



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

JAMES H. TROGDON, III
SECRETARY

August 15, 2018

Addendum No. 2

RE: Contract # C204107

WBS # 39049.3.1

F. A. # STPDA-0401(230)

Cumberland County (U-4405)

US-401 (Raeford Road) From Old Raeford Road To East
Of Fairway Drive In Fayetteville

September 18, 2018 Letting- Advertisement extended from the August 21, 2018 Letting

To Whom It May Concern:

Reference is made to the plans and proposal form furnished to you on this project.

The following revision has been made to the Structure plans:

Sheet No.	Revisions
Title Sheet	Revised the letting date to September 18, 2018

Please void the above listed sheet in your plans and staple the revised sheet thereto.

The following revisions have been made to the Roadway plans:

Sheet No.	Revisions
Title Sheet	Revised the letting date to September 18, 2018
TMP-2B	Revised the Begin Project station to match the Roadway plan sheet. The phasing was based on this corrected station so no further corrections are necessary.
UC-1	Updated "Index of Sheets"
UC-3	Revised General Notes. Added notes 6, 7 and 8
UC-3A thru UC-3G	Revised Utility Construction notes for sheets UC-4 thru UC-21 and UC-32. Added Utility Construction notes for sheets UC-22 the UC-27A. Added Temporary Shoring table to UC-3G
UC-3H	Previously sheet UC-3D renamed to UC-3H

Mailing Address:
NC DEPARTMENT OF TRANSPORTATION
CONTRACT STANDARDS AND DEVELOPMENT
1591 MAIL SERVICE CENTER
RALEIGH, NC 27699-1591

Telephone: (919) 707-6900
Fax: (919) 250-4127
Customer Service: 1-877-368-4968

Location:
1020 BIRCH RIDGE DR.
RALEIGH, NC 27610

Website: www.ncdot.gov

UC-3I thru UC-3Q	Added details W.1, W.2, W.3 and W.4; revised all references from "FAYPWC" to "Engineer" and all specification references to "Utility Special Provisions"; revised or added notes on UC-3Q to Stream Pump Around detail and Cofferdam detail
UC-9	Revised the thickness on the 24" and 36" encasement
UC-10	Revised encasement thicknesses and corrected WL alignment name at WL-13 Sta. 24+58.94
UC-13	Moved fire hydrant on WL-14 to branch off new 6" water line. Changed 2" waterline and encasement length. Changed 30" HDPE SDR 11 to 32" HDPE SDR9
UC-14	Added labels to existing valves for construction sequencing
UC-15	Shifted valve on WL-18 to Sta. 8+00 so hydrant may be used for flushing point
UC-16	Increased font size of profile sheet references in bottom right corner
UC-17	Added the following: alignment label in plan view for WL-20A; a sanitary sewer service reconnection on Karr Drive for Parcel 23; labels to existing valves for construction sequencing; note to remove valve to start of WL-19 and a 12" line stop in front of Circle K gas station
UC-18	Added labels to existing valves for construction sequencing
UC-19	Added labels to existing valves for construction sequencing; added temporary 1" service line for Parcel 227; shifted valve on WL-19 to Station 8+24 and moved water meter and hydrant inside of PUE on Parcel 214
UC-20	Added temporary 1" service line for Parcel 227; shifted water meter and service line for Parcel 227; Added labels to existing valves for construction sequencing
UC-20A	Added "No. 11" to the callout for 100 SF of Temporary Shoring
UC-21	Revised callouts to "See Construction Notes"; shifted valve on -WL-20R2- to Sta. 53+60; added labels to existing valves for construction sequencing and added valve to base file on Faison Ave
UC-22	Added callouts for abandoned sewer lines (3 locations); added a 30" valve to -WL-20R2-; added labels to existing valves for construction sequencing and added callout referencing next-in-line valve on Ferncreek Drive
UC-23	Shifted valve on -WL-20R2- to Sta. 78+38.35; added killout symbol on Owen Drive; relocated valve from Owen Dr. to WL-23; revised proposed waterline type from 6" to 8" and added temporary shoring to Bore and Jack of 16" across McPherson Church Rd.
UC-23A	Added note to abandon 290 LF of 8" utility pipe
UC-24	Moved tie-in on Ancestry Drive out of the railroad ROW; added callout referencing next-in-line valve on Cambridge Street; revised callout for the length to nearest valve on Fairview Dr. to 760 LF
UC-25	Shifted two valves on WL-28 to Sta. 19+62.50 and Sta. 24+22.49
UC-26	Added an 8" valve to WL-28 at Sta. 27+21.85 and a 12" valve to WL-26 at Sta. 30+63.86

UC-26A	Corrected callout for temporary shoring No. 39
UC-32	Removed proposed encasement across Robeson Rd.; added a cut-in valve to facilitate reconnections and added labels to existing valves for construction sequencing
UC-34	Restrained joint pipe size changed from 24" to 8" on profile-WL-3-
UC-35	Profile -WL-6- reduced landing gap size on "Prop 15" RCP" callout to avoid conflict with Raeford Rd. centerline
UC-36	Profile -WL-7- removed "56 LF of 24" Waterline callout; removed vertical line at Sta. 0+00.00 and reduced landing gap size on "90" LF of RJDIP" callout on profile -WL-8-
UC-37	Profile-W-10- added duct bank to profile near Sta 18+60 and revised profile to be installed at lower depth to avoid duct bank;
UC-38	24" encasement thickness was revised on -Wl-12-
UC-39	Added 50 LF of RJDIP near Sta. 10+50 on profile -WL-14- and revised 24" Encasement thickness on -WL-13-
UC-40	Profile -WL-14- fire hydrant moved to Sta. 24+96; revised pipe callout for directional drill to show 32" HDPE SDR9 and added encasement thickness to 16" encasement
UC-41	Shifted a valve to Sta 8+00 on WL-18- so hydrant can be used as flushing point; removed utility notes for -WL-16-; added 50 LF of RJDIP to -WL-18- Sta 7+74 and revised Prop 2" waterline length to 121 LF and proposed 4" encasement length to 100 LF
UC-43	Added 80 LF of RJDIP to -WL-19- at Sta. 1+70 and shifted valve from -WL-19 Sta. 4+49 to Sta 8+30
UC-44	Profile -WL-19C- shifted proposed valve from Sta. 4+36 to 8+24; added 74 LF of RJDIP before valve at -WL-19C- Sta. 8+24.34; added 80 LF of RJDIP at -WL-19C- at Sta. 11+91.40; Profile -WL-20R1 added 80 LF of RJDIP at Sta. 8+01 and added 200 LF of RJDIP before the tee at -WL-20R1 Sta. 15+49
UC-45	Added note about sewer service replacement and sanitary sewer line replacement on Profile -WL-20R1-; added 40 LF of RJDIP on-WL-20R2- at Sta. 5+48 and revised length and thickness for 36" encasement
UC-46	Revised RJDIP length from 182 LF to 506 LF Profile-WL-20R2- Sta. 24+39 and revised length from 443LF to 611 LF
UC-47	Shifted valve from -WL-20R2 Sta. 53+37 to 53+60; added valve at -WL-20R2 Sta. 58+08; added 40 LF of 30" RJDIP to tees at -WL-20R2- Sta. 40+52.93 and 44+46.71; revised RJDIP length near Sta. 52+70 and at 58+08; revised encasement length
UC-48	Revised RJDIP pipe lengths from St. 73+00 to 78+50; changed RJDIP length on -WL-20R2-; profile-WL-20A- added RJ water line length and profile -WL-20R2 shifted valve to Sta. 78+37.85
UC-49	Profile in bottom viewpoint, changed callout from WL-22 to WL-21; Added 40 LF of RJDIP to WL-21 Sta. 3+95 to 7+83

UC-50	Profile -WL-23- added RJDIP length callout around Sta. 11+00; Profile WL-25 added RJDIP callouts to all areas and 24" encasement thickness was revised
UC-51	Profile WL-25 added RJDIP callouts in all areas
UC-52	Profile -WL-26 added 12" valve at Sta 30+63.86; shifted a valve on -WL-26 to Sta. 40+12.36; added RJDIP to tie-in tees and revised encasement length to be 60 LF
UC-53	Profile -WL-28 added RJDIP callouts to all areas on top profile; shifted valve on -WL-28 to Sta. 9+85.00 for sequencing; shifted a valve to other side of street on Willsborough Ave. WL-28- Sta. 19+62.50; added 12" RJDIP to -WL-28 near Sta. 3+67, 17+00 and 20+08
UC-54	All changes are to -WL-28: Shifted a valve to Sta. 24+22.49; added valves to Station 27+21.85 and 37+63.09; added RJDIP callouts around Sta. 32+00 and 34+50; Bottom profile added 8" and 12" RJDIP callouts; changed Tee callout to 12" x 12" x 6"
UC-56	Revised encasement thickness on 30" encasement: corrected Plan Sheet reference for SL-2
UC-55	Removed profile CWL-EY46
UC-57	Removed box around encasement callout on SL-3
UC-59	Revised SL-7 profile

Please void the above listed sheets in your plans and staple the revised sheets thereto.

The following revisions have been made to the proposal:

Page No.	Revisions
Proposal Cover	Note added that reads "Includes Addendum No. 2 Dated 08-15-2018" and revised the letting date.
Table of Contents	Revised to show the addition of the project special provision entitled "Note To Contractor"
G-1	Revised the completion date within the project special provision entitled "Contract Time and Liquidated Damages" and revised the completion date within the project special provision entitled "Intermediate Contract Time Number 1 and Liquidated Damages"
G-8 and G-10	Revised the delay of entry date in the first paragraph, added an exception date for certain parcels within the project special provision entitled "Delay In Right Of Entry"
G-10	Revised the project special provision entitled "Major Contract Items" to add the Line #'s and Description of the Major Items
G-11	Revised the percentages within the project special provision entitled "Schedule of Estimated Completion Progress"
New G-38	Added the project special provision entitled "Note To Contractor"
R-35	Added the project special provision entitled "Exploratory Excavation"
UbO-1 thru UbO-5	Revised multiple dates within the project special provision entitled "Utilities By Others"

Please void the above listed pages in your proposal and staple the revised pages thereto.
Please staple New Page No. G-38 after G-37.

On the item sheets the following pay item quantity revisions have been made:

<u>Item</u>	<u>Description</u>	<u>Old Quantity</u>	<u>New Quantity</u>
013-0199000000-E-SP	Temporary Shoring	40,949.37 SF	45,349 SF
111-2830000000-N-858	Adjustment of Manholes	7 EA	86 EA
177-5325200000-E-1510	2" Water Line	619 LF	606 LF
178-5325600000-E-1510	6" Water Line	1,324 LF	955 LF
179-5325800000-E-1510	8" Water Line	13,019.07 LF	8,220 LF
180-5326200000-E-1510	12" Water Line	13,252.27 LF	7,481.8 LF
181-5326600000-E-1510	16" Water Line	880 LF	630 LF
182-5327400000-E-1510	24" Water Line	14,230 LF	6,741 LF
183-5328000000-E-1510	30" Water Line	7,842 LF	2,278 LF
185-5536000000-E-1515	2" Valve	38 EA	37 EA
187-5546000000-E-1515	8" Valve	59 EA	58 EA
188-5558000000-E-1515	12" Valve	28 EA	29 EA
191-5560000000-E-1515	30" Valve	5 EA	7 EA
205-5673000000-E-1515	Fire Hydrant Leg	1,687.1 LF	1,688 LF
222-5801000000-E-1530	Abandon 8" Utility Pipe	2,569.66 LF	4,185 LF
228-5816000000-N-1530	Abandon Utility Manhole	6 EA	11 EA
229-5828000000-N-1530	Remove Utility Manhole	3.01 EA	3 EA
230-5835000000-E-1540	4" Encasement Pipe	102 LF	100 LF
233-5835700000-E-1540	16" Encasement Pipe	298 LF	212 LF
394-5889000000-E-1510	6" RJ DI Water Line	NEW ITEM	369 LF
395-5879000000-E-1515	12" Line Stop	NEW ITEM	1 EA

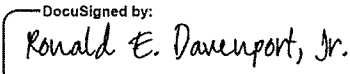
<u>Item</u>	<u>Description</u>	<u>Old Quantity</u>	<u>New Quantity</u>
396-5889000000-E-1510	8" RJ DI Water Line	NEW ITEM	5,313 LF
397-5889000000-E-1510	12" RJ DI Water Line	NEW ITEM	5,402 LF
398-5889000000-E-1510	16" RJ DI Water Line	NEW ITEM	250 LF
399-5889000000-E-1510	16" HDPE SDR-9 Water Line	NEW ITEM	368 LF
400-5889000000-E-1510	24" RJ DI Water Line	NEW ITEM	7,439.26 LF
401-5889000000-E-1510	30" RJ DI Water Line	NEW ITEM	3,483 LF
396-5889000000-E-1510	30" HDPE SDR-9 Water Line	NEW ITEM	540 LF

The Contractor's bid must be based on the revised pay item quantities and include the new pay items.

Please delete the EBS file (21AUG001.EBS) and (21AUG001.001) addendum file you previously downloaded for the August 21, 2018 letting and download the new EBS file listed for the September 18, 2018 letting (18SEP001.EBS). The new EBS file listed for the September 18, 2018 letting will contain the quantity changes that were made as part of Addendum No. 1 dated July 27, 2018. Please download the Expedite Addendum File (18SEP001.001) and follow the instructions for applying the addendum. Bid Express will not accept your bid unless the new EBS file associated with the September 18, 2018 letting with the addendum file (18SEP001.001) applied is used.

The contract will be prepared accordingly.

Sincerely,

DocuSigned by:

F81B6038A47A442...
 Ronald E. Davenport, Jr., PE
 State Contract Officer

RED/jag
 Attachments

cc: Mr. Lamar Sylvester, PE	Mr. Ray Arnold, PE	Ms. Lori Strickland
Mr. Greg Burns, PE	Ms. Theresa Canales, PE	Mr. Mitchell Dixon
Mr. Ron Hancock, PE	Ms. Jaci Kincaid	Mr. Mike Gwyn
Mr. Jon Weathersbee, PE	Ms. Penny Higgins	Mr. Mitchell Dixon
Mr. Ken Kennedy, PE	Mr. Alex Foster	Project File (2)

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH, N.C.

PROPOSAL

INCLUDES ADDENDUM No. 2 DATED 8-15-2018
INCLUDES ADDENDUM NO.1 DATED 7-27-2018

DATE AND TIME OF BID OPENING: **SEPTEMBER 18, 2018 AT 2:00 PM**

CONTRACT ID C204107
WBS 39049.3.1

FEDERAL-AID NO. STPDA-0401(230)
COUNTY CUMBERLAND
T.I.P. NO. U-4405
MILES 6.231
ROUTE NO. US 401
LOCATION US-401 (RAEFORD RD) FROM OLD RAEFORD RD TO EAST OF FAIRWAY
DR IN FAYETTEVILLE.

TYPE OF WORK GRADING, DRAINAGE, PAVING, SIGNALS, WALLS, AND STRUCTURES.

NOTICE:

ALL BIDDERS SHALL COMPLY WITH ALL APPLICABLE LAWS REGULATING THE PRACTICE OF GENERAL CONTRACTING AS CONTAINED IN CHAPTER 87 OF THE GENERAL STATUTES OF NORTH CAROLINA WHICH REQUIRES THE BIDDER TO BE LICENSED BY THE N.C. LICENSING BOARD FOR CONTRACTORS WHEN BIDDING ON ANY NON-FEDERAL AID PROJECT WHERE THE BID IS \$30,000 OR MORE, EXCEPT FOR CERTAIN SPECIALTY WORK AS DETERMINED BY THE LICENSING BOARD. BIDDERS SHALL ALSO COMPLY WITH ALL OTHER APPLICABLE LAWS REGULATING THE PRACTICES OF ELECTRICAL, PLUMBING, HEATING AND AIR CONDITIONING AND REFRIGERATION CONTRACTING AS CONTAINED IN CHAPTER 87 OF THE GENERAL STATUTES OF NORTH CAROLINA. NOTWITHSTANDING THESE LIMITATIONS ON BIDDING, THE BIDDER WHO IS AWARDED ANY FEDERAL - AID FUNDED PROJECT SHALL COMPLY WITH CHAPTER 87 OF THE GENERAL STATUTES OF NORTH CAROLINA FOR LICENSING REQUIREMENTS WITHIN 60 CALENDAR DAYS OF BID OPENING.

BIDS WILL BE RECEIVED AS SHOWN BELOW:

THIS IS A ROADWAY & STRUCTURE PROPOSAL

5% BID BOND OR BID DEPOSIT REQUIRED

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PROJECT SPECIAL PROVISIONSGENERALCONTRACT TIME AND LIQUIDATED DAMAGES:

(8-15-00) (Rev. 12-18-07)

108

SP1 G07 A

The date of availability for this contract is **October 29, 2018**, except that work in jurisdictional waters and wetlands shall not begin until a meeting between the DOT, Regulatory Agencies, and the Contractor is held as stipulated in the permits contained elsewhere in this proposal. This delay in availability has been considered in determining the contract time for this project.

The completion date for this contract is **December 12, 2023**.

Except where otherwise provided by the contract, observation periods required by the contract will not be a part of the work to be completed by the completion date and/or intermediate contract times stated in the contract. The acceptable completion of the observation periods that extend beyond the final completion date shall be a part of the work covered by the performance and payment bonds.

The liquidated damages for this contract are **Two Hundred Dollars (\$ 200.00)** per calendar day. These liquidated damages will not be cumulative with any liquidated damages which may become chargeable under Intermediate Contract Time Number 1.

INTERMEDIATE CONTRACT TIME NUMBER 1 AND LIQUIDATED DAMAGES:

(7-1-95) (Rev. 2-21-12)

108

SP1 G13 A

Except for that work required under the Project Special Provisions entitled *Planting, Reforestation* and/or *Permanent Vegetation Establishment*, included elsewhere in this proposal, the Contractor will be required to complete all work included in this contract and shall place and maintain traffic on same.

The date of availability for this intermediate contract time is **October 29, 2018**.

The completion date for this intermediate contract time is **June 15, 2023**.

In addition to the above time limit for completing this intermediate contract work, the Department desires that this intermediate contract work be completed by **October 1, 2022** and that the Contractor pursue the work with such labor, equipment and materials as necessary to ensure that an **October 1, 2022** completion date will be met without regard to time extensions and time reliefs provided for in the Specifications. **This date shall be utilized in determining Bonus payment and it shall not be revised for any reason whatsoever.** Therefore, as full compensation for all extra costs involved, the Department agrees to pay as a bonus, the sum of **One Million Dollars (\$ 1,000,000.00)** to the Contractor for satisfactorily completing this intermediate contract work on or prior to **October 1, 2022**. Should the Contractor fail to complete this intermediate contract work by **October 1, 2022**, then normal time extension and time reliefs provided in the Specifications will apply and no bonus will be allowed.

The liquidated damages for this intermediate contract time are **Four Thousand Dollars (\$ 4,000.00)** per calendar day.

Upon apparent completion of all the work required to be completed by this intermediate date, a final inspection will be held in accordance with Article 105-17 and upon acceptance, the

will be responsible for, and shall correct any areas disturbed by operations performed in permanent vegetation establishment and the removal of temporary erosion control measures, whether occurring prior to or after placing traffic on the project.

Payment for *Response for Erosion Control, Seeding and Mulching, Repair Seeding, Supplemental Seeding, Mowing, Fertilizer Topdressing, Silt Excavation, and Stone for Erosion Control* will be made at contract unit prices for the affected items. Work required that is not represented by contract line items will be paid in accordance with Articles 104-7 or 104-3 of the *2018 Standard Specifications*. No additional compensation will be made for maintenance and removal of temporary erosion control items.

DELAY IN RIGHT OF ENTRY:

(7-1-95)

108

SP1 G22 A

The Contractor will not be allowed right of entry to the parcels listed below before February 28, 2019 **except as noted below for Parcels # 382, 385 and 386** unless otherwise permitted by the Engineer.

<u>Parcel No.</u>	<u>Property Owner</u>
1	Ray Johnson
119	M. D. Gillis / Daryl Rozier
129	Time Warner Cable
137	City of Fayetteville
142	American Flag-Raeford Rd.
154	Oland B. Little
156	Waffle House
157	Schultz Rentals
158	D-J's Leasing Corp
164	William D. Sherman, Jr.
166	Ray Johnson
167	William D. Sherman, Jr.
175	Clyde Culbreth Heirs
183	Harvey Shultz
184	Roger R. Compton & Wife
193	DPGP Investments, LLC
195	Wesley C. Powers
198	John P. Taylor & Wife
198A	Unknown
23A	Paul Investments, LLC
27A	Circle K Stores
27B	ALDI, LLC
28A	Janice Billings
207	Trade Land Company, LLC
208	NLP III, LLC
212	Claude T. Haley, JR., & Wife
215	Lynne B. Barrett
217	Cumberland County Board of Education
218	Alderwoods, Inc.
220	RREF II BB-NC, LLC

329	Talley Investments, LLC	
330	VD Neal Properties, LLC	
331	Highland Commercial, LLC	
332	Waterville Equities I, LLC	
334	Highland Diaries, Inc.	
335	PBM of Fayetteville, LLC	
336	Randy S. Gregory & wife, Anne	
337	Weeks Rental Properties	
339	Weeks Rental Properties	
340	Fayetteville Association of Realtors	
346	W. A. Maxwell, Inc	
347	Highland Country Club	
349	Highland Country Club	
350	Frederick L. Graham	
351	WJ Wiggs et al C/O Pamela Griffin	
353	2401 Robeson Bend, LLC	
375	Buckhead Plaza, Inc.	
377	Luke Nwosu, Trustee of the Maxiorie Irrevocable Trust	
378	William H. Owen, III	
379	(Curtis M. Dail) Dail Center, LLC	
380	Louis W. Hackett	
381	Ernest L. Nelon, II	
382	Donald Deitz Bell	Delay of Entry Date is 11/01/2018
385	Betty M. Reeves	Delay of Entry Date is 11/01/2018
386	Bennie C. Benton	Delay of Entry Date is 11/01/2018
387	Buckhead Plaza, Inc.	
388	Pedro's Mexican Food, Inc.	

MAJOR CONTRACT ITEMS:

(2-19-02)

104

SP1 G28

The following listed items are the major contract items for this contract (see Article 104-5 of the 2018 Standard Specifications):

Line #	Description
-71	Asphalt Concrete Base Course, Type B 25.0C
-72	Asphalt Concrete Intermediate Course, Type I 19.0C
-74	Asphalt Concrete Surface Course, Type S 9.5C

SPECIALTY ITEMS:

(7-1-95)(Rev. 1-17-12)

108-6

SP1 G37

Items listed below will be the specialty items for this contract (see Article 108-6 of the 2018 Standard Specifications).

Line #	Description
115 thru 120	Guardrail
121 thru 126	Fencing
131 thru 147	Signing
162 thru 169	Long-Life Pavement Markings
175	Permanent Pavement Markers
177 thru 262	Utility Construction
263 thru 297	Erosion Control
298 thru 364	Signals/ITS System

FUEL PRICE ADJUSTMENT:

(11-15-05) (Rev. 2-18-14)

109-8

SP1 G43

Revise the *2018 Standard Specifications* as follows:

Page 1-83, Article 109-8, Fuel Price Adjustments, add the following:

The base index price for DIESEL #2 FUEL is \$ **2.4505** per gallon. Where any of the following are included as pay items in the contract, they will be eligible for fuel price adjustment.

The pay items and the fuel factor used in calculating adjustments to be made will be as follows:

Description	Units	Fuel Usage Factor Diesel
Unclassified Excavation	Gal/CY	0.29
Borrow Excavation	Gal/CY	0.29
Class IV Subgrade Stabilization	Gal/Ton	0.55
Aggregate Base Course	Gal/Ton	0.55
Sub-Ballast	Gal/Ton	0.55
Asphalt Concrete Base Course, Type _____	Gal/Ton	2.90
Asphalt Concrete Intermediate Course, Type _____	Gal/Ton	2.90
Asphalt Concrete Surface Course, Type _____	Gal/Ton	2.90
Open-Graded Asphalt Friction Course	Gal/Ton	2.90
Permeable Asphalt Drainage Course, Type _____	Gal/Ton	2.90
Sand Asphalt Surface Course, Type _____	Gal/Ton	2.90
Aggregate for Cement Treated Base Course	Gal/Ton	0.55
Portland Cement for Cement Treated Base Course	Gal/Ton	0.55
____ " Portland Cement Concrete Pavement	Gal/SY	0.245
Concrete Shoulders Adjacent to ____ " Pavement	Gal/SY	0.245

SCHEDULE OF ESTIMATED COMPLETION PROGRESS:

(7-15-08) (Rev. 6-19-18)

108-2

SP1 G58

The Contractor's attention is directed to the Standard Special Provision entitled *Availability of Funds Termination of Contracts* included elsewhere in this proposal. The Department of Transportation's schedule of estimated completion progress for this project as required by that Standard Special Provision is as follows:

	Fiscal Year	Progress (% of Dollar Value)
2019	(7/01/18 - 6/30/19)	20% of Total Amount Bid
2020	(7/01/19 - 6/30/20)	29% of Total Amount Bid
2021	(7/01/20 - 6/30/21)	23% of Total Amount Bid
2022	(7/01/21 - 6/30/22)	17% of Total Amount Bid
2023	(7/01/22 - 6/30/23)	11% of Total Amount Bid

The Contractor shall also furnish his own progress schedule in accordance with Article 108-2 of the *2018 Standard Specifications*. Any acceleration of the progress as shown by the Contractor's progress schedule over the progress as shown above shall be subject to the approval of the Engineer.

NOTE TO CONTRACTOR:

The Contractor shall perform all trenchless pipe culvert installations under the -L- line pavement during weekends only and between Friday beginning at 8:00 p.m. to Monday at 5:00 a.m. unless otherwise approved by the Engineer.

Method of Measurement: Tree protection fence to be paid for will be the actual number of linear feet installed in place and accepted.

Basis of Payment: The quantity of tree protection fence will be paid for at the contract unit price per linear foot. Such payment will be full compensation for the work as described above, including but not limited to furnishing, installing, maintaining and removing the tree protection fence and signs.

Payment will be made under

Tree Protection Fence.....LF

EXPLORATORY EXCAVATION:

08-21-18

SPI 8-23Rev

Description

This work consists of performing exploratory excavation to locate existing underground utilities and storm drain systems as directed by the Engineer. This work will allow minor adjustments to be made prior to the installation of proposed storm drain systems and other items of work to alleviate conflicts.

Construction Methods

Exploratory Excavation – Standard shall consist of removing asphalt, concrete, and earth material by use of standard construction equipment, materials, and laborers to locate accurately any existing underground utilities and storm drain systems. All excavations shall be backfilled with suitable material of the same type excavated. Use available unclassified excavation before using borrow excavation.

Measurement and Payment

Exploratory Excavation – Standard will be measured and paid for at the contract unit price per hour. Such price and payment shall be full compensation for satisfactorily excavating and removing existing material, backfilling with suitable previously excavated earth material and any necessary traffic control. Compensation for any additional earth material needed for backfill will be provided under the contract line items for unclassified excavation or borrow excavation, with available unclassified excavation being utilized before borrow excavation. Any pavement that is removed shall be paved back with an approved mix type being used on the project and payment will be made at the appropriate line item unit price established in the contract.


The Contractor at no cost to the Department shall correct any damage to existing underground or above ground structures, storm drain facilities, or utilities due to the negligence of the Contractor.

Payment will be made under:

Pay Item	Pay Unit
Exploratory Excavation – Standard	Hour

PROJECT SPECIAL PROVISIONS

Utilities by Others

 <p>WETHERILL ENGINEERING</p> <p><i>WE Design Your Tomorrow . .</i></p>	<p>1223 Jones Franklin Road Raleigh, NC 27606 Phone: 919.851.8077 Fax: 919.851.8107 wei@wetherilleng.com</p>
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General:

- A) Fayetteville PWC (Power Distribution)**
- B) Fayetteville PWC (Power Transmission)**
- C) Fayetteville PWC (Communication)**
- D) Aqua NC (Water)**
- E) CenturyLink (Communication)**
- F) Level 3 (Communication)**
- G) Spectrum (Communication)**
- H) Piedmont Natural Gas (Gas)**

The conflicting facilities of these concerns will be adjusted prior to the date of availability, unless otherwise noted and are therefore listed in these special provisions for the benefit of the Contractor. All utility work listed herein will be done by the utility owner. All utilities are shown on the plans from the best available information.

The Contractor's attention is directed to Article 105.8 of the Standard Specifications.

Utilities Requiring Adjustment:

Utility relocations are shown on the Utilities by Others Plans.

A) Fayetteville PWC (Power Distribution)

The relocation work will be done in phases.

Phase 1: Beginning of the project to Skibo Road. Work on the distribution will be completed by April 15, 2019.

Phase 2A: Skibo Road to Glensford Road/Hope Mills Road. Work on the distribution will be completed by November 15, 2019.

Phase 2B: All American Freeway to the end of the project. Work on the distribution will be completed by November 15, 2019.

PROJECT SPECIAL PROVISIONS

Utilities by Others

Phase 3: Glensford Road/Hope Mills Road to All American Freeway. Work on the distribution will be completed by May 31, 2020.

- 1) Temporary poles will be set at ±STA 82+00 and ±STA 221+00 to move the overhead lines across Raeford Road to allow the installation of new drainage at the creeks. The contractor shall notify Fayetteville PWC 8 weeks in advance of the date temporary relocation must be completed.
- 2) Contact person for Fayetteville PWC: Harry Buckner, 919-256-5908
hbuckner@powerservices.com

B) Fayetteville PWC (Power Transmission)

The relocation work will be done in phases.

Phase 1: STA 32+00 to Bunce Road. Work will be completed by April 15, 2019.

Phase 2: Bunce Road to Skibo Road. Work will be completed by August 15, 2019.

Phase 3: Beginning of the project to STA 32+00. Work will be completed by October 31, 2019.

Phase 4: Crossing at Owen Drive. Work will be completed by December 15, 2019.

- 1) Contact person for Fayetteville PWC: Harry Buckner, 919-256-5908
hbuckner@powerservices.com

C) Fayetteville PWC (Communication)

The relocation work will be done in phases.

Phase 1: Beginning of the project to Skibo Road. Fayetteville PWC will relocate PWC and NCDOT fiber. Relocation of attached NCDOT and PWC fiber will be completed by July 15, 2019.

Phase 2A: Skibo Road to Glensford Road/Hope Mills Road. Fayetteville PWC will relocate PWC and NCDOT fiber. Relocation of attached NCDOT and PWC fiber will be completed by February, 2020.

Phase 2B: All American Freeway to the end of the project. Fayetteville PWC will relocate PWC and NCDOT fiber. Relocation of attached NCDOT and PWC fiber will be completed by February 15, 2020.

PROJECT SPECIAL PROVISIONS

Utilities by Others

Phase 3: Glensford Road/Hope Mills Road to All American Freeway. Fayetteville PWC will relocate PWC and NCDOT fiber. Relocation of attached NCDOT and PWC fiber will be completed by July 28, 2020.

- 1) PWC and NCDOT overhead lines will be moved to the temporary power poles at ±STA 82+00 and ±STA 221+00 to allow the installation of new drainage at the creeks. The contractor shall notify Fayetteville PWC 8 weeks in advance of the date temporary relocation must be completed.
- 2) Contact person for Fayetteville PWC: Harry Buckner, 919-256-5908
hbuckner@powerservices.com

D) Aqua NC (Water)

- 1) All proposed water relocation work will be completed by the date of availability.
- 2) Contact person for Aqua NC: Larry Mitchell, 919-424-3741
lmitchell@dewberry.com

E) CenturyLink (Communication)

The relocation work will be done in phases.

Phase 1: Beginning of the project to Bunce Road. Work will be completed by June 15, 2019.

Phase 2: Bunce Road to Skibo Road. Work will be completed by August 15, 2019

Phase 3: Skibo Road to Glensford Road/Hope Mills Road. Work will be completed March 15, 2020.

Phase 4: Glensford Road/Hope Mills Road to All American Freeway. Work will be completed August 28, 2020.

Phase 5: All American Freeway to the end of the project. Work will be completed December 28, 2020.

- 1) The duct bank and manholes in the travel lanes of Raeford Road will be abandoned unless otherwise noted.
- 2) Centurylink's overhead lines will be moved to the temporary power poles at ±STA 82+00 and ±STA 221+00 to allow the installation of new drainage at the creeks. The contractor shall notify Centurylink 8 weeks in advance of the date temporary relocation must be completed.
- 3) Contact person for CenturyLink: Kevin Godwin, 910-366-2142
Kevin.godwin@centurylink.com

PROJECT SPECIAL PROVISIONS
Utilities by Others

F) Level 3 (Communication)

- 1) Relocation of Level 3's facilities will be completed March 15, 2020.
- 2) Contact person for Level 3: Rock Burnett, 336-788-0150
rockburnett@yahoo.com

G) Spectrum (Communication)

The relocation work will be done in phases.

Phase 1: Beginning of the project to the Spectrum office at ±STA 123+00. Work will be completed by August 15, 2019.

Phase 2: Spectrum office to Glensford Road/Hope Mills Road. Work will be completed by March 15, 2020.

Phase 4: Glensford Road/Hope Mills Road to All American Freeway. Work will be completed August 28, 2020.

Phase 5: All American Freeway to the end of the project. Work will be completed by December 28, 2020.

- 1) Spectrum's overhead lines will be moved to the temporary power poles at ±STA 82+00 and ±STA 221+00 to allow the installation of new drainage at the creeks. The contractor shall notify Spectrum 8 weeks in advance of the date temporary relocation must be completed.
- 2) Contact person for Spectrum: Thomas Roberts, 919-920-7409
troberts@telecs.com

H) Piedmont Natural Gas (Gas)

The relocation work will be done in phases.

Phase 1: From the beginning of the project to Skibo Road. Work will be completed by November 30, 2018.

Phase 2: Skibo Road to All American Freeway. Work will be completed by October 1, 2019.

Phase 3: All American Freeway to the end of the project. Work will be completed by March 31, 2020.

- 1) The contractor shall notify Piedmont Natural Gas 2 weeks prior to conducting any excavation work over the transmission mains. A Piedmont Natural Gas representative must be on site during any excavation work over the transmission mains that cross Raeford Road at ±STA 26+36.

PROJECT SPECIAL PROVISIONS

Utilities by Others

- 2) A work phase will be considered completed when the final service connections to the parcels are completed and the old gas mains are retired.
- 3) Contact person for Piedmont Natural Gas: Tommy Mallard, 704-516-8295
tmallard@maserconsulting.com

County : Cumberland

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
ROADWAY ITEMS						
0001	0000100000-N	800	MOBILIZATION	Lump Sum	L.S.	
0002	0000400000-N	801	CONSTRUCTION SURVEYING	Lump Sum	L.S.	
0003	0001000000-E	200	CLEARING & GRUBBING .. ACRE(S)	Lump Sum	L.S.	
0004	0008000000-E	200	SUPPLEMENTARY CLEARING & GRUB- BING	1 ACR		
0005	0022000000-E	225	UNCLASSIFIED EXCAVATION	18,000 CY		
0006	0029000000-N	SP	TYPE III REINFORCED APPROACH FILL, STATION ***** (26+78.00 -RPB-)	Lump Sum	L.S.	
0007	0036000000-E	225	UNDERCUT EXCAVATION	3,200 CY		
0008	0106000000-E	230	BORROW EXCAVATION	165,000 CY		
0009	0134000000-E	240	DRAINAGE DITCH EXCAVATION	3,740 CY		
0010	0156000000-E	250	REMOVAL OF EXISTING ASPHALT PAVEMENT	2,640 SY		
0011	0195000000-E	265	SELECT GRANULAR MATERIAL	3,200 CY		
0012	0196000000-E	270	GEOTEXTILE FOR SOIL STABILIZA- TION	19,300 SY		
0013	0199000000-E	SP	TEMPORARY SHORING	45,349 SF		
0014	0223000000-E	275	ROCK PLATING	935 SY		
0015	0255000000-E	SP	GENERIC GRADING ITEM HAULING & DISPOSAL OF PETRO- LEUM CONTAMINATED SOIL	100 TON		
0016	0318000000-E	300	FOUNDATION CONDITIONING MATE- RIAL, MINOR STRUCTURES	20,826.79 TON		
0017	0320000000-E	300	FOUNDATION CONDITIONING GEO- TEXTILE	48,703.99 SY		
0018	0335000000-E	305	*** DRAINAGE PIPE (54")	416 LF		

County : Cumberland

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0019	0335000000-E	305	*** DRAINAGE PIPE (60")	52 LF		
0020	0335000000-E	305	*** DRAINAGE PIPE (66")	52 LF		
0021	0335100000-E	305	12" DRAINAGE PIPE	52 LF		
0022	0335200000-E	305	15" DRAINAGE PIPE	2,656 LF		
0023	0335300000-E	305	18" DRAINAGE PIPE	1,456 LF		
0024	0335400000-E	305	24" DRAINAGE PIPE	468 LF		
0025	0335500000-E	305	30" DRAINAGE PIPE	704 LF		
0026	0335600000-E	305	36" DRAINAGE PIPE	120 LF		
0027	0335700000-E	305	42" DRAINAGE PIPE	824 LF		
0028	0335800000-E	305	48" DRAINAGE PIPE	704 LF		
0029	0335850000-E	305	*** DRAINAGE PIPE ELBOWS (12")	2 EA		
0030	0335850000-E	305	*** DRAINAGE PIPE ELBOWS (15")	2 EA		
0031	0335850000-E	305	*** DRAINAGE PIPE ELBOWS (24")	2 EA		
0032	0335850000-E	305	*** DRAINAGE PIPE ELBOWS (30")	4 EA		
0033	0335850000-E	305	*** DRAINAGE PIPE ELBOWS (48")	2 EA		
0034	0343000000-E	310	15" SIDE DRAIN PIPE	60 LF		
0035	0354000000-E	310	**** RC PIPE CULVERTS, CLASS ***** (66", V)	100 LF		
0036	0366000000-E	310	15" RC PIPE CULVERTS, CLASS III	28 LF		

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0037	0402000000-E	310	48" RC PIPE CULVERTS, CLASS III	20 LF		
0038	0414000000-E	310	60" RC PIPE CULVERTS, CLASS III	284 LF		
0039	0420000000-E	310	66" RC PIPE CULVERTS, CLASS III	48 LF		
0040	0426000000-E	310	72" RC PIPE CULVERTS, CLASS III	404 LF		
0041	0448000000-E	310	***** RC PIPE CULVERTS, CLASS IV (12")	40 LF		
0042	0448000000-E	310	***** RC PIPE CULVERTS, CLASS IV (48")	3,264 LF		
0043	0448000000-E	310	***** RC PIPE CULVERTS, CLASS IV (54")	2,248 LF		
0044	0448000000-E	310	***** RC PIPE CULVERTS, CLASS IV (60")	344 LF		
0045	0448200000-E	310	15" RC PIPE CULVERTS, CLASS IV	25,220 LF		
0046	0448300000-E	310	18" RC PIPE CULVERTS, CLASS IV	6,996 LF		
0047	0448400000-E	310	24" RC PIPE CULVERTS, CLASS IV	6,916 LF		
0048	0448500000-E	310	30" RC PIPE CULVERTS, CLASS IV	4,372 LF		
0049	0448600000-E	310	36" RC PIPE CULVERTS, CLASS IV	5,148 LF		
0050	0448700000-E	310	42" RC PIPE CULVERTS, CLASS IV	4,452 LF		
0051	0588000000-E	310	18" CS PIPE CULVERTS, 0.064" THICK	40 LF		
0052	0636000000-E	310	*** CS PIPE ELBOWS, ***** THICK (18", 0.064")	2 EA		

County : Cumberland

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0053	0973100000-E	330	*** WELDED STEEL PIPE, ***** THICK, GRADE B IN SOIL (30", 0.500")	22 LF		
0054	0973100000-E	330	*** WELDED STEEL PIPE, ***** THICK, GRADE B IN SOIL (36", 0.500")	46 LF		
0055	0973100000-E	330	*** WELDED STEEL PIPE, ***** THICK, GRADE B IN SOIL (60", 0.875")	140 LF		
0056	0973100000-E	330	*** WELDED STEEL PIPE, ***** THICK, GRADE B IN SOIL (72", 1")	216 LF		
0057	0973300000-E	330	*** WELDED STEEL PIPE, ***** THICK, GRADE B NOT IN SOIL (30", 0.500")	22 LF		
0058	0973300000-E	330	*** WELDED STEEL PIPE, ***** THICK, GRADE B NOT IN SOIL (36", 0.500")	46 LF		
0059	0973300000-E	330	*** WELDED STEEL PIPE, ***** THICK, GRADE B NOT IN SOIL (60", 0.875")	140 LF		
0060	0973300000-E	330	*** WELDED STEEL PIPE, ***** THICK, GRADE B NOT IN SOIL (72", 1")	216 LF		
0061	0986000000-E	SP	GENERIC PIPE ITEM 15" CS SLOTTED DRAIN, 0.064" THICK	30 LF		
0062	0986000000-E	SP	GENERIC PIPE ITEM 4" PVC SLEEVE	950 LF		
0063	0995000000-E	340	PIPE REMOVAL	28,887 LF		
0064	0996000000-N	350	PIPE CLEAN OUT	4 EA		
0065	1011000000-N	500	FINE GRADING	Lump Sum	L.S.	
0066	1099500000-E	505	SHALLOW UNDERCUT	4,300 CY		
0067	1099700000-E	505	CLASS IV SUBGRADE STABILIZA- TION	9,800 TON		

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0068	1220000000-E	545	INCIDENTAL STONE BASE	10,000 TON		
0069	1297000000-E	607	MILLING ASPHALT PAVEMENT, **** DEPTH (1-1/2")	16,490 SY		
0070	1330000000-E	607	INCIDENTAL MILLING	15,000 SY		
0071	1491000000-E	610	ASPHALT CONC BASE COURSE, TYPE B25.0C	52,830 TON		
0072	1503000000-E	610	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0C	61,440 TON		
0073	1519000000-E	610	ASPHALT CONC SURFACE COURSE, TYPE S9.5B	7,570 TON		
0074	1523000000-E	610	ASPHALT CONC SURFACE COURSE, TYPE S9.5C	52,880 TON		
0075	1575000000-E	620	ASPHALT BINDER FOR PLANT MIX	9,010 TON		
0076	1693000000-E	654	ASPHALT PLANT MIX, PAVEMENT REPAIR	14,879.1 TON		
0077	2022000000-E	815	SUBDRAIN EXCAVATION	385.4 CY		
0078	2026000000-E	815	GEOTEXTILE FOR SUBSURFACE DRAINS	1,600 SY		
0079	2036000000-E	815	SUBDRAIN COARSE AGGREGATE	268.8 CY		
0080	2044000000-E	815	6" PERFORATED SUBDRAIN PIPE	1,600 LF		
0081	2070000000-N	815	SUBDRAIN PIPE OUTLET	4 EA		
0082	2077000000-E	815	6" OUTLET PIPE	24 LF		
0083	2209000000-E	838	ENDWALLS	21 CY		
0084	2220000000-E	838	REINFORCED ENDWALLS	12.6 CY		
0085	2253000000-E	840	PIPE COLLARS	22.95 CY		
0086	2264000000-E	840	PIPE PLUGS	10 CY		

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0087	2275000000-E	SP	FLOWABLE FILL	185 CY		
0088	2286000000-N	840	MASONRY DRAINAGE STRUCTURES	773 EA		
0089	2297000000-E	840	MASONRY DRAINAGE STRUCTURES	98.374 CY		
0090	2308000000-E	840	MASONRY DRAINAGE STRUCTURES	480.5 LF		
0091	2364000000-N	840	FRAME WITH TWO GRATES, STD 840.16	252 EA		
0092	2366000000-N	840	FRAME WITH TWO GRATES, STD 840.24	12 EA		
0093	2367000000-N	840	FRAME WITH TWO GRATES, STD 840.29	27 EA		
0094	2374000000-N	840	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (E)	58 EA		
0095	2374000000-N	840	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (F)	193 EA		
0096	2374000000-N	840	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (G)	199 EA		
0097	2396000000-N	840	FRAME WITH COVER, STD 840.54	49 EA		
0098	2451000000-N	852	CONCRETE TRANSITIONAL SECTION FOR DROP INLET	143 EA		
0099	2535000000-E	846	***X*** CONCRETE CURB (8" X 12")	7,970 LF		
0100	2542000000-E	846	1'-6" CONCRETE CURB & GUTTER	22,170 LF		
0101	2549000000-E	846	2'-6" CONCRETE CURB & GUTTER	69,178.18 LF		
0102	2556000000-E	846	SHOULDER BERM GUTTER	490 LF		
0103	2580000000-E	846	CONCRETE VALLEY GUTTER	64 LF		
0104	2591000000-E	848	4" CONCRETE SIDEWALK	35,905.85 SY		

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0105	2605000000-N	848	CONCRETE CURB RAMPS	306 EA		
0106	2612000000-E	848	6" CONCRETE DRIVEWAY	4,908.89 SY		
0107	2655000000-E	852	5" MONOLITHIC CONCRETE ISLANDS (KEYED IN)	14,770 SY		
0108	2724000000-E	857	PRECAST REINFORCED CONCRETE BARRIER, SINGLE FACED	2,372 LF		
0109	2800000000-N	858	ADJUSTMENT OF CATCH BASINS	12 EA		
0110	2815000000-N	858	ADJUSTMENT OF DROP INLETS	3 EA		
0111	2830000000-N	858	ADJUSTMENT OF MANHOLES	86 EA		
0112	2845000000-N	858	ADJUSTMENT OF METER BOXES OR VALVE BOXES	150 EA		
0113	2860000000-N	859	CONVERT EXISTING CATCH BASIN TO JUNCTION BOX	4 EA		
0114	2905000000-N	859	CONVERT EXISTING DROP INLET TO JUNCTION BOX	2 EA		
0115	3030000000-E	862	STEEL BEAM GUARDRAIL	3,625 LF		
0116	3150000000-N	862	ADDITIONAL GUARDRAIL POSTS	5 EA		
0117	3210000000-N	862	GUARDRAIL END UNITS, TYPE CAT-1	12 EA		
0118	3287000000-N	SP	GUARDRAIL END UNITS, TYPE TL-3	12 EA		
0119	3317000000-N	SP	GUARDRAIL ANCHOR UNITS, TYPE B-77	5 EA		
0120	3360000000-E	863	REMOVE EXISTING GUARDRAIL	1,101 LF		
0121	3503000000-E	866	WOVEN WIRE FENCE, 47" FABRIC	1,600 LF		
0122	3509000000-E	866	4" TIMBER FENCE POSTS, 7'-6" LONG	98 EA		

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0123	3515000000-E	866	5" TIMBER FENCE POSTS, 8'-0" LONG	30 EA		
0124	3533000000-E	866	CHAIN LINK FENCE, *** FABRIC (72")	573 LF		
0125	3539000000-E	866	METAL LINE POSTS FOR *** CHAIN LINK FENCE (72")	56 EA		
0126	3545000000-E	866	METAL TERMINAL POSTS FOR *** CHAIN LINK FENCE (72")	49 EA		
0127	3628000000-E	876	RIP RAP, CLASS I	310 TON		
0128	3635000000-E	876	RIP RAP, CLASS II	2,800 TON		
0129	3649000000-E	876	RIP RAP, CLASS B	1,500 TON		
0130	3656000000-E	876	GEOTEXTILE FOR DRAINAGE	5,000 SY		
0131	4048000000-E	902	REINFORCED CONCRETE SIGN FOUNDATIONS	2 CY		
0132	4054000000-E	902	PLAIN CONCRETE SIGN FOUNDATIONS	1 CY		
0133	4057000000-E	SP	OVERHEAD FOOTING	18 CY		
0134	4060000000-E	903	SUPPORTS, BREAKAWAY STEEL BEAM	2,196 LB		
0135	4072000000-E	903	SUPPORTS, 3-LB STEEL U-CHANNEL	6,650 LF		
0136	4082100000-N	906	SUPPORTS, OVERHEAD SIGN STRUCTURE AT STA ***** (12+74 -RPB-)	Lump Sum	L.S.	
0137	4096000000-N	904	SIGN ERECTION, TYPE D	7 EA		
0138	4102000000-N	904	SIGN ERECTION, TYPE E	469 EA		
0139	4108000000-N	904	SIGN ERECTION, TYPE F	44 EA		

County : Cumberland

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0140	4109000000-N	904	SIGN ERECTION, TYPE *** (OVER-HEAD) (A)	4	EA	
0141	4110000000-N	904	SIGN ERECTION, TYPE *** (GROUND MOUNTED) (A)	4	EA	
0142	4116100000-N	904	SIGN ERECTION, RELOCATE TYPE **** (GROUND MOUNTED) (D)	69	EA	
0143	4152000000-N	907	DISPOSAL OF SIGN SYSTEM, STEEL BEAM	2	EA	
0144	4155000000-N	907	DISPOSAL OF SIGN SYSTEM, U- CHANNEL	279	EA	
0145	4192000000-N	907	DISPOSAL OF SUPPORT, U-CHANNEL	69	EA	
0146	4234000000-N	907	DISPOSAL OF SIGN, A OR B (OVERHEAD)	5	EA	
0147	4360000000-N	SP	GENERIC SIGNING ITEM DISPOSAL OF SIGN SYSTEM SPAN WIRE	2	EA	
0148	4400000000-E	1110	WORK ZONE SIGNS (STATIONARY)	346	SF	
0149	4405000000-E	1110	WORK ZONE SIGNS (PORTABLE)	384	SF	
0150	4410000000-E	1110	WORK ZONE SIGNS (BARRICADE MOUNTED)	127	SF	
0151	4415000000-N	1115	FLASHING ARROW BOARD	4	EA	
0152	4420000000-N	1120	PORTABLE CHANGEABLE MESSAGE SIGN	6	EA	
0153	4430000000-N	1130	DRUMS	335	EA	
0154	4445000000-E	1145	BARRICADES (TYPE III)	152	LF	
0155	4455000000-N	1150	FLAGGER	300	DAY	
0156	4465000000-N	1160	TEMPORARY CRASH CUSHIONS	3	EA	

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0157	4480000000-N	1165	TMA	4 EA		
0158	4485000000-E	1170	PORTABLE CONCRETE BARRIER	403 LF		
0159	4490000000-E	1170	PORTABLE CONCRETE BARRIER (ANCHORED)	1,290 LF		
0160	4510000000-N	1190	LAW ENFORCEMENT	200 HR		
0161	4590000000-E	SP	GENERIC TRAFFIC CONTROL ITEM PEDESTRIAN BARRICADE	128 LF		
0162	4685000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)	58,600 LF		
0163	4686000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (4", 120 MILS)	88,560 LF		
0164	4695000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (8", 90 MILS)	14,570 LF		
0165	4697000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (8", 120 MILS)	26,900 LF		
0166	4705000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (16", 120 MILS)	300 LF		
0167	4710000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (24", 120 MILS)	7,320 LF		
0168	4721000000-E	1205	THERMOPLASTIC PAVEMENT MARKING CHARACTER (120 MILS)	415 EA		
0169	4725000000-E	1205	THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS)	745 EA		
0170	4810000000-E	1205	PAINT PAVEMENT MARKING LINES (4")	233,461 LF		
0171	4820000000-E	1205	PAINT PAVEMENT MARKING LINES (8")	38,787 LF		
0172	4835000000-E	1205	PAINT PAVEMENT MARKING LINES (24")	1,336 LF		
0173	4840000000-N	1205	PAINT PAVEMENT MARKING CHARAC- TER	124 EA		

County : Cumberland

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0174	4845000000-N	1205	PAINT PAVEMENT MARKING SYMBOL	1,376 EA		
0175	4900000000-N	1251	PERMANENT RAISED PAVEMENT MARKERS	2,850 EA		
0176	5255000000-N	1413	PORTABLE LIGHTING	Lump Sum	L.S.	
0177	5325200000-E	1510	2" WATER LINE	606 LF		
0178	5325600000-E	1510	6" WATER LINE	955 LF		
0179	5325800000-E	1510	8" WATER LINE	8,220 LF		
0180	5326200000-E	1510	12" WATER LINE	7,481.8 LF		
0181	5326600000-E	1510	16" WATER LINE	630 LF		
0182	5327400000-E	1510	24" WATER LINE	6,741 LF		
0183	5328000000-E	1510	30" WATER LINE	2,278 LF		
0184	5329000000-E	1510	DUCTILE IRON WATER PIPE FITTINGS	327,584.15 LB		
0185	5536000000-E	1515	2" VALVE	37 EA		
0186	5540000000-E	1515	6" VALVE	124 EA		
0187	5546000000-E	1515	8" VALVE	58 EA		
0188	5558000000-E	1515	12" VALVE	29 EA		
0189	5558600000-E	1515	16" VALVE	1 EA		
0190	5559400000-E	1515	24" VALVE	18 EA		
0191	5560000000-E	1515	30" VALVE	7 EA		
0192	5571600000-E	1515	6" TAPPING SLEEVE & VALVE	3 EA		
0193	5571800000-E	1515	8" TAPPING SLEEVE & VALVE	4 EA		

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0194	5572200000-E	1515	12" TAPPING SLEEVE & VALVE	3 EA		
0195	5573400000-E	1515	24" TAPPING SLEEVE & VALVE	8 EA		
0196	5600000000-E	1515	*** BLOW OFF (1")	2 EA		
0197	5606000000-E	1515	2" BLOW OFF	5 EA		
0198	5648000000-N	1515	RELOCATE WATER METER	173 EA		
0199	5649000000-N	1515	RECONNECT WATER METER	6 EA		
0200	5653100000-E	1515	RELOCATE *** DCV BACKFLOW PRE- VENTION ASSEMBLY (1")	1 EA		
0201	5653210000-E	1515	RELOCATE 2" DCV BACKFLOW PRE- VENTION ASSEMBLY	2 EA		
0202	5653610000-E	1515	RELOCATE 6" DCV BACKFLOW PRE- VENTION ASSEMBLY	2 EA		
0203	5666000000-N	1515	FIRE HYDRANT	110 EA		
0204	5672000000-N	1515	RELOCATE FIRE HYDRANT	7 EA		
0205	5673000000-E	1515	FIRE HYDRANT LEG	1,688 LF		
0206	5679600000-E	1515	24" LINE STOP	2 EA		
0207	5686000000-E	1515	*** WATER SERVICE LINE (2")	837.01 LF		
0208	5686500000-E	1515	WATER SERVICE LINE	1,862 LF		
0209	5691300000-E	1520	8" SANITARY GRAVITY SEWER	1,731.5 LF		
0210	5691400000-E	1520	10" SANITARY GRAVITY SEWER	90 LF		
0211	5691500000-E	1520	12" SANITARY GRAVITY SEWER	2,934.75 LF		
0212	5691600000-E	1520	16" SANITARY GRAVITY SEWER	302.39 LF		

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0213	5768000000-N	1520	SANITARY SEWER CLEAN-OUT	68 EA		
0214	5768500000-E	1520	SEWER SERVICE LINE	3,018.52 LF		
0215	5775000000-E	1525	4' DIA UTILITY MANHOLE	30 EA		
0216	5776000000-E	1525	5' DIA UTILITY MANHOLE	2 EA		
0217	5781000000-E	1525	UTILITY MANHOLE WALL 4' DIA	165.39 LF		
0218	5782000000-E	1525	UTILITY MANHOLE WALL 5' DIA	11.41 LF		
0219	5798000000-E	1530	ABANDON **** UTILITY PIPE (15")	100 LF		
0220	5798000000-E	1530	ABANDON **** UTILITY PIPE (2")	877.01 LF		
0221	5800000000-E	1530	ABANDON 6" UTILITY PIPE	10,065.01 LF		
0222	5801000000-E	1530	ABANDON 8" UTILITY PIPE	4,185 LF		
0223	5804000000-E	1530	ABANDON 12" UTILITY PIPE	15,017.01 LF		
0224	5810000000-E	1530	ABANDON 16" UTILITY PIPE	665.01 LF		
0225	5813000000-E	1530	ABANDON 24" UTILITY PIPE	12,106 LF		
0226	5815000000-N	1530	REMOVE WATER METER	5 EA		
0227	5815500000-N	1530	REMOVE FIRE HYDRANT	37 EA		
0228	5816000000-N	1530	ABANDON UTILITY MANHOLE	11 EA		
0229	5828000000-N	1530	REMOVE UTILITY MANHOLE	3 EA		
0230	5835000000-E	1540	*** ENCASEMENT PIPE (4")	100 LF		
0231	5835000000-E	1540	*** ENCASEMENT PIPE (42")	125 LF		
0232	5835600000-E	1540	12" ENCASEMENT PIPE	75.01 LF		

County : Cumberland

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0233	5835700000-E	1540	16" ENCASEMENT PIPE	212 LF		
0234	5836000000-E	1540	24" ENCASEMENT PIPE	648.01 LF		
0235	5836200000-E	1540	30" ENCASEMENT PIPE	414 LF		
0236	5836400000-E	1540	36" ENCASEMENT PIPE	588 LF		
0237	5872500000-E	1550	BORE AND JACK OF *** (12")	75.01 LF		
0238	5872500000-E	1550	BORE AND JACK OF *** (16")	454 LF		
0239	5872500000-E	1550	BORE AND JACK OF *** (24")	588.01 LF		
0240	5872500000-E	1550	BORE AND JACK OF *** (30")	414 LF		
0241	5872500000-E	1550	BORE AND JACK OF *** (36")	588 LF		
0242	5872500000-E	1550	BORE AND JACK OF *** (4")	102 LF		
0243	5872500000-E	1550	BORE AND JACK OF *** (42")	399 LF		
0244	5872600000-E	1550	DIRECTIONAL DRILLING OF *** (16")	368 LF		
0245	5872600000-E	1550	DIRECTIONAL DRILLING OF *** (30")	540 LF		
0246	5882000000-N	SP	GENERIC UTILITY ITEM 12" NITRILE GASKETS	22 EA		
0247	5882000000-N	SP	GENERIC UTILITY ITEM 16" NITRILE GASKETS	3 EA		
0248	5882000000-N	SP	GENERIC UTILITY ITEM 2" COMBINATION AIR RELEASE VALVE	1 EA		
0249	5882000000-N	SP	GENERIC UTILITY ITEM 24" NITRILE GASKETS	44 EA		

County : Cumberland

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0250	5882000000-N	SP	GENERIC UTILITY ITEM 30" NITRILE GASKETS	11 EA		
0251	5882000000-N	SP	GENERIC UTILITY ITEM 8" NITRILE GASKETS	34 EA		
0254	5882000000-N	SP	GENERIC UTILITY ITEM AERIAL WATER MAIN STEEL PILE PIER	6 EA		
0255	5882000000-N	SP	GENERIC UTILITY ITEM REMOVE EXISTING PIERS	4 EA		
0256	5888000000-E	SP	GENERIC UTILITY ITEM BRICK AND MORTAR MANHOLE	0.86 LF		
0257	5888000000-E	SP	GENERIC UTILITY ITEM POLYETHYLENE ENCASEMENT ON 12" DIA MAIN	297 LF		
0258	5888000000-E	SP	GENERIC UTILITY ITEM POLYETHYLENE ENCASEMENT ON 16" DIA MAIN	101 LF		
0259	5888000000-E	SP	GENERIC UTILITY ITEM POLYETHYLENE ENCASEMENT ON 24" DIA MAIN	540 LF		
0260	5888000000-E	SP	GENERIC UTILITY ITEM POLYETHYLENE ENCASEMENT ON 8" DIA MAIN	270 LF		
0261	5888000000-E	SP	GENERIC UTILITY ITEM PRECAST MANHOLE	0.33 LF		
0262	5888000000-E	SP	GENERIC UTILITY ITEM SEWER MANHOLE VENT	3.17 LF		
0263	6000000000-E	1605	TEMPORARY SILT FENCE	39,000 LF		
0264	6006000000-E	1610	STONE FOR EROSION CONTROL, CLASS A	1,850 TON		
0265	6009000000-E	1610	STONE FOR EROSION CONTROL, CLASS B	3,100 TON		
0266	6012000000-E	1610	SEDIMENT CONTROL STONE	13,050 TON		
0267	6015000000-E	1615	TEMPORARY MULCHING	60 ACR		

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0268	6018000000-E	1620	SEED FOR TEMPORARY SEEDING	3,000 LB		
0269	6021000000-E	1620	FERTILIZER FOR TEMPORARY SEED- ING	16 TON		
0270	6024000000-E	1622	TEMPORARY SLOPE DRAINS	2,000 LF		
0271	6029000000-E	SP	SAFETY FENCE	200 LF		
0272	6030000000-E	1630	SILT EXCAVATION	6,000 CY		
0273	6036000000-E	1631	MATTING FOR EROSION CONTROL	60,000 SY		
0274	6037000000-E	SP	COIR FIBER MAT	100 SY		
0275	6038000000-E	SP	PERMANENT SOIL REINFORCEMENT MAT	300 SY		
0276	6042000000-E	1632	1/4" HARDWARE CLOTH	51,600 LF		
0277	6043000000-E	SP	LOW PERMEABILITY GEOTEXTILE	100 SY		
0278	6048000000-E	SP	FLOATING TURBIDITY CURTAIN	50 SY		
0279	6069000000-E	1638	STILLING BASINS	557 CY		
0280	6070000000-N	1639	SPECIAL STILLING BASINS	20 EA		
0281	6071012000-E	SP	COIR FIBER WATTLE	7,320 LF		
0282	6071020000-E	SP	POLYACRYLAMIDE (PAM)	4,515 LB		
0283	6071030000-E	1640	COIR FIBER BAFFLE	2,200 LF		
0284	6071050000-E	SP	*** SKIMMER (1-1/2")	5 EA		
0285	6084000000-E	1660	SEEDING & MULCHING	52 ACR		
0286	6087000000-E	1660	MOWING	26 ACR		
0287	6090000000-E	1661	SEED FOR REPAIR SEEDING	750 LB		

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0288	6093000000-E	1661	FERTILIZER FOR REPAIR SEEDING	2.25 TON		
0289	6096000000-E	1662	SEED FOR SUPPLEMENTAL SEEDING	1,250 LB		
0290	6108000000-E	1665	FERTILIZER TOPDRESSING	37.5 TON		
0291	6111000000-E	SP	IMPERVIOUS DIKE	1,050 LF		
0292	6114500000-N	1667	SPECIALIZED HAND MOWING	25 MHR		
0293	6117000000-N	SP	RESPONSE FOR EROSION CONTROL	125 EA		
0294	6117500000-N	SP	CONCRETE WASHOUT STRUCTURE	10 EA		
0295	6120000000-E	SP	CULVERT DIVERSION CHANNEL	300 CY		
0296	6132000000-N	SP	GENERIC EROSION CONTROL ITEM FABRIC INSERT INLET PROTECTION DEVICE CLEANOUT	300 EA		
0297	6132000000-N	SP	GENERIC EROSION CONTROL ITEM FABRIC INSERT INLET PROTECTION DEVICE	100 EA		
0298	7048500000-E	1705	PEDESTRIAN SIGNAL HEAD (16", 1 SECTION W/COUNTDOWN)	132 EA		
0299	7060000000-E	1705	SIGNAL CABLE	109,620 LF		
0300	7120000000-E	1705	VEHICLE SIGNAL HEAD (12", 3 SECTION)	376 EA		
0301	7132000000-E	1705	VEHICLE SIGNAL HEAD (12", 4 SECTION)	61 EA		
0302	7144000000-E	1705	VEHICLE SIGNAL HEAD (12", 5 SECTION)	47 EA		
0303	7252000000-E	1710	MESSENGER CABLE (1/4")	3,480 LF		
0304	7264000000-E	1710	MESSENGER CABLE (3/8")	20,490 LF		
0305	7279000000-E	1715	TRACER WIRE	745 LF		

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0306	7288000000-E	1715	PAVED TRENCHING (*****) (1, 2")	530 LF		
0307	7288000000-E	1715	PAVED TRENCHING (*****) (3, 2")	30 LF		
0308	7300000000-E	1715	UNPAVED TRENCHING (*****) (1, 2")	9,150 LF		
0309	7300000000-E	1715	UNPAVED TRENCHING (*****) (2, 2")	2,570 LF		
0310	7300000000-E	1715	UNPAVED TRENCHING (*****) (3, 2")	270 LF		
0311	7300000000-E	1715	UNPAVED TRENCHING (*****) (4, 2")	420 LF		
0312	7300100000-E	1715	UNPAVED TRENCHING FOR TEMP- ORARY LEAD-IN	510 LF		
0313	7301000000-E	1715	DIRECTIONAL DRILL (*****) (1, 2")	650 LF		
0314	7301000000-E	1715	DIRECTIONAL DRILL (*****) (2, 2")	235 LF		
0315	7324000000-N	1716	JUNCTION BOX (STANDARD SIZE)	214 EA		
0316	7348000000-N	1716	JUNCTION BOX (OVER-SIZED, HEA- VY DUTY)	13 EA		
0317	7360000000-N	1720	WOOD POLE	71 EA		
0318	7372000000-N	1721	GUY ASSEMBLY	145 EA		
0319	7396000000-E	1722	1/2" RISER WITH WEATHERHEAD	18 EA		
0320	7408000000-E	1722	1" RISER WITH WEATHERHEAD	22 EA		
0321	7420000000-E	1722	2" RISER WITH WEATHERHEAD	54 EA		
0322	7432000000-E	1722	2" RISER WITH HEAT SHRINK TUBING	2 EA		
0323	7444000000-E	1725	INDUCTIVE LOOP SAWCUT	31,420 LF		

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0324	7456000000-E	1726	LEAD-IN CABLE (***** (14-2)	127,800	LF	
0325	7481000000-N	SP	SITE SURVEY	20	EA	
0326	7481200000-N	SP	LUMINAIRE ARM FOR VIDEO SYSTEM	75	EA	
0327	7481240000-N	SP	CAMERA WITHOUT INTERNAL LOOP EMULATOR PROCESSING UNIT	75	EA	
0328	7481260000-N	SP	EXTERNAL LOOP EMULATOR PRO- CESSING UNIT	20	EA	
0329	7481280000-N	SP	RELOCATE CAMERA SENSOR UNIT	114	EA	
0330	7516000000-E	1730	COMMUNICATIONS CABLE (**FIBER) (12)	7,388	LF	
0331	7516000000-E	1730	COMMUNICATIONS CABLE (**FIBER) (24)	22,656	LF	
0332	7516000000-E	1730	COMMUNICATIONS CABLE (**FIBER) (72)	18,736	LF	
0333	7528000000-E	1730	DROP CABLE	7,045	LF	
0334	7540000000-N	1731	SPLICE ENCLOSURE	18	EA	
0335	7552000000-N	1731	INTERCONNECT CENTER	25	EA	
0336	7566000000-N	1733	DELINEATOR MARKER	19	EA	
0337	7575140000-N	SP	FIBER-OPTIC SPLICE CABINET (BASE MOUNTED)	4	EA	
0338	7575160000-E	1734	REMOVE EXISTING COMMUNICATIONS CABLE	30,854	LF	
0339	7576000000-N	SP	METAL STRAIN SIGNAL POLE	46	EA	
0340	7613000000-N	SP	SOIL TEST	46	EA	
0341	7614100000-E	SP	DRILLED PIER FOUNDATION	276	CY	
0342	7636000000-N	1745	SIGN FOR SIGNALS	57	EA	

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0343	7642100000-N	1743	TYPE I POST WITH FOUNDATION	1 EA		
0344	7642200000-N	1743	TYPE II PEDESTAL WITH FOUNDATION	113 EA		
0345	7642300000-N	1743	TYPE III PEDESTAL WITH FOUNDATION	2 EA		
0346	7675000000-N	1747	LED BLANKOUT SIGN	2 EA		
0347	7684000000-N	1750	SIGNAL CABINET FOUNDATION	25 EA		
0348	7696000000-N	1751	CONTROLLERS WITH CABINET (***** (2070LX, BASE MOUNTED)	7 EA		
0349	7780000000-N	1751	DETECTOR CARD (TYPE 2070L)	216 EA		
0350	7901000000-N	1753	CABINET BASE EXTENDER	11 EA		
0351	7960000000-N	SP	METAL POLE FOUNDATION REMOVAL	10 EA		
0352	7972000000-N	SP	METAL POLE REMOVAL	10 EA		
0353	7980000000-N	SP	GENERIC SIGNAL ITEM CCTV METAL POLE (40')	1 EA		
0354	7980000000-N	SP	GENERIC SIGNAL ITEM DIGITAL CCTV CAMERA ASSEMBLY	1 EA		
0355	7980000000-N	SP	GENERIC SIGNAL ITEM DMS ELECTRICAL SERVICE	1 EA		
0356	7980000000-N	SP	GENERIC SIGNAL ITEM DMS STRUCTURE	1 EA		
0357	7980000000-N	SP	GENERIC SIGNAL ITEM DUAL DMS MOUNTED BACK TO BACK	1 EA		
0358	7980000000-N	SP	GENERIC SIGNAL ITEM ETHERNET EDGE SWITCH	7 EA		
0359	7980000000-N	SP	GENERIC SIGNAL ITEM HUB SPLICE CENTER	16 EA		

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0360	7980000000-N	SP	GENERIC SIGNAL ITEM SOIL TEST FOR CCTV POLE	1 EA		
0361	7980000000-N	SP	GENERIC SIGNAL ITEM SOIL TEST FOR DMS FOUNDATION	1 EA		
0362	7990000000-E	SP	GENERIC SIGNAL ITEM BACK PULL FIBER OPTIC CABLE	1,550 LF		
0363	7992000000-E	SP	GENERIC SIGNAL ITEM DMS FOUNDATION	15 CY		
0364	7992000000-E	SP	GENERIC SIGNAL ITEM DRILLED PIER FOUNDATION FOR CCTV POLE	6 CY		
0391	0000910000-N	SP	GENERIC MISCELLANEOUS ITEM EXPLORATORY EXCAVATION - STANDARD	50 HR		
0392	1308000000-E	607	MILLING ASPHALT PAVEMENT, **** TO ***** (0" TO 3")	15,000 SY		
0393	6147000000-E	SP	GENERIC EROSION CONTROL ITEM TREE PROTECTION FENCE	1,700 LF		
0394	5889000000-E	1510	GENERIC UTILITY ITEM 6" RESTRAINED JOINT DI WATER LINE	369 LF		
0395	5679000000-E	1515	12" LINE STOP	1 EA		
0396	5889000000-E	1510	GENERIC UTILITY ITEM 8" RESTRAINED JOINT DI WATER LINE	5,313 LF		
0397	5889000000-E	1510	GENERIC UTILITY ITEM 12" RESTRAINED JOINT DI WATER LINE	5,402 LF		
0398	5889000000-E	1510	GENERIC UTILITY ITEM 16" RESTRAINED JOINT DI WATER LINE	250 LF		
0399	5889000000-E	1510	GENERIC UTILITY ITEM 16" HDPE SDR-9 WATER LINE	368 LF		
0400	5889000000-E	1510	GENERIC UTILITY ITEM 24" RESTRAINED JOINT DI WATER LINE	7,439.26 LF		

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0401	5889000000-E	1510	GENERIC UTILITY ITEM 30" RESTRAINED JOINT DI WATER LINE	3,483	LF	
0402	5889000000-E	1510	GENERIC UTILITY ITEM 30" HDPE SDR-9 WATER LINE	540	LF	

CULVERT ITEMS

0365	8056000000-N	402	REMOVAL OF EXISTING STRUCTURE AT STATION ***** (137+99.59 -L-)	Lump Sum	L.S.	
0366	8126000000-N	414	CULVERT EXCAVATION, STA ***** (137+99.59 -L-)	Lump Sum	L.S.	
0367	8133000000-E	414	FOUNDATION CONDITIONING MATER- IAL, BOX CULVERT	117	TON	
0368	8140000000-E	416	CHANNEL EXCAVATION	160	CY	
0369	8196000000-E	420	CLASS A CONCRETE (CULVERT)	247.2	CY	
0370	8245000000-E	425	REINFORCING STEEL (CULVERT)	32,201	LB	
0371	8847000000-E	SP	GENERIC RETAINING WALL ITEM ANCHORED SHEET PILE WALL	2,363	SF	

WALL ITEMS

0372	8801000000-E	SP	MSE RETAINING WALL NO **** (1)	17,470	SF	
0373	8801000000-E	SP	MSE RETAINING WALL NO **** (2)	11,360	SF	
0374	8802030000-E	454	SEGMENTAL GRAVITY RETAINING WALLS	450	SF	

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0375	8847000000-E	SP	GENERIC RETAINING WALL ITEM ARCHITECTURAL SURFACE TREATMENT	45,110 SF		
0376	8847000000-E	SP	GENERIC RETAINING WALL ITEM SOUND BARRIER WALL	27,855 SF		
STRUCTURE ITEMS						
0377	8112730000-N	450	PDA TESTING	1 EA		
0378	8147000000-E	420	REINFORCED CONCRETE DECK SLAB	3,042 SF		
0379	8161000000-E	420	GROOVING BRIDGE FLOORS	4,473 SF		
0380	8182000000-E	420	CLASS A CONCRETE (BRIDGE)	89.5 CY		
0381	8210000000-N	422	BRIDGE APPROACH SLABS, STATION ***** (26+78.00 -RPB-)	Lump Sum	L.S.	
0382	8217000000-E	425	REINFORCING STEEL (BRIDGE)	12,844 LB		
0383	8262000000-E	430	45" PRESTRESSED CONCRETE GIR- DERS	396.88 LF		
0384	8328200000-E	450	PILE DRIVING EQUIPMENT SETUP FOR *** STEEL PILES (HP 12 X 53)	14 EA		
0385	8364000000-E	450	HP12X53 STEEL PILES	1,225 LF		
0386	8393000000-N	450	PILE REDRIVES	8 EA		
0387	8503000000-E	460	CONCRETE BARRIER RAIL	220.3 LF		
0388	8531000000-E	462	4" SLOPE PROTECTION	28 SY		
0389	8657000000-N	430	ELASTOMERIC BEARINGS	Lump Sum	L.S.	

