

09_08/2019

29-AUG-2023 09:31 \\cort\meadhunt\com\shared\folder\sventp\4306200\166543\0\TECH\Utilities\UC\Utility Construction\U5808_ut_fsh_UC01.psh.dgn \$\$\$SERVERNAME\$\$\$

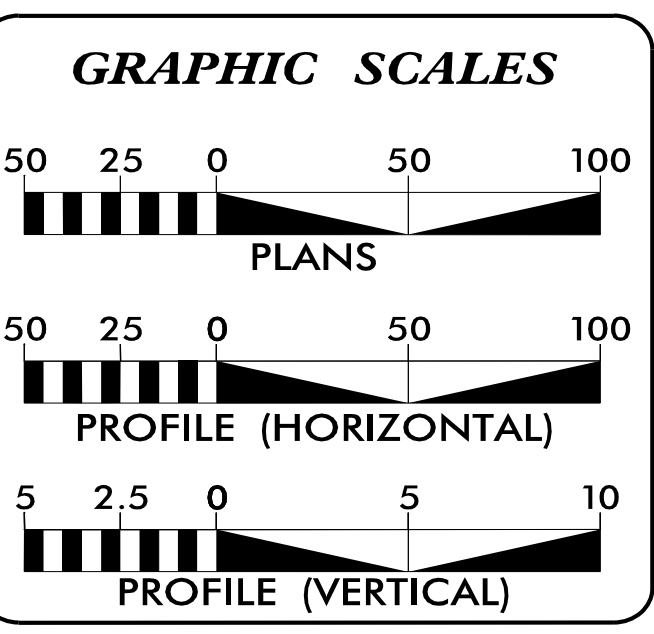
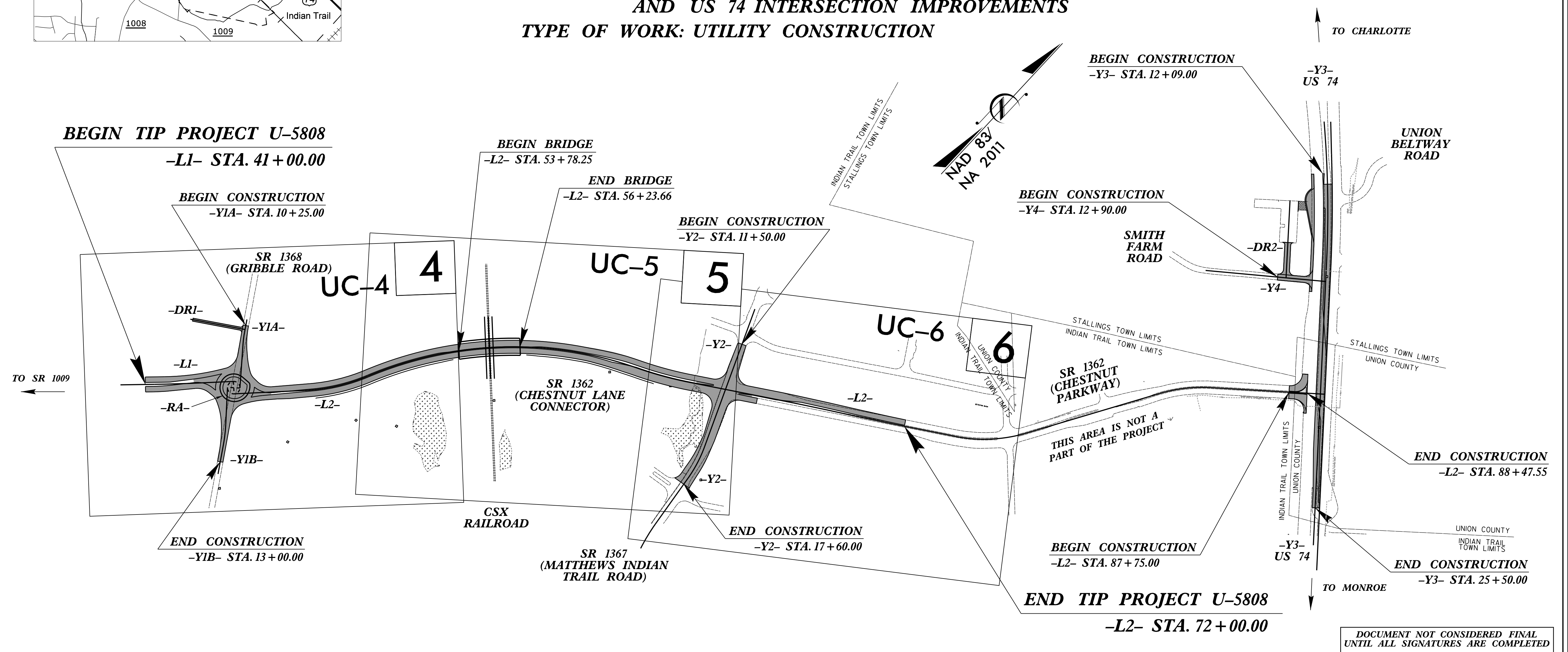
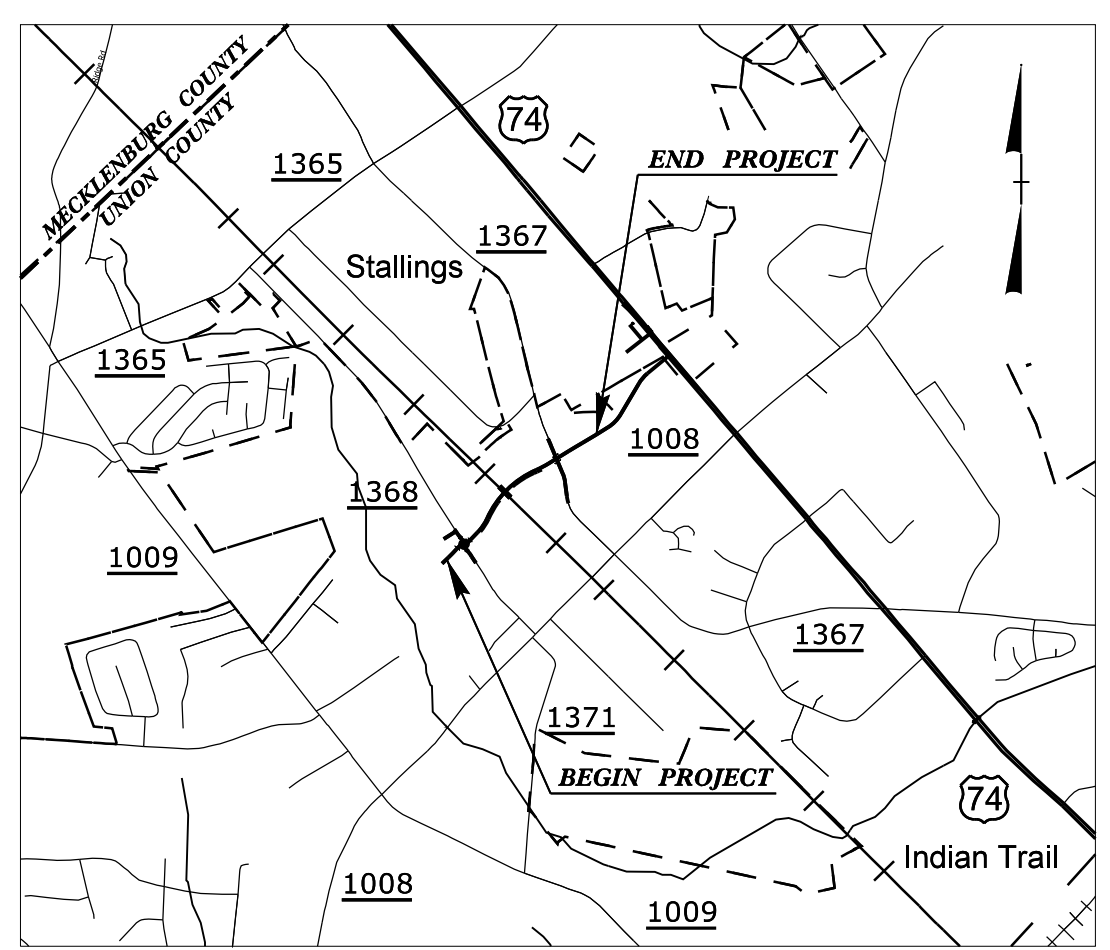
TIP PROJECT: U-5808

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

T.I.P. NO.	SHEET NO.
U-5808	UC-1

UTILITY CONSTRUCTION PLANS UNION COUNTY

LOCATION: CHESTNUT LANE CONNECTOR (SR 1362) FROM MATTHEWS INDIAN TRAIL ROAD (SR 1367) TO GRIBBLE ROAD (SR 1368) AND US 74 INTERSECTION IMPROVEMENTS
TYPE OF WORK: UTILITY CONSTRUCTION



INDEX OF SHEETS

SHEET NO.:	DESCRIPTION:
UC-1	TITLE SHEET
UC-2	UTILITY SYMBOLOGY
UC-3 THRU UC-3B	NOTES
UC-3C	DETAILS
UC-4 THRU UC-7	UTILITY CONSTRUCTION SHEETS
UC-8 THRU UC-9	PROFILE SHEETS

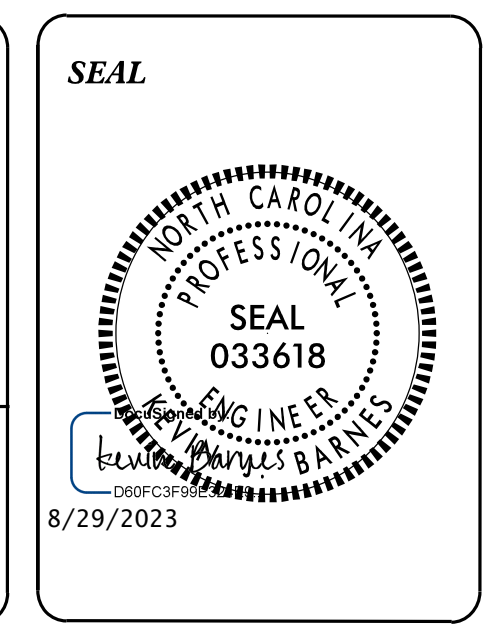
WATER AND SEWER OWNERS ON PROJECT

(A) WATER - UNION COUNTY
(B) SANITARY SEWER - UNION COUNTY

PREPARED IN THE OFFICE OF
Mead&Hunt

111 E. Hargett Street, Suite 300
Raleigh, North Carolina 27601
919-714-8670 | meadhunt.com
NC License No. F-1235

Rick DeCola, P.E. PROJECT MANAGER
Kevin Barnes, P.E. UTILITY MANAGER
Jennifer Smith, P.E. UTILITY DESIGNER



DIVISION OF HIGHWAYS
DIVISION 10
716 W. MAIN STREET
ALBEMARLE, NC 28001
PHONE (704) 983-4400
FAX (704) 982-3146

Travis Preslar, PE DIVISION PROJECT TEAM LEAD
Donald Griffith DIVISION PROJECT MANAGER
Lynn Basinger DIVISION UTILITY COORDINATOR
Donald E. Hampton REGIONAL UTILITIES ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNTIL ALL SIGNATURES ARE COMPLETED

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES PLAN SHEET SYMBOLS

PROPOSED WATER SYMBOLS

Water Line (Sized as Shown)	
11 1/4 Degree Bend	
22 1/2 Degree Bend	
45 Degree Bend	
90 Degree Bend	
Plug	
Tee	
Cross	
Reducer	
Gate Valve	
Butterfly Valve	
Tapping Valve	
Line Stop	
Line Stop with Bypass	
Blow Off	
Fire Hydrant	
Relocate Fire Hydrant	
Remove Fire Hydrant	REM FH
Water Meter	
Relocate Water Meter	
Remove Water Meter	REM WM
Water Pump Station	
RPZ Backflow Preventer	
DCV Backflow Preventer	
Relocate RPZ Backflow Preventer	
Relocate DCV Backflow Preventer	

PROPOSED SEWER SYMBOLS

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

PROPOSED MISCELLANEOUS UTILITIES SYMBOLS

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

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

EXISTING UTILITIES SYMBOLS

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

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

5/14/99
 C:\AUG-2003\0921\com\sheredf\older\s\entp\4306200\156543.01\TECH\Utilities\UC\Utility Construction\U5808_ut_sgm_UC02_psh.dgn
 REV: 2/1/2012

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

UTILITY CONSTRUCTION

PROJECT REFERENCE NO. U-5808	SHEET NO. UC-3
DESIGNED BY: KJB	
DRAWN BY: JLS	
CHECKED BY: RJD	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
Mead&Hunt <small>111 E. Hargett Street, Suite 300 Raleigh, North Carolina 27601 919-714-8870 meadhunt.com NC License No. F-1235</small>	

GENERAL NOTES:

1. THE PROPOSED UTILITY CONSTRUCTION SPECIFICATIONS SHALL MEET THE APPLICABLE REQUIREMENTS OF THE NC DEPARTMENT OF TRANSPORTATION'S "STANDARD FOR ROADS AND STRUCTURES" DATED JANUARY 2018.
2. THE EXISTING UTILITIES BELONG TO THE UNION COUNTY.
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 WATERLINES SHALL ADHERE TO THE UNION COUNTY PUBLIC WORKS SANITARY SEWER AND WATER SPECIFICATIONS REV. 6 AND DETAILS. PERFORM ALL WORK IN ACCORDANCE WITH THE APPLICABLE PLUMBING CODES.
4. THE UTILITY OWNER OWNS THE EXISTING UTILITY FACILITIES AND WILL OWN THE NEW UTILITY FACILITIES AFTER ACCEPTANCE BY THE DEPARTMENT. THE DEPARTMENT OWNS THE CONSTRUCTION CONTRACT AND HAS ADMINISTRATIVE AUTHORITY. COMMUNICATIONS AND DECISIONS BETWEEN THE CONTRACTOR AND UTILITY OWNER ARE NOT BINDING UPON THE DEPARTMENT OR THIS CONTRACT UNLESS AUTHORIZED BY THE ENGINEER. AGREEMENTS BETWEEN THE UTILITY OWNER AND CONTRACTOR FOR THE WORK THAT IS NOT PART OF THIS CONTRACT OR IS SECONDARY TO THIS CONTRACT ARE ALLOWED, BUT ARE NOT BINDING UPON THE DEPARTMENT.
5. PROVIDE ACCESS FOR THE DEPARTMENT PERSONNEL AND THE OWNER'S REPRESENTATIVES TO ALL PHASES OF CONSTRUCTION. NOTIFY DEPARTMENT PERSONNEL AND THE UTILITY OWNER TWO WEEKS PRIOR TO COMMENCEMENT OF ANY WORK AND ONE WEEK PRIOR TO SERVICE INTERRUPTION. KEEP UTILITY OWNERS' REPRESENTATIVES INFORMED OF WORK PROGRESS AND PROVIDE OPPORTUNITY FOR INSPECTION OF CONSTRUCTION AND TESTING.

