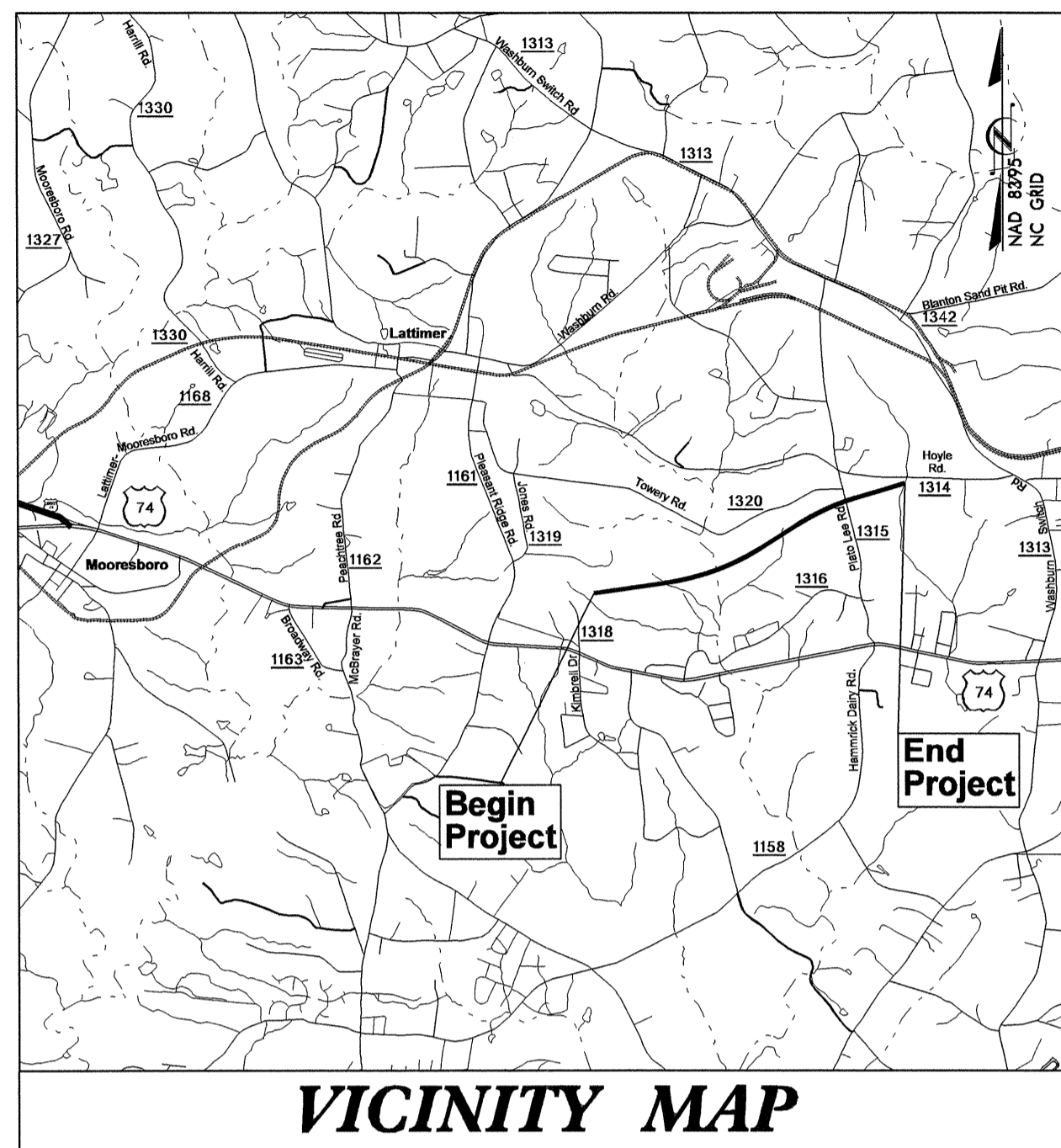


TIP PROJECT: R-2707AB

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

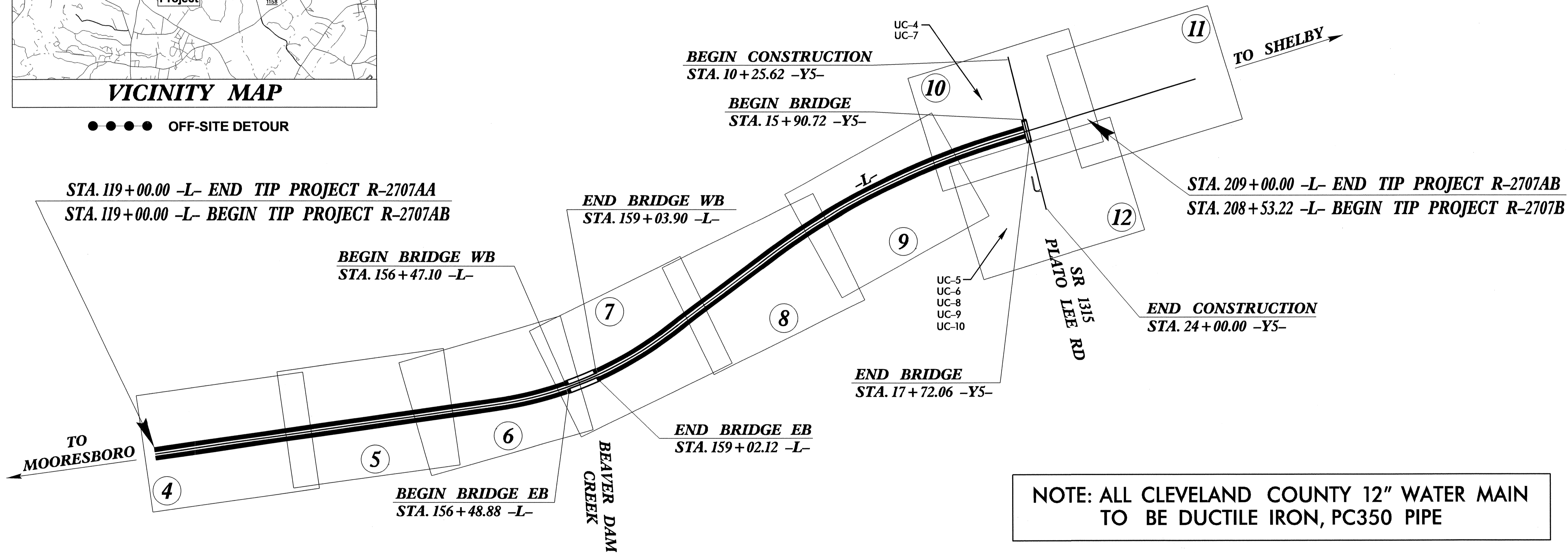
T.I.P. NO.	SHEET NO.
R-2707AB	UC-1



UTILITY CONSTRUCTION PLANS CLEVELAND COUNTY

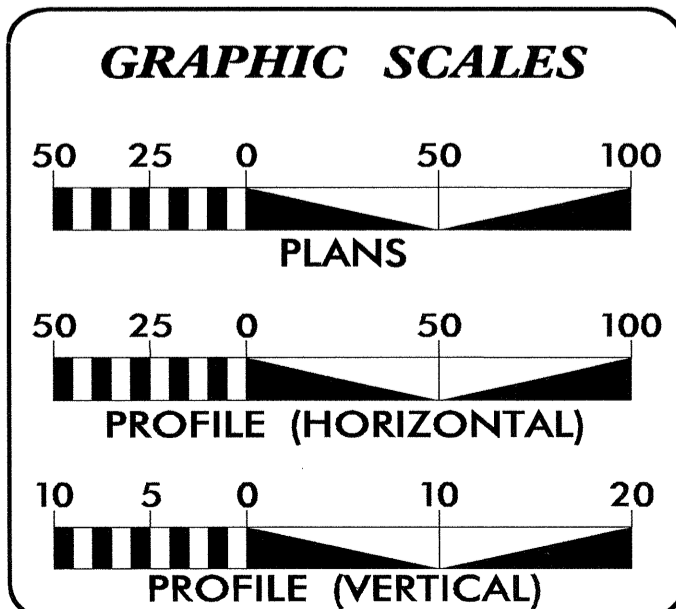
**LOCATION: US 74 (SHELBY BYPASS) FROM EAST OF
SR 1318 (KIMBRELL ROAD) TO EAST OF
SR 1315 (PLATO LEE ROAD)**

TYPE OF WORK: UTILITY CONSTRUCTION (WATER / GAS)



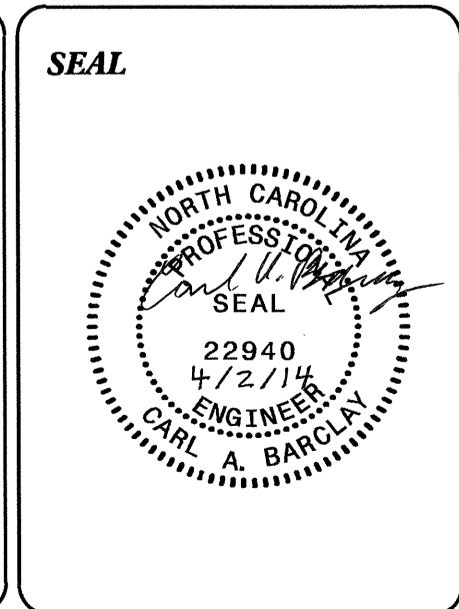
**NOTE: ALL CLEVELAND COUNTY 12" WATER MAIN
TO BE DUCTILE IRON, PC350 PIPE**

4-1-2014JES ADDED 12" WATER MAIN NOTE ON COVER SHEET
01-APR-2014 13:55
R:\Utilities\Engineering\UC\Proj\UC\NR-2707AB_Ut_Title_UC1.psn.dgn
\$\$\$\$\$USERNAME\$\$\$\$\$



SHEET NO.	DESCRIPTION
UC-1	TITLE SHEET
UC-2	SYMBOLGY SHEET
UC-3	THRU UC-3A NOTES AND DETAILS SHEET
UC-4	THRU UC-5 UC PLAN SHEETS (CLEVELAND WATER)
UC-6	UC PROFILE SHEET (CLEVELAND WATER)
UC-7	UC PLAN AND PROFILE SHEET (SHELBY WATER)
UC-8	THRU UC-9 UC PLAN SHEETS (SHELBY GAS)
UC-10	UTILITY CONST. PROFILE SHEET (SHELBY GAS)

WATER AND GAS OWNERS ON PROJECT
(1) WATER - CITY OF SHELBY
(2) WATER - CLEVELAND COUNTY
(3) GAS - CITY OF SHELBY



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

1555 MAIL SERVICES CENTER
RALEIGH NC 27699-1555
PHONE (919) 707-6690
FAX (919) 250-4151

Roger Worthington, P.E. UTILITIES SECTION ENGINEER
Carl A. Barclay, P.E. UTILITIES SQUAD LEADER PROJECT ENGINEER
James E. Swinson UTILITIES PROJECT DESIGNER

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES PLAN SHEET SYMBOLS

PROPOSED WATER SYMBOLS

Water Line (Sized as Shown)	
11¼ Degree Bend	
22½ Degree Bend	
45 Degree Bend	
90 Degree Bend	
Plug	
Tee	
Cross	
Reducer	
Gate Valve	
Butterfly Valve	
Tapping Valve	
Line Stop	
Line Stop with Bypass	
Blow Off	
Fire Hydrant	
Relocate Fire Hydrant	
Remove Fire Hydrant	REM FH
Water Meter	
Relocate Water Meter	
Remove Water Meter	REM WM
Water Pump Station	
RPZ Backflow Preventer	
DCV Backflow Preventer	
Relocate RPZ Backflow Preventer	
Relocate DCV Backflow Preventer	

PROPOSED SEWER SYMBOLS

Gravity Sewer Line (Sized as Shown)	
Force Main Sewer Line (Sized as Shown)	
Manhole (Sized per Note)	•
Sewer Pump Station	

PROPOSED MISCELLANEOUS UTILITIES SYMBOLS

Power Pole	
Telephone Pole	
Joint Use Pole	
Telephone Pedestal	
Utility Line by Others (Type as Shown)	
Trenchless Installation	
Encasement by Open Cut	
Encasement	

Thrust Block	
Air Release Valve	
Utility Vault	
Concrete Pier	
Steel Pier	
Plan Note	
Pay Item Note	

EXISTING UTILITIES SYMBOLS

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

*For Existing Utilities
Utility Line Drawn from Record (Type as Shown) ---
Designated Utility Line (Type as Shown) ---

UTILITY CONSTRUCTION

PROJECT REFERENCE NO.	SHEET NO.
R-2707AB	UC-3
DESIGNED BY: JES	
DRAWN BY: JES	
CHECKED BY: CAB	
APPROVED BY: CAB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

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 WATER UTILITIES BELONG TO THE CITY OF SHELBY AND CLEVELAND COUNTY. THE EXISTING GAS UTILITY BELONGS TO THE CITY OF SHELBY.
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:

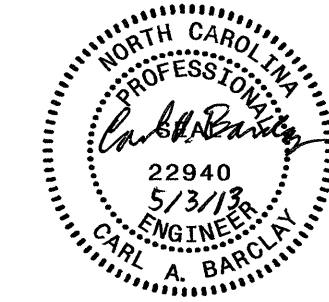
1. CONTRACTOR'S ATTENTION IS DIRECTED TO SECTIONS 102, 107, AND 1550 OF THE STANDARD SPECIFICATIONS CONCERNING TRENCHLESS INSTALLATION. IT IS CONTRACTOR'S RESPONSIBILITY TO HAVE BORE PATH DESIGNED AND SEALED BY A LICENSED NORTH CAROLINA PROFESSIONAL ENGINEER. NO DAMAGE IS ALLOWED TO RIVER, WETLANDS, OR BUFFER ZONES.
2. CONTRACTOR'S ATTENTION IS DIRECTED TO SECTION 1510 OF THE STANDARD SPECIFICATIONS CONCERNING WATER LINE / TRACER WIRE INSTALLATION. ALSO REFER TO THE PROJECT SPECIAL PROVISIONS.