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0390	8706000000-N	SP	EXPANSION JOINT SEALS	Lump Sum	L.S.	
1313/Aug14/Q2569011.274/D1873793832000/E400			Total Amount Of Bid For Entire Project :			

TIP PROJECT: U-4405

CONTRACT: C204107

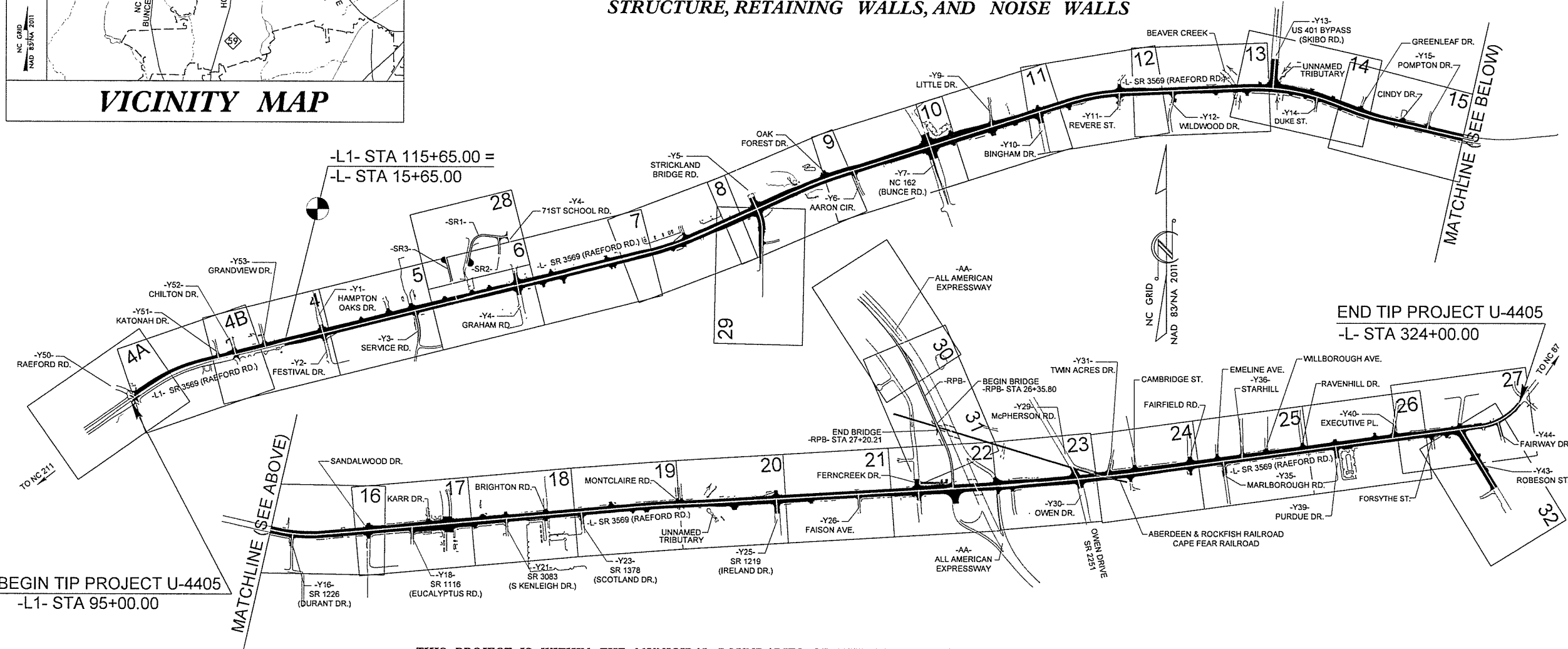
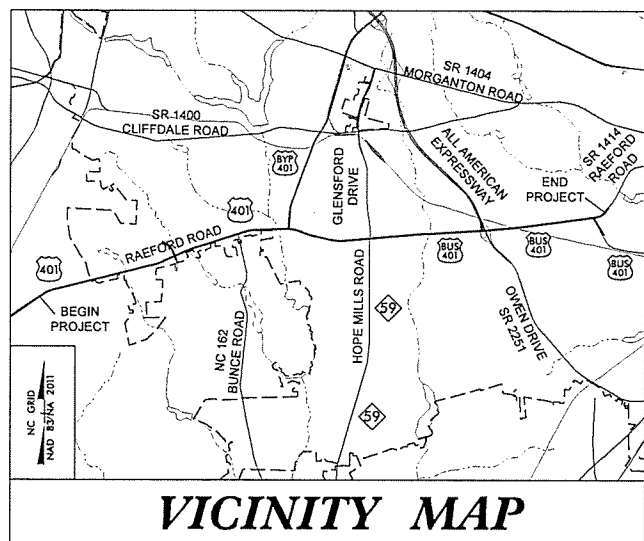
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CUMBERLAND COUNTY

LOCATION: US 401 FROM WEST OF HAPTON OAKS DRIVE TO EAST OF FAIRWAY DRIVE IN FAYETTEVILLE

TYPE OF WORK: GRADING, DRAINAGE, PAVING, SIGNALS, WIDENING, RESURFACING, STRUCTURE, RETAINING WALLS, AND NOISE WALLS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-4405	1	26
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
39049.1.1	STPDA-0401(230)	PE	
39049.2.1	STPDA-0401(230)	RW	
39049.2.1	STPDA-0401(230)	UTIL	
39049.3.1	STPDA-0401(230)	CONST	

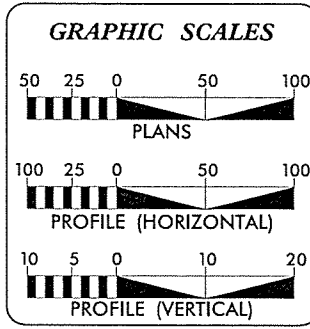


BEGIN TIP PROJECT U-4405
-L1- STA 95+00.00

END TIP PROJECT U-4405
-L- STA 324+00.00

THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF FAYETTEVILLE.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.
** A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED

STRUCTURES



DESIGN DATA

ADT 2018 =	63,150
ADT 2038 =	70,975
K =	10 %
D =	60 %
T =	3 %*
V =	50 MPH
*TTST =	1% DUAL=2%
FUNC CLASS =	URBAN ARTERIAL REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-4405 =	6.231 MILES
TOTAL LENGTH TIP PROJECT U-4405 =	6.231 MILES

NCDOT CONTACT: BRENDA MOORE, PE

Prepared for Division of Highways in the Office of:

KCA
KISINGER CAMPO & ASSOCIATES

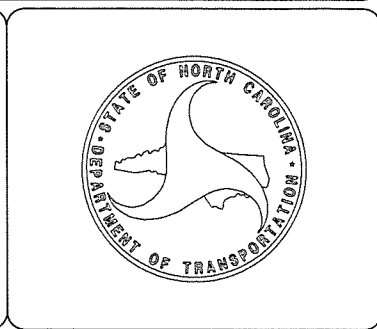
4800 SIX FORKS ROAD SUITE 120
RALEIGH, NC 27609
(919) 882-7839

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: TIERRE R. PETERSON, PE
PROJECT ENGINEER

LETTING DATE: KANAK PUROHIT, PE
PROJECT DESIGN ENGINEER
SEPTEMBER 18, 2018

STRUCTURES MANAGEMENT UNIT



SECTION DESIGNATIONS

SECTION 1:
BEGINNING OF PROJECT TO
STRICKLAND BRIDGE ROAD (-Y5-)

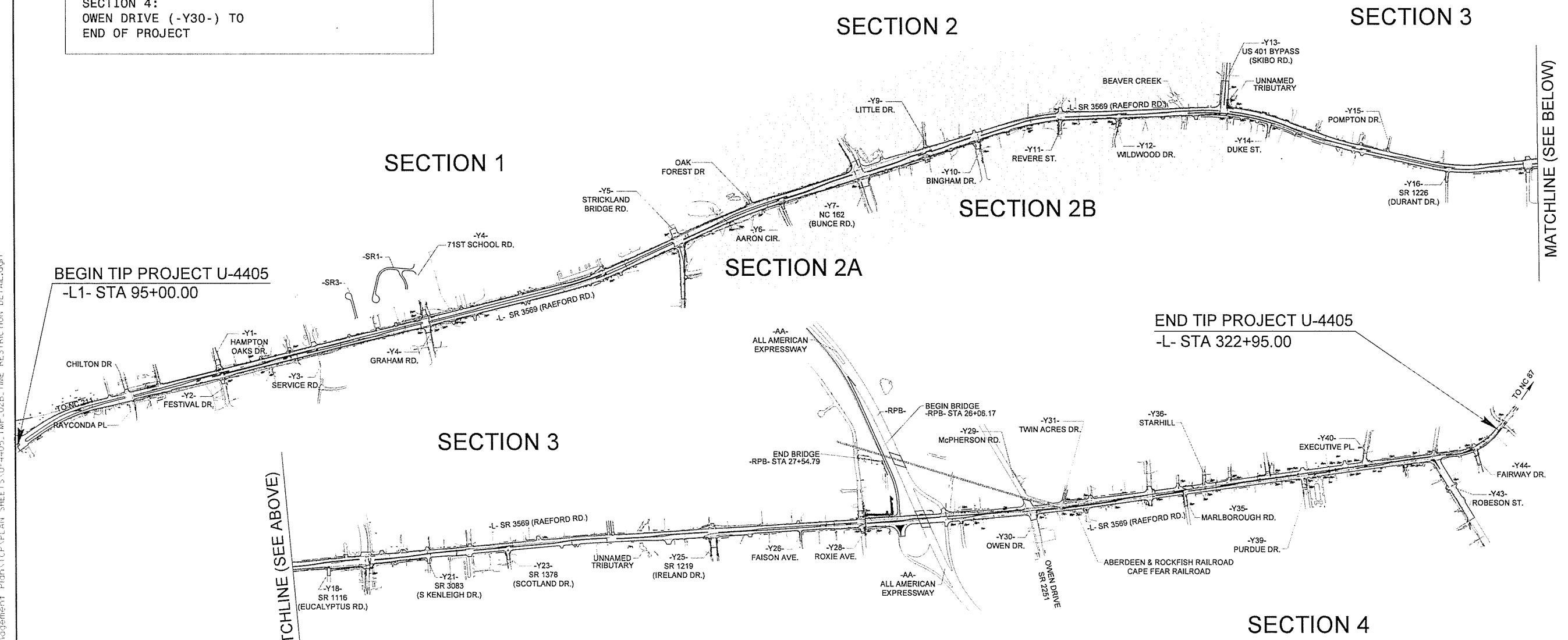
SECTION 2:
STRICKLAND BRIDGE ROAD (-Y5-)
TO SKIBO ROAD (-Y13-)
2A: NB -L- STA. 75+60 TO STA. 95+00
SB -L- STA. 75+60 TO STA. 123+50
2B: NB -L- STA. 95+00 TO STA. 142+65
SB -L- STA. 123+50 TO STA. 142+65

SECTION 3:
SKIBO ROAD (-Y13-) TO
OWEN DRIVE (-Y30-)

SECTION 4:
OWEN DRIVE (-Y30-) TO
END OF PROJECT

PROJ. REFERENCE NO.	SHEET NO.
U-4405	TMP-2B

8/7/2018
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jwoolard



Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. 919.851.6866
Fax. 919.851.7024
www.stantec.com
License No. F-0672

8/7/2018
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**SECTION
AND
TIME RESTRICTION
DETAIL**

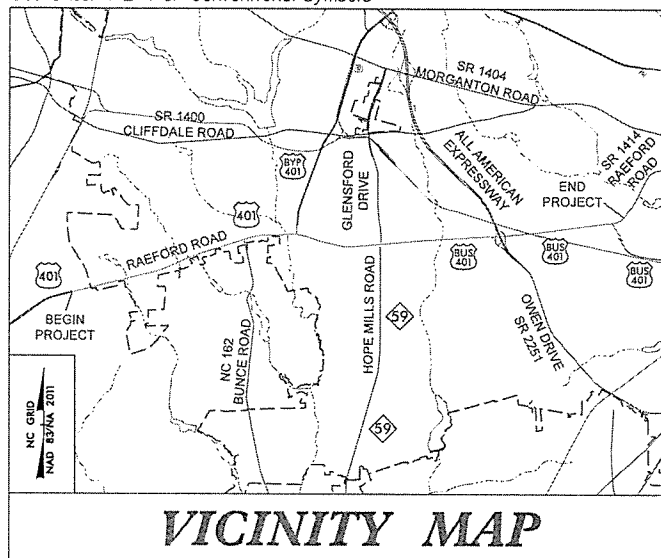
See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols

T.I.P. NO.	SHEET NO.
U-4405	UC-1

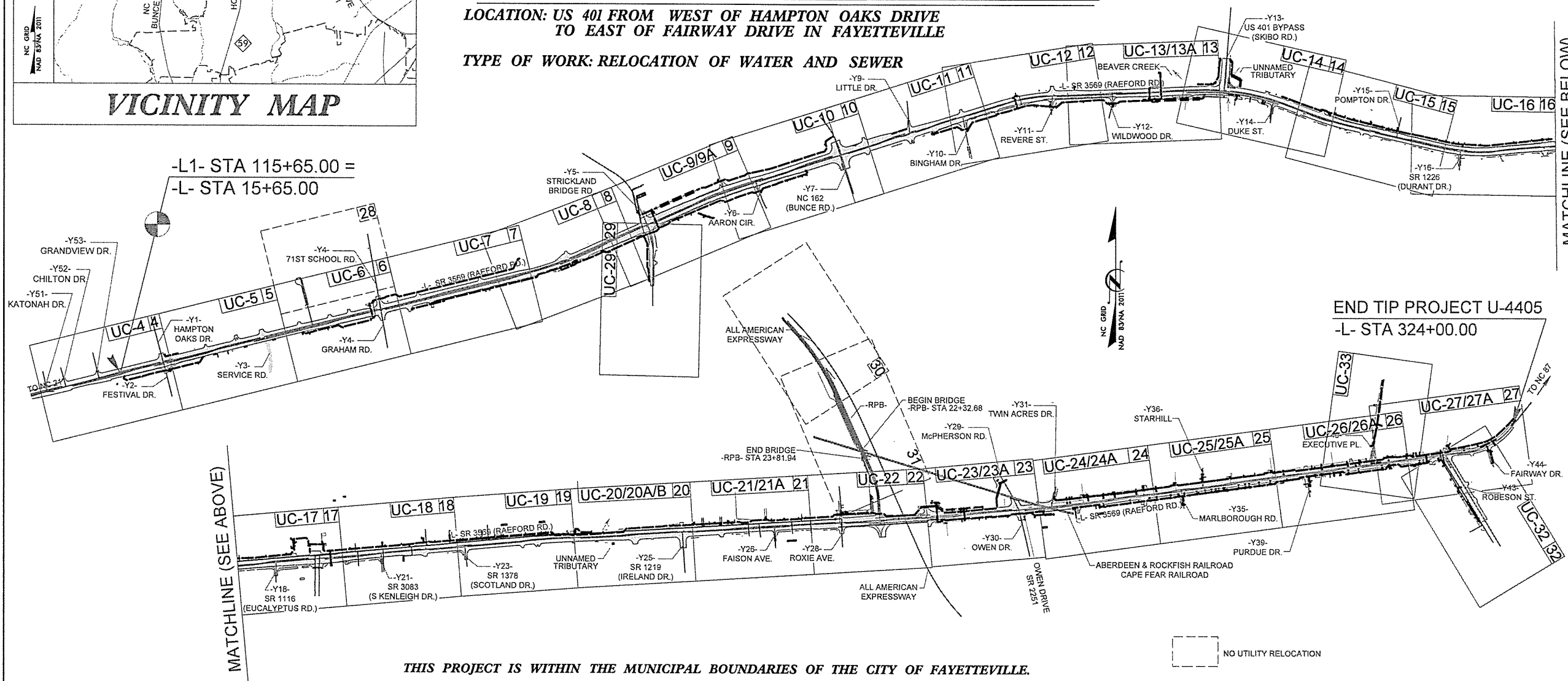
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

**UTILITY CONSTRUCTION PLANS
CUMBERLAND COUNTY**

LOCATION: US 401 FROM WEST OF HAMPTON OAKS DRIVE
TO EAST OF FAIRWAY DRIVE IN FAYETTEVILLE
TYPE OF WORK: RELOCATION OF WATER AND SEWER



TIP PROJECT: U-4405



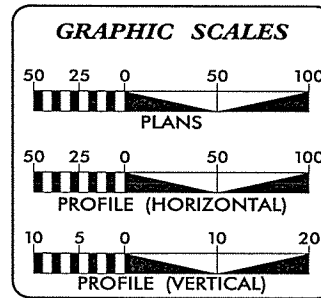
MATCHLINE (SEE ABOVE)

MATCHLINE (SEE BELOW)

THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF FAYETTEVILLE.

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD ____.

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INDEX OF SHEETS

SHEET NO.	DESCRIPTION
UC-1	TITLE SHEET
UC-2	UTILITY SYMBOLOGY
UC-3 THRU UC-3G	NOTES
UC-3H THRU UC-3Q	DETAILS
UC-4 THRU UC-33	UTILITY CONSTRUCTION SHEETS
UC-34 THUR UC-60	PROFILE SHEETS

WATER AND SEWER OWNERS ON PROJECT

(1) WATER: FAYETTEVILLE PWC
(2) SANITARY SEWER: FAYETTEVILLE PWC

Prepared In the Office of:

WK DICKSON
community infrastructure consultants
720 CORPORATE CENTER DRIVE
RALEIGH, NORTH CAROLINA 27607
(919) 782-0495 NCBEES #F-0374

MARK W. FISHER, PE
PROJECT ENGINEER

ALBERT M. HUCKABY, EI
PROJECT DESIGN ENGINEER

SEAL 8/3/2018

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

BO HEMPHILL, PE UTILITIES REGIONAL ENGINEER
KELVIN MARTIN, EI UTILITIES ENGINEER
KYLE PLEASANT UTILITIES AREA COORDINATOR
LARRY M. JAMES UTILITIES COORDINATOR

UTILITY REV. - JULY 27, 2006 - REVISIONS SHEET INDEX
 02-AUG-2018 13:19 L:\Projects\Fayetteville Public Works Commission\2015017700RA Raeford Road NCDOT U 4405\CADD\NCDOT PLANS\Utilities\Engineering\UC\Pro\U4405_ut_fsh_UC01.psh.dgn
 09/08/99

5/14/99

REVISIONS
UTILITY REV. - JULY 21, 2008 - REVISED ALL CONSTRUCTION NOTES
27 Jul - 2008 16:14
C:\projects\581031\110 Public Works Commission\20150177606A Raeford Road NCDOT U 4485\CAD\DD\NCDOT PLANS\Utilities\Engineering\UC\Proj\U4485_ut_no_sta_UC03a_pah.dgn

UTILITY CONSTRUCTION

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UNTIL ALL SIGNATURES ARE COMPLETED

PROJECT REFERENCE NO.	SHEET NO.
U-4405	UC-3A
DESIGNED BY: AMH	
DRAWN BY: AMH/AB	
CHECKED BY: AMH	
APPROVED BY: MWF	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

UTILITY CONSTRUCTION

UC-4 UTILITY NOTES:

- FULLY GROUT MIN. 60 LF OF 24" EXIST MAIN. PLUG EACH END OF ABANDONED MAIN PER UTILITY OWNER KILLOUT DETAIL W-22.
- KILL OUT OF BRANCH LINE SIDE OF TAPPING SLEEVE SHALL BE COORDINATED WITH 24" MAIN SHUTDOWN FOR LAYING BACK NEW 24" MAIN INTO EXIST ALIGNMENT (SEE SHEET UC-5).
- WL-2, WL-3 AND WL-1 BETWEEN TAP AT -WL-1- STA 0+00 AND VALVE AT APPROX -WL-1- STA. 8+95 SHALL BE INSTALLED AND OPERATIONAL BEFORE INSTALLING ANY OTHER PORTION OF WL-1
- PURSUANT TO TRAFFIC CONTROL REQUIREMENTS, CONTRACTOR MUST BE COMPLETE WITH THE PORTION OF WL-1 AND WL-2 AS DEFINED IN NOTE 3 BEFORE BEGINNING INSTALLATION OF WL-3. CONTRACTOR SHALL NOT BE PERFORMING WATER MAIN INSTALLATION LONGITUDINALLY TO THE ROAD ON BOTH SIDES.
- WL-3 TO BE CONNECTED TO EXISTING MAIN UNDER SERVICE INTERRUPTION. ADHERE TO UTILITY OWNER'S PROCEDURES FOR SHUTDOWN. EXISTING VALVES EV-2A AND EV-2B SHALL BE CRITICAL IN ISOLATING CONNECTING POINTS.
- KILL-OUT OF 24" SIDES OF 24"x24"x8"x8" CROSS TO BE FACILITATED BY SHUTDOWN WHEN KILLING OUT 24" MAIN AT TAPPING SLEEVE FOR WL-1. VALVES TO ISOLATE KILL OUT INCLUDE EV-1, EV-2A, EV-2B, EV-4 AND TAPPING VALVE FOR WL-1.

UC-5 UTILITY NOTES:

- CONTRACTOR SHALL LAY BACK INTO EXISTING 24" WATER MAIN WITH A MINIMUM OF 20 LF OF RESTRAINED JOINT UNDER PLANNED SERVICE INTERRUPTION.
- CONTRACTOR SHALL PROVIDE A TEMPORARY RESTRAINED PLUG AND TEMPORARY BLOW OFF ASSEMBLY FOR TESTING AND FLUSHING BEFORE RECONNECTING TO EXISTING 24" MAIN. NO SEPARATE PAYMENT SHALL BE MADE FOR TEMPORARY BLOW-OFF ASSEMBLIES.
- CONTRACTOR SHALL REMOVE TEMPORARY 24" PLUG AND SLEEVE TO EXISTING 24" WATER MAIN USING MJ x MJ FULL BODY SLEEVE AND RESTRAIN WITH RESTRAINING GLANDS.
- AFTER SLEEVING OF PROPOSED 24" MAIN TO EXISTING 24" MAIN, CONTRACTOR SHALL ADHERE TO CUT IN CONSTRUCTION REQUIREMENTS WHEN REINSTATING THE 24" MAIN.
- WL-2, WL-3 AND WL-1 BETWEEN TAPPING SLEEVE AND VALVE AT -WL-1- STA 0+00 AND VALVE AT -WL-1- STA 8+95 SHALL BE INSTALLED AND OPERATIONAL BEFORE INSTALLING ANY OTHER PORTION OF WL-1.
- PURSUANT TO TRAFFIC CONTROL REQUIREMENTS, CONTRACTOR MUST BE COMPLETE WITH THE PORTION OF WL-1 AND WL-2 BEFORE BEGINNING INSTALLATION OF WL-3. CONTRACTOR SHALL NOT BE PERFORMING WATER MAIN INSTALLATION LONGITUDINALLY TO THE ROAD ON BOTH SIDES.
- SHUTDOWN TO CONNECT WL-1 TO EXISTING 24" MAIN AND PERFORM KILL-OUT OF EXISTING 24" MAIN AT TAPPING LOCATION SHALL BE FACILITATED THROUGH EV-1, EV-2A, EV-2C, EV-4 AND 24" TAPPING VALVE AND NEW IN-LINE VALVE AT STA. 8+95. WL-2 AND WL-3 SHALL BE INSTALLED AND OPERATIONAL PRIOR TO SHUTDOWN FOR WL-1 TO BACKFEED EXISTING SERVICES ON SKATEWAY DRIVE.
- UTILITY OWNER'S SAMPLING STATION SHALL NOT BE DISTURBED. PROVIDE NEW TAP AND LATERAL TO SAMPLING STATION IF SAMPLING STATION'S 1" SERVICE LATERAL IS IN CONFLICT WITH PROPOSED DRAINAGE. SAMPLING STATION SHALL NOT BE INTERRUPTED DURING ANNUAL BURN OUT, WHICH OCCURS EVERY MARCH. OTHERWISE, SERVICE TO SAMPLING STATION MAY BE INTERRUPTED SHOULD PLANNED SHUTDOWNS IMPACT THIS SERVICE LATERAL.
- CITY OF FAYETTEVILLE HAS A 1" SERVICE FOR MEDIAN IRRIGATION. PROVIDE NEW TAP AND LATERAL TO RECONNECT 1" IRRIGATION SERVICE IF IT IS IN CONFLICT WITH PROPOSED DRAINAGE. CONTRACTOR SHALL REPLACE ALL DAMAGED IRRIGATION PIPING (INCIDENTAL AND THAT IS IN CONFLICT WITH WORK) AT NO ADDITIONAL COST. EXISTING IRRIGATION PIPING HAS NOT BEEN LOCATED AND IS NOT SHOWN ON SHEET.
- ALL DUCK AND UNDERS BETWEEN WL-1 AND WL-5 SHALL BE PERFORMED DURING PLANNED OUTAGES. CONTRACTOR SHALL CONFORM TO CUT IN CONSTRUCTION REQUIREMENTS WHEN PERFORMING THIS WORK.

UC-6 UTILITY NOTES:

- EXISTING METER AND SERVICE WAS NOT LOCATED FOR MULTIPLE PARCELS. CONTRACTOR TO PROVIDE 1" METER SERVICE FOR THOSE PARCELS THAT CURRENTLY ARE SERVED BY UTILITY OWNER. COORDINATE LOCATION WITH UTILITY OWNER'S PROJECT COORDINATOR.
- INSTALL AND HAVE OPERATIONAL WL-5 BETWEEN TAPPING VALVE AND 24"x24"x24" TEE AT WL-5- STA 8+37.33. STUB-OUT WL-5 FOR CONNECTION TO EXISTING 24" MAIN. INSTALL AND HAVE OPERATIONAL WL-6 BETWEEN WL-5 AND 24" TAPPING VALVE FOR WL-6. STUB-OUT WL-7.
- PURSUANT TO TRAFFIC CONTROL REQUIREMENTS, CONTRACTOR MUST BE COMPLETED WITH WORK ON WL-5 AS DEFINED NOTE 2 (ABOVE) BEFORE BEGINNING INSTALLATION ON WL-6. CONTRACTOR SHALL NOT BE PERFORMING WATER MAIN INSTALLATION LONGITUDINALLY TO THE ROAD ON BOTH SIDES.
- TRANSFER EXISTING METERS FROM EXISTING 24" MAIN TO WL-5 BEFORE PERFORMING DUCK AND UNDERS ON EXISTING MAIN AND HYDRANT LEG ADJUSTMENTS BETWEEN EV-4 AND EV-8.

UC-6 UTILITY NOTES:

- COORDINATE SHUTDOWN TO PERFORM EXISTING MAIN AND HYDRANT LEG ADJUSTMENTS BETWEEN EV-4 AND EV-8 WITH UTILITY OWNER'S PROJECT COORDINATOR AND KILLING OUT EXISTING MAIN AT TAPPING SLEEVE FOR WL-5, STA 0+00. EXISTING VALVES EV-4, EV-5, EV-8, AND TAPPING SLEEVE FOR WL-5 AT STA 0+00 SHALL FACILITATE SHUTDOWN AND MAINTAIN UNINTERRUPTED SERVICE TO CUSTOMERS.
- AFTER COMPLETING ALTERATIONS IN NOTE 5 (ABOVE), COMPLETE CONNECTION OF WL-5 TO EXISTING 24" MAIN BY CUTTING IN AND KILLING OUT EXISTING MAIN AT TAPPING SLEEVE FOR WL-6 UNDER PLANNED SHUTDOWN. CONSTRUCTION TIME FOR THIS WORK SHALL BE LIMITED TO WEEKEND AND SHALL NOT BEGIN UNTIL 6:00 P.M. ON FRIDAY. ALL WORK MUST BE COMPLETED AND WATER MAIN BACK IN OPERATION BEFORE 6:00 A.M. MONDAY. EXISTING VALVES EV-4, EV-5, EV-8A AND EV-9 SHALL FACILITATE SHUTDOWN TO MINIMIZE SERVICE INTERRUPTIONS.
- SLEEVING OF WL-5 INTO EXISTING MAIN SHALL ENTAIL THE REMOVAL OF ONE 24" RJ BUTTERFLY VALVE AND ONE 24"x24"x24" RJ TEE. EV-8A IS RESTRAINED AND SHALL NOT BE DAMAGED SO WL-5 CAN BE RECONNECTED TO IT USING SPOOL PIECE AND FULL BODY MJ SLEEVE AND RESTRAINING GLANDS.
- DURING INSTALLATION OF WL-5, CONTRACTOR SHALL REMOVE AND REPLACE 48 LF OF RCP AS SHOWN ON PLANS UNLESS ACTUAL CONDITIONS DIFFER, OR WORK CAN BE PERFORMED SO AS NOT TO INTERFERE WITH EXISTING DRAINAGE.

UC-7 UTILITY NOTES:

- WL-8 SHALL BE BUILT OUT FROM TAPPING SLEEVE AND VALVE (SEE SHEET UC-8) TO TIE INTO EXISTING 24" MAIN ON THIS SHEET.
- SEE UTILITY NOTES ON SHEET UC-8 FOR SPECIAL SEQUENCING OF INSTALLATION AND CUT IN REQUIREMENTS FOR WL-8, WL-10, AND 24" MAIN ABANDONMENT.
- LAY BACK MINIMUM OF ONE FULL RESTRAINED JOINT WHEN SLEEVING INTO EXISTING MAIN.

UC-8 UTILITY NOTES:

- THE PORTION OF WL-8 WITHIN RAEFORD ROAD (BETWEEN APPROX. WL-8- STA 12+00 AND APPROX. WL-8- STA 17+00) SHALL BE INSTALLED DURING WEEKNIGHT TIMES TO FACILITATE MAXIMUM OF TWO LANES OF CLOSURE. WORK EACH NIGHT SHALL NOT BEGIN BEFORE 7:00 P.M. ALL WORK UTILIZING THE SECOND LANE OF CLOSURE SHALL BE COMPLETED BEFORE 6:00 A.M.
- FULLY GROUT MIN. 60 LF OF 24" EXIST. MAIN. PLUG EACH END OF ABANDONED MAIN PER KILLOUT DETAIL W-22.
- KILL OUT OF LINE SIDE OF TAPPING SLEEVE SHALL BE COORDINATED WITH 24" MAIN SHUTDOWN FOR LAYING BACK NEW 24" MAIN INTO EXISTING ALIGNMENT (SEE SHEET UC-7 FOR WL-8 AND UC-8 FOR WL-10).
- INSTALL WL-8 AND WL-10 AND HAVE EACH SEGMENT OPERATIONAL TO LAST IN LINE VALVE ON EACH SEGMENT (BETWEEN WL-8- STA 1+10 AND APPROX. WL-8- STA 17+10 AND BETWEEN APPROX. WL-10- STA 1+00 AND WL-10- STA 25+50). ALL EXISTING METERS THAT OVERLAP THESE RELOCATION SEGMENTS SHALL BE TRANSFERRED TO THESE NEW SEGMENTS. ALL CROSS-LINES FOR WL-10 SHALL BE FULLY RESTRAINED THROUGH BRANCH VALVES. ARRAN CIRCLE AND STRICKLAND BRIDGE ROAD (WL-11 AND WL-12) RECONNECTION SHALL BE COMPLETED AND OPERATIONAL CONCURRENT WITH WL-10 INSTALLATION. EXISTING BRANCH VALVES FOR ARRAN CIRCLE AND STRICKLAND BRIDGE ROAD SHALL BE PERMANENTLY CLOSED AND PROPERLY ABANDONED. SEE UC-9 UTILITY NOTES FOR ADDITIONAL SEQUENCING PROVISIONS FOR UC-12 THAT SHALL BE PERFORMED BEFORE SHUTDOWN FOR WL-8 AND WL-10.
- PRIOR TO TAPPING THE EXISTING 24" WATER MAIN, CONTRACTOR SHALL INSTALL SPLIT RING BELL HARNESSSES ON EXISTING PIPE EQUIVALENT TO 3 FULL JOINT LENGTHS. MJ x MJ FULL BODY SOLID TAPPING SLEEVE WITH RESTRAINING GLANDS SHALL BE PLUGGED AND RESTRAINED ON LINE SIDE. NO SEPARATE PAYMENT SHALL BE MADE FOR PIPE HARNESSSES.
- TEMPORARILY BURY TEMPORARY 6" MAIN AT ALL DRIVEWAY CROSSINGS TO MAINTAIN INGRESS/EGRESS FOR THESE PARCELS.
- RECONNECT WL-8 AND WL-10 TO EXISTING MAIN UNDER SERVICE INTERRUPTION. ADHERE TO UTILITY OWNER'S PROCEDURES FOR SHUTDOWN. EXISTING VALVES EV-8A, EV-12, EV-12A, EV-13, EV-20, EV-20A AND EV-22 IN ISOLATING EXISTING 24" MAIN. KILL-OUT OF 24" TAPPING SLEEVE (LINE SIDE OF 24"x24"x24") FOR WL-8 AND WL-10 TO BE FACILITATED UNDER SAME SHUTDOWN. AFTER COMPLETION OF KILLOUTS AND CUT IN CONSTRUCTION, RESUME OPERATION OF EXISTING 24" WATER MAIN BY OPENING EV-8A, EV-20, EV-20A AND EV-22 AND COMPLETE ABANDONMENT OF 24" ADJACENT TO WL-8 AND WL-10
- EXISTING 24" WATER MAIN IS RESTRAINED AT DESIGNATED LOCATION OF CUT IN FOR WL-10. WL-10 CAN BE SLEEVED IN WITH FULL BODY SLEEVE AND RESTRAINING GLANDS WITHOUT LAYING BACK ONE FULLY JOINT INTO EXISTING SYSTEM UNLESS ACTUAL CONDITIONS.

UC-9 UTILITY NOTES:

- ADHERE TO SPECIAL PROVISIONS OF OPEN CUTTING EXISTING PAVEMENT.
- EXISTING IN LINE VALVE TO FACILITATE SHUTDOWN FOR RECONNECTION OF THE EXISTING WATER MAIN IN OAK FOREST DR IS APPROXIMATELY 325 LF FROM PROPOSED RECONNECTION POINT.
- FULLY GROUT MIN. 60 LF OF 12" EXIST. MAIN. PLUG EACH END OF ABANDONED MAIN PER KILLOUT DETAIL W-22.
- KILL OUT OF LINE SIDE OF TAPPING SLEEVE FOR WL-13 SHALL BE COORDINATED WITH 12" MAIN SHUTDOWN.
- INSTALL WL-12 AND HAVE OPERATIONAL PRIOR TO PLANNED SHUTDOWN FOR CONNECTION OF WL-10 BACK TO EXISTING 24" MAIN. WL-12 SHALL BE CONNECTED AS SHOWN TO EXISTING 12" MAIN TO MAINTAIN OPERATION AND TO FACILITATE KILL OUT OF EXISTING 12" MAIN CROSSING OF RAEFORD ROAD.
- 12"x12"x12" TAPPING SLEEVE AND VALVE AND SHORT LOOP BETWEEN EXISTING 12" MAIN AND WL-13 SHALL BE INSTALLED TO MAINTAIN OPERATION UNTIL WL-13 IS INSTALLED AND OPERATIONAL. THIS SHORT LOOP SHALL BE ABANDONED AFTER WL-13 IS IN OPERATION.
- KILL OUT OF PORTION OF EXISTING 12" MAIN THAT FEEDS STRICKLAND BRIDGE ROAD (NORTH) AND NORTH SIDE OF RAEFORD ROAD SHALL BE FACILITATED BY EV-13, EV-14 AND EV-15.
- PURSUANT TO TRAFFIC CONTROL REQUIREMENTS, NO WORK ON THE SOUTH SIDE SHALL BE IN PROGRESS WHILE INSTALLING WL-12 AND CONNECTING IT TO THE EXISTING 12" MAIN ON STRICKLAND BRIDGE ROAD. CONTRACTOR SHALL NOT BE PERFORMING WATER MAIN INSTALLATION LONGITUDINALLY TO THE ROAD ON BOTH SIDES.

UC-9A UTILITY NOTES:

- CONTRACTOR SHALL SUBMIT A DETAILED SEWAGE BYPASS PLAN FOR MAINTAINING ALL SEWAGE FLOWS THAT WILL BE IMPACTED BY THE SEWER RELOCATION AND ADHERE TO ALL REQUIREMENTS IN OWNER'S WASTE WATER CONTROL SPECIFICATIONS
 - CONTRACTOR SHALL VERIFY EXISTING SEWER SERVICE LOCATION AND DEPTH PRIOR TO ORDERING MATERIALS.
 - CONTRACTOR SHALL COORDINATE WITH UTILITY OWNER'S PROJECT COORDINATOR TO DETERMINE IF PARCEL 87 IS CONNECTED TO EXISTING SEWER. IF CONNECTED, CONTRACTOR SHALL DETERMINE LOCATION AND DEPTH PRIOR TO ORDERING MATERIALS.
- UC-9A UTILITY NOTES
- CONTRACTOR SHALL SUBMIT A DETAILED SEWAGE BYPASS PLAN FOR MAINTAINING ALL SEWAGE FLOWS THAT WILL BE IMPACTED BY THE SEWER RELOCATION AND ADHERE TO ALL REQUIREMENTS IN OWNER'S WASTE WATER CONTROL SPECIFICATIONS
 - CONTRACTOR SHALL VERIFY EXISTING SEWER SERVICE LOCATION AND DEPTH PRIOR TO ORDERING MATERIALS.
 - CONTRACTOR SHALL COORDINATE WITH UTILITY OWNER'S PROJECT COORDINATOR TO DETERMINE IF PARCEL 87 IS CONNECTED TO EXISTING SEWER. IF CONNECTED, CONTRACTOR SHALL DETERMINE LOCATION AND DEPTH PRIOR TO ORDERING MATERIALS.

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PROJECT REFERENCE NO. U-4405	SHEET NO. UC-3B
DESIGNED BY: AMH	
DRAWN BY: AMH/AB	
CHECKED BY: AMH	
APPROVED BY: MWF	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SECTION PHONE: (919) 707-6690 FAX: (919) 1250-4151	

UTILITY CONSTRUCTION

UC-10 UTILITY NOTES:

- EXISTING IN LINE VALVE TO FACILITATE SHUTDOWN FOR RECONNECTION OF THE EXISTING WATER MAIN IN ARRAN CIRCLE IS APPROXIMATELY 760 LF FROM PROPOSED RECONNECTION POINT.
- CONTRACTOR SHALL LAY BACK A MINIMUM OF 1 FULL JOINT OF RESTRAINED DUCTILE IRON PIPE.
- FULLY GROUT MIN. 60LF OF 24" EXIST MAIN. PLUG EACH END OF ABANDONED MAIN PER KILLOUT DETAIL W-22.
- KILL OUT OF LINE SIDE OF TAPPING SLEEVE FOR WL-10 SHALL BE COORDINATED WITH 24" MAIN SHUTDOWN FOR LAYING BACK NEW 24" MAIN INTO EXIST ALIGNMENT (SEE SHEET UC-5).
- REFERENCE UC-8 UTILITY NOTES FOR SEQUENCE OF WL-10 AND ABANDONMENT OF EXISTING 24" MAIN.
- WL-13 UP TO PROPOSED IN LINE VALVE NEAR STATION WL-13- STA 24+00 AND THE EXISTING CROSS-LINE THAT SERVES OAK FOREST DRIVE SHALL BE INSTALLED AND IN OPERATION PRIOR TO RECONNECTING TO THE EXISTING 12" MAIN IN BUNCE ROAD. ADHERE TO PROVISIONS FOR OPEN CUTTING PAVEMENT AND WORKING WITHIN TRAFFIC TO RECONNECT PROPOSED 12" MAIN TO EXISTING MAIN. EXISTING MAIN AT POINT OF CONNECTION IS RESTRAINED. CONNECT TO EXISTING RESTRAINED JOINT PIPE WITH FULL BODY MJ x MJ SLEEVE AND RESTRAINING GLANDS UNLESS ACTUAL CONDITIONS DIFFER.
- CONNECT WL-13 TO EXISTING MAIN UNDER SERVICE INTERRUPTION. ADHERE TO UTILITY OWNER'S PROCEDURES FOR SHUTDOWN. EXISTING VALVES EV-20, BRANCH VALVE EV-21, EXISTING IN LINE VALVE EV-21A, NEW TAPPING VALVE ON WL-12 THAT LOOPED TO EXISTING MAIN (SEE SHEET UC-9) TO FACILITATE SHUTDOWN. SHUTDOWN SHALL BE PERFORMED BETWEEN 11:00 P.M. AND 6:00 A.M. SERVICE SHALL BE RESTORED TO EXISTING 12" MAIN TO MINIMIZE SERVICE DISRUPTION TO EXISTING CUSTOMERS BETWEEN 1103 BUNCE RD AND 1165 BUNCE RD. IF SERVICE OUTAGE EXTENDS LONGER THAN 8 HOURS, CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING TEMPORARY WATER SERVICES TO IMPACTED METERS.
- AFTER RECONNECTION OF WL-13, ABANDON CROSS-OVER LINE FROM WL-12 TO EXISTING WATER MAIN. SEE SHEET UC-9 AND KILL OUT EXISTING 12" MAIN AT VALVE EV-20.

UC-11 UTILITY NOTES:

- FULLY GROUT MIN. 60 LF OF 24" EXIST. MAIN. PLUG EACH END OF ABANDONED MAIN PER KILLOUT DETAIL W-22.
- KILL OUT OF LINE SIDE OF TAPPING SLEEVE FOR WL-14 SHALL BE COORDINATED WITH 24" MAIN SHUTDOWN FOR LAYING BACK NEW 24" MAIN INTO EXISTING ALIGNMENT (SEE SHEET UC-13).
- INSTALL AND HAVE OPERATIONAL THE FOLLOWING SEGMENTS: WL-14 TO ITS LAST IN LINE VALVE, WL-15, WL-17 AND CROSS LINES AT BINGHAM DRIVE, REVERE STREET AND WILDWOOD DRIVE. TRANSFER ALL EXISTING SERVICES TO WL-14 AND WL-17. SEE ADDITIONAL SEQUENCING FOR WL-15 ON UC-12 UTILITY NOTES AND WL-17 ON UC-13 AND UC-14 UTILITY NOTES.
- KILL OUT OF LINE SIDE OF TAPPING SLEEVE FOR WL-14 SHALL BE COORDINATED WITH CUT IN CONSTRUCTION (SLEEVE IN) OF WL-14 TO EXISTING 24" MAIN (SEE SHEET UC-13). KILL OUT SHALL BE PERFORMED UNDER PLANNED SHUTDOWN OF EXISTING 24" MAIN AND SHALL BE PERFORMED BETWEEN 600 P.M. AND 6:00 A.M. ON SUNDAY. EXISTING 24" MAIN SHALL BE BACK IN OPERATION SO WATER SERVICE TO PARCELS 107, 112, 113 AND 115 ARE NOT IMPACTED DURING NORMAL BUSINESS HOURS. ADHERE TO PWC'S PROCEDURES FOR SHUTDOWN. EXISTING VALVES EV-22, EV-28, EV-31 AND EV-28A SHALL FACILITATE SHUTDOWN. AFTER COMPLETION OF KILLOUTS AND CUT IN CONSTRUCTION, RESUME OPERATION OF EXISTING 24" WATER MAIN BY RE-OPENING EV-22 AND EV-31.
- RECONNECTION OF EXISTING 24" MAIN ON BINGHAM DRIVE SHALL BE BY PLANNED SHUTDOWN. EXISTING VALVES TO FACILITATE SHUTDOWN INCLUDE EV-23A AND EV-23B. LAY BACK 20 LF OF RESTRAINED JOINT DUCTILE IRON PIPE AND RECONNECT TO EXISTING MAIN USING FULL BODY MJ SLEEVE WITH RESTRAINING GLANDS. RECONNECTION SHALL BE PERFORMED BETWEEN 9:00 P.M. AND 6:00 A.M. ONLY ON A WEEKNIGHT.

UC-12 UTILITY NOTES:

- CONNECTION OF WL-15 TO EXISTING WATER MAIN SHALL BE UNDER PLANNED SHUTDOWN. EXISTING VALVE EV-28 AND EV-28A SHALL FACILITATE SERVICE INTERRUPTION. REMOVE PLUG AND CONNECT TO EXISTING MAIN USING FULL BODY MJ SLEEVE AND RESTRAINING GLANDS. WL-15 SHALL BE INSTALLED AND OPERATIONAL TO MAINTAIN SERVICE TO THE NORTH SIDE AND FACILITATE KILL OUT OF THE 24" MAIN ON THE SOUTH SIDE.
- PURSUANT TO TRAFFIC CONTROL REQUIREMENTS, NO WORK ON THE SOUTH SIDE SHALL BE IN PROGRESS WHILE INSTALLING WL-15 AND CONNECTING IT TO THE EXISTING MAIN ON THE NORTH SIDE. CONTRACTOR SHALL NOT BE PERFORMING WATER MAIN INSTALLATION LONGITUDINALLY TO THE ROAD ON BOTH SIDES.

UC-13 UTILITY NOTES:

- INSTALL WL-14 AND HAVE IT OPERATIONAL TO ITS LAST IN LINE VALVE (APPROX. STAT 31+75). ALL EXISTING METERS THAT OVERLAP THESE RELOCATION SEGMENTS SHALL BE SWITCHED OVER TO THESE NEW SEGMENTS. ALL CROSS-LINES FOR WL-14 SHALL BE FULLY RESTRAINED THROUGH BRANCH VALVES. BINGHAM DRIVE, WL-15, WL-15A AND WILDWOOD DRIVE RECONNECTIONS SHALL BE COMPLETED AND OPERATIONAL CONCURRENT WITH WL-14 INSTALLATION. EXISTING BRANCH VALVES FOR THESE CROSS LINES SHALL BE PERMANENTLY CLOSED AND PROPERLY ABANDONED. SEE UC-12 UTILITY NOTES FOR ADDITIONAL SEQUENCING PROVISIONS FOR WL-15 THAT SHALL BE PERFORMED BEFORE SHUTDOWN TO CONNECT WL-14 BACK TO EXISTING MAIN.
- PRIOR TO SHUTTING DOWN 24" MAIN TO FACILITATE KILL OUT OF EXISTING 24" MAIN AT WL-14 TAPPING SLEEVE AND CUT IN CONSTRUCTION FOR WL-14 TIE BACK TO EXISTING 24" MAIN, INSTALL WL-16 AND HAVE IT OPERATIONAL. RECONNECT ALL SERVICES TO WL-16. SEE UC-13 UTILITY NOTES FOR ADDITIONAL SEQUENCING PROVISIONS FOR WL-16 THAT SHALL BE PERFORMED BEFORE SHUTDOWN FOR WL-14.
- BORE AND JACK FOR WL-15A SHALL BE INSTALLED AHEAD OF WL-14 SO BORE PIT WILL NOT BE IN CONFLICT WITH WL-14. BORE INSTALLATION IS ANTICIPATED TO BE IN CONFLICT WITH EXISTING SEWER. INSTALL TEMPORARY DOGHOUSE SSMH FOR RECEIVING SEWAGE BYPASS. READY SEWER BYPASS TO MAINTAIN SEWER SERVICE. UPON COMPLETION OF ENCASEMENT INSTALLATION AND THREADING OF 2-INCH MAIN, COMPLETE SEWER REPLACEMENT AS SHOWN ON UC-13A WHILE SEWER FLOW IS UNDER BYPASS. SEE ADDITIONAL PROVISIONS ON UC-13A UTILITY NOTES.
- PROTECT WORK AREA TO MAINTAIN INGRESS/EGRESS TO BUSINESS AND STORE FRONT PARKING.
- REMOVE INSITU MATERIAL COMPLETELY FOR 2" WATER MAIN ACROSS PARCEL 140 DUE TO POTENTIAL OF PRIOR CONTAMINATION. MINIMUM TRENCH WIDTH FOR INSITU MATERIAL AND SELECT BACKFILL SHALL BE 2 FEET WIDE BY 4 FEET DEEP.
- TEMPORARY SHORING IF REQUIRED FOR BUILDING FOUNDATION PROTECTION OR MAINTENANCE OF TRAFFIC WILL BE PAID AS TEMPORARY SHORING IN SQUARE FEET
- METER RECONNECTION NOTES FOR PARCEL NO. 136:
 - PROVIDE 2" TAP WITH 2" CURB STOP AND 2" BLOW OFF ASSEMBLY. 4-1" STD. PWC METER ASSEMBLIES SHALL BE PROVIDED UNLESS ACTUAL CONDITIONS DIFFER.
 - RECONNECT TO CUSTOMER'S EXIST. 3-1" PVC WATER LATERALS. FIELD COORDIANTE WATER SERVICE PIPING ROUTE.
 - RECONNECT PROPOSED IRRIGATION METER TO CUSTOMERS EXIST. RPZ. FIELD COORDINATE IRRIGATION PIPING TO ENCLOSURE.

UC-13A UTILITY NOTES:

- PLUG EXISTING 8" OPENING IN EXIST. SSMH ON 42" DIA. OUTFALL AFTER PROPOSED SEWER IS OPERATIONAL.
- PROP. SSMH SHALL BE CUT IN (DOG-HOUSE STYLE) ON THE 8" EXISTING SEWER LINE FOR TEMPORARY SEWAGE BYPASS. IT SHALL BE OPERATIONAL PRIOR TO INITIATING BORE AND JACK AND SETTING PROPOSED UPSTREAM SSMH. PROP. SSMH FOR TEMPORARY BYPASS PUMPING SHALL BE ABANDONED AFTER NEW SEWER IS OPERATIONAL AND BYPASS PUMPING CAN BE DISCONTINUED.
- PROP. SSMH SHALL BE 4" DIA. RECONNECT EXISTING DI AT SAME SLOPE USING DI COUPLING RATED FOR SEWER SERVICE.
- CONNECTION TO EXISTING SSMH ON EXIST. 8" OUTFALL BEHIND GAS STATION SHALL BE BY FIELD CORE. CORE SHALL BE NEAT AND EQUIPPED WITH BOOTED CONNECTION.
- LOCATE ELECTRICAL CIRCUITRY TO LIGHTS ON PARCEL 138 PRIOR TO SEWER INSTALLATION. ALL CIRCUITRY SHALL BE PROTECTED. ANY DAMAGE SHALL BE REPAIRED AND SHALL MEET LOCAL ELECTRICAL REQUIREMENTS.
- TEMPORARY SHORING IF REQUIRED FOR BUILDING FOUNDATION PROTECTION OR MAINTENANCE OF TRAFFIC WILL BE PAID AS TEMPORARY SHORING IN SQUARE FEET BELOW GROUND SURFACE
- CONTRACTOR SHALL VERIFY SEWER SERVICE DEPTH AND LOCATION PRIOR TO ORDERING MATERIALS.
- CONTRACTOR SHALL REPLACE EXISTING CLEAN OUT AND SEWER SEVICE LINE AT SAME DEPTH AND SLOPE.
- CONTRACTOR SHALL REMOVE EXISTING CLEAN OUT AND EXISTING SEWER SERVICE TO PROPOSED CLEAN OUT LOCATION. CONTRACTOR SHALL GROUT FILL EXISTING SERVICE CORE IN MANHOLE WITH NON-SHRINK GROUT.

UC-14 UTILITY NOTES:

- CONNECTION OF WL-16 TO EXISTING 8" SHALL BE PERFORMED UNDER PLANNED SERVICE INTERRUPTION. LENGTH OF BURIED PIPE BETWEEN DEAD END PLUG AND EV-33A IS LESS THAN 95 LF FOR ESTIMATED BURIAL DEPTH OF 3 FEET. EXISTING VALVE EV-33A, EV-33B AND EXISTING HYDRANT BETWEEN THESE TWO VALVES SHALL FACILITATE SHUTDOWN TO REMOVE EXISTING DEAD-END PLUG AND TO INSTALL PROPOSED 8" RJ GATE VALVE AND MINIMUM OF THREE JOINTS OF PROPOSED PIPE. PROPOSED VALVE AND MINIMUM OF THREE JOINTS OF PIPE INSTALLATION SHALL BE PERFORMED DURING NON-BUSINESS HOURS (BETWEEN 10:00 P.M. AND 6:00 A.M.). COORDINATE WITH UTILITY OWNER'S PROJECT COORDINATOR. EV-33A AND EV-33B SHALL BE TEMPORARILY CLOSED AND EXISTING HYDRANT SHALL BE UTILIZED TO REDUCE PRESSURE SO EXISTING 8" PLUG CAN BE SAFELY REMOVED AND CONNECTION CAN BE MADE. REFERENCE UTILITY OWNER'S DETAIL M.15.
- AFTER INSTALLATION OF 8" RJ GATE VALVE AND MINIMUM OF 60 LF OF PIPE, COORDINATE WITH UTILITY OWNER'S PROJECT COORDINATOR TO RESTORE OPERATION OF EV-33B. MAINTAIN CLOSURE OF EV-33A UNTIL WATER MAIN LENGTH EXCEEDS 125 LF FROM NEW 8" RJ VALVE. AT THAT POINT, DISINFECT EXISTING MAIN BETWEEN EV-33A AND NEW VALVE AND PERFORM BACTERIOLOGICAL TESTING BEFORE PLACING IT BACK IN OPERATION. UTILIZE EXISTING 2" BLOW ASSEMBLY TO FLUSH EXISTING MAIN. MAINTAIN CLOSURE OF NEW 8" RJ GATE VALVE AND RESUME OPERATION OF EV-33A AND CONTINUE INSTALLATION OF WL-16.
- AFTER EXISTING SEGMENT BETWEEN EV-33A AND NEW VALVE HAS BEEN PLACED BACK IN SERVICE, ABANDON EXISTING 2" TAP AND REMOVE BLOW ASSEMBLY.
- WL-16 SHALL BE IN OPERATION BEFORE CUT IN CONSTRUCTION TO CONNECT WL-14 TO EXISTING 24" MAIN. SEE UC-13 UTILITY NOTES FOR ADDITIONAL SEQUENCE PROVISIONS.
- ADHERE TO NCDOT TRAFFIC CONTROL PROVISIONS. WL-16 INSTALLATION SHALL BE COORDINATED SO THAT IT IS PERFORMED WHEN LONGITUDINAL WORK ON THE SOUTH SIDE OF RAEFORD ROAD IS NOT OCCURRING.
- COORDINATE WITH UTILITY OWNER'S PROJECT COORDINATOR FOR EXISTING VALVES TO FACILITATE TEMPORARY SHUT DOWN.
- PROP. 8" GATE VALVE SHALL BE CUT IN AND MIN. 40 LF OF 8" PVC PIPE SHALL BE REMOVED AND REPLACED WITH RESTRAINED JOINT DIP AND SLEEVED BACK TO EXISTING PVC ON THE SOUTH SIDE OF RAEFORD ROAD. LAYING BACK OF THE MIN. 40 LF OF RESTRAINED JOINT DIP IS ANTICIPATED TO OVERLAP WITH EXISTING SERVICE OF WAFFLE HOUSE. WORK SHALL BE PERFORMED UNDER SERVICE INTERRUPTION USING EV-31 AND EV-35, AND IT SHALL BE PERFORMED BETWEEN 9:00 P.M. AND 6:00 A.M. TO HAVE MINIMUM IMPACT ON ADJACENT BUSINESSES. SERVICE INTERRUPTION SHALL BE CONSISTENT WITH UTILITY OWNER'S REQUIREMENTS. THIS WORK SHALL BE PERFORMED AND COMPLETED PRIOR TO BEGINNING WORK ON EXTENSION OF EXISTING 84" CMP AND TRENCHLESS 72" STORM CROSSINGS. COORDINATE PLANNED OUTAGE WITH UTILITY OWNER'S PROJECT COORDINATOR. IF CONTRACTOR ANTICIPATES OUTAGE WILL BE LONGER THAN 8 HOURS TO COMPLETE WORK, CONTRACTOR SHALL PROVIDE TEMPORARY WATER SERVICE TO ALL IMPACTED BUSINESSES WITHIN ESTIMATED OUTAGE SEGMENT INCLUDING PARCELS 156, 157 AND 158. LAYOUT OF TEMPORARY WATER MAIN HAS NOT BEEN SHOWN, BUT ALL BUSINESS DRIVEWAYS SHALL NOT BE IMPACTED BY A TEMPORARY WATER MAIN. BUSINESS DRIVES SHALL BE MAINTAINED AND REMAIN OPEN.
- NEW RESTRAINED CUT IN VALVE AND EXISTING 8" TAPPING VALVE AT 8" CONNECTION TO EXISTING 24" MAIN SHALL BE UTILIZED TO ISOLATE EXISTING 8" FOR DRAINAGE WORK.
- WL-18 SHALL BE INSTALLED AND OPERATIONAL PRIOR TO EXTENDING 84" CULVERTS AND INSTALLING 72". WL-18 WILL BE REQUIRED TO BACK FEED CUSTOMERS WHEN ISOLATING EXISTING 8" MAIN AS DEFINED IN NOTE 8 (ABOVE).
- FULLY GROUT MIN. 60 LF OF 24" EXIST. MAIN AT DESIGNATED LOCATIONS. PLUG EACH END OF ABANDONED MAIN PER PWC DETAIL W-22.
- KILL OUT OF LINE SIDE OF TAPPING SLEEVE SHALL BE COORDINATED WITH 24" MAIN SHUTDOWN FOR LAYING BACK NEW 24" MAIN INTO EXISTING ALIGNMENT (SEE SHEET UC-14).

UTILITY CONSTRUCTION

REVISIONS

UTILITY REV. - JULY 23, 2008 - REVISED ALL CONSTRUCTION NOTES

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UTILITY CONSTRUCTION

PROJECT REFERENCE NO.	UC-3D
U-4405	UC-3D
DESIGNED BY: AMH	
DRAWN BY: AMH/AB	
CHECKED BY: AMH	
APPROVED BY: MWF	
REVISED:	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6590 FAX: (919) 720-4161	

UTILITY CONSTRUCTION

UC-19 UTILITY NOTES:

1. 8" RJ GATE VALVE ON SCOTLAND DRIVE AND 8" WATER MAIN THAT WILL CONTINUE SOUTH ON SCOTLAND DRIVE CONNECTING TO EXISTING 8" MAIN THAT ROUTES ACROSS FRED ANDERSON NISSAN COMPLETING A LOOP AND CONNECTING TO EXISTING MAIN ON ALAMANCE (OUTSIDE OF PROJECT LIMITS) WILL BE INSTALLED AND WILL BE OPERATIONAL PRIOR TO THE INSTALLATION OF WL-19A, WL-19B AND WL-19C. DESIGN PLANS FOR THE PROPOSED 8" MAIN THAT CONTINUES SOUTH ON SCOTLAND DRIVE WILL BE AVAILABLE TO CONTRACTOR AFTER CONTRACT AWARD.

2. PROPOSED 8" MAIN AS NOTED IN NOTE 1 ABOVE SHALL BE CONNECTED TO PROVIDE SOURCE WATER AND FACILITATE THE INSTALLATION AND TESTING OF WL-19A, WL-19B AND WL-19C.

3. INSTALL AND HAVE OPERATIONAL WL-19A FROM CONNECTION TO 8" RJ GATE VALVE AS NOTED IN NOTE 1 TO IN-LINE VALVE (APPROX. STA. 0+02) ON THE OPPOSING SIDE OF RAEFORD. CROSSING SHALL BE PERFORMED IN ACCORDANCE WITH TRAFFIC CONTROL REQUIREMENTS. NO LONGITUDINAL WORK SHALL BE OCCURRING ON THE SOUTH OR NORTH SIDES. FULLY RESTRAIN IN LINE VALVE AND BRANCH VALVES FOR WL-19B AND WL-19C.

4. PRIOR TO PERFORMING THE CROSSING VIA BORE AND JACK FOR WL-19A, CONTRACTOR SHALL RELOCATE METER FOR PARCEL 209 TO DESIGNATED LOCATION (OUTSIDE THE BORE FOOTPRINT) AND PROVIDE TEMPORARY 1" SERVICE TO RELOCATED METER. TEMPORARY 1" SERVICE SHALL BE TAPPED OFF OF THE EXISTING 12". ONCE WL-2R2 IS OPERATIONAL, RECONNECT METER TO 30" USING NEW LATERAL. REMOVE ALL PART OF THE TEMPORARY LATERAL.

5. BUILD OUT WL-19B AND WL-19C FROM WL-19A TO EACH END OF RESPECTIVE LINE.

6. EXIST. 2" MAIN CONFLICTS WITH PROP. TRENCH FOR WL-19C BETWEEN STA. 7+50 AND STA. 12+00. COORDINATE WITH UTILITY OWNER'S PROJECT COORDINATOR TO SHUT DOWN EXIST. 2" MAIN USING EXIST. 2" BALL VALVE BETWEEN WL-STA. 12+00 AND EXIST. SERVICE FOR PARCEL 220. WATER SERVICE SHALL BE MAINTAINED TO PARCEL 220 DURING INSTALLATION OF WL-19C. OUTAGE FOR OTHER EXISTING METER ON EXISTING 2" MAIN SHALL BE COORDINATED AS NOTED IN NOTE 7.

7. COORDINATE SERVICE INTERRUPTION FOR EXIST. 2" METER NEAR STA. 8+10 WITH THE ENGINEER. EXISTING 2" METER SERVICE PROVIDES IRRIGATION TO THE MEMORIAL GARDENS, WHICH ARE MAINTAINED BY THE CITY OF FAYETTEVILLE. OUTAGE SHALL BE MINIMIZED BY HAVING WL-19C INSTALLED AND OPERATIONAL UP TO IN LINE VALVE AT STA. 8+30. TRANSFER EXISTING 2" METER TO WL-19C BEFORE CONTINUING INSTALLATION TO WL-19C TERMINUS.

8. INSTALL AND HAVE WL-19C OPERATIONAL BETWEEN STA. 8+30 AND PLUGGED END WHILE MAINTAINING WATER TO PARCEL 220. RELOCATE WATER METER FOR PARCEL 220 AND CONNECT IT TO WL-19C.

9. KILLOUT EXIST. 2" MAIN AT EXIST. 12" MAIN. SHUT EXIST. VALVE AND PLUG 2" MAIN IN ACCORDANCE WITH KILLOUT DETAIL.

10. SEE SEQUENCE NOTE 2 ON UC-18 UTILITY NOTES AND NOTE 1 ON UC-20 UTILITY NOTES FOR INSTALLATION OF WL-20R2.

11. CONTRACTOR SHALL SAFEGUARD EXIST. 12" AC DURING INSTALLATION OF 30" BY BUILDING OUT 30" WATER MAIN AS NOTED IN NOTE 12.

12. INSTALLATION OF WL-20R2 BETWEEN IN-LINE VALVE NEAR STA. 24+25 AND IN-LINE VALVE NEAR STA. 33+10 SHALL REQUIRE INTERRUPTION OF SERVICE OF EXISTING 12" MAIN ON NORTH SIDE BECAUSE OF THE FOLLOWING:

A. POTENTIAL FOR EXCAVATION OF THE 30" WATER MAIN TO CONFLICT WITH EXISTING 12" MAIN

B. POTENTIAL FOR EXCAVATION TO CAUSE DAMAGE TO AC MATERIAL RESULTING IN RUPTURE OR BREAK

13. PRIOR TO INTERRUPTION OF SERVICE OF THE EXISTING 12" MAIN, RELOCATE METER FOR PARCEL 227 AND PROVIDE 1" TEMPORARY SERVICE FROM EXIST. 12" PVC MAIN IN MONTCLAIR DRIVE TO PARCEL 227.

14. INTERRUPTION OF EXIST. 12" MAIN AS NOTED IN NOTE 11 SHALL BE FACILITATED BY EV-50A, EV-50B, EV-50C AND EV-51.

15. INSTALLATION OF WL-20R2 BETWEEN STA. 24+25 AND STA. 33+10 SHALL ADHERE TO TRAFFIC CONTROL PROVISIONS. WORK SHALL BE PERFORMED BETWEEN 9:00 P.M. AND 6:00 A.M. OPEN EXCAVATIONS SHALL BE EQUIPPED WITH TRAFFIC RATED PLATED OR RETURNED TO DRIVABLE CONDITIONS BY 6:00 A.M. EACH DAY.

16. INSTALL WL-20R2 AND HAVE IT OPERATIONAL BETWEEN STA. 24+25 AND STA. 33+10. RESTRAIN BRANCH VALVE TO FACILITATE RECONNECTION OF 12" MAIN WITHIN MONTCLAIR DRIVE. PROVIDE NEW LATERAL FROM 30" MAIN TO RELOCATED METER FOR PARCEL 227 TO COMPLETE TRANSFER OF SERVICE AND REMOVE 1" TEMPORARY LATERAL AND PLUG TAP ON EXISTING 12" MAIN FOR TEMPORARY 1" LATERAL. KILL OUT EXIST. MAIN BETWEEN EV-50A AND EV-51.

