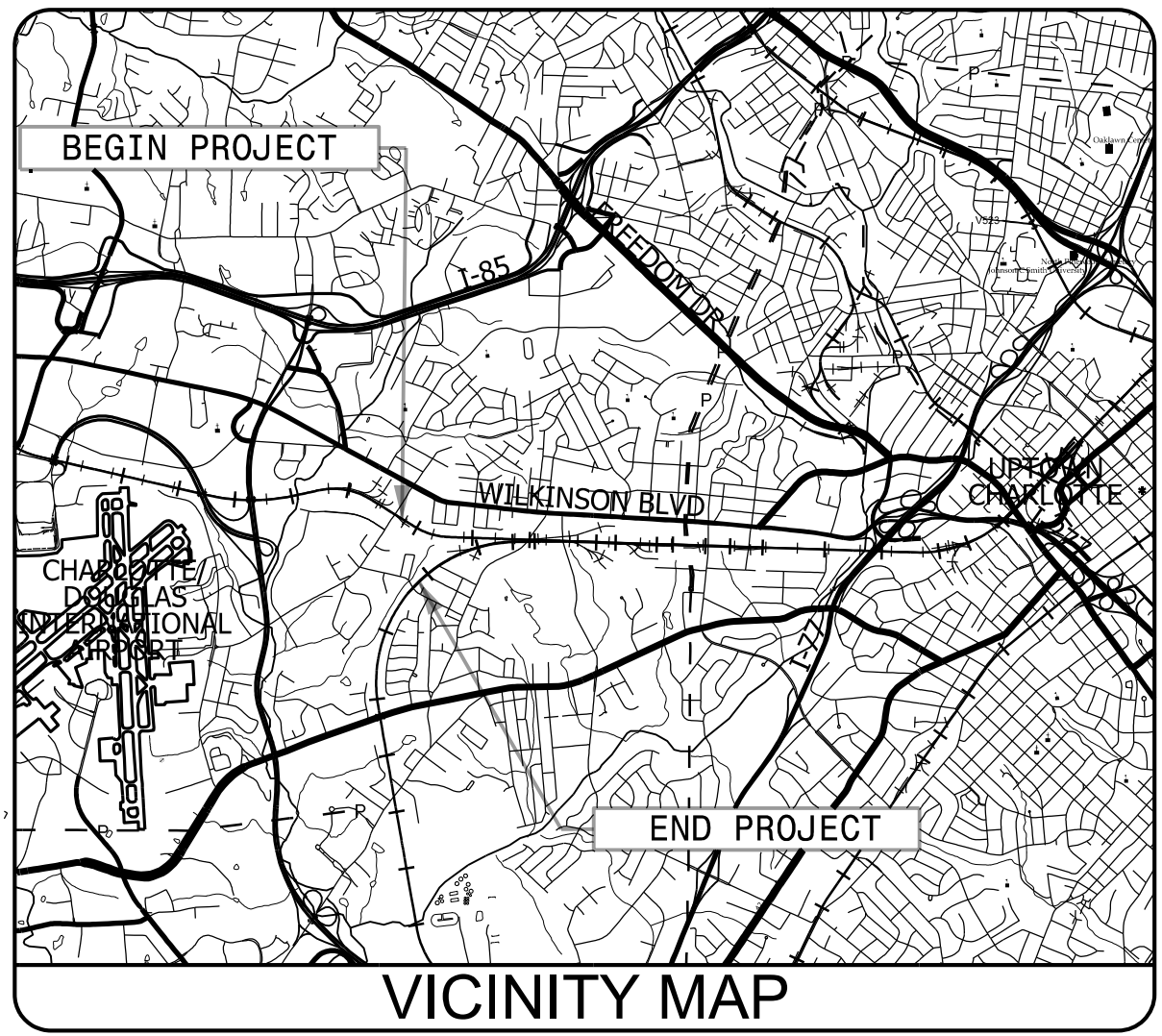


TIP PROJECT: P-5705A



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITY CONSTRUCTION PLANS
MECKLENBURG COUNTY

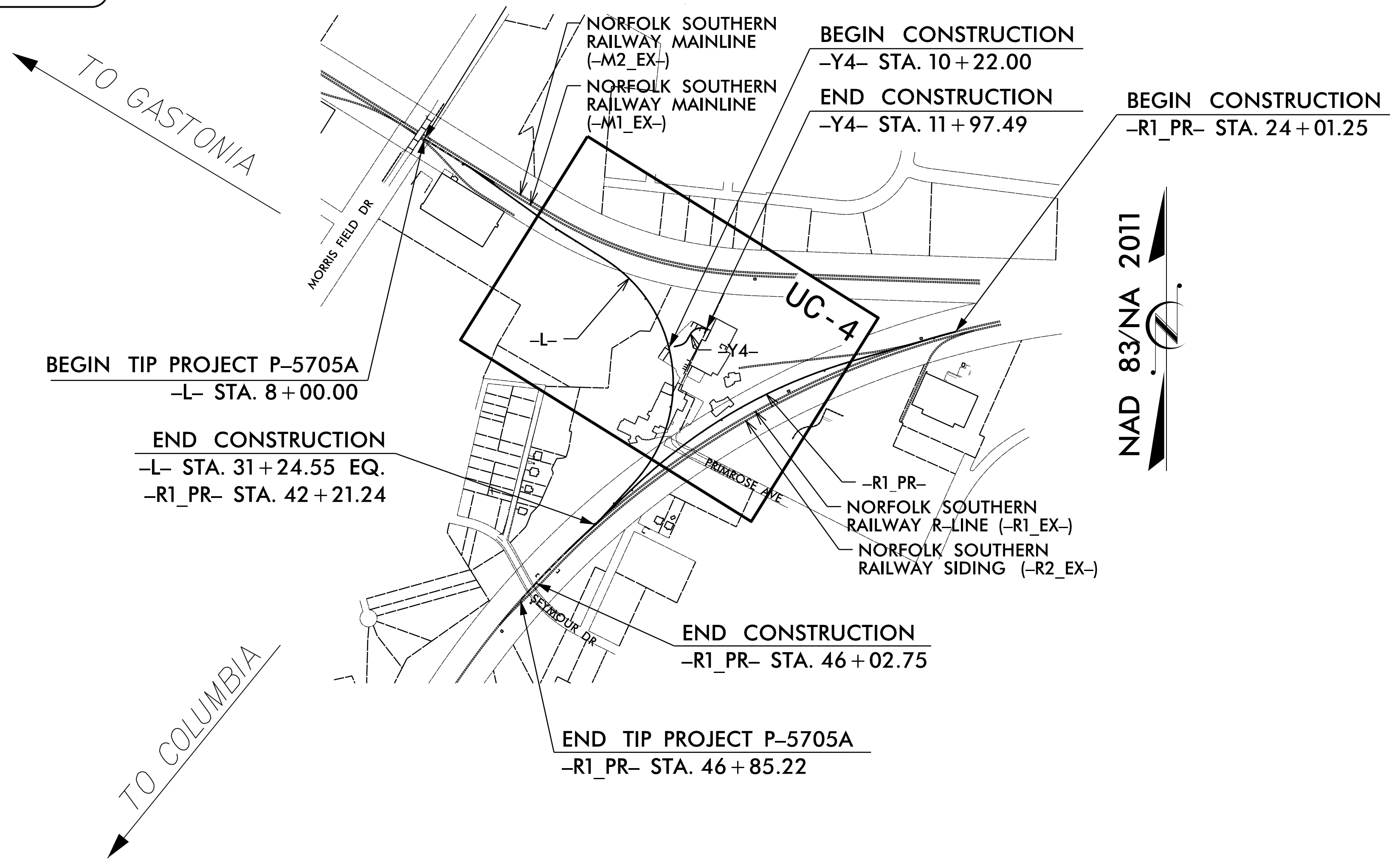
LOCATION: CHARLOTTE JUNCTION NS MP 381.4
NS R-LINE MP R-0.3 TO MP R-0.5
TYPE OF WORK: WATER & SEWER RELOCATIONS

T.I.P. NO.	SHEET NO.
P-5705A	UC-1

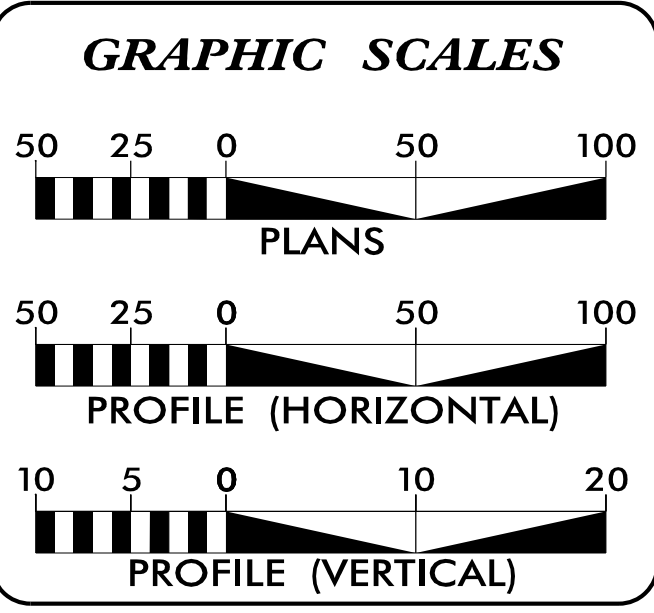
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TO CHARLOTTE →



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INDEX OF SHEETS

SHEET NO.	DESCRIPTION
UC-1	TITLE SHEET
UC-2	PERMITS
UC-2A	UTILITY SYMBOLOGY
UC-3	NOTES
UC-3A TO 3D	DETAILS
UC-4	UTILITY CONSTRUCTION SHEET
UC-4A	UTILITY CONSTRUCTION PHASING
UC-5	PROFILE SHEET

WATER AND SEWER OWNERS ON PROJECT

(A) WATER - CHARLOTTE WATER
(B) SEWER - CHARLOTTE WATER

PREPARED IN THE OFFICE OF:

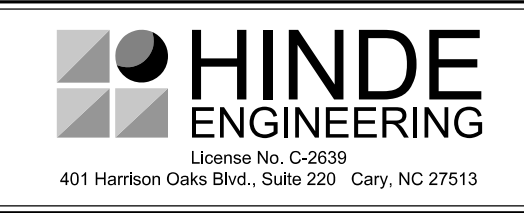
HINDE ENGINEERING
License No. C-2639
401 Harrison Oaks Blvd., Suite 220 Cary, NC 27513
Ph. (919) 653-0001

CLINT L. STEVENS, P.E. UTILITIES PROJECT MANAGER
COREY D. BOUSQUET, P.E. UTILITIES PROJECT ENGINEER
JORDAN K. CHAPMAN UTILITIES PROJECT DESIGNER

SEAL



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PROJECT REFERENCE NO. P-5705A	SHEET NO. UC-2
DESIGNED BY: CDB	
DRAWN BY: JKC	
CHECKED BY: CDB	
APPROVED BY: CLS	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

UTILITY CONSTRUCTION

APPLICATION FOR PERMIT FOR WATER MAIN EXTENSION

PROJECT NAME: PROPOSED 64" WATER LINE RELOCATION TO SERVE P-5705A CHARLOTTE JUNCTION PROJECT

CLTWater PROJECT NO.: CPM-20-21-130

PROJECT DESCRIPTION: PROPOSED 268 L.F. OF 64" WATER MAIN WITH ITS ASSOCIATED FITTINGS IN THE CITY OF CHARLOTTE

DESIGNED BY: FIRM: HINDE ENGINEERING, INC.