LIST OF STANDARD DRAWINGS

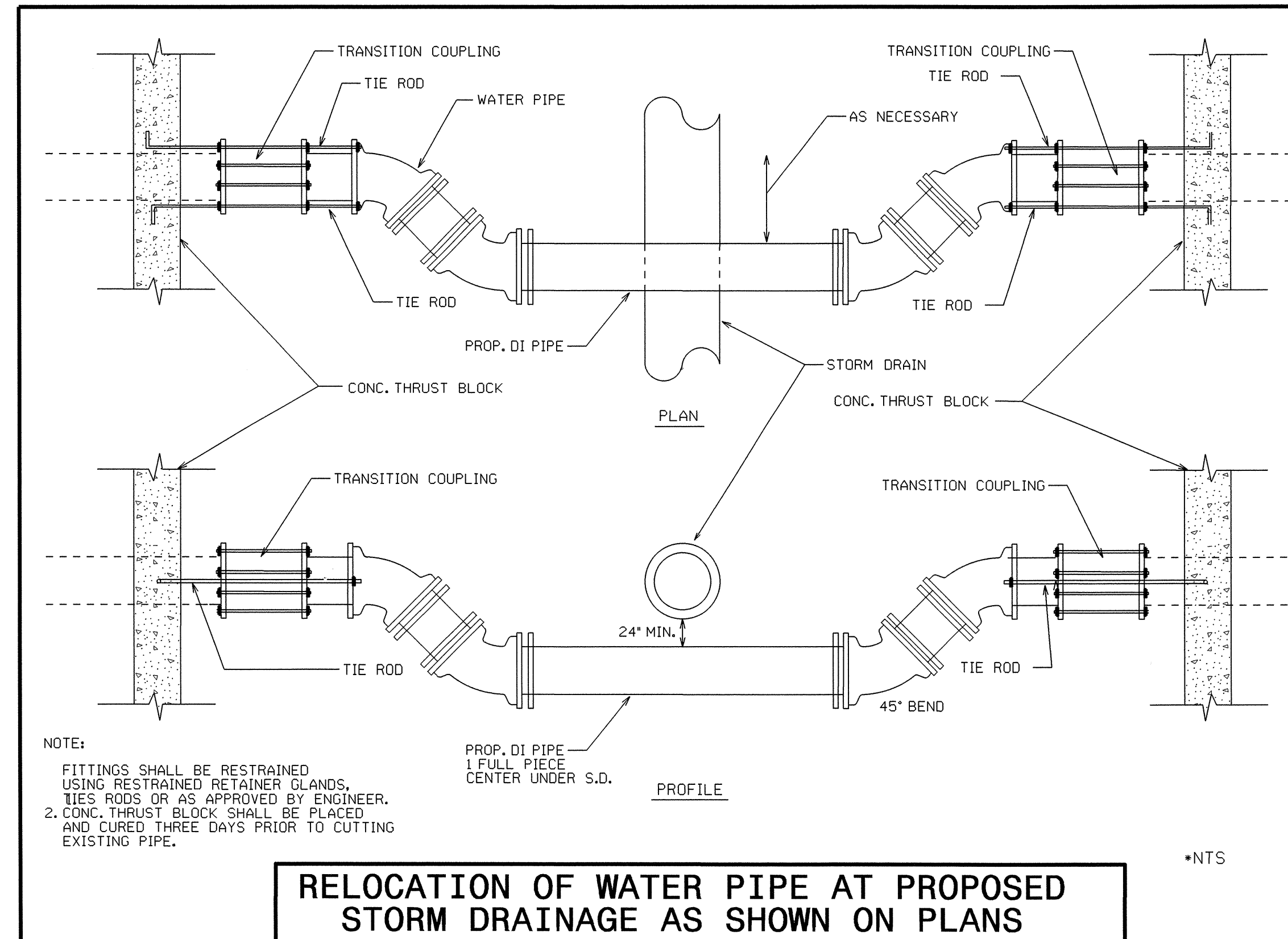
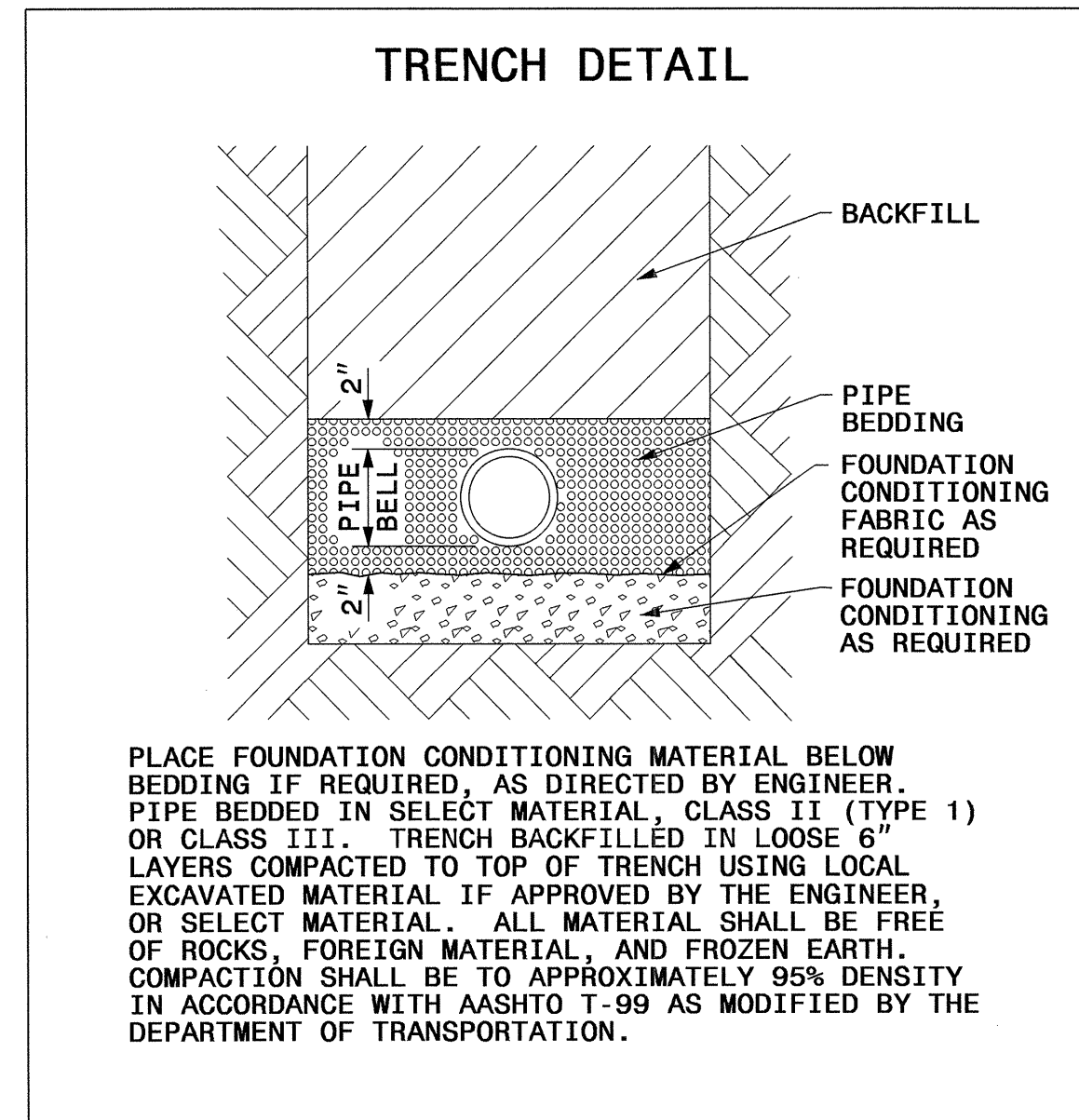
- 1515.01 WATER METER
- 1515.02 FIRE HYDRANT

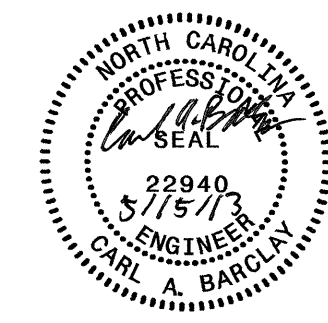
UTILITY CONSTRUCTION

PROJECT TYPICAL DETAILS

PROJECT REFERENCE NO. R-2707AB	SHEET NO. UC-3A
DESIGNED BY: JES	
DRAWN BY: JES	
CHECKED BY: CAB	
APPROVED BY: CAB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

UTILITY CONSTRUCTION



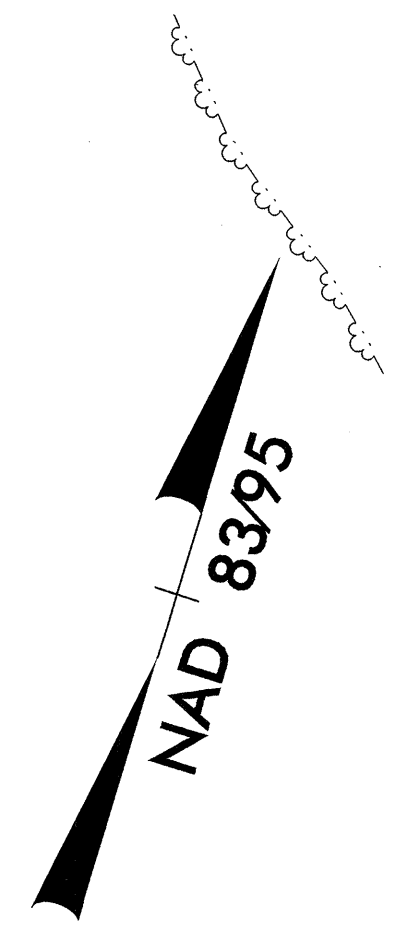
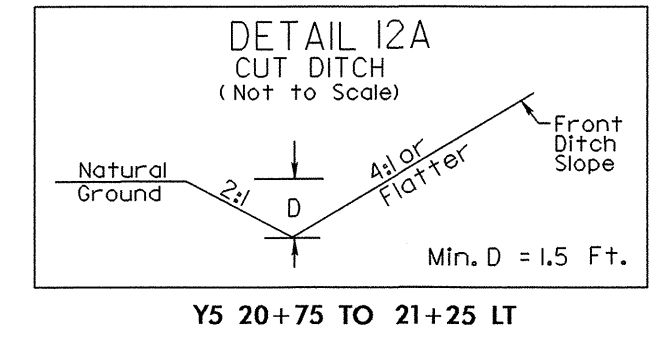
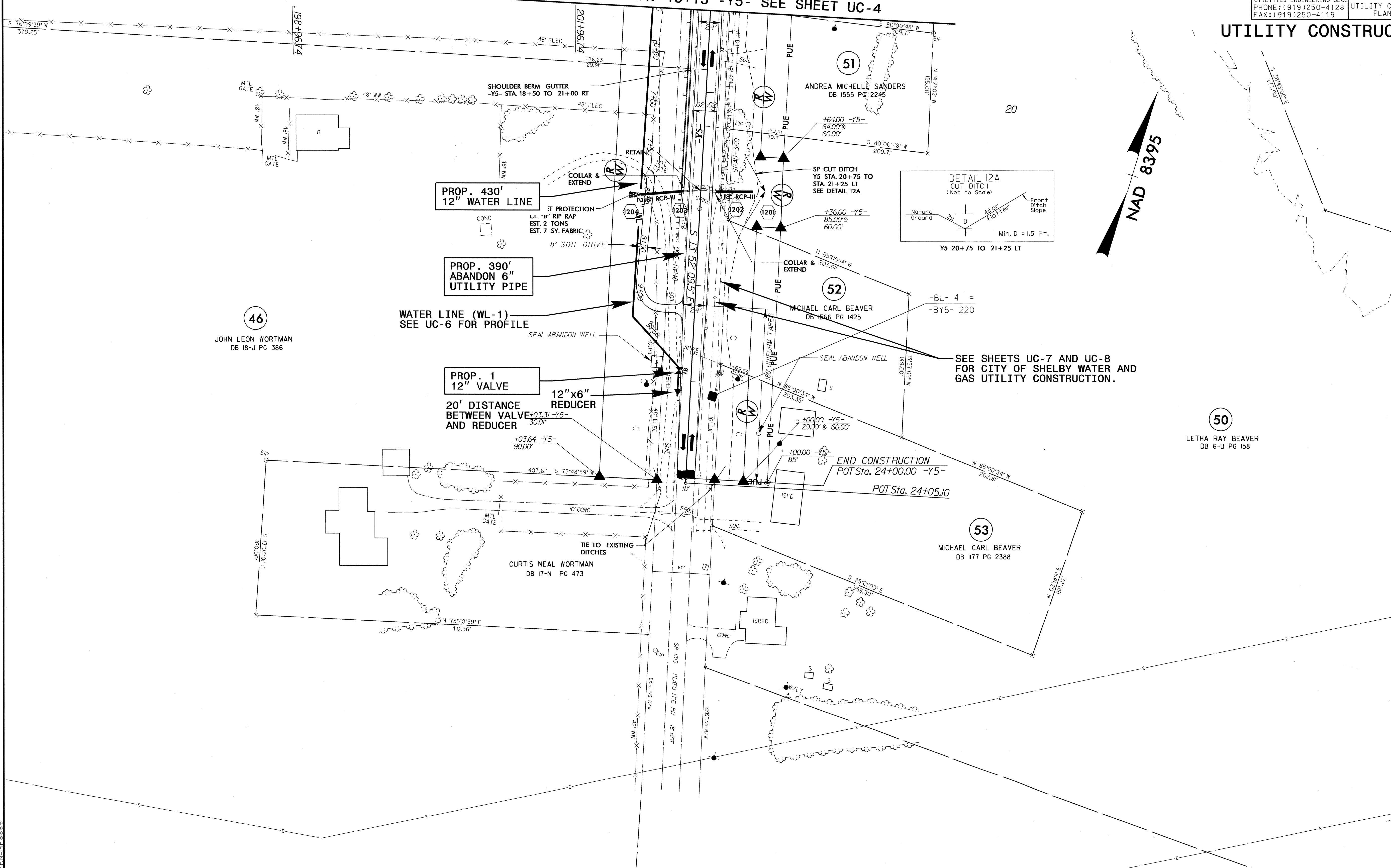
PROJECT REFERENCE NO.	SHEET NO.
R-2707AB	UC-5
DESIGNED BY: JES	
DRAWN BY: JES	
CHECKED BY: CAB	
APPROVED BY: CAB	
REVISED:	
	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 250-4128 FAX: (919) 250-4119	
UTILITY CONSTRUCTION PLANS ONLY	

UTILITY CONSTRUCTION

5/14/09

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MATCH LINE STA. 19+15 -Y5- SEE SHEET UC-4



46
 JOHN LEON WORTMAN
 DB 18-J PG 386

**PROP. 430'
 12" WATER LINE**

**PROP. 390'
 ABANDON 6"
 UTILITY PIPE**

**PROP. 1
 12" VALVE**

**20' DISTANCE
 BETWEEN VALVE
 AND REDUCER**

**12"x6"
 REDUCER**

SEE SHEETS UC-7 AND UC-8
 FOR CITY OF SHELBY WATER AND
 GAS UTILITY CONSTRUCTION.