17. RECONNECT EXIST. 12" MAIN IN MONTCLAIR DRIVE UNDER SERVICE INTERRUPTION ONCE SEGMENT OF WL-20R2 AS NOTED IN NOTE 14 IS OPERATIONAL. UPON RECONNECTION OF 12" MAIN IN MONTCLAIR DRIVE, KILL-OUT BRANCH AT EV-50C.

UC-20 UTILITY NOTES

1. BUILDOUT WL-20R2 FROM PROP. 12" CROSSING UNDER RAEFORD (WL-22) THAT WILL BE STUBBED WHEN INSTALLING WL-21 AND WL-22. REFERENCE UC-21 UTILITY NOTES FOR SEQUENCE OF WL-21 AND WL-22.

2. INSTALL WL-20R2 AND HAVE IT OPERATIONAL TO ITS IN-LINE VALVE (APPROX. STA. 33+10). ALL EXISTING METERS THAT OVERLAP THIS RELOCATION SEGMENT SHALL BE SWITCHED OVER TO THIS NEW SEGMENT. ALL CROSS-LINES FOR WL-20R2 SHALL BE FULLY RESTRAINED THROUGH BRANCH VALVES. RECONNECTIONS OF THESE CROSS-LINES INCLUDING FIRE LINES SHALL BE COMPLETED AND OPERATIONAL CONCURRENT WITH WL-20R2 INSTALLATION. KILL OUT EXISTING CROSS-LINES AT EXISTING BRANCH VALVES CONFORMING TO KILL OUT DETAIL.

3. SEE SEQUENCE NOTES UNDER UC-19 UTILITY NOTES FOR PORTION OF WL-20R2 BETWEEN STA. STA. 24+25 AND STA. 33+10.

4. SEE SEQUENCE NOTES FOR SEWER ON UC-20A AND UC-20B UTILITY NOTES.

5. BUILDOUT WL-21 FROM TAPPING SLEEVE AND VALVE IN ROXIE AVENUE (SEE SHEET UC-22) TO STA. 0+00 (THIS SHEET).

6. 2" SERVICE ON WL-20R2 NEAR STA. 40+25 IS ASSUMED TO BE IRRIGATION TAP FOR BYRAN HONDA. CONTRACTOR TO COORDINATE WITH UTILITY OWNER'S PROJECT COORDINATOR PRIOR TO PROVIDING NEW SERVICE AND ORDERING MATERIAL AND SHALL CONFIRM CONNECTIVITY AND SIZE.

RIGHT OF ENTRY NOTE:

7. CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING RIGHT OF ENTRY TO RECONNECT NEW MAIN TO EXISTING FIRE LINE IF RECONNECTION CANNOT BE MADE WITHIN PUE.

UC-20A/20-B UTILITY NOTES

1. INSTALLATION OF SL-3 AND SL-4 SHALL ADHERE TO THE INTERMEDIATE COMPLETION DATE. TEMPORARILY RE-CONNECT EXIST. SEWER ON SOUTHSIDE OF RAEFORD ROAD THAT RUNS TOWARDS IRELAND DRIVE TO SL-3 AT STA. 0+39.34 IN THE EVENT BUILDOUT OF SL-5 FLOATS ON A DIFFERENT INSTALLATION SCHEDULE.

2. CONTRACTOR SHALL SUBMIT A DETAILED SEWAGE BYPASS PLAN FOR MAINTAINING ALL SEWAGE FLOWS THAT WILL BE IMPACTED BY THE SEWER RELOCATION AND ADHERE TO ALL REQUIREMENTS IN UTILITY SPECIAL PROVISIONS.

3. CONTRACTOR SHALL PROPERLY BARRICADE BYPASS PUMP MANHOLE AND ADHERE TO MUTCD FOR BARRICADE PLACEMENT AND SIGNAGE. TRAFFIC FLOW IN RAEFORD ROAD SHALL NOT BE OBSTRUCTED BY BYPASS PUMP AND PIPE OPERATION.

4. CONTRACTOR SHALL SECURE BYPASS PIPING ACROSS IRELAND DRIVE AND MAINTAIN TRAFFIC FLOW. TRAFFIC RATED RAMP OR OTHER ACCEPTABLE TEMPORARY MEANS SHALL BE PROVIDED TO MAINTAIN TRAFFIC FLOW FOR IRELAND DRIVE.

5. SEWER MAIN THROUGH ENCASUREMENT AND FOR SUBMERGED STREAM CROSSINGS OR UNDERNEATH THE STREAMS SHALL BE FACTORY RESTRAINED JOINT.

6. SEWER MAINS CROSSING UNDER STREAMS SHALL BE HYDROSTATICALLY TESTED TO 150 PSI.

7. STREAM CROSSINGS SHALL NOT HAVE JOINTS BELOW STREAM CHANNEL (NORMAL WATER SURFACE ELEVATION) OR WITHIN TWO FEET OF BANKS UNLESS OTHERWISE NOTED.

8. PROP. RIM ELEVATION IS DESIGNED BASED ON UTILITY OWNER'S REQUIREMENT OF 18" ABOVE EXIST. GRADE.

9. SINCE SUBMERGED CREEK CROSSING FOR SL-4 BETWEEN APPROX. STA. 0+25 AND STA. 0+75 EXCEEDS 20 LF, NOTE 7 IS EXEMPTED FOR THIS CROSSING. ATTEMPT TO KEEP JOINTS OUTSIDE OF NORMAL WATER SURFACE TO THE EXTENT PRACTICAL.

10. WIDTH SPAN OF CREEK IS GREATER THAN 40 FEET, WHICH IS TYPICALLY THE LONGEST SPAN OF A TEMPORARY BRIDGE MAT. BENCH AND SLOPE APPROACHES TO ACCOMMODATE MAX. SPAN OF A TEMPORARY BRIDGE MAT. RESTORE BENCHED BANKS TO ORIGINAL CONDITIONS.

11. SL-5 SHALL BE INSTALLED AND OPERATIONAL BETWEEN SL-3 STA. 0+39.34 AND STA. 21+56.21. TRANSFER ALL IMPACTED SEWER SERVICES FROM EXIST. SEWER TO SL-5. THIS SEGMENT OF SL-5 SHALL BE INSTALLED PRIOR TO ANY INSTALLATION OF WL-21 AND WL-22. SEE ADDITIONAL SEQUENCE NOTES ON UC-21 UTILITY NOTES.

12. INSTALLATION OF SL-6 SHALL BE COORDINATED WITH INSTALLATION OF SL-5. MAINTAIN FLOW CONTROL PROVISIONS WHEN CONSTRUCTING SL-6 AND CUT IN INTO EXISTING SEWER ALONG IRELAND DRIVE. BYPASS PUMP AND PIPING TO MAINTAIN SEWER FLOW DURING CUT IN CONSTRUCTION SHALL BE SITUATED TO MAINTAIN TRAFFIC FLOW.

13. INSTALLATION OF SL-5 AND SL-6 THAT ARE CONTAINED IN IRELAND DRIVE SHALL BE PERFORMED BETWEEN 9:00 P.M. AND 6:00 A.M. TO MINIMIZE TRAFFIC IMPACTS. ALL OPEN EXCAVATIONS SHALL BE PLATED AND READY FOR TRAFFIC BY 6:00 A.M. UNLESS EXCAVATIONS ARE BACKFILLED/COMPACTED AND PATCHED BY 6:00 A.M.

UC-21 UTILITY NOTES

1. BUILD-OUT WL-21 FROM TAPPING SLEEVE AND VALVE (SEE SHEET UC-22) TO TERMINUS (SEE SHEET UC-20). ADHERE TO FOLLOWING PROVISIONS FOR WL-21, WL-22 AND SL-5 INSTALLATIONS:

A. BUILDOUT SL-5 FROM SL-3 TO SL-5, STA. 21+56.21. HAVE THIS SEGMENT OPERATIONAL AND ALL IMPACTED SEWER SERVICES TRANSFERRED TO SL-5.

B. RETAIN EXIST. SSMH BETWEEN PARCELS 246 AND 247 AND EXIST. 4" LATERAL THAT CONNECTS TO THIS EXIST. SSMH AND THAT SERVES PARCEL 247. THIS EXIST SSMH SHALL SERVE AS SEWER BYPASS SSMH TO MAINTAIN SEWER SERVICE FOR PARCEL 247 DURING BORE AND JACK OPERATION OF WL-22.

C. BORE AND JACK PIT FOR WL-22 WILL CONFLICT WITH SL-5 AND CONTINUATION OF WL-21 INSTALLATION TOWARDS IRELAND DRIVE. INSTALL BORE AND JACK FOR WL-22 AND THREAD CARRIER PIPE THROUGH ENCASUREMENT. PROTECT/SEAL/TEMPORARILY CAP CARRIER ENDS.

D. COMPLETE SL-5 INSTALLATION BETWEEN STA. 21+56.21 AND STA. 22+18.74. HAVE OPERATIONAL AND TRANSFER SEWER LATERAL FOR PARCEL 247 FROM EXIST. TERMINAL SSMH TO NEW TERMINAL SSMH.

E. INSTALL WL-21 BETWEEN TAPPING SLEEVE AND IN LINE VALVE NEAR STA. 19+25. INSTALL BRANCH VALVE (SOUTH AND NORTH SIDES OF RAEFORD) FOR WL-22 AND CONNECT TO CARRIER PIPE. PRESSURE TEST AND DISINFECT AND PLACE INTO SERVICE THIS PORTION OF WL-21 AND WL-22 AND TRANSFER SERVICES TO THIS PORTION OF WL-21.

F. COMPLETE INSTALLATION OF WL-21 TO ITS TERMINUS AND RECONNECT ALL EXISTING CROSS-LINES AND TRANSFER ALL SERVICES TO THIS PORTION OF WL-21.

2. EXISTING CROSS-LINES ON WL-21 SHALL BE RECONNECTED UNDER SERVICE INTERRUPTION ADHERING TO CUT IN CONSTRUCTION REQUIREMENTS. EXISTING 2" CROSS-LINE NEAR WL-21 STA. 11+25 SHALL BE INTERRUPTED USING EXISTING BRANCH VALVE. EXISTING 2" IS A DEAD-END LINE AND IS NOT LOOPED. RECONNECTION OF EXIST. 12" CROSS-LINE FOR IRELAND AVENUE (SEE SHEET UC-20) SHALL BE PERFORMED BETWEEN 9:00 P.M. AND 6:00 A.M. TO MINIMIZE TRAFFIC IMPACTS. KILLOUT EXIST. CROSS-LINES AT EXIST. BRANCH VALVES. AFTER COMPLETION OF WL-21 INCLUSIVE OF RECONNECTION OF CROSS-LINES AND SERVICES, CLOSE EV-62, EV- (SEE SHEET UC-22). KILL-OUT OF EXIST. 12" AC MAIN ON SOUTH SIDE OF RAEFORD ROAD BETWEEN ROXIE AVENUE AND PARCEL 223 (IRELAND CROSSING, SEE SHEET UC-20) SHALL BE COORDINATED AND PERFORMED AS DEFINED ON UC-22.

3. WL-20R2 SHALL BE INSTALLED FROM ITS CONNECTION TO WL-22 TO THE PROP. 30" IN-LINE VALVE NEAR STA. 33+10 TO FACILITATE SEQUENCE REQUIREMENTS AS DEFINED ON UC-19 UTILITY NOTES. CONNECT TO WL-22 RESTRAINED VALVE AND INSTALL AND RESTRAIN 30" VALVE TO FACILITATE CONTINUATION OF 30" TOWARDS FERN CREEK (SEE SHEET UC-22) ONCE WL-20R2 IS INSTALLED AND OPERATIONAL BETWEEN WL-22 AND STA. 24+25 (SEE SHEET UC-19).

4. WL-22 IS TO PROVIDE SOURCE WATER TO FACILITATE INSTALLATION SEQUENCE OF WL-20R2 AS NOTED IN NOTE 3.

5. EXISTING CROSS-LINES ON SEGMENT OF WL-20R2 BETWEEN WL-22 AND STA. 33+10 SHALL BE RECONNECTED UNDER SERVICE INTERRUPTION ADHERING TO CUT IN CONSTRUCTION REQUIREMENTS. KILLOUT EXIST. CROSS-LINES AT EXIST. BRANCH VALVES. AFTER COMPLETION OF WL-21 INCLUSIVE OF RECONNECTION OF CROSS-LINES AND SERVICES, CLOSE EV-67A. KILL-OUT OF EXIST. 12" AC MAIN ON NORTH SIDE OF RAEFORD ROAD BETWEEN FERN CREEK ROAD AND EV-67A SHALL BE COORDINATED AND PERFORMED WHEN WL-20R2 IS OPERATIONAL UP TO 30" IN LINE VALVE NEAR STA. 58+10 (SEE SHEET UC-22).

6. BUILD OUT WL-20R2 FROM 30" IN LINE VALVE NEAR STA. 53+55 TO 30" IN LINE VALVE NEAR STA. 58+10 (SEE SHEET UC-22). SEE ADDITIONAL SEQUENCE NOTES FOR CONTINUATION OF WL-20R2 ON UC-22 UTILITY NOTES.

RIGHT OF ENTRY NOTE:

7. CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING RIGHT OF ENTRY TO RECONNECT NEW MAIN TO EXISTING DOMESTIC AND FIRE LINE FOR PARCEL 229 IF RECONNECTIONS CANNOT BE MADE WITHIN PUE.

PARCEL 229 (BRYAN HONDA) NOTES:

8. CONFIRM DOMESTIC WATER SERVICE AND FIRE LINE SIZES FOR PARCEL 229. SIZES AS INDICATED ON SHEET UC-21 ARE BASED ON RECORD DRAWINGS. ACTUAL SIZES MAY DIFFER. COORDINATE SHUTDOWN WITH PROPERTY OWNER. VERIFY MATERIAL AND SIZES PRIOR TO ORDERING MATERIAL FOR RECONNECTION.

9. CONTRACTOR SHALL COORDINATE WITH BRYAN HONDA PRIOR TO CONSTRUCTION TO COORDINATE TRENCHING THROUGH PARKING LOT. CONTRACTOR SHALL POTHOLE IN ADVANCE OF CONSTRUCTION TO IDENTIFY ALL LIGHTING CIRCUITRY AND CONTROL CONDUIT. LOCATIONS ON DRAWINGS ARE APPROXIMATE AND SHALL BE VERIFIED.

10. CONTRACTOR SHALL NOT DISTURB ANY CONDUIT FOR POWER AND CONTROL WIRING FOR LIGHT POLE AND DRIVEWAY SENSORS. CONTRACTOR SHALL TAKE PRECAUTIONS AND MEASURES TO PROTECT EXISTING CONDUITS.

REVISIONS

UTILITY REV. - JULY 23, 2008 - REVISED ALL CONSTRUCTION NOTES

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UTILITY CONSTRUCTION

PROJECT REFERENCE NO.	UC-405	SHEET NO.	UC-3E
DESIGNED BY:	AMH		
DRAWN BY:	AMH/AB		
CHECKED BY:	AMH		
APPROVED BY:	MWF		
REVISED:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SECTION PHONE: (919) 707-6690 FAX: (919) 250-4161		Thank You for your business	

UTILITY CONSTRUCTION

UC-21 UTILITY NOTES:

11. CONTRACTOR SHALL PROTECT LIGHT POLES FROM TRENCHING OF WATER MAIN. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION AND ALL COSTS ASSOCIATED WITH DISMANTLING AND REINSTALLING LIGHT POLES DURING INSTALLATION OF WATER MAIN. ACCORDING TO DRAWINGS PROVIDED BY DEALERSHIP, POLE BASES ARE 2'-6" SQUARE AND INSTALLED 7' DEEP.

12. COORDINATE METER PLACEMENTS WITH 6" CONDUIT THAT POWERS AND CONTROLS DRIVEWAY SENSORS. BACKFLOW FOR 8" FIRE LINE IS PRESUMABLY IN BUILDING.

UC-22 UTILITY NOTES

1. SEE SEQUENCE NOTES FOR WL-21 AND WL-20R2 ON UC-21 UTILITY NOTES.

2. INSTALLATION OF 12" X 12" TAPPING SLEEVE FOR WL-21 AND OPEN CUT CROSSING OF ROXIE AVENUE SHALL BE PERFORMED BETWEEN 9:00 P.M. AND 6:00 A.M. TO MINIMIZE TRAFFIC IMPACTS. ALL OPEN EXCAVATIONS SHALL BE PLATED AND READY FOR TRAFFIC BY 6:00 A.M. UNLESS EXCAVATIONS ARE BACKFILLED/COMPACTED AND PATCHED BY 6:00 A.M.

3. SEE SEQUENCE NOTES FOR WL-20R2 ON UC-23 UTILITY NOTES. SEGMENT OF WL-20R2 BETWEEN 30" IN-LINE VALVE AT STA. 53+55 AND 30" IN-LINE VALVE NEAR STA. 73+05 SHALL BE INSTALLED AFTER WL-20R2 IS BUILT OUT AND OPERATIONAL ON EACH SIDE OF THIS SEGMENT.

4. RECONNECTION OF EXIST. 8" WATER MAIN IN FERNCREEK DRIVE SHALL BE UNDER SERVICE INTERRUPTION ADHERING TO CUT IN CONSTRUCTION REQUIREMENTS. RECONNECTION SHALL OCCUR AFTER 30" IS OPERATIONAL UP TO PROP. IN-LINE VALVE NEAR STA. 58+10. EXISTING 8" CROSS-LINE SHALL BE INTERRUPTED USING EXISTING BRANCH VALVE (EV-67). THE EXIST. 8" IN-LINE NORTH ON FERNCREEK DRIVE AND EV-67A (SEE SHEET UC-21). RECONNECTION OF EXIST. 12" CROSS-LINE FOR FERNCREEK DRIVE SHALL BE PERFORMED BETWEEN 9:00 P.M. AND 6:00 A.M. TO MINIMIZE TRAFFIC IMPACTS.

5. KILL OUT OF SOUTHSIDE WATER MAIN BETWEEN ROXIE AVENUE AND PARCEL 223 AND LINE SIDE OF TAPPING SLEEVE FOR WL-21 SHALL BE KILLED OUT. SEQUENCE ENTAILS PERMANENTLY CLOSING EV-63, EV-69 AND EV-62 AND TEMPORARILY CLOSING EV-67 AND EV-67A TO TAKE PRESSURE OFF OF EV-63. KILLOUT LINE SIDE OF TAPPING SLEEVE FOR WL-21 AND SOUTHSIDE OF EV-63. RE-OPEN EV-67 AND EV-67A TO CONTINUE TO FEED NORTHSIDE 12" MAIN ALONG RAEFORD ROAD UNTIL WL-20R2 IS OPERATIONAL UP TO 30" IN-LINE VALVE NEAR STA. 58+10 AND CROSS-LINE ON FERNCREEK DRIVE IS PLANNED FOR RECONNECTION. KILL-OUT OF 12" MAIN ON NORTHSIDE OF RAEFORD ROAD SHALL THEN BE BY CLOSING EV-67B AND CUTTING AND PLUGGING EV-67A. THOSE KILLOUTS OUTSIDE OF ONE LANE CLOSURE SHALL BE PERFORMED BETWEEN 9:00 P.M. AND 6:00 A.M. TO COMPLY WITH TRAFFIC CONTROL REQUIREMENTS.

UC-23 UTILITY NOTES

1. BUILD-OUT PROP. 12" WATER MAIN FROM TAPPING SLEEVE AND VALVE ON EXIST. 12" IN OWEN DRIVE TO WL-23 APPROX. STA. 11+40 AND CONTINUE BUILD-OUT OF WL-23 TO PROP. 12" IN-LINE VALVE NEAR STA. 0+05.

2. BUILD-OUT PROP. 8" WATER MAIN FROM TAPPING SLEEVE AND VALVE ON EXIST. 8" IN MCPHERSON CHURCH ROAD TO WL-20R2 APPROX. STA. 77+90 AND CONTINUE BUILD-OUT OF WL-20R2 TO PROP. 30" IN-LINE VALVE NEAR STA. 73+15.

3. INSTALL TAPPING SLEEVE AND VALVE, STUB-OUT RESTRAINED VALVE FOR FUTURE EXTENSION SOUTH DOWN OWEN DRIVE, STUB-OUT RESTRAINED VALVE FOR WL-23 FOR CONTINUATION OF 8" TO SERVE SHOPPING CENTER AND STUB-OUT RESTRAINED VALVE FOR CONTINUATION OF WL-23 TOWARDS OLD MCPHERSON CHURCH ROAD. THESE MAINS SHALL BE OPERATIONAL, AND ALL SERVICES AND IMPACTED CROSS-LINES SHALL BE TRANSFERRED OVER TO WL-23.

4. INSTALLATION OF THE FOLLOWING COMPONENTS OF WL-23 SHALL CONFORM TO TRAFFIC CONTROL REQUIREMENTS AND BE PERFORMED BETWEEN 9:00 P.M. AND 6:00 A.M. UNLESS WORK CAN BE PERFORMED UNDER ONE LANE CLOSURE:

A. TAPPING SLEEVE AND VALVE AND WATER MAIN ALONG OWEN DRIVE UP TO WL-23 STA. 11+50

B. WL-23 BETWEEN STA. 11+50 AND END OF LINE

C. WL-23 BETWEEN STA. 10+00 AND STA. 11+50

D. WL-23 BETWEEN STA. 4+00 AND STA. 5+50

E. RECEIVING PIT FOR WL-23 AND CONNECTION TO CARRIER PIPE

5. KILLOUT LINE SIDE OF TAPPING SLEEVE VALVE WITHIN OWEN DRIVE AND EXIST. 12" EXISTING WATER MAIN BETWEEN EV-71 AND EV-69 SHALL BE ONCE WL-20R2 IS INSTALLED COMPLETELY BETWEEN FERNCREEK DRIVE AND MCPHERSON CHURCH ROAD.

6. INSTALLATION OF WL-20R2 SHALL BE COMPLETED AND IN OPERATION UP TO PROP. 30" IN-LINE VALVE 73+05. TEMPORARY 2" MAIN SHALL BE INSTALLED AND EXTENDED TO SERVE PARCEL 249, 388 AND 378 PRIOR TO TAKING THE EXISTING 6" WATER MAIN ON THE NORTH SIDE OF RAEFORD BETWEEN MCPHERSON CHURCH ROAD AND OLD MCPHERSON CHURCH ROAD OUT OF SERVICE.

UC-23 UTILITY NOTES

7. ONCE TEMPORARY 2" MAIN IS IN SERVICE PRIOR TO INTERRUPTION OF SERVICE OF THE EXISTING 12" MAIN, RELOCATE METERS FOR PARCEL 249, 388 AND 378 AND CONNECT TO TEMPORARY MAIN.

8. INTERRUPT SERVICE TO EXIST. 6" USING EV-71A AND EV-69B (SEE SHEET UC-22) AND COMPLETE GAP ON WL-20R2 BETWEEN PROP. 30" IN-LINE VALVE NEAR WL-20R2 STA. 58+10 (SEE SHEET UC-22) AND PROP. 30" IN-LINE VALVE NEAR WL-20R2 STA. 73+05. CONNECT WL-20R2 TO WL-23. PROVIDE NEW SERVICES FROM WL-20R2 TO RELOCATED METERS FOR PARCELS 249, 288 AND 378 AND REMOVE TEMPORARY 2" MAINS.

9. INSTALLATION OF WL-20R2 BETWEEN APPROX. STA. 62+25 AND APPROX. STA. 65+50 SHALL CONFORM TO TRAFFIC CONTROL REQUIREMENTS AND BE PERFORMED BETWEEN 9:00 P.M. AND 6:00 A.M. PLATE ALL OPEN EXCAVATIONS OR HAVE IT READY FOR TRAFFIC BY 6:00 A.M.

10. RECONNECT EXIST. MAIN IN OLD MCPHERSON CHURCH ROAD UNDER SERVICE INTERRUPTION. LOCATION OF EXIST. WATER MAIN IN MCPHERSON CHURCH ROAD SHALL BE CONFIRMED PRIOR TO RECONNECTION. VERIFY VALVE NEST IN RAEFORD ROAD FOR APPROPRIATE VALVE TO SHUT FLOW OFF FROM EXISTING MAINS IN RAEFORD ROAD. SHUTDOWN SHOULD BE FACILITATED BY EV-69B AS IT APPEARS TO BE THE CORRECT VALVE IN RAEFORD AND THE EXISTING IN-LINE FURTHER NORTH ON MCPHERSON CHURCH ROAD.

11. ONCE WL-20R2 IS IN SERVICE AND THE GAP AS NOTED IN NOTE 8 AND RECONNECTION ON OLD MCPHERSON CHURCH ROAD IS COMPLETED, KILL OUT EXISTING MAINS BETWEEN RAILROAD CROSSING AND ALL-AMERICAN ROAD. 12" MAIN FROM EV-71 TOWARDS ROBESON STREET SHALL REMAIN ACTIVE. CLOSE EV-71 TO FACILITATE KILLOUT TOWARDS ALL AMERICAN.

UC23A/UC24A UTILITY NOTES

1. EXIST. 4" SEWER SERVICE FOR PARCEL 254 SHALL BE RE-ROUTED TO EXIST. SEWER MAIN ON NORTH SIDE. COORDINATE SEWER SERVICE RE-ROUTE WITH WL-23 AND STORM DRAINAGE INSTALLATION. EXIST. 4" SEWER SERVICE CONFLICTS WITH PROP. DRAINAGE SO IT SHALL BE RE-ROUTED PRIOR TO DRAINAGE WORK. PROP.

2. PROP. SL-7 SHALL BE INSTALLED PRIOR TO INSTALLATION OF WL-23 AND DRAINAGE. BUILD OUT FROM CONNECTION TO EXIST. SSMH NO. 1 AND HAVE PROP. SEWER AND SSMH NO. 2 IN SERVICE AND READY FOR SEWER BEFORE LAYING BACK TO EXIST. SSMH NO. 3. CONNECT TO EXIST. SSMH NO. 3 AND PLUG EXIST. INVERT OUT.

UC-24 UTILITY NOTES:

1. PURSUANT TO TRAFFIC CONTROL REQUIREMENTS, CONTRACTOR MUST BE COMPLETE WITH WORK ON THE SOUTH SIDE OF RAEFORD ROAD BEFORE BEGINNING WORK ON THE NORTH SIDE. CONTRACTOR SHALL NOT BE PERFORMING WATER MAIN INSTALLATION LONGITUDINALLY TO THE ROAD ON BOTH SIDES.

2. WL-26 BETWEEN THE PLUG AT STA. 0+00 TO THE FIRST IN-LINE VALVE AT MARLBOROUGH ROAD (APPROX STA. 12+50) (SEE UTILITY NOTES FOR SHEET UC-25), INCLUDING CROSS LINE CONNECTION FOR ANCESTRY DRIVE, SHALL BE INSTALLED AND OPERATIONAL BEFORE INSTALLING ANY OTHER PORTION OF WL-26. WL-26 FROM RESTRAINED PLUG (STA 0+00) TO HORIZONTAL 45 DEGREE BEND (APPROX. STA 3+29) SHALL BE INSTALLED BETWEEN 9:00 P.M. TO 6:00 A.M. TO COMPLY WITH TRAFFIC CONTROL REQUIREMENTS.

3. CONTRACTOR SHALL COORDINATE INSTALLATION OF WATER MAIN WITH ABANDONMENT/REMOVAL OF EXISTING STORM DRAINAGE AND INSTALLATION OF PROPOSED STORM DRAINAGE FROM STATION 0+00 TO STATION 3+29.

4. ANCESTRY DRIVE CROSS-LINE CONNECTION SHALL BE INSTALLED UNDER SERVICE INTERRUPTION AND SHALL BE COORDINATED WITH PWC'S PROJECT COORDINATOR. EXISTING VALVES EV-77 AND EV-78 SHALL BE USED TO FACILITATE RECONNECTION OF THE 8" WATER MAIN. CONTRACTOR SHALL CONNECT TO EXISTING 8" WATER MAIN USING FULLBODY SLEEVE AND RESTRAINING GLANDS. THIS PART OF THE CONNECTION SHALL BE SWABBED PRIOR TO RECONNECTION OF THE EXISTING 8" WATER MAIN. THE CROSS-LINE SHALL BE KILLED OUT BY PERMANENTLY CLOSING AND ABANDONING EXISTING VALVE EV-77. KILL OUT SHALL BE DONE BETWEEN 9:00 P.M. TO 6:00 A.M. TO COMPLY WITH TRAFFIC CONTROL REQUIREMENTS.

5. ANCESTRY DRIVE WILL BE THE SOURCE WATER FOR WL-26 TO IN-LINE VALVE AT STA. 25+43. SEE UTILITY NOTES FOR UC-26.

6. WL-28 BETWEEN IN-LINE VALVE AT APPROX. STATION 13+71 (SHEET UC-25) TO IN-LINE VALVE AT APPROX. STATION 9+81, INCLUDING FAIRFIELD ROAD CROSS-LINE CONNECTION, SHALL BE INSTALLED AND FULLY OPERATIONAL AFTER INSTALLATION OF SECTION WL-28 (SEE NOTE 18 ON UTILITY NOTES UC-25).

7. NEXT IN-LINE VALVE TO FACILITATE RECONNECTION OF THE 12" WATER MAIN IN FAIRFIELD ROAD IS APPROXIMATELY 760 FEET (NEAR INTERSECTION OF MICHAEL ST) FROM PROPOSED RECONNECTION POINT. THIS PLANNED SERVICE INTERRUPTION SHALL BE COORDINATED WITH THE ENGINEER.

8. ALL EXISTING METERS THAT OVERLAP THIS RELOCATION SEGMENT SHALL BE SWITCHED OVER TO THIS NEW SEGMENT. CROSS-LINE FOR FAIRFIELD ROAD SHALL BE FULLY RESTRAINED THROUGH BRANCH VALVES.

UC-24 UTILITY NOTES

9. CONTRACTOR SHALL CONNECT TO EXISTING 12" WATER MAIN USING FULL BODY SLEEVE AND RESTRAINING GLANDS. THIS PART OF THE CONNECTION SHALL BE SWABBED PRIOR TO RECONNECTION OF THE EXISTING 12" WATER MAIN. THE EXISTING CROSS LINE AT FAIRFIELD ROAD SHALL BE KILLED OUT BY PERMANENTLY CLOSING AND ABANDONING EXISTING VALVE EV-82. KILL OUT SHALL BE DONE BETWEEN 9:00 P.M. TO 6:00 A.M. TO COMPLY WITH TRAFFIC CONTROL REQUIREMENTS AND MINIMIZE SERVICE INTERRUPTION.

10. WL-28 BETWEEN IN-LINE VALVE AT APPROX. STATION 9+81 TO IN-LINE VALVE AT APPROX. STATION 3+00, INCLUDING CAMBRIDGE ST CROSS-LINE CONNECTION, SHALL BE INSTALLED AND FULLY OPERATIONAL AFTER INSTALLATION OF SECTION WL-28 (SEE NOTE 6).

11. NEXT IN-LINE VALVE TO FACILITATE RECONNECTION OF THE 6" WATER MAIN IN CAMBRIDGE ST IS APPROXIMATELY 372 FEET FROM PROPOSED RECONNECTION POINT. THIS PLANNED SERVICE INTERRUPTION SHALL BE COORDINATED WITH THE ENGINEER.

12. ALL EXISTING METERS THAT OVERLAP THIS RELOCATION SEGMENT SHALL BE SWITCHED OVER TO THIS NEW SEGMENT. CROSS-LINE FOR CAMBRIDGE ST SHALL BE FULLY RESTRAINED THROUGH BRANCH VALVES.

13. CONTRACTOR SHALL CONNECT TO EXISTING 6" WATER MAIN USING FULL BODY SLEEVE AND RESTRAINING GLANDS. THIS PART OF THE CONNECTION SHALL BE SWABBED PRIOR TO RECONNECTION OF THE EXISTING 6" WATER MAIN. THE EXISTING CROSS LINE AT CAMBRIDGE ST SHALL BE KILLED OUT BY PERMANENTLY CLOSING AND ABANDONING EXISTING VALVE EV-80. KILL OUT SHALL BE DONE BETWEEN 9:00 P.M. TO 6:00 A.M. TO COMPLY WITH TRAFFIC CONTROL REQUIREMENTS AND MINIMIZE SERVICE INTERRUPTION.

14. WL-28 BETWEEN IN-LINE VALVE AT APPROX. STATION 3+00 TO IN-LINE VALVE AT APPROX. STATION 0+35 SHALL BE INSTALLED AND FULLY OPERATIONAL AFTER INSTALLATION OF SECTION WL-28 (SEE NOTE 10).

15. NEXT IN-LINE VALVE TO FACILITATE RECONNECTION OF THE 8" WATER MAIN IN TWIN ACRES DR IS APPROXIMATELY 275 FEET FROM PROPOSED RECONNECTION POINT. THIS PLANNED SERVICE INTERRUPTION SHALL BE COORDINATED WITH THE ENGINEER.

16. ALL EXISTING METERS THAT OVERLAP THIS RELOCATION SEGMENT SHALL BE SWITCHED OVER TO THIS NEW SEGMENT.

17. CONTRACTOR SHALL CONNECT TO EXIST. 8" GATE VALVE USING NIPPLE AND FULLBODY SLEEVE AND RESTRAINING GLANDS AND LAY BACK INTO EXISTING 8" WATER MAIN IN TWIN ACRES DR. WITH A MINIMUM OF 20 LF OF RESTRAINED JOINT UNDER PLANNED SERVICE INTERRUPTION AND SHALL BE COORDINATED WITH THE ENGINEER. THIS PART OF WL-28 SHALL BE SWABBED PRIOR TO RECONNECTION OF THE EXISTING 8" WATER MAIN.

18. THE EXISTING 8" WATER MAIN AT TWIN ACRES DRIVE SHALL BE KILLED OUT BY PERMANENTLY CLOSING AND ABANDONING EXISTING VALVE EV-75. KILL OUT SHALL BE DONE BETWEEN 9:00 P.M. TO 6:00 A.M. TO COMPLY WITH TRAFFIC CONTROL REQUIREMENTS AND MINIMIZE SERVICE INTERRUPTION.

UC-24A UTILITY NOTES:

1. TEMPORARY SHORING IF REQUIRED FOR BUILDING FOUNDATION PROTECTION OR MAINTENANCE OF TRAFFIC WILL BE PAID AS TEMPORARY SHORING IN SQUARE FEET BELOW GROUND SURFACE.

2. CONTRACTOR SHALL SUBMIT A DETAILED SEWAGE BYPASS PLAN FOR MAINTAINING ALL SEWAGE FLOWS THAT WILL BE IMPACTED BY THE SEWER RELOCATION AND ADHERE TO ALL REQUIREMENTS IN OWNER'S WASTE WATER CONTROL SPECIFICATIONS.

3. CONTRACTOR SHALL VERIFY SEWER SERVICE DEPTH AND LOCATION PRIOR TO ORDERING MATERIALS.

4. CONTRACTOR SHALL REPLACE EXISTING CLEAN OUT AND SEWER SERVICE LINE AT SAME DEPTH AND SLOPE.

5. CONTRACTOR SHALL REMOVE EXISTING CLEAN OUT AND EXISTING SEWER SERVICE TO PROPOSED CLEAN OUT LOCATION. CONTRACTOR SHALL GROUT FILL EXISTING SERVICE CORE IN MANHOLE WITH NON-SHRINK GROUT.

6. SEE SEWER FROM 23A NOTES FOR SEWER CONNECTION TO OUTFALL.

REVISIONS

UTILITY REV. - JULY 23, 2008 - REVISED ALL CONSTRUCTION NOTES

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UTILITY CONSTRUCTION

PROJECT REFERENCE NO.		SHEET NO.	
U-4405		UC-36	
DESIGNED BY:	AMH		
DRAWN BY:	AMH/AB		
CHECKED BY:	AMH		
APPROVED BY:	MWF		
REVISED:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151			

UTILITY CONSTRUCTION

UC-27 UTILITY NOTES:

- PURSUANT TO TRAFFIC CONTROL REQUIREMENTS, CONTRACTOR MUST BE COMPLETE WITH WORK ON THE SOUTH SIDE OF RAEFORD ROAD BEFORE BEGINNING WORK ON THE NORTH SIDE. CONTRACTOR SHALL NOT BE PERFORMING WATER MAIN INSTALLATION LONGITUDINALLY TO THE ROAD ON BOTH SIDES.
- WL-25 IS TO PROVIDE SOURCE WATER TO FACILITATE INSTALLATION SEQUENCE FOR WL-26 BETWEEN 12" IN-LINE VALVE AT STA. 40+15 TO 12" IN-LINE VALVE AT STA. 30+64.
- WL-26 BETWEEN IN-LINE VALVE AT APPROX. STA. 30+64 TO THE IN-LINE VALVE AT APPROX. STA. 40+15 SHALL BE INSTALLED AND FULLY OPERATIONAL, INCLUDING FORSYTHE DRIVE CROSS-LINE CONNECTION, PRIOR TO CONNECTION TO PREVIOUSLY INSTALLED WL-25 SEGMENT. (SEE UTILITY NOTES FOR SHEET UC-32)
- PROPOSED WL-26 BRANCH VALVE (APPROX. STA. 40+34) SHALL BE INSTALLED AND REMAIN CLOSED. THE INSTALLATION OF THE PORTION OF WL-26 CROSSING RAEFORD ROAD SHALL BE OPEN CUT SIMULTANEOUSLY WITH THE PROPOSED 24" PARALLEL DRAINAGE PIPE.
- ALL EXISTING METERS THAT OVERLAP THIS RELOCATION SEGMENT SHALL BE SWITCHED OVER TO THIS NEW SEGMENT. CROSS LINE IN FORSYTHE ROAD SHALL BE FULLY RESTRAINED THROUGH BRANCH VALVES.
- THE NEXT IN-LINE VALVE FOR EXISTING 6" WATER LINE LOCATED IN FORSYTHE DRIVE IS APPROX. 400 LF FROM TIE-IN CONNECTION AND HAS A LOOPED SYSTEM AND AN EXISTING VALVE AT THE INTERSECTION OF BREEZEWOOD AVE APPROX. 370 LF FROM TIE-IN LOCATION. CONTRACTOR TO COORDINATE WITH THE ENGINEER TO FACILITATE TEMPORARY SHUTDOWN.
- CONTRACTOR SHALL CONNECT TO EXISTING 6" WATER MAIN USING FULLBODY SLEEVE AND RESTRAINING GLANDS. THIS PART OF THE CONNECTION SHALL BE SWABBED PRIOR TO RECONNECTION OF THE EXISTING 6" WATER MAIN. THE EXISTING CROSS LINE AT FORSYTHE DRIVE SHALL BE KILLED OUT BY PERMANENTLY CLOSING AND ABANDONING EXISTING VALVE EV-102. KILL OUT SHALL BE DONE BETWEEN 9:00 P.M. TO 6:00 A.M. TO COMPLY WITH TRAFFIC CONTROL REQUIREMENTS.
- WL-26 FROM 12" BRANCH VALVE (APPROX. STA. 40+34) TO 12" IN-LINE VALVE (APPROX. STA. 41+10) AND 12" X12" X12" TEE (APPROX. STA. 42+25 WL-28) SHALL BE INSTALLED, RESTRAINED, AND FULLY OPERATIONAL PRIOR TO MOVING TO INSTALLATION OF WL-28.
- WL-28 BETWEEN THE 12" X8" REDUCER (APPROX. STA. 41+95) TO 12" X12" X12" TEE (APPROX. STA. 45+22) SHALL BE INSTALLED AND FULLY OPERATIONAL PRIOR TO MOVING TO INSTALLATION OF WL-27. THIS INSTALLATION SHALL BE PERFORMED BETWEEN 9:00 P.M. AND 6:00 A.M. ALL OPEN EXCAVATIONS SHALL BE PLATED AND READY FOR TRAFFIC BY 6:00 A.M. UNLESS EXCAVATIONS ARE BACKFILLED/COMPACTED AND PATCHED BY 6:00 A.M.
- WL-27 BETWEEN 12" IN-LINE VALVE (APPROX. STA. 0+13) TO 6" X6" X6" TAPPING SLEEVE AND VALVE ON AMIGO DRIVE (APPROX. STA. 8+67), INCLUDING WL-30 FROM 6" X6" X6" TAPPING SLEEVE & VALVE ON SOUTH SIDE OF RAEFORD ROAD SHALL BE INSTALLED AND OPERATIONAL PRIOR TO TIE-IN OF EXISTING 12" WATER MAIN IN MCPHEE DRIVE.
- ALL EXISTING METERS THAT OVERLAP THIS RELOCATION SEGMENT SHALL BE SWITCHED OVER TO THIS NEW SEGMENT. CROSS LINE IN FORSYTHE ROAD SHALL BE FULLY RESTRAINED THROUGH BRANCH VALVES.
- THE EXISTING 12" WATER MAIN LOCATED IN MCPHEE DRIVE HAS AN IN-LINE VALVE APPROX. 83 FEET FROM TIE-IN LOCATION. SINCE EXISTING 12-INCH WATER MAIN MAY NOT BE RESTRAINED, THERE IS A LOOPED SYSTEM AND FOUR EXISTING VALVES IN MCBAIN DRIVE (EV-118, EV-119, EV-120 AND EV-121) TO FACILITATE SHUTDOWN FOR KILL-OUT OF EXISTING 12" CI WATER MAIN. CONTRACTOR TO COORDINATE WITH THE ENGINEER TO FACILITATE TEMPORARY SHUTDOWN.
- CONTRACTOR SHALL CONNECT TO EXISTING 12" WATER MAIN USING FULLBODY SLEEVE AND RESTRAINING GLANDS. THIS PART OF THE CONNECTION SHALL BE SWABBED PRIOR TO RECONNECTION OF THE EXISTING 12" WATER MAIN. THE EXISTING 12" WATER MAIN AT MCPHEE DRIVE SHALL BE KILLED OUT BY PERMANENTLY CLOSING AND ABANDONING EXISTING VALVE EV-107. KILL OUT SHALL BE DONE BETWEEN 9:00 P.M. TO 6:00 A.M. TO COMPLY WITH TRAFFIC CONTROL REQUIREMENTS AND MINIMIZE SERVICE INTERRUPTION.
- EXISTING VALVES, EV-112, EV-113, EV-109, EV-111, EV-110 AND IN-LINE VALVE NEAR CLUB CIRCLE (APPROX. 578 FEET FROM EV-113) TO FACILITATE SHUTDOWN FOR KILL-OUT OF EXISTING 6" CI WATER MAIN. PLANNED SHUT DOWN SHALL BE COORDINATED WITH THE ENGINEER.
- KILL OUT OF EXISTING WATER MAIN AT THE INTERSECTION OF AMIGO DRIVE AND RAEFORD ROAD SHALL INCLUDE THE ABANDONMENT OF 60 LF OF 6" PIPE AND SHALL BE PER PWC DETAIL W.22
- WL-29 SHALL BE BUILT OUT FROM TAPPING SLEEVE & VALVE. NEXT IN-LINE VALVE TO FACILITATE SHUTDOWN OF WL-29 IS APPROXIMATELY 187 LF FROM PROPOSED RECONNECTION POINT.
- CONNECT EXISTING 2" WATER MAIN TO NEW 8" WATER MAIN USING SADDLE TAP.

UC-27 UTILITY NOTES:

- CONTRACTOR SHALL CONNECT TO EXISTING 6" WATER MAIN USING FULLBODY SLEEVE AND RESTRAINING GLANDS. THIS PART OF THE CONNECTION SHALL BE SWABBED PRIOR TO RECONNECTION OF THE EXISTING 6" WATER MAIN. THE EXISTING 6" WATER MAIN AT FAIRWAY DRIVE SHALL BE KILLED OUT BY PERMANENTLY CLOSING AND ABANDONING EXISTING VALVE EV-111. KILL OUT SHALL BE DONE BETWEEN 9:00 P.M. TO 6:00 A.M. TO COMPLY WITH TRAFFIC CONTROL REQUIREMENTS AND MINIMIZE SERVICE INTERRUPTION.
- WL-28 BETWEEN THE 12" X8" REDUCER (APPROX. STA. 41+95) TO THE NEXT 8" IN-LINE VALVE (APPROX. STA. 37+58 ON SHEET UC-26) SHALL BE INSTALLED AND FULLY OPERATIONAL PRIOR TO INSTALLING WL-28 SECTION BETWEEN IN-LINE VALVES (APPROX. STA. 27+22 AND APPROX. STA. 37+58) ON SHEET UC-26. THE INSTALLATION BETWEEN HORIZONTAL 45 DEGREE BEND (APPROX. STA. 40+45) AND THE 12" X8" REDUCER (APPROX. STA. 41+95) SHALL BE PERFORMED BETWEEN 9:00 P.M. AND 6:00 A.M. ALL OPEN EXCAVATIONS SHALL BE PLATED AND READY FOR TRAFFIC BY 6:00 A.M. UNLESS EXCAVATIONS ARE BACKFILLED/COMPACTED AND PATCHED BY 6:00 A.M.
- ALL EXISTING METERS THAT OVERLAP THIS RELOCATION SEGMENT SHALL BE SWITCHED OVER TO THIS NEW SEGMENT.

UC-27A UTILITY NOTES:

- TEMPORARY SHORING IF REQUIRED FOR BUILDING FOUNDATION PROTECTION OR MAINTENANCE OF TRAFFIC WILL BE PAID AS TEMPORARY SHORING IN SQUARE FEET BELOW GROUND SURFACE.
- CONTRACTOR SHALL SUBMIT A DETAILED SEWAGE BYPASS PLAN FOR MAINTAINING ALL SEWAGE FLOWS THAT WILL BE IMPACTED BY THE SEWER RELOCATION AND ADHERE TO ALL REQUIREMENTS IN OWNER'S WASTE WATER CONTROL SPECIFICATIONS.
- CONTRACTOR SHALL VERIFY SEWER SERVICE DEPTH AND LOCATION PRIOR TO ORDERING MATERIALS.
- CONTRACTOR SHALL REPLACE EXISTING CLEAN OUT AND SEWER SERVICE LINE AT SAME DEPTH AND SLOPE.
- CONTRACTOR SHALL REMOVE EXISTING CLEAN OUT AND EXISTING SEWER SERVICE TO PROPOSED CLEAN OUT LOCATION. CONTRACTOR SHALL GROUT FILL EXISTING SERVICE CORE IN MANHOLE WITH NON-SHRINK GROUT.
- CONTRACTOR SHALL COORDINATE WITH DRAINAGE INSTALLATION OF 15" AND 18" STORM PIPE BETWEEN DRAINAGE STRUCTURE 2734, 2724 AND 2725 TO REPLACE 200 FEET OF EXISTING 12" VCP PIPE WITH DIP AT SAME SLOPE.

UC-32 UTILITY NOTES:

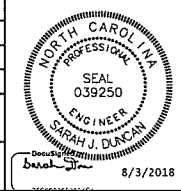
- PURSUANT TO TRAFFIC CONTROL REQUIREMENTS, CONTRACTOR MUST BE COMPLETE WITH WORK ON THE SOUTH SIDE OF RAEFORD ROAD BEFORE BEGINNING WORK ON THE NORTH SIDE. CONTRACTOR SHALL NOT BE PERFORMING WATER MAIN INSTALLATION LONGITUDINALLY TO THE ROAD ON BOTH SIDES.
- WL-25 FROM 12" X12" X12" TAPPING SLEEVE & VALVE ON ROBESON STREET INCLUDING CROSS-LINE CONNECTION CWL-EY46 TO IN-LINE VALVE APPROX. STA. 40+15 ON WL-26 AND 12" BRANCH VALVE APPROX. STA. 40+34 ON WL-26 (SEE UTILITY NOTES ON UC-27) SHALL BE INSTALLED AND OPERATIONAL.
- ALL EXISTING METERS THAT OVERLAP THIS RELOCATION SEGMENT SHALL BE SWITCHED OVER TO THIS NEW SEGMENT. CROSS-LINE IN CWL-EY46 SHALL BE FULLY RESTRAINED THROUGH BRANCH VALVES.
- EXISTING IN-LINE VALVE, EV-106 (AT INTERSECTION OF RAEFORD RD AND ROBESON ST, AND EXISTING 12" IN-LINE VALVE LOCATED APPROX. 685 LF FROM APPROX. TIE-IN LOCATION TO FACILITATE SHUTDOWN FOR KILL-OUT OF EXISTING 12" AC WATER MAIN. PLANNED SHUT DOWN SHALL BE COORDINATED WITH THE ENGINEER.
- KILL OUT OF EXISTING 12" AC WATER MAIN AT PROP. 12" TAPPING SLEEVE AND VALVE SHALL INCLUDE FULLY GROUT OF 60 LF OF 12" PIPE AND SHALL BE PER PWC DETAIL W.22
- CWL-EY46 AN 8" CUT-IN VALVE SHALL BE INSTALLED BETWEEN 9:00 P.M. AND 6:00 A.M. TO MINIMIZE SERVICE INTERRUPTION. EXISTING IN-LINE VALVE EV-115 (IN FAIRWAY DRIVE), EV-114 (IN ROBESON ST), AND EXISTING BRANCH VALVES EV-116 AND EV-117 TO FACILITATE SHUTDOWN FOR INSTALLATION OF 8" CUT-IN VALVE. PLANNED SHUT DOWN SHALL BE COORDINATED WITH THE ENGINEER.
- AFTER INSTALLATION OF 8" CUT-IN VALVE, CONTRACTOR SHALL CONNECT TO EXISTING 8" WATER MAIN USING FULLBODY SLEEVE AND RESTRAINING GLANDS OUTSIDE OF EXISTING 16" ENCASEMENT. THIS PART OF THE CONNECTION SHALL BE SWABBED PRIOR TO RECONNECTION OF THE EXISTING 8" WATER MAIN. THE CROSS-LINE SHALL BE KILLED OUT BY PERMANENTLY CLOSING AND ABANDONING EXISTING VALVE EV-106. IF THERE IS NOT ENOUGH EXISTING 8" WATER MAIN PIPE BETWEEN EXISTING ENCASEMENT AND EXISTING 12" X 8" TAPPING SLEEVE AND VALVE (EV-114) TO CONNECT TO, CONTRACTOR SHALL PROPERLY REMOVE EXISTING 12" X 8" TAPPING SLEEVE (EV-114) AFTER KILL OUT OF EXISTING 12" WATER MAIN.

UC-33 UTILITY NOTES:

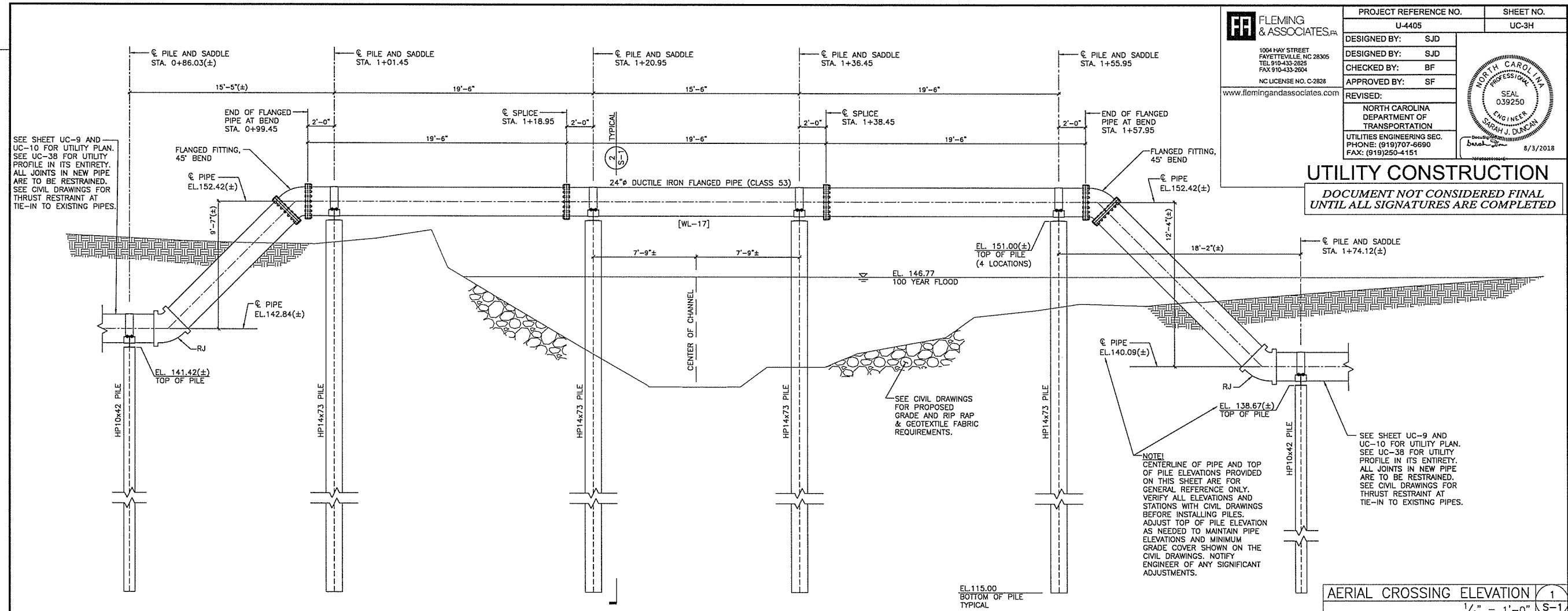
- CONTRACTOR SHALL SUBMIT A DETAILED SEWAGE BYPASS PLAN FOR MAINTAINING ALL SEWAGE FLOWS THAT WILL BE IMPACTED BY THE SEWER RELOCATION AND ADHERE TO ALL REQUIREMENTS IN OWNER'S WASTE WATER CONTROL SPECIFICATIONS.
- CONTRACTOR SHALL VERIFY SEWER SERVICE DEPTH AND LOCATION PRIOR TO ORDERING MATERIALS.
- SL-8 SHALL BE INSTALLED AND OPERATIONAL FROM EXIST MANHOLE AT STA. 0+00 TO PROP. MANHOLE MH-4 AT STA. 7+35.71 PRIOR TO INSTALLING 4" SEWER SERVICE IN PROP. MANHOLE MH-4, SL-9 AND SL-10.
- CONTRACTOR SHALL RETAIN DOWNSTREAM PORTION OF EXISTING SEWER OF PROP. MH-4 SO EXISTING 4" SEWER SERVICE CAN REMAIN ACTIVE UNTIL NEW SEWER IS READY FOR SERVICE LATERAL RELOCATION.
- INSTALLATION OF SL-9 AND SL-10 SHALL BE COORDINATED WITH INSTALLATION OF SL-8. MAINTAIN FLOW CONTROL PROVISIONS WHEN CONSTRUCTING SL-9 AND SL-10. BYPASS PUMP AND PIPING TO MAINTAIN SEWER FLOW DURING CUT IN CONSTRUCTION SHALL BE SITUATED TO MAINTAIN TRAFFIC FLOW.
- AFTER SEWER IS INSTALLED AND OPERATIONAL WITHIN EXECUTIVE PLACE, CONTRACTOR SHALL PLUG INVERT OF 12" INSIDE EXISTING MANHOLE LOCATED IN RAEFORD ROAD. THIS WORK SHALL BE PERFORMED BETWEEN 9:00 P.M. AND 6:00 A.M. TO MINIMIZE TRAFFIC IMPACTS.

TEMPORARY SHORING LOCATION TABLE									
Shoring Location No.	Begin Station & Offset	End Station & Offset	Estimated		Shoring Location Type	Square Footage (ft²)	Trench Length (ft)	Notes	Remarks
			Average Height (ft)	Maximum Height (ft)					
No. 1	67+17.82 L- 43.50'	67+46.02 L- 57.17'	6.5	10.81	Roadway (Longitudinal Trench)	715	53		
No. 2	147+00.00 L- 162.50'	147+00.00 L- 161.50'	9.55	9.71	Roadway (Perpendicular Trench)	286.5	13		
No. 3	148+32.49 L- 25+00'	148+11.69 L- 225.00'	6.75	6.75	Bore (Retaining) Within Roadway	170	13		
No. 4	154+33.76 L- 49.20'	154+33.76 L- 62.97'	4.25	4.55	Bore (Retaining) Adjacent to Roadway	370	13		
No. 5	135+42.27 L- 74.20'	135+42.27 L- 84.20'	10	10	Bore (Retaining) Adjacent to Roadway	460	13		
No. 6	155+30.07 L- 35.20'	155+30.07 L- 46.16'	6	6	Roadway (Longitudinal Trench)	1500	120		
No. 7	154+34.83 L- 77.40'	154+44.40 L- 87.10'	7	12	Roadway (Longitudinal Trench)	1820	125		
No. 8	163+00.00 L- 61.16'	163+00.00 L- 60.74'	5	5	Roadway (Longitudinal Trench)	1300	125		
No. 9	160+00.00 L- 65.72'	160+00.00 L- 65.72'	6.25	6.5	Bore (Retaining) Adjacent to Roadway	250	13		
No. 10	160+00.00 L- 65.72'	160+00.00 L- 65.72'	5.3	5.3	Bore (Retaining) Adjacent to Roadway	650	43		
No. 11	160+00.00 L- 65.72'	160+00.00 L- 65.72'	8	8	Roadway (Perpendicular Trench)	640	27		
No. 12	160+00.00 L- 65.72'	160+00.00 L- 65.72'	6.5	6.5	Roadway (Perpendicular Trench)	315	23		
No. 13	160+00.00 L- 65.72'	160+00.00 L- 65.72'	8	13	Roadway (Perpendicular Trench)	13280	820		
No. 14	153+42.17 L- 41.37'	153+57.16 L- 53.50'	5	9.5	Roadway (Longitudinal Trench)	3630	200		
No. 15	154+37.30 L- 67.33'	154+47.75 L- 41.43'	6.5	6.5	Roadway (Longitudinal Trench)	1385	100		
No. 16	157+00.00 L- 40.50'	157+40.32 L- 40.75'	6	6	Roadway (Longitudinal Trench)	5744	354		
No. 17	160+00.00 L- 18.16'	160+43.85 L- 28.18'	14	14	Roadway (Perpendicular Trench)	260	5		
No. 18	161+00.00 L- 19.80'	161+01.34 L- 50.78'	10	14	Bore (Retaining) Within Roadway	1230	43		
No. 19	161+00.00 L- 19.80'	161+00.00 L- 19.80'	5.5	5.5	Roadway (Perpendicular Trench)	1735	150		
No. 20	174+30.81 L- 21.20'	174+30.81 L- 19.79'	10	10	Roadway (Perpendicular Trench)	200	5		
No. 21	162+25.02 L- 34.30'	162+25.02 L- 19.63'	10	10	Roadway (Perpendicular Trench)	200	5		
No. 22	164+09.72 L- 21.00'	164+09.72 L- 19.56'	8.9	8.9	Roadway (Perpendicular Trench)	178	5		
No. 23	165+35.81 L- 24.55'	165+35.81 L- 19.55'	8.9	8.9	Roadway (Perpendicular Trench)	178	5		
No. 24	167+00.00 L- 24.89'	167+00.00 L- 19.69'	10	10	Roadway (Perpendicular Trench)	200	5		
No. 25	168+40.89 L- 24.85'	168+40.89 L- 19.65'	10	10	Roadway (Perpendicular Trench)	200	5		
No. 26	168+40.89 L- 24.85'	168+40.89 L- 19.65'	10	10	Roadway (Perpendicular Trench)	200	5		
No. 27	168+40.89 L- 24.85'	168+40.89 L- 19.65'	10	10	Roadway (Perpendicular Trench)	200	5		
No. 28	168+40.89 L- 24.85'	168+40.89 L- 19.65'	10	10	Roadway (Perpendicular Trench)	200	5		
No. 29	169+15.06 L- 27.00'	169+15.06 L- 27.50'	13	13	Roadway (Perpendicular Trench)	260	5		
No. 30	169+15.06 L- 27.00'	169+15.06 L- 27.50'	13	13	Roadway (Perpendicular Trench)	260	5		
No. 31	169+15.06 L- 27.00'	169+15.06 L- 27.50'	13	13	Roadway (Perpendicular Trench)	260	5		
No. 32	169+15.06 L- 27.00'	169+15.06 L- 27.50'	13	13	Roadway (Perpendicular Trench)	260	5		
No. 33	169+15.06 L- 27.00'	169+15.06 L- 27.50'	13	13	Roadway (Perpendicular Trench)	260	5		
No. 34	169+15.06 L- 27.00'	169+15.06 L- 27.50'	13	13	Roadway (Perpendicular Trench)	260	5		
No. 35	169+15.06 L- 27.00'	169+15.06 L- 27.50'	13	13	Roadway (Perpendicular Trench)	260	5		
No. 36	169+15.06 L- 27.00'	169+15.06 L- 27.50'	13	13	Roadway (Perpendicular Trench)	260	5		
No. 37	169+15.06 L- 27.00'	169+15.06 L- 27.50'	13	13	Roadway (Perpendicular Trench)	260	5		
No. 38	169+15.06 L- 27.00'	169+15.06 L- 27.50'	13	13	Roadway (Perpendicular Trench)	260	5		
No. 39	169+15.06 L- 27.00'	169+15.06 L- 27.50'	13	13	Roadway (Perpendicular Trench)	260	5		
No. 40	169+15.06 L- 27.00'	169+15.06 L- 27.50'	13	13	Roadway (Perpendicular Trench)	260	5		
No. 41	169+15.06 L- 27.00'	169+15.06 L- 27.50'	13	13	Roadway (Perpendicular Trench)	260	5		
No. 42	169+15.06 L- 27.00'	169+15.06 L- 27.50'	13	13	Roadway (Perpendicular Trench)	260	5		
No. 43	169+15.06 L- 27.00'	169+15.06 L- 27.50'	13	13	Roadway (Perpendicular Trench)	260	5		
No. 44	169+15.06 L- 27.00'	169+15.06 L- 27.50'	13	13	Roadway (Perpendicular Trench)	260	5		
No. 45	169+15.06 L- 27.00'	169+15.06 L- 27.50'	13	13	Roadway (Perpendicular Trench)	260	5		
No. 46	169+15.06 L- 27.00'	169+15.06 L- 27.50'	13	13	Roadway (Perpendicular Trench)	260	5		
No. 47	169+15.06 L- 27.00'	169+15.06 L- 27.50'	13	13	Roadway (Perpendicular Trench)	260	5		
No. 48	169+15.06 L- 27.00'	169+15.06 L- 27.50'	13	13	Roadway (Perpendicular Trench)	260	5		
No. 49	169+15.06 L- 27.00'	169+15.06 L- 27.50'	13	13	Roadway (Perpendicular Trench)	260	5		
No. 50	169+15.06 L- 27.00'	169+15.06 L- 27.50'	13	13	Roadway (Perpendicular Trench)	260	5		
No. 51	169+15.06 L- 27.00'	169+15.06 L- 27.50'	13	13	Roadway (Perpendicular Trench)	260	5		
No. 52	169+15.06 L- 27.00'	169+15.06 L- 27.50'	13	13	Roadway (Perpendicular Trench)	260	5		
No. 53	169+15.06 L- 27.00'	169+15.06 L- 27.50'	13	13	Roadway (Perpendicular Trench)	260	5		
No. 54	169+15.06 L- 27.00'	169+15.06 L- 27.50'	13	13	Roadway (Perpendicular Trench)	260	5		
No. 55	169+15.06 L- 27.00'	169+15.06 L- 27.50'	13	13	Roadway (Perpendicular Trench)	260	5		
No. 56	169+15.06 L- 27.00'	169+15.06 L- 27.50'	13	13	Roadway (Perpendicular Trench)	260	5		
No. 57	169+15.06 L- 27.00'	169+15.06 L- 27.50'	13	13	Roadway (Perpendicular Trench)	260	5		
No. 58	169+15.06 L- 27.00'	169+15.06 L- 27.50'	13	13	Roadway (Perpendicular Trench)	260	5		
No. 59	169+15.06 L- 27.00'	169+15.06 L- 27.50'	13	13	Roadway (Perpendicular Trench)	260	5		
No. 60	169+15.06 L- 27.00'	169+15.06 L- 27.50'	13	13	Roadway (Perpendicular Trench)	260	5		
No. 61	169+15.06 L- 27.00'	169+15.06 L- 27.50'	13	13	Roadway (Perpendicular Trench)	260	5		
No. 62	169+15.06 L- 27.00'	169+15.06 L- 27.50'	13	13	Roadway (Perpendicular Trench)	260	5		
No. 63	169+15.06 L- 27.00'	169+15.06 L- 27.50'	13	13	Roadway (Perpendicular Trench)	260	5		
No. 64	169+15.06 L- 27.00'	169+15.06 L- 27.50'	13	13	Roadway (Perpendicular Trench)	260	5		
No. 65	169+15.06 L- 27.00'	169+15.06 L- 27.50'	13	13	Roadway (Perpendicular Trench)	260	5		
No. 66	169+15.06 L- 27.00'	169+15.06 L- 27.50'	13	13	Roadway (Perpendicular Trench)	260	5		
No. 67	169+15.06 L- 27.00'	169+15.06 L- 27.50'	13	13	Roadway (Perpendicular Trench)	260	5		
No. 68	169+15.06 L- 27.00'	169+15.06 L- 27.50'	13	13	Roadway (Perpendicular Trench)	260	5		
No. 69	169+15.06 L- 27.00'	169+15.06 L- 27.50'	13	13	Roadway (Perpendicular Trench)	260	5		
No. 70	169+15.06 L- 27.00'	169+15.06 L- 27.50'	13	13	Roadway (Perpendicular Trench)	260	5		
No. 71	169+15.06 L- 27.00'	169+15.06 L- 27.50'	13	13	Roadway (Perpendicular Trench)	260	5		
No. 72	169+15.06 L- 27.00'	169+15.06 L- 27.50'	13	13	Roadway (Perpendicular Trench)	260	5		
No. 73	169+15.06 L- 27.00'	169+15.06 L- 27.50'	13	13	Roadway (Perpendicular Trench				

FA FLEMING & ASSOCIATES, P.A.
 1004 HAY STREET
 FAYETTEVILLE, NC 28305
 TEL 910-433-2825
 FAX 910-433-2804
 NC LICENSE NO. C-2828
 www.flemingandassociates.com

PROJECT REFERENCE NO.	U-4405	SHEET NO.	UC-3H
DESIGNED BY:	SJD		
CHECKED BY:	BF		
APPROVED BY:	SF		
REVISED:			

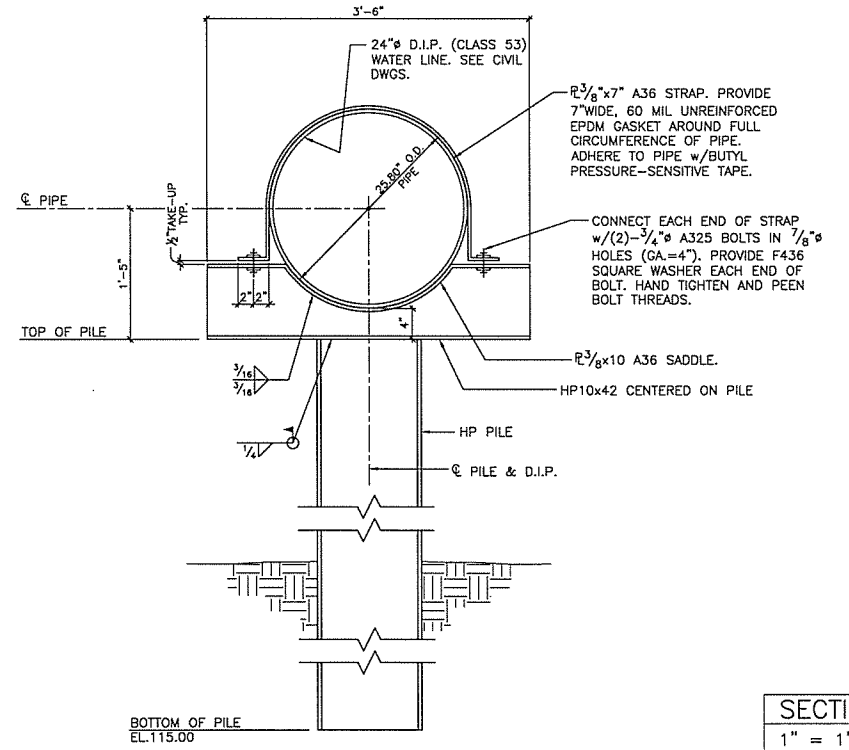
UTILITY CONSTRUCTION
 DOCUMENT NOT CONSIDERED FINAL
 UNTIL ALL SIGNATURES ARE COMPLETED



AERIAL CROSSING ELEVATION 1
 1/4" = 1'-0" S-1

- Design Loads**
 - Wind Load:
Basic Wind Speed (3-second gust) 100 mph (ASCE 7-05/2012 NC Building Code)
Exposure Category C
 - Estimated stream flow at flood stage: 8 ft/sec.
- Materials**
 - Structural Steel: ASTM A-36 U.N.O., ASTM A-572 Grade 50 at HP shapes (Hot-dip galvanized per ASTM A123)
 - Bolts: ASTM A-325N (Hot-dip galvanized per ASTM A153)
 - Weld Electrodes: E70
 - Pile Driving Equipment:
 - All piles shall be driven to the specified embed depth with a steam, air, or hydraulically operated powered pile hammer having a rated energy of not less than 30,000 ft. lbs. of energy per blow. The capacity of the driving equipment shall be such that the number of blows per minute during and at the completion of driving of the pile can be maintained at approximately the normal rate given by the manufacturer of the hammer.
 - The pile driving rig shall be of adequate size and capacity to permit driving the piles at the locations shown on the drawings and with required axial alignment.
 - All piles shall be driven with a hammer operating in fixed leaders or other approved methods shall be used to hold the hammer and pile in accurate alignment. Leaders shall be equipped with extensions to hold the hammer and pile in alignment when the hammer operates below the bottom of the leader. The use of swinging or spud type leaders will not be permitted.
 - The cap block or hammer cushion shall consist of aluminum and mica mats stacked alternately in a steel housing with steel top and bottom plates, except that a one-piece hardwood block with grain parallel to the pile axis and enclosed in a close-fitting steel housing may be used, provided a satisfactory driving criterion has been established with such a cap block and a new cap block is not used during the final driving of the pile. The use of a cap block consisting of wood chips, small wood blocks, wood shavings, wire rope, or other materials with high elastic properties shall not be permitted.
- Quality Assurance**
 - Comply with all pertinent federal, state, and local laws and codes. In addition, pile foundation work shall comply with the latest edition of the North Carolina State Building Code. Where Provisions of pertinent codes conflict with these drawings and notes, the more stringent provisions shall govern.
 - The inspector employed by the Owner shall oversee the installation of the entire piling operation and advise the Owner of any extraordinary circumstances that need resolution and suggest measures as warranted to produce a sound foundation system.
 - Unless otherwise specifically approved by the Owner, the pile contractor shall have been successfully engaged in installing similar types of piling in the general area for a period of not less than five (5) years prior to performing this work.
- Pile Installation Notes**
 - All pile locations shall be staked and surveyed as part of the construction staking process.
 - Subsurface parameters are based on the Report of Subsurface Exploration and Geotechnical Engineering Evaluation performed by Froehling & Robertson, Inc. (F&R Project No. 66U-0375) dated September 1, 2017.
 - Prior to installation, carefully inspect the site and verify that the piles can be installed as specified. Piles shall not be placed in the center of the stream. Contractor to verify dimensions and elevations shown on this drawing and on UC-9, UC-10, and UC-38 with existing conditions before placing piles. Verify that piles can be installed in accordance with all pertinent codes and regulations. Notify Engineer of any significant discrepancies.
 - Piles are to be cut off square at the required finish elevation and prepared for weld to saddle beam.
 - Pile Tolerances: plumbness = 1" total, alignment = 2" maximum, elevation = ±0.01'. The pile contractor shall be responsible for installing, at his expense, any piles which may be downgraded or rejected because of misalignment or misplacement.

