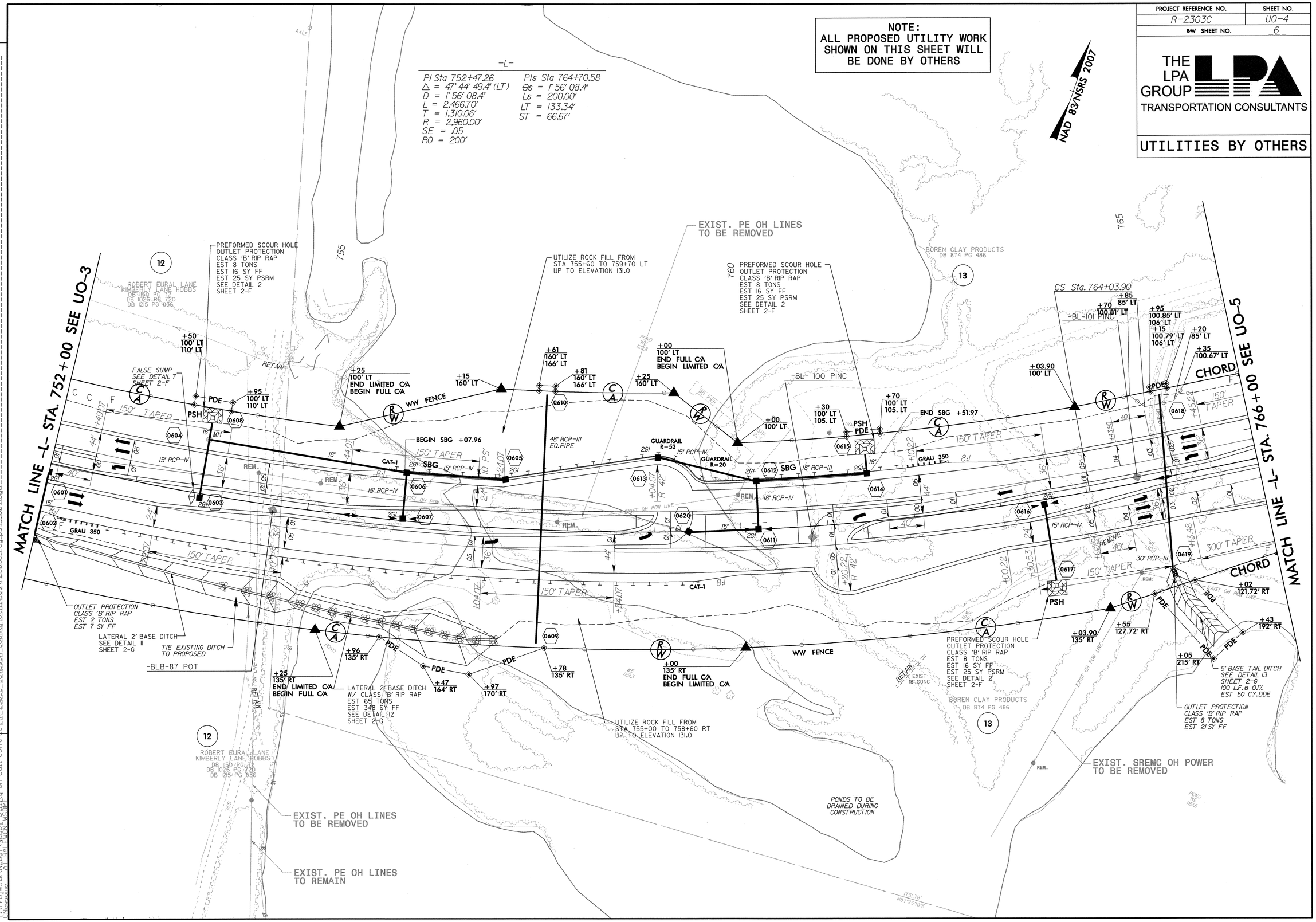
NOTE:
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS

NAD 83/NSRS 2007

-L-

PI Sta 752+47.26
Δ = 47° 44' 49.4" (LT)
D = 1° 56' 08.4"
L = 2,466.70'
T = 1,310.06'
R = 2,960.00'
SE = .05
RO = 200'

PIs Sta 764+70.58
Θs = 1° 56' 08.4"
Ls = 200.00'
LT = 133.34'
ST = 66.67'



REVISIONS

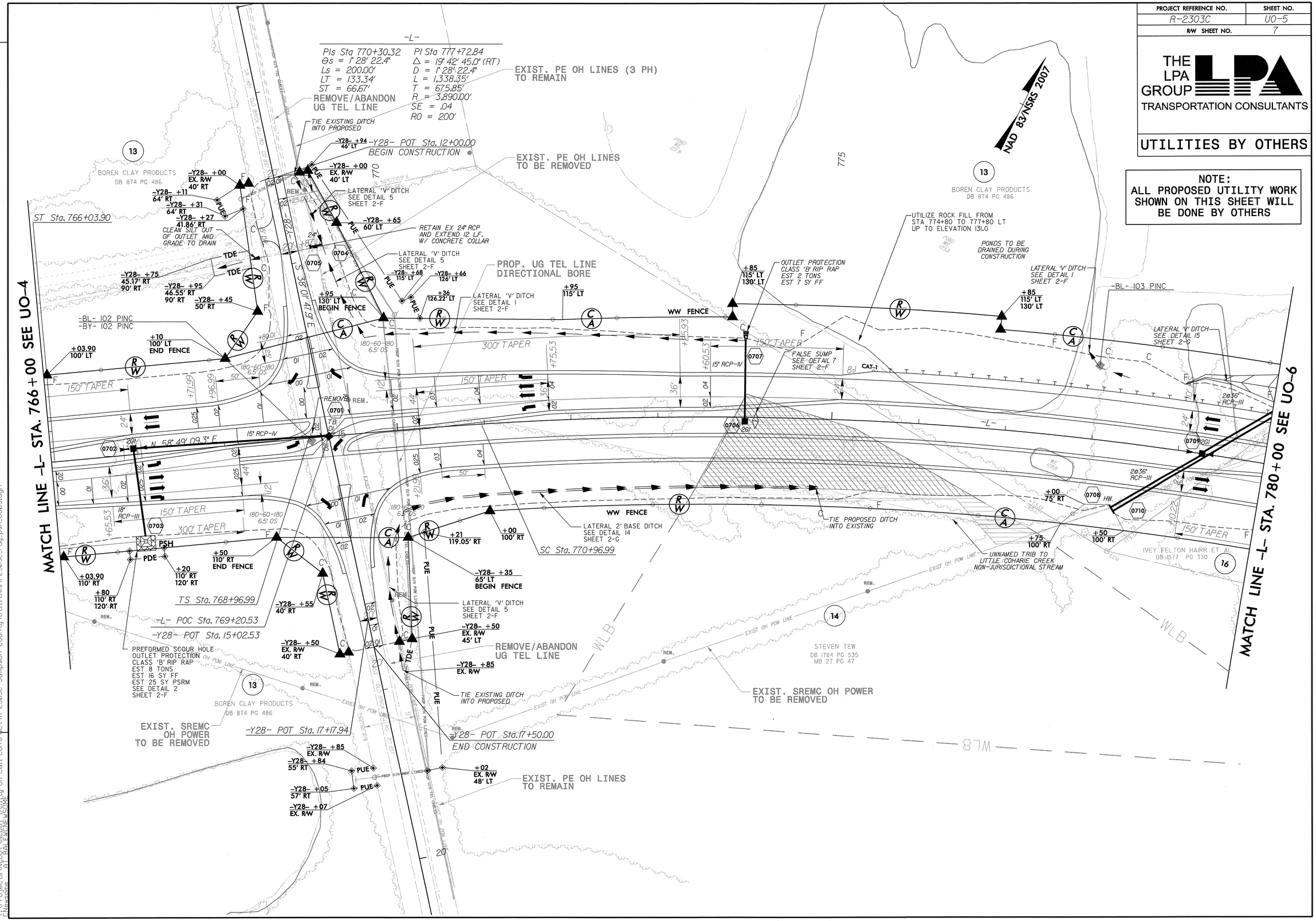
07-MAY-2013 12:06
R:\Projects\NCDOT\NCDOT Utility On-Call Contract\R-2303C Sampson County\Utilities\r2303c_rdu_psh_U004.dgn
Newsome AT RALEIGH\NSOME

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	U0-5
R/W SHEET NO.	7

THE LPA GROUP
TRANSPORTATION CONSULTANTS

UTILITIES BY OTHERS

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



REVISIONS

07-MAY-2013 12:07
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CNewsome
ALT RAL FWCNEWSOME

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	U0-6
R/W SHEET NO.	8

THE LPA GROUP
TRANSPORTATION CONSULTANTS

UTILITIES BY OTHERS

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

NAD 83/NSRS 2007

-Y29-
PI Sta 23+15.10
Δ = 35° 10' 37.6" (LT)
D = 19° 05' 54.9"
L = 184.19'
T = 95.10'
R = 300.00'
SE = .05
RO = 95'

PI Sta 24+87.47
Δ = 11° 25' 09.6" (RT)
D = 6° 52' 41.7"
L = 166.02'
T = 83.29'
R = 833.00'
SE = .06
RO = 162

-L-
PIs Sta 785+02.00
Θs = 1° 28' 22.4"
Ls = 200.00'
LT = 133.34'
ST = 66.67'

MATCH LINE -L- STA. 780+00 SEE UO-5

MATCH LINE -L- STA. 794+00 SEE UO-7

EXIST. UG CTV TO BE ABANDONED

BEGIN CONSTRUCTION
-Y29- POT Sta. 19+00.00

PROP. UG TEL LINE DIRECTIONAL BORE

-L- POT Sta. 785+00.22
-Y29- POT Sta. 22+16.95

ST Sta. 786+35.33

CS Sta. 784+35.33

PC Sta. 22+20.00

PRC Sta. 24+04.19

PT Sta. 25+70.21
BEARING AH = S 41° 15' 47.4" E

TS Sta. 792+99.45

CHORD

END CONSTRUCTION
-Y29- POT Sta. 27+50.00

EXIST. OH POWER TO BE REMOVED

TEMPORARY OH POWER LINE

REMOVE/ABANDON UG TEL LINE

EXIST. SREMC OH POWER (3 PH) TO BE REMOVED

EXIST. SREMC OH POWER TO REMAIN

-BL- 105 PINC

UNNAMED TRIB TO LITTLE COHARIE CREEK (LC2) PERENNIAL JURISDICTIONAL STREAM

UNNAMED TRIB TO LITTLE COHARIE CREEK (LC1) INTERMITTANT JURISDICTIONAL STREAM

-BL- 104 PINC
-BYI- 104 PINC

-BYI- 203 PINC 18+68.48

-BYI- 204 POT 23+73.17

DONALD RAY KELLY DB 992 PG 986

DONALD RAY KELLY ELIZABETH JUNE KELLY DB 1579 PG 795

DONALD KELLY DB 1579 PG 795

LONNIE P. FAIRCLOTH DB 1028 PG 622

HERMAN JAMES FAIRCLOTH DB 1155 PG 218

BILLY DEAN FAIRCLOTH DB 963 PG 939 DB 1146 PG 240

BOREN CLAY PRODUCTS DB 874 PG 486

IVEY FELTON HAIRR, ET AL DB 1577 PG 330 MB 57 PG 84

RONALD CANNADY DB 1080 PG 812

STEVEN TEW DB 1784 PG 535 MB 27 PG 47

JERRY ALLEN MITCHUM DB 1623 PG 930

07-MAY-2013 12:07
Y:\Projects\NCDOT\NCDOT Utility On-Call Contracts\R-2303C_Sampson County\Utilities\r2303c_rdy_psb_U006.dgn
DNewsome AT RALEWNEWSOME