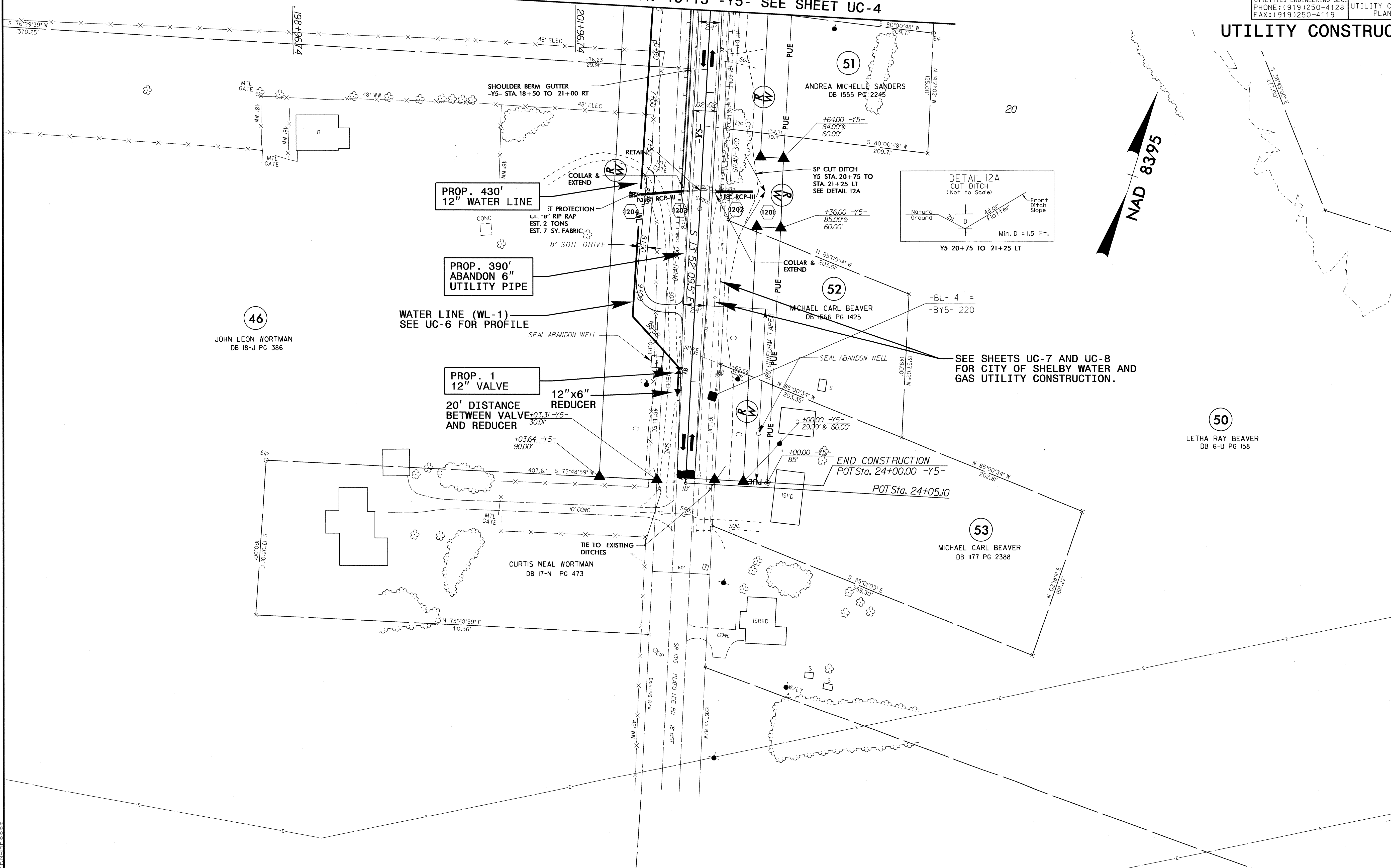
50
 LETHA RAY BEAVER
 DB 6-U PG 158

53
 MICHAEL CARL BEAVER
 DB 1177 PG 2388

52
 MICHAEL CARL BEAVER
 DB 1566 PG 1425

51
 ANDREA MICHELLE SANDERS
 DB 1555 PG 2245

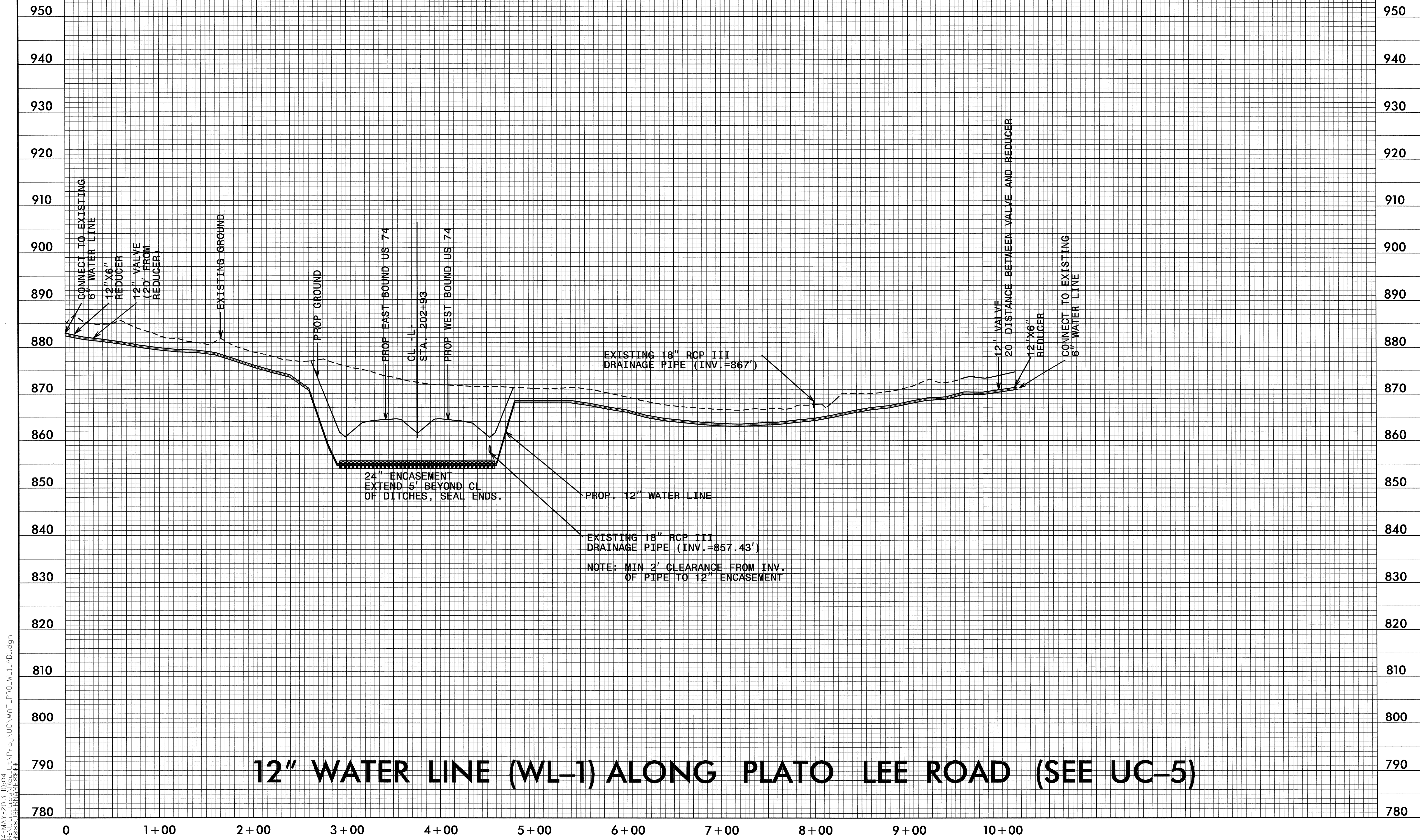
47
 CURTIS NEAL WORTMAN
 DB 17-N PG 473



5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-2707AB	UC-6
DESIGNED BY: PNH	
DRAWN BY: PNH	
CHECKED BY: CAB	
APPROVED BY: CAB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

UTILITY CONSTRUCTION

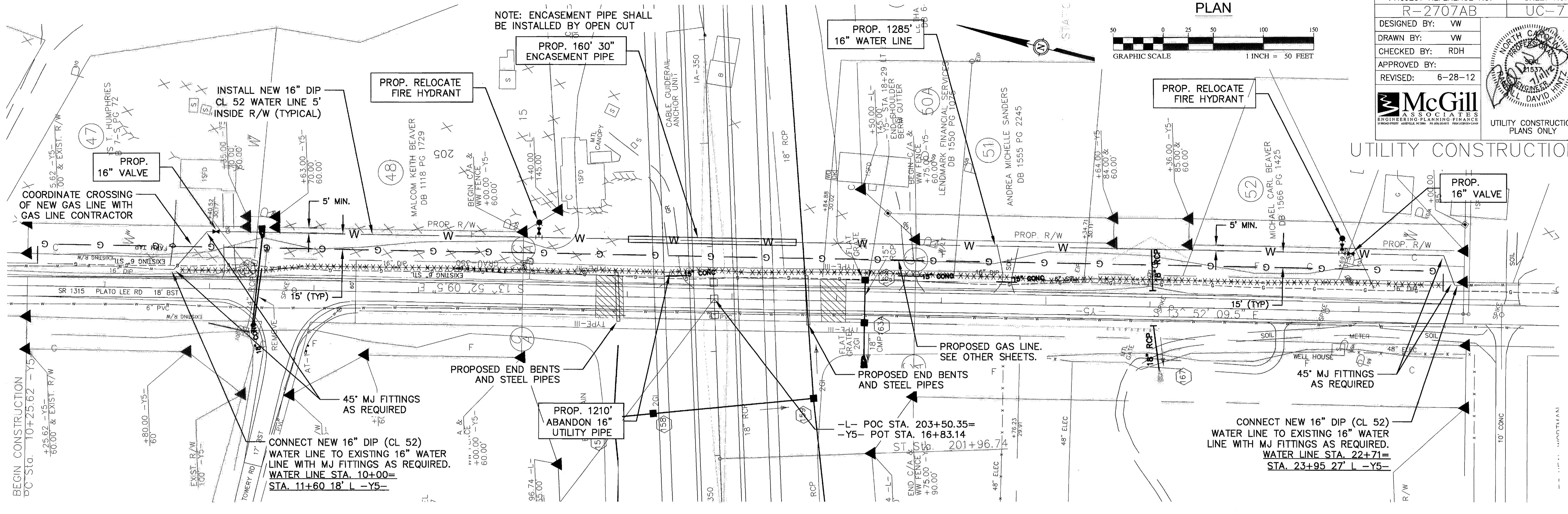
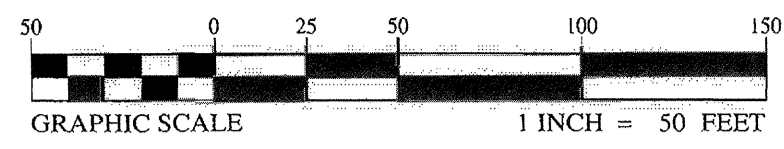


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\$\$\$\$\$USERNAME\$\$\$\$\$

PROJECT REFERENCE NO.	SHEET NO.
R-2707AB	UC-7
DESIGNED BY: VW	
DRAWN BY: VW	
CHECKED BY: RDH	
APPROVED BY:	
REVISED: 6-28-12	

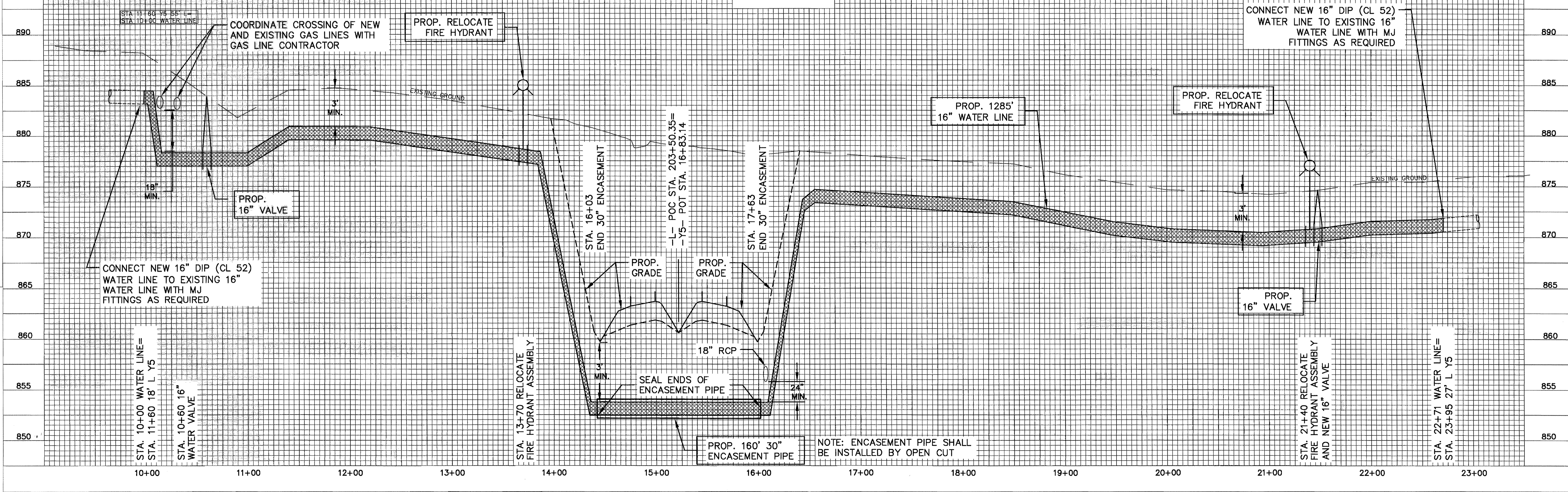
McGill ASSOCIATES
ENGINEERING-PLANNING-FINANCE
UTILITY CONSTRUCTION PLANS ONLY

PLAN



PROFILE

SCALE: HORIZ. 1"= 50'
VERT. 1"= 5'