6. THE PLANS DEPICT THE BEST AVAILABLE INFORMATION FOR THE LOCATION, SIZE, AND TYPE OF MATERIAL FOR ALL EXISTING UTILITIES. MAKE INVESTIGATIONS FOR DETERMINING THE EXACT LOCATION, SIZE, AND TYPE OF 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 NCDOT STANDARD SPECIFICATIONS.

LIST OF STANDARD DRAWINGS

1. NCDOT STANDARD DRAWING 654.01 "PAVEMENT REPAIRS"

PROJECT SPECIFIC NOTES:

1. ALL PROPOSED 8" WATER LINES SHALL BE AWWA C-900 PVC THICKNESS CLASS SDR 18 WITH A MINIMUM PRESSURE RATING OF 200 PSI. ALL PROPOSED 12" WATER LINES SHALL BE DUCTILE IRON PIPE PC 350. RESTRAINED-JOINT DUCTILE IRON PIPE IS REQUIRED AROUND ALL BENDS, VALVES, IN SCP, ETC.
2. ALL WATER LINE FITTINGS SHALL BE RESTRAINED-JOINT DUCTILE IRON IN ACCORDANCE WITH THE REQUIREMENTS OF EITHER ANSI/AWWA A21.53/C153 OR ANSI/AWWA A21.1 O/C 110. FITTINGS SHALL HAVE CEMENT MORTAR LINING AND SEAL COATED IN ACCORDANCE WITH ANSI/AWWA A21.4/C104.

3. THE JACK AND BORE AT THE RAILROAD CROSSING SHALL BE DONE IN ACCORDANCE WITH CSX DESIGN AND CONSTRUCTION STANDARD SPECIFICATIONS.
4. ALL VALVES SHALL CONFORM TO AWWA C509 FOR BRONZE MOUNTED, RESILIENT SEATED, CAST IRON BODIED GATE VALVES.
5. PROPOSED WATER LINES SHALL BE WRAPPED IN POLYETHYLENE ENCASEMENT FOR 10' EACH SIDE OF GAS LINE CROSSINGS AND WHERE THE WATER LINE AND GAS LINE ARE WITHIN 10 FEET OF EACH OTHER.
6. CONTRACTOR SHALL RETURN ALL REMOVED WATER METERS TO THE UTILITY OWNER.
7. PROVIDE THRUST BLOCKS ON THE EXISTING WATER LINE WHERE TIE-INS ARE MADE AS NECESSARY. REFER TO PLANS.
8. CONTRACTOR SHALL NOT OPERATE ANY VALVES ON THE EXISTING UTILITY SYSTEMS. CONTRACTOR SHALL CONTACT THE UTILITY OWNER TO CONDUCT STRATEGIC OPERATION OF VALVES FOR SERVICE INTERRUPTION IN ORDER TO PERFORM SPECIFIC WORK.
9. ANY BENDS OF PVC WATER PIPE NOT SPECIFICALLY CALLED OUT WITH A 90, 45, 22.5, OR 11.25 DEGREE BEND FITTING, SHALL BE CONSTRUCTED BY A RADIAL BEND OF THE PIPE AS NOTED ON THE PLANS OR IN ACCORDANCE WITH PIPE MANUFACTURER'S SPECIFICATIONS (WHICHEVER IS MORE STRINGENT)- OR A COMBINATION OF BEND FITTINGS AND A RADIAL BEND OF THE PIPE.
10. RESTRAINT JOINT PIPE LENGTH HAS BEEN CALCULATED IN ACCORDANCE WITH THE DUCTILE IRON PIPE RESEARCH ASSOCIATION (DIPRA) STANDARDS FOR ALL FITTINGS. THIS DESIGN ACCOMODATES 20' LAY LENGTH PIPES. REFER TO PROFILES FOR RJ DIP LIMITS.
11. THE PROPOSED UTILITY CONSTRUCTION SHALL MEET THE APPLICABLE REQUIREMENTS OF UNION COUNTY PUBLIC WORKS WATER SPECIFICATIONS.
12. WELL IN ADVANCE OF BEGINNING UTILITY WORK, SOFT DIGS SHALL BE PERFORMED BY CONTRACTOR TO VERIFY ACTUAL WATER LINE DEPTH AND MATERIAL AT PROPOSED TIE-IN LOCATIONS.
13. LAY PIPE STRAIGHT IN ALIGNMENT AND GRADIENT OR FOLLOW TRUE CURVES AS NEARLY AS POSSIBLE. DO NOT DEFLECT ANY JOINT MORE THAN HALF THE MAXIMUM DEFLECTION RECOMMENDED BY THE MANUFACTURER.

UTILITY CONSTRUCTION

14. CONTRACTOR SHALL ADHERE TO SECTION 1530 "ABANDON OR REMOVE UTILITIES" FOR ABANDONMENT OF EXISTING WATER LINES.
15. PRIOR TO THE START OF PROJECT, CONTRACTOR MUST CONTACT MICHAEL CALDWELL OF UNION COUNTY PUBLIC WORKS DEPARTMENT AT 704-968-4150. UNION COUNTY PUBLIC WORKS DEPARTMENT MAY INSPECT WORK AT ANY TIME.
16. NO INTERRUPTION OF EXISTING WATER SERVICE SHALL BE MADE DURING CONSTRUCTION UNTIL AUTHORIZED BY UNION COUNTY PUBLIC WORKS DEPARTMENT. UNION COUNTY PUBLIC WORKS DEPARTMENT WILL BE COPIED ON BOTH THE WATER MAIN PRESSURE TEST REPORT AND THE WATER MAIN CHLORINATION TEST REPORT. UNION COUNTY WILL COLLECT SAMPLES AND PERFORM BACTERIOLOGICAL TESTING. UNION COUNTY WILL NOT ACCEPT TEST RESULTS FORM OUTSIDE TESTING LABS.
17. CONTRACTOR SHALL COORDINATE SHUT DOWN OF ALL WATER LINES MINIMUM OF 96 HOURS IN ADVANCE WITH UNION COUNTY PUBLIC WORKS DEPARTMENT (MICHAEL CALDWELL, 704-968-4150). CONTRACTOR SHALL COMPLETE TIE-INS WITHIN A 6 HOUR WINDOW. MAY REQUIRE NIGHT WORK.
18. IN ACCORDANCE WITH NCDOT SPECIFICATION SECTION 1500-7 SUBMITTALS AND RECORDS, CONTRACTOR TO PROVIDE AS-BUILT PLANS OF THE INSTALLED UTILITY TO UTILITY OWNER AND ENGINEER.
19. FOR CONNECTIONS TO EXISTING WATER LINES, CONTRACTOR TO COORDINATE WITH UNION COUNTY FIELD REPRESENTATIVE. PROVIDE A MINIMUM OF 96 HOURS OF NOTICE TO FIELD REPRESENTATIVE PRIOR TO THE NEED FOR ISOLATION OF WATER LINES.
20. COORDINATE WITH UNION COUNTY FIELD REPRESENTATIVE TO DEVELOP A PLAN TO CONNECT THE NEW WATER LINES TO EXISTING WATER LINES WHILE MINIMIZING WATER SERVICE INTERRUPTIONS. DEVLEOP A PLAN TO PERFORM WATER SERVICE TRANSFERS WITH MINIMUM INTERRUPTION OF SERVICE.
21. LIMIT INTERRUPTION OF SERVICE TO UNION COUNTY WATER CUSTOMERS TO NO MORE THAN 6 HOURS FOR WATER LINE INTERCONNECTIONS, AND 30 MINUTES FOR WATER SERVICE TRANSFERS.

5/14/99

C:\AUG-2023_0912\com\sheredf\older\s\entp\4306200\156543.01\TECH\Utilities\UC\Utility Construction\U5808_ut_notes_UC03A_psh.dgn

UTILITY CONSTRUCTION

CSXT GENERAL NOTES:

1. REFER TO THE CSXT PIPELINE DESIGN & CONSTRUCTION SPECIFICATIONS FOR ADDITIONAL INFORMATION.

2. THE FRONT OF THE PIPE SHALL BE PROVIDED WITH MECHANICAL ARRANGEMENTS OR DEVICES THAT WILL POSITIVELY PREVENT THE AUGER FROM LEADING THE PIPE SO THAT NO UNSUPPORTED EXCAVATION IS AHEAD OF THE PIPE. THE BORE HEAD / AUGER SET-UP (SKETCH OR PHOTOS) SHALL BE SUBMITTED BY CONTRACTOR AND ACCEPTED BY ASSIGNED CSXT DESIGNEE PRIOR TO START OF THE JACK & BORE.

3. THE OPERATION SHALL BE PROGRESSED ON A 24-HOUR BASIS WITHOUT STOPPAGE (EXCEPT FOR ADDING LENGTHS OF PIPE) UNTIL THE LEADING EDGE OF THE PIPE HAS REACHED THE RECEIVING PIT.

4. THE AUGER AND CUTTING HEAD ARRANGEMENT SHALL BE REMOVABLE FROM WITHIN THE PIPE IN THE EVENT AN OBSTRUCTION IS ENCOUNTERED.

5. PIPELINE SHALL BE PROMINENTLY MARKED AT BOTH SIDES OF THE CSXT PROPERTY LINES BY DURABLE, WEATHERPROOF SIGNS LOCATED OVER THE CENTERLINE OF THE PIPE IN ACCORDANCE WITH CSXT SPECIFICATIONS.

6. NO CONSTRUCTION OR ENTRY UPON THE CSXT CORRIDOR IS PERMITTED UNTIL THE DOCUMENT TRANSACTION IS COMPLETED, YOU ARE IN RECEIPT OF A FULLY EXECUTED DOCUMENT, AND YOU HAVE OBTAINED AUTHORITY FROM THE LOCAL ROADMASTER.

7. IF REQUIRED, A DEWATERING PLAN IN ACCORDANCE WITH CSXT SPECIFICATIONS WILL BE SUBMITTED TO THE CSXT DESIGNEE FOR REVIEW AND APPROVAL PRIOR TO ANY DEWATERING OPERATIONS.

8. BLASTING IS NOT PERMITTED UNDER OR ON CSXT PROPERTY.

9. CSXT DOES NOT GRANT OR CONVEY AN EASEMENT FOR THIS INSTALLATION.

10. ALL PERSONNEL SHALL RECEIVE SAFETY BRIEFINGS BY A CSXT FLAGMAN OR DESIGNATED CSXT DESIGNEE EACH DAY BEFORE BEGINNING WORK ON THE RIGHT OF WAY. ADDITIONAL SAFETY BRIEFINGS MAY BE REQUIRED WHEN CONDITIONS AND/OR WORK SITES ARE CHANGED.

11. AGENCY OR ITS CONTRACTOR SHALL ARRANGE AND CONDUCT ITS WORK SO THAT THERE WILL BE NO INTERFERENCE WITH CSXT OPERATIONS, INCLUDING TRAIN, SIGNAL, TELEPHONE AND TELEGRAPHIC SERVICES, OR DAMAGES TO CSXT'S PROPERTY, OR TO POLES, WIRES, AND OTHER FACILITIES OF TENANTS OF CSXT'S PROPERTY OR RIGHT-OF-WAY.

12. CONTRACTOR ACCESS WILL BE LIMITED TO THE IMMEDIATE PROJECT AREA ONLY. THE CSXT RIGHT-OF-WAY OUTSIDE THE PROJECT AREA MAY NOT BE USED FOR CONTRACTOR ACCESS TO THE PROJECT SITE AND NO TEMPORARY AT-GRADE CROSSINGS WILL BE ALLOWED.

