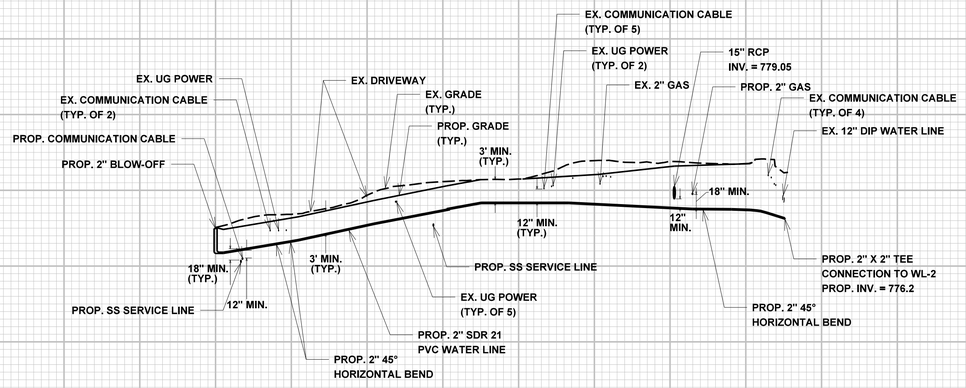
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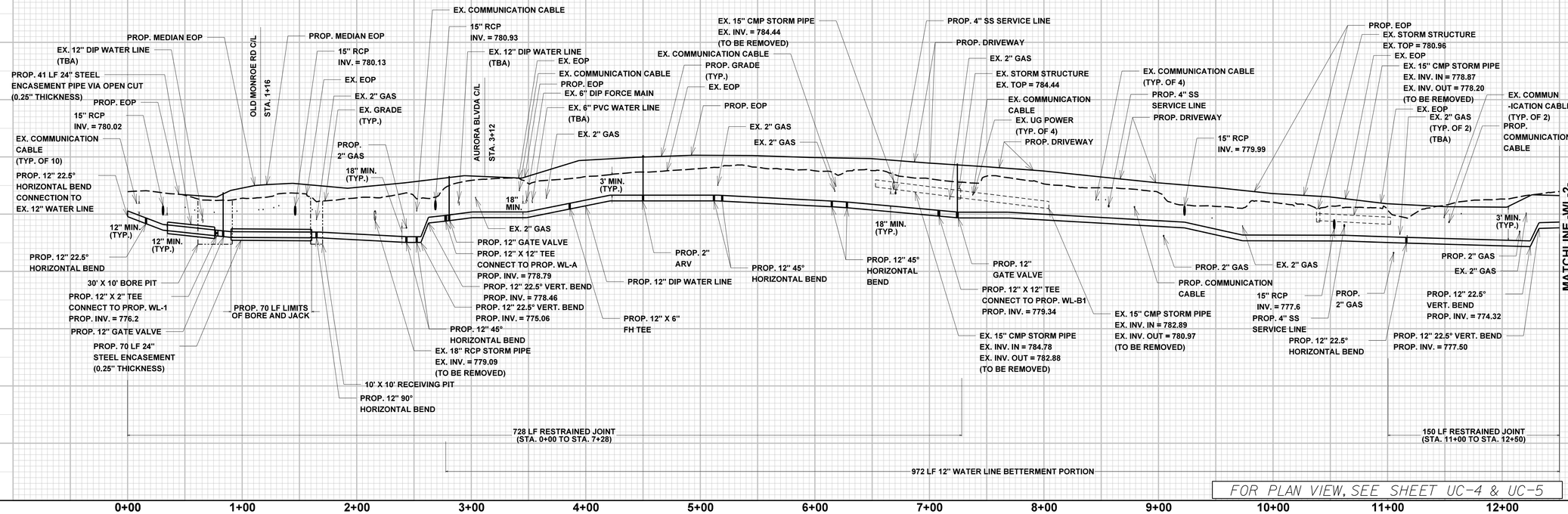
NOTES:
1. CONTRACTOR TO VERIFY LOCATION, DEPTH, AND SIZE OF EXISTING UTILITIES.

-WL-1-



FOR PLAN VIEW, SEE SHEET UC-4

-WL-2-



FOR PLAN VIEW, SEE SHEET UC-4 & UC-5

PROJECT REFERENCE NO.	SHEET NO.
U-4714AC	UC-14
DESIGNED BY: AP	
DRAWN BY: AP	
CHECKED BY: MM	
APPROVED BY: MM	
REVISED:	

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UTILITIES ENGINEERING SEC.
PHONE:(919)707-6690
FAX:(919)250-4151

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8/10/2026

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PROFILE (VERTICAL)

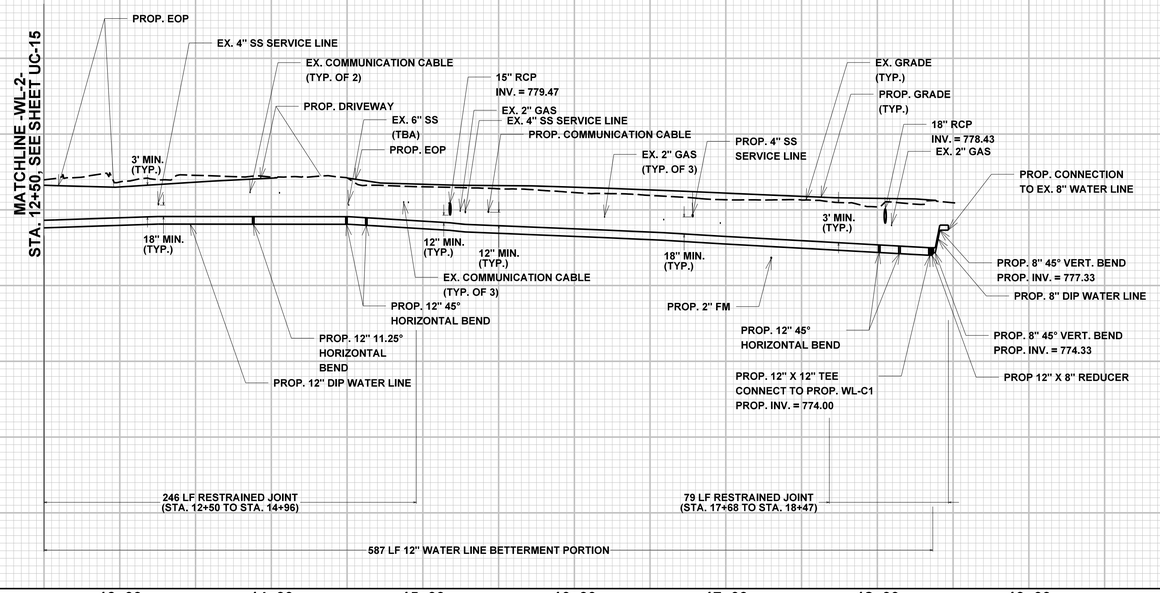
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-WL-2-

NOTES:
1. CONTRACTOR TO VERIFY LOCATION, DEPTH, AND SIZE OF EXISTING UTILITIES.



FOR PLAN VIEW, SEE SHEET UC-5 & 5A

PROJECT REFERENCE NO.	SHEET NO.
U-4714AC	UC-15
DESIGNED BY: AP	
DRAWN BY: AP	
CHECKED BY: MM	
APPROVED BY: MM	
REVISED:	

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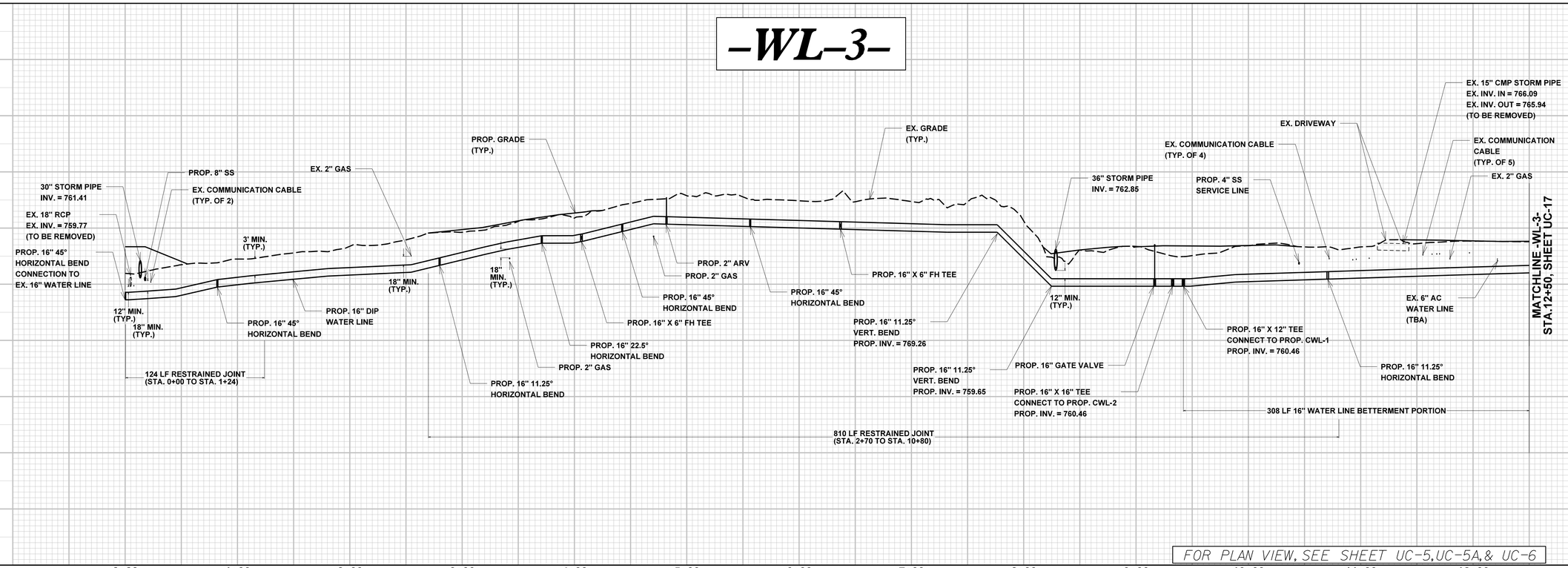
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PROFILE (VERTICAL)

-WL-3-



FOR PLAN VIEW, SEE SHEET UC-5, UC-5A, & UC-6

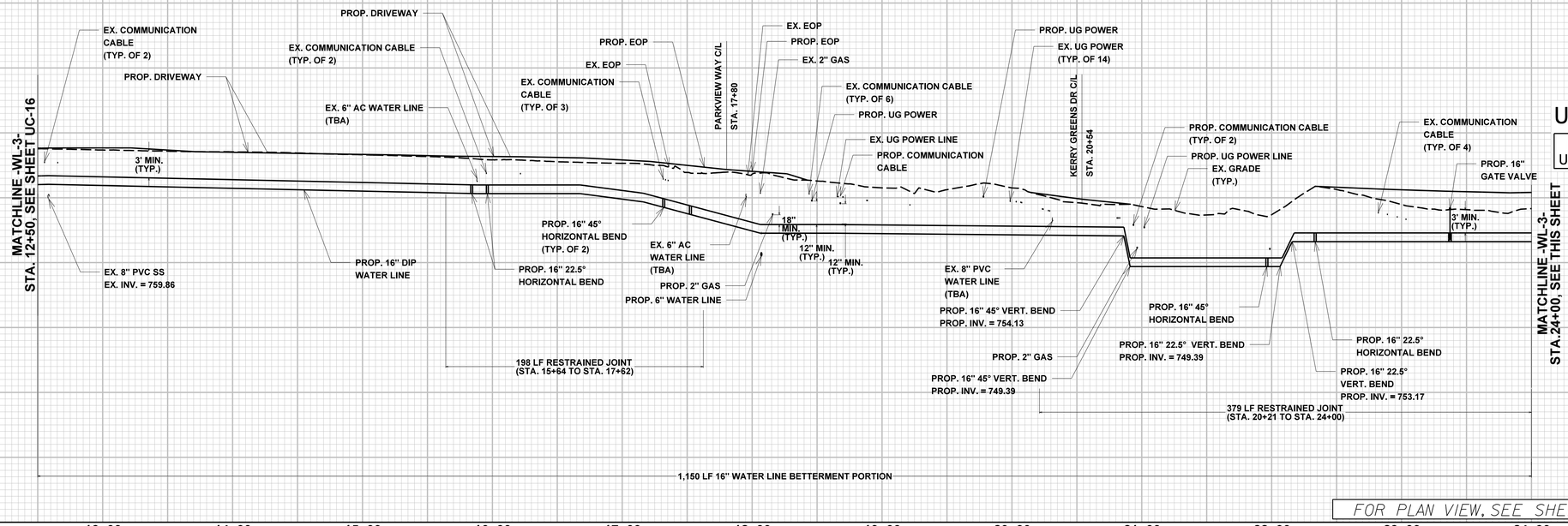
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NOTES:
1. CONTRACTOR TO VERIFY LOCATION, DEPTH, AND SIZE OF EXISTING UTILITIES.