ENGINEER: CLINT L. STEVENS, PE

ADDRESS: 401 HARRISON OAKS BLVD., SUITE 220 CARY, N. C. 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. _____ DATE _____

JOSEPH C WILSON, PE, CHIEF ENGINEER
CHARLOTTE WATER
5100 BROOKSHIRE BLVD.
CHARLOTTE, NORTH CAROLINA 28216

**APPLICATION FOR NON-DISCHARGE PERMIT
GRAVITY SEWER MAIN EXTENSION
CHARLOTTE WATER**

PROJECT NAME PROPOSED 12" SANITARY SEWER RELOCATION TO SERVE CREEK BASIN COFFEY CREEK

P-5705A CHARLOTTE JUNCTION PROJECT

CLTWater PROJECT NO.: CPM-40-21-131

PROJECT TYPE: NEW CONSTRUCTION RELOCATION MODIFICATION OF PERMIT NO. _____
OTHER _____

VOLUME OF WASTEWATER GENERATED BY THIS PROJECT: N/A GALLONS PER DAY BASED ON 190 GAL/DAY/SINGLE FAMILY HOUSEHOLD X N/A HOUSEHOLDS OR

135 GAL/DAY/MULTI-FAMILY UNIT X N/A UNITS OR IS BASED ON :

WASTEWATER TREATMENT PLANT RECEIVING WASTEWATER:
 McALPINE CR. (NC0024970) IRWIN CR. (NC0024945) McDOWELL CR. (NC0036277)
 SUGAR CR. (NC0024937) MALLARD CR. (NC0030210)

NATURE OF WASTEWATER 60 % DOMESTIC _____ % INDUSTRIAL
40 % COMMERCIAL _____ % OTHER _____

ORIGIN OF WASTEWATER SUBDIVISION COMMERCIAL
 SCHOOL INDUSTRIAL
 APARTMENTS/CONDO'S OTHER _____

LIST ANY PARAMETER AND ITS CONCENTRATION THAT WILL BE GREATER THAN NORMAL DOMESTIC LEVELS:
NONE

IF WASTEWATER IS NON-DOMESTIC, DESCRIBE LEVEL OF PRETREATMENT:
N/A

IF A PRETREATMENT PERMIT IS REQUIRED, HAS ONE BEEN ISSUED? YES NO

HAS ENGINEER DETERMINED THAT DOWNSTREAM SEWERS ARE CAPABLE TO HANDLE THIS FLOW? YES NO
 PERMIT NO. FOR SEWERS IMMEDIATELY DOWNSTREAM _____
 PIPE DIAMETER OF SEWERS IMMEDIATELY DOWNSTREAM 10-INCH

HAS ENGINEER DETERMINED THAT NC DEM AND CLTWater MINIMUM DESIGN STANDARDS ARE MET BY THIS PROJECT? YES NO

COMPLETE NAME AND ADDRESS OF ENGINEERING DESIGN FIRM:
HINDE ENGINEERING, INC.
401 HARRISON OAKS BLVD., SUITE 220
CARY, N. C. 27513

TELEPHONE 919 - 653 - 0001

PROFESSIONAL ENGINEER'S CERTIFICATION:
 I, CLINT L. STEVENS, PE, ATTEST THAT THIS APPLICATION FOR 12" SAN. SEWER RELOCATION TO SERVE P-5705A CHARLOTTE JUNCTION PROJECT HAS BEEN REVIEWED BY ME AND IS ACCURATE AND COMPLETE TO THE BEST OF MY KNOWLEDGE. I FURTHER ATTEST THAT TO THE BEST OF MY KNOWLEDGE THE PROPOSED DESIGN HAS BEEN PREPARED IN ACCORDANCE WITH THE APPLICABLE REGULATIONS. ALTHOUGH CERTAIN PORTIONS OF THIS SUBMITTAL PACKAGE MAY HAVE BEEN DEVELOPED BY OTHER PROFESSIONALS, INCLUSION OF THESE MATERIALS UNDER MY SIGNATURE AND SEAL SIGNIFIES THAT I HAVE REVIEWED THIS MATERIAL AND HAVE JUDGED IT TO BE CONSISTENT WITH THE PROPOSED DESIGN.

NORTH CAROLINA PROFESSIONAL ENGINEER'S SEAL, SIGNATURE, AND DATE:

CLTWater PERMIT NO. _____ ISSUED _____

PLANT FLOW ALLOCATION RECORDED BY: _____

PERMIT APPROVED BY: JOSEPH C WILSON, P.E., CHIEF ENGINEER

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WATER LINE DETAILS

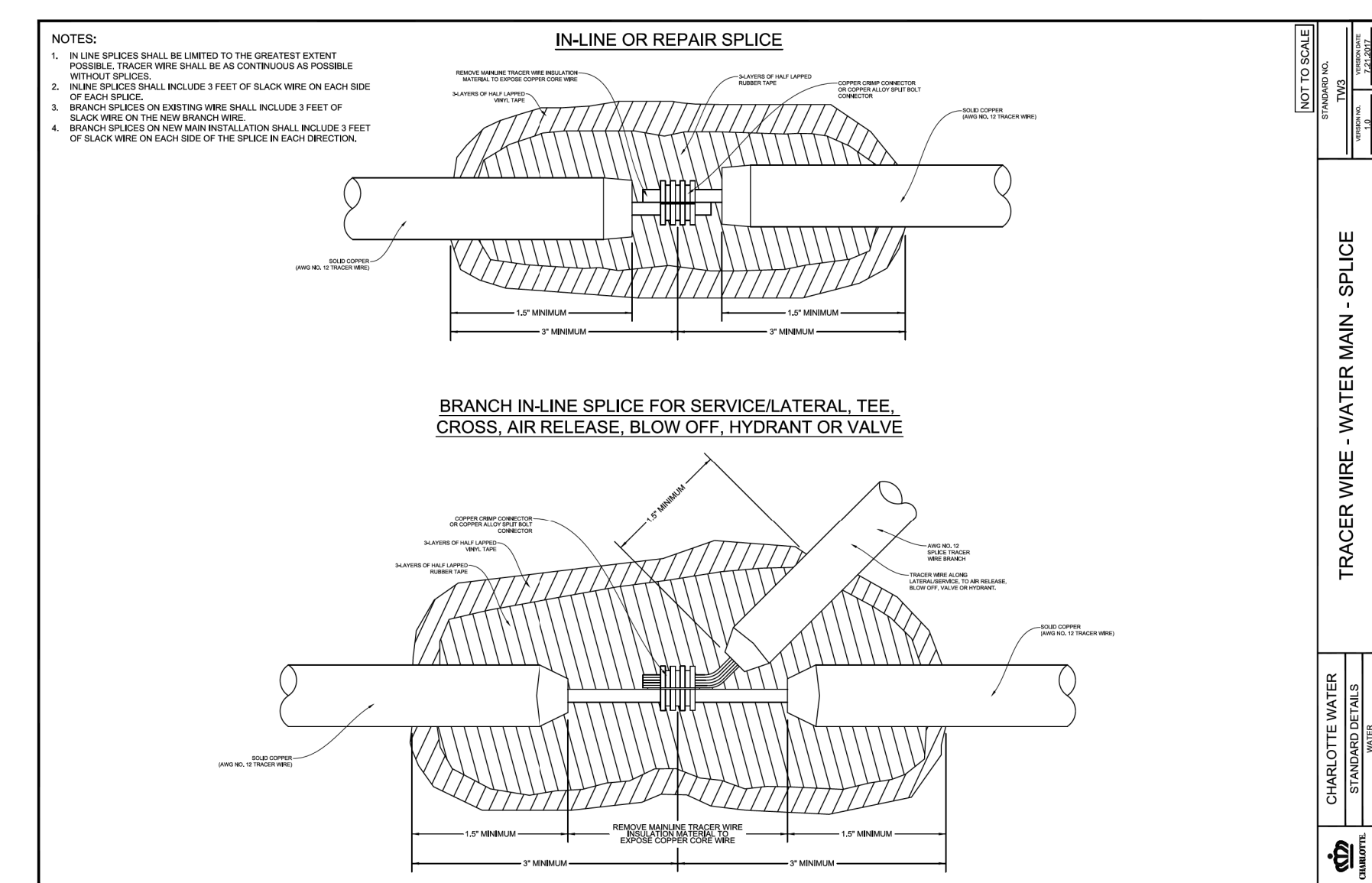
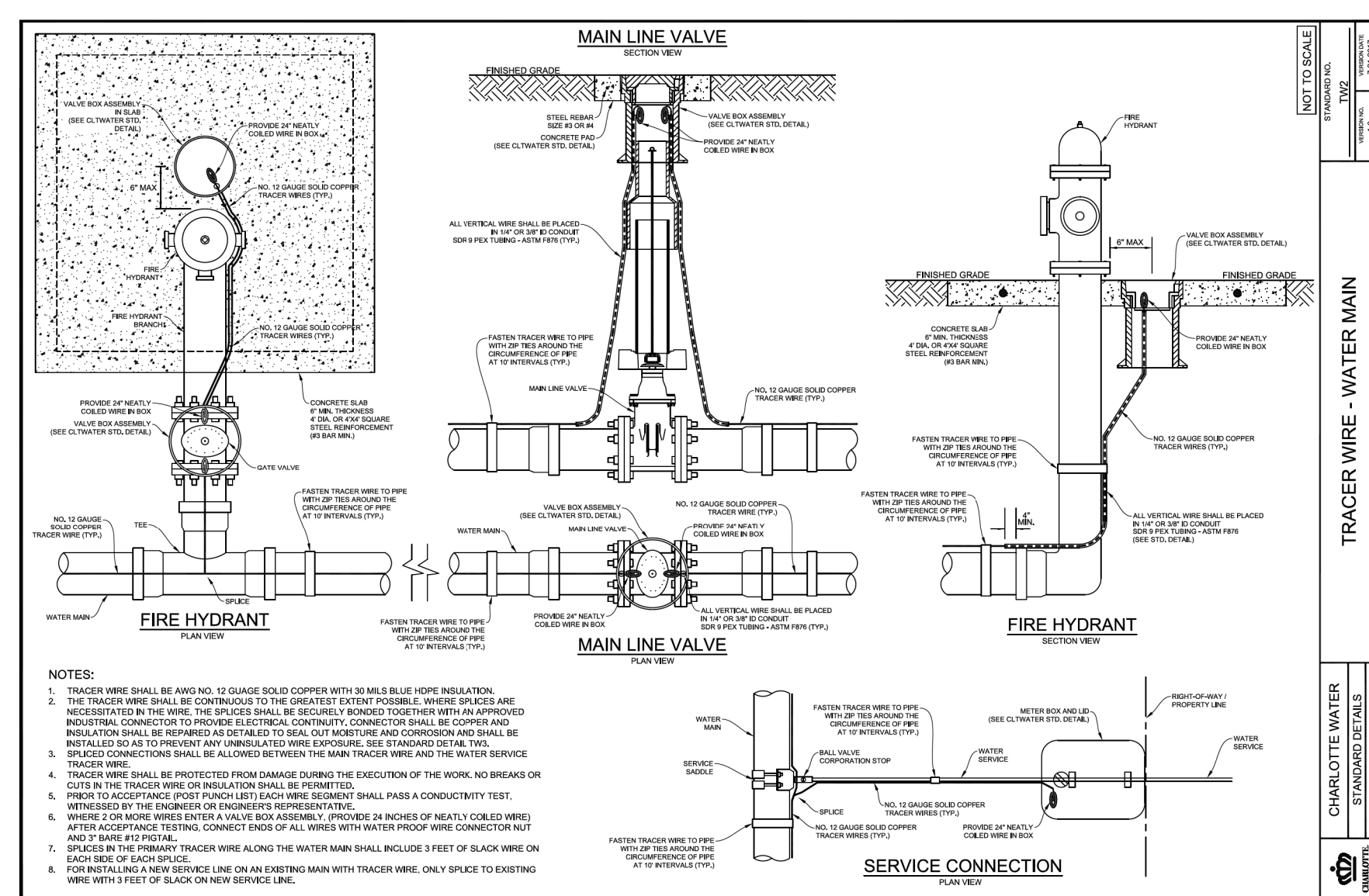
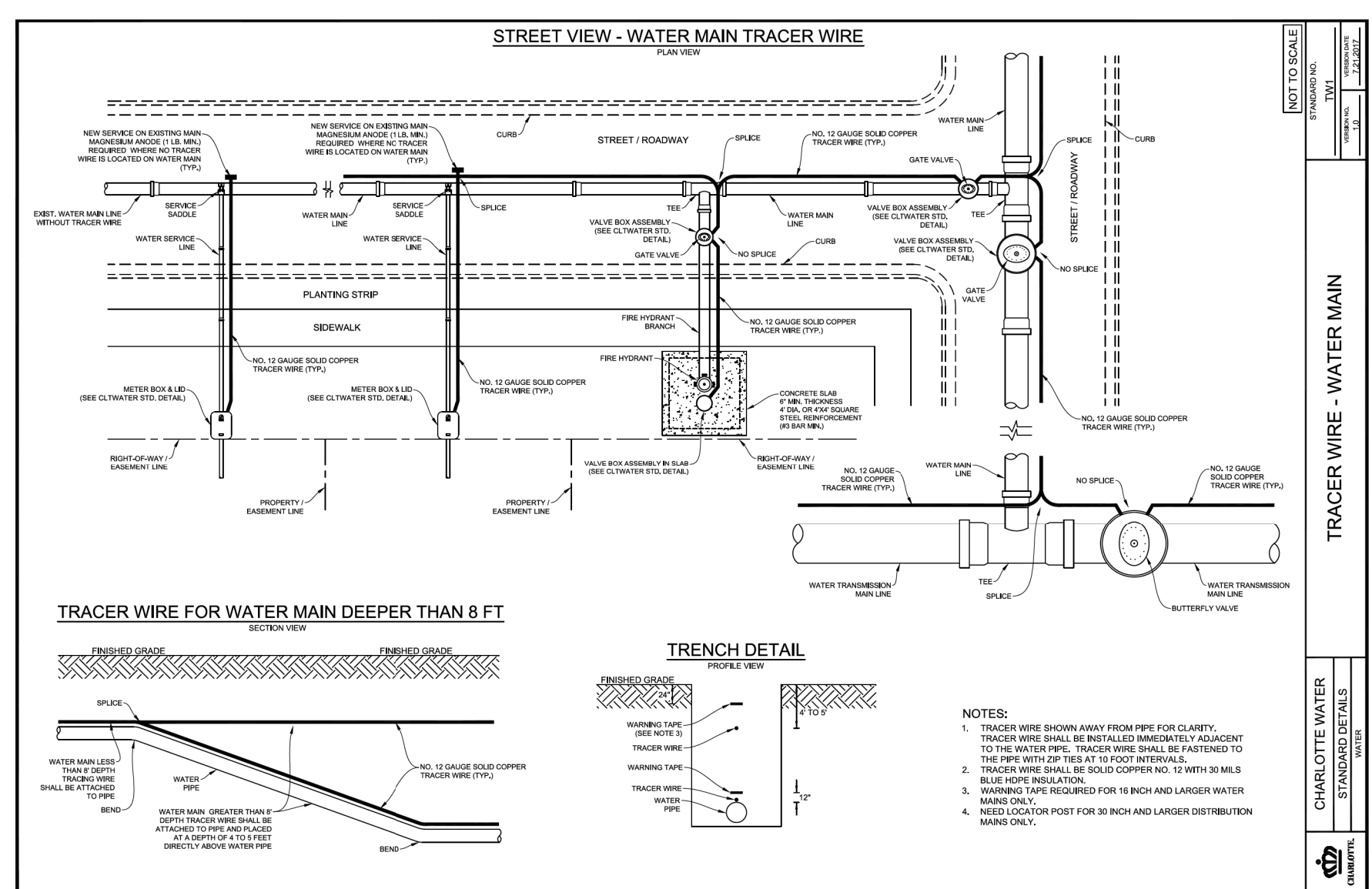
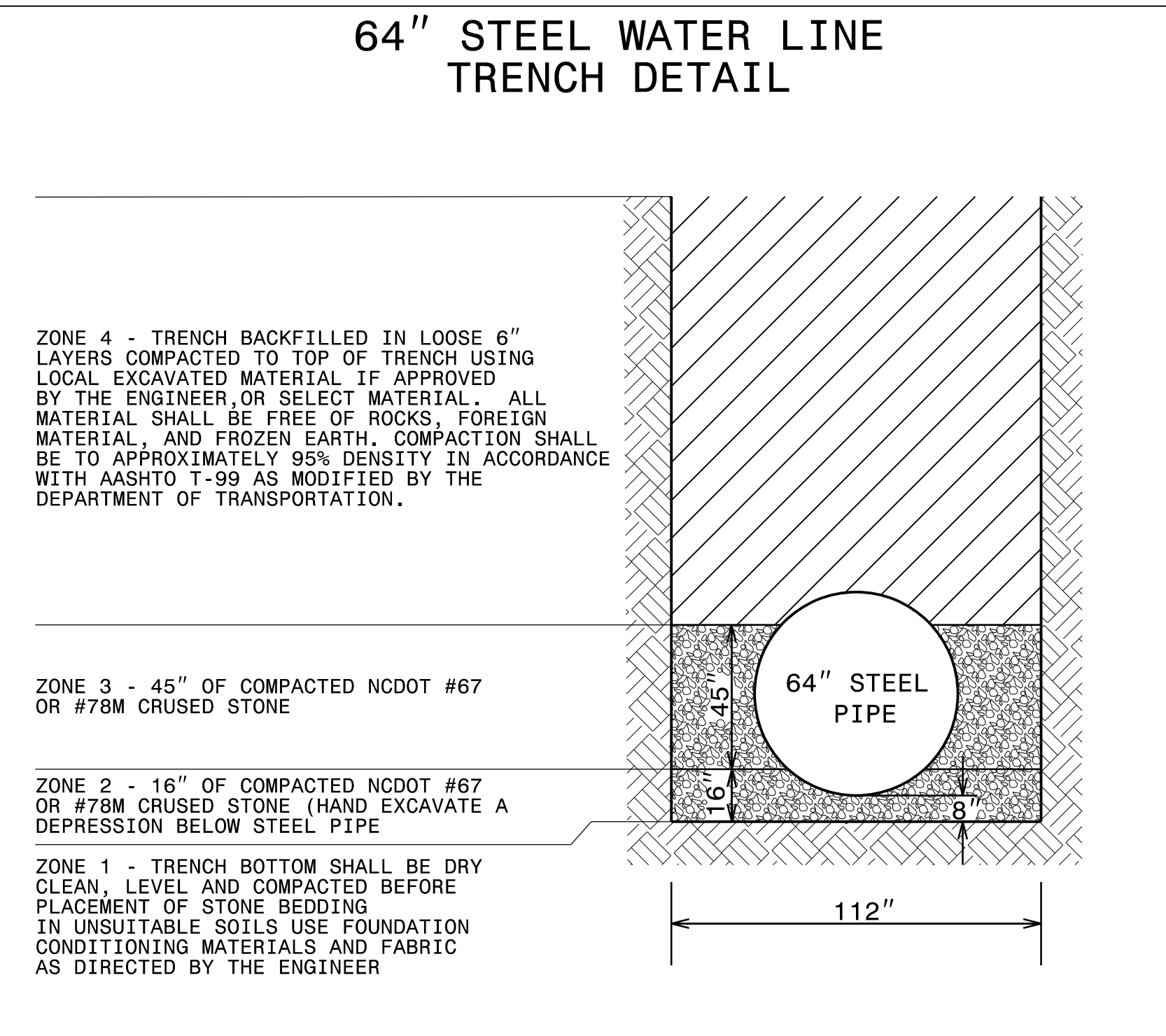