13. ALL MATERIAL AND EQUIPMENT WILL BE STAGED TO NOT BLOCK ANY CSXT ACCESS OR MAINTENANCE ROADS. NO HOISTING OR AUXILIARY EQUIPMENT NECESSARY FOR THE PROCEDURE SHALL BE PLACED ON CSXT TRACK STRUCTURE AND / OR BALLAST SECTION. CLEAR WORKING LOCATIONS FOR EQUIPMENT USED WILL BE LAID OUT AND APPROVED BY THE CSXT FLAGGER PRIOR TO EQUIPMENT SET-UP.

14. DURING CONSTRUCTION, THE CONTRACTOR SHALL PROTECT ALL ACTIVE RAILROAD FACILITIES, INCLUDING ELECTRICAL, WATER LINES, SEWER LINES, COMMUNICATION AND SIGNAL LINES AS WELL AS UNDERGROUND PIPING. THE CONTRACTOR SHALL BE REQUIRED TO KEEP ALL EQUIPMENT AND MATERIAL A MINIMUM OF SIX (6) FEET FROM AFOREMENTIONED ELEVATED COMMUNICATION AND SIGNAL FACILITIES.

15. CONTRACTOR MUST CONDUCT ALL OF ITS WORK IN A SAFE MANNER. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH RULES, REGULATIONS, PROCEDURES AND SAFE PRACTICES OF CSXT, OSHA, THE FRA AND ALL OTHER GOVERNMENT AGENCIES HAVING JURISDICTION OVER THE PROJECT.

16. OWNER SHALL REIMBURSE CSXT DIRECTLY FOR ALL COSTS OF FLAGGING AND INSPECTION SERVICE THAT ARE REQUIRED ON ACCOUNT OF CONSTRUCTION WITHIN CSXT PROPERTY SHOWN ON THE PLANS, OR COVERED BY AN APPROVED PLAN REVISION, SUPPLEMENTAL AGREEMENT OR CHANGE ORDER. INSPECTION SERVICE SHALL NOT RELIEVE CONTRACTOR FROM LIABILITY FOR ITS WORK.

17. OWNER OR CONTRACTOR SHALL GIVE A MINIMUM OF 30 DAYS' ADVANCE NOTICE TO CSXT DESIGNEE FOR ANTICIPATED NEED FOR FLAGGING AND INSPECTION SERVICE. NO WORK SHALL BE UNDERTAKEN UNTIL THE FLAG PERSON(S) AND INSPECTOR(S) IS/ARE AT THE JOB SITE. IF IT IS NECESSARY FOR CSXT TO ADVERTISE A FLAGGING JOB FOR BID, CSXT SHALL NOT BE LIABLE FOR THE COST OF DELAYS ATTRIBUTABLE TO OBTAINING SUCH SERVICE.

18. THE RIGHT OF WAY SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN THE CONDITION PRIOR TO BEGINNING THE PROJECT BEFORE FINAL ACCEPTANCE WILL BE PROVIDED. PUNCH LISTS SHALL BE RESPONDED TO PRIOR TO ISSUANCE OF AN ACCEPTANCE MEMORANDUM SIGNED BY THE CSXT DESIGNEE.

19. JACKING PIT: IDENTIFY HAZARDS AND PUT CONTROLS IN PLACE PRIOR TO START OF EXCAVATION. CONTRACTOR SHALL ERECT A BARRIER AND CONSTRUCTION FENCE ALONG THE FACE OF JACKING PIT CONSTRUCTION LIMITS AND NOT ENCROACH PAST IT WHEN PREPARING THE PIT. STAKE OR MARK PIT AS NEEDED FOR DIGGING. EROSION CONTROL DEVICES SHALL BE PLACED AT THE JACKING AND RECEIVING PITS PROTECTING CSXT PROPERTY AND DITCHES TO THE SATISFACTION OF THE CSXT DESIGNEE.

20. TRENCH EXCAVATION SHALL BE OF SUCH DIMENSIONS AS TO PROVIDE AMPLE ROOM FOR CONSTRUCTION. TRENCH WIDTHS SHALL BE AT LEAST 12 INCHES WIDER THAN THE OUTSIDE DIAMETER OF THE PIPE (6-INCHES EITHER SIDE OF THE PIPE). THE BOTTOM OF THE TRENCH, IN SO FAR AS IS PRACTICAL, SHALL BE EXCAVATED TO PERMIT PROPER PLACEMENT OF THE PIPE. THE EXCAVATION FOR THE PIPELINE SHALL INCLUDE THE REMOVAL OF ANY OBSTRUCTIONS ENCOUNTERED. THE TRENCH SHALL BE EXCAVATED TO A DEPTH OF AT LEAST 3 INCHES BELOW THE OUTSIDE BOTTOM ELEVATION OF THE PLANNED PIPELINE. WHEN NECESSARY, ALL EXCAVATIONS SHOULD BE DEWATERED PRIOR TO AND DURING INSTALLATION AND BACKFILLING OF THE SYSTEM.

21. COMPACT ALL BACKFILL IN EXCAVATIONS AND TRENCHES TO 95% MAXIMUM DRY DENSITY AS DEFINED IN ASTM STANDARD D1557. USE CLEAN, SUITABLE BACKFILL MATERIAL, INSTALL IN SIX-INCH LIFTS AND COMPACT.

22. BEDDING MATERIAL SHALL BE GRANULAR BACKFILL IDENTICAL TO SUBBALLAST, OR A WELL GRADED CRUSHED STONE OR GRAVEL.

23. BACKFILL, COVER OR FENCE ALL EXCAVATIONS WHEN UNATTENDED. THE CSXT DESIGNEE WILL APPROVE THE PROTECTION METHOD AND THE TYPE OF FENCING MATERIAL. SET FENCING BACK AT LEAST 3 FEET (91 CENTIMETERS) FROM THE EDGES OF THE EXCAVATION. SET FENCE POSTS SECURELY IN THE GROUND AND INSURE THE FENCING IS SECURELY TIED TO POSTS WITH ZIP TIES OR SOME OTHER TIE WRAP PRODUCT.

24. TRACK MONITORING: PRIOR TO COMMENCING JACK & BORE OPERATIONS, CONTRACTOR SHALL BE REQUIRED TO CONDUCT AND SUBMIT A BASELINE SURVEY ALONG THE TOP OF EACH RAIL UNDER CSXT FLAGGER PROTECTION. ADDITIONAL SURVEY DATA SHALL BE COLLECTED AND SUBMITTED ONCE EACH DAY DURING CASING PIPE INSTALLATION, OR AS DIRECTED BY CSXT DESIGNEE. CONTRACTOR SHALL ALSO TAKE ELEVATION SHOTS AT TOP OF TIE AND TOP OF CASING PIPE BEFORE STARTING THE BORE TO VERIFY DEPTH OF COVER PROPOSED FOR THE WORK HAS BEEN MET.

25. EXCAVATION: IF THE EXCAVATION IS 5 FEET OR GREATER IN DEPTH, THE WALLS MAY BE SLOPED AT 1.5 HORIZONTAL TO 1 VERTICAL TO REDUCE THE RISK OF CAVE-INS OR SLIDES. A SAFE MANNER IN WHICH TO ENTER AND EXIT THE EXCAVATION MUST BE ESTABLISHED. THE TOE OF SLOPES IN EXCAVATION SHALL IN NO CASE BE UNDERCUT BY POWER SHOVELS, BULLDOZERS, GRADERS, BLASTING, OR IN ANY MANNER. EXCAVATION SHALL NOT BE MADE IN EXCESS OF THE AUTHORIZED CROSS-SECTION.

26. PROJECTS THAT GENERATE SOILS FROM CSXT PROPERTY MUST ADHERE TO CSXT'S SOIL MANAGEMENT POLICIES. CSXT REQUIRES SOILS GENERATED FROM ITS PROPERTY TO EITHER BE REUSED ON CSXT PROPERTY OR PROPERLY DISPOSED IN A CSXT APPROVED DISPOSAL FACILITY. CSXT ENVIRONMENTAL DEPARTMENT WILL HANDLE WASTE CHARACTERIZATION AND PROFILING INTO AN APPROVED DISPOSAL FACILITY. CSXT PROHIBITS ANY ENVIRONMENTAL SAMPLING ON ITS PROPERTY UNLESS GRANTED THROUGH A WRITTEN ENVIRONMENTAL RIGHT-OF-ENTRY OR APPROVED IN WRITING BY THE CSXT ENVIRONMENTAL DEPARTMENT. THE MANAGEMENT OF SOILS GENERATED FROM CSXT PROPERTY SHOULD BE PLANNED FOR AND PROPERLY PERMITTED (IF APPLICABLE) PRIOR TO INITIATING ANY WORK ON CSXT PROPERTY. A LIST OF CSXT APPROVED LABORATORIES AND/OR DISPOSAL FACILITIES MAY BE OBTAINED FROM THE CSXT MANAGER ENVIRONMENTAL PROGRAMS.

PROJECT REFERENCE NO.	SHEET NO.
U-5808	UC-3A
DESIGNED BY: KJB	
DRAWN BY: JLS	
CHECKED BY: RJD	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
Mead&Hunt <small>111 E. Hargett Street, Suite 300 Raleigh, North Carolina 27601 919-714-8870 meadhunt.com NC License No. F-1235</small>	

UTILITY CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

5/14/99

UTILITY CONSTRUCTION

CSXT GENERAL NOTES:

27. CONTRACTOR ALSO HAS THE SOLE RESPONSIBILITY OF ASCERTAINING THAT ALL OTHER UTILITIES HAVE BEEN PROPERLY LOCATED BY COMPLYING WITH THE LOCAL "CALL BEFORE YOU DIG" REGULATION(S). CONTRACTOR SHALL SOLELY BE RESPONSIBLE FOR NOTIFYING OWNERS OF ADJACENT PROPERTIES AND OF UNDERGROUND FACILITIES AND UTILITY OWNERS WHEN PROSECUTION OF THE WORK MAY AFFECT THEM, AND SHALL COOPERATE WITH THEM IN THE PROTECTION, REMOVAL, RELOCATION AND REPLACEMENT OF THEIR PROPERTY.

28. CONTRACTOR SHALL CONDUCT "PRE-DIG" MEETING PRIOR TO CONSTRUCTION WORK, WITH ALL SUBCONTRACTORS AND WORKERS TO REVIEW THE LOCATION OF ALL UTILITIES AS MARKED OUT, EXCAVATION PROCEDURES, AND TO CONFIRM THE "ONE CALL" REQUEST. THIS PERMIT IS SUBJECT TO ANY EXISTING UTILITIES THAT MAY BE IN CONFLICT WITH THE DESIGN AND REQUIRES POTHOLING. ALL EXISTING UTILITIES ARE REQUIRED TO BE POTHOLED PRIOR TO COMMENCEMENT OF CONSTRUCTION AND SHALL BE PERFORMED IN ACCORDANCE WITH CSXT SPECIFICATIONS. HAND EXPOSE LINES TO A POINT OF NO CONFLICT (24 INCHES ON EITHER SIDE OF THE UNDERGROUND INSTALLATION). IF MARKED UTILITY CANNOT BE LOCATED, EXCAVATION MUST NOT PROCEED AND YOU MUST NOTIFY THE ONE CALL NUMBER OR UTILITY COMPANY TO PROVIDE ADDITIONAL INFORMATION TO DETERMINE THE EXACT LOCATION.

29. BEFORE EXCAVATING, ALL SIGNAL CABLES AND OTHER UTILITIES MUST BE LOCATED AND MARKED/FLAGGED. CONTRACTOR SHALL BE HELD LIABLE FOR ANY DAMAGES TO CSXT COMMUNICATION & SIGNAL FACILITIES.