-WL-3-



FOR PLAN VIEW, SEE SHEET UC-6 & UC-7

PROJECT REFERENCE NO.	SHEET NO.
U-4714AC	UC-16
DESIGNED BY: AP	
DRAWN BY: AP	
CHECKED BY: MM	
APPROVED BY: MM	
REVISED:	

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9/10/2026

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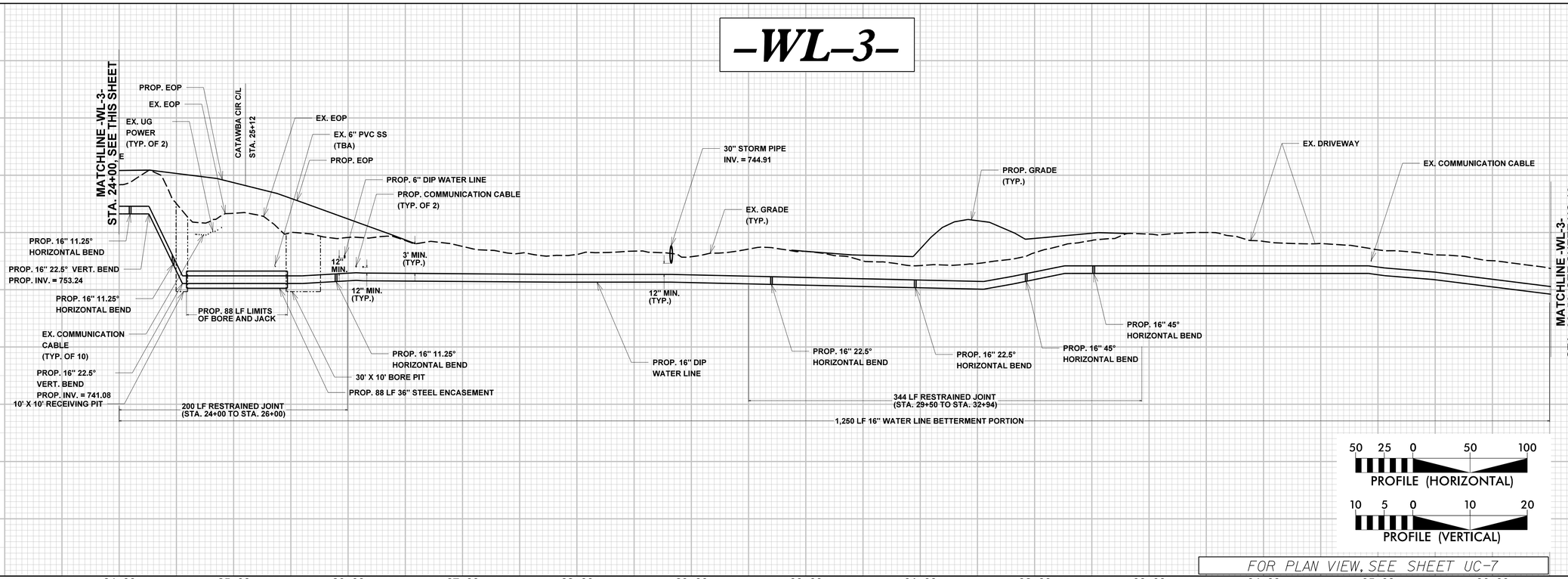
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-WL-3-



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PROFILE (VERTICAL)

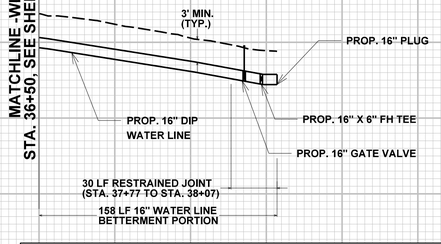
FOR PLAN VIEW, SEE SHEET UC-7

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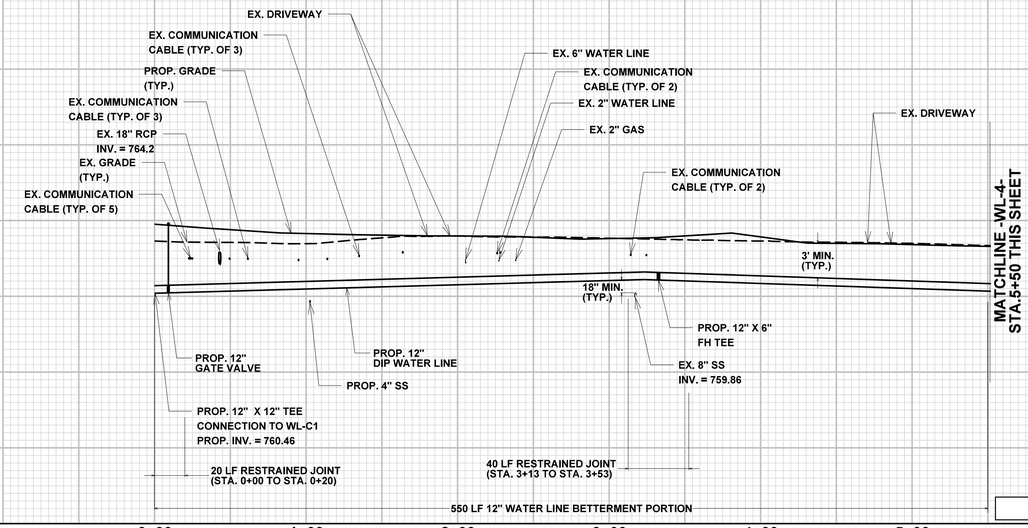
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-WL-3-



FOR PLAN VIEW, SEE SHEET UC-8

-WL-4-



FOR PLAN VIEW, SEE SHEET UC-6

NOTES:

1. CONTRACTOR TO VERIFY LOCATION, DEPTH, AND SIZE OF EXISTING UTILITIES.

PROJECT REFERENCE NO.	SHEET NO.
U-4714AC	UC-17
DESIGNED BY: AP	
DRAWN BY: AP	
CHECKED BY: MM	
APPROVED BY: MM	
REVISED:	

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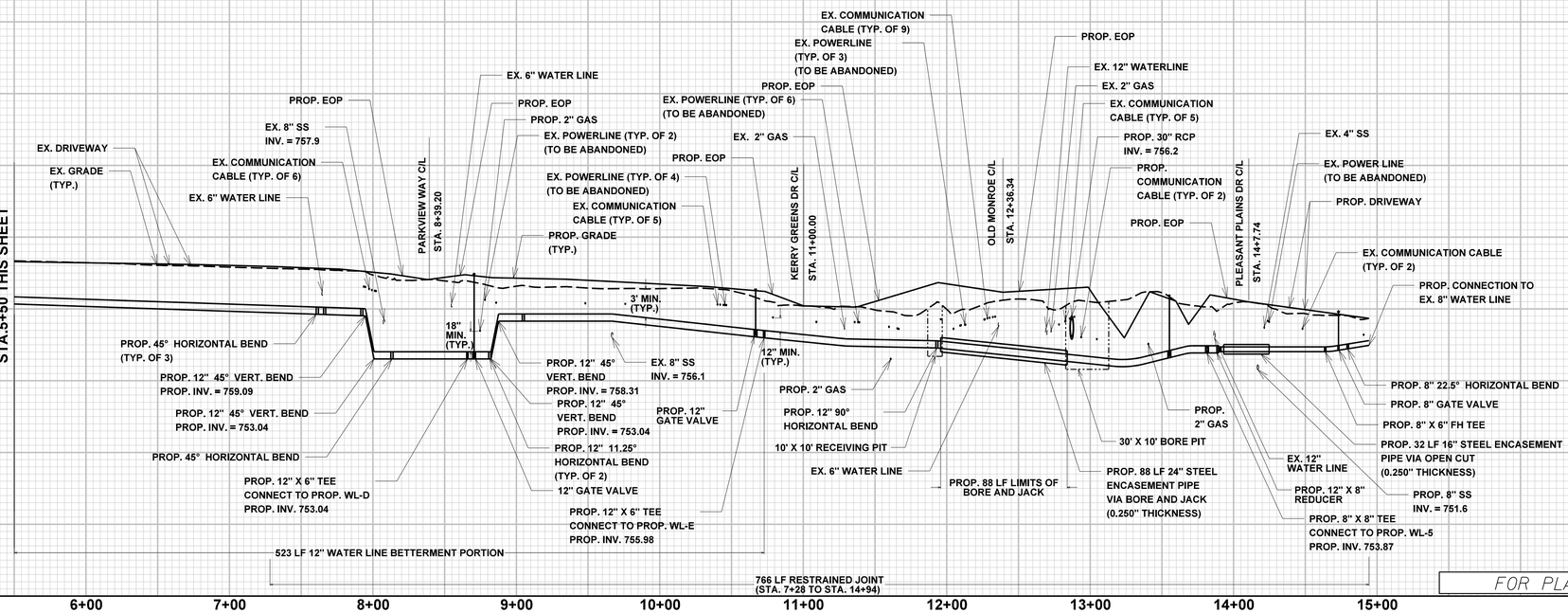
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PROFILE (HORIZONTAL)

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PROFILE (VERTICAL)

-WL-4-



FOR PLAN VIEW, SEE SHEETS UC-6

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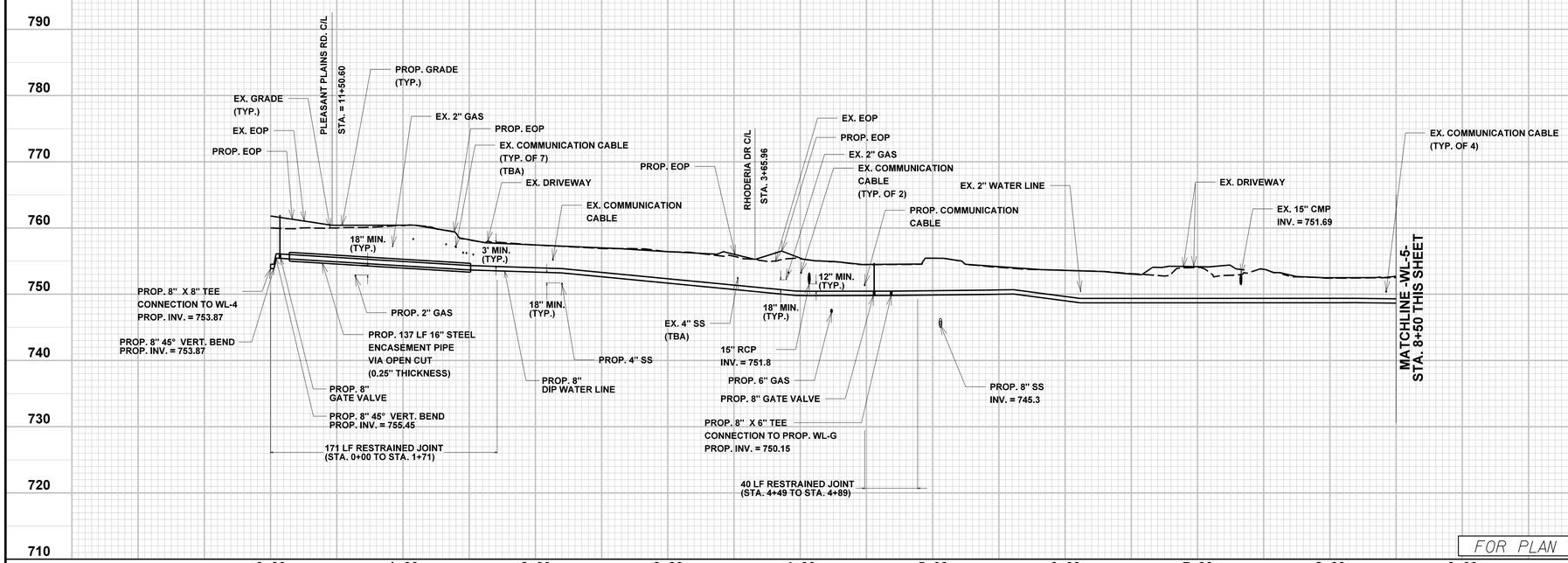
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-WL-5-

NOTES:

1. CONTRACTOR TO VERIFY LOCATION, DEPTH, AND SIZE OF EXISTING UTILITIES.



FOR PLAN VIEW, SEE SHEETS UC-6 & UC-7

PROJECT REFERENCE NO.	SHEET NO.
U-4714AC	UC-18
DESIGNED BY: AH	
DRAWN BY: AH	
CHECKED BY: MM	
APPROVED BY: MM	
REVISED:	

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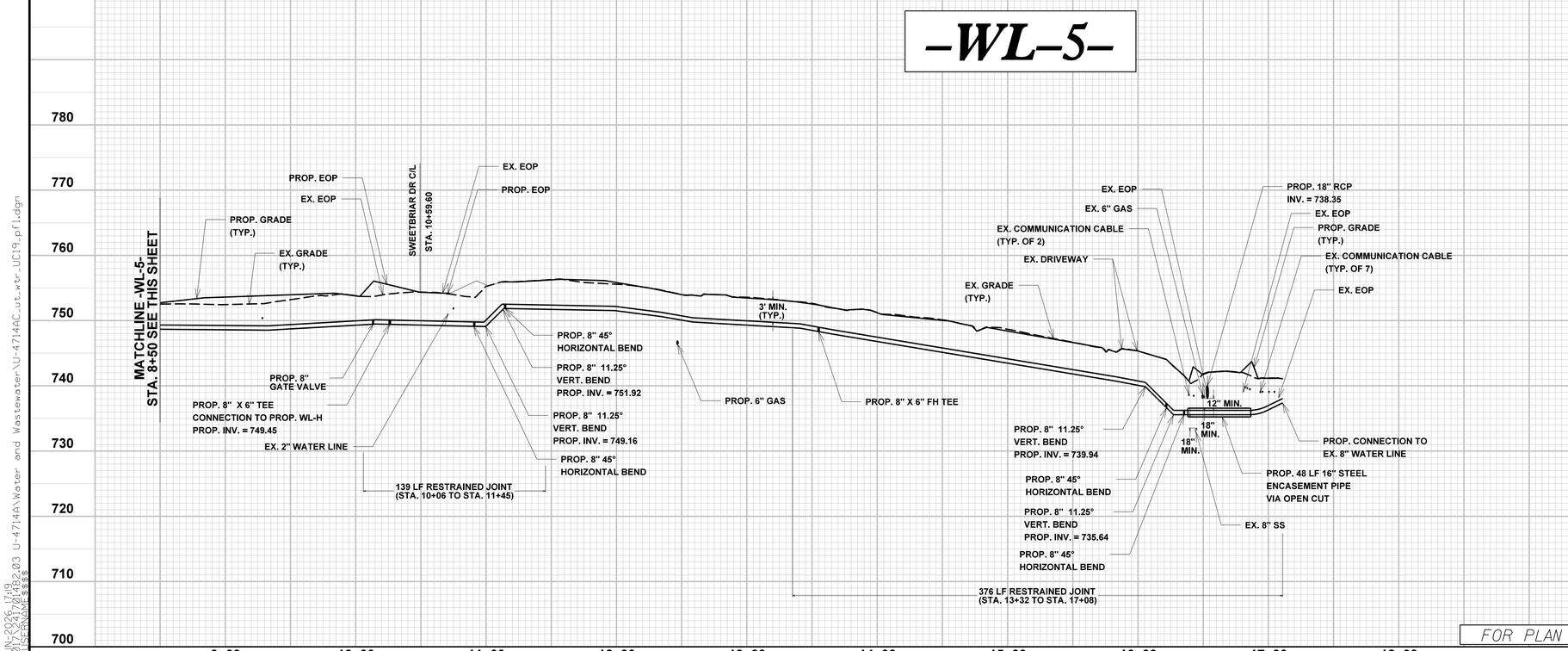
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PROFILE (HORIZONTAL)
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PROFILE (VERTICAL)

