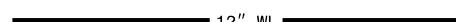



























STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

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 |  |
| 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 |  |



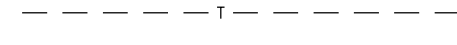
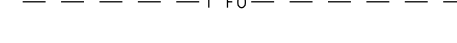




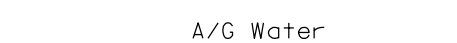
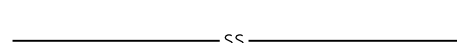

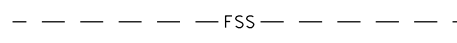
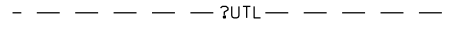






PROPOSED MISCELLANEOUS UTILITIES SYMBOLS

| | |
|--|---|
| 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 |  |
| Abandon Utility (Sized as Shown) |  |
| 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 |  |
| Aboveground Power |  |
| *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) _____

5/14/99

3/21/2022
tr-ans-3/21/2022
c:\p\dm\42729\R2707D_ut_sym_UC02.dgn

UTILITY CONSTRUCTION

GENERAL NOTES:

1. THE PROPOSED UTILITY CONSTRUCTION WILL MEET THE APPLICABLE REQUIREMENTS OF THE NC DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" DATED JANUARY 2018.

2. THE EXISTING WATER MAIN BELONGS TO CITY OF SHELBY, NC.

3. ALL WATER LINES ARE 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.

4. THE UTILITY OWNER OWNS THE EXISTING UTILITY FACILITIES AND WILL OWN THE NEW UTILITY FACILITIES AFTER ACCEPTANCE BY THE NC DEPARTMENT OF TRANSPORTATION ("DEPARTMENT"). THE DEPARTMENT OWNS THE CONSTRUCTION CONTRACT AND HAS ADMINISTRATIVE AUTHORITY.
 - A. COMMUNICATIONS AND DECISIONS BETWEEN THE CONTRACTOR AND UTILITY OWNER ARE NOT BINDING UPON THE DEPARTMENT OR THIS CONTRACT UNLESS AUTHORIZED BY THE ENGINEER.
 - B. 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 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 DRAWINGS, 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 WILL BE APPROVED PRIOR TO DELIVERY TO THE PROJECT. SEE 1500-7, " SUBMITTALS AND RECORDS" IN SECTION 1500 OF THE NCDOT STANDARD SPECIFICATIONS.

STANDARD DETAIL DRAWINGS:

1. PROJECT STANDARD DETAILS ARE TO BE USED WHEN PROVIDED. CITY OF SHELBY STANDARD DETAILS ARE ALSO AVAILABLE ON LINE AT www.cityofshelby.com.

2. IF NO STANDARD DETAILS ARE PROVIDED FOR THE CITY OF SHELBY OR IN THE PROJECT DRAWINGS, THEN USE NCDOT STANDARD SPECIFICATIONS, DIVISION 15 STANDARD DETAILS FOR UTILITY CONSTRUCTION.

PROJECT SPECIFIC NOTES:

1. ALL NEW WATER MAINS LINES WILL BE CLASS 52 D.I. (DUCTILE IRON) PIPE UNLESS OTHERWISE INDICATED ON THE DRAWINGS. SECTION OF 2" PVC WATER MAIN LINE WILL BE C905, DR 21.

2. WATER MAINS CROSSING UNDER STORM DRAIN PIPE WILL HAVE 18" MINIMUM VERTICAL CLEARANCE UNLESS SPECIFIED ON THE DRAWINGS.

3. ALL MATERIALS AND CONSTRUCTION PERTAINING TO WATER MAIN CONSTRUCTION WILL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF CITY OF SHELBY AND NCDOT DIV. 15 UTILITY CONSTRUCTION.


4. CONTRACTOR WILL OBTAIN THE LATEST STANDARDS, SPECIFICATIONS, AND STANDARD DETAILS DRAWINGS FROM THE CITY OF SHELBY AND NCDOT.