PROJECT REFERENCE NO. U-5808	SHEET NO. UC-3B
DESIGNED BY: KJB	
DRAWN BY: JLS	
CHECKED BY: RJD	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
Mead&Hunt <small>111 E. Hargett Street, Suite 300 Raleigh, North Carolina 27601 919-714-8870 meadhunt.com NC License No. F-1235</small>	

UTILITY CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

C:\AUG-2023_09:22
 com\sheredf\older\s\entp\4306200\156543.01\TECH\Utilities\UC\Utility Construction\U5808_utl_notes_UC03B_psh.dgn

5/14/99

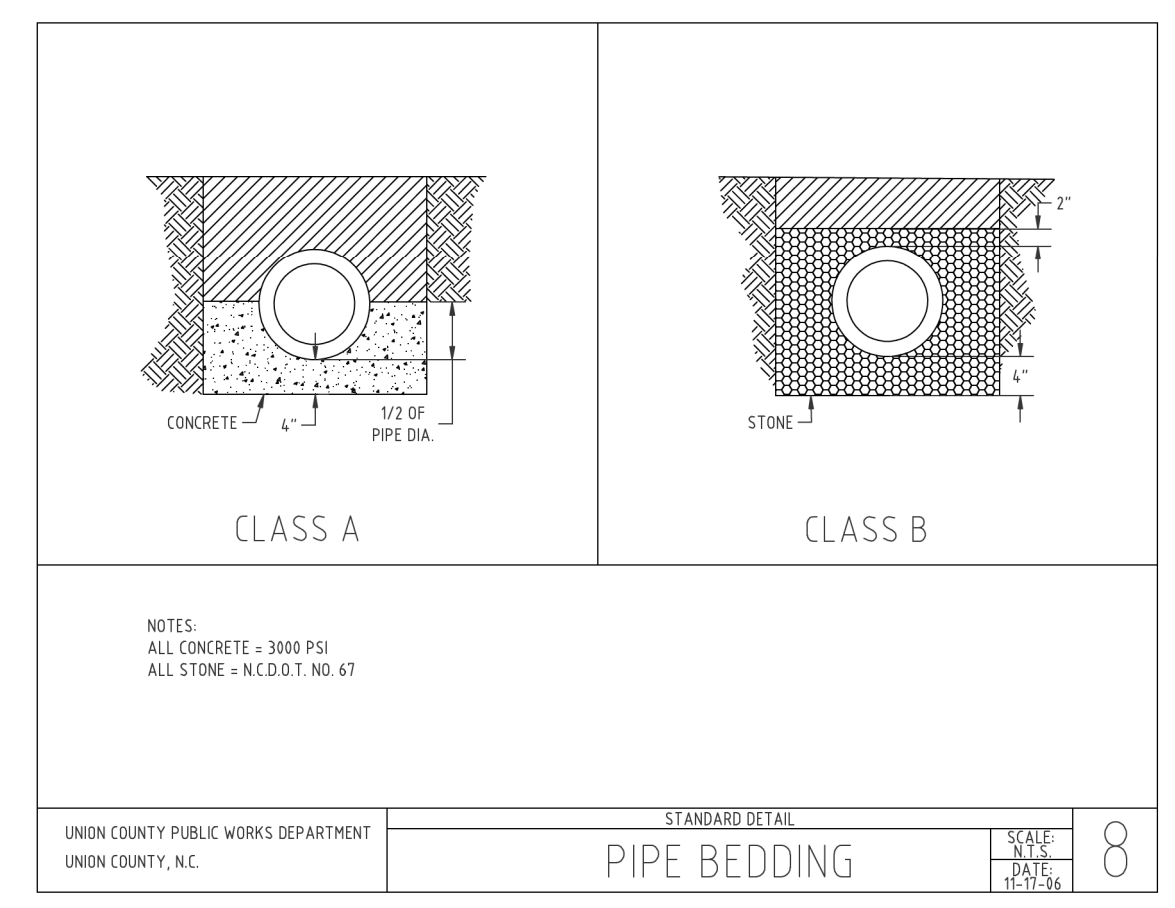
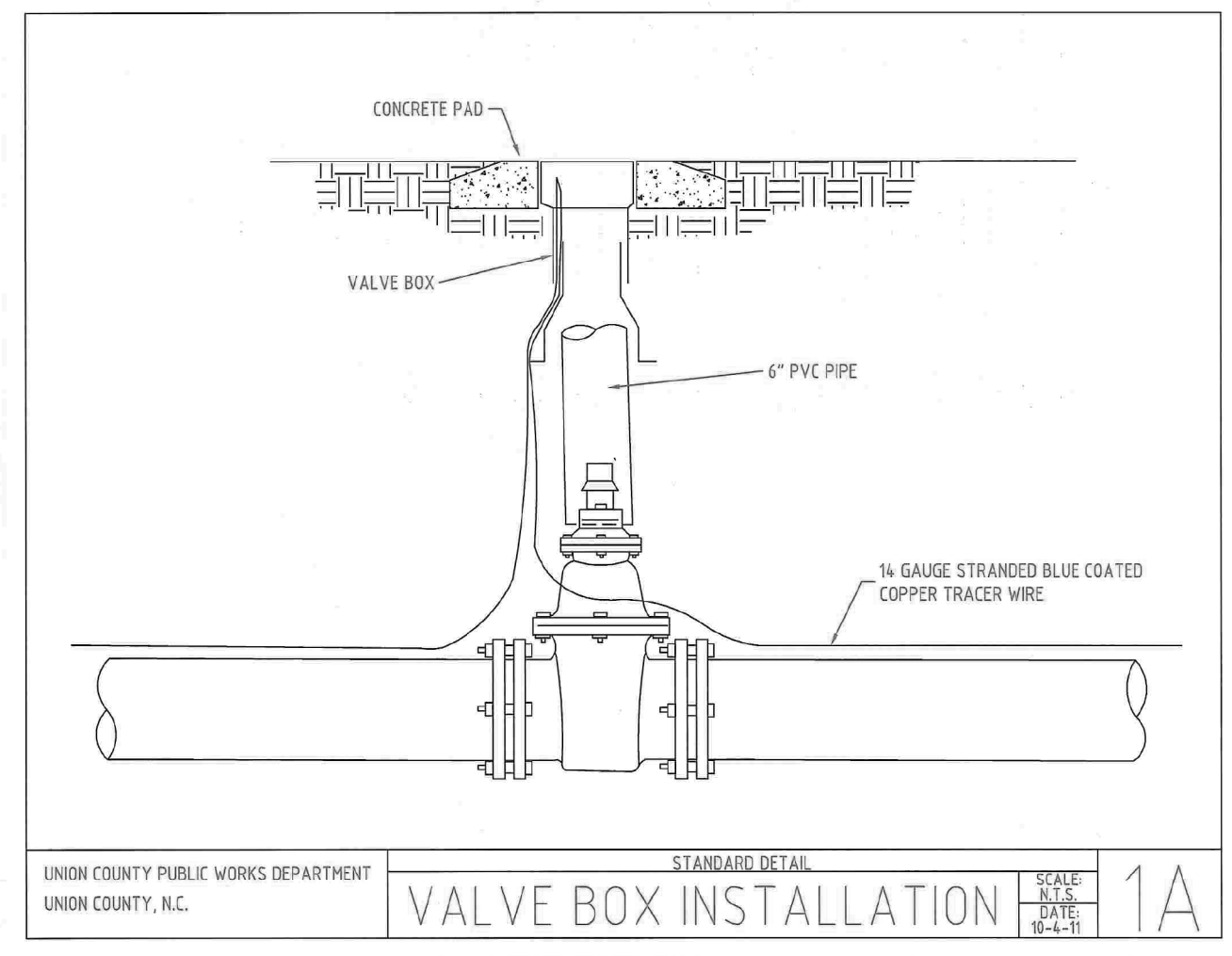
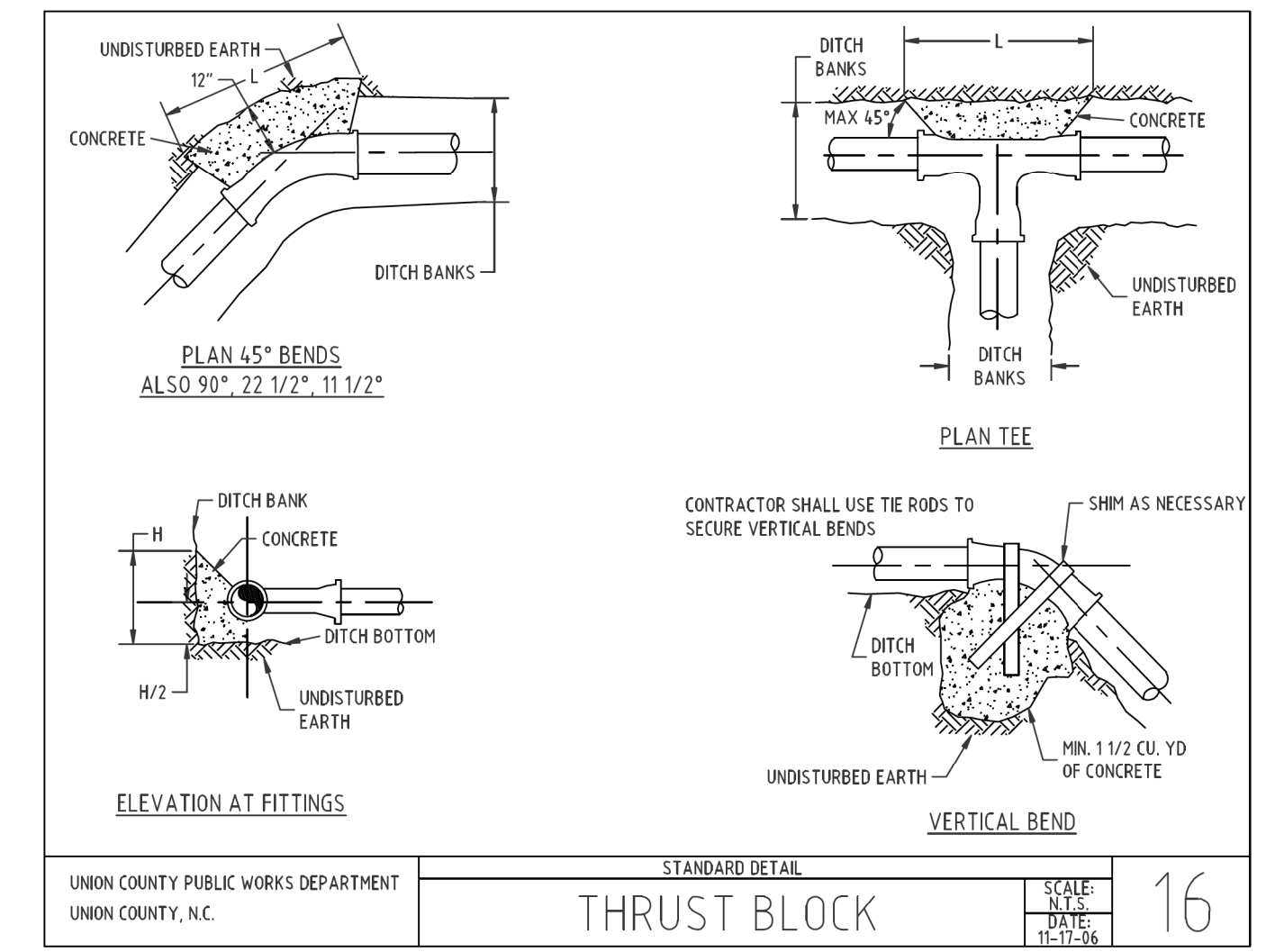
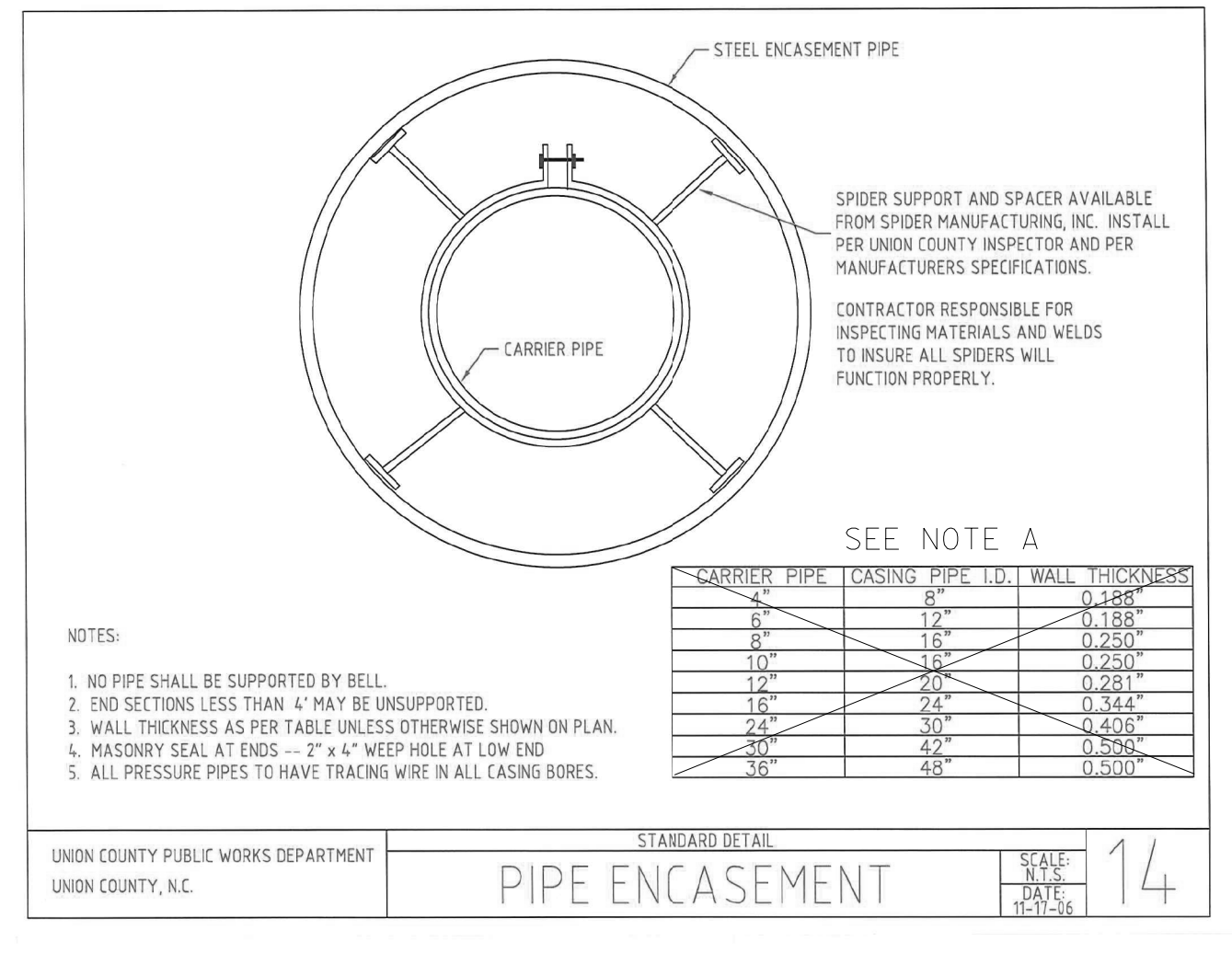
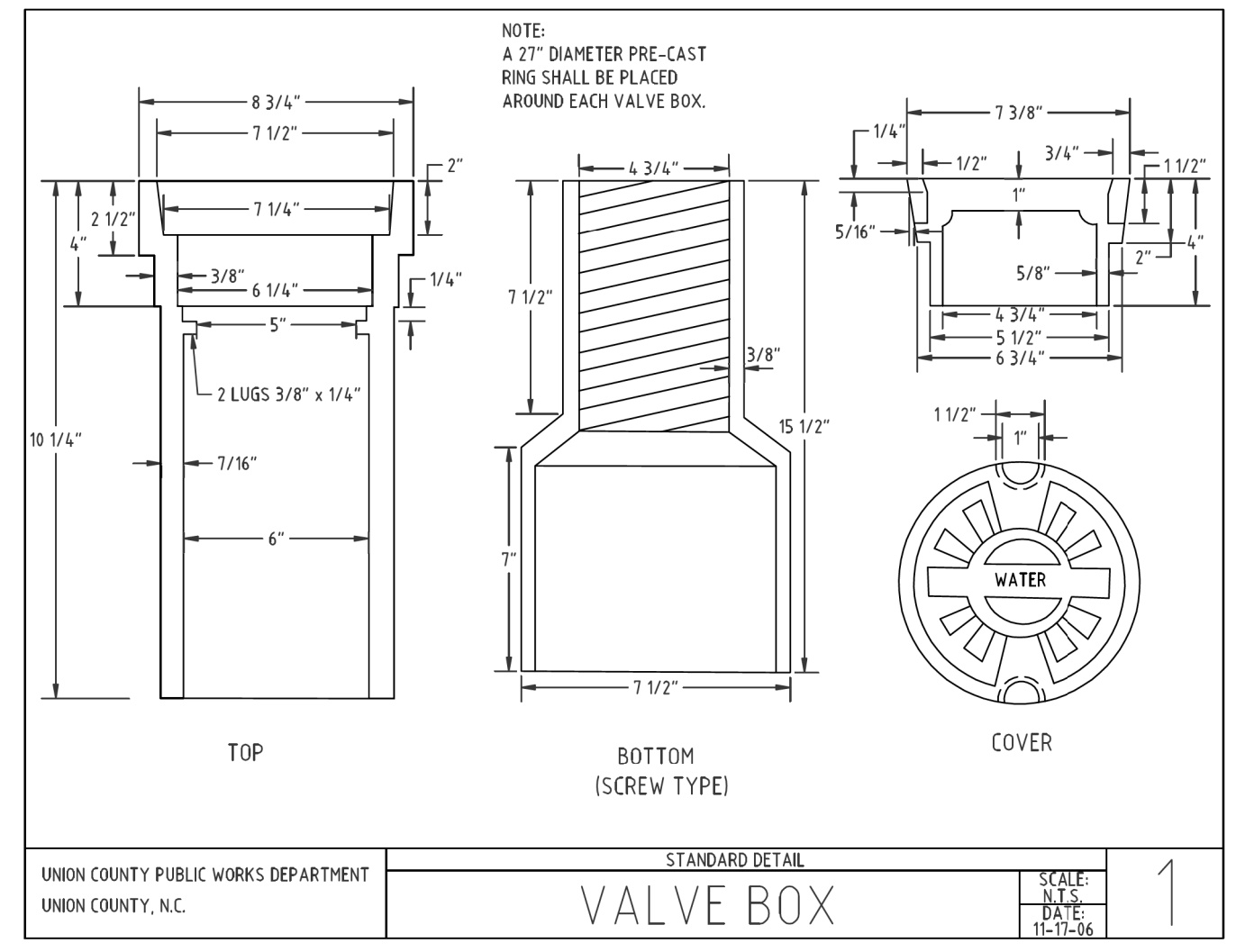
PROJECT TYPICAL DETAILS