-WL-5-



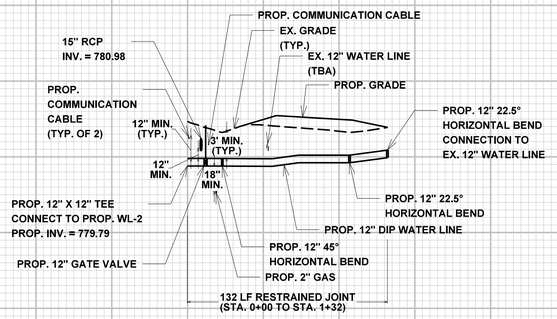
FOR PLAN VIEW, SEE SHEET UC-7 & UC-8

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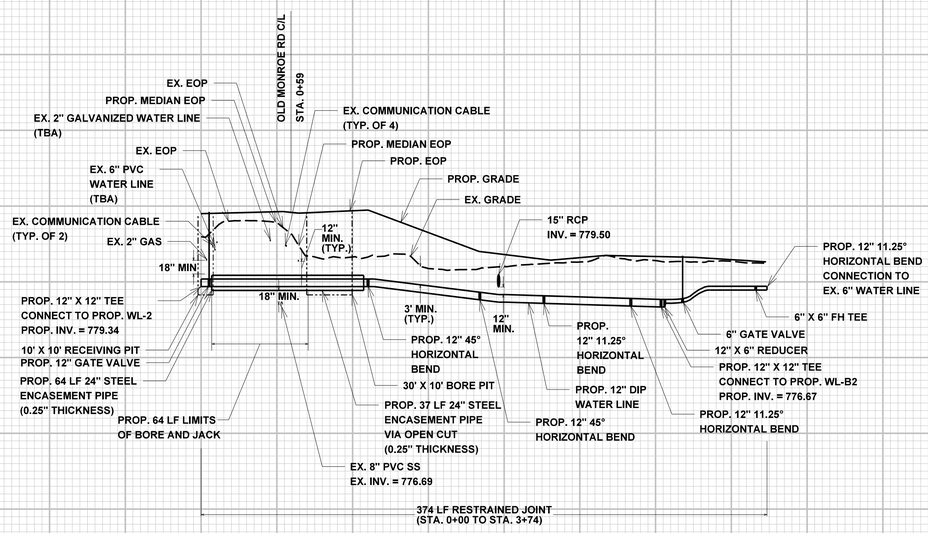


FOR PLAN VIEW, SEE SHEET UC-4 & UC-5

-WL-B1-

NOTES:

1. CONTRACTOR TO VERIFY LOCATION, DEPTH, AND SIZE OF EXISTING UTILITIES.



FOR PLAN VIEW, SEE SHEET UC-5

PROJECT REFERENCE NO.	SHEET NO.
U-4714AC	UC-19
DESIGNED BY: AP	
DRAWN BY: AP	
CHECKED BY: MM	
APPROVED BY: MM	
REVISED:	

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6/10/2026

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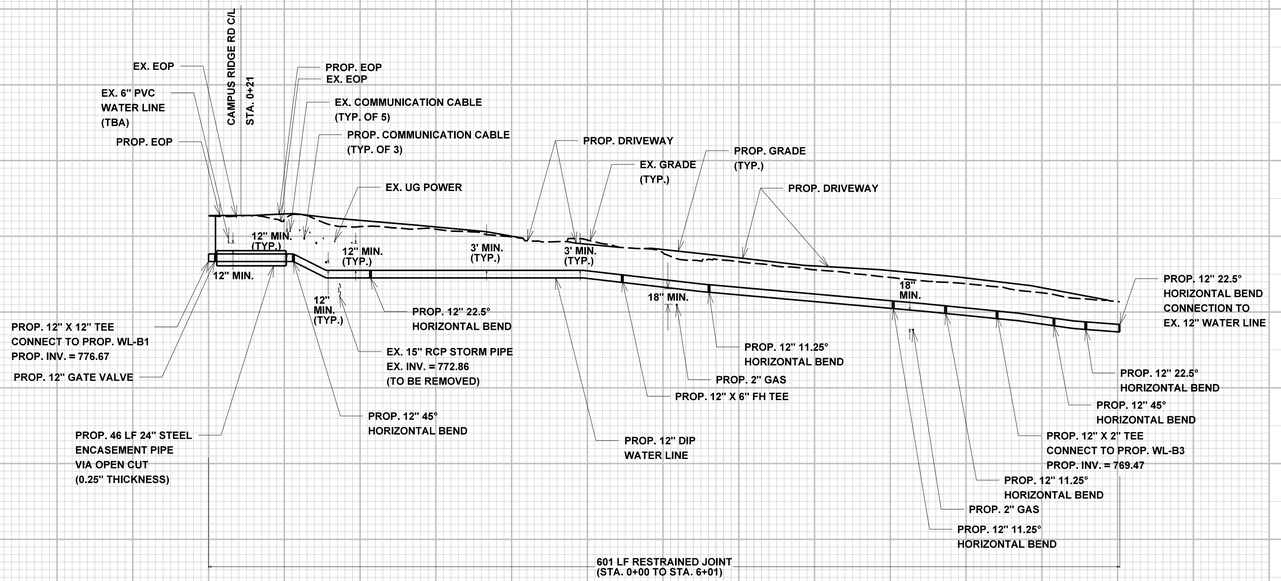
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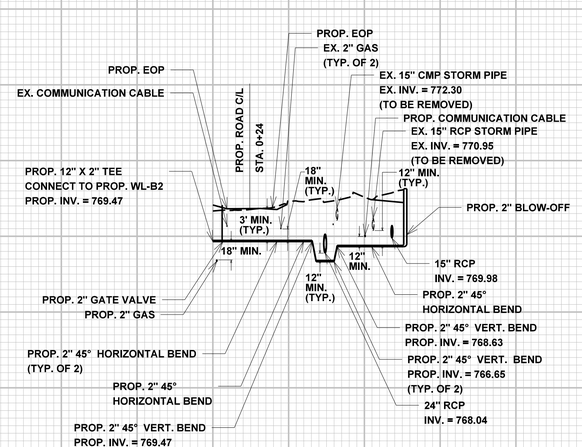
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PROFILE (VERTICAL)

-WL-B2-



FOR PLAN VIEW, SEE SHEET UC-5

-WL-B3-



FOR PLAN VIEW, SEE SHEET UC-5

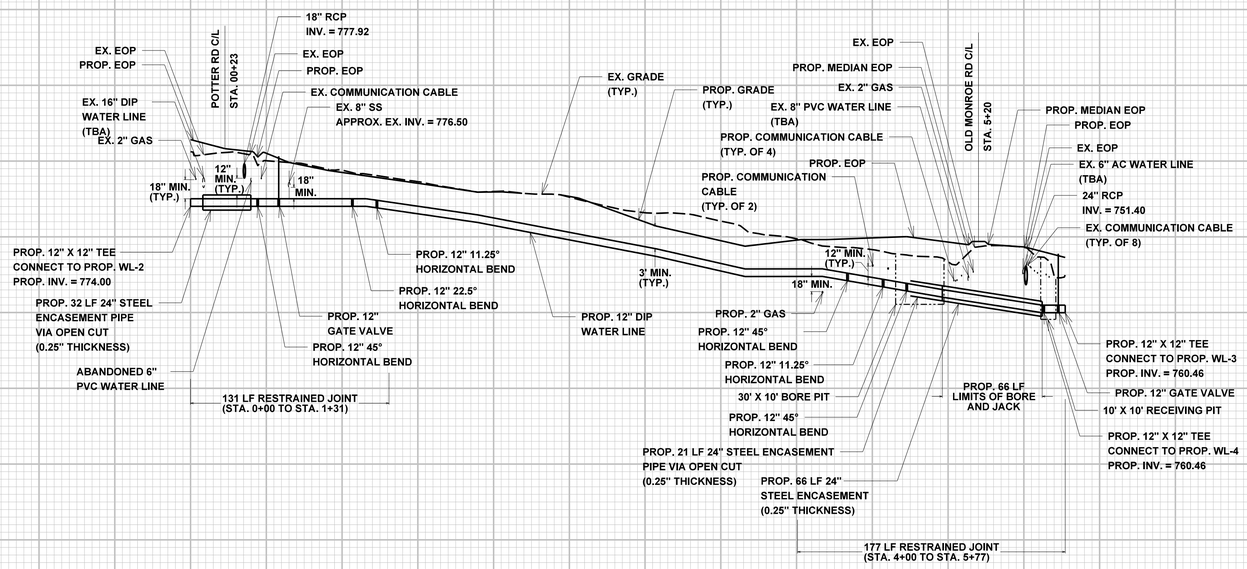
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NOTES:
1. CONTRACTOR TO VERIFY LOCATION, DEPTH, AND SIZE OF EXISTING UTILITIES.

-WL-C1-



FOR PLAN VIEW, SEE SHEET UC-5A & 6

PROJECT REFERENCE NO.	SHEET NO.
U-4714AC	UC-20
DESIGNED BY: AP	
DRAWN BY: AP	
CHECKED BY: MM	
APPROVED BY: MM	
REVISED:	

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FAX:(919)250-4151

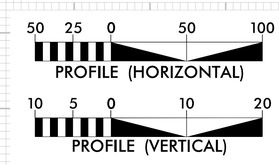
NORTH CAROLINA PROFESSIONAL SEAL 032322 ENGINEER MARCO R. MENENDEZ
10/2026

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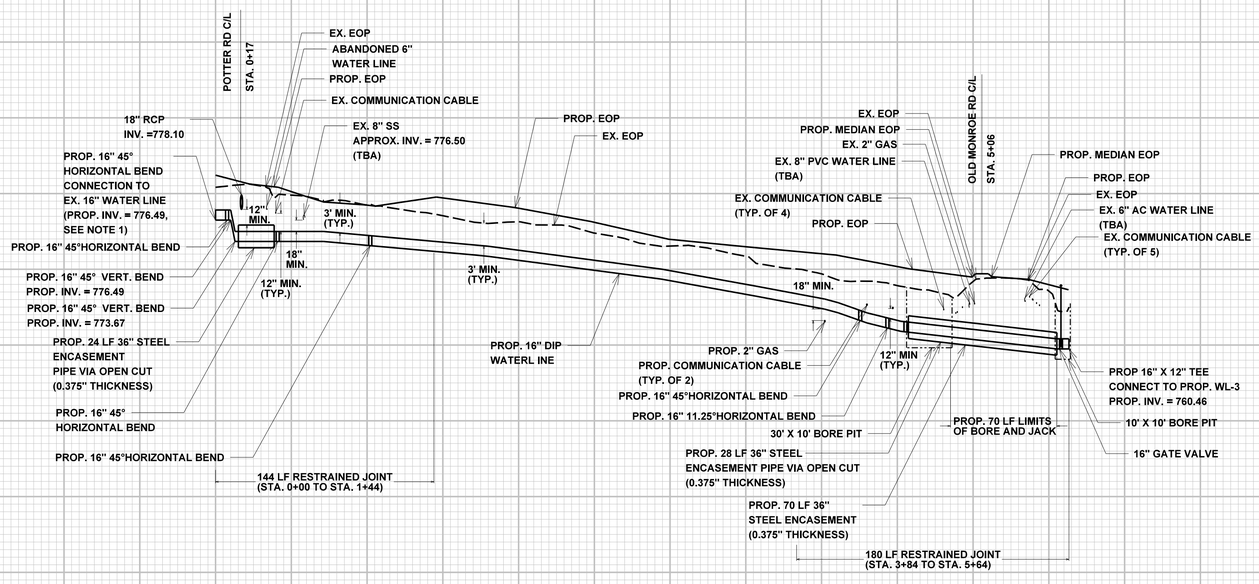
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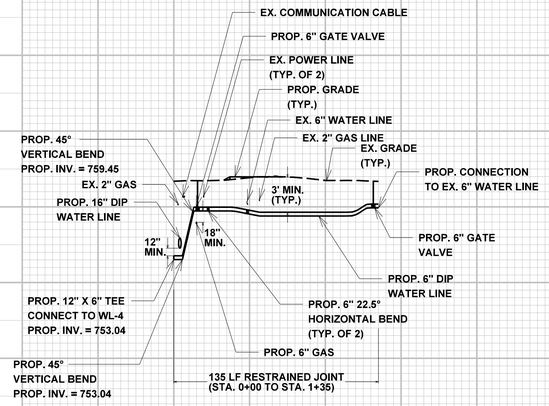
FOR PLAN VIEW, SEE SHEET UC-5A & 6

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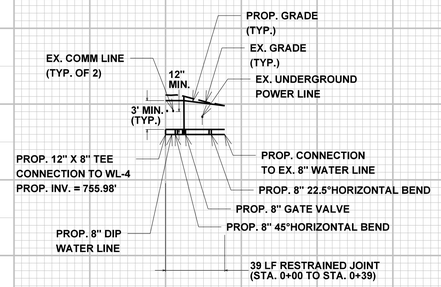
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FOR PLAN VIEW, SEE SHEETS UC-6

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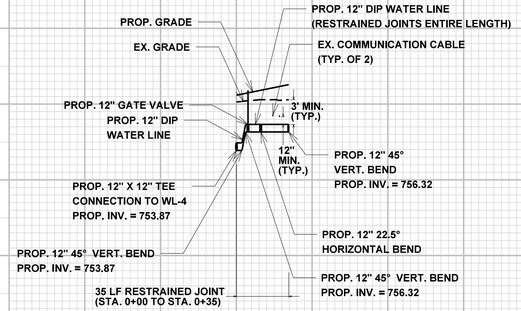
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FOR PLAN VIEW, SEE SHEETS UC-6

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FOR PLAN VIEW, SEE SHEETS UC-7

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PROJECT REFERENCE NO.	SHEET NO.
U-4714AC	UC-21
DESIGNED BY: NP	
DRAWN BY: NP	
CHECKED BY: MM	
APPROVED BY: MM	
REVISED:	

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

NORTH CAROLINA PROFESSIONAL SEAL 032322 ENGINEER MARCO P. MENENDEZ
5/10/2026

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FAX:(919)250-4151

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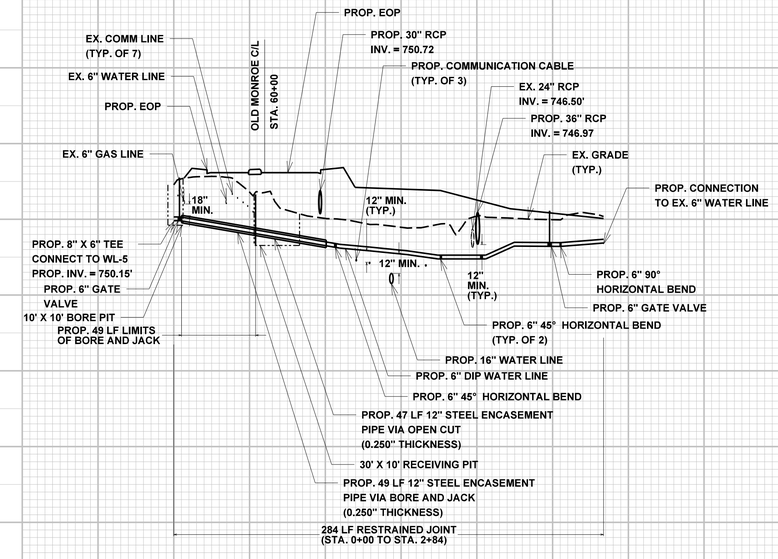
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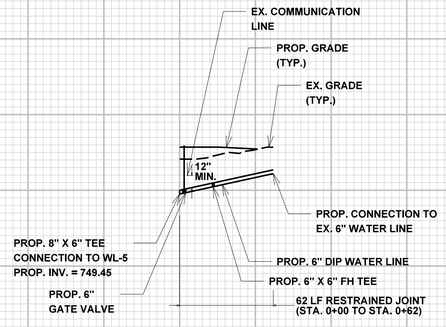
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FOR PLAN VIEW, SEE SHEET UC-7