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P-5705A	UC-3A
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CHECKED BY: CDB	
APPROVED BY: CLS	
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
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UTILITY CONSTRUCTION

64" STEEL WATER LINE TRENCH DETAIL



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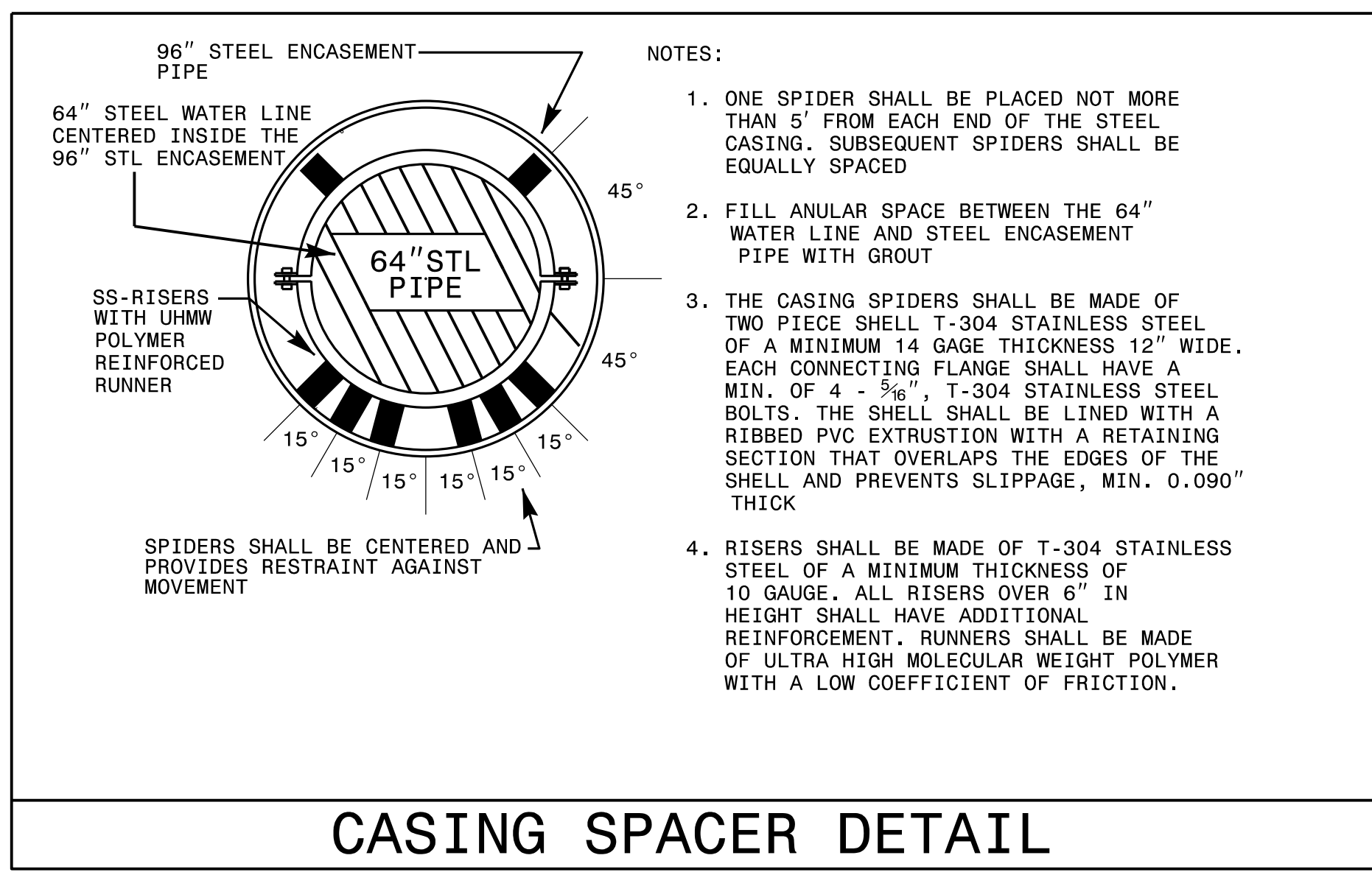
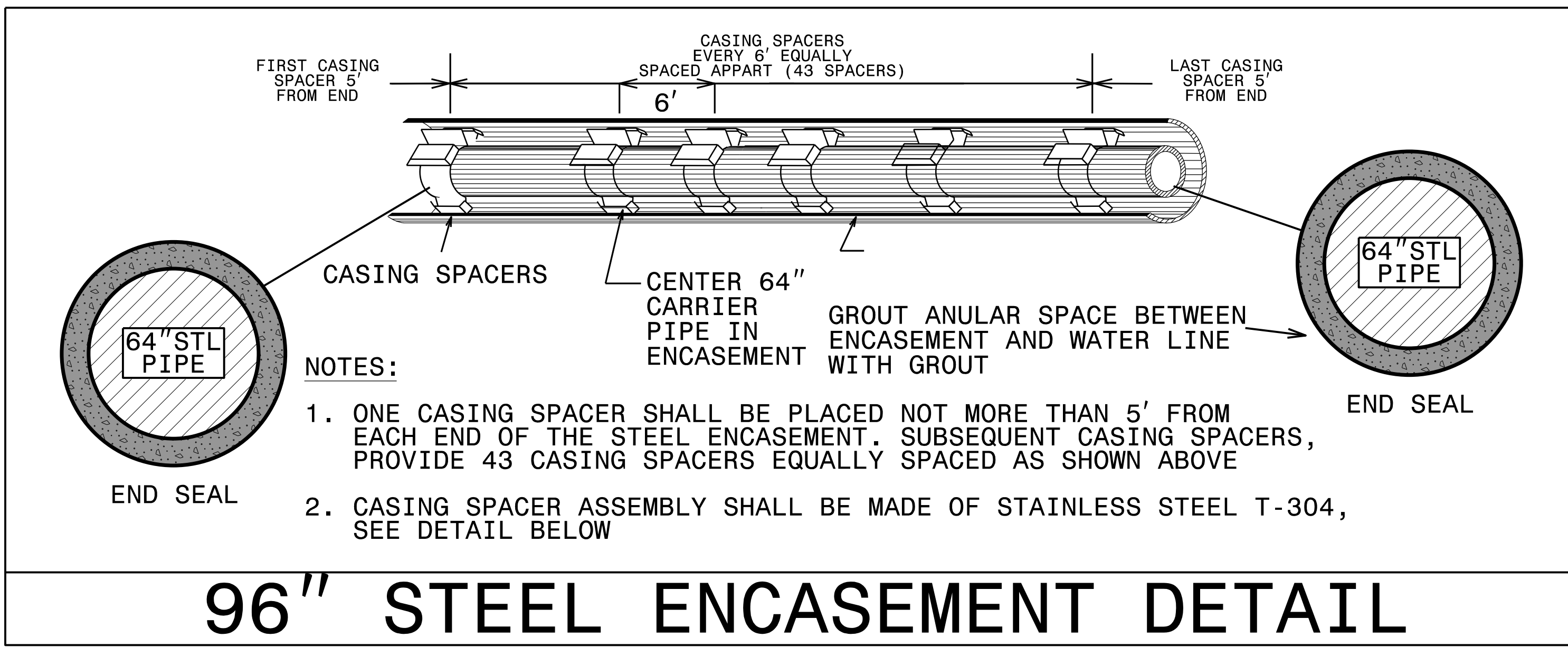
WATER LINE DETAILS