REVISIONS

ALL NATURAL GAS WORK IS TO BE PER CITY OF SHELBY SPECIFICATIONS PN 21209

ESTIMATED QUANTITIES OF PRIMARY MATERIALS FOR GAS LINE RELOCATION

QUANTITY	DESCRIPTION
24	6" POLYETHYLENE PLASTIC INSULATOR
2	MODULAR SEAL, TEN LINKS PER SEAL, WITH BOLTS, PRESSURE PLATES, AND RELATED HARDWARE FOR 6" CARRIER IN 10" CASING.
2	PULL ON END SEALS W/STAINLESS STEEL BANDING CLAMPS.
8	6.625" STEEL LR ELL, STANDARD WEIGHT
4	6.625" STEEL LR 45 DEGREE ELL, STANDARD WEIGHT
4	6.625" STEEL CAP, STANDARD WEIGHT
4	2.375" STEEL LR ELL, STANDARD WEIGHT
4	2.375" STEEL LR 45 DEGREE ELL, STANDARD WEIGHT
2	3/4"x3/4" STEEL AUTO-PERF TAPPING TEE CAPABLE OF SHUT OFF, 1440 PSIG RATING, 3/8" TIP, WITH COMPLETION CAP PROVIDING ADDITIONAL SEAL
120	2.375" STEEL PIPE, STANDARD WALL, API 5L X-42, 16-18 MILS FBE COATING (feet)
1480	6.625" STEEL PIPE, 0.250" WALL, API 5L X-42, 16-18 MILS FBE COATING (feet)
170	10.75" STEEL PIPE, 0.250" WALL, API 5L X-42, 16-18 MILS FBE COATING (feet)
	ROCK SHIELD OR SELECT FILL AS NEEDED TO BED THE PIPE IN AREAS WHERE ROCK IS ENCOUNTERED

THE CITY OF SHELBY WILL PROVIDE AND INSTALL TEST STATIONS AND GAS PIPELINE MARKERS. CONTRACTOR WILL NEED TO COORDINATE THE INSTALLATION OF TEST STATIONS AND LEADS WITH THE CITY OF SHELBY NATURAL GAS DEPARTMENT.

EXCEPT FOR THE MARKERS AND TEST STATIONS, CONTRACTOR IS TO FURNISH AND INSTALL ALL MATERIALS REQUIRED TO INSTALL THE NATURAL GAS PIPELINE. ALL NEW PIPE IS TO BE EMBEDDED IN SELECT FILL OR WRAPPED IN ROCK SHIELD WHERE ROCK IS ENCOUNTERED. PAYMENT WILL BE BASED ON FEET OF 2" AND 6" GAS LINE AND 10" ENCASEMENT PIPE INSTALLED, AND FEET OF 6" UTILITY PIPE ABANDONED. NO OTHER COMPENSATION WILL BE MADE FOR OTHER WORK OR MATERIALS ASSOCIATED WITH THE NATURAL GAS PIPELINE INSTALLATION.

ONLY CITY OF SHELBY EMPLOYEES WILL OPERATE EXISTING NATURAL GAS VALVES NORTH AND SOUTH OF THE PROJECT TO FACILITATE WORK. BOTH VALVES ARE IN PLATO LEE ROAD RIGHT-OF-WAY.

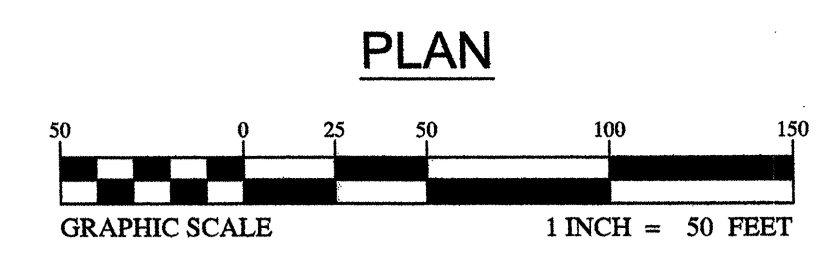
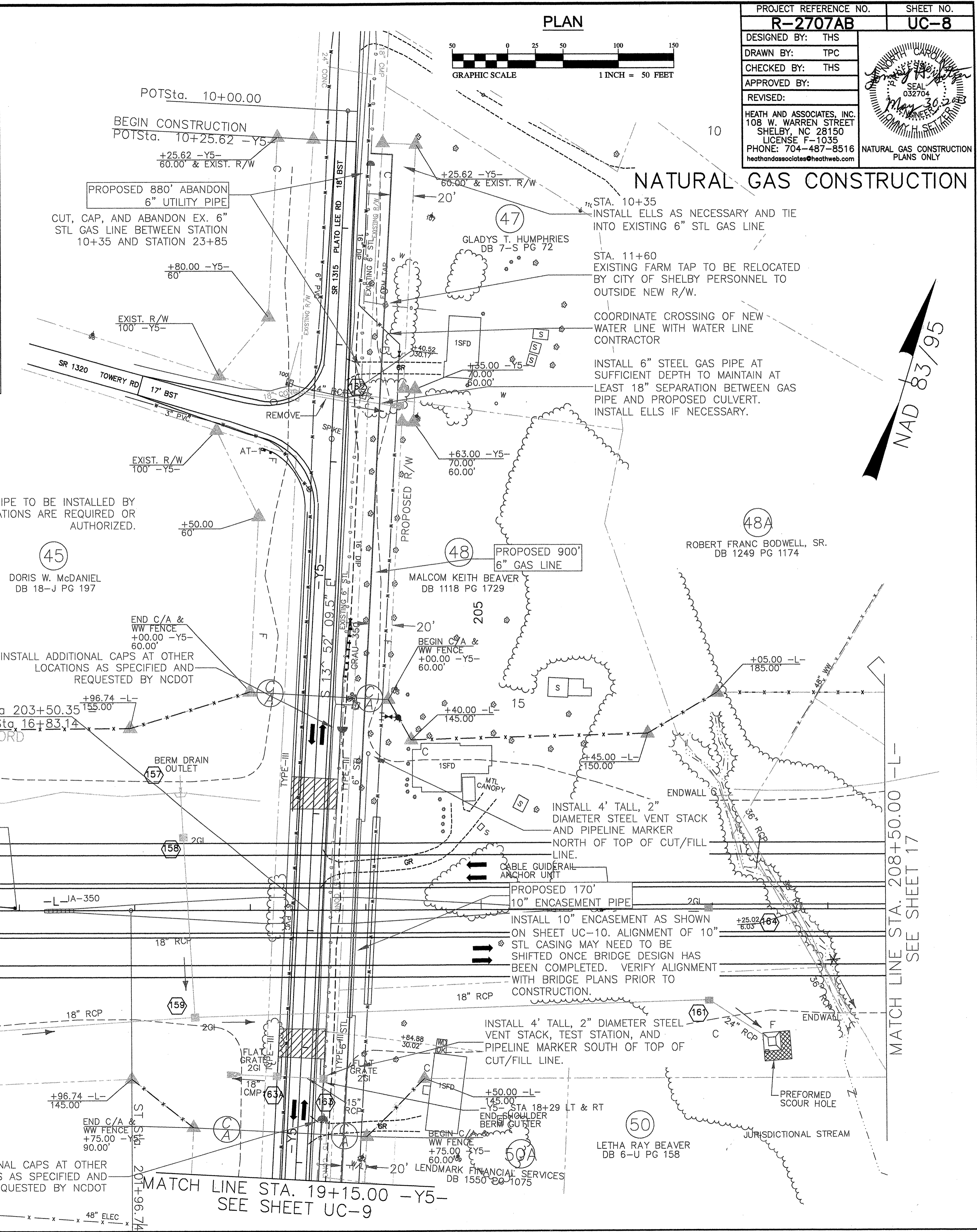
THE NORTH VALVE IS APPROXIMATELY 260 FEET NORTH OF STATION 10+35. THE SOUTH VALVE IS APPROXIMATELY 1150 FEET SOUTH OF STATION 23+90.

CONTRACTOR IS TO INSTALL A 3/4"x 3/4" STEEL AUTO-PERF TAPPING TEE CAPABLE OF SHUT OFF, 1440 PSIG RATING, 3/8" TIP, WITH COMPLETION CAP PROVIDING ADDITIONAL SEAL, NEAR EACH OF THE VALVES TO ACT AS BLOW DOWN AND PURGE POINTS. STEEL PURGE STACKS EXTENDING AT LEAST SIX FEET ABOVE TOP OF TRENCH SHOULD BE INSTALLED. STEEL CAPS ARE TO BE WELDED ON TEES AFTER USE.

PAYMENT TO PROVIDE, INSTALL, AND OPERATE THE TWO TEES AND PURGE STACKS, INCLUDING EXCAVATION, TRAFFIC CONTROL, REMOVAL OF STACKS AND CAPPING TEES AFTER USE, SHALL BE INCLUDED IN THE CONTRACT PRICE FOR INSTALLING PIPE.

THE CONTRACTOR SHALL SCHEDULE BLOW DOWN, PURGE, AND TIE-IN OPERATIONS SUCH THAT NATURAL GAS CUSTOMERS WILL NOT BE OUT OF SERVICE FOR MORE THAN EIGHT (8) HOURS.

ALL CASING AND NATURAL GAS CARRIER PIPE TO BE INSTALLED BY TRENCHING. NO NATURAL GAS BORE INSTALLATIONS ARE REQUIRED OR AUTHORIZED.



PROJECT REFERENCE NO. **R-2707AB** SHEET NO. **UC-8**

DESIGNED BY: THS
 DRAWN BY: TPC
 CHECKED BY: THS
 APPROVED BY:
 REVISED:

HEATH AND ASSOCIATES, INC.
 108 W. WARREN STREET
 SHELBY, NC 28150
 LICENSE F-1035
 PHONE: 704-487-8516
 heathandassociates@heathweb.com

