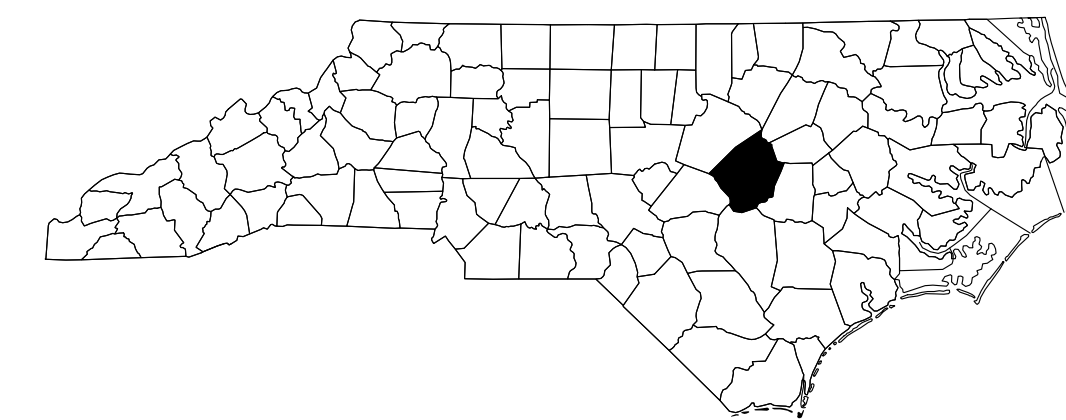


**TIP PROJECT: R-3825B**

**CONTRACT:**

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

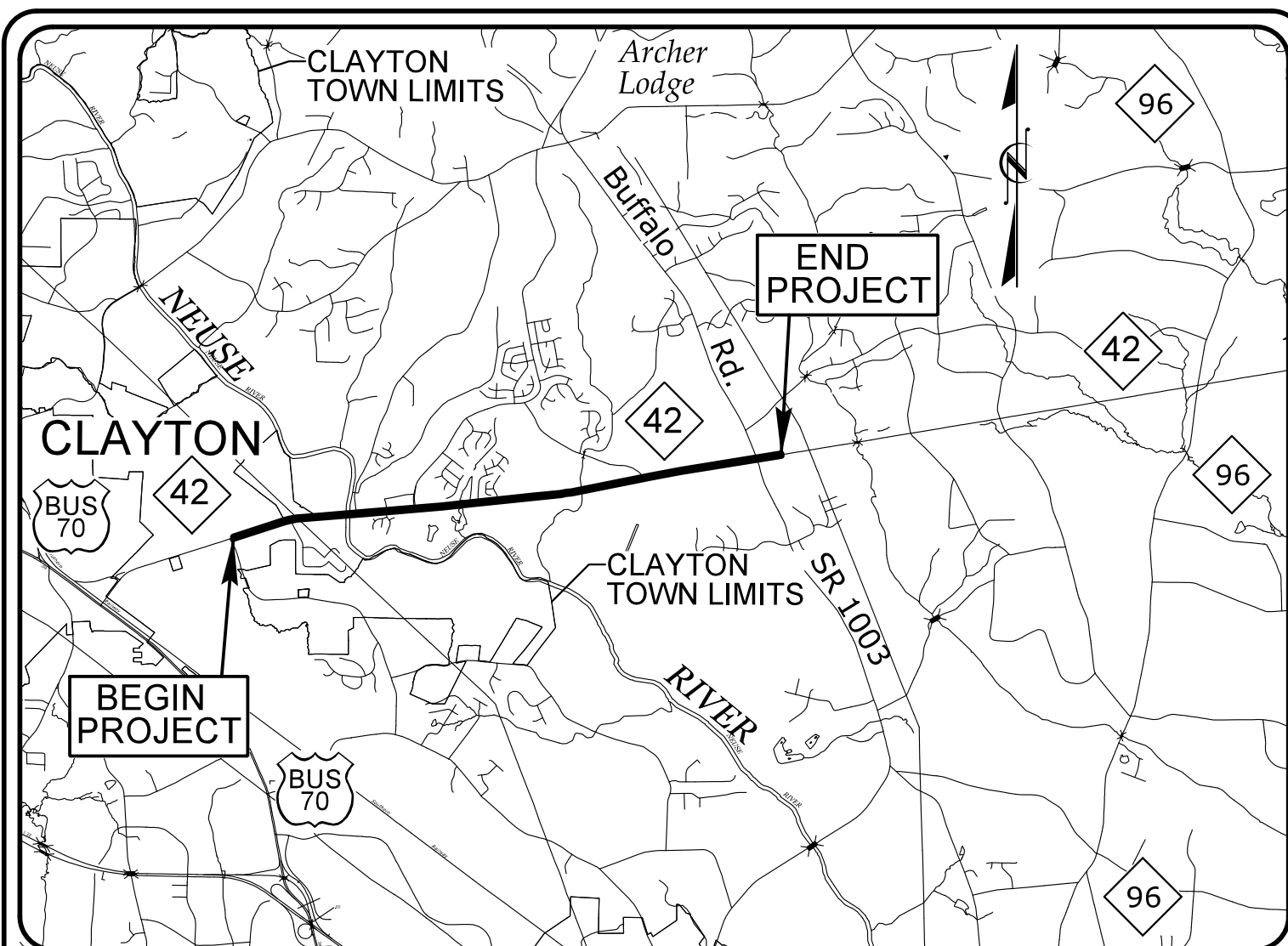
T.I.P. NO.	SHEET NO.
R-3825B	UC-1



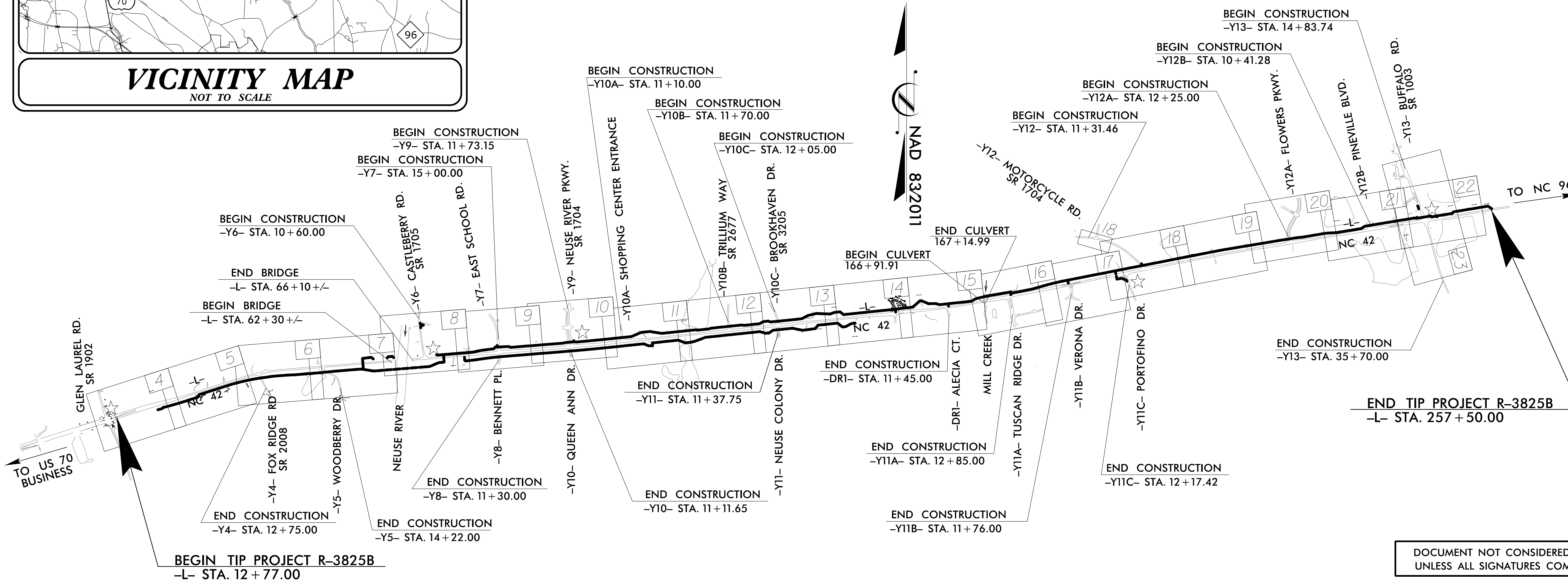
# UTILITY CONSTRUCTION PLANS JOHNSTON COUNTY

**LOCATION: NC 42 FROM SR 1902 (GLEN LAUREL RD)  
TO SR 1003 (BUFFALO RD)**

**TYPE OF WORK: WATER AND SEWER RELOCATIONS**

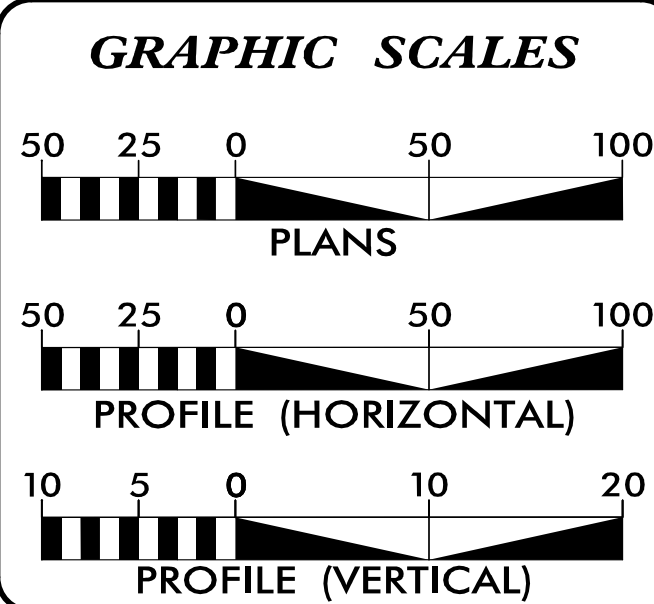


**VICINITY MAP**  
NOT TO SCALE



DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

**SUBMITTAL:** FINAL UTILITY CONST. PLANS  
**DATE:** AUGUST 9, 2018



**INDEX OF SHEETS**

SHEET NO.:	DESCRIPTION:
UC-1	TITLE SHEET
UC-2	LEGEND OF SYMBOLS
UC-3	GENERAL NOTES
UC-3A THRU UC-3F	CONSTRUCTION DETAILS
UC-4 THRU UC-23	UTILITY CONST. PLAN SHEETS
UC-24 THRU UC-37	UTILITY CONST. PROFILES

**WATER AND SEWER OWNERS ON PROJECT**

(A) WATER: JOHNSTON COUNTY UTILITIES  
(B) SANITARY SEWER: JOHNSTON COUNTY UTILITIES, TOWN OF CLAYTON

PREPARED IN THE OFFICE OF:

**AECOM**

AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.  
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607  
919-854-6200 919-854-6259 (fax)  
F - 0342

Steve Scruggs, PE UTILITIES PROJECT ENGINEER

SEAL  
8/9/2018

DocuSigned by:  
D. Stephen Scruggs  
957A10CE3D5E47...

**DIVISION OF HIGHWAYS  
UTILITIES UNIT**  
1555 MAIL SERVICES CENTER  
RALEIGH NC 27699-1555  
PHONE (919) 707-6690  
FAX (919) 250-4151

Nabil Hamdan UTILITIES REGIONAL ENGINEER  
Ashley B. Cox, Jr, LG UTILITIES ENGINEER  
Kyle Pleasant UTILITIES AREA COORDINATOR  
Dayton Martin UTILITIES COORDINATOR

### PROPOSED WATER SYMBOLS

Water Line (Sized as Shown)	
11 1/4 Degree Bend	
22 1/2 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	

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	
End of Information	

*Underground Power Line	
*Underground Telephone Cable	
*Underground Telephone Conduit	
*Underground Fiber Optics Telephone Cable	
*Underground TV Cable	
*Underground Fiber Optics TV Cable	
*Underground Gas Pipeline	
Aboveground Gas Pipeline	
*Underground Water Line	
Aboveground Water Line	
*Underground Gravity Sanitary Sewer Line	
Aboveground Gravity Sanitary Sewer Line	
*Underground SS Forced Main Line	
Underground Unknown Utility Line	
SUE Test Hole	
Water Meter	
Water Valve	
Fire Hydrant	
Sanitary Sewer Cleanout	

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

49  
48  
47  
46  
45  
44  
43  
42  
41  
40  
39  
38  
37  
36  
35  
34  
33  
32  
31  
30  
29  
28  
27  
26  
25  
24  
23  
22  
21  
20  
19  
18  
17  
16  
15  
14  
13  
12  
11  
10  
9  
8  
7  
6  
5  
4  
3  
2  
1

# 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 2018.
2. THE EXISTING WATER UTILITIES BELONG TO JOHNSTON COUNTY UTILITIES. THE EXISTING SEWER UTILITIES BELONG TO JOHNSTON COUNTY AND THE TOWN OF CLAYTON.
3. ALL WATER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF WATER RESOURCES, PUBLIC WATER SUPPLY SECTION. ALL SEWER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT QUALITY, DIVISION OF WATER RESOURCES, WATER QUALITY SECTION. 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 OPPORTUNITY 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 ADDITIONAL 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:

## UTILITY CONSTRUCTION

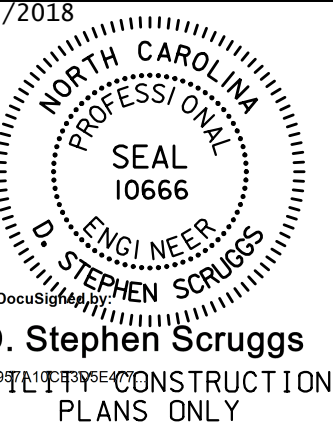
Prepared In the Office of:

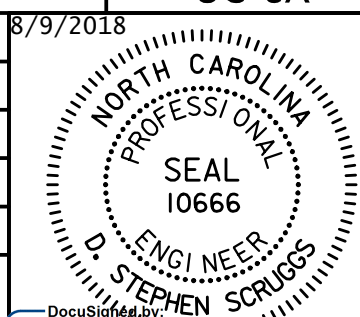
# AECOM

AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.  
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607  
919-854-6200 919-854-6259 (fax)  
F - 0342

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	UC-3
DESIGNED BY:	8/9/2018
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	





**UTILITY CONSTRUCTION**

**1 1/2" WATER SERVICE W/ RPZ & BFP**  
NOT TO SCALE

NOTES: 1. 12" MIN. SEPARATION REQUIRED BETWEEN YOKE CENTERLINE AND TOP OF METER BOX.  
2. RPZ MUST BE LOCATED AT THE POINT OF DELIVERY. IF RPZ IS LOCATED IN THE BUILDING, AN ADDITIONAL DOUBLE CHECK VALVE IS REQUIRED AT THE POINT OF DELIVERY.  
3. METER SHALL BE FURNISHED AND SET BY JOHNSTON COUNTY.  
4. IF THE METER BOX IS LOCATED IN A TRAFFIC AREA A CONCRETE METER BOX, BROOKS, No. 38-H WITH 12" EXTENSION SHALL BE USED.  
5. ALL MATERIALS USED IN THE POTABLE WATER SYSTEM MUST BE NSF61 AND NSF372 CERTIFIED AND MEET THE LATEST FEDERAL SAFE DRINKING WATER ACT REQUIREMENTS.

Drawn By:	Name	Date	JOHNSTON COUNTY	WATER STANDARD DETAIL	PAGE
Checked By:			Department of Public Utilities	1 1/2" Meter & Backflow Assembly	22
Approved By:			P.O. Box 2263		
Scale:			Smithfield, NC 27577		

**TAPPING SLEEVE & VALVE ASSEMBLY**  
NOT TO SCALE

NOTES: 1. TAPPING SLEEVE SHALL BE FABRICATED OF TYPE 304 OR 316 S.S. AND PROVIDE A 360° SEAL AROUND EXISTING PIPE WITH FULL CIRCUMFERENTIAL GASKET.  
2. TAPPING SLEEVE SHALL BE JCM 432, MUELLER H-304, FORD FTSS, ROMAC ST III OR APPROVED EQUAL.  
3. ALL MATERIALS USED IN THE POTABLE WATER SYSTEM MUST BE NSF61 AND NSF372 CERTIFIED AND MEET THE LATEST FEDERAL SAFE DRINKING WATER ACT REQUIREMENTS.

Drawn By:	Name	Date	JOHNSTON COUNTY	WATER STANDARD DETAIL	PAGE
Checked By:			Department of Public Utilities	Tapping Sleeve and Valve Assembly	5
Approved By:			P.O. Box 2263		
Scale:			Smithfield, NC 27577		

**VALVE AND VALVE BOX INSTALLATION**  
NOT TO SCALE

NOTES: 1. D.I.P. MAY BE USED FOR VALVE BOX EXTENSIONS.  
2. VALVE BOX SHOULD NOT CONTACT WATER MAIN OR VALVE.  
3. CONCRETE PROTECTOR RING SHALL BE USED IN ALL UNPAVED AREAS.  
4. ALL MATERIALS USED IN THE POTABLE WATER SYSTEM MUST BE NSF61 AND NSF372 CERTIFIED AND MEET THE LATEST FEDERAL SAFE DRINKING WATER ACT REQUIREMENTS.

Drawn By:	Name	Date	JOHNSTON COUNTY	WATER STANDARD DETAIL	PAGE
Checked By:			Department of Public Utilities	Valve and Valve Box Installation	13
Approved By:			P.O. Box 2263		
Scale:			Smithfield, NC 27577		

**TRENCH 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.

Drawn By:	Name	Date	JOHNSTON COUNTY	WATER STANDARD DETAIL	PAGE
Checked By:			Department of Public Utilities	Pipe Laying Condition	17
Approved By:			P.O. Box 2263		
Scale:			Smithfield, NC 27577		

**VALVE MARKER DETAIL**  
NOT TO SCALE

NOTES: 1. VALVE MARKERS SHALL BE PLACED AT RW.  
2. LETTERS "MV" SHALL FACE TOWARDS VALVE.  
3. MARKER SHALL HAVE BRASS OR BRONZE EMBED ON TOP OR SIDE.  
4. CONTRACTOR SHALL STAMP DISTANCE TO CENTER OF VALVE INTO EMBED.  
5. BLOW-OFF ASSEMBLY SHALL INCLUDE 1 EA. MARKER W/ "BO" OR "MV" CAST.

Drawn By:	Name	Date	JOHNSTON COUNTY	WATER STANDARD DETAIL	PAGE
Checked By:			Department of Public Utilities	Valve Marker	15
Approved By:			P.O. Box 2263		
Scale:			Smithfield, NC 27577		

**CONCRETE PROTECTOR RING**  
NOT TO SCALE

NOTE: PROTECTOR RING SHALL BE 3,000 P.S.I. CONCRETE.

Drawn By:	Name	Date	JOHNSTON COUNTY	WATER STANDARD DETAIL	PAGE
Checked By:			Department of Public Utilities	Concrete Protector Ring	14
Approved By:			P.O. Box 2263		
Scale:			Smithfield, NC 27577		

**FIRE HYDRANT ASSEMBLY**  
NOT TO SCALE

NOTE: 1. MIN. OF 4 CU. FT. STONE (MORE IF REQ'D).  
2. CONC. THRUST BLOCK TO HAVE MIN. OF 6 SQ. FT. BEARING ON SOLID BANK (MORE IF REQ'D).  
3. DRAIN HOLES AND FLANGES SHALL BE CLEAR OF CONC.  
4. FIRE HYDRANT BARREL SHALL BE PLUMB.  
5. ALL MATERIALS USED IN THE POTABLE WATER SYSTEM MUST BE NSF61 AND NSF372 CERTIFIED AND MEET THE LATEST FEDERAL SAFE DRINKING WATER ACT REQUIREMENTS.

"FIRE HYDRANTS INSTALLED ON EXISTING 6" WATER MAINS, MUST BE INSTALLED USING A 6"x6" TEE CUT INTO THE EXISTING WATER MAIN. FIRE HYDRANTS INSTALLED ON EXISTING WATER MAINS LARGER THAN 6", CAN BE INSTALLED USING A TAPPING SLEEVE AND VALVE ON THE EXISTING WATER MAIN.

Drawn By:	Name	Date	JOHNSTON COUNTY	WATER STANDARD DETAIL	PAGE
Checked By:			Department of Public Utilities	Fire Hydrant Assembly	4
Approved By:			P.O. Box 2263		
Scale:			Smithfield, NC 27577		

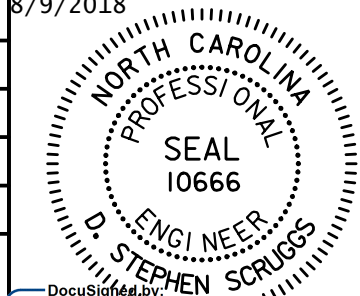
**PIPE LAYING CONDITION**  
NOT TO SCALE

NOTE: PIPE SHALL BE BEDDED UP TO SPRING LINE AND MINIMUM 4" BELOW BOTTOM OF PIPE WHEN WET AREAS ARE ENCOUNTERED.

NOTE: WATER MAINS 8"Ø AND SMALLER SHALL HAVE MINIMUM OF 3" COVER. WATER MAINS LARGER THAN 8"Ø SHALL HAVE A MINIMUM OF 3'-6" COVER.

Drawn By:	Name	Date	JOHNSTON COUNTY	WATER STANDARD DETAIL	PAGE
Checked By:			Department of Public Utilities	Pipe Laying Condition	17
Approved By:			P.O. Box 2263		
Scale:			Smithfield, NC 27577		

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	UC-3B
DESIGNED BY:	8/9/2018
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SECTION	
D. Stephen Struggs	
PLANS ONLY	



UTILITY CONSTRUCTION

**STANDARD AIR RELEASE MANHOLE FOR WATER MAIN**  
NOT TO SCALE

Drawn By:	Name	Date	JOHNSTON COUNTY	WATER STANDARD DETAIL	PAGE
Checked By:			Department of Public Utilities	Air Vacuum/Pressure Release Valve in Manhole	3
Approved By:			P.O. Box 2263		
Scale:			Smithfield, NC 27577		

**STANDARD BORE ENCASEMENT**  
NOT TO SCALE

Drawn By:	Name	Date	JOHNSTON COUNTY	WATER STANDARD DETAIL	PAGE
Checked By:			Department of Public Utilities	Standard Bore Encasement	6
Approved By:			P.O. Box 2263		
Scale:			Smithfield, NC 27577		

**STORM SEWER CROSSING DETAILS**  
NOT TO SCALE

Drawn By:	Name	Date	JOHNSTON COUNTY	STANDARD WATER DETAIL	PAGE
Checked By:			Department of Public Utilities	Storm Sewer Crossing	12
Approved By:			P.O. Box 2263		
Scale:			Smithfield, NC 27577		

**STANDARD WATER TAP DETAIL**  
NOT TO SCALE

Drawn By:	Name	Date	JOHNSTON COUNTY	WATER STANDARD DETAIL	PAGE
Checked By:			Department of Public Utilities	Standard Water Tap	20
Approved By:			P.O. Box 2263		
Scale:			Smithfield, NC 27577		

**STORM DRAIN PIPE CROSSING DETAIL**  
NOT TO SCALE

Drawn By:	Name	Date	JOHNSTON COUNTY	WATER STANDARD DETAIL	PAGE
Checked By:			Department of Public Utilities	Storm Pipe Crossing	11
Approved By:			P.O. Box 2263		
Scale:			Smithfield, NC 27577		

DATE: 8/9/2018  
TIME: 3:56:52 PM  
DGN: R3825B\_UC-PK03B.dgn

UTILITY CONSTRUCTION

**VERTICAL BEND RODDING AND BLOCKING DETAIL**  
NOT TO SCALE

**ROD REQUIREMENTS**

SIZE OF 45° BEND	STATIC THRUST IN POUNDS	NUMBER OF RODS REQUIRED
6"	4,328	2
8"	7,694	2
12"	17,312	4
16"	30,779	6
20"	48,091	8
24"	69,252	10

**GENERAL NOTES**  
1. RODS AND NUTS SHALL BE OF TYPE 304 OR TYPE 316 STAINLESS STEEL.  
2. CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL JOINT BENDS.

Drawn By:	Name	Date	JOHNSTON COUNTY	WATER STANDARD DETAIL	PAGE
Checked By:			Department of Public Utilities	Standard Bend Rodding and Blocking Details	7
Approved By:			P.O. Box 2293		
Scale:			Smithfield, NC 27577		

**NOTES:**  
1. CONCRETE SHALL BE 3,000 PSI MIN.  
2. CONCRETE FOR THRUST BLOCKING SHALL BE KEPT FAIRLY DRY, THUS MAKING THE CONCRETE WEDGE SHAPE MORE EASILY FORMED WITH THE WIDEST PART (BLOCKING AREA) AGAINST UNDISTURBED SOIL.  
3. NO CONCRETE SHALL COVER ANY BOLTS OR GLANDS.  
4. ALL FITTING AND ACCESSORIES TO BE WRAPPED WITH 10 MIL POLYETHYLENE PRIOR TO POURING BLOCKING.  
5. VOLUME OF THRUST BLOCKING SHALL BE AS SHOWN ON THE THRUST BLOCKING SCHEDULE.

**THRUST BLOCK DETAIL**  
NOT TO SCALE

PIPE SIZE	90° BEND		45° BEND		22 1/2° BEND		11 1/4° BEND		TEE		PLUG	
	A	B	A	B	A	B	A	B	A	B	C	D
4"	6"	12"	6"	6"	6"	6"	6"	6"	6"	6"	10"	16"
6"	10"	12"	6"	10"	6"	6"	6"	6"	6"	6"	10"	12"
8"	15"	13"	10"	10"	6"	6"	6"	6"	6"	6"	12"	24"
10"	18"	14"	10"	12"	6"	10"	6"	10"	11"	14"	14"	25"
12"	20"	16"	12"	14"	6"	12"	6"	12"	14"	16"	16"	30"
14"	22"	18"	14"	16"	10"	14"	10"	14"	16"	18"	18"	34"
16"	26"	20"	16"	18"	12"	16"	12"	16"	18"	20"	20"	36"
20"	36"	26"	24"	18"	18"	13"	12"	9"	19"	18"	24"	48"
24"	48"	33"	30"	21"	18"	16"	11"	21"	21"	28"	28"	56"

Drawn By:	Name	Date	JOHNSTON COUNTY	WATER STANDARD DETAIL	PAGE
Checked By:			Department of Public Utilities	Thrust Block	8
Approved By:			P.O. Box 2293		
Scale:			Smithfield, NC 27577		

**HARNESS RESTRAINT DETAIL**  
NOT TO SCALE

Drawn By:	Name	Date	JOHNSTON COUNTY	WATER STANDARD DETAIL	PAGE
Checked By:			Department of Public Utilities	Restraint Harness	10
Approved By:			P.O. Box 2293		
Scale:			Smithfield, NC 27577		

**THRUST COLLAR INSTALLATION**  
NOT TO SCALE

**SCHEDULE**

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

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

Drawn By:	Name	Date	JOHNSTON COUNTY	WATER STANDARD DETAIL	PAGE
Checked By:			Department of Public Utilities	Thrust Collar Installation	9
Approved By:			P.O. Box 2293		
Scale:			Smithfield, NC 27577		

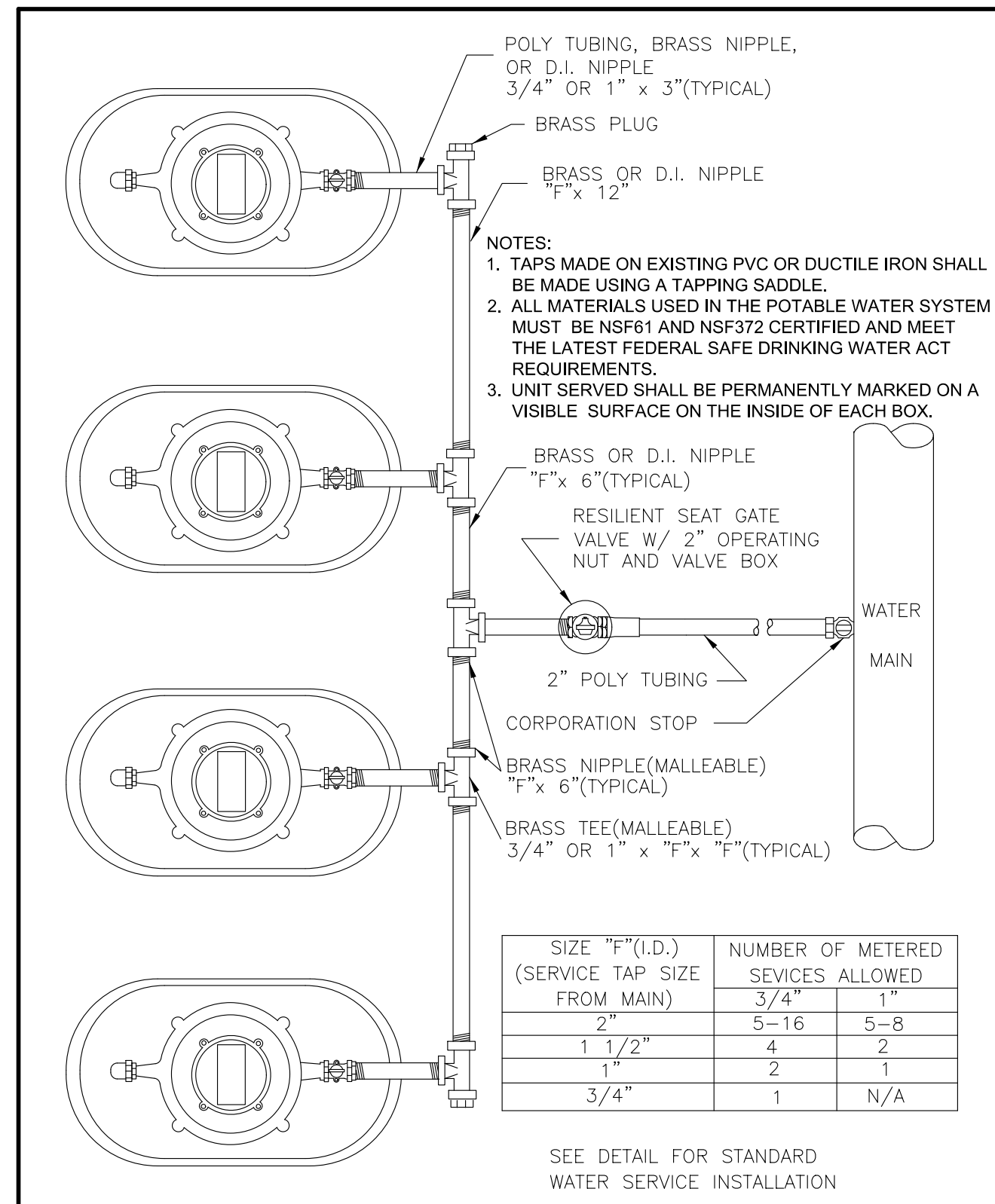
**3" WATER SERVICE W/ BFP-ABOVE GRADE**  
NOT TO SCALE

**NOTES:**  
1. PREFABRICATED HOTBOX SHALL HAVE MINIMUM INSIDE DIMENSIONS OF 2' 8" x 4' x 4'. DIMENSIONS OF HOTBOX SHALL INCREASE WITH SERVICE SIZE TO MAINTAIN SAME CLEARANCES. CONFIRM METER DIMENSIONS WITH COUNTY PRIOR TO ORDERING WALL.  
2. METER, STRAINER, BFP, AND VALVES MAY BE INSTALLED ABOVE OR BELOW HOTBOX ON 4" CONCRETE PAD. PAD SHALL BE 8" WIDER THAN HOTBOX ON ALL SIDES AND REINFORCED WITH 1 MAT OF #6 W.W.F. HOTBOX SHALL BE SIZED TO HAVE MIN. 9" CLEARANCE ON ALL SIDES OF METER.  
3. BYPASS PIPING SHALL BE 2" FOR 3" METERS AND 3" FOR 4" METERS.  
4. JOHNSTON COUNTY SHALL FURNISH AND SET METER.  
5. A GATE VALVE (SAME SIZE AS SERVICE LINE) SHALL BE INSTALLED AT THE WATER MAIN TAP.  
6. ALL MATERIALS USED IN THE POTABLE WATER SYSTEM MUST BE NSF61 AND NSF312 CERTIFIED AND MEET THE LATEST FEDERAL SAFE DRINKING WATER ACT REQUIREMENTS.

