

TIP PROJECT: U-6146 /B-5857

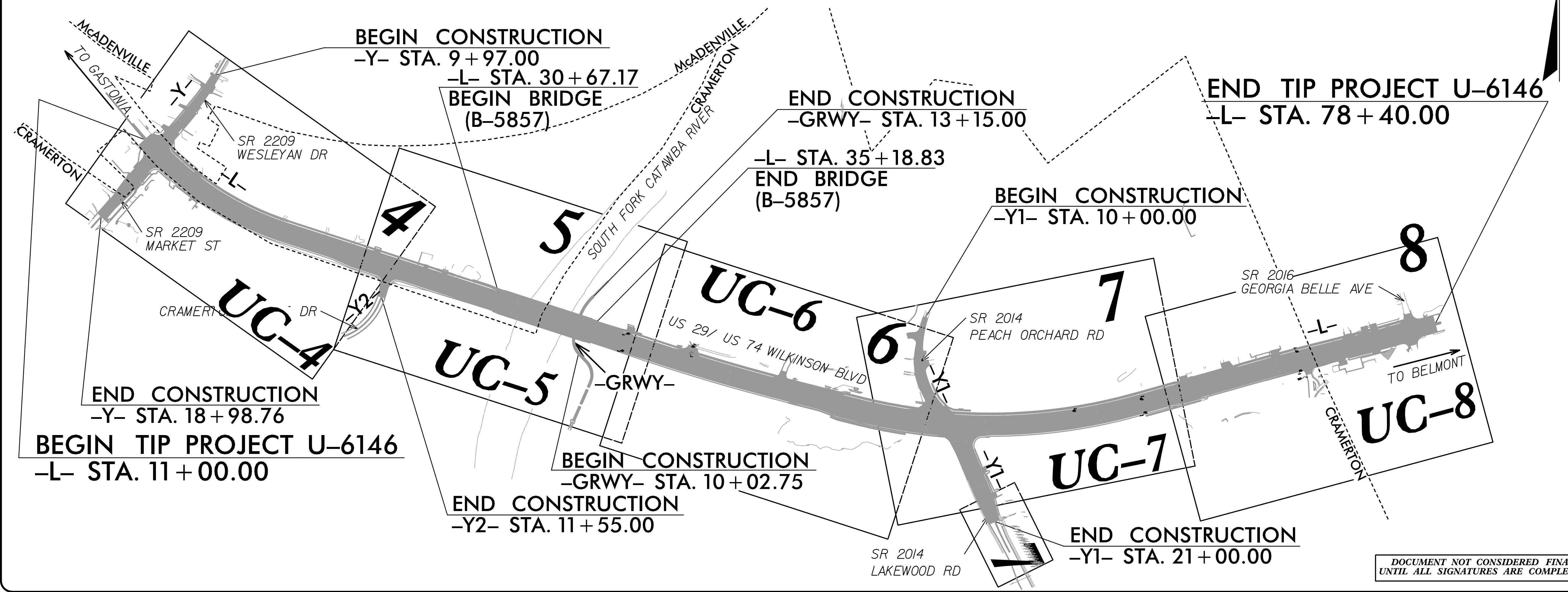
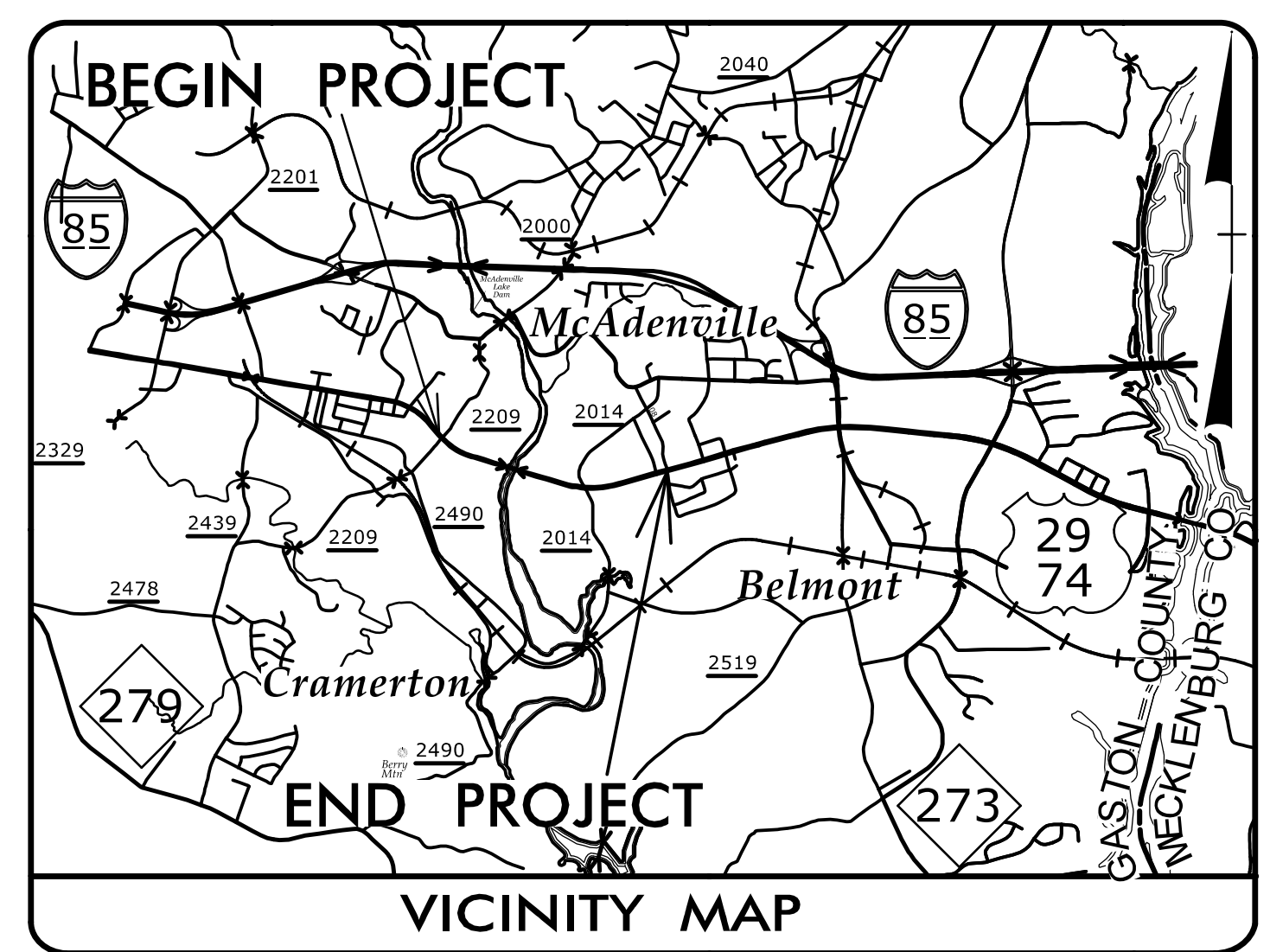
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

T.I.P. NO.	SHEET NO.
U-6146 /B-5857	UC-1

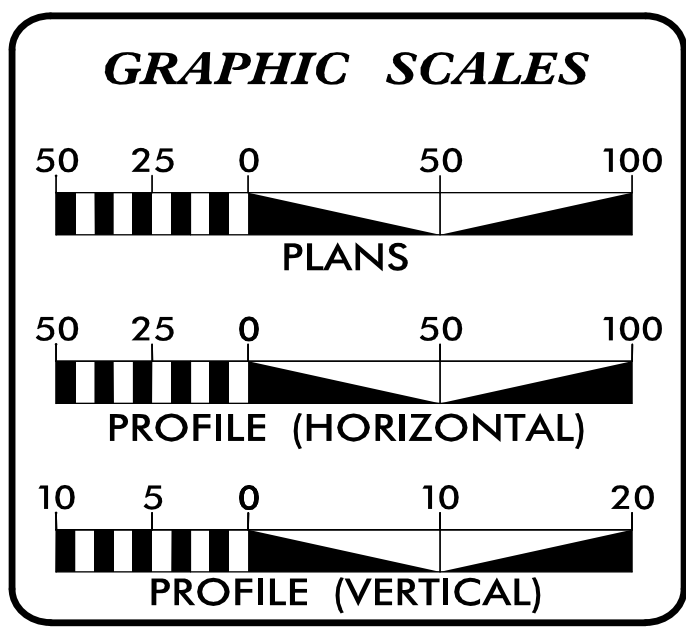
UTILITY CONSTRUCTION PLANS
GASTON COUNTY

LOCATION: US 29/US 74 (WILKINSON BLVD) FROM SR 2209 (WESLEYAN DR/MARKET ST) TO SR 2016/SR 2017 (GEORGIA BELLE AVE/HUBBARD ST) COMBINED WITH B-5857.

TYPE OF WORK: WATER LINE AND SEWER LINE CONSTRUCTION



DOCUMENT NOT CONSIDERED FINAL
UNTIL ALL SIGNATURES ARE COMPLETED



SHEET NO.:	DESCRIPTION:
UC-1	TITLE SHEET
UC-2	UTILITY SYMBOLOGY
UC-3	NOTES
UC-3A THRU UC-3D	DETAILS
UC-4 THRU UC-8	UTILITY CONSTRUCTION SHEETS
UC-9 THRU UC-13	PROFILE SHEETS

WATER AND SEWER
OWNERS ON PROJECT

(A) WATER - TWO RIVERS UTILITIES
(B) WATER - TOWN OF McADENVILLE
(C) WATER - CITY OF BELMONT
(D) SANITARY SEWER - TWO RIVERS UTILITIES
(E) SANITARY SEWER - TOWN OF McADENVILLE

PREPARED IN THE OFFICE OF

TGS ENGINEERS
201 W. MARION ST
SUITE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

B. CHAD HOUSER PE, PLS UTILITY DESIGN ENGINEER
JIMMY TERRY PE PROJECT MANAGER

SEAL

Professional Engineer Seal for Bobby C. Houser, State of North Carolina, License No. 130499, dated 8/26/2025.

NCDOT DIVISION 12
1710 E. MARION ST
Shelby, NC 28151
PHONE (980) 552-4200

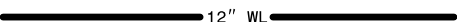
WARREN ANDERSON DIVISION UTILITY COORDINATOR
CHAD DREWERY DIVISION UTILITY ENGINEER

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
U-6146/B-5857	UC-2

UTILITIES PLAN SHEET SYMBOLS

PROPOSED WATER SYMBOLS

Water Line (Sized as Shown)	
11¼ Degree Bend	
22½ 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	
Water Meter	
Relocate Water Meter	
Remove Water Meter	
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	

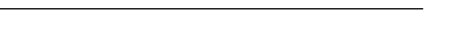
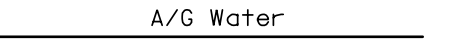
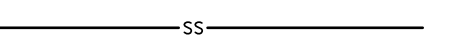
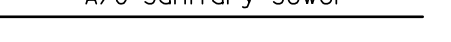
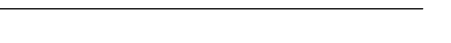
PROPOSED MISCELLANEOUS UTILITIES SYMBOLS

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	
Telephone Pole	
Joint Use Pole	
Utility Pole	
Utility Pole with Base	
H-Frame Pole	
Power Transmission Line Tower	
Water Manhole	
Power Manhole	
Telephone Manhole	
Sanitary Sewer Manhole	
Hand Hole for Cable	
Power Transformer	
Telephone Pedestal	
CATV Pedestal	
Gas Valve	
Gas Meter	
Located Miscellaneous Utility Object	
Abandoned According to Utility Records	
End of Information	

*Underground Power Line	
*Underground Telephone Cable	
*Underground Telephone Conduit	
*Underground Fiber Optics Telephone Cable	
*Underground TV Cable	
*Underground Fiber Optics TV Cable	
*Underground Gas Pipeline	
Aboveground Gas Pipeline	
*Underground Water Line	
Aboveground Water Line	
*Underground Gravity Sanitary Sewer Line	
Aboveground Gravity Sanitary Sewer Line	
*Underground SS Forced Main Line	
Underground Unknown Utility Line	
SUE Test Hole	
Water Meter	
Water Valve	
Fire Hydrant	
Sanitary Sewer Cleanout	

