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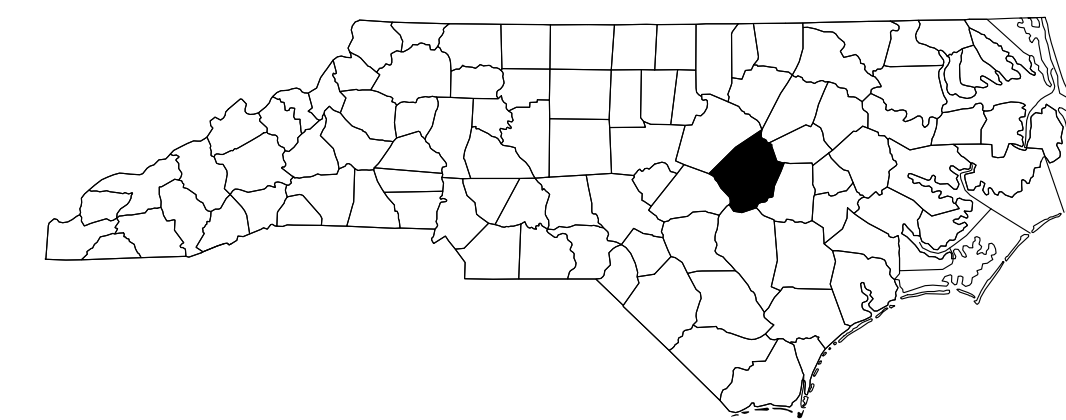
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TIP PROJECT: R-3825B

CONTRACT:

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

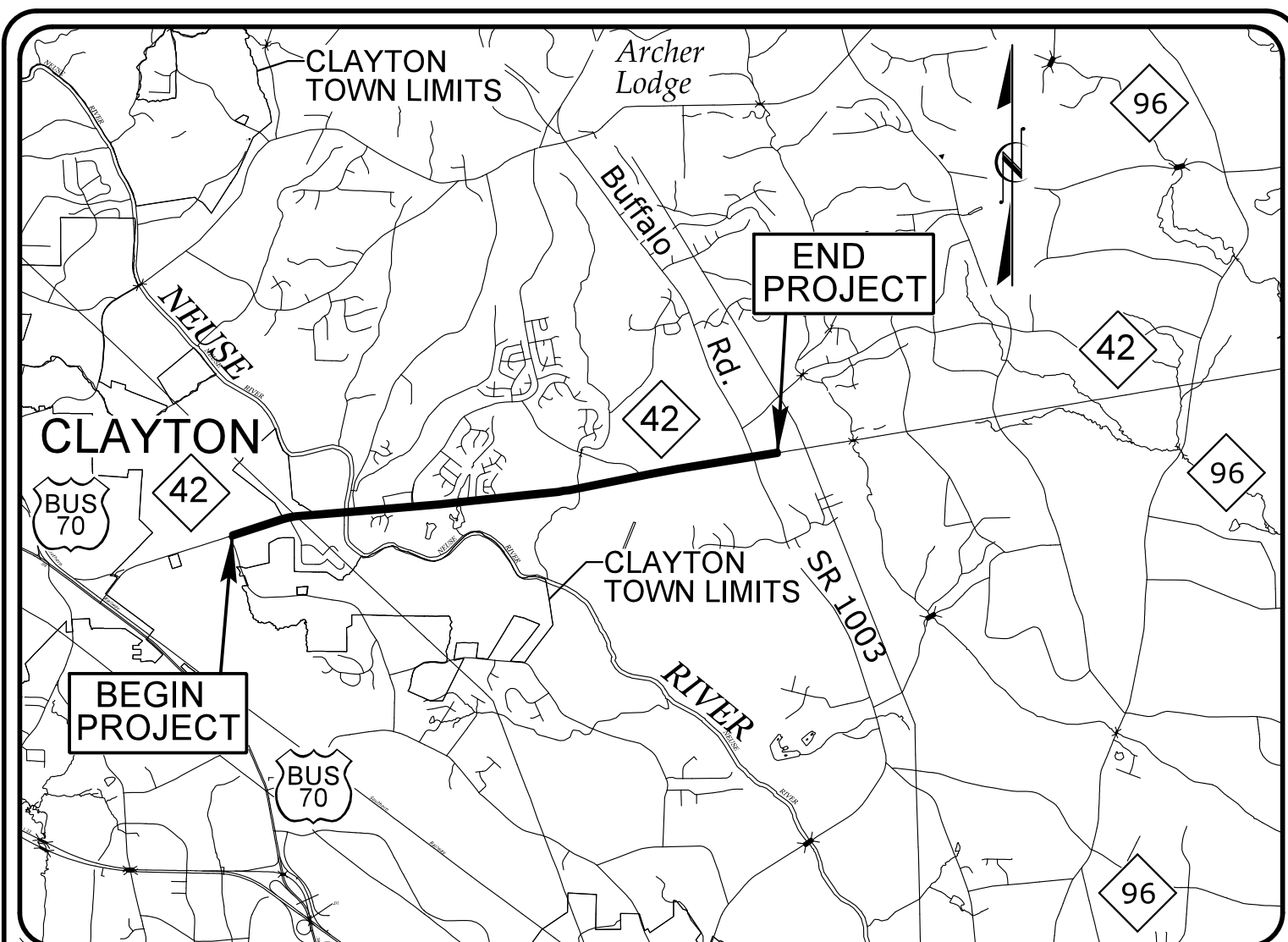
T.I.P. NO.	SHEET NO.
R-3825B	UC-1



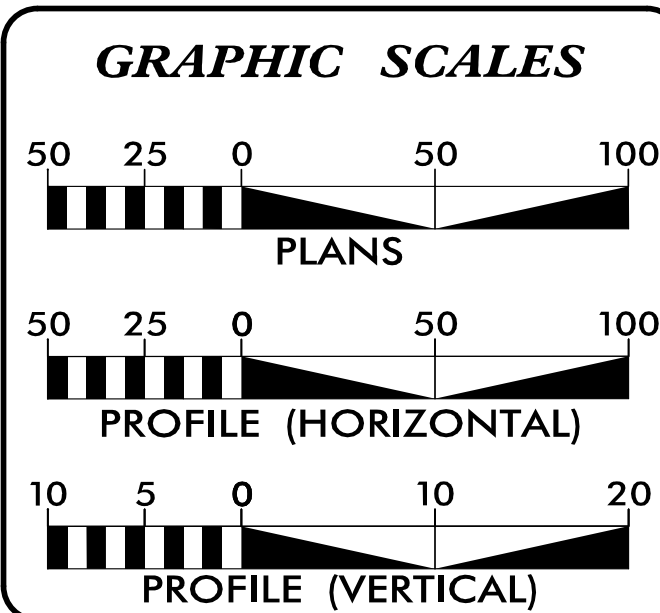
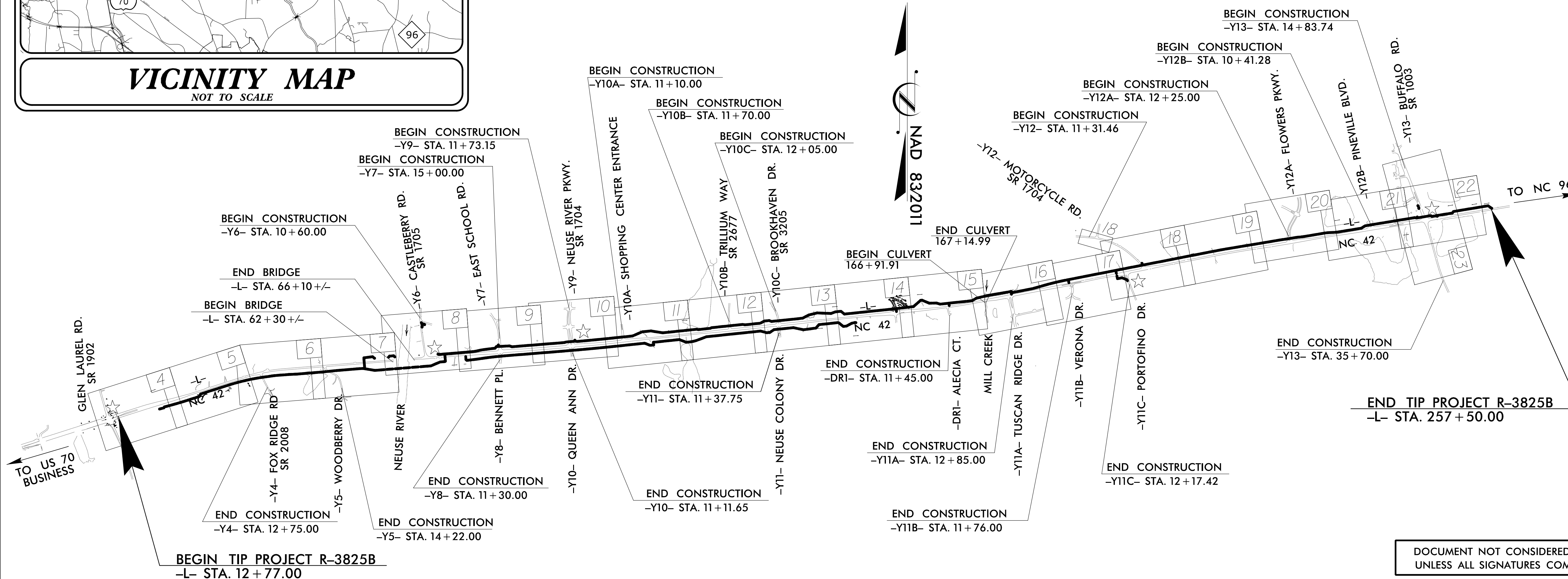
UTILITY CONSTRUCTION PLANS JOHNSTON COUNTY

**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



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

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

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)

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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:

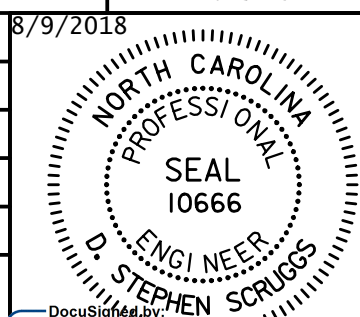
UTILITY CONSTRUCTION

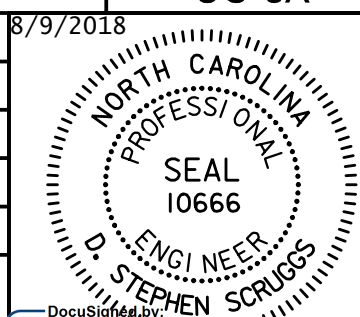
Prepared In the Office of:

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AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607
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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	
	
D. Stephen Scruggs UTILITY CONSTRUCTION PLANS ONLY	



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		

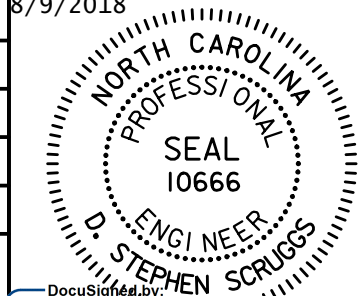
PIPE LAYING CONDITION
NOT TO SCALE

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:	
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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		

3/4\"/>

Drawn By:	Name	Date	JOHNSTON COUNTY	WATER STANDARD DETAIL	PAGE
Checked By:			Department of Public Utilities	3/4\"/>	
Approved By:			P.O. Box 2263		
Scale:			Smithfield, NC 27577		

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Drawn By:	Name	Date	JOHNSTON COUNTY	WATER STANDARD DETAIL	PAGE
Checked By:			Department of Public Utilities	2\"/>	
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
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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		

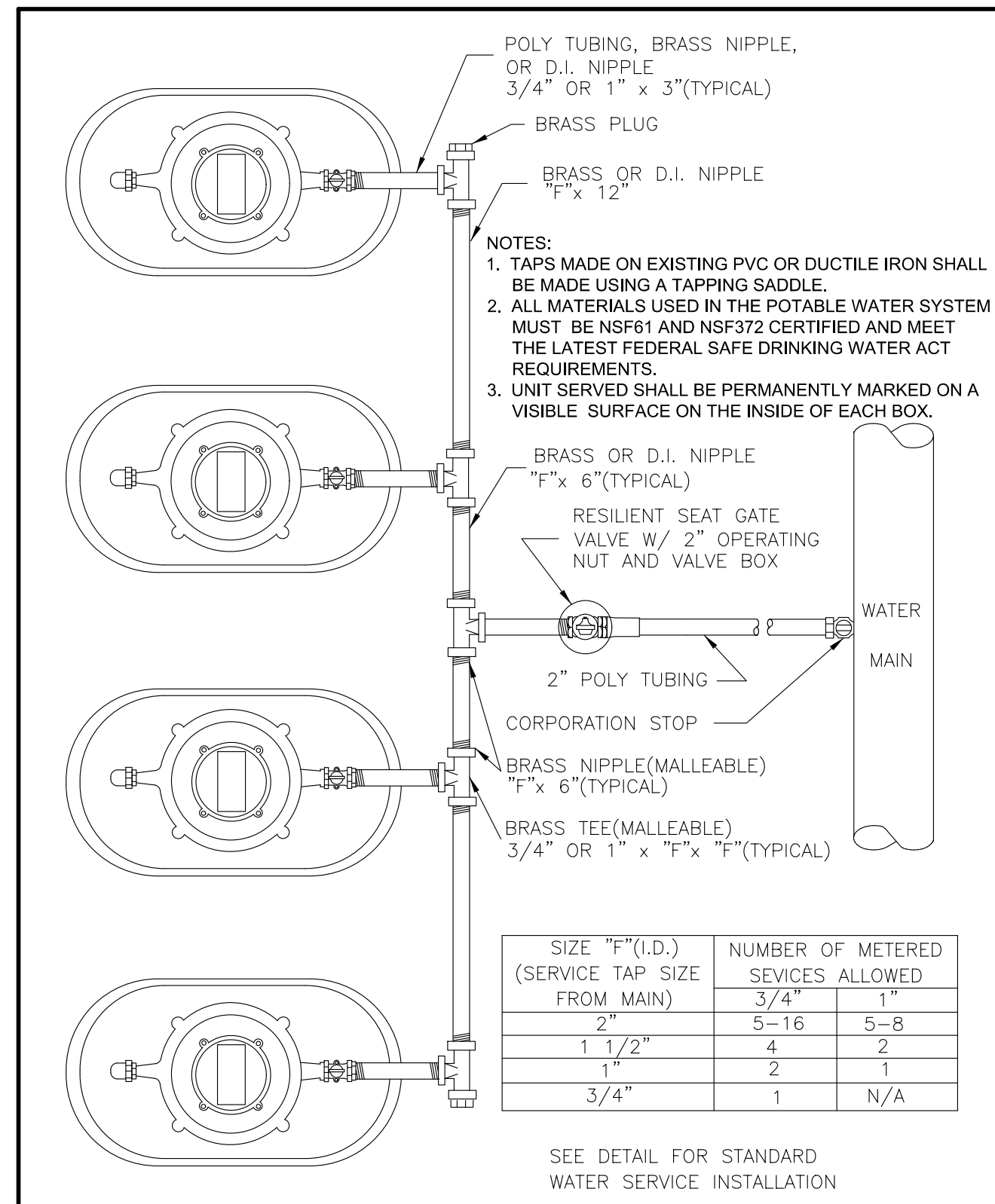
3" WATER SERVICE W/ BFP-ABOVE GRADE
NOT TO SCALE

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.

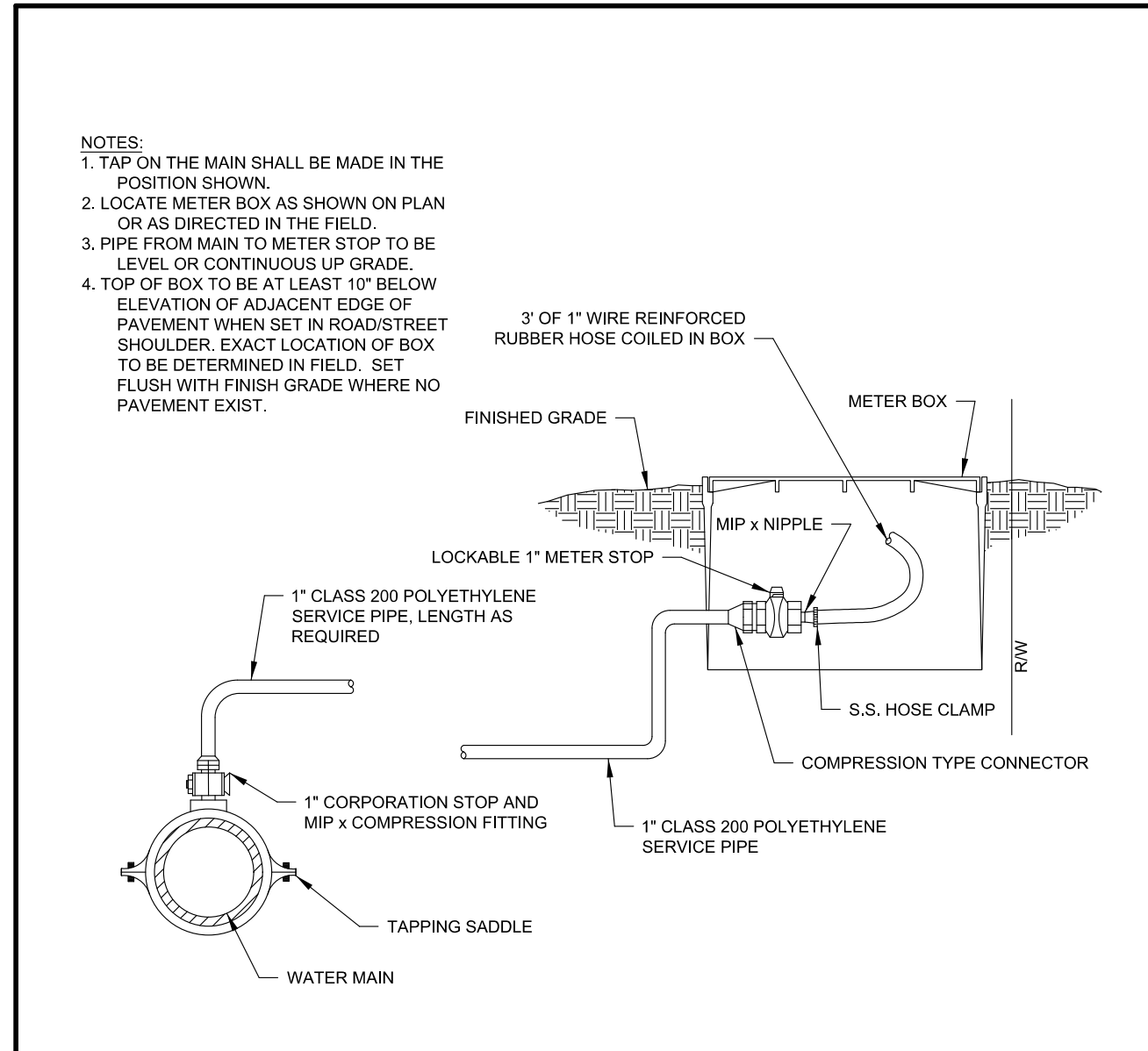
Drawn By:	Name	Date	JOHNSTON COUNTY	WATER STANDARD DETAIL	PAGE
Checked By:			Department of Public Utilities	3" Meter & Backflow Assembly	24A
Approved By:			P.O. Box 2293		
Scale:			Smithfield, NC 27577		

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		

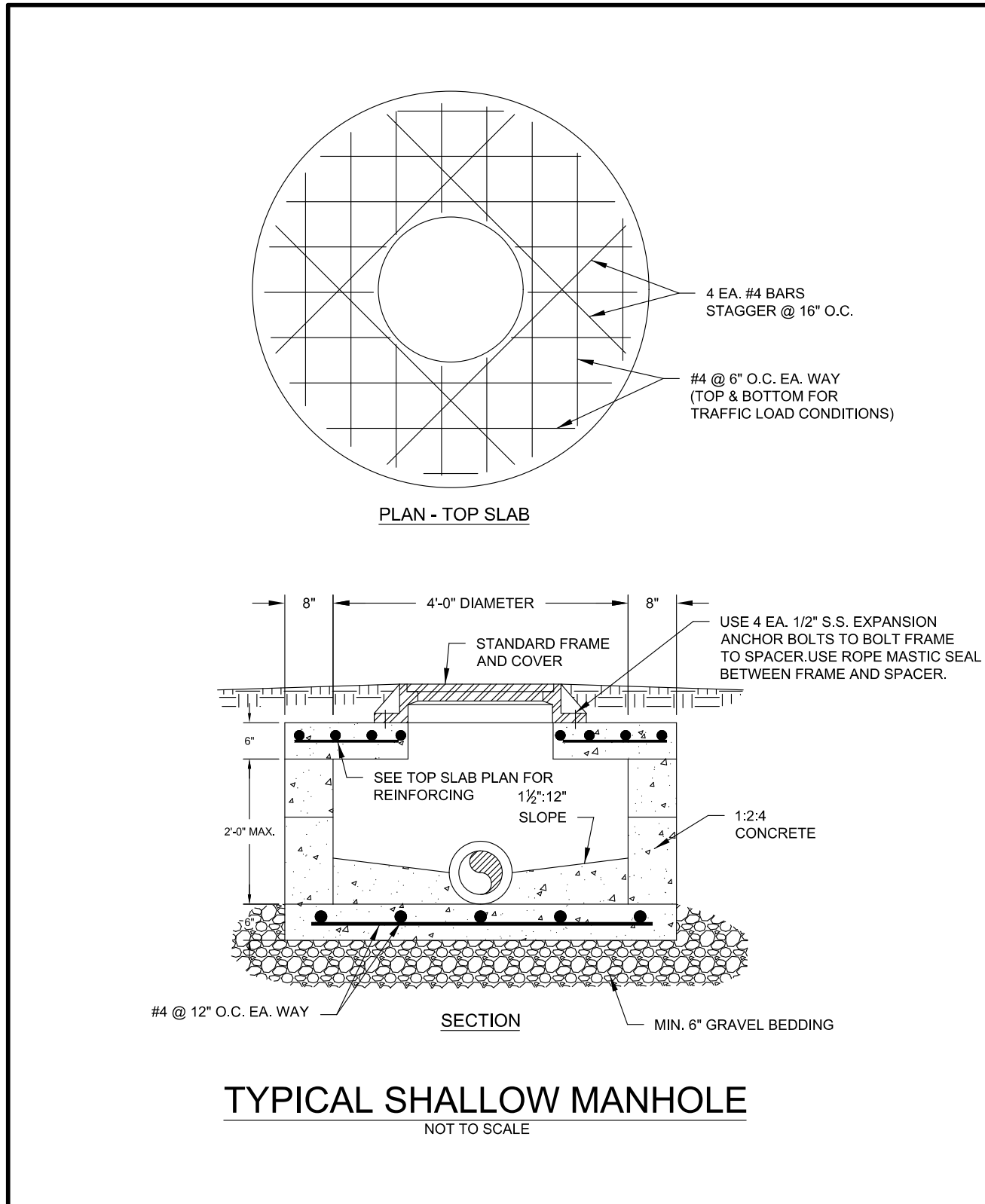


Drawn By:	Name	Date	JOHNSTON COUNTY Department of Public Utilities P.O. Box 2293 Smithfield, NC 27577	WATER STANDARD DETAIL STANDARD GANG METER ASSEMBLY	PAGE 26
Checked By:					
Approved By:					
Scale:					
Rev.	Description	Date	Init.		