NATURAL GAS CONSTRUCTION PLANS ONLY

Seal: May 30, 2012
 032704

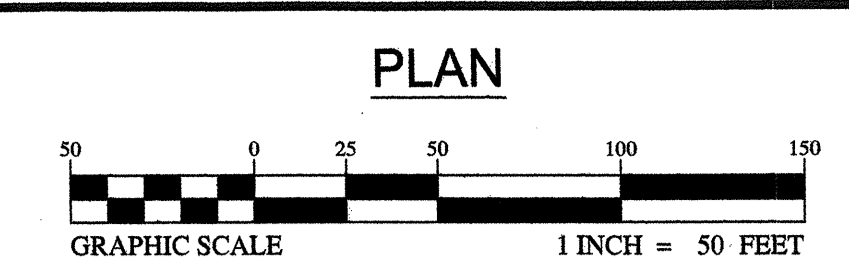
NAD 83/95

MATCH LINE STA. 195+50.00 -L- SEE SHEET 15

MATCH LINE STA. 208+50.00 -L- SEE SHEET 17

MATCH LINE STA. 19+15.00 -Y5- SEE SHEET UC-9

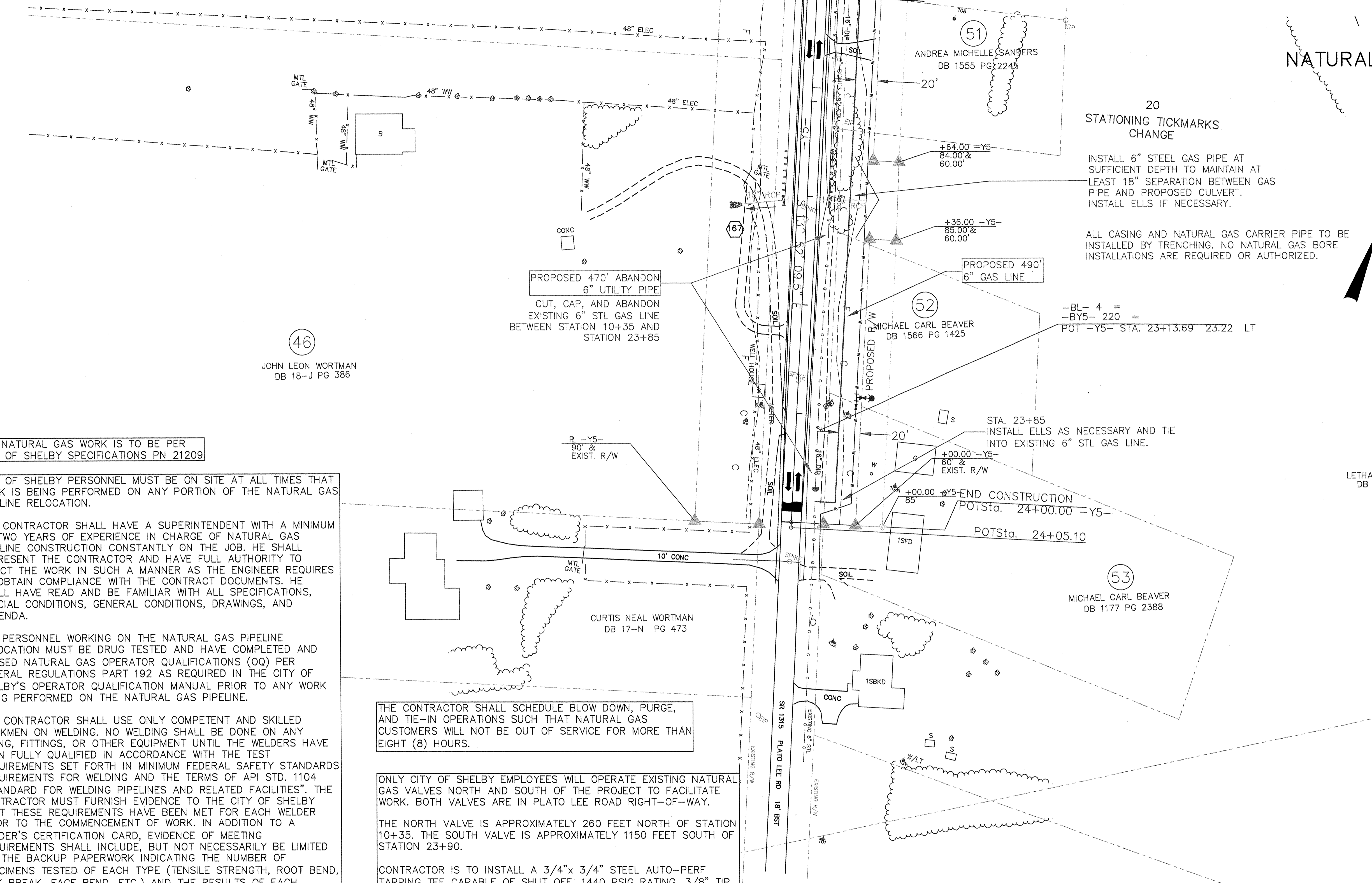
REVISIONS



PLAN

PROJECT REFERENCE NO.	SHEET NO.
R-2707AB	UC-9
DESIGNED BY: THS	
DRAWN BY: TPC	
CHECKED BY: THS	
APPROVED BY:	
REVISED:	
HEATH AND ASSOCIATES, INC. 108 W. WARREN STREET SHELBY, NC 28150 LICENSE F-1035 PHONE: 704-487-8516 heathandassociates@heathweb.com	
NATURAL GAS CONSTRUCTION PLANS ONLY	

MATCH LINE STA. 19+15.00 -Y5-
SEE SHEET UC-8



20 STATIONING TICKMARKS CHANGE

INSTALL 6" STEEL GAS PIPE AT SUFFICIENT DEPTH TO MAINTAIN AT LEAST 18" SEPARATION BETWEEN GAS PIPE AND PROPOSED CULVERT. INSTALL ELLS IF NECESSARY.

ALL CASING AND NATURAL GAS CARRIER PIPE TO BE INSTALLED BY TRENCHING. NO NATURAL GAS BORE INSTALLATIONS ARE REQUIRED OR AUTHORIZED.

NAD 83/95

NATURAL GAS CONSTRUCTION

46
JOHN LEON WORTMAN
DB 18-J PG 386

PROPOSED 470' ABANDON 6" UTILITY PIPE
CUT, CAP, AND ABANDON EXISTING 6" STL GAS LINE BETWEEN STATION 10+35 AND STATION 23+85

PROPOSED 490' 6" GAS LINE

-BL- 4 =
-BY5- 220 =
POT -Y5- STA. 23+13.69 23.22 LT

STA. 23+85
INSTALL ELLS AS NECESSARY AND TIE INTO EXISTING 6" STL GAS LINE.

50
LETHA RAY BEAVER
DB 6-U PG 158

53
MICHAEL CARL BEAVER
DB 1177 PG 2388

CURTIS NEAL WORTMAN
DB 17-N PG 473

ALL NATURAL GAS WORK IS TO BE PER CITY OF SHELBY SPECIFICATIONS PN 21209

CITY OF SHELBY PERSONNEL MUST BE ON SITE AT ALL TIMES THAT WORK IS BEING PERFORMED ON ANY PORTION OF THE NATURAL GAS PIPELINE RELOCATION.

THE CONTRACTOR SHALL HAVE A SUPERINTENDENT WITH A MINIMUM OF TWO YEARS OF EXPERIENCE IN CHARGE OF NATURAL GAS PIPELINE CONSTRUCTION CONSTANTLY ON THE JOB. HE SHALL REPRESENT THE CONTRACTOR AND HAVE FULL AUTHORITY TO DIRECT THE WORK IN SUCH A MANNER AS THE ENGINEER REQUIRES TO OBTAIN COMPLIANCE WITH THE CONTRACT DOCUMENTS. HE SHALL HAVE READ AND BE FAMILIAR WITH ALL SPECIFICATIONS, SPECIAL CONDITIONS, GENERAL CONDITIONS, DRAWINGS, AND ADDENDA.

ALL PERSONNEL WORKING ON THE NATURAL GAS PIPELINE RELOCATION MUST BE DRUG TESTED AND HAVE COMPLETED AND PASSED NATURAL GAS OPERATOR QUALIFICATIONS (OQ) PER FEDERAL REGULATIONS PART 192 AS REQUIRED IN THE CITY OF SHELBY'S OPERATOR QUALIFICATION MANUAL PRIOR TO ANY WORK BEING PERFORMED ON THE NATURAL GAS PIPELINE.

THE CONTRACTOR SHALL USE ONLY COMPETENT AND SKILLED WORKMEN ON WELDING. NO WELDING SHALL BE DONE ON ANY PIPING, FITTINGS, OR OTHER EQUIPMENT UNTIL THE WELDERS HAVE BEEN FULLY QUALIFIED IN ACCORDANCE WITH THE TEST REQUIREMENTS SET FORTH IN MINIMUM FEDERAL SAFETY STANDARDS REQUIREMENTS FOR WELDING AND THE TERMS OF API STD. 1104 "STANDARD FOR WELDING PIPELINES AND RELATED FACILITIES". THE CONTRACTOR MUST FURNISH EVIDENCE TO THE CITY OF SHELBY THAT THESE REQUIREMENTS HAVE BEEN MET FOR EACH WELDER PRIOR TO THE COMMENCEMENT OF WORK. IN ADDITION TO A WELDER'S CERTIFICATION CARD, EVIDENCE OF MEETING REQUIREMENTS SHALL INCLUDE, BUT NOT NECESSARILY BE LIMITED TO, THE BACKUP PAPERWORK INDICATING THE NUMBER OF SPECIMENS TESTED OF EACH TYPE (TENSILE STRENGTH, ROOT BEND, NICK BREAK, FACE BEND, ETC.) AND THE RESULTS OF EACH INDIVIDUAL SPECIMEN TESTED.

ALL STEEL PIPING AND OTHER FITTINGS MUST CONFORM TO THE API STANDARD. LINE PIPING MUST MEET THE API STANDARD 5L X-42 SPECIFICATION.

ALL WORK MUST BE PRESSURE TESTED TO 225 PSIG OR GREATER FOR AT LEAST 24 HOURS USING AIR OR NITROGEN PRIOR TO ACCEPTANCE OF WORK OR PUTTING INTO SERVICE. WATER WILL NOT BE ACCEPTED AS A TEST MEDIUM.

THE CONTRACTOR SHALL SCHEDULE BLOW DOWN, PURGE, AND TIE-IN OPERATIONS SUCH THAT NATURAL GAS CUSTOMERS WILL NOT BE OUT OF SERVICE FOR MORE THAN EIGHT (8) HOURS.

ONLY CITY OF SHELBY EMPLOYEES WILL OPERATE EXISTING NATURAL GAS VALVES NORTH AND SOUTH OF THE PROJECT TO FACILITATE WORK. BOTH VALVES ARE IN PLATO LEE ROAD RIGHT-OF-WAY.

THE NORTH VALVE IS APPROXIMATELY 260 FEET NORTH OF STATION 10+35. THE SOUTH VALVE IS APPROXIMATELY 1150 FEET SOUTH OF STATION 23+90.

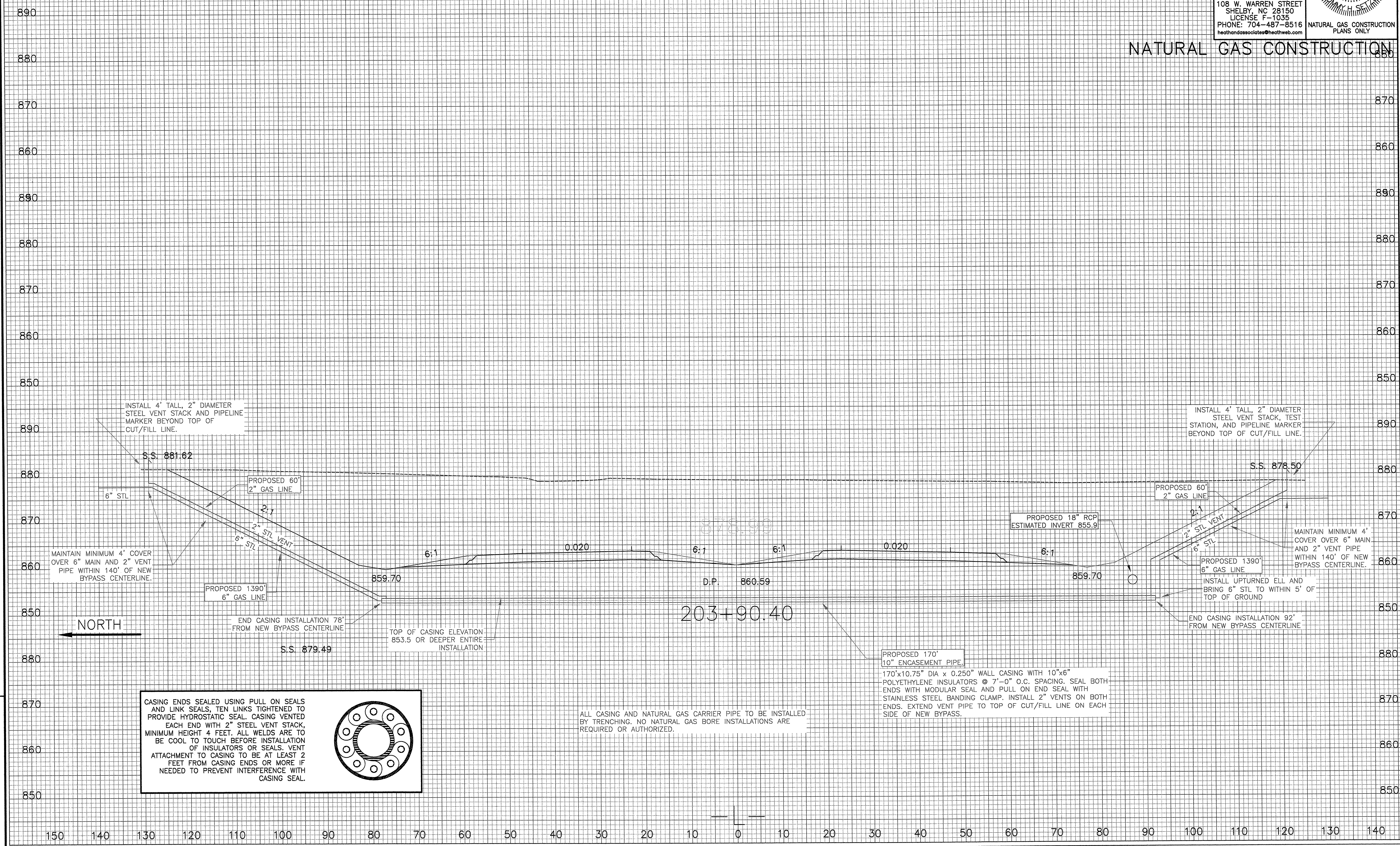
CONTRACTOR IS TO INSTALL A 3/4"x 3/4" STEEL AUTO-PERF TAPPING TEE CAPABLE OF SHUT OFF, 1440 PSIG RATING, 3/8" TIP, WITH COMPLETION CAP PROVIDING ADDITIONAL SEAL, NEAR EACH OF THE VALVES TO ACT AS BLOW DOWN AND PURGE POINTS. STEEL PURGE STACKS EXTENDING AT LEAST SIX FEET ABOVE TOP OF TRENCH SHOULD BE INSTALLED. STEEL CAPS ARE TO BE WELDED ON TEES AFTER USE.

PAYMENT TO PROVIDE, INSTALL, AND OPERATE THE TWO TEES AND PURGE STACKS, INCLUDING EXCAVATION, TRAFFIC CONTROL, REMOVAL OF STACKS AND CAPPING TEES AFTER USE, SHALL BE INCLUDED IN THE CONTRACT PRICE FOR INSTALLING PIPE.

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-2707AB	UC-10
DESIGNED BY: THS	
DRAWN BY: TPC	
CHECKED BY: THS	
APPROVED BY:	
REVISED:	
HEATH AND ASSOCIATES, INC. 108 W. WARREN STREET SHELBY, NC 28150 LICENSE F-1035 PHONE: 704-487-8516 heathandassociates@heathweb.com	
NATURAL GAS CONSTRUCTION PLANS ONLY	

NATURAL GAS CONSTRUCTION



INSTALL 4' TALL, 2" DIAMETER STEEL VENT STACK AND PIPELINE MARKER BEYOND TOP OF CUT/FILL LINE.

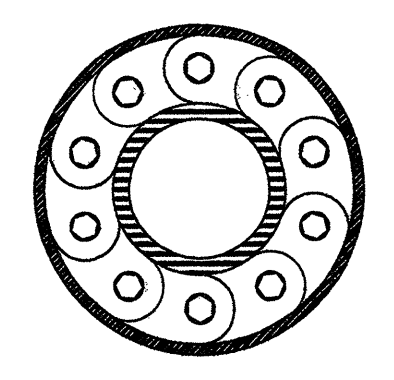
INSTALL 4' TALL, 2" DIAMETER STEEL VENT STACK, TEST STATION, AND PIPELINE MARKER BEYOND TOP OF CUT/FILL LINE.