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

UTILITY CONSTRUCTION

GENERAL NOTES:

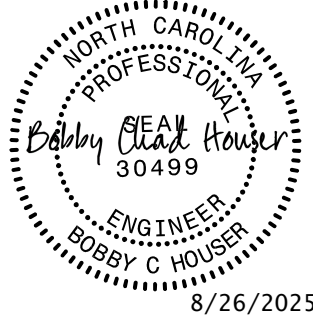
1. THE PROPOSED UTILITY CONSTRUCTION SHALL MEET THE APPLICABLE REQUIREMENTS OF THE NC DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" DATED JANUARY 2024.
2. THE EXISTING UTILITIES BELONG TO THE CITY OF GASTONIA, TOWN OF MCADENVILLE, AND TOWN OF CRAMERTON. THE CONTACT FOR ALL OF THESE UTILITY OWNERS IS KYLE BUTLER, PE. HIS PHONE NUMBER IS 704-866-6768 AND HIS EMAIL IS kyleb@tworiversutilities.com
3. ALL WATER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF WATER RESOURCES, PUBLIC WATER SUPPLY SECTION. ALL SEWER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT QUALITY, DIVISION OF WATER RESOURCES, WATER QUALITY SECTION. PERFORM ALL WORK IN ACCORDANCE WITH THE APPLICABLE PLUMBING CODES.
4. THE UTILITY OWNER OWNS THE EXISTING UTILITY FACILITIES AND WILL OWN THE NEW UTILITY FACILITIES AFTER ACCEPTANCE BY THE DEPARTMENT. THE DEPARTMENT OWNS THE CONSTRUCTION CONTRACT AND HAS ADMINISTRATIVE AUTHORITY. COMMUNICATIONS AND DECISIONS BETWEEN THE CONTRACTOR AND UTILITY OWNER ARE NOT BINDING UPON THE DEPARTMENT OR THIS CONTRACT UNLESS AUTHORIZED BY THE ENGINEER. AGREEMENTS BETWEEN THE UTILITY OWNER AND CONTRACTOR FOR THE WORK THAT IS NOT PART OF THIS CONTRACT OR IS SECONDARY TO THIS CONTRACT ARE ALLOWED, BUT ARE NOT BINDING UPON THE DEPARTMENT.
5. PROVIDE ACCESS FOR THE DEPARTMENT PERSONNEL AND THE OWNER'S REPRESENTATIVES TO ALL PHASES OF CONSTRUCTION. NOTIFY DEPARTMENT PERSONNEL AND THE UTILITY OWNER TWO WEEKS PRIOR TO COMMENCEMENT OF ANY WORK AND ONE WEEK PRIOR TO SERVICE INTERRUPTION. KEEP UTILITY OWNERS' REPRESENTATIVES INFORMED OF WORK PROGRESS AND PROVIDE OPPORTUNITY FOR INSPECTION OF CONSTRUCTION AND TESTING.

6. THE PLANS DEPICT THE BEST AVAILABLE INFORMATION FOR THE LOCATION, SIZE, AND TYPE OF MATERIAL FOR ALL EXISTING UTILITIES. MAKE INVESTIGATIONS FOR DETERMINING THE EXACT LOCATION, SIZE, AND TYPE MATERIAL OF THE EXISTING FACILITIES AS NECESSARY FOR THE CONSTRUCTION OF THE PROPOSED UTILITIES AND FOR AVOIDING DAMAGE TO EXISTING FACILITIES. REPAIR ANY DAMAGE INCURRED TO EXISTING FACILITIES TO THE ORIGINAL OR BETTER CONDITION AT NO ADDITIONAL COST TO THE DEPARTMENT.
7. MAKE FINAL CONNECTIONS OF THE NEW WORK TO THE EXISTING SYSTEM WHERE INDICATED ON THE PLANS, AS REQUIRED TO FIT THE ACTUAL CONDITIONS, OR AS DIRECTED.
8. MAKE CONNECTIONS BETWEEN EXISTING AND PROPOSED UTILITIES AT TIMES MOST CONVENIENT TO THE PUBLIC, WITHOUT ENDANGERING THE UTILITY SERVICE, AND IN ACCORDANCE WITH THE UTILITY OWNER'S REQUIREMENTS. MAKE CONNECTIONS ON WEEKENDS, AT NIGHT, AND ON HOLIDAYS IF NECESSARY.
9. ALL UTILITY MATERIALS SHALL BE APPROVED PRIOR TO DELIVERY TO THE PROJECT. SEE 1500-7, " SUBMITTALS AND RECORDS" IN SECTION 1500 OF THE STANDARD SPECIFICATIONS.

PROJECT SPECIFIC NOTES:

1. ALL PROPOSED WATER MAINS SHALL BE PRESSURE CLASS 350 DUCTILE IRON PIPE AND UTILIZE FLEXIBLE PUSH-ON RESTRAINED JOINTS.
2. DUCTILE IRON PIPE SHALL BE MECHANICAL JOINT OR PUSH-ON JOINT TYPE. PUSH-ON TYPE JOINTS SHALL BE "BELL-TITE", "FASTITE", "TYTON", OR APPROVED EQUAL. ALL JOINTS FOR DUCTILE IRON PIPE SHALL CONFORM TO THE APPLICABLE DIMENSIONS AND WEIGHTS SHOWN IN THE TABLES IN AWWA C-151 AND TO ANSI A-21.11 (AWWA C-111) OR LATEST REVISION.
3. ALL WATERLINE SHALL HAVE COATED TRACER WIRE NO SMALLER THAN 12 AWG SOLID COPPER.
4. FIRE HYDRANTS SHALL BE AMERICAN-DARLING (AMERICAN FLOW CONTROL) MARK-73-1, MUELLER "SUPER CENTURION 200", KENNEDY GUARDIAN K-81-D, OR CLOW "MEDALLION" OR APPROVED EQUAL.
5. ALL WATER LINE FITTINGS 6" OR LARGER SHALL BE PRESSURE CLASS 350 DUCTILE IRON MECHANICAL RESTRAINED JOINT IN ACCORDANCE WITH AWWA C110
6. EXISTING WATER SERVICE LINES WHICH ARE GALVANIZED OR IN WHICH THE EXISTING SERVICE COUPLING IS BENEATH THE PROPOSED EDGE OF PAVEMENT SHALL BE INSTALLED FROM THE WATER MAIN TO THE METER.
7. GATE VALVES SHALL BE THOSE MANUFACTURED BY M & H VALVE AND FITTINGS COMPANY, AMERICAN-DARLING (AMERICAN FLOW CONTROL) VALVE AND MANUFACTURING COMPANY, KENNEDY & CLOW OR AN APPROVED EQUAL, ALL VALVES SHALL BE AWWA STANDARD. 2" GATE VALVE TO BE RESILIENT WEDGE WITH SQUARE OPERATING NUT IN ACCORDANCE WITH CURRENT CITY OF GASTONIA STANDARD SPECIFICATIONS AND DEATAILS. ALL RESILIENT SEATED GATE VALVES SHALL COMPLY WITH AWWA C-509 LATEST REVISION.
8. WATER MAINS CROSSING OTHER UTILITIES AND NON -POTABLE WATER LINES (SANITARY SEWER, STORM DRAINS, ETC.) SHALL BE LAID TO PROVIDE A MINIMUM TWENTY -FOUR (24") INCHES BETWEEN THE WATER LINE AND OTHER UTILITIES. IF THESE SEPARATIONS CANNOT BE MAINTAINED, THEN DUCTILE IRON PIPE SHALL BE USED FOR 10' ON EACH SIDE OF THE CROSSING WITH A MINIMUM SEPARATION OF 6" MAINTAINED AS WELL AS ENCASED IN CLASS B CONCRETE FOR 5' ON EACH SIDE.