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SEWER LINE DETAILS

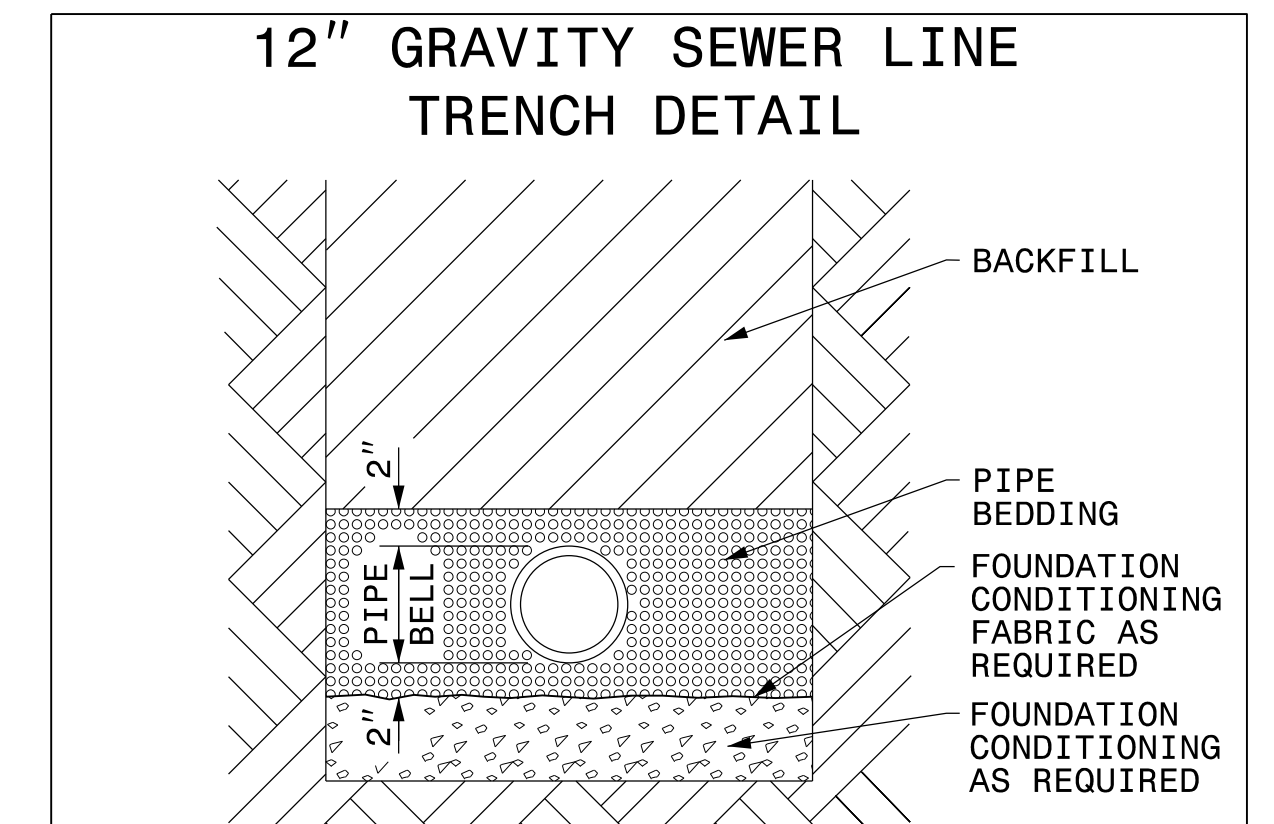
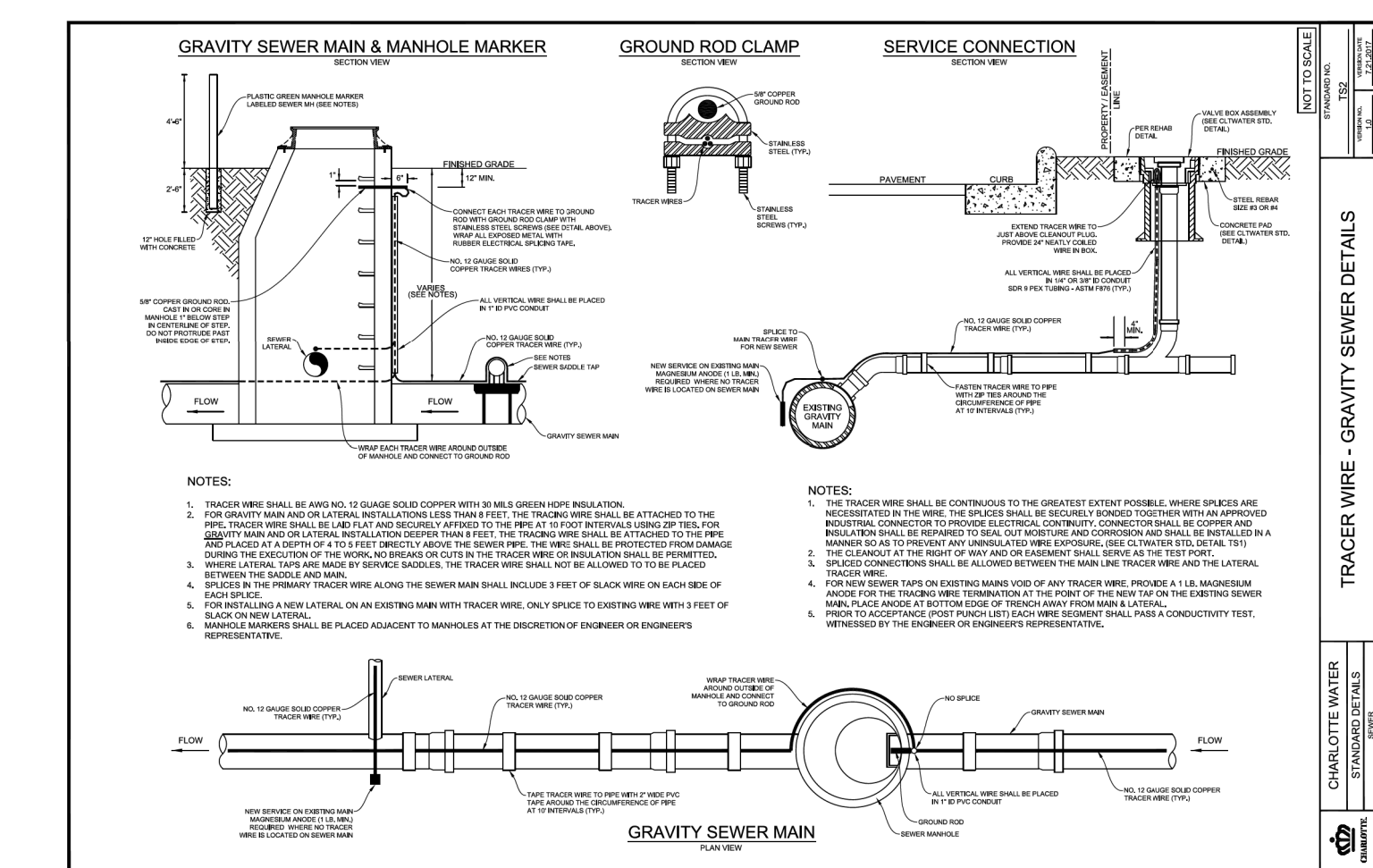
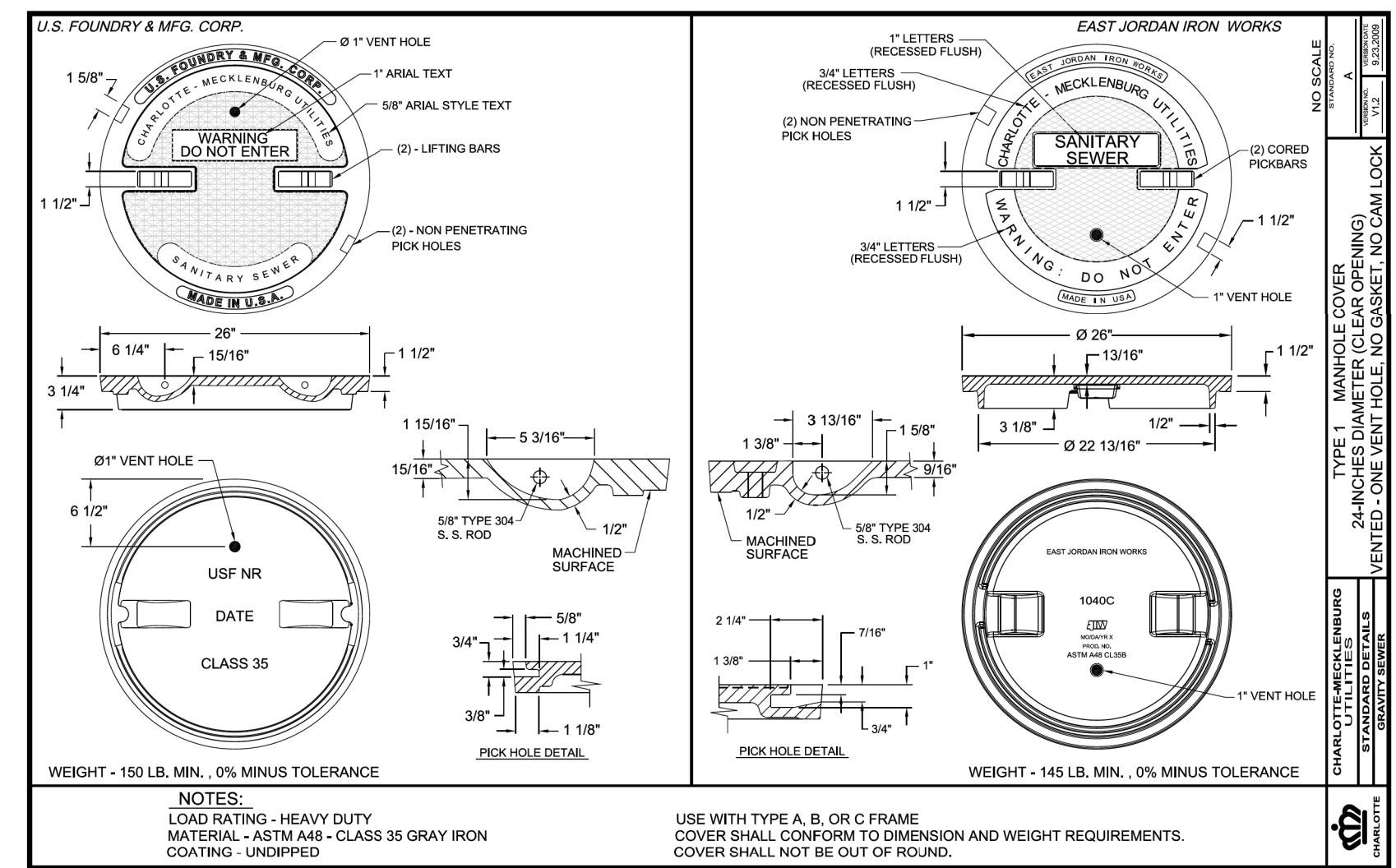
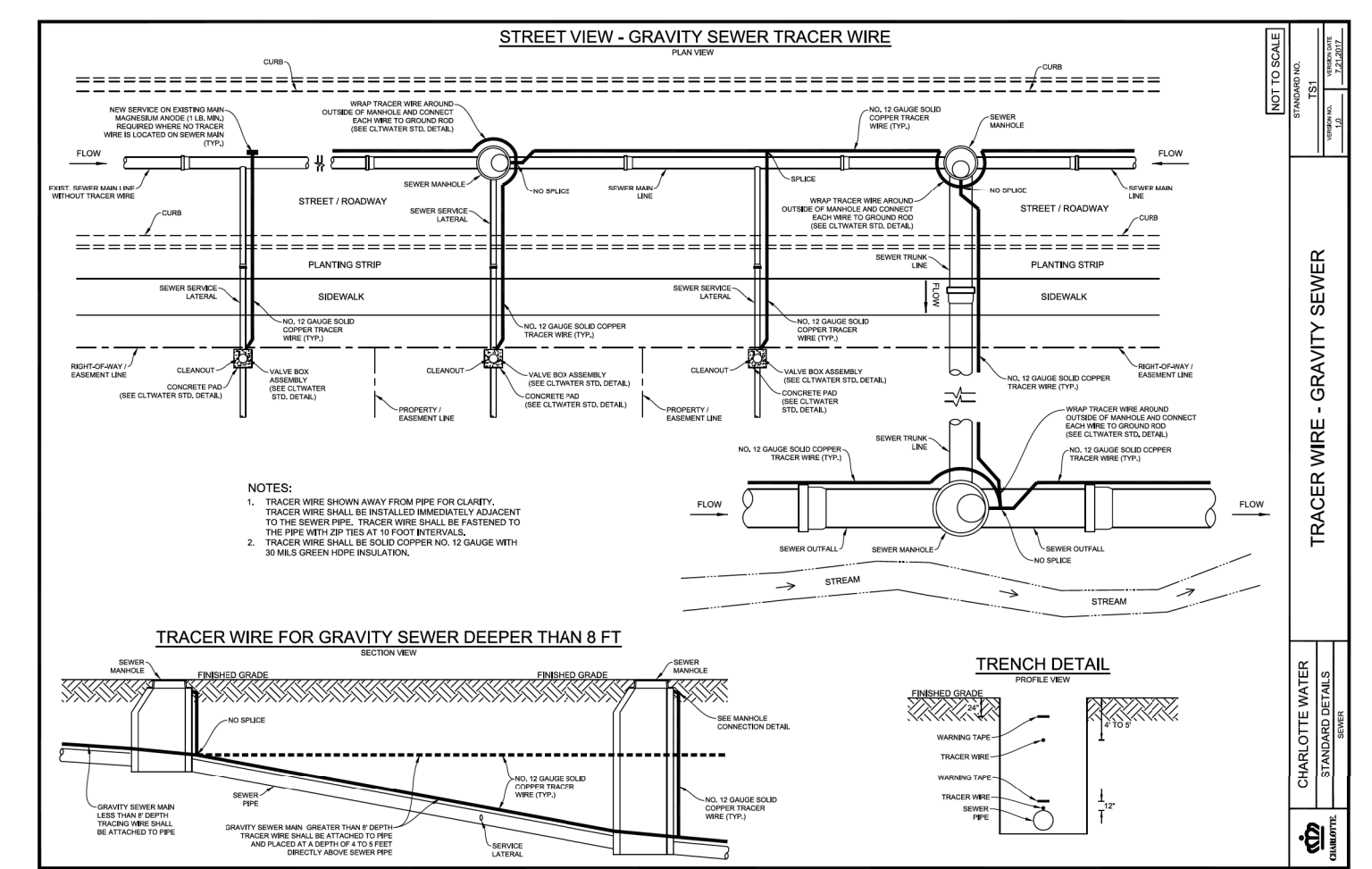
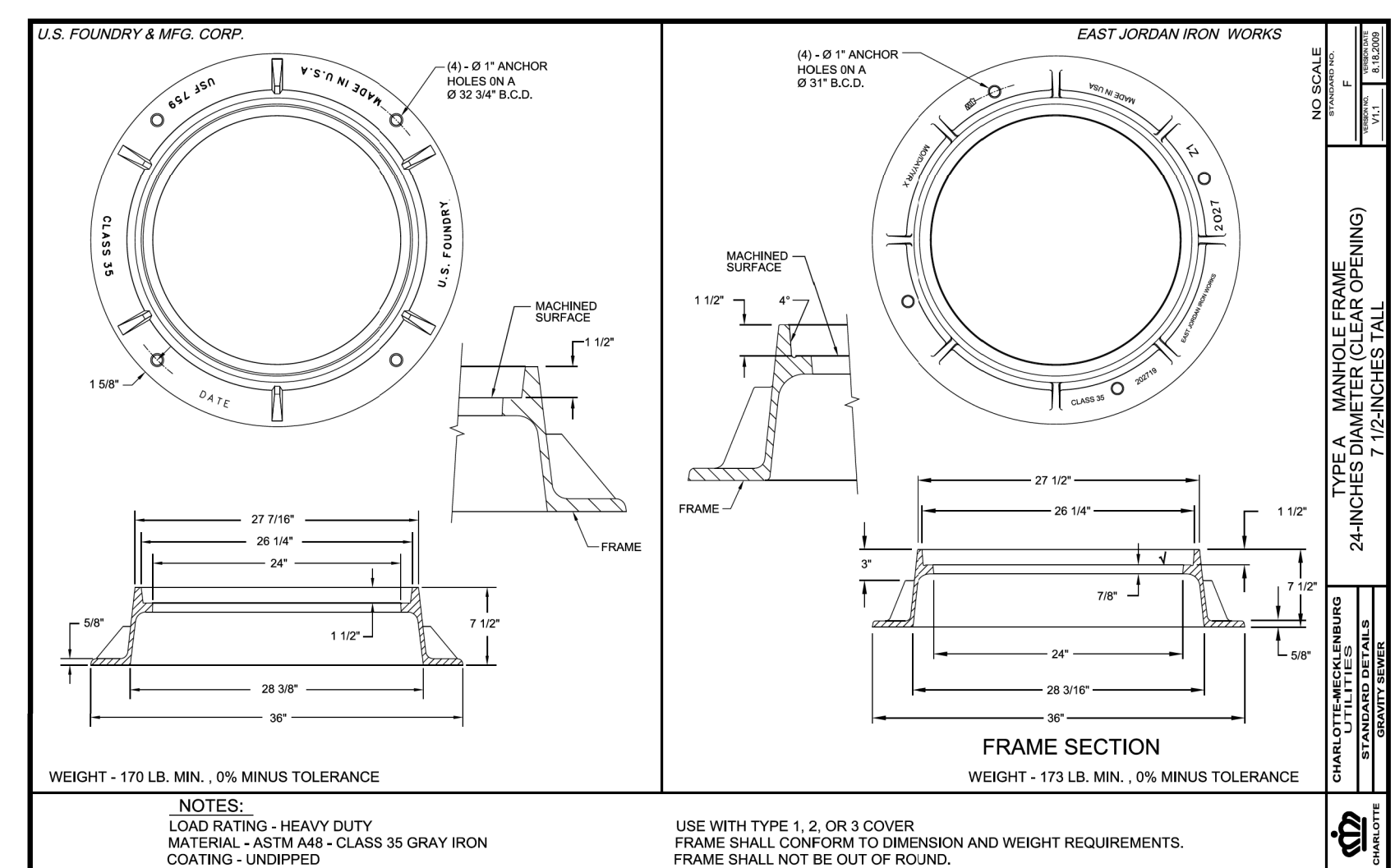
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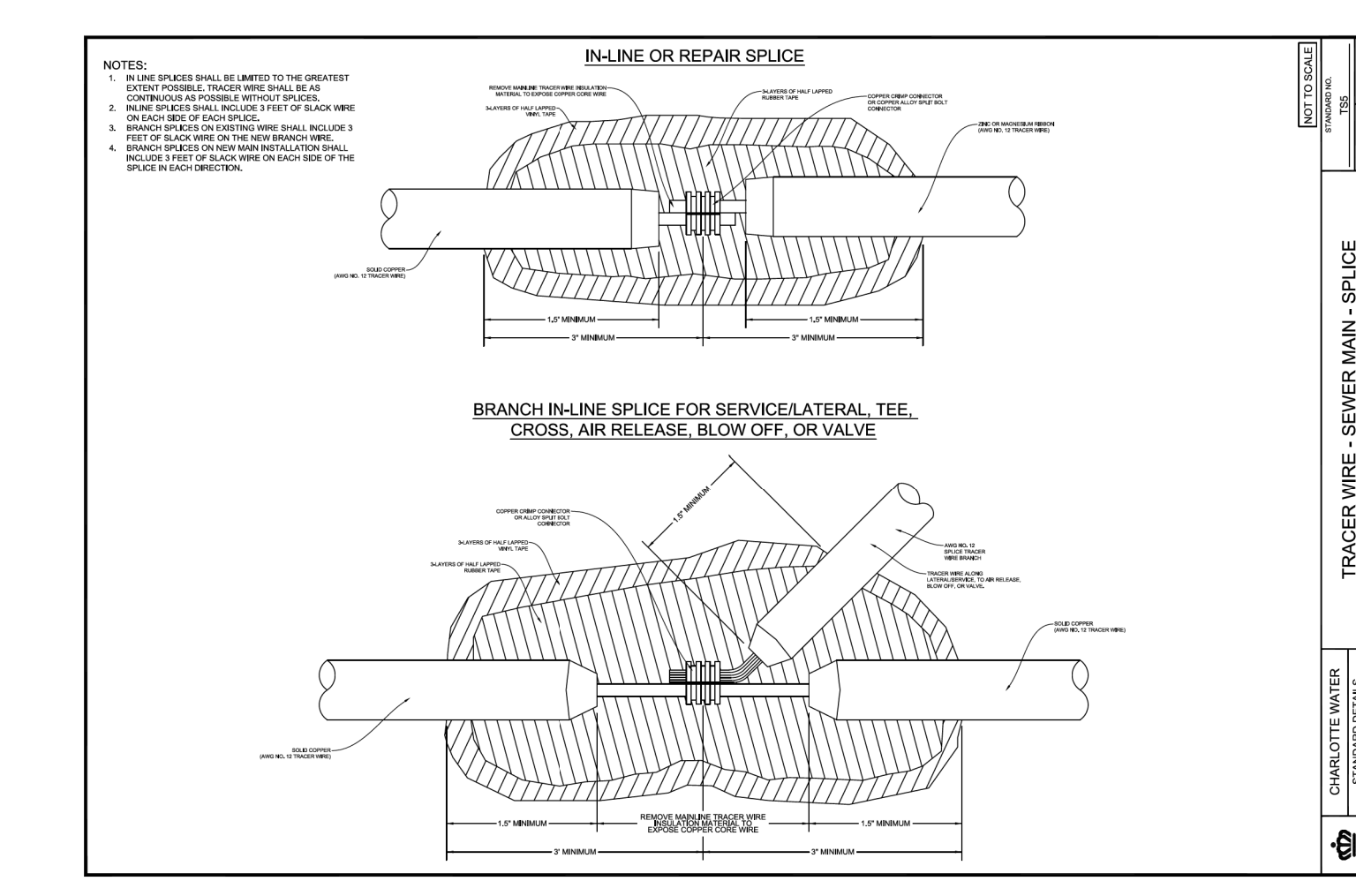