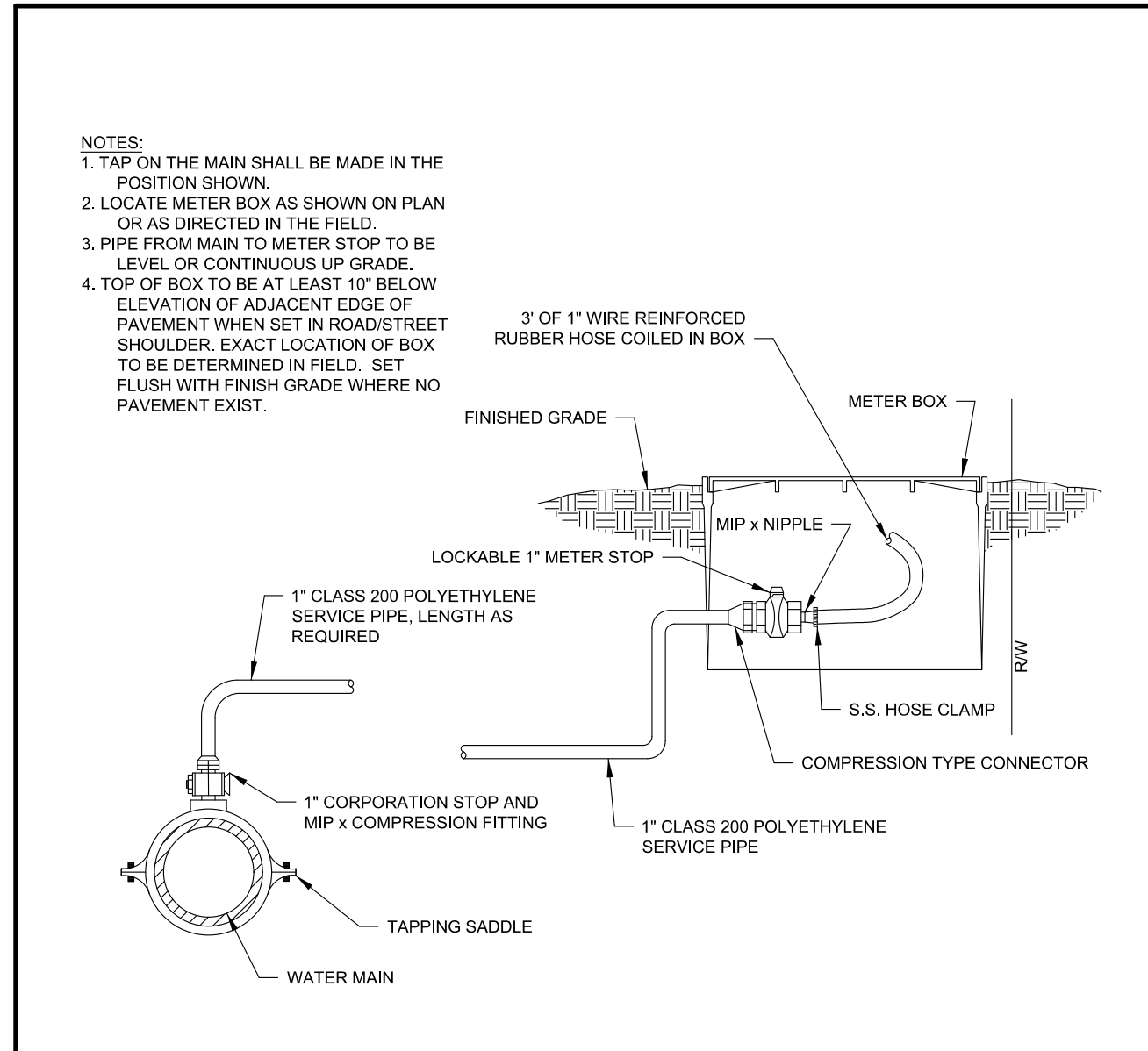
Drawn By:	Name	Date	JOHNSTON COUNTY	WATER STANDARD DETAIL	PAGE
Checked By:			Department of Public Utilities	3" Meter & Backflow Assembly	24A
Approved By:			P.O. Box 2293		
Scale:			Smithfield, NC 27577		

**HDPE PIPE CONNECTION**  
NOT TO SCALE

Drawn By:	Name	Date	JOHNSTON COUNTY	WATER STANDARD DETAIL	PAGE
Checked By:			Department of Public Utilities	HDPE PIPE CONNECTION	16
Approved By:			P.O. Box 2293		
Scale:			Smithfield, NC 27577		

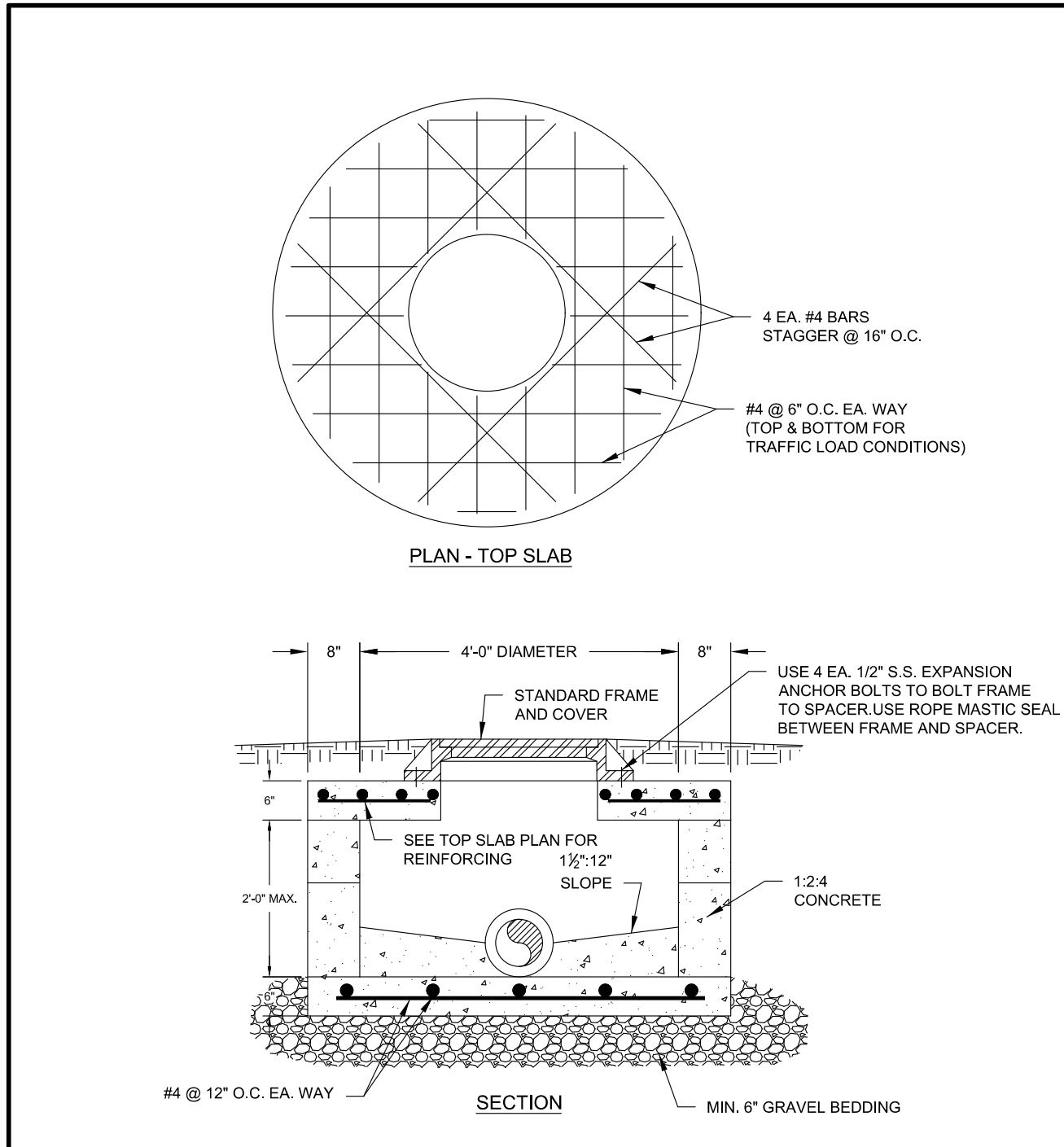


Drawn By:	Name	Date	<b>JOHNSTON COUNTY</b> Department of Public Utilities P.O. Box 2293 Smithfield, NC 27577	<b>WATER STANDARD DETAIL</b> STANDARD GANG METER ASSEMBLY	PAGE <b>26</b>
Checked By:					
Approved By:					
Scale:					
Rev.	Description	Date	Init.		



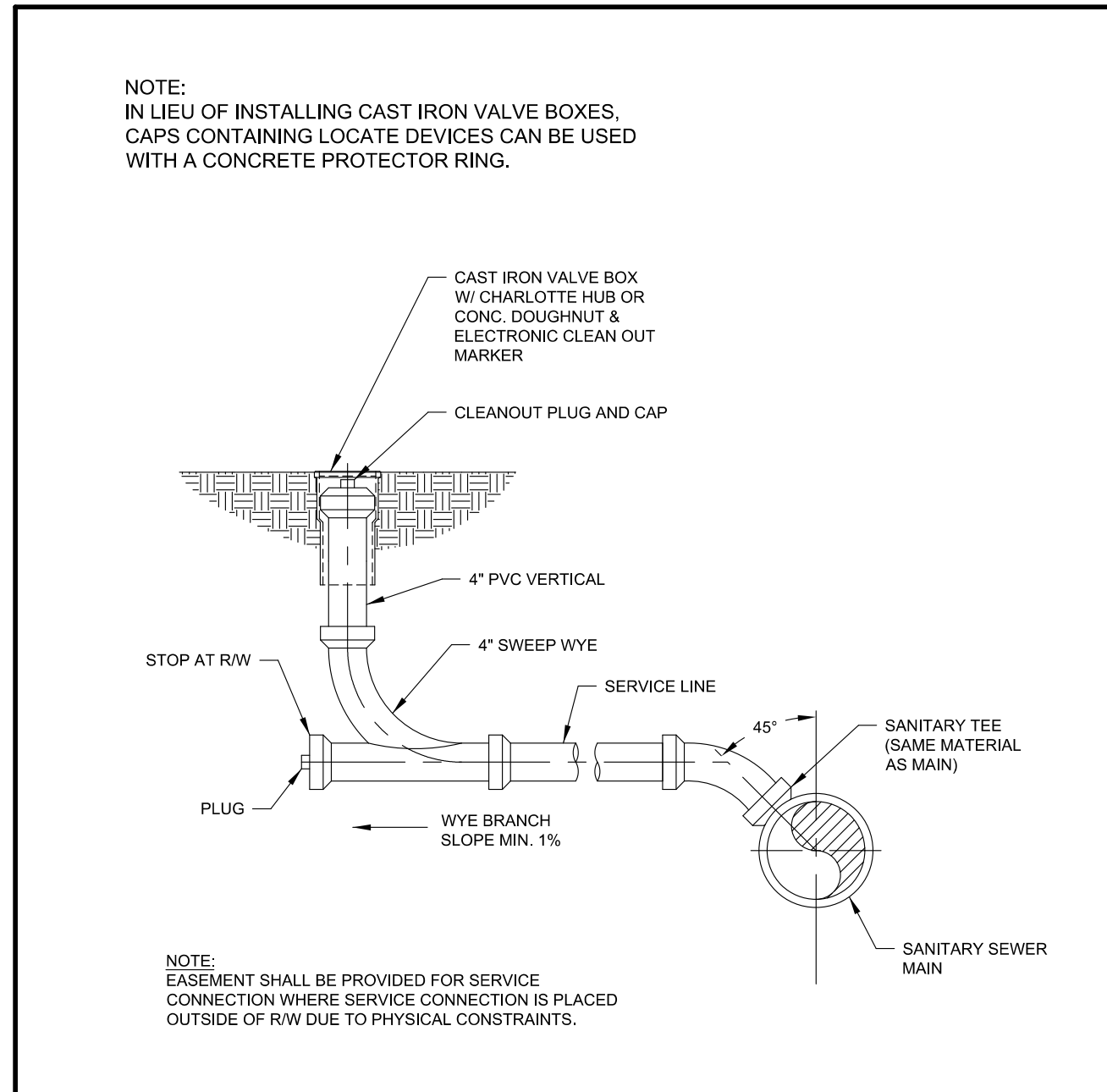
**MANUAL AIR RELIEF VALVE ASSEMBLY**  
NOT TO SCALE

Drawn By:	Name	Date	<b>JOHNSTON COUNTY</b> Department of Public Utilities P.O. Box 2293 Smithfield, NC 27577	<b>WATER STANDARD DETAIL</b> Manual Air Relief Valve Assembly	PAGE <b>25</b>
Checked By:					
Approved By:					
Scale:					
Rev.	Description	Date	Init.		



**TYPICAL SHALLOW MANHOLE**  
NOT TO SCALE

Drawn By:	Name	Date	<b>JOHNSTON COUNTY</b> Department of Public Utilities P.O. Box 2293 Smithfield, NC 27577	<b>SANITARY SEWER STANDARD DETAIL</b> Typical Shallow Manhole	PAGE <b>32</b>
Checked By:					
Approved By:					
Scale:					
Rev.	Description	Date	Init.		



**TYPICAL SEWER SERVICE CONNECTION**  
NOT TO SCALE

Drawn By:	Name	Date	<b>JOHNSTON COUNTY</b> Department of Public Utilities P.O. Box 2293 Smithfield, NC 27577	<b>SANITARY SEWER STANDARD DETAIL</b> Typical Sewer Service Connection	PAGE <b>41</b>
Checked By:					
Approved By:					
Scale:					
Rev.	Description	Date	Init.		

Prepared In the Office of:

**AECOM**

AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.  
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607  
919-854-6200 919-854-6259 (fax)  
F - 0342

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	UC-3D
DESIGNED BY:	8/9/2018
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

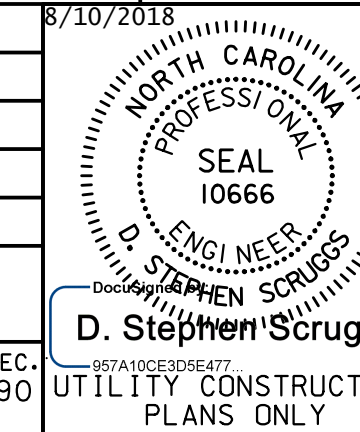
**DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED**

**UTILITY CONSTRUCTION**

**D. Stephen Scruggs**  
 UTILITY CONSTRUCTION PLANS ONLY

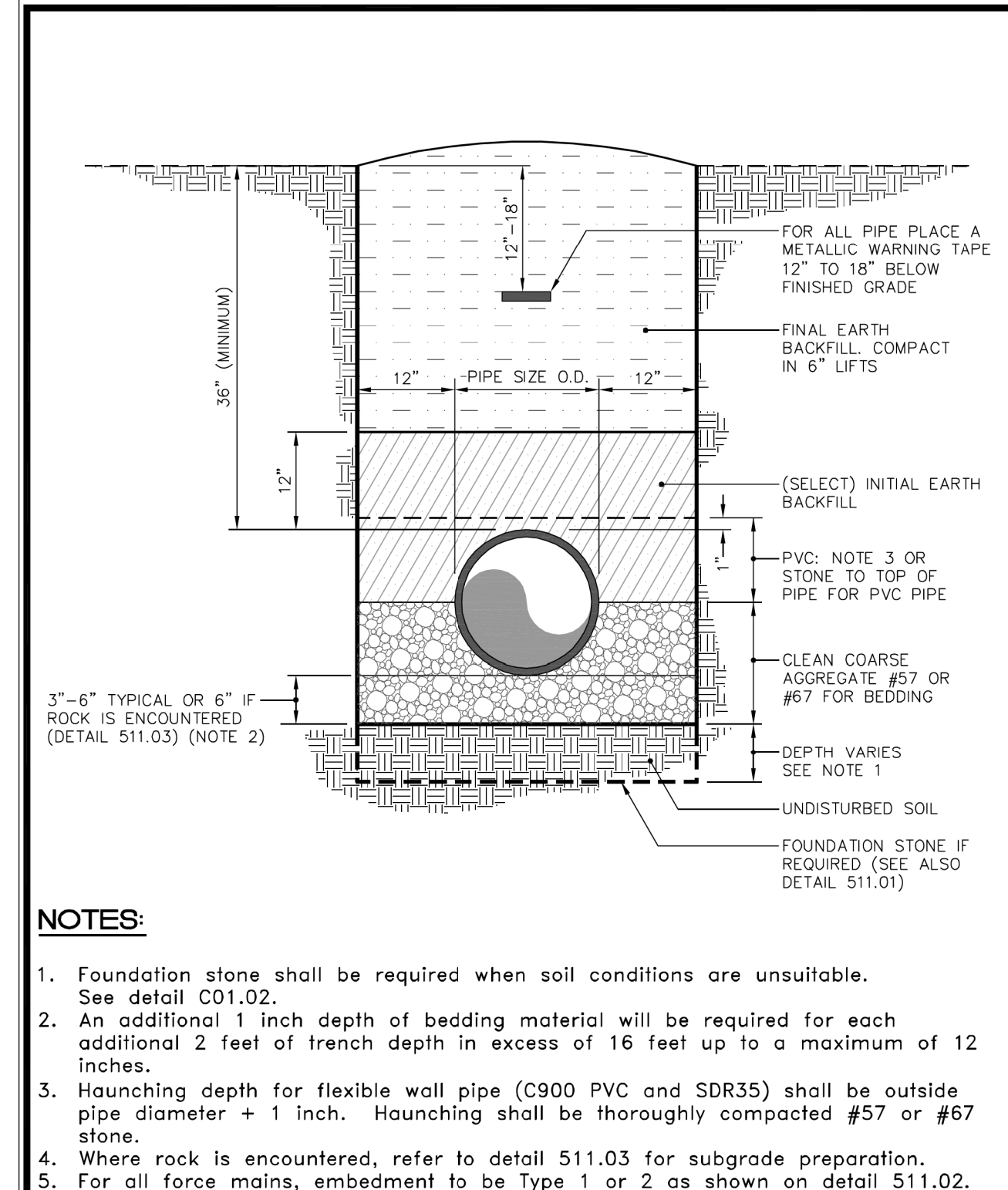
DATE: 8/9/2018  
 TIME: 3:57:41 PM  
 DRN: R3825B\_UC\_PAK03D.dgn

PROJECT REFERENCE NO. <b>R-3825B</b>	SHEET NO. <b>UC-3E</b>
DESIGNED BY:	8/10/2018
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	



**UTILITY CONSTRUCTION**

Details Provided by APPIAN Consulting Engineers - www.appianengineers.com 11/17/2010 - 5:06:38 PM

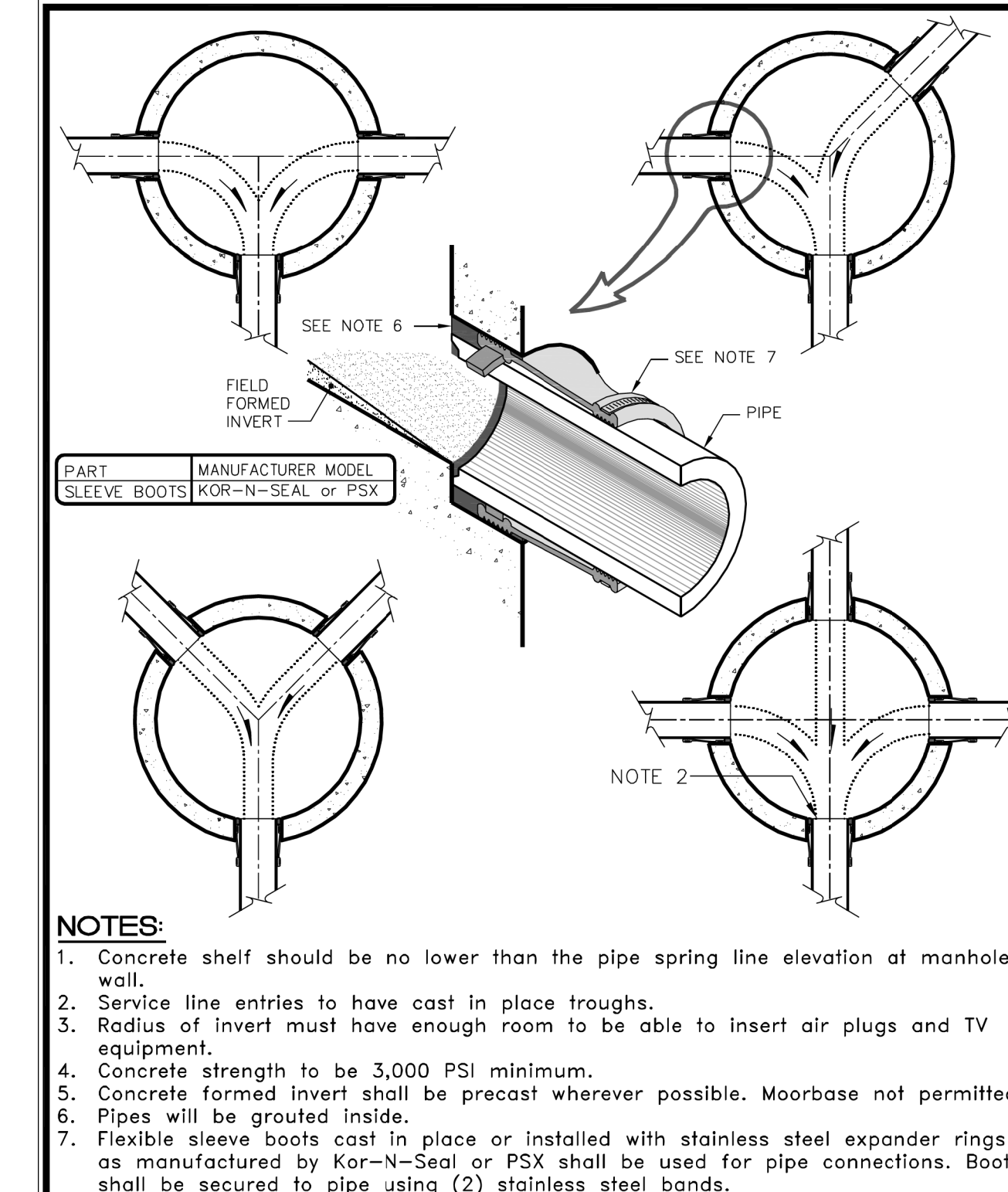


**TOWN of CLAYTON**  
USE WITH THE TOWN OF CLAYTON STANDARD SPECIFICATIONS ONLY

**SANITARY SEWER PIPE LAYING CONDITIONS**

SCALE: Not To Scale	DETAIL # 2.531.01
REVISION DATE: July, 2010	SHEET # 1 of 1

Details Provided by APPIAN Consulting Engineers - www.appianengineers.com 11/17/2010 - 5:06:28 PM

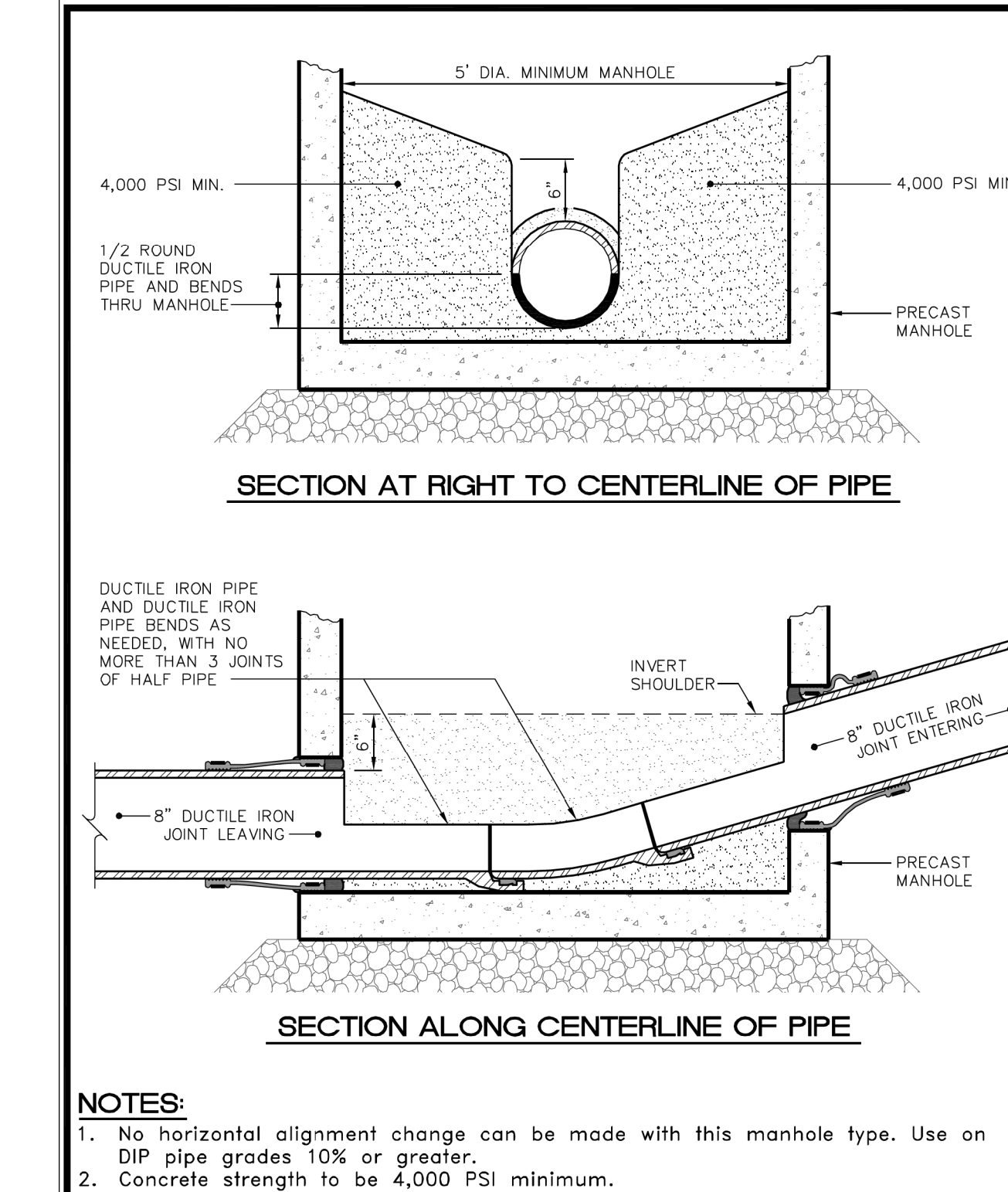


**TOWN of CLAYTON**  
USE WITH THE TOWN OF CLAYTON STANDARD SPECIFICATIONS ONLY

**TYPICAL SEWER INVERT PLANS FOR MANHOLES**

SCALE: Not To Scale	DETAIL # 2.532.01
REVISION DATE: July, 2010	SHEET # 1 of 1

Details Provided by APPIAN Consulting Engineers - www.appianengineers.com 11/17/2010 - 5:06:17 PM

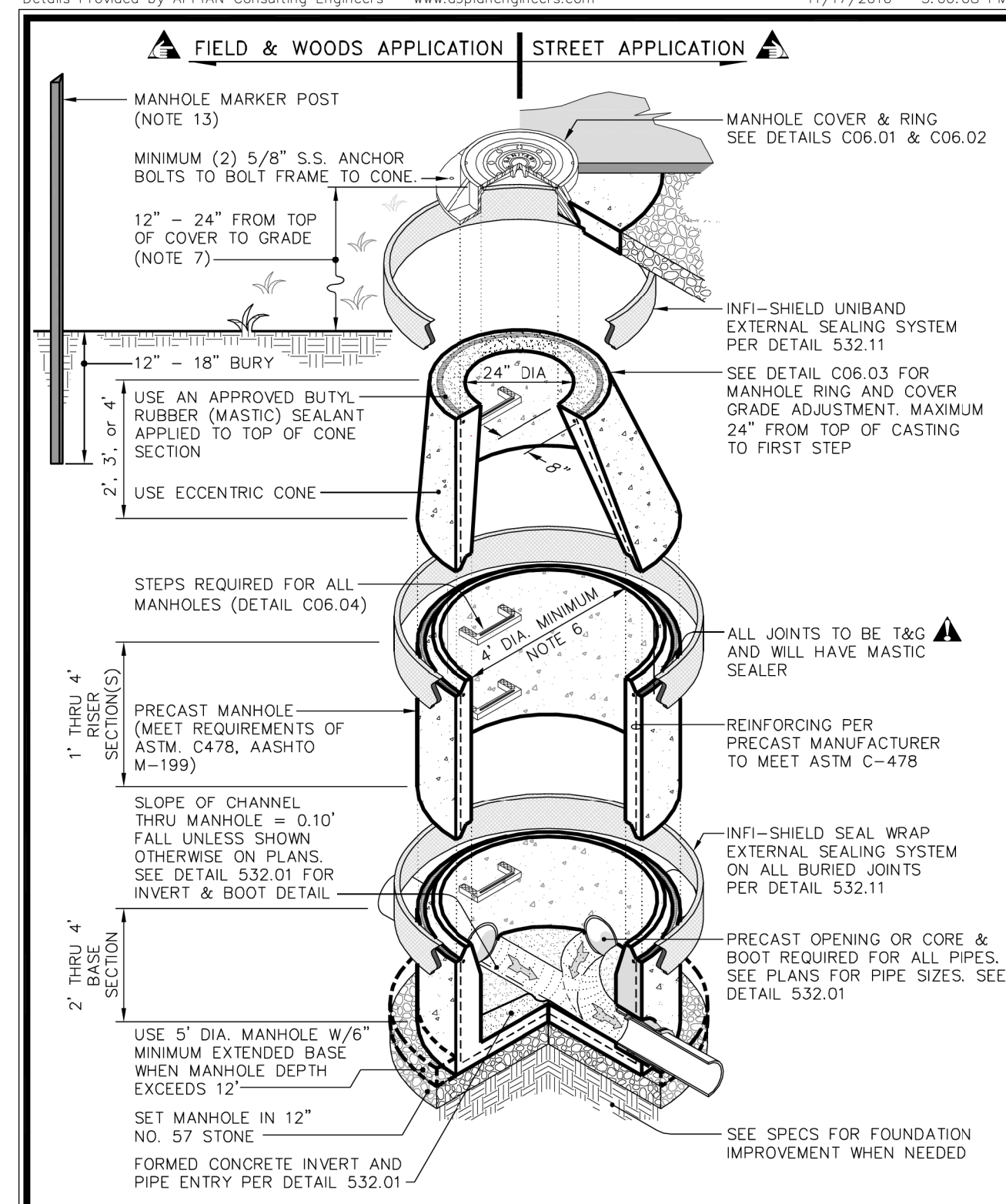


**TOWN of CLAYTON**  
USE WITH THE TOWN OF CLAYTON STANDARD SPECIFICATIONS ONLY

**HIGH VELOCITY INVERT DETAIL**

SCALE: Not To Scale	DETAIL # 2.532.02
REVISION DATE: July, 2010	SHEET # 1 of 1

Details Provided by APPIAN Consulting Engineers - www.appianengineers.com 11/17/2010 - 5:06:08 PM

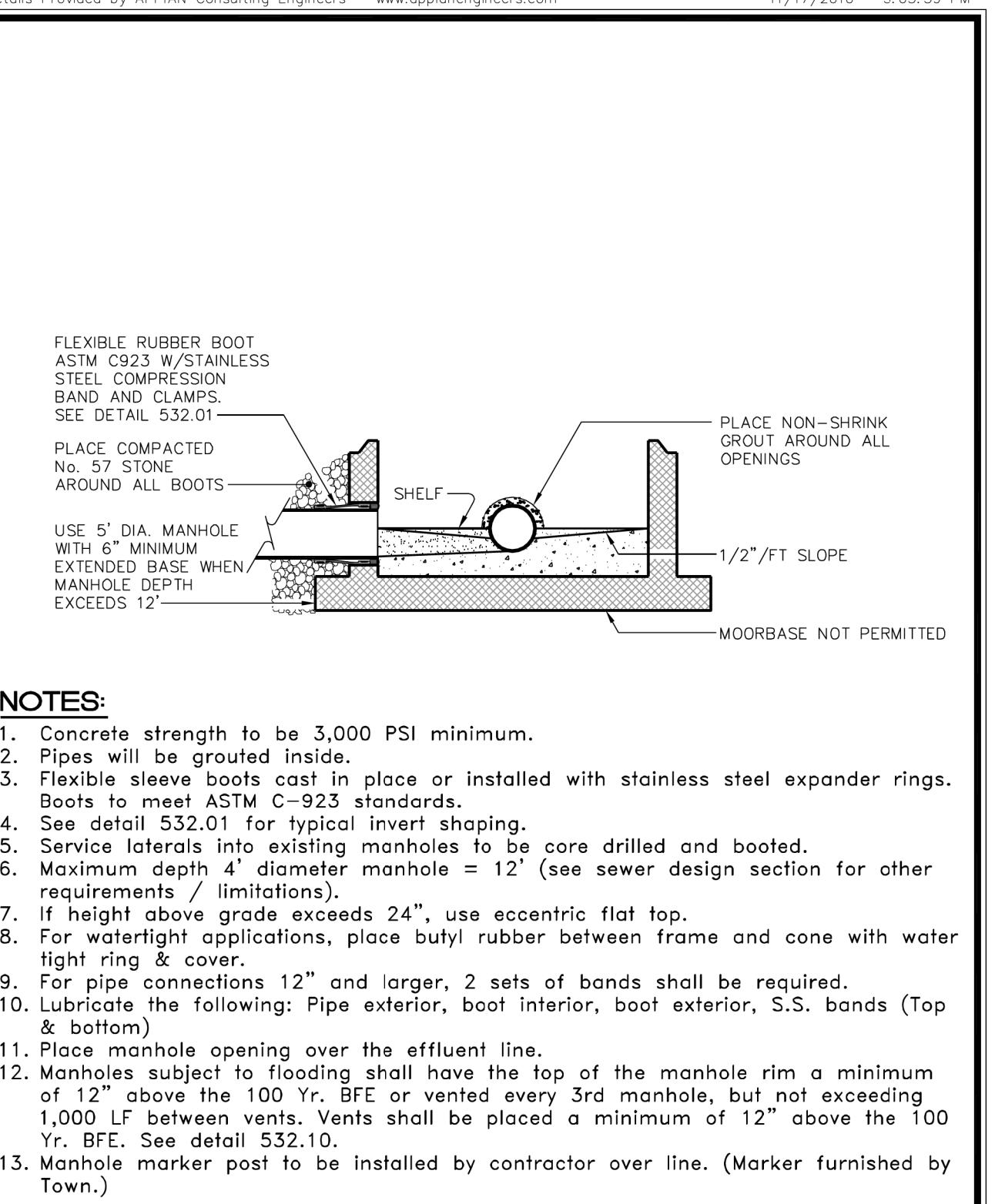


**TOWN of CLAYTON**  
USE WITH THE TOWN OF CLAYTON STANDARD SPECIFICATIONS ONLY

**STANDARD ECCENTRIC PRECAST MANHOLE DETAIL**

SCALE: Not To Scale	DETAIL # 2.532.03
REVISION DATE: July, 2010	SHEET # 1 of 2

Details Provided by APPIAN Consulting Engineers - www.appianengineers.com 11/17/2010 - 5:05:59 PM