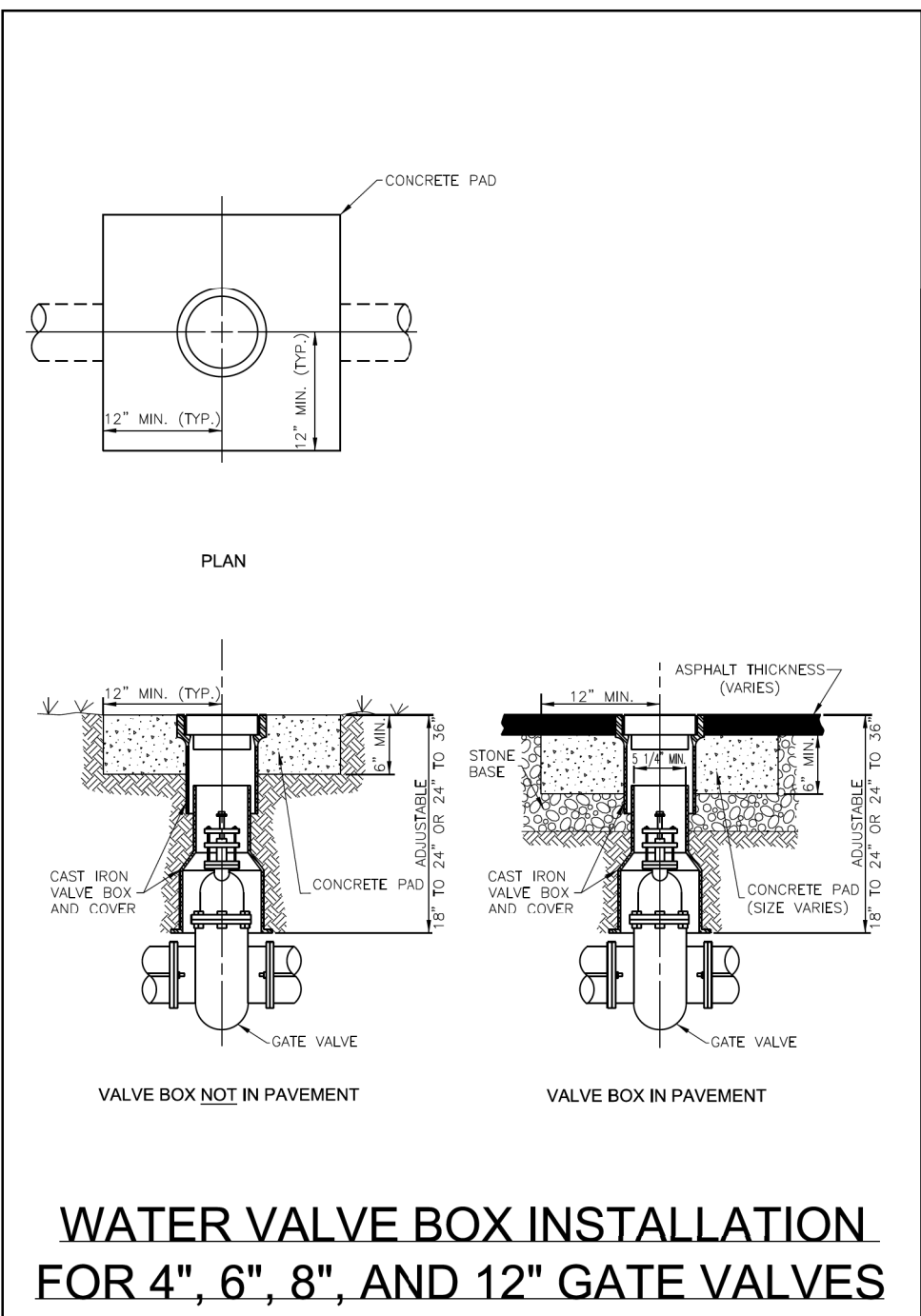
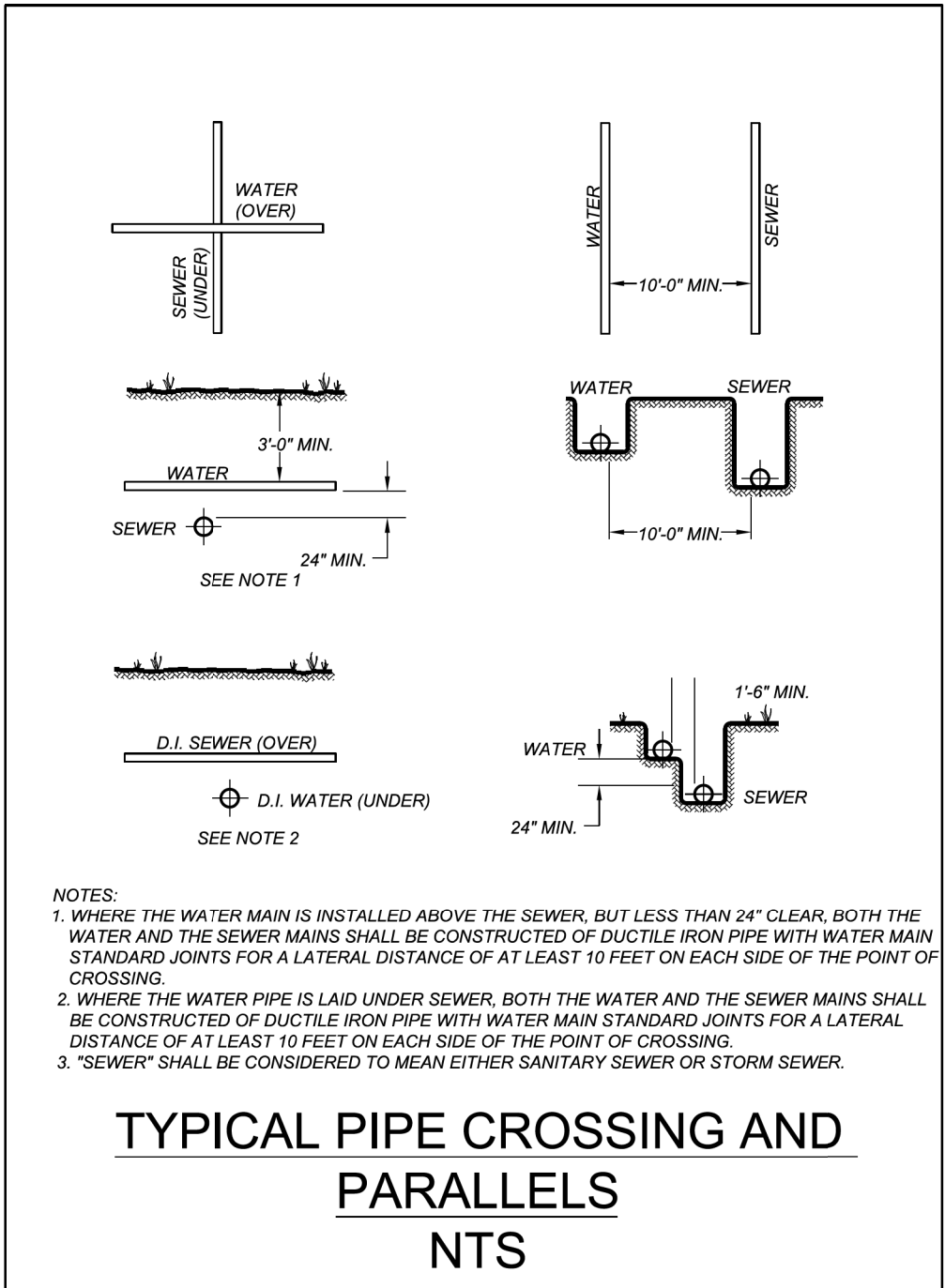
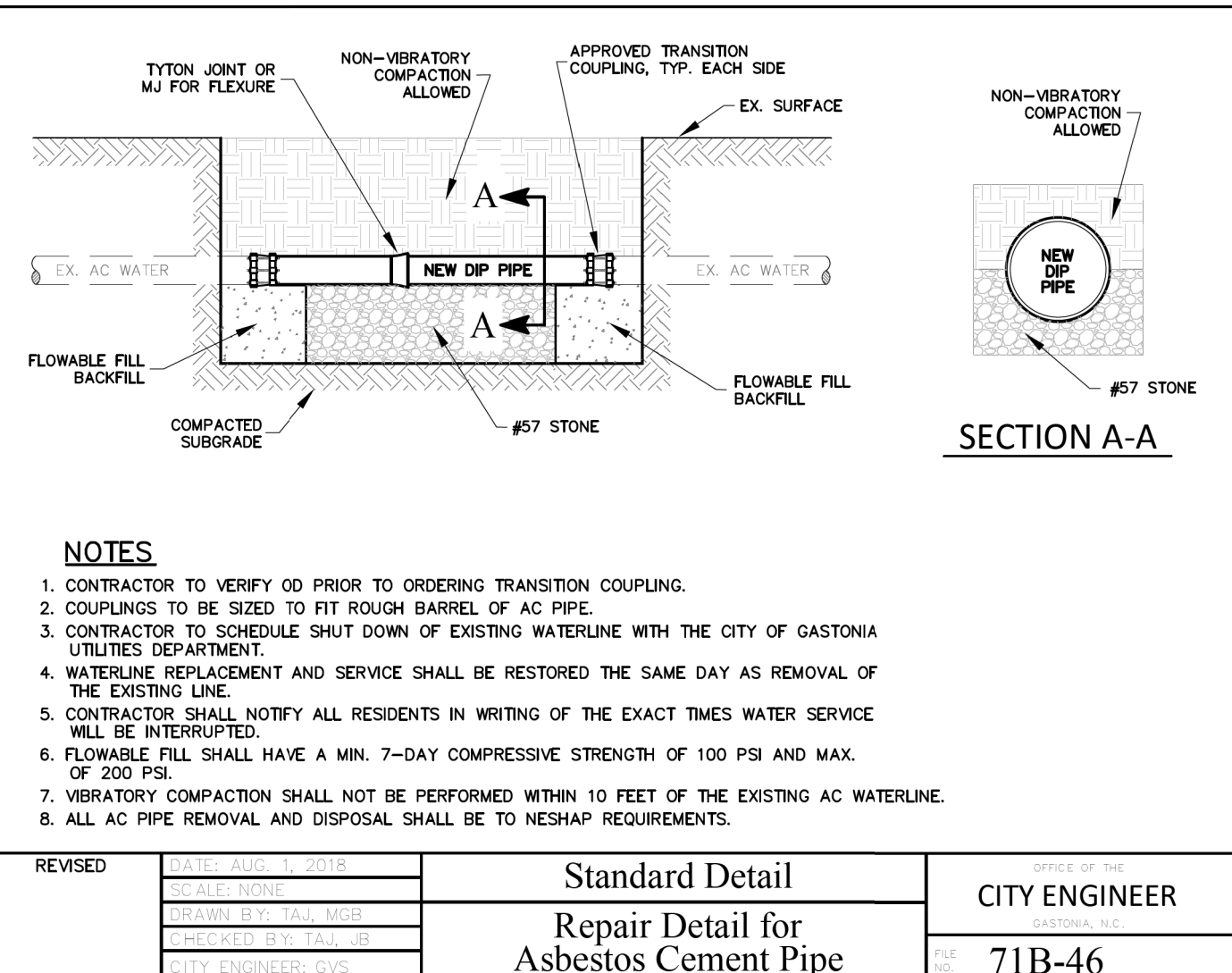
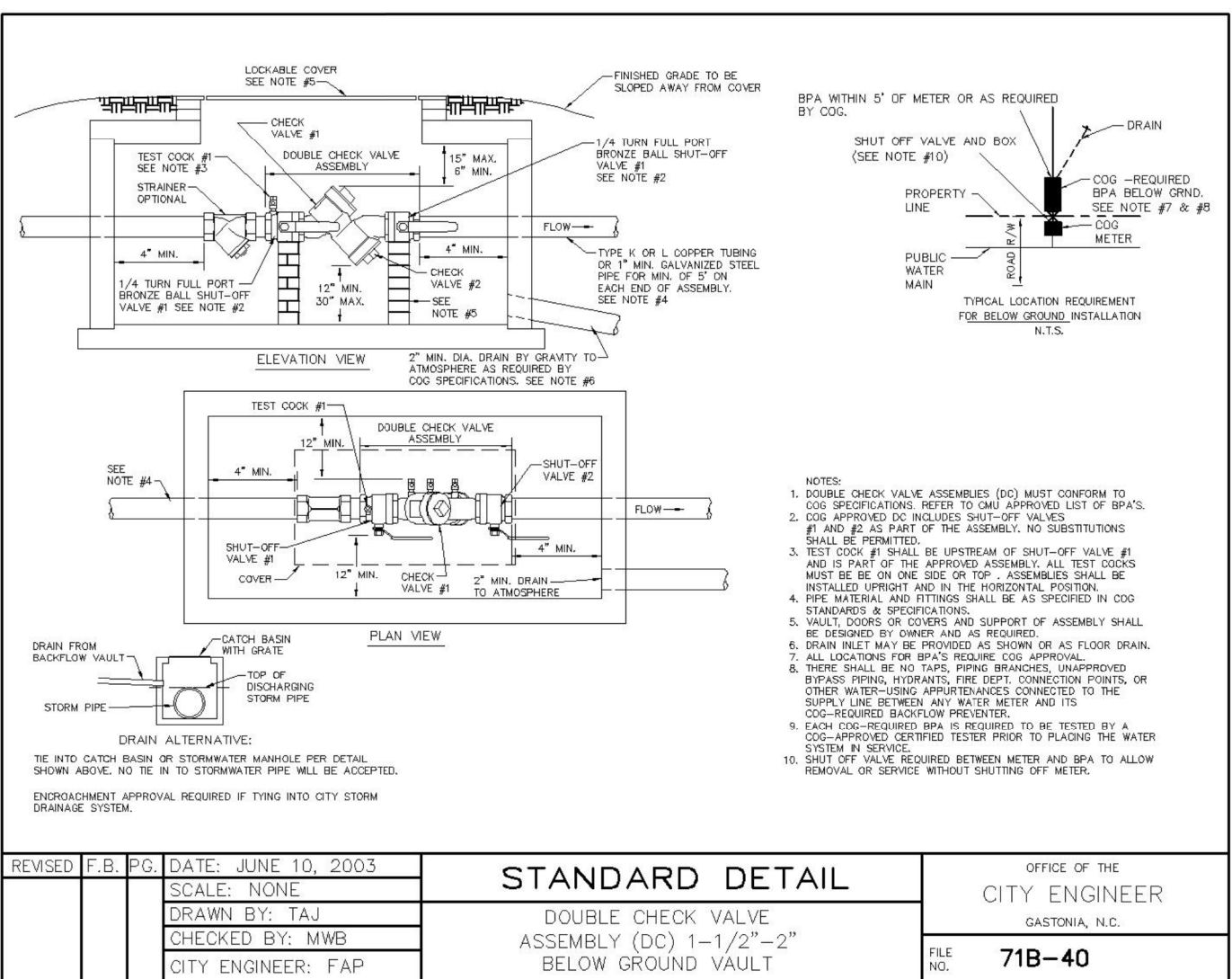
9. WHERE WATER, SEWER, AND GAS LINES ARE PARALLEL, A TEN FEET HORIZONTAL CLEARANCE MUST BE MAINTAINED.
10. PROPOSED WATER LINES SHALL BE WRAPPED IN POLYETHYLENE ENCASEMENT FOR 10' EACH SIDE OF GAS LINE CROSSINGS AND WHERE THE WATER LINE AND GAS LINE ARE WITHIN 10 FEET OF EACH OTHER.
11. PROVIDE THRUST RESTRAINT ON THE EXISTING WATER LINE WHERE TIE-INS ARE MADE AS NECESSARY.
12. 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.
13. BACKFLOW ASSEMBLY INSTALLATIONS TO BE IN ACCORDANCE WITH CURRENT CITY OF GASTONIA STANDARD SPECIFICATIONS AND DETAILS DEPENDING ON THE DEGREE OF HAZARD OF THE PROPOERTY SERVED.
14. ALL PROPOSED GRAVITY SEWER LINE SHALL BE PRESSURE CLASS 350 DUCTILE IRON PIPE .
15. ALL MATERIALS, EQUIPMENT, LABOR, AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH CITY OF GASTONIA STANDARDS AND NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES FOR PROPOSED WATER AND SEWER LINES. IN THE EVENT OF CONFLICT BETWEEN STANDARDS, THE MORE RESTRICTIVE REQUIREMENTS SHALL APPLY.
16. 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. DEFLECTION OF THE PIPE JOINTS ON PVC PIPE MATERIAL IS NOT AN ACCEPTABLE METHOD OF PIPE BENDING.