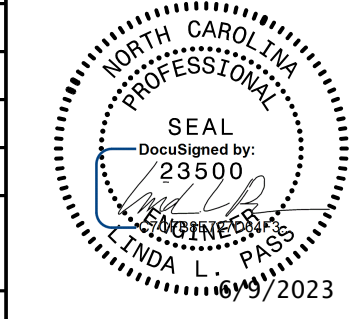
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 Fax. (919) 851-7024
www.stantec.com
 License No. F-0672

| | |
|---|-----------|
| PROJECT REFERENCE NO. | SHEET NO. |
| R-2707D | UC-03 |
| DESIGNED BY: LEW | |
| DRAWN BY: GMM | |
| CHECKED BY: LLP | |
| APPROVED BY: | |
| REVISED: | |
| NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151 | |
| UTILITY CONSTRUCTION PLANS ONLY DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED | |

UTILITY CONSTRUCTION

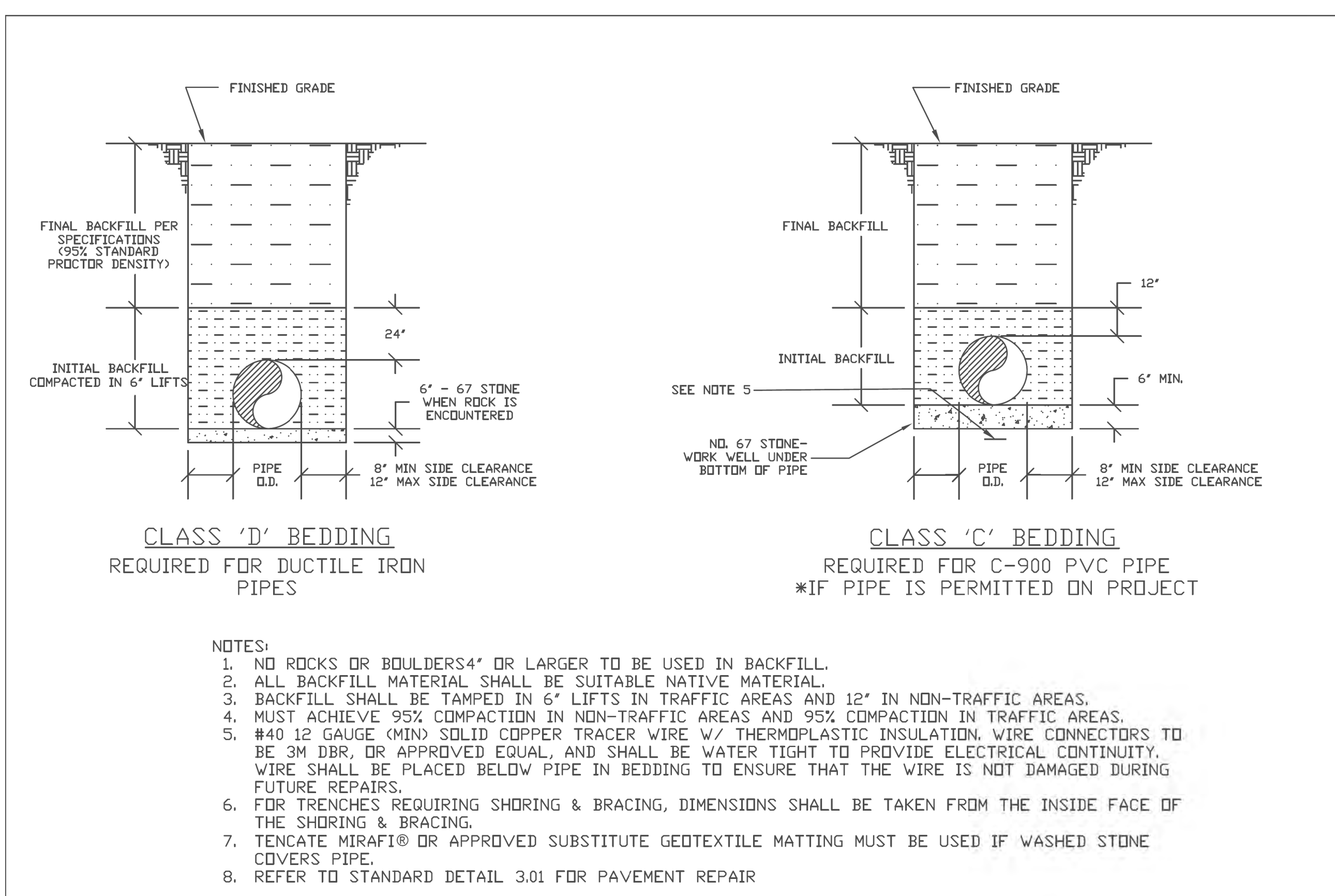


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| | | | |
|--|---------|---|--------|
| PROJECT REFERENCE NO. | R-2707D | SHEET NO. | UC-03A |
| DESIGNED BY: | LEW |  | |
| DRAWN BY: | GMM | | |
| CHECKED BY: | LLP | | |
| APPROVED BY: | | | |
| REVISER: | | | |
| NORTH CAROLINA DEPARTMENT OF TRANSPORTATION | | UTILITY CONSTRUCTION PLANS ONLY | |
| UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151 | | | |