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	U0-7
R/W SHEET NO.	9

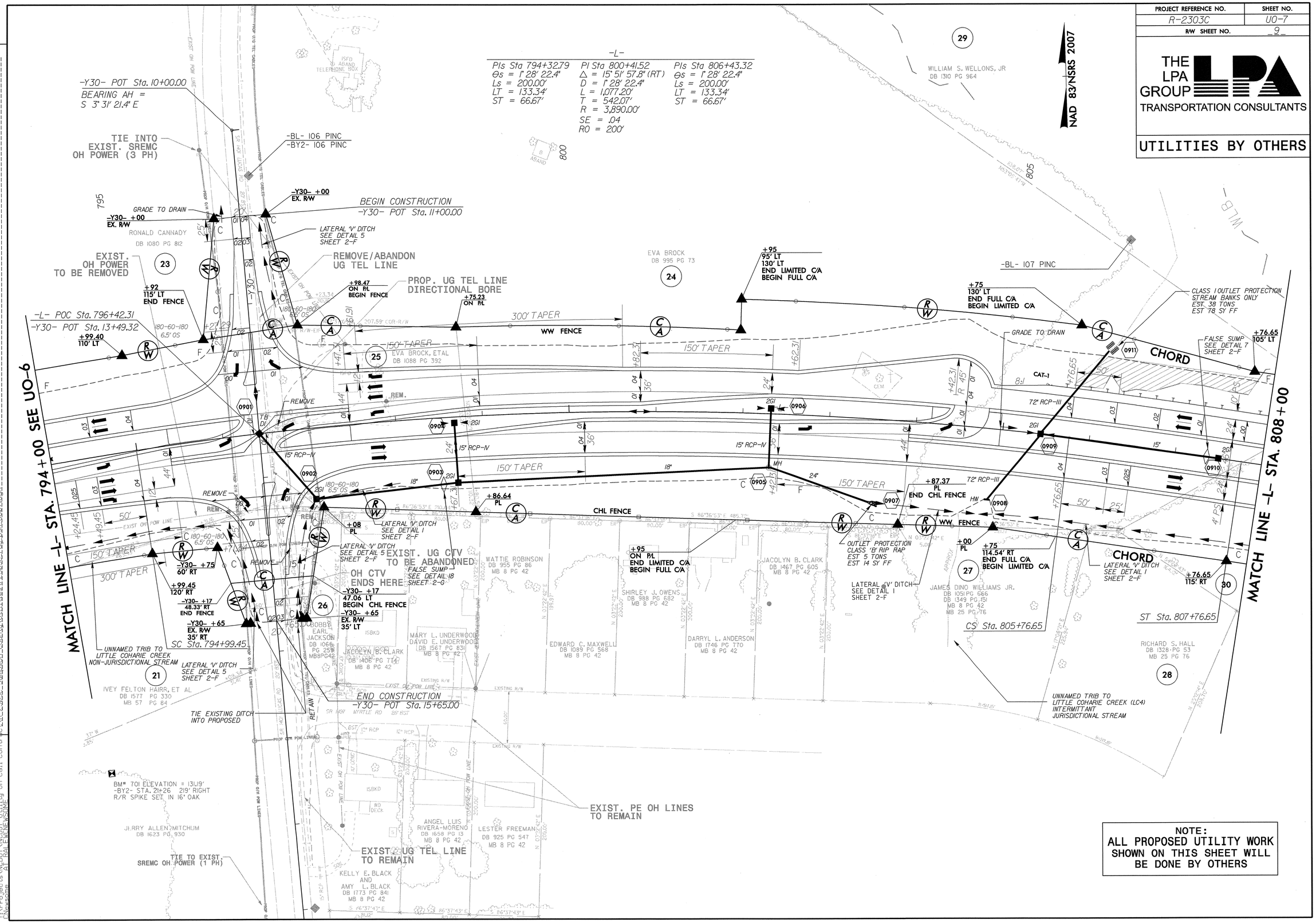
THE LPA GROUP
TRANSPORTATION CONSULTANTS

UTILITIES BY OTHERS

NAD 83/NSRS 2007

-L-

PIs Sta 794+32.79	PI Sta 800+41.52	PIs Sta 806+43.32
Θs = 1° 28' 22.4"	Δ = 15° 51' 57.8" (RT)	Θs = 1° 28' 22.4"
Ls = 200.00'	D = 1° 28' 22.4"	Ls = 200.00'
LT = 133.34'	L = 1,077.20'	LT = 133.34'
ST = 66.67'	T = 542.07'	ST = 66.67'
	R = 3,890.00'	
	SE = .04	
	R0 = 200'	



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

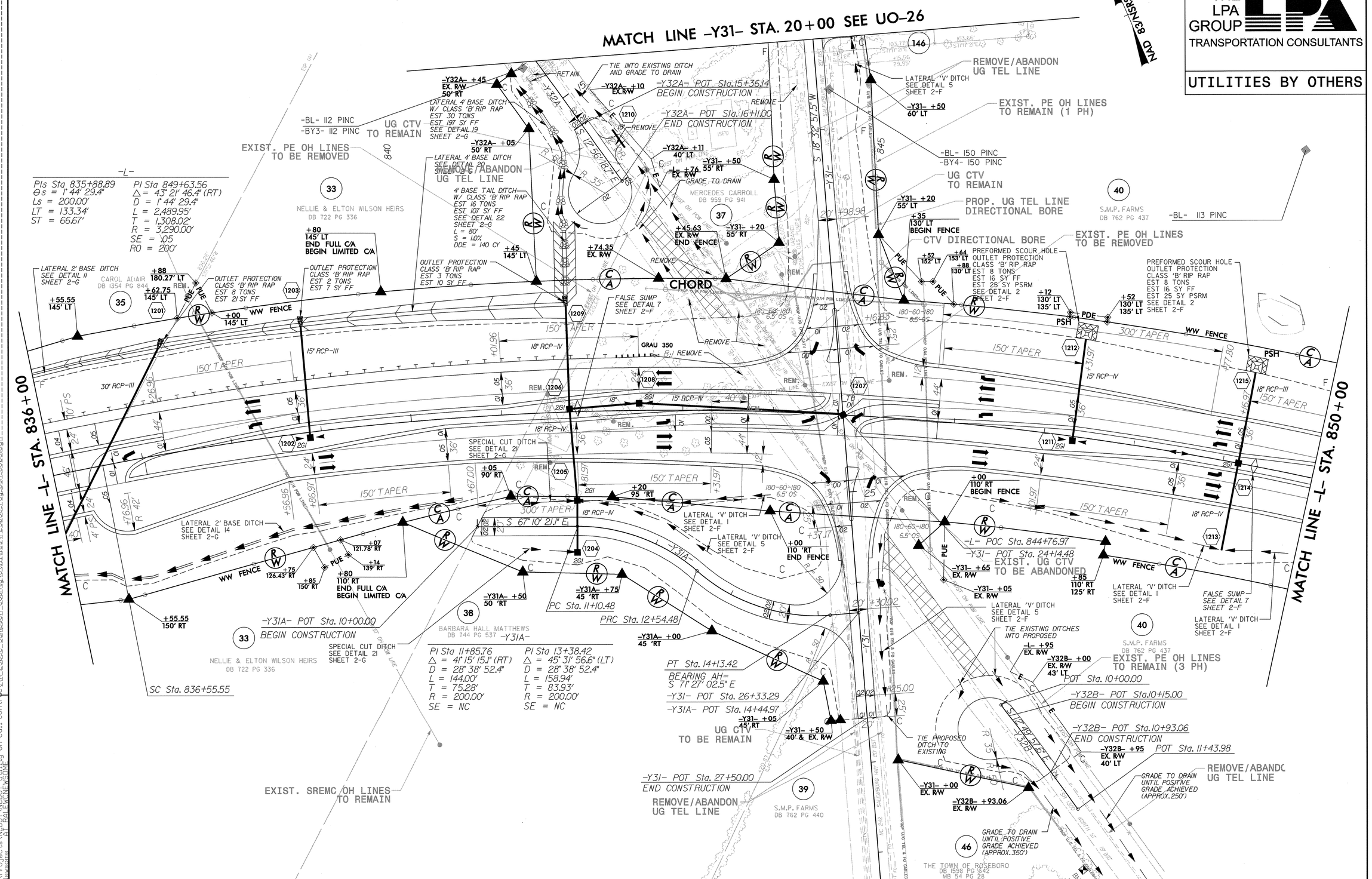
REVISIONS

07-MAY-2013 12:07
R:\Projects\R-2303C_NCDOT_Utility On-Call Contract\R-2303C_Sampson_County\Utilities\r2303c_rdy_psh_U007.dgn
Checksum: 41781 EWINEWSOME

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	U0-8
R/W SHEET NO.	12

THE LPA GROUP
TRANSPORTATION CONSULTANTS

UTILITIES BY OTHERS



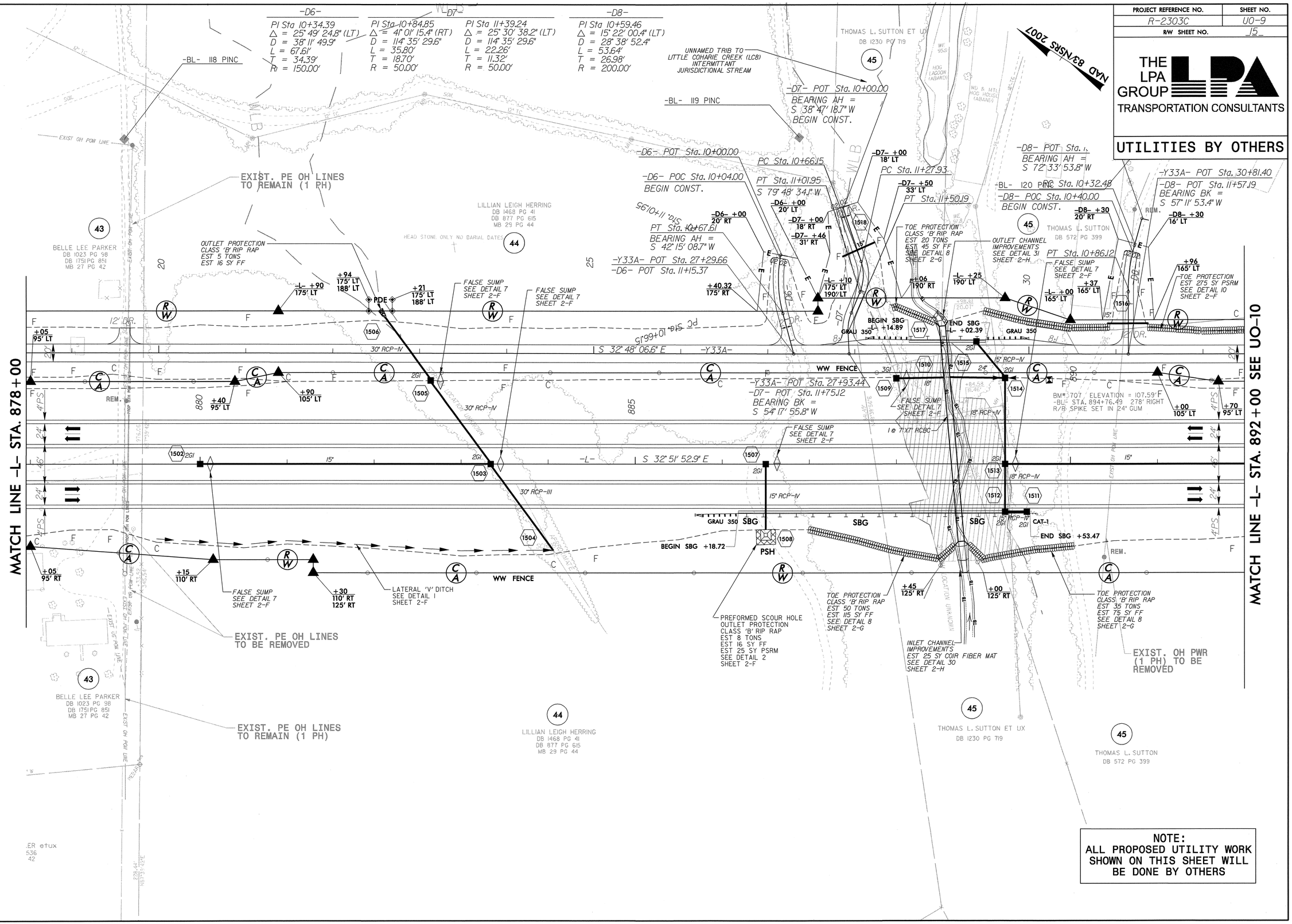
REVISIONS

07-MAY-2013 12:07
Y:\Projects\NCDOT\NCDOT Utility On-Call Contract\R-2303C_Sampson County\Utilities\r2303c_u0_sab_U0026.dgn
Flowsome
AT REF: MOVE_SCONE

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	U0-9
R/W SHEET NO.	15

THE LPA GROUP
TRANSPORTATION CONSULTANTS

UTILITIES BY OTHERS



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

REVISIONS

07-MAY-2013 12:08
V:\Projects\NCDOT\NCDOT Utility On-Call Contract\R-2303C_Sampson_County\Utilities\r2303c_rdy_psh_U009.dgn
Newsome
AT RAILROAD