- Superstructure**
 - All structural bolts will have heavy hex nuts and (2) F436 square washers.
 - All welders, shop and field, will be certified for the type of work involved. Field welders must be certified for overhead welding.
 - All detailing, fabricating, and erection shall conform to the following specifications (latest editions), except as otherwise indicated:
AISC - "Specification for Structural Steel Buildings."
AISC - "Code of Standard Practice for Steel Buildings and Bridges."
Paragraph 4.4.1 of the above code is hereby modified by deletion of the following sentence:
a) "Confirmation that the Fabricator has correctly interpreted the Contract Documents in the preparation of those submittals";
AWS - "Structural Welding Code - Steel."
 - All steel saddle beams and straps will be power tool cleaned to a minimum of SSPC-SP3 and hot dip galvanized per ASTM A123. Similarly, power tool clean the (4)-HP14x73 piles and hot-dip galvanize the top 15 feet. Bolts and washers will be hot-dip galvanized per ASTM A153. All field welds will be ground and coated with (2) coats of a cold applied galvanizing paint. Touch up any damaged galvanizing.
 - Contractor shall have sole responsibility for site safety.
- Submittals**
 - Submit mill certificate on all structural steel shapes.
 - Equipment Data: Submit a detailed description of the equipment proposed to be used to install piles.
 - Steel shop drawings for saddle beam, straps, and bolts.
 - Pile inspector's report to include:
 - Actual installed depth elevation of each pile and the cut off elevation of each pile.
 - Any unusual conditions and/or obstructions encountered while driving pile.
 - Hammer blows per foot at not less than 5 feet intervals and continuous count during the last 6' of driving.
 - Elevations before and after cut off.
- Miscellaneous**
 - The structural drawing UC-S-1 takes precedence when a conflict occurs between the structural drawing, the civil drawings, and the specifications concerning the aerial crossing. Notify Engineer in writing for clarification prior to bidding. The term unless noted otherwise (U.N.O.), means unless noted otherwise on the structural drawings. If there is a conflict on the structural drawings or specifications the most stringent requirement will control.
 - Construction of aerial crossing shall be sequenced so that it does not conflict with storm drainage installation and channel grading. Sequence installation so that the aerial crossing is performed after storm drainage work, specifically the trenchless installation of 72" RCP and 72" RCP extensions and concrete collar.
 - Coordinate placement of Class II Rip Rap and geotextile fabric with piles and exposed piping. Carefully place Class II Rip Rap to avoid any damage of installed facilities.
 - Installation of piles and any other work to install aerial crossing that shall come into contact with stream shall be performed in a dry condition. Provide coffer dam and pump around.



GENERAL NOTES 3
 NO SCALE S-1

SECTION 2
 1" = 1'-0" S-1

REVISIONS
 JULY 27, 2018 - SHEET NUMBER CHANGED

1. CONTRACTOR SHALL REPAIR ALL WATER LATERALS AND MAINS DAMAGED DURING CONSTRUCTION. THE CONTRACTOR SHALL REPORT IMMEDIATELY ALL WATER MAIN AND LATERAL BREAKS TO THE ENGINEER. THE CONTRACTOR SHALL INITIATE IMMEDIATE REPAIRS IN ACCORDANCE WITH THE SPECIAL PROVISIONS. CONTRACTOR SHALL NOT OPERATE WATER MAIN VALVES WITHOUT ENGINEER APPROVAL AND SHALL COORDINATE ALL VALVE CLOSURES WITH ENGINEER.

2. THE CONTRACTOR SHALL NOT USE HOUSE HOSE OR ANY OTHER METHOD OF BLOW OFF WHICH ALLOWS DOMESTIC WATER CONTAINING SEDIMENTS OR HIGH LEVELS OF CHLORINE TO PASS THRU RESIDENTS' METERS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES RESULTING FROM ALLOWING "DIRTY" WATER TO ENTER RESIDENTS' PLUMBING SYSTEMS SUCH AS WATER HEATERS, STAINED CLOTHING, KITCHENS, ETC.

3. WATER MAINS AND LATERALS SHALL BE INSTALLED UTILIZING AN APPROVED CUT-SHEET INDICATING INSTALLATION DEPTH.

4. TRANSFER OF WATER SERVICES SHALL BE ACCOMPLISHED AS FOLLOWS:
 A. INSTALL, TEST AND STERILIZE NEW MAIN AND LATERALS. LATERALS SHALL BE INSTALLED 1" INSIDE RIGHT-OF-WAY UNLESS OTHERWISE DIRECTED BY ENGINEER.
 B. TRANSFER SERVICE METER TO NEW METER BOX AND THE NEW WATER LATERAL TO EXISTING DOMESTIC SERVICE UTILIZING BRASS FITTINGS. SAME METER NUMBER SHALL BE INSTALLED ON SAME ADDRESS AND/OR CUSTOMER. BLOW OFF SERVICE AT HOSE BIBB ON HOUSE ONLY AFTER METER HAS BEEN TRANSFERRED.
 C. AFTER ALL SERVICES ARE TRANSFERRED TO THE NEW SYSTEM, SHUT OFF VALVE ON EXISTING SYSTEM AND ABANDON EXISTING MAINS IN ACCORDANCE WITH DETAIL AND SPECIAL PROVISIONS.
 D. CONTRACTOR SHALL SUPPLY NEW METER BOXES AND DISPOSE OF EXISTING METER BOXES.
 E. WHEN MAIN IS NOT TO BE ABANDONED, CONTRACTOR SHALL UNCOVER OLD CORPORATION AT MAIN, CLOSE AND PLUG CORPORATION TO ABANDON OLD SERVICE.
 F. CONTRACTOR SHALL ABANDON (CUT-OUT) ANY EXISTING WATER SERVICE THAT WILL NOT BE UTILIZED BY CUTTING THE SERVICE AT THE MAIN, PLUGGING THE CORPORATION, AND TURNING OFF THE CORPORATION. AT THE METER BOX, THE ABANDONED SERVICE IS TO BE CUT OR EXPOSED, AND BURIED A MINIMUM OF 3 FEET BELOW GRADE.
 G. ALL EXISTING UTILITIES IMPACTED BY CONSTRUCTION SHALL BE ADJUSTED TO FINISHED GRADE IN ACCORDANCE WITH PLAN REQUIREMENTS.
 H. ALL WORK ON FAYPWC WATER UTILITIES (MAINS, LATERALS, ETC) SHALL BE PERFORMED BY A LICENSED UTILITY CONTRACTOR. THE ENGINEER SHALL OBSERVE AND APPROVE ALL WORK ON WATER UTILITIES. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE UTILITY SPECIAL PROVISIONS.

5. SEPARATION REQUIREMENTS:
 A. LATERAL SEPARATION OF SEWERS AND WATER MAINS. WATER MAINS SHALL BE LAD AT LEAST 10 FEET LATERALLY FROM EXISTING OR PROPOSED SEWER MAINLATERAL, UNLESS LOCAL CONDITIONS OR BARRIERS PREVENT A 10-FOOT LATERAL SEPARATION - IN WHICH CASE:
 1. THE WATER MAIN IS LAD IN A SEPARATE TRENCH WITH THE ELEVATION OF THE BOTTOM OF THE WATER MAIN AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER MAINLATERAL OR
 2. THE WATER MAIN IS LAD IN THE SAME TRENCH AS THE SEWER MAINLATERAL WITH THE WATER MAIN LOCATED AT ONE SIDE ON A BENCH OF UNDISTURBED EARTH AND WITH THE ELEVATION OF THE BOTTOM OF THE WATER MAIN AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER MAINLATERAL.
 B. CROSSING A WATER MAIN OVER A SEWER, WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS OVER A SEWER MAINLATERAL, THE WATER MAIN SHALL BE LAD AT SUCH AN ELEVATION THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER MAINLATERAL, UNLESS LOCAL CONDITIONS OR BARRIERS PREVENT AN 18 INCH VERTICAL SEPARATION. IN WHICH CASE BOTH THE WATER MAIN AND SEWER MAINLATERAL SHALL BE DUCTILE IRON IN ACCORDANCE WITH UTILITY SPECIAL PROVISIONS.
 C. CROSSING WATER MAIN UNDER A SEWER, WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS UNDER A SEWER MAINLATERAL, BOTH THE WATER MAIN AND THE SEWER MAINLATERAL SHALL BE DUCTILE IRON IN ACCORDANCE WITH UTILITY SPECIAL PROVISIONS. A FULL JOINT OF DUCTILE IRON PIPE SHALL BE INSTALLED ON THE WATER MAIN CENTERED AT THE POINT OF CROSSING.
 D. CROSSING STORM DRAINAGE LINES: A MINIMUM OF 12-INCHES OF VERTICAL CLEARANCE SHALL BE MAINTAINED BETWEEN A WATER LINE CROSSING OVER A STORM DRAINAGE LINE UNLESS DUCTILE IRON PIPE IS USED. IN ADDITION, THERE AND A HALF (1.5) FEET OF COVER SHALL BE MAINTAINED OVER THE WATER MAIN OR IT SHALL BE DUCTILE IRON. IF DUCTILE IRON PIPE IS USED THEN TWO AND A HALF (2.5) FEET OF COVER SHALL BE MAINTAINED OVER THE WATER MAIN AND A MINIMUM OF ANCHAGES OF VERTICAL CLEARANCE SHALL BE MAINTAINED BETWEEN THE WATER MAIN AND THE STORM DRAINAGE LINE. WHERE A WATER MAIN CROSSES UNDER A STORM DRAINAGE LINE THE MINIMUM OF TWELVE (12) INCHES OF VERTICAL SEPARATION SHALL BE MAINTAINED AND THE WATER MAIN SHALL BE DUCTILE IRON FOR A DISTANCE OF 10-FOOT ON EACH SIDE OF THE CROSSING.

10. WATER OUTAGES: THE CONTRACTOR SHALL SCHEDULE A COORDINATION MEETING WITH THE ENGINEER A MINIMUM OF THREE (3) WORKING DAYS PRIOR TO ANY PLANNED WATER OUTAGE. THE COORDINATION MEETING SHALL BE CONDUCTED PRIOR TO ANY NOTICES BEING ISSUED. ADDITIONALLY, THE CONTRACTOR SHALL LOCATE VERTICALLY AND HORIZONTALLY ANY UTILITIES WITHIN THE WORK AREA IN ACCORDANCE WITH THE SPECIAL PROVISIONS. THE LOCATIONS OF ALL UTILITIES WITHIN THE WORK AREA SHALL BE DETERMINED PRIOR TO THE COORDINATION MEETING. ANY CONFLICTS WITH THE PENDING WORK AND THE EXISTING UTILITIES SHALL BE IDENTIFIED AND A PLAN FOR RESOLVING ANY CONFLICTS SHALL BE PRESENTED. THE PURPOSE OF THIS COORDINATION MEETING IS TO ENSURE THAT THE CONTRACTOR HAS A GOOD UNDERSTANDING OF THE REQUIREMENTS RELATED TO THE PENDING OUTAGE, VERIFY THAT THERE ARE NO UTILITY CONFLICTS THAT WILL PREVENT THE WORK FROM BEING COMPLETED, ALL NECESSARY PERMITS AND WORKING ORDERS, ALL EQUIPMENT IS FUNCTIONAL, ALL MATERIALS ARE ON SITE, ALL NECESSARY TOOLS ARE ON SITE, DISCUSS ANY NECESSARY CONTINGENCY PLANS, AND ANY OTHER ITEMS NECESSARY TO ENSURE THAT THE ENGINEER HAS CONFIDENCE THAT THE WORK CAN BE ACCOMPLISHED WITHIN THE GIVEN TIME PERIOD. SHOULD FOR ANY REASON, THE ENGINEER DEEM THAT THE CONTRACTOR IS NOT PREPARED FOR THE PROPOSED OUTAGE, THE OUTAGE NOTIFICATIONS WILL NOT BE DISTRIBUTED AND THE OUTAGE SHALL BE POSTPONED A MINIMUM OF TWO (2) WEEKS.

ONCE THE WATER OUTAGE NOTIFICATIONS HAVE BEEN ISSUED, A FOLLOW-UP COORDINATION MEETING WITH THE ENGINEER SHALL BE HELD A MINIMUM OF 24 HOURS PRIOR TO THE SCHEDULED OUTAGE. THE PURPOSE OF THIS MEETING IS TO VERIFY THAT THE CONTRACTOR IS PREPARED TO PROCEED WITH THE OUTAGE, AND THAT ALL EQUIPMENT, MATERIALS, TOOLS, AND ALL OTHER ESSENTIALS ARE ON THE PROJECT SITE AND FUNCTIONING. IF FOR ANY REASON THE ENGINEER DEEMS THAT THE CONTRACTOR IS NOT PREPARED, THE OUTAGE SHALL BE POSTPONED AND ALL CUSTOMERS IMMEDIATELY NOTICED OF THE CANCELLATION.

THE CONTRACTOR SHALL COMPLETE THE REQUIRED WORK AND RESTORE WATER SERVICE WITHIN THE GIVEN TIME PERIOD FOR THE OUTAGE.

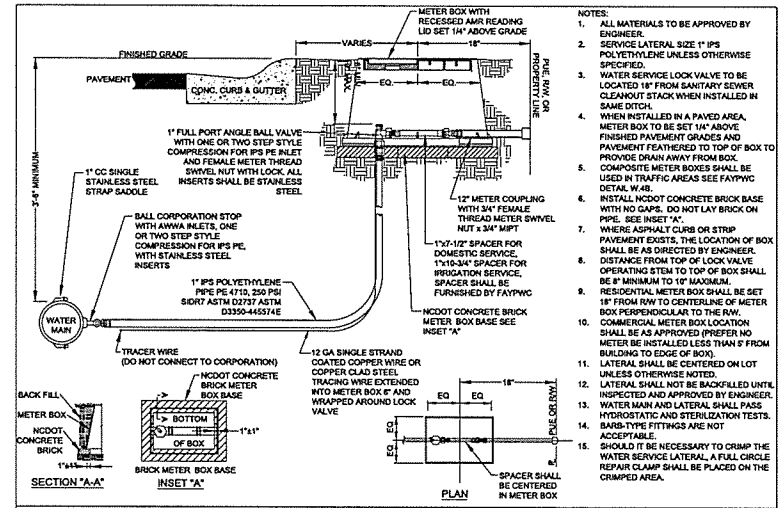
NOTE:
 ANY REFERENCE TO FAYPWC PROJECT COORDINATOR, PWC COORDINATOR OR FAYPWC (FAYETTEVILLE PUBLIC WORKS COMMISSION) SHALL BE INTERPRETTED AS A REFERENCE TO THE ENGINEER.

WATER UTILITY NOTES		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION
1. REVISED NOTES AND ADDED NOTE # 1		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		1	07/11	REVISED NOTES AND ADDED NOTE # 1
2. ADDED NOTE # 2		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		2	07/11	ADDED NOTE # 2
3. ADDED NOTE # 3		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		3	07/11	ADDED NOTE # 3
4. ADDED NOTE # 4		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		4	05/29/18	ADDED NOTE # 4

DATE: JAN. 01, 2018 APPROVED BY: J.E.G.

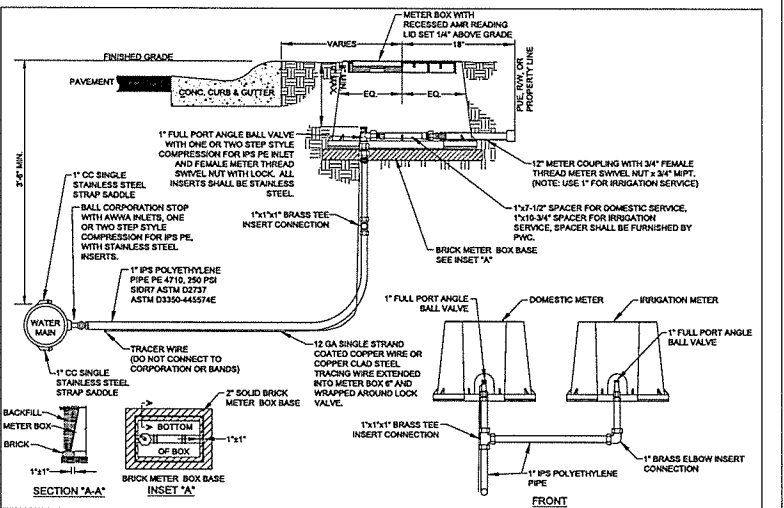
WATER UTILITY NOTES		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION
1. REVISED NOTES AND ADDED NOTE # 1		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		1	07/11	REVISED NOTES AND ADDED NOTE # 1
2. ADDED NOTE # 2		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		2	07/11	ADDED NOTE # 2
3. ADDED NOTE # 3		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		3	07/11	ADDED NOTE # 3
4. ADDED NOTE # 4		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		4	05/29/18	ADDED NOTE # 4

DATE: JAN. 01, 2018 APPROVED BY: J.E.G.



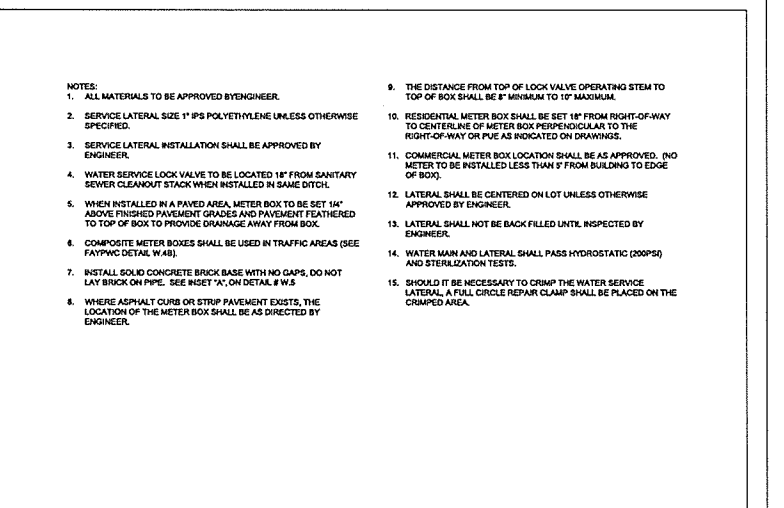
1" WATER SERVICE LATERAL N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION
1. REVISED METER COUPLING		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		1	07/06	REVISED METER COUPLING
2. REVISED NOTES: TRACER WIRE		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		2	07/11	REVISED NOTES: TRACER WIRE
3. REVISED NOTES: 1" AND 1/2" INCLUDE PLACEMENT OF BOX 18" WITHIN PUE ON SECTION AND PLAN VIEWS		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		3	07/11	REVISED NOTES: 1" AND 1/2" INCLUDE PLACEMENT OF BOX 18" WITHIN PUE ON SECTION AND PLAN VIEWS

DATE: JAN. 01, 2018 APPROVED BY: J.E.G.



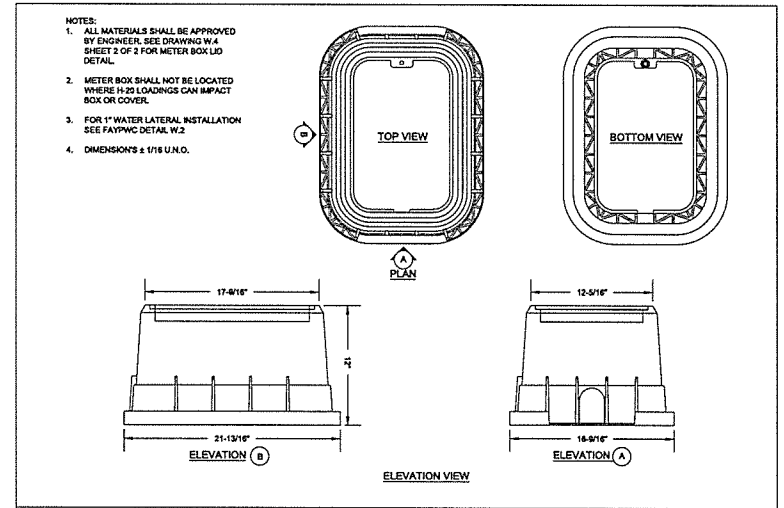
1" SPLIT WATER SERVICE LATERAL N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION
1. REVISED FRONT VIEW AND MOVED NOTES TO SHEET 2		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		1	07/06	REVISED FRONT VIEW AND MOVED NOTES TO SHEET 2
2. ADDED NOTE: TRACER WIRE		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		2	07/11	ADDED NOTE: TRACER WIRE
3. INCLUDE PLACEMENT OF BOX 18" WITHIN PUE ON SECTION AND PLAN VIEWS		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		3	05/29/18	INCLUDE PLACEMENT OF BOX 18" WITHIN PUE ON SECTION AND PLAN VIEWS

DATE: JAN. 01, 2018 APPROVED BY: J.E.G.



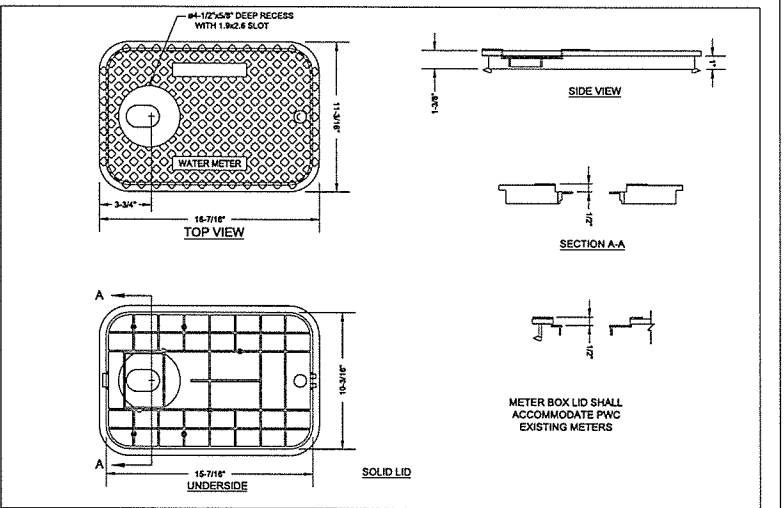
1" SPLIT WATER SERVICE LATERAL NOTES		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION
1. ADDED FRONT VIEW AND MOVED NOTES TO SHEET 2		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		1	07/06	ADDED FRONT VIEW AND MOVED NOTES TO SHEET 2
2. UPDATED NOTES		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		2	02/16	UPDATED NOTES
3. REVISED NOTES 1, 3, 8, 10, 12 AND 13 FOR NCDOT U-4405		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		3	05/29/18	REVISED NOTES 1, 3, 8, 10, 12 AND 13 FOR NCDOT U-4405

DATE: JAN. 01, 2018 APPROVED BY: J.E.G.



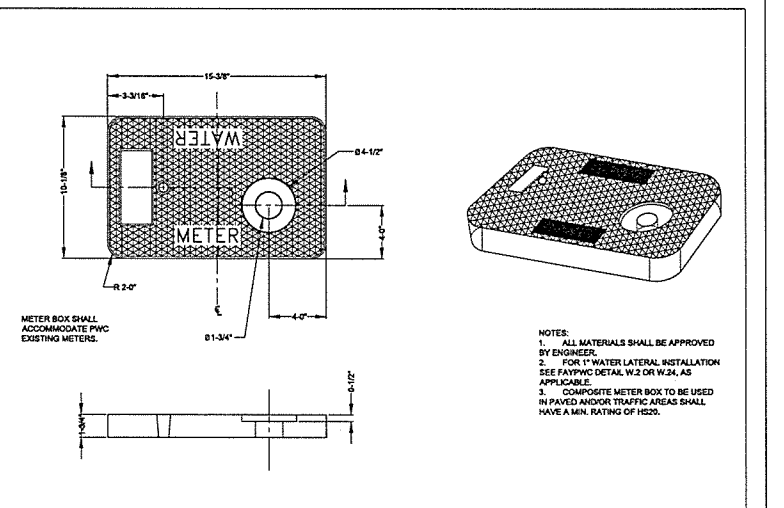
1-INCH METER BOX DETAILS N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION
1. CHANGED BOX DIMENSIONS		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		1	03/10	CHANGED BOX DIMENSIONS
2. REVISED NOTES 1 FOR NCDOT U-4405		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		2	05/29/18	REVISED NOTES 1 FOR NCDOT U-4405

DATE: JAN. 01, 2018 APPROVED BY: J.E.G.



1-INCH METER BOX LID N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION
1. REVISED LID		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		1	07/07	REVISED LID
2. CHANGED BOX AND LID DIMENSIONS		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		2	03/10	CHANGED BOX AND LID DIMENSIONS
3. REVISED LID		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		3	07/11	REVISED LID
4. ADDED NOTE FOR METER LID CONFORMANCE TO AMB		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		4	05/29/18	ADDED NOTE FOR METER LID CONFORMANCE TO AMB

DATE: JAN. 01, 2018 APPROVED BY: J.E.G.



1-INCH COMPOSITE METER BOX & COVER N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION
1. CHANGED BOX X LID DIMENSIONS		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		1	03/10	CHANGED BOX X LID DIMENSIONS
2. REPLACED C-BOX WITH COMPOSITE BOX		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		2	07/11	REPLACED C-BOX WITH COMPOSITE BOX
3. ADDED NOTE FOR METER LID CONFORMANCE TO AMB		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		3	05/29/18	ADDED NOTE FOR METER LID CONFORMANCE TO AMB

DATE: JAN. 01, 2018 APPROVED BY: J.E.G.

03-AUG-2018 08:57
 L:\P\Projects\Fayetteville Public Works Commission\2015017708A Reeford Road NCDOT U 4405\CADD\NCDOT PLANS\Utilities\Engineering\UC\Pro\Detail Sheets\U4405-ut-dtl-UC031-0.dgn
 5/14/19
 REVISIONS
 UTILITY REV. - JUL 24, 2018 - REVISIONS TO DETAIL SHEETS

UTILITY CONSTRUCTION

NOTES:
 1. ALL MATERIALS SHALL BE IN ACCORDANCE WITH UTILITY SPECIAL PROVISIONS.
 2. TAPPING SLEEVES SHALL BE AS MANUFACTURED BY ROMAC, SMITH-BLAW, OR APPROVED EQUAL.
 3. STAINLESS STEEL TAPPING SLEEVE MAY BE UTILIZED FOR ALL TAPPING OF MAINS UP TO AND INCLUDING 24" DIAMETER WITH 12" OR LESS BRANCH. BRANCH GREATER THAN 12" SHALL REQUIRE FULL BODY M.J. TAPPING COUPLER (SEE DETAIL W.15).
 4. SHELL AND LUGS SHALL BE STAINLESS STEEL PER ASTM A-240, TYPE 304 AND 304L.
 5. BOLTS SHALL BE 5/8" UNC ROLLED THREAD, STAINLESS STEEL PER ASTM A 193 TYPE 304 4" NOM. PIPE SIZE SHALL HAVE MINIMUM 1/2" BOLTS.
 6. NUTS SHALL BE HEAVY HEX STAINLESS STEEL, PER ASTM A-194, TYPE 304.
 7. WASHERS SHALL BE STEEL AND PLASTIC LUBRICATING WASHER.
 8. GASKETS SHALL BE VIRGIN SBR PER ASTM D 2000 MAX #10, COMPOUNDED FOR WATER AND SEWER SERVICE.
 9. FLANGE SHALL BE DUCTILE IRON PER ASTM 536, GRADE 65-45-12, OR STAINLESS STEEL PER ASTM A-240, TYPE 304.
 10. DIMENSIONS SHOWN ARE FOR REFERENCE AND MAY VARY BASED UPON MANUFACTURER. SLEEVES SHALL BE SIMILAR IN MATERIAL TO THAT SHOWN AND SHALL NOT DEVIATE IN ESSENTIAL DETAILS.
 11. PIPE SURFACES SHALL BE CLEANED THOROUGHLY TO PERMIT A GOOD SEAL PRIOR TO INSTALLATION.
 12. ALL TAPPING SLEEVES SHALL BE HYDROSTATICALLY PRESSURE TESTED IN ACCORDANCE WITH UTILITY SPECIAL PROVISIONS. TEST SHALL BE WITNESSED AND APPROVED BY ENGINEER PRIOR TO BEGINNING TAPPING PROCESS.
 13. THE NUMBER OF BOLTS, NUTS AND WASHERS SHOWN ARE FOR ILLUSTRATION ONLY. ACTUAL QUANTITY SHALL BE AS RECOMMENDED BY THE SLEEVE MANUFACTURER FOR THE REQUIRED SERVICE.
 14. SEE DETAILS W.9 AND W.17 FOR ADDITIONAL REQUIREMENTS.

NOMINAL PIPE SIZE (INCH)	BRANCH SIZE	APPROX. WT. LBS.
4"	3/4"	29.30
6"	3/4"	36.38
8"	3/4"	42.44
10"	3/4"	48.50
12"	3/4"	54.56
14"	3/4"	60.62
16"	3/4"	66.68
18"	3/4"	72.74
20"	3/4"	78.80
22"	3/4"	84.86
24"	3/4"	90.92

STAINLESS STEEL TAPPING SLEEVE
 N.T.S.
 SHEET NO. 1 OF 1
 DWG. NO. W.11
 DATE: JAN. 01, 2018
 DWG. BY: FAYPWC
 APPROVED BY: J.E.G.

FAYETTEVILLE PUBLIC WORKS COMMISSION
 FAYETTEVILLE, N.C.
 WATER RESOURCES ENGINEERING DEPARTMENT

NO. DATE REVISION
 1 0709 ADDED NOTES 2, 12, AND CLARIFIED NOTES
 2 0713 REVISED NOTES 3, 12, 14
 3 072418 REVISED PER NCDOT COMMENTS (U-4405)

W11-SS-TAPPING-SLEEVE.dwg

FIRE HYDRANT AND VALVE INSTALLATION
 N.T.S.
 SHEET NO. 1 OF 2
 DWG. NO. W.13
 DATE: JAN. 01, 2018
 DWG. BY: FAYPWC
 APPROVED BY: J.E.G.

FAYETTEVILLE PUBLIC WORKS COMMISSION
 FAYETTEVILLE, N.C.
 WATER RESOURCES ENGINEERING DEPARTMENT

NO. DATE REVISION
 1 102303 REVISED NOTE NO. 4
 2 0710109 REVISED NOTE NO. 4, REMOVED NOTE NO. 3 AND ALTERED RESTRAINT DETAIL
 3 0710118 REVISED NOTES
 4 072418 REVISED NOTES PER NCDOT U-4405 AND INCLUDE PLACEMENT NODE PIPE

W13-FHCC.dwg

NOTE:
 ANY REFERENCE TO FAYPWC PROJECT COORDINATOR, PWC COORDINATOR OR FAYPWC FAYETTEVILLE PUBLIC WORKS COMMISSION SHALL BE INTERPRETTED AS A REFERENCE TO THE ENGINEER.

NOTES:
 1. FIRE HYDRANT SHALL BE MODELS MANUFACTURED BY MUELLER CO. (CENTURION), AMERICAN VALVE AND HYDRANT CO. (MODEL MARK 75), CLOW MEDALLION OR APPROVED EQUAL.
 2. ALL VALVES AND HYDRANTS SHALL HAVE M.J. CONNECTIONS WITH IRON RETAINING GLAND M.J. RESTRAINT.
 3. HYDRANT VALVE SHALL BE PLACED AS CLOSE AS POSSIBLE TO THE MAIN, BUT DO NOT PLACE VALVE IN PROPOSED OR EXISTING CURB AND GUTTER. IF THE STREET IS SOIL AND NO PAVING IS TO BE DONE AT THIS TIME, THE LOCATION OF THE VALVE IS TO BE DETERMINED BY THE ENGINEER.
 4. HYDRANT BRANCH SHALL NOT BE BACK FILLED UNTIL INSPECTED AND APPROVED BY ENGINEER.
 5. GATE VALVE AND BOX SHALL BE IN ACCORDANCE WITH STANDARD DETAIL.
 6. HYDRANT EXTENSIONS AND/OR OFFSETS SHALL BE APPROVED BY ENGINEER.
 7. FIRE HYDRANT CONNECTIONS TO EXISTING WATER MAINS SHALL BE MADE USING A TAPPING SLEEVE AND VALVE BY WET TAP CONNECTION. THE TAPPING SLEEVE AND VALVE SHALL BE HYDROSTATICALLY TESTED PRIOR TO STARTING THE TAP IN THE PRESENCE OF THE ENGINEER.
 8. THE PROPOSED LOCATION MAY BE RELOCATED BY THE ENGINEER IF CONFLICTS EXIST (E.G. GAS SERVICES, USE, TELEPHONE, ETC.).
 9. THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING WATER MAIN MATERIAL, SIZE AND DEPTH FOR EACH FIRE HYDRANT LOCATION PRIOR TO ORDERING MATERIALS. THE CONTRACTOR WILL BE REQUIRED TO SUPPLY VARIOUS LENGTHS OF BARRELS AND HYDRANT EXTENSIONS NO MORE THAN ONE HYDRANT EXTENSION MAY BE USED PER HYDRANT. ADDITIONAL FITTINGS AND/OR HYDRANT EXTENSIONS OR OFFSET CONNECTIONS MAY BE REQUIRED TO MAINTAIN PROPER COVER AS APPROVED BY THE ENGINEER.
 10. CONTRACTOR SHALL NOTIFY THE APPROPRIATE FIRE DEPARTMENT OF OUT OF SERVICE FIRE HYDRANTS PRIOR TO CONSTRUCTION.
 11. FIRE HYDRANT SHALL BE FIELD PAINTED IN ACCORDANCE WITH UTILITY SPECIAL PROVISIONS. BEFORE PROJECT IS ACCEPTED, HYDRANTS SHALL BE PAINTED WITH A GREEN BONNET AND YELLOW BODY. PAINT SHALL BE IN ACCORDANCE WITH UTILITY SPECIAL PROVISIONS. THE CONTRACTOR SHALL PAINT ALL EXPOSED EXTERIOR FIRE HYDRANT SURFACES PRIOR TO FINAL ACCEPTANCE BY ENGINEER. ALL PAINTING SHALL BE DONE IN STRICT ACCORDANCE WITH THE PAINT MANUFACTURER'S RECOMMENDATIONS AND SHALL BE SATISFACTORY TO THE ENGINEER.
 12. PROTECTIVE COVERING SHALL BE UTILIZED, AS NECESSARY FOR PROTECTION OF ADJACENT AREAS, EQUIPMENT, SHRUBBERY, OR OTHER ITEMS. AFTER PAINTING IS COMPLETE, THE ENTIRE AREA SHALL BE THOROUGHLY CLEANED UP.
 13. ALL PAINT MATERIALS SHALL BE IN THE ORIGINAL SEALED CONTAINERS BEARING THE MANUFACTURER'S NAME.
 14. WHERE NECESSARY, THINNING SHALL BE DONE IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS, AND AS APPROVED BY ENGINEER.
 15. ALL SURFACES TO BE PAINTED SHALL BE CLEAN AND DRY.
 16. THE BONNET OF THE FIRE HYDRANT SHALL BE PAINTED A DARK GREEN, UTILIZING AN ALYD OR POLYURETHANE ENAMEL WITH A FINAL DRY MIL THICKNESS OF 4 TO 6 MILS. MULTIPLE COATS MAY BE NECESSARY TO ACHIEVE THE FINAL REQUIRED DRY MIL THICKNESS. THE PAINT SHALL BE FOREST GREEN, SAMPLES SHALL BE SUBMITTED IN ORDER FOR ENGINEER TO CONSIDER ALTERNATIVE PAINT MANUFACTURERS.
 17. THE REMAINDER OF THE FIRE HYDRANT SHALL BE PAINTED SAFETY YELLOW, UTILIZING AN ALYD OR POLYURETHANE ENAMEL WITH A FINAL DRY MIL THICKNESS OF 4 TO 6 MILS. MULTIPLE COATS MAY BE NECESSARY TO ACHIEVE THE FINAL REQUIRED DRY MIL THICKNESS. THE PAINT SHALL BE YELLOW, BY THE SHERWIN-WILLIAMS COMPANY, PAINT NUMBER 7116, OR APPROVED EQUAL. SAMPLES SHALL BE SUBMITTED IN ORDER FOR ENGINEER TO APPROVE PAINT MANUFACTURERS.

SIZE # DIA. OFFSET	6"Ø	8"Ø	12"Ø
A	18"	30"	41"
B	6"	12"	24"

FIRE HYDRANT AND VALVE INSTALLATION
 N.T.S.
 SHEET NO. 2 OF 2
 DWG. NO. W.13
 DATE: JAN. 01, 2018
 DWG. BY: FAYPWC
 APPROVED BY: J.E.G.

FAYETTEVILLE PUBLIC WORKS COMMISSION
 FAYETTEVILLE, N.C.
 WATER RESOURCES ENGINEERING DEPARTMENT

NO. DATE REVISION
 1 102303 REVISED NOTE NO. 4
 2 0710109 REVISED NOTE NO. 4, REMOVED NOTE NO. 3 AND ALTERED RESTRAINT DETAIL
 3 0710118 REVISED NOTES
 4 072418 REVISED PER NCDOT COMMENTS (U-4405)

W13-FHCC.dwg

RESTRAINED JOINT FIRE HYDRANT OFFSET CONNECTOR (STEEP BANK)
 N.T.S.
 SHEET NO. 1 OF 2
 DWG. NO. W.14
 DATE: JAN. 01, 2018
 DWG. BY: FAYPWC
 APPROVED BY: J.E.G.

FAYETTEVILLE PUBLIC WORKS COMMISSION
 FAYETTEVILLE, N.C.
 WATER RESOURCES ENGINEERING DEPARTMENT

NO. DATE REVISION
 1 0709 REVISED NOTES 1, 2, AND 3
 2 072418 REVISED NOTES PER NCDOT COMMENTS (U-4405)

W14-FH-OFFSET.dwg

RESTRAINED JOINT FIRE HYDRANT OFFSET CONNECTOR @ DITCH
 N.T.S.
 SHEET NO. 2 OF 2
 DWG. NO. W.14
 DATE: JAN. 01, 2018
 DWG. BY: FAYPWC
 APPROVED BY: J.E.G.

FAYETTEVILLE PUBLIC WORKS COMMISSION
 FAYETTEVILLE, N.C.
 WATER RESOURCES ENGINEERING DEPARTMENT

NO. DATE REVISION
 1 0709 ADDED NOTES
 2 0709 REVISED NOTES 1, 2, AND 3
 3 072418 REVISED PER NCDOT COMMENTS (U-4405)

W14-FH-OFFSET.dwg

NOTES:
 1. ALL MATERIAL SHALL BE APPROVED BY ENGINEER.
 2. WHEN INSTALLED IN A PAVED AREA METER BOX SHALL BE SET 1/4" ABOVE FINISHED PAVEMENT GRADE AND PAINTMENT FEATHERED TO TOP OF BOX. COMPOSITE METER BOX (DETAIL W.4B) SHALL BE USED IN PAVED AREAS.
 3. METER BOX SHALL BE IN ACCORDANCE WITH UTILITY SPECIAL PROVISIONS. PROVIDE SOLID METER BOX LID.
 4. BLOW-OFF ASSEMBLY NOT TO BE RE-USED UNLESS APPROVED BY ENGINEER.
 5. REMOVE ENTIRE ASSEMBLY FROM WELL OF WATER MAIN PIPE WHEN EXTENDING THE MAIN.
 6. CENTER 2" SDR-21 PIPE IN METER BOX.
 7. INSTALLATION SHALL BE INSPECTED AND APPROVED BY ENGINEER PRIOR TO BACKFILL.
 8. CONTRACTOR SHALL INSTALL TRACING WIRE INTO THE BOX.
 9. A MINIMUM OF 2" OF WIRE SHALL BE IN BOX.
 10. METER BOX TO BE INSTALLED IN ACCORDANCE WITH DETAIL W.7.

2" BLOW OFF
 N.T.S.
 SHEET NO. 1 OF 1
 DWG. NO. W.15
 DATE: JAN. 01, 2018
 DWG. BY: FAYPWC
 APPROVED BY: J.E.G.

FAYETTEVILLE PUBLIC WORKS COMMISSION
 FAYETTEVILLE, N.C.
 WATER RESOURCES ENGINEERING DEPARTMENT

NO. DATE REVISION
 1 0606 CHANGED FITTINGS TO SCHED 80
 2 1106 REVISED CONFIGURATION
 3 0717 REVISED NOTES
 4 072418 REVISED PER NCDOT COMMENTS (U-4405)

W15-2-BLOWOFF.dwg

2" VALVE INSTALLATION
 N.T.S.
 SHEET NO. 1 OF 1
 DWG. NO. W.15A
 DATE: JAN. 01, 2018
 DWG. BY: FAYPWC
 APPROVED BY: J.E.G.

FAYETTEVILLE PUBLIC WORKS COMMISSION
 FAYETTEVILLE, N.C.
 WATER RESOURCES ENGINEERING DEPARTMENT

NO. DATE REVISION
 1 0606 ADDED NOTE ON CONCRETE COLLAR
 2 0717 UPDATED NOTES
 3 072418 REVISED PER NCDOT COMMENTS

W15A-VALVE-INSTALLATION.dwg

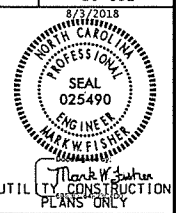
2" WET TAP
 N.T.S.
 SHEET NO. 1 OF 1
 DWG. NO. W.15B
 DATE: JAN. 01, 2018
 DWG. BY: FAYPWC
 APPROVED BY: J.E.G.

FAYETTEVILLE PUBLIC WORKS COMMISSION
 FAYETTEVILLE, N.C.
 WATER RESOURCES ENGINEERING DEPARTMENT

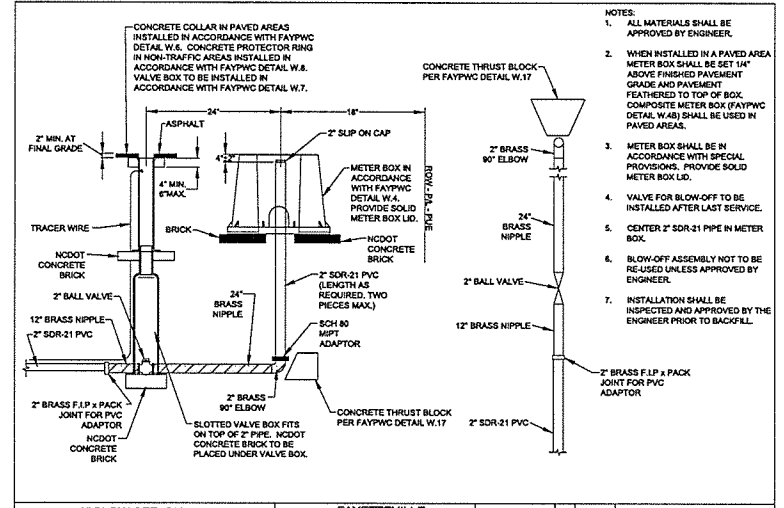
NO. DATE REVISION
 1 0606 ADDED NOTE ON CONCRETE COLLAR
 2 0707 REVISED VALVE LOCATION
 3 0717 REVISED NOTES
 4 072418 REVISED PER NCDOT COMMENTS

W15B-2-WET-TAP.dwg

REVISIONS
 02-AUG-2016 13:11 Fayetteville Public Works Commission\2015017700RA Reeford Road NCDOT U 4405\CADD\NCDOT PLANS\Utilities\Engineering\UC\Proc\Detail Sheets\U4405-ut.dtl UC031-0.dgn
 5/14/2018
 UTILITY REV. - JULY 24, 2008 - REVISIONS TO DETAIL SHEETS

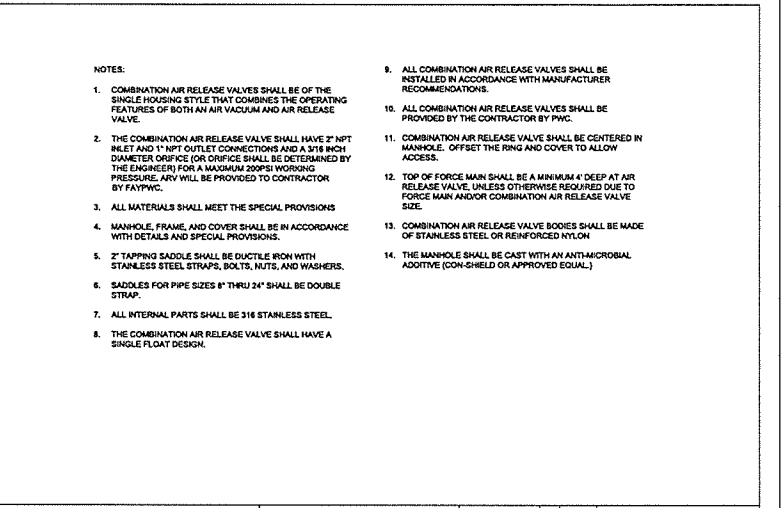


UTILITY CONSTRUCTION



- NOTES:
 1. ALL MATERIALS SHALL BE APPROVED BY ENGINEER.
 2. WHEN INSTALLED IN A PAVED AREA METER BOX SHALL BE SET 1" ABOVE FINISHED PAVEMENT GRADE AND PAVEMENT FEATHERED TO TOP OF BOX. COMPOSITE METER BOX (FAYFWC DETAIL W.4B) SHALL BE USED IN PAVED AREAS.
 3. METER BOX SHALL BE IN ACCORDANCE WITH SPECIAL PROVISIONS, PROVIDE SOLID METER BOX LID.
 4. VALVE FOR BLOW-OFF TO BE INSTALLED AFTER LAST SERVICE.
 5. CENTER 2" SDR-21 PIPE IN METER BOX.
 6. BLOW-OFF ASSEMBLY NOT TO BE RE-USED UNLESS APPROVED BY ENGINEER.
 7. INSTALLATION SHALL BE INSPECTED AND APPROVED BY THE ENGINEER PRIOR TO BACKFILL.

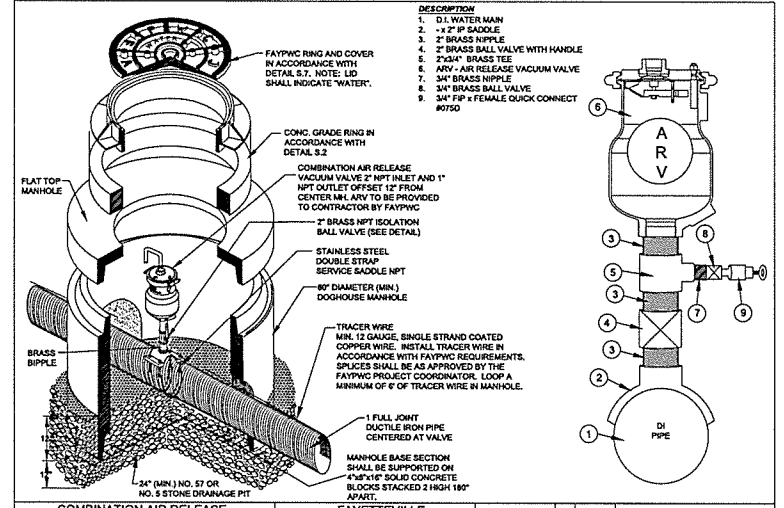
2" BLOW OFF ON 2" WATER MAIN N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION
DWG. NO. W.15C		DWG. BY: FAYFWC		1	07/17	REVISED NOTES
DATE: JAN. 01, 2018		APPROVED BY: J.E.G.		2	05/29/18	REVISED NOTES 1, 3, 8 AND 7 AND INCLUDE PLACEMENT INSIDE PIPE FOR NCDOT U-4405
SHEET NO. 1 OF 1		WATER RESOURCES ENGINEERING DEPARTMENT		W15C-BLOWOFF.dwg		



- NOTES:
 1. COMBINATION AIR RELEASE VALVES SHALL BE OF THE SINGLE HOUSING STYLE THAT COMBINES THE OPERATING FEATURES OF BOTH AN AIR VACUUM AND AIR RELEASE VALVE.
 2. THE COMBINATION AIR RELEASE VALVE SHALL HAVE 2" NPT INLET AND 1" NPT OUTLET CONNECTIONS AND A 3/16 INCH DIAMETER ORifice FOR ORifice SHALL BE DETERMINED BY THE ENGINEER. FOR A MAXIMUM 200PSI WORKING PRESSURE, ORifice WILL BE PROVIDED TO CONTRACTOR BY FAYFWC.
 3. ALL MATERIALS SHALL MEET THE SPECIAL PROVISIONS.
 4. MANHOLE, FRAME, AND COVER SHALL BE IN ACCORDANCE WITH DETAILS AND SPECIAL PROVISIONS.
 5. 2" TAPPING SADDLE SHALL BE DUCTILE IRON WITH STAINLESS STEEL STRAPS, BOLTS, NUTS, AND WASHERS.
 6. SADDLES FOR PIPE SIZES 8" THRU 24" SHALL BE DOUBLE STRAP.
 7. ALL INTERNAL PARTS SHALL BE 316 STAINLESS STEEL.
 8. THE COMBINATION AIR RELEASE VALVE SHALL HAVE A SINGLE FLOAT DESIGN.
 9. ALL COMBINATION AIR RELEASE VALVES SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.
 10. ALL COMBINATION AIR RELEASE VALVES SHALL BE PROVIDED BY THE CONTRACTOR BY PWC.
 11. COMBINATION AIR RELEASE VALVE SHALL BE CENTERED IN MANHOLE, OFFSET THE RING AND COVER TO ALLOW ACCESS.
 12. TOP OF FORCE MAIN SHALL BE A MINIMUM 4' DEEP AT AIR RELEASE VALVE, UNLESS OTHERWISE REQUIRED DUE TO FORCE MAIN AND/OR COMBINATION AIR RELEASE VALVE SIZE.
 13. COMBINATION AIR RELEASE VALVE BODIES SHALL BE MADE OF STAINLESS STEEL OR REINFORCED NYLON.
 14. THE MANHOLE SHALL BE CAST WITH AN ANTI-MICROBIAL ADDITIVE (ION-SHIELD OR APPROVED EQUAL).

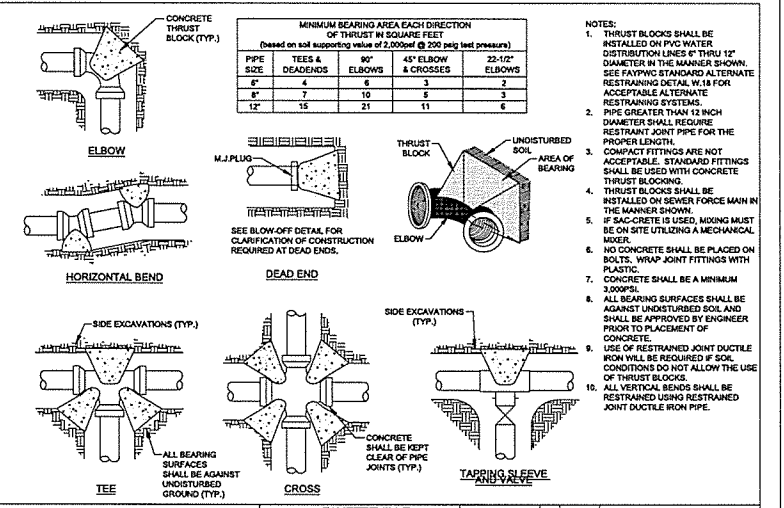
COMBINATION AIR RELEASE VACUUM VALVE (WATER SERVICE) N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION
DWG. NO. W.16		DWG. BY: FAYFWC		1	07/17	REVISED NOTES
DATE: JAN. 01, 2018		APPROVED BY: J.E.G.		2	07/16	DELETED NOTES 3, 18
SHEET NO. 2 OF 2		WATER RESOURCES ENGINEERING DEPARTMENT		W16-AIR-RELEASE-VALVE.dwg		

NOTE:
 ANY REFERENCE TO FAYFWC PROJECT COORDINATOR, PWC COORDINATOR OR FAYFWC (FAYETTEVILLE PUBLIC WORKS COMMISSION) SHALL BE INTERPRETED AS A REFERENCE TO THE ENGINEER.



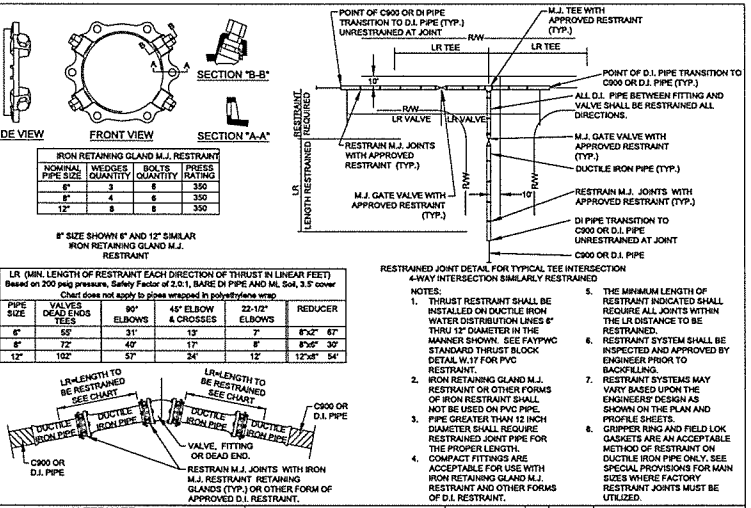
- DESCRIPTION:
 1. D.I. WATER MAIN
 2. 2" x 2" IP SADDLE
 3. 2" BRASS NIPPLE
 4. 2" BRASS BALL VALVE WITH HANDLE
 5. 2" x 2" BRASS TEE
 6. AIR-RELEASE VACUUM VALVE
 7. 3/4" BRASS NIPPLE
 8. 3/4" BRASS BALL VALVE
 9. 3/4" FIP x FEMALE QUICK CONNECT 40750

COMBINATION AIR RELEASE VACUUM VALVE (WATER SERVICE) N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION
DWG. NO. W.16		DWG. BY: FAYFWC		1	07/17	REVISED NOTES 3 AND 8, ADD NOTE 7
DATE: JAN. 01, 2018		APPROVED BY: J.E.G.		2	07/16	ADDED NOTES 3 AND 18
SHEET NO. 1 OF 2		WATER RESOURCES ENGINEERING DEPARTMENT		W16-AIR-RELEASE-VALVE.dwg		

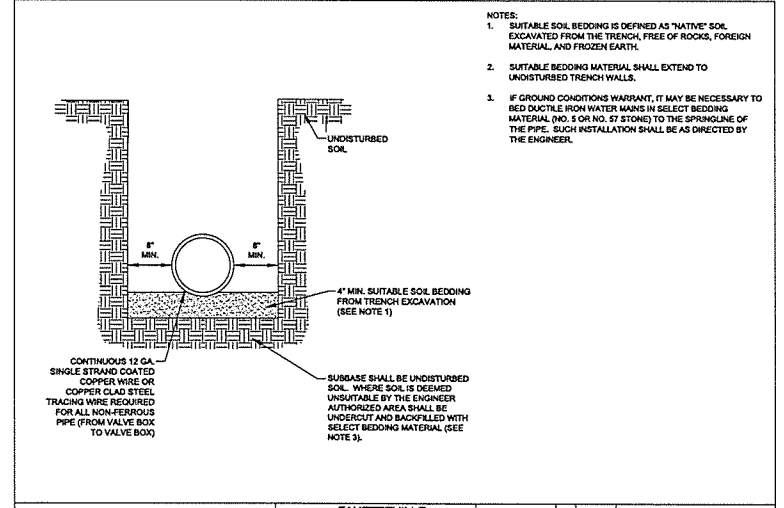


- NOTES:
 1. THRUST BLOCKS SHALL BE INSTALLED ON PVC WATER DISTRIBUTION LINES 6" THRU 12" DIAMETER IN THE MANNER SHOWN. SEE FAYFWC STANDARD ALTERNATE RESTRAINING DETAIL W.18 FOR ACCEPTABLE ALTERNATE RESTRAINING SYSTEMS.
 2. PIPE GREATER THAN 12 INCH DIAMETER SHALL REQUIRE RESTRAINT JOINT PIPE FOR THE PROPER LENGTH.
 3. COMPACT FITTINGS ARE NOT ACCEPTABLE. STANDARD FITTINGS SHALL BE USED WITH CONCRETE THRUST BLOCKING.
 4. THRUST BLOCKS SHALL BE INSTALLED ON SEWER FORCE MAIN IN THE MANNER SHOWN.
 5. IF SAC-CRETE IS USED, MIXING MUST BE ON SITE UTILIZING A MECHANICAL MIXER.
 6. NO CONCRETE SHALL BE PLACED ON BOLTS. WRAP JOINT FITTINGS WITH PLASTIC.
 7. CONCRETE SHALL BE A MINIMUM 3000PSI.
 8. ALL BEARING SURFACES SHALL BE AGAINST UNDISTURBED SOIL AND SHALL BE APPROVED BY ENGINEER PRIOR TO PLACEMENT OF CONCRETE.
 9. USE OF RESTRAINED JOINT DUCTILE IRON SHALL BE LIMITED TO THE CONDITIONS DO NOT ALLOW THE USE OF THRUST BLOCKS.
 10. ALL VERTICAL BENDS SHALL BE RESTRAINED USING RESTRAINED JOINT DUCTILE IRON PIPE.

CONCRETE THRUST BLOCK DETAIL N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION
DWG. NO. W.17		DWG. BY: FAYFWC		1	09/05	REVISED TABLE
DATE: JAN. 01, 2018		APPROVED BY: J.E.G.		2	02/07	ADDED NOTES 9 AND 10
SHEET NO. 1 OF 1		WATER RESOURCES ENGINEERING DEPARTMENT		W17-THRUSTBLOCK.dwg		

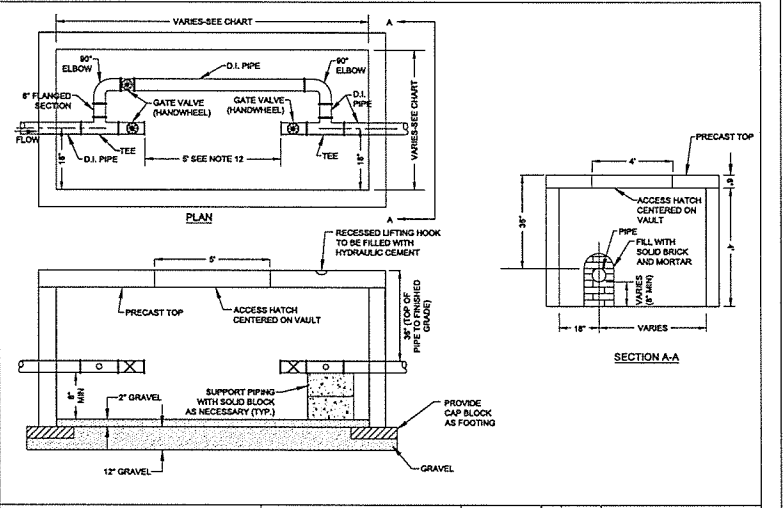


ALTERNATE RESTRAINT DETAIL (DUCTILE IRON PIPE ONLY) N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION
DWG. NO. W.18		DWG. BY: FAYFWC		1	11/16/07	REVISED TABLE, ADDED NOTE 8
DATE: JAN. 01, 2018		APPROVED BY: J.E.G.		2	05/29/18	REVISED NOTES 8 AND 8 FOR NCDOT U-4405
SHEET NO. 1 OF 1		WATER RESOURCES ENGINEERING DEPARTMENT		W18-RESTRAINT-DETAIL.dwg		

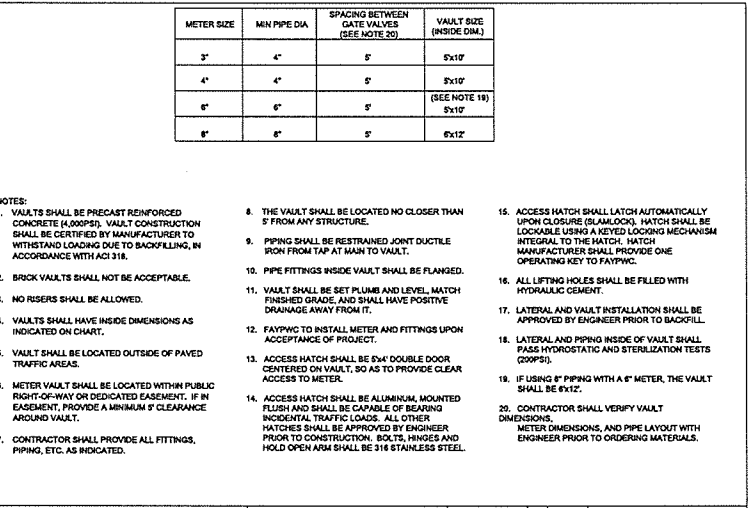


- NOTES:
 1. SUITABLE SOIL BEDDING IS DEFINED AS "NATIVE" SOIL EXCAVATED FROM THE TRENCH FREE OF ROCKS, FOREIGN MATERIAL, AND FROZEN EARTH.
 2. SUITABLE BEDDING MATERIAL SHALL EXTEND TO UNDISTURBED TRENCH WALLS.
 3. IF GROUND CONDITIONS WARRANT, IT MAY BE NECESSARY TO BED DUCTILE IRON WATER MAINS IN SELECT BEDDING MATERIAL (NO. 5 OR NO. 57 STONE) TO THE SPRINGLINE OF THE PIPE. SUCH INSTALLATION SHALL BE AS DIRECTED BY THE ENGINEER.

WATER MAIN BEDDING DETAIL N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION
DWG. NO. W.19		DWG. BY: FAYFWC		1	09/01/17	REVISED NOTES
DATE: JAN. 01, 2018		APPROVED BY: J.E.G.		3	05/29/18	REVISED NOTES FOR NCDOT U-4405
SHEET NO. 1 OF 1		WATER RESOURCES ENGINEERING DEPARTMENT		W19-WATER-BEDDING.dwg		

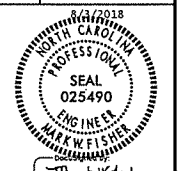


METER VAULT N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION
DWG. NO. W.20		DWG. BY: FAYFWC		1	09/10	REVISED PIPE BURY DEPTH
DATE: JAN. 01, 2018		APPROVED BY: J.E.G.		2		
SHEET NO. 1 OF 2		WATER RESOURCES ENGINEERING DEPARTMENT		W20-METER-VAULT.dwg		

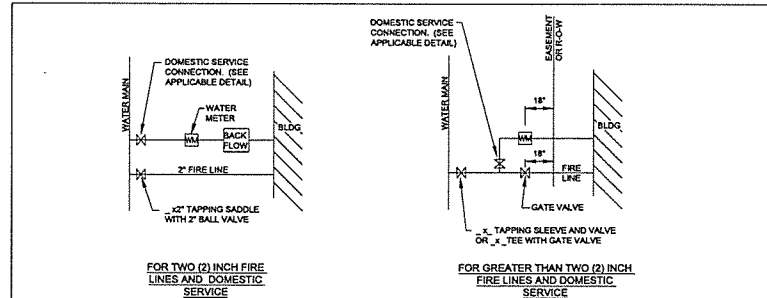


METER VAULT N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION
DWG. NO. W.20		DWG. BY: FAYFWC		1	09/10	REVISED NOTES
DATE: JAN. 01, 2018		APPROVED BY: J.E.G.		2	05/29/18	REVISED NOTES 14 AND 17 FOR NCDOT U-4405
SHEET NO. 2 OF 2		WATER RESOURCES ENGINEERING DEPARTMENT		W20-METER-VAULT.dwg		

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 Utility Rev. - JULY 24, 2018 - REVISIONS TO DETAIL SHEETS
 U-4405-CAADD\NCDOT PLANS\Utilities\Engineering\UC-Proj\Detail Sheets\U-4405-ut-dtl-UC03L-0.dgn
 5/14/19



UTILITY CONSTRUCTION



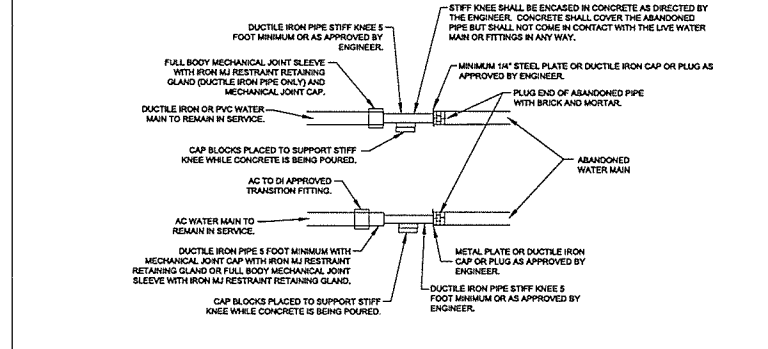
STANDARD TAPS
 N.T.S.
 SHEET NO. 1 OF 1
 DWG. NO. W.21
 DATE: JAN. 01, 2018
 DWG. BY: FAYPWC
 APPROVED BY: J.E.G.

FAYETTEVILLE PUBLIC WORKS COMMISSION
 FAYETTEVILLE, N.C.
WATER RESOURCES ENGINEERING DEPARTMENT

NO.	DATE	REVISION
1	10/17	ADDED NOTES 4, 5, 6, 7, 8
2	05/29/18	REVISED NOTE 8 FOR NCDOT U-4405

W21-STANDARD-TAPS.dwg

NOTES:
 1. KILL OUT SHALL BE DONE A MINIMUM OF 5 FEET FROM ANY FITTING ON THE EXISTING WATER MAIN THAT IS TO REMAIN IN SERVICE.
 2. IRON PIPE SHALL BE 4" DIAMETER FOR MAINS 12" OR LESS. UTILIZE 8" PIPE OR LARGER AS DIRECTED BY THE ENGINEER FOR ALL MAINS LARGER THAN 12".
 3. ALLOW CONCRETE TO SET UP PRIOR TO PLACING BACKFILL.
 4. VOLUME OF CONCRETE FOR THRUST BLOCK SHALL BE IN ACCORDANCE WITH FAYPWC STANDARD DETAIL W.17.
 5. ALL OUTAGES SHALL BE COORDINATED WITH THE ENGINEER.
 6. PIPE SHALL BE GROUT FILLED OR REMOVED IN ACCORDANCE WITH NCDOT SPECIFICATIONS AND SPECIAL PROVISIONS WHEN LOCATED IN THE STATE RIGHT-OF-WAY. ALL OTHER INSTANCES SHALL BE IN ACCORDANCE WITH FAYPWC SPECIFICATIONS.