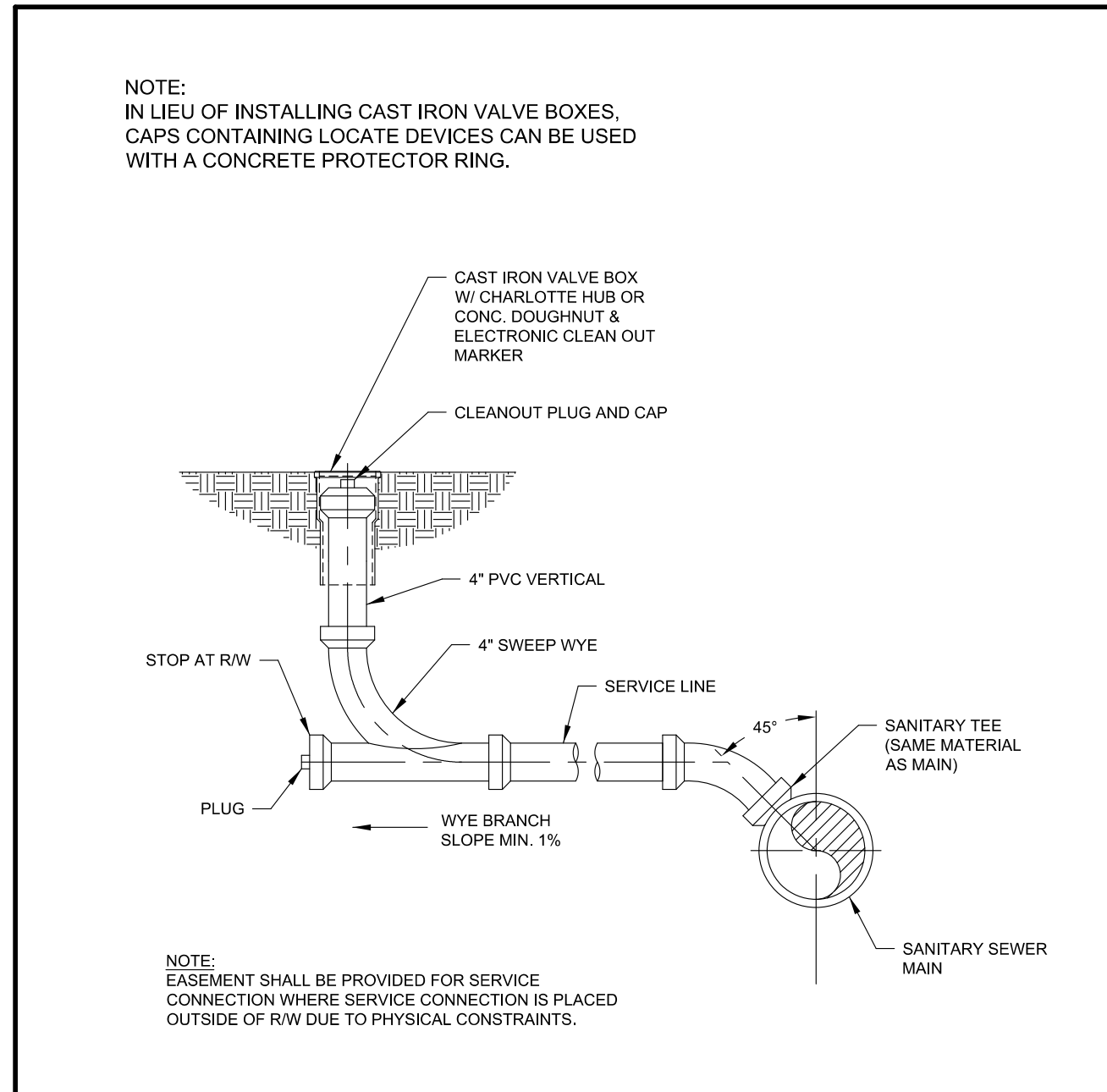


MANUAL AIR RELIEF VALVE ASSEMBLY
NOT TO SCALE

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



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



TYPICAL SEWER SERVICE CONNECTION
NOT TO SCALE

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

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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	

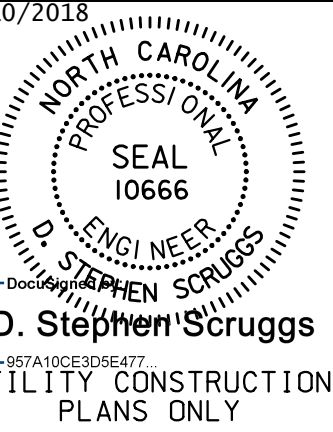
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UTILITY CONSTRUCTION

D. Stephen Scruggs
 UTILITY CONSTRUCTION PLANS ONLY

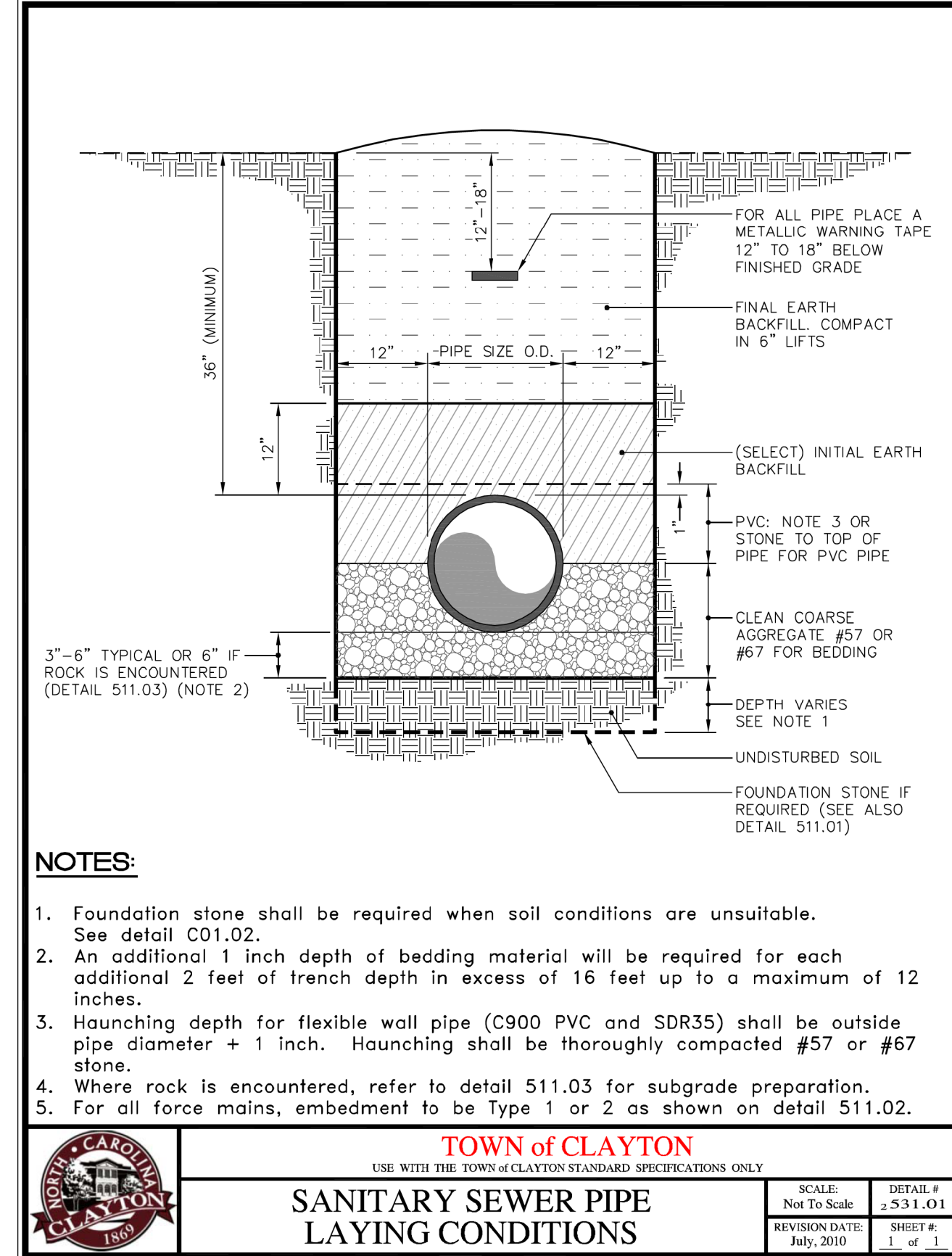
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PROJECT REFERENCE NO. R-3825B	SHEET NO. UC-3E
DESIGNED BY:	8/10/2018
DRAWN BY:	
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APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
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UTILITY CONSTRUCTION

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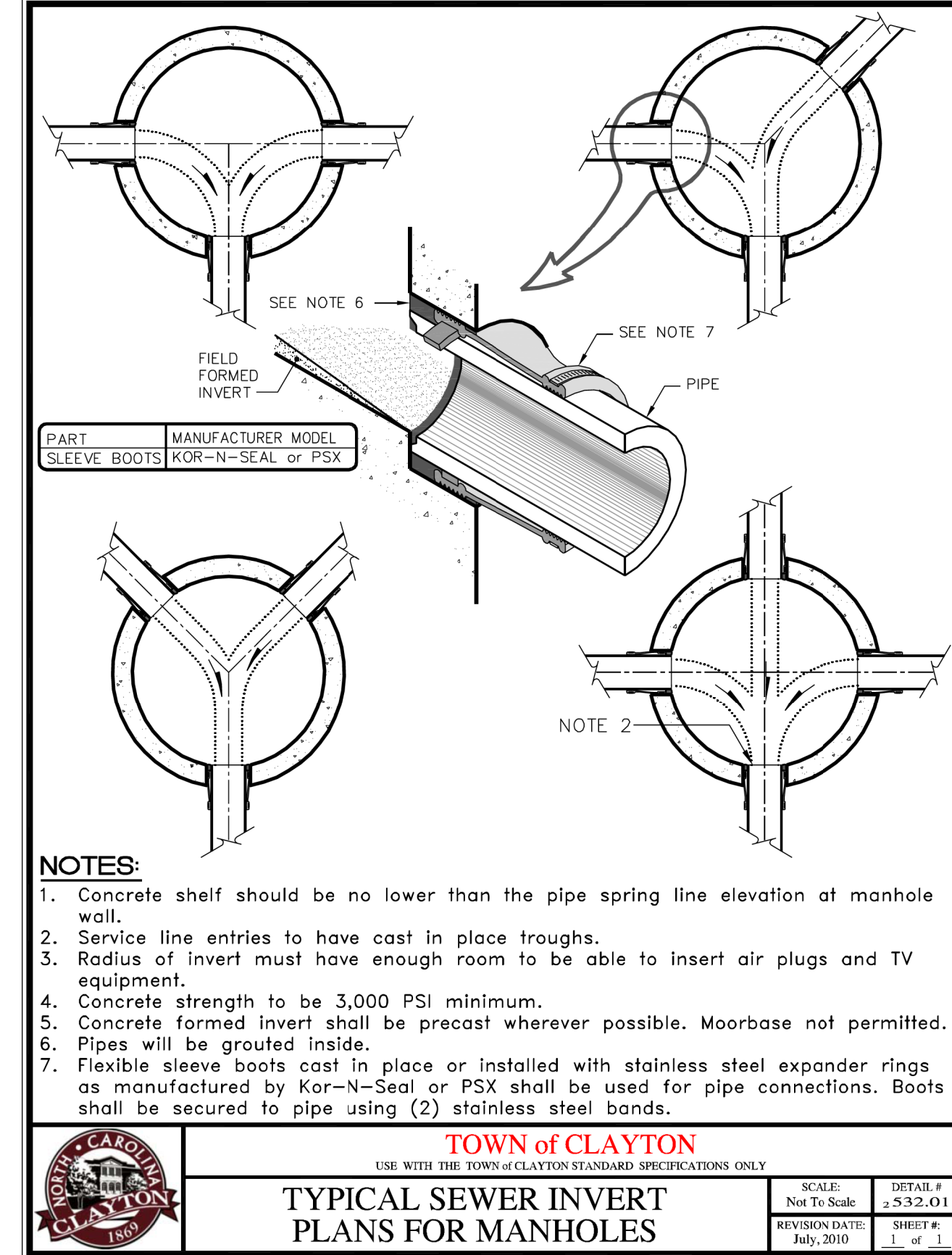


NOTES:

1. Foundation stone shall be required when soil conditions are unsuitable. See detail C01.02.
2. An additional 1 inch depth of bedding material will be required for each additional 2 feet of trench depth in excess of 16 feet up to a maximum of 20 inches.
3. Haunching depth for flexible wall pipe (C900 PVC and SDR35) shall be outside pipe diameter + 1 inch. Haunching shall be thoroughly compacted #57 or #67 stone.
4. Where rock is encountered, refer to detail 511.03 for subgrade preparation.
5. For all force mains, embedment to be Type 1 or 2 as shown on detail 511.02.

TOWN of CLAYTON USE WITH THE TOWN OF CLAYTON STANDARD SPECIFICATIONS ONLY	
SCALE: Not To Scale	DETAIL # 2.531.01
REVISION DATE: July, 2010	SHEET # 1 of 1

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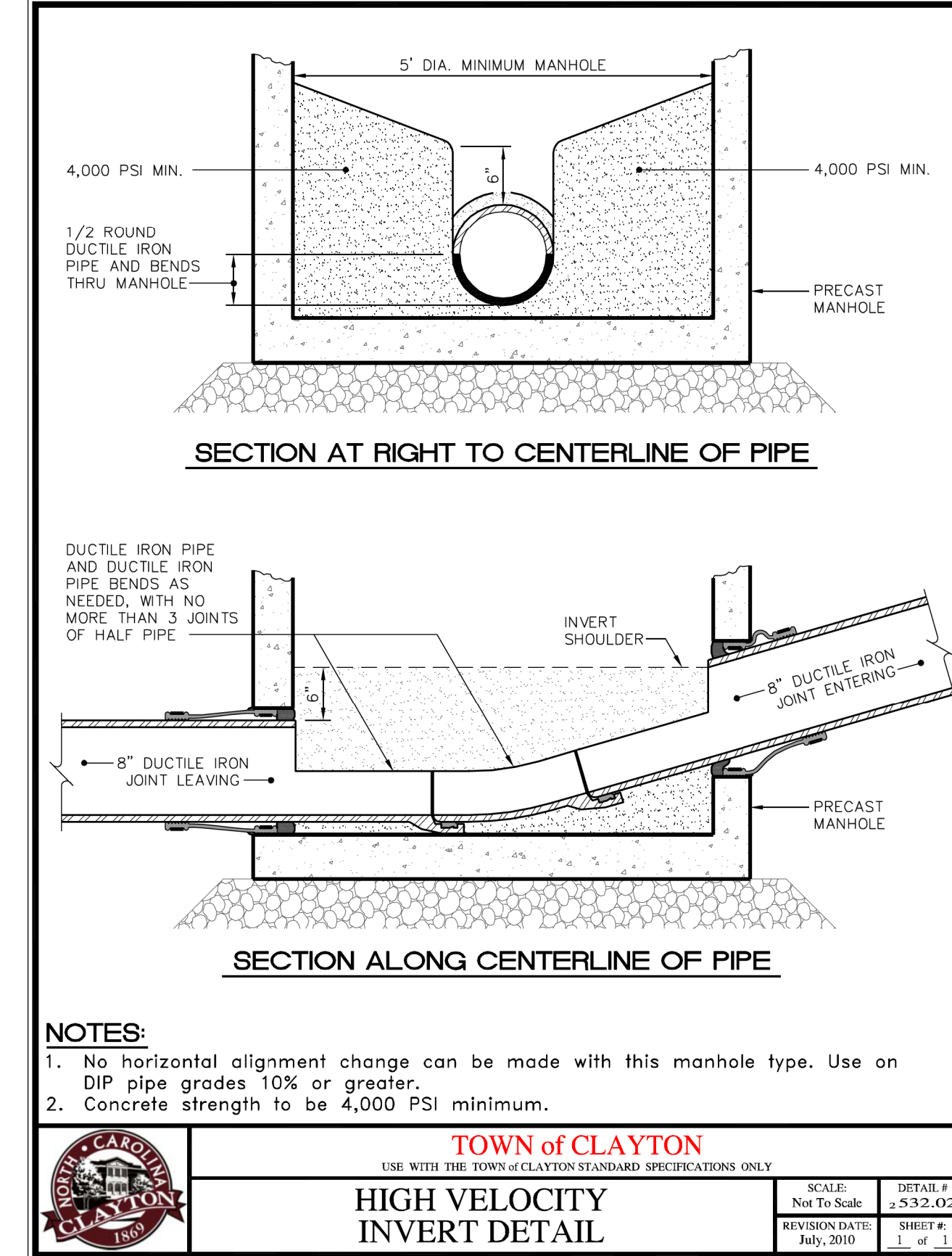


NOTES:

1. Concrete shelf should be no lower than the pipe spring line elevation at manhole wall.
2. Service line entries to have cast in place troughs.
3. Radius of invert must have enough room to be able to insert air plugs and TV equipment.
4. Concrete strength to be 3,000 PSI minimum.
5. Concrete formed invert shall be precast wherever possible. Moorbase not permitted.
6. Pipes will be grouted inside.
7. Flexible sleeve boots cast in place or installed with stainless steel expander rings as manufactured by Kor-N-Seal or PSX shall be used for pipe connections. Boots shall be secured to pipe using (2) stainless steel bands.

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

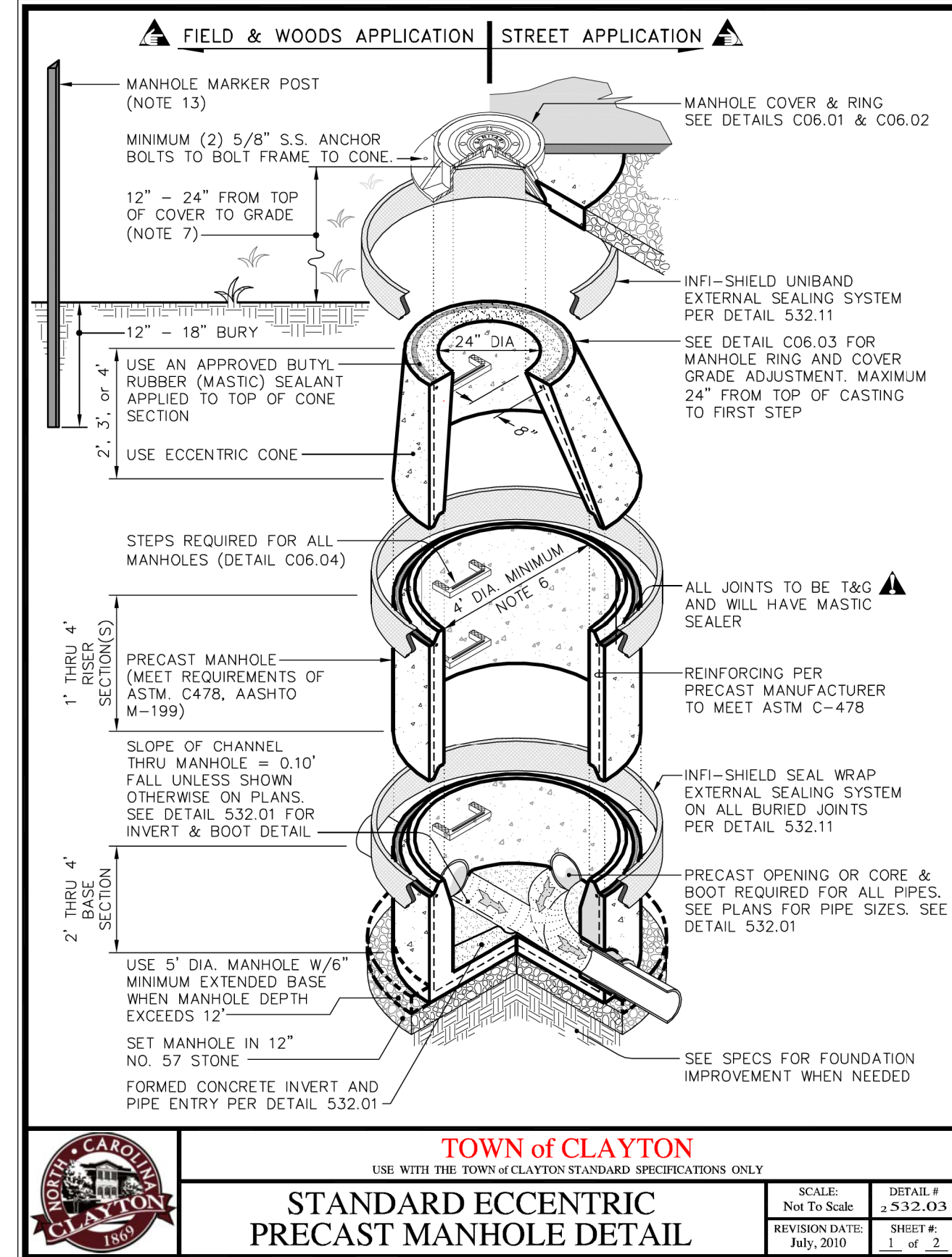


NOTES:

1. No horizontal alignment change can be made with this manhole type. Use on DIP pipe grades 10% or greater.
2. Concrete strength to be 4,000 PSI minimum.