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	U0-10
R/W SHEET NO.	16

THE LPA GROUP
TRANSPORTATION CONSULTANTS

UTILITIES BY OTHERS

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

NAD 83/NSRS 2007

MATCH LINE -L- STA. 892+00 SEE U0-9

MATCH LINE -L- STA. 906+00 SEE U0-11

-BL- 121 PINC
-BL- 122 PINC
-BL- 123 PINC
-BY5- 123 PINC
-Y33A- S 32°48' 06.6" E
S 32°51' 52.9" E
-Y33B- POT Sta.10+15.00
BEGIN CONSTRUCTION
POT Sta. 10+00.00
-Y33B- POT Sta.10+90.52
END CONSTRUCTION
POT Sta. 11+14.25

30+81.40
57.19

TOE PROTECTION
EST 275 SY PSRM
SEE DETAIL 10
SHEET 2-F

FALSE SUMP
SEE DETAIL 7
SHEET 2-F

FALSE SUMP
SEE DETAIL 18
SHEET 2-G

LATERAL 'V' DITCH
SEE DETAIL 5
SHEET 2-F

SPECIAL CUT DITCH
SEE DETAIL 21
SHEET 2-G

FALSE SUMP
SEE DETAIL 24
SHEET 2-G

TOE PROTECTION
CLASS 'B' RIP RAP
EST 40 TONS
EST 90 SY F.F
SEE DETAIL 8
SHEET 2-G

REMOVE/ABANDON
UG TEL LINE

EXIST. PE OH LINES
TO BE REMOVED

EXIST. OH POWER
TO BE REMOVED

EXIST. PE OH LINES
TO REMAIN

WW FENCE

15" RCP-III
18" RCP-IV
15" RCP-IV
18" RCP-III

+30
125' RT

+25
125'RT
135' RT

+36.00
136' RT

+85
125' RT
170' RT

Y33A- +83
EX. R/W
50' LT

-Y33B- +04
EX. R/W
50' LT

+46
245' RT

+51.15
EXIST R/W

+52
EX. R/W

+36.61
EX. R/W

+20
180' LT

+10
189' LT

+87
165' LT

+25
EX. R/W

REM.
GUY

PUE

TOWN OF ROSEBORO
DB 1160 PG 603

SEWER TREATMENT PLANT

TANK

HOG LAGOON

THOMAS L. SUTTON
DB 572 PG 399

CARL T. WOLFORD
DB 1202 PG 639
MB 31 PG 85

JOHNNY GENE JOHNSON
DB 1501 PG 633
MB 31 PG 85

PATRICIA A. BRYANT
DB 1522 PG 498
MB 31 PG 85

WILLIE EDWARD WILLIAMS
DB 1107 PG 09

TROY K. AUTRY
SHIRLEY S. AUTRY
DB 1372 PG 316
MB 31 PG 85

JACOLYN B. CLARK
DB 1466 PG 660
MB 31 PG 86

CLARA JEWEL SESSOMS AVERITTE
DB 847 PG 219

CHRISTAL WEAVER FREEMAN
WB 04E PG 439

THE CHILDREN OF
MORRIS CLIFFORD HERRIN
DB 845 PG 279
WB 94E PG 235
MB 1 PG 166
MB 28 PG 09
WB 52 PG 51
(THESE 3 MAP BOOKS AND SAM
WERE USED TO DEVELOP THI

45 48 49 50 51 52 54 55 56

1601 1602 1603 1604 1605 1606 1607 1608 1610 1611

07-MAY-2013 12:08
X:\Projects\R-2303C_Sampson_County\Utilities\r2303c_rdy_psb_U010.dgn
C:\Newsome
NCDOT Utility On-Call Contract\R-2303C, Sampson County, NC
AT RALEIGH\NEWSOME

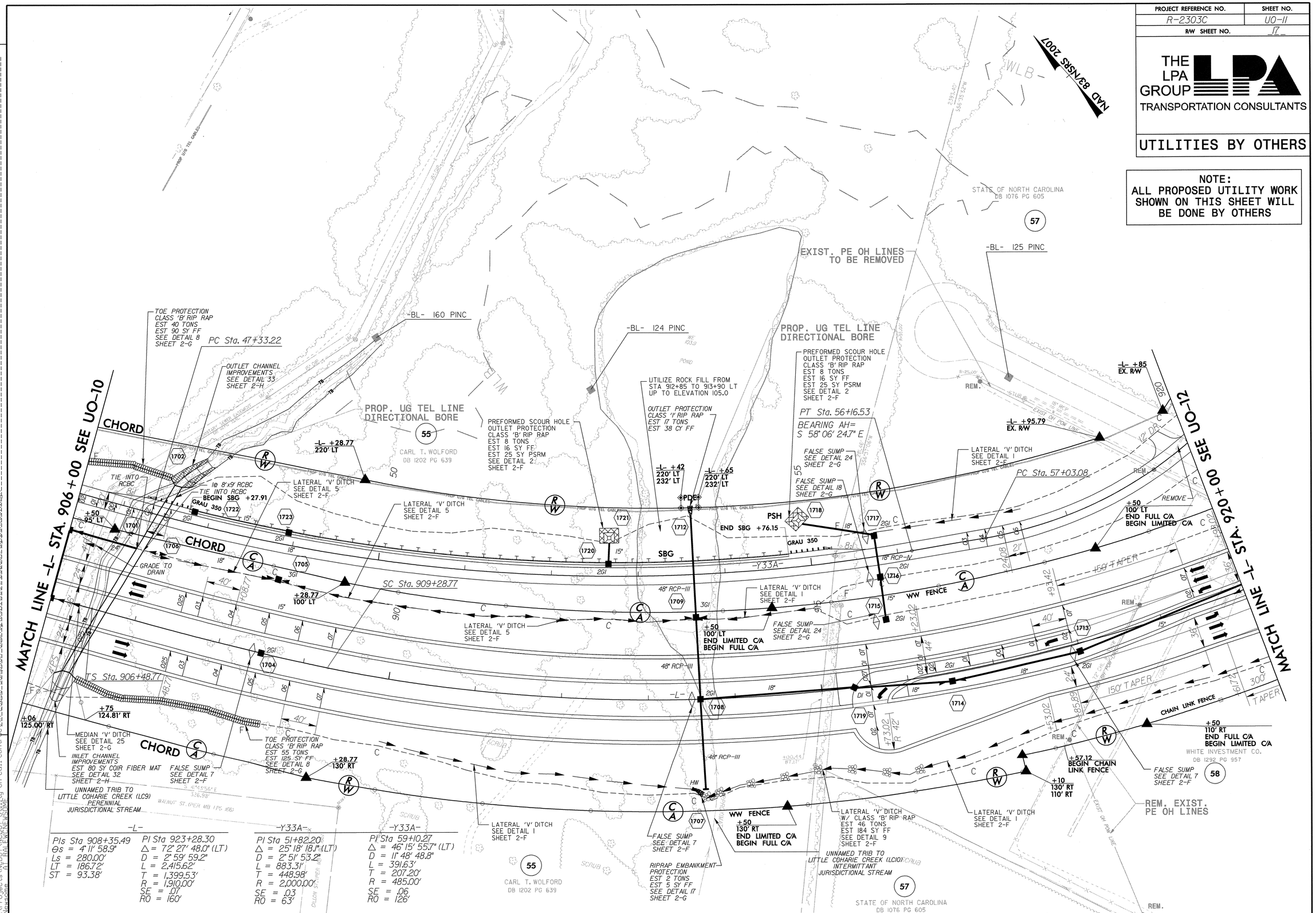
REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	U0-11
R/W SHEET NO.	17

THE LPA GROUP
TRANSPORTATION CONSULTANTS

UTILITIES BY OTHERS

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



REVISIONS

07-MAY-2013 12:08
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$USERNAME$

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	U0-12
R/W SHEET NO.	18

THE LPA GROUP
TRANSPORTATION CONSULTANTS

UTILITIES BY OTHERS

NAD 83/NSRS 2007

-L-

PI Sta 923+28.30
△ = 72° 27' 48.0" (LT)
D = 2° 59' 59.2"
L = 2,415.62'
T = 1,399.53'
R = 1,910.00'
SE = .07
RO = 280'

PIs Sta 934+37.78
Θs = 4° 11' 58.9"
Ls = 280.00'
LT = 186.72'
ST = 93.38'

-Y33-

PI Sta 12+62.83
△ = 58° 48' 27.7" (RT)
D = 16° 51' 06.1"
L = 348.97'
T = 191.61'
R = 340.00'
SE = .06
RO = 114'

PI Sta 16+20.82
△ = 3° 51' 54.0" (RT)
D = 1° 47' 21.7"
L = 216.00'
T = 108.04'
R = 3,202.00'
SE = .06
RO = 114'

-Y33A-

PI Sta 59+10.27
△ = 46° 15' 55.7" (LT)
D = 11° 48' 48.8"
L = 391.63'
T = 207.20'
R = 485.00'
SE = .06
RO = 126'

PI Sta 63+23.88
△ = 113° 35' 13.8" (RT)
D = 38° 11' 49.9"
L = 297.37'
T = 229.17'
R = 150.00'
SE = .06
RO = 102'

-D2-

PI Sta 10+88.72
△ = 59° 11' 25.0" (RT)
D = 114° 35' 29.6"
L = 51.65'
T = 28.40'
R = 50.00'
SE = SEE PLANS

PI Sta 10+36.54
△ = 61° 00' 21.0" (LT)
D = 114° 35' 29.6"
L = 53.24'
T = 29.46'
R = 50.00'
SE = SEE PLANS

MATCH LINE -L- STA. 920+00 SEE UO-11

MATCH LINE -L- STA. 934+00 SEE UO-13

-L- +22 476' LT
-L- +81 447' LT
-L- +90 353' LT
-L- +50 337' LT
-L- +62 302.95' LT
-L- +10 300' LT
-L- +00 305' LT
PDE
2' BASE TAIL DITCH SEE DETAIL 16 SHEET 2-G 180 LF.@ 0.3% EST 110 CY DDE
OUTLET PROTECTION CLASS 'B' RIP RAP EST 3 TONS EST 10 SY FF
EXIST. PE OH LINES TO BE REMOVED
PRC Sta. 60+94.71
18" RCP-III
2' BASE TAIL DITCH SEE DETAIL 16 SHEET 2-G 50 LF.@ 0.3% EST 8 CY DDE
-Y33A- POC Sta. 63+42.50
-D9- POT Sta. 10+98.90
-D9- POT Sta. 10+00.00
BEARING AH = S 80° 18' 35.5" W
BEGIN CONST.
-BL- 126 PINC
EXIST. PE OH LINES TO BE REMOVED
-D2-POT Sta. 10+00.00
BEARING AH
S 16° 12' 53.7" E
-D2- POT Sta. 10+05.00
BEGIN CONSTRUCTION
PC Sta. 10+07.09
SPECIAL LATERAL 'V' DITCH SEE DETAIL 1 SHEET 2-F
PRC Sta. 10+60.32
PT Sta. 11+11.98
TIE EXISTING DITCH TO PROPOSED
STATE OF NORTH CAROLINA DB 1076 PG 605
REMOVE
-L- POC Sta. 923+76.07
-Y33A- POT Sta. 65+06.17
-Y33- POT Sta. 10+00.00
PT Sta. 63+92.08
FALSE SUMP SEE DETAIL 7 SHEET 2-F
MEDIAN 'V' DITCH SEE DETAIL 25 SHEET 2-G
18" RCP-III
18" RCP-IV
24" RCP-III
15" RCP-IV
150' TAPER
300' TAPER
CHAIN LINK FENCE
LATERAL 'V' DITCH SEE DETAIL 1 SHEET 2-F
WW FENCE
SPECIAL CUT DITCH SEE DETAIL 21 SHEET 2-G
-D2- POT Sta. 11+80.47
CS Sta. 933+44.39
FALSE SUMP SEE DETAIL 24 SHEET 2-G
TOE PROTECTION CLASS 'B' RIP RAP EST 73 TONS EST 162 SY FF SEE DETAIL 8 SHEET 2-G
-BL- 142' PINC
-BY6- 127' PINC
SPECIAL CUT DITCH W/ CLASS 'B' RIP RAP EST 30 TONS EST 120 SY FF SEE DETAIL 27 SHEET 2-H
PROP. UG TEL LINE DIRECTIONAL BORE
FALSE SUMP SEE DETAIL 24 SHEET 2-G
PC Sta. 10+71.22
PT Sta. 14+20.19
PC Sta. 15+12.79
-Y33- POC Sta. 15+44.00
END CONSTRUCTION
EXIST. PE OH LINES TO REMAIN
REMOVE/ABANDON UG TEL LINE
EXIST. CTV OH LINE TO REMAIN
EXIST. PE OH LINES TO REMAIN
BENJAMIN R. GOFF, III DB 1126 PG 466
JEFFREY LYNN CARLISLE DB 1234 PG 453
CLARENCE OLIVER CARLISLE DB 949 PG 189
WHITE INVESTMENT CO. DB 1292 PG 957
CHARLES DUBOSE DB 781 PG 153
ELTON WARREN WILSON DB 1091 PG 52