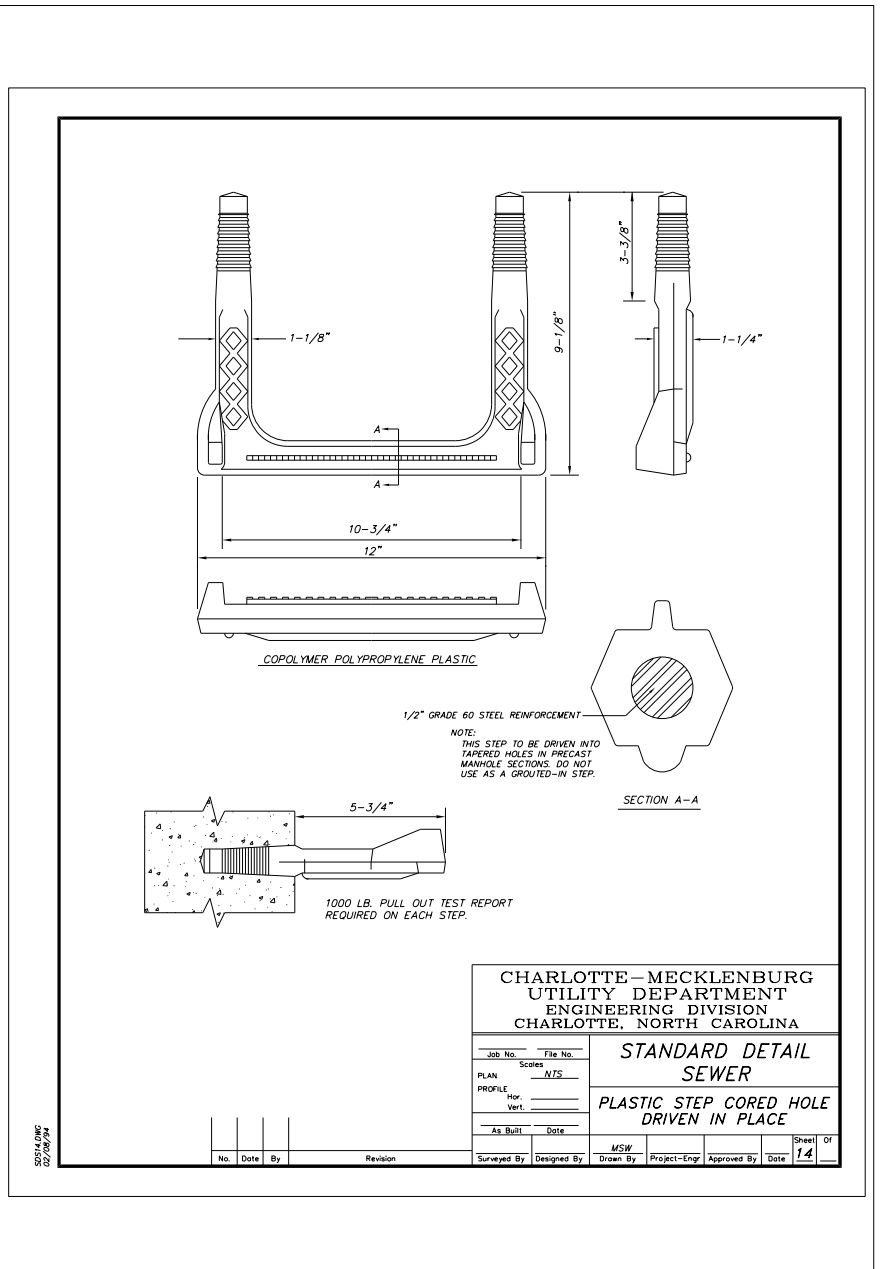
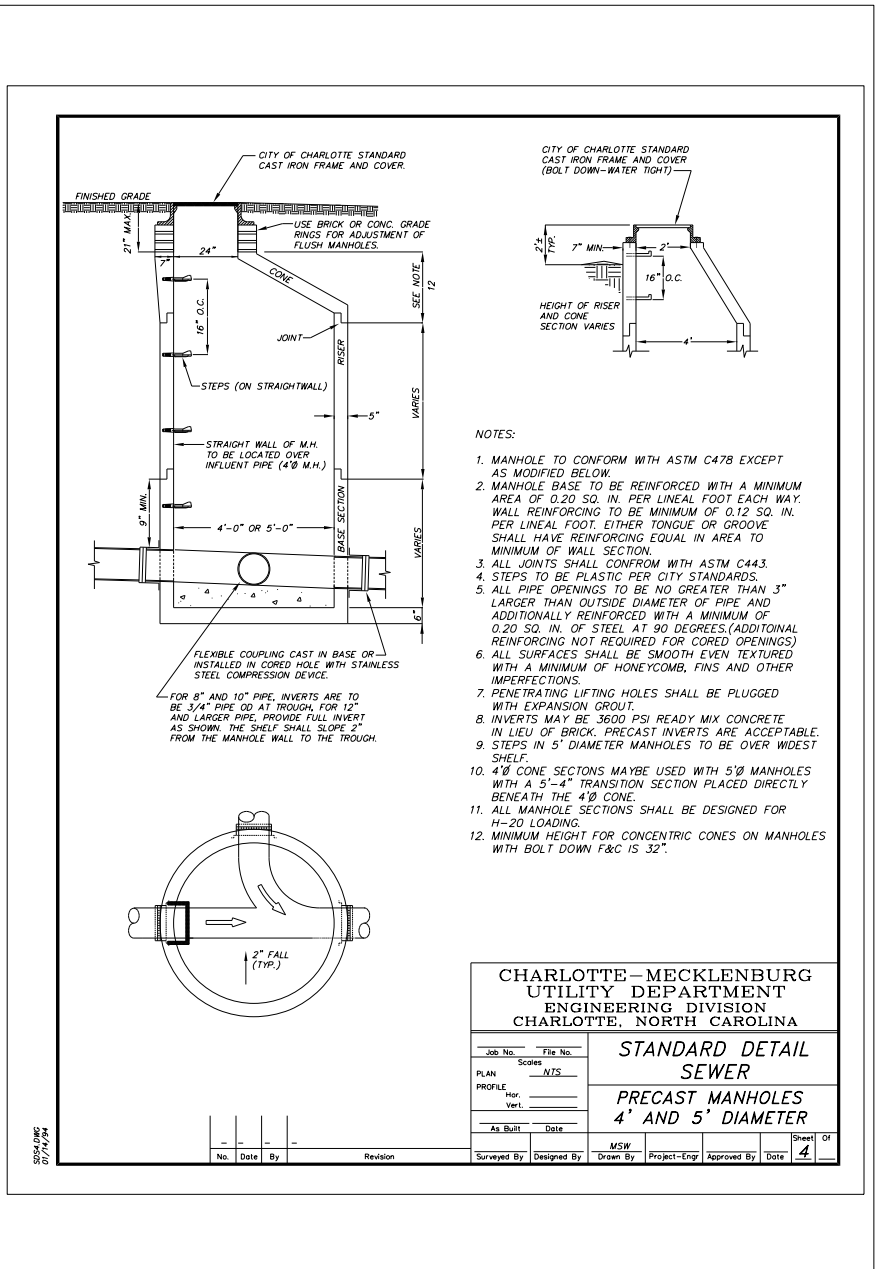
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P-5705A	UC-3C
DESIGNED BY: CDB	
DRAWN BY: JKC	
CHECKED BY: CDB	
APPROVED BY: CLS	
REVISED:	
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UTILITY CONSTRUCTION