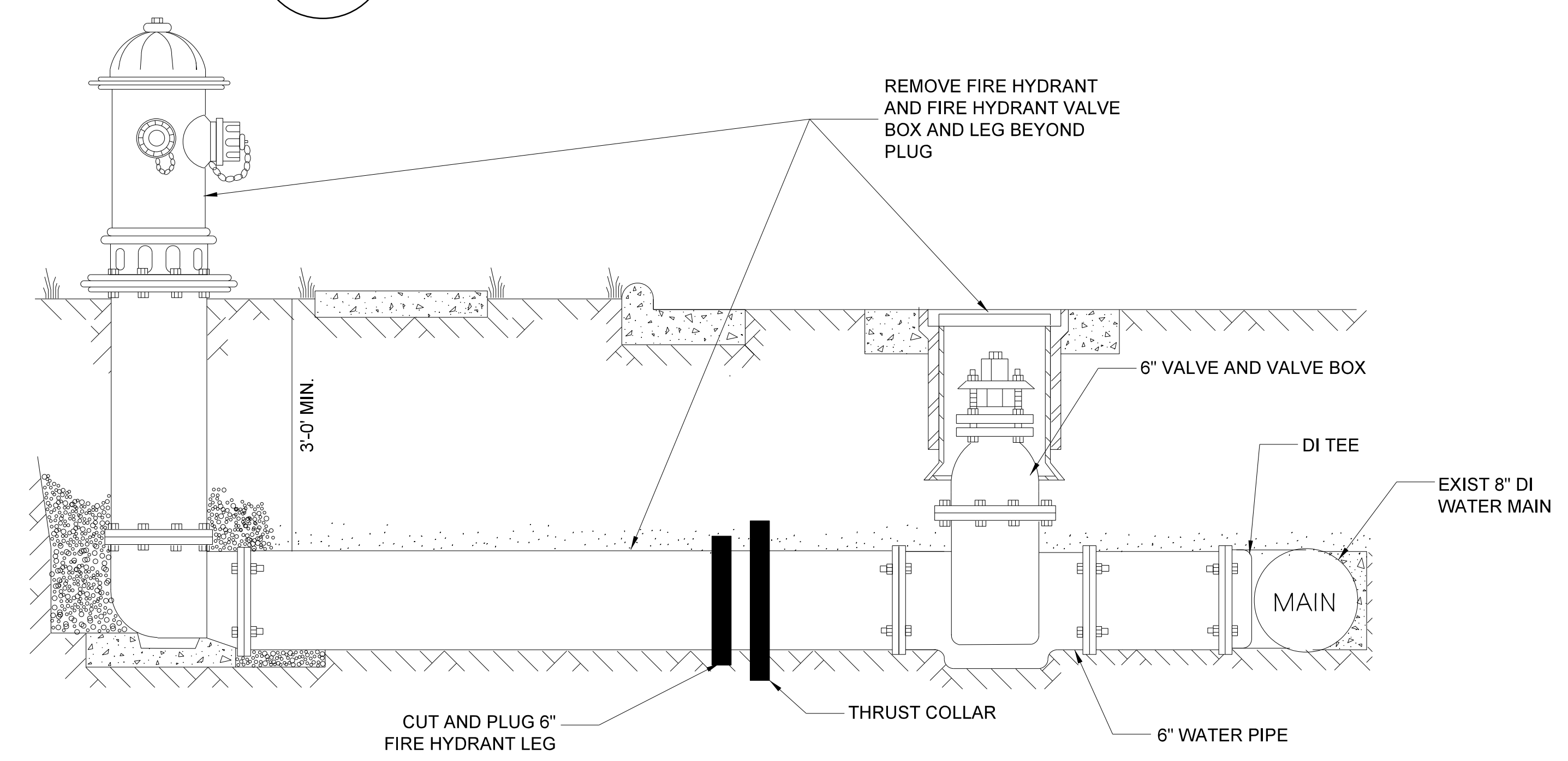
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