PROJECT REFERENCE NO.	SHEET NO.
U-5808	UC-3C
DESIGNED BY: KJB	
DRAWN BY: JLS	
CHECKED BY: RJD	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151 UTILITY CONSTRUCTION PLANS ONLY 111 E. Hargett Street, Suite 300 Raleigh, North Carolina 27601 919-714-8870 mead@mead.com NC License No. F-1235	

UTILITY CONSTRUCTION

NOTE A:
NCDOT REQUIRED CASING PIPE DIAMETER AND THICKNESS DESCRIBED BELOW PER CARRIER PIPE SIZE FOR THIS PROJECT.

CARRIER PIPE	CASING PIPE I.D.	WALL THICKNESS
6"	8"	0.375"
8"	10"	0.375"
12"	14"	0.375"



ANCHORAGE SCHEDULE

PIPE SIZE	11 1/4" BEND		22 1/2" BEND		45° BEND		90° BEND		TEE		TEST PRESSURE (P.S.I.)
	L	H	L	H	L	H	L	H	L	H	
6"	13"	10"	23"	10"	26"	16"	29"	16"	20"	16"	200
	16"	13"	23"	16"	30"	16"	40"	16"	30"	16"	300
8"	16"	16"	26"	19"	30"	20"	39"	20"	26"	20"	200
	20"	16"	30"	20"	39"	23"	46"	26"	36"	23"	300
12"	26"	19"	40"	23"	43"	30"	50"	33"	40"	30"	200
	36"	20"	53"	26"	60"	33"	70"	36"	50"	36"	300
14"	30"	10"	40"	30"	46"	39"	60"	39"	46"	36"	200
	40"	26"	53"	36"	60"	43"	66"	50"	50"	50"	300
16"	30"	29"	46"	36"	50"	46"	70"	43"	50"	40"	200
	40"	30"	63"	39"	65"	53"	80"	53"	76"	40"	300

THRUST BLOCK DIMENSIONS BASED ON SOIL BEARING CAPACITY OF 2000 P.S.F. AND A WATER TEST PRESSURE OF 150 P.S.I. SIZES OF THRUST BLOCKS MAY BE REVISED BY THE ENGINEER WHERE BEARING CAPACITY OF SOIL VARIES.

PROVIDE TAR PAPER JOINT BETWEEN CONCRETE THRUST BLOCK AND PORTION OF PIPE BEING ANCHORED.

ALL CONCRETE THRUST BLOCKS SHALL BE 2500 P.S.I. CONCRETE.

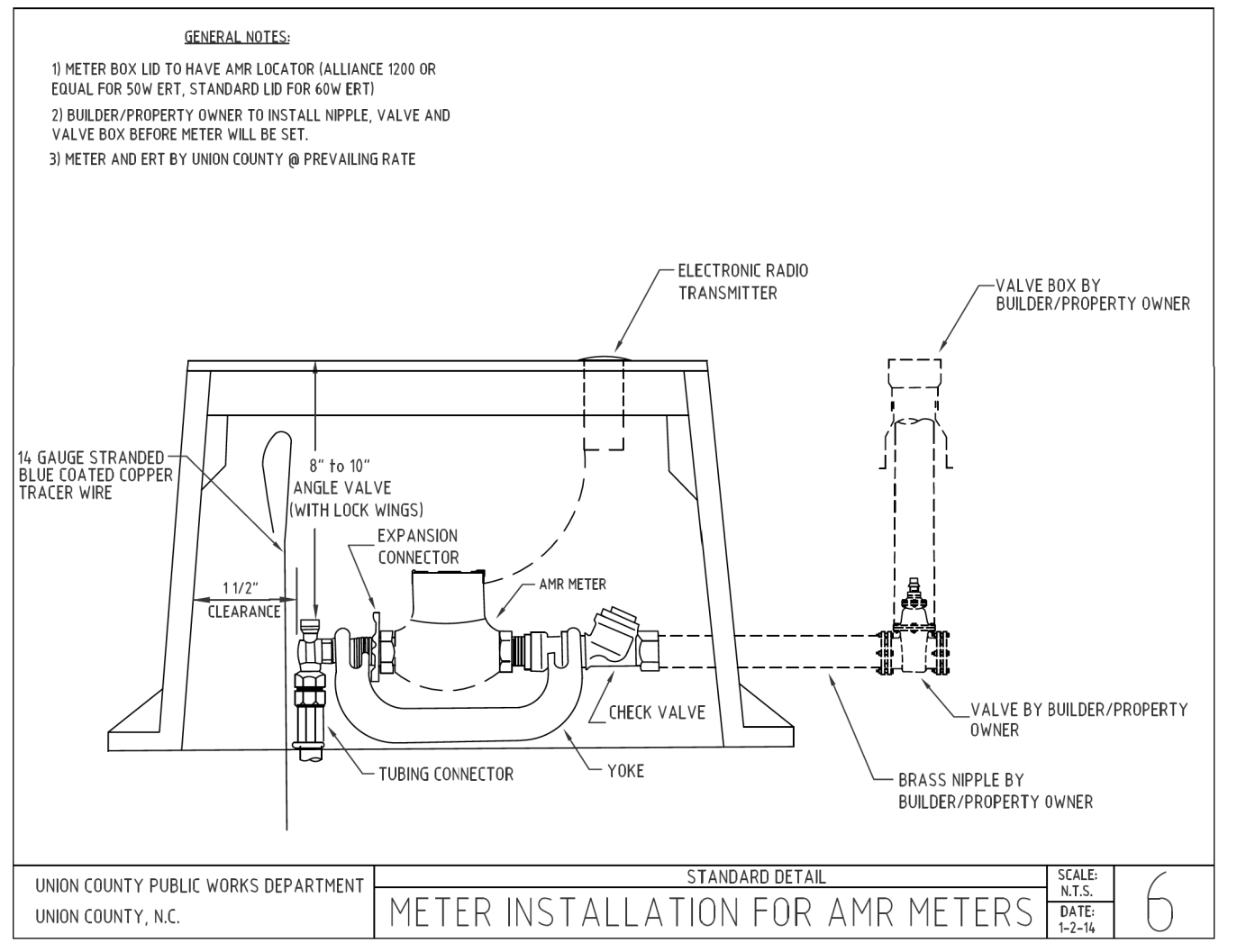
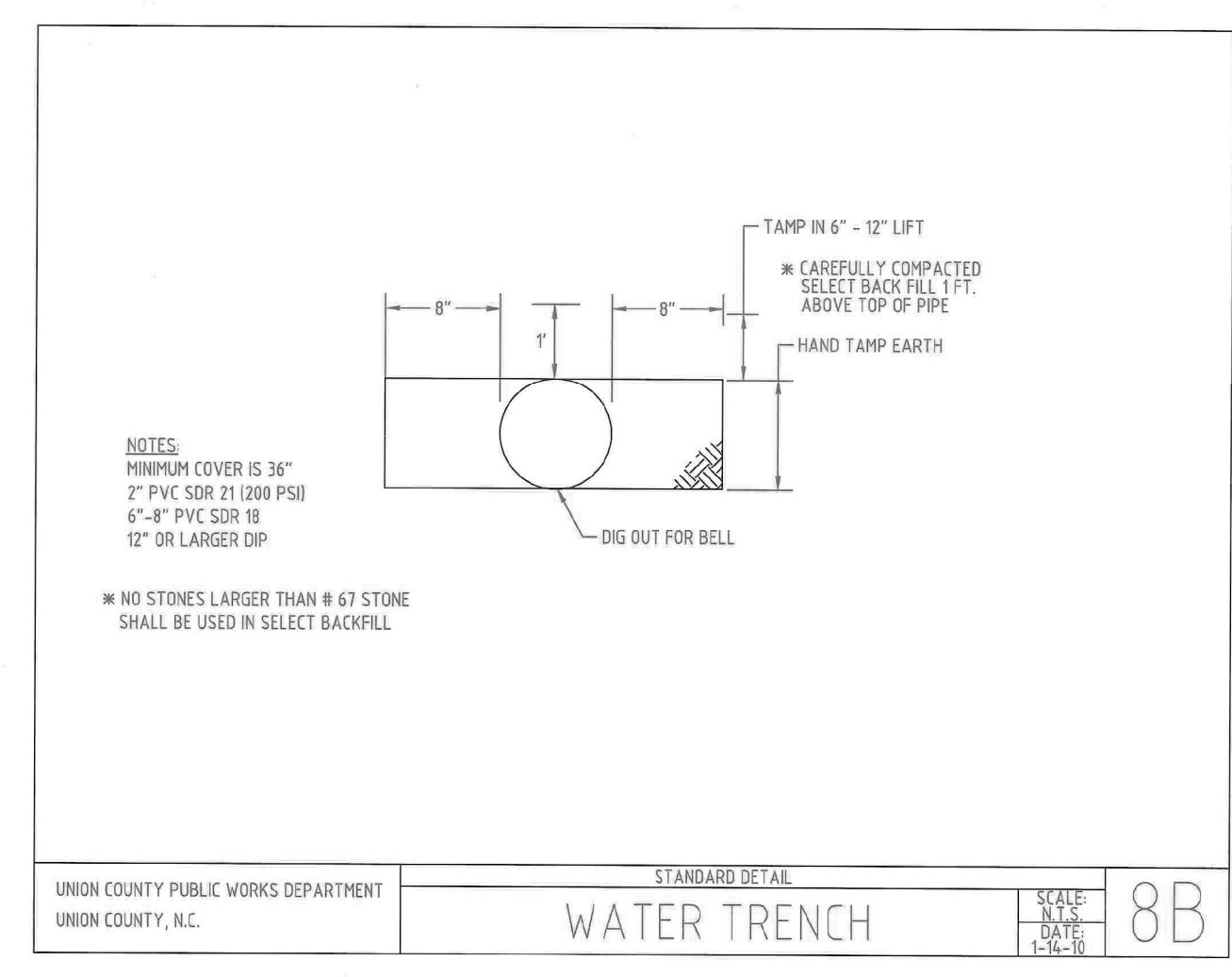
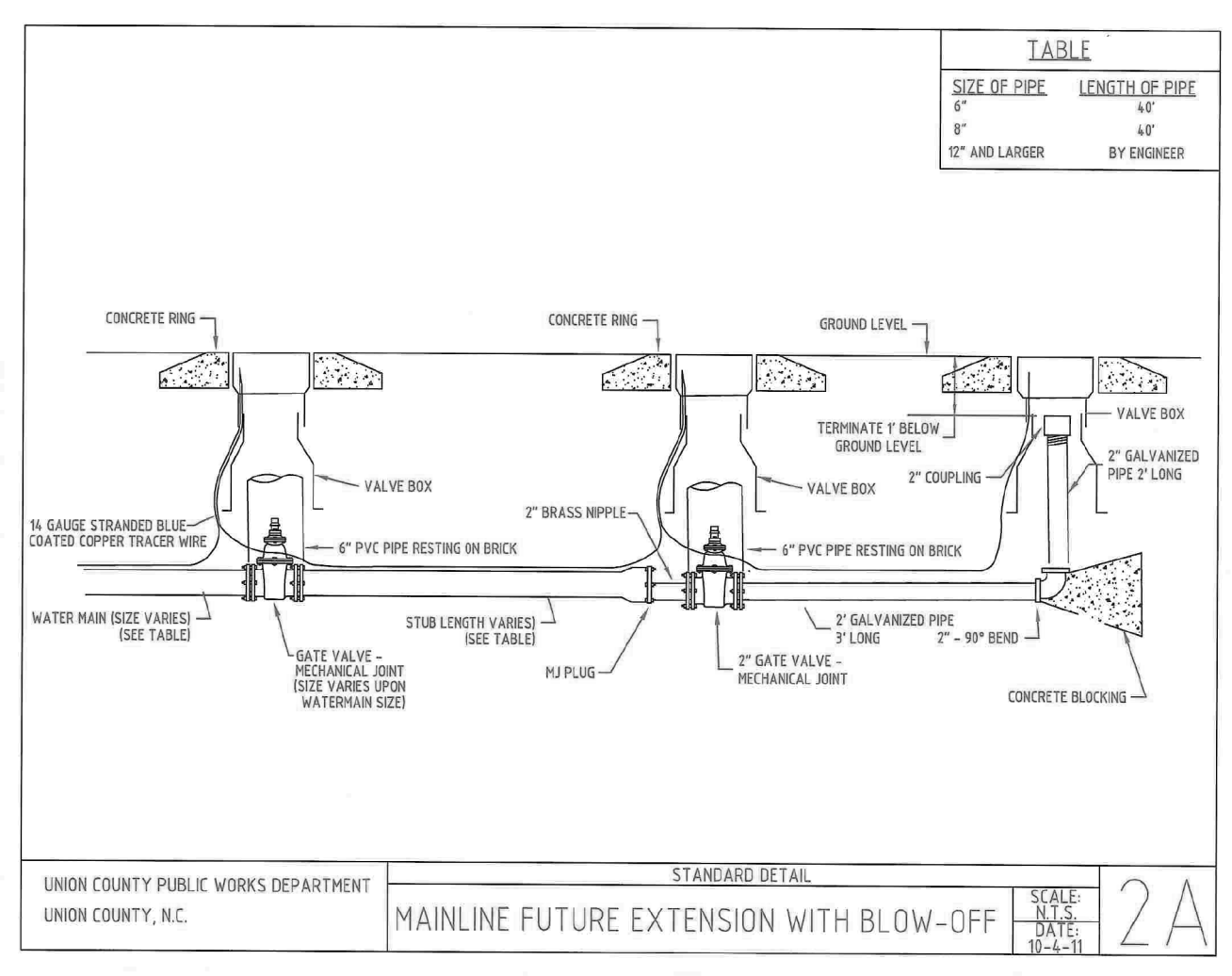
MAXIMUM VERTICAL DEFLECTION SHALL BE 22 1/2".