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

REVISIONS

07-MAY-2013 12:08
N:\Projects\R-2303C_Sampson_County\Utilities\r2303c_rdu_psh_U012.dgn
CNewsome ALPHA\CNEWSOME

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	U0-13
R/W SHEET NO.	19

THE LPA GROUP
TRANSPORTATION CONSULTANTS

UTILITIES BY OTHERS

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

NAD 83/NSRS 2007

-L-
PIs Sta 934+37.78
Θs = 4° 11' 58.9"
Ls = 280.00'
LT = 186.72'
ST = 93.38'

MATCH LINE -L- STA. 934+00 SEE UO-12

MATCH LINE -L- STA. 948+00 SEE UO-14

60
BENJAMIN R. GOFF, III
DB 1126 PG 466

64
RICCI TADLOCK
DB 1460 PG 622

65
ANN W. WHEELER AND JANE B. COPELAND
DB 1288 PG 843
DB 1288 PG 853
DB 1288 PG 856
DB 1389 PG 845

61
CHARLES DUBOSE
DB 781 PG 153

66
CHARLES B. WILLIAMS AND LELA J. WILLIAMS
DB 1548 PG 13

EXIST 115 KV TRANSMISSION LINE TO BE REMOVED

CLASS II RIP RAP
EST 800 TONS
EST 850 SY FF

FALSE SUMP
SEE DETAIL 7
SHEET 2-F

EXIST. PE OH LINES TO BE REMOVED

REMOVE/ABANDON UG TEL LINE

ST Sta. 936+24.39

GUY TO BE REMOVED

PROPERTY OWNER TO RETAIN DRIVEWAY PIPE

SPECIAL LATERAL 'V' DITCH
SEE DETAIL 1
SHEET 2-F

BM# 709 ELEVATION = 89.90'
-BL- STA. 939+96 115' LEFT
R/R SPIKE SET IN 22" GUM

OUTLET PROTECTION
CLASS 'B' RIP RAP
EST 2 TONS
EST 7 SY FF

+24.39
110' LT
120' LT

+05
BEGIN FENCE

CHORD

CAT-1

BEGIN SBG +48.81

N 66°16'21.3" E -L-

BEGIN SPECIAL GRADING
-L- POT STA.939+35.00

BEGIN SBG +04.37

-BL- 128 PINC

24" RCP-III

15" RCP-IV

TYPE M350

18" RCP-IV

18" RCP-III

18" CSP W/ ELBOWS AND W/ ROD & LUG CONNECTORS

+30
120' LT

END SBG +40.00
48" RCP-III
EQ.PIPE
PLACE AT NATURAL GROUND ELEVATION

REM. GR

TYPE B-77

EXCAVATION
EST 4300 CY

CLASS II RIP RAP

BEGIN BRIDGE
-L- STA.941+65.00

END BRIDGE
-L- STA.944+60.00

-BL- 129 PINC

TOP OF BANK

EDGE OF WATER

BEGIN SBG +84.99

+85
120' LT

+25.00
115' LT
120' LT

+06.58
115' LT

+53
151.06' LT

+38
115' LT

18" CSP W/ ELBOWS AND W/ ROD & LUG CONNECTORS

+75
125' RT

+97.58
125.00' RT

+50
125' RT

+13.96
141' RT

+34.56
125' RT

END SPECIAL GRADING
-L- POT STA.946+88.00

WW FENCE

PUE

PSH

PROP U/G TEL & FO CABLES

PROP O/H POW & CATV LINES

PROP O/H POW LINES (TRANS)

TOE PROTECTION
CLASS 'B' RIP RAP
EST 73 TONS
EST 162 SY FF
SEE DETAIL 8
SHEET 2-G

+04
140' RT

+24.39
125' RT

+80
141' RT

END SBG +40.00

+21
262.16' RT

PROP. UG TEL LINE DIRECTIONAL BORE

OUTLET PROTECTION
CLASS 'I' RIP RAP
EST 12 SY FF

OUTLET PROTECTION
CLASS 'B' RIP RAP
EST 2 TONS
EST 7 SY FF

OUTLET PROTECTION
CLASS 'B' RIP RAP
EST 2 TONS
EST 7 SY FF

LITTLE COHARIE CREEK (LC6)
PERENNIAL
JURISDICTIONAL STREAM

OUTLET PROTECTION
CLASS 'B' RIP RAP
EST 2 TONS
EST 7 SY FF

BEGIN SBG +85.00

CLASS II RIP RAP
EST 775 TONS
EST 825 SY FF

+05
203' RT

+31
142' RT

PREFORMED SCOUR HOLE
OUTLET PROTECTION
CLASS 'B' RIP RAP
EST 18 TONS
EST 25 SY PSRM
SEE DETAIL 2
SHEET 2-F

PROP. UG TEL LINE DIRECTIONAL BORE

EXIST 115 KV TRANSMISSION LINE

PROP 115 KV TRANSMISSION LINE

REVISIONS

97-MAY-2013 10:08
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LR-2303C
CNewsome
01 RAILEWONFWSOME

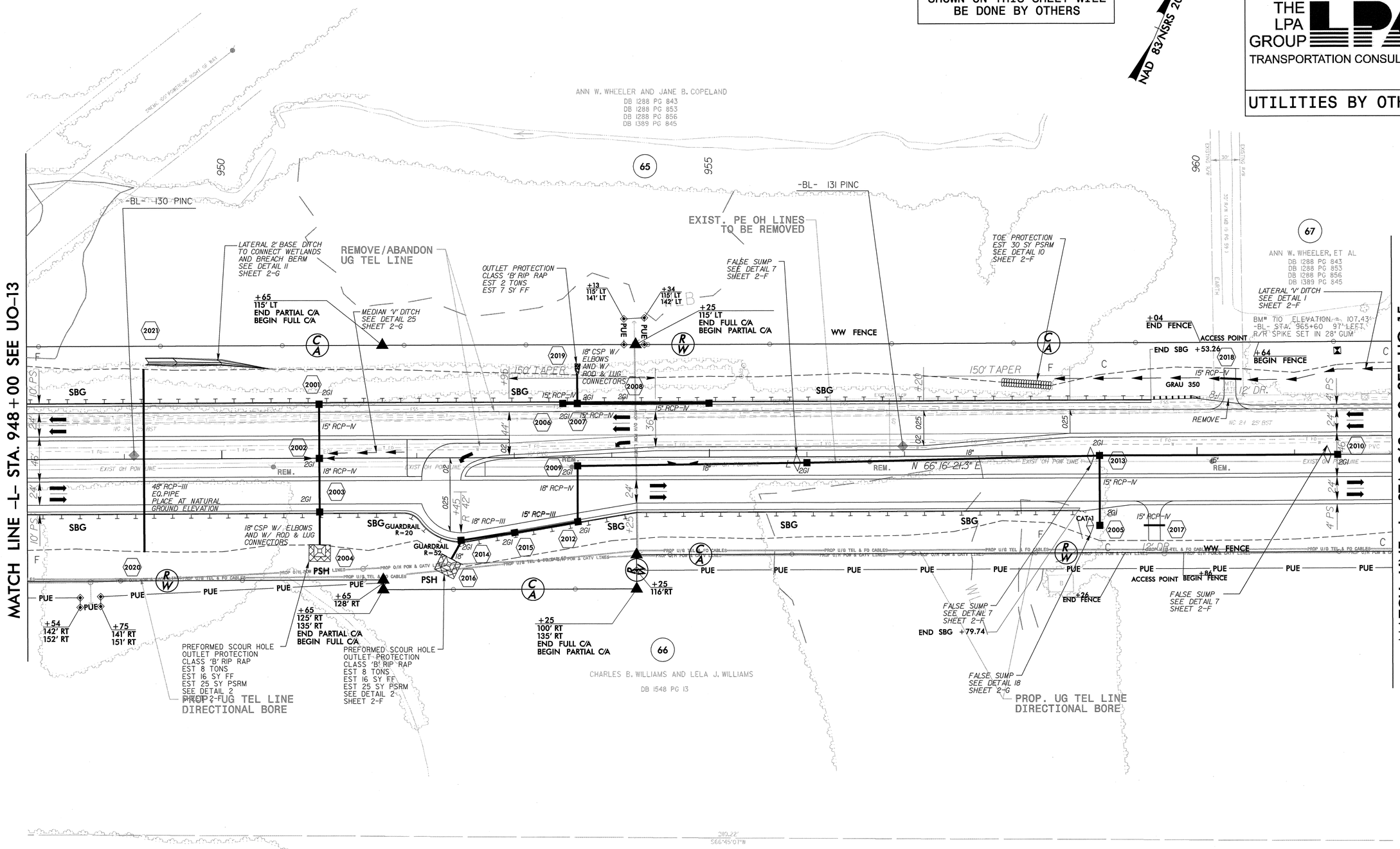
PROJECT REFERENCE NO.	SHEET NO.
R-2303C	U0-14
R/W SHEET NO.	20

THE LPA GROUP
TRANSPORTATION CONSULTANTS

UTILITIES BY OTHERS

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

NAD 83/NSRS 2007



REVISIONS

07-MAY-2013 16:18
Y:\Projects\NCDOT\NCDOT Utility On-Call Contract\R-2303C_Sampson_County\Utilities\r2303c_rdy_psh_U014.dgn
CNewsome AT RALEWCNEWSOME

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	U0-15
R/W SHEET NO.	21

THE LPA GROUP
TRANSPORTATION CONSULTANTS

UTILITIES BY OTHERS

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

NAD 83/NSRS 2007

-L-

PIs Sta 965+56.21
Θs = 1° 28' 22.4"
Ls = 200.00'
LT = 133.34'
ST = 66.67'

PI Sta 969+45.99
Δ = 9° 29' 48.0" (RT)
D = 1° 28' 22.4"
L = 644.76'
T = 323.12'
R = 3,890.00'
SE = .04
RO = 200'

PIs Sta 973+34.30
Θs = 1° 28' 22.4"
Ls = 200.00'
LT = 133.34'
ST = 66.67'

-Y34-

PI Sta 11+85.02
Δ = 48° 38' 56.1" (LT)
D = 19° 05' 54.9"
L = 254.73'
T = 135.61'
R = 300.00'
SE = .06
RO = 108'

MATCH LINE -L- STA. 962+00 SEE UO-14

MATCH LINE -L- STA. 976+00 SEE UO-16

EXIST. PE OH LINES TO REMAIN

UNNAMED TRIB TO LITTLE COHARIE CREEK NON-JURISDICTIONAL STREAM

EXIST. PE OH LINES TO BE REMOVED

REMOVE/ABANDON UG TEL LINE

-L- POC Sta. 967+66.94
-Y34- POT Sta. 10+00.00
BEARING AH = S 20° 05' 20.0" E

TIE PROPOSED DITCH INTO EXISTING

FALSE SUMP SEE DETAIL 7 SHEET 2-F

LATERAL 'V' DITCH SEE DETAIL 1 SHEET 2-F

LATERAL 2' BASE DITCH SEE DETAIL 14 SHEET 2-G

PC Sta. 10+49.41

TS Sta. 964+22.87

SC Sta. 966+22.87

CS Sta. 972+67.63

ST Sta. 974+67.63

-BL- 132 PINC
-BY7- 132 POT

-BL- 5 PINC

-Y34- POT Sta. 13+80.00
END CONSTRUCTION

PROP. UG TEL LINE DIRECTIONAL BORE

OUTLET PROTECTION CLASS 'B' RIP RAP EST 3 TONS EST 10 SY FF

OUTLET PROTECTION CLASS 'B' RIP RAP EST 2 TONS EST 7 SY FF

OUTLET PROTECTION CLASS 'B' RIP RAP EST 15 TONS EST 37 SY FF

EXISTING ROADWAY TO BE DEMOLISHED AND AREA GRADED TO DRAIN AWAY FROM FILL SLOPE

GRADE TO DRAIN

TIE EXISTING DITCH TO PROPOSED

REMOVE/ABANDON UG TEL LINE
PT Sta. 13+04.13

EXIST. PE OH LINES TO REMAIN

EXIST. UG CTV TO BE ABANDONED
-BY7- 217 PINC

LATERAL 'V' DITCH SEE DETAIL 5 SHEET 2-F

POT Sta. 15+07.15

EXIST. UG TEL LINE TO REMAIN

ANN HARPER WHEELER
DB 1389 PG 842
MB 19 PG 59
MB 38 PG 79

JANE B. COPELAND
DB 1389 PG 853

ANN W. WHEELER, ET AL
DB 1288 PG 843
DB 1288 PG 853
DB 1288 PG 856
DB 1389 PG 845

TODD ALLEN WHEELER
DB 1497 PG 935

CHARLES B. WILLIAMS
DB 1548 PG 13

CHARLES B. WILLIAMS AND LELA J. WILLIAMS
DB 1548 PG 13

AUBREY PAYTON CRUMPLER
DB 1199 PG 137

GEORGE HALL, JR
DB 856 PG 441

BILLY RAY HALL
DB 1361 PG 664

FULTON WAYNE BROCK
DB 1329 PG 612

REVISIONS

07-MAY-2013 12:08
V:\Projects\NCDOT\NCDOT_Utility On-Call Contract\R-2303C_Sampson_County\Utilities\r2303c_rdu_psh_U015.dgn
Rexcope AT RALEWKNEWSOME