UTILITY CONSTRUCTION

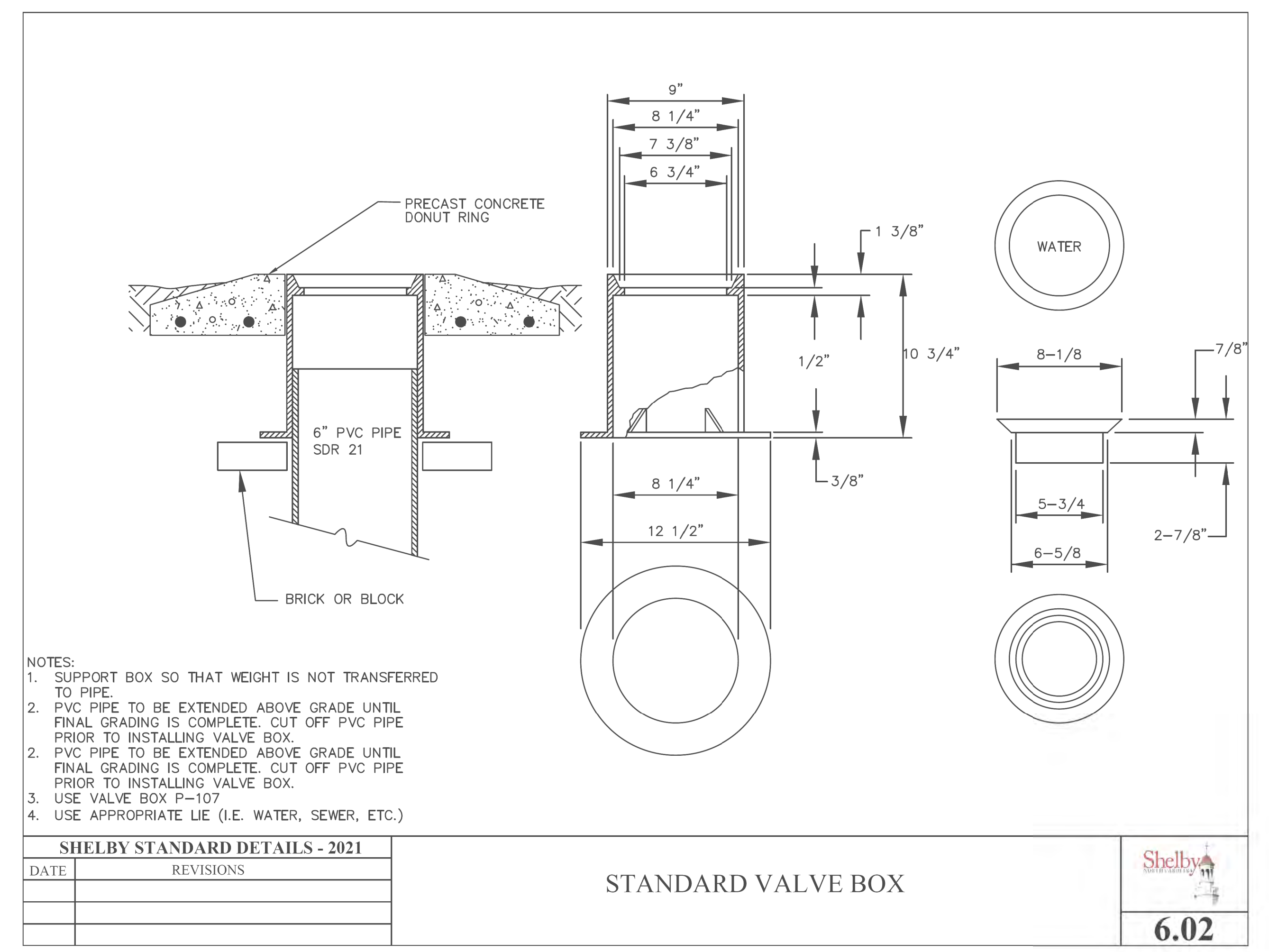


| | | | |
|--------------------------------|---------|--|---|
| SHELBY STANDARD DETAILS - 2021 | | PIPE BEDDING AND BACKFILLING - CLASS D&C |  6.01A |
| DATE | REVISED | | |
| | | | |