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FOR PLAN VIEW, SEE SHEET UC-7

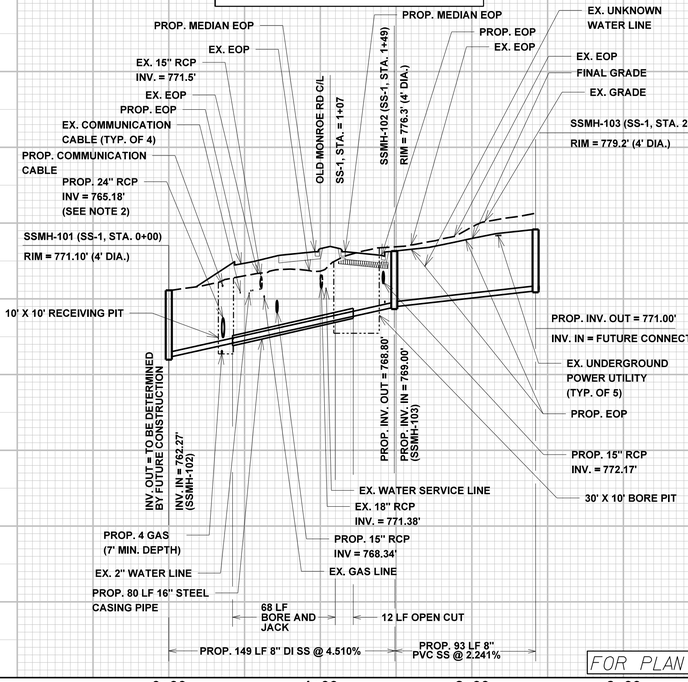
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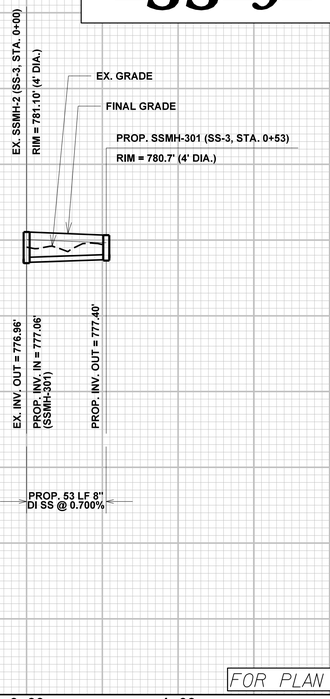


FOR PLAN VIEW, SEE SHEET UC-9

NOTES:

1. SS-1 IS TO BE INSTALLED DURING ROADWAY CONSTRUCTION.
2. SEE SHEET UC-3G FOR CONCRETE CRADLE PROTECTION DETAIL.

-SS-3-



FOR PLAN VIEW, SEE SHEET UC-10A

PROJECT REFERENCE NO.	SHEET NO.
U-4714AC	UC-22
DESIGNED BY: TW	
DRAWN BY: TW	
CHECKED BY: MM	
APPROVED BY: MM	
REVISED:	

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

UTILITIES ENGINEERING SEC.
PHONE:(919)707-6690
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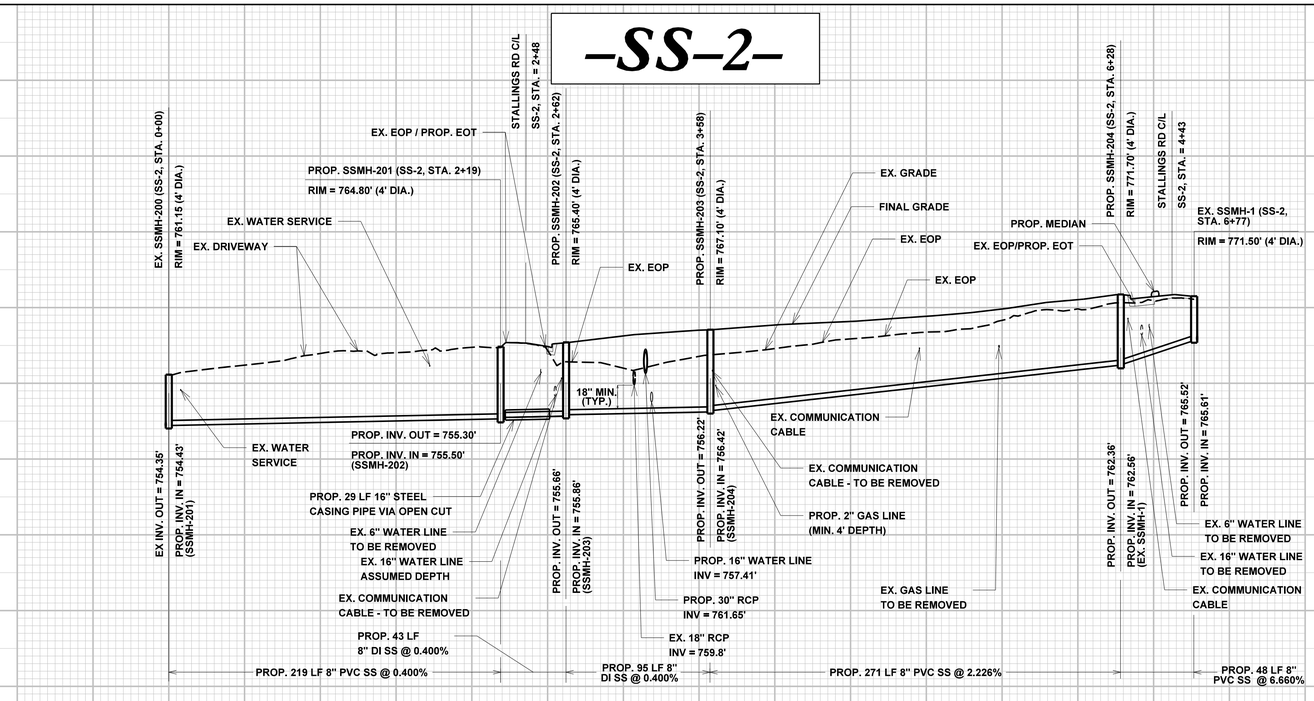
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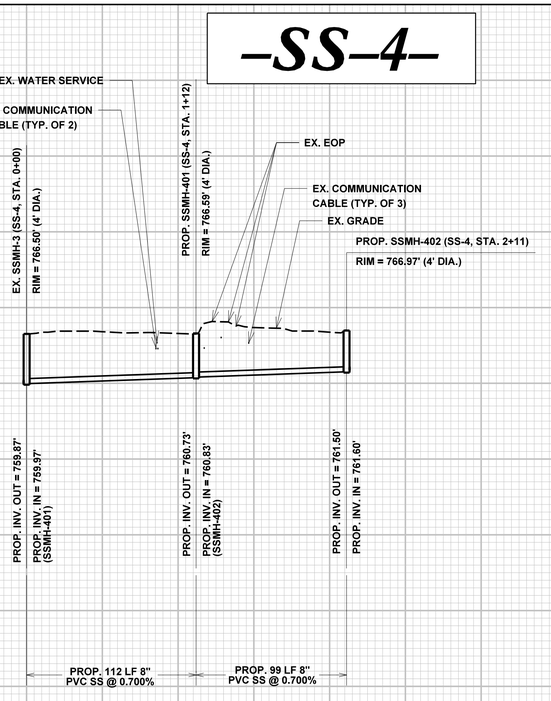
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PROFILE (VERTICAL)

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FOR PLAN VIEW, SEE SHEETS UC-10 & UC-10A

-SS-4-



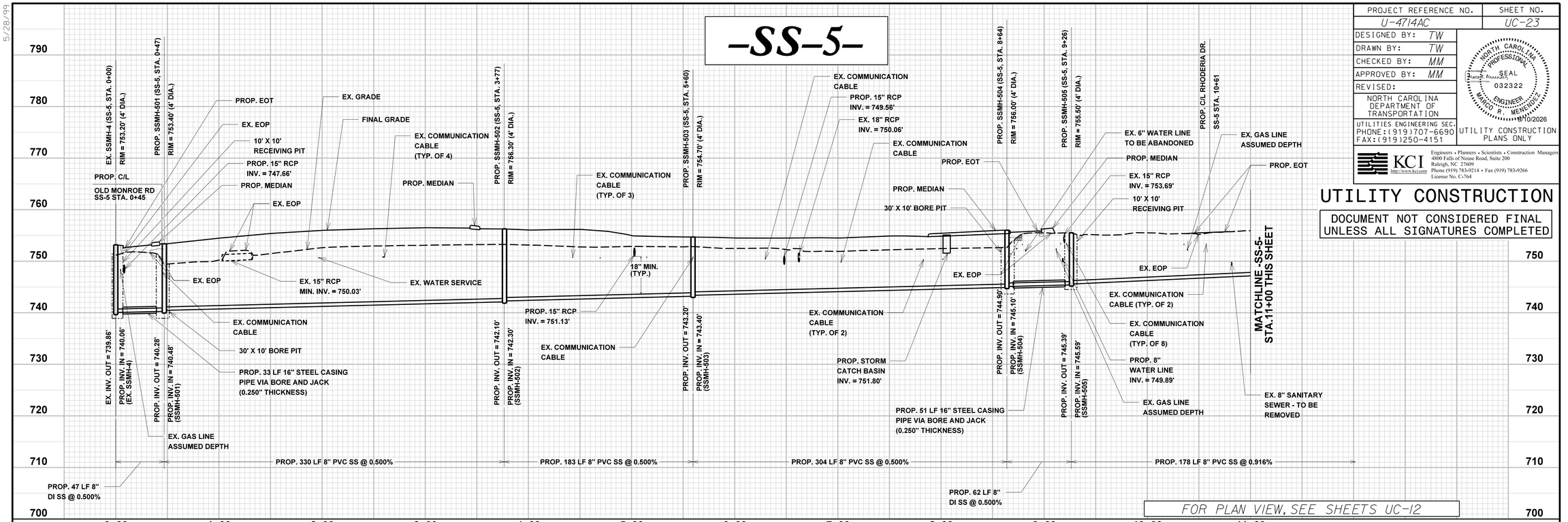
FOR PLAN VIEW, SEE SHEET UC-11

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PROJECT REFERENCE NO.	SHEET NO.
U-4714AC	UC-23
DESIGNED BY: TW	
DRAWN BY: TW	
CHECKED BY: MM	
APPROVED BY: MM	
REVISED:	

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
UTILITIES ENGINEERING SEC.
PHONE:(919)707-6690
FAX:(919)250-4151

NORTH CAROLINA PROFESSIONAL SEAL 032322 ENGINEER MARCO R. MENENDEZ
8/31/2026

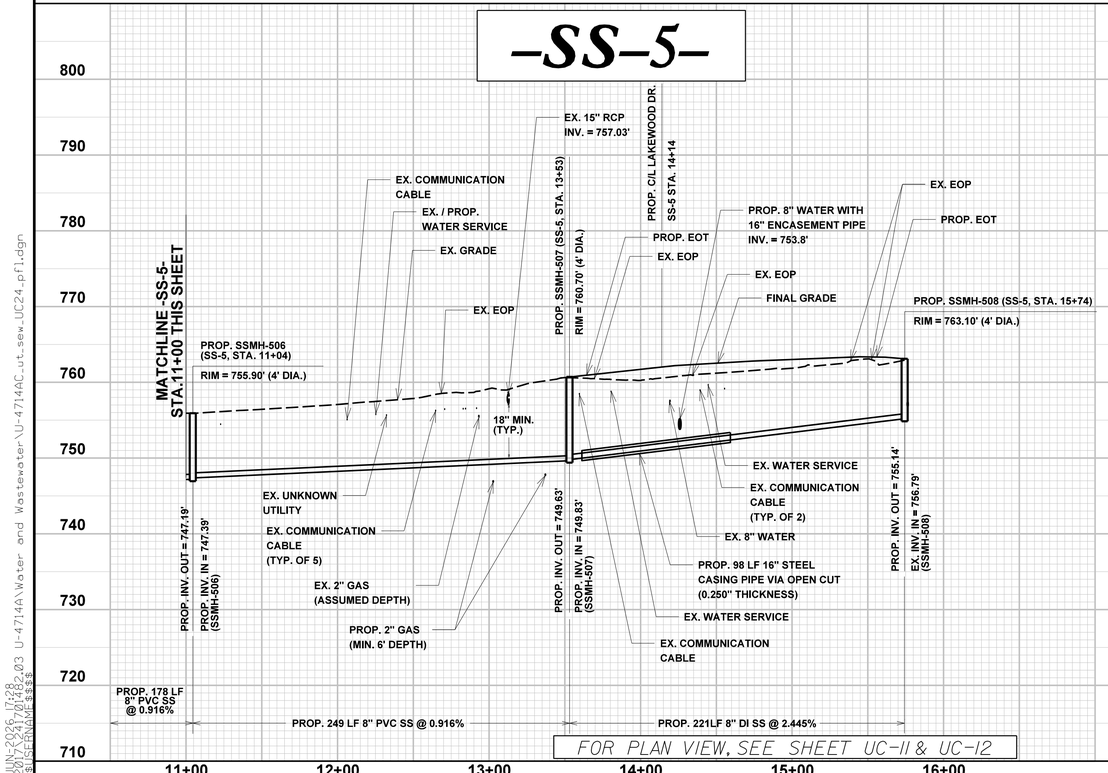
UTILITY CONSTRUCTION PLANS ONLY

KCI http://www.kci.com
Engineers • Planners • Scientists • Construction Managers
4000 Falls of Neuse Road, Suite 200
Raleigh, NC 27609
Phone (919) 783-9214 • Fax (919) 783-9266
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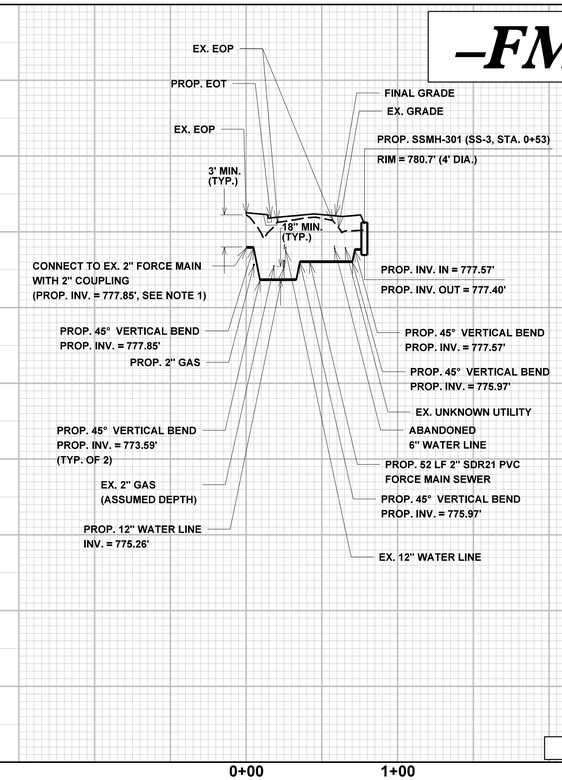
UTILITY CONSTRUCTION