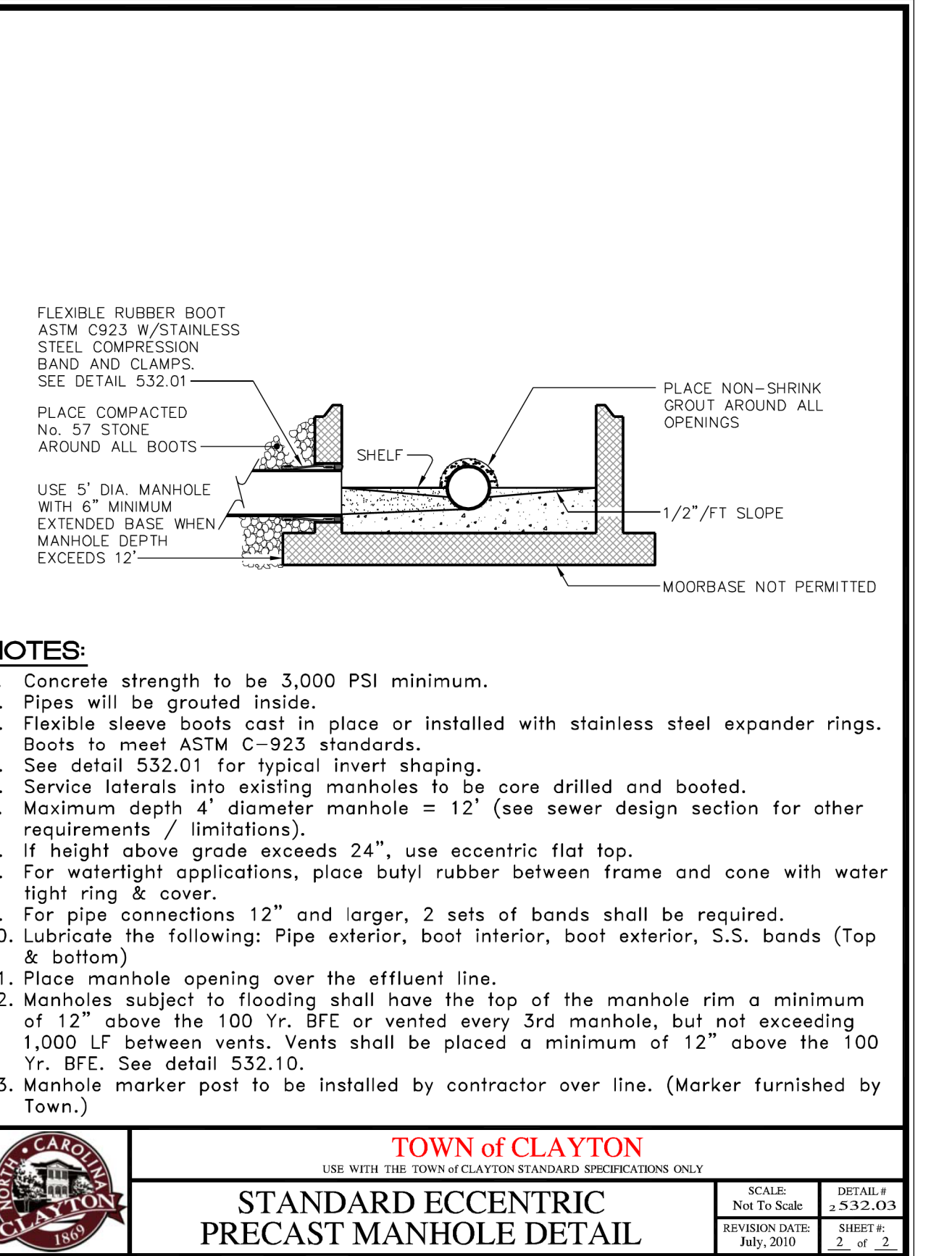
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REVISION DATE: July, 2010	SHEET # 1 of 1

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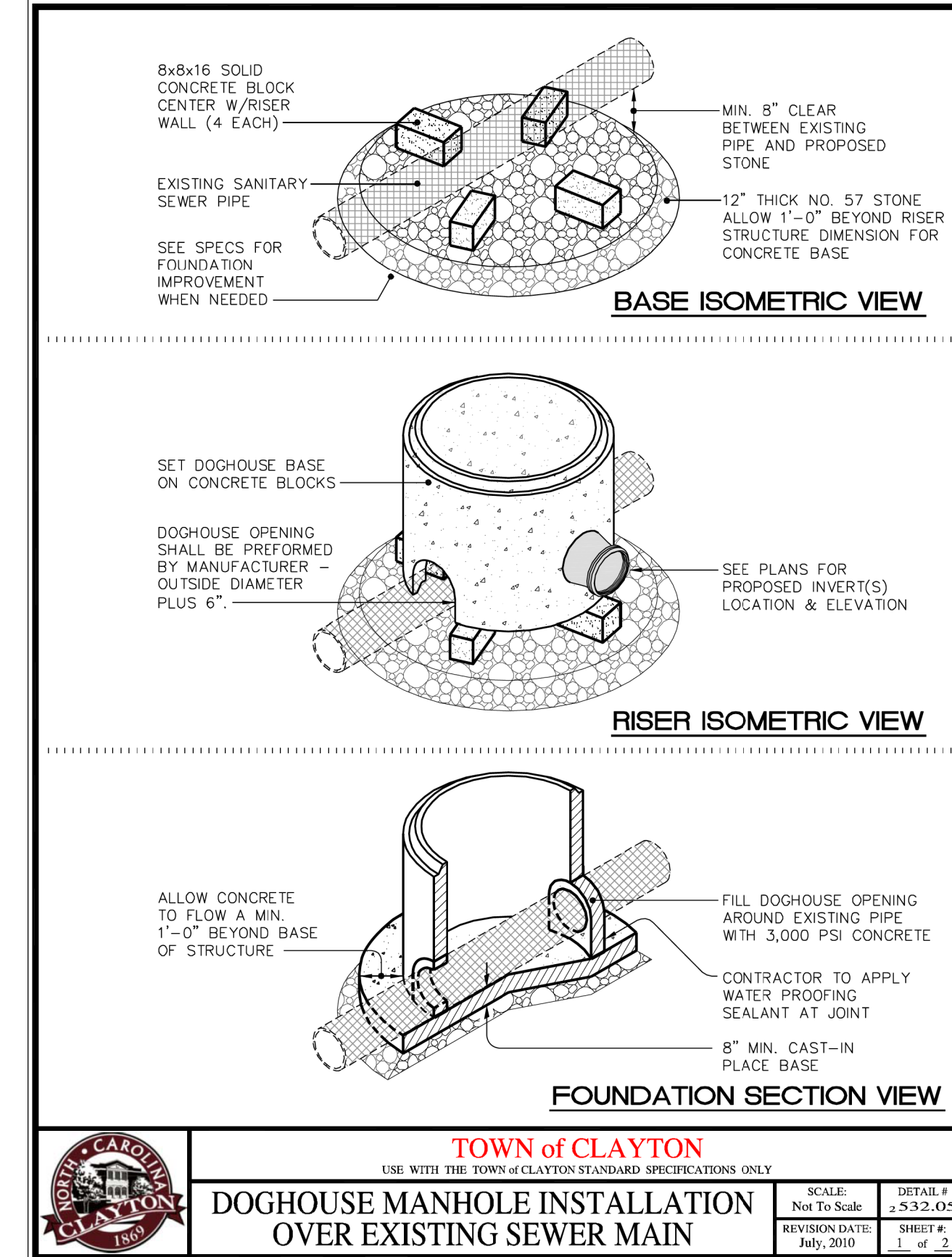
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SCALE: Not To Scale	DETAIL # 2.532.03
REVISION DATE: July, 2010	SHEET # 1 of 2

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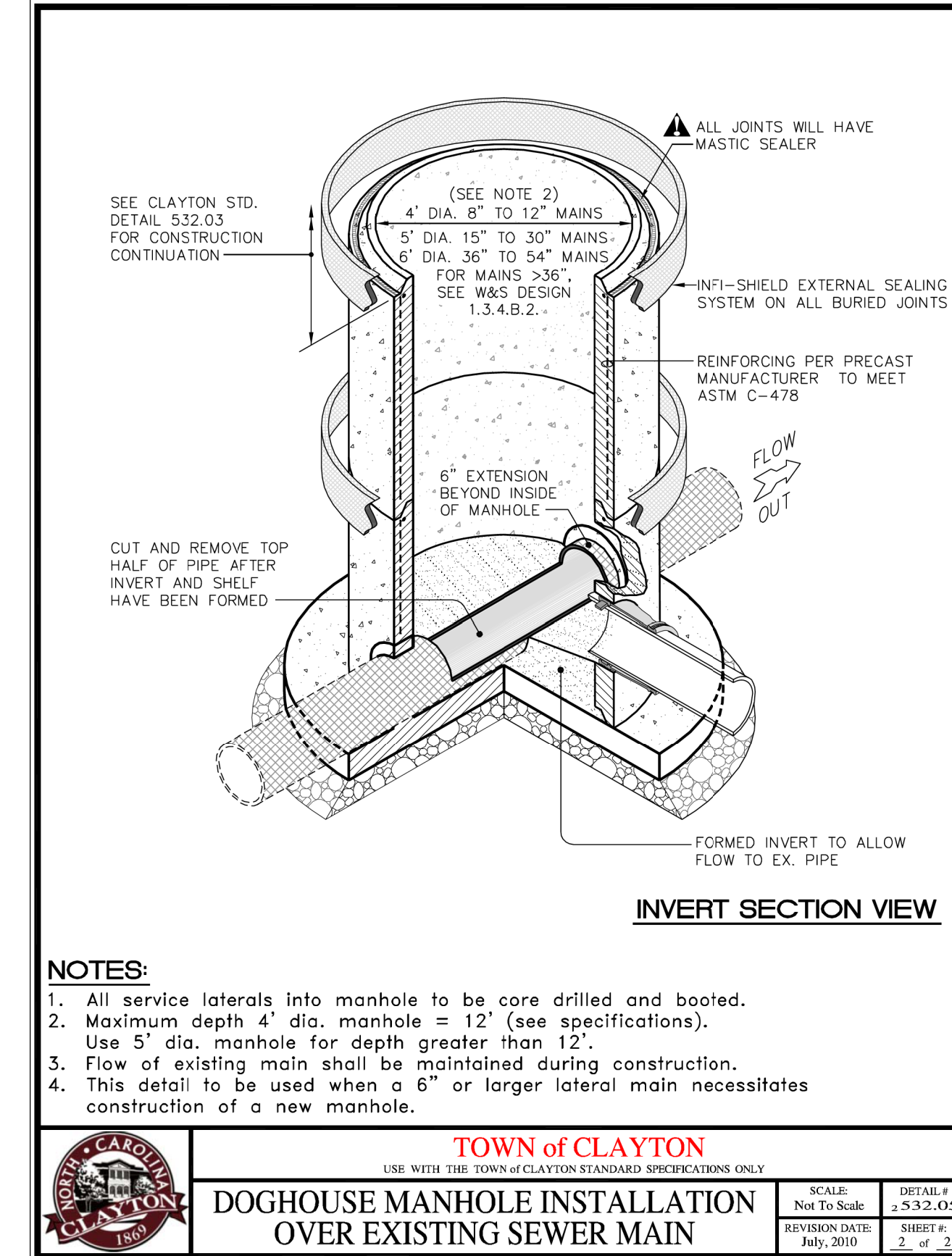
TOWN of CLAYTON USE WITH THE TOWN OF CLAYTON STANDARD SPECIFICATIONS ONLY	
SCALE: Not To Scale	DETAIL # 2.532.03
REVISION DATE: July, 2010	SHEET # 2 of 2

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



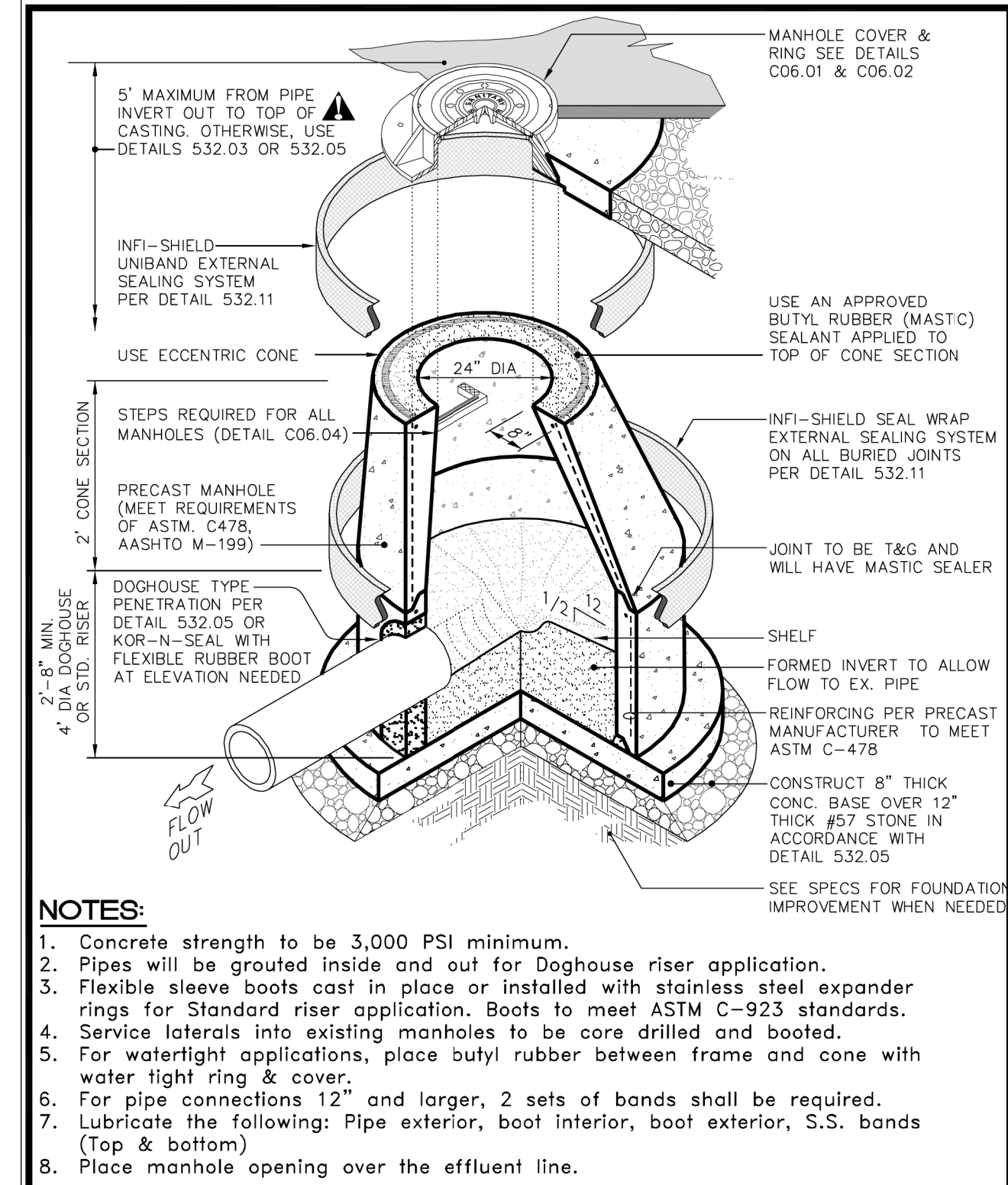
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SCALE: Not To Scale	DETAIL # 2.532.05
REVISION DATE: July, 2010	SHEET # 1 of 2

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TOWN of CLAYTON USE WITH THE TOWN OF CLAYTON STANDARD SPECIFICATIONS ONLY	
SCALE: Not To Scale	DETAIL # 2.532.05
REVISION DATE: July, 2010	SHEET # 2 of 2

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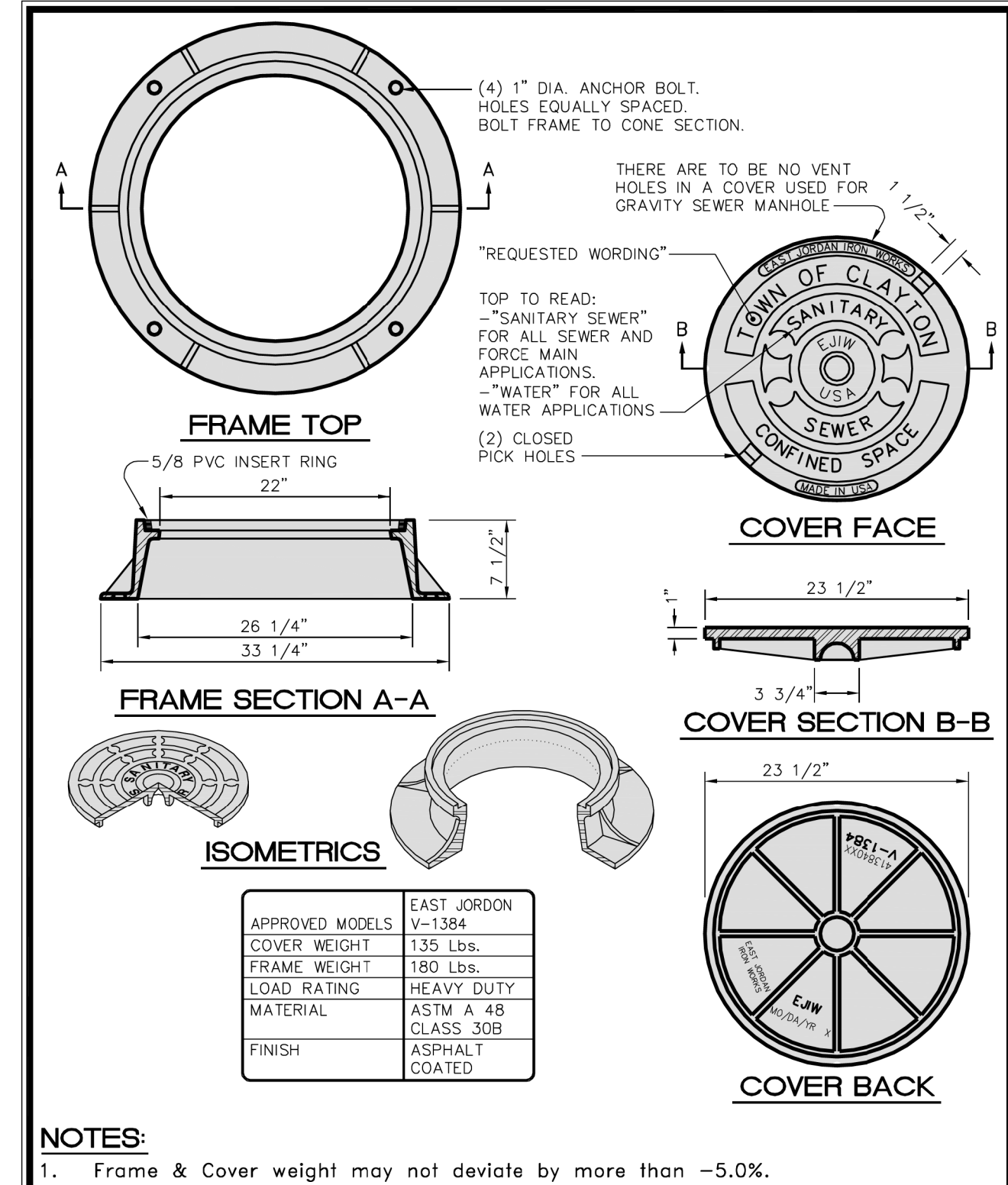


TOWN of CLAYTON
USE WITH THE TOWN OF CLAYTON STANDARD SPECIFICATIONS ONLY

TYPICAL SHALLOW PRECAST MANHOLE DETAIL

SCALE: Not To Scale	DETAIL # S32.07
REVISION DATE: July, 2010	SHEET # 1 of 1

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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

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F-0342

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PROJECT REFERENCE NO. R-3825B	SHEET NO. UC-3F
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	