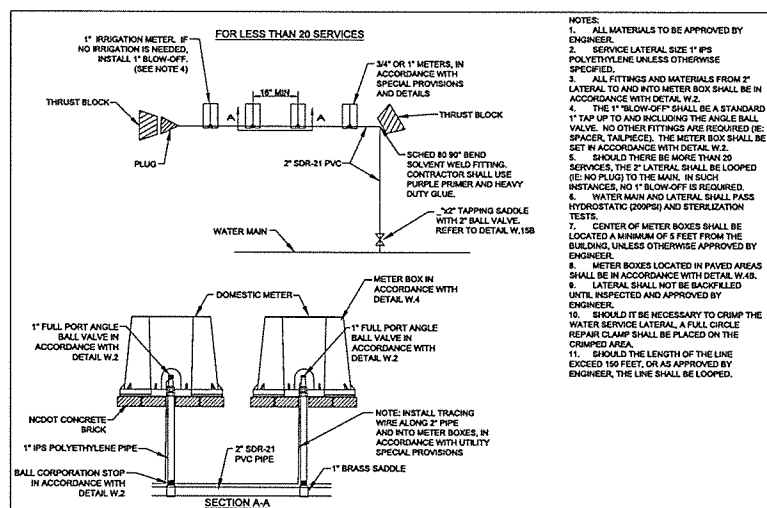
WATER MAIN KILL-OUT
 N.T.S.
 SHEET NO. 1 OF 1
 DWG. NO. W.22
 DATE: JAN. 01, 2018
 DWG. BY: FAYPWC
 APPROVED BY: J.E.G.

FAYETTEVILLE PUBLIC WORKS COMMISSION
 FAYETTEVILLE, N.C.
WATER RESOURCES ENGINEERING DEPARTMENT

NO.	DATE	REVISION
1	5/29/18	REVISED NOTED AND CALLOUTS FOR NCDOT U-4405

W22-WATERMAIN-KILLOUT.dwg

NOTE:
 ANY REFERENCE TO FAYPWC PROJECT COORDINATOR, PWC COORDINATOR OR FAYPWC (FAYETTEVILLE PUBLIC WORKS COMMISSION) SHALL BE INTERPRETTED AS A REFERENCE TO THE ENGINEER.

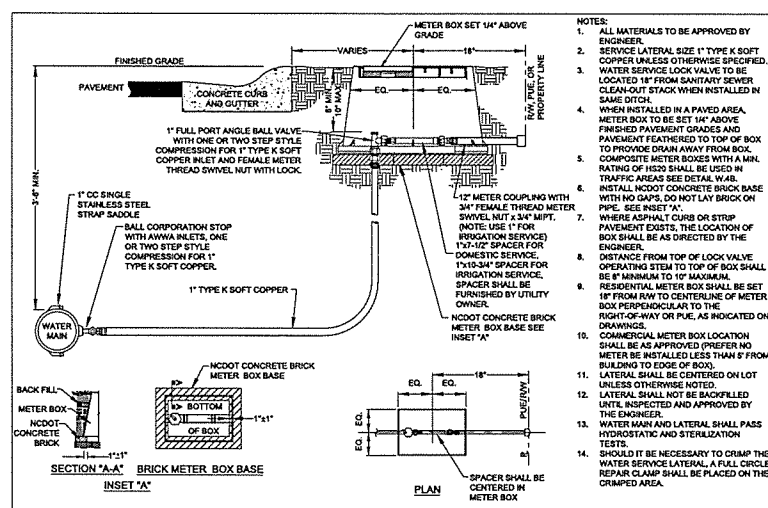


WATER SERVICE DETAILS FOR MULTI-UNIT BUILDINGS
 N.T.S.
 SHEET NO. 1 OF 1
 DWG. NO. W.23
 DATE: JAN. 01, 2018
 DWG. BY: FAYPWC
 APPROVED BY: J.E.G.

FAYETTEVILLE PUBLIC WORKS COMMISSION
 FAYETTEVILLE, N.C.
WATER RESOURCES ENGINEERING DEPARTMENT

NO.	DATE	REVISION
1	07/16	REVISED TITLE, NOTES
2	07/17	REVISED NOTES
3	7/24/18	REVISED PER NCDOT COMMENTS (U-4405)

W23-SERVICE-FOR-MULTI-UNIT-BUILDINGS.dwg

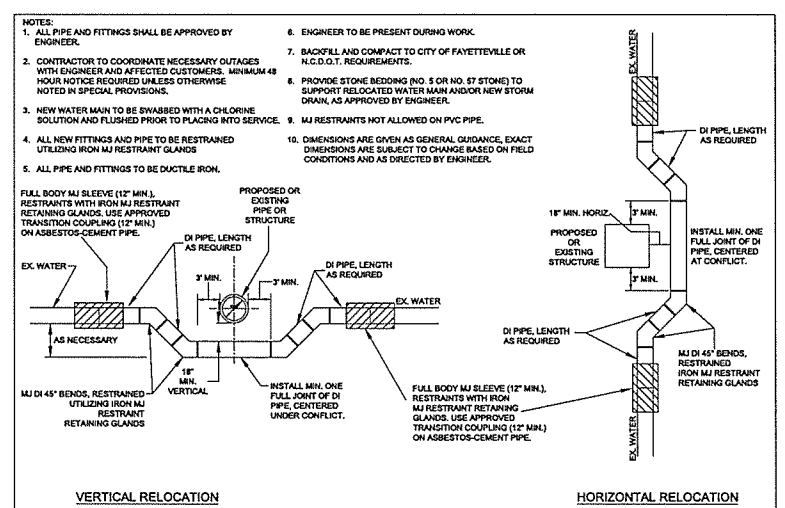


1" COPPER WATER SERVICE LATERAL
 N.T.S.
 SHEET NO. 1 OF 1
 DWG. NO. W.24
 DATE: JAN. 01, 2018
 DWG. BY: FAYPWC
 APPROVED BY: J.E.G.

FAYETTEVILLE PUBLIC WORKS COMMISSION
 FAYETTEVILLE, N.C.
WATER RESOURCES ENGINEERING DEPARTMENT

NO.	DATE	REVISION
1	06/05	VALVE CHANGE, ADD NOTE 18
2	07/06	RESIZED METER COUPLING
3	07/17	REVISED NOTES
4	07/24/18	INCLUDE PROJECT 1, 3, 4, AND 12 AND 13
5	07/24/18	REVISED PER NCDOT COMMENTS (U-4405)

W24-COPPER-SERVICE-LATERAL.dwg

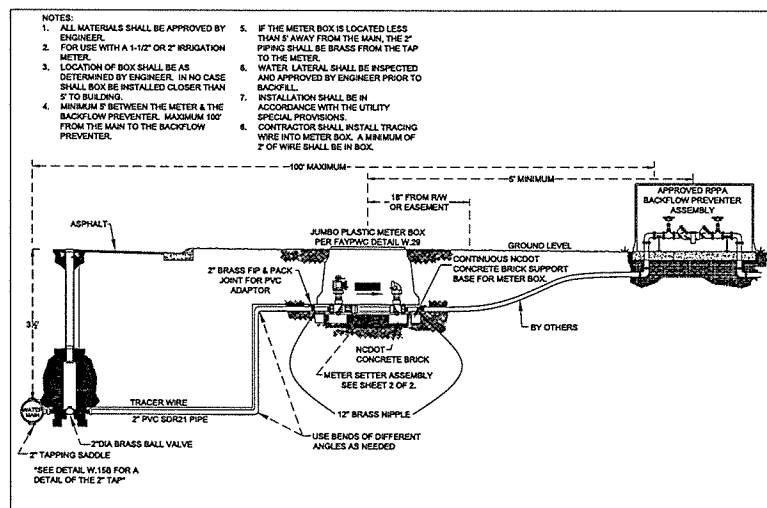


PIPE RELOCATION DETAIL
 N.T.S.
 SHEET NO. 1 OF 1
 DWG. NO. W.26
 DATE: JAN. 01, 2018
 DWG. BY: FAYPWC
 APPROVED BY: J.E.G.

FAYETTEVILLE PUBLIC WORKS COMMISSION
 FAYETTEVILLE, N.C.
WATER RESOURCES ENGINEERING DEPARTMENT

NO.	DATE	REVISION
1	07/12	REVISED NOTES, ADDED HORIZONTAL RELOCATION
2	05/28/18	REVISED NOTES AND CALLOUTS FOR NCDOT U-4405
3	07/24/18	REVISED PER NCDOT COMMENTS (U-4405)

W26-PIPE-RELOCATION-DETAIL.dwg

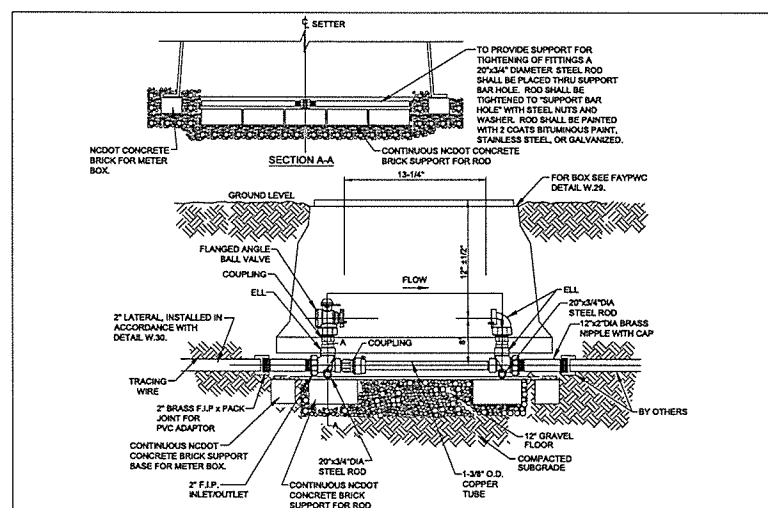


2" IRRIGATION LATERAL
 N.T.S.
 SHEET NO. 1 OF 2
 DWG. NO. W.28
 DATE: JAN. 01, 2018
 DWG. BY: FAYPWC
 APPROVED BY: J.E.G.

FAYETTEVILLE PUBLIC WORKS COMMISSION
 FAYETTEVILLE, N.C.
WATER RESOURCES ENGINEERING DEPARTMENT

NO.	DATE	REVISION
1	07/17	REVISED NOTES, ADDED SHEET 2
2	05/29/18	REVISED NOTES 1, 3, 4 AND 7 FOR NCDOT U-4405
3	07/24/18	REVISED PER NCDOT COMMENTS (U-4405)

W28-2IN-IRRIG-LAT.DWG

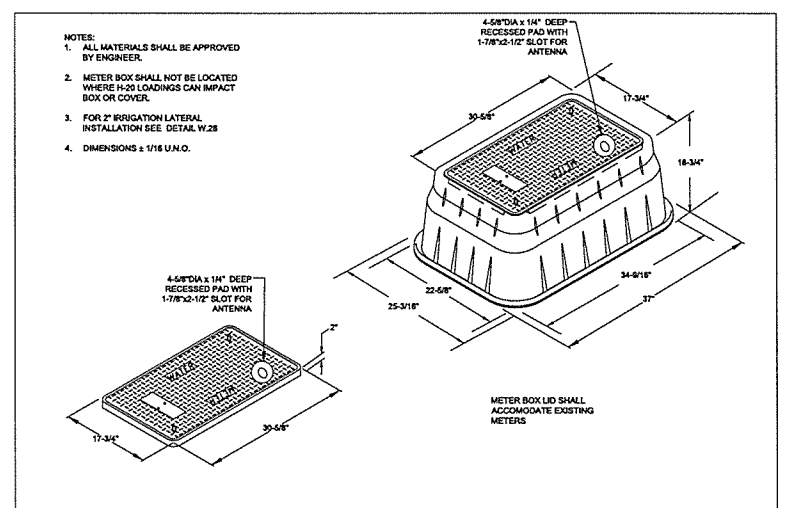


2" IRRIGATION LATERAL
 N.T.S.
 SHEET NO. 2 OF 2
 DWG. NO. W.28
 DATE: JAN. 01, 2018
 DWG. BY: FAYPWC
 APPROVED BY: J.E.G.

FAYETTEVILLE PUBLIC WORKS COMMISSION
 FAYETTEVILLE, N.C.
WATER RESOURCES ENGINEERING DEPARTMENT

NO.	DATE	REVISION
1	07/17	ADDED SHEET 2 OF 2

W28-2IN-IRRIG-LAT.DWG



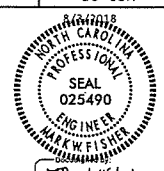
JUMBO METER BOX FOR IRRIGATION
 N.T.S.
 SHEET NO. 1 OF 1
 DWG. NO. W.29
 DATE: JAN. 01, 2018
 DWG. BY: FAYPWC
 APPROVED BY: J.E.G.

FAYETTEVILLE PUBLIC WORKS COMMISSION
 FAYETTEVILLE, N.C.
WATER RESOURCES ENGINEERING DEPARTMENT

NO.	DATE	REVISION
1	07/17	REVISED LID, BOX AND DIMENSIONS
2	05/29/18	REVISED NOTES 1 AND ADDED NOTE FOR LID TO BE CONSISTENT WITH EXISTING AREA FOR NCDOT U-4405
3	07/24/18	REVISED PER NCDOT COMMENTS

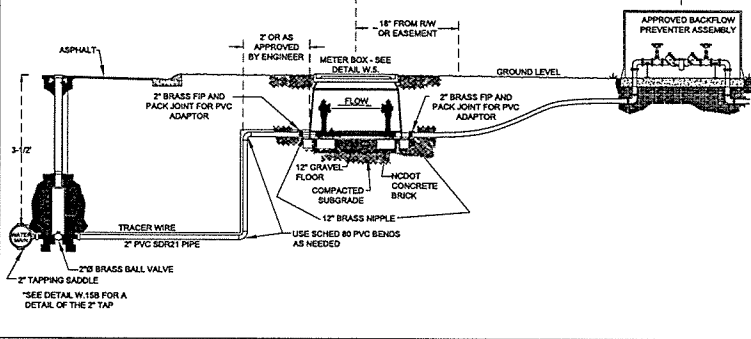
W29-JUMBO-METERBOX-IRRIG.dwg

02-AUG-2018 16:29 Fayetteville Public Works Commission\20150177008RA Reeford Road NCDOT U-4405\CADD\NCDOT PLANS\Utilities\Engineering\UC\Proc\Detail Sheets\U-4405-ut.dtl UC031-0.dgn
 5/14/19
 REVISIONS
 UTILITY REV. - JUL 24, 2018 - REVISIONS TO DETAIL SHEETS



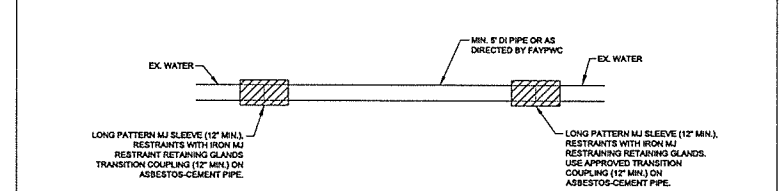
UTILITY CONSTRUCTION

- NOTES:
 1. FOR USE WITH 1-1/2" OR 2" DOMESTIC METER.
 2. METER BOX AND SETTER SHALL BE IN ACCORDANCE WITH DETAIL W.5.
 3. MINIMUM 8" BETWEEN THE METER AND THE BACKFLOW PREVENTER.
 4. IF THE METER BOX IS LOCATED LESS THAN 8" AWAY FROM THE MAIN, THE 2" PIPING AND FITTINGS SHALL BE BRASS FROM THE TAP TO THE METER.
 5. LATERALS SHALL BE INSPECTED AND APPROVED BY ENGINEER PRIOR TO BACKFILL.
 6. ALL MATERIALS SHALL BE APPROVED BY ENGINEER.
 7. LOCATION OF BOX SHALL BE AS DETERMINED BY ENGINEER. IN NO CASE SHALL BOX BE INSTALLED CLOSER THAN 8" TO BUILDING.
 8. CONTRACTOR SHALL INSTALL TRACING WIRE INTO BOX. A MINIMUM OF 2' OF WIRE SHALL BE IN BOX.



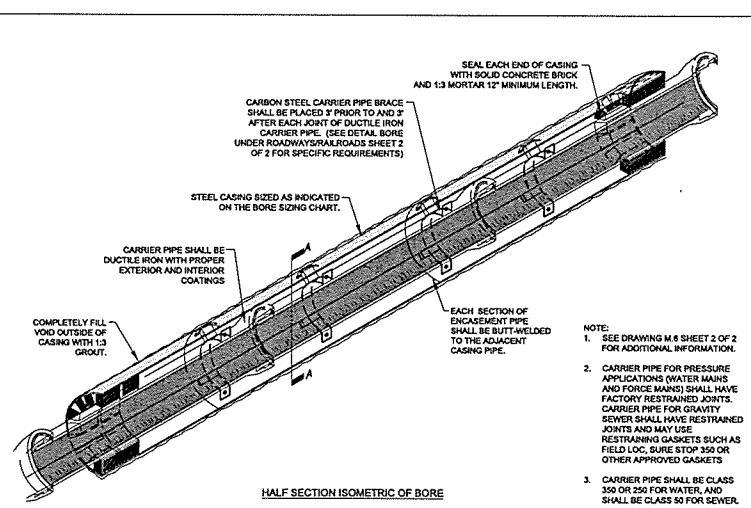
2" DOMESTIC LATERAL N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION
SHEET NO. 1 OF 1	DWG. NO. W.30	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT	1	07/01/17	REVISED NOTES
	DATE: JAN. 01, 2018	APPROVED BY: J.E.G.		2	05/20/18	REVISED NOTES 5, 6, AND 7 FOR NCDOT U-4405
				3	07/24/18	REVISED PER NCDOT COMMENTS (U-4405)

- NOTES:
 1. ALL PIPE AND FITTINGS SHALL BE APPROVED BY ENGINEER.
 2. CONTRACTOR TO COORDINATE NECESSARY OUTAGES WITH ENGINEER AND AFFECTED CUSTOMERS. MINIMUM 48 HOUR NOTICE REQUIRED UNLESS LOWER DURATIONS ARE SPECIFIED IN UTILITY SPECIAL PROVISIONS.
 3. NEW WATER MAIN TO BE SWABBED WITH A CHLORINE SOLUTION AND FLUSHED PRIOR TO PLACING INTO SERVICE.
 4. ALL NEW FITTINGS AND PIPE TO BE RESTRAINED UTILIZING IRON MJ RESTRAINT RETAINING CLAMPS.
 5. ALL PIPES TO BE DUCTILE IRON.
 6. ENGINEER TO BE PRESENT DURING WORK.
 7. BACKFILL AND COMPACT IN ACCORDANCE WITH THE APPLICABLE AGENCY REQUIREMENTS.
 8. PROVIDE STONE BEDDING (NO. 5 OR NO. 57 STONE) TO SUPPORT REPAIRED WATER MAIN, AS APPROVED BY ENGINEER.
 9. MJ RESTRAINTS ARE NOT ALLOWED ON PVC PIPE.
 10. DIMENSIONS ARE GIVEN AS GENERAL GUIDANCE, EXACT DIMENSIONS ARE SUBJECT TO CHANGE BASED ON FIELD CONDITIONS AND AS DIRECTED BY ENGINEER.
 11. ALL MATERIALS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE SPECIAL PROVISIONS.
 12. PIPE REPAIR SHALL EXHIBIT STRAIGHT HORIZONTAL AND VERTICAL ALIGNMENT. DEFLECTIONS OF HORIZONTAL AND VERTICAL ALIGNMENT ARE NOT ACCEPTABLE.
 13. THERE SHALL BE NO MORE THAN 1/4" SPACE BETWEEN THE EXISTING WATER MAIN AND THE REPLACEMENT PIPE AT EACH END. DAMAGED SECTION SHALL BE CUT OUT WITHOUT DAMAGING THE PIPE TO REMAIN.
 14. PIPE REPAIRS ON MATERIALS OTHER THAN SHOWN, SHALL BE AS DIRECTED BY ENGINEER.
 15. THE MINIMUM LENGTH OF REPAIR SHALL BE 5 FEET, UNLESS OTHERWISE DIRECTED BY ENGINEER.

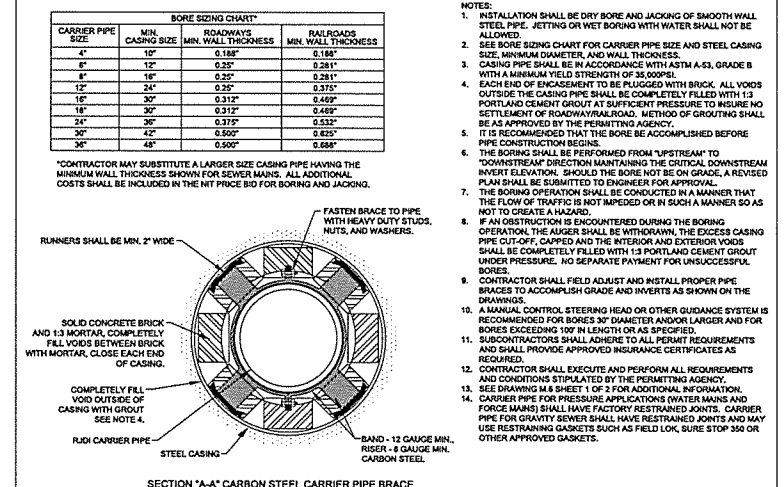


PIPE REPAIR DETAIL N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION
SHEET NO. 1 OF 1	DWG. NO. W.31	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT	1	05/20/18	REVISED NOTES AND CALL OUT FOR NCDOT U-4405
	DATE: JAN. 01, 2018	APPROVED BY: J.E.G.		2	07/24/18	REVISED PER NCDOT COMMENTS (U-4405)

NOTE:
 ANY REFERENCE TO FAYPWC PROJECT COORDINATOR, PWC COORDINATOR OR FAYPWC (FAYETTEVILLE PUBLIC WORKS COMMISSION) SHALL BE INTERPRETTED AS A REFERENCE TO THE ENGINEER.



BORE UNDER ROADWAYS/RAILROADS N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION
SHEET NO. 1 OF 2	DWG. NO. M.6	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT	1	01/05	ADDED NOTES 2 AND 3
	DATE: JAN. 01, 2018	APPROVED BY: J.E.G.		2	10/09	CLARIFIED RESTRAINT REQUIREMENTS



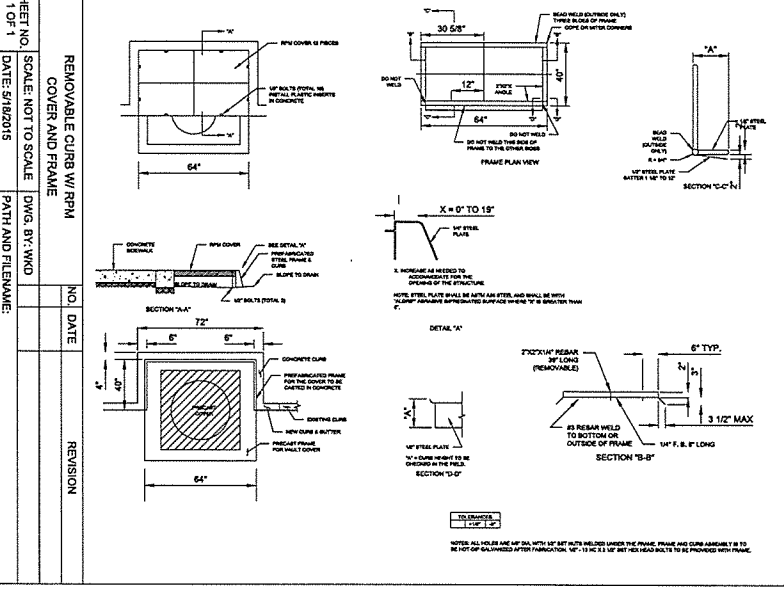
BORE UNDER ROADWAYS/RAILROADS N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION
SHEET NO. 2 OF 2	DWG. NO. M.6	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT	1	02/11/14	ADDED F' CARRIER PIPE TO BORE SIZING CHART
	DATE: JAN. 01, 2018	APPROVED BY: J.E.G.		2	07/10	REVISED NOTES, SIZING CHART
				3	07/24/18	REVISED PER NCDOT COMMENTS (U-4405)

MINIMUM LENGTH OF BURIED PIPE BETWEEN CLOSED VALVE AND EXCAVATION FOR RESTRAINT			
BASED ON MINIMUM TYPE 2 BEDDING IN SILT SOIL			
Diameter (inches)	Depth of Cover (feet)	Length (feet)	
18	2-3.99	291	
18	4-5.99	175	
18	6-7.99	120	
18	8-9.99	82	
18	≥ 10	75	
12	2-3.99	174	
12	4-5.99	135	
12	6-7.99	93	
12	8-9.99	71	
12	≥ 10	57	
10	2-3.99	148	
10	4-5.99	115	
10	6-7.99	79	
10	8-9.99	60	
10	≥ 10	49	
8	2-3.99	123	
8	4-5.99	95	
8	6-7.99	65	
8	8-9.99	49	
8	≥ 10	40	
6	2-3.99	96	
6	4-5.99	73	
6	6-7.99	50	
6	8-9.99	38	
6	≥ 10	31	

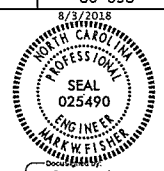
VALVE REMOVAL WITH EXCAVATION N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION
SHEET NO. 1 OF 1	DWG. NO. M.15	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT			
	DATE: JAN. 01, 2018	APPROVED BY: J.E.G.				

- UTILITY GENERAL NOTES
 1. PRIOR TO COMMENCEMENT OF ANY WORK WITHIN EASEMENTS OR RIGHTS-OF-WAYS THE CONTRACTOR IS REQUIRED TO NOTIFY CONCERNED UTILITY COMPANIES IN ACCORDANCE WITH GS 81-102. CONTRACTOR SHALL VERIFY LOCATION OF EXISTING UTILITIES PRIOR TO BEGINNING CONSTRUCTION. NO SEPARATE PAYMENT. EXISTING UTILITIES SHOWN ARE TAKEN FROM MAPS FURNISHED BY VARIOUS UTILITY COMPANIES AND HAVE NOT BEEN PHYSICALLY LOCATED (IE. TELEPHONE, GAS, CABLE, ETC.).
 2. THE CONTRACTOR SHALL DO UP EACH UTILITY WHICH MAY CONFLICT WITH CONSTRUCTION 14 DAYS IN ADVANCE TO VERIFY LOCATIONS (HORIZONTALLY AND VERTICALLY) TO ALLOW THE ENGINEER AN OPPORTUNITY TO ADJUST THE DESIGN TO AVOID CONFLICTS (NO SEPARATE PAYMENT).
 3. ALL SANITARY SEWER AND WATER CONSTRUCTION SHALL BE IN ACCORDANCE WITH UTILITY SPECIAL PROVISIONS. STREET CONSTRUCTION AND PAVING SHALL BE IN ACCORDANCE WITH THE CITY OF FAYETTEVILLE.
 4. UTILITY SERVICES TO INDIVIDUAL PROPERTIES ARE NOT SHOWN IN THE PROFILES FOR SIMPLICITY OF THE DRAWINGS. SERVICES MAY INCLUDE WATER, LATERALS, TELEPHONE, ELECTRIC, GAS, ETC.
 5. CONTRACTOR SHALL COORDINATE WITH UTILITY OWNER AND BE RESPONSIBLE FOR TEMPORARY RELOCATION AND/OR SECURING EXISTING UTILITY POLES AND SIGNS AND/OR UTILITIES IN ACCORDANCE WITH UTILITY OWNER REQUIREMENTS DURING THE UTILITY MAIN INSTALLATION AND STREET CONSTRUCTION. (NO SEPARATE PAYMENT).
 6. CONTRACTOR SHALL PROVIDE TEMPORARY SUPPORTS FOR UTILITY CROSSINGS AND REPAIR DAMAGES DUE TO CONSTRUCTION TO THE SATISFACTION OF THE UTILITY INVOLVED AT NO ADDITIONAL EXPENSE TO THE OWNER. UNDERGROUND ELECTRICAL CROSSINGS SHALL BE CROSSED IN ACCORDANCE WITH THE N.E.C. AND TECHNICAL SPECIFICATION SECTION UNDERGROUND ELECTRICAL CROSSING REQUIREMENTS.
 7. WHERE DEEMED NECESSARY BY THE ENGINEER THAT A SUBSURFACE DRAINAGE SYSTEM IS REQUIRED, THE CONTRACTOR SHALL PROVIDE ALL MATERIALS, TOOLS, LABOR, EQUIPMENT, TIES TO EXISTING DRAINAGE STRUCTURES AND ALL OTHER INCIDENTALS NECESSARY TO PROVIDE COMPLETE INSTALLATION IN ACCORDANCE WITH CITY OF FAYETTEVILLE STANDARDS. IMPROPERLY INSTALLED AND NONFUNCTIONING DRAINAGE SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE. EXISTING FRENCH DRAINAGE DAMAGED DURING CONSTRUCTION SHALL BE REPLACED AND/OR REPAIRED AT NO ADDITIONAL EXPENSE TO THE OWNER.
 8. STORM DRAINAGE REPAIRS BY CONTRACTOR DUE TO CONSTRUCTION DAMAGE AND JOINTS EXPOSED DURING CONSTRUCTION SHALL BE INSPECTED BY THE OWNER PRIOR TO BACKFILLING.

UTILITY GENERAL NOTES		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION
SHEET NO. 1 OF 1	DWG. NO. N.2	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT	1	07/24/18	REVISED PER NCDOT COMMENTS (U-4405)
	DATE: JAN. 01, 2018	APPROVED BY: J.E.G.				



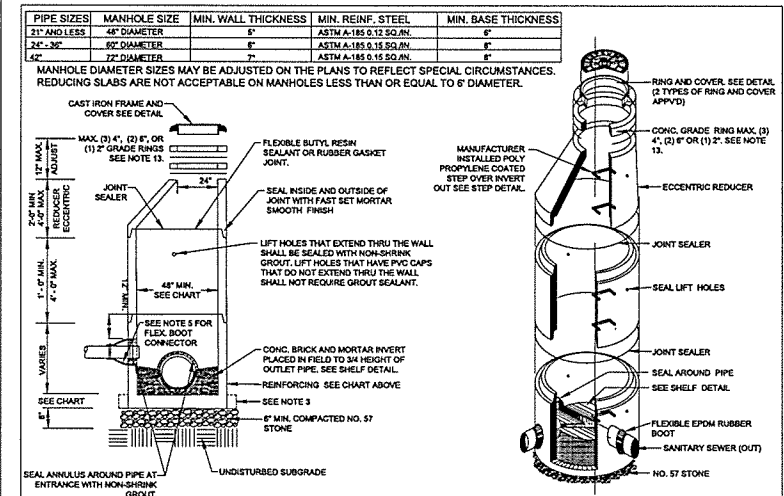
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UTILITY CONSTRUCTION PLANS ONLY

- CONTRACTOR SHALL REPAIR ALL SEWER LATERALS AND MAINS DAMAGED DURING CONSTRUCTION. THE CONTRACTOR SHALL IMMEDIATELY REPORT ALL SEWER MAIN AND LATERAL BREAKS TO THE ENGINEER. THE CONTRACTOR SHALL INITIATE IMMEDIATE REPAIRS IN ACCORDANCE WITH THE UTILITY SPECIAL PROVISIONS.
- SEWER MAINS, LATERALS, AND MANHOLES SHALL BE INSTALLED UTILIZING AN APPROVED CUT-SHEET, INDICATING INSTALLATION DEPTH.
- TRANSFER OF SEWER SERVICES SHALL BE ACCOMPLISHED AS FOLLOWS:
 - INSTALL AND TEST NEW MAINS, MANHOLES, AND LATERALS. CLEANOUTS SHALL BE INSTALLED 18" INCH R/W OR PUE UNLESS OTHERWISE DIRECTED BY ENGINEER.
 - CONNECT EXISTING PLUMBING TO NEW LATERAL UTILIZING THE NECESSARY FITTINGS AS DIRECTED BY ENGINEER.
 - AFTER ALL SERVICES HAVE BEEN TRANSFERRED TO THE NEW MAIN, THE EXISTING SEWER SYSTEM SHALL BE ABANDONED IN ACCORDANCE WITH THE UTILITY SPECIAL PROVISIONS.
- WHEN THE EXISTING MAIN IS NOT TO BE ABANDONED, THE CONTRACTOR SHALL UNCOVER THE EXISTING LATERAL AT THE MAIN, CUT AND PLUG BOTH ENDS, REMOVE THE EXISTING CLEANOUT AND COMBINATOR, AND PLUG THE LATERAL TO ABANDON THE OLD SERVICE.
- CONTRACTOR SHALL ABANDON (YALL-OUT) ANY EXISTING SEWER SERVICES THAT WILL NOT BE UTILIZED BY UNCOVERING THE EXISTING LATERAL AT THE MAIN, CUT AND PLUG AT BOTH ENDS, REMOVE THE EXISTING CLEANOUT AND COMBINATOR, AND PLUG THE TAP OR TEE AT THE MAIN. FOR LATERALS THAT CONNECT TO A MANHOLE AND ARE TO BE ABANDONED (YALL-OUT), THE LATERAL SHALL BE REMOVED FROM THE MANHOLE AND THE REMAINING VOID IN THE MANHOLE SHALL BE FILLED WITH BLOCK AND MORTAR.
- SEWER PLUGS SHALL BE INSTALLED TO ELIMINATE ANY DEBRIS OR OTHER MATERIAL FROM ENTERING THE ACTIVE SEWER SYSTEM. UPON ACCEPTANCE OF THE NEW SEWER SYSTEM, THE CONTRACTOR SHALL CLEAN THE NEW MAINS, REMOVE ALL DEBRIS, AND THEN REMOVE THE PLUG.
- ALL EXISTING UTILITIES IMPACTED BY CONSTRUCTION SHALL BE ADJUSTED TO FINISHED GRADE, IN ACCORDANCE WITH ELEVATIONS INDICATED OR SHOWN ON DRAWINGS.

GENERAL NOTES		FAYETTEVILLE PUBLIC WORKS COMMISSION		FAYETTEVILLE, N.C.	
SHEET NO. 1 OF 1	DWG. NO. S.1	DWG. BY: FAYPWC	DATE: JAN. 01, 2018	APPROVED BY: J.E.G.	WATER RESOURCES ENGINEERING DEPARTMENT

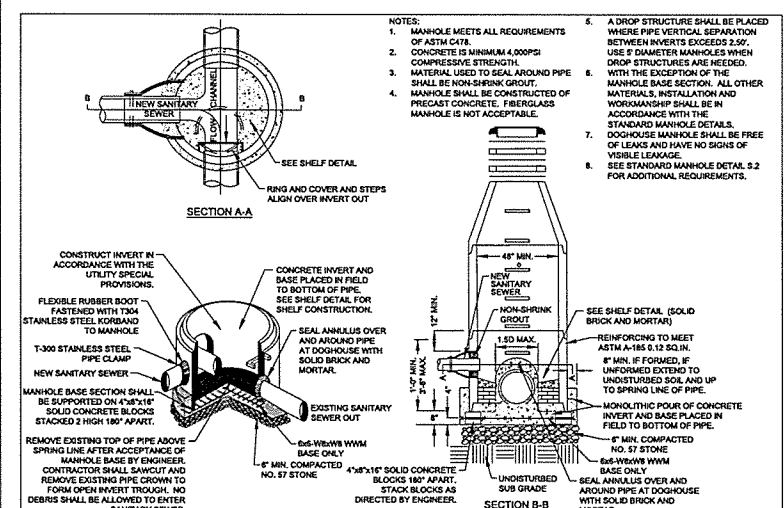


STANDARD MANHOLE		FAYETTEVILLE PUBLIC WORKS COMMISSION		FAYETTEVILLE, N.C.	
SHEET NO. 1 OF 2	DWG. NO. S.2	DWG. BY: FAYPWC	DATE: JAN. 01, 2018	APPROVED BY: J.E.G.	WATER RESOURCES ENGINEERING DEPARTMENT

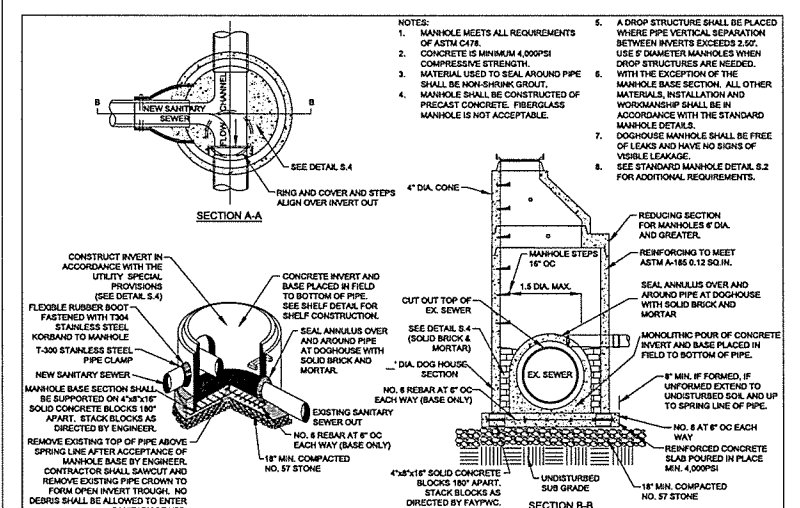
NOTE:
 ANY REFERENCE TO FAYPWC PROJECT COORDINATOR, PWC COORDINATOR OR FAYPWC (FAYETTEVILLE PUBLIC WORKS COMMISSION) SHALL BE INTERPRETTED AS A REFERENCE TO THE ENGINEER.

- PRECAST REINFORCED CONCRETE MANHOLES SHALL BE IN ACCORDANCE WITH ASTM C-418.
- MINIMUM CONCRETE COMPRESSIVE STRENGTH SHALL BE 4,000PSI. EXTENDED BASE.
- MANHOLES GREATER THAN 12" DEPTH SHALL HAVE MINIMUM 6" EXTENDED BASE.
- FLEXIBLE BUTYL RESIN JOINT SEALANT SHALL BE IN ACCORDANCE WITH ASTM D-977. RUBBER GASKET JOINTS SHALL BE IN ACCORDANCE WITH ASTM C-443.
- FLEXIBLE EPDM RUBBER BOOT CONNECTORS SHALL BE IN ACCORDANCE WITH ASTM D-2001. INSTALLED BY MANUFACTURER WITH STAINLESS STEEL COMPRESSION RING AND TAKE-UP CLAMP. CONNECTION TO MAIN SHALL BE BY CONTRACTOR WITH STAINLESS STEEL PIPE CLAMP.
- CONNECTIONS TO EXISTING MANHOLES SHALL BE BY CORING MANHOLE AND FIELD INSTALLING A FLEX BOOT CONNECTOR. DO NOT ALLOW DEBRIS TO ENTER SYSTEM.
- MORTAR SHALL BE QUICK SETTING, NON-SHRINK GROUT MIXED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- MANHOLE STEPS SHALL BE IN ACCORDANCE WITH ASTM D-478 AND OSHA REGULATIONS. ALIGN STEPS WITH INVERT OUT.
- PRECAST INVERTS ARE NOT ALLOWED. STANDING WATER IN INVERT OF MANHOLE IS NOT ACCEPTABLE.
- VERTICAL DROPS BETWEEN THE INFLOW PIPES AND OUTFLOW PIPES SHALL REQUIRE THE FOLLOWING:
 - GREATER THAN 2.5' DROP STRUCTURE DETAIL, MIN. 4" DIAMETER (4" REQUIRED).
 - 1" TO 2.5' DROP STRUCTURE DETAIL, MIN. 3" DIAMETER.
 - LESS THAN 1" SEE MORTAR SLIDE DETAIL.
- AN ECCENTRIC CONE SHALL BE UTILIZED ON ALL MANHOLES, UNLESS OTHERWISE APPROVED BY ENGINEER.
- INVERT ON PLANS IS TO MANHOLE CENTERLINE.
- CONCRETE GRADE RINGS SHALL NOT BE USED FOR ABOVE GRADE ADJUSTMENTS (IE. OUTCALL AREAS). USE OF GRADE RINGS ARE ALLOWABLE IN YARD AREAS AND PAVEMENT, WHERE THE RING AND COVER ARE AT GROUND LEVEL.
- THE MINIMUM SLOPE ACROSS THE INVERT OF THE MANHOLE SHALL BE 1%, UNLESS OTHERWISE APPROVED BY ENGINEER.
- THE EXTERIOR MANHOLE RISER, JOINTS, INCLUDING THE JOINT AT THE CONE, SHALL BE SEALED ON THE OUTSIDE BY AN APPROVED JOINT W/AF. THE W/AF SHALL BE IN ACCORDANCE WITH THE UTILITY SPECIAL PROVISIONS.
- MANHOLE BOOT FOR 4-INCH LATERALS, SHOULD IT BE NECESSARY TO INSTALL A 4-INCH LATERAL INTO A MANHOLE, THE RUBBER BOOT THAT THE LATERAL IS INSERTED INTO SHALL BE SECURELY FASTENED TO THE CORE HOLE BY UTILIZING A STAINLESS STEEL BAND THAT IS THE SAME WIDTH AS A JACK OR TONGUE WRENCH (DIRECT DRIVE). BOTH STANDARD SIZE AND STEP DOWN BOOTS ARE ALLOWED. THE TONGUE WRENCH SHALL BE USED TO SECURE THE BOOT TO THE MANHOLE. NO OTHER TYPE BANDS OR METHOD OF SECURING THE BOOT TO THE MANHOLE SHALL BE ACCEPTED.
- FOR FOUR (4) INCH SDR 26 LATERALS, THE PIPE OUTSIDE DIAMETER RANGE OF THE BOOT SHALL BE 5.5 INCHES TO 4.25 INCHES.
- FOR FOUR (4) INCH DUCTILE IRON LATERALS, THE PIPE OUTSIDE DIAMETER RANGE OF THE BOOT SHALL EITHER BE AS FOR VC OR 4.25 INCHES TO 4.1 INCHES.
- IN ALL CASES, THE BOOT SHALL BE TIGHTENED ON THE LATERAL BY MEANS OF A SINGLE STAINLESS STEEL STRAP.
- THE LATERAL INVERT SHALL BE AT THE TOP OF THE SHELF.
- NO MORE THAN 4, FOUR INCH LATERALS OR 3, SIX INCH LATERALS SHALL ENTER A 4" DIAMETER TERMINAL MANHOLE. NO MORE THAN 2 LATERALS (REGARDLESS OF SIZE) SHALL ENTER A 6" DIAMETER MANHOLE. ALL LATERALS SHALL HAVE AN INDIVIDUAL TROUGH. 8" DIAMETER MANHOLES SHALL BE USED IF THE ABOVE CONDITIONS ARE NOT MET.
- NO MORE THAN 3 LATERALS SHALL ENTER A 6" DIAMETER.
- USE OF TEE-WYES ON LATERALS IS NOT ALLOWED.
- ALL MANHOLES SHALL BE VACUUM TESTED IN ACCORDANCE WITH THE UTILITY SPECIAL PROVISIONS.

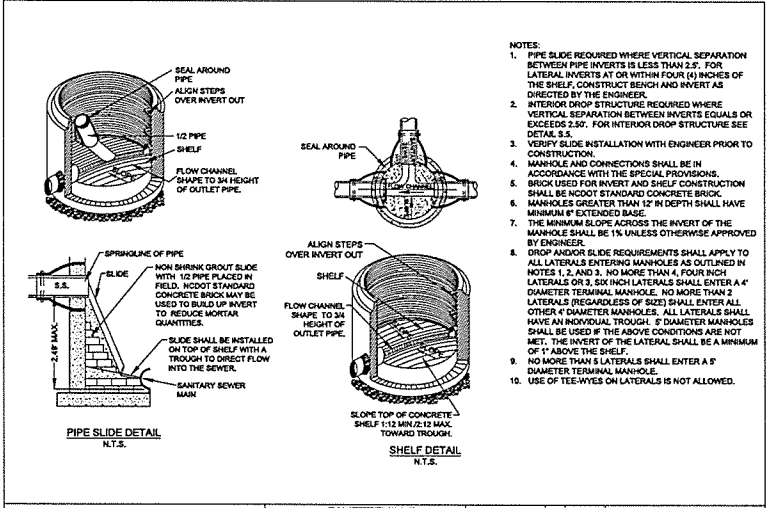
STANDARD MANHOLE		FAYETTEVILLE PUBLIC WORKS COMMISSION		FAYETTEVILLE, N.C.	
SHEET NO. 2 OF 2	DWG. NO. S.2	DWG. BY: FAYPWC	DATE: JAN. 01, 2018	APPROVED BY: J.E.G.	WATER RESOURCES ENGINEERING DEPARTMENT



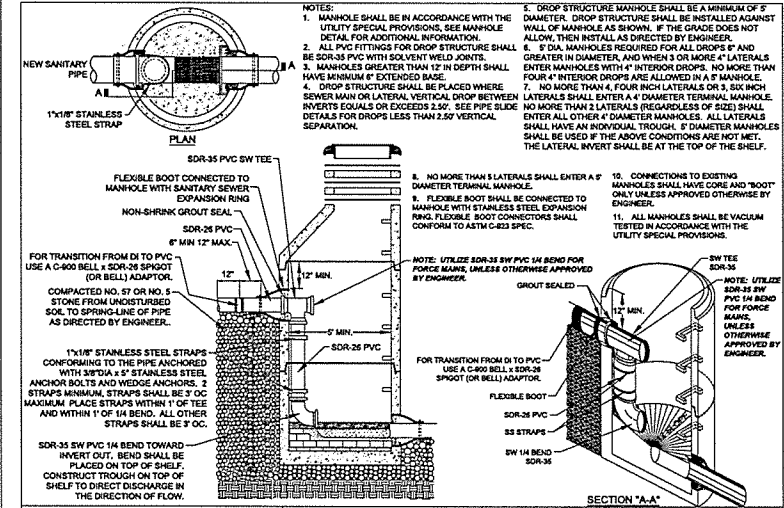
DOGHOUSE MANHOLE (MAINS 15" OR LESS)		FAYETTEVILLE PUBLIC WORKS COMMISSION		FAYETTEVILLE, N.C.	
SHEET NO. 1 OF 2	DWG. NO. S.3	DWG. BY: FAYPWC	DATE: JAN. 01, 2018	APPROVED BY: J.E.G.	WATER RESOURCES ENGINEERING DEPARTMENT



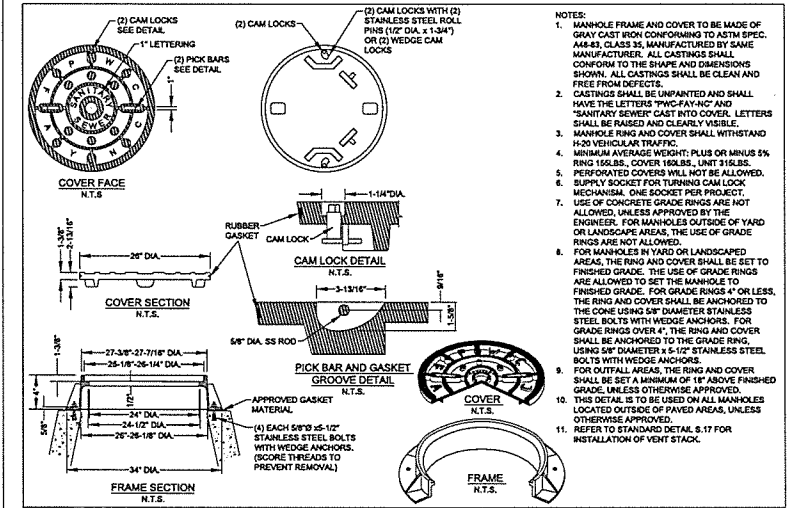
DOGHOUSE MANHOLE (MAINS 15" OR LARGER)		FAYETTEVILLE PUBLIC WORKS COMMISSION		FAYETTEVILLE, N.C.	
SHEET NO. 2 OF 2	DWG. NO. S.3	DWG. BY: FAYPWC	DATE: JAN. 01, 2018	APPROVED BY: J.E.G.	WATER RESOURCES ENGINEERING DEPARTMENT



PIPE SLIDE AND SHELF DETAILS		FAYETTEVILLE PUBLIC WORKS COMMISSION		FAYETTEVILLE, N.C.	
SHEET NO. 1 OF 1	DWG. NO. S.4	DWG. BY: FAYPWC	DATE: JAN. 01, 2018	APPROVED BY: J.E.G.	WATER RESOURCES ENGINEERING DEPARTMENT



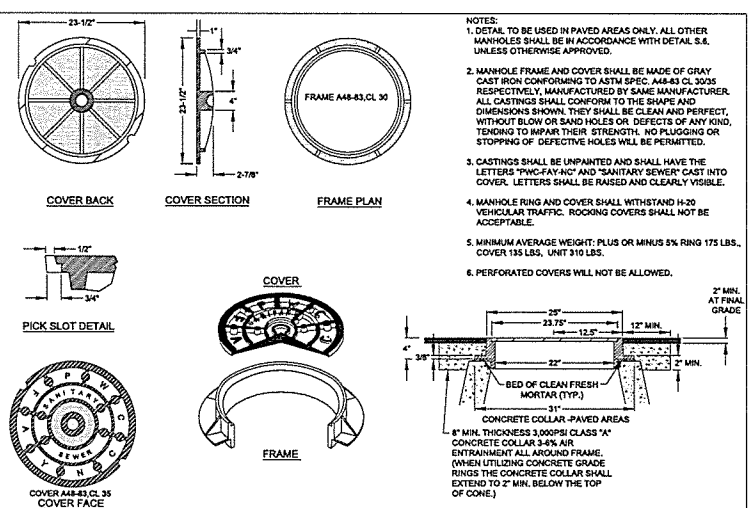
INTERIOR DROP STRUCTURE SEWER MAINS & LATERALS		FAYETTEVILLE PUBLIC WORKS COMMISSION		FAYETTEVILLE, N.C.	
SHEET NO. 1 OF 1	DWG. NO. S.5	DWG. BY: FAYPWC	DATE: JAN. 01, 2018	APPROVED BY: J.E.G.	WATER RESOURCES ENGINEERING DEPARTMENT



STANDARD NON-TRAFFIC AREA MANHOLE RING AND COVER WITH WIPER GASKET AND CAM LOCK		FAYETTEVILLE PUBLIC WORKS COMMISSION		FAYETTEVILLE, N.C.	
SHEET NO. 1 OF 1	DWG. NO. S.6	DWG. BY: FAYPWC	DATE: JAN. 01, 2018	APPROVED BY: J.E.G.	WATER RESOURCES ENGINEERING DEPARTMENT

REVISIONS
 UTILITY REV. - JULY 24, 2018 - REVISIONS TO DETAIL SHEETS
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UTILITY CONSTRUCTION

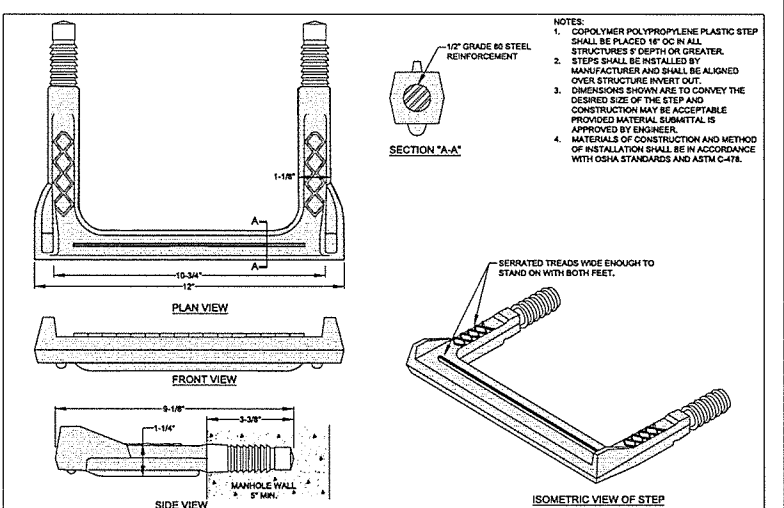


STANDARD TRAFFIC AREA MANHOLE RING AND COVER
 N.T.S.
 DWG. NO. S.7
 DATE: JAN. 01, 2018
 DWG. BY: FAYPWC
 APPROVED BY: JEG

FAYETTEVILLE PUBLIC WORKS COMMISSION
 FAYETTEVILLE, N.C.
 WATER RESOURCES ENGINEERING DEPARTMENT

NO.	DATE	REVISION
1	01/05	CHANGED NON TRAFFIC DETAIL
2	07/06	ADDED NOTE ON CONCRETE COLLAR
3	02/07	REMOVED NON TRAFFIC AREA AND REVISED NOTES
4	07/08	REVISED ASPHALT THICKNESS

57-RING-COVER.dwg



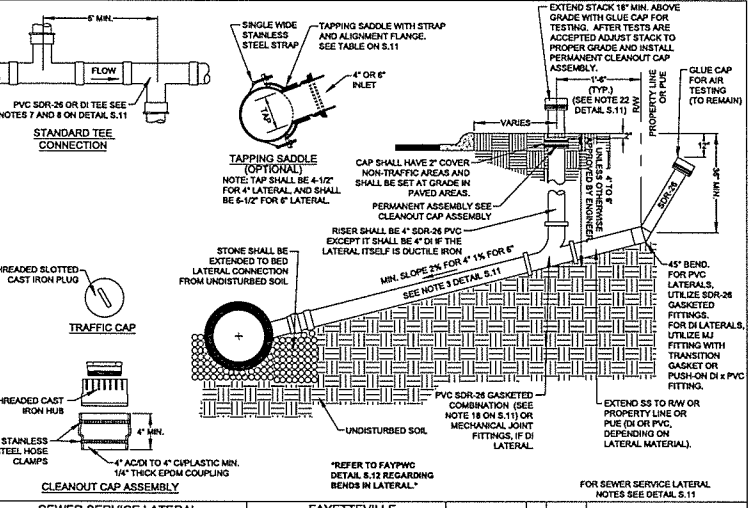
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 DWG. NO. S.8
 DATE: JAN. 01, 2018
 DWG. BY: FAYPWC
 APPROVED BY: J.E.G.

FAYETTEVILLE PUBLIC WORKS COMMISSION
 FAYETTEVILLE, N.C.
 WATER RESOURCES ENGINEERING DEPARTMENT

NO.	DATE	REVISION
1	05/29/18	REVISED NOTE 3 FOR NCDOT U-4405.

58-STEP.dwg

NOTE:
 ANY REFERENCE TO FAYPWC PROJECT COORDINATOR, PWC COORDINATOR OR FAYPWC (FAYETTEVILLE PUBLIC WORKS COMMISSION) SHALL BE INTERPRETTED AS A REFERENCE TO THE ENGINEER.

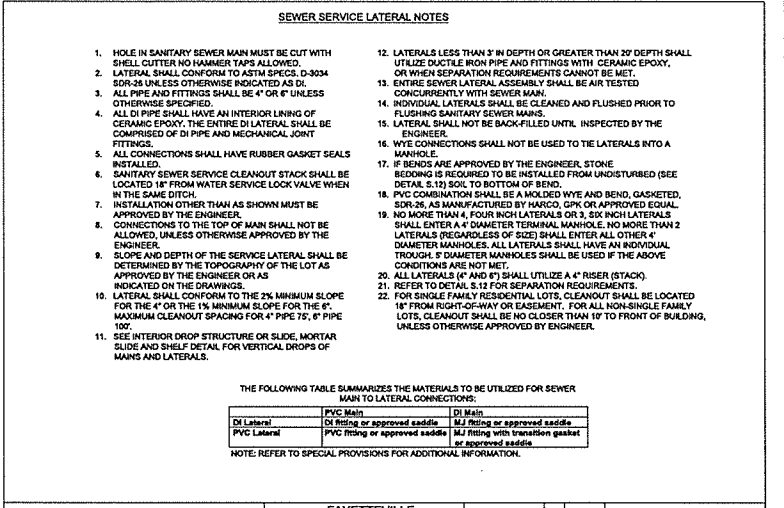


SEWER SERVICE LATERAL (4-INCH AND 6-INCH)
 N.T.S.
 DWG. NO. S.10
 DATE: JAN. 01, 2018
 DWG. BY: FAYPWC
 APPROVED BY: JEG

FAYETTEVILLE PUBLIC WORKS COMMISSION
 FAYETTEVILLE, N.C.
 WATER RESOURCES ENGINEERING DEPARTMENT

NO.	DATE	REVISION
2	01/14	ADDED TAPLICE, NOTES
3	01/15	REVISED NOTES RE: TAPLICE
4	05/29/18	REVISED CALLOUTS FOR NCDOT U-4405

610-FRESLAT.dwg

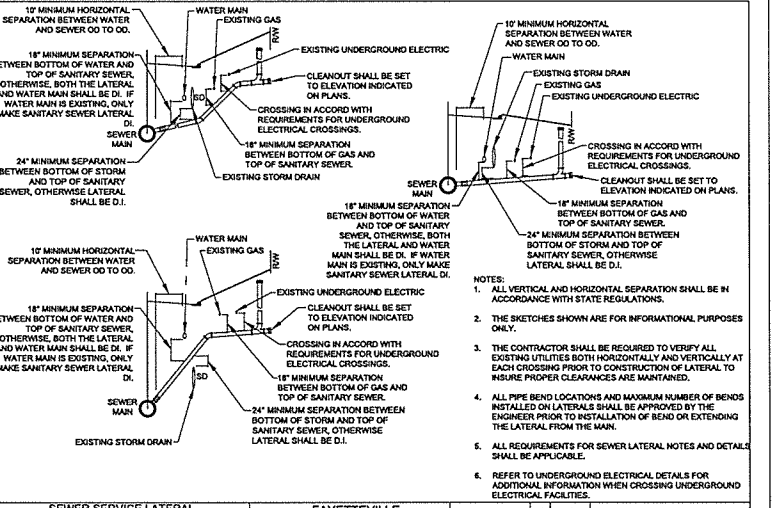


SEWER SERVICE LATERAL NOTES (4-INCH AND 6-INCH)
 N.T.S.
 DWG. NO. S.11
 DATE: JAN. 01, 2018
 DWG. BY: FAYPWC
 APPROVED BY: JEG

FAYETTEVILLE PUBLIC WORKS COMMISSION
 FAYETTEVILLE, N.C.
 WATER RESOURCES ENGINEERING DEPARTMENT

NO.	DATE	REVISION
3	01/13	REVISED NOTES AND ADDED TABLE
4	01/15	REVISED NOTES RE: TAPLICE
5	05/29/18	REVISED NOTE 4, 7, 8, 12, 17 AND 22 FOR NCDOT U-4405

611-FRESLAT-NOTES.dwg

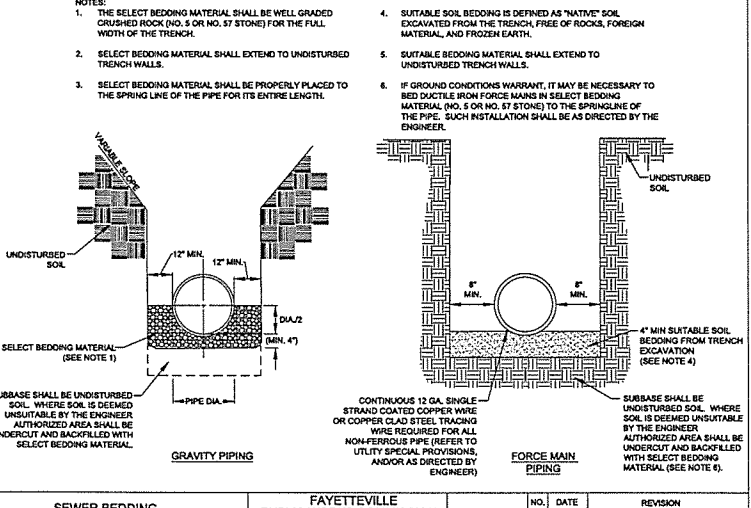


SEWER SERVICE LATERAL UTILITY CONFLICT SEPARATION REQUIREMENTS
 N.T.S.
 DWG. NO. S.12
 DATE: JAN. 01, 2018
 DWG. BY: FAYPWC
 APPROVED BY: JEG

FAYETTEVILLE PUBLIC WORKS COMMISSION
 FAYETTEVILLE, N.C.
 WATER RESOURCES ENGINEERING DEPARTMENT

NO.	DATE	REVISION
2	11/06	ADDED NOTE ON DI LATERALS
3	03/10	ADDED LATERAL AND WM SEPARATION
4	05/29/18	REVISED NOTE 4 FOR NCDOT U-4405

612-UTL-CONFLICT.dwg

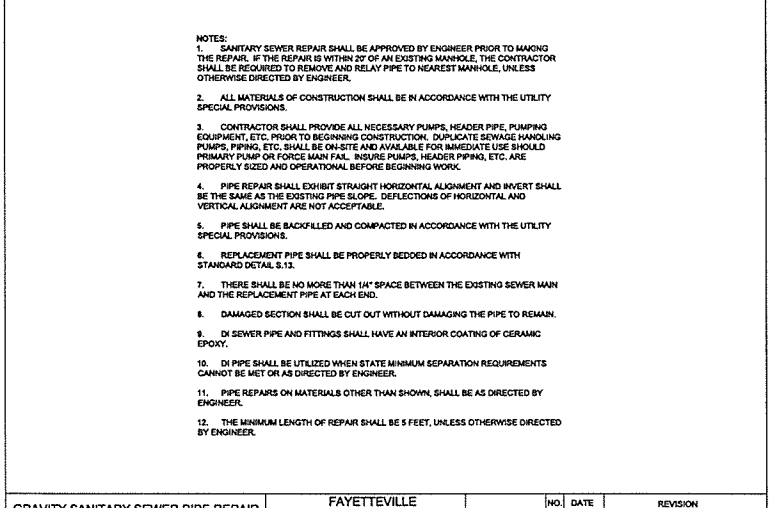


SEWER BEDDING
 N.T.S.
 DWG. NO. S.13
 DATE: JAN. 01, 2018
 DWG. BY: FAYPWC
 APPROVED BY: J.E.G.

FAYETTEVILLE PUBLIC WORKS COMMISSION
 FAYETTEVILLE, N.C.
 WATER RESOURCES ENGINEERING DEPARTMENT

NO.	DATE	REVISION
1	01/05/09	REVISED NOTES
2	01/01/16	REVISED NOTES
3	07/20/18	REVISED NOTES AND CALL OUTS FOR NCDOT U-4405

613-BEDDING.dwg

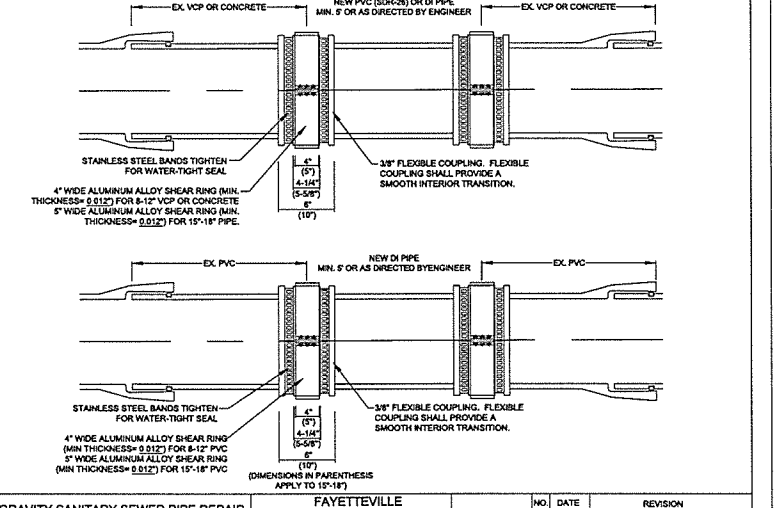


GRAVITY SANITARY SEWER PIPE REPAIR
 N.T.S.
 DWG. NO. S.15
 DATE: JAN. 01, 2018
 DWG. BY: FAYPWC
 APPROVED BY: J.E.G.

FAYETTEVILLE PUBLIC WORKS COMMISSION
 FAYETTEVILLE, N.C.
 WATER RESOURCES ENGINEERING DEPARTMENT

NO.	DATE	REVISION
1	01/05	REVISED REPLACEMENT PIPE
2	07/11	REVISED NOTES
3	07/24/18	REVISED NOTES 1, 2, 3, 6, 10, 11 AND 12 FOR NCDOT U-4405

615-VCP-REPAIR.dwg



GRAVITY SANITARY SEWER PIPE REPAIR
 N.T.S.
 DWG. NO. S.15
 DATE: JAN. 01, 2018
 DWG. BY: FAYPWC
 APPROVED BY: J.E.G.