1 PIPE BEDDING AND BACKFILL
03A



3 FIRE HYDRANT REMOVAL
03A

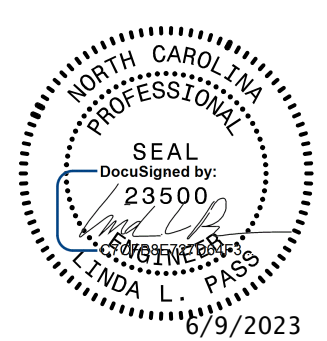


| | | | |
|--------------------------------|-----------|--------------------|--|
| SHELBY STANDARD DETAILS - 2021 | | STANDARD VALVE BOX |  6.02 |
| DATE | REVISIONS | | |
| | | | |

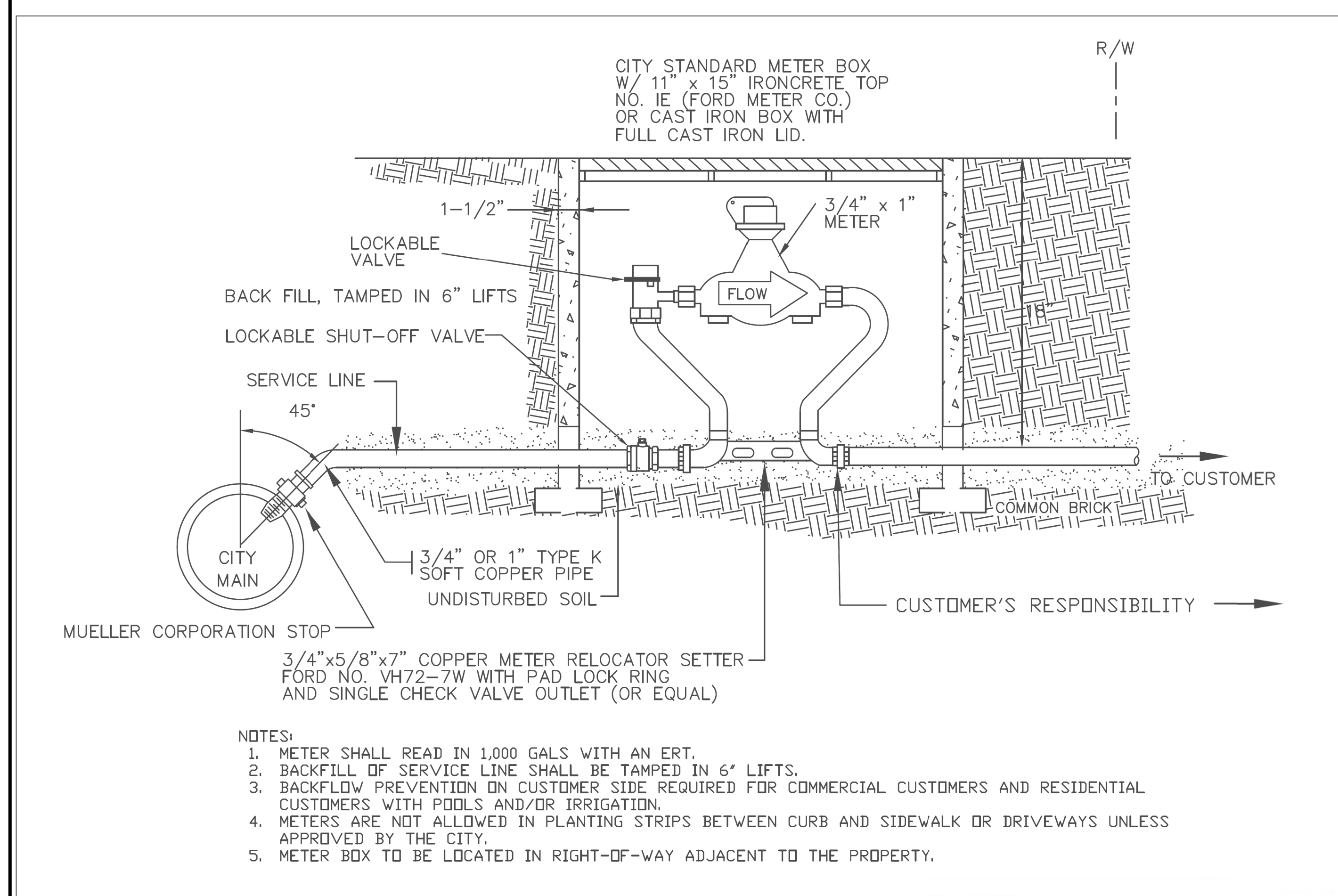
2 STANDARD VALVE BOX PIPE BEDDING AND BACKFILL
03A