MAINTAIN MINIMUM 4' COVER OVER 6" MAIN AND 2" VENT PIPE WITHIN 140' OF NEW BYPASS CENTERLINE.

MAINTAIN MINIMUM 4' COVER OVER 6" MAIN AND 2" VENT PIPE WITHIN 140' OF NEW BYPASS CENTERLINE.

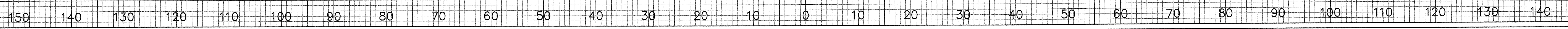
NORTH

CASING ENDS SEALED USING PULL ON SEALS AND LINK SEALS, TEN LINKS TIGHTENED TO PROVIDE HYDROSTATIC SEAL. CASING VENTED EACH END WITH 2" STEEL VENT STACK, MINIMUM HEIGHT 4 FEET. ALL WELDS ARE TO BE COOL TO TOUCH BEFORE INSTALLATION OF INSULATORS OR SEALS. VENT ATTACHMENT TO CASING TO BE AT LEAST 2 FEET FROM CASING ENDS OR MORE IF NEEDED TO PREVENT INTERFERENCE WITH CASING SEAL.



ALL CASING AND NATURAL GAS CARRIER PIPE TO BE INSTALLED BY TRENCHING. NO NATURAL GAS BORE INSTALLATIONS ARE REQUIRED OR AUTHORIZED.

PROPOSED 170" 10" ENCASEMENT PIPE. 170"x10.75" DIA x 0.250" WALL CASING WITH 10"x6" POLYETHYLENE INSULATORS @ 7'-0" O.C. SPACING. SEAL BOTH ENDS WITH MODULAR SEAL AND PULL ON END SEAL WITH STAINLESS STEEL BANDING CLAMP. INSTALL 2" VENTS ON BOTH ENDS. EXTEND VENT PIPE TO TOP OF CUT/FILL LINE ON EACH SIDE OF NEW BYPASS.



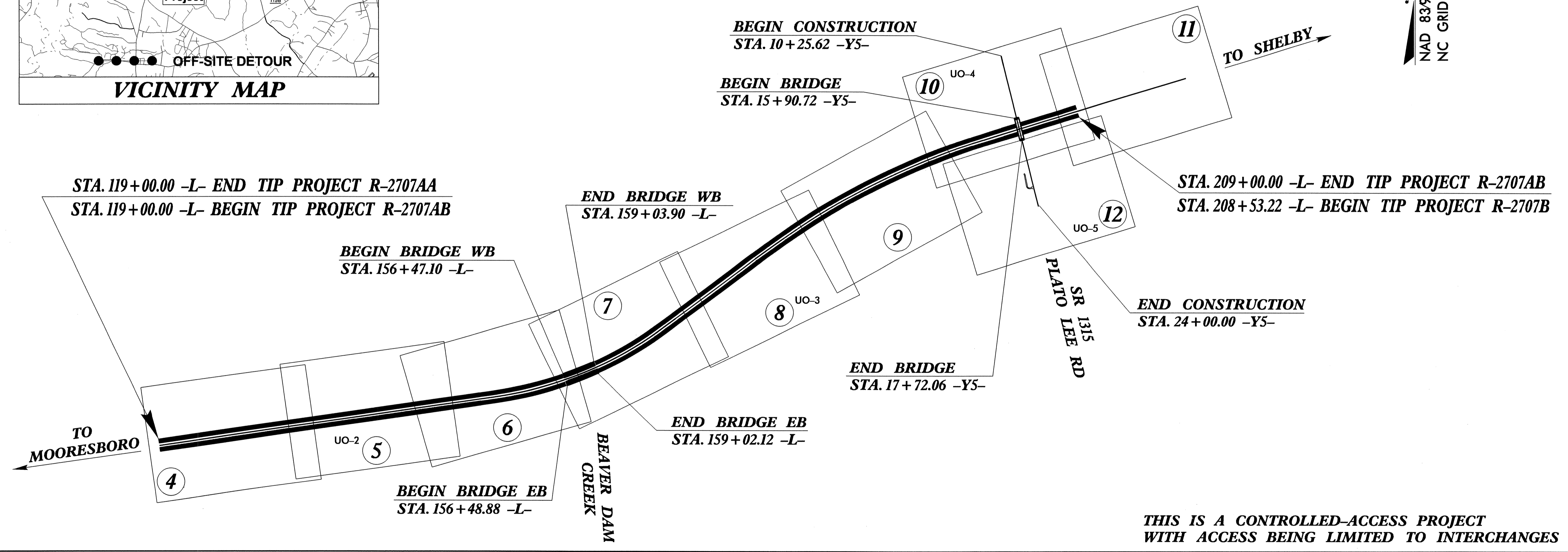
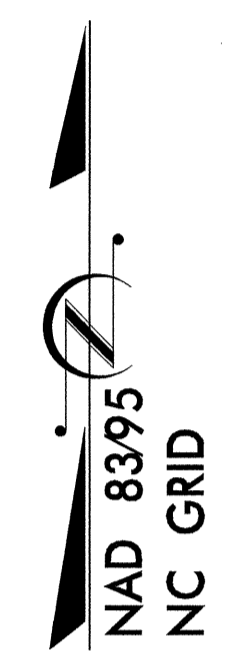
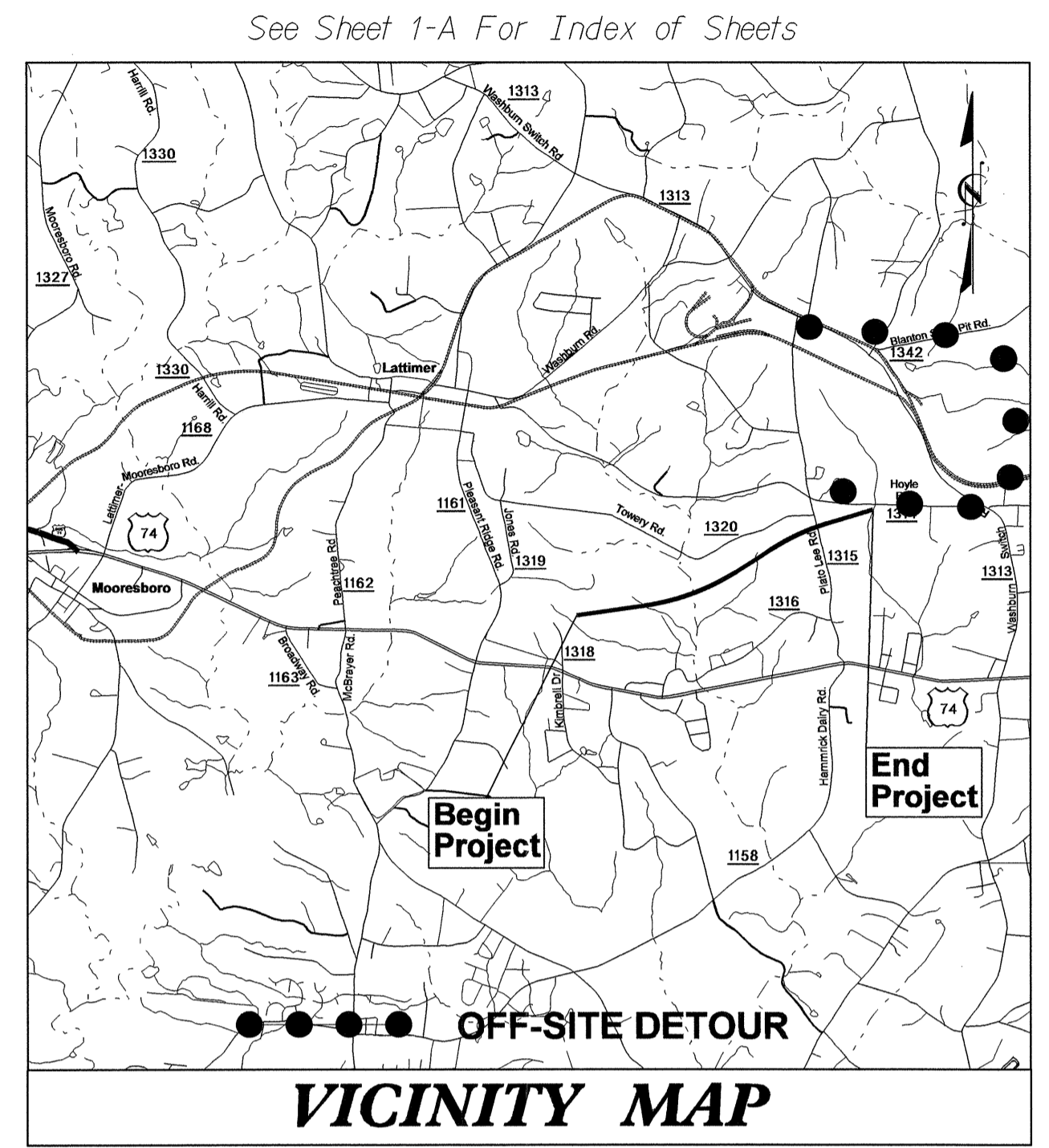
T.I.P. NO.	SHEET NO.
R-2707AB	UO-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

**UTILITIES BY OTHERS PLANS
CLEVELAND COUNTY**

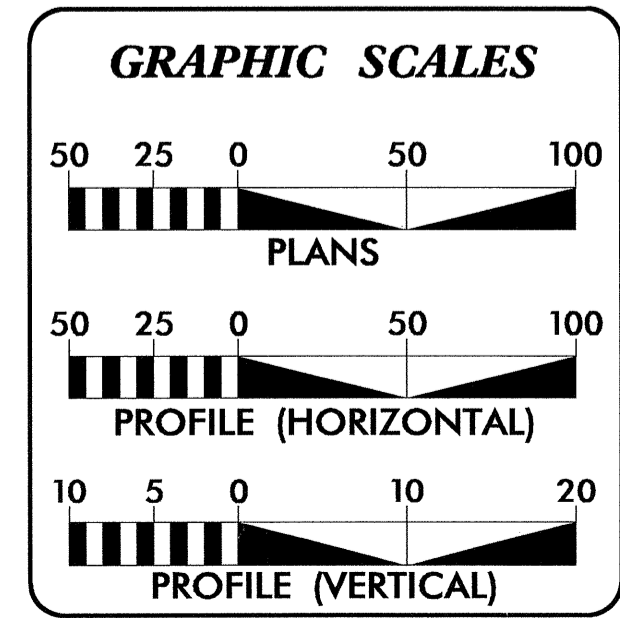
**LOCATION: US 74 (SHELBY BYPASS) FROM EAST OF
SR 1318 (KIMBRELL ROAD) TO EAST OF
SR 1315 (PLATO LEE ROAD ROAD)**

TYPE OF WORK: AERIAL POWER, TELEPHONE & CATV



TIP PROJECT: R-2707AB

CONTRACT: C203027

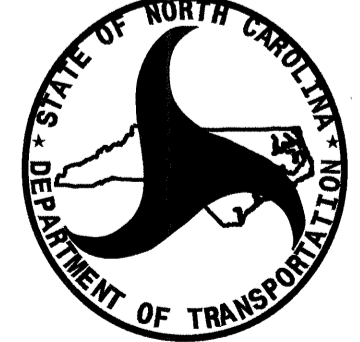


INDEX OF SHEETS

SHEET NO.	DESCRIPTION
UO-1	TITLE SHEET
UO-2 THRU UO-5	UTILITIES BY OTHERS PLAN SHEETS

- UTILITY OWNERS ON PROJECT**
- (1) AT&T /MCNC - TELEPHONE
 - (2) DUKE ENERGY - DISTRIBUTION POWER
 - (3) DUKE ENERGY - TRANSMISSION POWER
 - (4) TIME WARNER CABLE - CATV

**THIS IS A CONTROLLED-ACCESS PROJECT
WITH ACCESS BEING LIMITED TO INTERCHANGES**



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

1555 MAIL SERVICES CENTER
RALEIGH, NC 27699-1555
PHONE: (919) 707-6690
FAX: (919) 250-4151

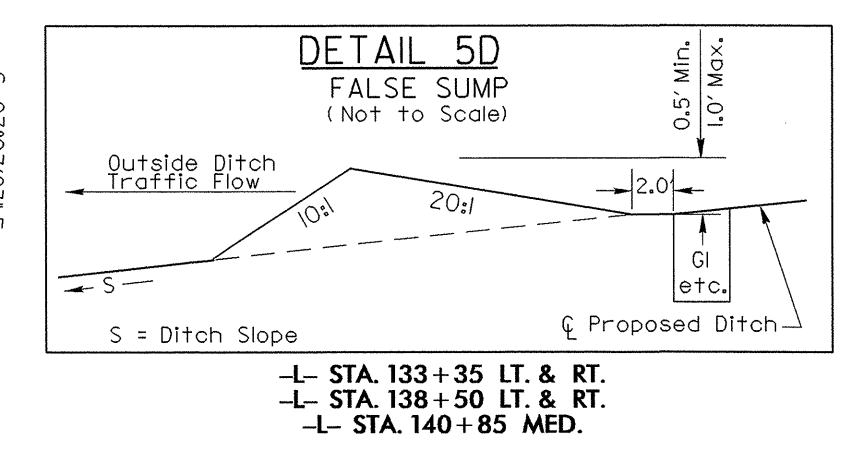
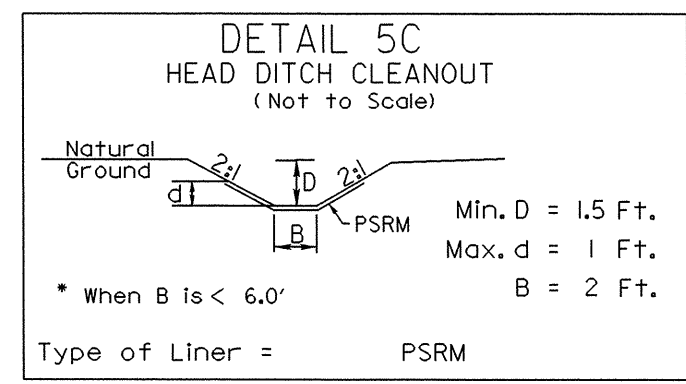
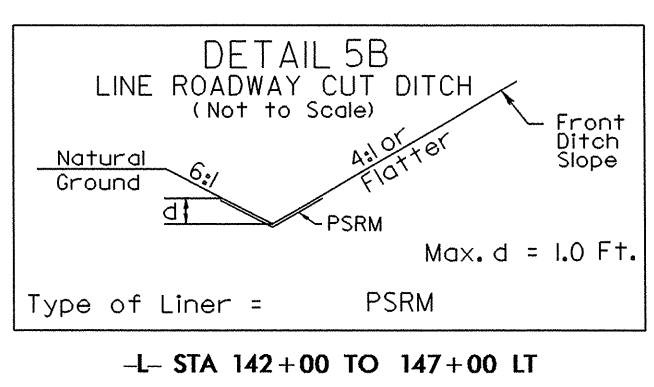
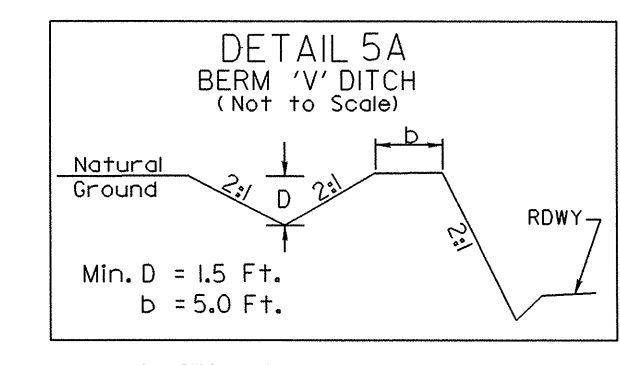
Roger Worthington, P.E. UTILITIES SECTION ENGINEER
Carl A. Barclay, P.E. UTILITIES SQUAD LEADER PROJECT ENGINEER
James E. Swinson UTILITIES PROJECT DESIGNER