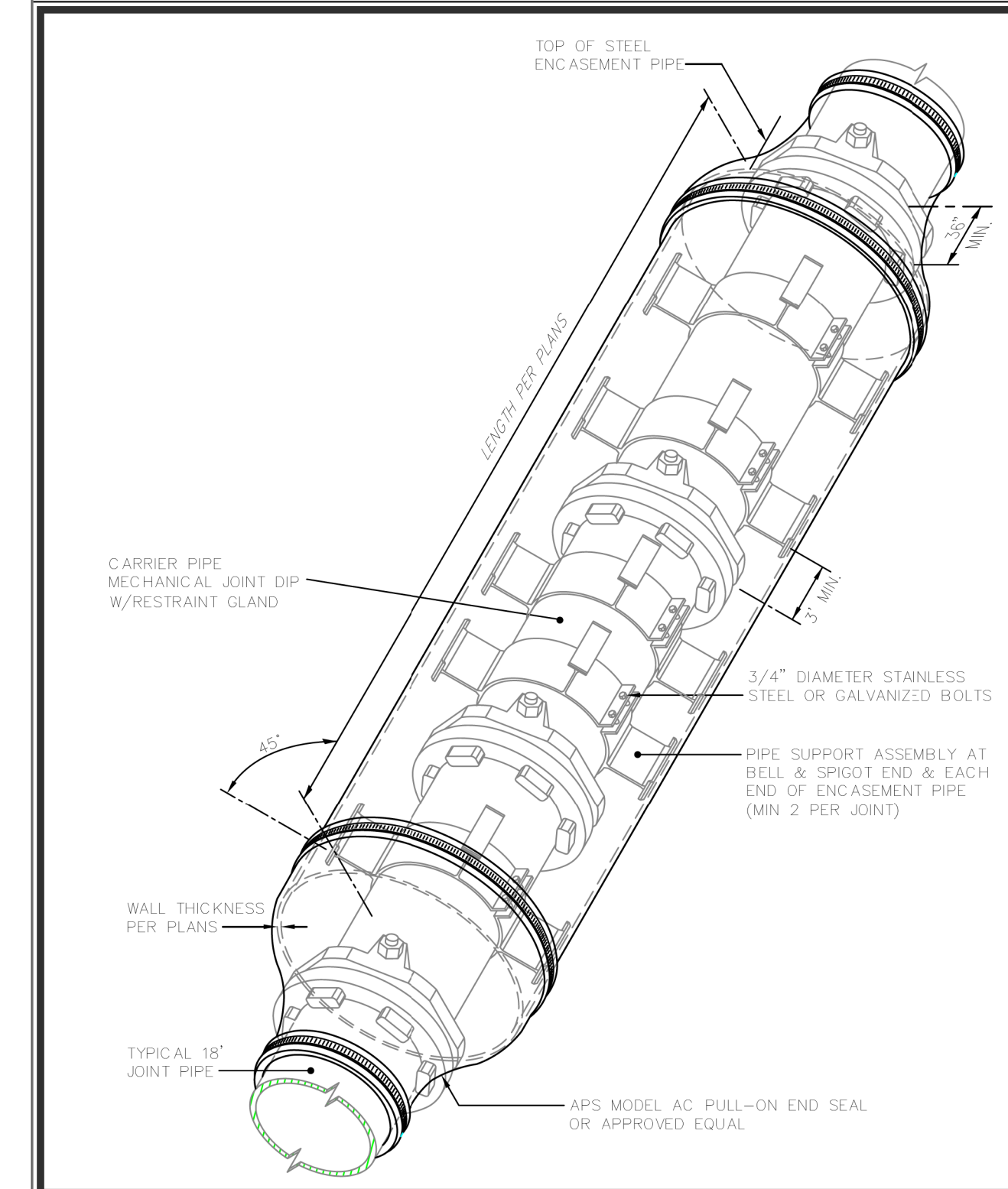
SEAL 10666

D. Stephen Scruggs

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

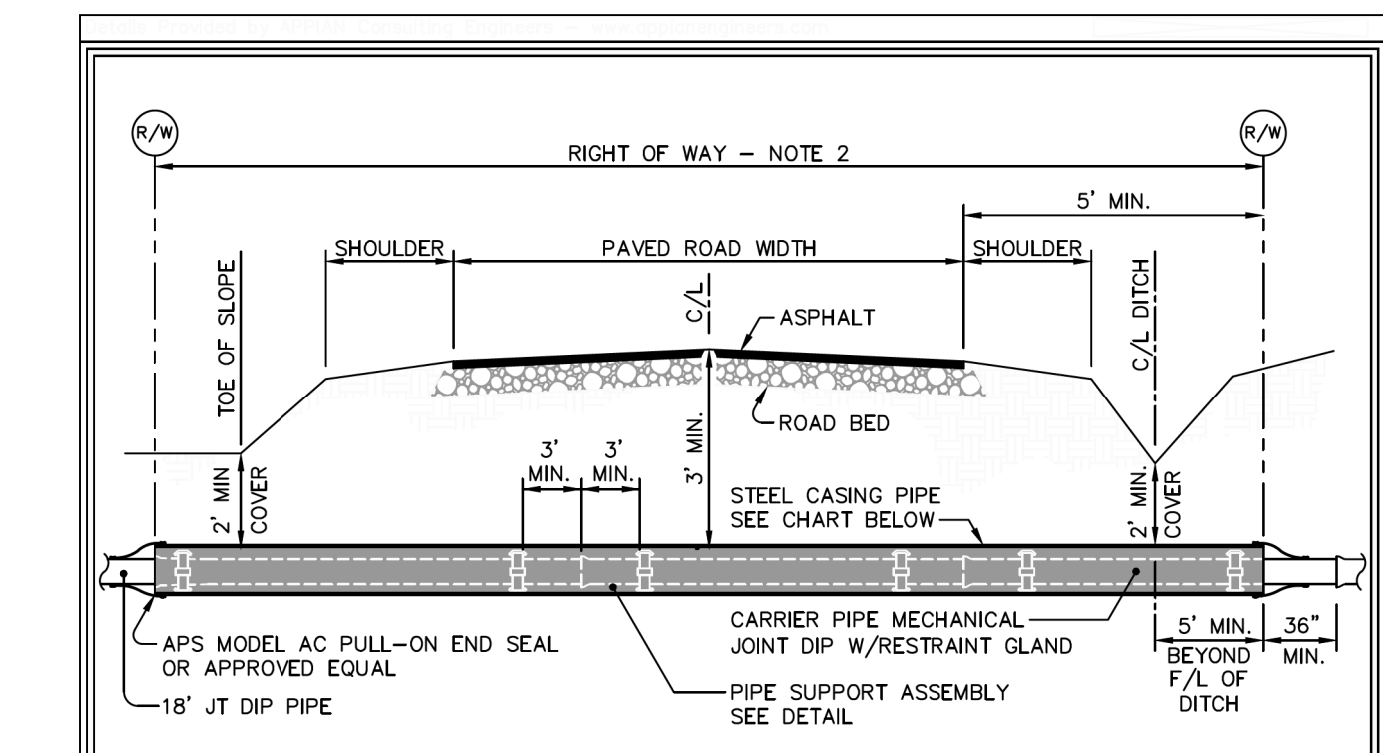
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TOWN of CLAYTON
USE WITH THE TOWN OF CLAYTON STANDARD SPECIFICATIONS ONLY

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

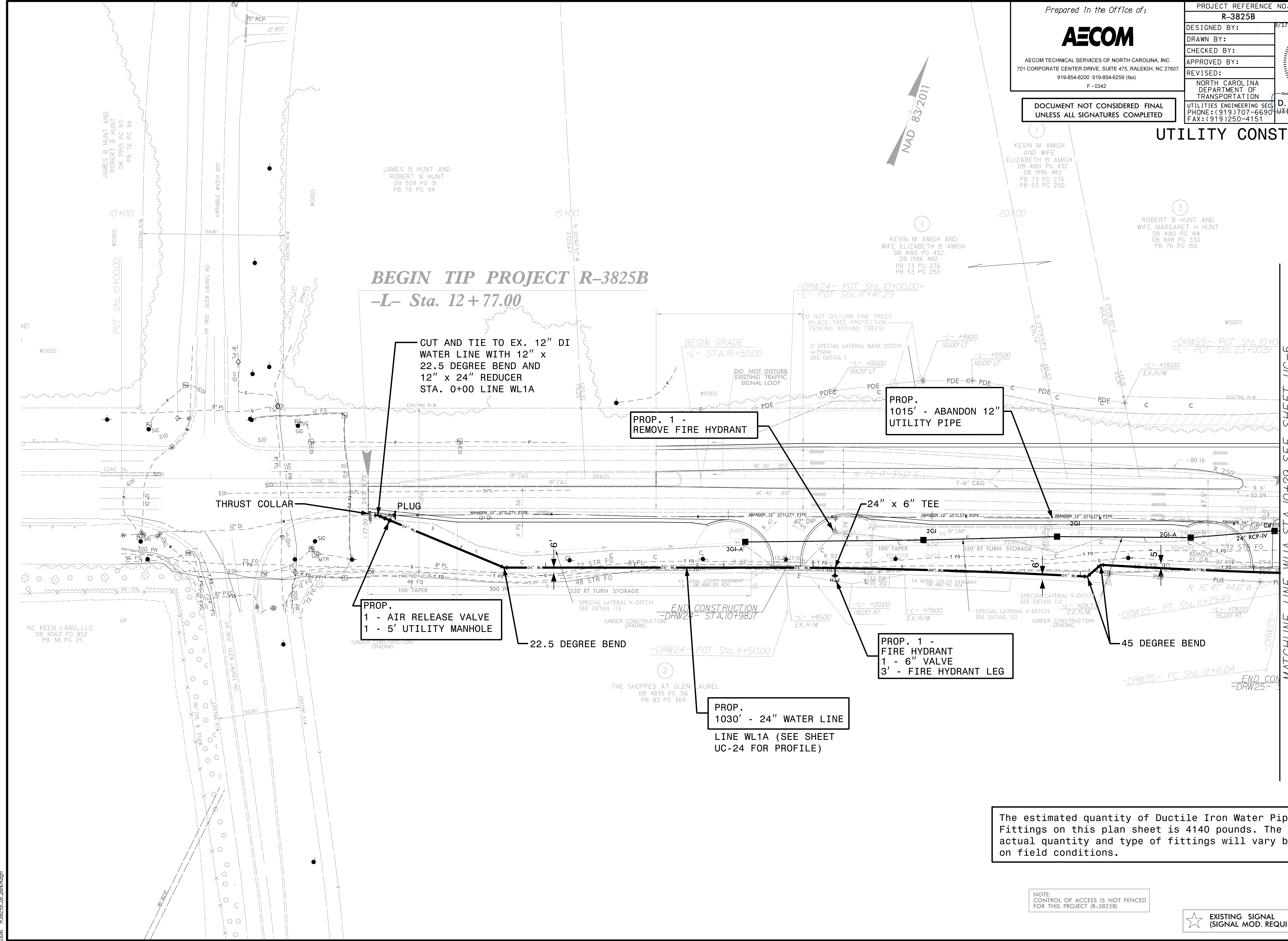
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REVISION DATE: July, 2010	SHEET # 1 of 2

DATE: 8/9/2018
TIME: 6:02:57 PM
DGN: R3825B_UC_P003F.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	UC-4
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	
ENGINEER	

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BEGIN TIP PROJECT R-3825B
-L- Sta. 12+77.00

CUT AND TIE TO EX. 12" DI
 WATER LINE WITH 12" x
 22.5 DEGREE BEND AND
 12" x 24" REDUCER
 STA. 0+00 LINE WL1A

PROP. 1 -
 REMOVE FIRE HYDRANT

PROP.
 1015' - ABANDON 12"
 UTILITY PIPE

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

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

PROP.
 1030' - 24" WATER LINE
 LINE WL1A (SEE SHEET
 UC-24 FOR PROFILE)

The estimated quantity of Ductile Iron Water Pipe Fittings on this plan sheet is 4140 pounds. The actual quantity and type of fittings will vary based on field conditions.

NOTE:
 CONTROL OF ACCESS IS NOT FENCED
 FOR THIS PROJECT (R-3825B)

★ EXISTING SIGNAL
 (SIGNAL MOD. REQUIRED)

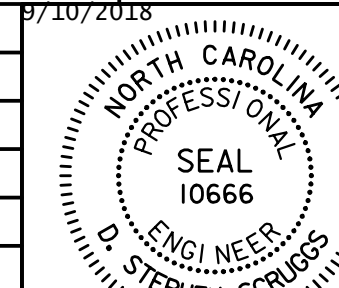
MATCHLINE LINE WL1A STA. 10+29 SEE SHEET UC-5

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701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607
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F - 0342

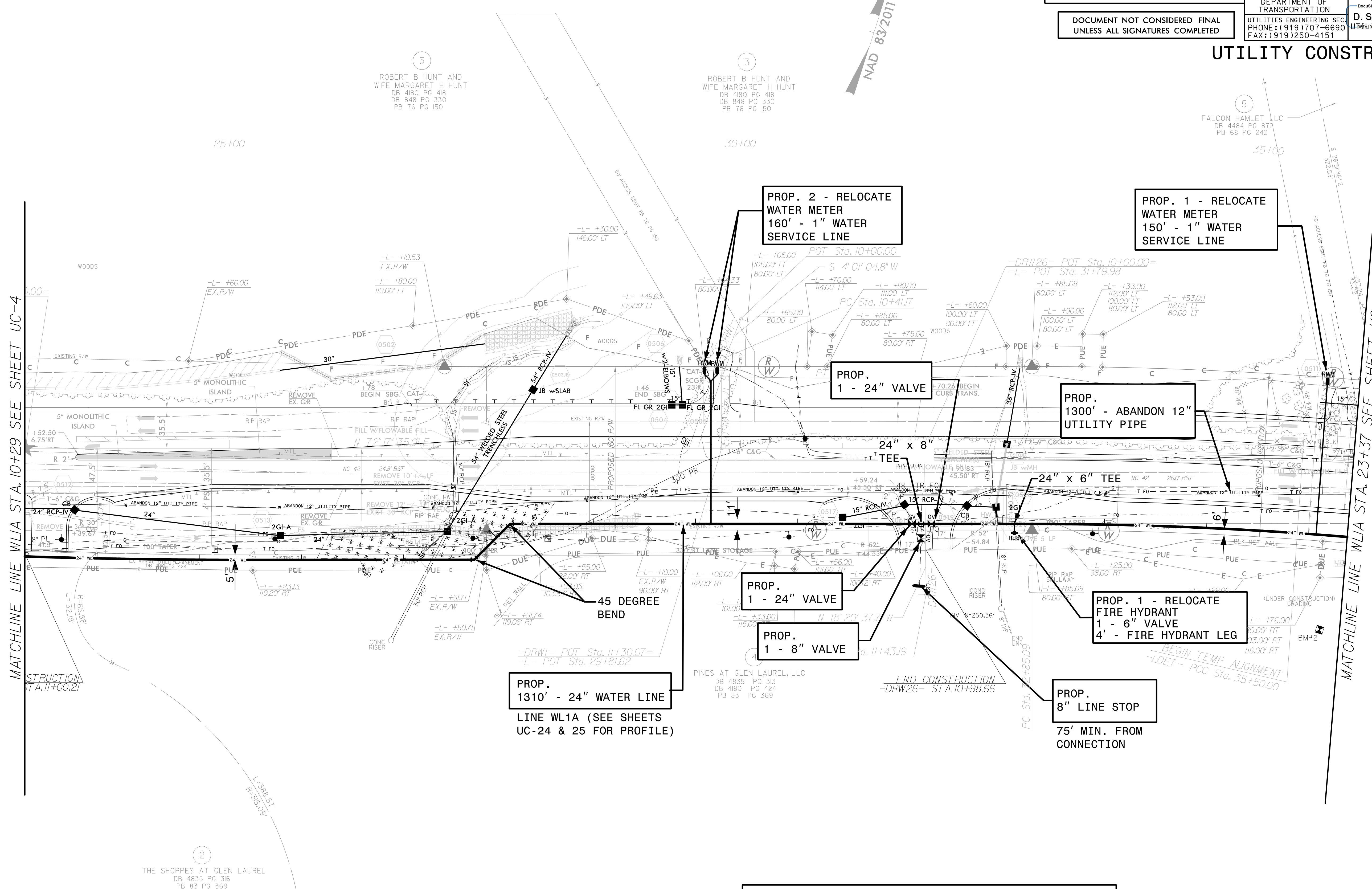
PROJECT REFERENCE NO.	SHEET NO.
R-3825B	UC-5
DESIGNED BY:	
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D. Stephen Scruggs
REGISTERED PROFESSIONAL ENGINEER
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UTILITY CONSTRUCTION



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

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

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

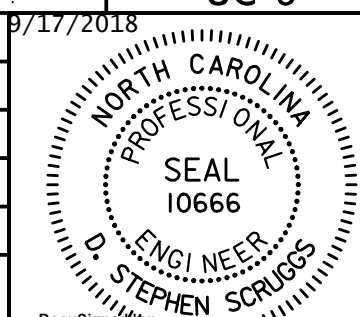
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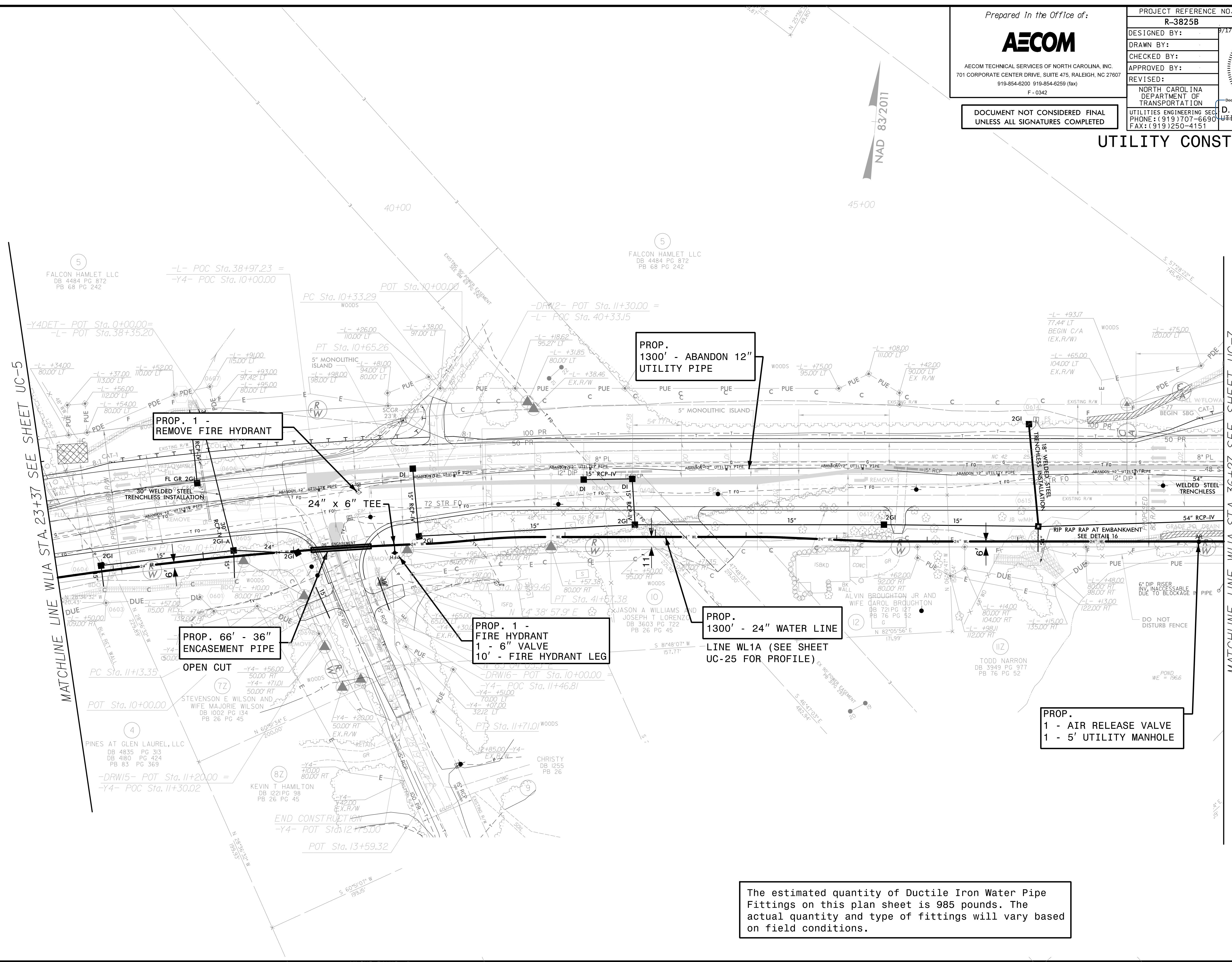
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PROJECT REFERENCE NO.	R-3825B	SHEET NO.	UC-6
DESIGNED BY:		DATE:	9/17/2018
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APPROVED BY:			
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UTILITIES ENGINEERING SECTION		DATE: 9/17/2018	
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MATCHLINE LINE WL1A STA. 23+37.37 SEE SHEET UC-5

MATCHLINE LINE WL1A STA. 36+27.27 SEE SHEET UC-7

PROP. 1300' - ABANDON 12" UTILITY PIPE

PROP. 1 - REMOVE FIRE HYDRANT

PROP. 66' - 36" ENCASEMENT PIPE

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

PROP. 1300' - 24" WATER LINE LINE WL1A (SEE SHEET UC-25 FOR PROFILE)

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

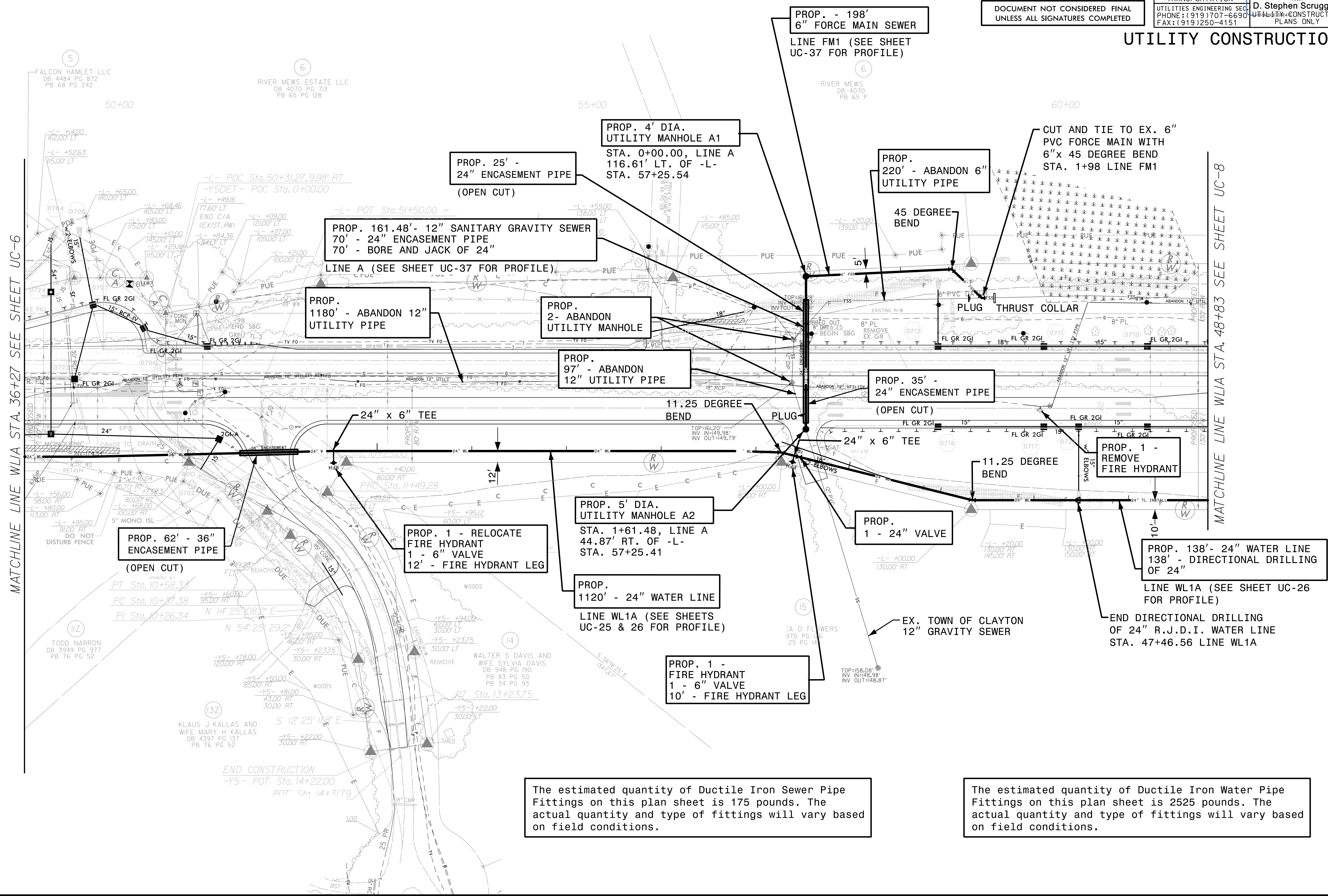
The estimated quantity of Ductile Iron Water Pipe Fittings on this plan sheet is 985 pounds. The actual quantity and type of fittings will vary based on field conditions.