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NOTES:

1. CONTRACTOR TO VERIFY LOCATION, DEPTH, AND SIZE OF EXISTING UTILITIES.

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TIP PROJECT: U–4714AC

T.I.P. NO.	SHEET NO.
U–4714AC	UC–1

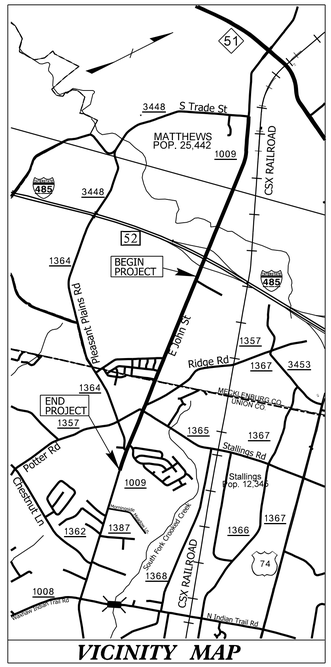
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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

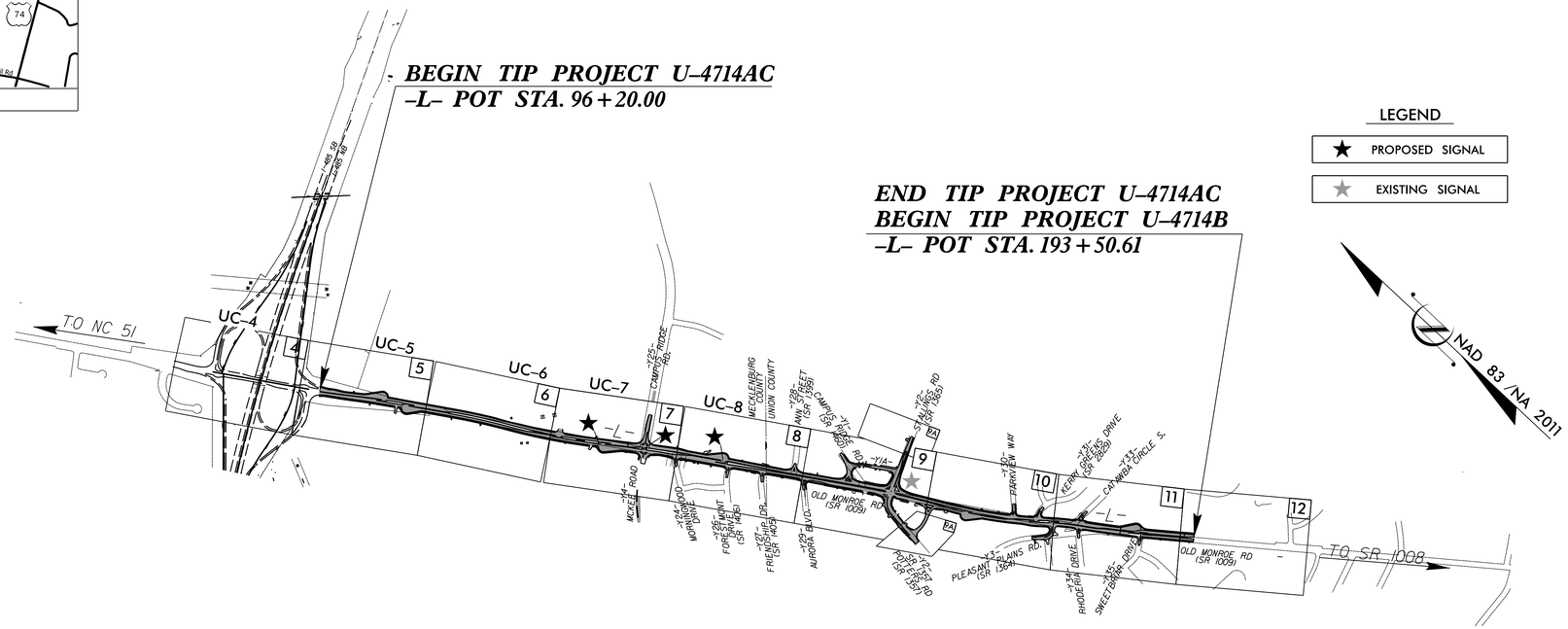
UTILITY CONSTRUCTION PLANS
MECKLENBURG & UNION COUNTY

LOCATION: SR 1009 (JOHN STREET)\OLD MONROE ROAD
FROM EAST OF I–485 INTERCHANGE TO
WEST OF MORNINGSIDE MEADOW LANE

TYPE OF WORK: WATER & SEWER RELOCATIONS



VICINITY MAP



Initial: LA DS: MV

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

INDEX OF SHEETS

SHEET NO.	*DESCRIPTION*
UC–1	*TITLE SHEET*
UC–2	*UTILITY SYMBOLOGY*
UC–3	*NOTES*
UC–3A	*DETAILS*
UC–4 THRU UC–8	*UTILITY CONSTRUCTION SHEETS*
UC–9 THRU UC–10	*PROFILE SHEETS*

WATER AND SEWER OWNERS ON PROJECT

(A) WATER – CHARLOTTE WATER
(B) SEWER – CHARLOTTE WATER

PREPARED IN THE OFFICE OF:

HINDE ENGINEERING
License No. C-2639
401 Harrison Oaks Blvd., Suite 220 Cary, NC 27513
Ph. (919) 653-0001

Clint L. Stevens, P.E.	*UTILITIES PROJECT MANAGER*
Jordan K. Chapman, E.I.	*UTILITIES PROJECT ENGINEER*
James N. Arnold	*UTILITIES PROJECT DESIGNER*

SEAL

NORTH CAROLINA PROFESSIONAL ENGINEER CLINT L. STEVENS 040370
Docusigned by: Clint L. Stevens 0DEF32D777EB43D...
8/19/2026

DIVISION OF HIGHWAYS
UTILITIES UNIT
1555 MAIL SERVICES CENTER
RALEIGH NC 27699–1555
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Bryan C. Key, P.E.	*TEAM LEAD*
Radha Attaluri, P.E.	*SENIOR PROJECT MANAGER*
Jong T Yoon, PE	*SENIOR UTILITIES ENGINEER*
Donald E. Hampton	*WESTERN UTILITIES MANAGER*

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PROJECT REFERENCE NO.	SHEET NO.
U-4714AC	UC-2

UTILITIES PLAN SHEET SYMBOLS

PROPOSED WATER SYMBOLS

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

PROPOSED SEWER SYMBOLS

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

PROPOSED MISCELLANOUS UTILITIES SYMBOLS

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

EXISTING UTILITIES SYMBOLS

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

Initial: LH DS: MV

*For Existing Utilities

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

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PROJECT REFERENCE NO.	SHEET NO.
U-4714AC	UC-2A
DESIGNED BY: JKC	
DRAWN BY: JNA	
CHECKED BY: JKC	
APPROVED BY: CLS	
REVISED:	

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
UTILITIES ENGINEERING SEC.
PHONE:(919)707-6690
FAX:(919)250-4151

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 040370 CLINT L STEVENS
Docusigned by: Clint L Stevens 9B8F32D777EB42D...
8/19/2026

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

APPLICATION FOR PERMIT FOR WATER MAIN EXTENSION

PROJECT NAME: NCDOT TIP U-4714AC

CLTWater PROJECT NO.: CPM-20-26-384

PROJECT DESCRIPTION: PROPOSED 3,287 L.F. OF 16" WATER MAIN WITH IT'S ASSOCIATED FITTINGS ALONG JOHN STREET FROM I-485 TO EAST OF MCKEE ROAD

DESIGNED BY: FIRM: HINDE ENGINEERING, INC.

ENGINEER: CLINT L. STEVENS, PE

ADDRESS: 401 HARRISON OAKS BLVD., SUITE 220
CARY, NORTH CAROLINA 27513

PHONE: (919) 653-0001

THIS APPLICATION IS MADE UNDER AND IN FULL ACCORD WITH THE PROVISIONS OF CHAPTER 130A-317 OF THE NORTH CAROLINA GENERAL STATUTES, AND SUCH OTHER STATUTES AS RELATED TO PUBLIC WATER SYSTEMS. CLTWater HAS BEEN GRANTED AUTHORITY TO ISSUE PERMITS FOR EXTENSION OF WATER MAINS PURSUANT TO 15A NCAC 18C.1801. THE APPLICANT AGREES THAT NO SIGNIFICANT CHANGE OR DEVIATION FROM THE PLANS AND SPECIFICATIONS APPROVED BY CLTWater WILL BE MADE WITHOUT THE WRITTEN CONSENT AND APPROVAL OF CLTWater OR ITS AUTHORIZED REPRESENTATIVE. A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF NORTH CAROLINA SHALL SUBMIT A STATEMENT REFLECTING THAT ADEQUATE OBSERVATIONS DURING AND UPON COMPLETION OF CONSTRUCTION INDICATES THAT CONSTRUCTION WAS COMPLETED IN ACCORDANCE WITH APPROVED PLANS AND SPECIFICATIONS.

PERMIT NO. _____

APPROVED: Signed by: Charles M. Bliss C54CEB0B4E8441E... DATE _____

CHARLES M. BLISS, PE, CHIEF ENGINEER
CHARLOTTE WATER
5100 BROOKSHIRE BLVD.
CHARLOTTE, NORTH CAROLINA 28216

Initial LA

DS MV

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U-4714AC	UC-3
DESIGNED BY: JKC	
DRAWN BY: JNA	
CHECKED BY: JKC	
APPROVED BY: CLS	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE:(919)707-6690 FAX:(919)250-4151	

NORTH CAROLINA PROFESSIONAL SEAL 040370 ENGINEER CLINT L STEVENS
Docusigned by: Clint L Stevens 9D8F32D777EB42D...
8/19/2026
UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

UTILITY CONSTRUCTION

GENERAL NOTES:

1. THE PROPOSED UTILITY CONSTRUCTION SHALL MEET THE APPLICABLE REQUIREMENTS OF THE NC DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" DATED JANUARY 2024.

2. THE EXISTING WATER AND SEWER FACILITIES BELONG TO CHARLOTTE WATER.

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

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

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

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

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

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

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

PROJECT SPECIFIC NOTES:

1. ALL 16-INCH AND LARGER DIAMETER PIPE SHALL BE DUCTILE IRON RESTRAINED JOINT PRESSURE CLASS 250, UNLESS OTHERWISE NOTED ON THE UTILITY CONSTRUCTION PLANS.

2. ALL VALVES ON WATER MAINS SHALL BE DIRECT BURY GATE VALVES, UNLESS OTHERWISE NOTED ON THE UTILITY CONSTRUCTION PLANS.

3. DUCTILE IRON RESTRAINED JOINT PIPE SHALL BE USED IN LIEU OF THRUST BLOCKING ON PROPOSED WATER LINE.

4. ALL FIRE HYDRANTS SHALL BE HIGH VELOCITY FIRE HYDRANTS . GUARD VALVES SHALL BE 8-INCH GATE VALVES AND FIRE HYDRANT LEG SHALL BE 8-INCH DUCTILE IRON RESTRAINED JOINT PIPE.

5. CONTRACTOR IS REQUIRED TO CONTACT LOGAN HEDRICK, CLTWATER ENGINEERING PROJECT MANAGER, AT (980) 253-4390 AT LEAST 2 WEEKS PRIOR TO ANY WATER AND SEWER CONSTRUCTION.

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U-4714AC	UC-3A
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APPROVED BY: CLS	
REVISED:	

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UTILITIES ENGINEERING SEC.
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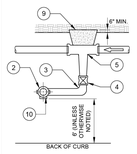
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ENGINEER
CLINT L STEVENS
8/19/2026

UTILITY CONSTRUCTION PLANS ONLY

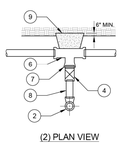
UTILITY CONSTRUCTION

CLTW STANDARD DETAILS

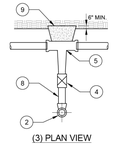
STANDARD FIRE HYDRANT WITH 8" PIPE



(1) PLAN VIEW

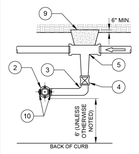


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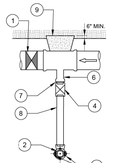


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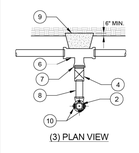
HIGH VELOCITY FIRE HYDRANT WITH 8" PIPE



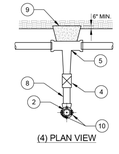
(1) PLAN VIEW



(2) PLAN VIEW



(3) PLAN VIEW



(4) PLAN VIEW

NO.	DESCRIPTION:
1.	MAIN LINE VALVE.
2.	STANDARD FIRE HYDRANT ON 8" MAINS AND HIGH VELOCITY FIRE HYDRANT ON 12" AND LARGER MAINS.
3.	8" SWIVEL 90° BEND.
4.	8" RMJ GATE VALVE.
5.	8" OUTLET SWIVEL HYDRANT TEE.
6.	8" OUTLET RMJ TEE.
7.	8" FOSTER ADAPTER WHICH BOLTS VALVE DIRECTLY TO TEE OR FH.
8.	DIP WITH MJ RESTRAINED JOINTS.
9.	3,600 PSI CONCRETE THRUST BLOCKING.
10.	PUMPER NOZZLE.