PROJECT REFERENCE NO.	SHEET NO.
U-6146/B-5857	UC-3
DESIGNED BY: BCH	
DRAWN BY: ADC	
CHECKED BY:	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	UTILITY CONSTRUCTION PLANS ONLY
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

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UTILITY CONSTRUCTION

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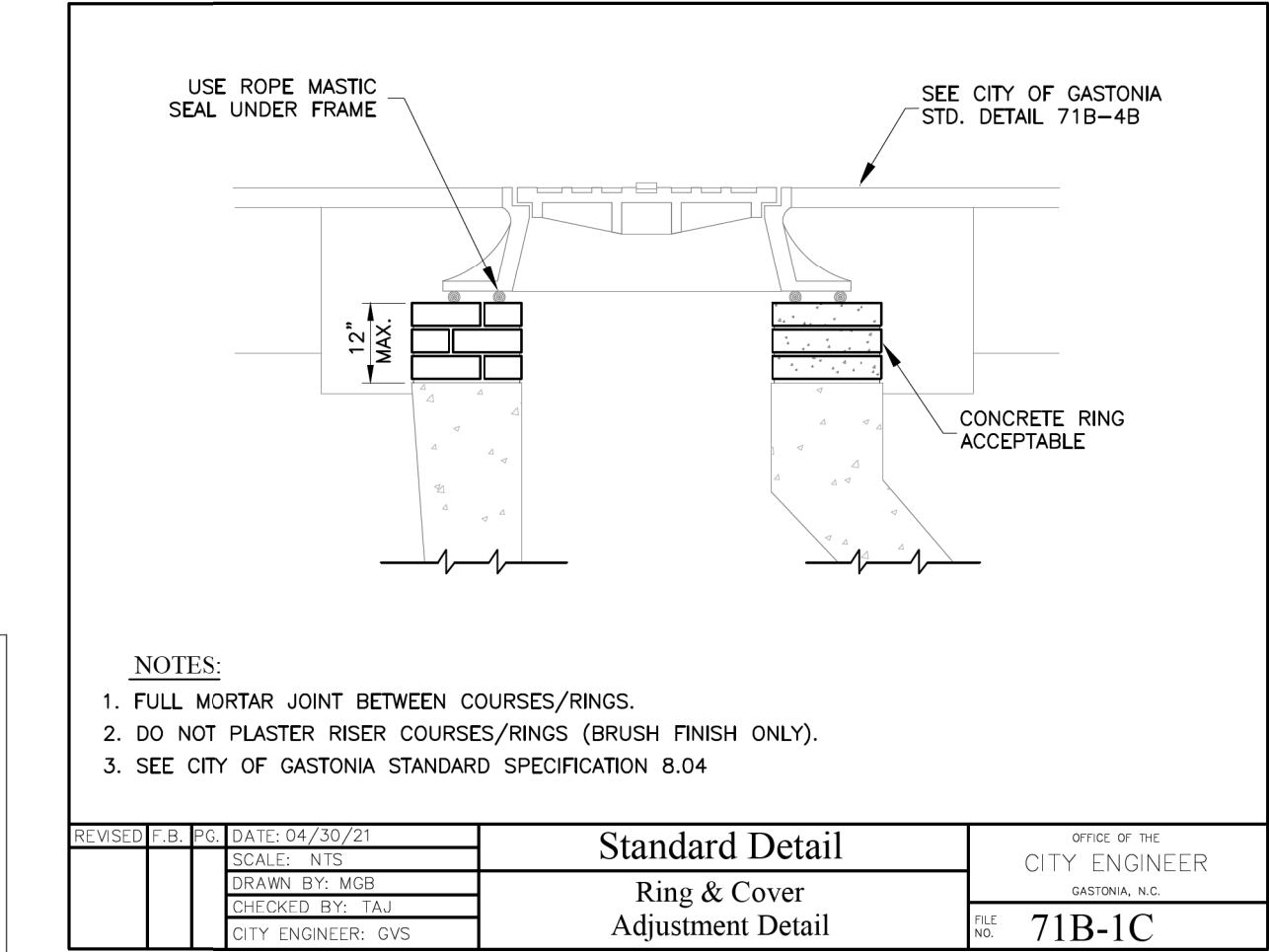
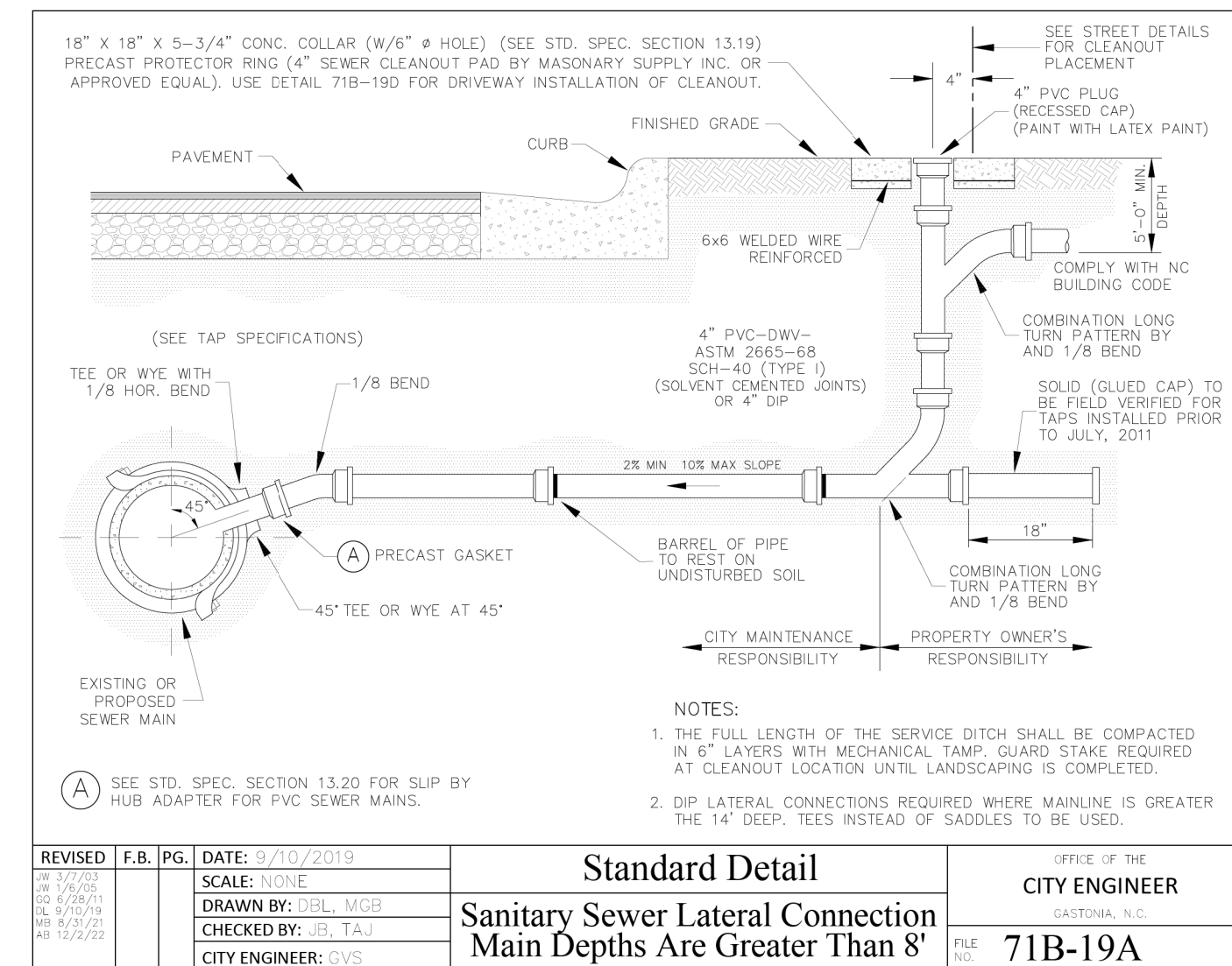
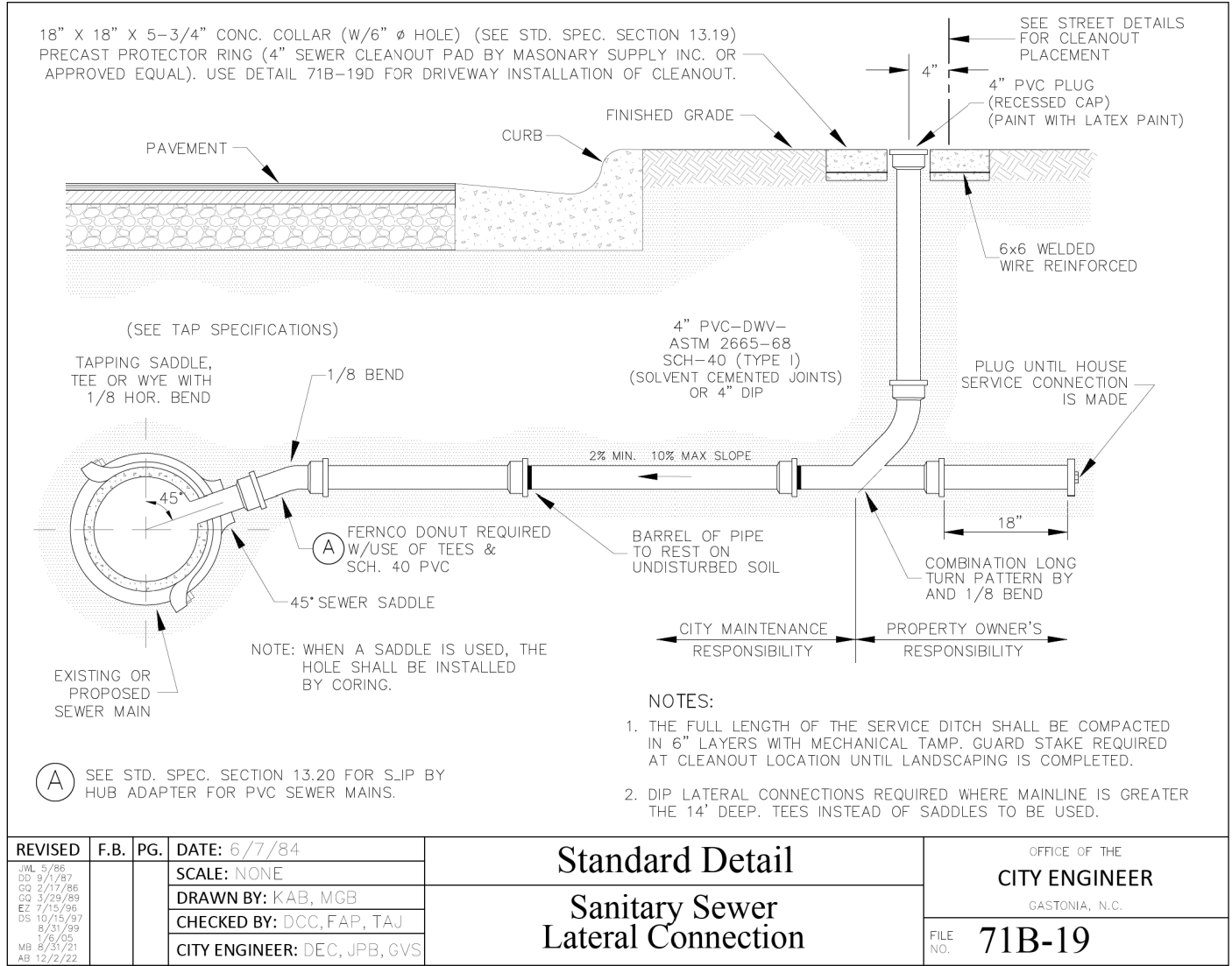
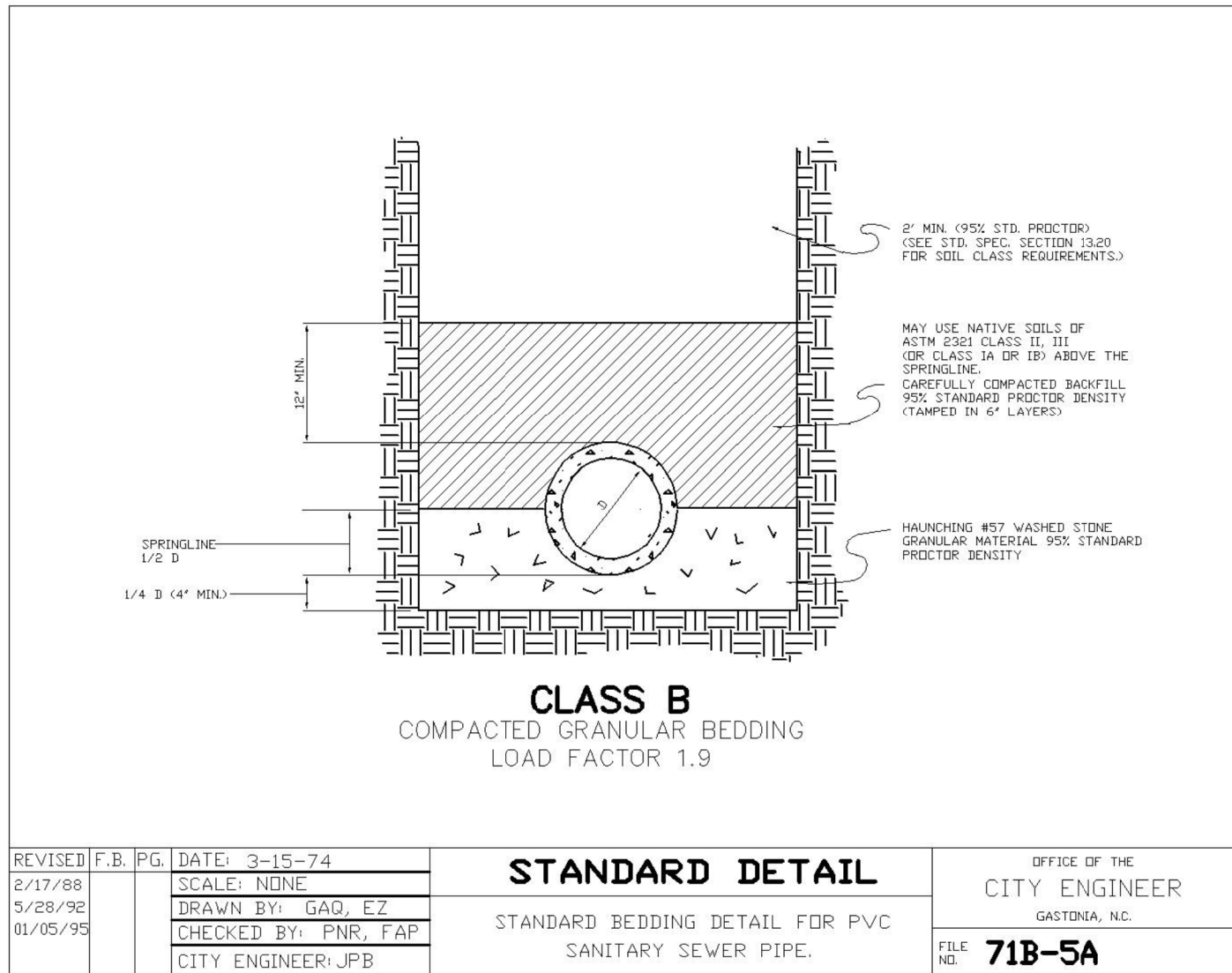