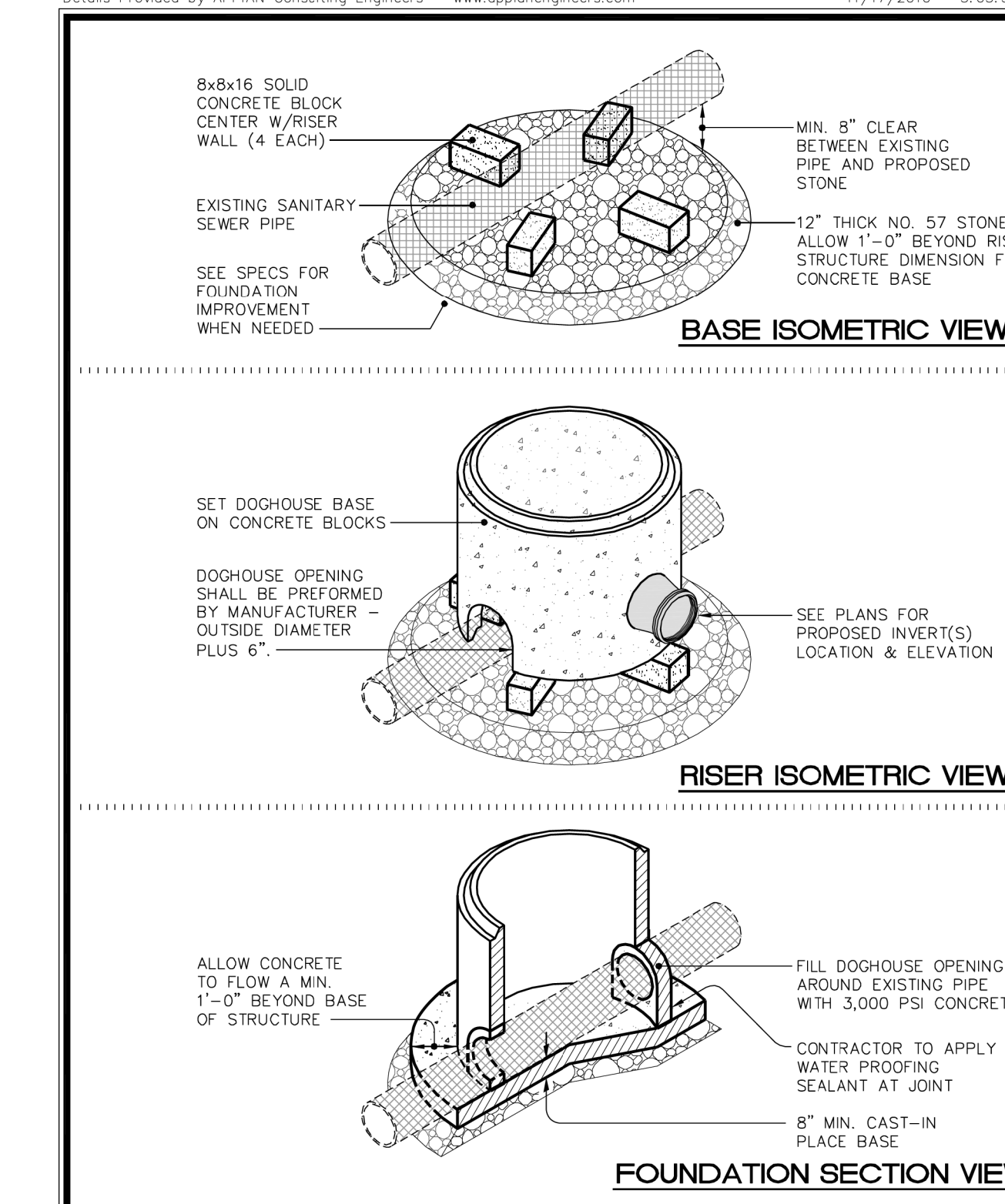


**TOWN of CLAYTON**  
USE WITH THE TOWN OF CLAYTON STANDARD SPECIFICATIONS ONLY

**STANDARD ECCENTRIC PRECAST MANHOLE DETAIL**

SCALE: Not To Scale	DETAIL # 2.532.03
REVISION DATE: July, 2010	SHEET # 2 of 2

Details Provided by APPIAN Consulting Engineers - www.appianengineers.com 11/17/2010 - 5:05:37 PM

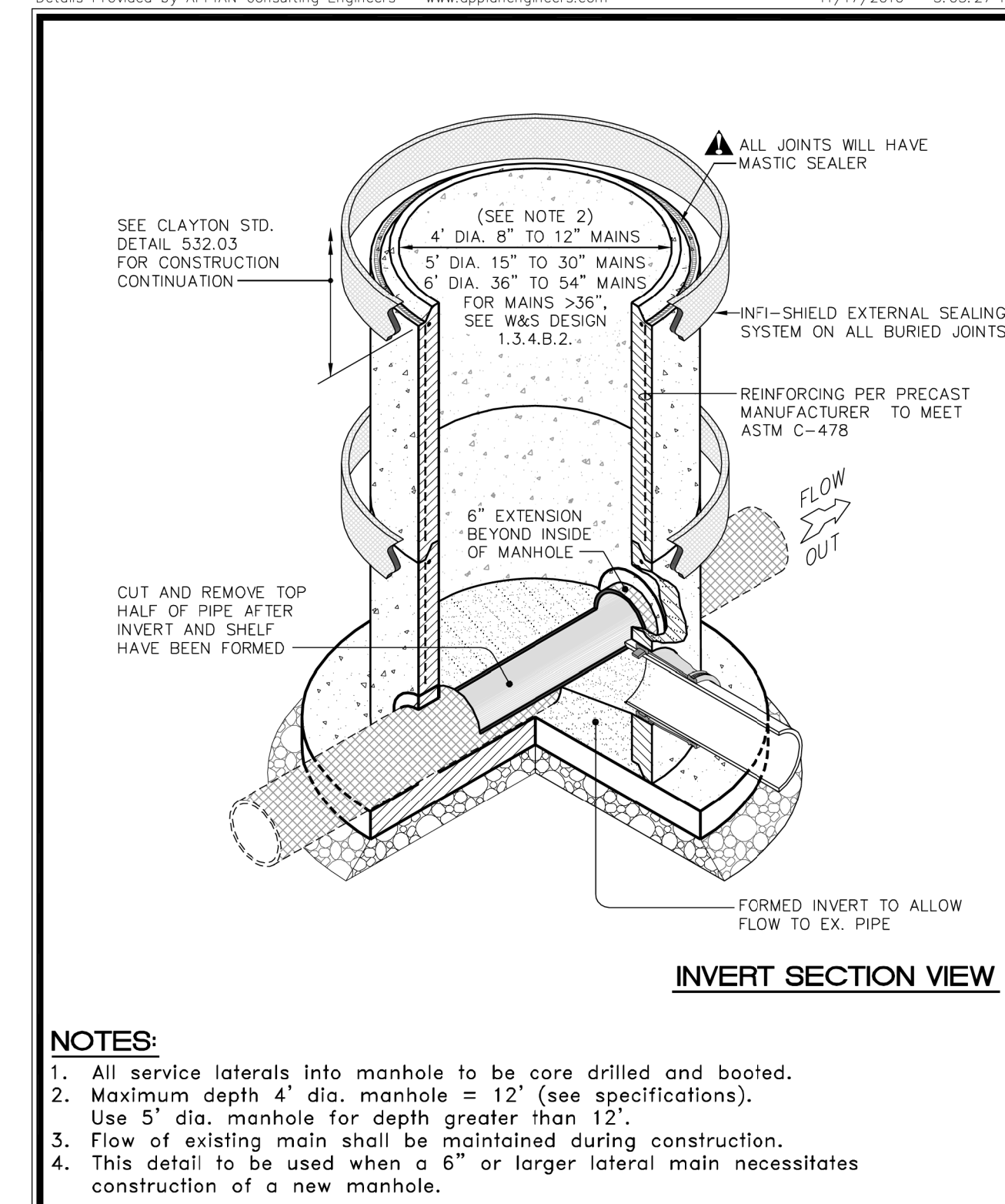


**TOWN of CLAYTON**  
USE WITH THE TOWN OF CLAYTON STANDARD SPECIFICATIONS ONLY

**DOGHOUSE MANHOLE INSTALLATION OVER EXISTING SEWER MAIN**

SCALE: Not To Scale	DETAIL # 2.532.05
REVISION DATE: July, 2010	SHEET # 1 of 2

Details Provided by APPIAN Consulting Engineers - www.appianengineers.com 11/17/2010 - 5:05:27 PM



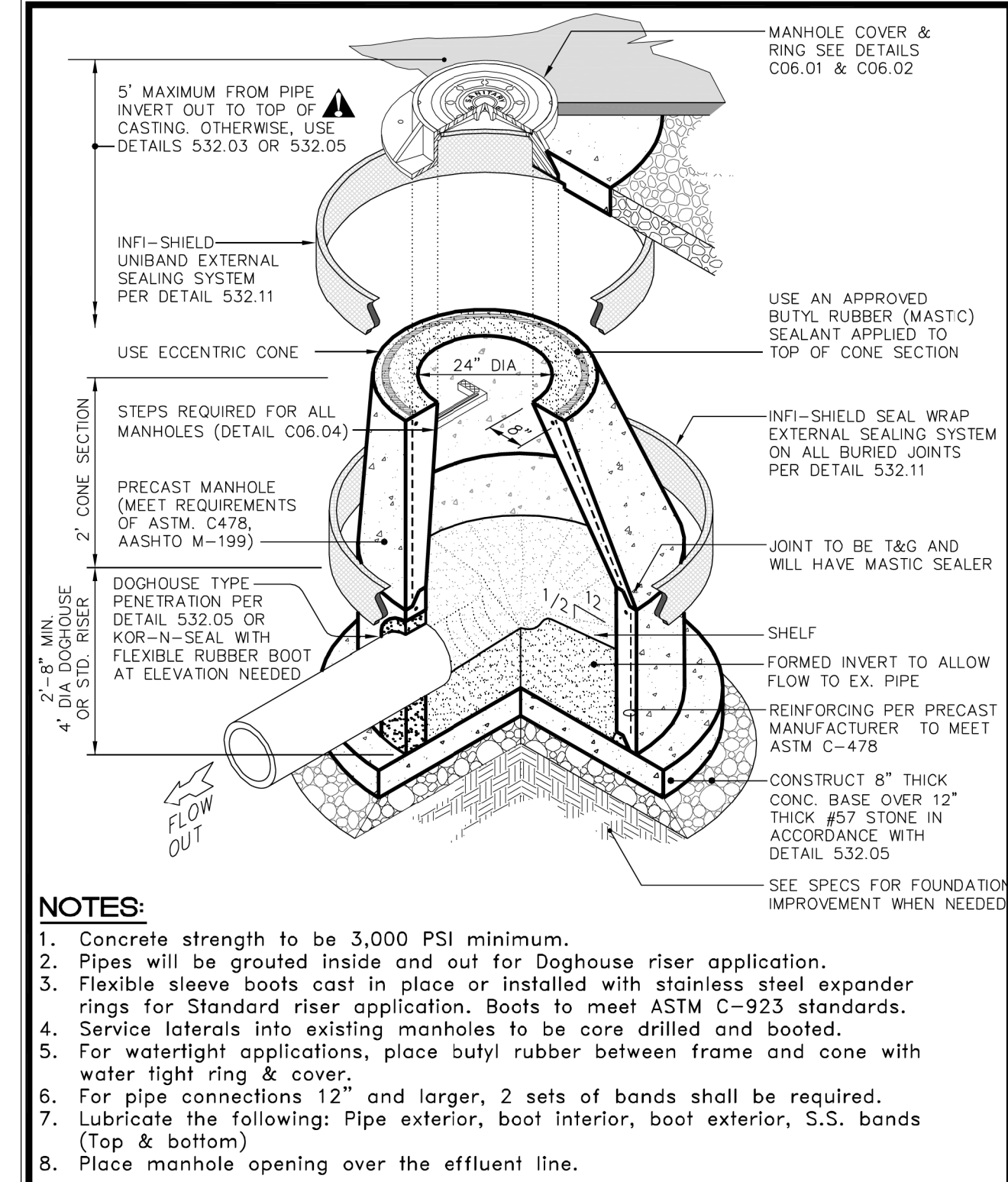
**TOWN of CLAYTON**  
USE WITH THE TOWN OF CLAYTON STANDARD SPECIFICATIONS ONLY

**DOGHOUSE MANHOLE INSTALLATION OVER EXISTING SEWER MAIN**

SCALE: Not To Scale	DETAIL # 2.532.05
REVISION DATE: July, 2010	SHEET # 2 of 2



Details Provided by APPIAN Consulting Engineers - www.appianengineers.com 11/17/2010 - 5:04:37 PM

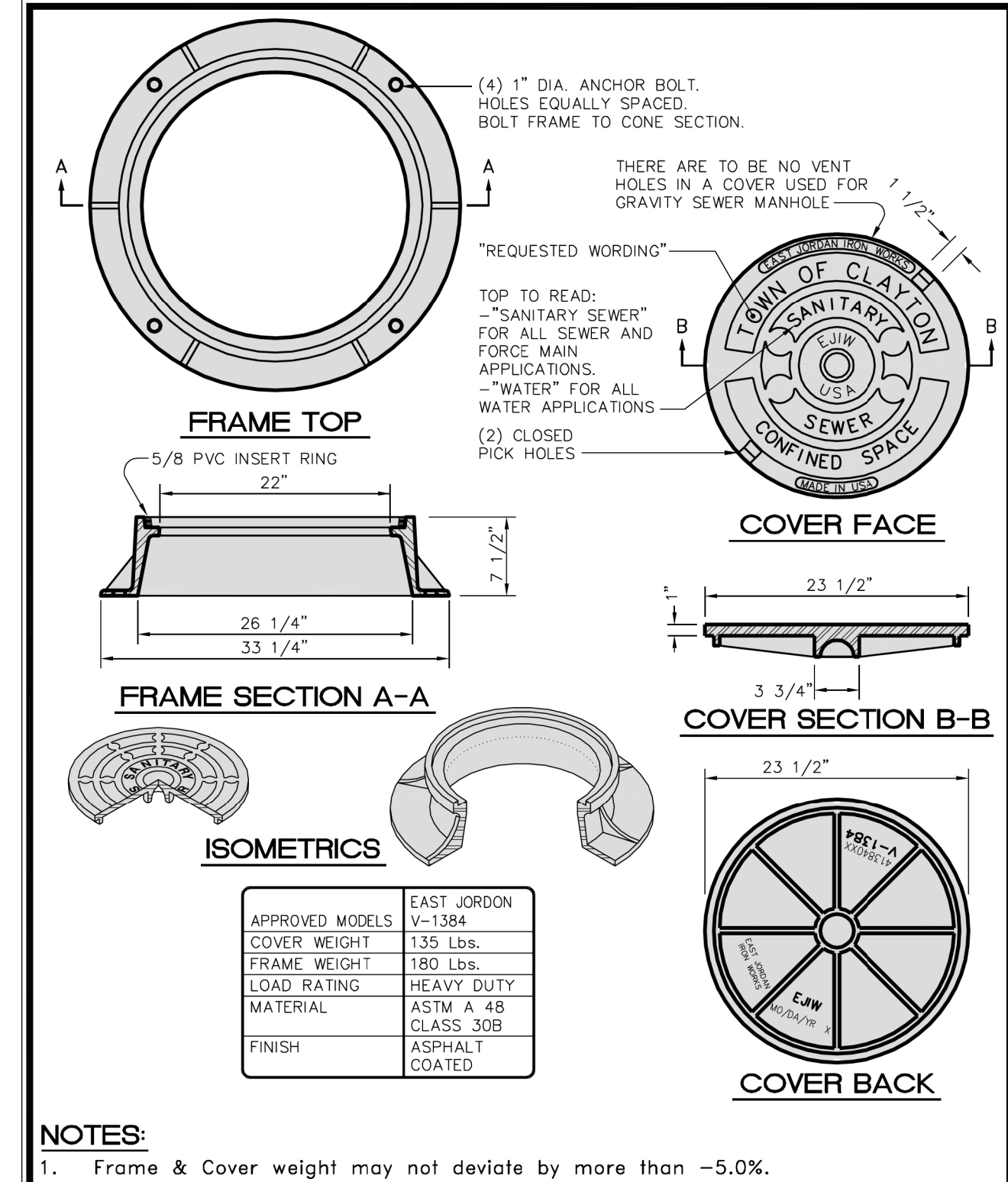


**TOWN of CLAYTON**  
USE WITH THE TOWN OF CLAYTON STANDARD SPECIFICATIONS ONLY

**TYPICAL SHALLOW PRECAST MANHOLE DETAIL**

SCALE: Not To Scale	DETAIL # C06.07
REVISION DATE: July, 2010	SHEET # 1 of 1

Details Provided by APPIAN Consulting Engineers - www.appianengineers.com 08/05/2010 - 5:09:49 PM



**TOWN of CLAYTON**  
USE WITH THE TOWN OF CLAYTON STANDARD SPECIFICATIONS ONLY

**STANDARD MANHOLE FRAME and COVER**

SCALE: Not To Scale	DETAIL # C06.01
REVISION DATE: July, 2010	SHEET # 1 of 1

Prepared In the Office of:



AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.  
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607  
919-854-6200 919-854-6259 (fax)  
F-0342

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT REFERENCE NO. <b>R-3825B</b>	SHEET NO. <b>UC-3F</b>
DESIGNED BY:	8/10/2018
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

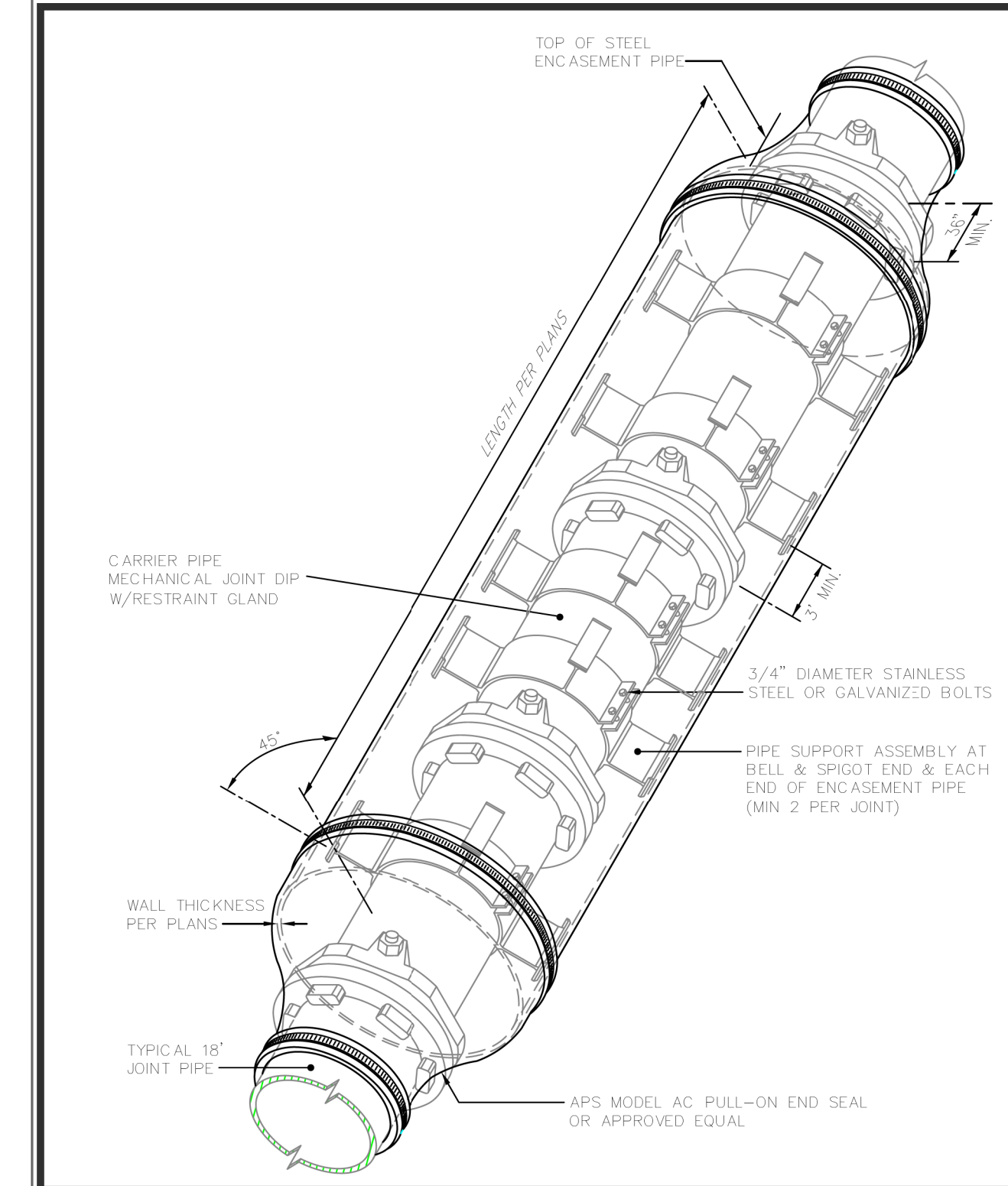
SEAL 10666

D. Stephen Scruggs

UTILITY CONSTRUCTION PLANS ONLY

**UTILITY CONSTRUCTION**

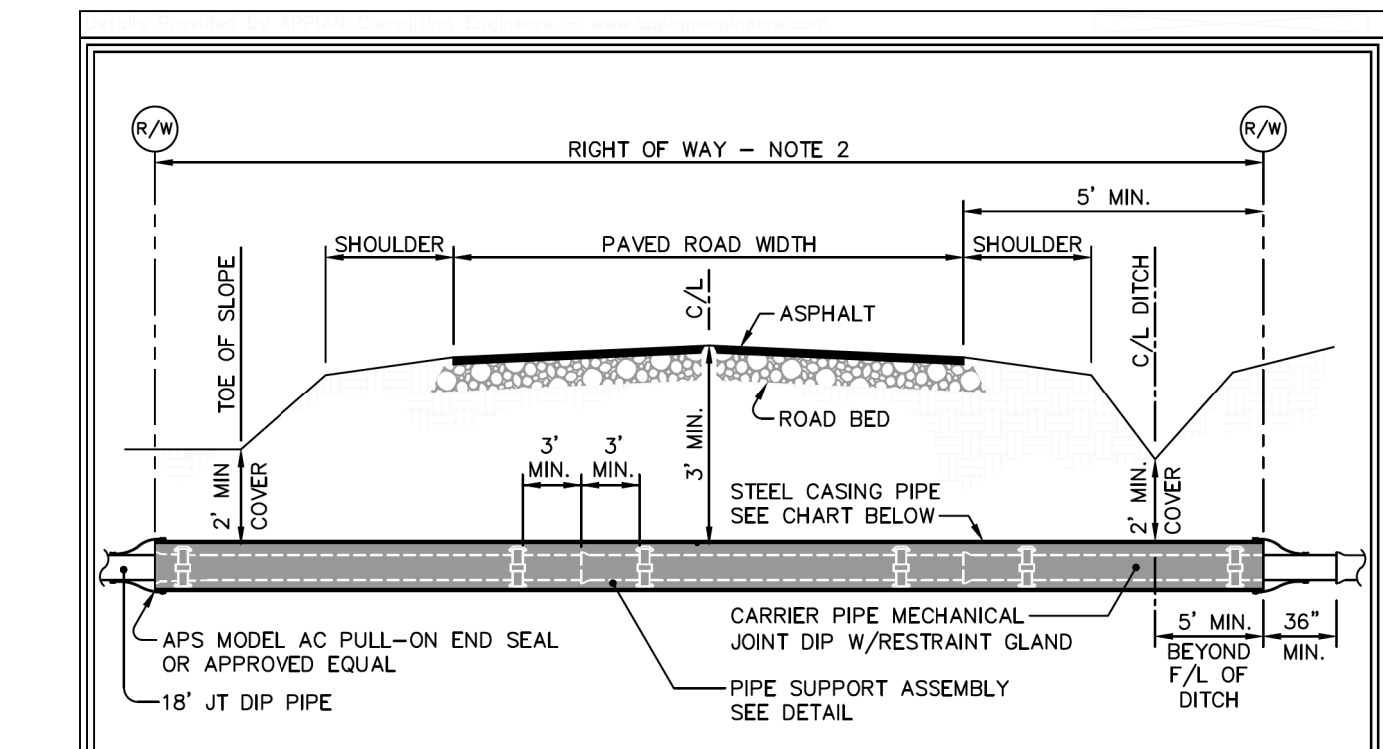
Details Provided by APPIAN Consulting Engineers - www.appianengineers.com



**TOWN of CLAYTON**  
USE WITH THE TOWN OF CLAYTON STANDARD SPECIFICATIONS ONLY

**TYPICAL DETAIL FOR BORE UNDER PAVED ROADS / HIGHWAYS**

SCALE: Not To Scale	DETAIL # C07.01
REVISION DATE: April, 2011	SHEET # 2 of 2



CARRIER PIPE NOMINAL DIAMETER	CARRIER PIPE OUTSIDE DIAMETER	CASING PIPE			
		RAILROAD OUTSIDE DIAMETER	RAILROAD WALL THICKNESS	HIGHWAY OUTSIDE DIAMETER	HIGHWAY WALL THICKNESS
6" & UNDER	6.90"	12 3/4"	0.188"	12 3/4"	0.250"
8"	9.05"	16"	0.250"	16"	0.250"
10"	11.10"	20"	0.281"	20"	0.250"
12"	13.20"	24"	0.344"	24"	0.250"
14"	15.30"	28"	0.406"	28"	0.312"
16"	17.40"	30"	0.406"	30"	0.312"
20"	21.60"	42"	0.563"	42"	0.312"
24"	25.80"	42"	0.563"	42"	0.312"

\*DIMENSIONS ARE WITHOUT COATINGS

- NOTES:**
1. Installation by dry bore & jacking.
  2. Bore to run from Right-of-Way to Right-of-Way unless approved otherwise by Town of Clayton.
  3. Grease encasement pipe as required for ease of installation.
  4. Steel pipe to be 35,000 psi min. yield strength, grade B.
  5. All exposed metal to be coated with epoxy or asphaltic material.
  6. Skids to be installed, manufactured by ITT Grinnell, Charlotte, N.C. / Spider Manufacturing, Durham, N.C. / APS casing spacers by Advanced Products Systems Inc, Lafayette, LA. / or approved equal.

**TOWN of CLAYTON**  
USE WITH THE TOWN OF CLAYTON STANDARD SPECIFICATIONS ONLY

**TYPICAL DETAIL FOR BORE UNDER PAVED ROADS / HIGHWAYS**

SCALE: Not To Scale	DETAIL # C07.01
REVISION DATE: July, 2010	SHEET # 1 of 2

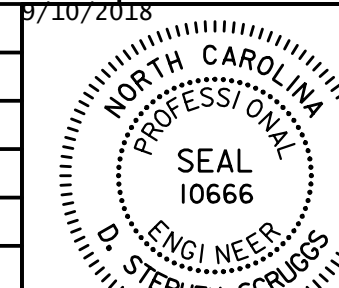
DATE: 8/9/2018  
TIME: 6:02:57 PM  
DGN: R3825B\_UC\_P003F.dgn

Prepared In the Office of:



AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.  
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607  
919-854-6200 919-854-6259 (fax)  
F - 0342

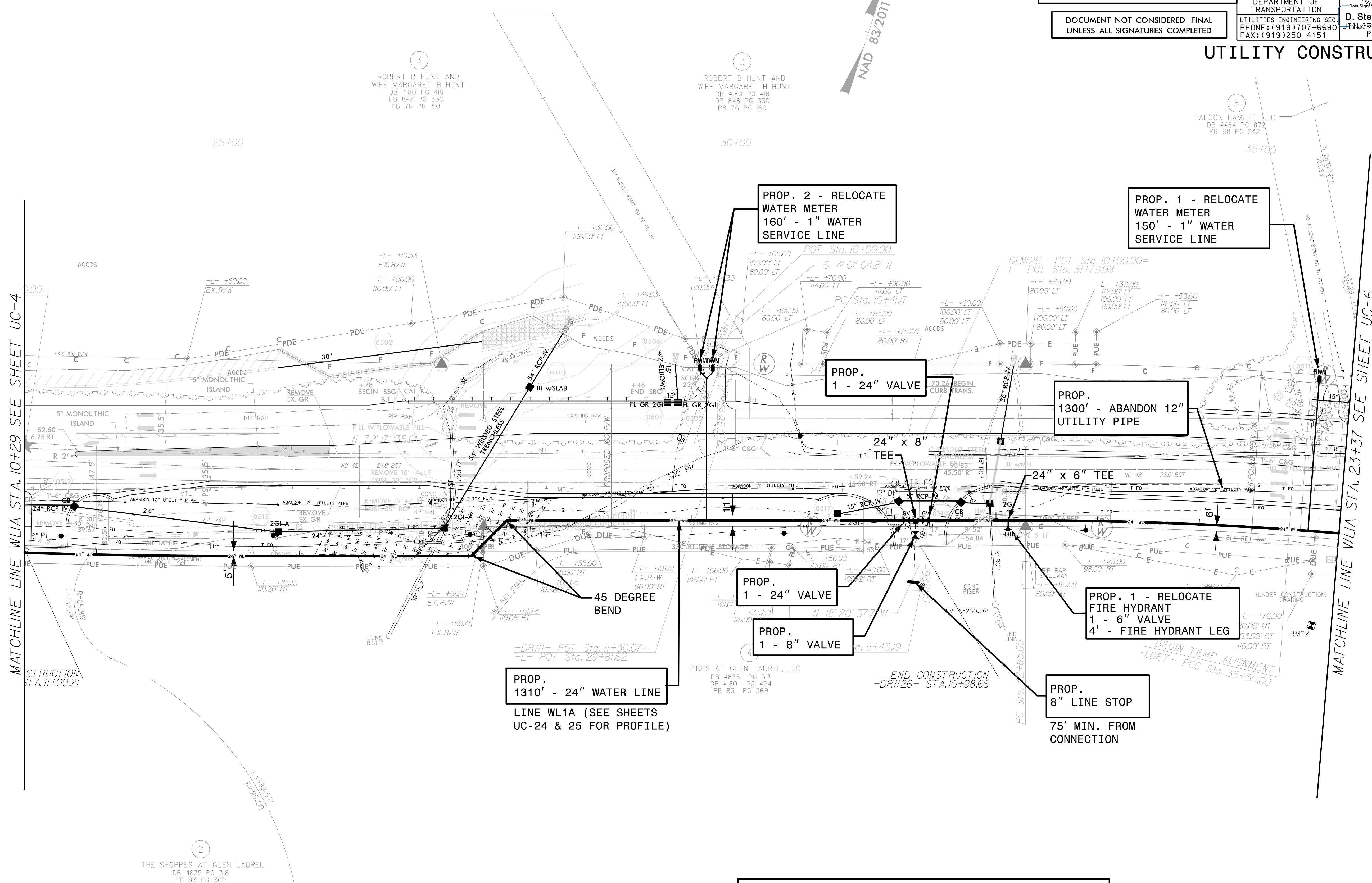
PROJECT REFERENCE NO.	SHEET NO.
R-3825B	UC-5
DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SECTION	
PHONE: (919) 707-6690	
FAX: (919) 250-4151	



D. Stephen Scruggs  
REGISTERED PROFESSIONAL ENGINEER  
PLANS ONLY

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

### UTILITY CONSTRUCTION



MATCHLINE LINE WL1A STA. 10+29 SEE SHEET UC-4

MATCHLINE LINE WL1A STA. 23+37 SEE SHEET UC-6

PROP. 1310' - 24" WATER LINE  
LINE WL1A (SEE SHEETS  
UC-24 & 25 FOR PROFILE)

PROP. 2 - RELOCATE  
WATER METER  
160' - 1" WATER  
SERVICE LINE

PROP. 1 - RELOCATE  
WATER METER  
150' - 1" WATER  
SERVICE LINE

PROP.  
1 - 24" VALVE

PROP.  
1300' - ABANDON 12"  
UTILITY PIPE

PROP.  
1 - 24" VALVE

PROP.  
1 - 8" VALVE

PROP. 1 - RELOCATE  
FIRE HYDRANT  
1 - 6" VALVE  
4' - FIRE HYDRANT LEG

PROP.  
8" LINE STOP  
75' MIN. FROM  
CONNECTION

The estimated quantity of Ductile Iron Water Pipe Fittings on this plan sheet is 2495 pounds. The actual quantity and type of fittings will vary based on field conditions.

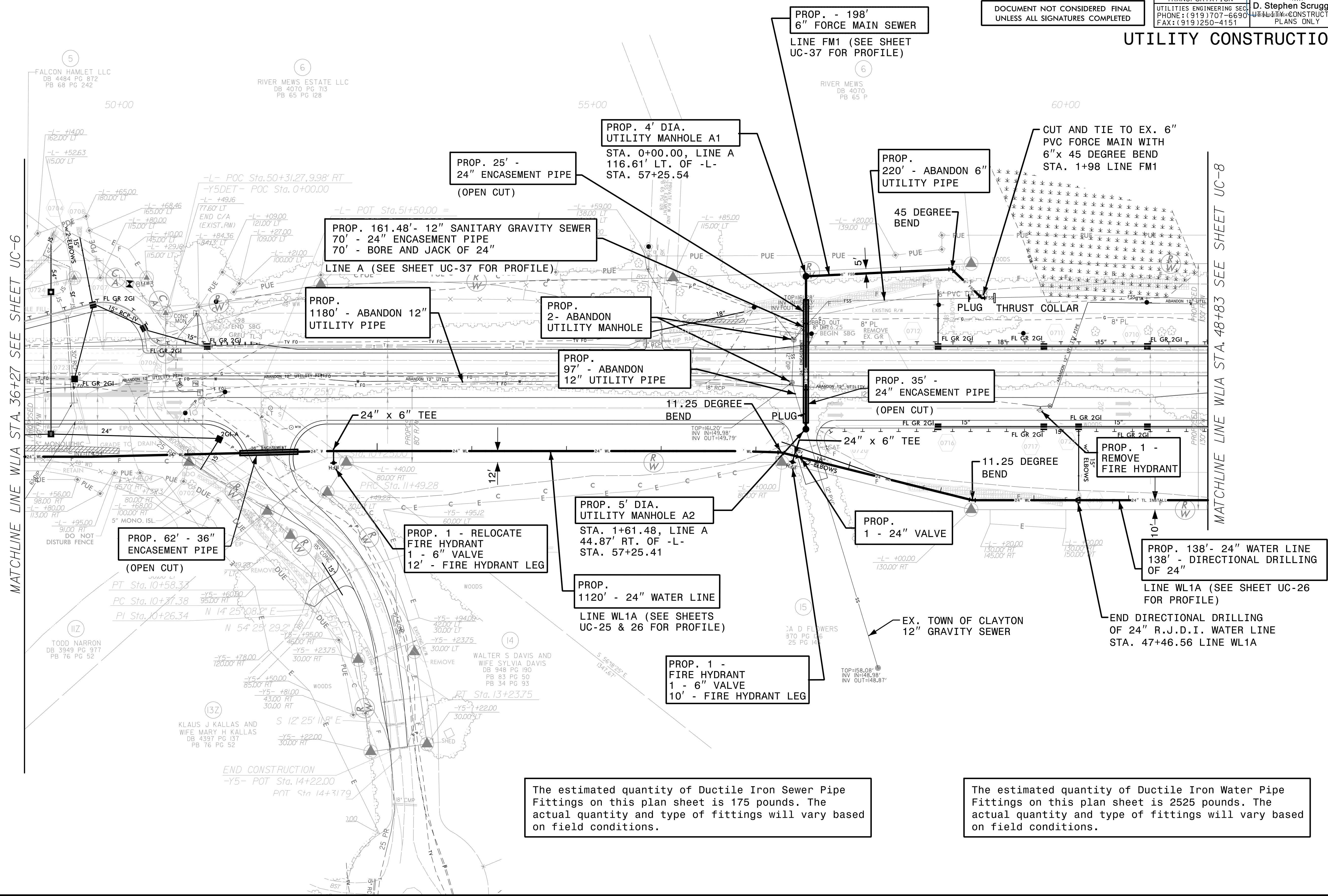
DATE: 9/7/2018  
TIME: 2:52:52 PM  
DGN: R3825B\_UC\_P05.dgn

2  
THE SHOPPES AT GLEN LAUREL  
DB 4835 PG 316  
PB 83 PG 369

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	UC-7
DESIGNED BY:	9/17/2018
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SECTION	
PHONE: (919) 707-6690	
FAX: (919) 250-4151	
D. Stephen Scruggs SEAL 10666 REGISTERED PROFESSIONAL ENGINEER	

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

## UTILITY CONSTRUCTION



The estimated quantity of Ductile Iron Sewer Pipe Fittings on this plan sheet is 175 pounds. The actual quantity and type of fittings will vary based on field conditions.