**SENSITIVE MATERIALS
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PLACE FOUNDATION CONDITIONING MATERIAL BELOW BEDDING IF REQUIRED, AS DIRECTED BY ENGINEER. PIPE BEDDED IN SELECT MATERIAL, CLASS II (TYPE 1) OR CLASS III. TRENCH BACKFILLED IN LOOSE 6" LAYERS COMPACTED TO TOP OF TRENCH USING LOCAL EXCAVATED MATERIAL IF APPROVED BY THE ENGINEER, OR SELECT MATERIAL. ALL MATERIAL SHALL BE FREE OF ROCKS, FOREIGN MATERIAL, AND FROZEN EARTH. COMPACTION SHALL BE TO APPROXIMATELY 95% DENSITY IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED BY THE DEPARTMENT OF TRANSPORTATION.

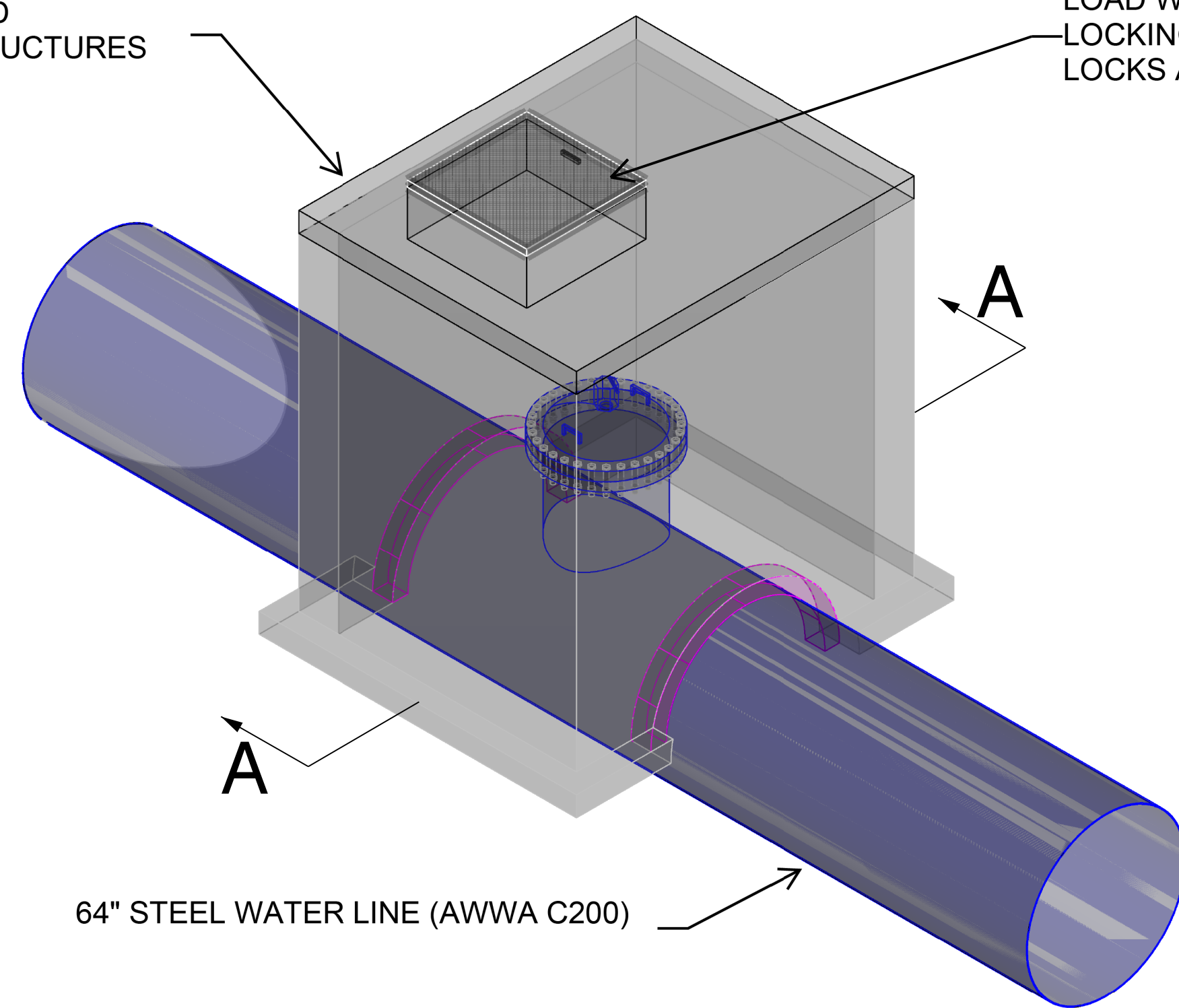


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MANWAY AND VAULT DETAIL

8'-0" X 10'-0" X 8" PRECAST CONCRETE VAULT REINFORCED FOR AASHTO HS-20 WHEEL LOAD - THE PRECAST VAULT SHALL BE SUBMITTED IN ACCORDANCE WITH NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTION 1077

BILCO TYPE J-4AL CHANNEL FRAME 36" X 36" ALUMINUM DOUBLE LEAF ACCESS DOOR REINFORCED FOR AASHTO HS-20 WHEEL LOAD WITH RECESSED DOOR HANDLE AND LOCKING DEVICE-OPENS TO 90 DEGREES AND LOCKS AUTOMATICALLY WITH LIFT ASSISTANCE



64" STEEL WATER LINE (AWWA C200)