FAYETTEVILLE PUBLIC WORKS COMMISSION
 FAYETTEVILLE, N.C.
 WATER RESOURCES ENGINEERING DEPARTMENT

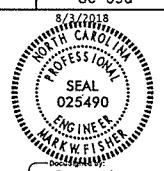
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2	07/11	REVISED NOTES
3	05/29/18	REVISED CALLOUTS FOR NCDOT U-4405

615-VCP-REPAIR.dwg

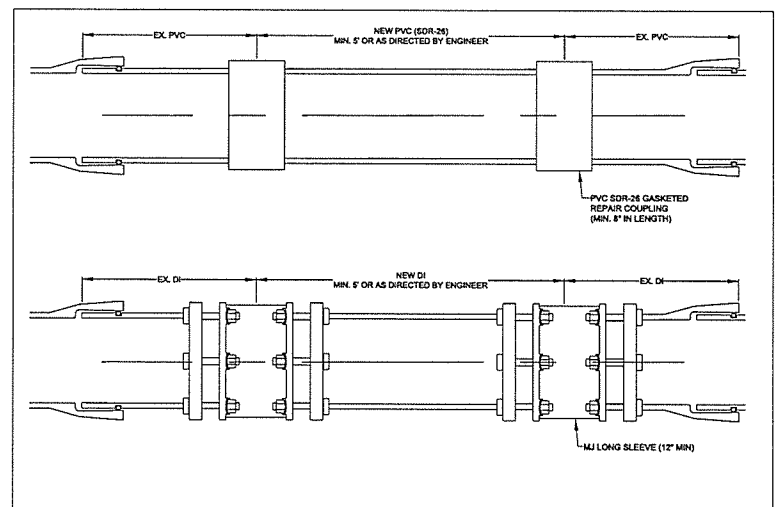
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 UTILITY REV. - JULY 24, 2018 - REVISIONS TO DETAIL SHEETS

UTILITY REV. - JULY 24, 2018 - REVISIONS TO DETAIL SHEETS
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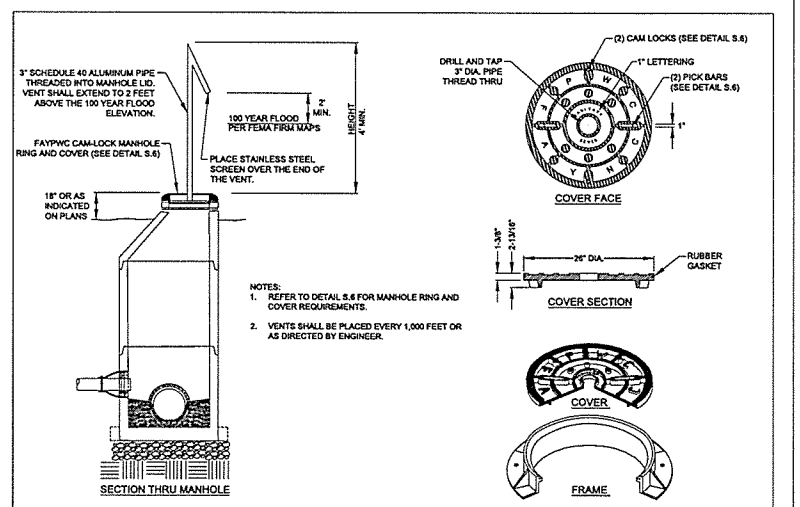
PROJECT REFERENCE NO.	UC-030
U-4405	
DESIGNED BY:	AMH
DRAWN BY:	AMH/AB
CHECKED BY:	AMH
APPROVED BY:	MWF
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SECTION PHONE: (919) 707-6690 FAX: (919) 250-4151	



UTILITY CONSTRUCTION

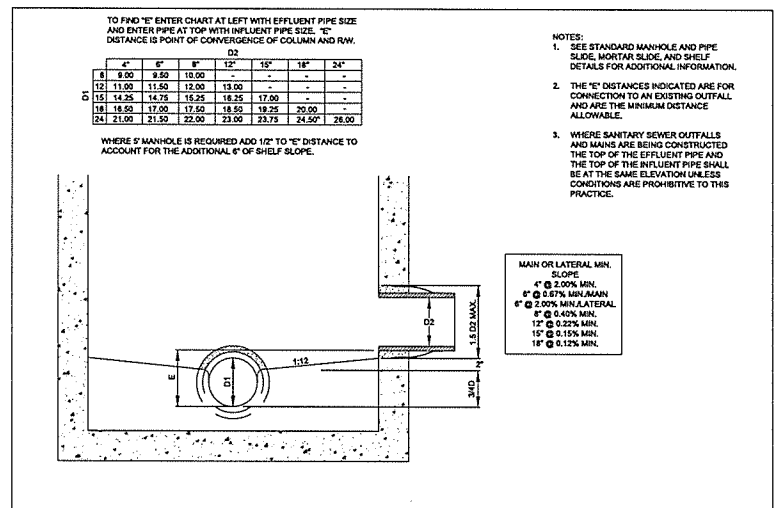


GRAVITY SANITARY SEWER PIPE REPAIR		FAYETTEVILLE PUBLIC WORKS COMMISSION		NO. DATE REVISION	
N.T.S.		FAYETTEVILLE, N.C.			
DWG. NO. S.15		WATER RESOURCES ENGINEERING DEPARTMENT		1 01/05 REVISED REPLACEMENT PIPE	
DWG. BY: FAYPWC				2 07/11 REVISED NOTES, REPAIRS	
DATE: JAN. 01, 2018		APPROVED BY: J.E.G.		3 03/28/18 REVISED CALLOUTS FOR NCDOT U-4405.	
SHEET NO. 3 OF 3		S15-VCP-REPAIR.dwg			

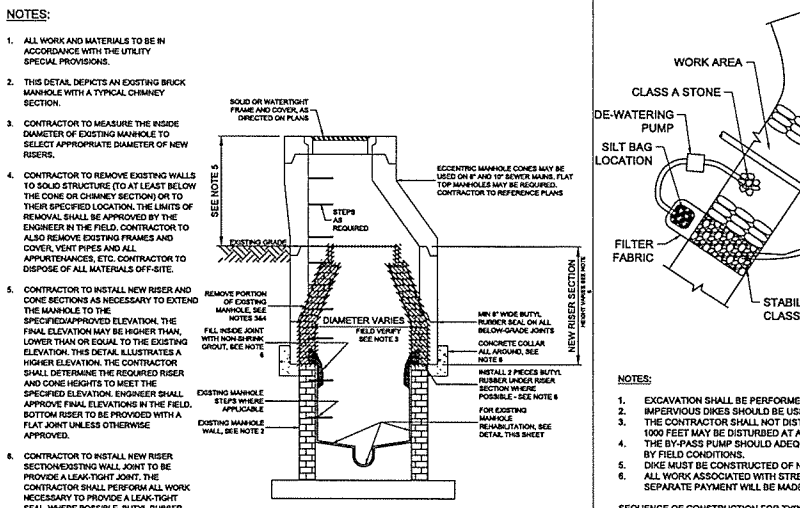


MANHOLE VENT		FAYETTEVILLE PUBLIC WORKS COMMISSION		NO. DATE REVISION	
N.T.S.		FAYETTEVILLE, N.C.			
DWG. NO. S.17		WATER RESOURCES ENGINEERING DEPARTMENT		1 05/28/18 REVISED NOTES 2 FOR NCDOT U-4405	
DWG. BY: FAYPWC					
DATE: JAN. 01, 2018		APPROVED BY: J.E.G.			
SHEET NO. 1 OF 1		S17-MH-VENT.dwg			

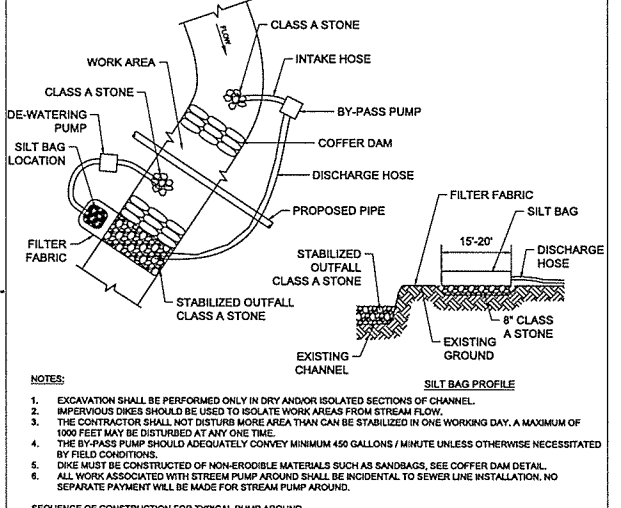
NOTE:
 ANY REFERENCE TO FAYPWC PROJECT COORDINATOR, PWC COORDINATOR OR FAYPWC (FAYETTEVILLE PUBLIC WORKS COMMISSION) SHALL BE INTERPRETTED AS A REFERENCE TO THE ENGINEER.



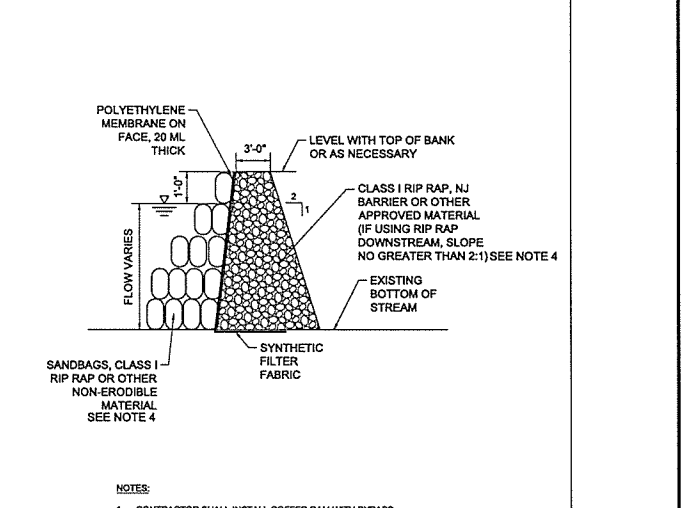
MH CONNECTION DESIGN GUIDE		FAYETTEVILLE PUBLIC WORKS COMMISSION		NO. DATE REVISION	
N.T.S.		FAYETTEVILLE, N.C.			
DWG. NO. S.18		WATER RESOURCES ENGINEERING DEPARTMENT		1 7/24/2018 REVISED PER NCDOT COMMENTS (U-4405)	
DWG. BY: FAYPWC					
DATE: JAN. 01, 2018		APPROVED BY: J.E.G.			
SHEET NO. 1 OF 1		S18-PENETRATION-DETAIL.dwg			



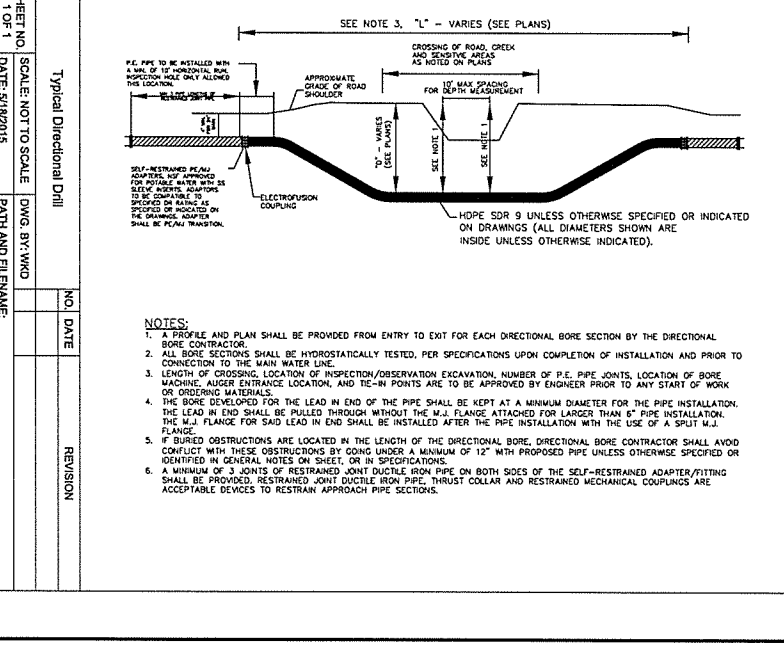
RAISE AND REPLACE EXISTING MANHOLE		FAYETTEVILLE PUBLIC WORKS COMMISSION		NO. DATE REVISION	
N.T.S.		FAYETTEVILLE, N.C.			
DWG. BY: WKD		WATER RESOURCES ENGINEERING DEPARTMENT		1 7/24/2018 REVISED PER NCDOT COMMENTS (U-4405)	
DATE: 5/18/2015		APPROVED BY: J.E.G.			
SHEET NO. 1 OF 1		PATH AND FILENAME:			



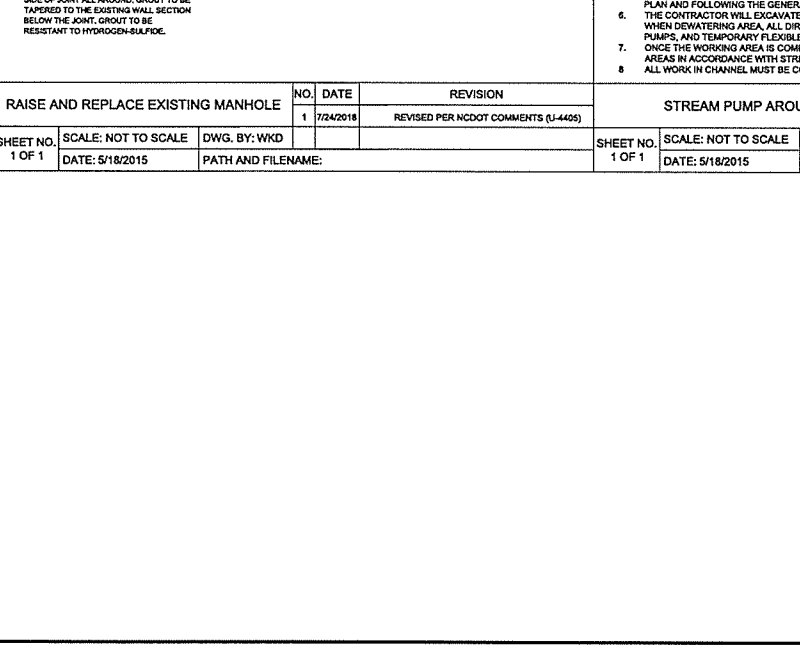
STREAM PUMP AROUND		FAYETTEVILLE PUBLIC WORKS COMMISSION		NO. DATE REVISION	
N.T.S.		FAYETTEVILLE, N.C.			
DWG. BY: WKD		WATER RESOURCES ENGINEERING DEPARTMENT		1 7/24/2018 REVISED PER NCDOT COMMENTS (U-4405)	
DATE: 5/18/2015		APPROVED BY: J.E.G.			
SHEET NO. 1 OF 1		PATH AND FILENAME:			



COFFER DAM DETAIL		FAYETTEVILLE PUBLIC WORKS COMMISSION		NO. DATE REVISION	
N.T.S.		FAYETTEVILLE, N.C.			
DWG. BY: WKD		WATER RESOURCES ENGINEERING DEPARTMENT		1 7/24/2018 REVISED PER NCDOT COMMENTS (U-4405)	
DATE: 5/18/2015		APPROVED BY: J.E.G.			
SHEET NO. 1 OF 1		PATH AND FILENAME:			



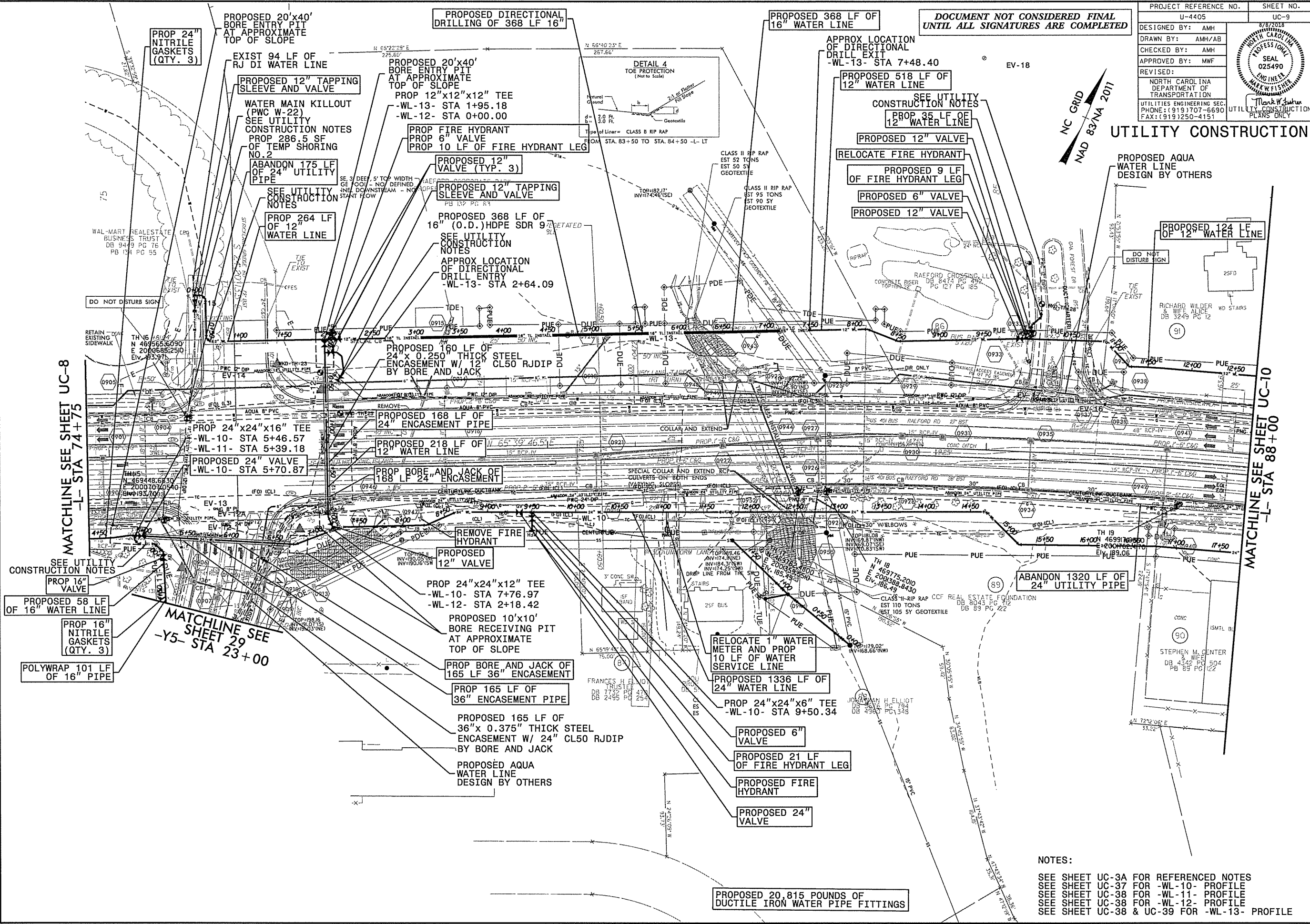
TYPICAL Directional Drill		FAYETTEVILLE PUBLIC WORKS COMMISSION		NO. DATE REVISION	
SCALE: NOT TO SCALE		FAYETTEVILLE, N.C.			
DATE: 5/18/2015		WATER RESOURCES ENGINEERING DEPARTMENT		1 7/24/2018 REVISED PER NCDOT COMMENTS (U-4405)	
DWG. BY: WKD					
PATH AND FILENAME:					



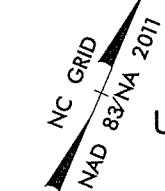
PATH AND FILENAME		FAYETTEVILLE PUBLIC WORKS COMMISSION		NO. DATE REVISION	
SCALE: NOT TO SCALE		FAYETTEVILLE, N.C.			
DATE: 5/18/2015		WATER RESOURCES ENGINEERING DEPARTMENT		1 7/24/2018 REVISED PER NCDOT COMMENTS (U-4405)	
DWG. BY: WKD					
PATH AND FILENAME:					

NOTE:
 COFFER DAM AND STREAM BYPASS PUMP AROUND SHALL BE INCIDENTAL TO THE SEWER LINE CONSTRUCTION. NO SEPARATE PAYMENT SHALL BE MADE FOR ITS INSTALLATION, UPKEEP AND REMOVAL.

07-AUG-2018 09:35
L:\Projects\2015017700RA Reelford Road NCDOT U 4405\CADD\NCDOT PLANS\Utilities\Engineering\UC-Proj\4405.ut_rdy9_uc09_pah.dgn
5/14/09



PROJECT REFERENCE NO.	SHEET NO.
U-4405	UC-9
DESIGNED BY: AMH	8/27/2018
DRAWN BY: AMH/AB	UTILITY CONSTRUCTION
CHECKED BY: AMH	SEAL 025490
APPROVED BY: MWF	ENGINEER
REVISIONS:	MARK W. FISHER
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	PLANS ONLY
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	



UTILITY CONSTRUCTION

- NOTES:
- SEE SHEET UC-3A FOR REFERENCED NOTES
 - SEE SHEET UC-37 FOR -WL-10- PROFILE
 - SEE SHEET UC-38 FOR -WL-11- PROFILE
 - SEE SHEET UC-38 FOR -WL-12- PROFILE
 - SEE SHEET UC-38 & UC-39 FOR -WL-13- PROFILE

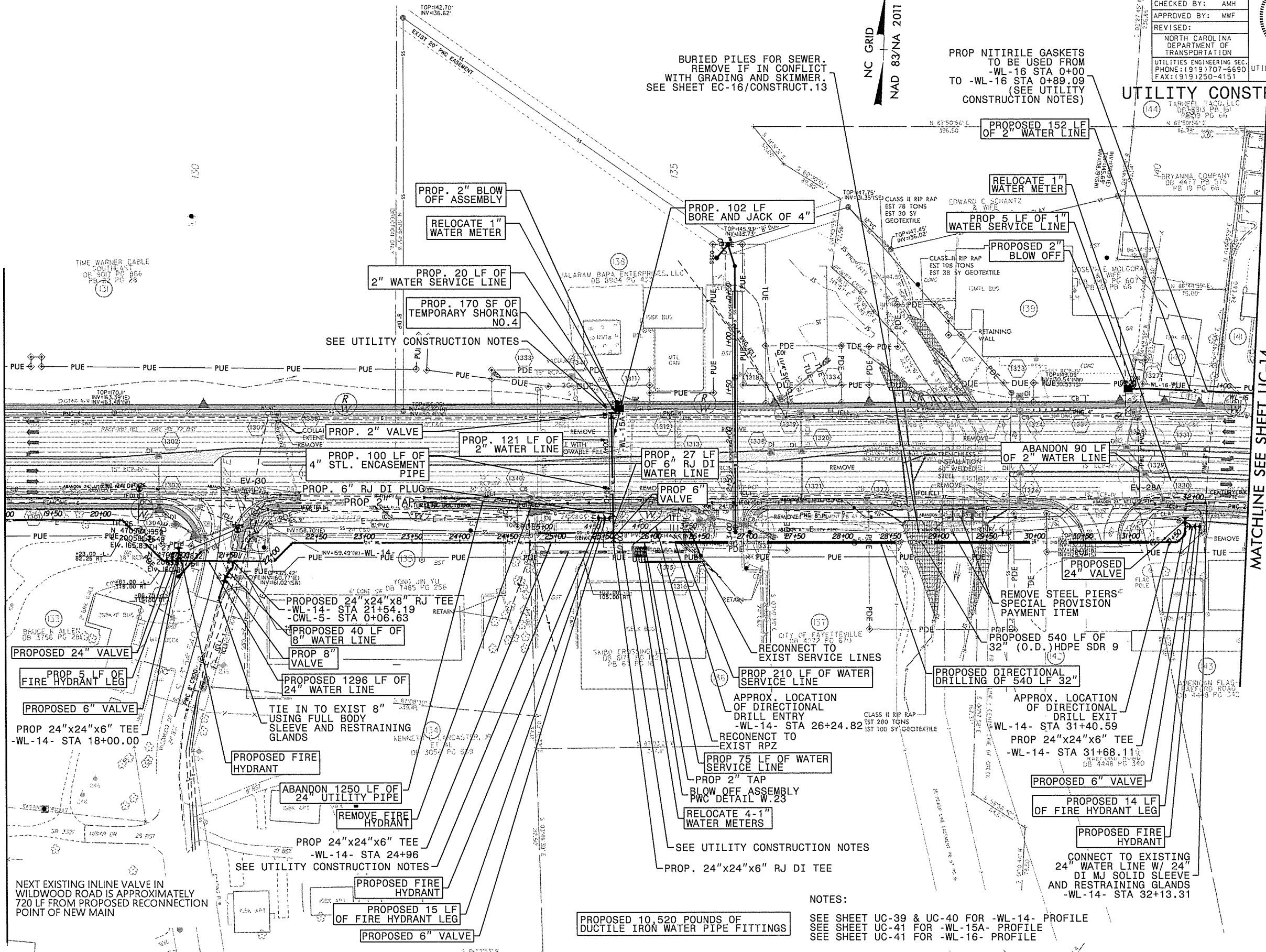
5/14/99
 REVISIONS
 UTILITY REV. - JULY 24, 2008 - CORE IMPROVEMENT AT WILKINSON ST. 247253 MOVED TO WILKINSON ST. - CALCULATED FOR BURIED SEWER PILES AROUND BULLWATER CREEK - REVISED DIRECTIONAL DRILL TO USE 3/4 HDPE SDR 9
 27-JUL-2018 14:46
 L:\Projects\Fayetteville Public Works Commission\20150117\00RA Reeford Road NCDOT U-4405\CADD\NCDOT PLANS\Utilities\Engineering\UC\Pro\U4405.ut_rdyj13.uc13.psh.dgn
 abiermann AT wkdg17

DOCUMENT NOT CONSIDERED FINAL
 UNTIL ALL SIGNATURES ARE COMPLETED

PROJECT REFERENCE NO.	U-4405	SHEET NO.	UC-13
DESIGNED BY:	AMH		
DRAWN BY:	AMH/AB		
CHECKED BY:	AMH		
APPROVED BY:	MWF		
REVISED:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151		UTILITY CONSTRUCTION TARBEL TACO, LLC DE 4477 PG 575 PB 19 PG 66	

MATCHLINE SEE SHEET UC-12
 -L- STA 128+00

MATCHLINE SEE SHEET UC-14
 -L- STA 141+00



PROPOSED 10,520 POUNDS OF
 DUCTILE IRON WATER PIPE FITTINGS

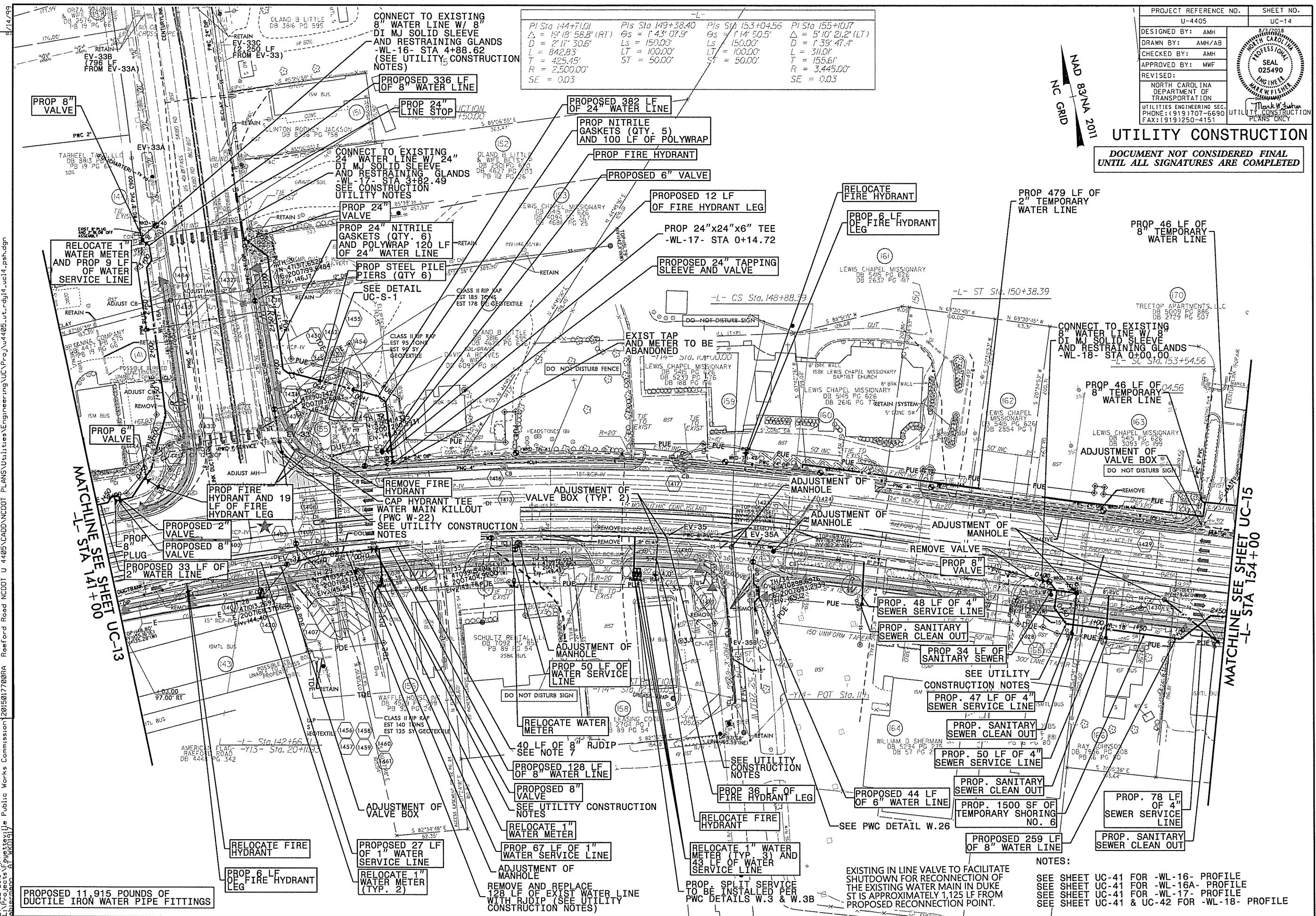
NOTES:
 SEE SHEET UC-39 & UC-40 FOR -WL-14- PROFILE
 SEE SHEET UC-41 FOR -WL-15A- PROFILE
 SEE SHEET UC-41 FOR -WL-16- PROFILE

PROJECT REFERENCE NO.	SHEET NO.
U-4405	UC-14
DESIGNED BY: AMH	
DRAWN BY: AMH/AB	
CHECKED BY: AMH	
APPROVED BY: MWF	
REVISED:	UTILITY CONSTRUCTION PLANS ONLY
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

UTILITY CONSTRUCTION

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UNTIL ALL SIGNATURES ARE COMPLETED

PI Sta 144+71.01 $\Delta = 1^{\circ}18'58.8"$ (RT) $D = 2^{\circ}17'30.6"$ $L = 842.83'$ $T = 425.45'$ $R = 2,500.00'$ $SE = 0.03$	PIs Sta 149+38.40 $\Delta = 1^{\circ}43'07.9"$ $Ls = 150.00'$ $LT = 100.00'$ $ST = 50.00'$	PIs Sta 153+04.56 $\Delta = 1^{\circ}14'50.5"$ $Ls = 150.00'$ $LT = 100.00'$ $ST = 50.00'$	PI Sta 155+10.17 $\Delta = 5^{\circ}10'21.2"$ (LT) $D = 1^{\circ}39'47.4"$ $L = 311.01'$ $T = 155.61'$ $R = 3,445.00'$ $SE = 0.03$
--	--	--	--



27-JUL-2008 14:44
 L:\Projects\Projects\Public Works Commission\2015017700RA Reelford Road NCDOT U 4405\CADD\NCDOT PLANS\Utilities\Engineering\UC\Pro\U4405\ut_r.dwg\4_vcl4_psh.dgn
 UTILITY REV. - JULY 24, 2008 - NAMED TWO VALVES EV-35A AND EV-35B FOR CONSTRUCTION SEEKING NOTES
 REVISIONS

PROPOSED 11,915 POUNDS OF DUCTILE IRON WATER PIPE FITTINGS

NOTES:
 SEE SHEET UC-41 FOR -WL-16- PROFILE
 SEE SHEET UC-41 FOR -WL-16A- PROFILE
 SEE SHEET UC-41 FOR -WL-17- PROFILE
 SEE SHEET UC-41 & UC-42 FOR -WL-18- PROFILE

EXISTING IN LINE VALVE TO FACILITATE SHUTDOWN FOR RECONNECTION OF THE EXISTING WATER MAIN IN DUKE ST IS APPROXIMATELY 1,125 LF FROM PROPOSED RECONNECTION POINT.

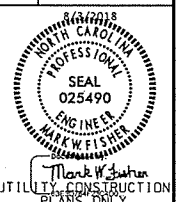
PROP. SPLIT SERVICE TO BE INSTALLED PER PWC DETAILS W.3 & W.3B

REMOVE AND REPLACE 128 LF OF EXIST WATER LINE WITH RJDIP (SEE UTILITY CONSTRUCTION NOTES)

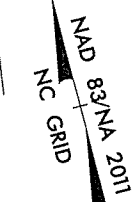
MATCHLINE SEE SHEET UC-13
 -L- STA 141+00

MATCHLINE SEE SHEET UC-15
 -L- STA 154+00

PROJECT REFERENCE NO.	U-4405
SHEET NO.	UC-15
DESIGNED BY:	AMH
DRAWN BY:	AMH/AB
CHECKED BY:	AMH
APPROVED BY:	MWF
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	



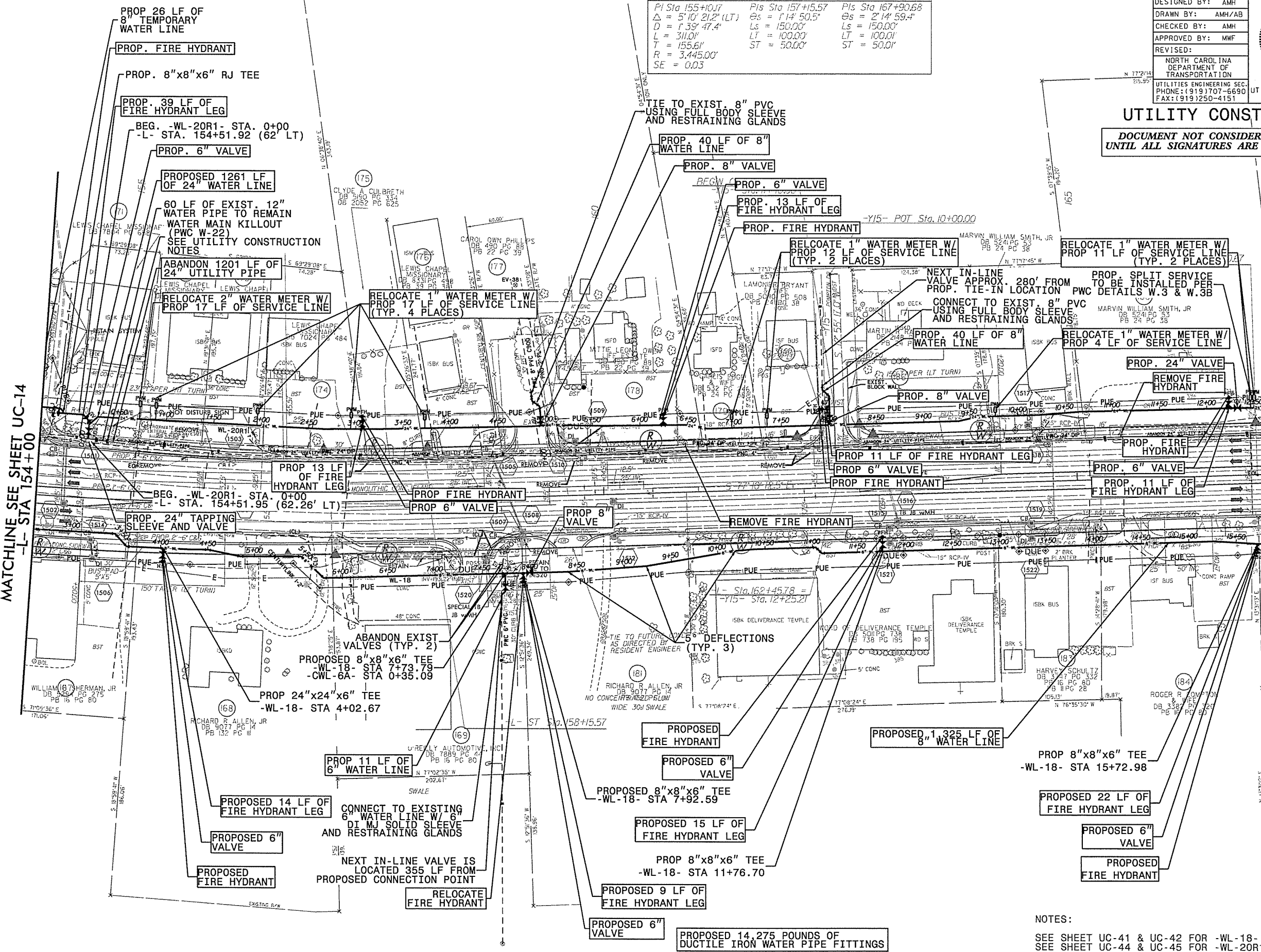
UTILITY CONSTRUCTION
 DOCUMENT NOT CONSIDERED FINAL
 UNTIL ALL SIGNATURES ARE COMPLETED



-L-		
PI Sta 155+0.17	PIs Sta 157+15.57	PIs Sta 167+90.68
$\Delta = 5'10'21.2''$ (LT)	$\Theta_s = 1'14'50.5''$	$\Theta_s = 2'14'59.4''$
$D = 1'39'47.4''$	$L_s = 150.00'$	$L_s = 150.00'$
$L = 311.0'$	$LT = 100.00'$	$LT = 100.00'$
$T = 155.61'$	$ST = 50.00'$	$ST = 50.00'$
$R = 3,445.00'$		
$SE = 0.03$		

MATCHLINE SEE SHEET UC-14
-L- STA 154+00

MATCHLINE SEE SHEET UC-16
-L- STA 167+00



REVISIONS

UTILITY REV. - JULY 24, 2008 - SHIFTED VALVE TO STABWAD ON WL-18 SO HYDRANT CAN BE USED AS FLUSHING POINT

27-JUL-2018 14:15
 C:\Projects\Projects\Public Works Commission\2015017700RA Reelford Road NCDOT U 4405\CADD\NCDOT PLANS\Utilities\Engineering\UC-Proj\4405-ut.-rdj\5-uc15.psh.dgn
 sherman

NOTES:
 SEE SHEET UC-41 & UC-42 FOR -WL-18- PROFILE
 SEE SHEET UC-44 & UC-45 FOR -WL-20R1- PROFILE

27-JUL-2018 14:15
 L:\Projects\Wetzelville Public Works Commission\2015017700RA Roseford Road NCDOT U 4405\CAADD\NCDOT PLANS\Utilities\Engineering\UC\Proj\ud405-ut-rd17-uc17-ush.dgn
 8/14/99

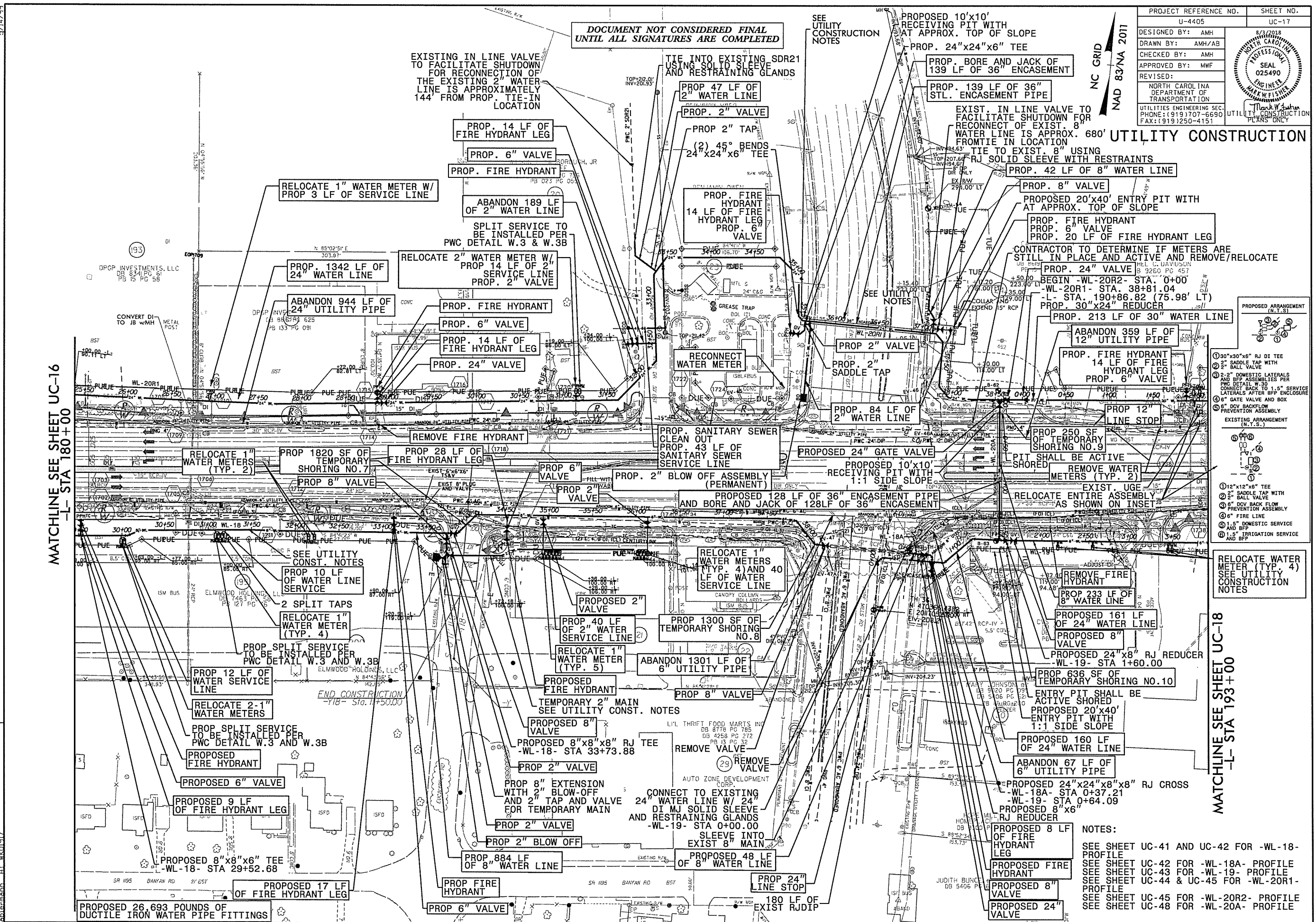
REVISIONS

UTILITY REV. - JUL 21, 2018 - ADDED A SANITARY SEWER SERVICE RECONNECTION ON RARR DR FOR PARCEL 23 AND BPP FOR CONSTRUCTION SCHEDULING
 - ADDED A 12" SLOPE STOP IN FRONT OF THE CIRCLE K FOR CONSTRUCTION SCHEDULING
 - ADDED A 12" SLOPE STOP IN FRONT OF THE CIRCLE K FOR CONSTRUCTION SCHEDULING

2015017700RA Roseford Road NCDOT U 4405\CAADD\NCDOT PLANS\Utilities\Engineering\UC\Proj\ud405-ut-rd17-uc17-ush.dgn
 W. Wetzelville Public Works Commission
 W. Wetzelville Public Works Commission

MATCHLINE SEE SHEET UC-16
 -L- STA 180+00

MATCHLINE SEE SHEET UC-18
 -L- STA 193+00



DOCUMENT NOT CONSIDERED FINAL
 UNTIL ALL SIGNATURES ARE COMPLETED

SEE UTILITY CONSTRUCTION NOTES

PROPOSED 10'x10' RECEIVING PIT WITH AT APPROX. TOP OF SLOPE
 PROP. 24"x24"x6" TEE

NC GRID
 NAD 83/NA 2011

PROJECT REFERENCE NO.	UC-405	SHEET NO.	UC-17
DESIGNED BY:	AMH		
DRAWN BY:	AMH/AB		
CHECKED BY:	AMH		
APPROVED BY:	MWF		
REVISED:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SECTION PHONE: (919) 707-6690 FAX: (919) 250-4151			

UTILITY CONSTRUCTION PLANS ONLY

EXIST. IN LINE VALVE TO FACILITATE SHUTDOWN FOR RECONNECT OF EXIST. 8" WATER LINE IS APPROX. 680' FROM TIE IN LOCATION
 TIE TO EXIST. 8" USING RJ SOLID SLEEVE WITH RESTRAINTS

PROPOSED 20'x40' ENTRY PIT WITH AT APPROX. TOP OF SLOPE
 PROP. FIRE HYDRANT
 PROP. 6" VALVE
 PROP. 20 LF OF FIRE HYDRANT LEG

CONTRACTOR TO DETERMINE IF METERS ARE STILL IN PLACE AND ACTIVE AND REMOVE/RELOCATE
 PROP. 24" VALVE
 BEGIN -WL-20R2- STA. 0+00
 -L- STA. 190+86.82 (75.98' LT)
 PROP. 30"x24" REDUCER

PROP. 213 LF OF 30" WATER LINE
 ABANDON 359 LF OF 12" UTILITY PIPE
 PROP. FIRE HYDRANT
 14 LF OF FIRE HYDRANT LEG
 PROP. 6" VALVE

PROPOSED 24" GATE VALVE
 RECEIVING PIT WITH 1:1 SIDE SLOPE

PROPOSED 128 LF OF 36" ENCASUREMENT PIPE AND BORE AND JACK OF 128 LF OF 36" ENCASUREMENT

RELOCATE 1" WATER METERS (TYP. 4) AND 40 LF OF WATER SERVICE LINE

RELOCATE 1" WATER METER (TYP. 5)
 ABANDON 1301 LF OF 6" UTILITY PIPE

RELOCATE 1" WATER METER (TYP. 4)
 SEE UTILITY CONSTRUCTION NOTES

RELOCATE 1" WATER METER (TYP. 2)
 PROP. 1820 SF OF TEMPORARY SHORING NO. 7

RELOCATE 1" WATER METER (TYP. 2)
 PROP. 250 SF OF TEMPORARY SHORING NO. 9

RELOCATE 1" WATER METER (TYP. 2)
 PROP. 233 LF OF 8" WATER LINE

RELOCATE 1" WATER METER (TYP. 2)
 PROP. 161 LF OF 24" WATER LINE

RELOCATE 1" WATER METER (TYP. 2)
 PROP. 160 LF OF 24" WATER LINE

RELOCATE 1" WATER METER (TYP. 2)
 PROP. 636 SF OF TEMPORARY SHORING NO. 10

RELOCATE 1" WATER METER (TYP. 2)
 PROP. 884 LF OF 8" WATER LINE

RELOCATE 1" WATER METER (TYP. 2)
 PROP. 884 LF OF 8" WATER LINE

RELOCATE 1" WATER METER (TYP. 2)
 PROP. 884 LF OF 8" WATER LINE

RELOCATE 1" WATER METER (TYP. 2)
 PROP. 884 LF OF 8" WATER LINE

RELOCATE 1" WATER METER (TYP. 2)
 PROP. 884 LF OF 8" WATER LINE

RELOCATE 1" WATER METER (TYP. 2)
 PROP. 884 LF OF 8" WATER LINE

RELOCATE 1" WATER METER (TYP. 2)
 PROP. 884 LF OF 8" WATER LINE

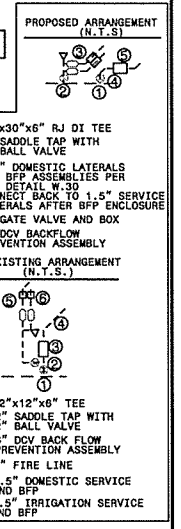
RELOCATE 1" WATER METER (TYP. 2)
 PROP. 884 LF OF 8" WATER LINE

RELOCATE 1" WATER METER (TYP. 2)
 PROP. 884 LF OF 8" WATER LINE

RELOCATE 1" WATER METER (TYP. 2)
 PROP. 884 LF OF 8" WATER LINE

RELOCATE 1" WATER METER (TYP. 2)
 PROP. 884 LF OF 8" WATER LINE

NOTES:
 SEE SHEET UC-41 AND UC-42 FOR -WL-18- PROFILE
 SEE SHEET UC-42 FOR -WL-18A- PROFILE
 SEE SHEET UC-43 FOR -WL-19- PROFILE
 SEE SHEET UC-44 & UC-45 FOR -WL-20R1- PROFILE
 SEE SHEET UC-45 FOR -WL-20R2- PROFILE
 SEE SHEET UC-48 FOR -WL-20A- PROFILE



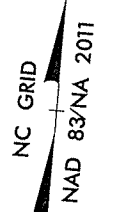
PROPOSED 26,693 POUNDS OF DUCTILE IRON WATER PIPE FITTINGS

180 LF OF EXIST RJDIP

END CONSTRUCTION
 -Y18- Sta. 1+50.00

PROJECT REFERENCE NO.	U-4405	SHEET NO.	UC-18
DESIGNED BY:	AMH		
DRAWN BY:	AMH/AB		
CHECKED BY:	AMH		
APPROVED BY:	MWF		
REVISED:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151			

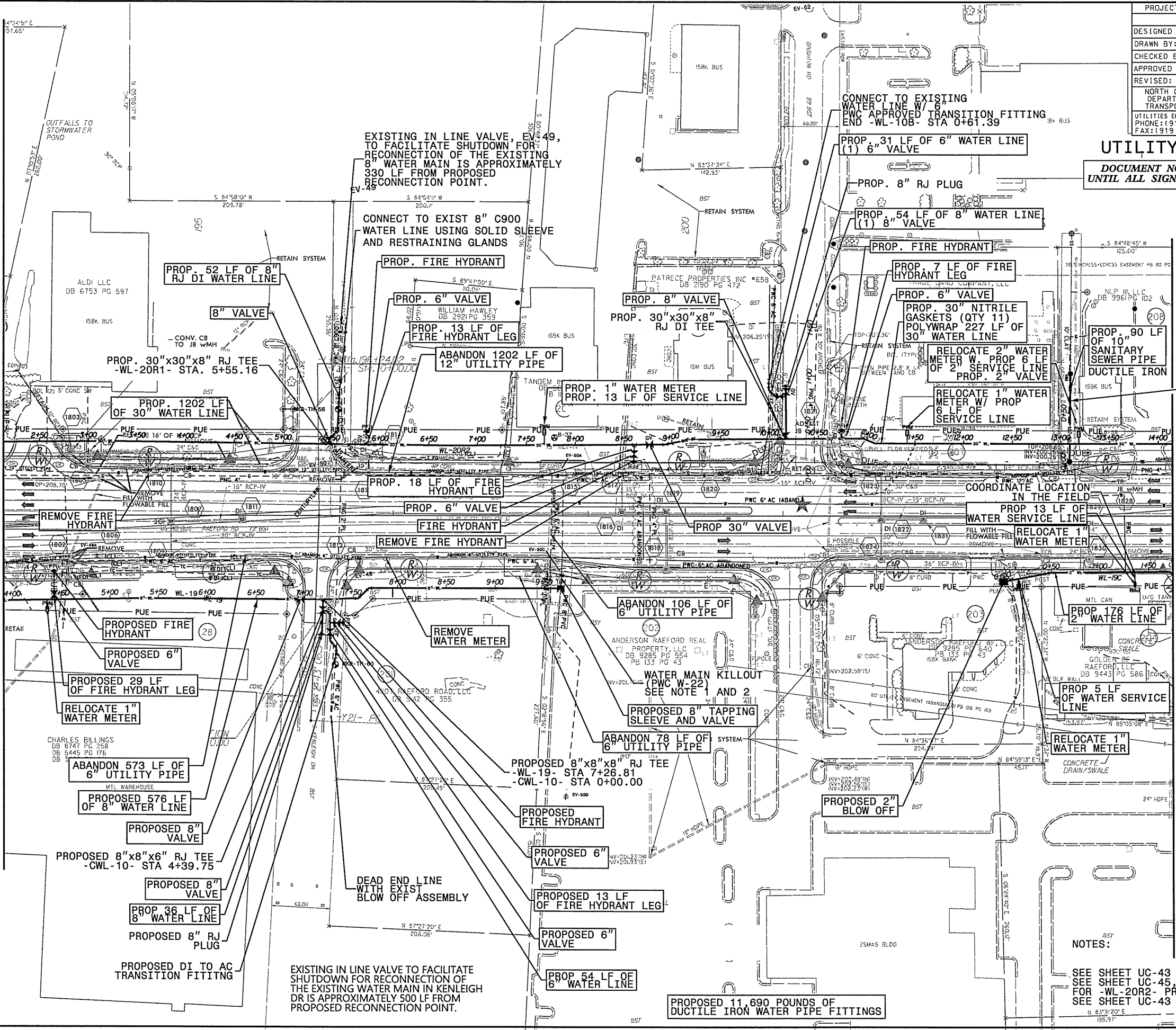
UTILITY CONSTRUCTION
 DOCUMENT NOT CONSIDERED FINAL
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REMOVE AND REPLACE
 10" VC WITH 10" DI
 FROM SSMH TO SSMH.
 CENTER 20 FT
 JOINT OVER CROSSING
 OF 30" MAIN. JOINT
 SHALL BE EQUIVALENT
 OF WATER MAIN
 STANDARD

MATCHLINE SEE SHEET UC-17
 -L- STA 193+00

MATCHLINE SEE SHEET UC-19
 -L- STA 205+00



NOTES:

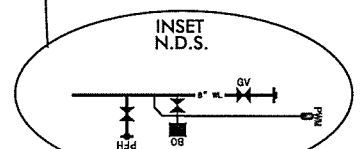
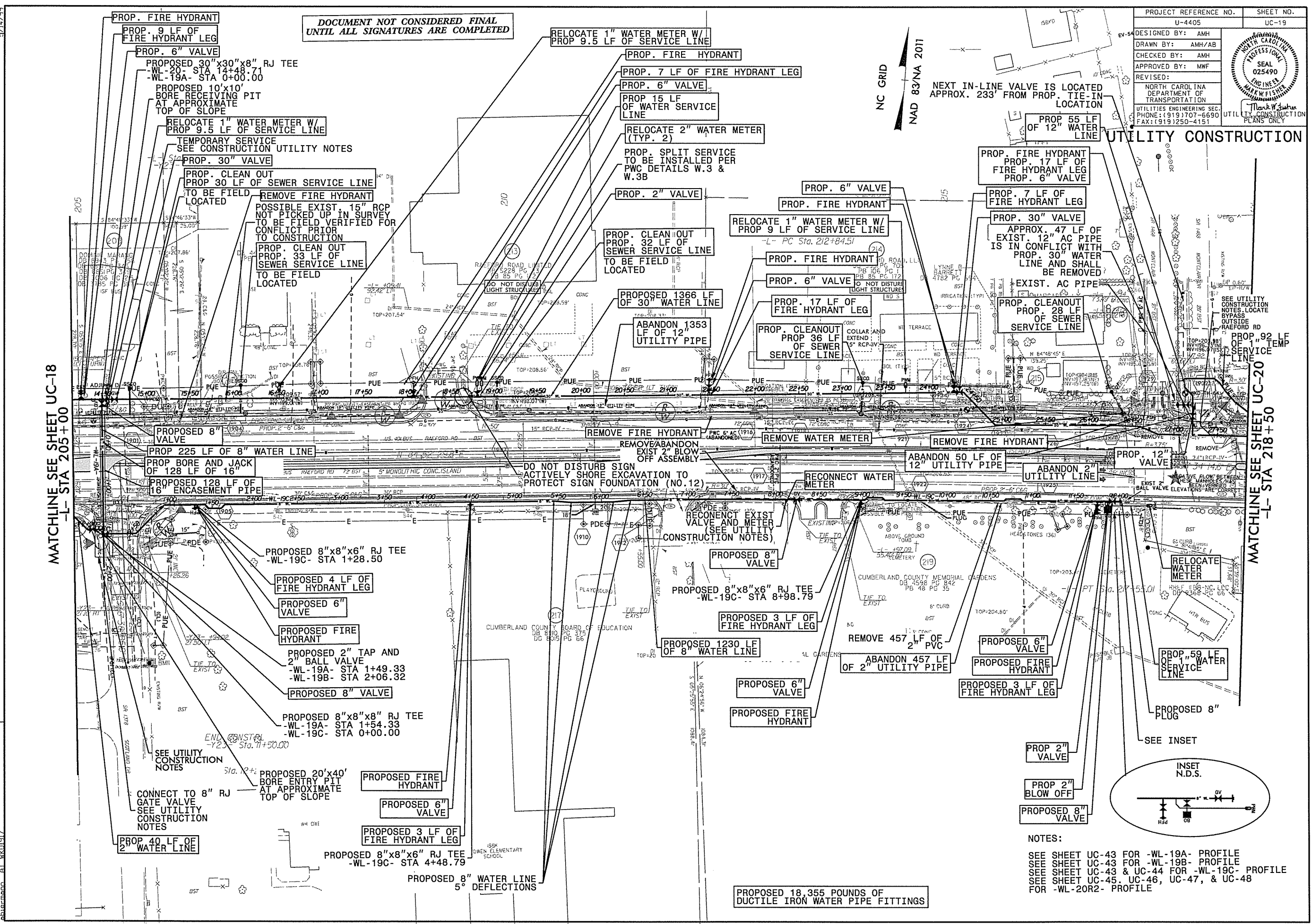
SEE SHEET UC-43 FOR -WL-19- PROFILE
 SEE SHEET UC-45, UC-46, UC-47
 FOR -WL-20R2- PROFILE
 SEE SHEET UC-43 FOR -WL-19B- PROFILE

REVISIONS

UTILITY REV. - JULY 23, 2018 - ADDED VALVES EV-49A, EV-50A, EV-50C, EV-50D

27-JUL-2018 14:05
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 5/14/99

02-AUG-2018 13:20
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 1/14/19



PROJECT REFERENCE NO.	U-4405	SHEET NO.	UC-20
DESIGNED BY:	AMH		
DRAWN BY:	AMH/AB		
CHECKED BY:	AMH		
APPROVED BY:	MWF		
REVISED:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SECTION PHONE: (919) 707-6690 FAX: (919) 250-4151		UTILITY CONSTRUCTION PLANS ONLY	

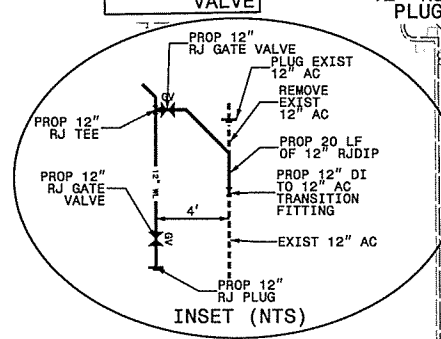
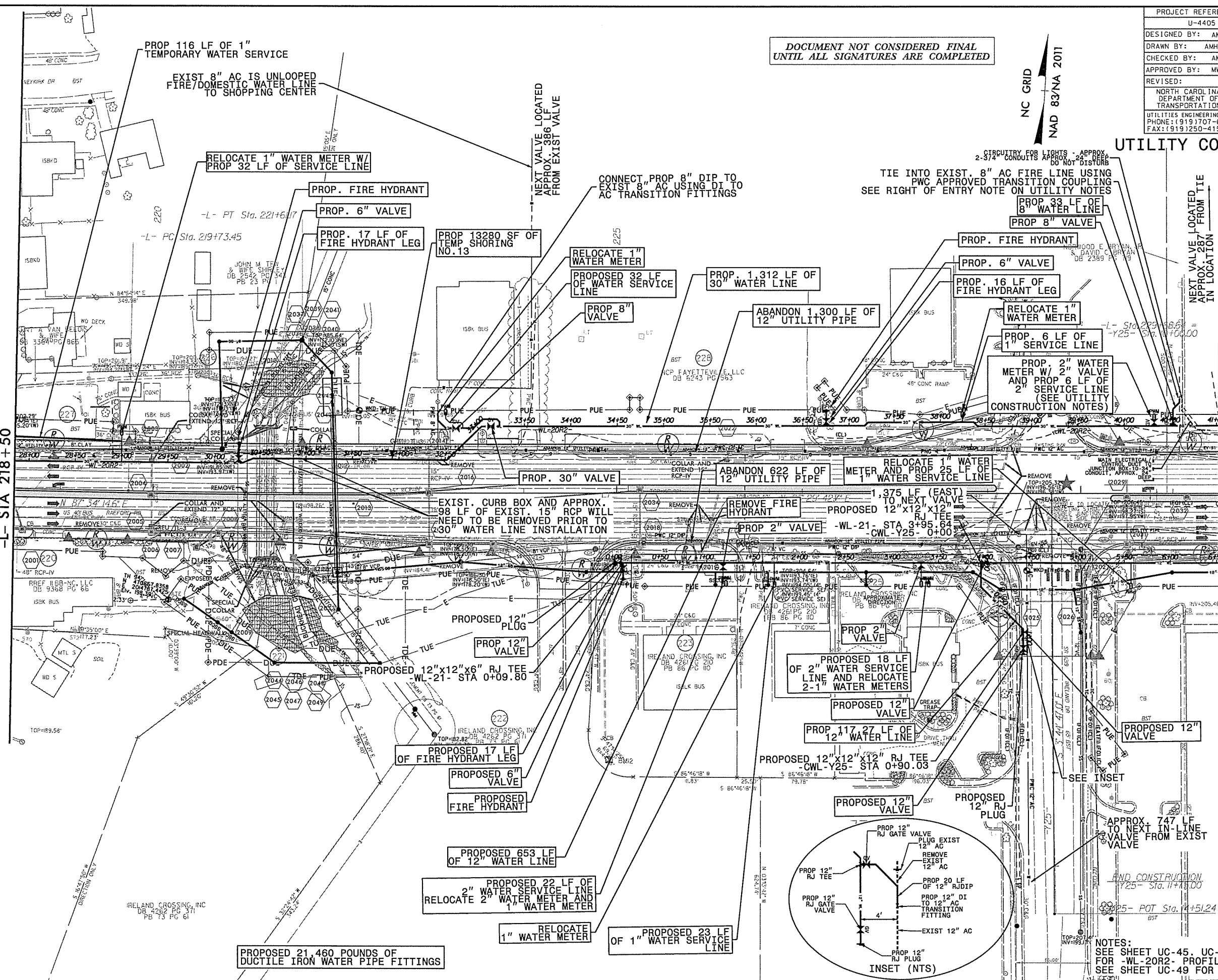
DOCUMENT NOT CONSIDERED FINAL
UNTIL ALL SIGNATURES ARE COMPLETED

NC GRID
NAD 83/NA 2011

UTILITY CONSTRUCTION

MATCHLINE SEE SHEET UC-19
-L- STA 218+50

MATCHLINE SEE SHEET UC-21
-L- STA 231+50



NOTES:
SEE SHEET UC-45, UC-46, UC-47, UC-48
FOR -WL-20R2- PROFILE
SEE SHEET UC-49 FOR -WL-21- PROFILE

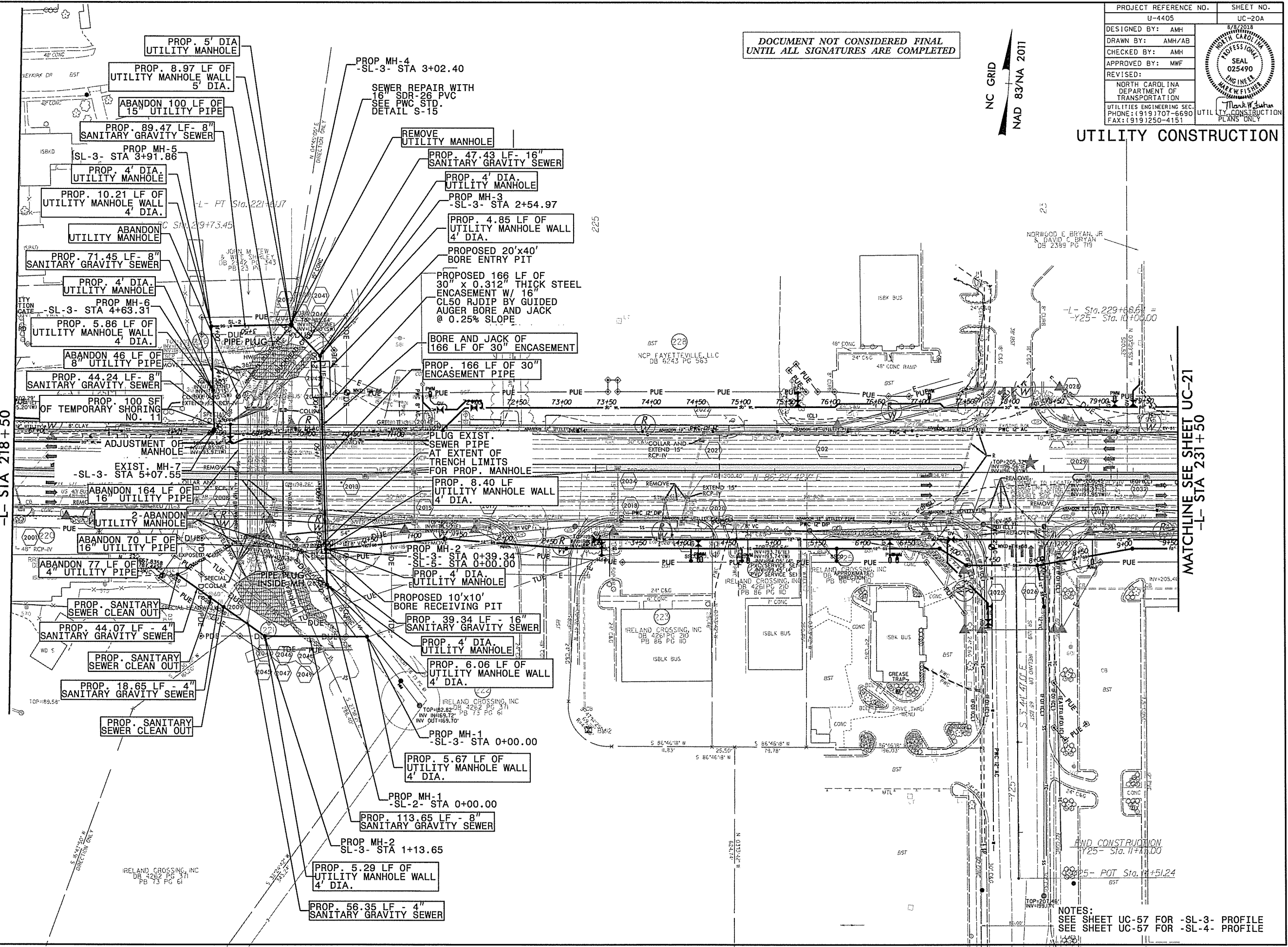
REVISIONS
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11/14/99
UTILITY REV. - JULY 23, 2008 - SHIFTED PROP. WATER METER AND WATER SERVICE LINE FOR PARCEL 227
- ADDED VALVE NAME FOR CONSTRUCTION SEQUENCING

5/14/99
08-AUG-2008 14:43
U:\Projects\Fayetteville Public Works Commission\2015017700RA Reeford Road NCDOT U 4405\CADD\NCDOT PLANS\Utilities\Engineering\UC\ProJ\U4405.ut_r.dwg20.ue20a.psh.dgn
sherman

REVISIONS
UTILITY REV. - JULY 23, 2008 - ADDED A TEMPORARY SHORING (NO. 11) TO CALLOUT STATIONING (NO. 11) OF TEMPORARY SHORING

MATCHLINE SEE SHEET UC-19
-L- STA 218+50

MATCHLINE SEE SHEET UC-21
-L- STA 231+50



DOCUMENT NOT CONSIDERED FINAL
UNTIL ALL SIGNATURES ARE COMPLETED

NC GRID
NAD 83/NA 2011

PROJECT REFERENCE NO.	UC-20A
U-4405	
DESIGNED BY:	AMH
DRAWN BY:	AMH/AB
CHECKED BY:	AMH
APPROVED BY:	MWF
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC.	
PHONE: (919) 707-6690	
FAX: (919) 250-4151	

SEAL	025490
ENGINEER	
MARK W. FISHER	
UTILITIES CONSTRUCTION PLANS ONLY	

UTILITY CONSTRUCTION

NOTES:
SEE SHEET UC-57 FOR -SL-3- PROFILE
SEE SHEET UC-57 FOR -SL-4- PROFILE

PROJECT REFERENCE NO.	U-4405	SHEET NO.	UC-21
DESIGNED BY:	AMH		
DRAWN BY:	AMH/AB		
CHECKED BY:	AMH		
APPROVED BY:	MWF		
REVISED:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SECTION PHONE: (919) 707-6690 FAX: (919) 250-4151			

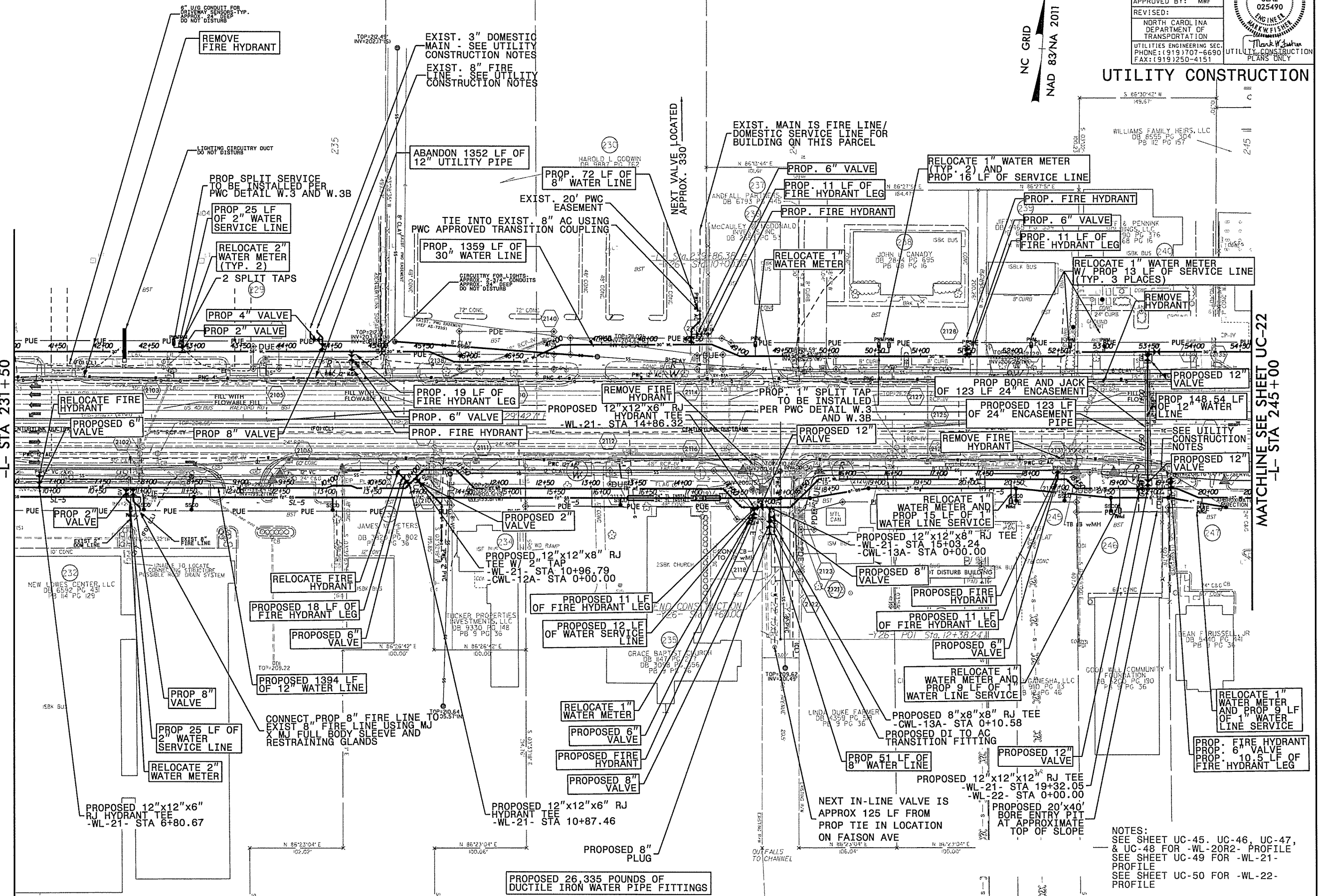
DOCUMENT NOT CONSIDERED FINAL
UNTIL ALL SIGNATURES ARE COMPLETED

NC GRID
NAD 83/NA 2011

UTILITY CONSTRUCTION

MATCHLINE SEE SHEET UC-20
-L- STA 231+50

MATCHLINE SEE SHEET UC-22
-L- STA 245+00



REVISIONS

UTILITY REV. - JUL 23, 2008 - SEE SHEET UC-20 FOR ADDITIONAL NOTES
- ADDED VALVE TO EXISTING WATER LINE

27 JUL 2008 10:06 AM
Revised by: MWF
UC-21.dwg
UC-21

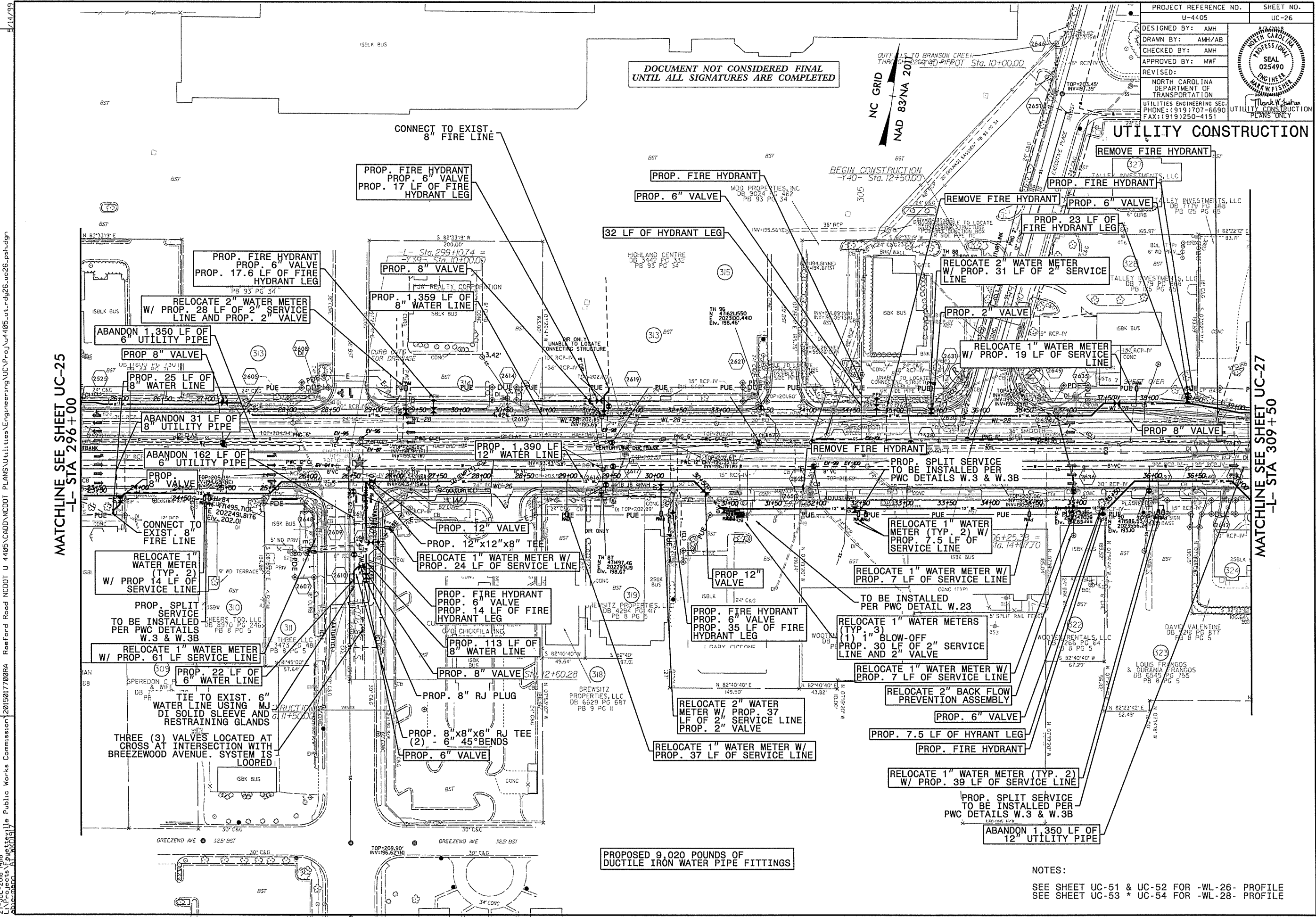
NOTES:
SEE SHEET UC-45, UC-46, UC-47,
& UC-48 FOR -WL-20R2- PROFILE
SEE SHEET UC-49 FOR -WL-21-
PROFILE
SEE SHEET UC-50 FOR -WL-22-
PROFILE