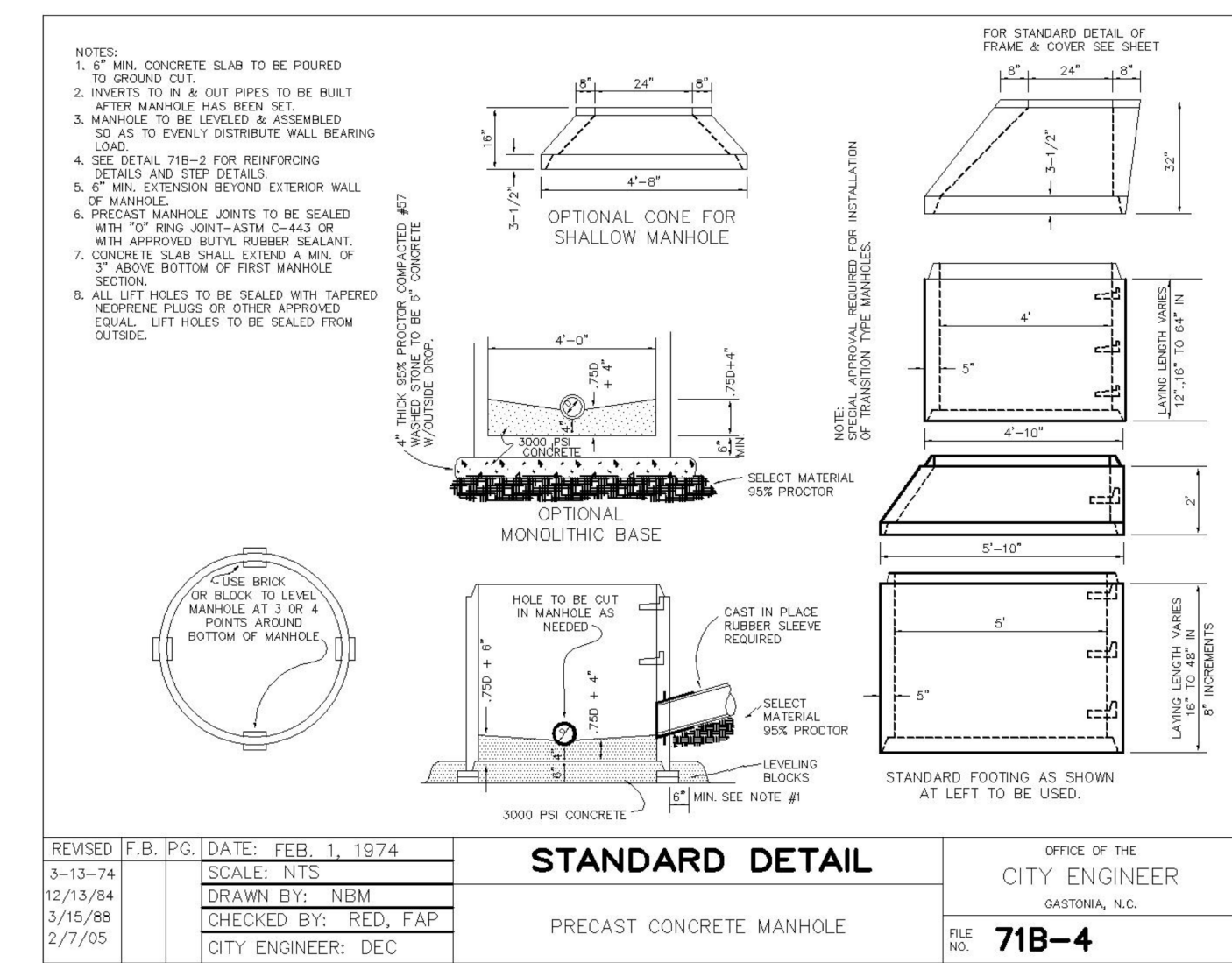
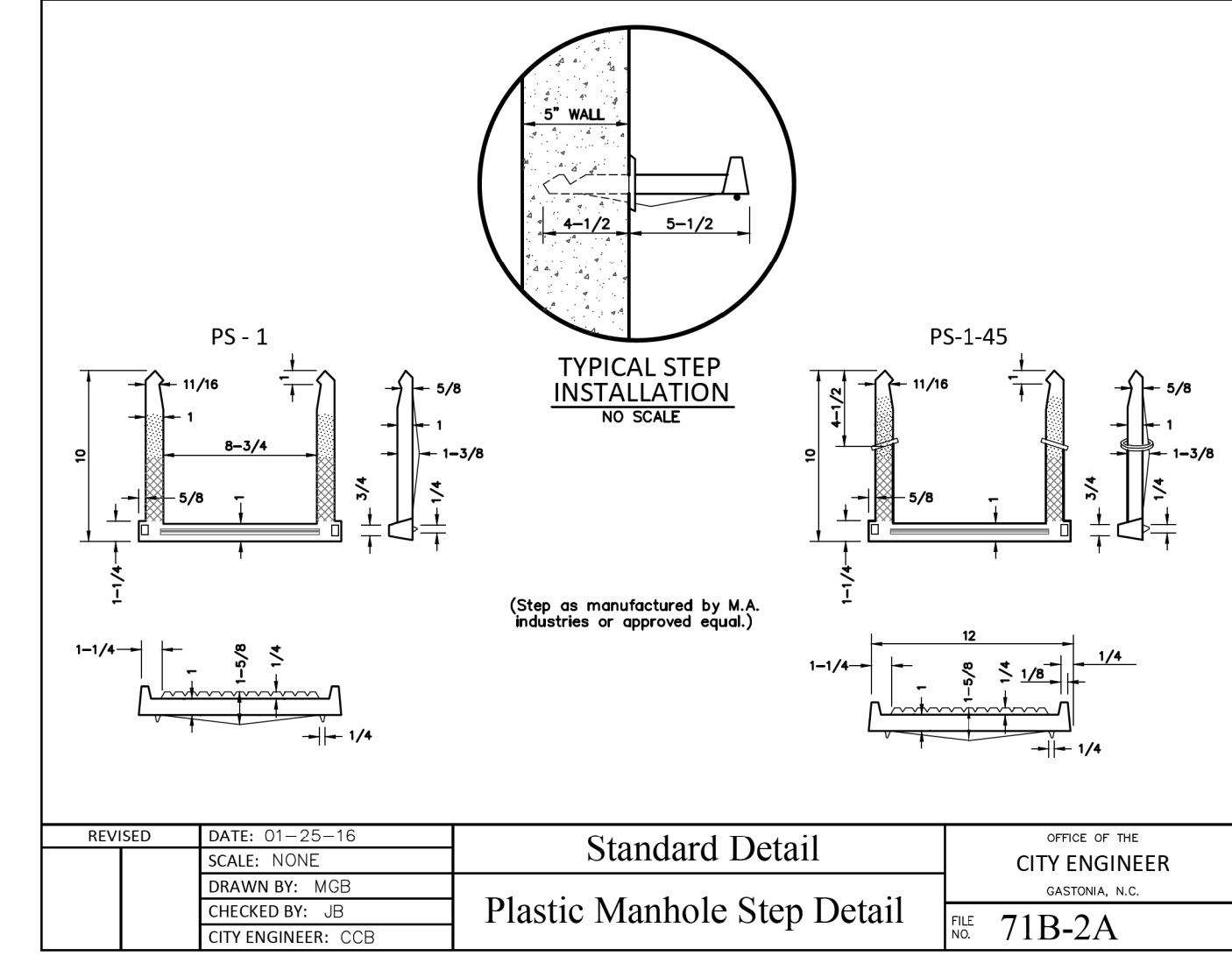
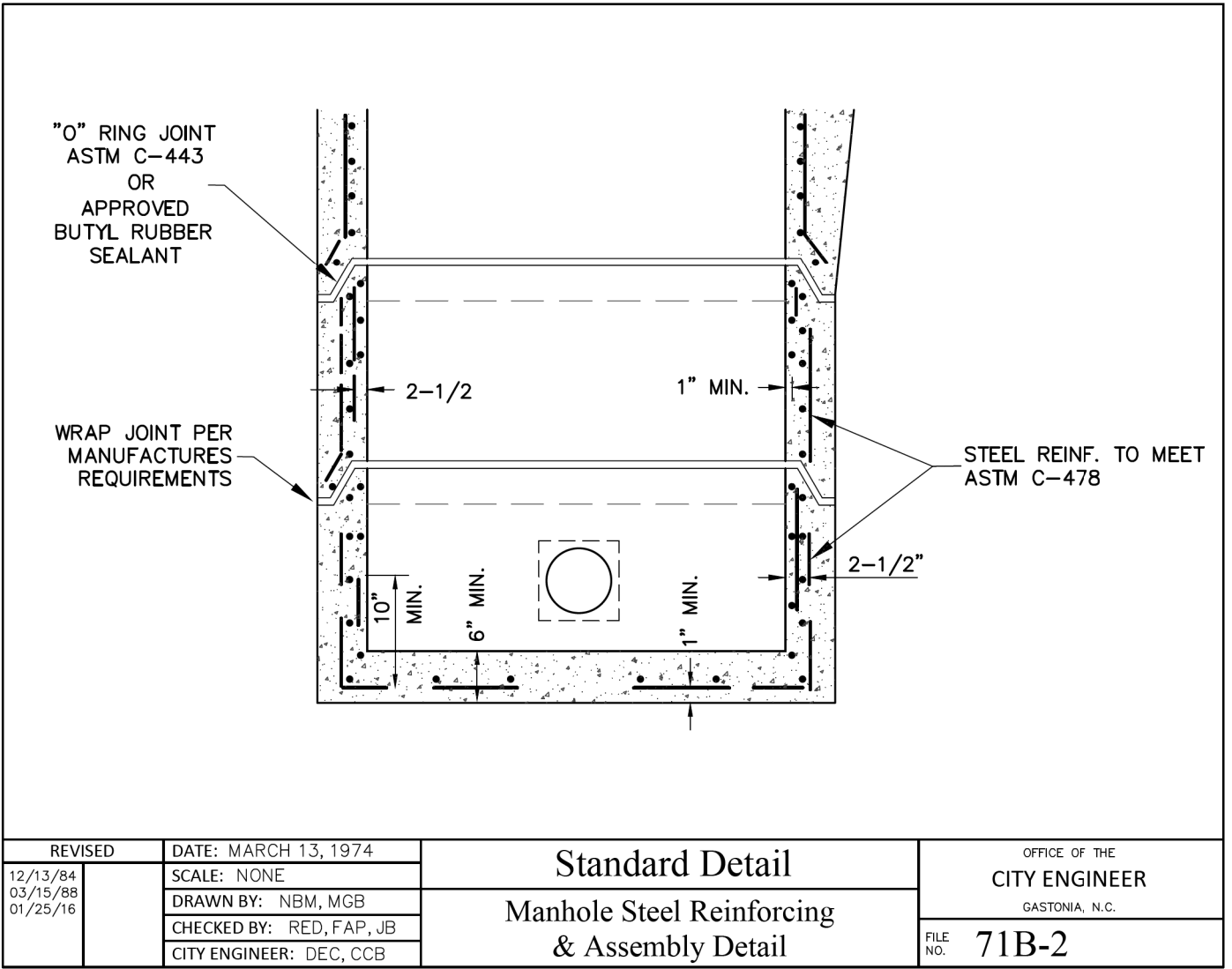
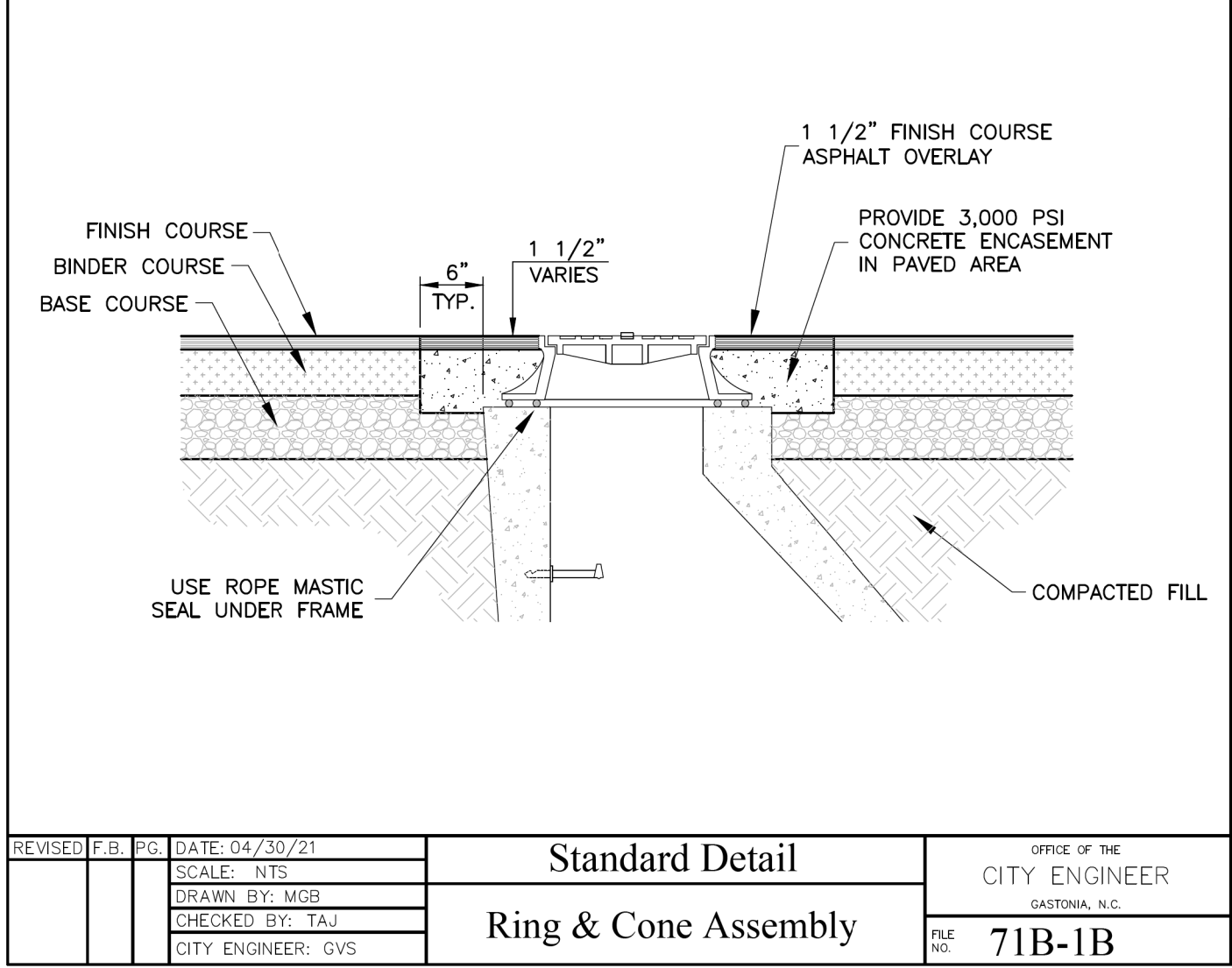
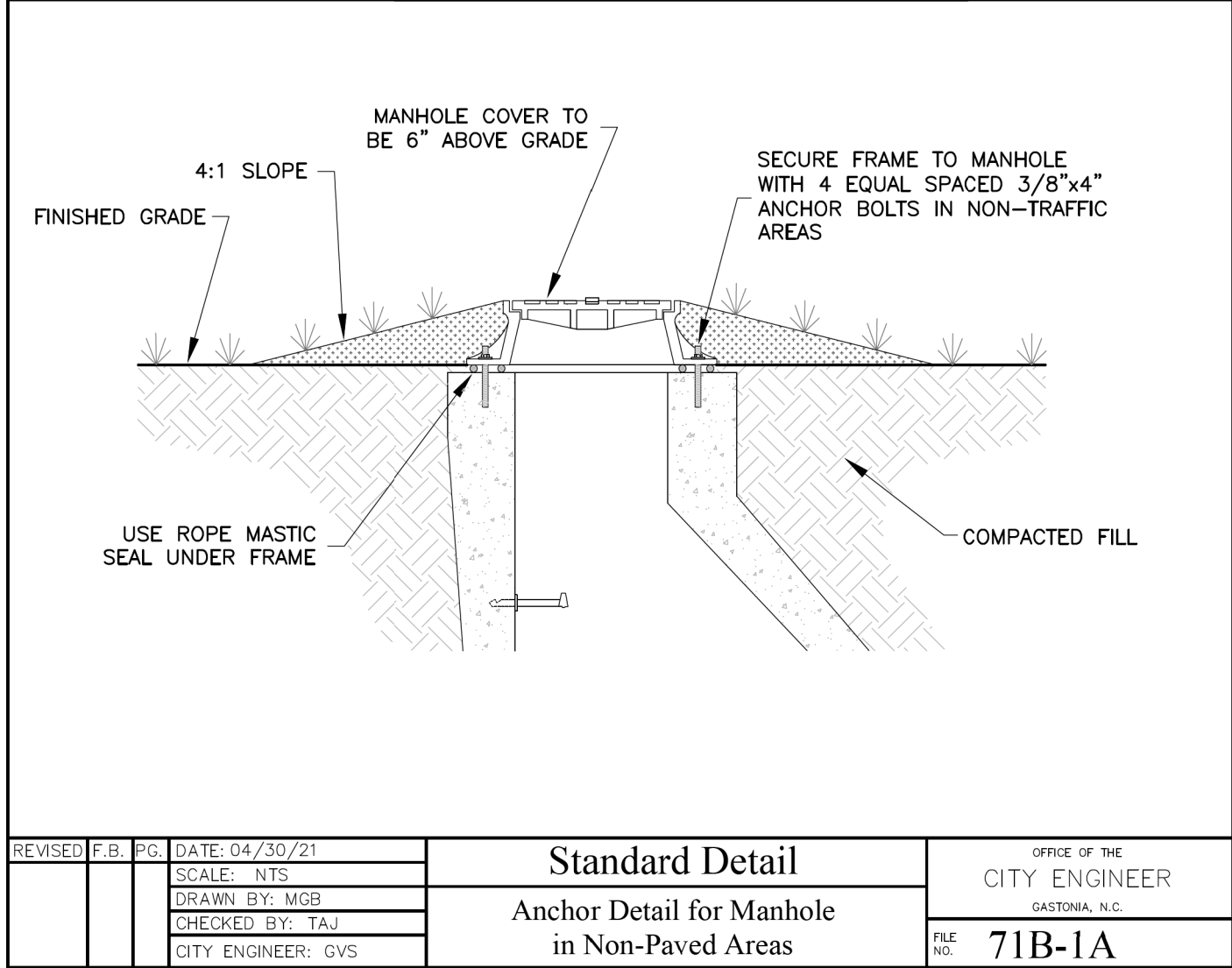
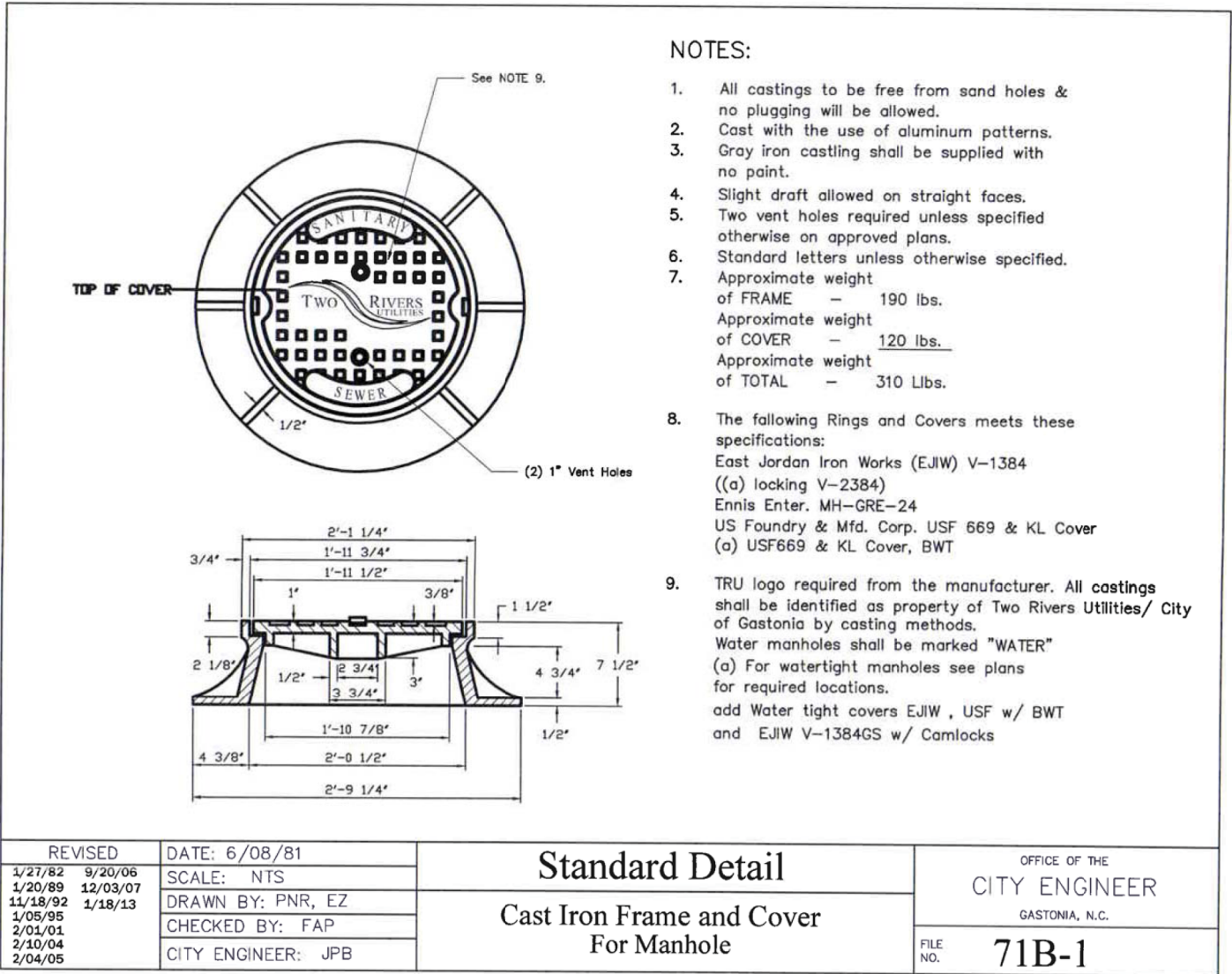