DATE: 9/17/2018
TIME: 10:01:30 PM
DGN: R3825B_UC-6_P10666.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	UC-7
DESIGNED BY:	9/17/2018
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APPROVED BY:	
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D. Stephen Scruggs REGISTERED PROFESSIONAL ENGINEER SEAL 10666	

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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.

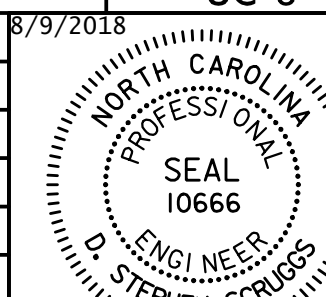
The estimated quantity of Ductile Iron Water Pipe Fittings on this plan sheet is 2525 pounds. The actual quantity and type of fittings will vary based on field conditions.

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F-0342

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	UC-8
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REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SECTION PHONE: (919) 707-6690 FAX: (919) 250-4151	



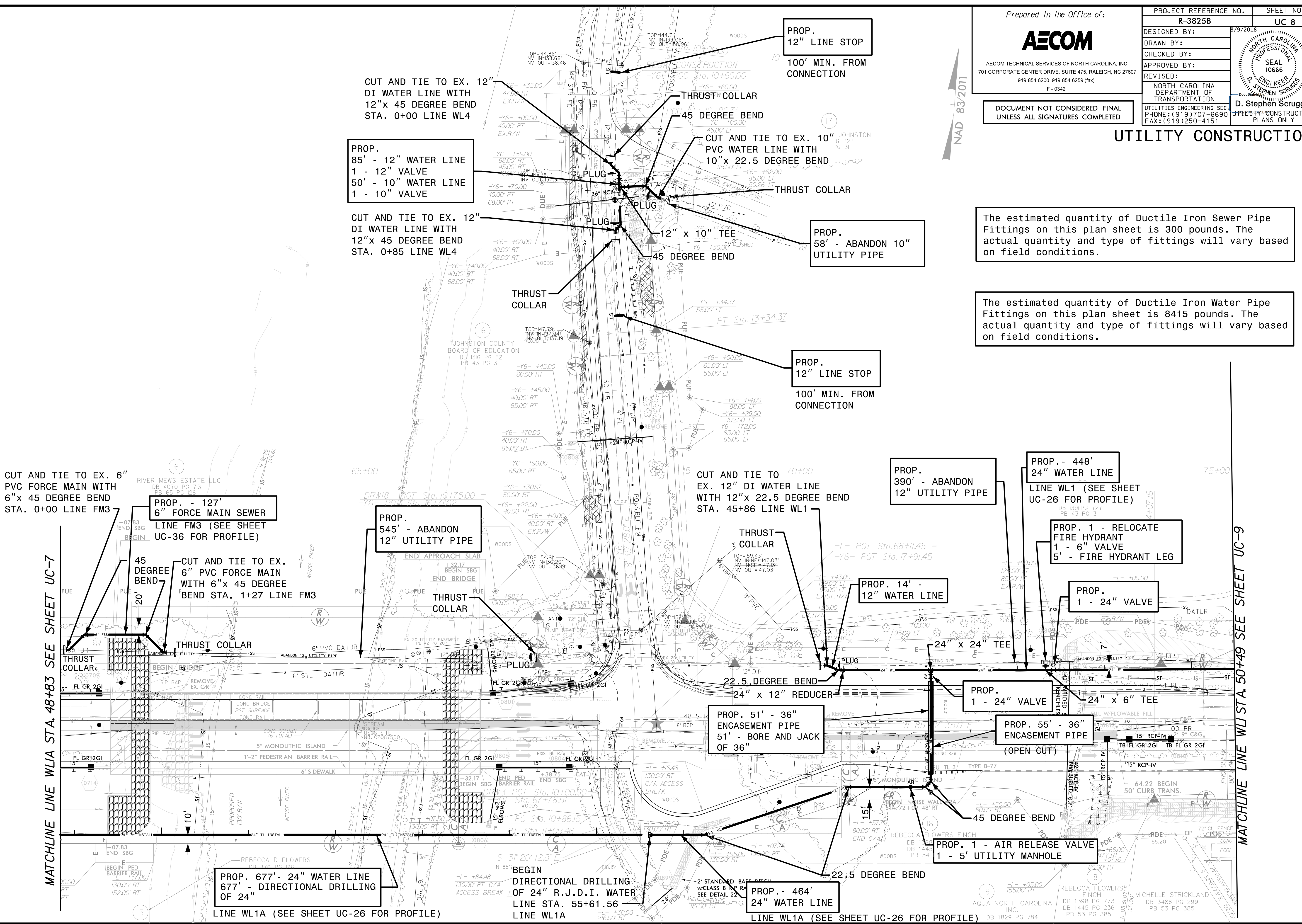
D. Stephen Scruggs
UTILITY CONSTRUCTION PLANS ONLY

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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. 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)

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

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

PROP. - ABANDON 12" UTILITY PIPE

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. 677' - 24" WATER LINE 677' - DIRECTIONAL DRILLING OF 24" LINE WL1A (SEE SHEET UC-26 FOR PROFILE)

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

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

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

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

PROP. 390' - ABANDON 12" UTILITY PIPE

PROP. 14' - 12" WATER LINE

PROP. 1 - 24" VALVE

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

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

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

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

DATE: 8/9/2018
TIME: 3:41:3 PM
DGN: R3825B_UC_PAK08.dgn

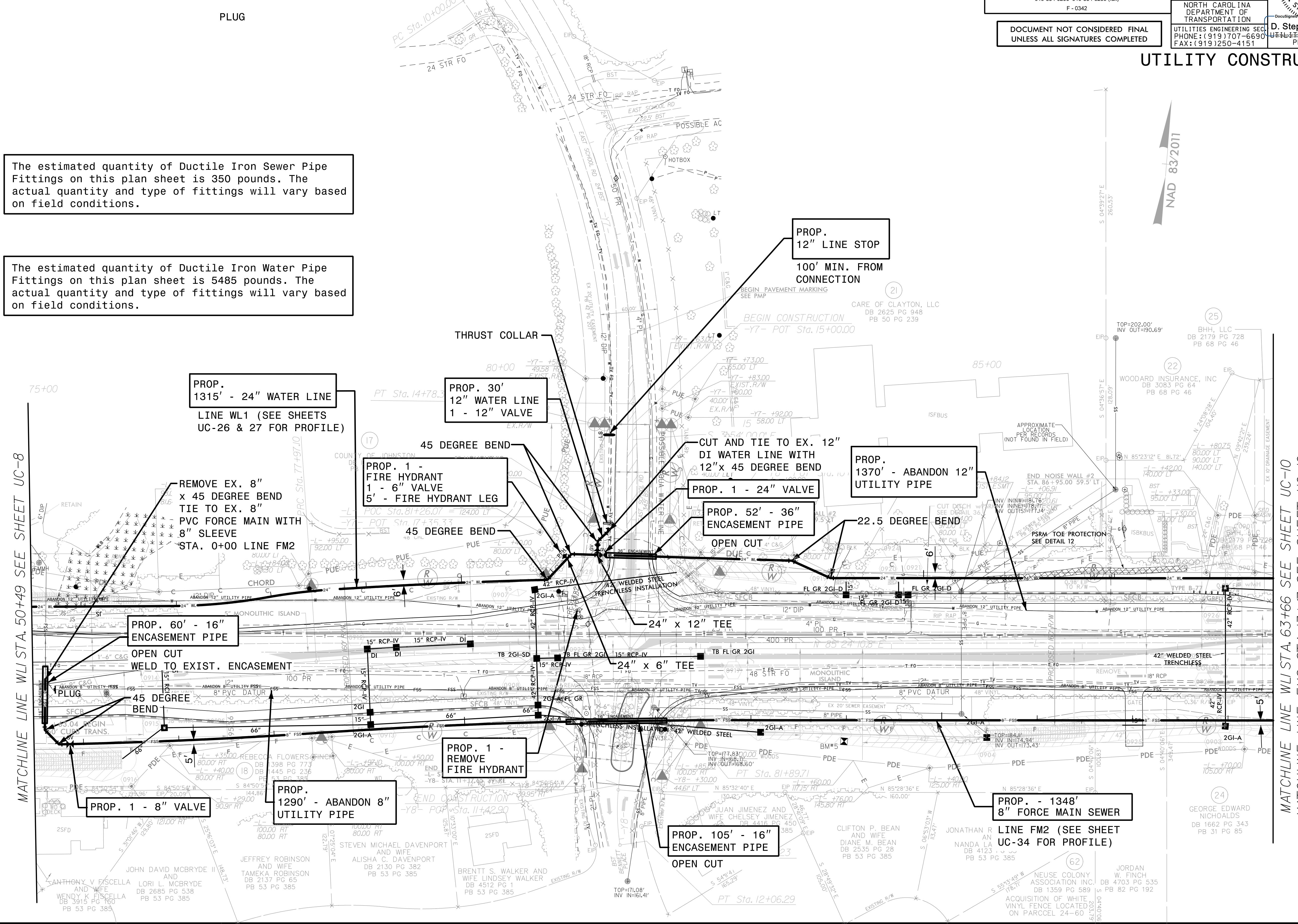
PROJECT REFERENCE NO.	R-3825B	SHEET NO.	UC-9
DESIGNED BY:			
DRAWN BY:			
CHECKED BY:			
APPROVED BY:			
REVISED:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		D. Stephen Scruggs SEAL 10666 UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

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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.



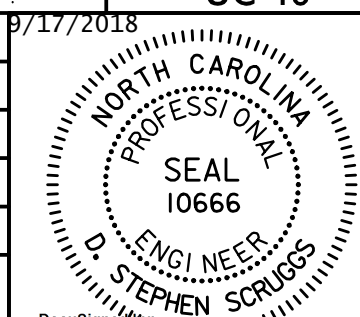
MATCHLINE LINE WL1 STA. 50+49 SEE SHEET UC-8

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

NAD 83/2011

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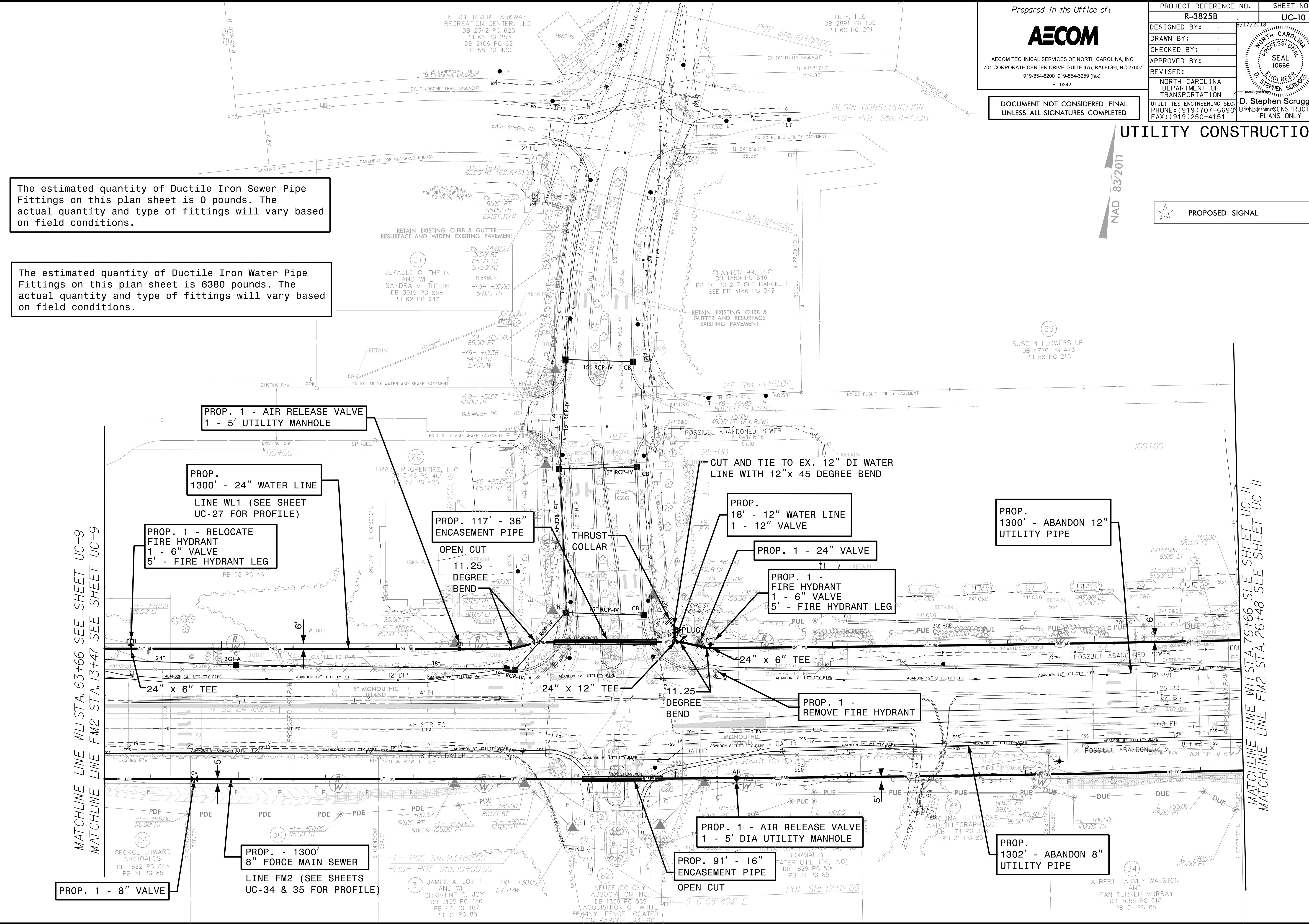
UTILITY CONSTRUCTION

NAD 83/2011



The estimated quantity of Ductile Iron Sewer Pipe Fittings on this plan sheet is 0 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 6380 pounds. The actual quantity and type of fittings will vary based on field conditions.



MATCHLINE LINE WL1 STA. 63+66 SEE SHEET UC-9
MATCHLINE LINE FM2 STA. 13+47 SEE SHEET UC-9

MATCHLINE LINE WL1 STA. 76+66 SEE SHEET UC-11
MATCHLINE LINE FM2 STA. 26+48 SEE SHEET UC-11

PROP. 1 - 8" VALVE

PROP. - 1300' 8" FORCE MAIN SEWER
LINE FM2 (SEE SHEETS UC-34 & 35 FOR PROFILE)

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

PROP. 1300' - 24" WATER LINE
LINE WL1 (SEE SHEET UC-27 FOR PROFILE)

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

PROP. 117' - 36" ENCASUREMENT PIPE
OPEN CUT
11.25 DEGREE BEND

THRUST COLLAR
15" RCP-IV
24" x 12" TEE

PROP. 18' - 12" WATER LINE
1 - 12" VALVE

PROP. 1 - 24" VALVE
PROP. 1 - FIRE HYDRANT
1 - 6" VALVE
5' - FIRE HYDRANT LEG

PROP. 1300' - ABANDON 12" UTILITY PIPE

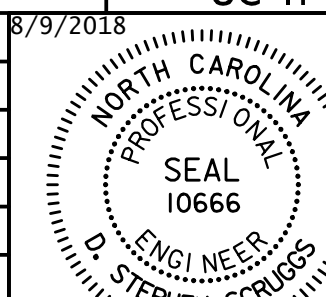
PROP. 1 - AIR RELEASE VALVE
1 - 5' DIA UTILITY MANHOLE
PROP. 91' - 16" ENCASUREMENT PIPE
OPEN CUT

PROP. 1 - REMOVE FIRE HYDRANT

PROP. 1302' - ABANDON 8" UTILITY PIPE

DATE: 9/17/2018
TIME: 10:06:43 AM
DGN: R3825B_UC_Plan000

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	

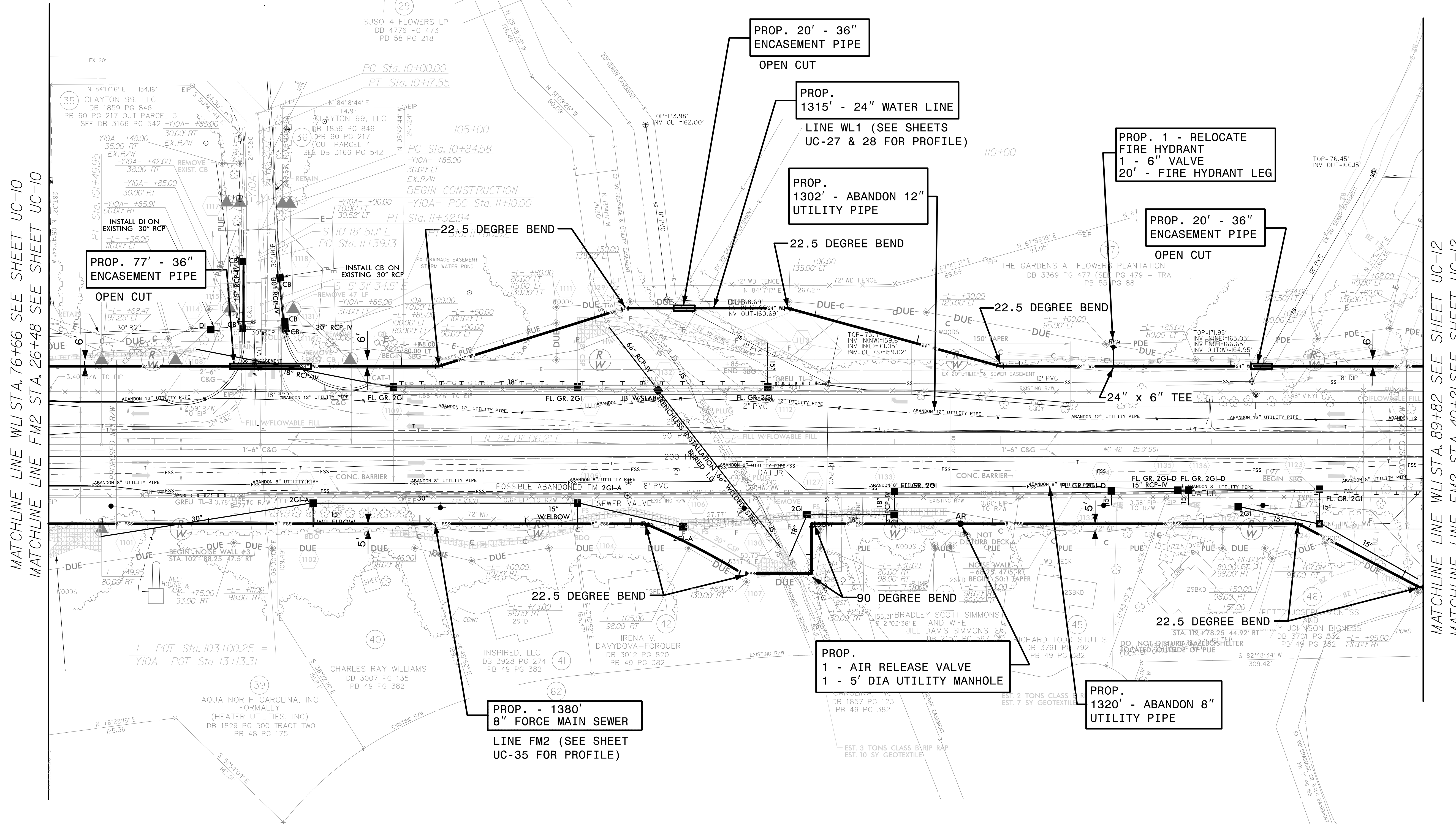


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UTILITY CONSTRUCTION
PLANS ONLY

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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

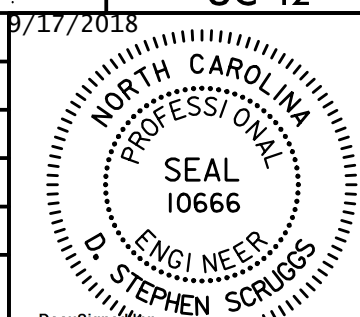
MATCHLINE LINE WL STA. 89+82 SEE SHEET UC-12
MATCHLINE LINE FM STA. 40+21 SEE SHEET UC-12

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.