The estimated quantity of Ductile Iron Water Pipe Fittings on this plan sheet is 2525 pounds. The actual quantity and type of fittings will vary based on field conditions.

DATE: 9/17/2018  
TIME: 12:03:29 PM  
DGN: R3825B\_UC\_PAK7.dgn

Prepared In the Office of:



AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.  
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607  
919-854-6200 919-854-6259 (fax)  
F-0342

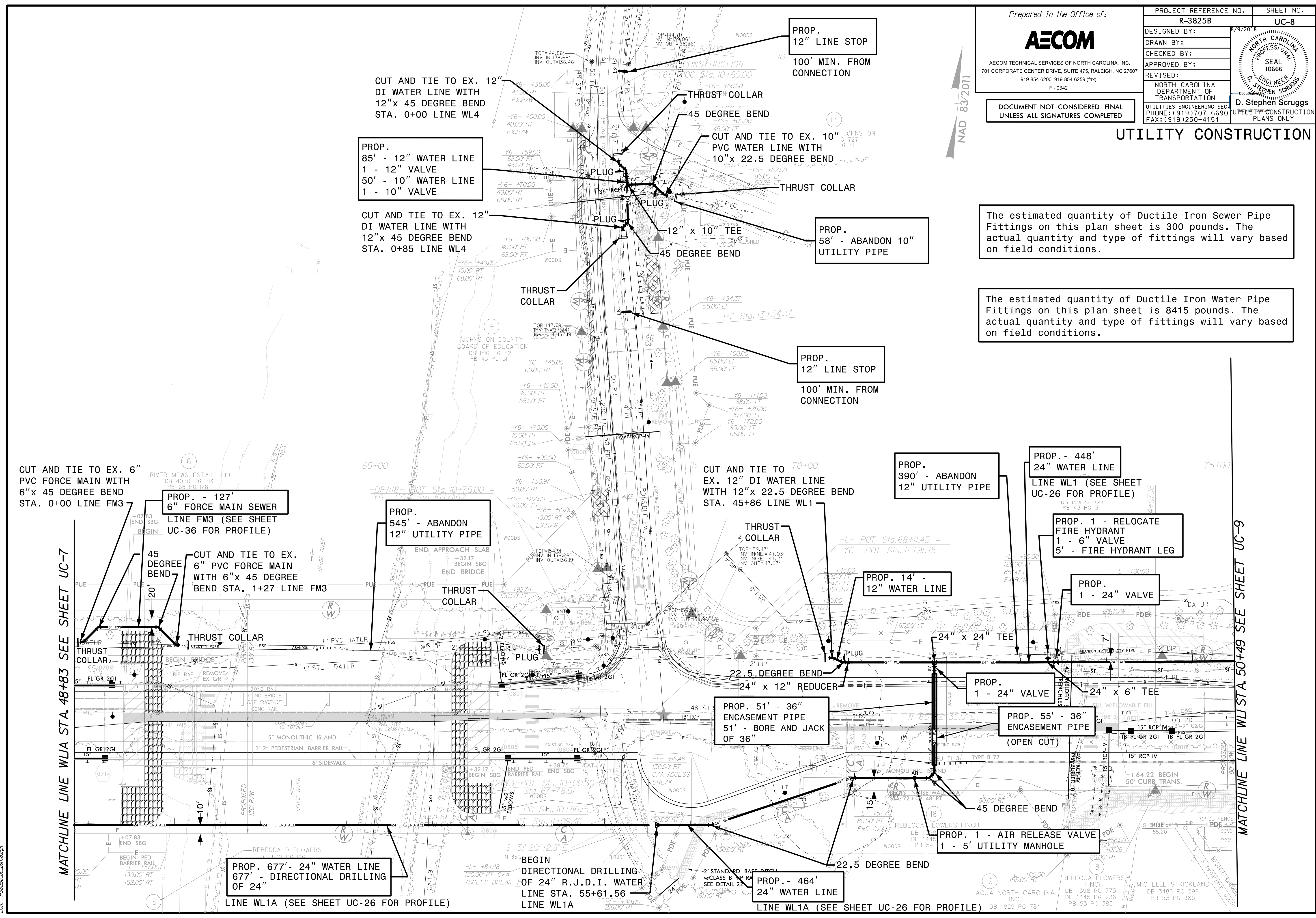
PROJECT REFERENCE NO. <b>R-3825B</b>	SHEET NO. <b>UC-8</b>
DESIGNED BY:	8/9/2018
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SECTION PHONE: (919) 707-6690 FAX: (919) 250-4151	

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

# UTILITY CONSTRUCTION

The estimated quantity of Ductile Iron Sewer Pipe Fittings on this plan sheet is 300 pounds. The actual quantity and type of fittings will vary based on field conditions.

The estimated quantity of Ductile Iron Water Pipe Fittings on this plan sheet is 8415 pounds. The actual quantity and type of fittings will vary based on field conditions.



CUT AND TIE TO EX. 12" DI WATER LINE WITH 12"x 45 DEGREE BEND STA. 0+00 LINE WL4

PROP. 85' - 12" WATER LINE  
1 - 12" VALVE  
50' - 10" WATER LINE  
1 - 10" VALVE

CUT AND TIE TO EX. 12" DI WATER LINE WITH 12"x 45 DEGREE BEND STA. 0+85 LINE WL4

PROP. 12" LINE STOP  
100' MIN. FROM CONNECTION

THRUST COLLAR  
45 DEGREE BEND

CUT AND TIE TO EX. 10" PVC WATER LINE WITH 10"x 22.5 DEGREE BEND

PROP. 58' - ABANDON 10" UTILITY PIPE

PROP. 12" LINE STOP  
100' MIN. FROM CONNECTION

CUT AND TIE TO EX. 6" PVC FORCE MAIN WITH 6"x 45 DEGREE BEND STA. 0+00 LINE FM3

PROP. - 127' 6" FORCE MAIN SEWER LINE FM3 (SEE SHEET UC-36 FOR PROFILE)

CUT AND TIE TO EX. 6" PVC FORCE MAIN WITH 6"x 45 DEGREE BEND STA. 1+27 LINE FM3

PROP. 545' - ABANDON 12" UTILITY PIPE

CUT AND TIE TO EX. 12" DI WATER LINE WITH 12"x 22.5 DEGREE BEND STA. 45+86 LINE WL1

PROP. 390' - ABANDON 12" UTILITY PIPE

PROP. - 448' 24" WATER LINE LINE WL1 (SEE SHEET UC-26 FOR PROFILE)

PROP. 1 - RELOCATE FIRE HYDRANT  
1 - 6" VALVE  
5 - FIRE HYDRANT LEG

PROP. 1 - 24" VALVE

PROP. 14' - 12" WATER LINE

PROP. 1 - 24" VALVE

PROP. 55' - 36" ENCASUREMENT PIPE (OPEN CUT)

PROP. 1 - AIR RELEASE VALVE  
1 - 5' UTILITY MANHOLE

PROP. 677' - 24" WATER LINE  
677' - DIRECTIONAL DRILLING OF 24"

BEGIN DIRECTIONAL DRILLING OF 24" R.J.D.I. WATER LINE STA. 55+61.56 LINE WL1A

PROP. 51' - 36" ENCASUREMENT PIPE  
51' - BORE AND JACK OF 36"

PROP. - 464' 24" WATER LINE  
LINE WL1A (SEE SHEET UC-26 FOR PROFILE)

MATCHLINE LINE WL1A STA. 48+83 SEE SHEET UC-7

MATCHLINE LINE WL1 STA. 50+49 SEE SHEET UC-9

DATE: 8/9/2018  
TIME: 3:41:3 PM  
DGN: R3825B\_UC\_PAK08.dgn

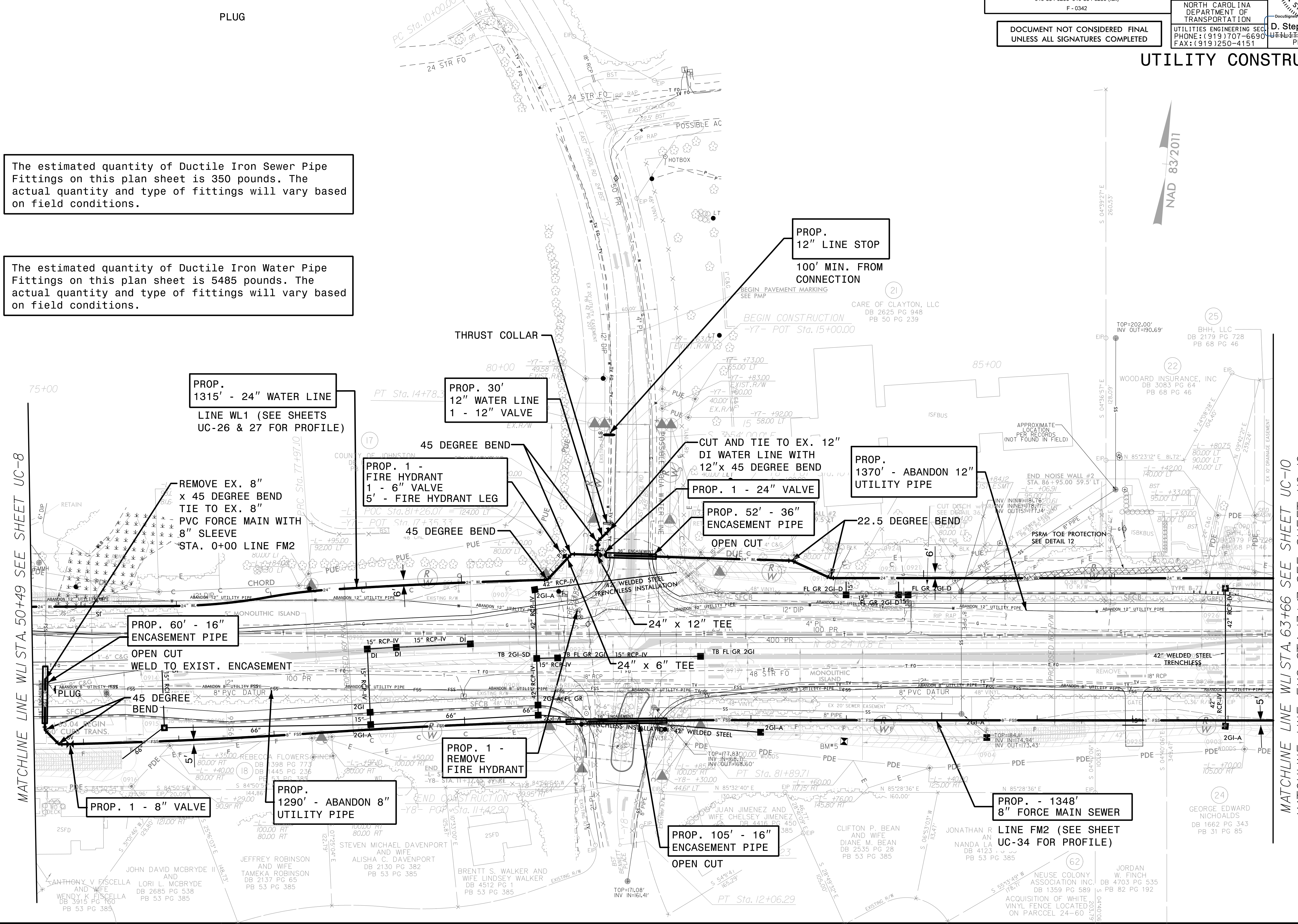
PROJECT REFERENCE NO.	R-3825B	SHEET NO.	UC-9
DESIGNED BY:		DATE:	9/17/2018
DRAWN BY:			
CHECKED BY:			
APPROVED BY:			
REVISED:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		D. Stephen Scruggs SEAL 10666 REGISTERED PROFESSIONAL ENGINEER	
UTILITIES ENGINEERING SECTION		DATE: 9/17/2018	
PHONE: (919) 707-6690		FAX: (919) 250-4151	

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

## UTILITY CONSTRUCTION

The estimated quantity of Ductile Iron Sewer Pipe Fittings on this plan sheet is 350 pounds. The actual quantity and type of fittings will vary based on field conditions.

The estimated quantity of Ductile Iron Water Pipe Fittings on this plan sheet is 5485 pounds. The actual quantity and type of fittings will vary based on field conditions.



MATCHLINE LINE WL1 STA. 50+49 SEE SHEET UC-8

MATCHLINE LINE WL1 STA. 63+66 SEE SHEET UC-10  
MATCHLINE LINE FM2 STA. 13+47 SEE SHEET UC-10

DATE: 9/17/2018  
TIME: 12:05:09 PM  
DGN: R3825B\_UC-9\_PWD/BAM

ANTHONY V. FISCELLA AND WIFE  
DB 3915 PG 180  
PB 53 PG 385

JOHN DAVID MCBRYDE II AND WIFE  
LORI L. MCBRYDE  
DB 2685 PG 538  
PB 53 PG 385

JEFFREY ROBINSON AND WIFE  
TAMEKA ROBINSON  
DB 2137 PG 65  
PB 53 PG 385

STEVEN MICHAEL DAVENPORT AND WIFE  
ALISHA C. DAVENPORT  
DB 2130 PG 382  
PB 53 PG 385

BRENT S. WALKER AND WIFE  
LINDSEY WALKER  
DB 4512 PG 1  
PB 53 PG 385

CLIFTON P. BEAN AND WIFE  
DIANE M. BEAN  
DB 2535 PG 28  
PB 53 PG 385

JONATHAN R. AN AND WIFE  
NANDA LA.  
DB 4123 PG 1  
PB 53 PG 385

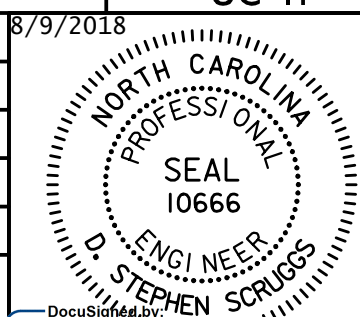
JORDAN W. FINCH  
DB 4703 PG 535  
PB 82 PG 192

NEUSE COLONY ASSOCIATION, INC.  
DB 1359 PG 589

ACQUISITION OF WHITE VINYL FENCE LOCATED ON PARCEL 24-60

GEORGE EDWARD NICHOLDS  
DB 1662 PG 343  
PB 31 PG 85

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	UC-11
DESIGNED BY:	8/9/2018
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SECTION	
PHONE: (919) 707-6690	
FAX: (919) 250-4151	

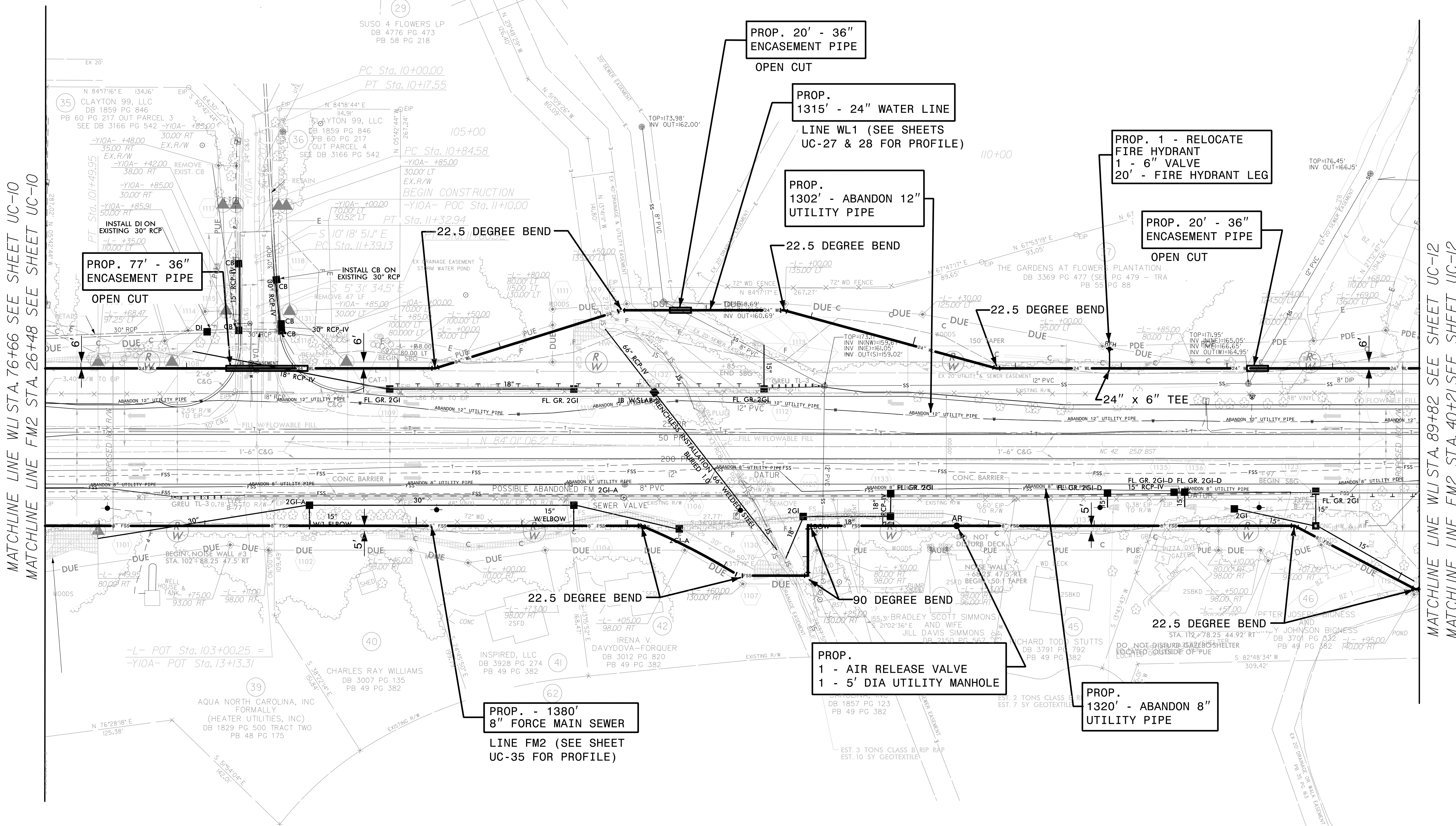


D. Stephen Scruggs  
UTILITY CONSTRUCTION PLANS ONLY

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

# UTILITY CONSTRUCTION

NAD 83/2011



MATCHLINE LINE WL STA. 76+66 SEE SHEET UC-10  
MATCHLINE LINE FM STA. 26+48 SEE SHEET UC-10

MATCHLINE LINE WL STA. 89+82 SEE SHEET UC-12  
MATCHLINE LINE FM STA. 40+21 SEE SHEET UC-12

The estimated quantity of Ductile Iron Sewer Pipe Fittings on this plan sheet is 690 pounds. The actual quantity and type of fittings will vary based on field conditions.

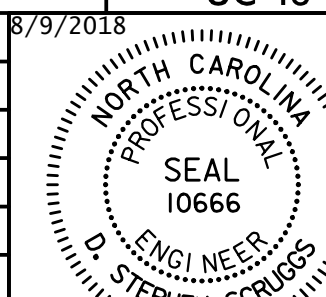
The estimated quantity of Ductile Iron Water Pipe Fittings on this plan sheet is 4045 pounds. The actual quantity and type of fittings will vary based on field conditions.

Prepared In the Office of:



AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.  
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607  
919-854-6200 919-854-6259 (fax)  
F - 0342

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	UC-13
DESIGNED BY:	8/9/2018
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SECTION PHONE: (919) 707-6690 FAX: (919) 250-4151	

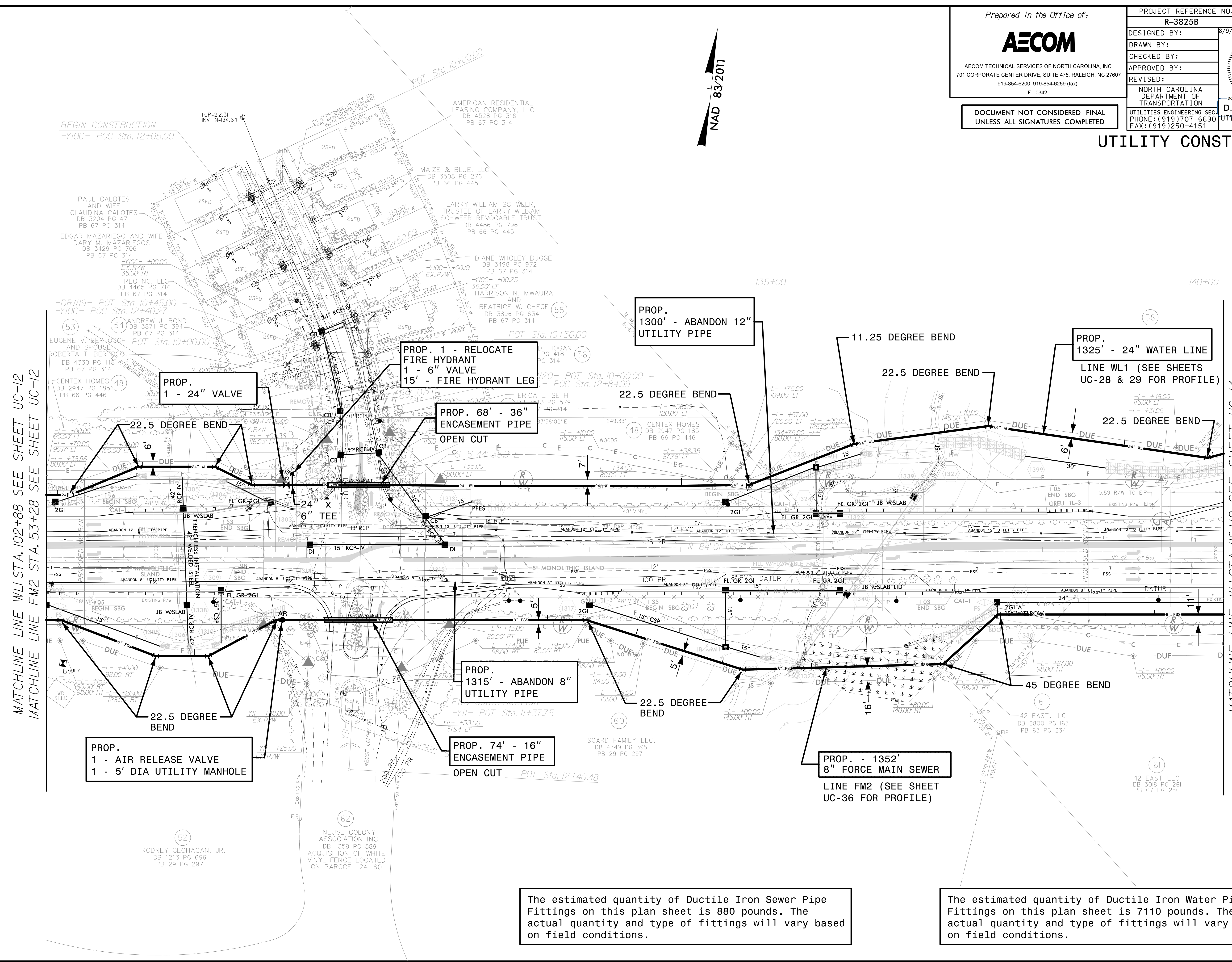


D. Stephen Scruggs  
UTILITY CONSTRUCTION PLANS ONLY

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

# UTILITY CONSTRUCTION

NAD 83/2011



MATCHLINE LINE WL1 STA. 102+88 SEE SHEET UC-12  
MATCHLINE LINE FM2 STA. 53+28 SEE SHEET UC-12

MATCHLINE LINE WL1 STA. 116+12 SEE SHEET UC-14  
MATCHLINE LINE FM2 STA. 66+75 SEE SHEET UC-14

PROP. 1 - 24" VALVE

PROP. 1 - RELOCATE FIRE HYDRANT  
1 - 6" VALVE  
15' - FIRE HYDRANT LEG

PROP. 68' - 36" ENCASEMENT PIPE  
OPEN CUT

PROP. 1300' - ABANDON 12" UTILITY PIPE

PROP. 1325' - 24" WATER LINE  
LINE WL1 (SEE SHEETS UC-28 & 29 FOR PROFILE)

PROP. 1315' - ABANDON 8" UTILITY PIPE

PROP. 74' - 16" ENCASEMENT PIPE  
OPEN CUT

PROP. - 1352' 8" FORCE MAIN SEWER  
LINE FM2 (SEE SHEET UC-36 FOR PROFILE)

PROP. 1 - AIR RELEASE VALVE  
1 - 5' DIA UTILITY MANHOLE

The estimated quantity of Ductile Iron Sewer Pipe Fittings on this plan sheet is 880 pounds. The actual quantity and type of fittings will vary based on field conditions.

The estimated quantity of Ductile Iron Water Pipe Fittings on this plan sheet is 7110 pounds. The actual quantity and type of fittings will vary based on field conditions.

DATE: 8/9/2018  
TIME: 3:43:40 PM  
DGN: R3825B\_UC\_P01.dgn

Prepared In the Office of:

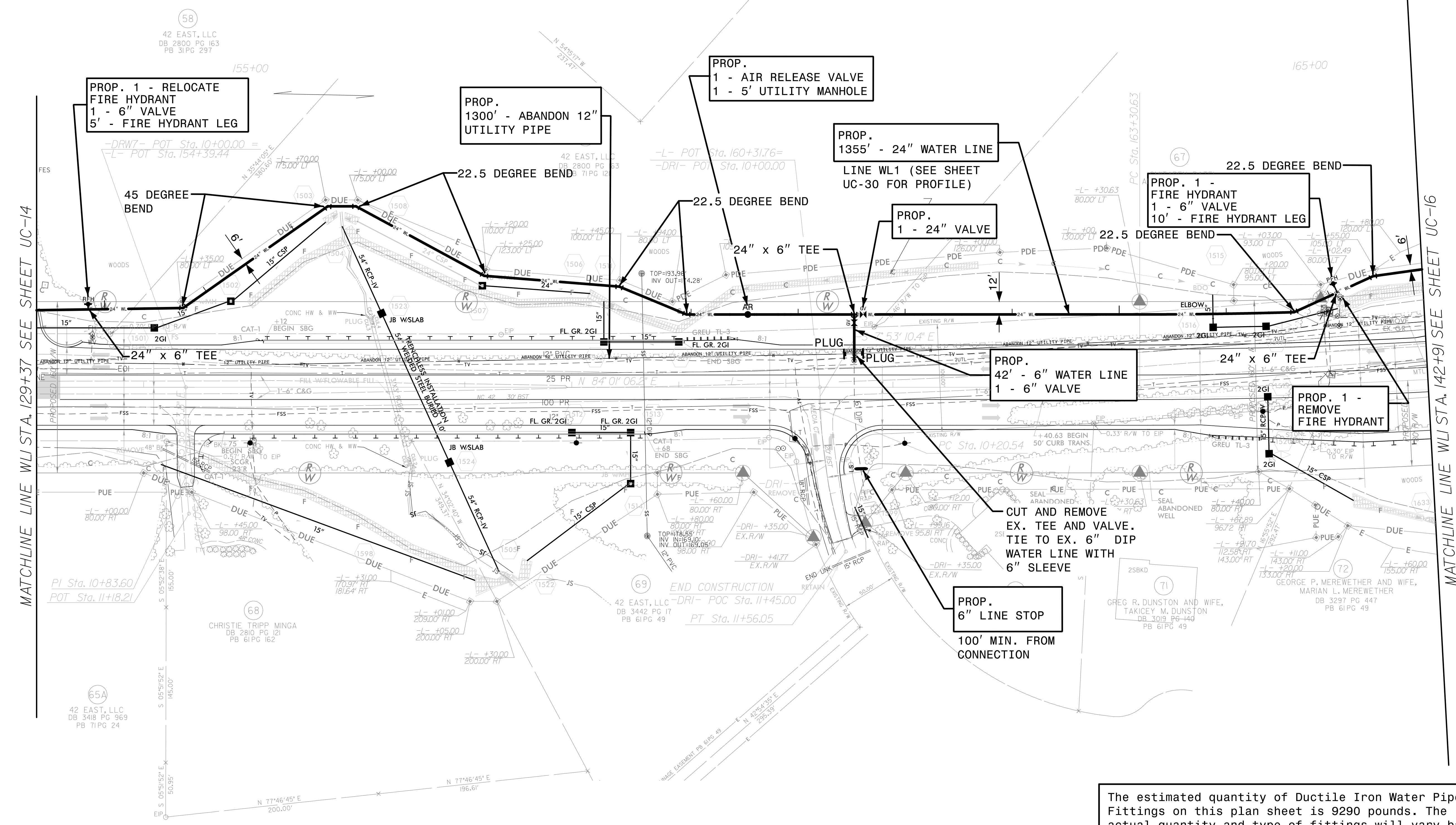
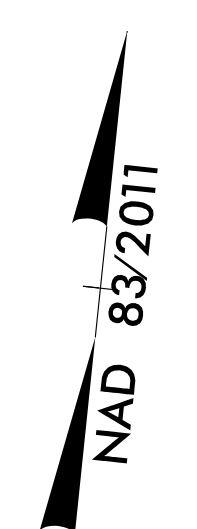


AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.  
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607  
919-854-6200 919-854-6259 (fax)  
F - 0342

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

PROJECT REFERENCE NO.	R-3825B	SHEET NO.	UC-15
DESIGNED BY:		DATE:	9/17/2018
DRAWN BY:			
CHECKED BY:			
APPROVED BY:			
REVISED:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		D. Stephen Scruggs SEAL 10666 REGISTERED PROFESSIONAL ENGINEER STEPHEN SCRUGGS	
UTILITIES ENGINEERING SECTION		DATE: 9/17/2018	
PHONE: (919) 707-6690		FAX: (919) 250-4151	

# UTILITY CONSTRUCTION



MATCHLINE LINE WL1 STA. 129+37 SEE SHEET UC-14

MATCHLINE LINE WL1 STA. 142+91 SEE SHEET UC-16

The estimated quantity of Ductile Iron Water Pipe Fittings on this plan sheet is 9290 pounds. The actual quantity and type of fittings will vary based on field conditions.