JOINTS SHALL REMAIN FREE OF CONCRETE FOR INSPECTION, REPAIR OR REPLACEMENT OF JOINTS.

UNION COUNTY PUBLIC WORKS DEPARTMENT
UNION COUNTY, N.C.

STANDARD DETAIL
THRUST BLOCK SPECIFICATIONS

SCALE: N.T.S.
DATE: 11-11-96



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

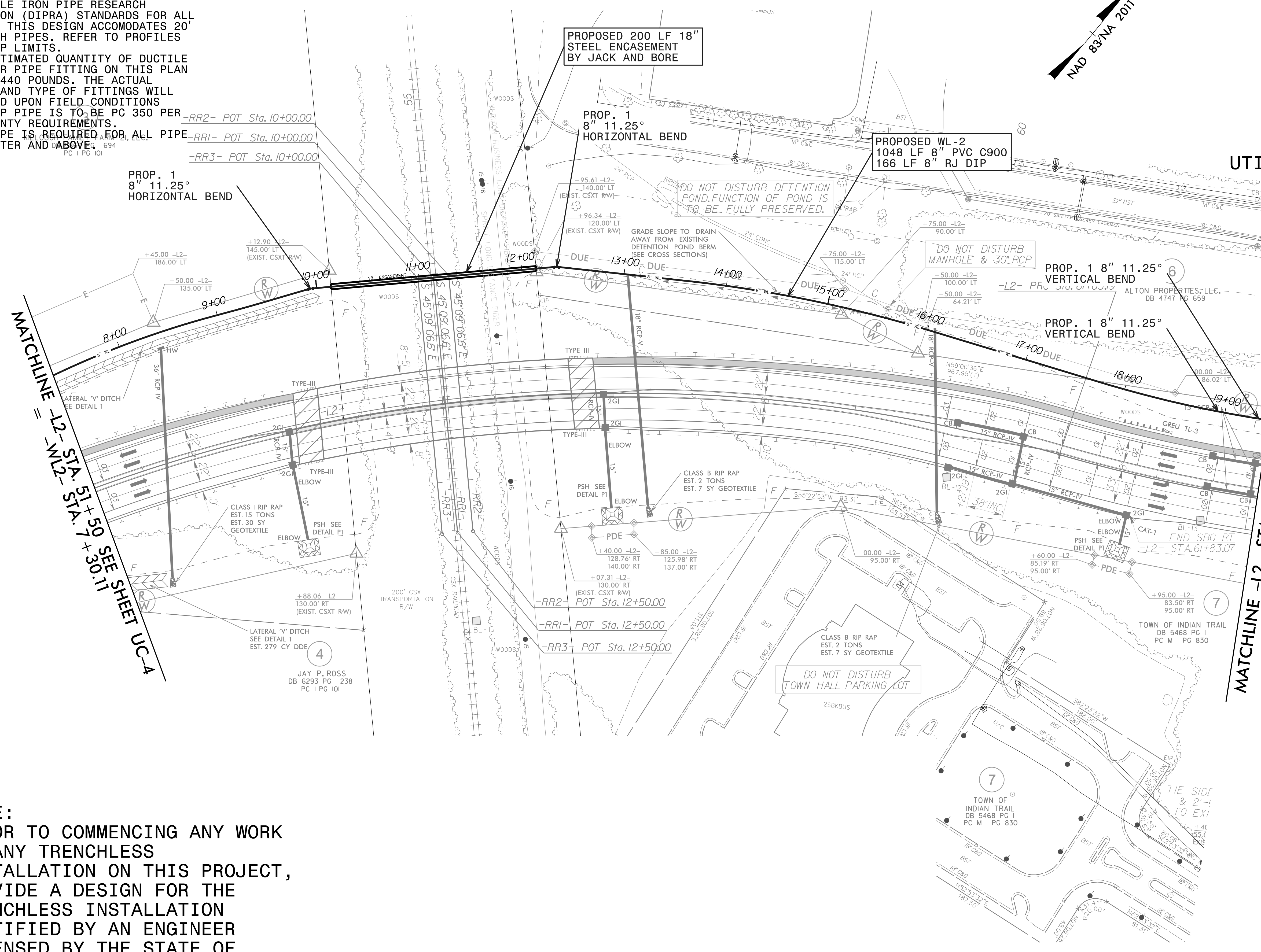
C:\AUG-2023_09:22.com\shared\olde\shere\entp\4306200\156543.01\TECH\Utilities\Construction\U5808_ut_dtl\UC03C_psh.dwg
 11/11/2023 10:58:58 AM

5/14/2019

NOTE:
 1. RESTRAINT JOINT PIPE LENGTH HAS BEEN CALCULATED IN ACCORDANCE WITH THE DUCTILE IRON PIPE RESEARCH ASSOCIATION (DIPRA) STANDARDS FOR ALL FITTINGS. THIS DESIGN ACCOMODATES 20' LAY LENGTH PIPES. REFER TO PROFILES FOR RJ DIP LIMITS.
 2. THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTING ON THIS PLAN SHEET IS 440 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED UPON FIELD CONDITIONS.
 3. ALL DIP PIPE IS TO BE PC 350 PER UNION COUNTY REQUIREMENTS.
 4. DIP PIPE IS REQUIRED FOR ALL PIPE 12" DIAMETER AND ABOVE.

PROJECT REFERENCE NO.	SHEET NO.
U-5808	UC-5
THIS SHEET CORRESPONDS TO RDY-5	
DESIGNED BY: KJB	
DRAWN BY: JLS	
CHECKED BY: RJD	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SECTION PHONE: (919) 707-6690 FAX: (919) 250-4151	
Mead&Hunt 111 E. Hargett Street, Suite 300 Raleigh, North Carolina 27601 919-714-8670 meadhunt.com NC License No. F-1235	

UTILITY CONSTRUCTION



MATCHLINE = -12- STA. 51+50 SEE SHEET UC-4
 MATCHLINE = -12- STA. 7+30.11 SEE SHEET UC-4

MATCHLINE = -12- STA. 63+00 SEE SHEET UC-6
 MATCHLINE = -WL2- STA. 19+43.55

NOTE:
 PRIOR TO COMMENCING ANY WORK ON ANY TRENCHLESS INSTALLATION ON THIS PROJECT, PROVIDE A DESIGN FOR THE TRENCHLESS INSTALLATION CERTIFIED BY AN ENGINEER LICENSED BY THE STATE OF NORTH CAROLINA, AS REQUIRED BY SUBARTICLE 1550-3(B) OF THE STANDARD SPECIFICATIONS.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