01-MAY-2013 16:04 R:\Utilities\Proj\Uo1\Pro\UBO\UO1.dgn \$\$\$USERNAME\$\$\$

UTILITIES BY OTHERS

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

NC GRID NAD 8395



-L-
PI Sta 157+27.72
 $\Delta = 24^{\circ}02'37.9"$ (LT)
D = 0'45'14.0"
L = 3,189.30'
T = 1,618.47'
R = 7,600.00'
DS = 70 MPH
e = .03

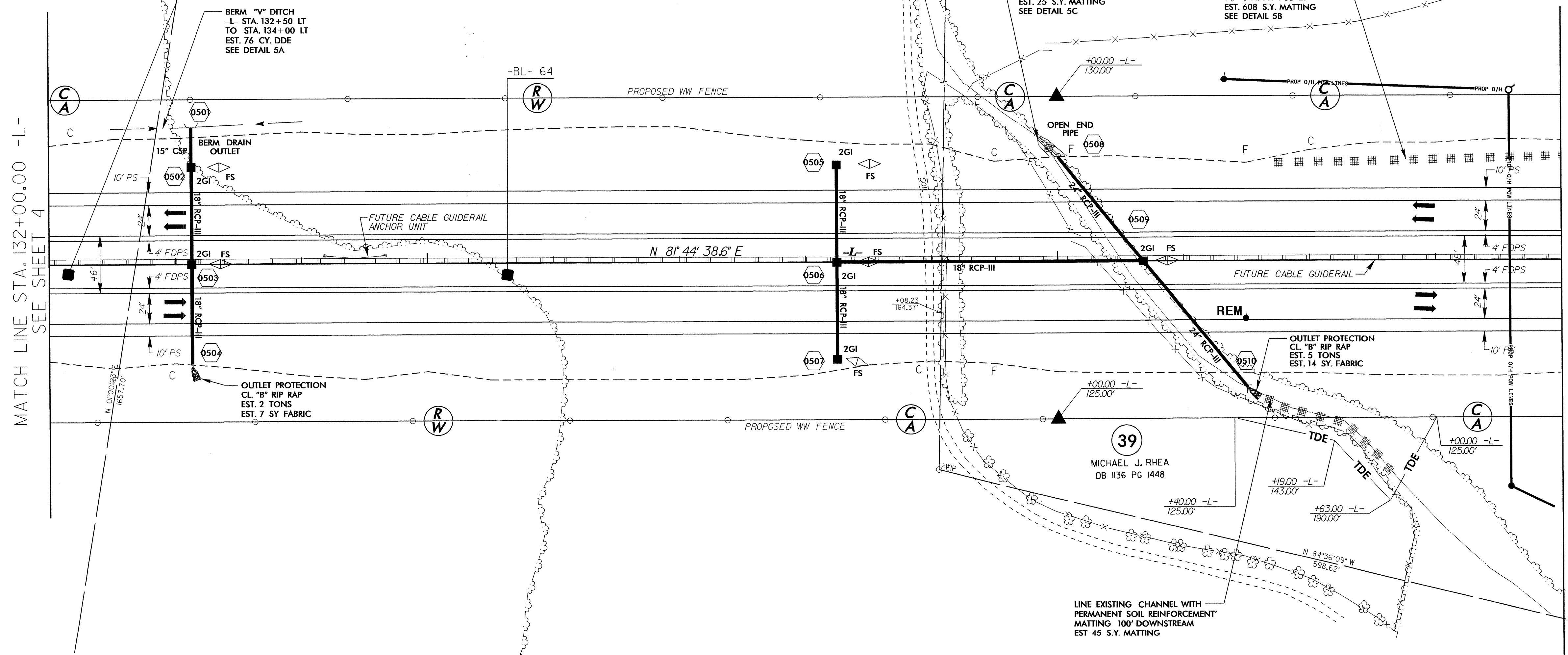
37
MARY JONES PANNELL
DB 1169 PG 143

38
BOBBY LEE BLANTON, SR.
DB 16-B PG 209

39
MICHAEL J. RHEA
DB 1136 PG 1448

MATCH LINE STA. 132+00.00 -L-
SEE SHEET 4

MATCH LINE STA. 144+00 -L-
SEE SHEET U0-3



38
BOBBY LEE BLANTON, SR.
DB 16-B PG 209

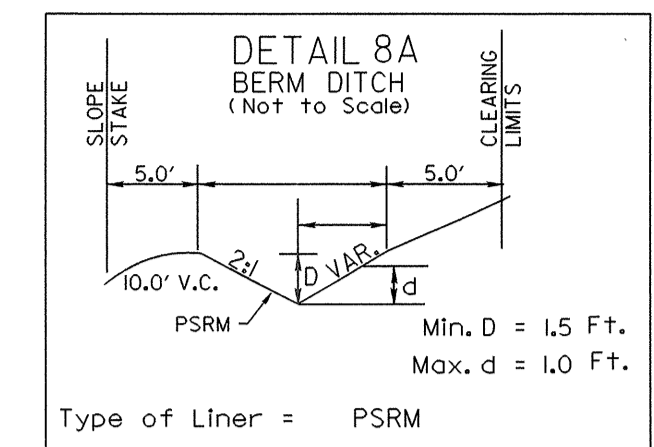
39
MICHAEL J. RHEA
DB 1136 PG 1448

5/14/09

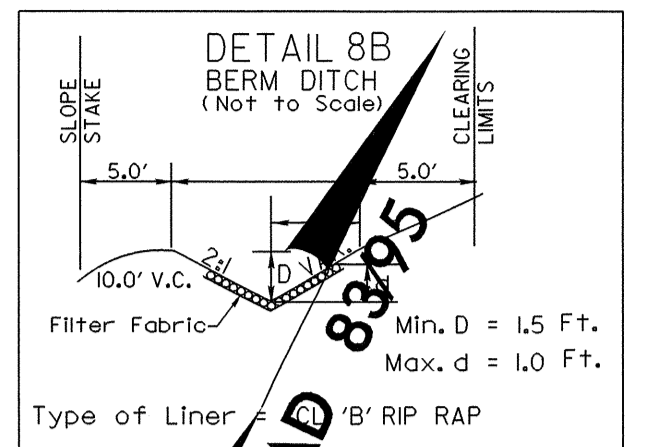
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\$\$\$\$\$ ISTERNAME\$\$\$\$\$

UTILITIES BY OTHERS

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



-L- STA 172+00 TO 176+50 LT



-L- STA 176+50 TO 177+50 LT

BERM 'V' DITCH
W/ PERMANENT SOIL
REINFORCEMENT MATTING
-L- STA 172+00 LT
TO STA 177+50 LT
EST. 174 S.Y. MATTING
EST. 130 CY. DDE
SEE DETAIL 8A

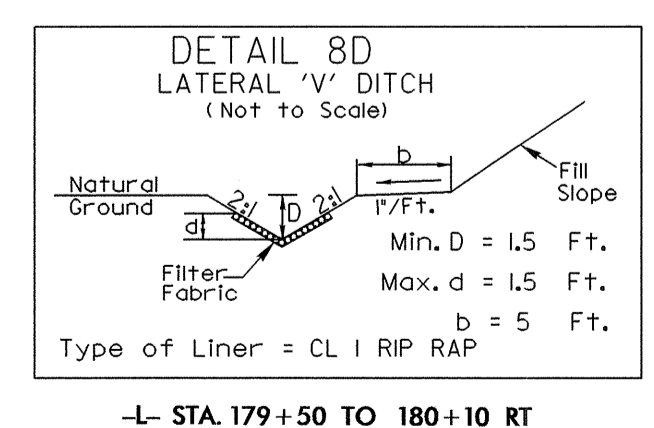
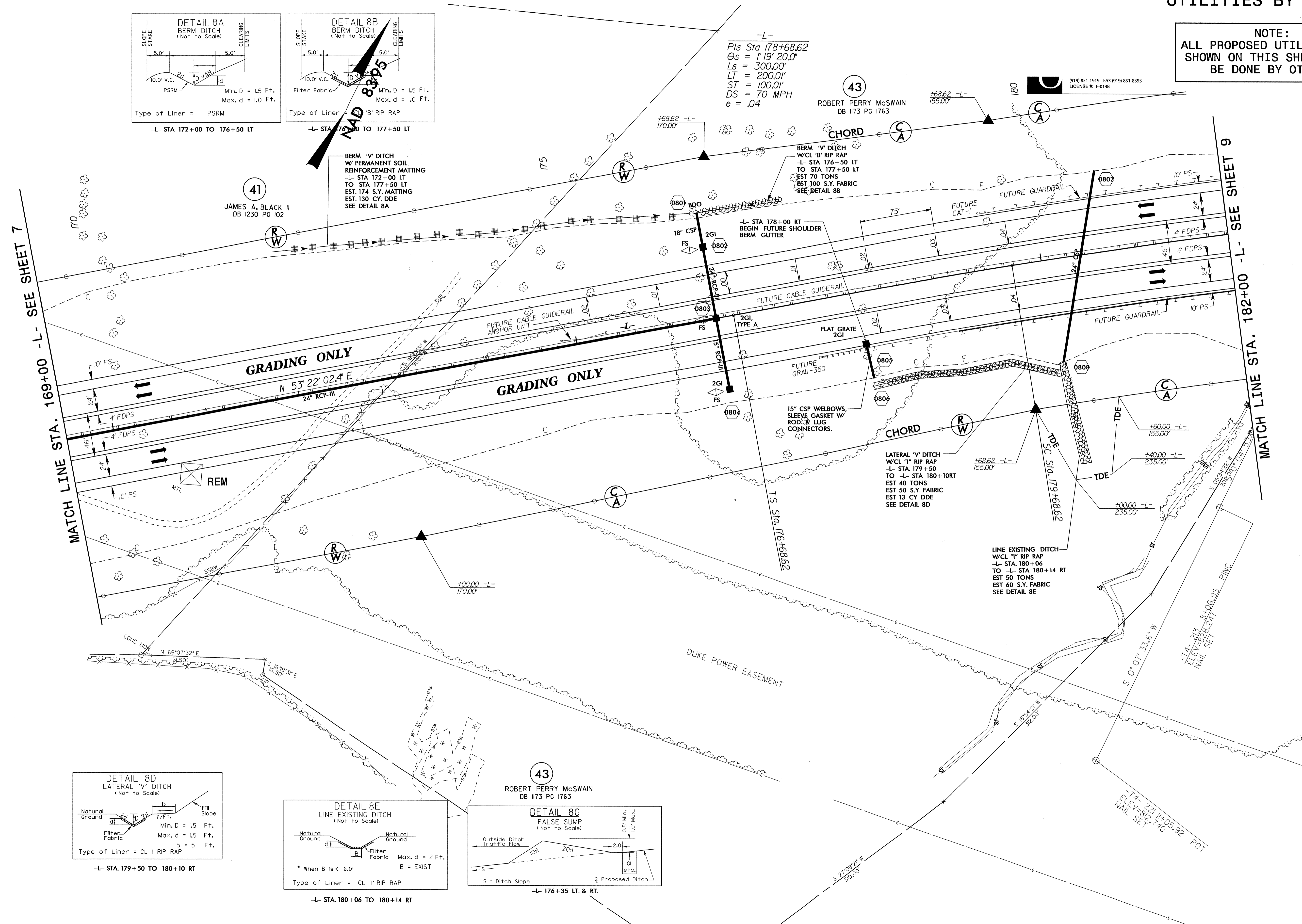
-L-
Pls Sta 178+68.62
Os = 1' 19" 20.0'
Ls = 300.00'
LT = 200.01'
ST = 100.01'
DS = 70 MPH
e = .04

43
ROBERT PERRY McSWAIN
DB 1173 PG 1763

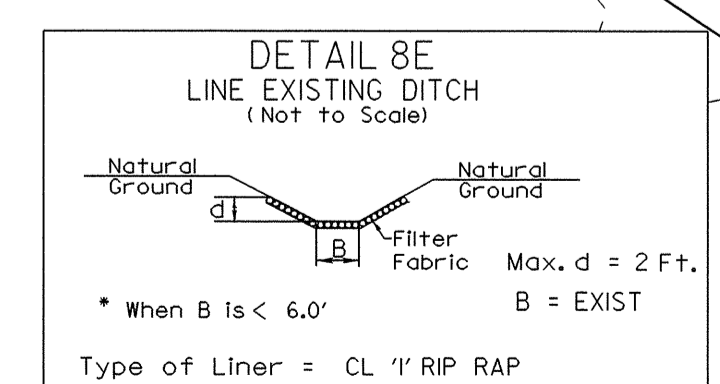
(919) 851-1919 FAX (919) 851-8393
LICENSE # F-0148

MATCH LINE STA. 169+00 -L- SEE SHEET 7

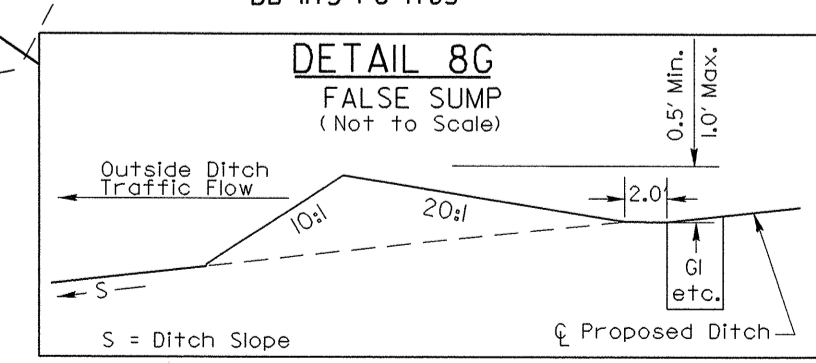
MATCH LINE STA. 182+00 -L- SEE SHEET 9



-L- STA 179+50 TO 180+10 RT



-L- STA. 180+06 TO 180+14 RT



-L- 176+35 LT. & RT.