DATE: 9/17/2018  
TIME: 12:46 PM  
DGN: R3825B\_UC\_Plan.dgn

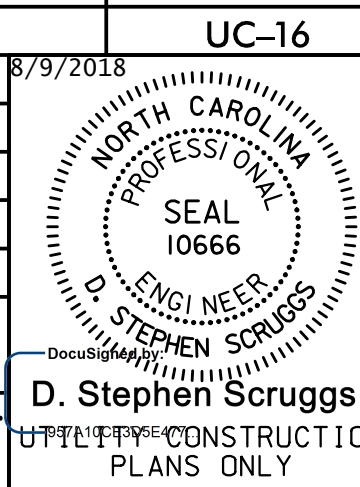




AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.  
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607  
919-854-6200 919-854-6259 (fax)  
F-0342

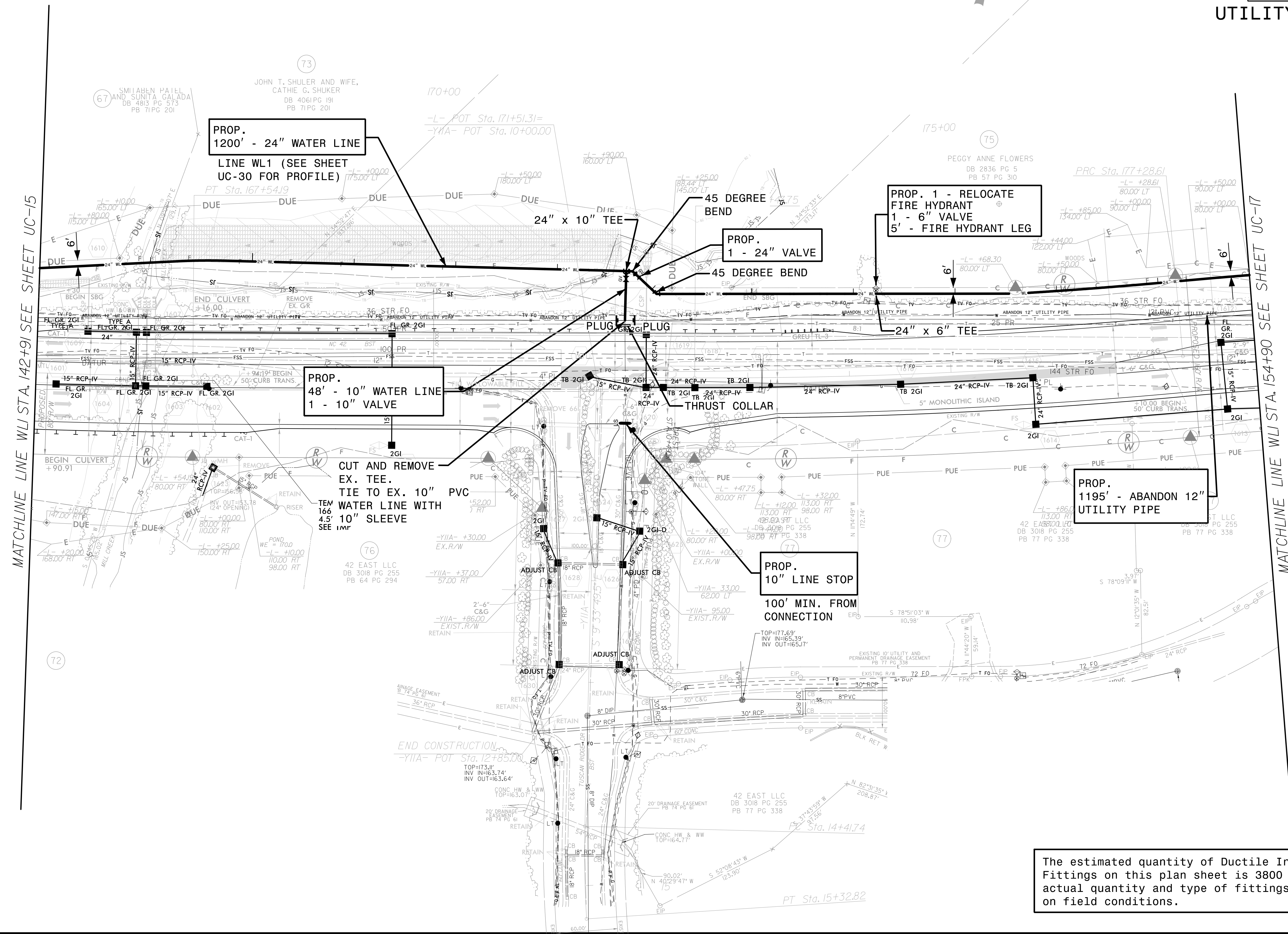
DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

DESIGNED BY:	8/9/2018
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SECTION	
PHONE: (919) 707-6690	
FAX: (919) 250-4151	



D. Stephen Scruggs  
UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION



MATCHLINE LINE WL STA. 142+91 SEE SHEET UC-15

MATCHLINE LINE WL STA. 154+90 SEE SHEET UC-17

PROP. 1200' - 24" WATER LINE  
LINE WL1 (SEE SHEET UC-30 FOR PROFILE)  
PT Sta. 167+54.19

PROP. 1 - RELOCATE FIRE HYDRANT  
1 - 6" VALVE  
5' - FIRE HYDRANT LEG

PROP. 48' - 10" WATER LINE  
1 - 10" VALVE

CUT AND REMOVE EX. TEE.  
TIE TO EX. 10" PVC WATER LINE WITH 4.5' 10" SLEEVE  
SEE IMP

PROP. 10" LINE STOP  
100' MIN. FROM CONNECTION

PROP. 1195' - ABANDON 12" UTILITY PIPE

DATE: 8/9/2018  
TIME: 3:44:17 PM  
DGN: R3825B\_UC\_Plan6.dgn

The estimated quantity of Ductile Iron Water Pipe Fittings on this plan sheet is 3800 pounds. The actual quantity and type of fittings will vary based on field conditions.

Prepared In the Office of:

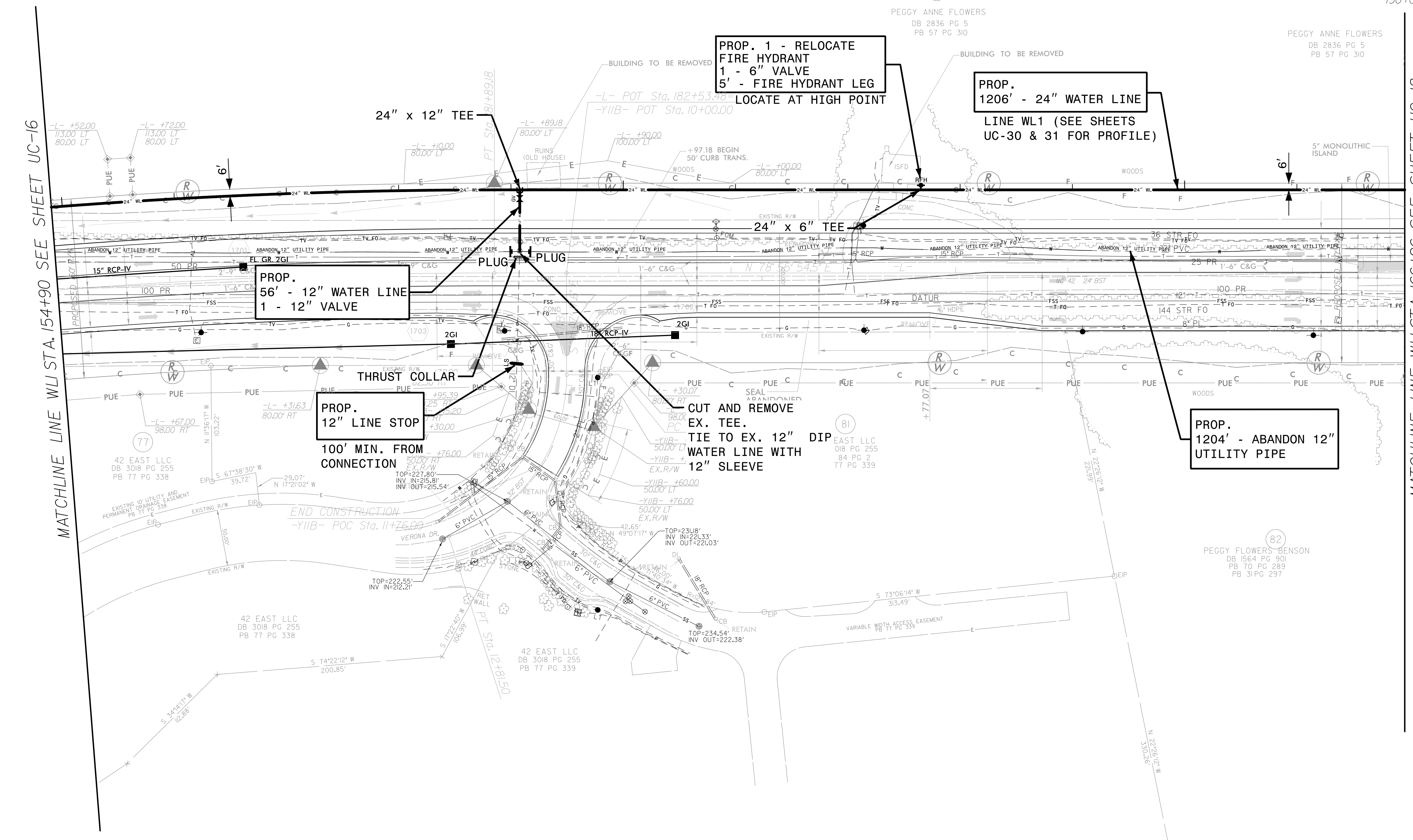
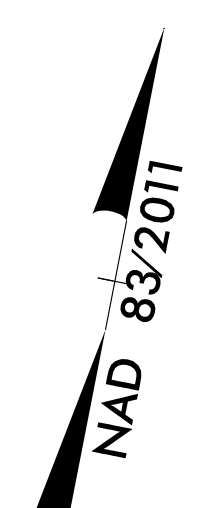


AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.  
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607  
919-854-6200 919-854-6259 (fax)  
F-0342

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	UC-17
DESIGNED BY:	8/9/2018
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
REVISED:	
NORTH CAROLINA PROFESSIONAL SEAL 10666	
D. Stephen Scruggs	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SECTION	
PHONE: (919) 707-6690 FAX: (919) 250-4151	

# UTILITY CONSTRUCTION



PROP. 1 - RELOCATE FIRE HYDRANT  
1 - 6" VALVE  
5' - FIRE HYDRANT LEG  
LOCATE AT HIGH POINT

PROP. 1206' - 24" WATER LINE  
LINE WL1 (SEE SHEETS UC-30 & 31 FOR PROFILE)

PROP. 56' - 12" WATER LINE  
1 - 12" VALVE

PROP. 12" LINE STOP  
100' MIN. FROM CONNECTION

CUT AND REMOVE EX. TEE.  
TIE TO EX. 12" WATER LINE WITH 12" SLEEVE

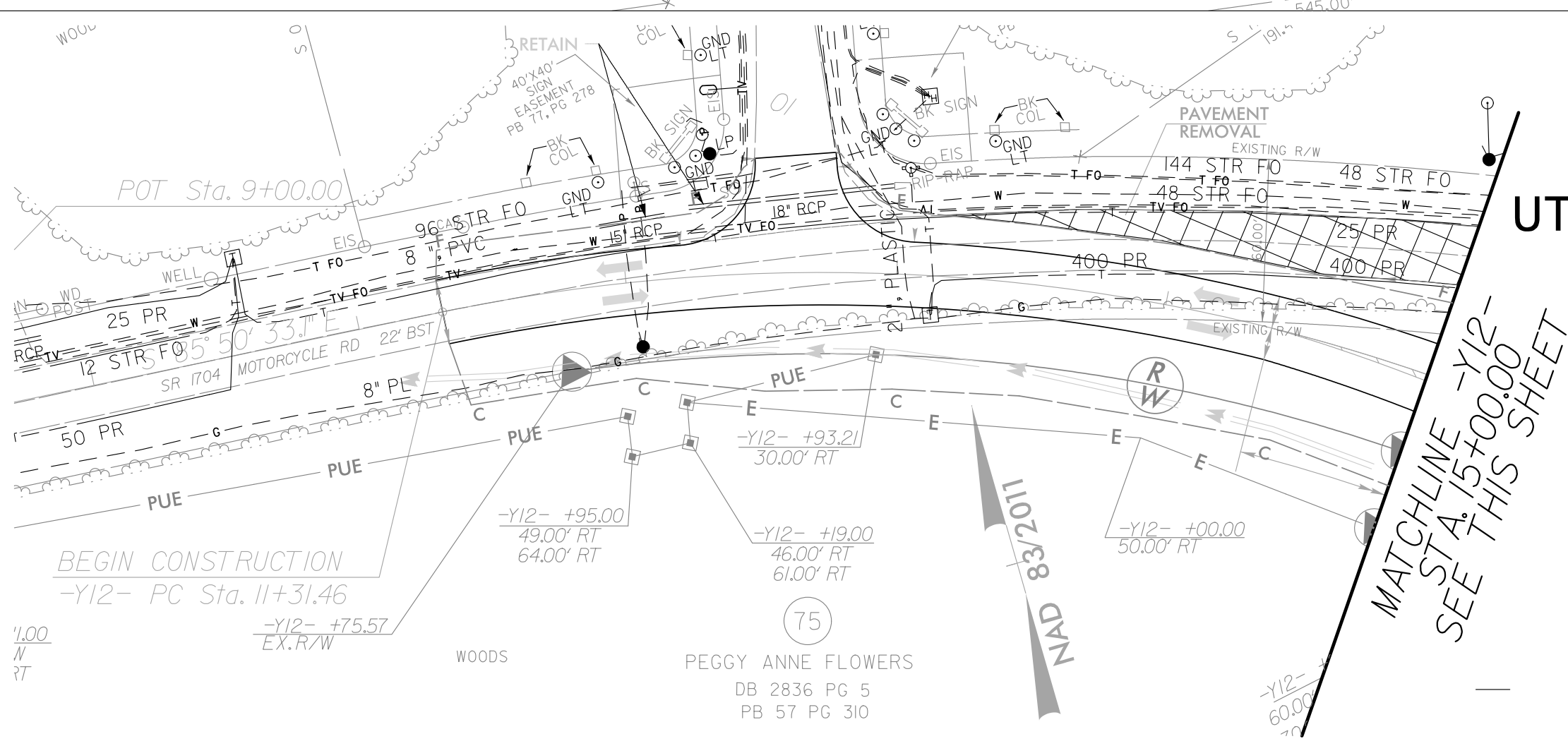
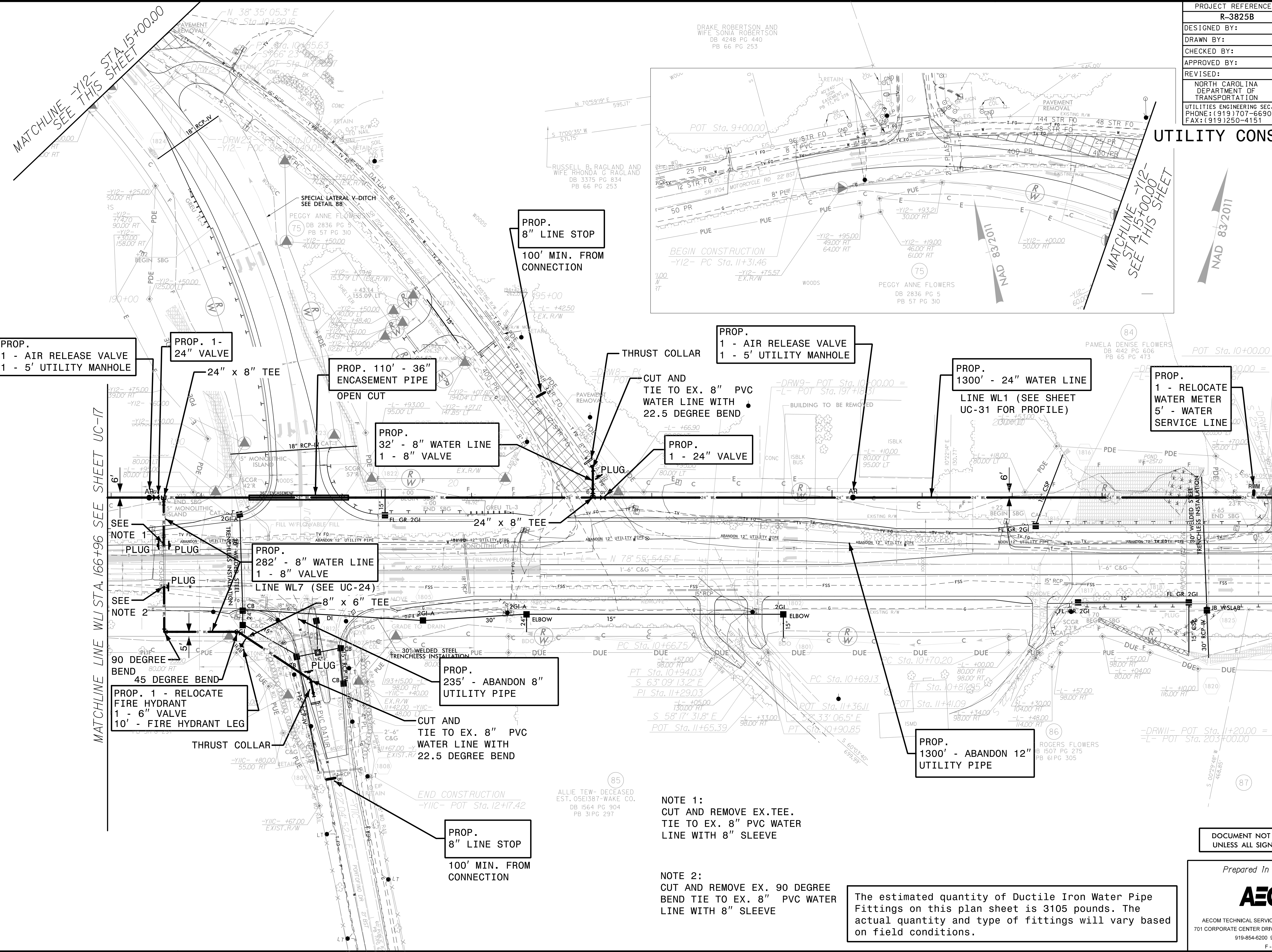
PROP. 1204' - ABANDON 12" UTILITY PIPE

The estimated quantity of Ductile Iron Water Pipe Fittings on this plan sheet is 2240 pounds. The actual quantity and type of fittings will vary based on field conditions.

DATE: 8/9/2018  
TIME: 3:44:59 PM  
DGN: R3825B\_UC\_P817.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	UC-18
DESIGNED BY:	8/9/2018
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
REVISED:	
NORTH CAROLINA PROFESSIONAL SEAL 10666	
D. Stephen Scruggs	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

# UTILITY CONSTRUCTION



PROP.  
1 - AIR RELEASE VALVE  
1 - 5' UTILITY MANHOLE

PROP. 1 -  
24" VALVE

PROP. 110' - 36"  
ENCASEMENT PIPE  
OPEN CUT

PROP.  
32' - 8" WATER LINE  
1 - 8" VALVE

PROP.  
8" LINE STOP  
100' MIN. FROM  
CONNECTION

PROP.  
1 - AIR RELEASE VALVE  
1 - 5' UTILITY MANHOLE

PROP.  
1300' - 24" WATER LINE  
LINE WL1 (SEE SHEET  
UC-31 FOR PROFILE)

PROP.  
1 - RELOCATE  
WATER METER  
5' - WATER  
SERVICE LINE

PROP.  
282' - 8" WATER LINE  
1 - 8" VALVE  
LINE WL7 (SEE UC-24)

PROP.  
235' - ABANDON 8"  
UTILITY PIPE

PROP.  
1300' - ABANDON 12"  
UTILITY PIPE

PROP. 1 - RELOCATE  
FIRE HYDRANT  
1 - 6" VALVE  
10' - FIRE HYDRANT LEG

PROP.  
8" LINE STOP  
100' MIN. FROM  
CONNECTION

NOTE 1:  
CUT AND REMOVE EX.TEE.  
TIE TO EX. 8" PVC WATER  
LINE WITH 8" SLEEVE

NOTE 2:  
CUT AND REMOVE EX. 90 DEGREE  
BEND TIE TO EX. 8" PVC WATER  
LINE WITH 8" SLEEVE

The estimated quantity of Ductile Iron Water Pipe Fittings on this plan sheet is 3105 pounds. The actual quantity and type of fittings will vary based on field conditions.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared In the Office of:



AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.  
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607  
919-854-6200 919-854-6259 (fax)

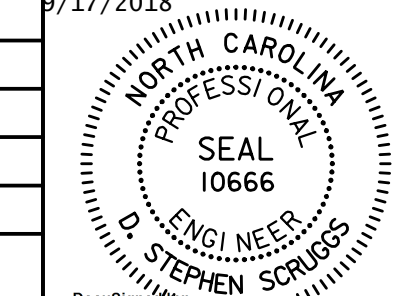
DATE: 8/9/2018  
TIME: 3:45:00 PM  
DGN: R3825B\_UC\_PAN650P

Prepared In the Office of:

**AECOM**

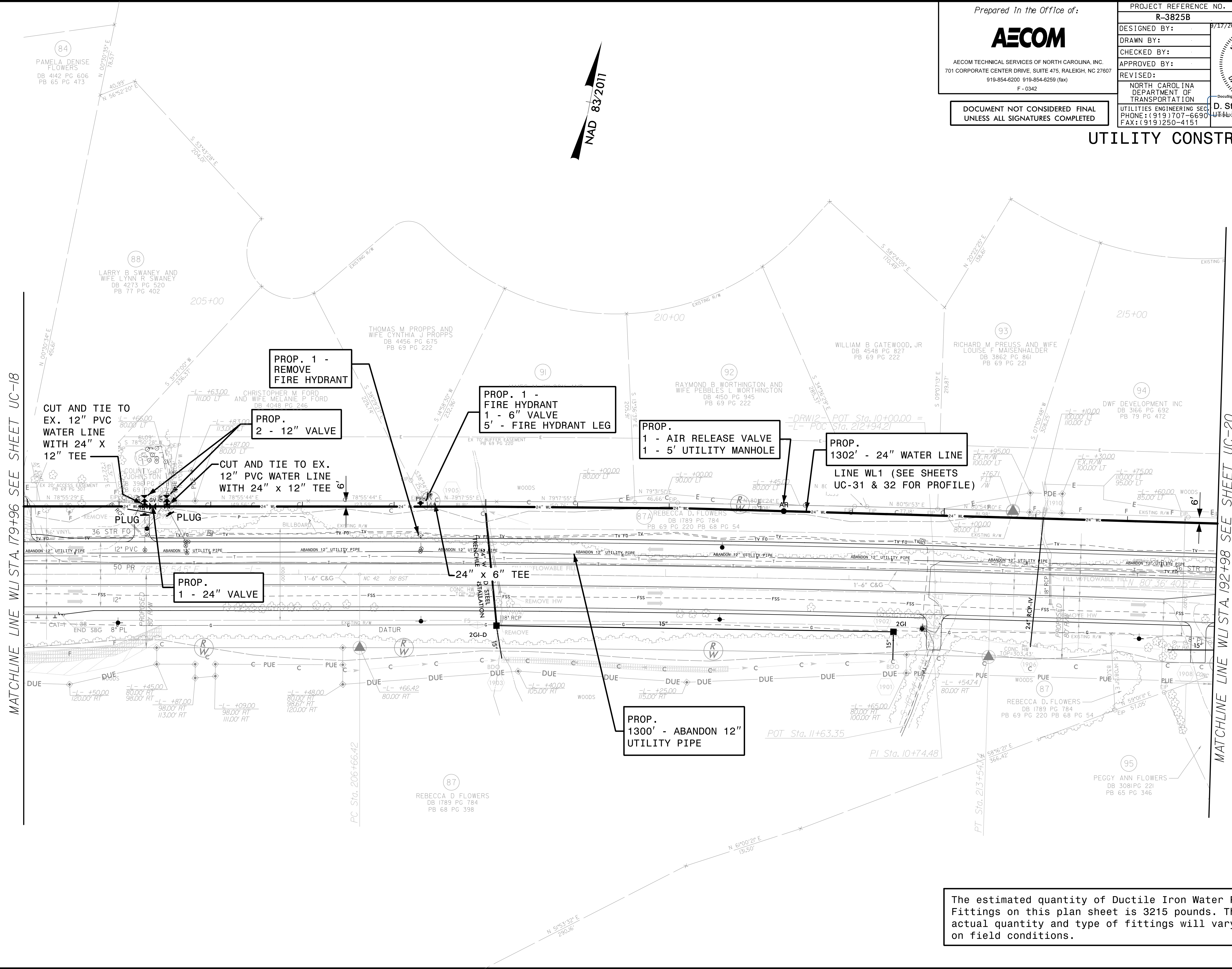
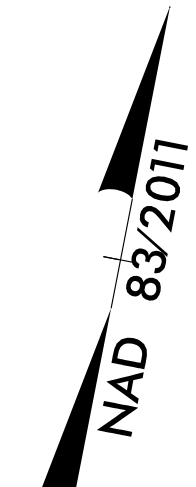
AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.  
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607  
919-854-6200 919-854-6259 (fax)  
F - 0342

PROJECT REFERENCE NO.	R-3825B	SHEET NO.	UC-19
DESIGNED BY:		DATE:	9/17/2018
DRAWN BY:			
CHECKED BY:			
APPROVED BY:			
REVISED:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		D. Stephen Scruggs	
UTILITIES ENGINEERING SECTION		DATE: 9/17/2018	
PHONE: (919) 707-6690		FAX: (919) 250-4151	



DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

### UTILITY CONSTRUCTION



MATCHLINE LINE WL STA. 179+96 SEE SHEET UC-18

MATCHLINE LINE WL STA. 192+98 SEE SHEET UC-20

The estimated quantity of Ductile Iron Water Pipe Fittings on this plan sheet is 3215 pounds. The actual quantity and type of fittings will vary based on field conditions.

DATE: 9/17/2018  
TIME: 12:52:00 PM  
DGN: R3825B\_UC\_PlanSheet.dgn

Prepared In the Office of:

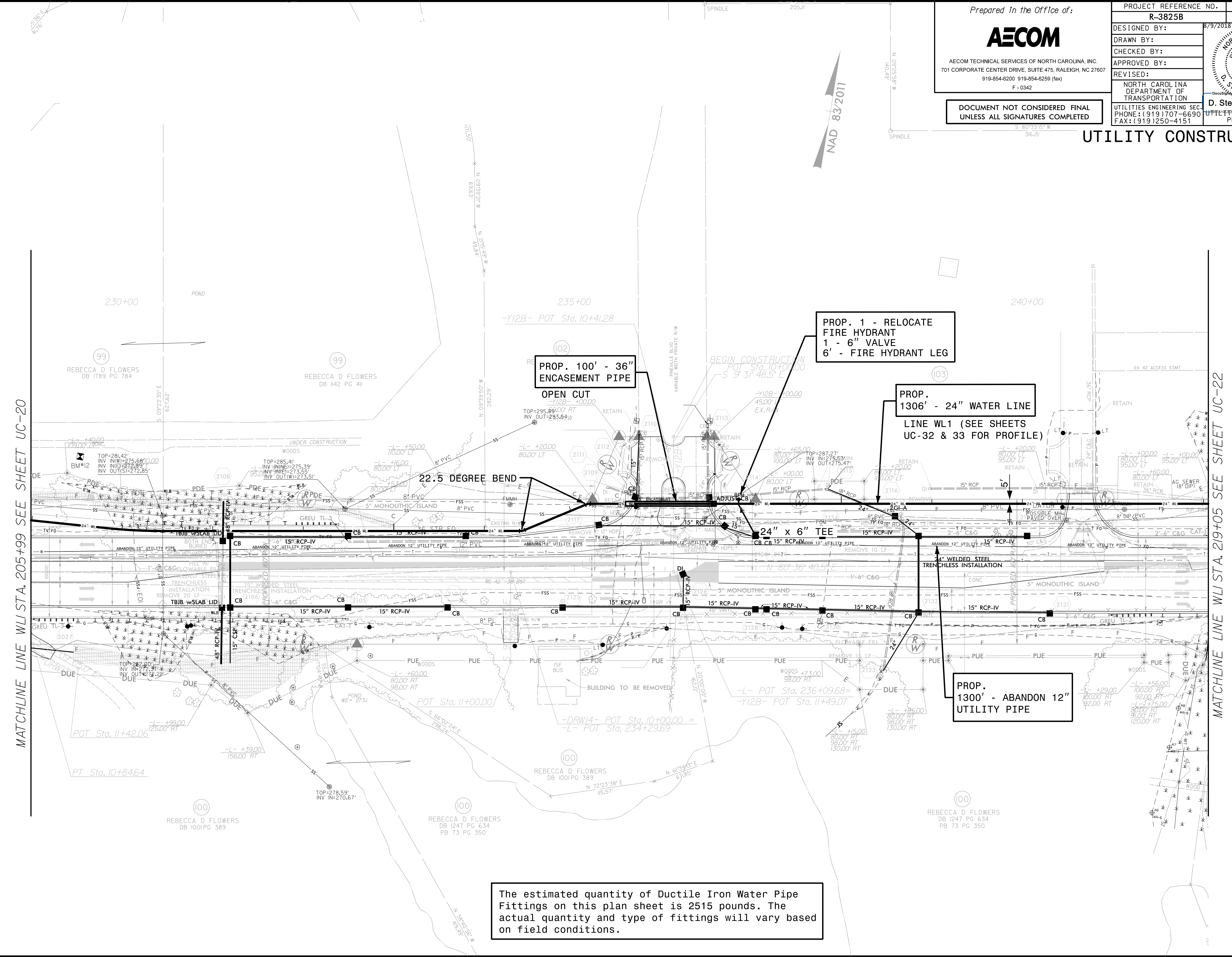


AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.  
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607  
919-854-6200 919-854-6259 (fax)  
F - 0342

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	UC-21
DESIGNED BY:	8/9/2018
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
D. Stephen Scruggs SEAL 10666 STEPHEN SCRUGGS ENGINEER	
UTILITY CONSTRUCTION PLANS ONLY	

# UTILITY CONSTRUCTION



PROP. 100' - 36" ENCASEMENT PIPE  
OPEN CUT

PROP. 1 - RELOCATE  
FIRE HYDRANT  
1 - 6" VALVE  
6' - FIRE HYDRANT LEG

PROP. 1306' - 24" WATER LINE  
LINE WL1 (SEE SHEETS  
UC-32 & 33 FOR PROFILE)

PROP. 1300' - ABANDON 12" UTILITY PIPE

The estimated quantity of Ductile Iron Water Pipe Fittings on this plan sheet is 2515 pounds. The actual quantity and type of fittings will vary based on field conditions.

MATCHLINE LINE WL1 STA. 205+99 SEE SHEET UC-20

MATCHLINE LINE WL1 STA. 219+05 SEE SHEET UC-22

DATE: 8/9/2018  
TIME: 3:46:08 PM  
DGN: R3825B\_UC\_Plan2.dgn

Prepared In the Office of:

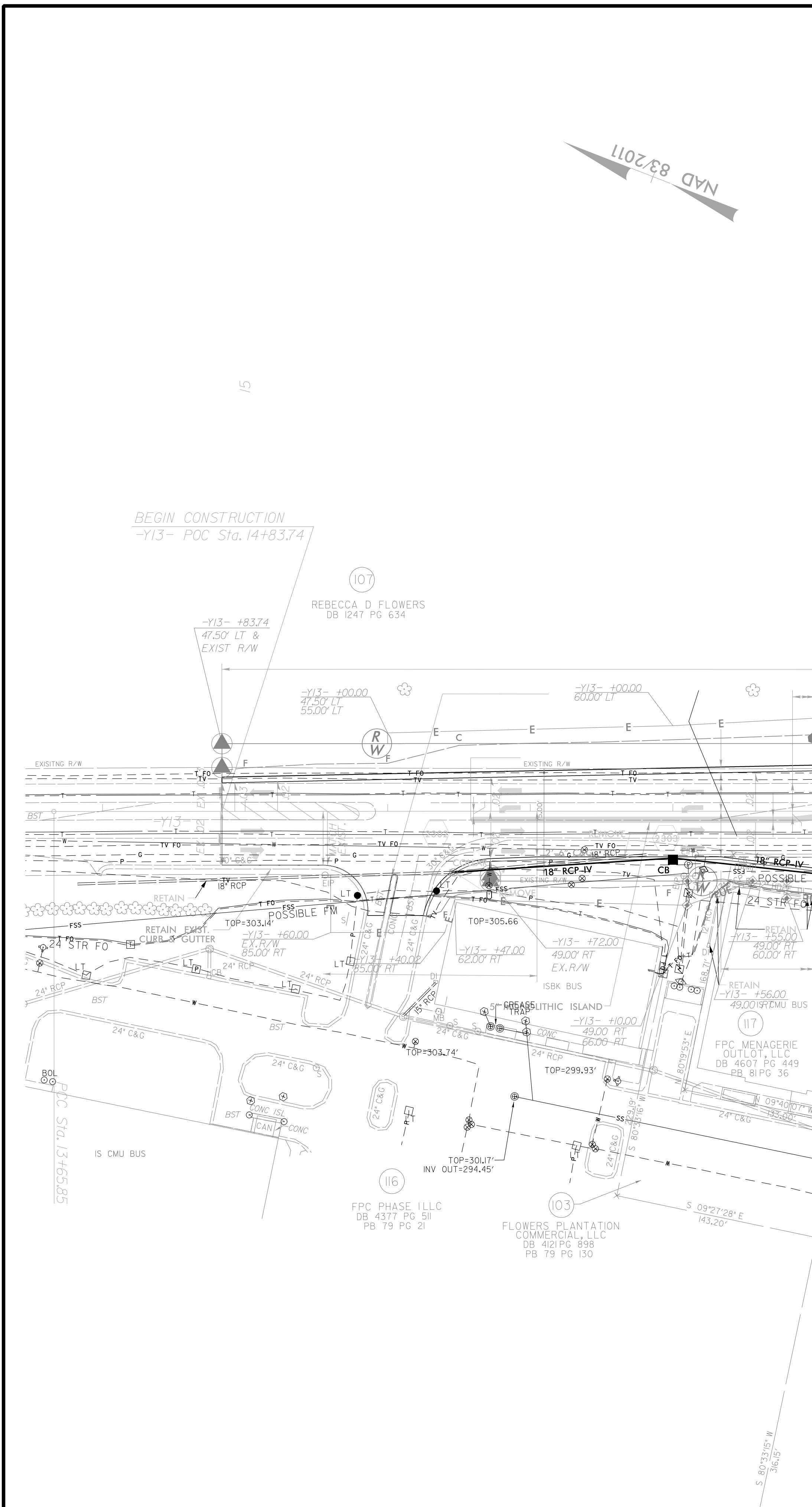


AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.  
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607  
919-854-6200 919-854-6259 (fax)  
F-0342