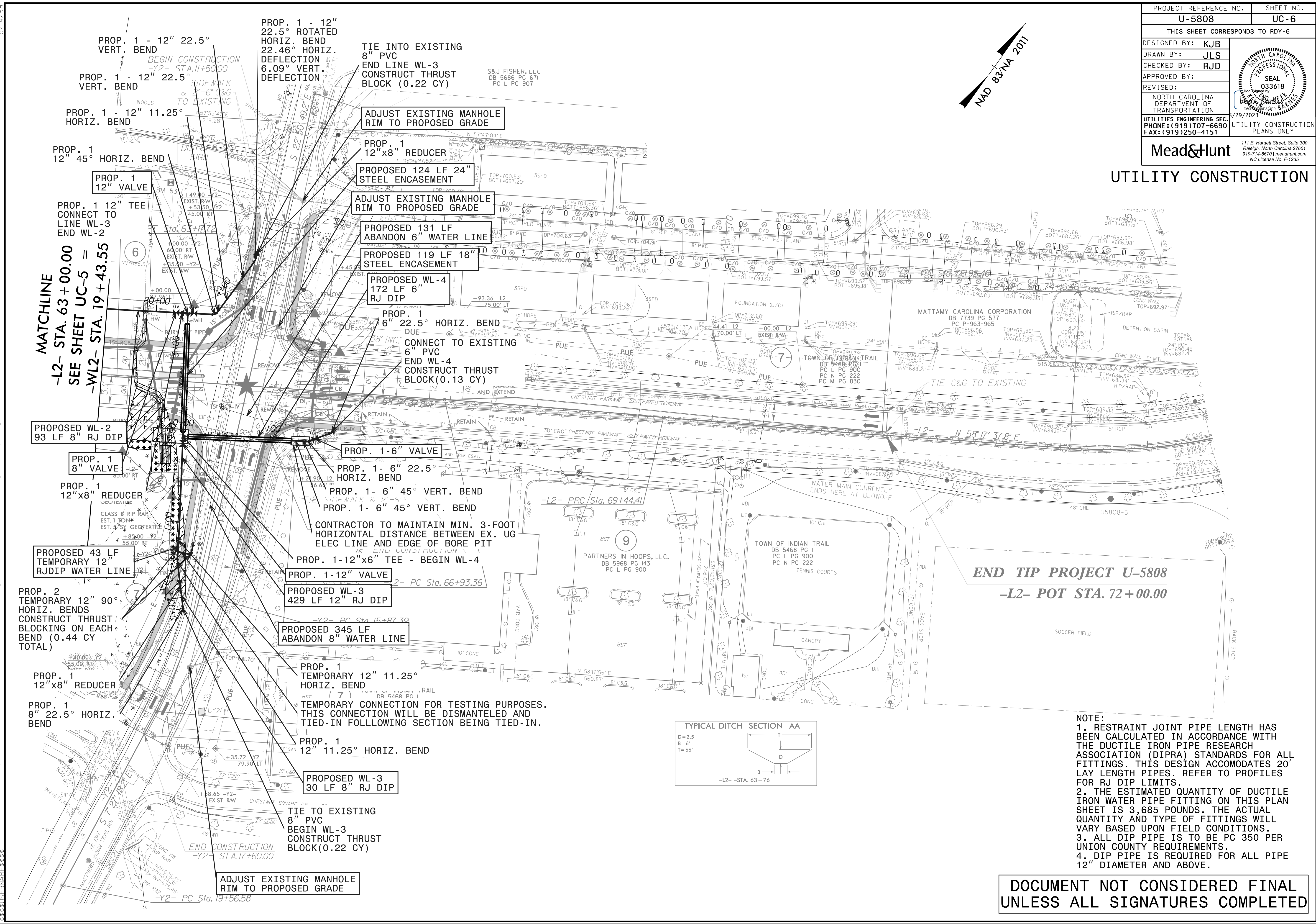
C:\AUC-2023_09\22\com\shored\del-s\entp\43062200\156543.01\TECH\Utilities\UC\Utility Construction\U5808-ut_rdy05_UC5_psh.dgn
 5/14/2019 10:58:38 AM

5/14/2019

PROJECT REFERENCE NO.	SHEET NO.
U-5808	UC-6
THIS SHEET CORRESPONDS TO RDY-6	
DESIGNED BY: KJB	
DRAWN BY: JLS	
CHECKED BY: RJD	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SECTION PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

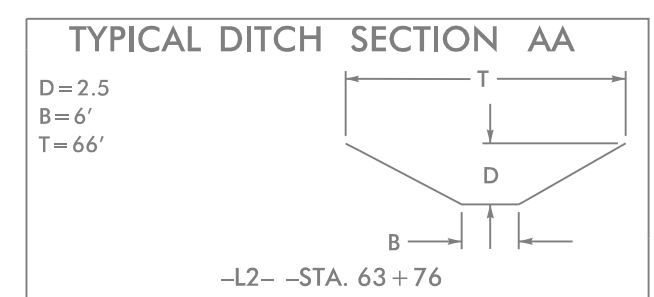
Mead&Hunt
111 E. Hargett Street, Suite 300
Raleigh, North Carolina 27601
919-714-8670 | meadhunt.com
NC License No. F-1235

UTILITY CONSTRUCTION



MATCHLINE
-L2- STA. 63+00.00
SEE SHEET UC-5
-WL2- STA. 19+43.55

END TIP PROJECT U-5808
-L2- POT STA. 72+00.00



- NOTE:**
1. RESTRAINT JOINT PIPE LENGTH HAS BEEN CALCULATED IN ACCORDANCE WITH THE DUCTILE IRON PIPE RESEARCH ASSOCIATION (DIPRA) STANDARDS FOR ALL FITTINGS. THIS DESIGN ACCOMMODATES 20' LAY LENGTH PIPES. REFER TO PROFILES FOR RJ DIP LIMITS.
 2. THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTING ON THIS PLAN SHEET IS 3,685 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED UPON FIELD CONDITIONS.
 3. ALL DIP PIPE IS TO BE PC 350 PER UNION COUNTY REQUIREMENTS.
 4. DIP PIPE IS REQUIRED FOR ALL PIPE 12" DIAMETER AND ABOVE.

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

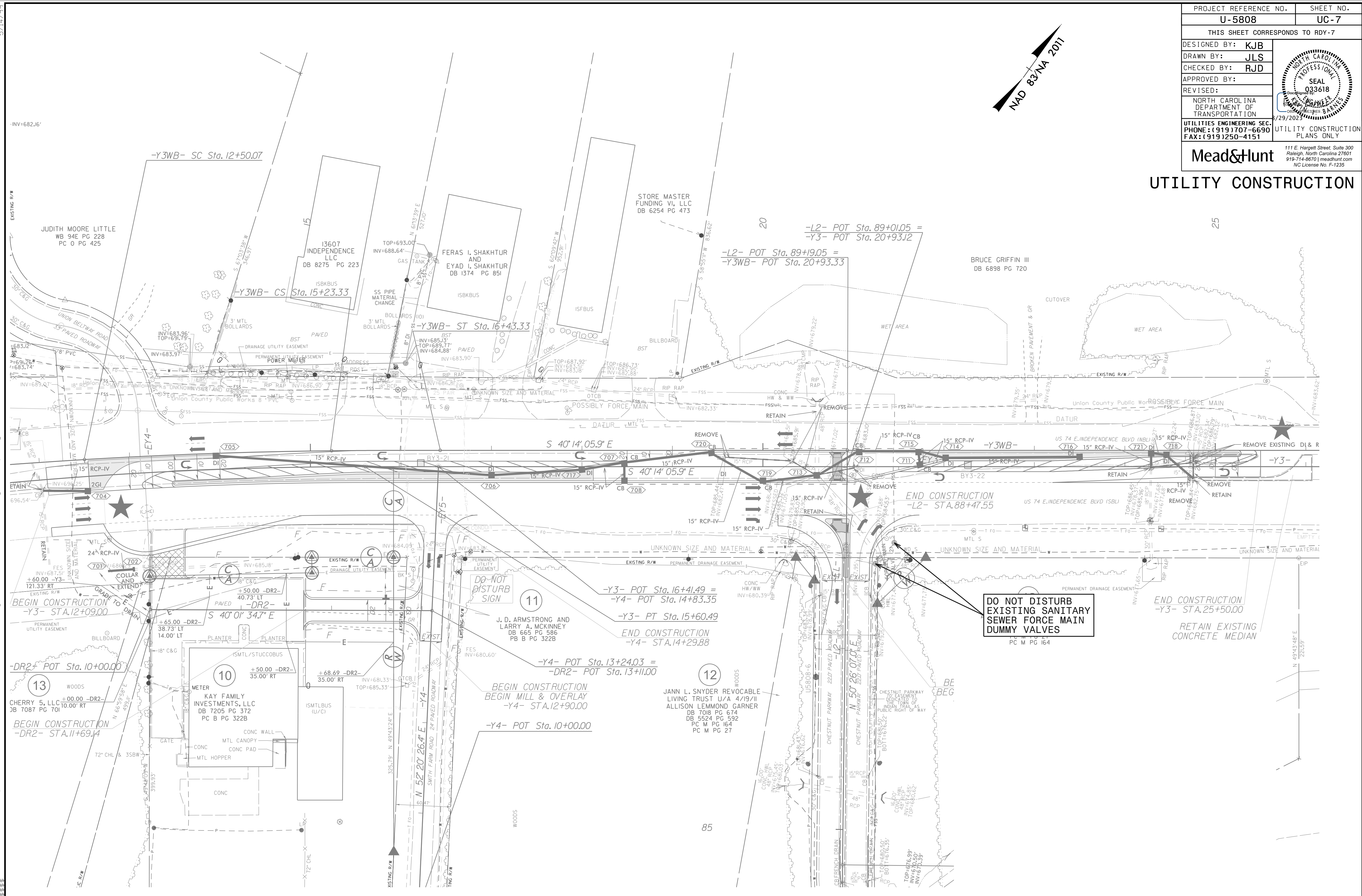
C:\AUC-2023_0912\com\share\edf\ol\der-s\entp\43062200\156543.01\TECH\Utilities\UC\Utility Construction\U5808-ut_rdy_06_UC6_psh.dgn
 5/14/2019 10:53:53 AM

5/14/2023

PROJECT REFERENCE NO.	SHEET NO.
U-5808	UC-7
THIS SHEET CORRESPONDS TO RDY-7	
DESIGNED BY: KJB	
DRAWN BY: JLS	
CHECKED BY: RJD	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SECTION PHONE: (919) 707-6690 FAX: (919) 250-4151	

Mead&Hunt
 111 E. Hargett Street, Suite 300
 Raleigh, North Carolina 27601
 919-714-8670 | meadhunt.com
 NC License No. F-1235

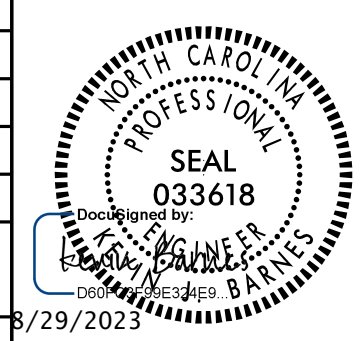
UTILITY CONSTRUCTION

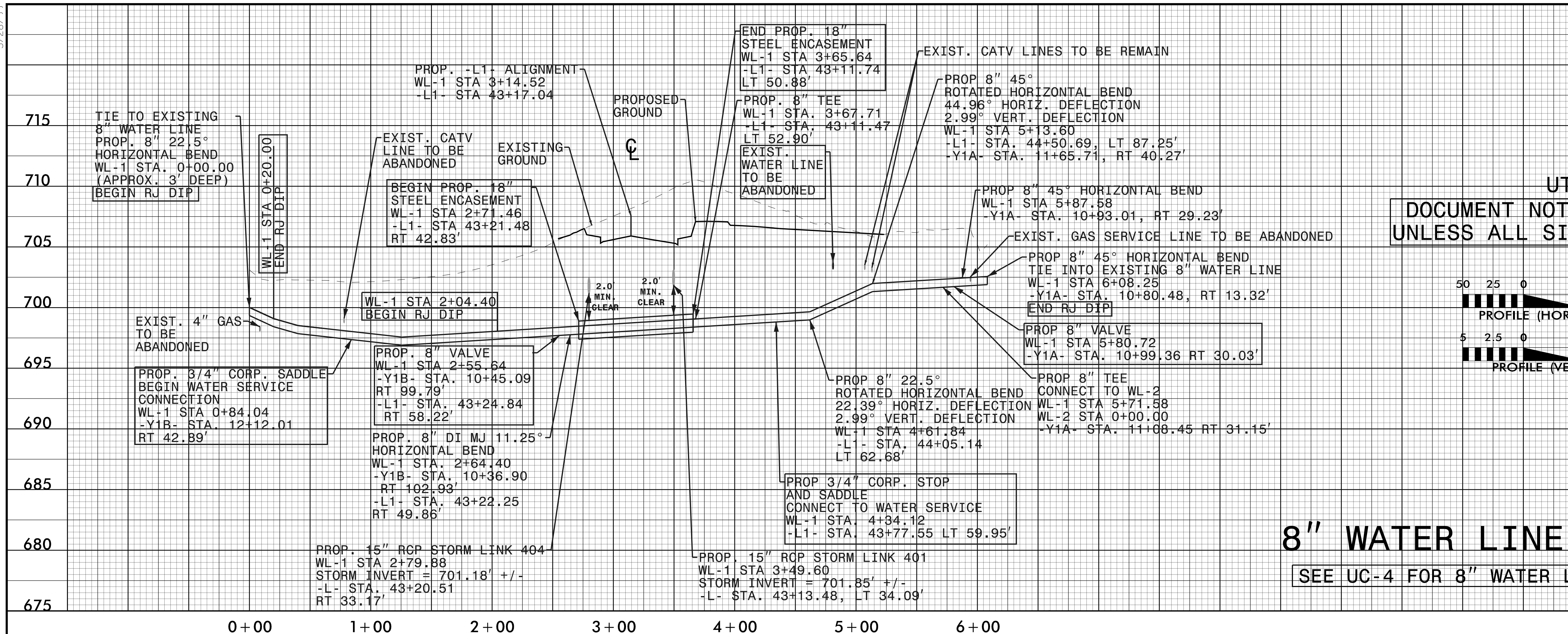


**DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED**

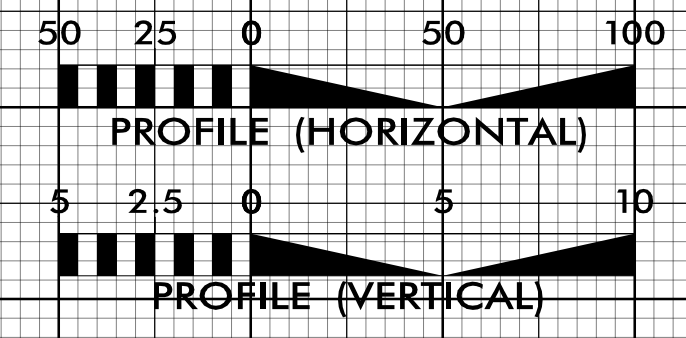
C:\AUG-2023_09:33 com\sheredf\older\entp\4306200\156543\01\TECH\Utilities UC\Utility Construction\U5808-ut_rdy07_UC7_psh.dgn
 5/14/2023 09:33