SEWER TYPICAL DETAILS

PROJECT REFERENCE NO.	SHEET NO.
U-6146/B-5857	UC-3C
DESIGNED BY: BCH	SEAL 30499 NORTH CAROLINA PROFESSIONAL ENGINEER BOBBY C. HENDERSON
DRAWN BY: ADC	
CHECKED BY:	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	8/26/2025
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	UTILITY CONSTRUCTION PLANS ONLY

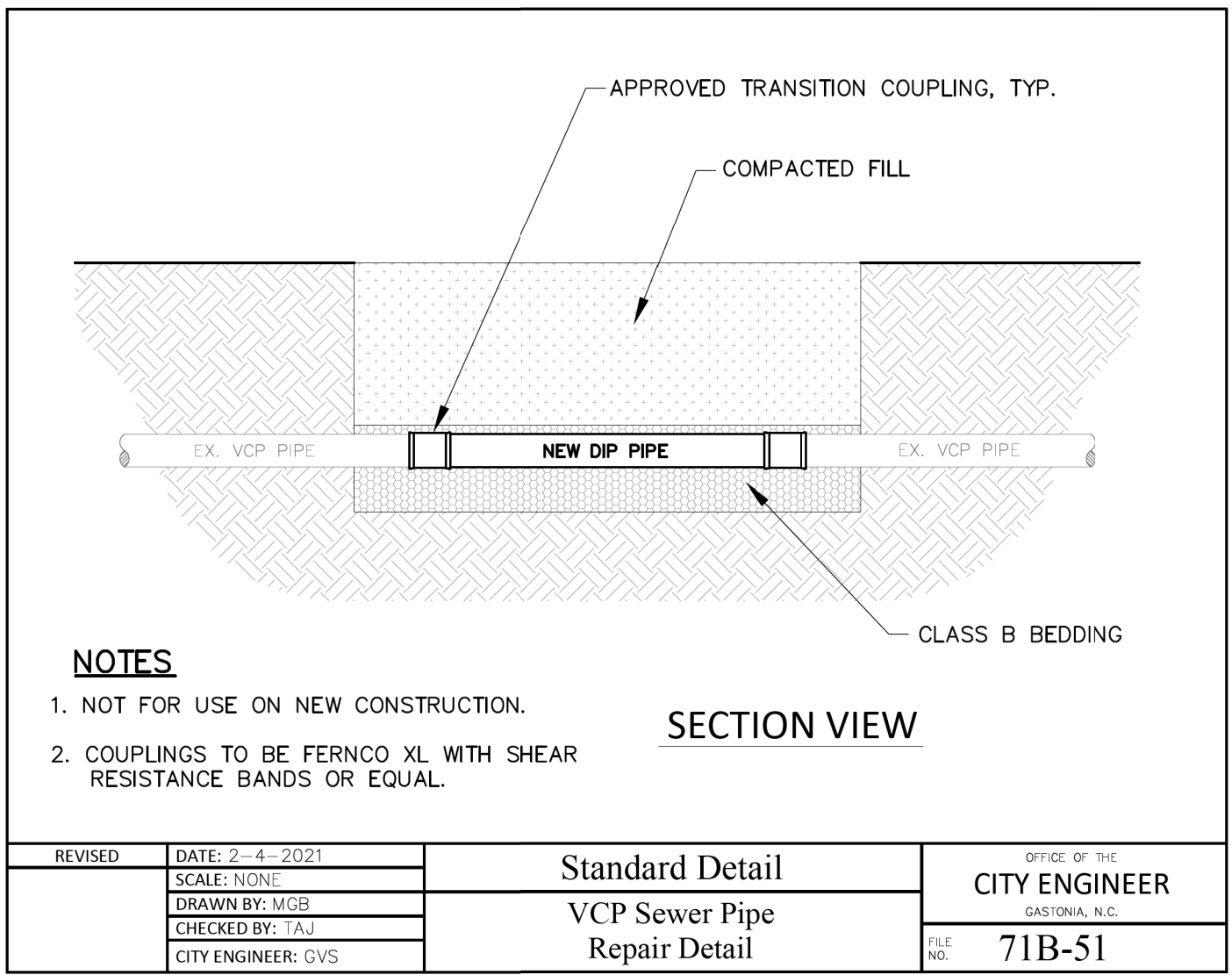
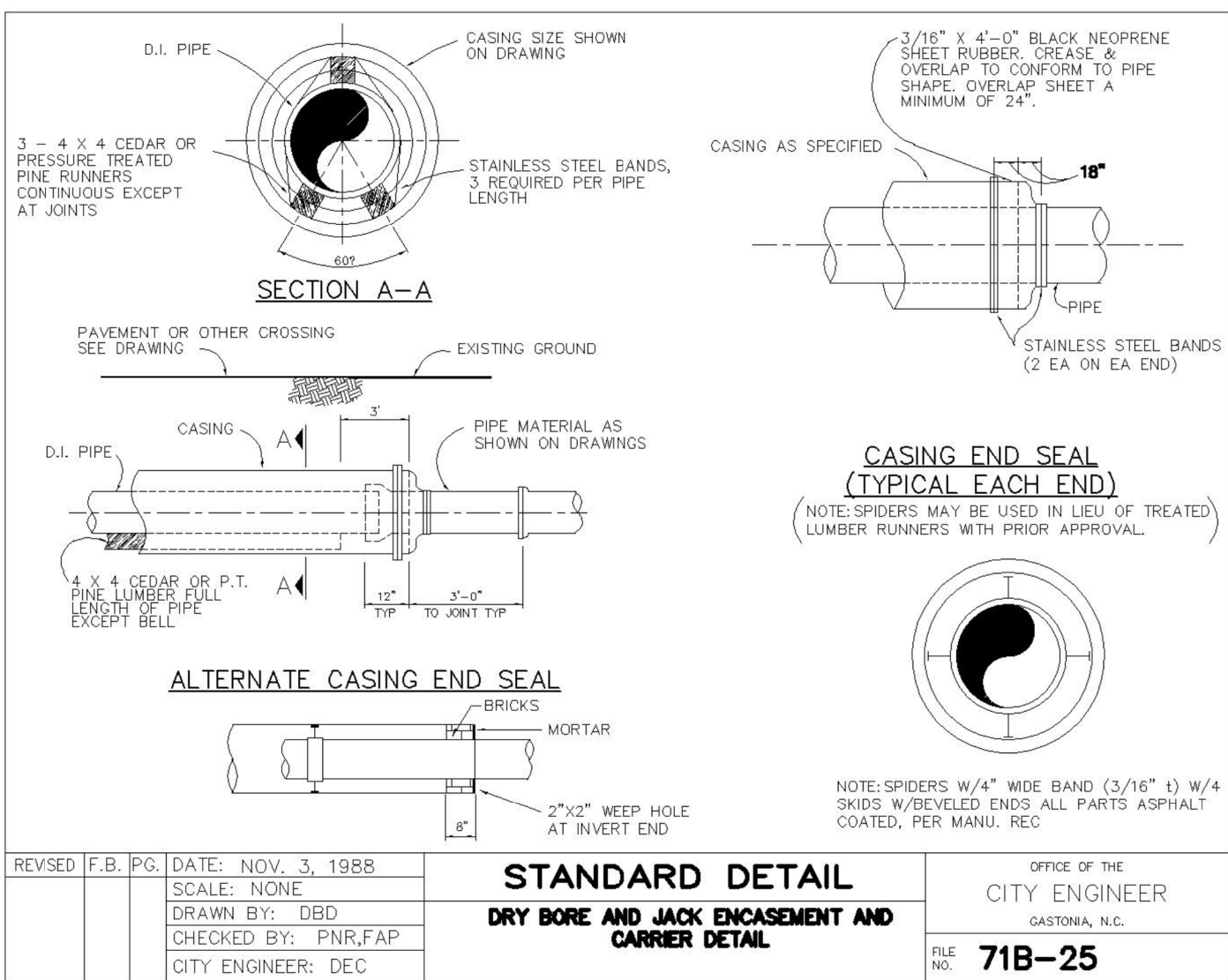
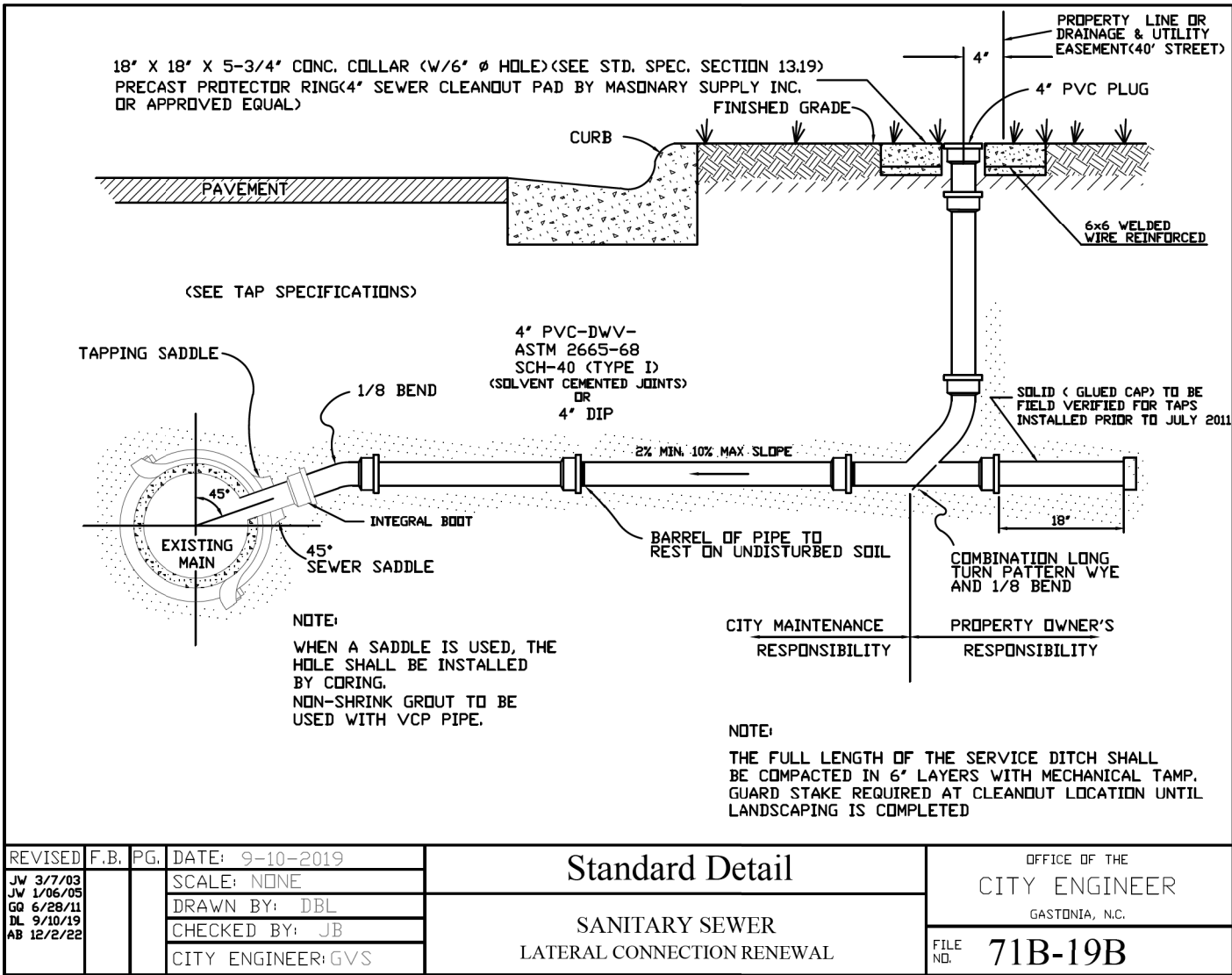
UTILITY CONSTRUCTION