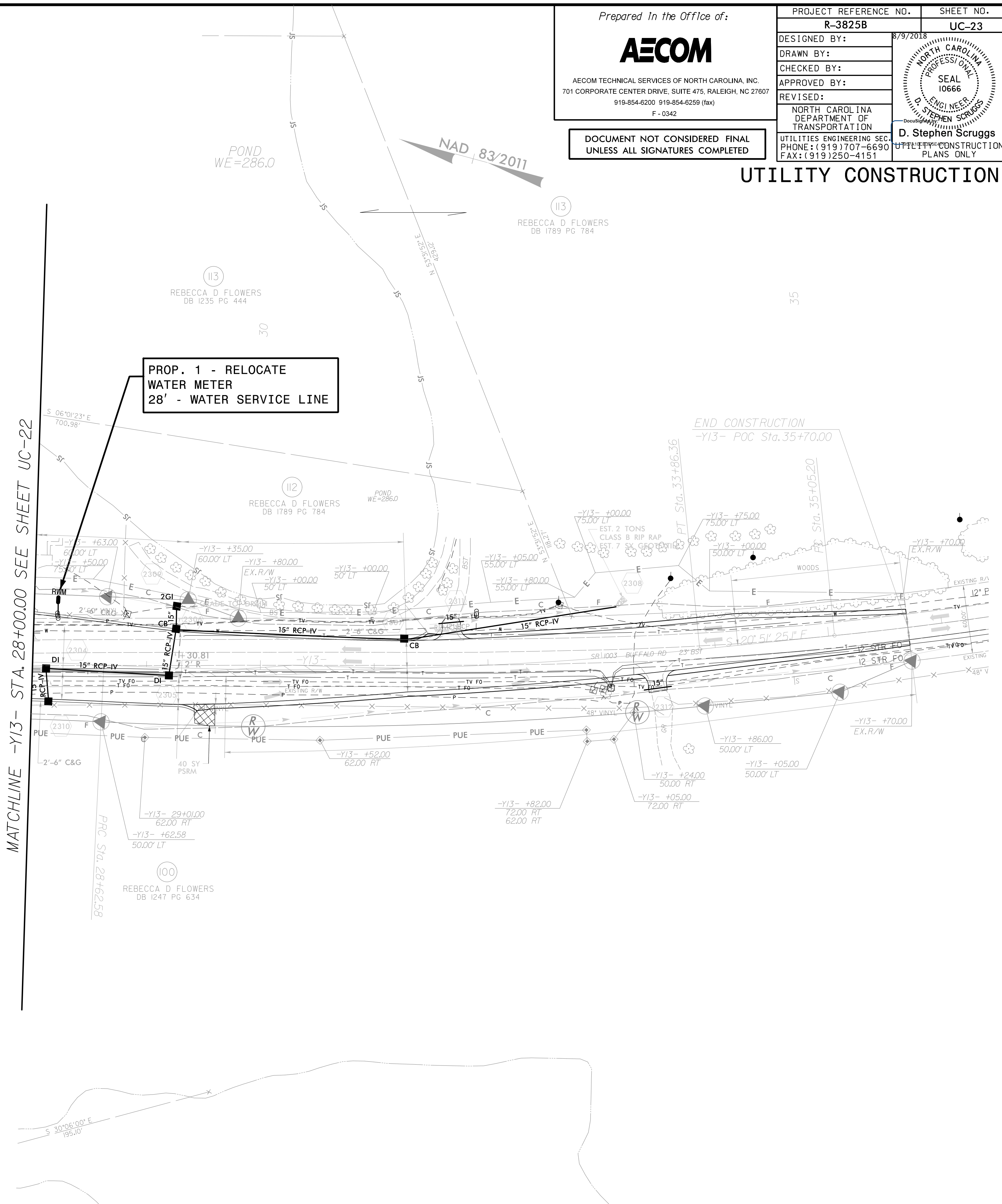
DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	UC-23
DESIGNED BY:	8/9/2018
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

UTILITY CONSTRUCTION



MATCHLINE -Y13- STA. 19+00.00 SEE SHEET UC-22



MATCHLINE -Y13- STA. 28+00.00 SEE SHEET UC-22

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

Prepared in the Office of:

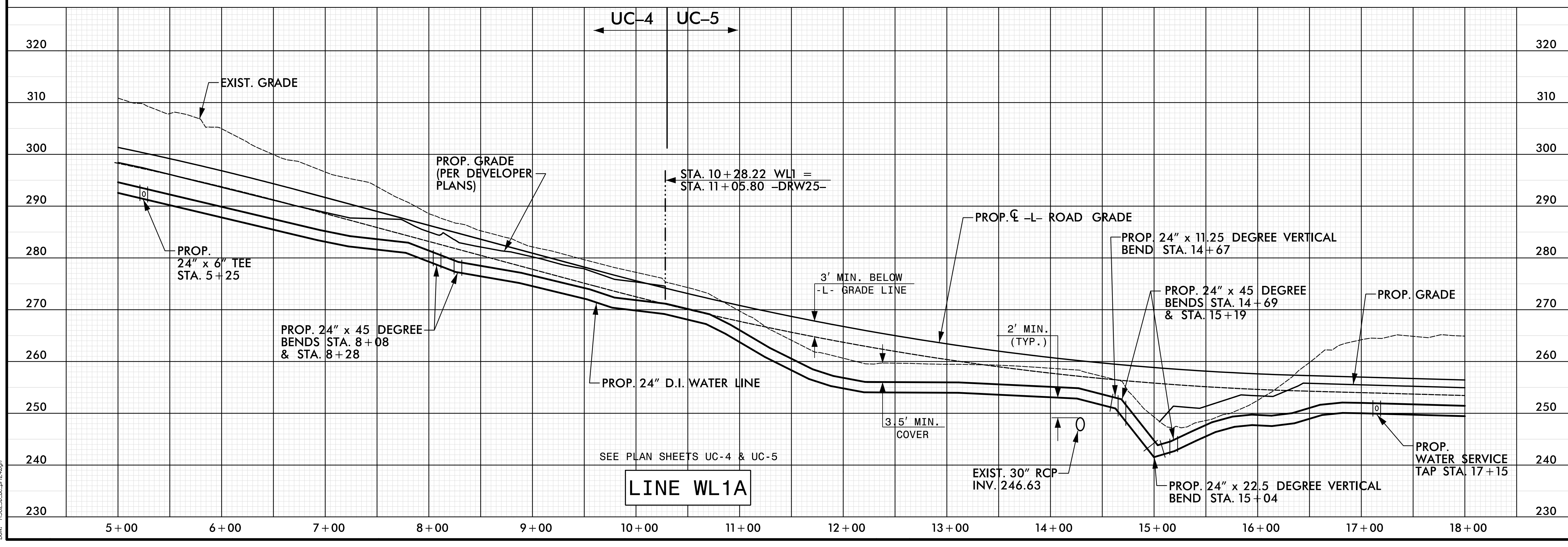
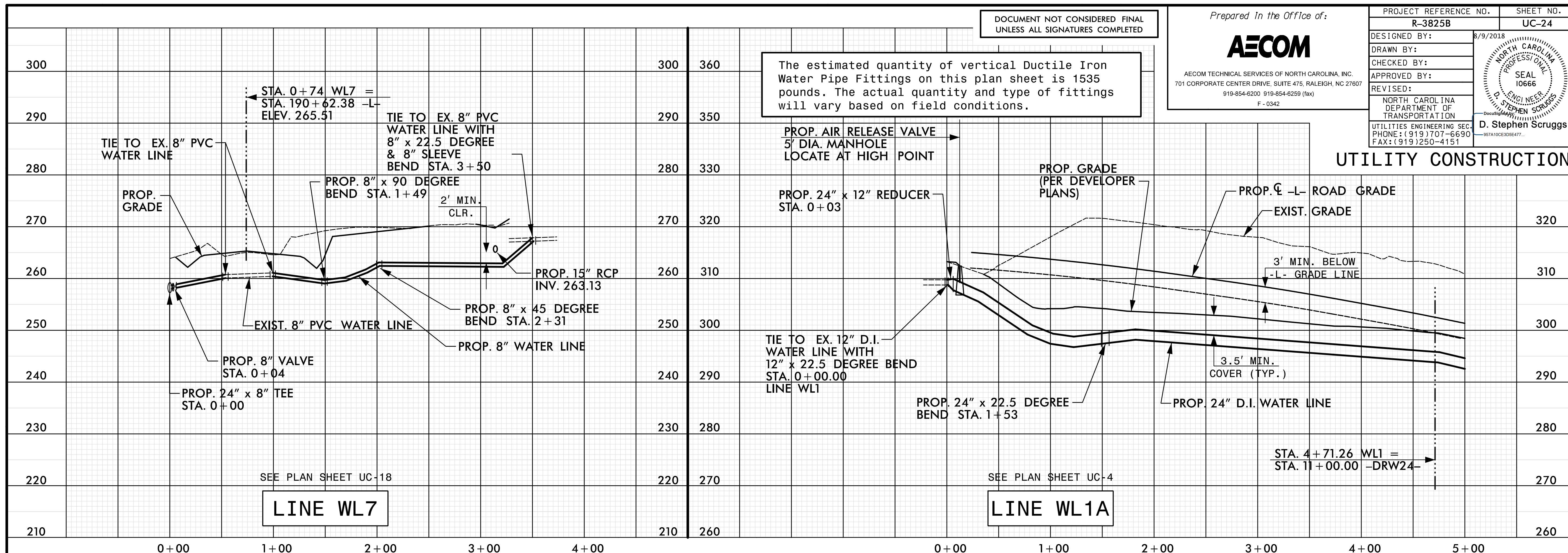


AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.  
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607  
919-854-6200 919-854-6259 (fax)  
F-0342

PROJECT REFERENCE NO. <b>R-3825B</b>	SHEET NO. <b>UC-24</b>
DESIGNED BY:	8/9/2018
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

### UTILITY CONSTRUCTION

The estimated quantity of vertical Ductile Iron Water Pipe Fittings on this plan sheet is 1535 pounds. The actual quantity and type of fittings will vary based on field conditions.



DATE: 8/9/2018  
TIME: 3:51:46 PM  
DWG: R3825B\_UC-24.dwg

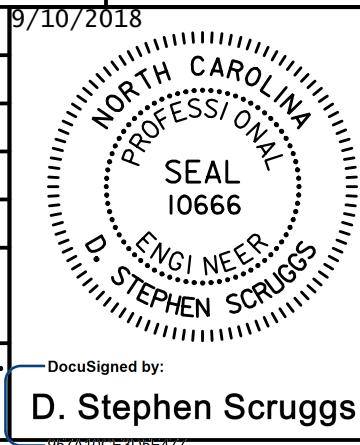
DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

Prepared in the Office of:

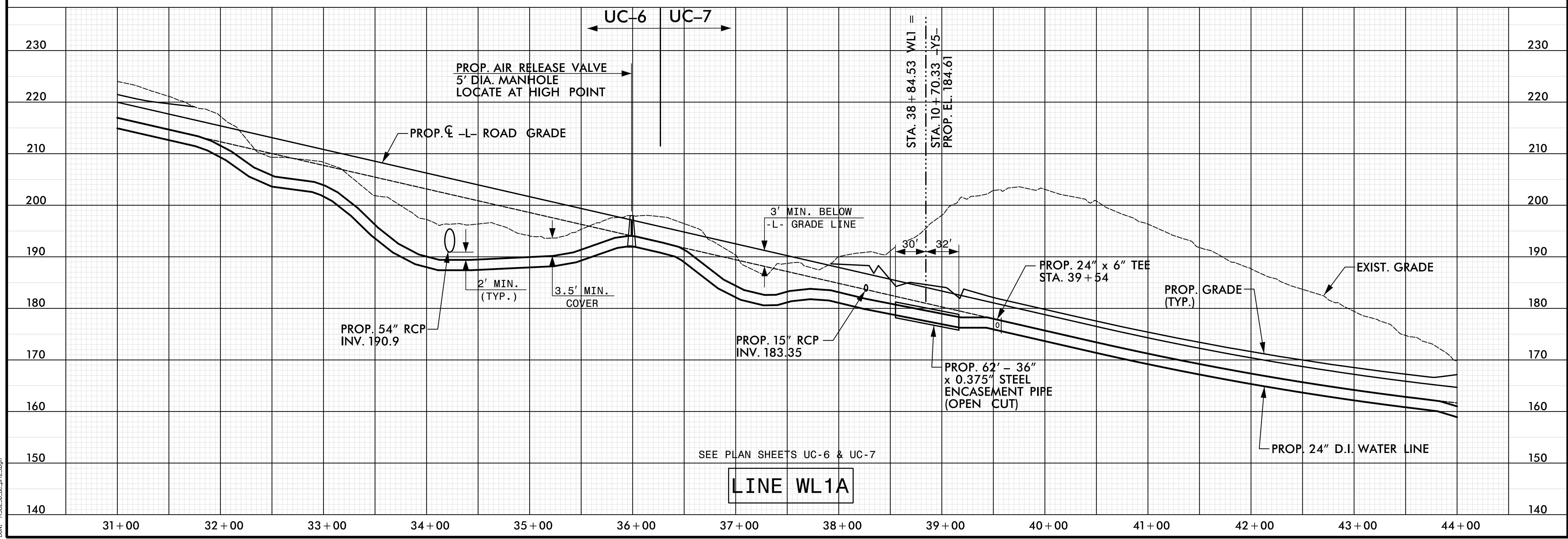
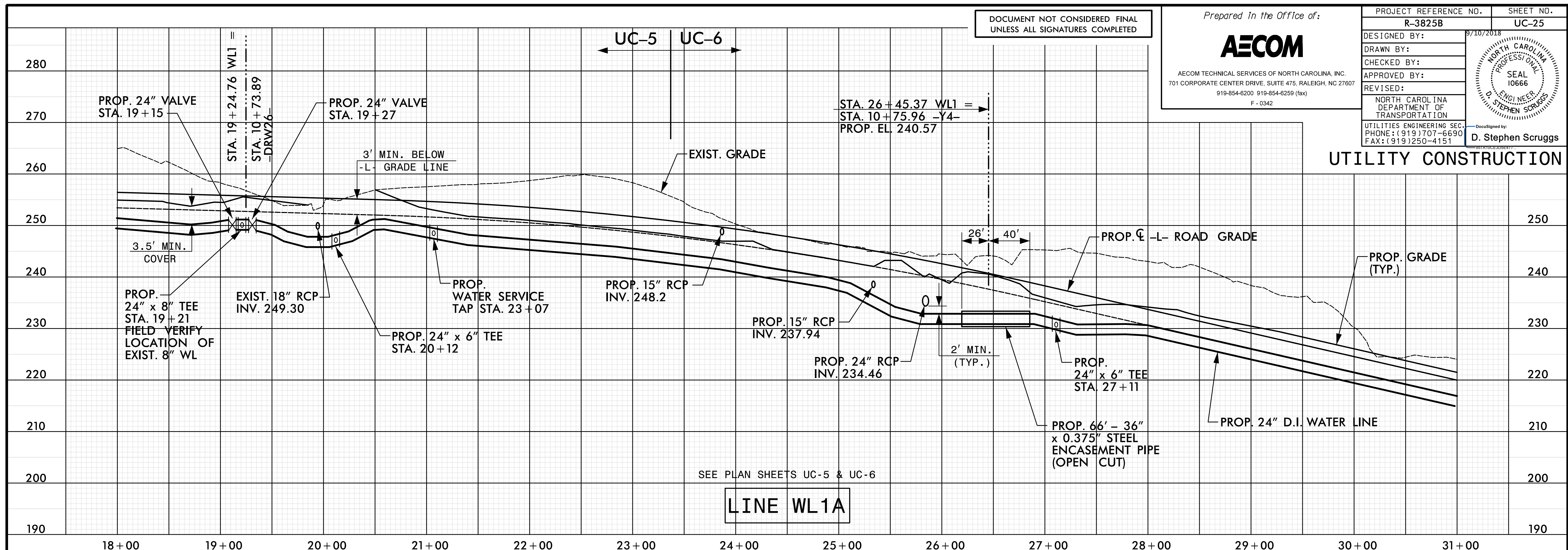


AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.  
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607  
919-854-6200 919-854-6259 (fax)  
F-0342

PROJECT REFERENCE NO. <b>R-3825B</b>	SHEET NO. <b>UC-25</b>
DESIGNED BY:	9/10/2018
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
DocuSigned by: <b>D. Stephen Scruggs</b>	



### UTILITY CONSTRUCTION



DATE: 9/7/2018  
TIME: 3:52:21 PM  
DRAWN: R3825B\_UC-25.dgn



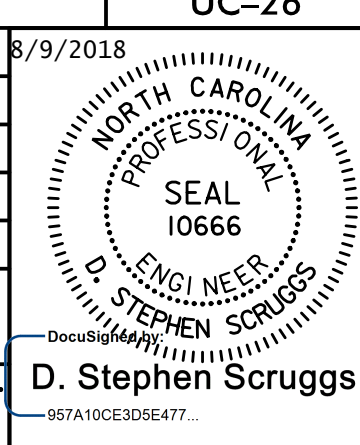
DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

Prepared In the Office of:

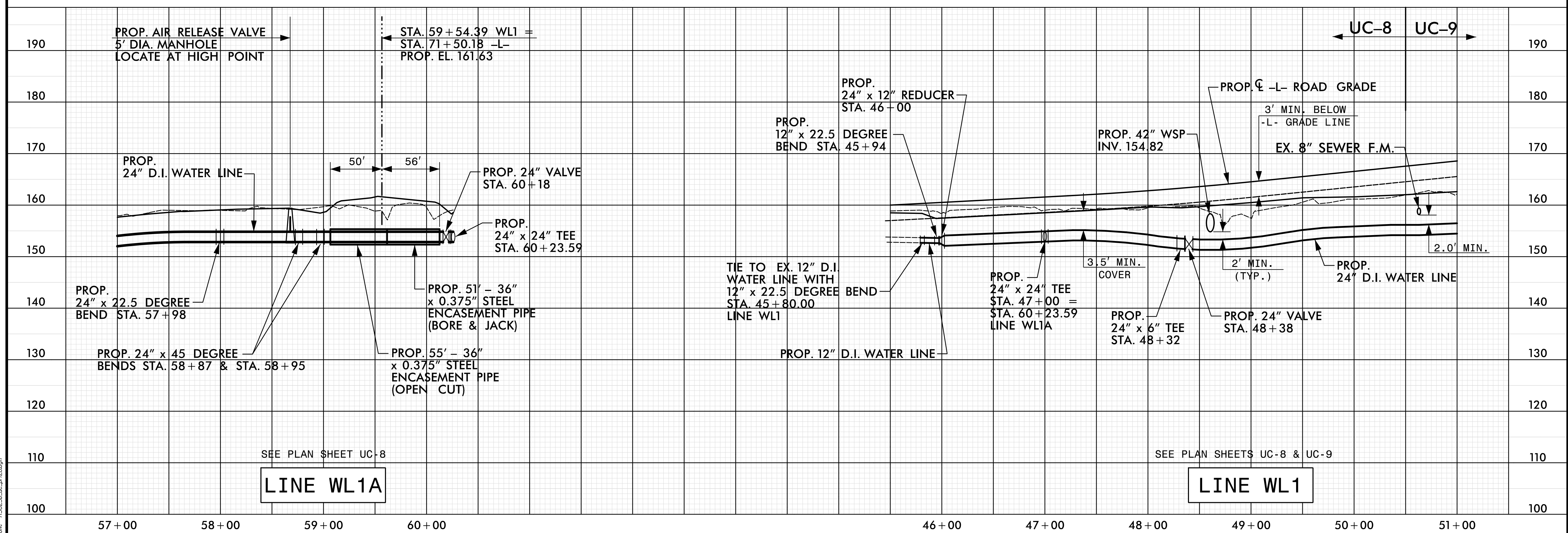
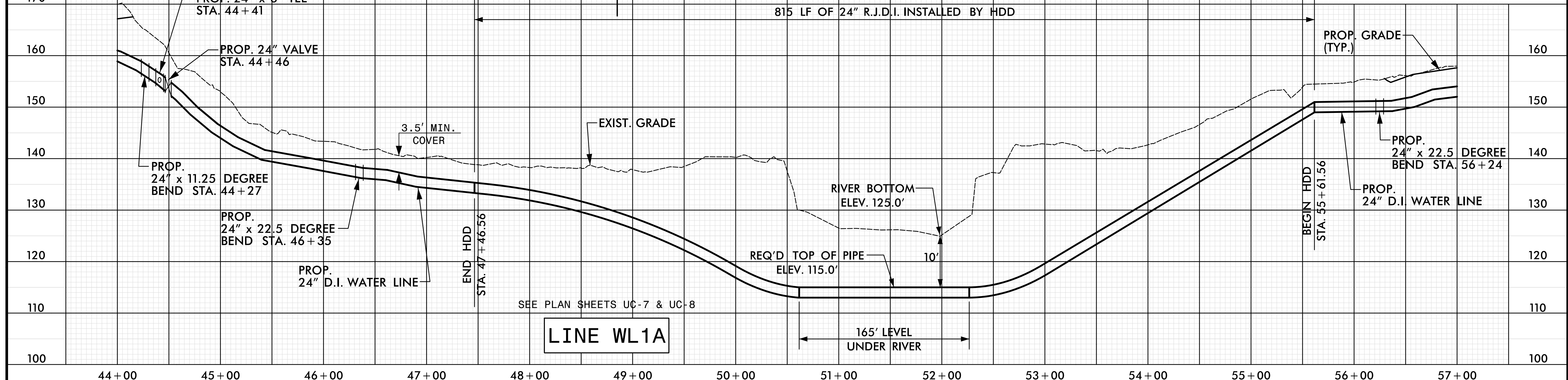


AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.  
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607  
919-854-6200 919-854-6259 (fax)  
F - 0342

PROJECT REFERENCE NO. <b>R-3825B</b>	SHEET NO. <b>UC-26</b>
DESIGNED BY:	8/9/2018
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
D. Stephen Scruggs	



### UTILITY CONSTRUCTION



DATE: 8/9/2018  
TIME: 3:52:21 PM  
DWG: R3825B\_UC-26.dwg

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

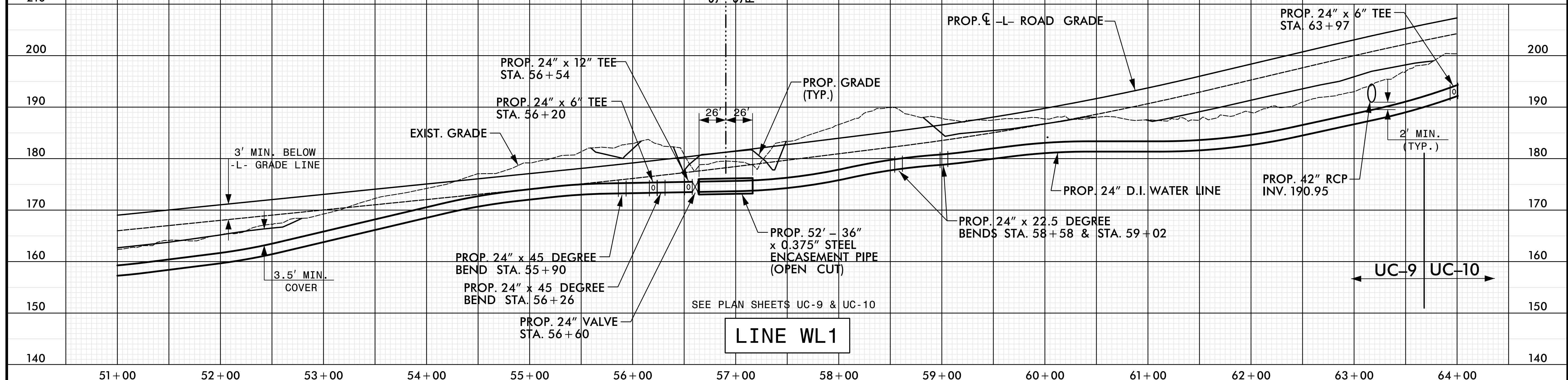
Prepared in the Office of:



AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.  
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607  
919-854-6200 919-854-6259 (fax)  
F - 0342

PROJECT REFERENCE NO. <b>R-3825B</b>	SHEET NO. <b>UC-27</b>
DESIGNED BY:	8/9/2018
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

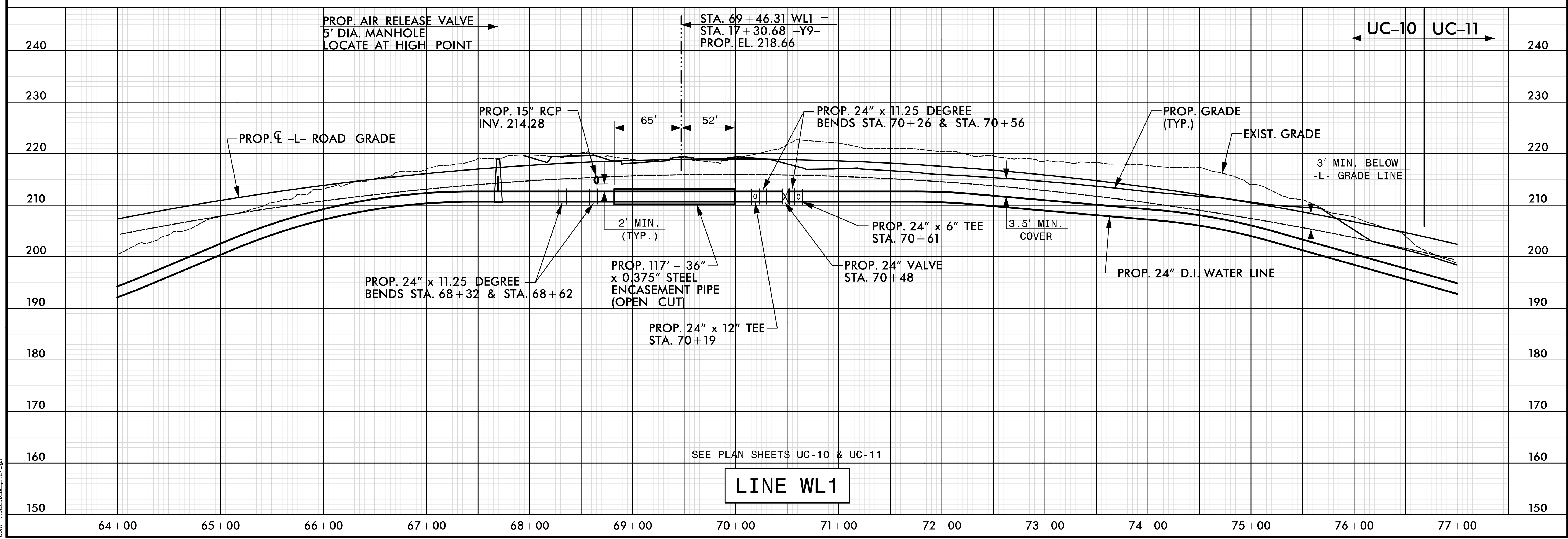
### UTILITY CONSTRUCTION



**LINE WL1**

SEE PLAN SHEETS UC-9 & UC-10

UC-9 UC-10



**LINE WL1**

SEE PLAN SHEETS UC-10 & UC-11

UC-10 UC-11

DATE: 8/9/2018  
TIME: 3:52:41 PM  
DWG: R3825B\_UC-27.dgn

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

Prepared In the Office of:

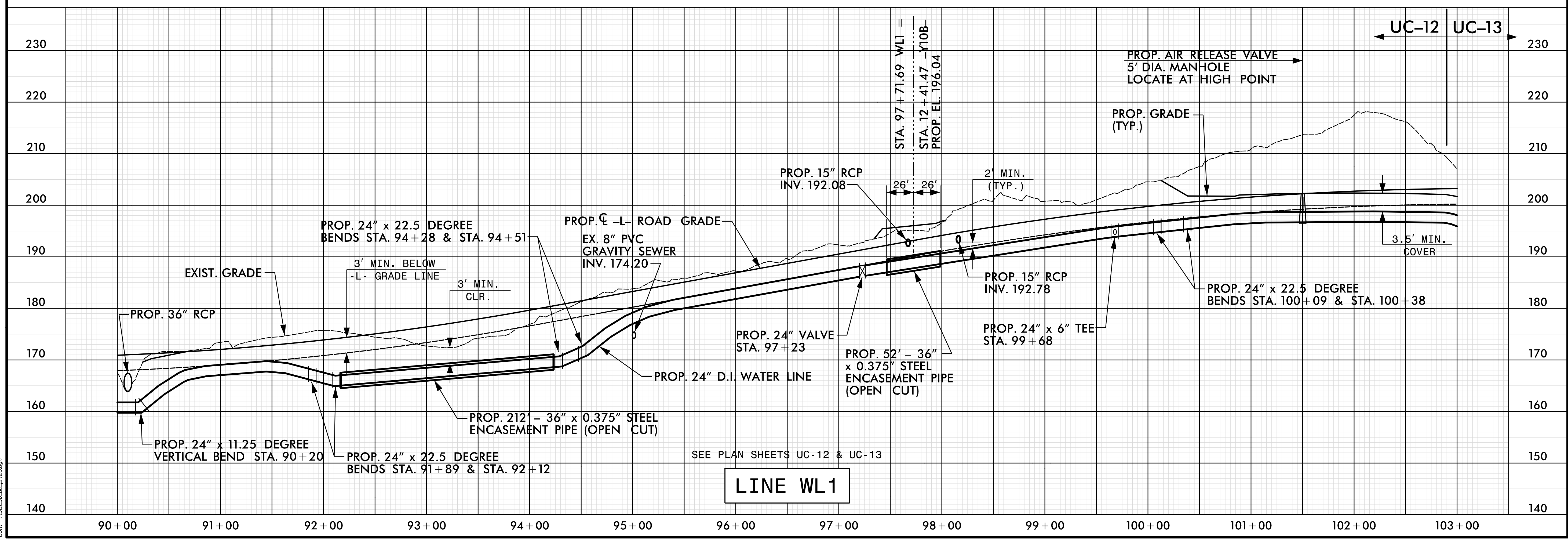
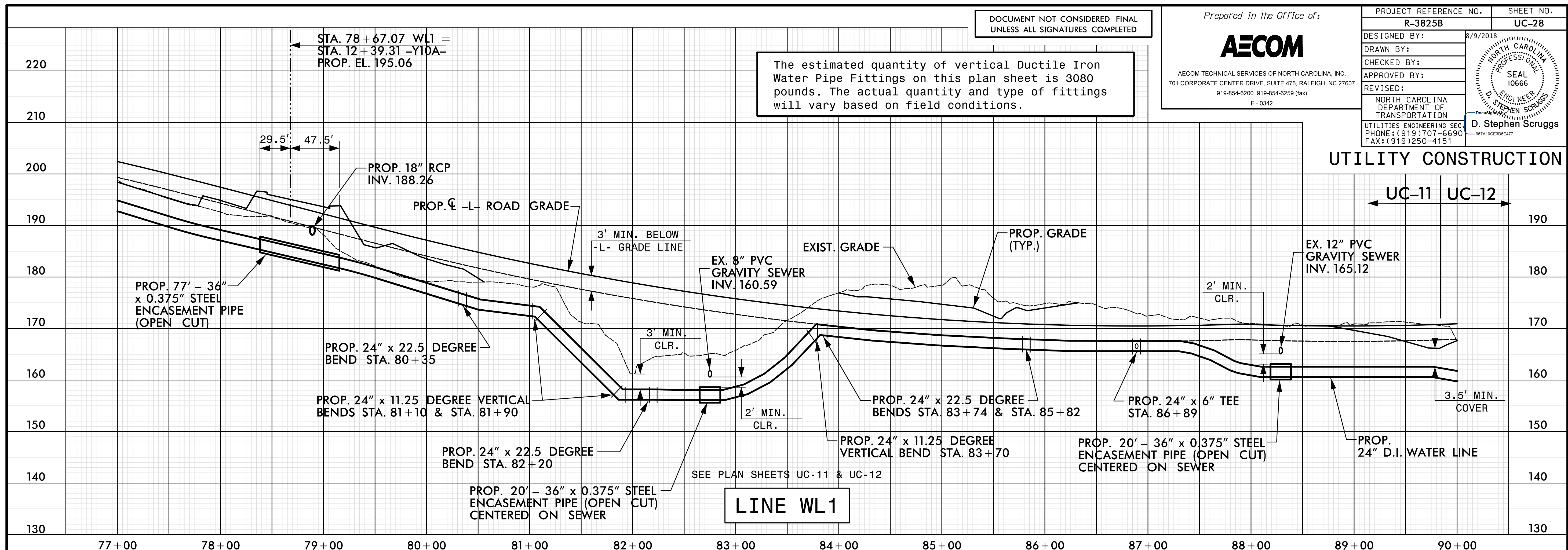


AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.  
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607  
919-854-6200 919-854-6259 (fax)  
F - 0342

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	UC-28
DESIGNED BY:	8/9/2018
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
D. Stephen Scruggs	

The estimated quantity of vertical Ductile Iron Water Pipe Fittings on this plan sheet is 3080 pounds. The actual quantity and type of fittings will vary based on field conditions.