5/28/2019

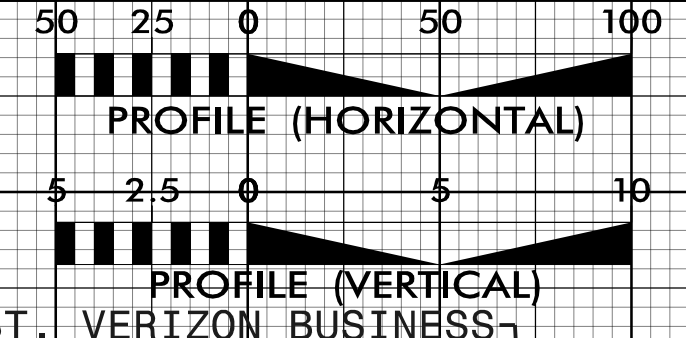
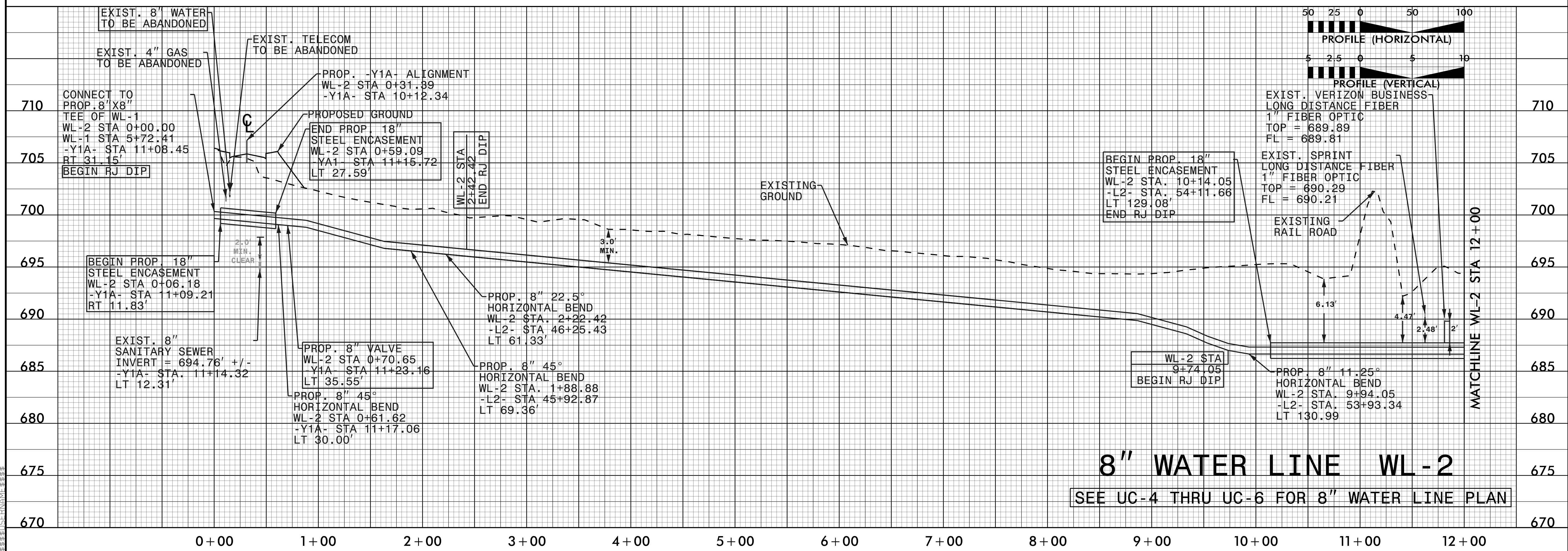
PROJECT REFERENCE NO.	SHEET NO.
U-5808	UC-8
DESIGNED BY: KJB	
DRAWN BY: JLS	
CHECKED BY: RJD	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
3/29/2019 UTILITY CONSTRUCTION PLANS ONLY	



UTILITY CONSTRUCTION
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



8" WATER LINE WL-1
SEE UC-4 FOR 8" WATER LINE PLAN

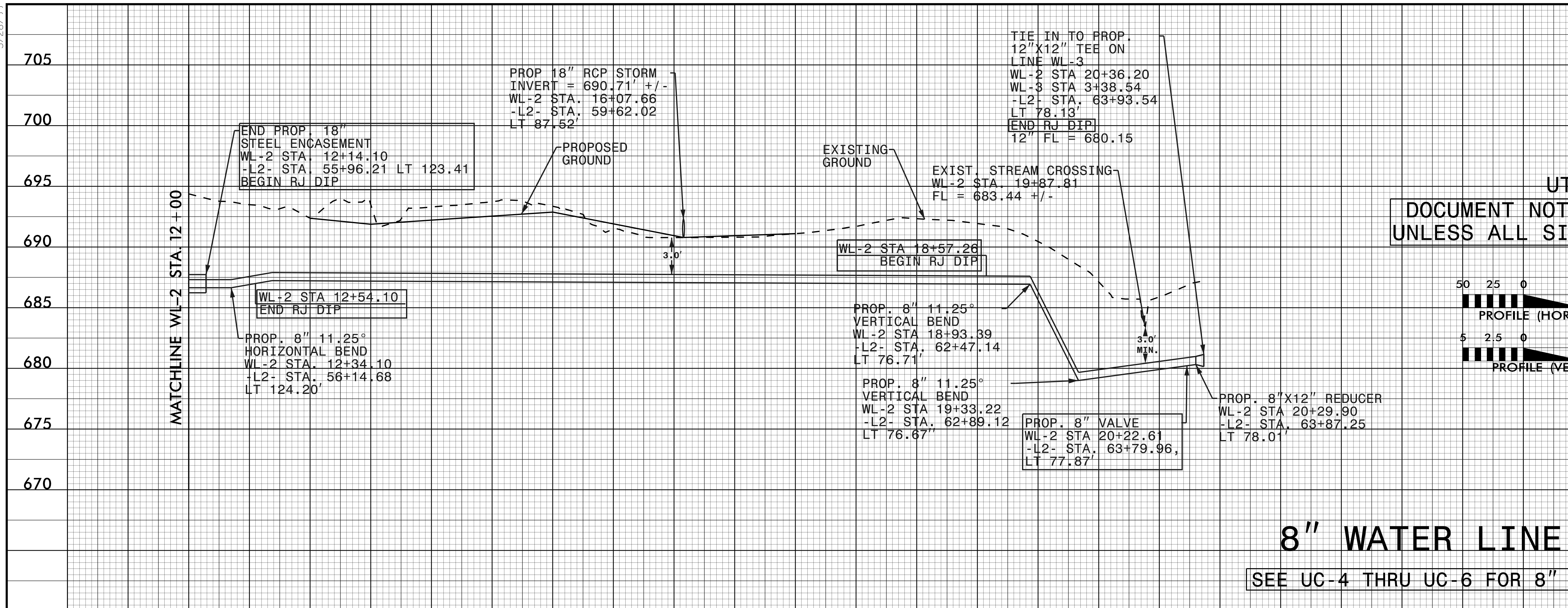


8" WATER LINE WL-2
SEE UC-4 THRU UC-6 FOR 8" WATER LINE PLAN

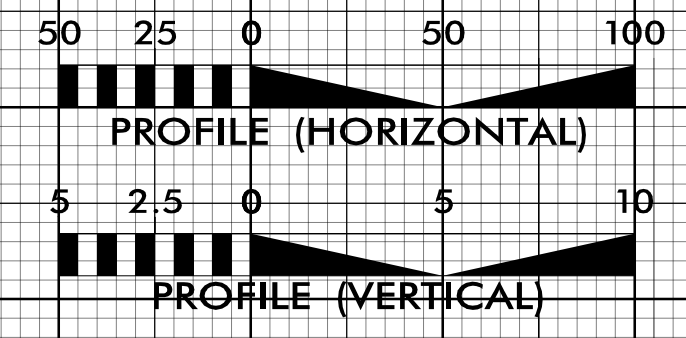
R:\AUG-2023-09\33\com\share\folders\ventp\4306200\156543\01\TECH\Utilities\Utility Construction\U5808_ut_of1_UC07_esh.dgn

5/28/99

PROJECT REFERENCE NO. U-5808	SHEET NO. UC-9
DESIGNED BY: KJB	
DRAWN BY: JLS	
CHECKED BY: RJD	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151 UTILITY CONSTRUCTION PLANS ONLY	

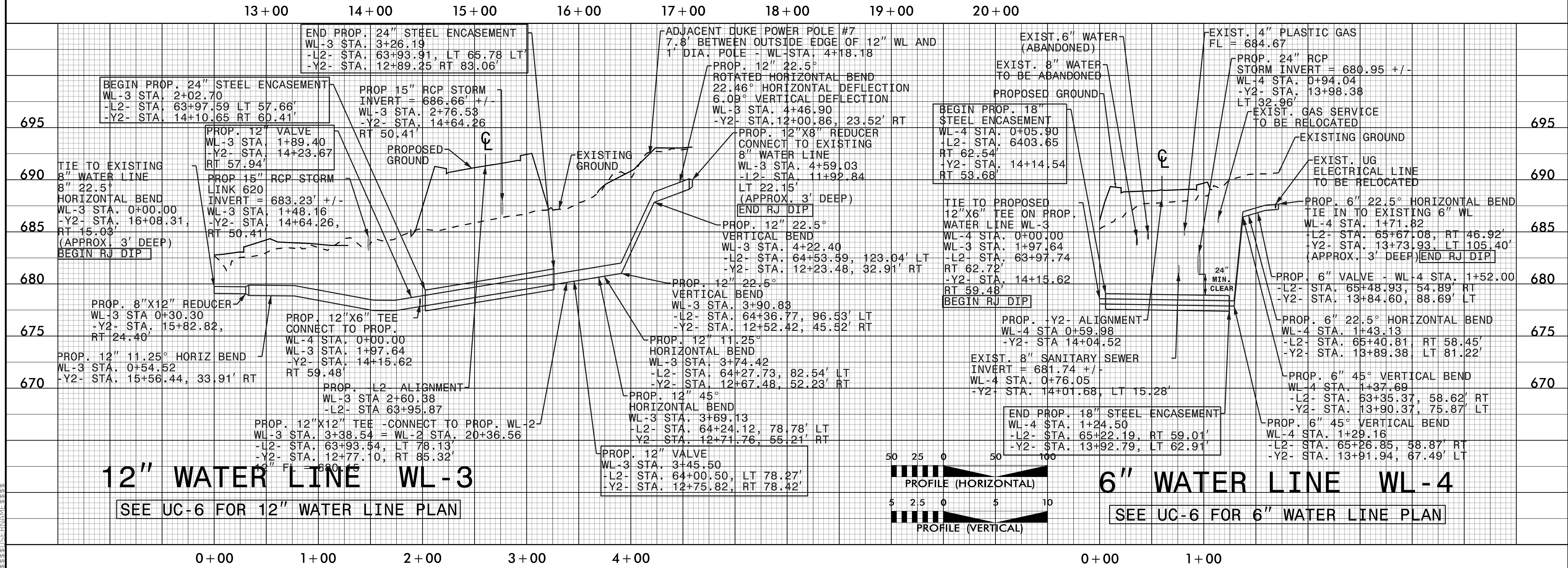


UTILITY CONSTRUCTION
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



8" WATER LINE WL-2

SEE UC-4 THRU UC-6 FOR 8" WATER LINE PLAN

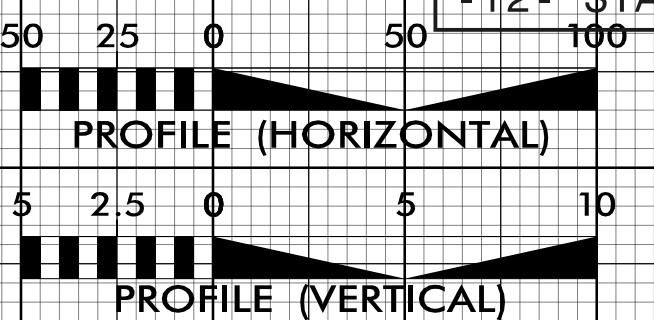


12" WATER LINE WL-3

SEE UC-6 FOR 12" WATER LINE PLAN

6" WATER LINE WL-4

SEE UC-6 FOR 6" WATER LINE PLAN



R:\AUG-2023\09133\1\c\c\share\of\folders\ventp\4306200\156543\01\TECH\Utilities\UC\Utility Construction\U5808_ut_pl1_UC08_psh.dgn