DATE: 8/9/2018
TIME: 3:42:23 PM
DGN: R3825B_UC_PSH1001

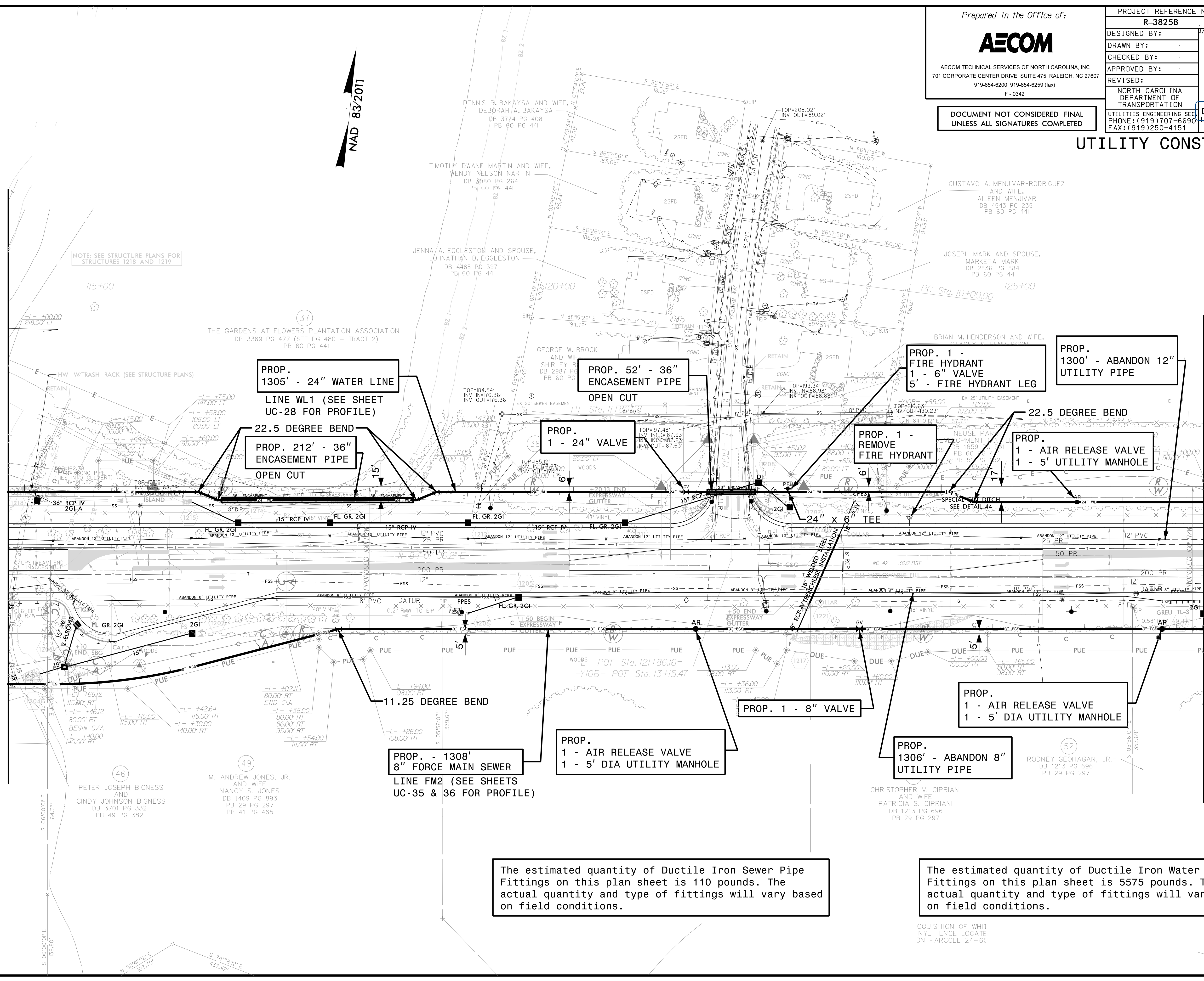
PROJECT REFERENCE NO.	R-3825B	SHEET NO.	UC-12
DESIGNED BY:		DATE:	9/17/2018
DRAWN BY:			
CHECKED BY:			
APPROVED BY:			
REVISED:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		D. Stephen Scruggs REGISTERED PROFESSIONAL ENGINEER PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITIES ENGINEERING SECTION		CONSTRUCTION PLANS ONLY	



UTILITY CONSTRUCTION

MATCHLINE LINE WL1 STA. 89+82 SEE SHEET UC-11
MATCHLINE LINE FM2 STA. 40+21 SEE SHEET UC-11

MATCHLINE LINE WL1 STA. 102+88 SEE SHEET UC-13
MATCHLINE LINE FM2 STA. 53+28 SEE SHEET UC-13



PROP. 1305' - 24" WATER LINE
LINE WL1 (SEE SHEET UC-28 FOR PROFILE)

PROP. 52' - 36" ENCASMENT PIPE
OPEN CUT

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

PROP. 1300' - ABANDON 12" UTILITY PIPE

22.5 DEGREE BEND
PROP. 212' - 36" ENCASMENT PIPE
OPEN CUT

PROP. 1 - 24" VALVE

PROP. 1 - REMOVE FIRE HYDRANT

22.5 DEGREE BEND
PROP. 1 - AIR RELEASE VALVE
1 - 5' UTILITY MANHOLE

11.25 DEGREE BEND

PROP. - 1308' 8" FORCE MAIN SEWER
LINE FM2 (SEE SHEETS UC-35 & 36 FOR PROFILE)

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

PROP. 1 - 8" VALVE

PROP. 1306' - ABANDON 8" UTILITY PIPE

The estimated quantity of 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.

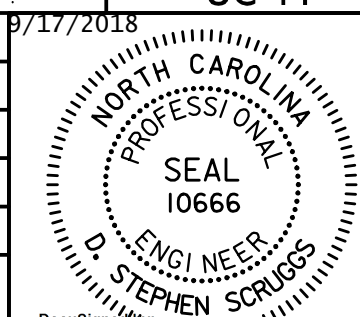
The estimated quantity of Ductile Iron Water Pipe Fittings on this plan sheet is 5575 pounds. The actual quantity and type of fittings will vary based on field conditions.

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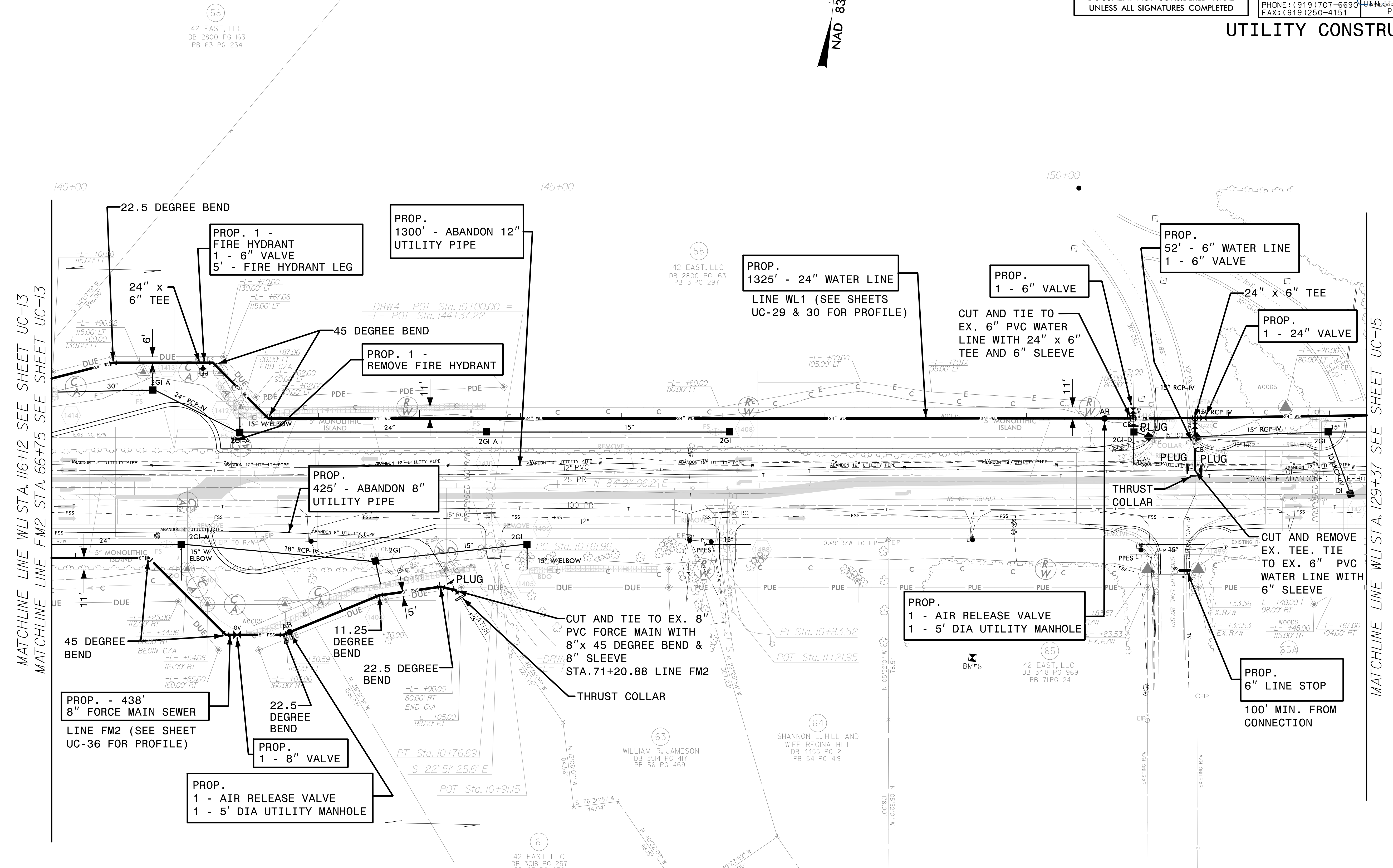
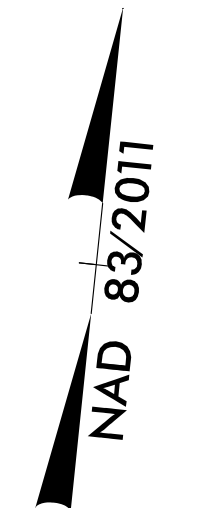
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919-854-6200 919-854-6259 (fax)
F - 0342

PROJECT REFERENCE NO.	R-3825B	SHEET NO.	UC-14
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	



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UTILITY CONSTRUCTION



MATCHLINE LINE WL1 STA. 116+12 SEE SHEET UC-13
MATCHLINE LINE FM2 STA. 66+75 SEE SHEET UC-13

MATCHLINE LINE WL1 STA. 129+37 SEE SHEET UC-15

PROP. - 438' 8" FORCE MAIN SEWER
LINE FM2 (SEE SHEET UC-36 FOR PROFILE)

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

PROP. 1300' - ABANDON 12" UTILITY PIPE

PROP. 1325' - 24" WATER LINE
LINE WL1 (SEE SHEETS UC-29 & 30 FOR PROFILE)

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

PROP. 6" LINE STOP
100' MIN. FROM CONNECTION

The estimated quantity of Ductile Iron Sewer Pipe Fittings on this plan sheet is 790 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 5555 pounds. The actual quantity and type of fittings will vary based on field conditions.

DATE: 9/17/2018
TIME: 12:09:50 PM
DGN: R3825B_UC-14.dwg

58
42 EAST, LLC
DB 2800 PG 163
PB 63 PG 234

58
42 EAST, LLC
DB 2800 PG 163
PB 31 PG 297

65
42 EAST, LLC
DB 3418 PG 969
PB 71 PG 24

63
WILLIAM R. JAMESON
DB 3514 PG 417
PB 56 PG 469

64
SHANNON L. HILL AND
WIFE REGINA HILL
DB 4455 PG 21
PB 54 PG 419

61
42 EAST, LLC
DB 3018 PG 257
PB 67 PG 256

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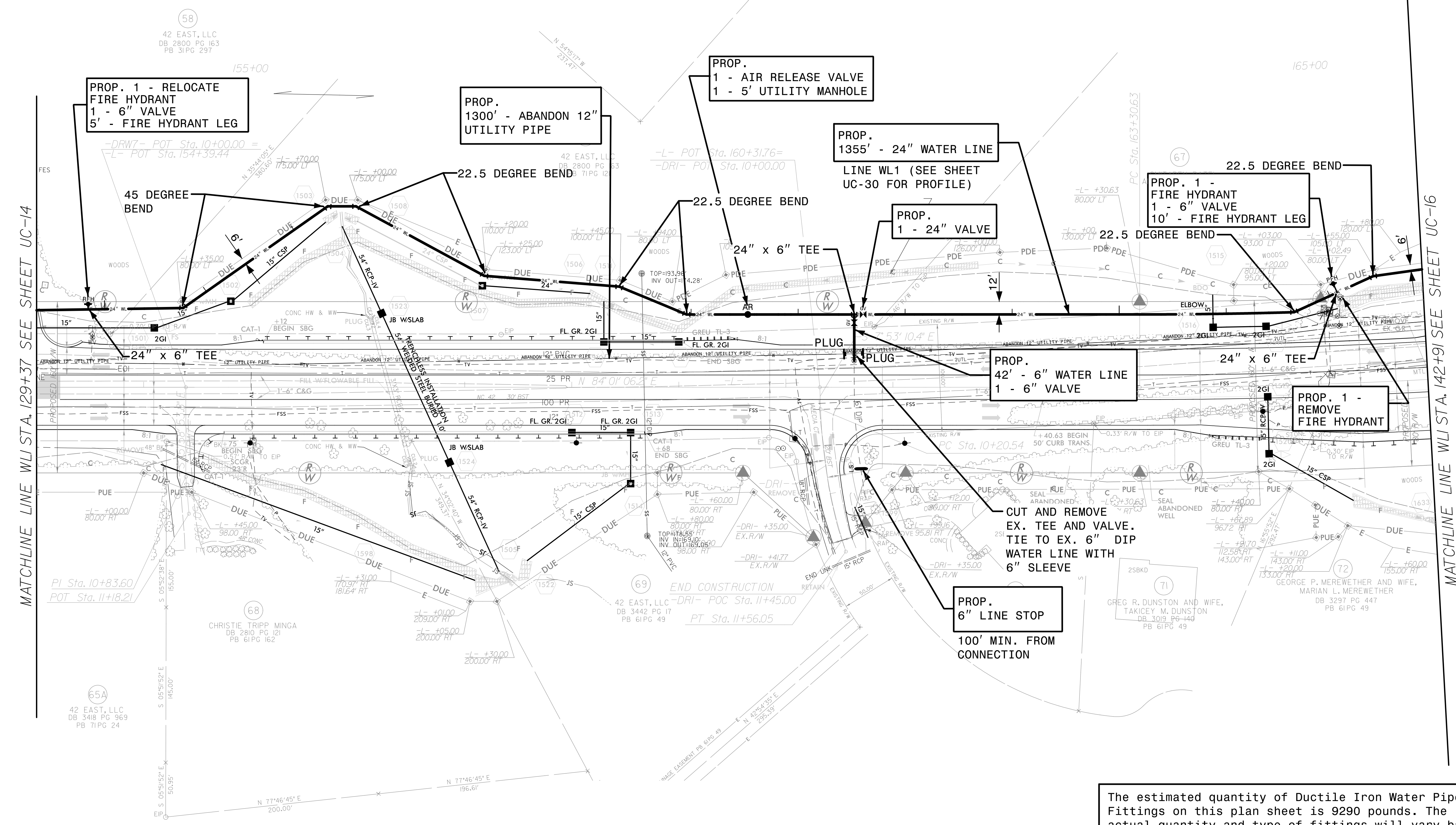
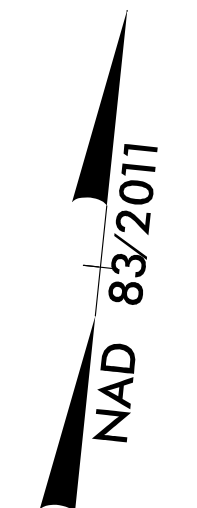


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PROJECT REFERENCE NO.	R-3825B	SHEET NO.	UC-15
DESIGNED BY:		DATE:	9/17/2018
DRAWN BY:			
CHECKED BY:			
APPROVED BY:			
REVISED:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		D. Stephen Scruggs SEAL 10666 REGISTERED PROFESSIONAL ENGINEER STEPHEN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

UTILITY CONSTRUCTION



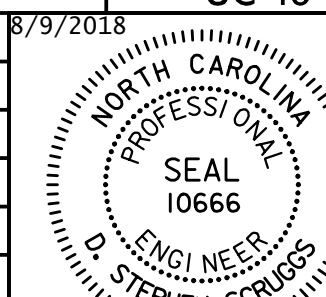
MATCHLINE LINE WL1 STA. 129+37 SEE SHEET UC-14

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

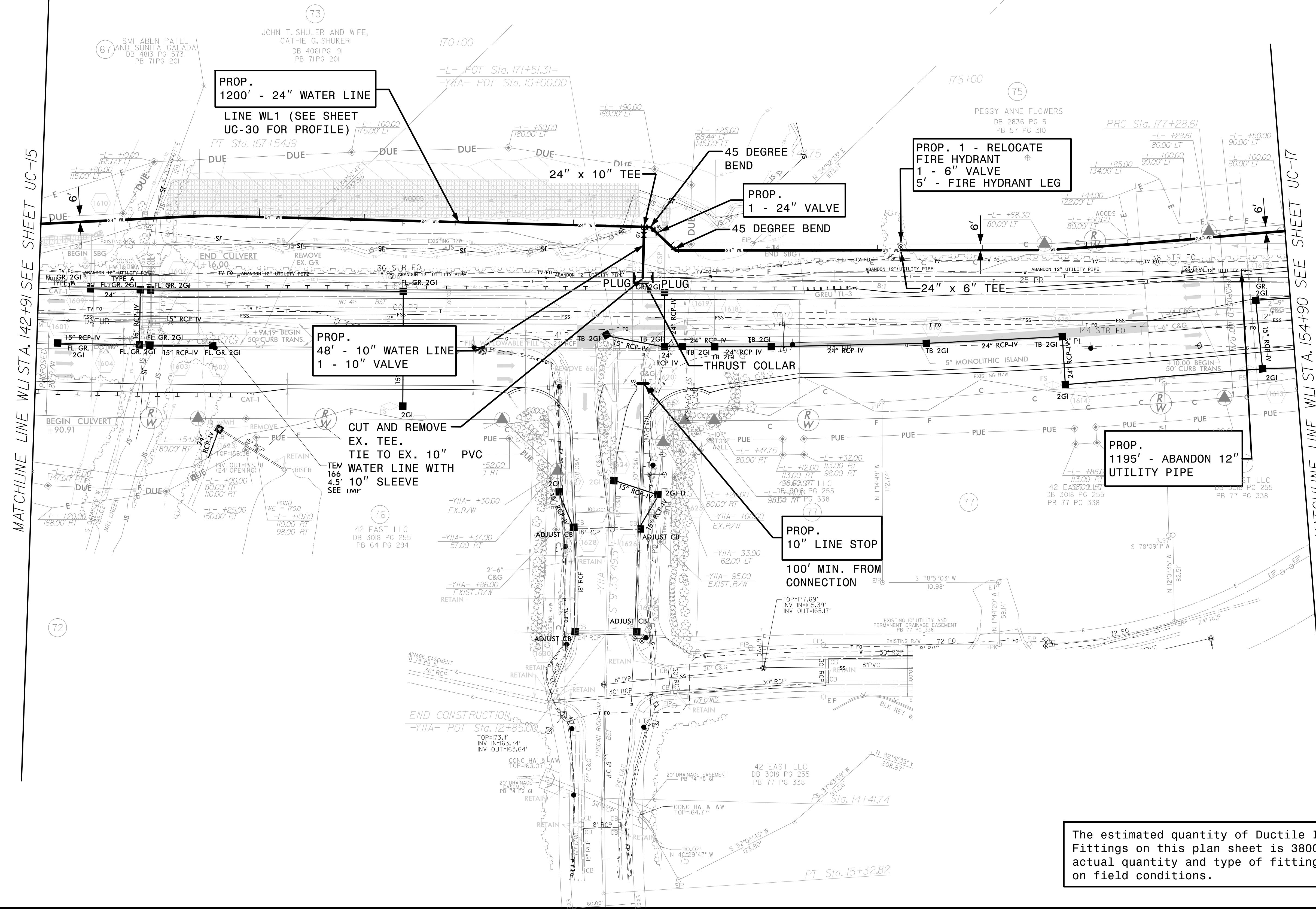
The estimated quantity of Ductile Iron Water Pipe Fittings on this plan sheet is 9290 pounds. The actual quantity and type of fittings will vary based on field conditions.

DATE: 9/17/2018
TIME: 12:46 PM
DGN: R3825B_UC_Plan.dgn

DESIGNED BY:	8/9/2018
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
REVISED:	
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UTILITY CONSTRUCTION



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

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

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.

DATE: 8/9/2018
TIME: 3:44:17 PM
DGN: R3825B_UC_Plan6.dgn

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PROJECT REFERENCE NO. SHEET NO.