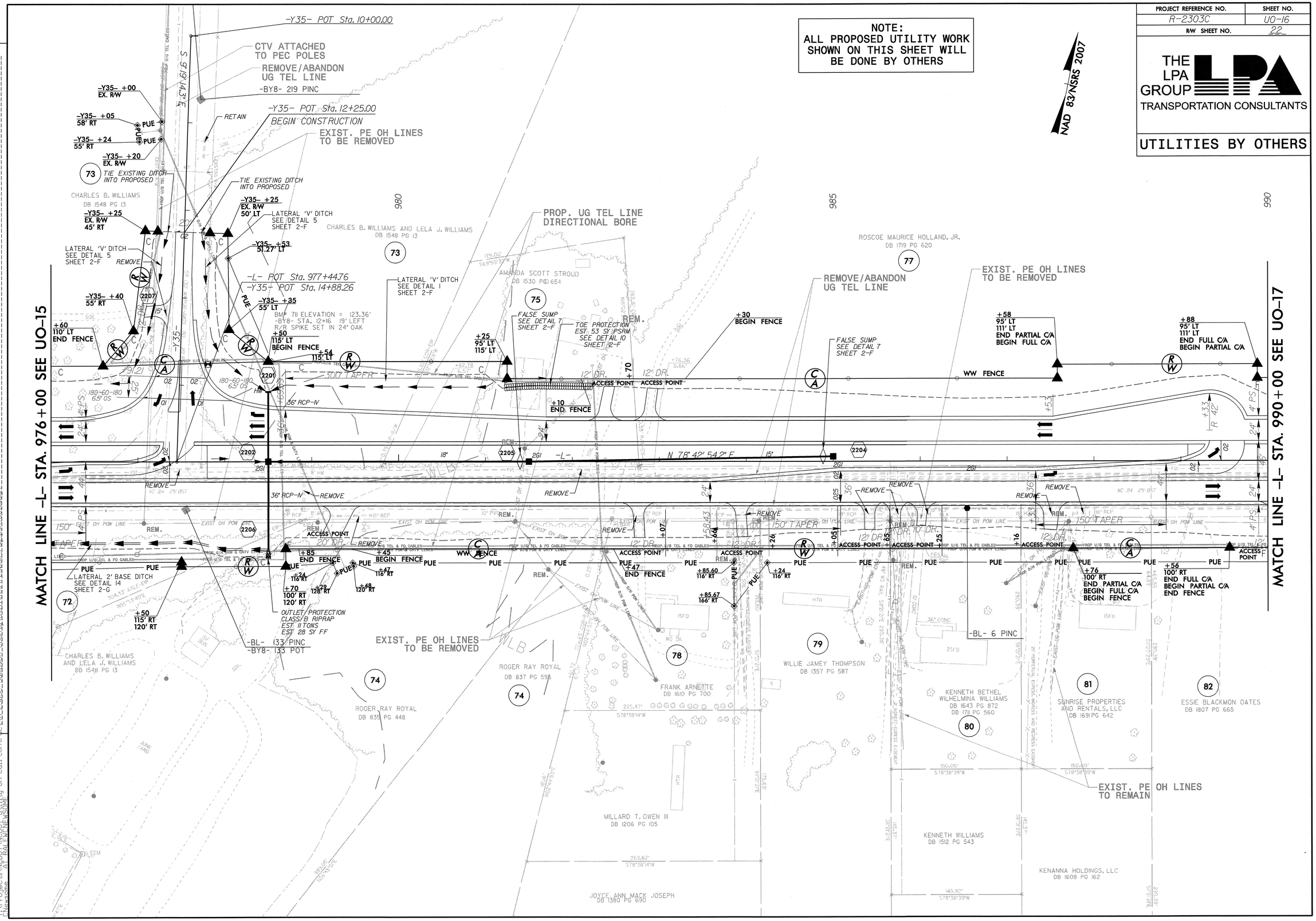
PROJECT REFERENCE NO.	SHEET NO.
R-2303C	U0-16
R/W SHEET NO.	22

THE LPA GROUP
TRANSPORTATION CONSULTANTS

UTILITIES BY OTHERS

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

NAD 83/NSRS 2007



REVISIONS

07-MAY-2013 12:09
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C:\Newsome
AT&T RALEIGHNEWSOME

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	U0-17
R/W SHEET NO.	23

THE LPA GROUP
TRANSPORTATION CONSULTANTS

UTILITIES BY OTHERS

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

-L-
PI Sta 1003+58.50
△ = 2° 27' 14.2" (RT)
D = 0° 34' 22.6"
L = 428.30'
T = 214.18'
R = 10,000.00'

NAD 83/NSRS 2007

NOTE: CLEAR PATH FOR C/A FENCE 6' WIDE TO MINIMIZE IMPACTS TO TREES.

+11 358' LT

EXIST. PE OH LINES TO REMAIN

PROP. UG TEL LINE DIRECTIONAL BORE

+75 260' LT

BM# 712 ELEVATION = 132.67'
-BL- STA. 1003+96 267' LEFT
R/R SPIKE SET IN 26" PINE

POND WILL BE DRAINED.
PIPE INVERT MAY NEED TO BE ADJUSTED ONCE POND IS DRAINED AND ELEVATIONS VERIFIED BY NEU.

REMOVE/ABANDON UG TEL LINE

EXIST. PE OH LINES TO BE REMOVED

MATCH LINE -L- STA. 990+00 SEE UO-16

MATCH LINE -L- STA. 1004+00 SEE UO-18

+68 END FENCE

FALSE SUMP SEE DETAIL 7 SHEET 2-F

+28 BEGIN FENCE

WW FENCE

+85 95' & 120' LT

+06 95' & 120' LT

+97 END FENCE

+57 95' LT BEGIN FENCE

BEGIN SBG +80.26

+44.32 95' LT

GRADE TO DRAIN

FALSE SUMP SEE DETAIL 7 SHEET 2-F

N 78° 42' 54.2" E

-L-

ACCESS POINT

PUE

CHL FENCE

+76 BEGIN CHL FENCE

+50 117' RT 123' RT

+70 128' RT

+74 117' RT

DO NOT DISTURB WELL IN PUE.

+80 END CHL FENCE

+91 100' RT

FALSE SUMP SEE DETAIL 7 SHEET 2-F

+51 BEGIN CHL FENCE

+44.32 100' RT 103' RT 120' RT

PC Sta. 1001+44.32

+85 100' RT 103' RT 120' RT

+30 END CHL FENCE

+45 85' RT

-BL- 135 PINC

-BL- 134 PINC

CLASS I RIPRAP STREAM BANKS ONLY
EST 26 TONS
EST 56 SY FF

UNNAMED TRIB TO LITTLE COHARIE CREEK (LCII) PERENNIAL JURISDICTIONAL STREAM

EXIST. PE OH LINES TO REMAIN

EXIST. PE OH LINES TO BE REMOVED

ROSCOE MAURICE HOLLAND, JR. DB 1719 PG 620 (77)

RICKY WALTON SESSOMS DB 1008 PG 871 (91)

GEORGE B. FANN DB 750 PG 199 DB 1692 PG 526 (88)

GEORGE FANN DB 771 PG 536 (92)

JEANETTE H. WILLIAMS DB 1605 PG 115 (93)

MICHAEL A. CORPREW DB 1333 PG 344 (85)

JOHNNIE LEE WEST DB 1059 PG 17 (86)

GEORGE HARRIS, SR. HEIRS DB 1085 PG 170 (87)

GWENDOLYN M. KING DB 1379 PG 459 (83)

MUHAMMAD B. ABDUL-ALIM DB 1128 PG 825 (84)

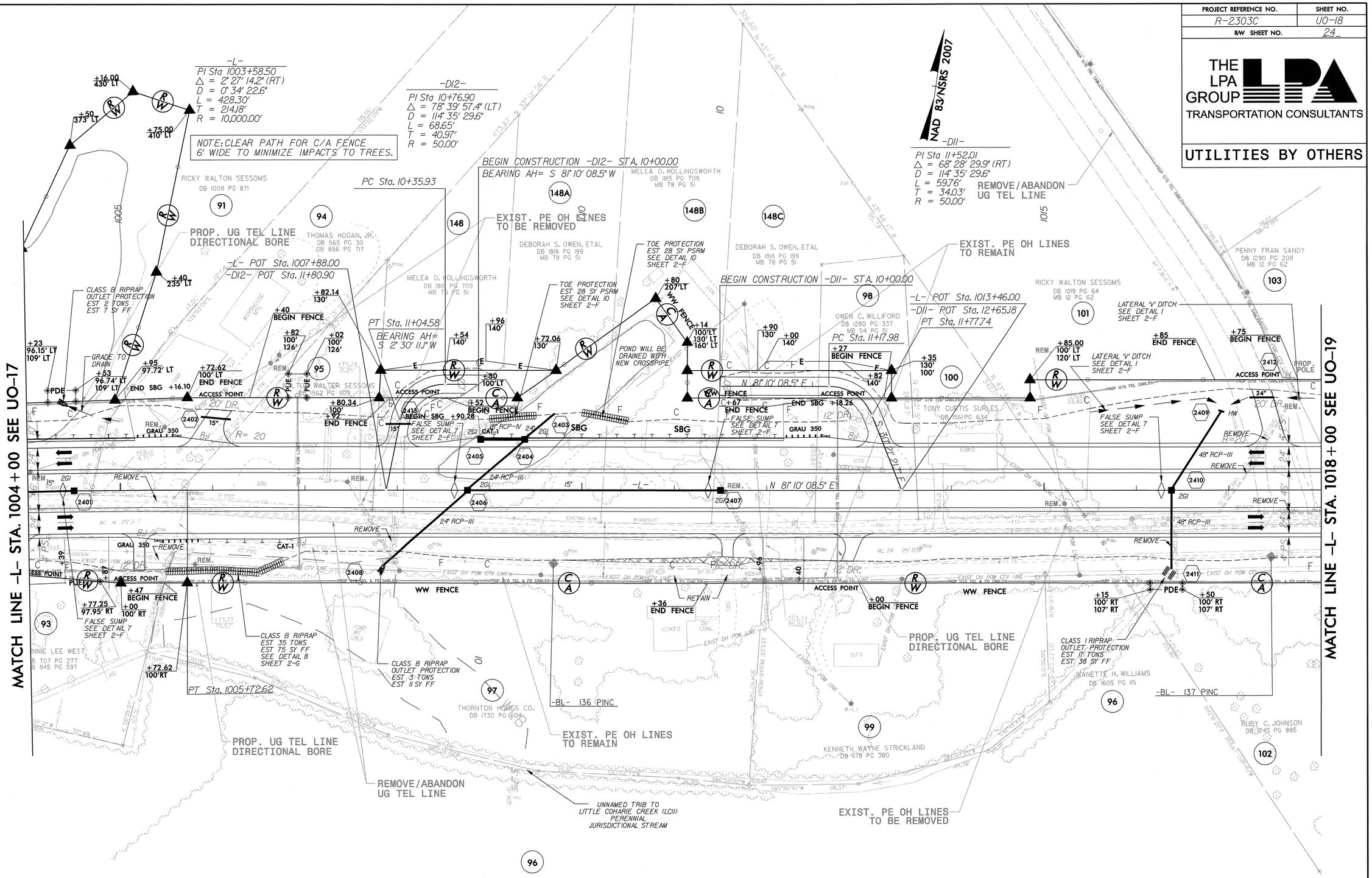
REVISIONS

07-MAY-2013 12:09
R:\Roadway\Proj\NCDOT Utility On-Call Contract\R-2303C_Sampson_County\Utilities\r2303c_rdu_psh_U017.dgn
C:\Newsome
$ATTR: RAILEWNF,WSDMF