NOTES:

A. HYDRANT LOCATION: ON ROADS WITH CURB AND GUTTER, USE DETAIL (1) (THIS SHEET) IN ALL CASES UNLESS OTHERWISE APPROVED BY ENGINEER. HYDRANT BURIAL TO BE MINIMUM 3'-6" UNLESS OTHERWISE APPROVED BY THE ENGINEER.
C. FOR HYDRANTS ON DEAD END LINES, MAIN LINE VALVES ARE LOCATED DOWNSTREAM OF HYDRANT.
D. EXTENSIONS REQUIRED AS APPROVED BY THE ENGINEER. NO MORE THAN ONE HYDRANT EXTENSION IS ALLOWED. IF EXTENSION IS USED, DO NOT CAST HYDRANT COLLAR ON EXTENSION JOINT.
E. PUMPER NOZZLE TO FACE THE ROADWAY ON STANDARD FIRE HYDRANTS. PUMPER NOZZLES SHALL BE PARALLEL WITH ROAD ON HIGH VELOCITY FIRE HYDRANTS.
F. CONCRETE BLOCKING TO EXTEND TO UNDISTURBED EARTH UNLESS APPROVED BY THE ENGINEER.
G. SEE CLTW STANDARD DETAIL FOR PLACEMENT OF FIRE HYDRANT IN NCDOT R/W.
H. ALL HYDRANT PIPING SHALL BE RESTRAINED JOINT DIP.
I. FLOW DIRECTION ARROW IS THE PRIMARY WATER FLOW DIRECTION BASED ON HYDRAULICS OR DEAD END PIPE AND CONTROLS THE VALVE LOCATION.
J. HIGH VELOCITY MAINS ARE CLASSIFIED AS 12" MAINS OR LARGER.
K. MAIN LINE VALVES ARE FOR MAINS 30" AND LARGER.

NO SCALE | DETAIL 10.3.3

FIRE HYDRANT DETAIL

CLTW PUBLIC FIRE HYDRANTS

1 FIRE PROTECTION — YELLOW / YELLOW

2 FIRE PROTECTION (MUDDY WATER) (NOT FOR PUBLIC WATER TRUCK USE) — YELLOW / RED

3 AIR RELEASE / BLOW-OFF (FIRE DEPARTMENT OR PUBLIC WATER TRUCK USE) — BLUE / BLUE

4 REUSE / RECLAIM (NOT FOR FIRE DEPARTMENT OR PUBLIC WATER TRUCK USE) — PURPLE / PURPLE (PUMPER NOZZLE FACES AWAY FROM STREET)

PRIVATE FIRE HYDRANTS (NOT FOR PUBLIC WATER TRUCK USE)

5 PRIVATE (THROUGH WATER METER) — YELLOW / GREEN

6 PRIVATE (VIA METER AND BOOSTER PUMP) — YELLOW / WHITE

7 PRIVATE (6" & SMALLER OR LIMITED SUPPLY) — YELLOW / BLUE

8 PRIVATE (2.5" OUTLET YARD HYDRANT) — RED / RED

NOTES:
A. PUBLIC FIRE HYDRANTS ARE (1) CONNECTED DIRECTLY TO (2) 8W DISTRIBUTION SYSTEM, (2) OWNED AND MAINTAINED BY CLTW, AND (3) LOCATED WITHIN PUBLIC RIGHT-OF-WAY OR PUBLIC UTILITY EASEMENT.
B. PRIVATE FIRE HYDRANTS ARE NON-PUBLIC FIRE HYDRANTS, INCLUDING HYDRANTS (1) SERVED VIA METER, (2) SERVED VIA PRIVATE WATER SYSTEM, AND ARE (3) LOCATED OUTSIDE THE ROAD RIGHT-OF-WAY AND (4) PRIVATELY OWNED AND MAINTAINED.

CLTW / CFD COLOR LEGEND

COLOR	SPACE
OSHA SAFETY YELLOW	
OSHA SAFETY BLUE	
OSHA SAFETY PURPLE (LAVENDER)	
OSHA SAFETY RED	
OSHA SAFETY GREEN	
OSHA SAFETY WHITE	

CLTW AND CHARLOTTE FIRE DEPARTMENT STANDARDS COLOR SCHEME FOR CLTW PUBLIC FIRE HYDRANTS

FIRE HYDRANT CLASSIFICATION	BARREL	SQUARE TOP / BONNET	PUMPER / PURPLE NOZZLE	IRON / PURPLE NOZZLE	IRON HOSE NOZZLE
1 - FIRE PROTECTION (NOT MUDDY FLOW)	OSHA SAFETY YELLOW	OSHA SAFETY YELLOW	NOT PAINTED	OSHA SAFETY YELLOW	OSHA SAFETY YELLOW
2 - FIRE PROTECTION (MUDDY FLOW)	OSHA SAFETY YELLOW	OSHA SAFETY YELLOW	NOT PAINTED	OSHA SAFETY RED	OSHA SAFETY RED
3 - AIR RELEASE	OSHA SAFETY BLUE	OSHA SAFETY BLUE	NOT PAINTED	OSHA SAFETY BLUE	OSHA SAFETY BLUE
3 - BLOW-OFF	OSHA SAFETY BLUE	OSHA SAFETY BLUE	NOT PAINTED	OSHA SAFETY BLUE	OSHA SAFETY BLUE
4 - REUSE / RECLAIM	OSHA SAFETY PURPLE	OSHA SAFETY PURPLE	NOT PAINTED	OSHA SAFETY PURPLE	OSHA SAFETY PURPLE

CHARLOTTE FIRE DEPARTMENT STANDARDS COLOR SCHEME FOR PRIVATE FIRE HYDRANTS

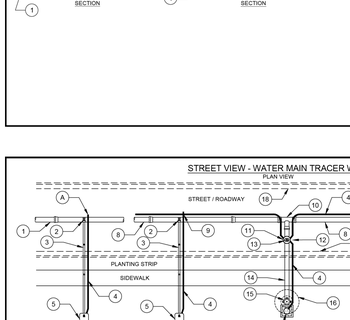
CLASSIFICATION	BARREL	TOP / BONNET	PUMPER / IRON NOZZLE	IRON HOSE NOZZLE
5 - PRIVATE THROUGH WATER METER	OSHA SAFETY YELLOW	OSHA SAFETY YELLOW	NOT PAINTED	OSHA SAFETY GREEN
6 - PRIVATE (VIA METER AND BOOSTER PUMP)	OSHA SAFETY YELLOW	OSHA SAFETY YELLOW	NOT PAINTED	OSHA SAFETY WHITE
7 - PRIVATE (6" & SMALLER MAIN OR LIMITED SUPPLY)	OSHA SAFETY YELLOW	OSHA SAFETY YELLOW	NOT PAINTED	OSHA SAFETY BLUE
8 - PRIVATE (2.5 INCH OUTLET YARD HYDRANT)	OSHA SAFETY RED	OSHA SAFETY RED	N/A	OSHA SAFETY RED

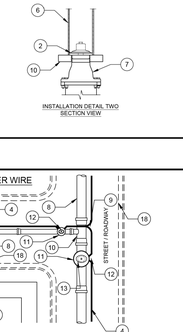
INDUSTRY STANDARD - **NOT** ADOPTED OR USED BY CLTW/CFD AWWA C-502 UNIFORM COLOR SCHEME FOR FIRE HYDRANTS NFPA 291 RECOMMENDED PRACTICE FOR MARKING FIRE HYDRANTS

CLASSIFICATION	FLOW CAPACITY (GPM AT 20 PSI RESIDUAL)	BARREL	TOP / BONNET	PUMPER NOZZLE	HOSE NOZZLE
CLASS AA	1500 TO 1999	CHROME YELLOW	LIGHT BLUE	LIGHT BLUE	LIGHT BLUE
CLASS A	1000 TO 1499	CHROME YELLOW	GREEN	GREEN	GREEN
CLASS B	500 TO 999	CHROME YELLOW	ORANGE	ORANGE	ORANGE
CLASS C	LESS TO 500	CHROME YELLOW	RED	RED	RED

NO SCALE | DATE 04/2024 | DETAIL 10.3.2

FIRE HYDRANT PAINT / COLOR SCHEMES CLTW / CHARLOTTE FIRE DEPT. STANDARDS (PUBLIC AND PRIVATE HYDRANTS)





NO.	DESCRIPTION:
1.	CONCRETE GRADE RING.
2.	PLASTIC VALVE CENTERING DISK (EX: PLASTIC POSI-CAP VALVE BOX ADJUSTER) OR BRICKS USED TO KEEP VALVE BOX ALIGNED DURING BACK FILLING. REQUIRED FOR ALL VALVES.
3.	#4 REBAR – 17" DIAMETER.
4.	#4 REBAR – LENGTH = 66", OR (ALTERNATE -17" DIAMETER).
5.	VALVE BOX BOTTOM SECTION.
6.	6" DIAMETER C900 PVC PIPE.
7.	GATE VALVE – 12" OR SMALLER.
8.	STEM EXTENSION OF VALVE BOX.
9.	FILL ANNULAR SPACE WITH NON SHRINK GROUT.
10.	CONCRETE SUPPORT BRICK - 2 EACH.

NOTES:

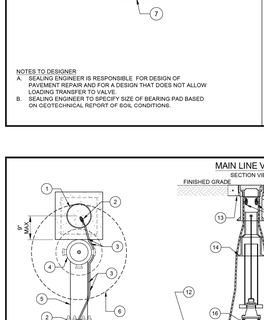
A. FOR PRECAST GRADE RINGS – FILL VOID BETWEEN GRADE RING AND CAST IRON VALVE BOX TOP SECTION WITH NON-SHRINK GROUT.
B. FOR CAST-IN-PLACE GRADE RINGS – TOP SECTION OF CAST IRON VALVE BOX SHALL BE CAST IN THE CONCRETE.
C. TYPE A GRADE RINGS SHALL BE REQUIRED ON ROAD SHOULDERS WITHOUT CURB.
D. FOR INSTALLATION DETAIL TWO – ONLY ONE VALVE BOX ASSEMBLY (NO. 5 OR NO. 6) SHALL BE REQUIRED. VALVE BOX ASSEMBLY SHALL NOT REST ON THE VALVE, AND SHALL BE CENTERED ON THE VALVE OPERATING NUT AS SHOWN.
E. TOP SECTION/LID SHALL BE FLUSH WITH GRADE RING TO AVOID TRIPPING HAZARD.
F. FOR LOCATIONS WHERE A STANDARD PRECAST GRADE RING DOES NOT FIT, IT CANNOT BE CUT TO FIT AND A CAST IN PLACE CONCRETE PAD MUST BE POURED IN PLACE.

DESIGN REQUIREMENTS:

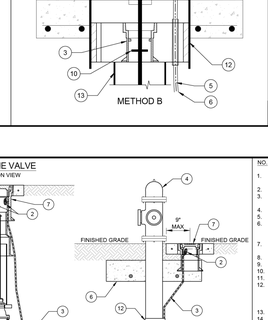
a. CONCRETE = f'c = 4,000 PSI (PRECAST), OR 3,000 PSI (CAST-IN-PLACE).
b. STEEL REINFORCEMENT – REBARS – GRADE 60 (60,000 PSI) – ASTM A-615, OR WELDED WIRE FABRIC – ASTM A-185.

NO SCALE | DETAIL 10.1.5

VALVE BOX - CONCRETE GRADE RINGS (12" AND SMALLER VALVES - ONLY) (2" AIR RELEASES AND BLOW-OFFS)



NOTES TO DESIGNER
A. SEALING ENGINEER IS RESPONSIBLE FOR DESIGN OF PAVEMENT REPAIR AND FOR A DESIGN THAT DOES NOT ALLOW LOADING TRANSFER TO VALVE.
B. SEALING ENGINEER TO SPECIFY SIZE OF BEARING PAD BASED ON GEOTECHNICAL REPORT OF SOIL CONDITIONS.



NO.	DESCRIPTION:
1.	WATER MAIN.
2.	GATE VALVE (OR BALL VALVE, AS APPLICABLE) FOR 1.5"-2" WATER LINES.
3.	VALVE BOX ASSEMBLY - SEE CLTW STANDARD DETAIL.
4.	TRACER WIRE TERMINATION WITH 24" NEATLY COILED WIRE.
5.	TRACER WIRE - CONTINUOUS AWG #12 GAUGE SOLID COPPER HDPE INSTALLATION TRACER WIRE WITH 30 MILS BLUE INSULATION.
6.	ALL VERTICAL WIRE SHALL BE PLACED IN 1/4" OR 3/8" ID CONDUIT SDR 9 PEX TUBING - ASTM F876 (TYP.).
7.	CONCRETE BEARING BLOCK FOR 10-INCH AND LARGER GATE VALVES: POLYETHYLENE WRAP BARRIER SHALL BE PLACED BETWEEN CONCRETE BLOCK AND VALVE. WRAP SHALL BE MINIMUM TWO LAYERS OF 4 MILS THICK HDCLPE.
8.	FRAME AND COVER. REFER TO APPROPRIATE STANDARD DETAILS.
9.	EXTENSION STEM ASSEMBLY. SEE APPROPRIATE STANDARD DETAIL.
10.	CENTERING COLLAR.
11.	VALVE LOCK BOX - FURNISHED BY CLTWATER.
12.	24" PVC PIPE - C905 - DR18, OR DIP - CAST IN.
13.	12" (MIN.) DIP (OR C900 PVCO RISER PIPE 20' MAXIMUM.

NOTES:

A. MJ ADAPTER KIT SHALL INCLUDE BOLTS AND NUTS, GRADE 3 OR HIGHER.
B. CLTW ALLOWS THE INSTALLATION OF DIFFERENT PIPE MATERIALS ON EITHER SIDE OF THE GATE VALVE. INSTALL TRANSITIONS PER APPROPRIATE STANDARD DETAIL.
C. IF VALVE OPERATING NUT IS MORE THAN 3' BELOW FINISHED GRADE, PROVIDE EXTENSION STEM WITH STANDARD 2" SQUARE OPERATING NUT IN TOP SECTION OF VALVE BOX. SEE STANDARD DETAIL.

NO SCALE | DATE 04/2024 | DETAIL 10.6.5

GATE VALVE FOR NON-HDPE PIPE (1.5-INCH TO 30-INCH)

NOTES:

A. FOR NEW SERVICE ON EXISTING MAIN WHERE NO TRACER WIRE IS LOCATED ON WATER MAIN, PLACE TRACER WIRE END AT BOTTOM EDGE OF TRENCH AWAY FROM MAIN AND SERVICE.
B. WATER MAIN LESS THAN 15' DEPTH OF COVER - TRACING WIRE SHALL BE ATTACHED TO PIPE.
C. WATER MAIN GREATER THAN 15' DEPTH OF COVER - TRACER WIRE SHALL BE ATTACHED TO PIPE AND PLACED AT A DEPTH OF 4' BELOW FINISH GRADE.
D. TRACER WIRE SHOWN AWAY FROM PIPE FOR CLARITY. TRACER WIRE SHALL BE INSTALLED IMMEDIATELY ADJACENT TO THE WATER PIPE. TRACER WIRE SHALL BE FASTENED TO THE PIPE WITH ZIP TIES OR DUCT TAPE AT 10' INTERVALS.
E. TRACER WIRE PLACEMENT NEXT TO PIPE FOR PIPE MATERIALS OTHER THAN HDPE. TRACER WIRE PLACEMENT IN RELATION TO HDPE PIPE IS UNDER PIPE IN CASE OF WEATHER.
F. TRACER WIRE SHALL BE SOLID COPPER #12 WITH 30 MILS BLUE HDPE INSULATION.
G. SPLICED CONNECTIONS SHALL BE ALLOWED BETWEEN THE MAIN LINE TRACER WIRE AND THE SERVICE TRACER WIRE.
H. TRACER WIRE SHALL BE PROTECTED FROM DAMAGE DURING THE EXECUTION OF THE WORK. NO BREAKS OR CUTS IN THE TRACER WIRE OR INSULATION SHALL BE PERMITTED.
I. PRIOR TO ACCEPTANCE (POST PUNCH LIST) EACH WIRE SEGMENT SHALL PASS A CONDUCTIVITY TEST, WITNESSED BY THE ENGINEER OR ENGINEER'S REPRESENTATIVE.
J. FOR INSTALLING A NEW SERVICE LINE ON AN EXISTING OR NEW MAIN WITH TRACER WIRE, INCLUDE 2' OF SLACK IN NEW TRACER WIRE AT THE SPLICE. THE METER BOX SHALL SERVE AS THE TEST PORT.
K. MAXIMUM DISTANCE BETWEEN TEST PORTS SHALL BE 750 LINEAR FEET.