### UTILITY CONSTRUCTION



DATE: 8/9/2018  
TIME: 3:53:02 PM  
DWG: R3825B\_UC-28.dgn

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

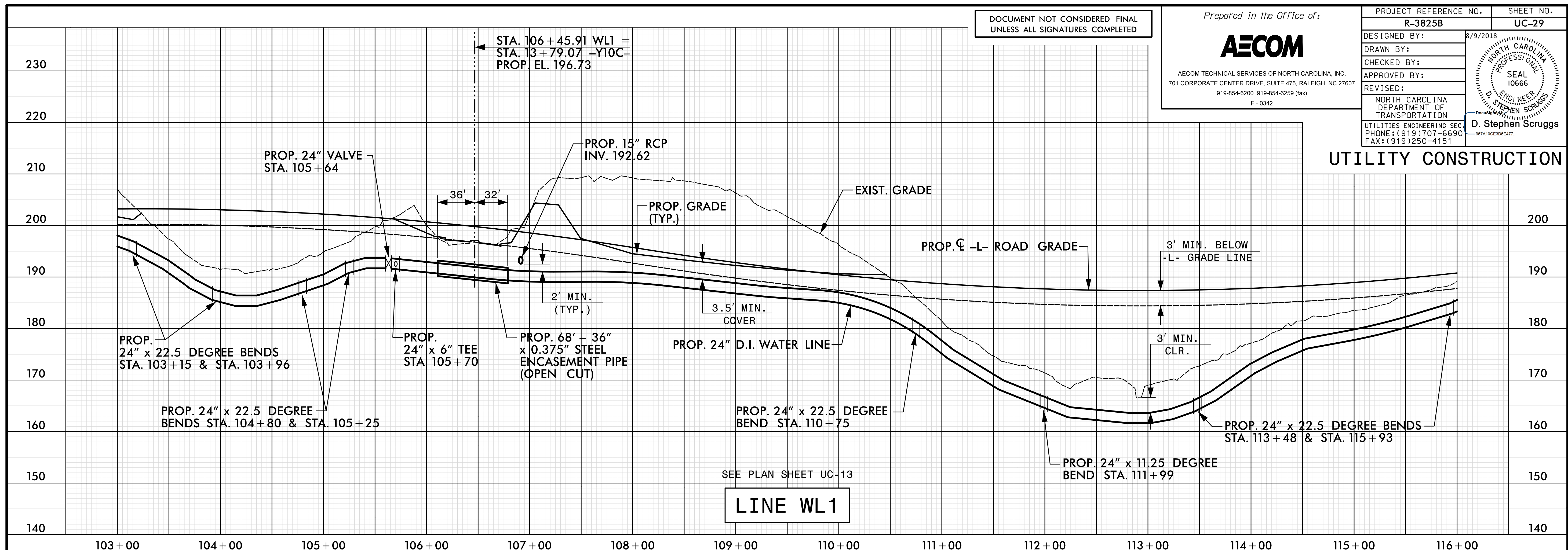
Prepared in the Office of:



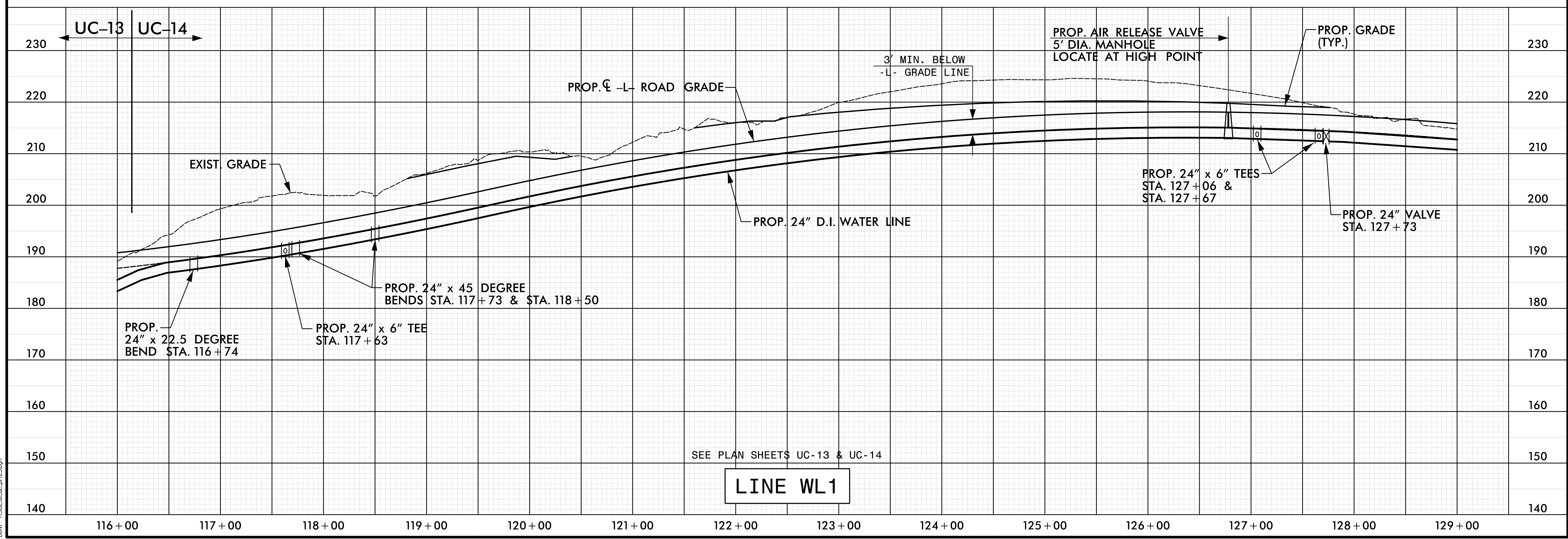
AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.  
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607  
919-854-6200 919-854-6259 (fax)  
F - 0342

PROJECT REFERENCE NO. <b>R-3825B</b>	SHEET NO. <b>UC-29</b>
DESIGNED BY:	8/9/2018
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

### UTILITY CONSTRUCTION



**LINE WL1**



**LINE WL1**

DATE: 8/9/2018  
TIME: 3:53:22 PM  
DWG: R3825B\_UC-29.dwg

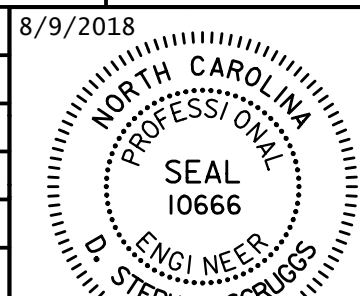
DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

Prepared in the Office of:



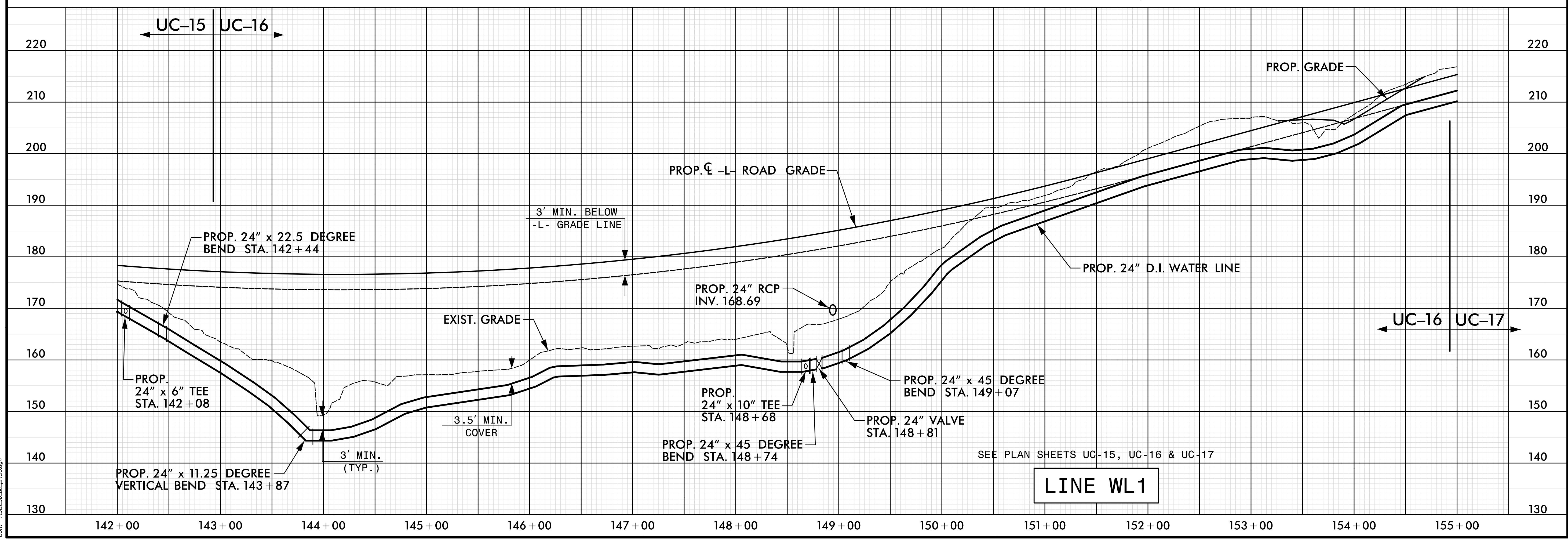
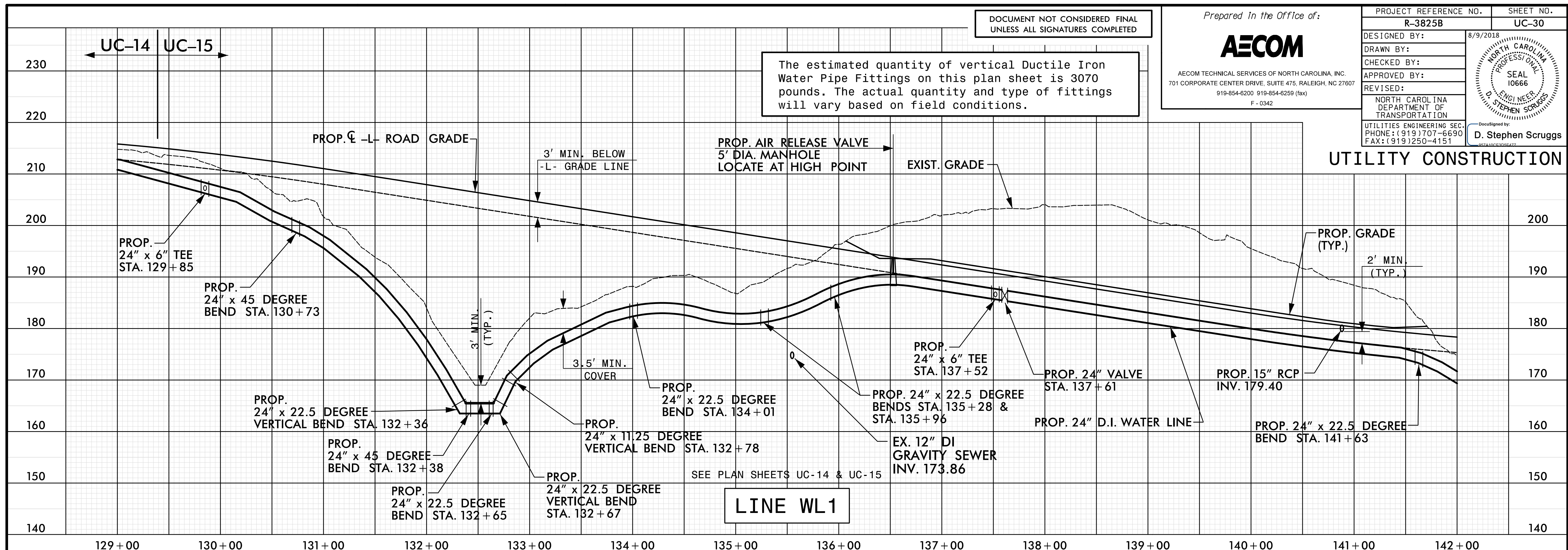
AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.  
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607  
919-854-6200 919-854-6259 (fax)  
F-0342

PROJECT REFERENCE NO. <b>R-3825B</b>	SHEET NO. <b>UC-30</b>
DESIGNED BY:	8/9/2018
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
DocuSigned by: <b>D. Stephen Scruggs</b> 052410C8D9E472	



The estimated quantity of vertical Ductile Iron Water Pipe Fittings on this plan sheet is 3070 pounds. The actual quantity and type of fittings will vary based on field conditions.

### UTILITY CONSTRUCTION



DATE: 8/9/2018  
TIME: 5:46:39 PM  
DWG: R3825B\_UC-30.dwg

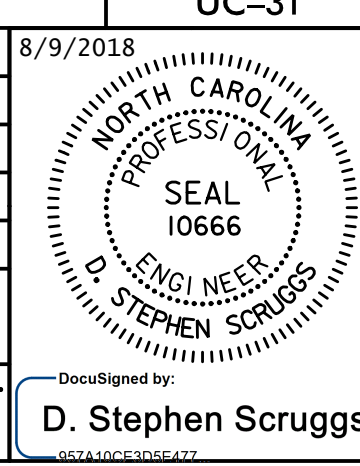
DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

Prepared in the Office of:

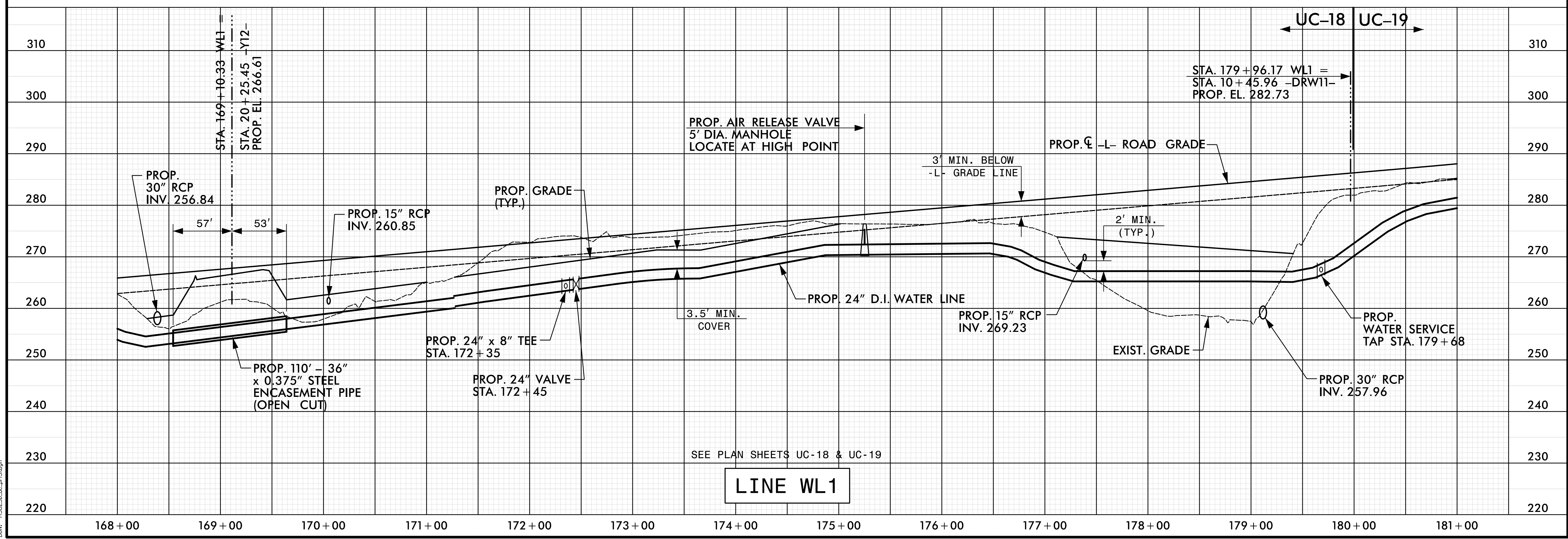
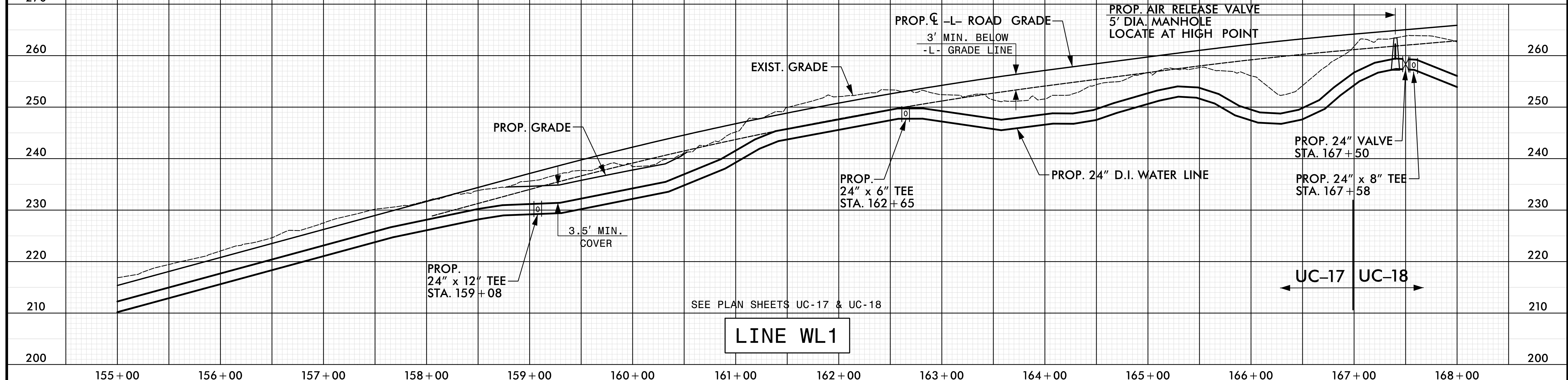


AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.  
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607  
919-854-6200 919-854-6259 (fax)  
F - 0342

PROJECT REFERENCE NO. <b>R-3825B</b>	SHEET NO. <b>UC-31</b>
DESIGNED BY:	8/9/2018
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
DocuSigned by: <b>D. Stephen Scruggs</b>	



### UTILITY CONSTRUCTION



DATE: 8/9/2018  
TIME: 5:43:00 PM  
DWG: R3825B\_UC-31.dgn

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

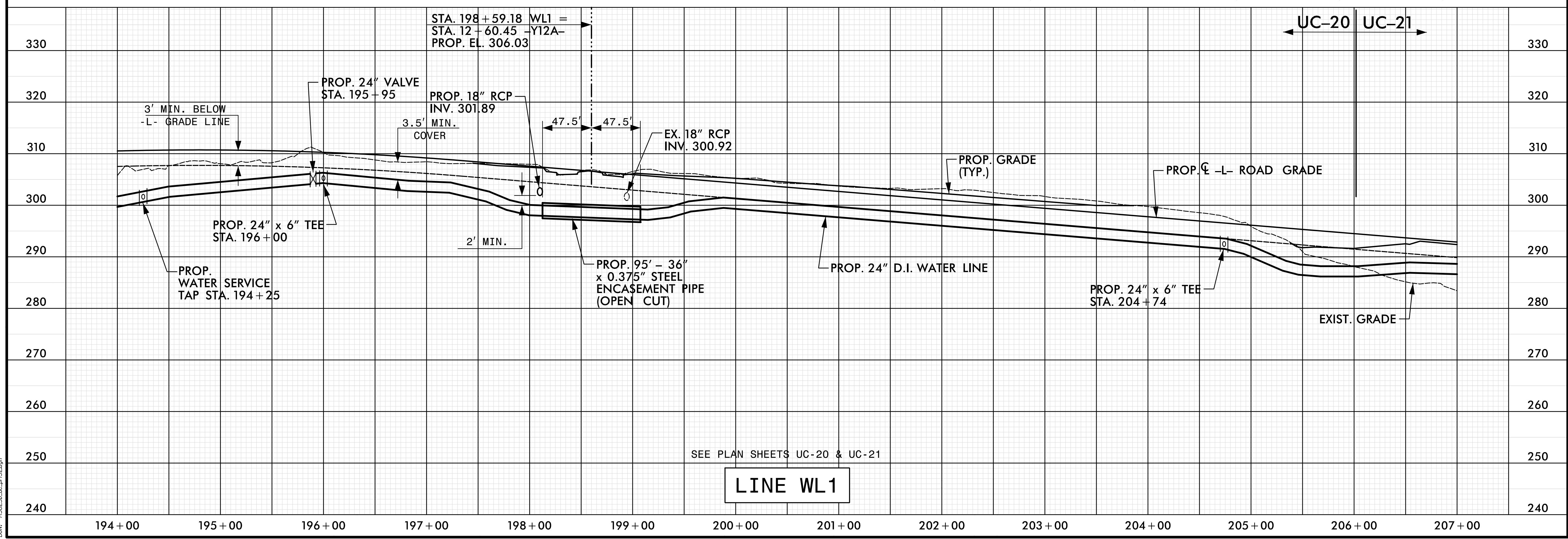
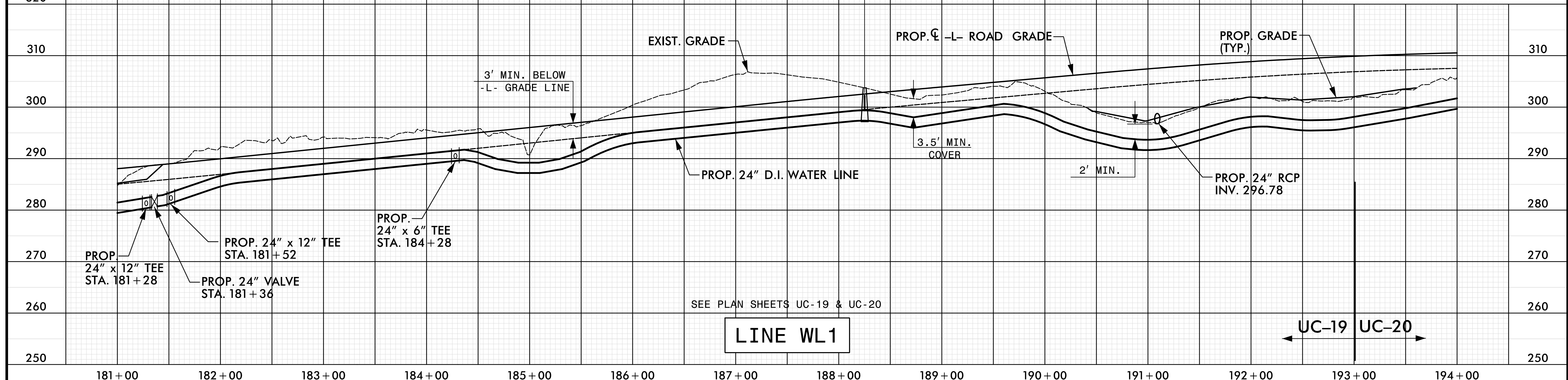
Prepared in the Office of:



AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.  
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607  
919-854-6200 919-854-6259 (fax)  
F - 0342

PROJECT REFERENCE NO. <b>R-3825B</b>	SHEET NO. <b>UC-32</b>
DESIGNED BY:	8/9/2018
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

### UTILITY CONSTRUCTION



DATE: 8/9/2018  
TIME: 3:54:24 PM  
DWG: R3825B\_UC\_32.dwg

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

Prepared In the Office of:

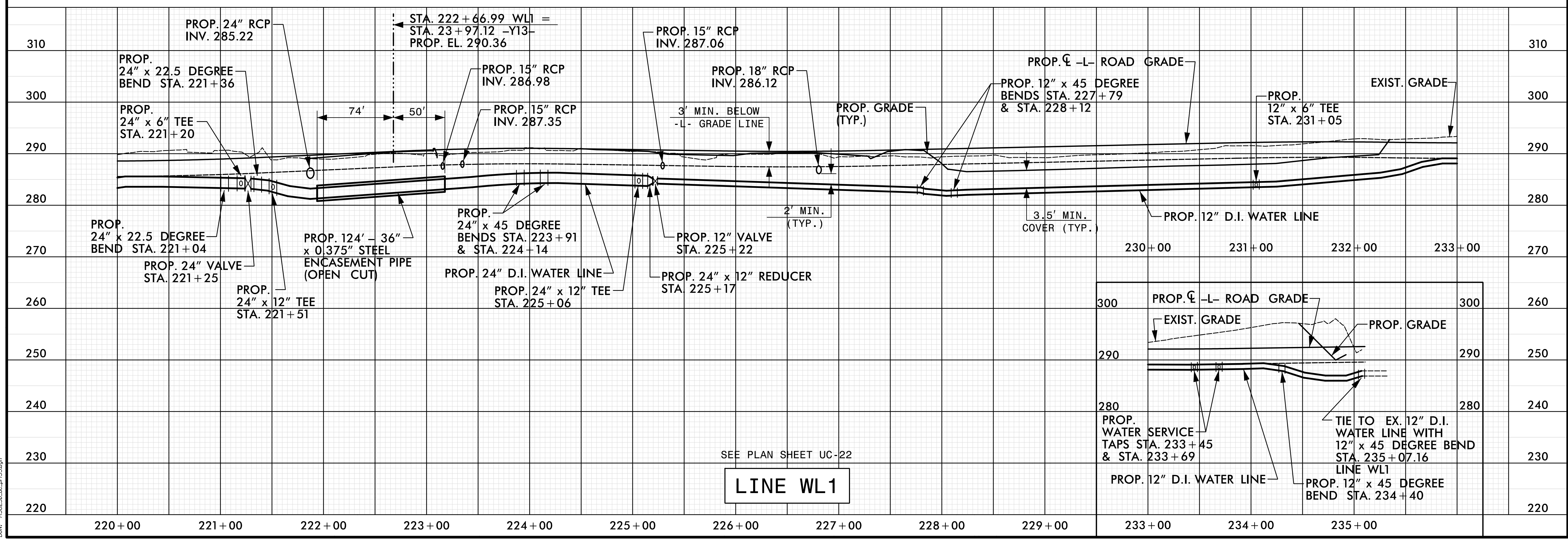
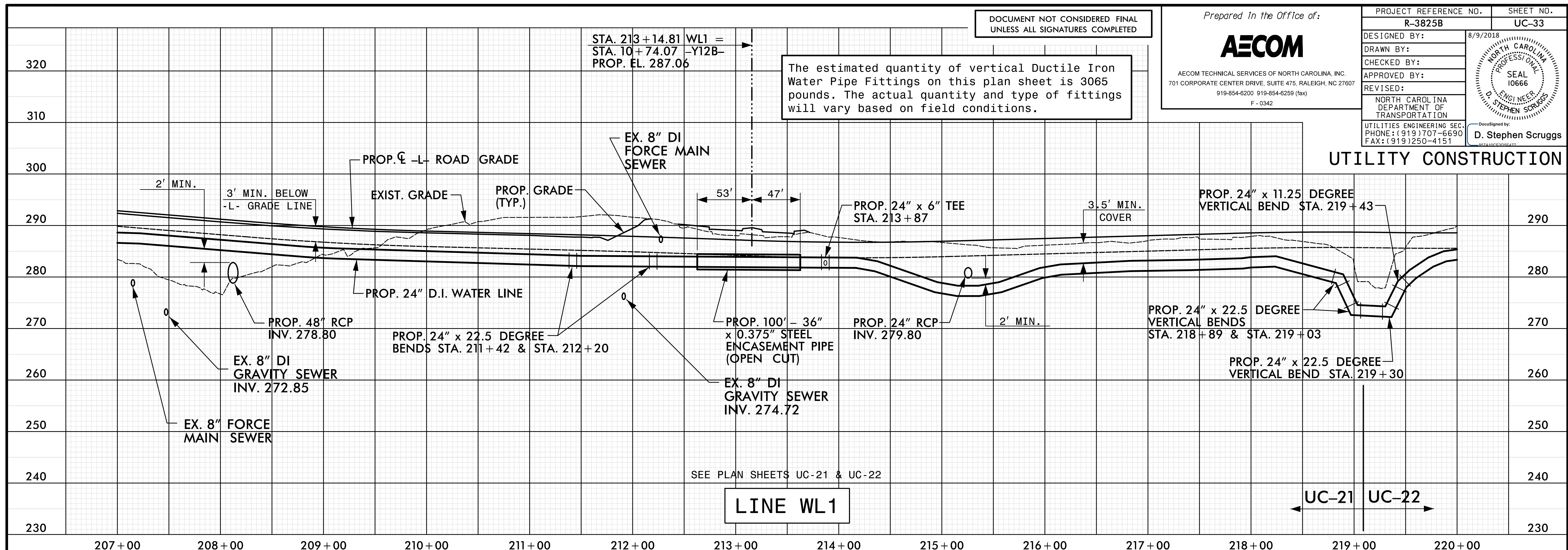


AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.  
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607  
919-854-6200 919-854-6259 (fax)  
F - 0342

PROJECT REFERENCE NO. <b>R-3825B</b>	SHEET NO. <b>UC-33</b>
DESIGNED BY:	8/9/2018
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
DocuSigned by: <b>D. Stephen Scruggs</b> SEAL 10666	

The estimated quantity of vertical Ductile Iron Water Pipe Fittings on this plan sheet is 3065 pounds. The actual quantity and type of fittings will vary based on field conditions.

### UTILITY CONSTRUCTION



DATE: 8/9/2018  
TIME: 5:43:20 PM  
DWG: R3825B\_UC.PLT



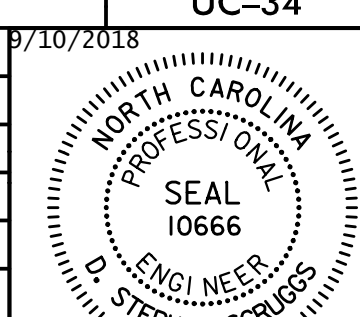
DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

Prepared in the Office of:



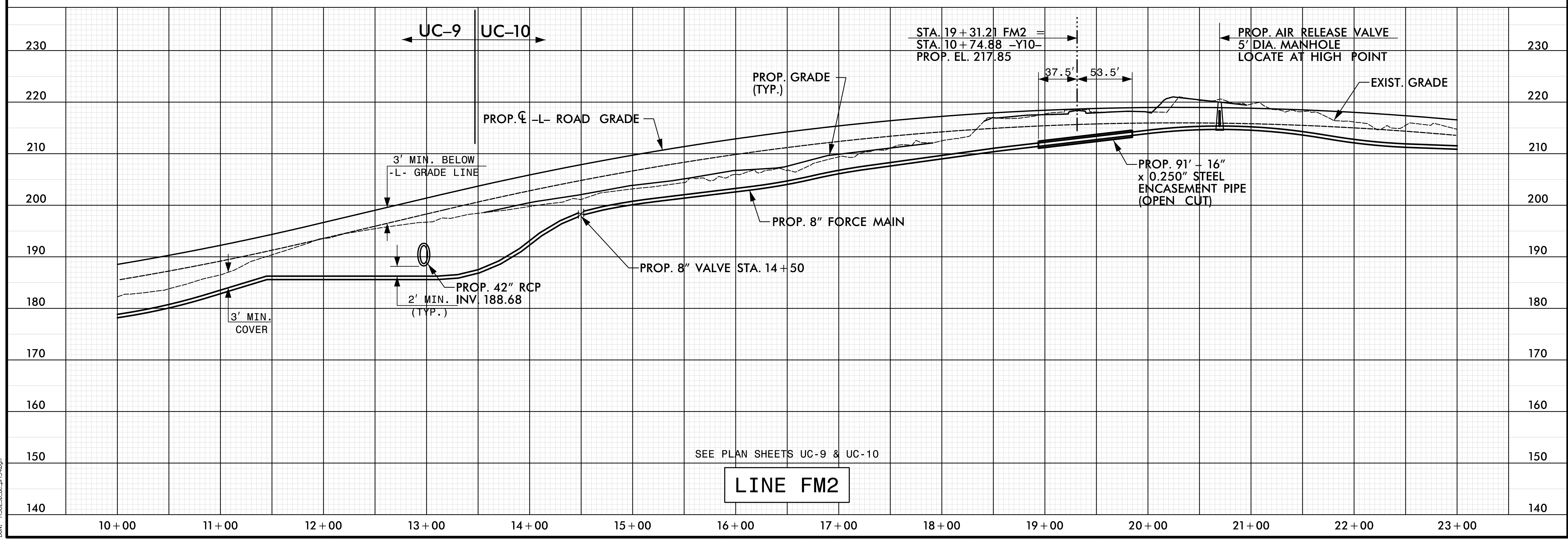
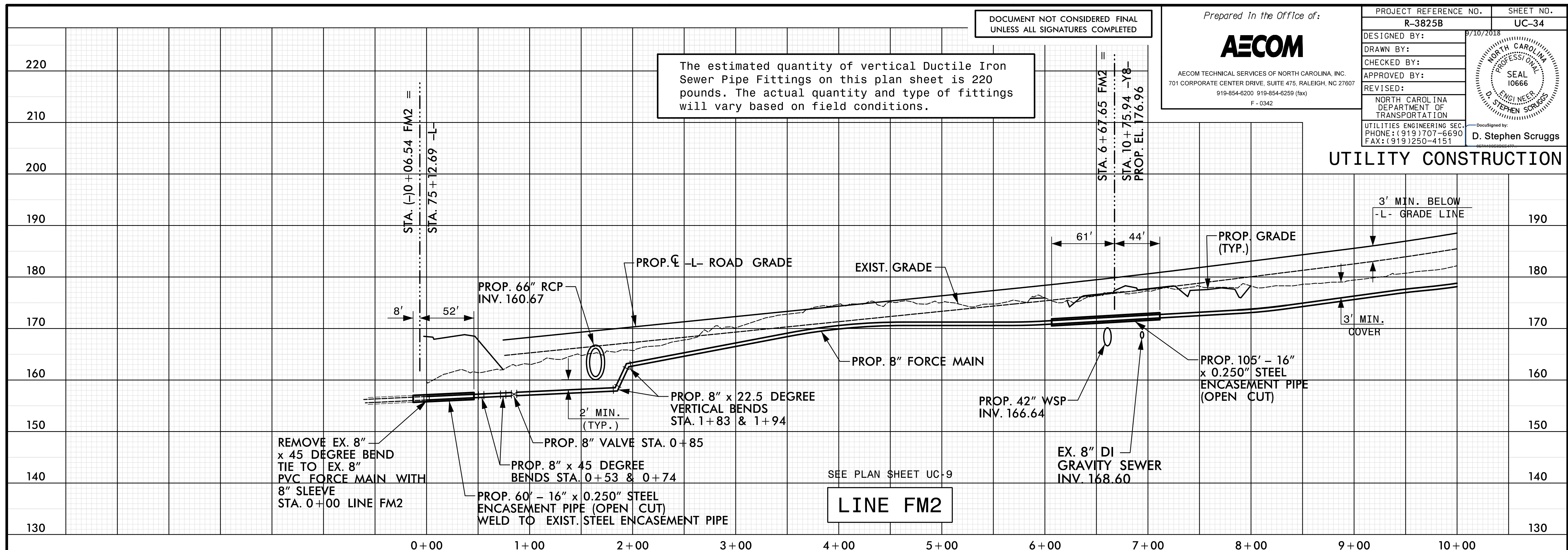
AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.  
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607  
919-854-6200 919-854-6259 (fax)  
F-0342

PROJECT REFERENCE NO. <b>R-3825B</b>	SHEET NO. <b>UC-34</b>
DESIGNED BY:	9/10/2018
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
DocuSigned by: <b>D. Stephen Scruggs</b>	



### UTILITY CONSTRUCTION

The estimated quantity of vertical Ductile Iron Sewer Pipe Fittings on this plan sheet is 220 pounds. The actual quantity and type of fittings will vary based on field conditions.