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	U0-18
RW SHEET NO.	24

THE LPA GROUP
TRANSPORTATION CONSULTANTS

UTILITIES BY OTHERS



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

REVISIONS

07-MAY-2013 12:00
C:\Users\kbolt\NCDOT Utility On-Call Contract\R-2303C_Sampson_County\Utilities\r2303c_rdu_psh_U018.dgn
AT RALEIGH\WSMF

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UO-19
R/W SHEET NO.	25

THE LPA GROUP
TRANSPORTATION CONSULTANTS

UTILITIES BY OTHERS

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

NAD 83/NSRS 2007

-L-

PIs Sta 1026+46.66
Θs = 1° 56' 08.4"
Ls = 200.00'
LT = 133.34'
ST = 66.67'

PI Sta 1030+32.66
Δ = 12° 18' 53.7" (LT)
D = 1° 56' 08.4"
L = 636.21'
T = 319.34'
R = 2,960.00'
SE = .05
R0 = 200'

-Y36-

PI Sta 13+07.18
Δ = 77° 38' 06.4" (RT)
D = 22° 02' 12.6"
L = 352.30'
T = 209.18'
R = 260.00'
SE = .06
R0 = 108'

MATCH LINE -L- STA. 1018+00 SEE UO-18

MATCH LINE -L- STA. 1032+00 SEE UO-20

EXIST. PE OH LINES TO BE REMOVED

EXIST. PE OH LINES TO BE REMOVED

EXIST. PE OH LINES TO REMAIN

REMOVE/ABANDON UG TEL LINE

PENNY FRAN SANDY
DB 1290 PG 209
MB 12 PG 62

MARVIN RAMIREZ
DB 1350 PG 438

JOHN KEITH HOBBS, ETUX
AND
THOMAS DALE HOBBS, JR., ETUX
DB 1690 PG 33
MB 10 PG 80

RUBY C. JOHNSON
DB 1245 PG 885

WILLIAM H. HARRIS
DB 1702 PG 800

DAN BENJAMIN
DB 1060 PG 284

GEORGE FRANKLIN MURPHY
DB 1093 PG 892

GEORGE F. MURPHY
DB 1353 PG 838

ELIZABETH B. PARKER
GEORGE L. PARKER
DB 1309 PG 575
DB 1309 PG 577

MATTHEW NEAL
DB 1693 PG 713

MATTHEW D. NEAL, ETUX
AND
PATRICK G. NEAL, ETUX
DB 1740 PG 42
MB 10 PG 80

+95 END FENCE
+55 BEGIN FENCE
ACCESS POINT
+70 105' LT 120' LT 132' LT
+95 105' LT 131' LT
PUE
+60 105' LT END PARTIAL C/A BEGIN FULL C/A
WW FENCE
LATERAL 'V' DITCH SEE DETAIL 1 SHEET 2-F
OUTLET PROTECTION CLASS B RIPRAP EST 3 TONS EST 10 SY FF
MEDIAN 'V' DITCH SEE DETAIL 25 SHEET 2-G
TS Sta. 1025+13.32
+13.32 105' LT
CHORD
SC Sta. 1027+13.32
+13.32 115' LT END FULL C/A BEGIN PARTIAL C/A
MEDIAN 'V' DITCH SEE DETAIL 25 SHEET 2-G
18" RCP-IV
12' DR.
150' TAPER
18" RCP-III
FALSE SUMP SEE DETAIL 7 SHEET 2-F
150' TAPER
15" RCP-IV
N 81° 10' 08.5" E
REM.
REMOVE
RETAIN
+45 90' RT 100' RT
+20 END FENCE
+76 90' RT 94' RT
+88 BEGIN FENCE
+60 90' RT 115' RT END PARTIAL C/A BEGIN FULL C/A
WW FENCE
+13.32 115' RT 125' RT
+35 115' RT 126' RT
+13.32 100' RT END FULL C/A BEGIN PARTIAL C/A
-BL- 138 PINC
+96 END FENCE
ACCESS POINT
+56 BEGIN FENCE
+05 125' RT END FENCE
+05.13 131.74' RT
+37 127' RT 138' RT
+58 129' RT 139' RT
-Y36- +40 65' RT
300' TAPER
-Y36- POT Sta. 16+15.00
END CONSTRUCTION
-Y36- POT Sta. 19+75.04
-BY9- 222 PINC
S 64° 03' 45.9" W
-Y36- +15 EX. R/W 40' RT
TIE EXISTING DITCH TO PROPOSED
-Y36- +15 EX. R/W 40' LT
LATERAL 'V' DITCH SEE DETAIL 5 SHEET 2-F
-Y36- +45 40' RT
-Y36- +50 50' RT
PT Sta. 14+50.30
30" RCP-III
-Y36- +65 EX. R/W
-Y36- +90 EX. R/W
-Y36- +58 EX. R/W
-Y36- +50 45' LT
OUTLET PROTECTION CLASS B RIPRAP EST 8 TONS EST 21 SY FF
GRADE TO DRAIN
OUTLET PROTECTION CLASS B RIPRAP EST 2 TONS EST 7 SY FF

REVISIONS

07-MAY-2013 (R3)
C:\Projects\NCDOT\NCDOT Utility On-Call Contract\R-2303C_Sampson_County\Utilities\r2303c_ru_psh_U019.dgn
C:\Keysone\ALRALEWCNEWSOME

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	U0-20
R/W SHEET NO.	26

THE LPA GROUP
TRANSPORTATION CONSULTANTS

UTILITIES BY OTHERS

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

-L-

PI Sta 1030+32.66
Δ = 12° 18' 53.7" (LT)
D = 1° 56' 08.4"
L = 636.21'
T = 319.34'
R = 2,960.00'
SE = .05
RO = 200'

PIs Sta 1034+16.21
Θs = 1° 56' 08.4"
Ls = 200.00'
LT = 133.34'
ST = 66.67'

PIs Sta 1041+52.75
Θs = 1° 56' 08.4"
Ls = 200.00'
LT = 133.34'
ST = 66.67'

PI Sta 1047+17.30
Δ = 19° 05' 46.9" (RT)
D = 1° 56' 08.4"
L = 986.55'
T = 497.89'
R = 2,960.00'
SE = .05
RO = 200'

-D3-

PI Sta 11+56.85
Δ = 29° 14' 29.8" (RT)
D = 114° 35' 29.6"
L = 25.52'
T = 13.04'
R = 50.00'
SE = SEE PLANS

-Y37-

PI Sta 16+00.77
Δ = 19° 37' 12.9" (LT)
D = 6° 52' 41.7"
L = 285.25'
T = 144.04'
R = 833.00'
SE = .06
RO = 144'

PI Sta 18+62.78
Δ = 39° 07' 05.7" (RT)
D = 16° 51' 06.1"
L = 232.13'
T = 120.80'
R = 340.00'
SE = .06
RO = 114'

NAD 83/NSRS 2007

-L- POC Sta.1032+15.99
-Y36- POT Sta. 10+00.00
BEARING AH =
S 13° 34' 20.5" E

-Y37- POT Sta. 12+60.00
BEGIN CONSTRUCTION

-D3-POT Sta. 10+00.00
BEGIN CONSTRUCTION
BEARING AH
S 54° 12' 15.9" E

PC Sta. 11+43.80

PT Sta. 11+69.32

CS Sta. 1033+49.53

ST Sta. 1035+49.53

-D3-POT Sta. 12+12.92
BEARING BK
S 24° 57' 46.1" E

PC Sta. 10+98.00

Y36A- POT Sta.10+20.00
BEGIN CONSTRUCTION

-Y36A- POT Sta.10+94.65
END CONSTRUCTION

POT Sta. 10+00.00

POT Sta. 11+33.12

-Y37-POC Sta. 18+11.46
-SR2- POT Sta. 12+86.38
BEARING BK
S 49° 07' 02.8" W

PC Sta. 14+56.74

PT Sta. 12+57.29

-BY10- 226 PINC PRC Sta. 17+41.99

SC Sta. 1042+19.41

TS Sta. 1040+19.41

-BL- 139 PINC
-BY9- 139 POT

MATCH LINE -L- STA. 1032+00 SEE UO-19

MATCH LINE -L- STA. 1046+00 SEE UO-21

REVISIONS

07-MAY-2013 12:10
C:\Users\KHOBBS\AppData\Local\Temp\Acl Temp\Publish Newscine
R:\Roadway\Proposals\R-2303C_Sampson_County\Utilities\r2303c_rdu_psh_U020.dgn
R-2303C: Sampson County Utility On-Call Contract
NCDOT Utility On-Call Contract

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	U0-21
R/W SHEET NO.	27

THE LPA GROUP
TRANSPORTATION CONSULTANTS

UTILITIES BY OTHERS

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

NAD 83/NSRS 2007

-SR2-
PI Sta 12+37.45
Δ = 48° 37' 33.8" (LT)
D = 114° 35' 29.6"
L = 42.43'
T = 22.59'
R = 50.00'
SE = SEE PLANS

-L-
PI Sta 1047+17.30
Δ = 19° 05' 46.9" (RT)
D = 1° 56' 08.4"
L = 986.55'
T = 497.89'
R = 2,960.00'
SE = .05
RO = 200'

PIs Sta 1052+72.63
Θs = 1° 56' 08.4"
Ls = 200.00'
LT = 133.34'
ST = 66.67'

PIs Sta 1058+03.98
Θs = 1° 56' 08.4"
Ls = 200.00'
LT = 133.34'
ST = 66.67'

-Y37-
PI Sta 18+62.78
Δ = 39° 07' 05.7" (RT)
D = 16° 51' 06.1"
L = 232.13'
T = 120.80'
R = 340.00'
SE = .06
RO = 114'

PI Sta 21+24.91
Δ = 19° 16' 50.7" (LT)
D = 19° 05' 54.9"
L = 100.95'
T = 50.96'
R = 300.00'
SE = .03
RO = 45'

MATCH LINE -L- STA. 1046+00 SEE UO-20

MATCH LINE -L- STA. 1060+00 SEE UO-22

ROGER R. ROYAL DB 1314 PG 218

TERA CULBRETH DB 967 PG 995 MB. 14 PAGE 15

HAROLD T. CULBRETH DB 1434 PG 195

WILMA FOWLER DB 1304 PG 483

SAMPSON COUNTY DB 933 PG 606

TERA CULBRETH MB. 14 PAGE 15

LUTRELL BUTLER JR. DB 768 PG 829

SUDIE MAE BETHEA JOHNSON DB 933 PG 765 DB 720 PG 423

RETHA BETHEA DB 1242 PG 841

CHRIS DESSENTZ DB 1568 PG 149

JOHNNY C. BASS DB 931 PG 331

GILBERT L. OATES DB 1058 PG 246

JOHNNY C. BASS DB 1221 PG 166

WENDELL W. BUTLER DB 768 PG 371

CLARA PARKER DB 526 PG 426

EDWARD PARKER DB 862 PG 650

JIMMY L. COOPER DB 862 PG 539

WILLIAM HALLETT DB 1357 PG 729

MINNIE JANETA BENNETT DB 1267 PG 449

ELLA MAE WHITE DB 646 PG 258

BRENDA TATUM DB 1357 PG 422

TERA CLYDE CULBRETH DB 1361 PG 250

VALERIE LIPSHAW CLAY BY CAIN DB 1407 PG 308

JUDITH ANN BETHEA DB 1145 PG 724

PT Sta. 19+74.12
BEARING AH =
S 19° 48' 15.5" E
PC Sta. 12+14.86

-SR2- POT Sta. 10+04.30
BEGIN CONSTRUCTION
BEARING AH =
N 82° 15' 23.3" W

EXIST. PE OH LINES TO REMAIN

EXIST. PE OH LINES TO BE REMOVED

-Y37- +06
EX. R/W

+42
EX. R/W

+78
125' LT
BEGIN FENCE

+80
159' LT

+83
139' LT

+61
125' LT

WW FENCE

-L- POC Sta. 1046+24.39

-Y37- POT Sta. 20+28.30

+05.96
125' LT
END LIMITED C/A
BEGIN FULL C/A

LATERAL 'V' DITCH
SEE DETAIL 1
SHEET 2-F

+05.96
135' LT

CHORD

TS Sta. 1056+70.64

SC Sta. 1058+70.64

+50
105' LT

+70.64
105' LT

+44
105' LT
137' LT

+82
105' LT
137' LT

TRANSITION PROTECTION
PSRM EST 20 SY
SEE DETAIL 10
SHEET 2-F

PDE

300' TAPER

150' TAPER

REMOVE

REM.