43
ROBERT PERRY McSWAIN
DB 1173 PG 1763

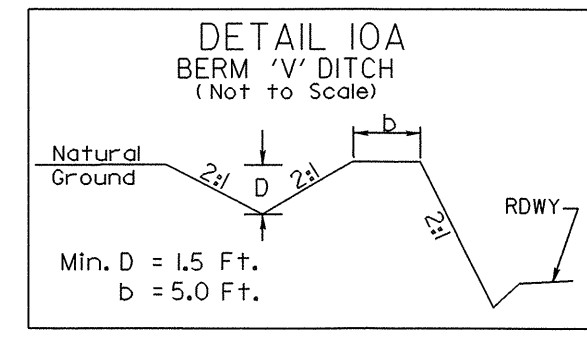
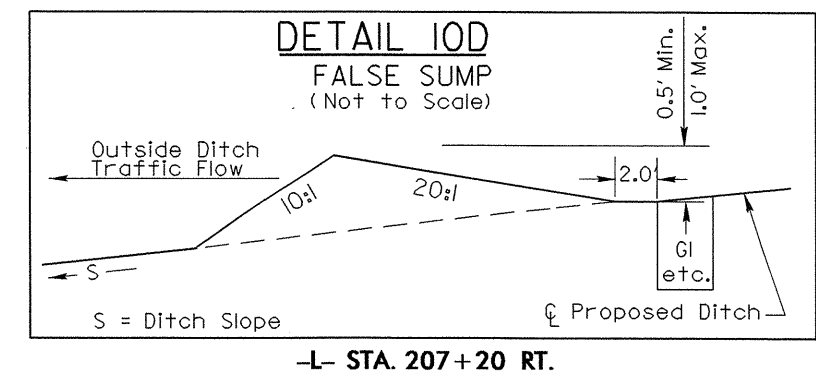
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UTILITIES BY OTHERS

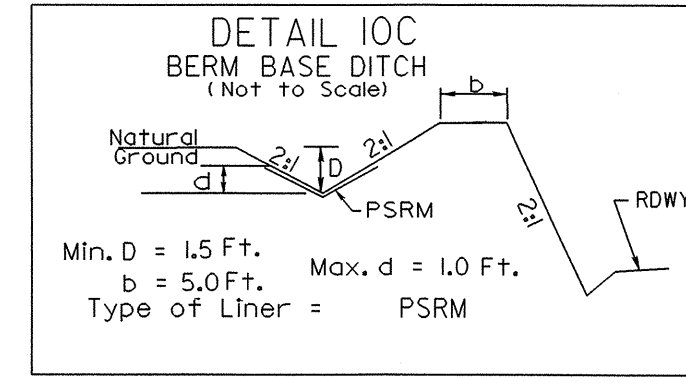
NOTE:
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS

NC GRID NAD 83/95

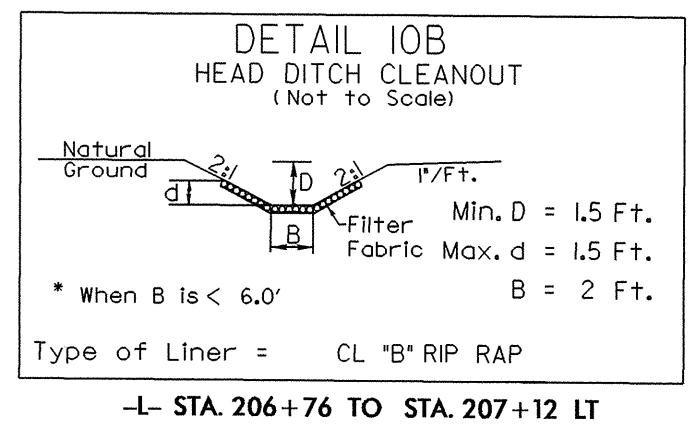
-L-
Pls Sta 199+96.75
Os = 1'19" 20.0"
Ls = 300.00'
LT = 200.01'
ST = 100.01'
DS = 70 MPH
e = .04



-L- STA 196+00 TO 198+50 LT
-L- STA 198+50 TO 200+50 LT
-L- STA 202+00 TO 202+50 LT
-L- STA 206+67 TO 213+00 LT

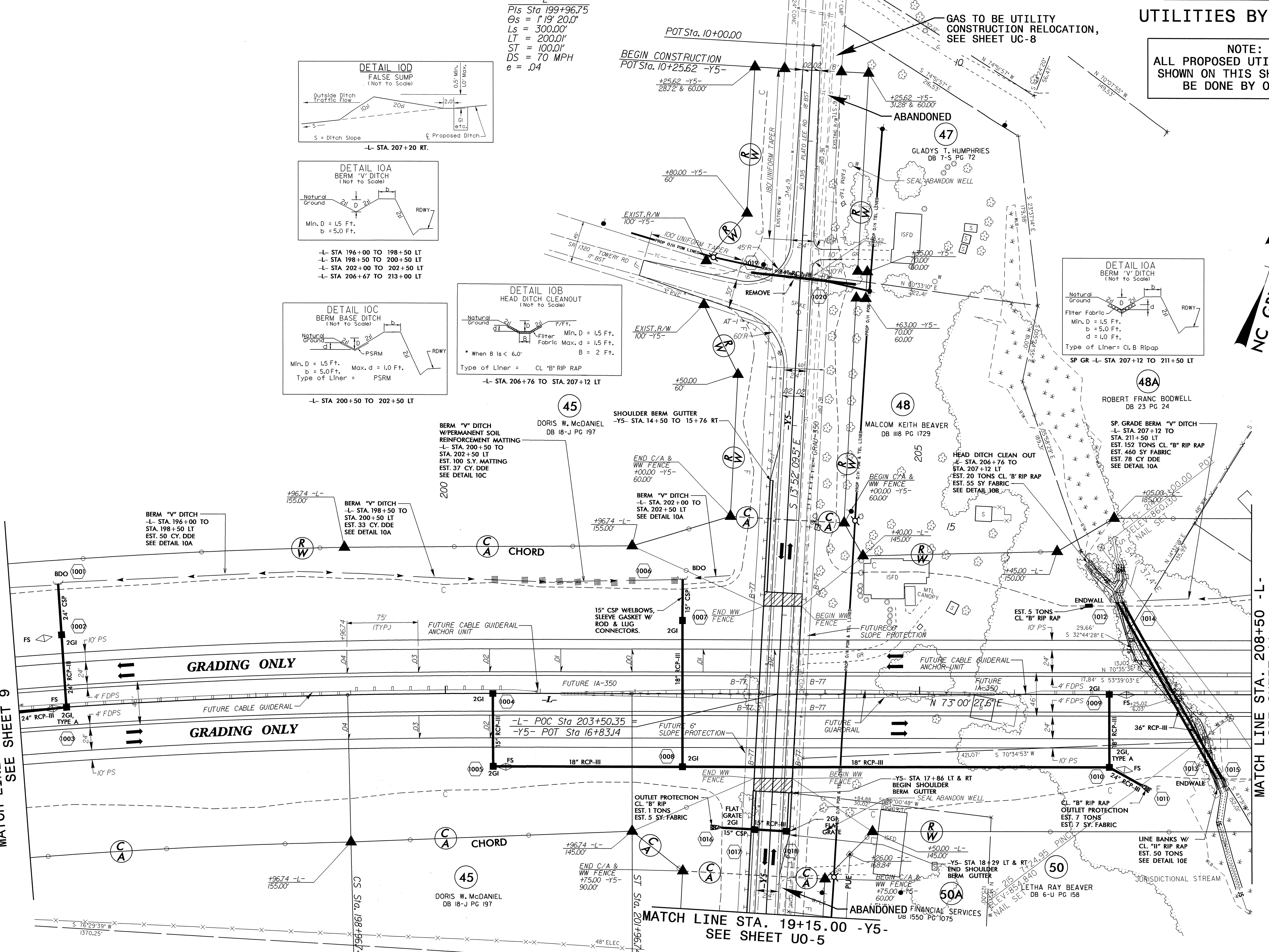


-L- STA 200+50 TO 202+50 LT



-L- STA. 206+76 TO STA. 207+12 LT

MATCH LINE STA. 195+50 -L-
SEE SHEET 9

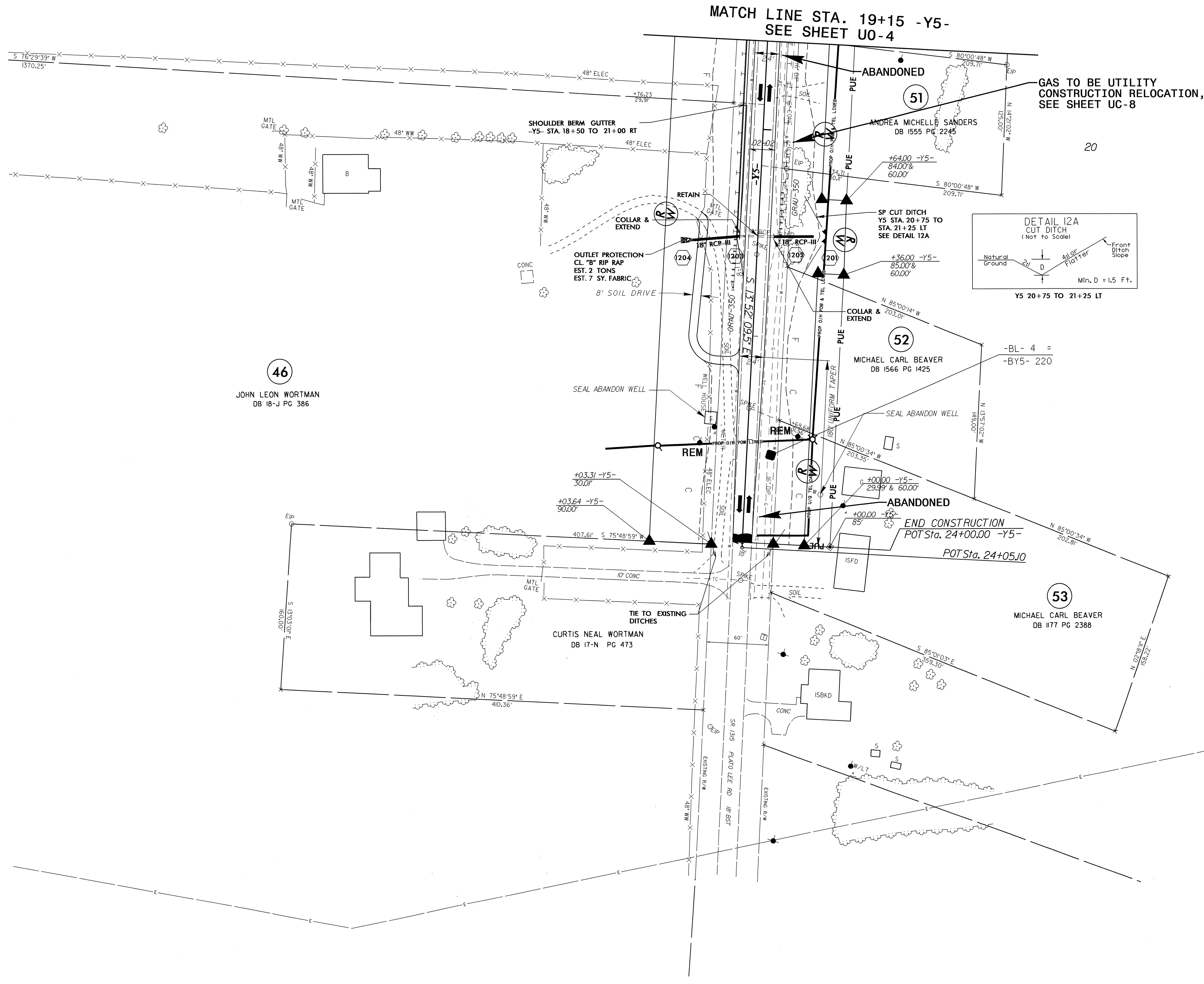


MATCH LINE STA. 19+15.00 -Y5-
SEE SHEET UO-5

MATCH LINE STA. 208+50 -L-
SEE SHEET 11

UTILITIES BY OTHERS

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



5/14/99
01-MAY-2017 09:55 \\B01\N-2707AB_Ut_12-U05.dgn
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