NO SCALE | DETAIL 10.15.1

TRACER WIRE - WATER MAIN

NOTES:

A. TRACER WIRE SHALL BE AWG #12 GUAGE SOLID COPPER WITH 30 MILS BLUE HDPE INSULATION.
B. THE TRACER WIRE SHALL BE CONTINUOUS TO THE GREATEST EXTENT POSSIBLE. WHERE SPLICES ARE NECESSITATED IN THE WIRE, THE SPLICES SHALL BE SECURLEY BONDED TOGETHER WITH AN APPROVED INDUSTRIAL CONNECTOR TO PROVIDE ELECTRICAL CONTINUITY. CONNECTOR SHALL BE COPPER AND INSULATION SHALL BE REPAIRED AS DETAILED TO SEAL OUT MOISTURE AND CORROSION AND SHALL BE INSTALLED SO AS TO PREVENT ANY UNINSULATED WIRE EXPOSURE. SEE APPROPRIATE STD. DETAIL.
C. SPLICED CONNECTIONS SHALL BE ALLOWED BETWEEN THE MAIN TRACER WIRE AND THE WATER SERVICE TRACER WIRE.
D. TRACER WIRE SHALL BE PROTECTED FROM DAMAGE DURING THE EXECUTION OF THE WORK. NO BREAKS OR CUTS IN THE TRACER WIRE OR INSULATION SHALL BE PERMITTED.
E. PRIOR TO ACCEPTANCE (POST PUNCH LIST) EACH WIRE SEGMENT SHALL PASS A CONDUCTIVITY TEST, WITNESSED BY THE ENGINEER OR ENGINEER'S REPRESENTITIVE.
F. WHERE 2 OR MORE WIRES ENTER A VALVE BOX ASSEMBLY, (PROVIDE 24" OF NEATLY COILED WIRE) AFTER ACCEPTANCE TESTING, CONNECT ENDS OF ALL WIRES WITH WATER PROOF WIRE CONNECTOR NUT AND 3" BARE #12 PIGTAIL.
G. SPLICES IN THE PRIMARY TRACER WIRE ALONG THE WATER MAIN SHALL INCLUDE 2' OF SLACK WIRE ON EACH SIDE OF EACH SPLICE.
H. FOR INSTALLING A NEW SERVICE LINE ON AN EXISTING MAIN WITH TRACER WIRE, ONLY SPLICE TO EXISTING WIRE WITH 2' OF SLACK ON NEW SERVICE LINE.
I. TRACER WIRE PLACEMENT NEXT TO PIPE FOR PIPE MATERIALS OTHER THAN HDPE. TRACER WIRE PLACEMENT IN RELATION TO HDPE PIPE IS UNDER PIPE IN CASE OF WEATHER.

NO SCALE | DETAIL 10.15.2

TRACER WIRE - WATER MAIN

NO.	DESCRIPTION:
1.	3-LAYERS OF HALF LAPPED VINYL TAPE.
2.	3-LAYERS OF HALF LAPPED RUBBER TAPE.
3.	COPPER CRIMP CONNECTOR OR COPPER ALLOY SPLIT BOLT CONNECTOR.
4.	SOLID COPPER WITH 30 MILS BLUE HDPE INSULATION (AWG #12 TRACER WIRE).
5.	SPLIT BOLT.
6.	PRESSURE BAR.
7.	HEX NUT.

NOTES:

A. REMOVE MINIMUM TRACER WIRE INSULATION MATERIAL TO EXPOSE COPPER CORE WIRE.
B. IN LINE SPLICES SHALL BE LIMITED TO THE GREATEST EXTENT POSSIBLE. TRACER WIRE SHALL BE AS CONTINUOUS AS POSSIBLE WITHOUT SPLICES.
C. SPLICES SHALL INCLUDE 2' OF SLACK WIRE ON EACH SIDE OF EACH SPLICE (SEE DETAIL ON THIS SHEET).
D. TRACER WIRE PLACEMENT NEXT TO PIPE FOR PIPE MATERIALS OTHER THAN HDPE. TRACER WIRE PLACEMENT IN RELATION TO HDPE PIPE IS UNDER PIPE IN CASE OF WEATHER.

NO SCALE | DATE 04/2024 | DETAIL 10.15.3

TRACER WIRE - WATER MAIN - SPLICE

Initial: LA
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PROJECT REFERENCE NO.	SHEET NO.
U-4714AC	UC-4
DESIGNED BY: JKC	
DRAWN BY: JNA	
CHECKED BY: JKC	
APPROVED BY: CLS	
REVISED:	

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
UTILITIES ENGINEERING SEC.
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FAX:(919)250-4151

NORTH CAROLINA LICENSED PROFESSIONAL ENGINEER SEAL 040370 CLINT L STEVENS
Docusigned by: Clint Stevens 9D0F32D777EB42D...
8/19/2026

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

NO UTILITY CONFLICTS EXPECTED THIS SHEET

NAD 83/NA 2011

-L- PI Sta. 81+85.14
Δ = 3° 02' 37.6" (LT)
D = 0° 34' 22.6"
L = 531.24'
T = 265.68'
R = 10,000.00'
DS = 40 MPH
θ = NC

-L- PT Sta. 84+50.70

EX. WATER LINE INSTALLED UNDER NCDOT I-5507PROJECT. (NOT SURVEYED, DRAWN PER AS-BUILT RECORDS ONLY).

MATCHLINE -L- 94+00.00
SEE SHEET UC-5

FOR -L- PROFILE VIEW, SEE SHEET 13

Initial: LA DS: MV

24-AUG-2026 16:43
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APPROVED BY: CLS	
REVISED:	

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Clint L Stevens
Docusigned by: 9DBF32D777EB42D...
8/19/2026
UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

NAD 83/NA 2011

MATCHLINE –L– 94+00.00
SEE SHEET UC-4

MATCHLINE –L– 108+00.00
SEE SHEET UC-6

LESTER AND MARY YANDLE, LLC
DB 14396 PG 692

ASPEN ASSETT GROUP LLC
DB 8909 PG 829

ASPEN ASSET GROUP LLC
DB 8786 PG 789

LESTER AND MARY YANDLE, LLC

EDWIN LAWRENCE TENHENGEL
DB 1918 PG 155

PAUL H TROTTER
6058 - 295

16" DI RJ SLEEVE
TIE-IN TO EX.
16" WATER LINE

16" 45°
DI RJ BEND

16" 45°
DI RJ BEND

REMOVE 16" MJ PLUG
W/2" BLOW OFF
INSTALLED UNDER
NCDOT I-5507 PROJECT.
(NOT SURVEYED, DRAWN PER
AS-BUILT RECORDS ONLY)

EX. WATER LINE
INSTALLED UNDER
NCDOT I-5507PROJECT.
(NOT SURVEYED, DRAWN PER
AS-BUILT RECORDS ONLY).

BORE PIT
10'X40'

48 LF OF INLET
CHANNEL IMPROVEMENT
EST. 125 TONS CL II RIP RAP
EST. 130 SY GEOTEXTILE
EST. 50 CY DDE
SEE DETAIL 5

RETAIN AND EXTEND
2 @ 5'x6' RCBC

PROPOSED GUARDRAIL

GREU TL-3

CAT-1

SPEC BACK OF CURB V-DITCH
SEE DETAIL 1

EXISTING EASEMENT

-L- PRC Sta. 100+20.16

-L- PC Sta. 95+70.31

-L- PT Sta. 105+11.09

82 LF OF 30" ENCASEMENT PIPE
60 LF OF BORE & JACK OF 30"
(STEEL, 0.312")

16" 45°
DI RJ BEND

16" 45°
DI RJ BEND

BORE PIT
10'X20'

EXISTING EASEMENT

920 LF OF 16" WATER LINE
(DI RJ, PC 250)

Q10=5.5 CFS
HW/D=0.88

SPEC. LAT. V-DITCH
SEE DETAIL 2

CL 'B' RIPRAP
EST. 2 TONS
EST. 7 SY GF

SPEC LAT V-DITCH w/CL B RIPRAP
EST. 105 TONS CL B RIPRAP
EST 235 SY GEOTEXTILE
SEE DETAIL 3

LAT 2' BASE DITCH w/CL B RIPRAP
EST. 75 TONS CL B RIPRAP
EST. 327 SY GEOTEXTILE
EST. 181 CY DDE
SEE DETAIL 4

RETAIN AND EXTEND
2 @ 5'x6' RCBC

38 LF OF INLET
CHANNEL IMPROVEMENT
EST. 80 TONS CL II RIP RAP
EST. 80 SY GEOTEXTILE
EST. 20 CY DDE
SEE DETAIL 5

END PROJECT I-5507
BEGIN PROJECT U-4714AC
-L- STA. 96+20.00 =
-Y6- STA. 108+79.49, OS = 5.27' RT

NOTE:
THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 1,595 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

Initial: LA DS: MV

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U-4714AC	UC-6
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CHECKED BY: JKC	
APPROVED BY: CLS	
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Clint L Stevens 956F32D777EB42D...
8/19/2026
UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

NAD 83/NA 2011

MATCHLINE –L– 108+00.00
SEE SHEET UC-5

MATCHLINE –L– 122+00.00
SEE SHEET UC-7

–L– PRC Sta. 111+34.50

–L– PRC Sta. 117+10.14

SPEC BACK OF CURB V-DITCH
w/CL B RIPRAP
EST. 59 TONS CL B RIPRAP
EST. 271 SY GEOTEXTILE
SEE DETAIL 6

LAT 5' BASE DITCH
w/CL I RIPRAP
EST. 115 TONS CL I RIPRAP
EST. 150 SY GEOTEXTILE
EST. 197 CY DDE
SEE DETAIL 8

SPEC LAT 5' BASE DITCH
EST. 135 TONS CL I RIPRAP
EST. 200 SY GEOTEXTILE
SEE DETAIL 7

TRENCHED INSTALLATION
60" WELDED STEEL
(74 LF)

TRENCHLESS INSTALLATION
60" WELDED STEEL
(110 LF)

REMOVE

REMOVE
12" DR

15" w/
2 ELBOWS

30" w/
2 ELBOWS

16" VALVE (GATE)

HIGH-VELOCITY FIRE HYDRANT
8" VALVE (GATE)
10 LF OF 8" FIRE HYDRANT LEG (DI RJ, PC 350)
16"X16"X8" DI RJ TEE

1,400 LF OF 16" WATER LINE
(DI RJ, PC 250)

LAT 6' BASE DITCH w/CL I RIPRAP
EST. 214 TONS CL I RIPRAP
EST. 260 SY GEOTEXTILE
EST. 360 CY DDE
SEE DETAIL 9

SPEC BACK OF CURB 3' BASE DITCH w/CL I

SPEC BACK OF CURB 2' BASE DITCH w/CL B RIPRAP
EST. 230 TONS OF CL B RIPRAP
EST. 1015 SY OF GEOTEXTILE
SEE DETAIL 11

SPEC BACK OF CURB V-DITCH
SEE DETAIL 1

CL 'B' RIPRAP
EST. 2 TONS
EST. 7 SY GF

CL 'B' RIPRAP
EST. 2 TONS
EST. 7 SY GF

89 ASPEN ASSETT GROUP LLC
DB 8909 PG 829

86

85 FOUR MORE INVESTMENTS LLC
DB 19420 PG 508
TRACT A

FOUR MORE INVESTMENTS LLC
DB 19420 PG 508

STON VENTURE LLC
10765 PG 668

JEFFREY WAYNE SPARKS
AND RICHARD ALAN SPARKS
DB 33348 PG 935

87 DUKE POWER CO
4147 - 321

DUKE POWER CO
4147 - 915

DUKE ENERGY EMPTY CONDUIT

SR 1009 E JOHN ST 25' BST

NOTE:
THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 550 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

Initial LH DS MV

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PROJECT REFERENCE NO.	SHEET NO.
U-4714AC	UC-7

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DRAWN BY: JNA
CHECKED BY: JKC
APPROVED BY: CLS
REVISED:

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 040370 CLINT L STEVENS
Docusigned by: Clint L Stevens 9DBF32D777EB42D...
8/19/2026

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

NAD 83/NA 2011

MATCHLINE –L– 122+00.00
SEE SHEET UC-6

MATCHLINE –L– 136+00.00
SEE SHEET UC-8

-L-
PI Sta 134+01.52
Δ = 2° 51' 59.9" (RT)
D = 0° 28' 38.9"
Ls = 600.39'
Ls = 300.26'
R = 12,000.00'
DS = 50 MPH
e = NC

-L- PT Sta. 126+53.86

PC Sta. 28+42.27

PI Sta. 24+75.58

PI Sta. 25+39.54

PIPE INLET CHANNEL BANK STABILIZATION
EST. 35 TONS CL 'I' RIPRAP
EST. 55 SY GEOTEXTILE
EST. DDE=39 CY
SEE DETAIL 13

TOE PROTECTION
STA. 124+50 TO 126+00 -L- LT
EST. 50 TON CL B RIPRAP
EST. 216 SY GEOTEXTILE
SEE DETAIL 12

SPEC BACK OF CURB V-DITCH
SEE DETAIL 14

FLOWABLE FILL

ADJUST MANHOLE TO GRADE

SPEC LAT V-DITCH
SEE DETAIL 15

CL 'B' RIPRAP
EST. 2 TONS
EST. 7 SY GF

SPEC CUT 2' BASE DITCH w/CL B RIPRAP
EST. 230 TONS CL B RIPRAP
EST. 510 SY GEOTEXTILE
SEE DETAIL 18

CL 'B' RIPRAP
EST. 2 TONS
EST. 7 SY GF

TOE PROTECTION
STA. 124+00 TO 125+50 -L- RT
EST. 50 TON CL B RIPRAP
EST. 216 SY GEOTEXTILE
SEE DETAIL 12

PIPE OUTLET CHANNEL BANK STABILIZATION
EST. 50 TONS CL 'I' RIPRAP
EST. 60 SY GEOTEXTILE
EST. 25 CY DDE

SPEC BACK OF CURB V-DITCH
SEE DETAIL 1

967 LF OF 16" WATER LINE
(DI RJ, PC 250)

16" VALVE (GATE)

HIGH-VELOCITY FIRE HYDRANT
8" VALVE (GATE)
10 LF OF 8" FIRE HYDRANT LEG (DI RJ, PC 350)
16"X16"X8" DI RJ TEE

16" 11.25° DI RJ BEND

16" 22.5° DI RJ BEND

16" 11.25° DI RJ BEND

16" 11.25° DI RJ BEND

16" 11.25° DI RJ BEND

16" DI RJ SLEEVE
REMOVE THE EX. BLOW-OFF AND TIE-IN TO THE EX. 16" WATER LINE INSTALLED UNDER NCDOT U-4713A PROJECT. (NOT SURVEYED, DRAWN PER AS-BUILT RECORDS ONLY)

EX. WATER LINE INSTALLED UNDER NCDOT U-4713A PROJECT. (NOT SURVEYED, DRAWN PER AS-BUILT RECORDS ONLY)

ADJUST VALVES TO GRADE

ADJUST HYDRANT TO GRADE

RECONSTRUCT MANHOLE STRUCTURES

NOTE:
THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 2,510 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

★ PROPOSED SIGNAL

Initial: LH DS: MV

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PROJECT REFERENCE NO.	SHEET NO.
U-4714AC	UC-8
DESIGNED BY: JKC	
DRAWN BY: JNA	
CHECKED BY: JKC	
APPROVED BY: CLS	
REVISED:	

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
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FAX:(919)250-4151

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UTILITY CONSTRUCTION

NAD 83NA 2011

CHARLOTTE WATER DOES NOT OWN THE WATER LINES ON THIS SHEET.