15" RCP-IV

18" RCP-IV

N 87° 57' 01.7" E

R 42'

40'

50' TAPER

PC Sta. 20+73.95

+25
110' RT
BEGIN FENCE

-Y37- +15
50' LT

PT Sta. 21+74.90
BEARING AH =
S 39° 05' 06.2" E

REMOVE/ABANDON UG TEL LINE

LATERAL 'V' DITCH
SEE DETAIL 5
SHEET 2-F

BM# 714 ELEVATION = 146.80
-BY10- STA. 19+14 51' LEFT

REMOVE R/R SPIKE SET IN 14" PINE

-Y37- +00
EX. R/W

-Y37- POT Sta. 23+00.00
END CONSTRUCTION

-Y37- +65.77
35.95 RT

-Y37- +00
EX. R/W

-Y37- +82
EX.R/W

-Y37- +11
49' LT

-Y37- +30
55' LT

-Y37- +37
EX. R/W

POT. Sta. 24+67.93

S 39° 05' 06.2" E

GUY TO BE REMOVED

EXIST. UG TEL LINE TO REMAIN

REMOVE/ABANDON UG TEL LINE

OUTLET PROTECTION
CLASS 'B' RIP RAP
EST 2 TONS
EST 7 SY FF

+05.96
110' RT
END LIMITED C/A
BEGIN FULL C/A

CS Sta. 1052+05.96

+05.96
110' RT

ST Sta. 1054+05.96

+50
109.98' RT

WW FENCE

+00
135' RT

OUTLET PROTECTION
CLASS 'B' RIP RAP
EST 3 TONS
EST 10 SY FF

EXIST. PE OH LINES TO REMAIN

REMOVE/ABANDON UG TEL LINE

-BL- 140 PINC

-BY10- 140 PINC

-BL- 141 PINC

OH CTV ENDS HERE

PROP U/G TEL & FO CABLES

EXIST OH POW LINE

EXIST OH CTV LINE

REVISIONS

07-MAY-2013 16:16
\Projects\R-2303C_DOT\NCDOT Utility On-Call Contract\R-2303C_Sampson_County\Utilities\r2303c_rdu_psh_U021.dgn
CNewsome AT RALEWCNEWSOME

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	U0-22
R/W SHEET NO.	28

THE LPA GROUP
TRANSPORTATION CONSULTANTS

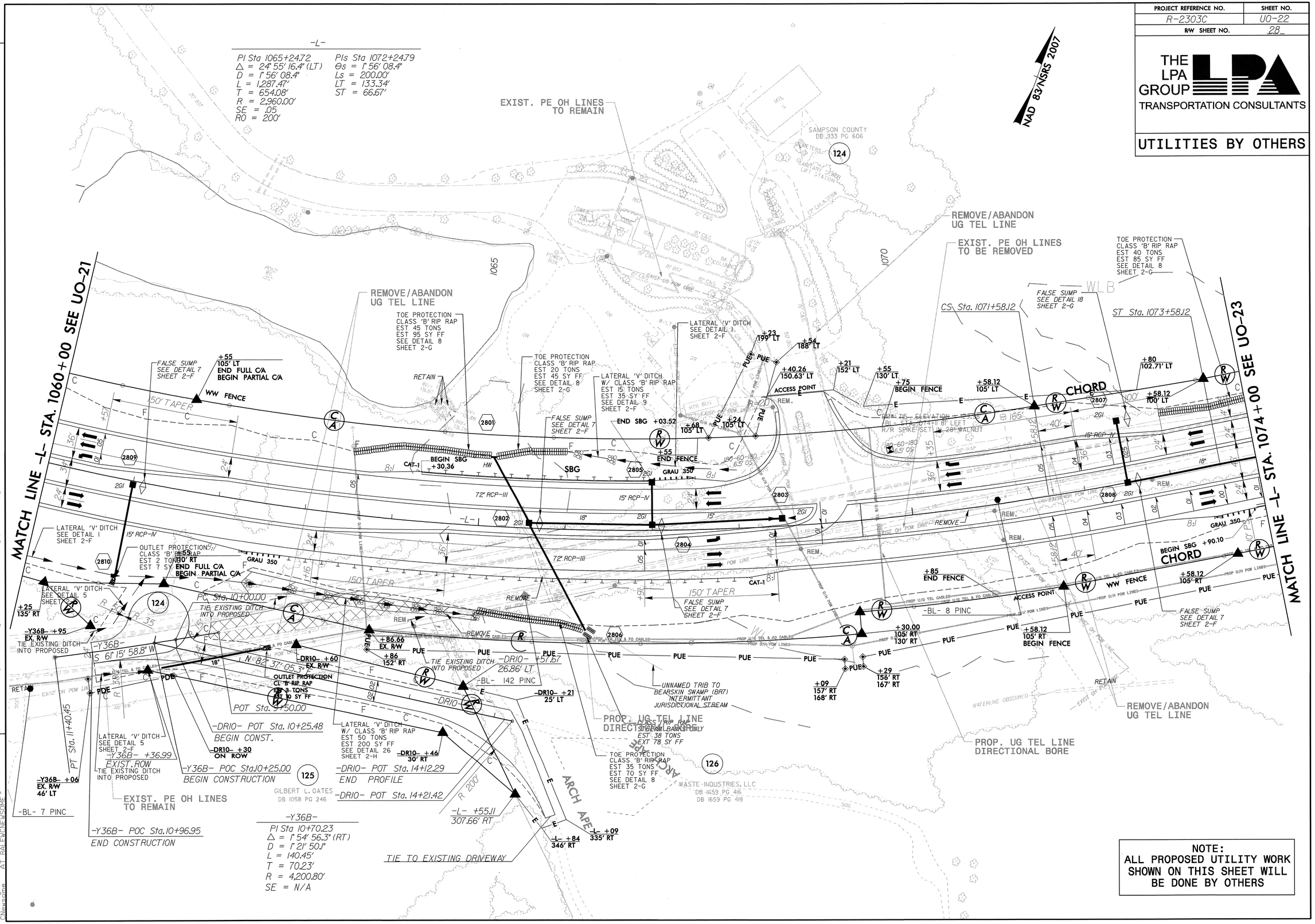
UTILITIES BY OTHERS

NAD 83/NSRS 2007

-L-

PI Sta 1065+24.72
△ = 24° 55' 16.4" (LT)
D = 1° 56' 08.4"
L = 1,287.47'
T = 654.08'
R = 2,960.00'
SE = .05
R0 = 200'

PIs Sta 1072+24.79
Θs = 1° 56' 08.4"
Ls = 200.00'
LT = 133.34'
ST = 66.67'



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

REVISIONS

07-MAY-2013 12:11
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Newsome, Al RAILEWNEWSOME