PROPOSED 26,335 POUNDS OF
DUCTILE IRON WATER PIPE FITTINGS

PROJECT REFERENCE NO.	U-4405	SHEET NO.	UC-26
DESIGNED BY:	AMH		
DRAWN BY:	AMH/AB		
CHECKED BY:	AMH		
APPROVED BY:	MMF		
REVISED:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SECTION PHONE: (919) 707-6690 FAX: (919) 250-4151			

DOCUMENT NOT CONSIDERED FINAL
UNTIL ALL SIGNATURES ARE COMPLETED

UTILITY CONSTRUCTION



MATCHLINE SEE SHEET UC-25
-L- STA 296+00

MATCHLINE SEE SHEET UC-27
-L- STA 309+50

REVISIONS
 27-JUL-2018 (4:48 PM) Projects\Projects\Public Works Commission\2015017700RA Reelford Road NCDOT U 4405\CADD\NCDOT PLANS\Utilities\Engineering\UC\Pro\U4405.ut.r.dwg uc26.psh.dgn
 UTILITY REV. - JUL 23, 2018 - ADDED AN 8" VALVE AT -L- STA 297+82.5

PROPOSED 9,020 POUNDS OF
DUCTILE IRON WATER PIPE FITTINGS

NOTES:
SEE SHEET UC-51 & UC-52 FOR -WL-26- PROFILE
SEE SHEET UC-53 * UC-54 FOR -WL-28- PROFILE

PROJECT REFERENCE NO.	SHEET NO.
U-4405	UC-32
DESIGNED BY: AMH	
DRAWN BY: AMH/AB	
CHECKED BY: AMH	
APPROVED BY: MWF	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SECTION PHONE: (919) 707-6690 FAX: (919) 250-4151	

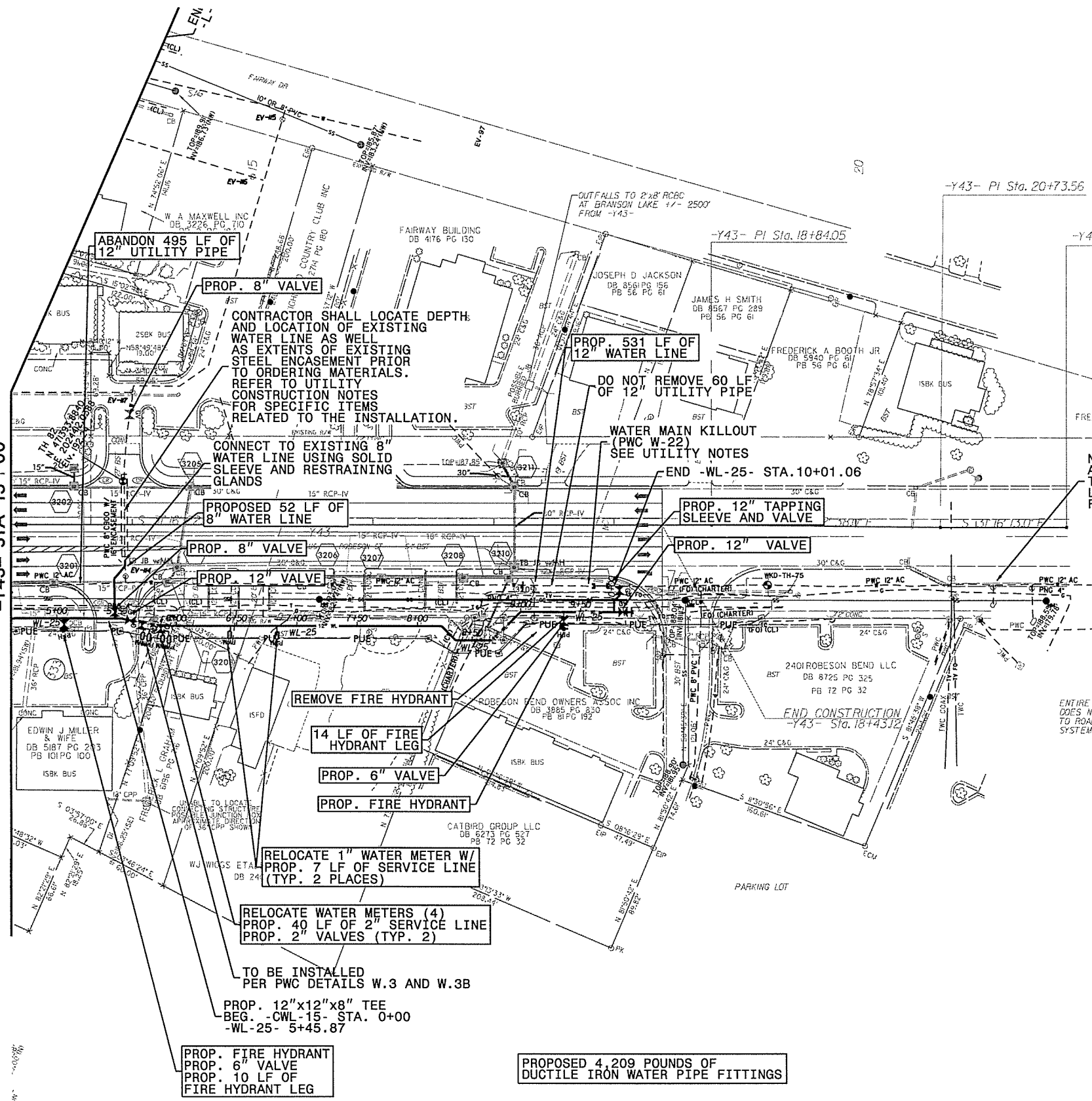
NC GRID
NAD 83/NA 2011

UTILITY CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL
UNTIL ALL SIGNATURES ARE COMPLETED

-Y43-	
PI Sta. 18+97.74	PI Sta. 21+77.77
$\Delta = 0' 29' 06.2" (RT)$	$\Delta = 0' 28' 56.2" (LT)$
$D = 1' 25' 56.6"$	$D = 1' 25' 56.6"$
$L = 33.86'$	$L = 33.67'$
$T = 16.93'$	$T = 16.83'$
$R = 4,000.00'$	$R = 4,000.00'$

MATCHLINE SEE SHEET UC-27
-Y43- STA 13+00



NEXT IN LINE VALVE LOCATED APPROX. 685 LF FROM PROP. TIE IN LOCATION. BRANCH LINE LOCATED APPROX. 193 LF FROM APPROX. TIE IN LOCATION

ENTIRE PARKING LOT DOES NOT CONNECT TO ROAD DRAINAGE SYSTEM

TO BE INSTALLED PER PWC DETAILS W.3 AND W.3B

PROP. 12"x12"x8" TEE
BEG. -CWL-15- STA. 0+00
-WL-25- 5+45.87

PROPOSED 4,209 POUNDS OF
DUCTILE IRON WATER PIPE FITTINGS

NOTES:
SEE SHEET UC-50 & UC-51 FOR -WL-25- PROFILE

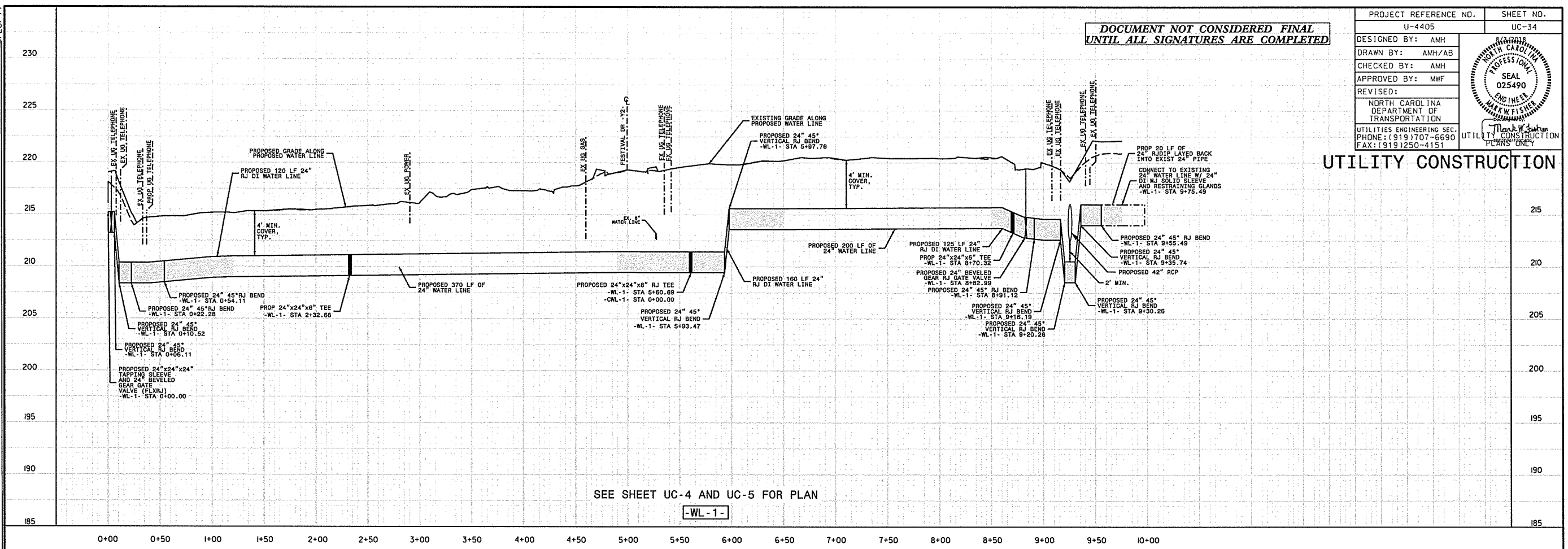
REVISIONS
UTILITY REV. - JUL 23, 2008 - REVISED TO SHOW PROPOSED 12\"/>

27-JUL-2018 14:19
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1/14/99

DOCUMENT NOT CONSIDERED FINAL
UNTIL ALL SIGNATURES ARE COMPLETED

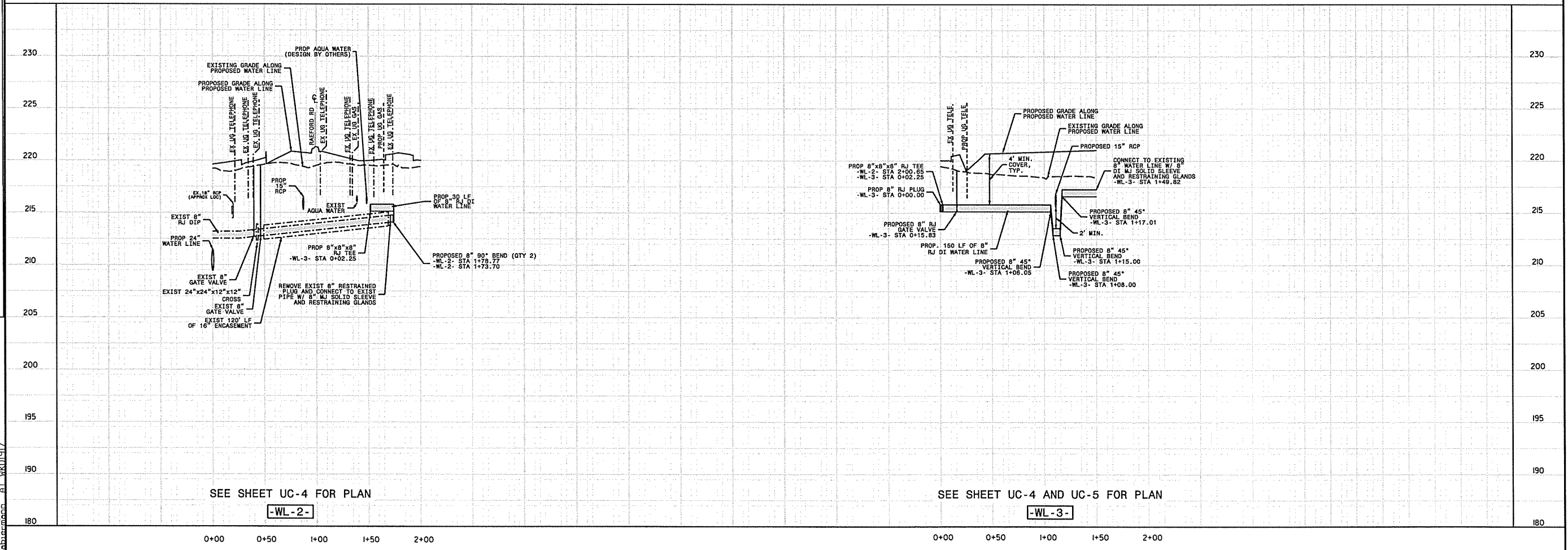
PROJECT REFERENCE NO.	U-4405	SHEET NO.	UC-34
DESIGNED BY:	AMH		
DRAWN BY:	AMH/AB		
CHECKED BY:	AMH		
APPROVED BY:	MWF		
REVISED:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		UTILITY CONSTRUCTION PLANS ONLY	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151			

UTILITY CONSTRUCTION



SEE SHEET UC-4 AND UC-5 FOR PLAN

-WL-1-



SEE SHEET UC-4 FOR PLAN

-WL-2-

SEE SHEET UC-4 AND UC-5 FOR PLAN

-WL-3-

REVISIONS

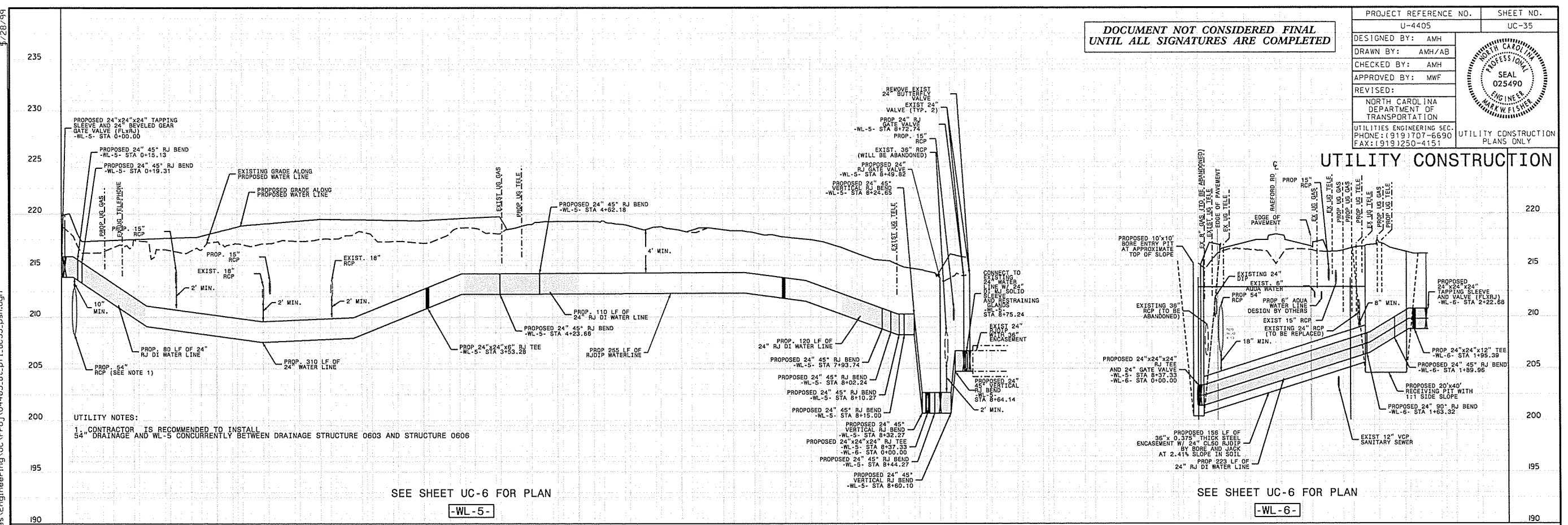
UTILITY REV. - JULY 23, 2008 - MODIFIED RAMP SIZE ON A CALLOUT

27-JUL-2008 15:49
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5/28/09

DOCUMENT NOT CONSIDERED FINAL
UNTIL ALL SIGNATURES ARE COMPLETED

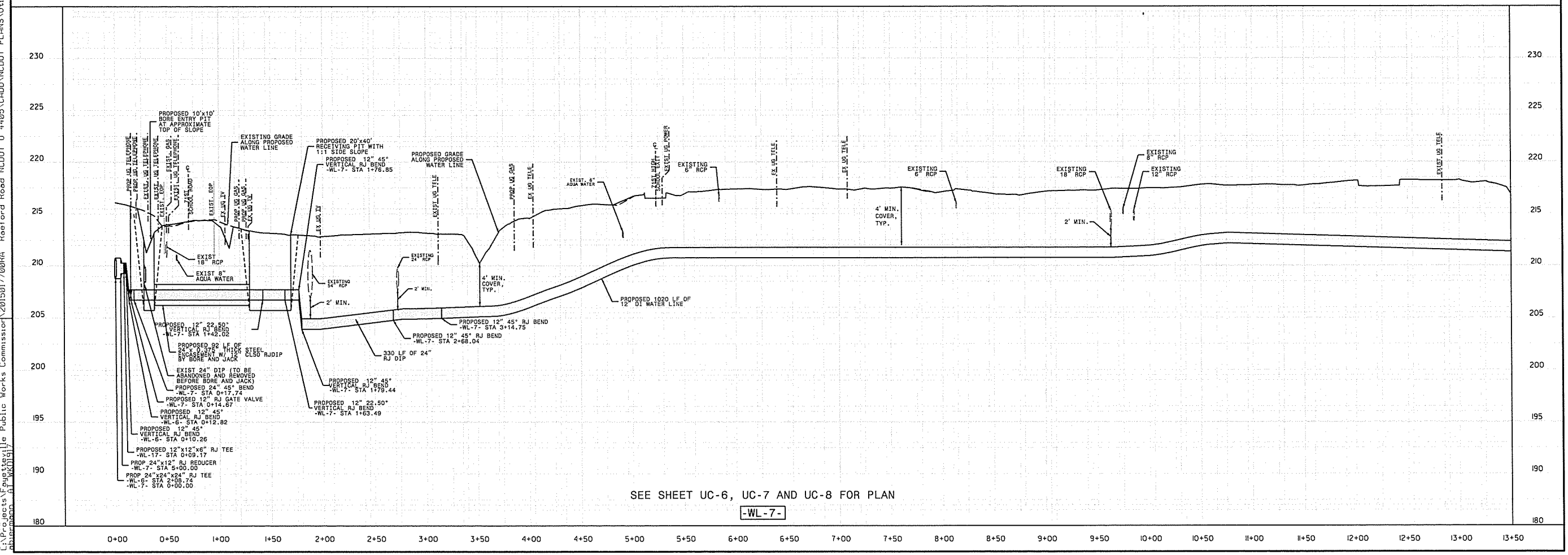
PROJECT REFERENCE NO.	SHEET NO.
U-4405	UC-35
DESIGNED BY: AMH	
DRAWN BY: AMH/AB	
CHECKED BY: AMH	
APPROVED BY: MWF	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 107-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

UTILITY CONSTRUCTION



SEE SHEET UC-6 FOR PLAN

SEE SHEET UC-6 FOR PLAN



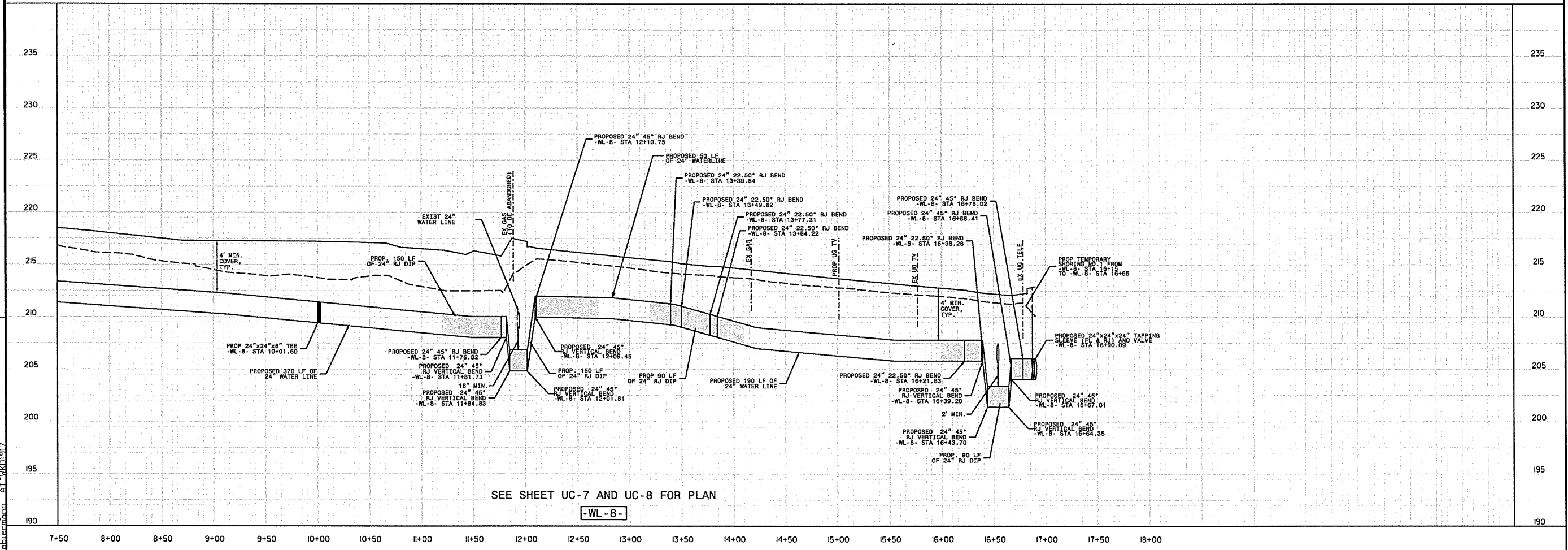
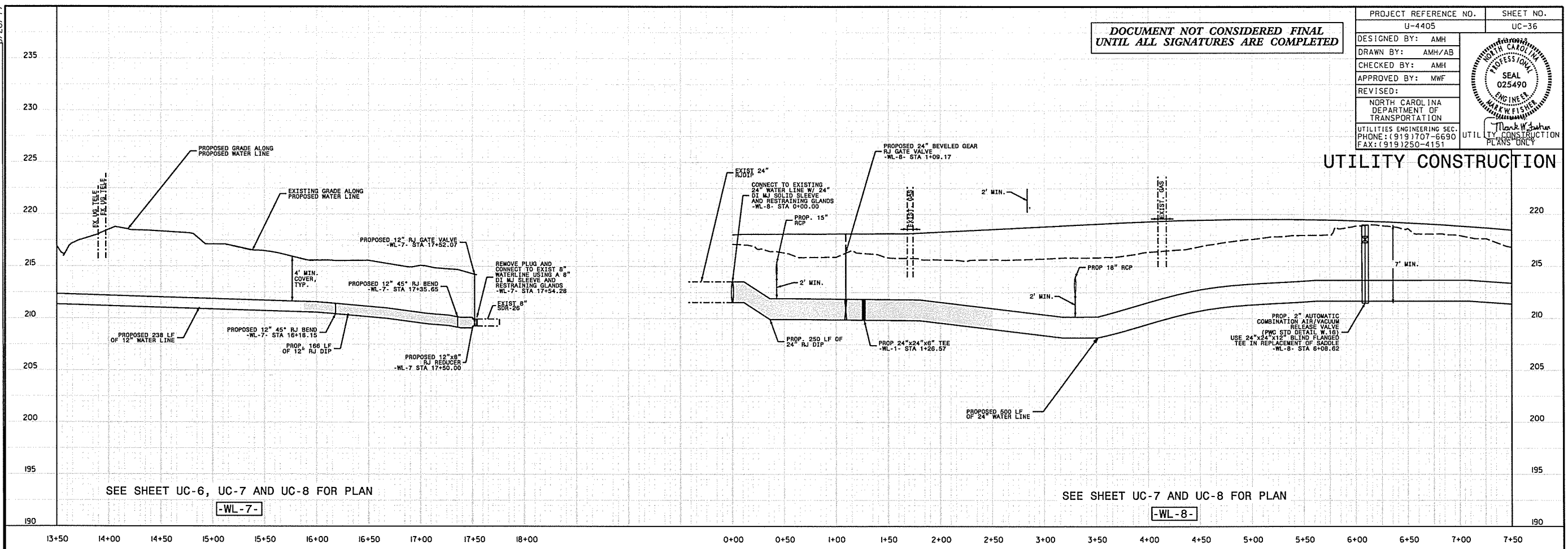
SEE SHEET UC-6, UC-7 AND UC-8 FOR PLAN

REVISIONS
 UTILITY REV. - JULY 21, 2008 - CORRECTED TEXT OVER TEXT CONFLICTS
 27-JUL-2008 (5:19 PM) Projects\Wettestville Public Works Commission\2010150177000RA Roeford Road NCDOT U 4405\CADD\NCDOT PLANS\Utilities\Engineering\UC\Proj\U4405-ut-pl\uc35.psh.dgn
 5/28/99

DOCUMENT NOT CONSIDERED FINAL
UNTIL ALL SIGNATURES ARE COMPLETED

PROJECT REFERENCE NO. U-4405	SHEET NO. UC-36
DESIGNED BY: AMH	
DRAWN BY: AMH/AB	
CHECKED BY: AMH	
APPROVED BY: MWF	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

UTILITY CONSTRUCTION



REVISIONS

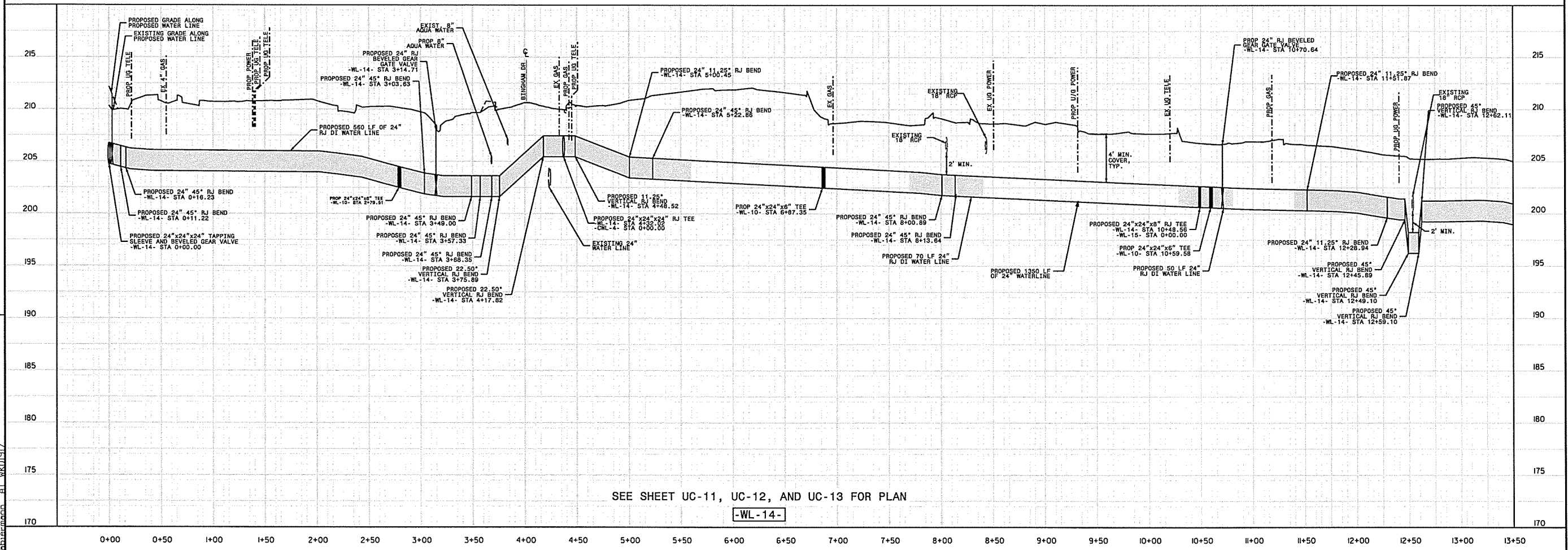
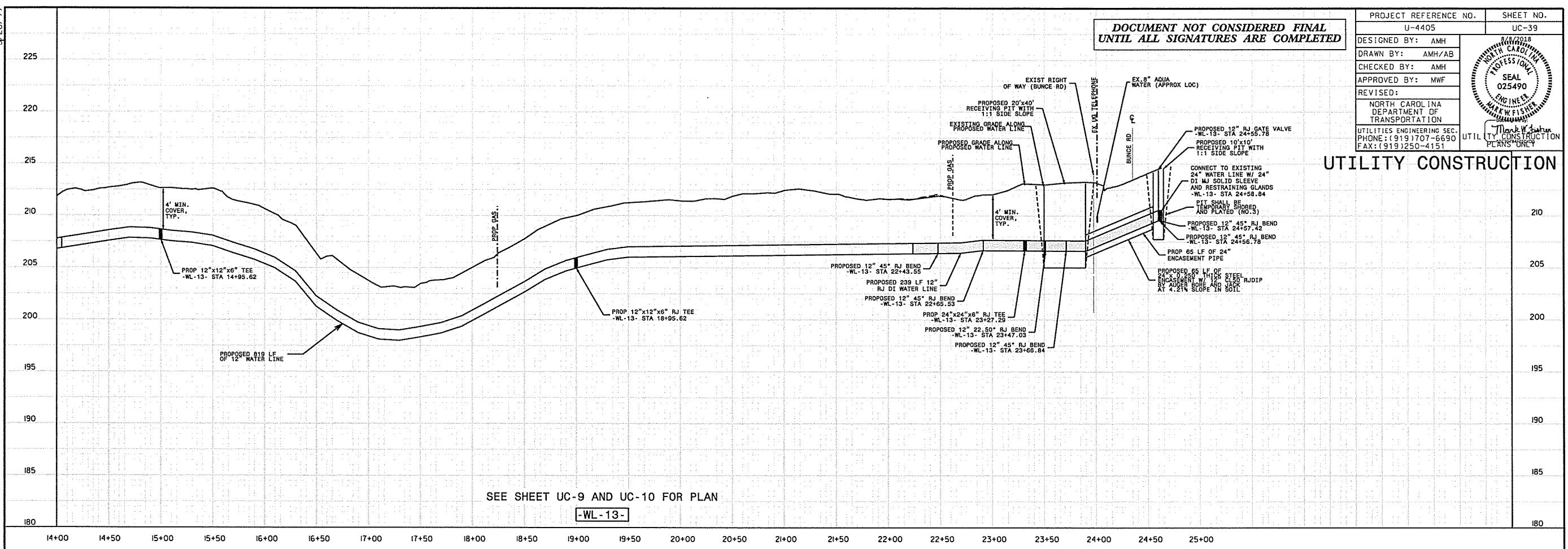
UTILITY REV. - JULY 23, 2008 - REMOVED INCORRECT CALLOUTS

5/28/19
 27 JUL 2008 15:49
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 \2015017700RA Reeferd Road NCDOT U 4405\CADD\NCDOT PLANS\Utilities\Engineering\UC\Proj\U4405.ut.pl_uc36.psh.dgn

DOCUMENT NOT CONSIDERED FINAL
UNTIL ALL SIGNATURES ARE COMPLETED

PROJECT REFERENCE NO.	U-4405	SHEET NO.	UC-39
DESIGNED BY:	AMH		
DRAWN BY:	AMH/AB		
CHECKED BY:	AMH		
APPROVED BY:	MWF		
REVISED:		NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6590 FAX: (919) 250-4151	

UTILITY CONSTRUCTION



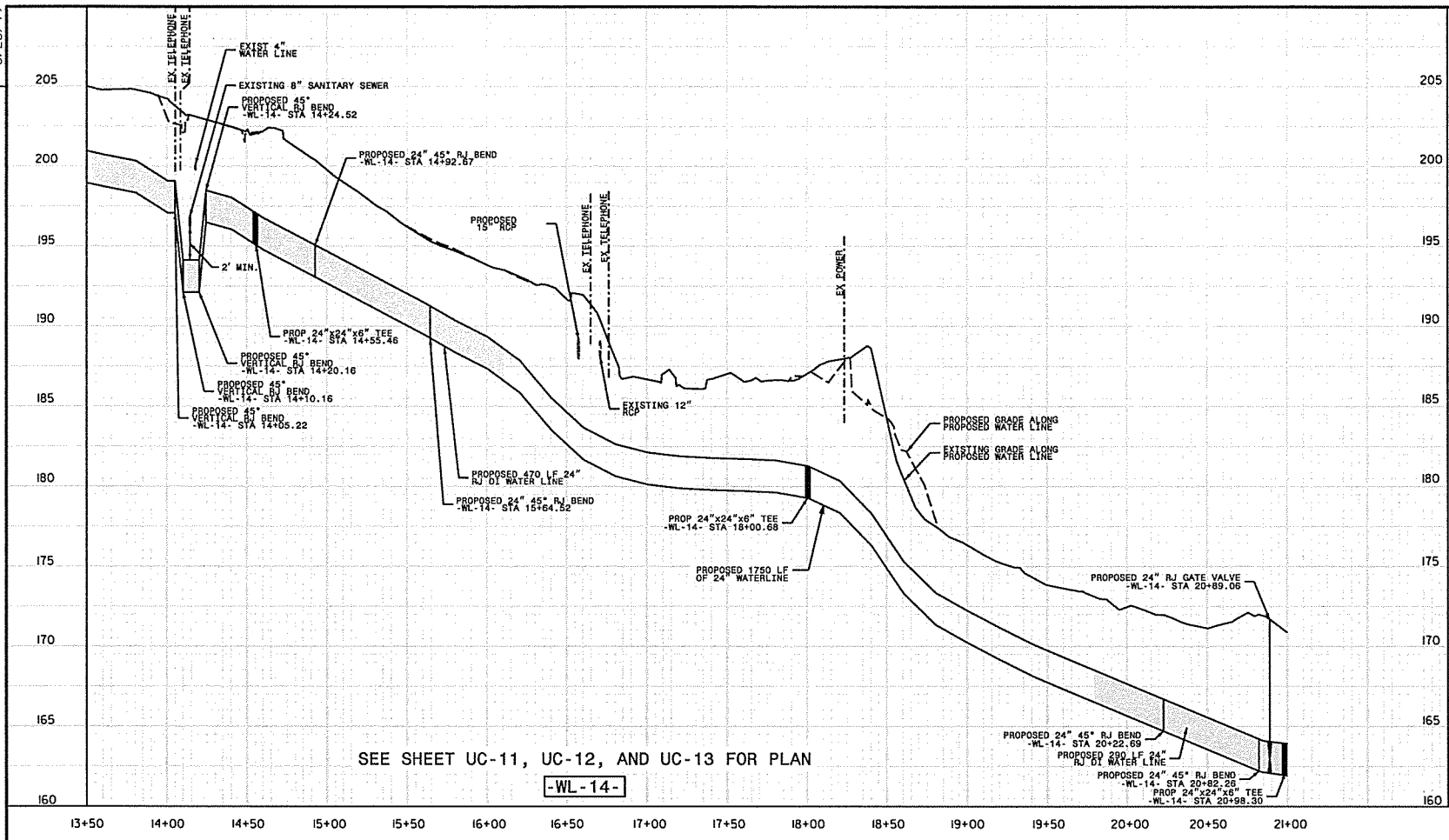
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 5/28/99
 REVISIONS
 UTILITY REV. - JUL 23, 2008 - ADDED 50 LF OF R/DIP TO WL-14 STA 0+50

5/28/99

07-AUG-2018 09:45
L:\Projects\Feagteville Public Works Commission\2015011700RA Reeford Road NCDOT U 4405\CADD\NCDOT PLANS\Utilities\Engineering\UC\Proj\U4405.ut.pfl\uc40.psh.dgn
blabermann AT WKS

REVISIONS

UTILITY REV. - JUL 24, 2008 - ADDED 10' MIN. COVER TO 24" WATERLINE AND 18" SANITARY SEWER. ADDED 10' MIN. COVER TO 18" SANITARY SEWER. ADDED 10' MIN. COVER TO 18" SANITARY SEWER. ADDED 10' MIN. COVER TO 18" SANITARY SEWER.



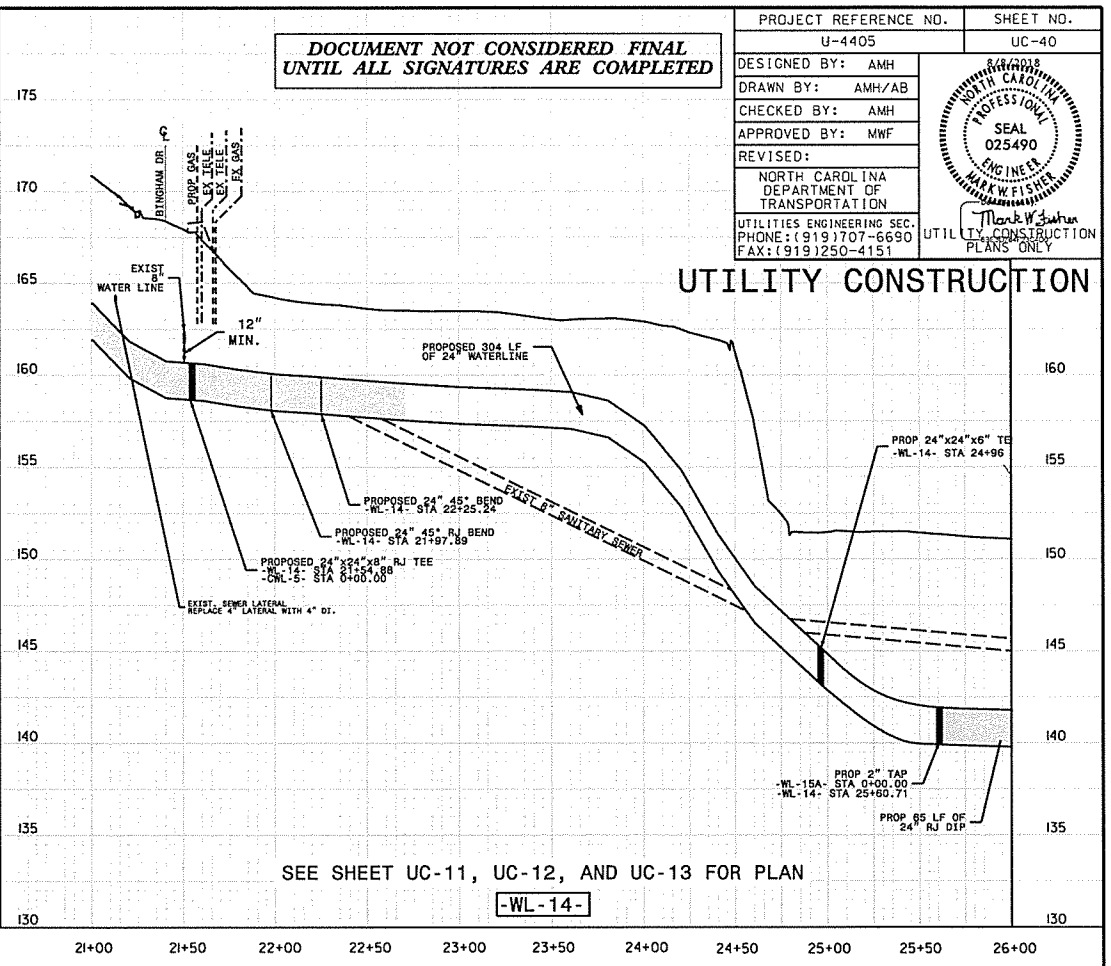
SEE SHEET UC-11, UC-12, AND UC-13 FOR PLAN

-WL-14-

DOCUMENT NOT CONSIDERED FINAL
UNTIL ALL SIGNATURES ARE COMPLETED

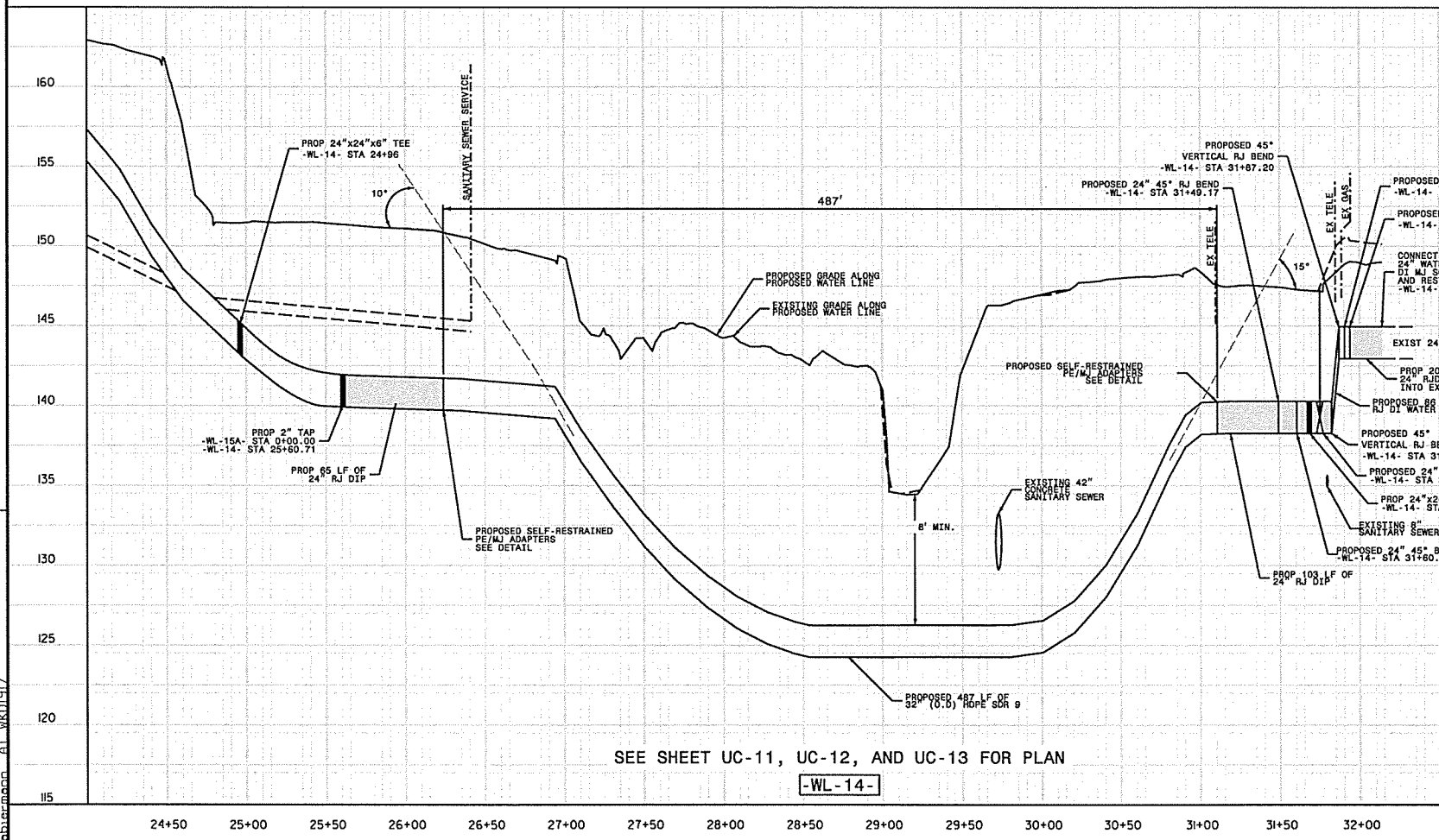
PROJECT REFERENCE NO.	U-4405	SHEET NO.	UC-40
DESIGNED BY:	AMH		
DRAWN BY:	AMH/AB		
CHECKED BY:	AMH		
APPROVED BY:	MWF		
REVISED:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151			

UTILITY CONSTRUCTION



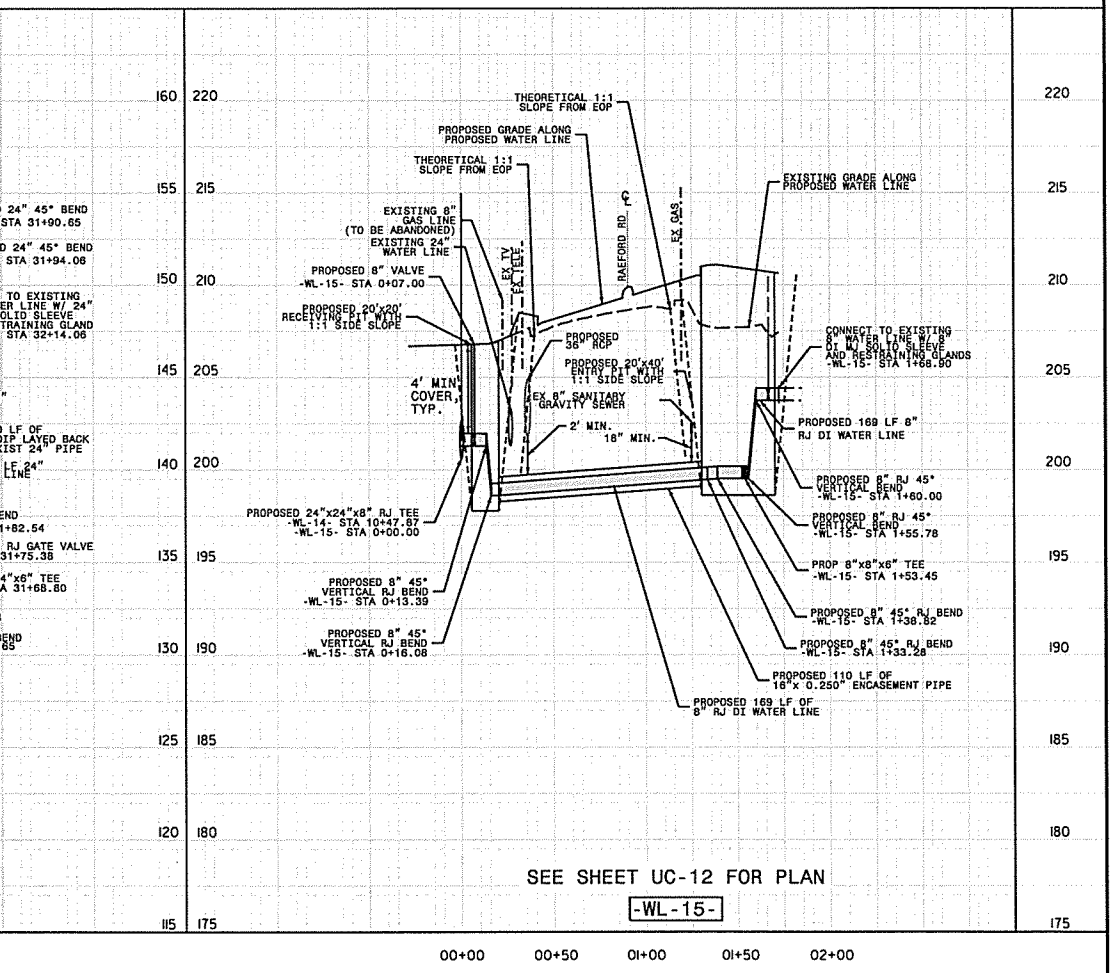
SEE SHEET UC-11, UC-12, AND UC-13 FOR PLAN

-WL-14-



SEE SHEET UC-11, UC-12, AND UC-13 FOR PLAN

-WL-14-



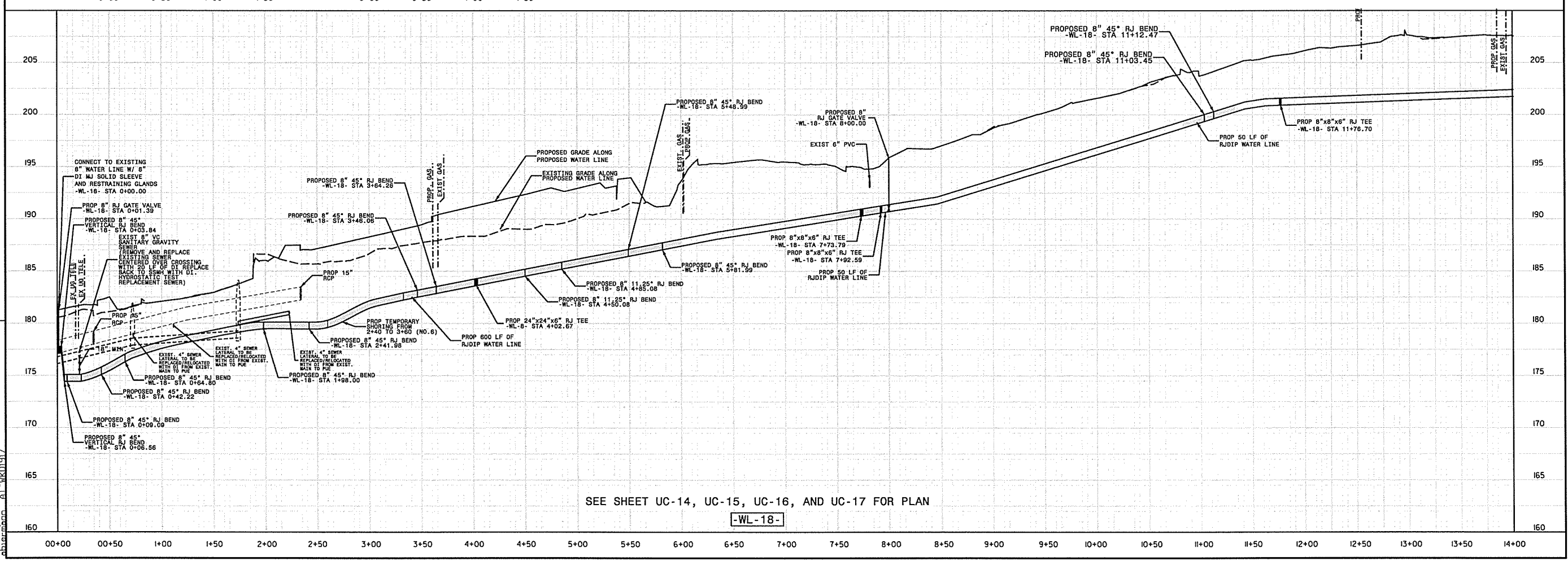
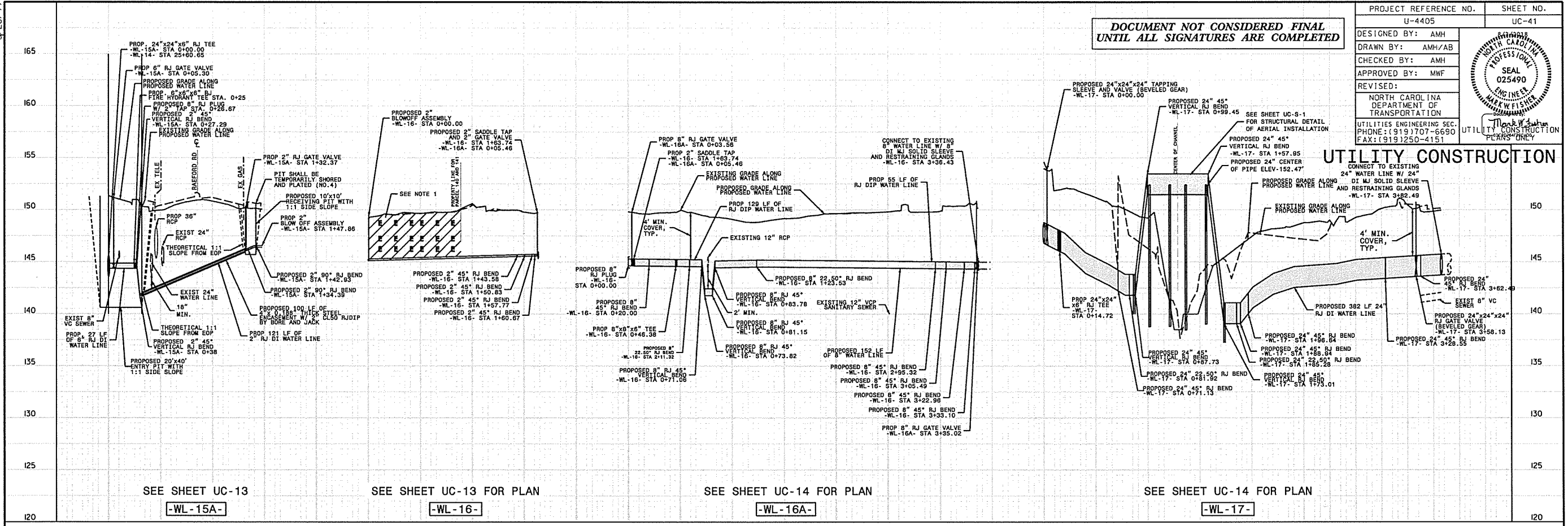
SEE SHEET UC-12 FOR PLAN

-WL-15-

DOCUMENT NOT CONSIDERED FINAL
UNTIL ALL SIGNATURES ARE COMPLETED

PROJECT REFERENCE NO.	U-4405	SHEET NO.	UC-41
DESIGNED BY:	AMH		
DRAWN BY:	AMH/AB		
CHECKED BY:	AMH		
APPROVED BY:	MWF		
REVISED:		NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

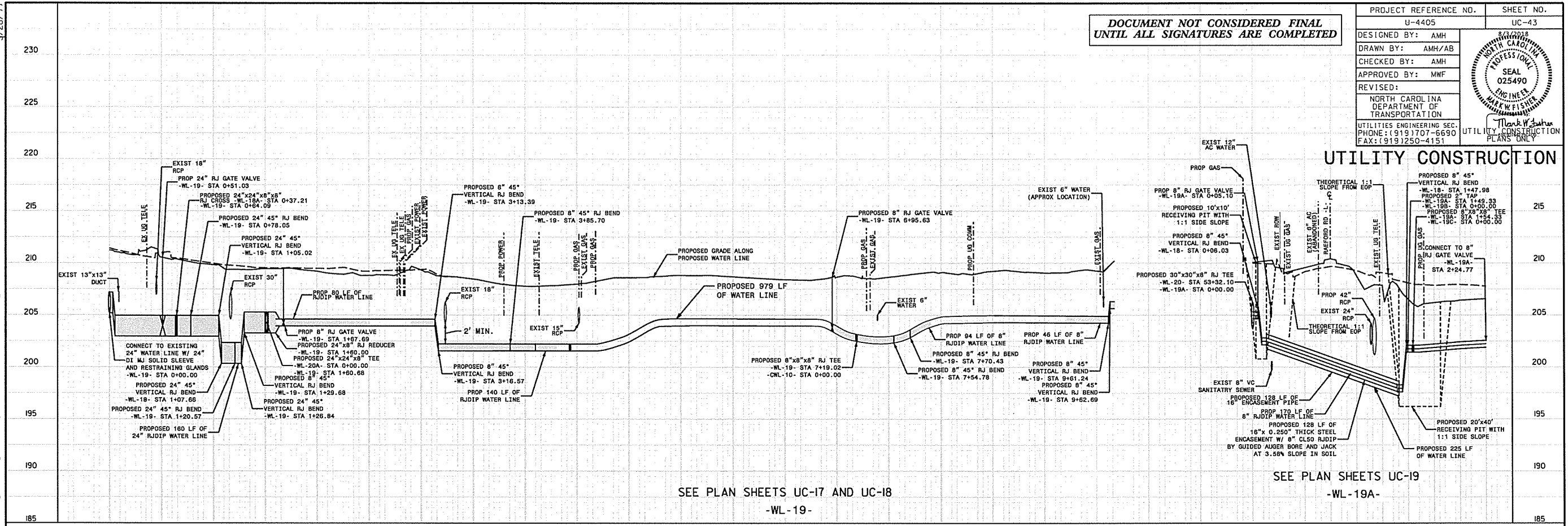
UTILITY CONSTRUCTION



5/28/09
 UTILITY REV. - JULY 24, 2008 - REVISED WITH COMMENTS FROM THE STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SECTION. REVISED TO INCLUDE 8" DI WATER LINE, 2" DI WATER TAP AND HYDRANT TEE.
 21 JUL 2008 14:48
 C:\projects\Public Works Commission\2015017700RA Reeford Road NCDOT U 4405\CADD\NCDOT PLANS\Utilities\Engineering\UC-Proj\U4405.ut.pfl.uc41.psh.dgn
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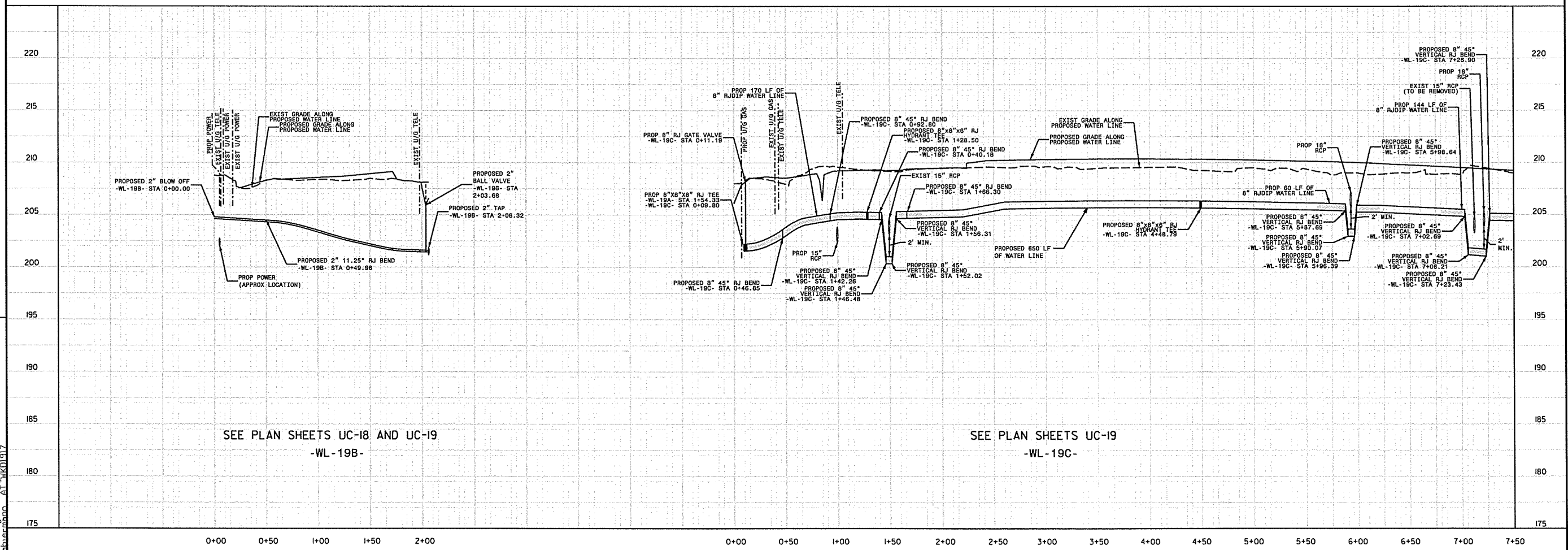
DOCUMENT NOT CONSIDERED FINAL
UNTIL ALL SIGNATURES ARE COMPLETED

PROJECT REFERENCE NO.	U-4405	SHEET NO.	UC-43
DESIGNED BY:	AMH		
DRAWN BY:	AMH/AB		
CHECKED BY:	AMH		
APPROVED BY:	MWF		
REVISED:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		UTILITY CONSTRUCTION PLANS ONLY	
UTILITIES ENGINEERING SEC.		PHONE: (919) 707-6590 FAX: (919) 250-4151	



SEE PLAN SHEETS UC-17 AND UC-18
-WL-19-

SEE PLAN SHEETS UC-19
-WL-19A-



SEE PLAN SHEETS UC-18 AND UC-19
-WL-19B-

SEE PLAN SHEETS UC-19
-WL-19C-

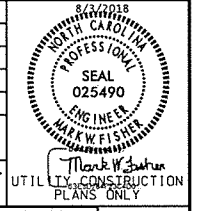
REVISIONS

UTILITY REV. - JULY 23, 2008 - ADDED 80 LF OF RJDIP TO -WL-9- AT STA 1+70. VERTICAL RJ BEND -WL-9- FROM STA 1+48 TO STA 1+70.