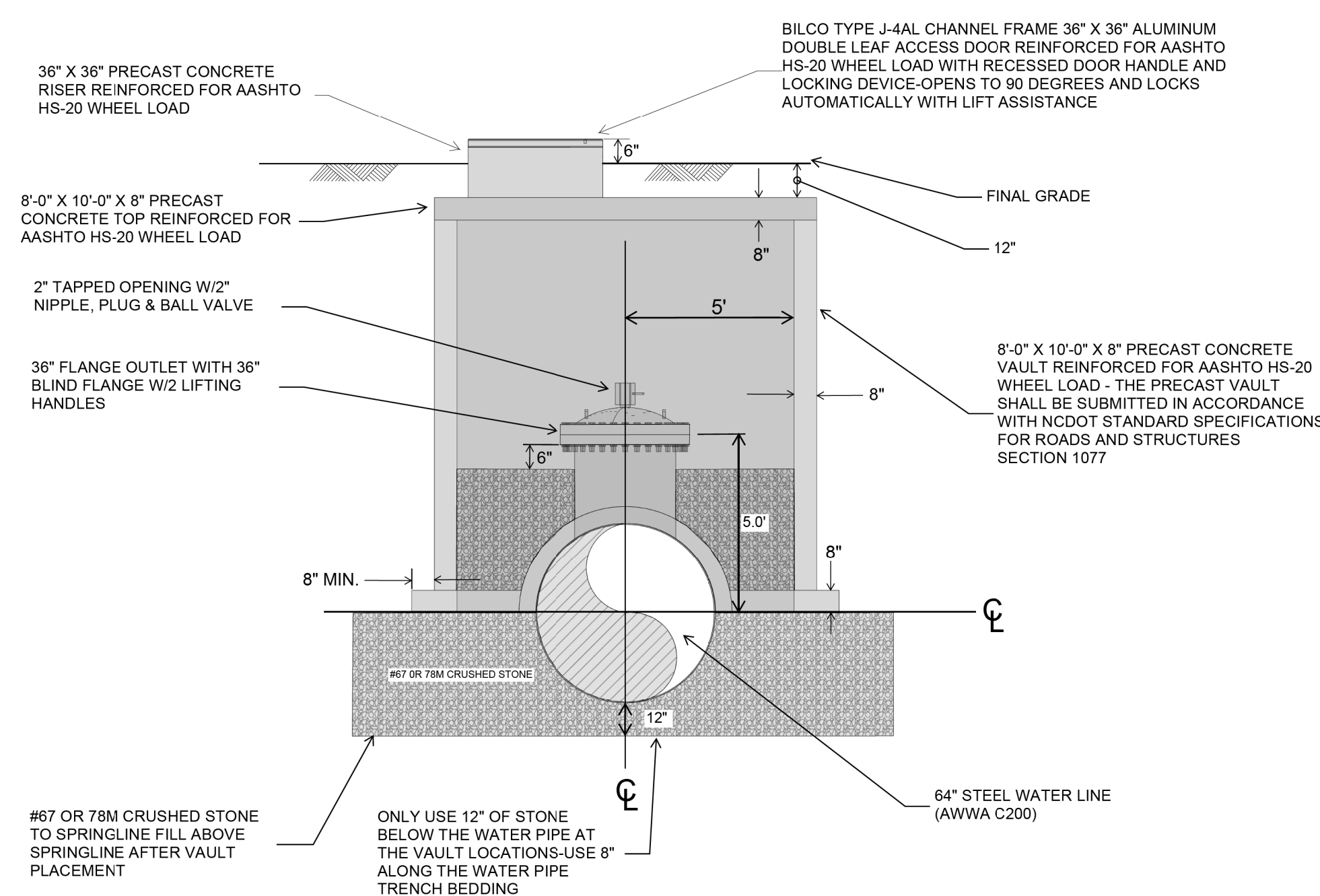
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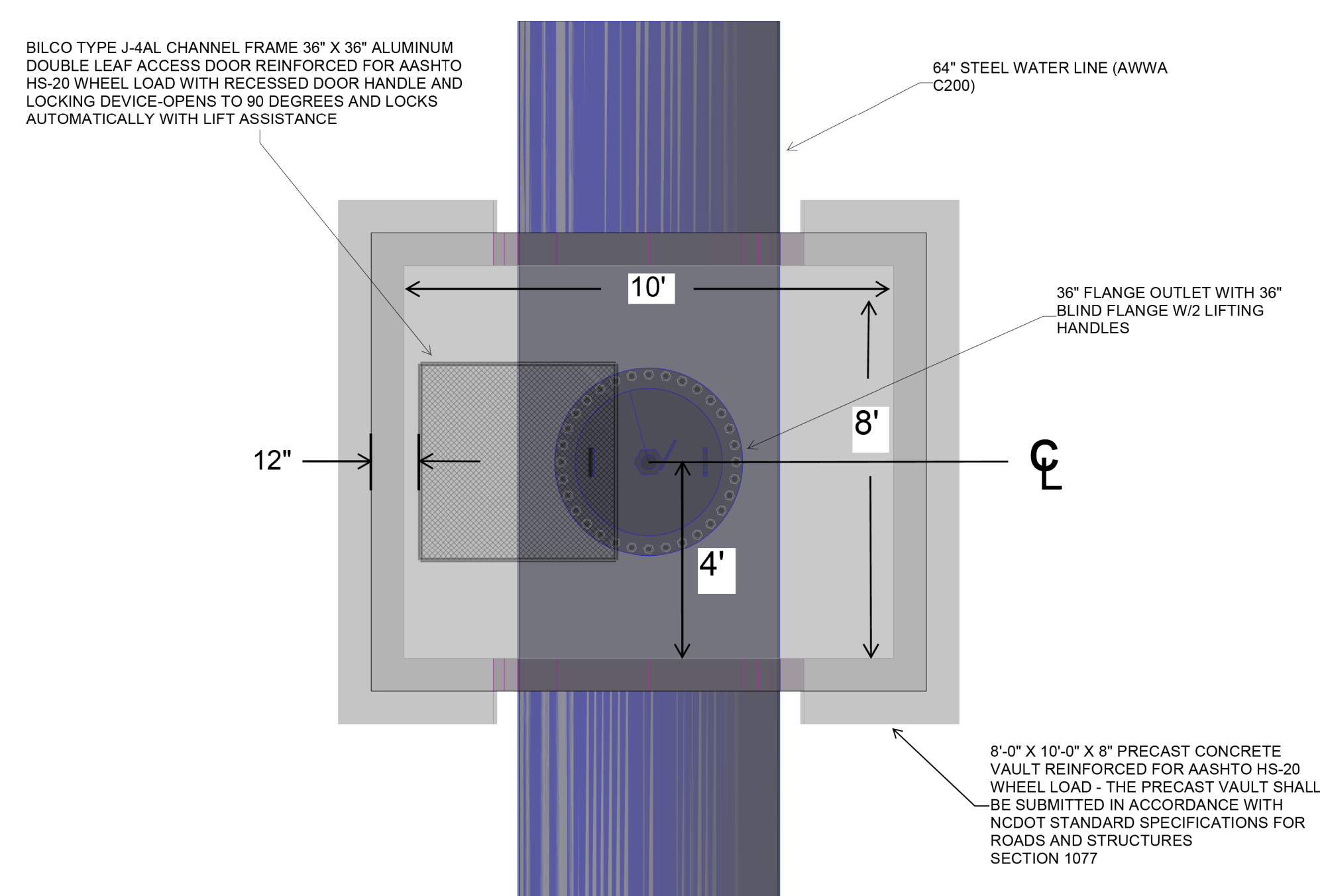
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DESIGNED BY: CDB	
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CHECKED BY: CDB	
APPROVED BY: CLS	
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SECTION A-A VIEW



TOP VIEW

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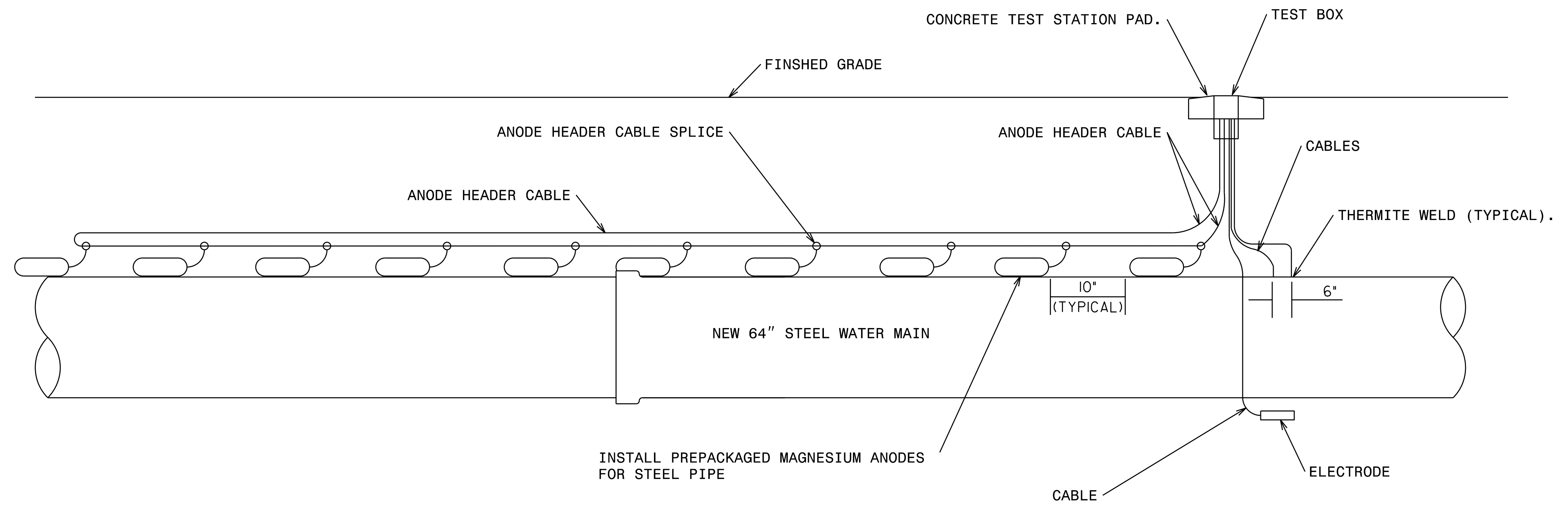
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APPROVED BY: CLS	
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PROJECT TYPICAL DETAILS

UTILITY CONSTRUCTION



TEST STATION (ANODE)

NOT TO SCALE

THE ANODE TEST STATION DETAIL IS A GENERAL REPRESENTATION OF THE EXISTING CATHODIC PROTECTION BEING IMPACTED BY THE PROPOSED 64" WATER LINE, THE CONTRACTOR WILL BE RESPONSIBLE TO PREPARE DESIGN PLANS AND SPECIFICATIONS FOR THE PROPOSED CATHODIC PROTECTION SIGNED AND SEALED BY A NORTH CAROLINA PROFESSIONAL ENGINEER. THE CONTRACTOR SHALL HAVE A CERTIFIED CATHODIC PROTECTION SPECIALIST TO INSTALL THE TEST STATION AND CATHODIC PROTECTION.

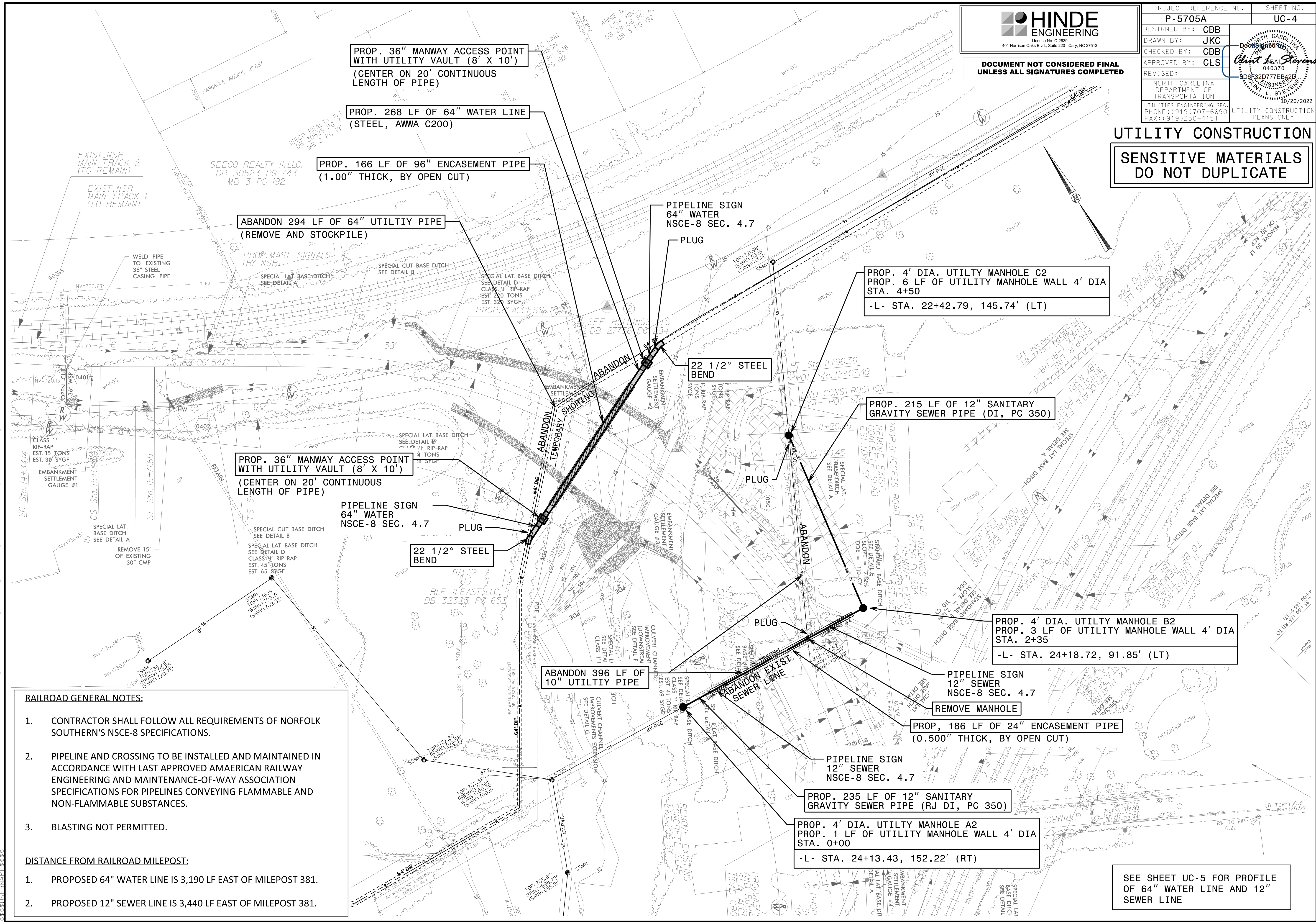
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PROJECT REFERENCE NO.	P-5705A	SHEET NO.	UC-4
DESIGNED BY:	CDB		
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APPROVED BY:	CLS		
REVISED:		DATE	10/20/2022
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UTILITY CONSTRUCTION
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- RAILROAD GENERAL NOTES:**
- CONTRACTOR SHALL FOLLOW ALL REQUIREMENTS OF NORFOLK SOUTHERN'S NSCE-8 SPECIFICATIONS.
 - PIPELINE AND CROSSING TO BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH LAST APPROVED AMERICAN RAILWAY ENGINEERING AND MAINTENANCE-OF-WAY ASSOCIATION SPECIFICATIONS FOR PIPELINES CONVEYING FLAMMABLE AND NON-FLAMMABLE SUBSTANCES.
 - BLASTING NOT PERMITTED.
- DISTANCE FROM RAILROAD MILEPOST:**
- PROPOSED 64" WATER LINE IS 3,190 LF EAST OF MILEPOST 381.
 - PROPOSED 12" SEWER LINE IS 3,440 LF EAST OF MILEPOST 381.