R-3825B UC-17

DESIGNED BY: 8/9/2018

DRAWN BY:

CHECKED BY:

APPROVED BY:

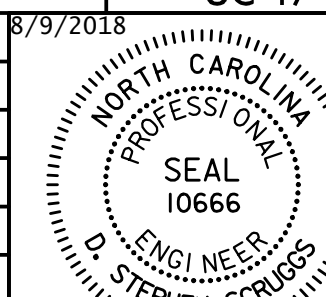
REVISED:

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

UTILITIES ENGINEERING SECTION

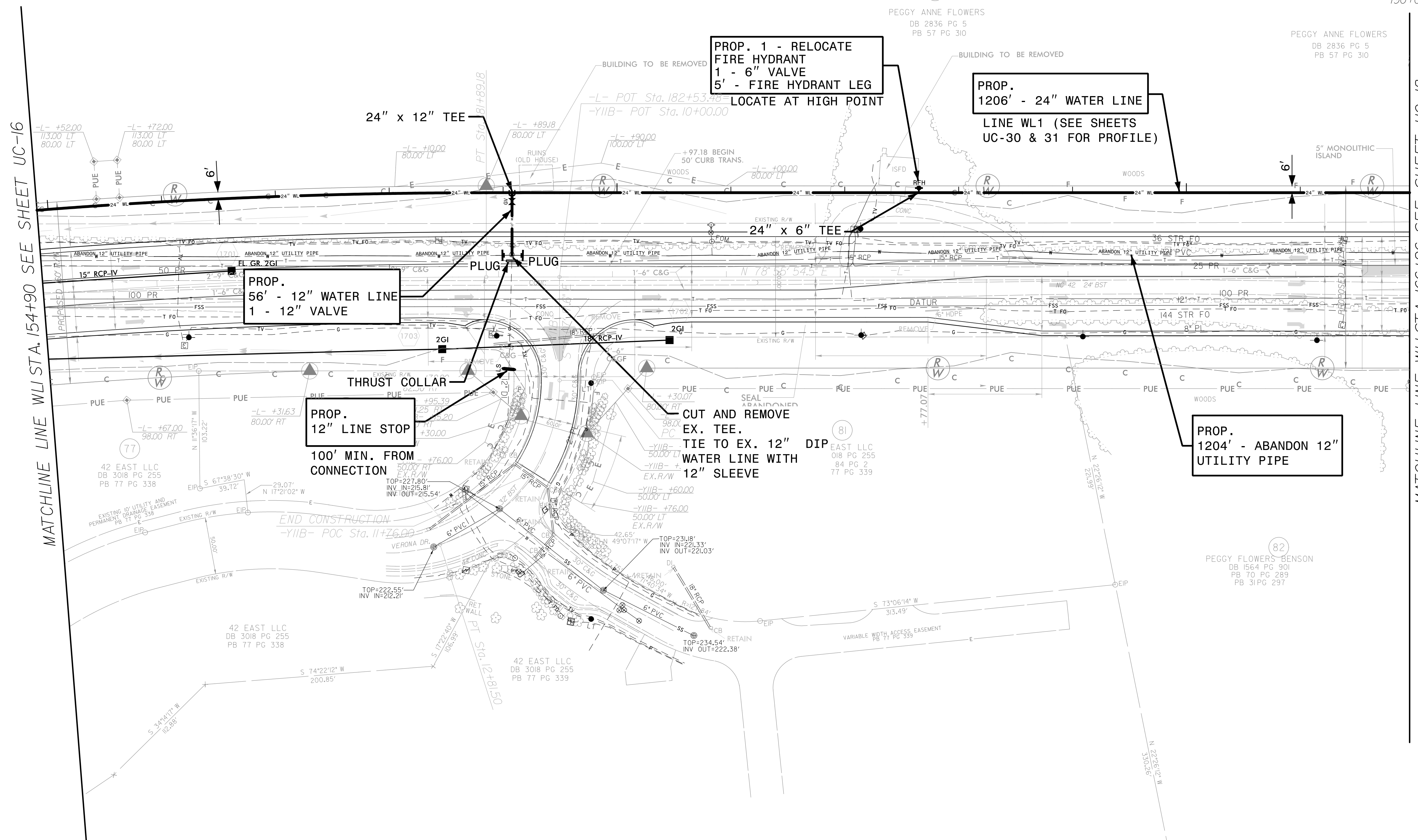
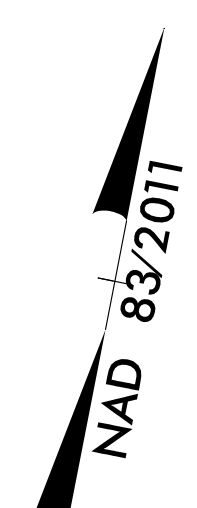
PHONE: (919) 707-6690

FAX: (919) 250-4151



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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" DIP
WATER LINE WITH
12" SLEEVE

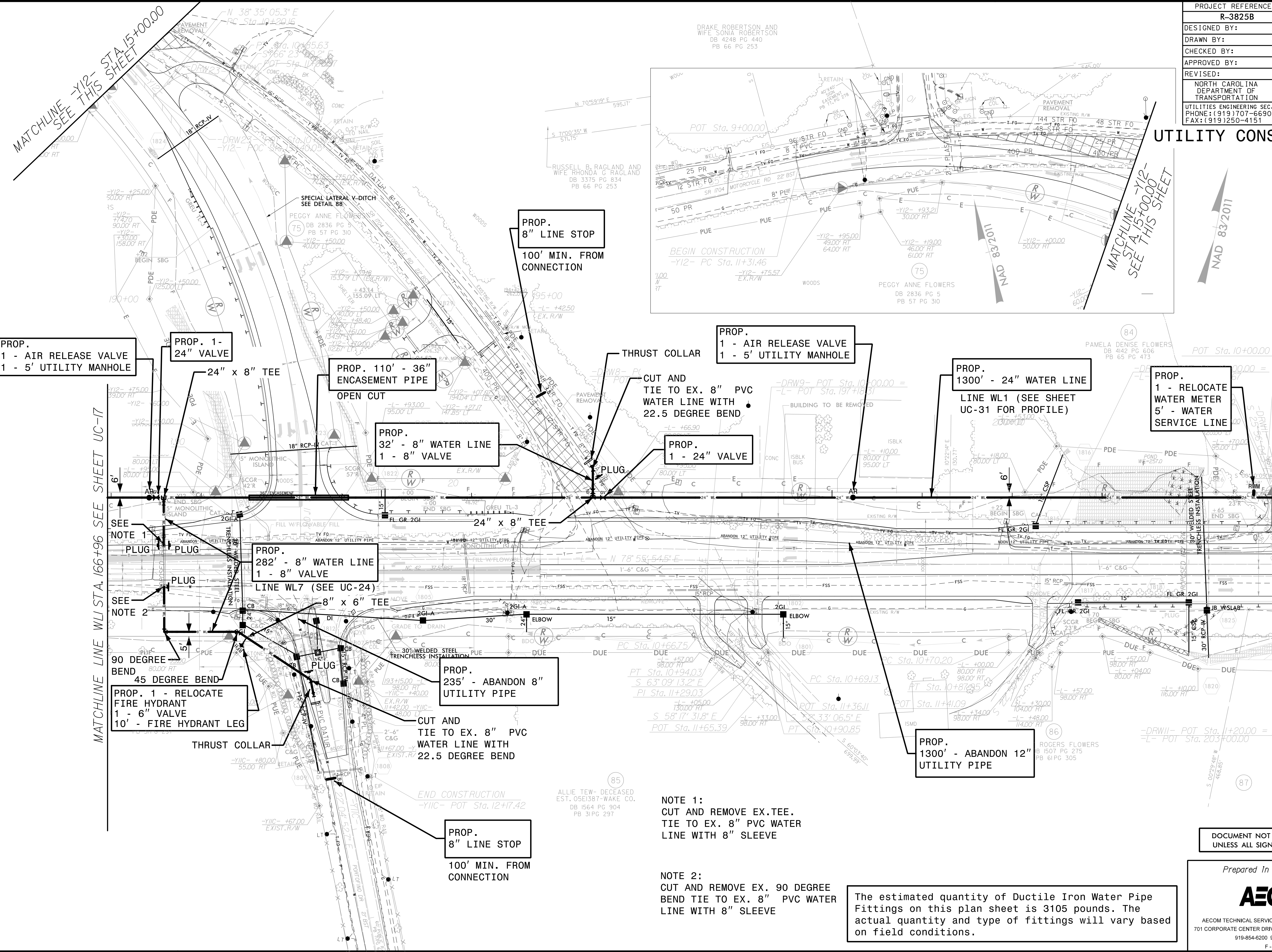
PROP.
1204' - ABANDON 12"
UTILITY PIPE

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 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



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

PROP.
1300' - ABANDON 12"
UTILITY PIPE

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.

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919-854-6200 919-854-6259 (fax)

DATE: 8/9/2018
TIME: 3:45:00 PM
DGN: R3825B_UC_PAN650P

MATCHLINE LINE WL1 STA. 166+96 SEE SHEET UC-17

MATCHLINE LINE WL1 STA. 179+96 SEE SHEET 19

MATCHLINE -Y12- STA. 15+00.00
SEE THIS SHEET

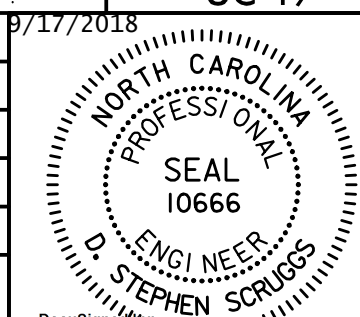
MATCHLINE -Y12- STA. 15+00.00
SEE THIS SHEET

Prepared In the Office of:



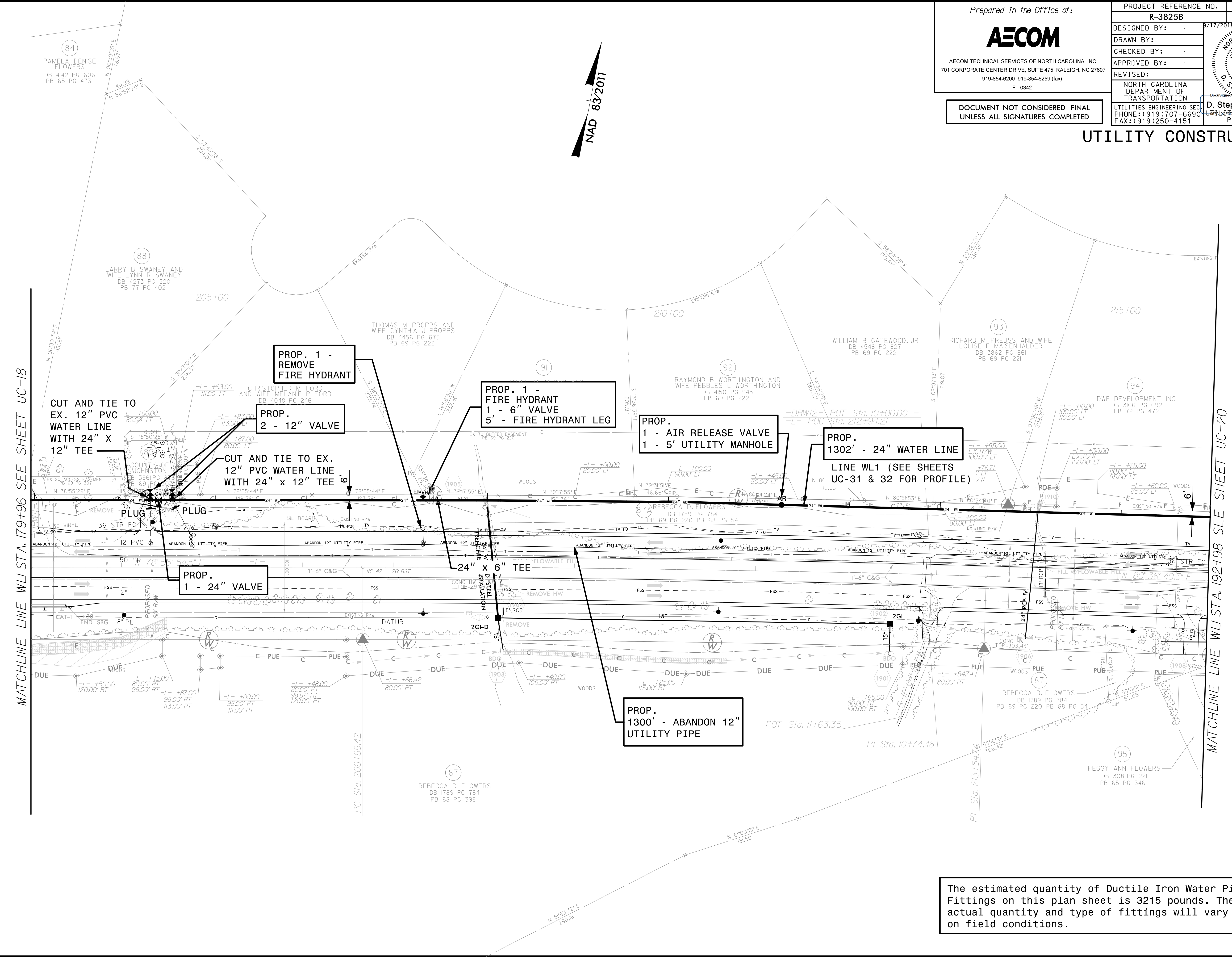
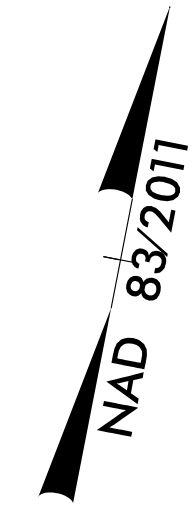
AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.
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PROJECT REFERENCE NO.	R-3825B	SHEET NO.	UC-19
DESIGNED BY:		DATE:	9/17/2018
DRAWN BY:			
CHECKED BY:			
APPROVED BY:			
REVISED:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		D. Stephen Scruggs	
UTILITIES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



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UTILITY CONSTRUCTION



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

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

CUT AND TIE TO
EX. 12" PVC
WATER LINE
WITH 24" X
12" TEE

PROP. 1 -
REMOVE
FIRE HYDRANT

PROP.
2 - 12" VALVE

CUT AND TIE TO EX.
12" PVC WATER LINE
WITH 24" X 12" TEE

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

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

PROP.
1302' - 24" WATER LINE
LINE WL1 (SEE SHEETS
UC-31 & 32 FOR PROFILE)

PROP.
1 - 24" VALVE

24" X 6" TEE

PROP.
1300' - ABANDON 12"
UTILITY PIPE

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.

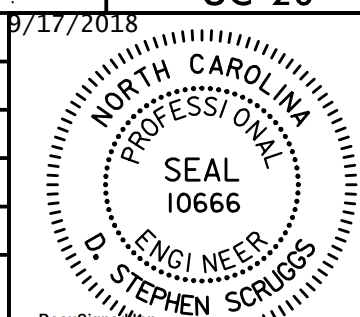
DATE: 9/17/2018
TIME: 12:52:00 PM
DGN: R3825B_UC_PlanSheet.dgn

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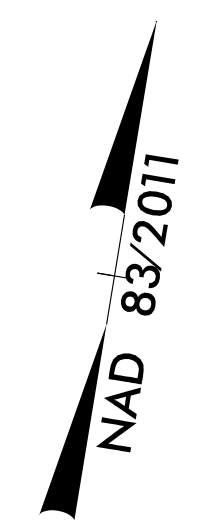
AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607
919-854-6200 919-854-6259 (fax)
F-0342

PROJECT REFERENCE NO.	R-3825B	SHEET NO.	UC-20
DESIGNED BY:		DATE:	9/17/2018
DRAWN BY:			
CHECKED BY:			
APPROVED BY:			
REVISED:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		D. Stephen Scruggs	
UTILITIES ENGINEERING SECTION		PHONE: (919) 707-6690	
		FAX: (919) 250-4151	



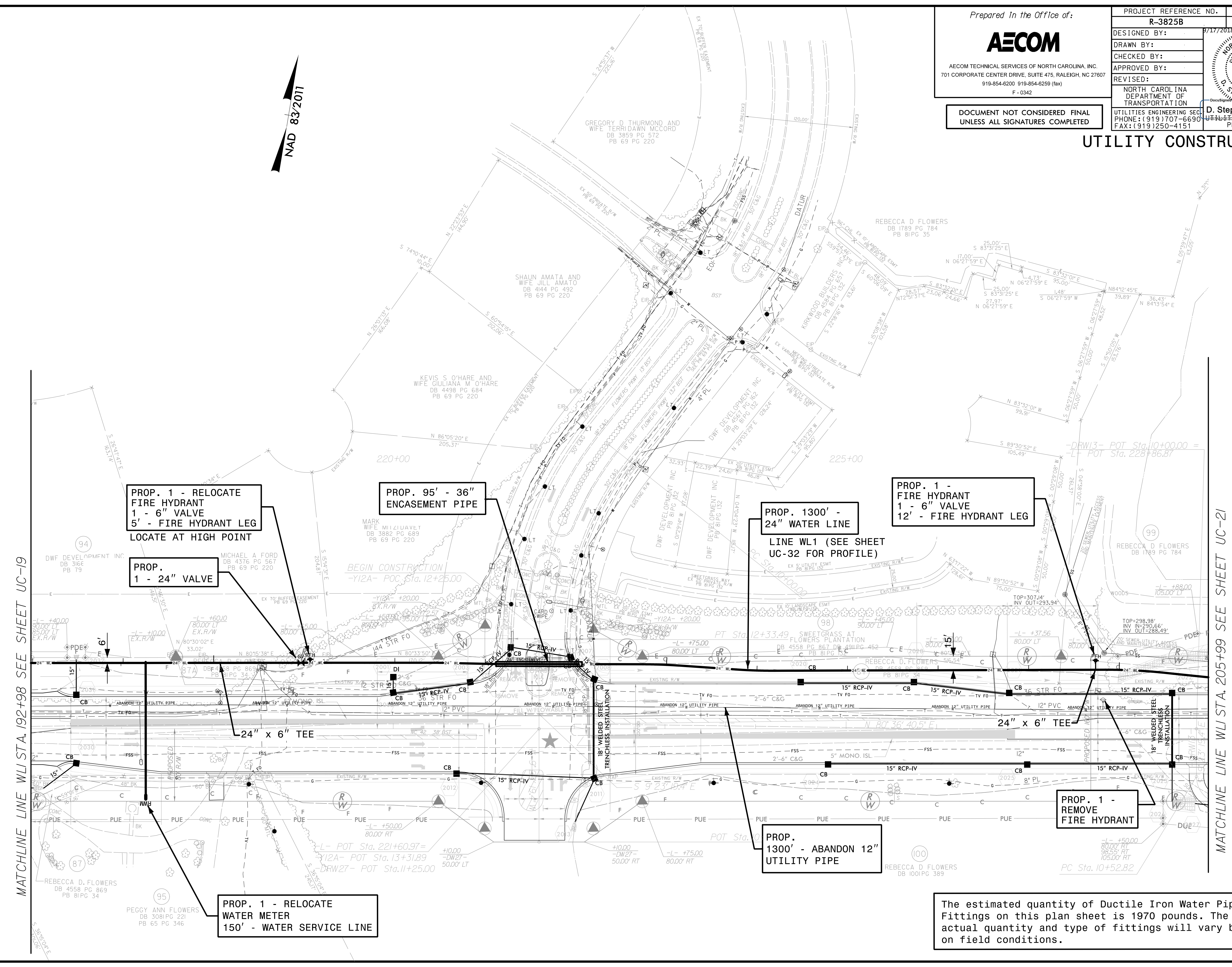
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UTILITY CONSTRUCTION



MATCHLINE LINE WL1 STA. 192+98 SEE SHEET UC-19

MATCHLINE LINE WL1 STA. 205+99 SEE SHEET UC-21



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

PROP. 95' - 36" ENCASUREMENT PIPE

PROP. 1300' - 24" WATER LINE
LINE WL1 (SEE SHEET UC-32 FOR PROFILE)

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

PROP. 1 - 24" VALVE

PROP. 1 - REMOVE FIRE HYDRANT

PROP. 1300' - ABANDON 12" UTILITY PIPE

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

The estimated quantity of Ductile Iron Water Pipe Fittings on this plan sheet is 1970 pounds. The actual quantity and type of fittings will vary based on field conditions.

DATE: 9/17/2018
TIME: 12:45:58 PM
DGN: R3825B_UC_Plan20.dgn

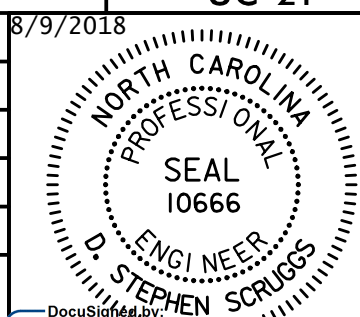
Prepared in the Office of:



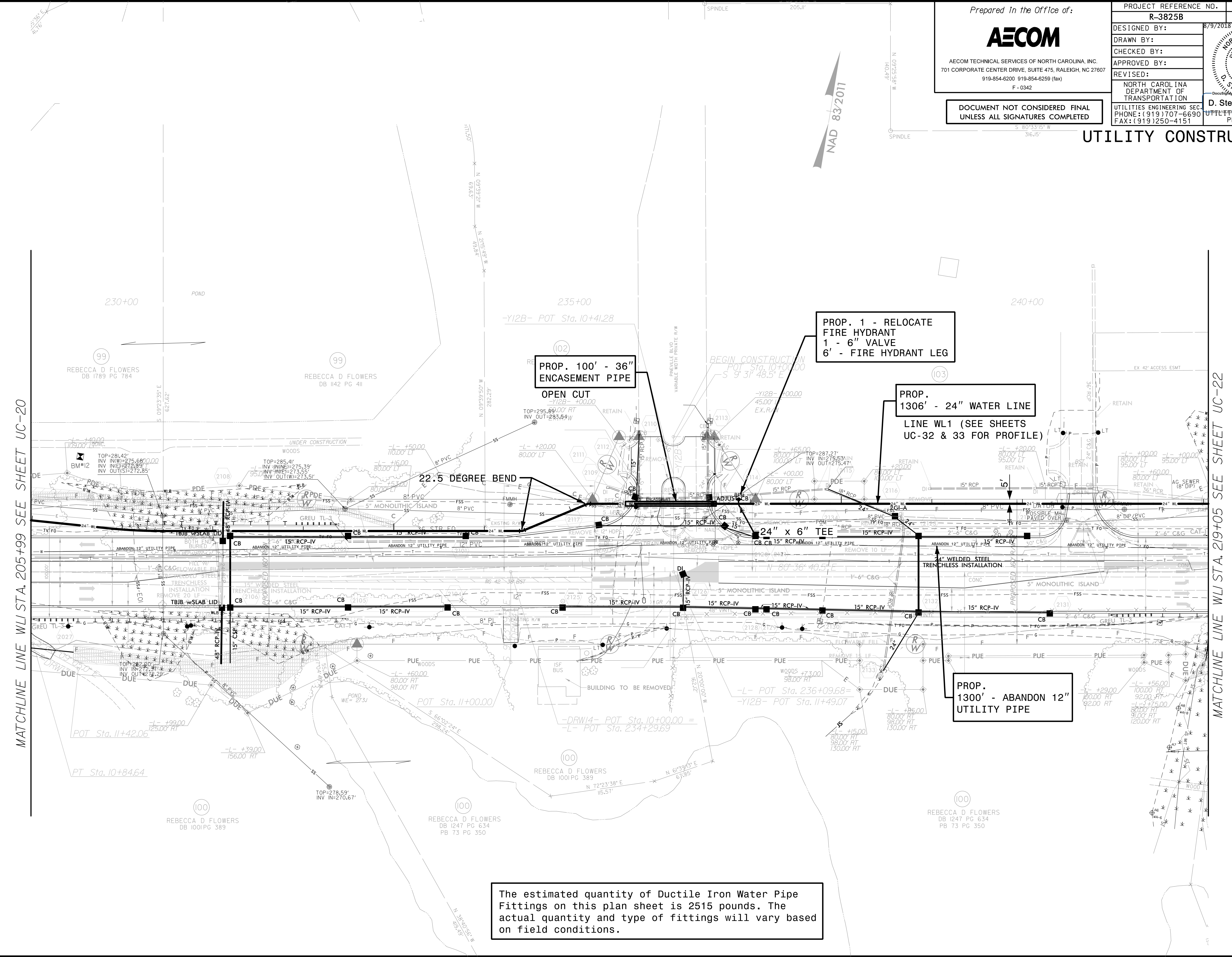
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PROJECT REFERENCE NO.	SHEET NO.
R-3825B	UC-21
DESIGNED BY:	8/9/2018
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
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UTILITY 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)

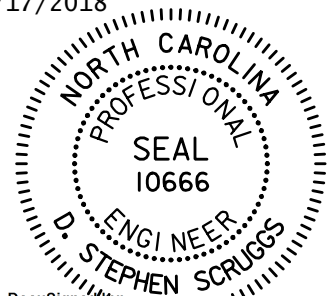
PROP. 1300' - ABANDON 12" UTILITY PIPE

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.