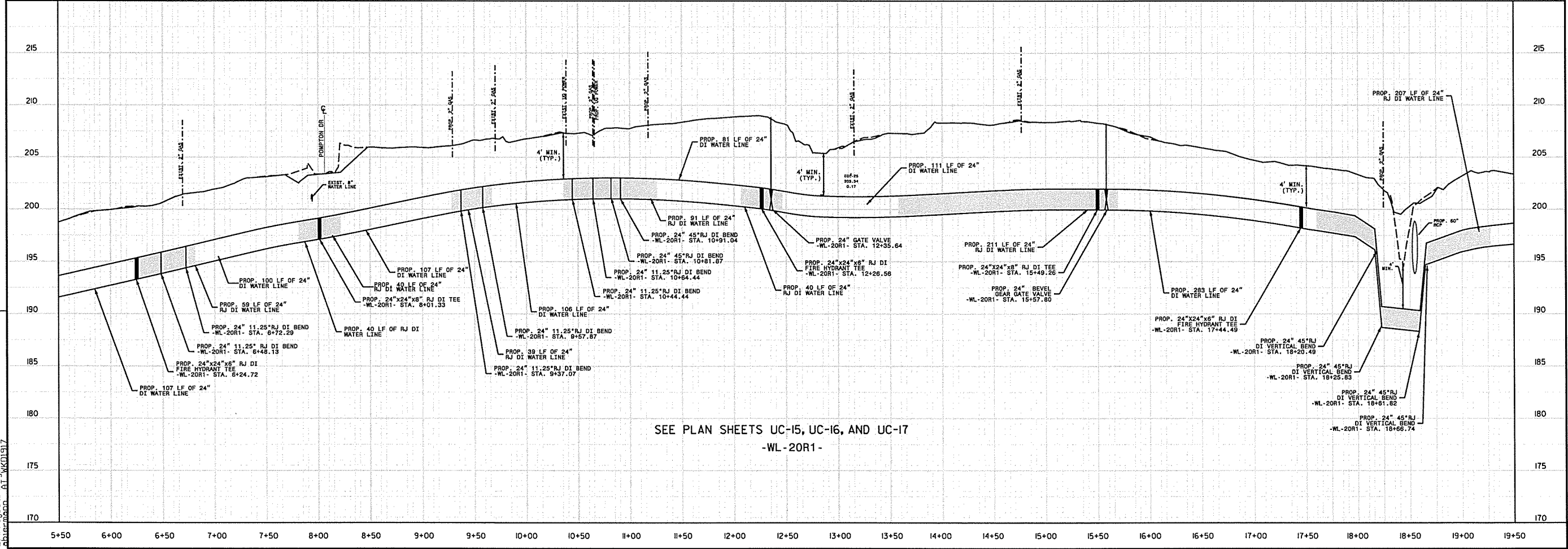
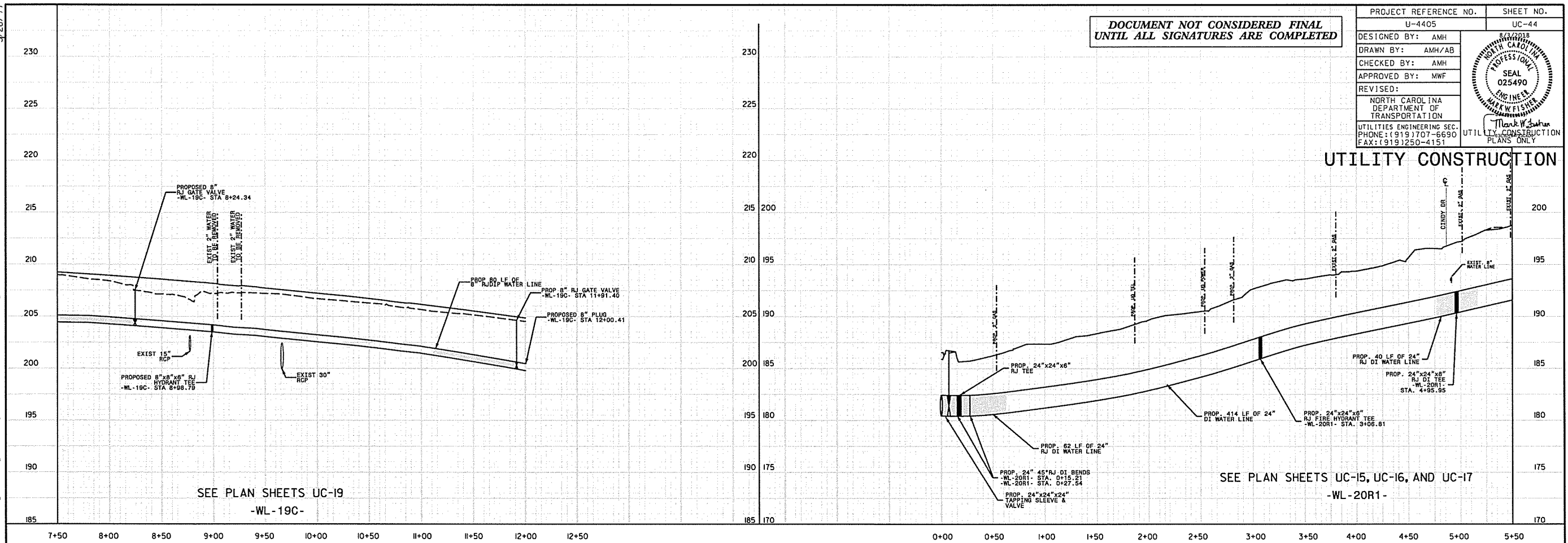
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DOCUMENT NOT CONSIDERED FINAL
UNTIL ALL SIGNATURES ARE COMPLETED

PROJECT REFERENCE NO.	UC-44
U-4405	UC-44
DESIGNED BY:	AMH
DRAWN BY:	AMH/AB
CHECKED BY:	AMH
APPROVED BY:	MWF
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC.	
PHONE: (919) 707-6690	
FAX: (919) 250-4151	



UTILITY CONSTRUCTION



REVISIONS
 UTILITY REV. - JULY 24, 2008 - SHIFTED VALVE FROM STA. 8+24 TO STA. 8+24.72
 - ADDED 10' LF OF 24\"/>

SEE PLAN SHEETS UC-19
-WL-19C-

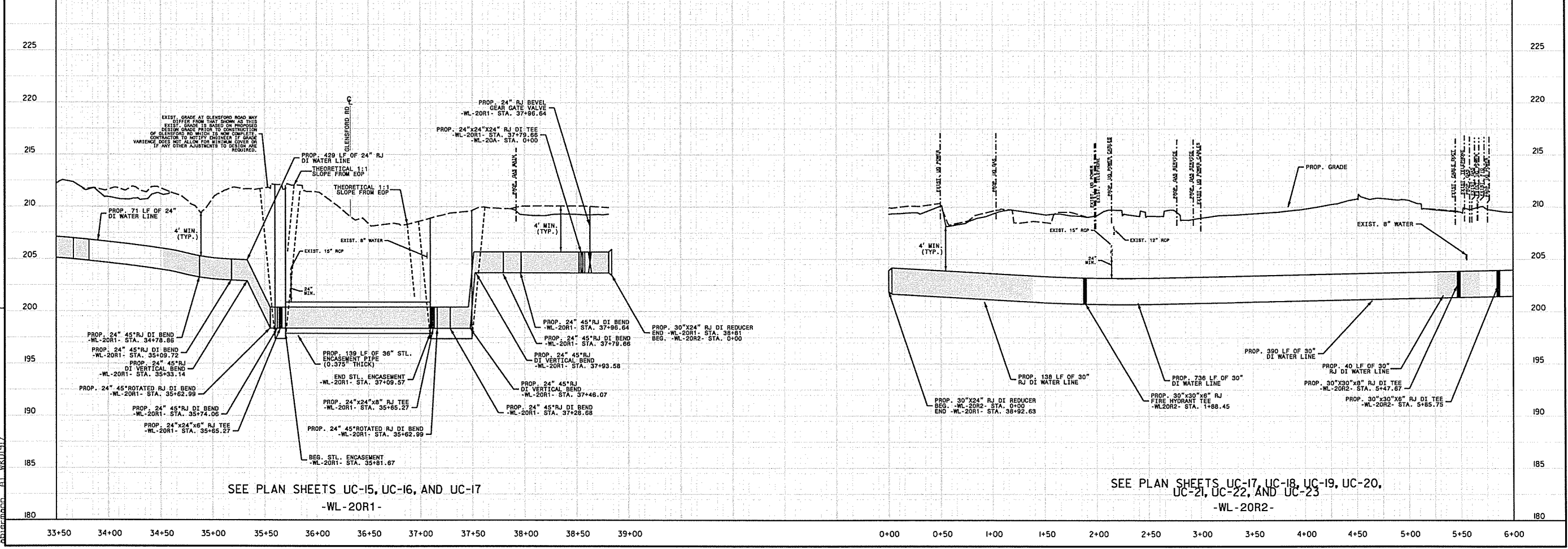
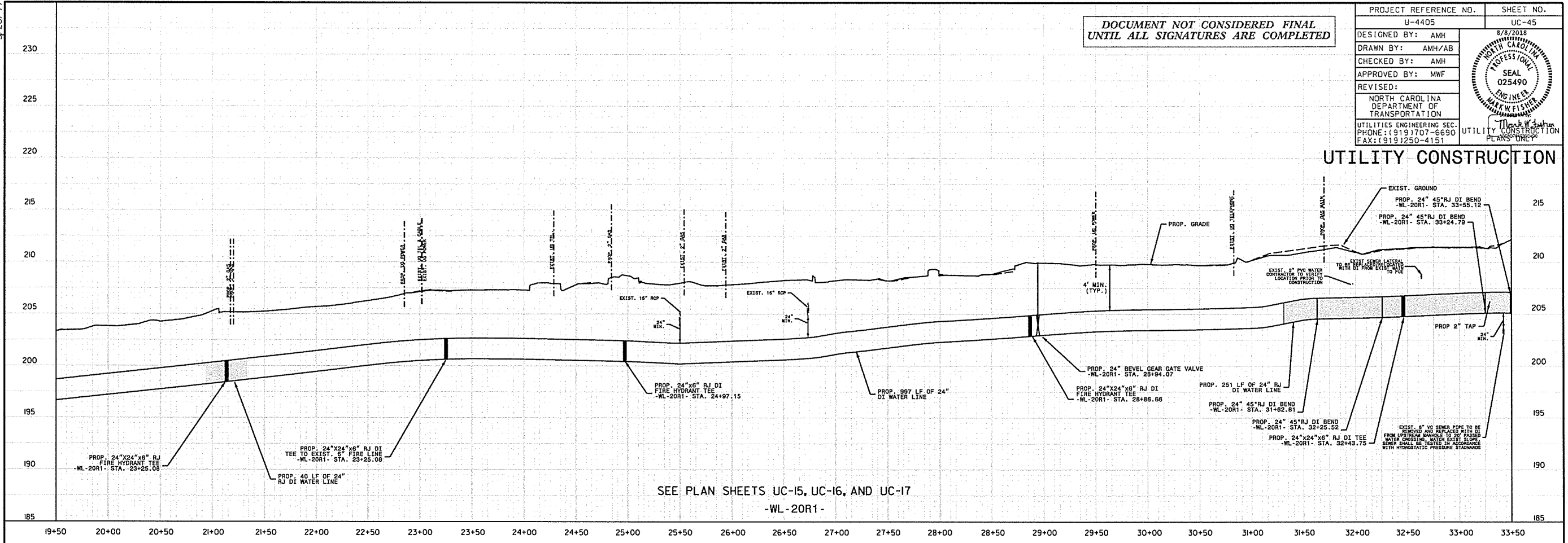
SEE PLAN SHEETS UC-15, UC-16, AND UC-17
-WL-20R1-

SEE PLAN SHEETS UC-15, UC-16, AND UC-17
-WL-20R1-

DOCUMENT NOT CONSIDERED FINAL
UNTIL ALL SIGNATURES ARE COMPLETED

PROJECT REFERENCE NO.	U-4405	SHEET NO.	UC-45
DESIGNED BY:	AMH	DATE:	8/8/2018
DRAWN BY:	AMH/AB	PROFESSIONAL SEAL	025490
CHECKED BY:	AMH	ENGINEER	M. W. FISHER
APPROVED BY:	MWF	UTILITY CONSTRUCTION PLANS	
REVISED:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		UTILITY CONSTRUCTION PLANS	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690		FAX: (919) 250-4151	

UTILITY CONSTRUCTION



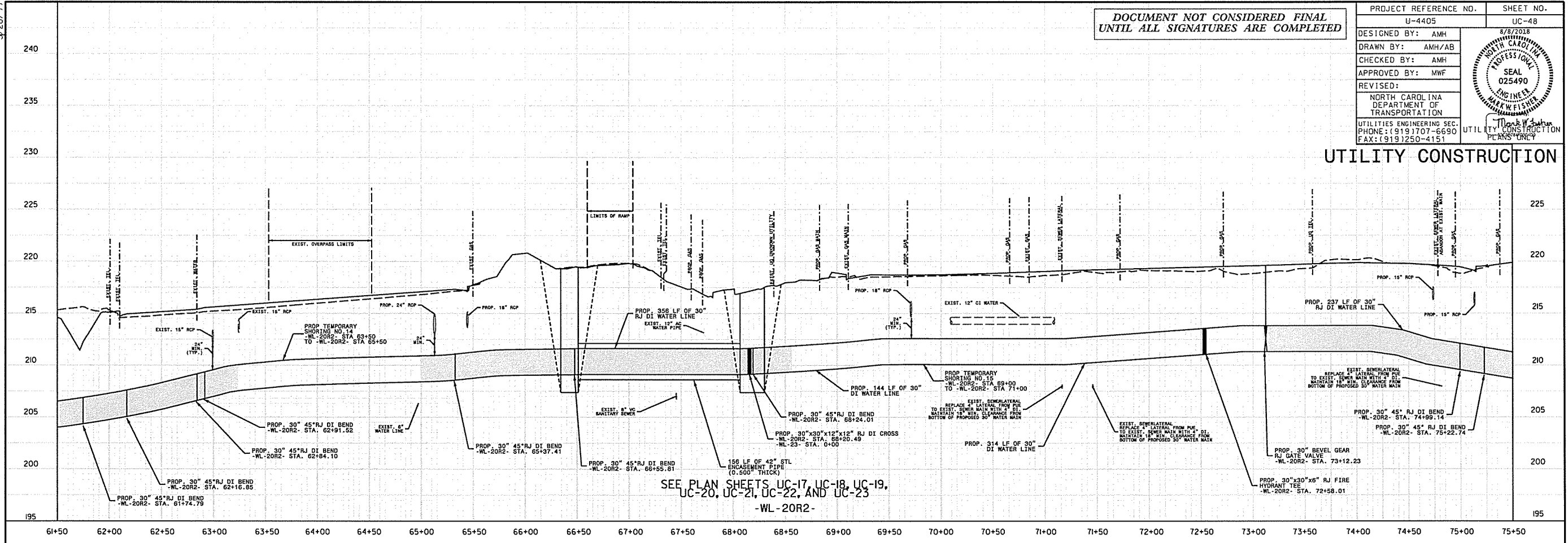
REVISIONS

07-AUG-2018 09:20
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 5/28/18
 UTILITY REV. - JULY 24, 2018 - ADDED A 24" X 24" X 8" RJ DI WATER LINE TO THE PLAN TO PROVIDE A 36" ENCASUREMENT - ADDED ENCASUREMENT THICKNESS AND LENGTH FOR 36" ENCASUREMENT

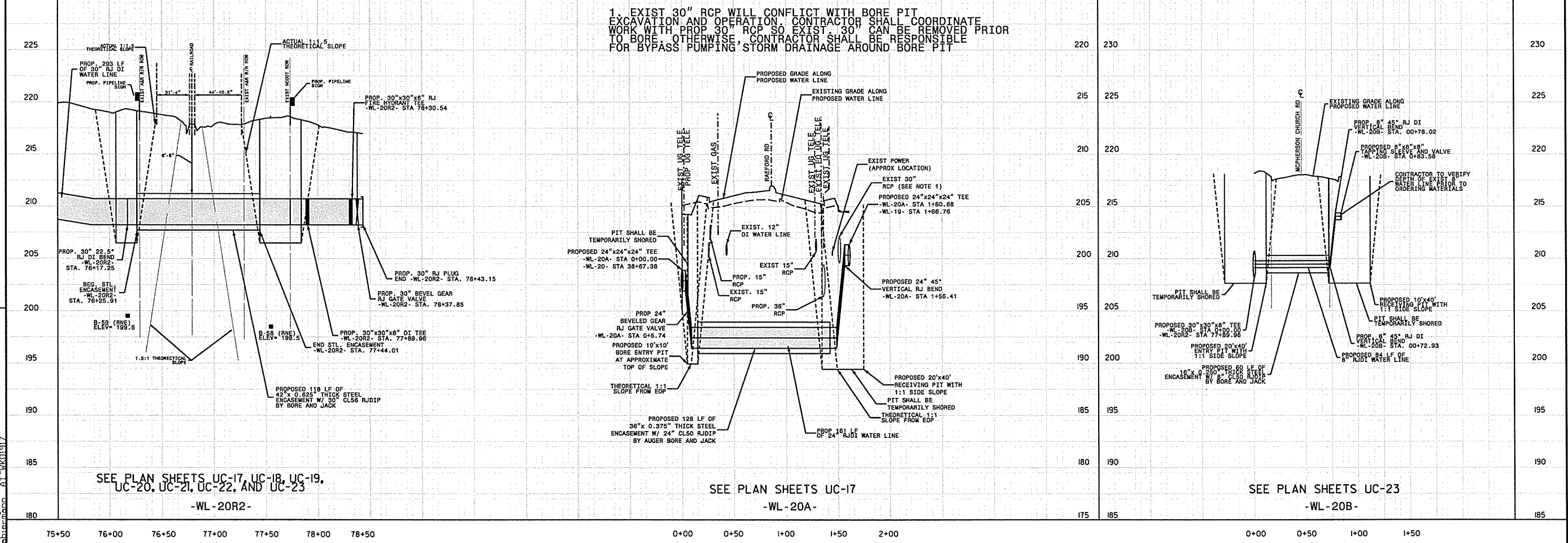
DOCUMENT NOT CONSIDERED FINAL
UNTIL ALL SIGNATURES ARE COMPLETED

PROJECT REFERENCE NO.	U-4405	SHEET NO.	UC-48
DESIGNED BY:	AMH	DATE	8/8/2018
DRAWN BY:	AMH/AB	PROFESSIONAL SEAL	025490
CHECKED BY:	AMH	ENGINEER	MARK W. FISHER
APPROVED BY:	MWF	REGISTERED PROFESSIONAL ENGINEER	
REVISED:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION			
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151			

UTILITY CONSTRUCTION



SEE PLAN SHEETS UC-17, UC-18, UC-19,
UC-20, UC-21, UC-22, AND UC-23
-WL-20R2-



SEE PLAN SHEETS UC-17, UC-18, UC-19,
UC-20, UC-21, UC-22, AND UC-23
-WL-20A-

SEE PLAN SHEETS UC-17
-WL-20A-

SEE PLAN SHEETS UC-23
-WL-20B-

REVISIONS

UTILITY REV. - JULY 23, 2018 - REVISED BORE PIT TO SHOW 30\"/>

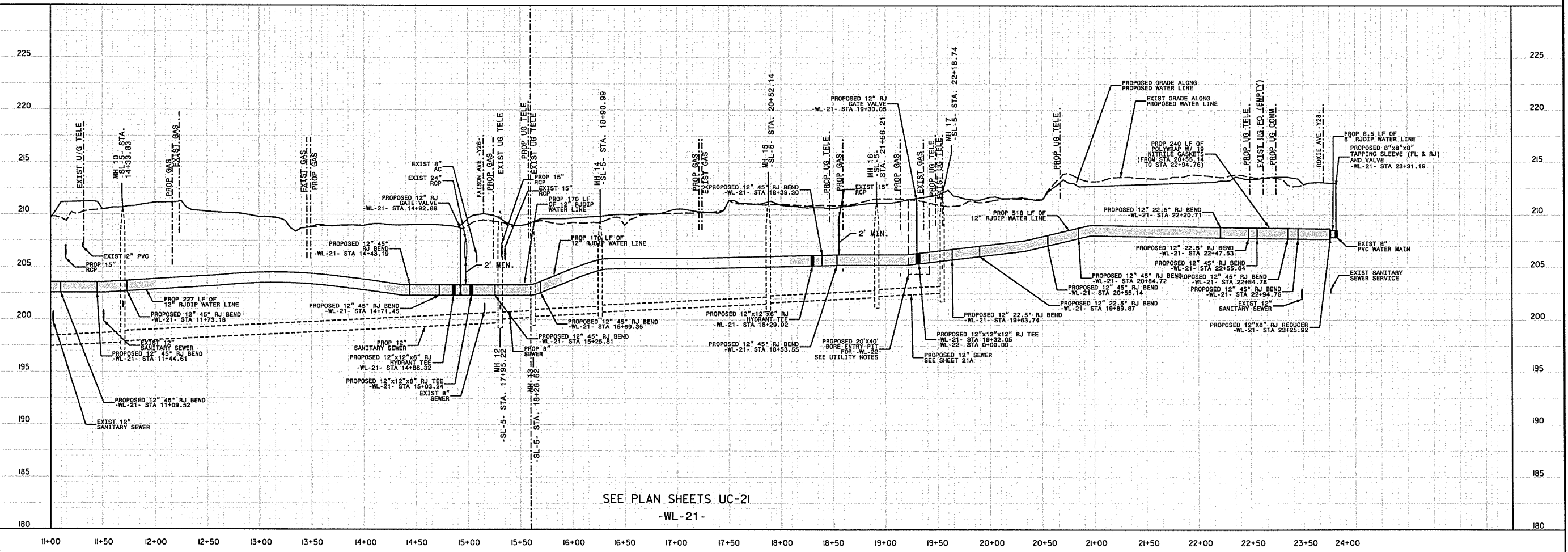
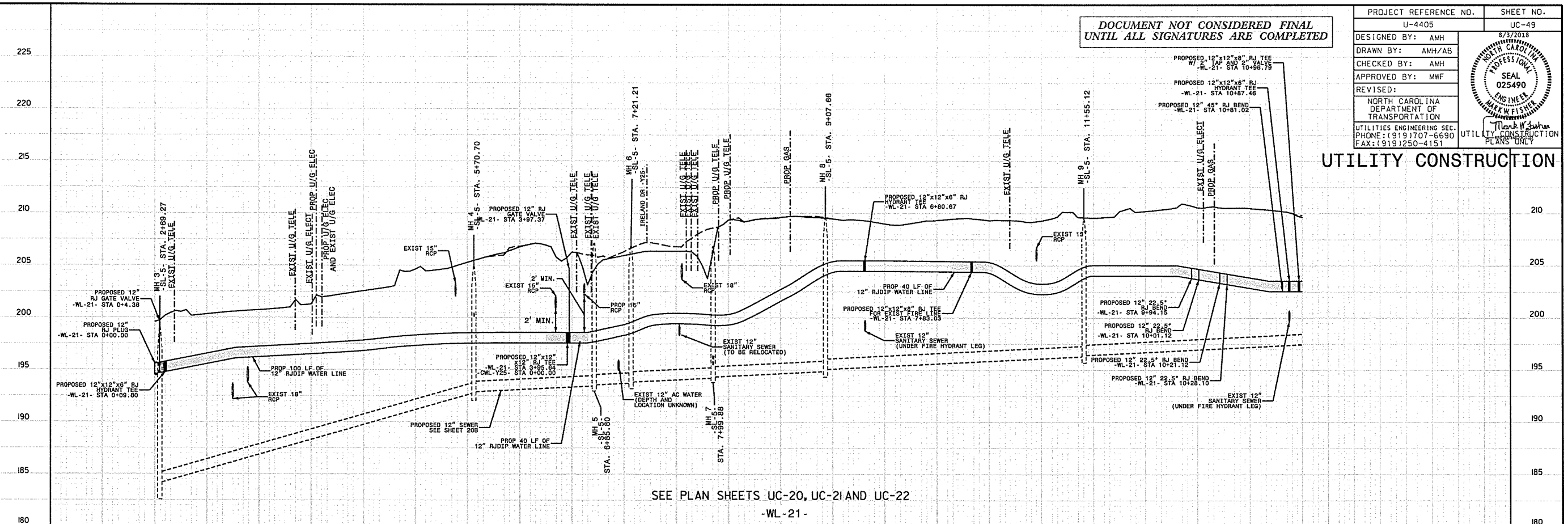
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Checked by: MWF

5/28/99

27-JUL-2018 14:49
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Blairmond At Wkfish

UTILITY REV. - JUL 23, 2008 - ADDED 8" LF OF 6" RJDIP WATER LINE TO WL-21 STA 3377.00 AND 8" LF OF 8" RJDIP WATER LINE TO STA 3377.00 AND 8" LF OF 8" RJDIP WATER LINE TO STA 3377.00

27-JUL-2018 14:49
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Blairmond At Wkfish

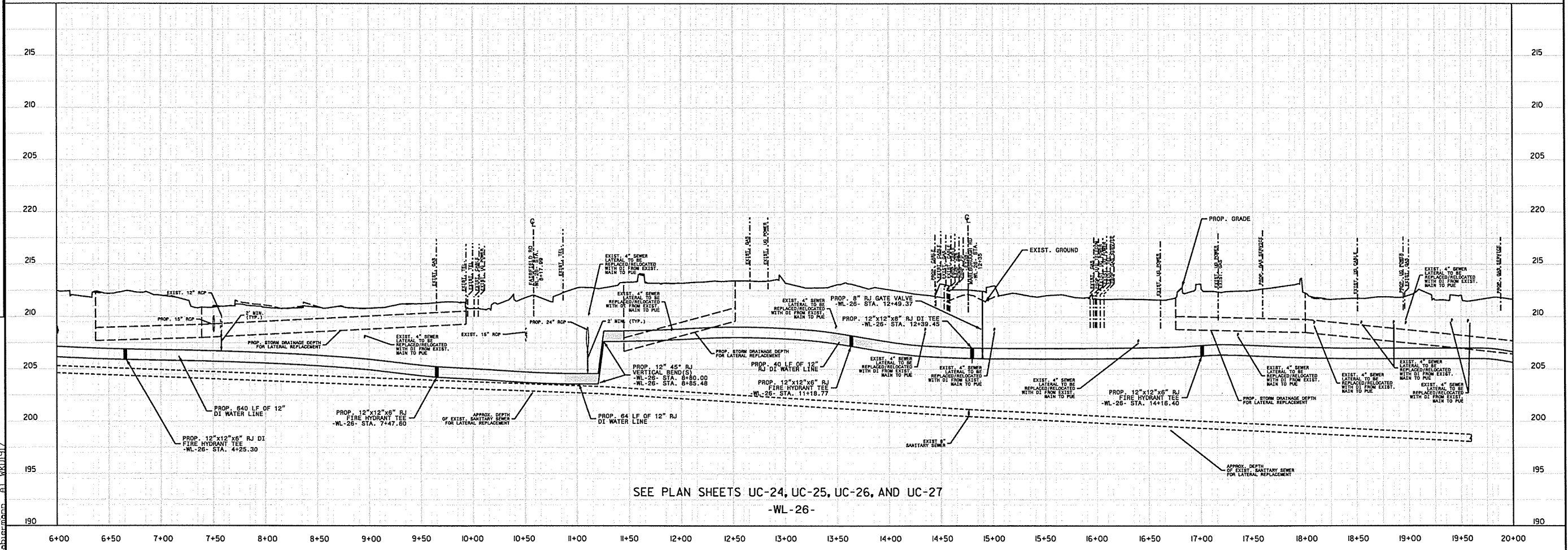
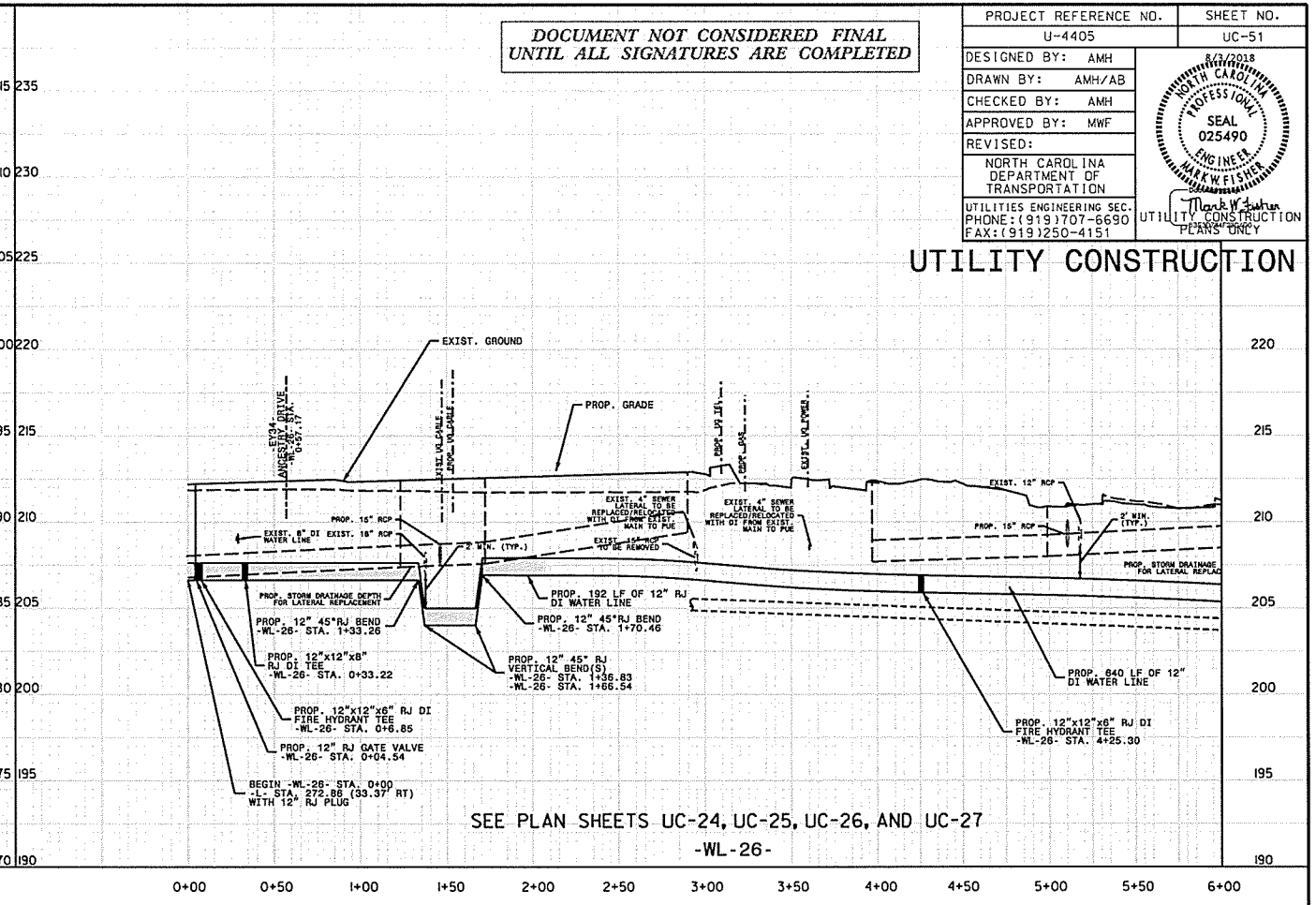
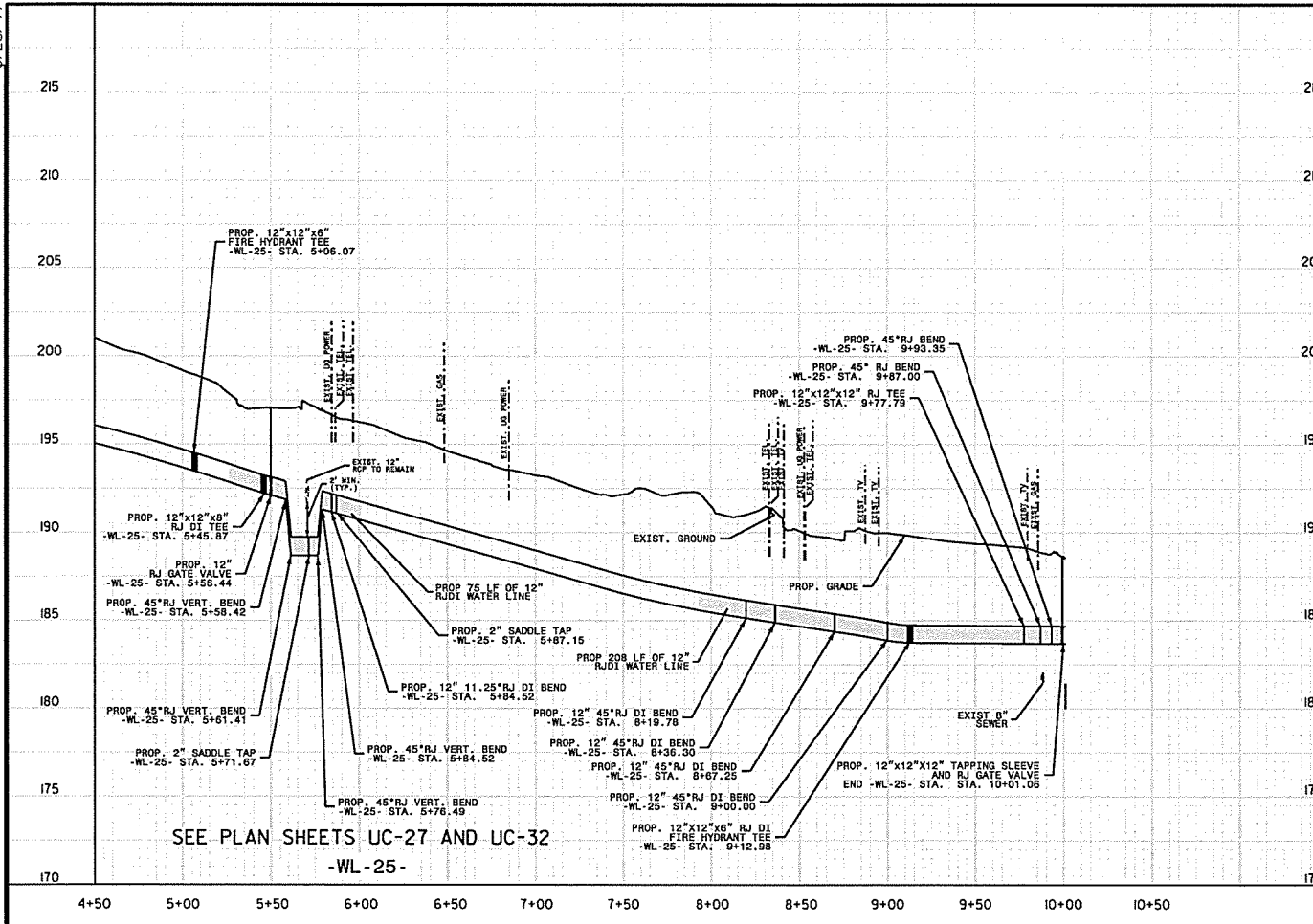


REVISIONS

DOCUMENT NOT CONSIDERED FINAL
UNTIL ALL SIGNATURES ARE COMPLETED

PROJECT REFERENCE NO. U-4405	SHEET NO. UC-51
DESIGNED BY: AMH	
DRAWN BY: AMH/AB	
CHECKED BY: AMH	
APPROVED BY: MWF	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

UTILITY CONSTRUCTION



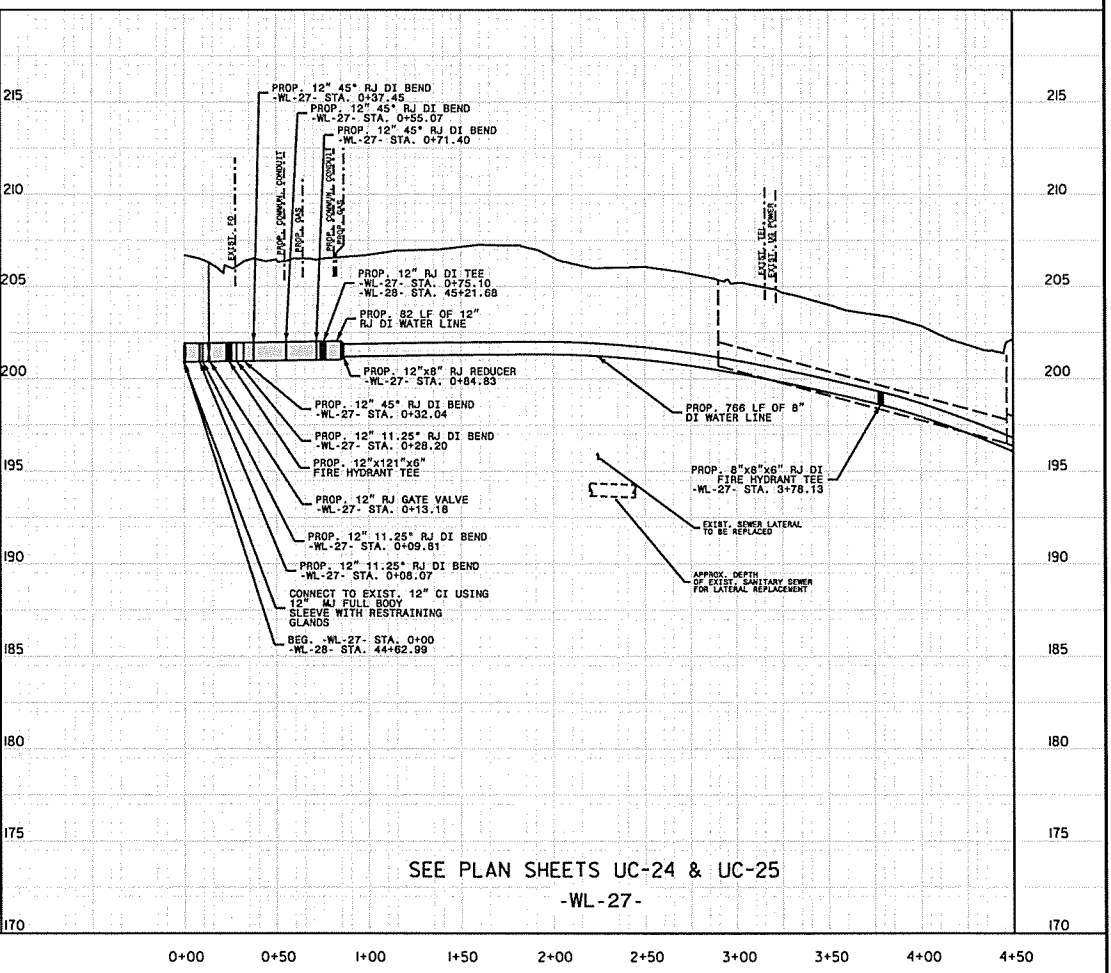
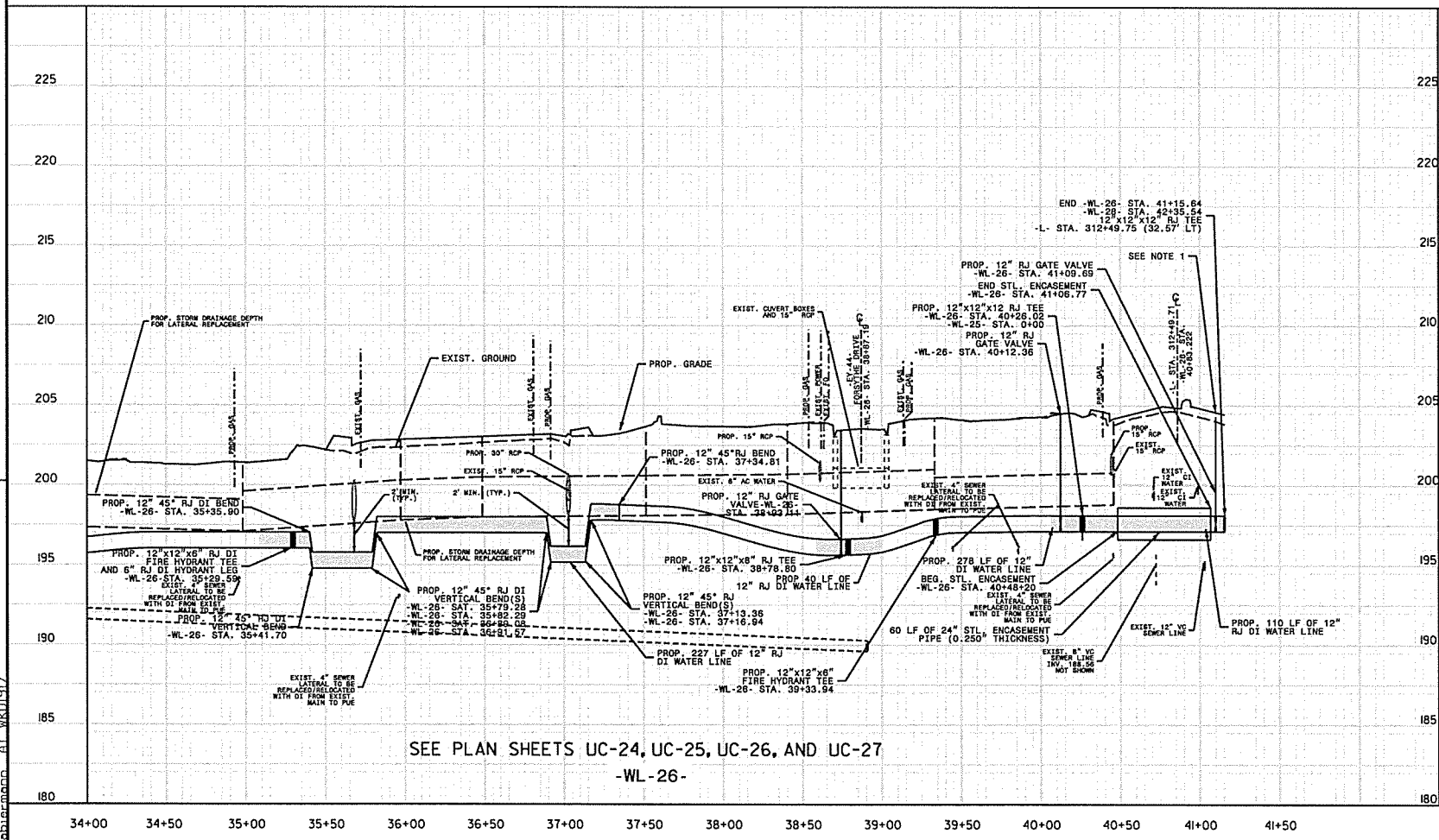
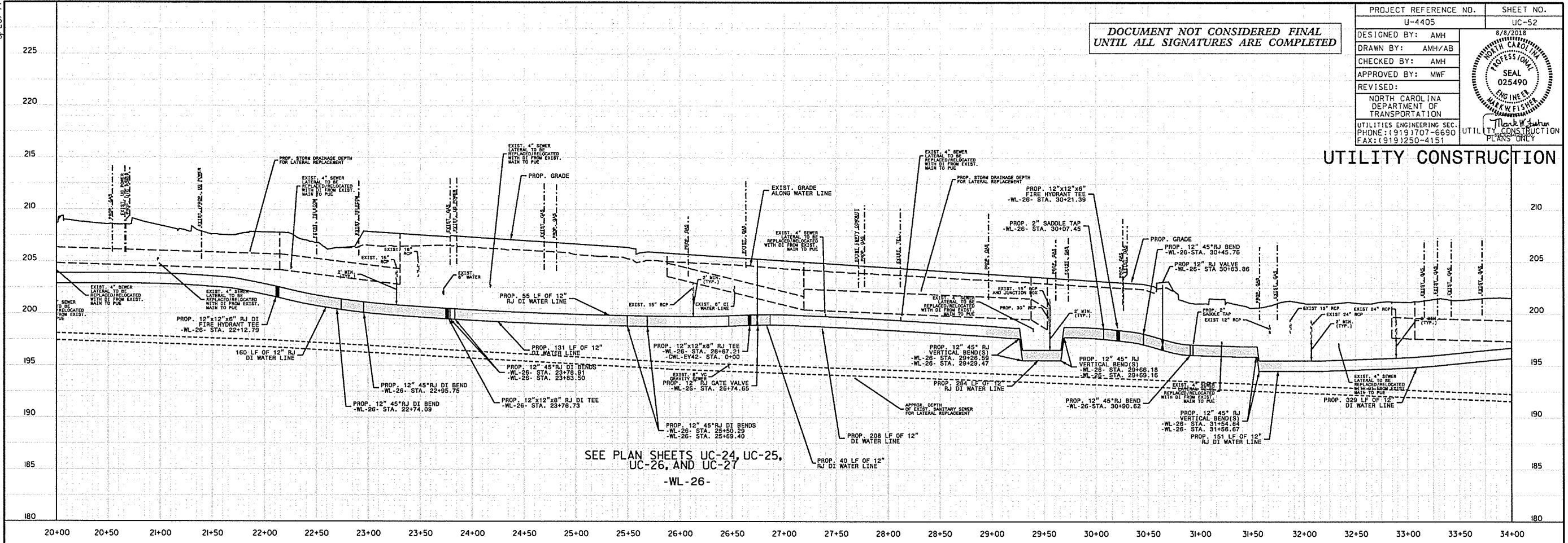
REVISIONS

UTILITY REV. - JULY 23, 2008 - ADDED 840 LF OF 12" RJD DI WATER TO WL-25 NEAR STA 5+45
 27-JUL-2008 14:20
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 abstermann At work

PROJECT REFERENCE NO.	U-4405	SHEET NO.	UC-52
DESIGNED BY:	AMH	DATE:	8/8/2018
DRAWN BY:	AMH/AB	PROFESSIONAL SEAL	025490
CHECKED BY:	AMH	ENGINEER	K.W. FLETCHER
APPROVED BY:	MWF	REGISTERED PROFESSIONAL	
REVISED:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		UTILITY ENGINEERING SECTION	
PHONE: (919) 707-6590		FAX: (919) 250-4151	

DOCUMENT NOT CONSIDERED FINAL
UNTIL ALL SIGNATURES ARE COMPLETED

UTILITY CONSTRUCTION

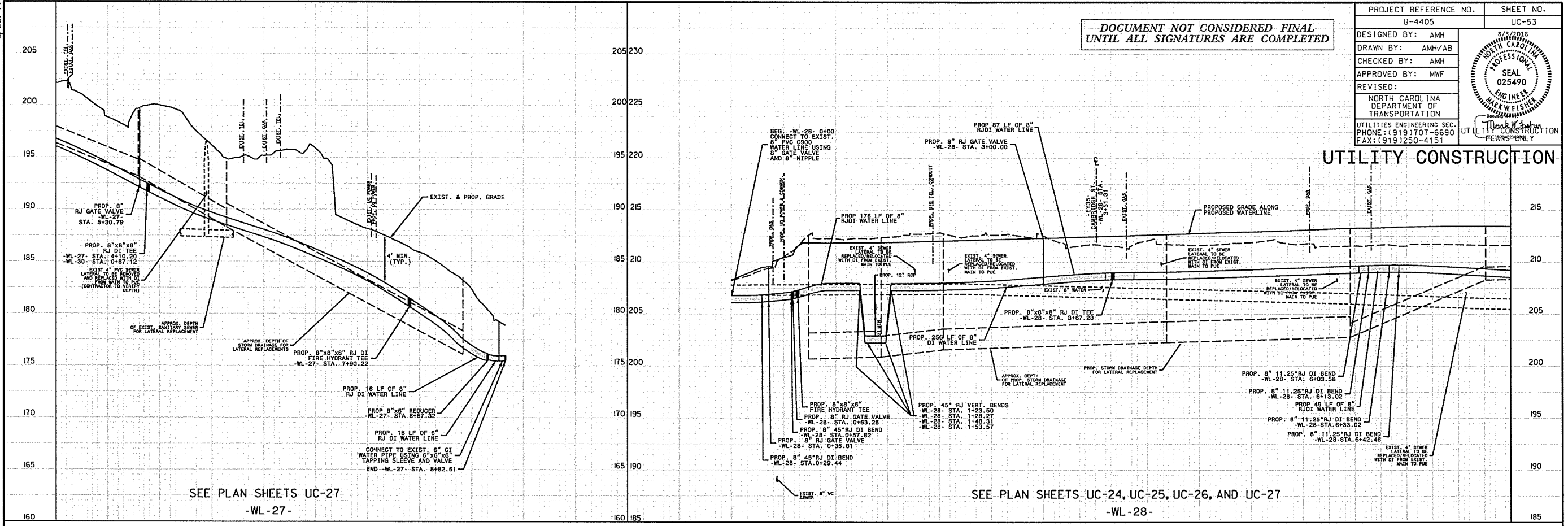


REVISIONS
 07-AUG-2018 09:08
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 5/28/19
 UTILITY REV. - JULY 23, 2018 - SEE PLAN SHEETS UC-24, UC-25, UC-26, AND UC-27 FOR LENGTH AND THICKNESS OF 24" ENCASUREMENT ON WL-26
 - REVIEWED FOR LENGTH AND THICKNESS OF 24" ENCASUREMENT ON WL-26

PROJECT REFERENCE NO.	U-4405	SHEET NO.	UC-53
DESIGNED BY:	AMH	DATE:	8/3/2018
DRAWN BY:	AMH/AB	PROFESSOR:	MARK W. FLETCHER
CHECKED BY:	AMH	SEAL:	025490
APPROVED BY:	MWF	ENGINEER:	MARK W. FLETCHER
REVISED:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION			
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151			

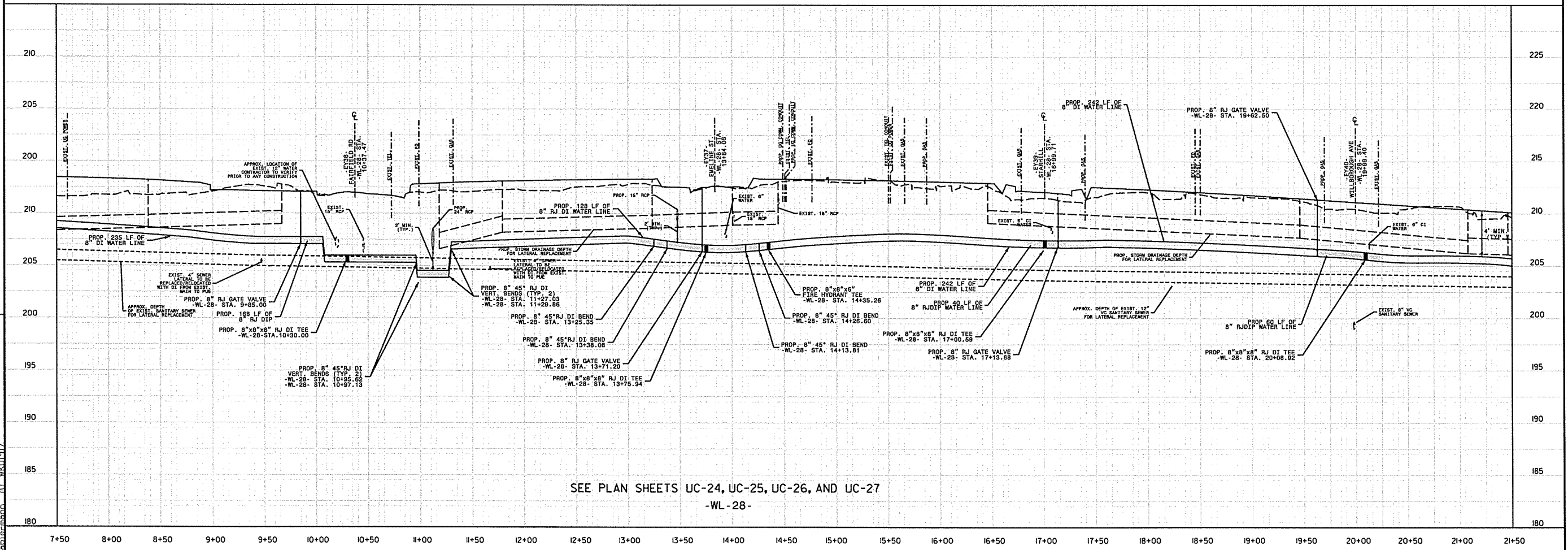
DOCUMENT NOT CONSIDERED FINAL
UNTIL ALL SIGNATURES ARE COMPLETED

UTILITY CONSTRUCTION



SEE PLAN SHEETS UC-27
-WL-27-

SEE PLAN SHEETS UC-24, UC-25, UC-26, AND UC-27
-WL-28-



SEE PLAN SHEETS UC-24, UC-25, UC-26, AND UC-27
-WL-28-

REVISIONS

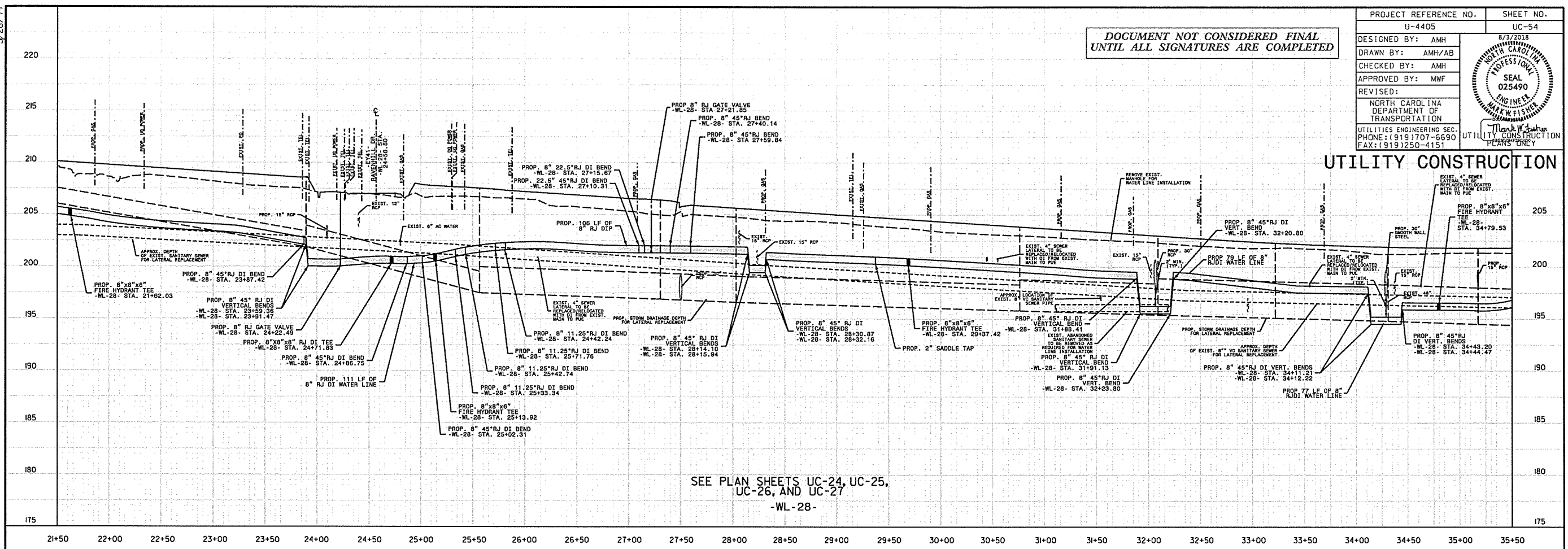
UTILITY REV. - JULY 23, 2008 - REVISED TO CORRECT THE LOCATION OF THE TEE ON CAMBRIDGE ST
- SHIFTED WATER MAIN TO OTHER SIDE OF TEE ON WATSON ROAD AVE

27-JUL-2018 14:20 L:\Projects\Feuilletville Public Works Commission\2015017700RA Reelford Road NCDOT U 4405\CAD\NCDOT PLANS\Utilities\Engineering\UC\Proj\U4405_ut.pl\uc53_psh.dgn

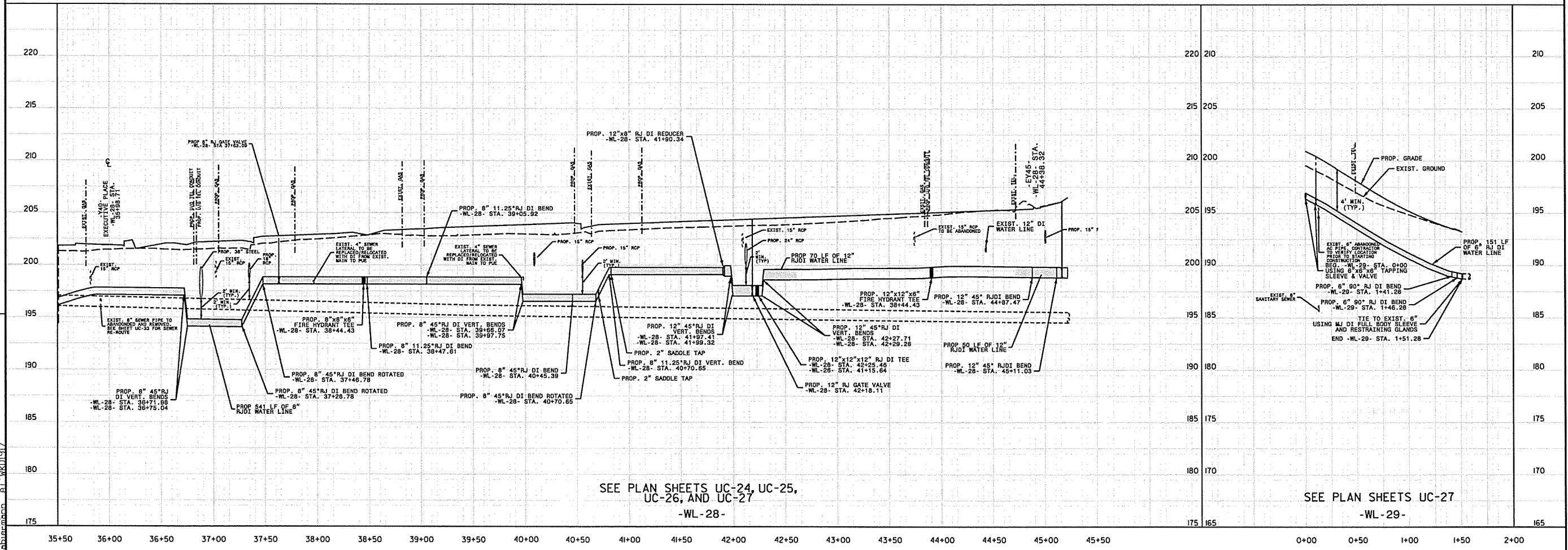
DOCUMENT NOT CONSIDERED FINAL
UNTIL ALL SIGNATURES ARE COMPLETED

PROJECT REFERENCE NO. U-4405	SHEET NO. UC-54
DESIGNED BY: AMH	8/3/2018
DRAWN BY: AMH/AB	DEPARTMENT OF TRANSPORTATION
CHECKED BY: AMH	
APPROVED BY: MWF	
REVISED:	UTILITY CONSTRUCTION PLANS ONLY
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SECTION PHONE: (919) 707-6690 FAX: (919) 250-4151	

UTILITY CONSTRUCTION



SEE PLAN SHEETS UC-24, UC-25,
UC-26, AND UC-27
-WL-28-



SEE PLAN SHEETS UC-24, UC-25,
UC-26, AND UC-27
-WL-28-

SEE PLAN SHEETS UC-27
-WL-29-

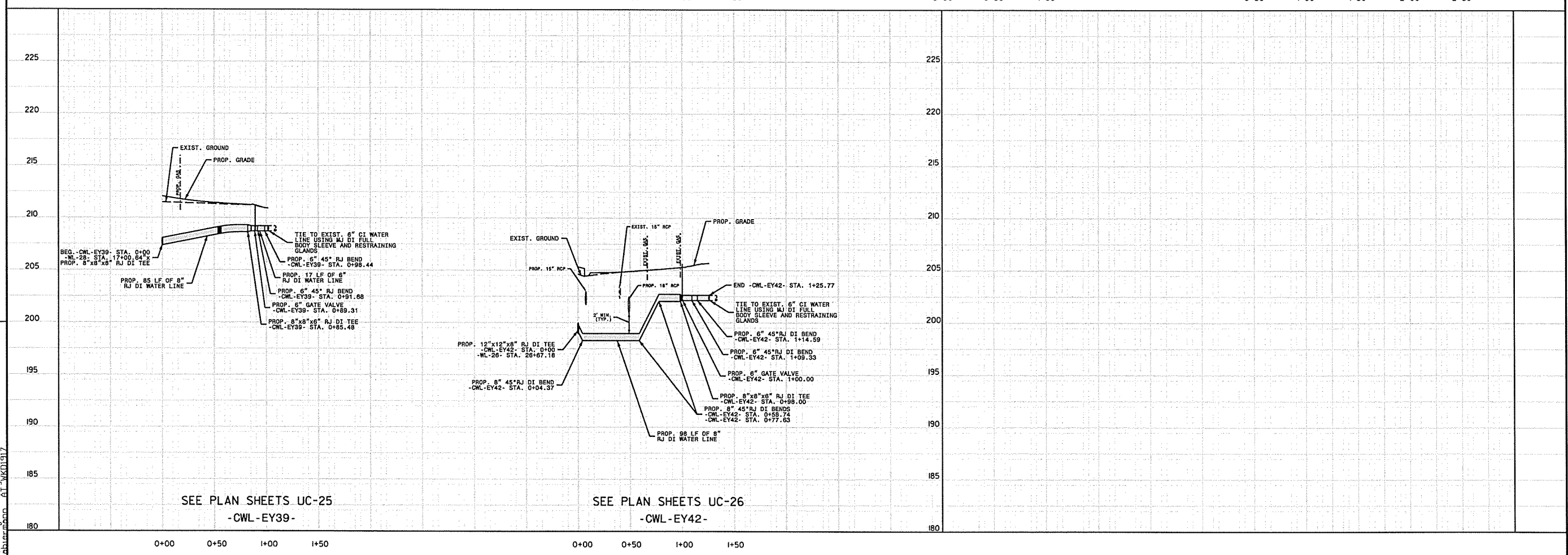
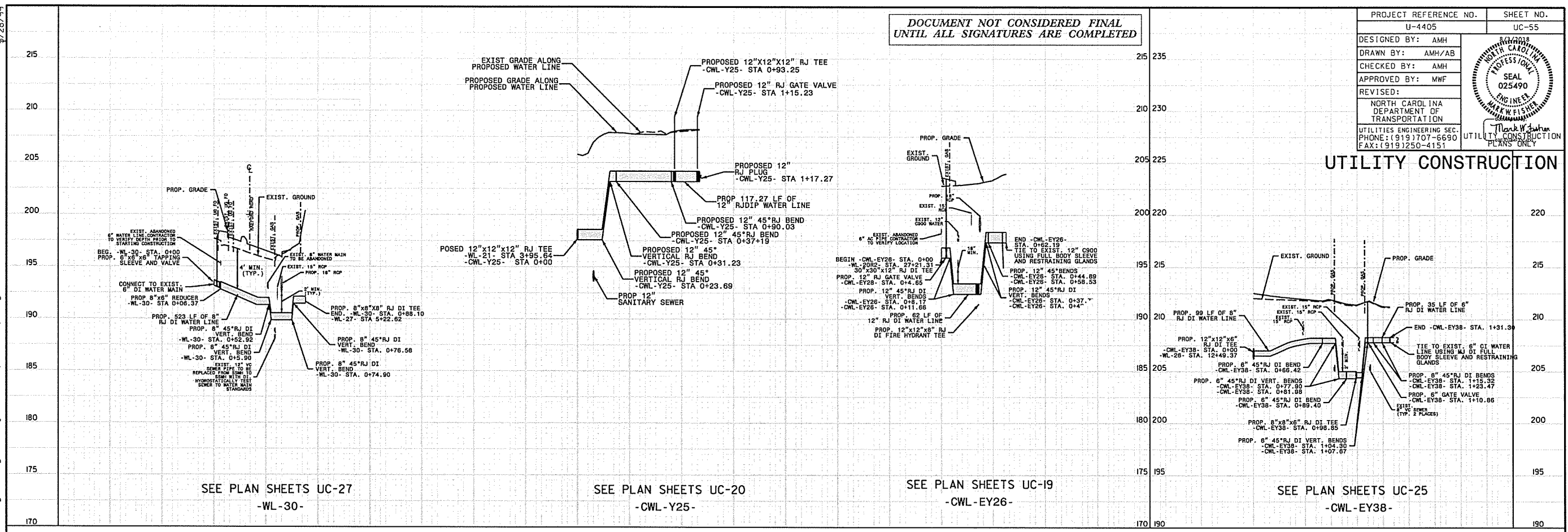
REVISIONS

UTILITY REV. - JULY 23, 2018 - ADDED 8" RJI WATER LINE TO WL-28 STA. 34+42.20
 27-JUL-2018 14:20
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 abraham

DOCUMENT NOT CONSIDERED FINAL
UNTIL ALL SIGNATURES ARE COMPLETED

PROJECT REFERENCE NO. U-4405	SHEET NO. UC-55
DESIGNED BY: AMH	
DRAWN BY: AMH/AB	
CHECKED BY: AMH	
APPROVED BY: MWF	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

UTILITY CONSTRUCTION



REVISIONS

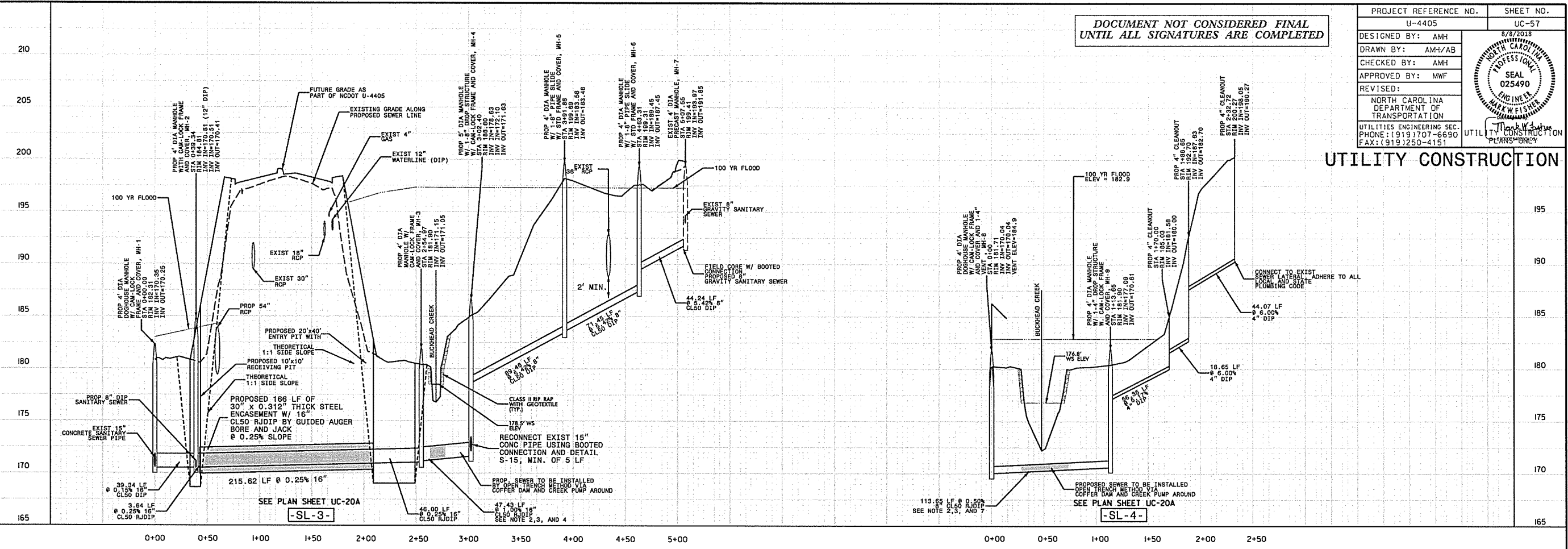
UTILITY REV. - JULY 23, 2008 - REMOVED -CWL-EY46- PROFILE

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 7/28/08

07-AUG-2018 10:52
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 5/28/19

DOCUMENT NOT CONSIDERED FINAL
 UNTIL ALL SIGNATURES ARE COMPLETED

PROJECT REFERENCE NO.	U-4405	SHEET NO.	UC-57
DESIGNED BY:	AMH	DATE	8/7/2018
DRAWN BY:	AMH/AB	SCALE	AS SHOWN
CHECKED BY:	AMH	SEAL	025490
APPROVED BY:	MWF	ENGINEER	MARK W. FISHER
REVISED:		PLANS	CONSTRUCTION
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION			
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151			



UTILITY CONSTRUCTION

SEE PLAN SHEET UC-20A
 -SL-3-

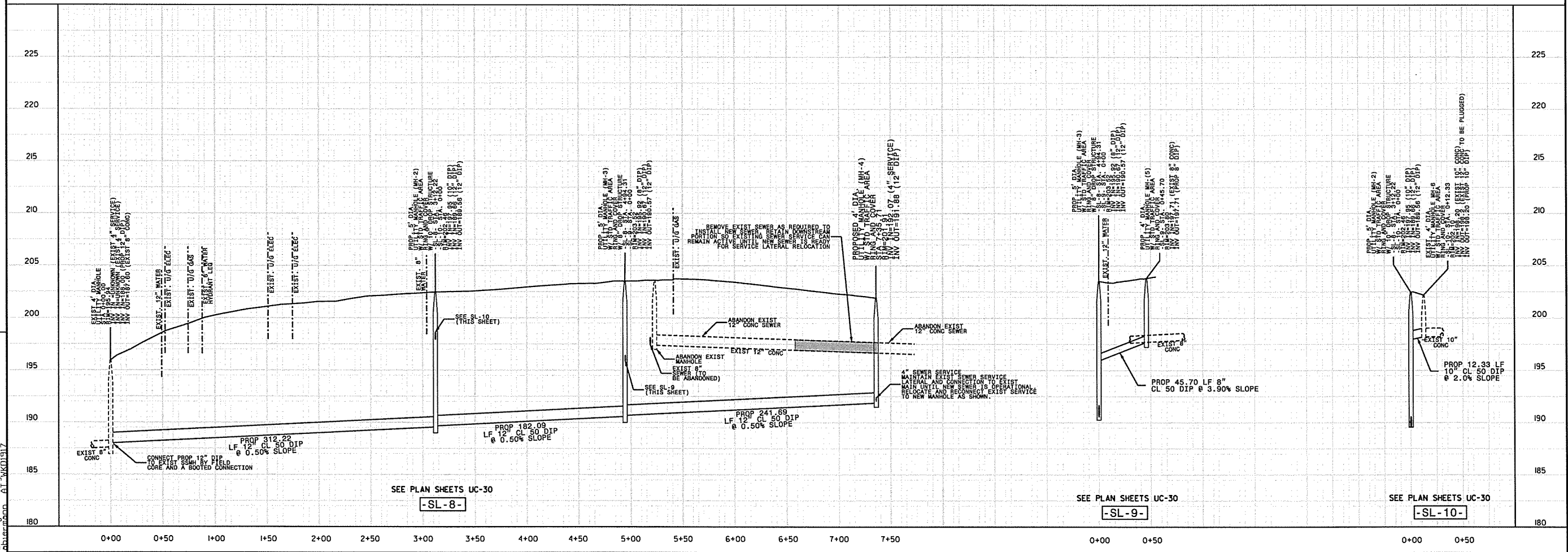
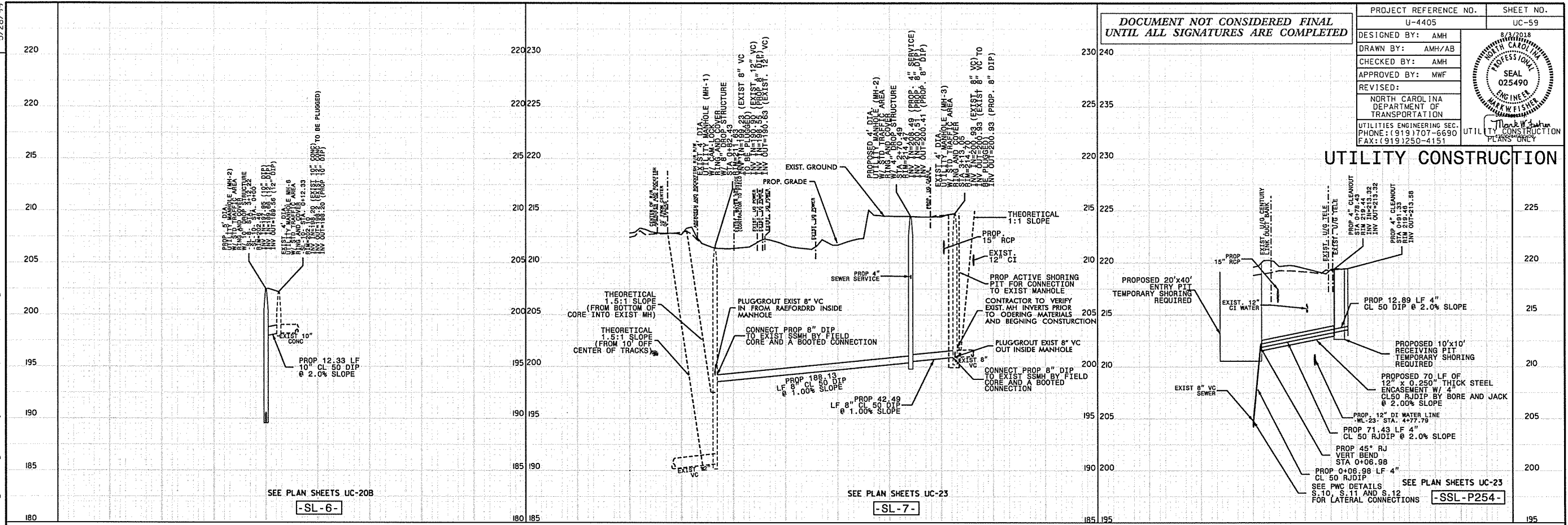
SEE PLAN SHEET UC-20A
 -SL-4-

5/28/99

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REVISIONS

UTILITY REV. - JULY 24, 2008 - PROFILE SL-7 UPDATED



DOCUMENT NOT CONSIDERED FINAL UNTIL ALL SIGNATURES ARE COMPLETED

PROJECT REFERENCE NO. U-4405	SHEET NO. UC-59
DESIGNED BY: AMH	
DRAWN BY: AMH/AB	
CHECKED BY: AMH	
APPROVED BY: MWF	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

UTILITY CONSTRUCTION

SSL-P254