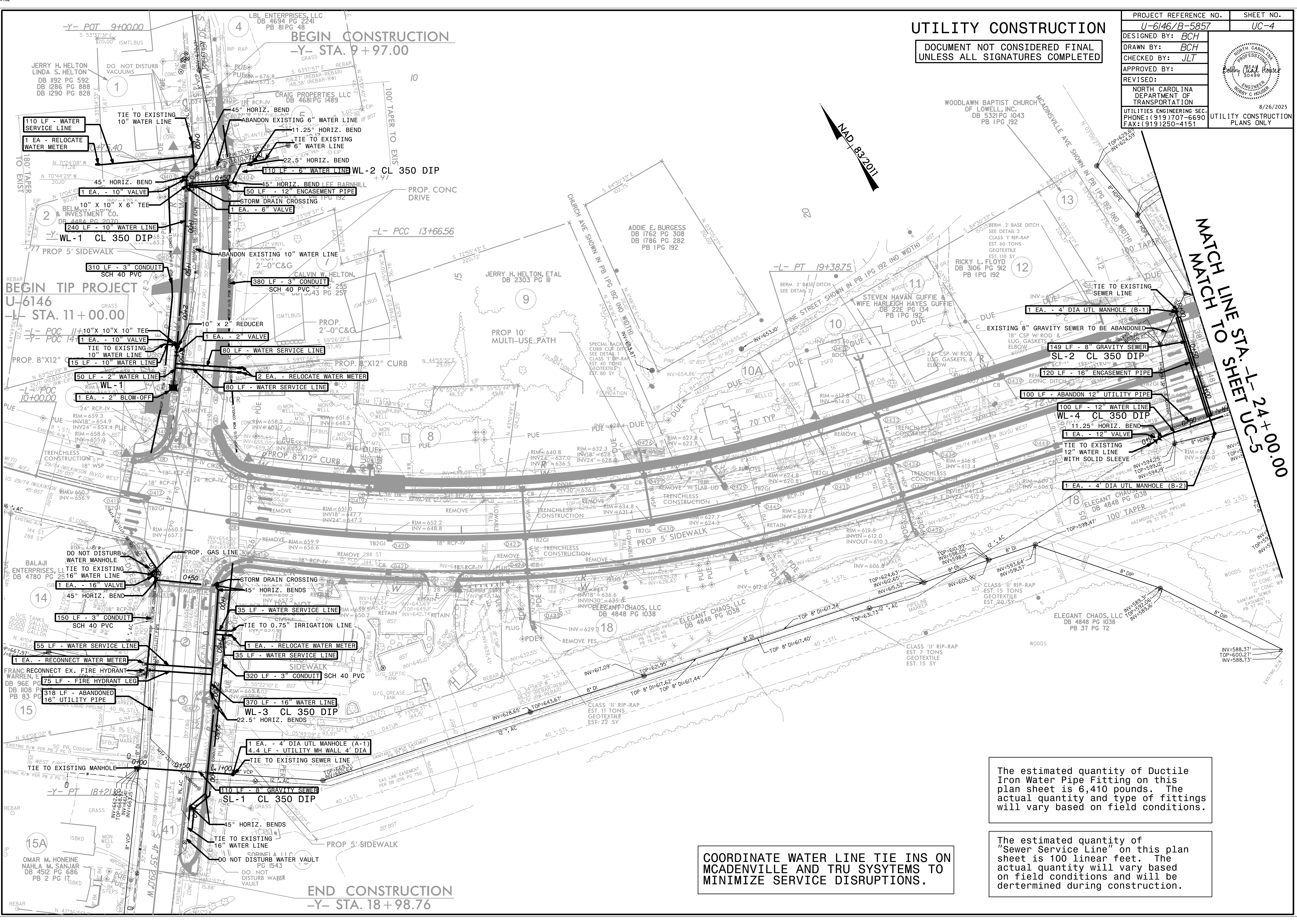
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PROJECT REFERENCE NO.		SHEET NO.	
U-6146/B-5857		UC-5	
DESIGNED BY: BCH			
DRAWN BY: BCH			
CHECKED BY: JLT			
APPROVED BY:			
REVISED:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		8/26/2025	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151		UTILITY CONSTRUCTION PLANS ONLY	

The estimated quantity of Ductile Iron Sewer Pipe Fitting on this plan sheet is 505 pounds. The actual quantity and type of fittings will vary based on field conditions.

The estimated quantity of Ductile Iron Water Pipe Fitting on this plan sheet is 1,940 pounds. The actual quantity and type of fittings will vary based on field conditions.

~~END CONSTRUCTION~~
~~-GRWY- STA. 13+15.00~~

-L- STA. 35+18.83
END BRIDGE
(B-5857)

— WOOD RUB RAIL
—L— STA. 30+10±
SEE DETAIL SHT 20

$$\frac{-L - POT \ 34+59.81}{-GRWY - POT \ 11+40.32}$$

-L- STA. 30 + 67.17
BEGIN BRIDGE
(B-5857)

BEGIN CONSTRUCTION
-GRWY- STA. 10+02.75
= TIP PROJECT EB-5535
STA. 45+22 ±

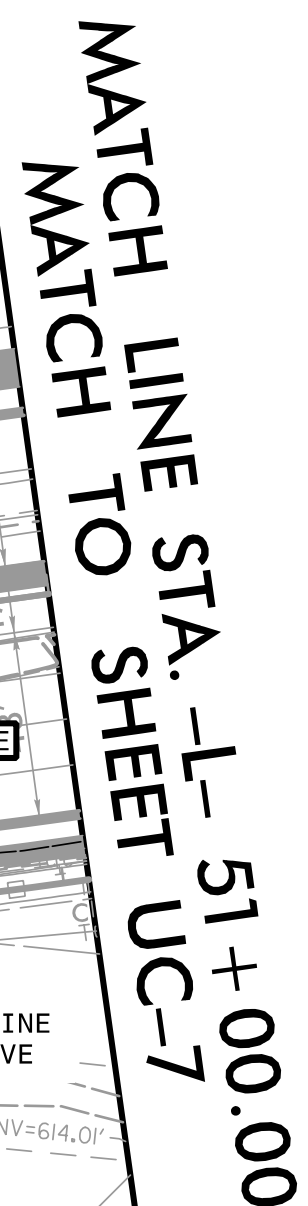
**MATCH LINE STA. -L- 38 + 00.00
MATCH TO SHEET UC-6**

**MATCH LINE STA. -L- 24 + 00.00
MATCH TO SHEET UC-4**

END CONSTRUCTION
-Y2- STA. 11+55.00

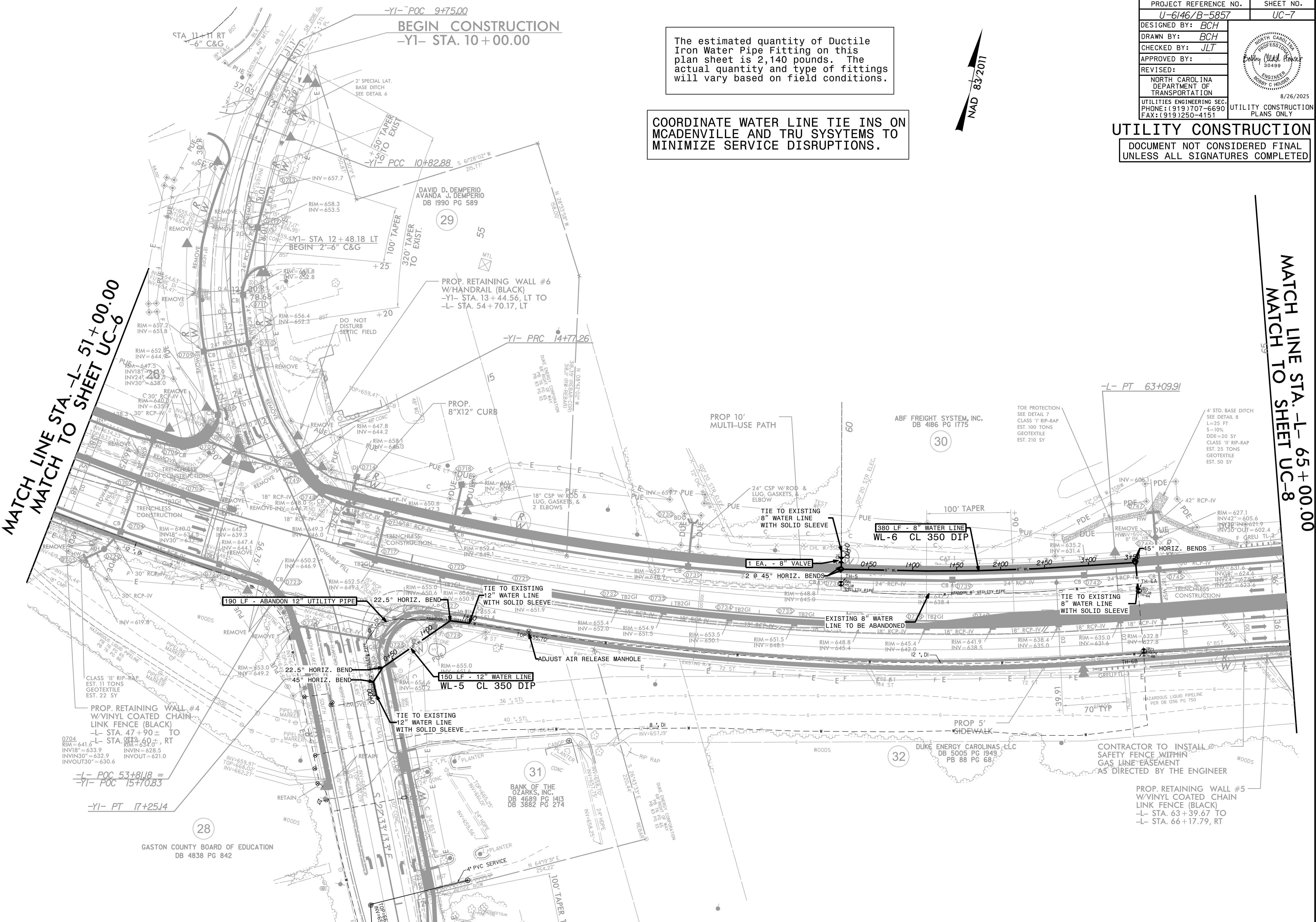
ROCK PLATING
-L- STA 28+80 TO 30+50, RT
SEE DETAIL SHT 2G-1
EST. 600 SY

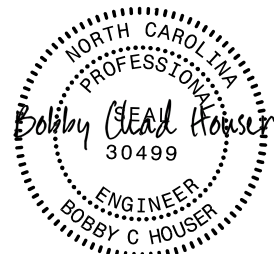
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8/17/99

9/2/2025 X:\NC0001\B-5857-Cramerton\Utilities\Engineering\UC\Pro\U-6146-Ut.-r.dyt sht7\UC(utl const sht7).psh.dgn 2/23/24 3:43 PM



PROJECT REFERENCE NO.		SHEET NO.
U-6146/B-5857		UC-7
DESIGNED BY: BCH		
DRAWN BY: BCH		
CHECKED BY: JLT		
APPROVED BY:		
REVISED:		
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		8/26/2025
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8/17/99

9/2/2025
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MATCH LINE STA. -L- 65 + 00.00
MATCH TO SHEET UC-7