MATCHLINE –L– 136+00.00
SEE SHEET UC-7

MATCHLINE –L– 150+00.00

RECONSTRUCT MANHOLE STRUCTURES

RECONSTRUCT MANHOLE STRUCTURES

RECONSTRUCT MANHOLE STRUCTURES

ADJUST MANHOLE TO GRADE

SPEC CUT 2' BASE DITCH w/CL B RIPRAP
EST. 230 TONS CL B RIPRAP

SPEC LAT 2' BASE DITCH w/CL B RIPRAP
EST. 140 TONS CL B RIPRAP
EST. 310 SY GEOTEXTILE
SEE DETAIL 17

SPEC CUT 2' BASE DITCH w/CL B RIPRAP
EST. 130 TONS CL B RIPRAP
EST. 290 SY GEOTEXTILE
SEE DETAIL 18

SPEC LAT 2' BASE DITCH w/CL B RIPRAP
EST. 90 TONS CL B RIPRAP
EST. 195 SY GEOTEXTILE
SEE DETAIL 17

HEAD DITCH w/CL B RIPRAP
EST. 20 TONS CL B RIPRAP
EST. 85 SY GEOTEXTILE
EST. 9 CY DDE
SEE DETAIL 28

-DRI-
PI Sta 10+67.33
Δ = 81° 37' 27.9" (RT)
D = 286° 28' 44.0"
L = 28.49'
T = 17.27'
R = 20.00'

PI Sta 11+21.70
Δ = 56° 41' 54.6" (LT)
D = 32° 24' 16.0"
L = 17.32'
T = 9.44'
R = 17.50'

-DRI- POT Sta. 10+00.00
BA = S 43° 00' 35.0" W
-DRI- PC Sta. 10+50.06
-DRI- PT Sta. 10+78.56
BA = N 55° 21' 57.2" W
-DRI- PC Sta. 11+42.25
BA = S 67° 56' 08.3" W
-DRI- PT Sta. 11+29.57

-Y24-
PI Sta 11+05.92
Δ = 3° 59' 55.6" (LT)
D = 18° 19' 42.5"
L = 21.82'
T = 10.91'
R = 312.61'

PI Sta 11+73.95
Δ = 5° 21' 36.9" (LT)
D = 5° 38' 12.0"
L = 95.10'
T = 47.58'
R = 1,016.48'

-Y24- PT Sta. 11+16.83
-Y24- PC Sta. 11+26.36
-Y24- PT Sta. 12+21.46
-Y24- POT Sta. 13+80.57

-Y26-
PI Sta 11+73.09
Δ = 15° 17' 46.0" (LT)
D = 12° 33' 27.3"
L = 121.81'
T = 61.27'
R = 456.26'

PI Sta 12+91.24
Δ = 2° 39' 20.6" (LT)
D = 2° 41' 38.0"
L = 98.58'
T = 49.30'
R = 2,126.88'

-Y26- PT Sta. 13+40.53
-Y26- POT Sta. 12+47.94
-Y26- PC Sta. 12+47.94

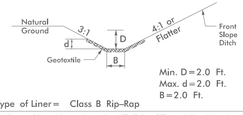
-Y27-
PI Sta 11+31.33
Δ = 9° 01' 19.7" (LT)
D = 4° 26' 28.1"
L = 203.15'
T = 101.79'
R = 1,290.12'

-Y27- POT Sta. 13+42.69
-Y27- PT Sta. 12+32.69

-Y28-
Δ = 2° 24' 41.2" (RT)
D = 9° 27' 00.9"
L = 25.52'
T = 12.76'
R = 606.29'

-Y28- POT Sta. 10+00.00
-Y28- PC Sta. 11+61.82
-Y28- PT Sta. 11+87.34

DETAIL 18
SPECIAL CUT BASE DITCH
(Not to Scale)



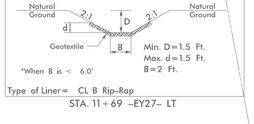
Min. D=2.0 Ft.
Max. d=2.0 Ft.
B=2.0 Ft.

Type of Liner= Class B Rip-Rap

FROM STA. 134+50 –L– LT TO STA. 137+50 –L– LT
FROM STA. 140+00 –L– LT TO STA. 141+50 –L– LT

THERE ARE PIPES IN EITHER DIRECTION OF THE DITCH WHICH FLOW IN DIFFERENT DIRECTIONS. CONSENSUS IS NORTHERN PIPE, FLOWING TOWARD –L– ACTS AS PRIMARY PIPE IF HW GETS TOO HIGH, NORTHERN PIPE FLOWING AWAY FROM –L– ACTS AS OVERFLOW PIPE

DETAIL 28
STANDARD BASE DITCH
(Not to Scale)



Min. D=1.5 Ft.
Max. d=1.5 Ft.
B=2 Ft.
*When B is < 6.0'

Type of Liner= CL B Rip-Rap

STA. 11+69 –EY27– LT

Initial: LH
DS: MV

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PROJECT REFERENCE NO.	SHEET NO.
U-4714AC	UC-9

DESIGNED BY:	JKC
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CHECKED BY:	JKC
APPROVED BY:	CLS
REVISED:	

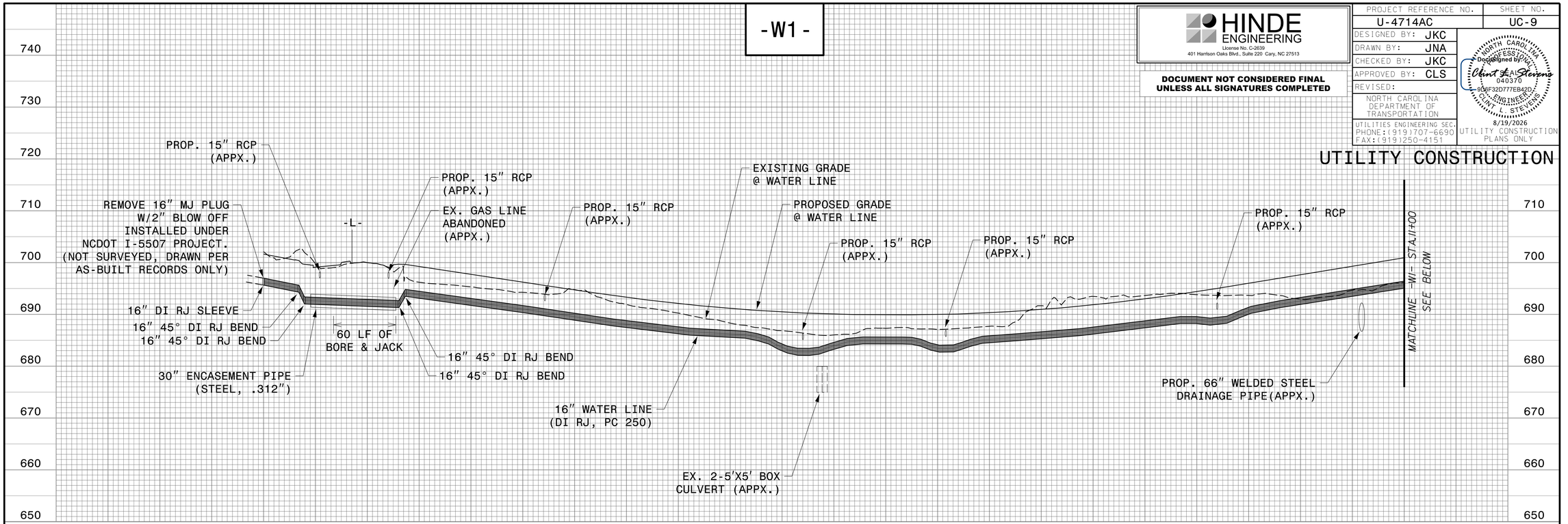
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8/19/2026

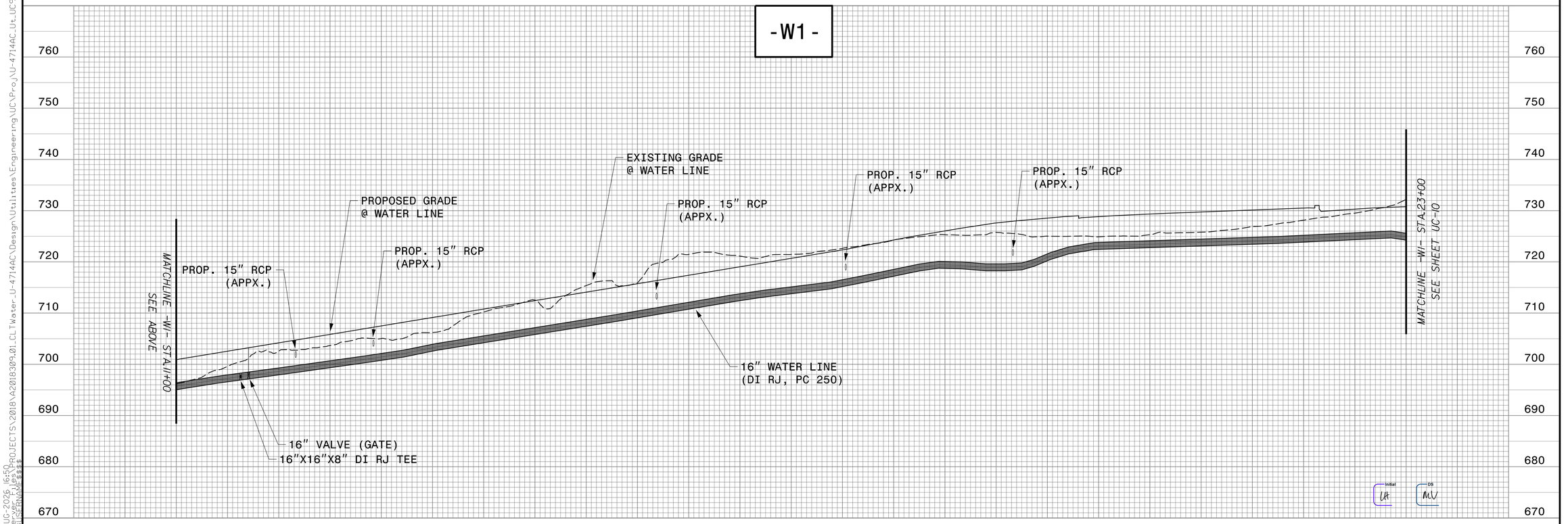
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UTILITY CONSTRUCTION

-W1-



-W1-



Initial UH DS MV

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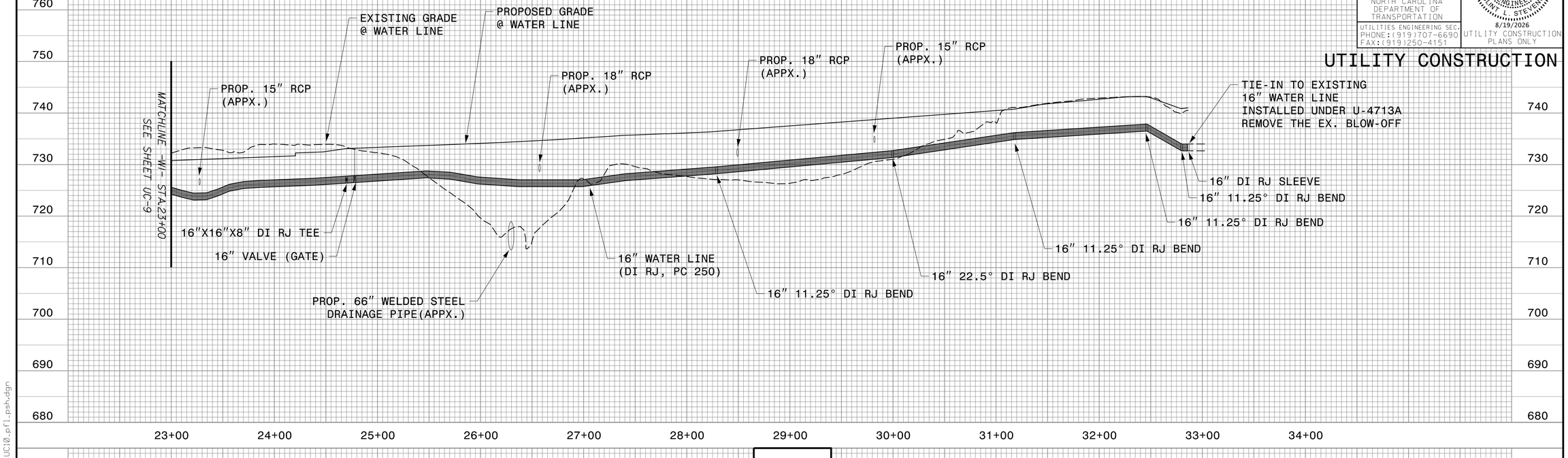
PROJECT REFERENCE NO.	SHEET NO.
U-4714AC	UC-10

DESIGNED BY: JKC
DRAWN BY: JNA
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REVISED:

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UTILITY CONSTRUCTION



Initial: LH
DS: MV

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