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	U0-23
R/W SHEET NO.	29

THE LPA GROUP
TRANSPORTATION CONSULTANTS

UTILITIES BY OTHERS

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

NAD 83/NSRS 2007

MATCH LINE -L- STA. 1074+00 SEE UO-22

MATCH LINE -L- STA. 1088+00 SEE UO-24

124
SAMPSON COUNTY
DB 933 PG 606

128
T&W DEVELOPMENT
DB 1369 PG 743

130
BERTHILDA BARBOZA ROBLES
DB 1367 PG 770

126
WASTE INDUSTRIES, LLC
DB 1659 PG 416
DB 1659 PG 419

129
BARON M. VAN LIEW
DB 1209 PG 765

1075
1080
1085

REMOVE/ABANDON UG TEL LINE

EXIST. PE OH LINES TO BE REMOVED

BEGIN BRIDGE
-L- STA.1080+32.00

EDGE OF WATER

TOP OF BANK

-BL- 144 PINC
-BYII- 144 POT

-L- POT Sta. 1087+13.09
-Y38- POT Sta. 10+00.00
BEARING AH =
S 37° 57' 54.8" E

TOE PROTECTION
CLASS 'B' RIP RAP
EST 40 TONS
EST 85 SY FF
SEE DETAIL 8
SHEET 2-G

MEDIAN 'V' DITCH
SEE DETAIL 25
SHEET 2-G

FALSE SUMP
SEE DETAIL 7
SHEET 2-F

BEGIN SBG +53.56

+20
100' LT
115' LT

WW FENCE

CLASS II RIP RAP
EST 700 TONS
EST 750 SY FF

+05
115' LT

CLASS II RIP RAP

END SBG +06.74

EXCAVATION
EST 1100 CY

+00
115' LT

BEGIN SBG +02.00

FALSE SUMP
SEE DETAIL 7
SHEET 2-F

END SBG +75.00

+55
END FENCE

ACCESS POINT

+92
138' LT

+98
100' LT

+70
100' LT

GRAU 350

FALSE SUMP
SEE DETAIL 7
SHEET 2-F

CAT-1

SBG

TYPE B-77

REM. GR

15" RCP-IV

15" RCP-III

18" RCP-III

30" RCP-III

TYPE M350

BEGIN SPECIAL GRADING
-L- POT STA.1077+38.00

END SPECIAL GRADING
-L- POT STA.1084+08.00

-L- N 59° 09' 28.5" E

300' TAPER

END SBG +07.00

END SBG +94.47

18" CSP W/ ELBOWS
AND W/ ROD & LUG
CONNECTORS

+55
115' RT
END FENCE

BEGIN SBG +02.00

+00
115' LT

+50
105' RT
115' RT

+05
115' RT

+89
115' RT
140' RT

+32
115' RT
140' RT

+53
141' RT
151' RT

+74
141' RT
151' RT

+95
65' RT

+60
139.35' RT

BM# 716 ELEVATION = 142.53
-BYII- STA. 6+10 7' LEFT
PK R SPIKE SET IN 38" OAK

PROP U/G TEL & FO CABLES

PROP O/H POW LINES

PUE

DUE

FSH

OUTLET PROTECTION
CLASS B RIP RAP
EST 2 TONS
EST 7 SY FF

-BL- 143 PINC

END BRIDGE
-L- STA.1081+77.00

PROP. UG TEL LINE
DIRECTIONAL BORE

BEARSKIN SWAMP (BR3)
PERENNIAL
JURISDICTIONAL STREAM

CLASS II RIP RAP
EST 800 TONS
EST 850 SY FF

PREFORMED SCOUR HOLE
OUTLET PROTECTION
CLASS 'B' RIP RAP
EST 8 TONS
EST 16 SY FF
EST 25 SY PSRM
SEE DETAIL 2
SHEET 2-F

PROP. UG TEL LINE
DIRECTIONAL BORE

OUTLET PROTECTION
CLASS 'B' RIP RAP
EST 8 TONS
EXT 21 SY FF

OUTLET CONDITION
SEE DETAIL 16
-Y38- +95

TOE PROTECTION
EST 17 SY PSRM
SEE DETAIL 10
SHEET 2-F

CLASS B RIPRAP
STREAM BANKS ONLY
EST 14 TONS
EXT 34 SY FF

2Ø30" RCP-III

INLET CONDITION
SEE -Y38- +50

-Y38- +50
EX. R/W

UNNAMED TRIB TO
BEARSKIN SWAMP (BR4)
INTERMITTANT
JURISDICTIONAL STREAM

-Y38- POT Sta. 12+50.00
END CONSTRUCTION

LATERAL 2' BASE DITCH
SEE DETAIL 14
SHEET 2-G

REMOVE/ABANDON
UG TEL LINE

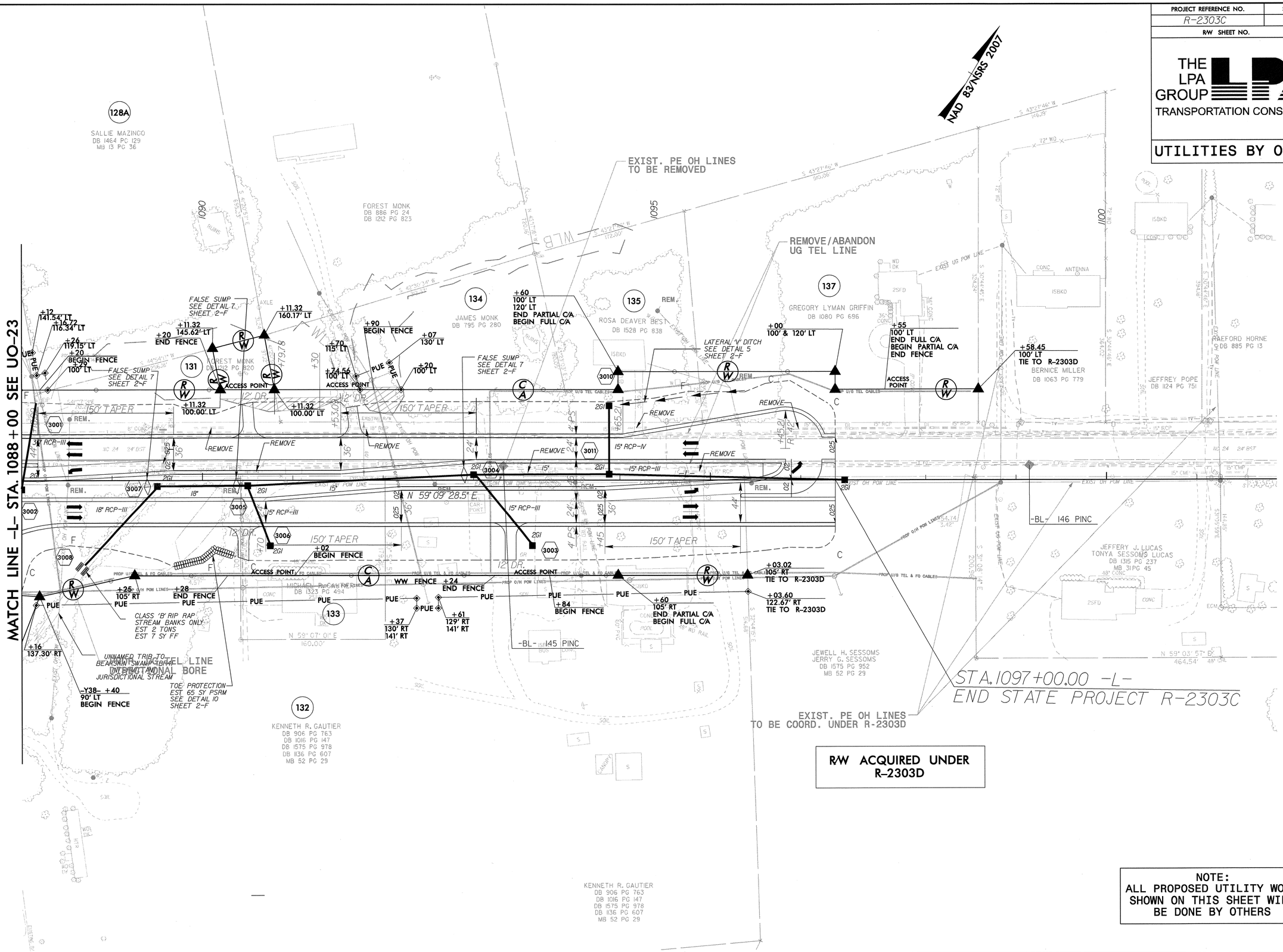
REVISIONS

07-MAY-2013 12:11
Y:\Projects\NCDOT\NCDOT Utility On-Call Contract\R-2303C_Sampson_County\Utilities\r-2303c_rdy_psh_U023.dgn
CNewsome
AT RAILROAD WSDOT

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	U0-24
R/W SHEET NO.	30

THE LPA GROUP
TRANSPORTATION CONSULTANTS

UTILITIES BY OTHERS



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

REVISIONS

07-MAY-2013 12:41
C:\Projects\NCDOT\NCDOT Utility On-Call Contract\R-2303C Sampson County\Utilities\r2303c_rdu_psh_U024.dgn
LN:Rosome CT:RALEIGHNWSOME

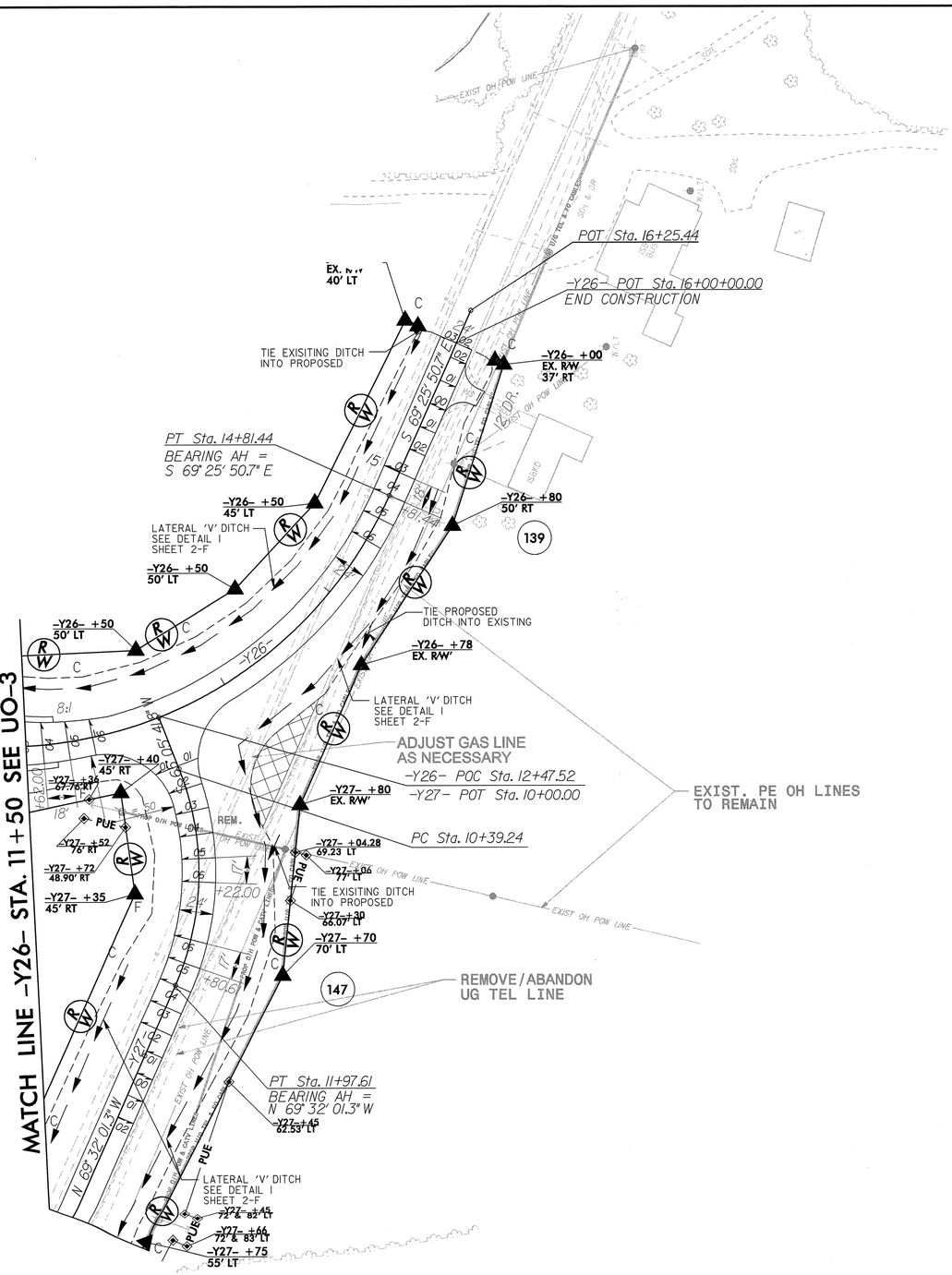
PROJECT REFERENCE NO.	SHEET NO.
R-2303C	U0-25
R/W SHEET NO.	31

THE LPA GROUP
TRANSPORTATION CONSULTANTS

UTILITIES BY OTHERS

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

NAD 83/NSRS 2007



-Y26-	-Y27-
PI Sta 13+31.66	PI Sta 11+22.84
Δ = 65° 21' 33.8" (LT)	Δ = 45° 22' 16.9" (RT)
D = 19° 05' 54.9"	D = 28° 38' 52.4"
L = 342.22'	L = 158.38'
T = 192.45'	T = 83.60'
R = 300.00'	R = 200.00'
SE = .06	SE = .06
RO = 108'	RO = 102'

REVISIONS

07-MAY-2013 12:11
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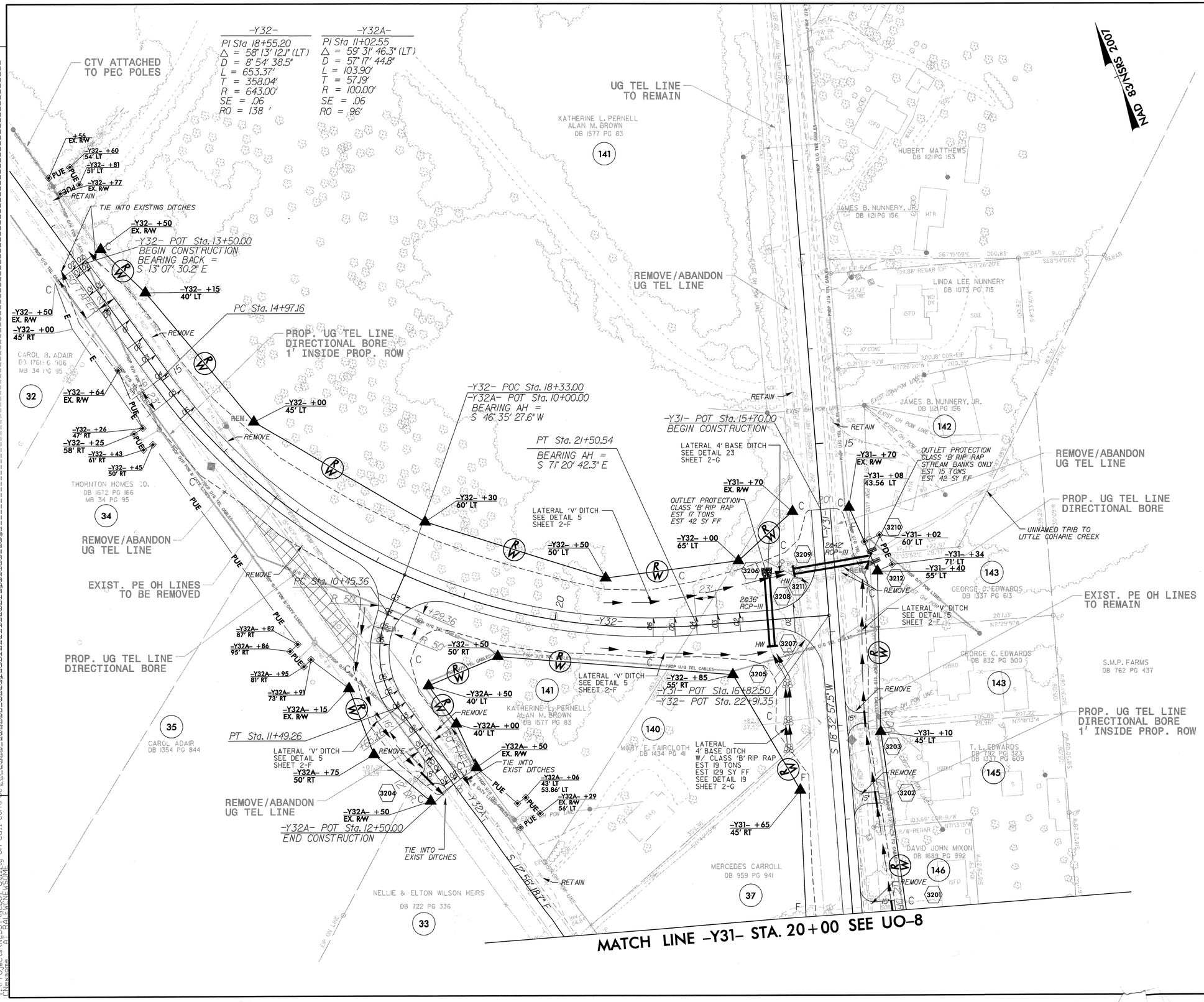
Chesapeake NT RALEIGHNFWSOME

PROJECT REFERENCE NO.	SHEET NO.
R-2303C	UO-26
R/W SHEET NO.	32

THE LPA GROUP
TRANSPORTATION CONSULTANTS

UTILITIES BY OTHERS

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



REVISIONS

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