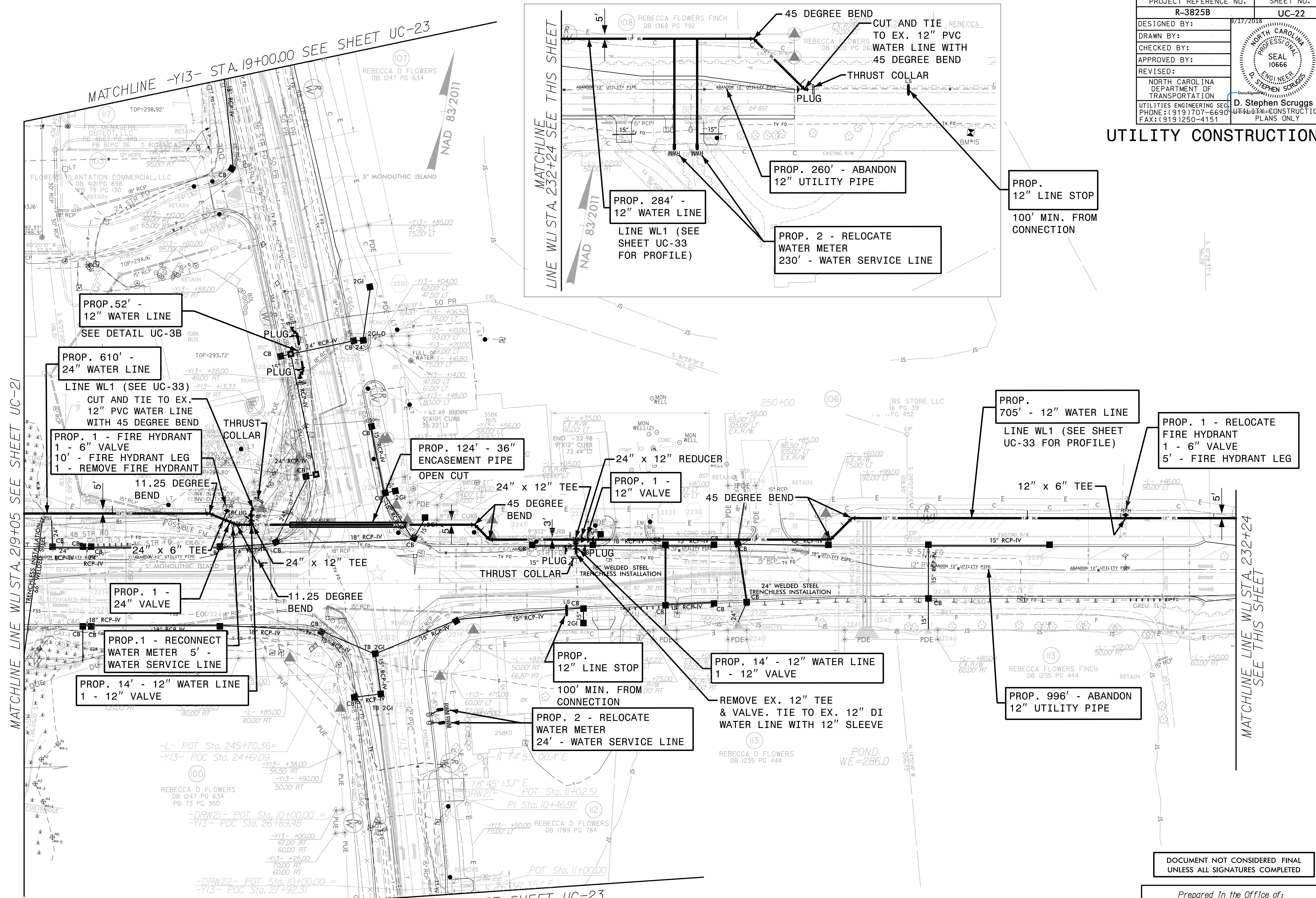
MATCHLINE LINE WL1 STA. 205+99 SEE SHEET UC-20

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

DATE: 8/9/2018
TIME: 3:46:08 PM
DGN: R3825B_UC_Plan2.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	UC-22
DESIGNED BY:	9/17/2018
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
REVISED:	
	
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UTILITY CONSTRUCTION



MATCHLINE LINE WL1 STA. 219+05 SEE SHEET UC-21

MATCHLINE LINE WL1 STA. 232+24 SEE THIS SHEET

MATCHLINE LINE WL1 STA. 232+24 SEE THIS SHEET

MATCHLINE -Y13- STA. 19+00.00 SEE SHEET UC-23

MATCHLINE -Y13- STA. 28+00.00 SEE SHEET UC-23

The estimated quantity of Ductile Iron Water Pipe Fittings on this plan sheet is 9585 pounds. The actual quantity and type of fittings will vary based on field conditions.

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 701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607
 919-854-6200 919-854-6259 (fax)

DATE: 9/17/2018
 TIME: 12:45:40 PM
 DGN: R3825B_UC_Plan22.dgn

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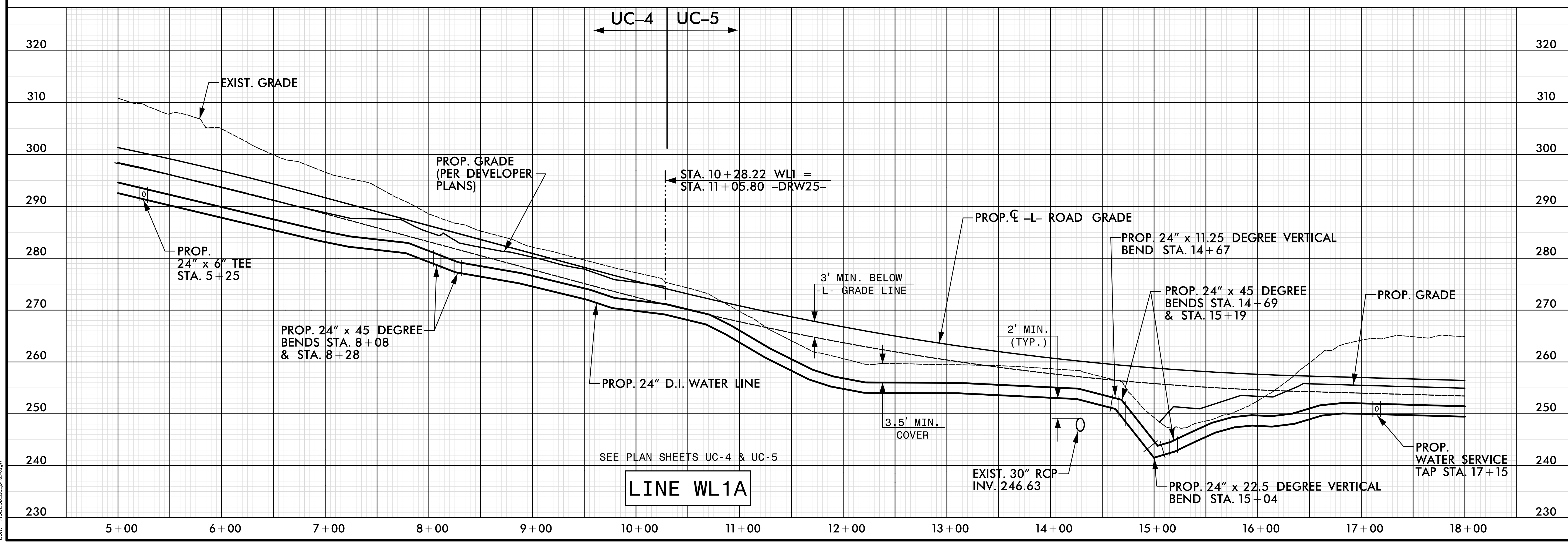
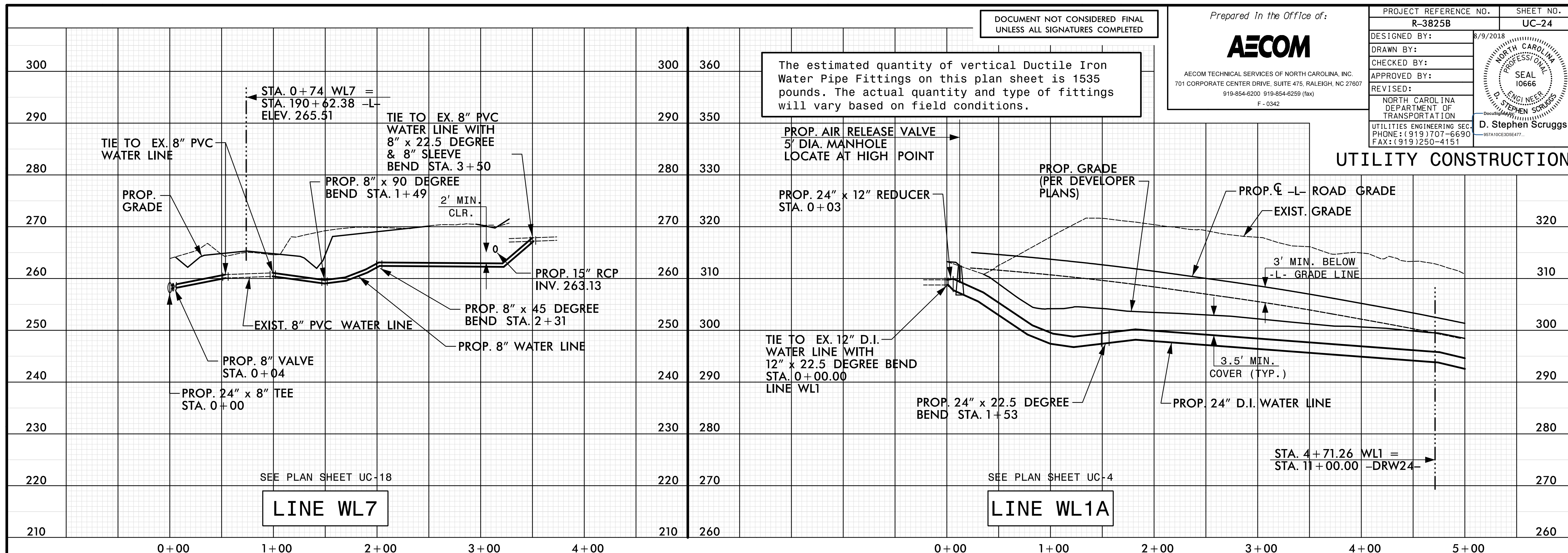


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F-0342

PROJECT REFERENCE NO. R-3825B	SHEET NO. UC-24
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 Water Pipe Fittings on this plan sheet is 1535 pounds. The actual quantity and type of fittings will vary based on field conditions.

UTILITY CONSTRUCTION



DATE: 8/9/2018
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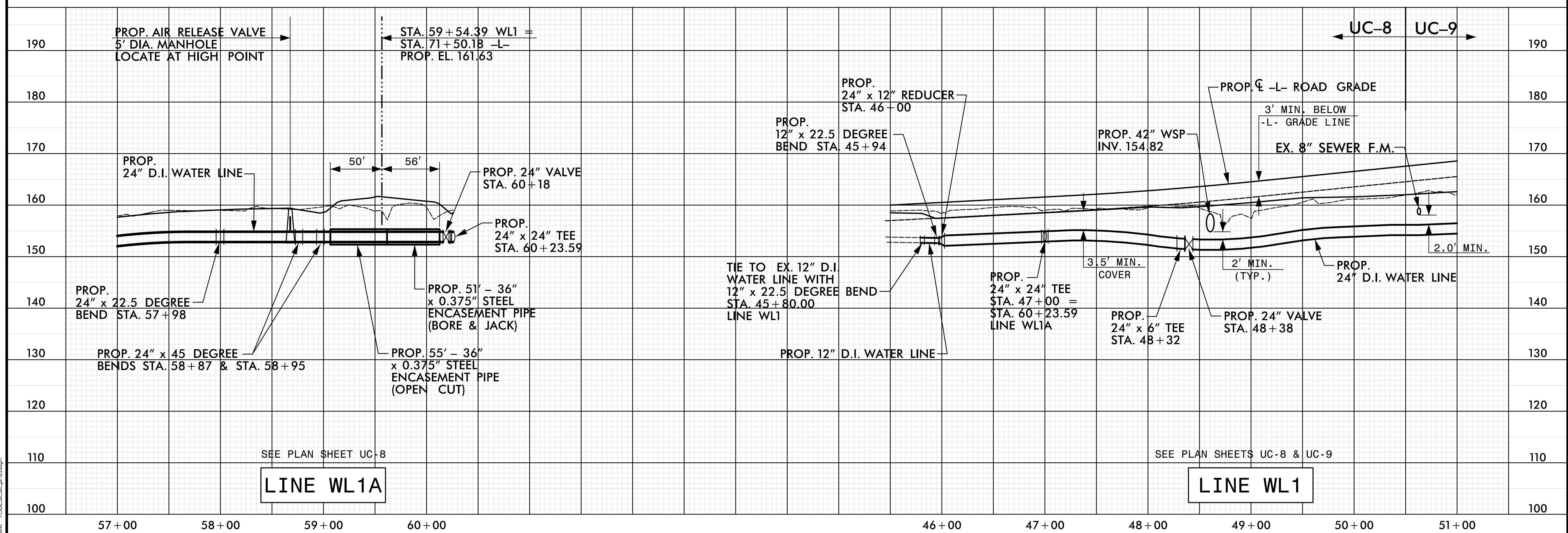
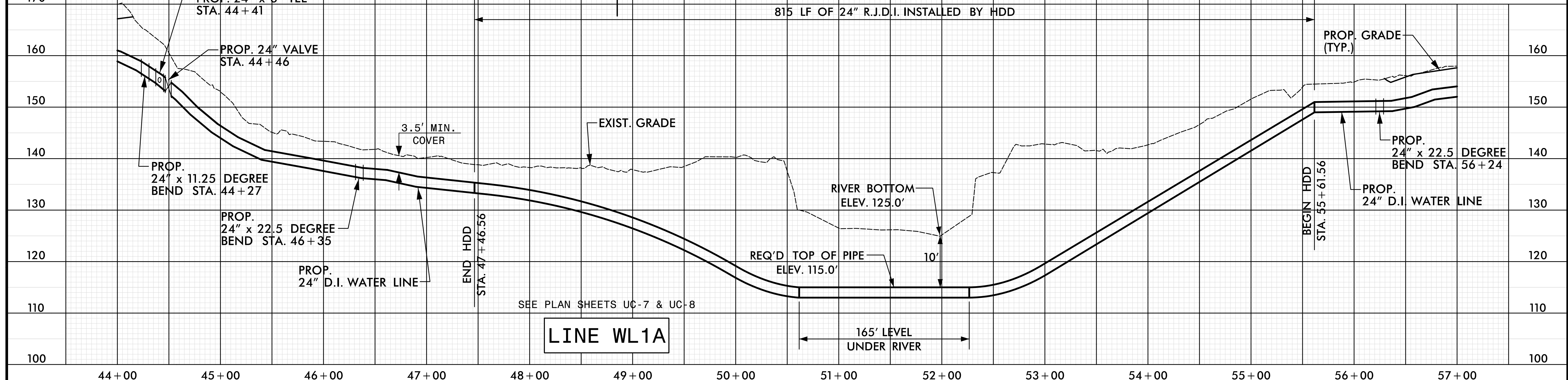
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F - 0342

PROJECT REFERENCE NO. R-3825B	SHEET NO. UC-26
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: 3:52:21 PM
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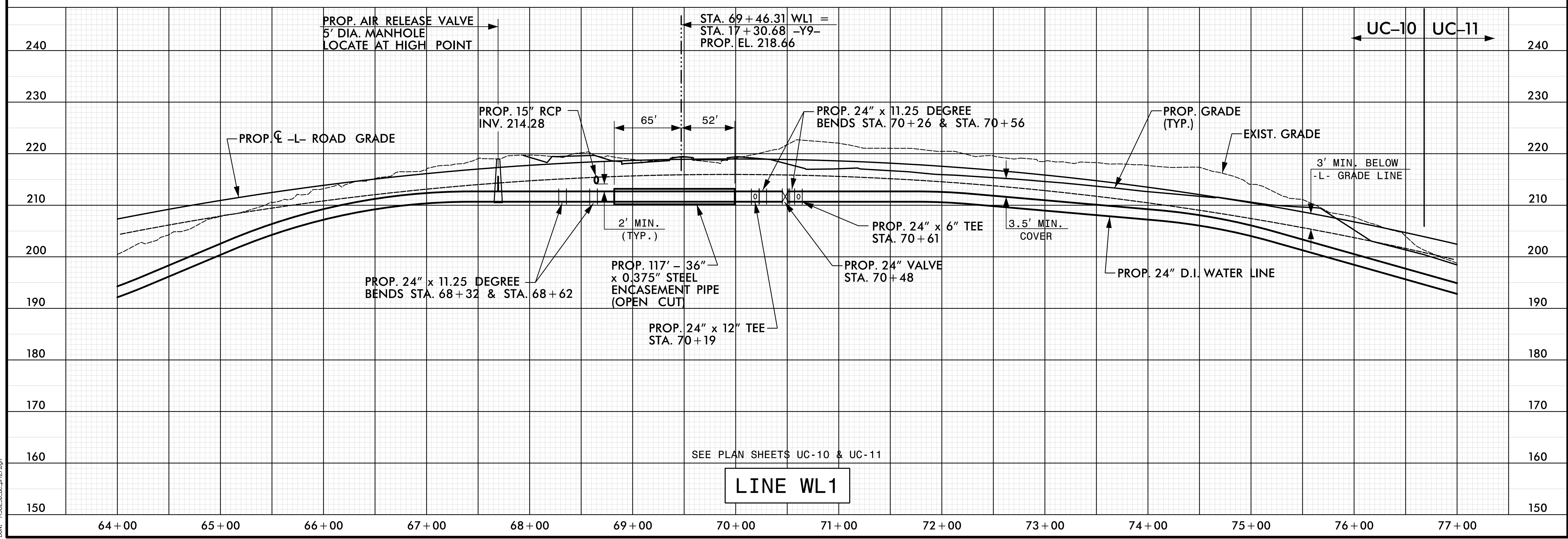
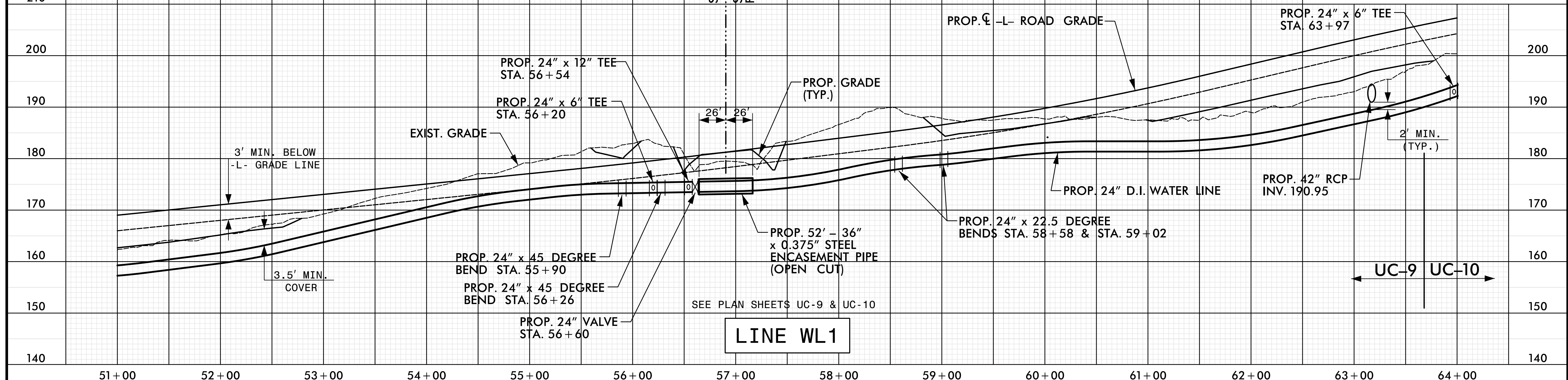
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PROJECT REFERENCE NO. R-3825B	SHEET NO. UC-27
DESIGNED BY:	8/9/2018
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
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D. Stephen Scruggs	

UTILITY CONSTRUCTION



DATE: 8/9/2018
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DWG: R3825B_UC-27.dwg