DATE: 9/7/2018  
TIME: 3:54:43 PM  
DWG: R3825B-UC-34.dgn

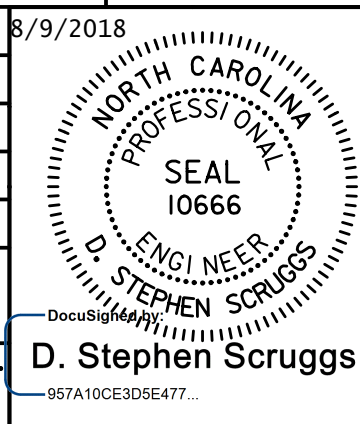
DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

Prepared In the Office of:



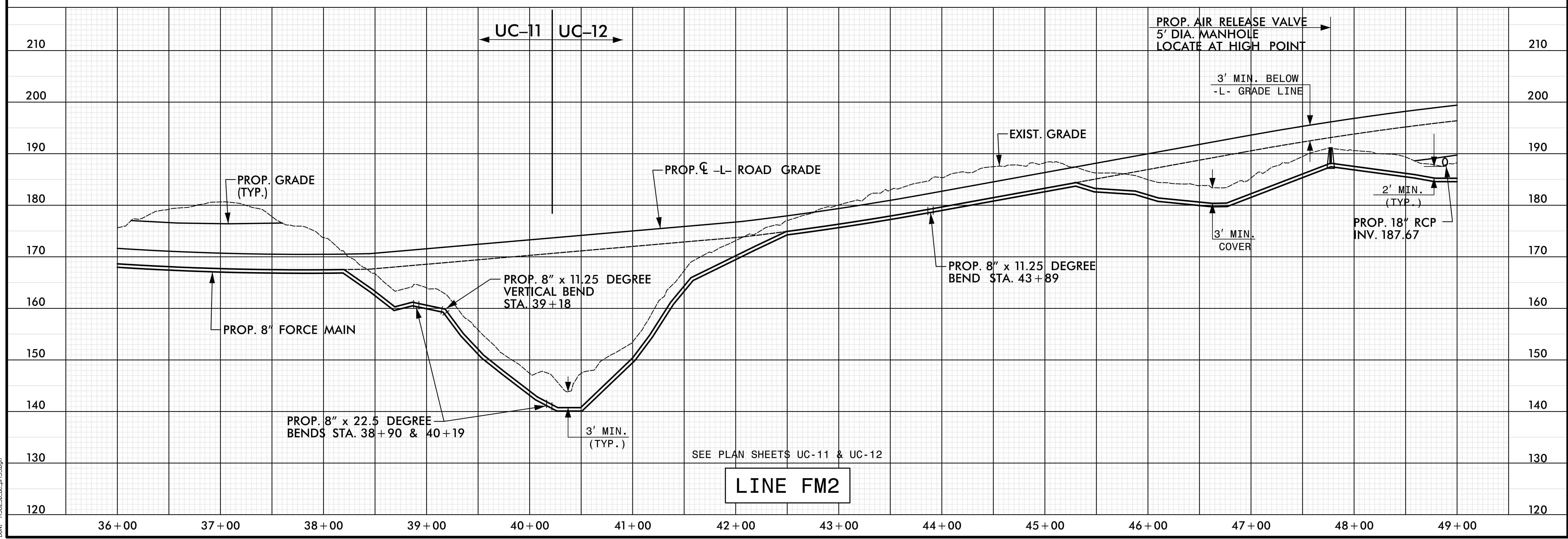
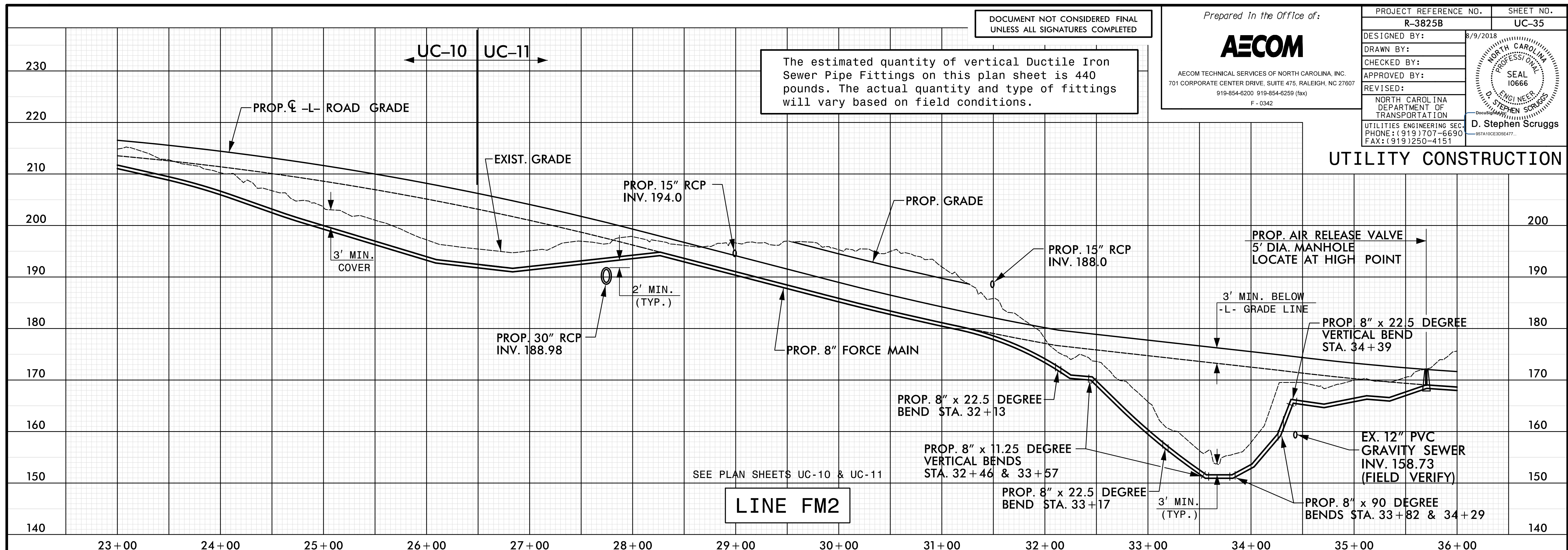
AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.  
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607  
919-854-6200 919-854-6259 (fax)  
F-0342

PROJECT REFERENCE NO. <b>R-3825B</b>	SHEET NO. <b>UC-35</b>
DESIGNED BY:	8/9/2018
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	



The estimated quantity of vertical Ductile Iron Sewer Pipe Fittings on this plan sheet is 440 pounds. The actual quantity and type of fittings will vary based on field conditions.

### UTILITY CONSTRUCTION



DATE: 8/9/2018  
TIME: 3:55:26 PM  
DWG: R3825B\_UC\_35.dgn

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

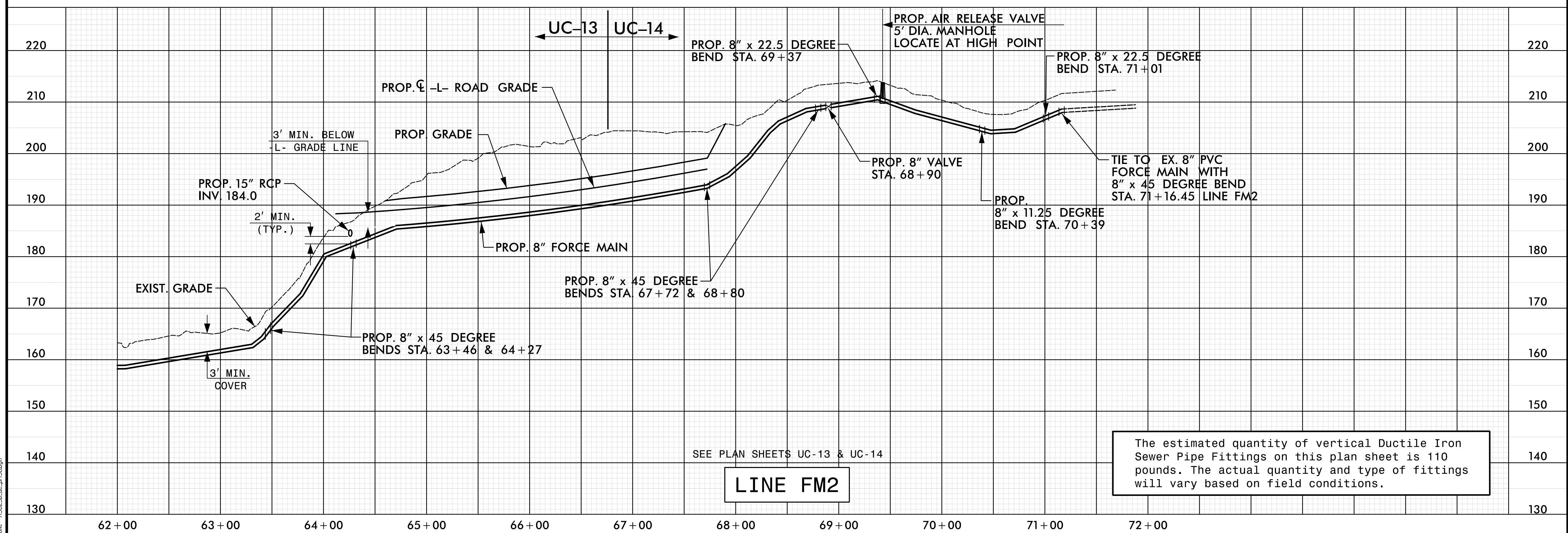
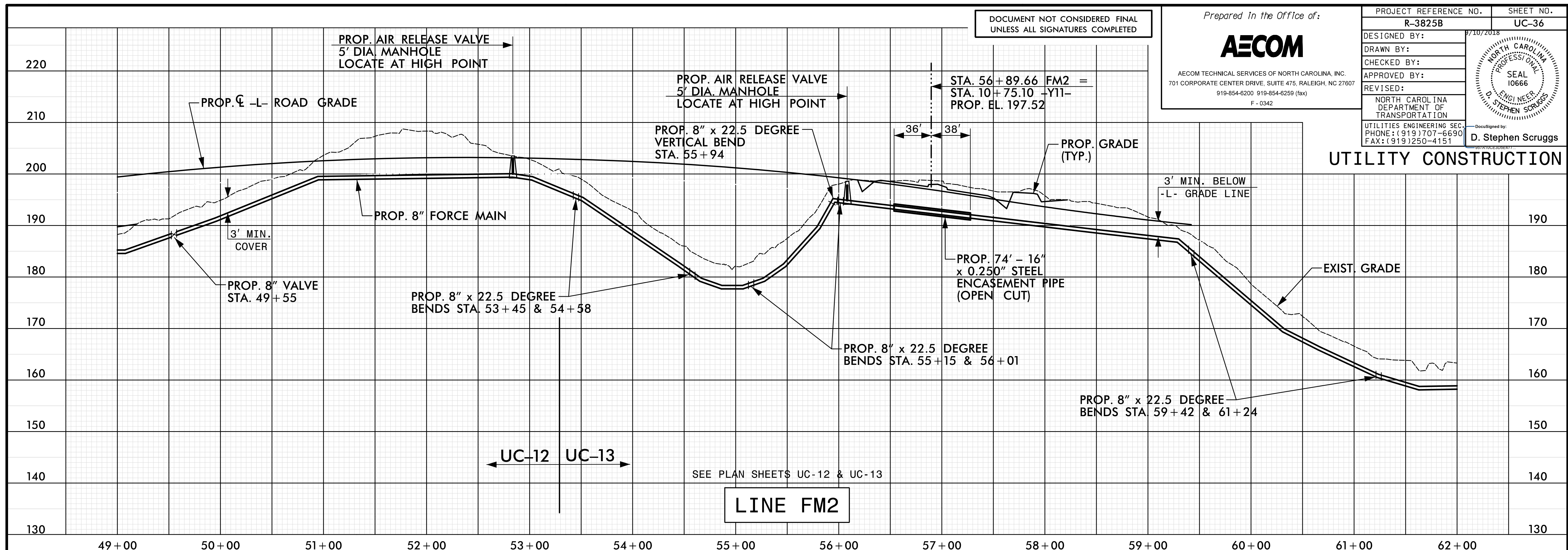
Prepared In the Office of:



AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.  
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607  
919-854-6200 919-854-6259 (fax)  
F-0342

PROJECT REFERENCE NO. <b>R-3825B</b>	SHEET NO. <b>UC-36</b>
DESIGNED BY:	9/7/2018
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
Seal: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 10666 D. Stephen Scruggs	

### UTILITY CONSTRUCTION



The estimated quantity of vertical Ductile Iron Sewer Pipe Fittings on this plan sheet is 110 pounds. The actual quantity and type of fittings will vary based on field conditions.

DATE: 9/7/2018  
TIME: 3:56:06 PM  
DWG: R3825B\_UC-36.dgn

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

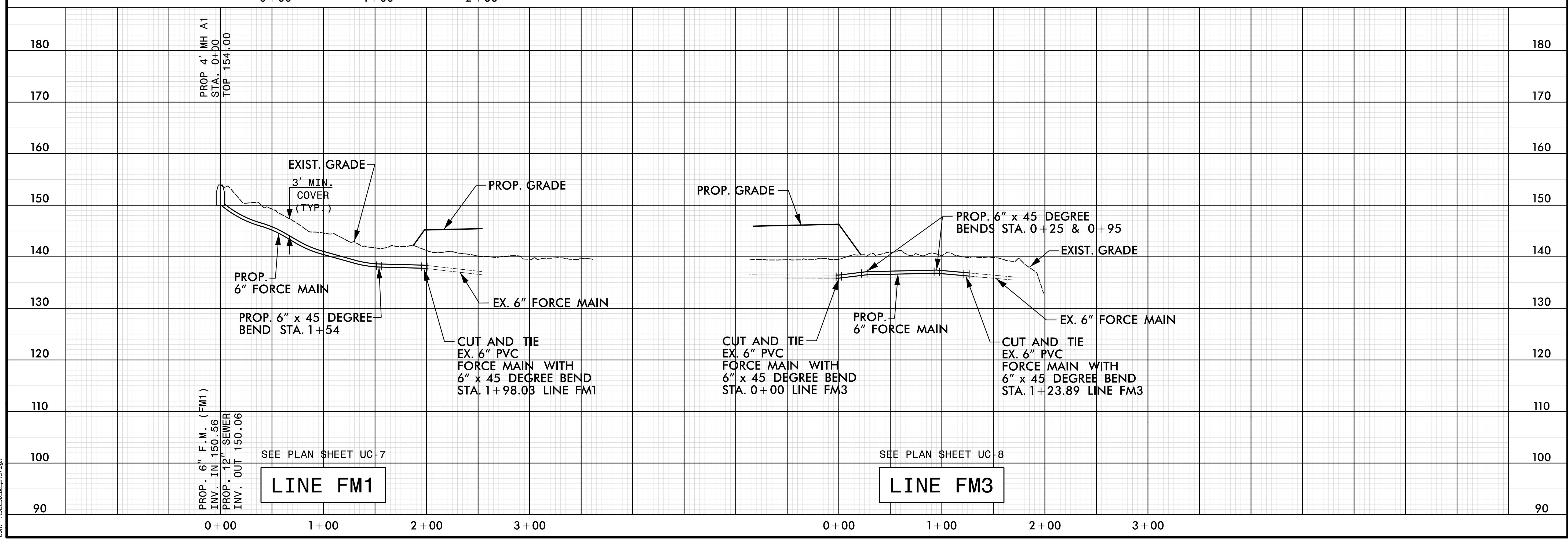
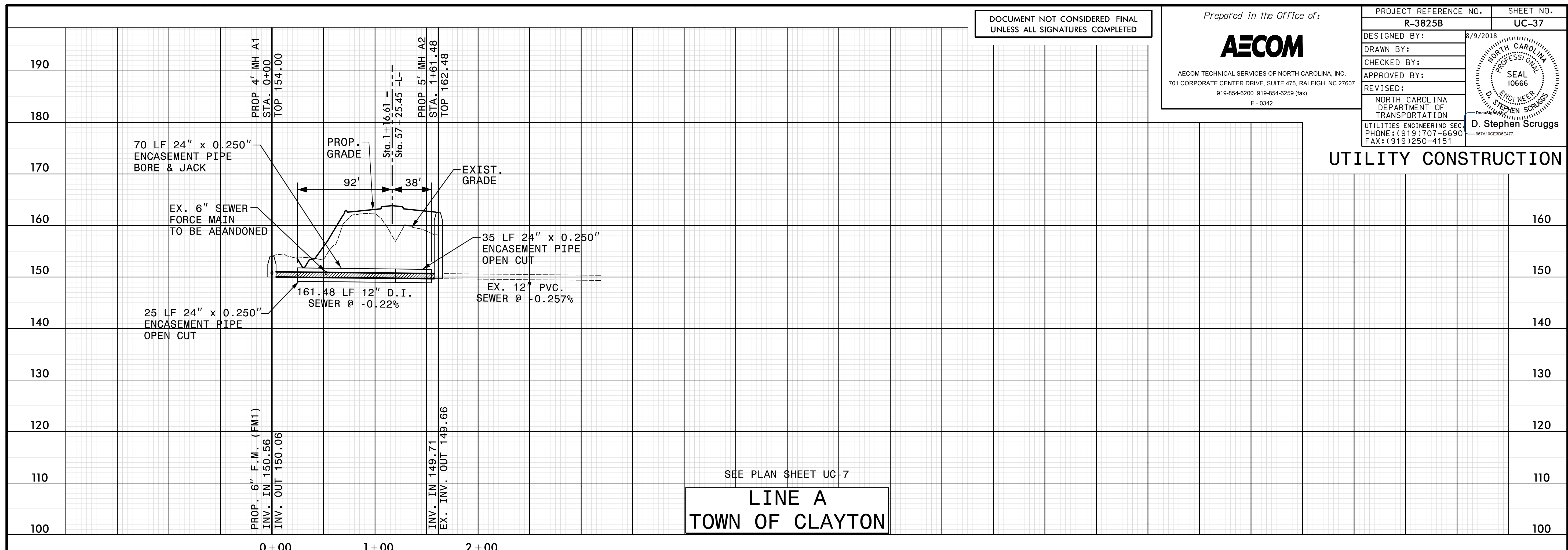
Prepared in the Office of:



AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.  
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607  
919-854-6200 919-854-6259 (fax)  
F-0342

PROJECT REFERENCE NO. <b>R-3825B</b>	SHEET NO. <b>UC-37</b>
DESIGNED BY:	8/9/2018
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

### UTILITY CONSTRUCTION

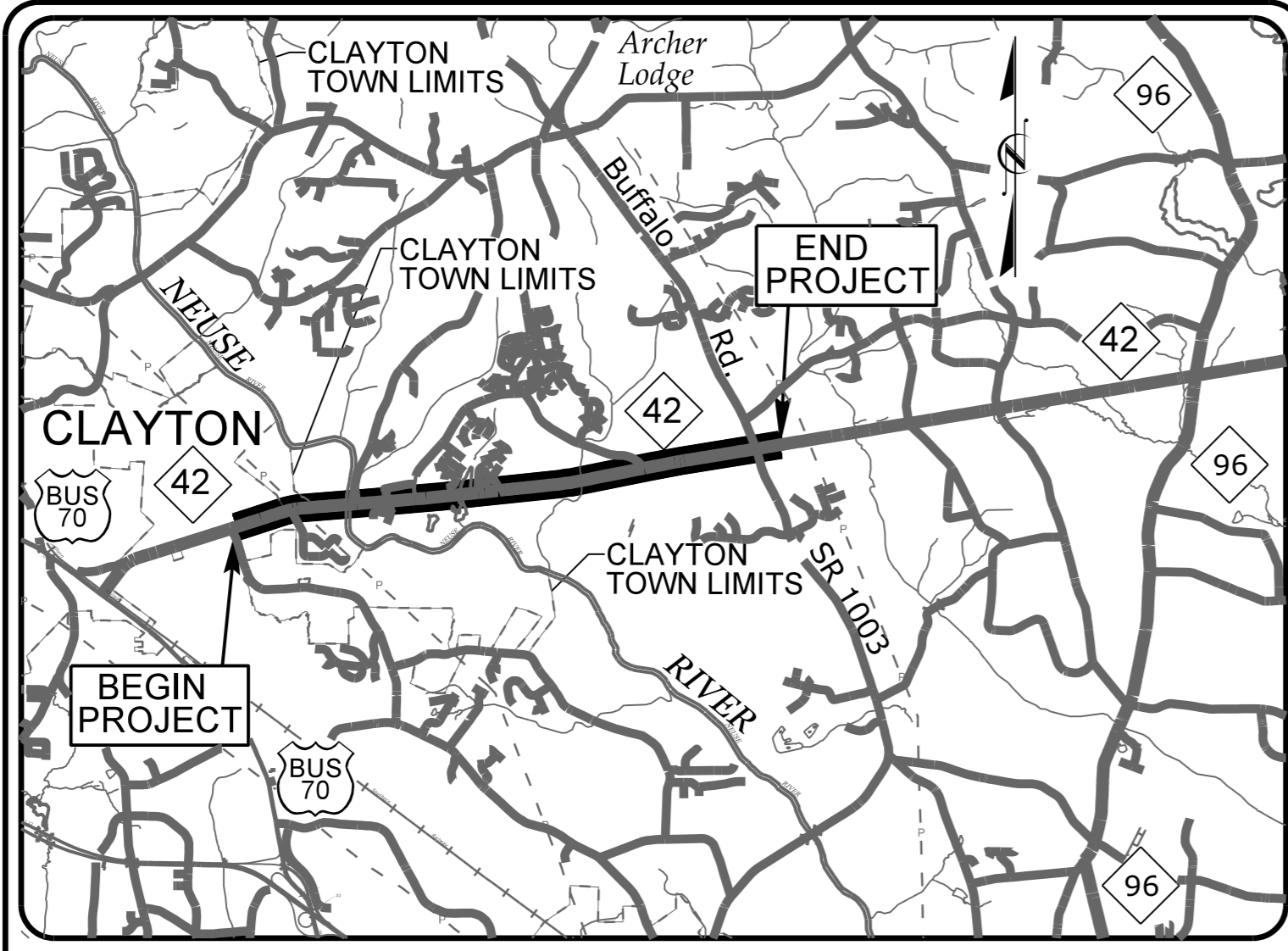


DATE: 8/9/2018  
TIME: 3:56:01 PM  
DWG: R3825B-UC-37.dgn

09/08/99

TIP PROJECT: R-3825B

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



VICINITY MAP  
NOT TO SCALE

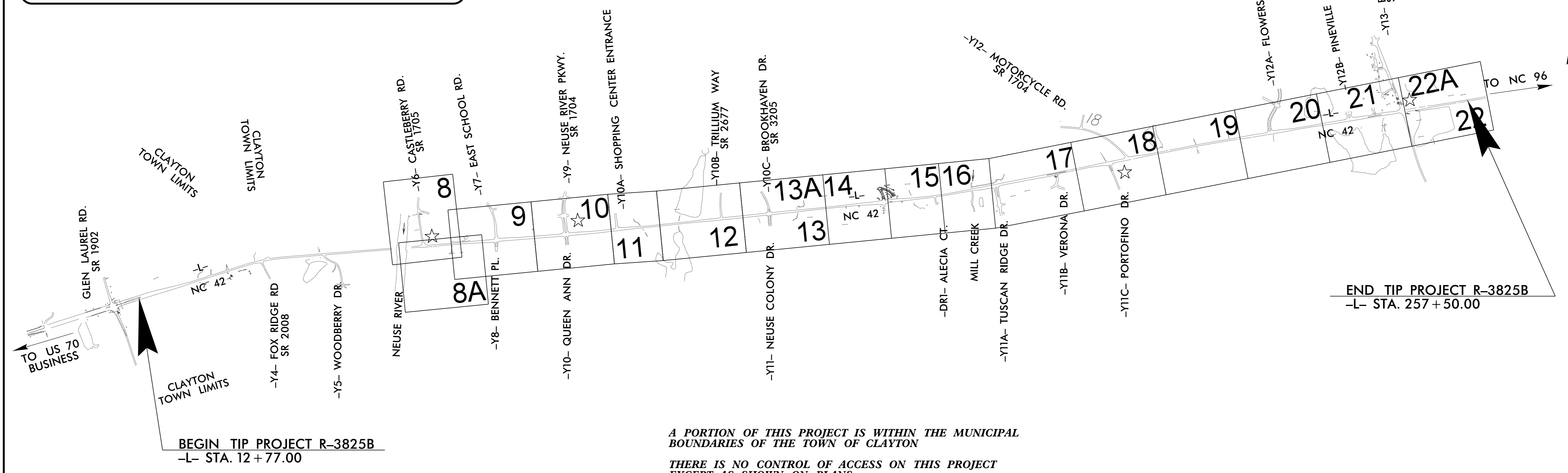
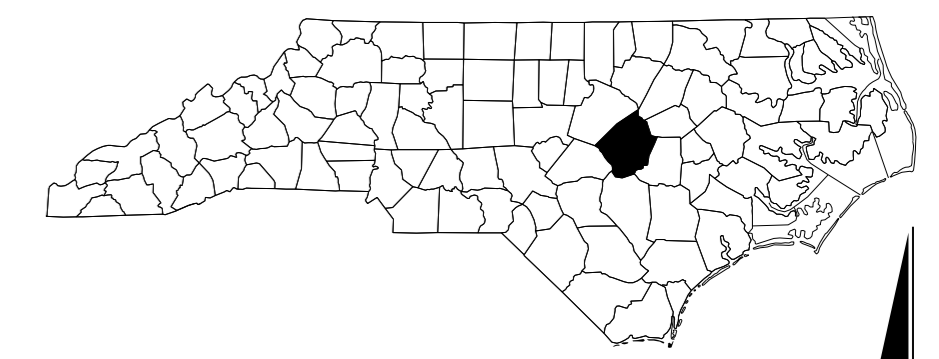
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

UTILITY CONSTRUCTION PLANS  
JOHNSTON COUNTY

LOCATION: NC 42 FROM SR 1902 (GLENN LAUREL RD)  
TO SR 1003 (BUFFALO RD)

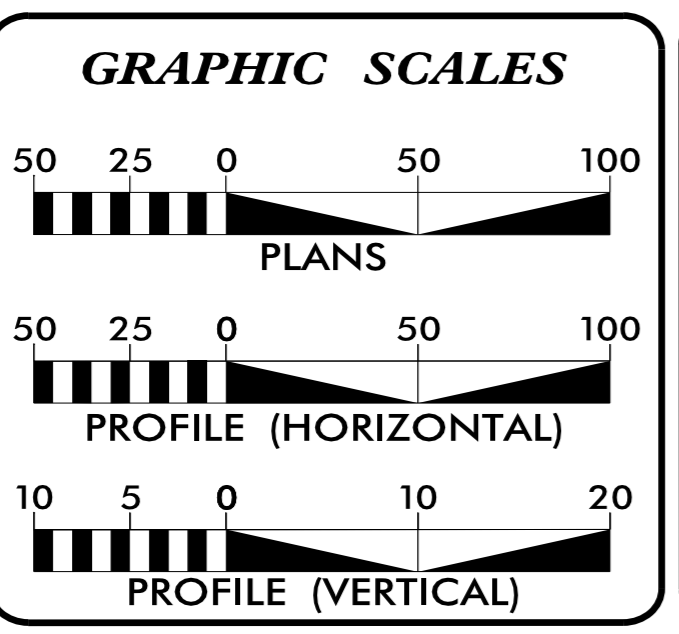
TYPE OF WORK: WATER AND SEWER LINE RELOCATION

T.I.P. NO.	SHEET NO.
R-3825B	UC-1Q



END TIP PROJECT R-3825B  
-L- STA. 257+50.00

A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE TOWN OF CLAYTON  
THERE IS NO CONTROL OF ACCESS ON THIS PROJECT EXCEPT AS SHOWN ON PLANS  
A DESIGN EXCEPTION IS REQUIRED FOR MAXIMUM GRADE.  
CLEARING ON THIS PROJECT WILL BE PERFORMED TO THE LIMITS ESTABLISHED BY NCDOT METHOD III.



SHEET NO.:	DESCRIPTION:
UC-1Q	TITLE SHEET
UC-2Q	UTILITY SYMBOLOGY
UC-3Q	NOTES
UC-3A THRU UC-3DQ	DETAILS
UC-8Q THRU UC-22Q	UTILITY CONSTRUCTION SHEETS AND PROFILES

**WATER AND SEWER OWNERS ON PROJECT**

(A) WATER AQUA NC  
(B) SANITARY SEWER AQUA NC

PREPARED IN THE OFFICE OF

**CONSULTANT INFO**  
**Dewberry**  
 2610 WYCLIFF ROAD, SUITE 410  
 RALEIGH, NC 27607  
 919.881.9939  
 NCBELS: NO. F-0929

LARRY MITCHELL, P.E. CONSULTANT CONTACT #1  
 TIMOTHY RITTACO, P.E. CONSULTANT CONTACT #2  
 DUSTIN JAMES CONSULTANT CONTACT #3

SEAL

8/9/2018

**DIVISION OF HIGHWAYS UTILITIES UNIT**  
 1555 MAIL SERVICES CENTER  
 RALEIGH, NC 27699-1555  
 PHONE (919) 707-6690  
 FAX (919) 250-4151

NABIL HAMDAN UTILITIES REGIONAL ENGINEER  
 ASHLEY B. COX, JR, LG UTILITIES ENGINEER  
 KYLE PLEASANT UTILITIES AREA COORDINATOR  
 DAYTON MARTIN UTILITIES COORDINATOR

\$\$\$\$\$SYTIME\$\$\$\$\$  
\$\$\$\$\$DGN\$\$\$\$\$  
\$\$\$\$\$USERNAME\$\$\$\$\$

# STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale \*S.U.E. = Subsurface Utility Engineering

## BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EP
Property Corner	-----
Property Monument	□ ECM
Parcel/Sequence Number	①23
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	--- WLB ---
Proposed Wetland Boundary	--- WLB ---
Existing Endangered Animal Boundary	--- EAB ---
Existing Endangered Plant Boundary	--- EPB ---
Existing Historic Property Boundary	--- HPB ---
Known Contamination Area: Soil	☠ ☠
Potential Contamination Area: Soil	☠ ☠
Known Contamination Area: Water	☠ ☠
Potential Contamination Area: Water	☠ ☠
Contaminated Site: Known or Potential	☠ ☠

## BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	○
Well	○ W
Small Mine	✂
Foundation	▭
Area Outline	▭
Cemetery	⊕
Building	▭
School	▭
Church	▭
Dam	▭

## HYDROLOGY:

Stream or Body of Water	-----
Hydro, Pool or Reservoir	▭
Jurisdictional Stream	--- JS ---
Buffer Zone 1	--- BZ 1 ---
Buffer Zone 2	--- BZ 2 ---
Flow Arrow	←
Disappearing Stream	-----
Spring	○
Wetland	---
Proposed Lateral, Tail, Head Ditch	-----
False Sump	▽

## RAILROADS:

Standard Gauge	-----
RR Signal Milepost	① MILEPOST 35
Switch	SWITCH
RR Abandoned	-----
RR Dismantled	-----

## RIGHT OF WAY:

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	-----
Proposed Right of Way Line	-----
Proposed Right of Way Line with Iron Pin and Cap Marker	-----
Proposed Right of Way Line with Concrete or Granite R/W Marker	-----
Proposed Control of Access Line with Concrete C/A Marker	-----
Existing Control of Access	-----
Proposed Control of Access	-----
Existing Easement Line	--- E ---
Proposed Temporary Construction Easement	--- E ---
Proposed Temporary Drainage Easement	--- TDE ---
Proposed Permanent Drainage Easement	--- PDE ---
Proposed Permanent Drainage / Utility Easement	--- DUE ---
Proposed Permanent Utility Easement	--- PUE ---
Proposed Temporary Utility Easement	--- TUE ---
Proposed Aerial Utility Easement	--- AUE ---
Proposed Permanent Easement with Iron Pin and Cap Marker	-----

## ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	--- C ---
Proposed Slope Stakes Fill	--- F ---
Proposed Curb Ramp	CR
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊕
Pavement Removal	▨

## VEGETATION:

Single Tree	☼
Single Shrub	☼
Hedge	-----
Woods Line	-----

Orchard	☼ ☼ ☼ ☼
Vineyard	▭ Vineyard

## EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	CONC
Bridge Wing Wall, Head Wall and End Wall	CONC WW
MINOR:	
Head and End Wall	CONC HW
Pipe Culvert	-----
Footbridge	-----
Drainage Box: Catch Basin, DI or JB	CB
Paved Ditch Gutter	-----
Storm Sewer Manhole	Ⓢ
Storm Sewer	S

## UTILITIES:

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	Ⓢ
Power Line Tower	⊠
Power Transformer	⊠
U/G Power Cable Hand Hole	-----
H-Frame Pole	●
U/G Power Line LOS B (S.U.E.*)	--- P ---
U/G Power Line LOS C (S.U.E.*)	--- P ---
U/G Power Line LOS D (S.U.E.*)	--- P ---

## TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	Ⓢ
Telephone Pedestal	Ⓢ
Telephone Cell Tower	Ⓢ
U/G Telephone Cable Hand Hole	-----
U/G Telephone Cable LOS B (S.U.E.*)	--- T ---
U/G Telephone Cable LOS C (S.U.E.*)	--- T ---
U/G Telephone Cable LOS D (S.U.E.*)	--- T ---
U/G Telephone Conduit LOS B (S.U.E.*)	--- TC ---
U/G Telephone Conduit LOS C (S.U.E.*)	--- TC ---
U/G Telephone Conduit LOS D (S.U.E.*)	--- TC ---
U/G Fiber Optics Cable LOS B (S.U.E.*)	--- T FO ---
U/G Fiber Optics Cable LOS C (S.U.E.*)	--- T FO ---
U/G Fiber Optics Cable LOS D (S.U.E.*)	--- T FO ---

## WATER:

Water Manhole	Ⓢ
Water Meter	○
Water Valve	⊗
Water Hydrant	Ⓢ
U/G Water Line LOS B (S.U.E.*)	--- W ---
U/G Water Line LOS C (S.U.E.*)	--- W ---
U/G Water Line LOS D (S.U.E.*)	--- W ---
Above Ground Water Line	A/G Water

## TV:

TV Pedestal	Ⓢ
TV Tower	⊗
U/G TV Cable Hand Hole	-----
U/G TV Cable LOS B (S.U.E.*)	--- TV ---
U/G TV Cable LOS C (S.U.E.*)	--- TV ---
U/G TV Cable LOS D (S.U.E.*)	--- TV ---
U/G Fiber Optic Cable LOS B (S.U.E.*)	--- TV FO ---
U/G Fiber Optic Cable LOS C (S.U.E.*)	--- TV FO ---
U/G Fiber Optic Cable LOS D (S.U.E.*)	--- TV FO ---

## GAS:

Gas Valve	◇
Gas Meter	Ⓢ
U/G Gas Line LOS B (S.U.E.*)	--- G ---
U/G Gas Line LOS C (S.U.E.*)	--- G ---
U/G Gas Line LOS D (S.U.E.*)	--- G ---
Above Ground Gas Line	A/G Gas

## SANITARY SEWER:

Sanitary Sewer Manhole	Ⓢ
Sanitary Sewer Cleanout	Ⓢ
U/G Sanitary Sewer Line	--- SS ---
Above Ground Sanitary Sewer	A/G Sanitary Sewer
SS Forced Main Line LOS B (S.U.E.*)	--- FSS ---
SS Forced Main Line LOS C (S.U.E.*)	--- FSS ---
SS Forced Main Line LOS D (S.U.E.*)	--- FSS ---

## MISCELLANEOUS:

Utility Pole	●
Utility Pole with Base	Ⓢ
Utility Located Object	○
Utility Traffic Signal Box	Ⓢ
Utility Unknown U/G Line LOS B (S.U.E.*)	--- UTL ---
U/G Tank; Water, Gas, Oil	▭
Underground Storage Tank, Approx. Loc.	UST
A/G Tank; Water, Gas, Oil	▭
Geoenvironmental Boring	Ⓢ
U/G Test Hole LOS A (S.U.E.*)	Ⓢ
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.