SEE SHEET UC-5 FOR PROFILE OF 64" WATER LINE AND 12" SEWER LINE

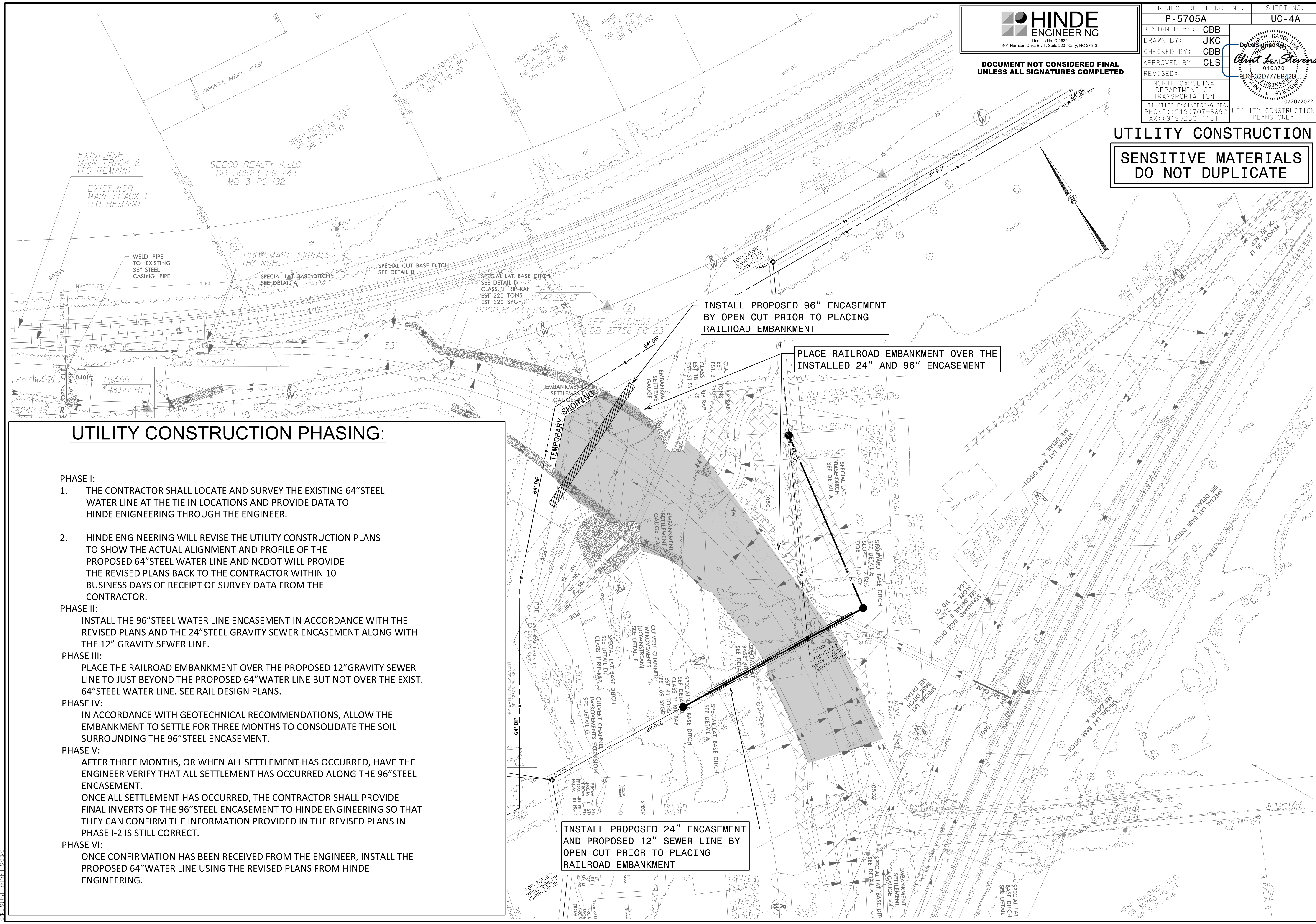
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UTILITY CONSTRUCTION PHASING:

- PHASE I:**
1. THE CONTRACTOR SHALL LOCATE AND SURVEY THE EXISTING 64" STEEL WATER LINE AT THE TIE IN LOCATIONS AND PROVIDE DATA TO HINDE ENGINEERING THROUGH THE ENGINEER.
 2. HINDE ENGINEERING WILL REVISE THE UTILITY CONSTRUCTION PLANS TO SHOW THE ACTUAL ALIGNMENT AND PROFILE OF THE PROPOSED 64" STEEL WATER LINE AND NCDOT WILL PROVIDE THE REVISED PLANS BACK TO THE CONTRACTOR WITHIN 10 BUSINESS DAYS OF RECEIPT OF SURVEY DATA FROM THE CONTRACTOR.
- PHASE II:**
- INSTALL THE 96" STEEL WATER LINE ENCASEMENT IN ACCORDANCE WITH THE REVISED PLANS AND THE 24" STEEL GRAVITY SEWER ENCASEMENT ALONG WITH THE 12" GRAVITY SEWER LINE.
- PHASE III:**
- PLACE THE RAILROAD EMBANKMENT OVER THE PROPOSED 12" GRAVITY SEWER LINE TO JUST BEYOND THE PROPOSED 64" WATER LINE BUT NOT OVER THE EXIST. 64" STEEL WATER LINE. SEE RAIL DESIGN PLANS.
- PHASE IV:**
- IN ACCORDANCE WITH GEOTECHNICAL RECOMMENDATIONS, ALLOW THE EMBANKMENT TO SETTLE FOR THREE MONTHS TO CONSOLIDATE THE SOIL SURROUNDING THE 96" STEEL ENCASEMENT.
- PHASE V:**
- AFTER THREE MONTHS, OR WHEN ALL SETTLEMENT HAS OCCURRED, HAVE THE ENGINEER VERIFY THAT ALL SETTLEMENT HAS OCCURRED ALONG THE 96" STEEL ENCASEMENT. ONCE ALL SETTLEMENT HAS OCCURRED, THE CONTRACTOR SHALL PROVIDE FINAL INVERTS OF THE 96" STEEL ENCASEMENT TO HINDE ENGINEERING SO THAT THEY CAN CONFIRM THE INFORMATION PROVIDED IN THE REVISED PLANS IN PHASE I-2 IS STILL CORRECT.
- PHASE VI:**
- ONCE CONFIRMATION HAS BEEN RECEIVED FROM THE ENGINEER, INSTALL THE PROPOSED 64" WATER LINE USING THE REVISED PLANS FROM HINDE ENGINEERING.

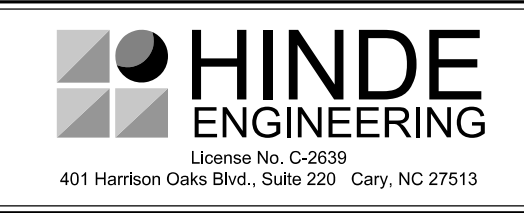
**INSTALL PROPOSED 96" ENCASEMENT
 BY OPEN CUT PRIOR TO PLACING
 RAILROAD EMBANKMENT**

**PLACE RAILROAD EMBANKMENT OVER THE
 INSTALLED 24" AND 96" ENCASEMENT**

**INSTALL PROPOSED 24" ENCASEMENT
 AND PROPOSED 12" SEWER LINE BY
 OPEN CUT PRIOR TO PLACING
 RAILROAD EMBANKMENT**

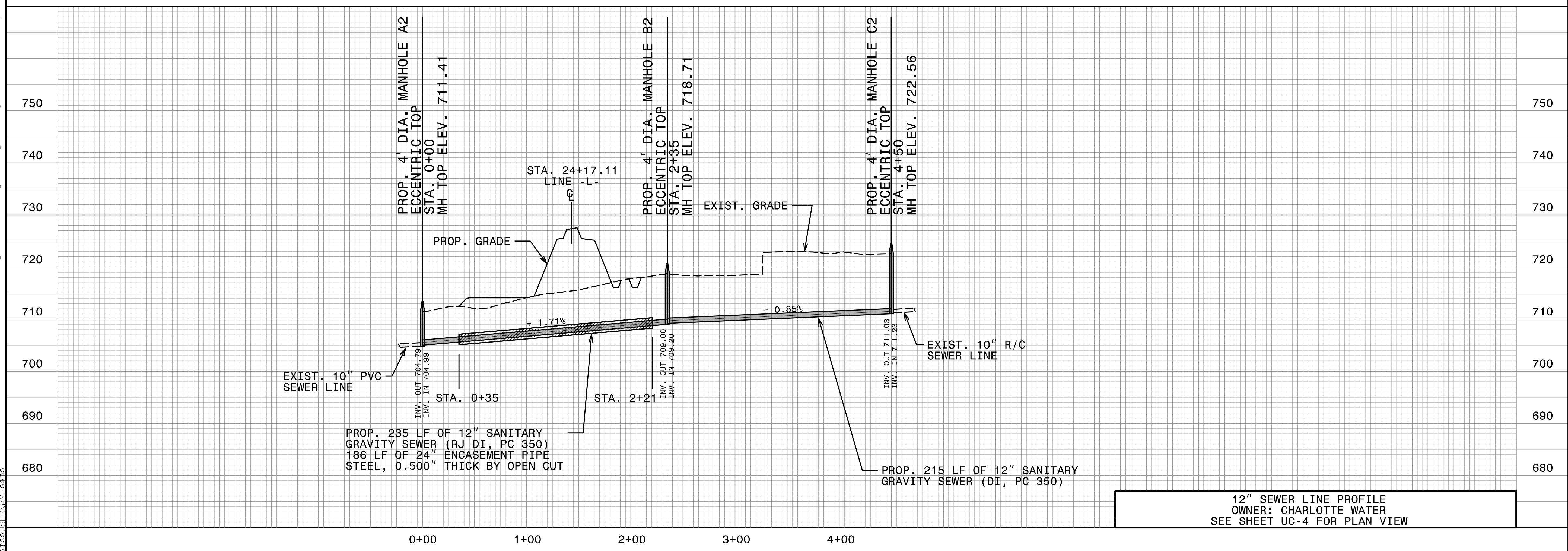
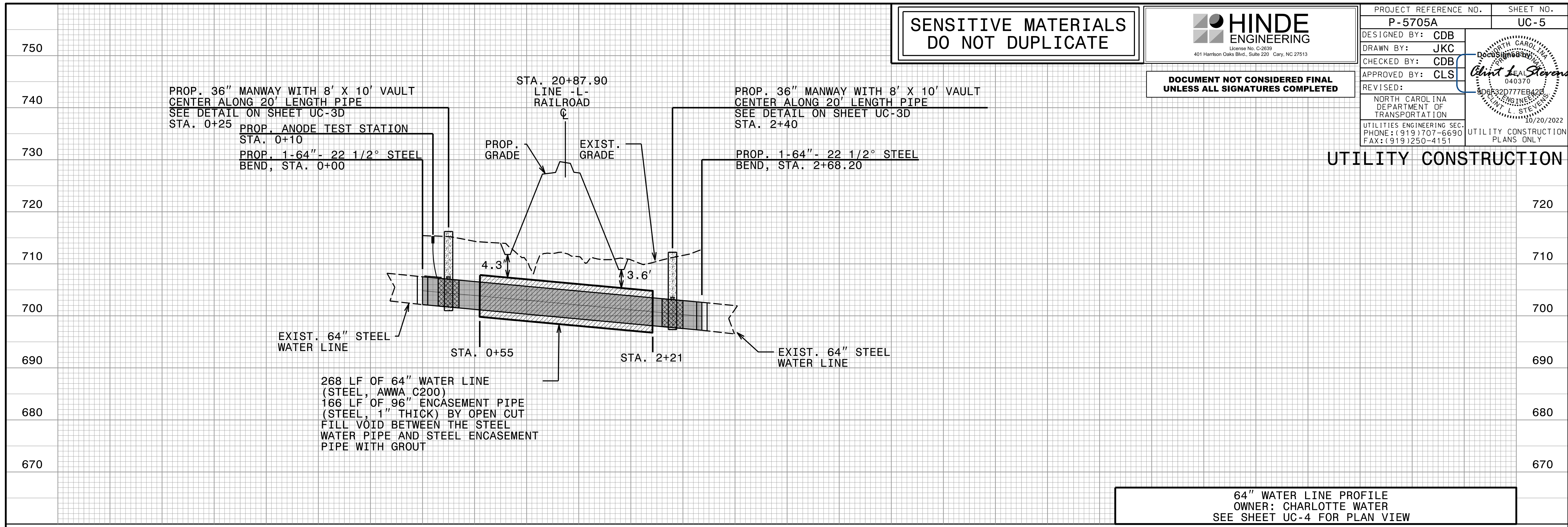
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