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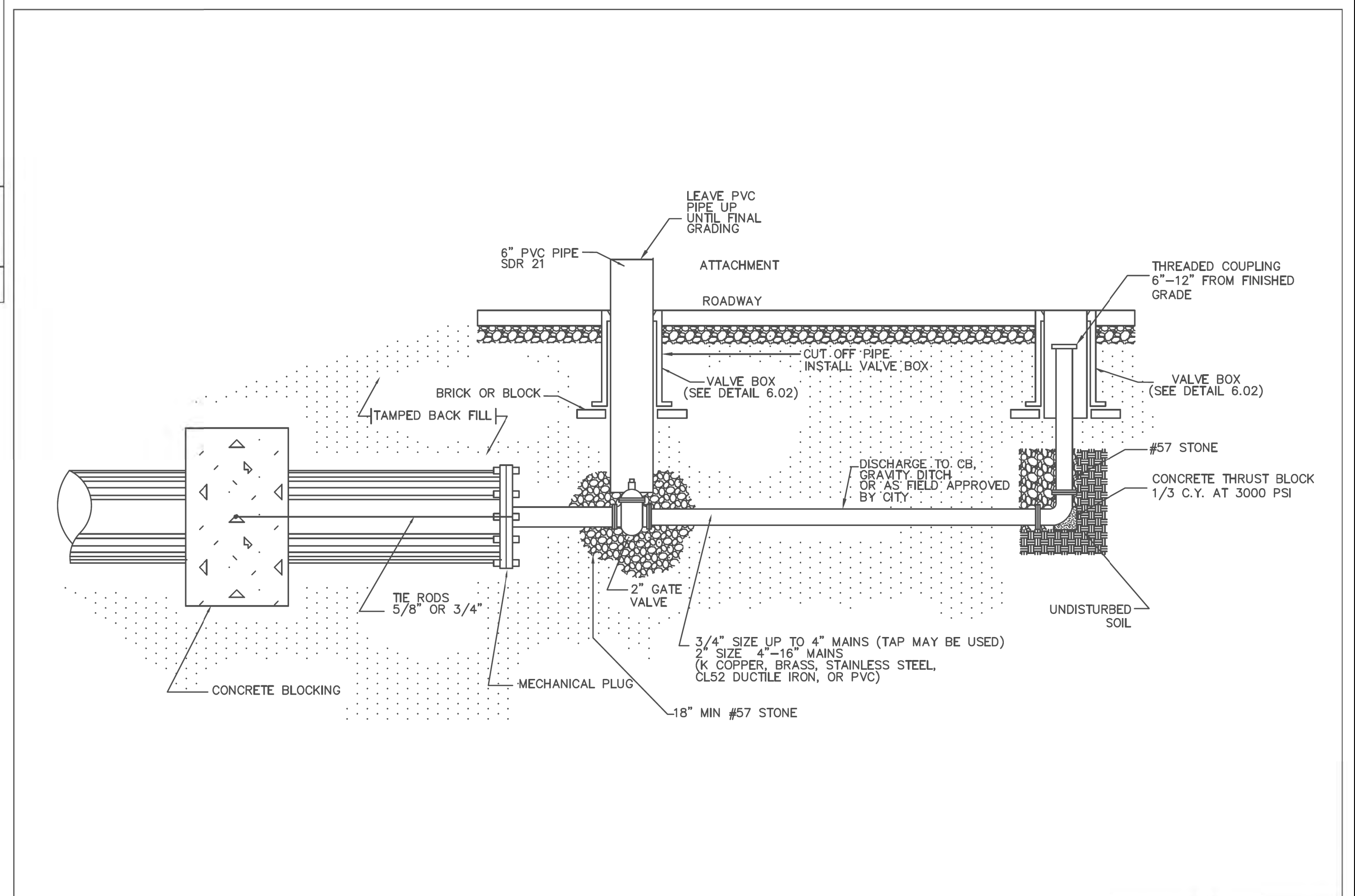
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| PROJECT REFERENCE NO. R-2707D | SHEET NO. UC-03B |
| DESIGNED BY: LEW |  |
| DRAWN BY: GMM | |
| CHECKED BY: LLP | |
| APPROVED BY: | |
| REVISED: | |
| NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151 | UTILITY CONSTRUCTION PLANS ONLY |
| DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED | |


UTILITY CONSTRUCTION



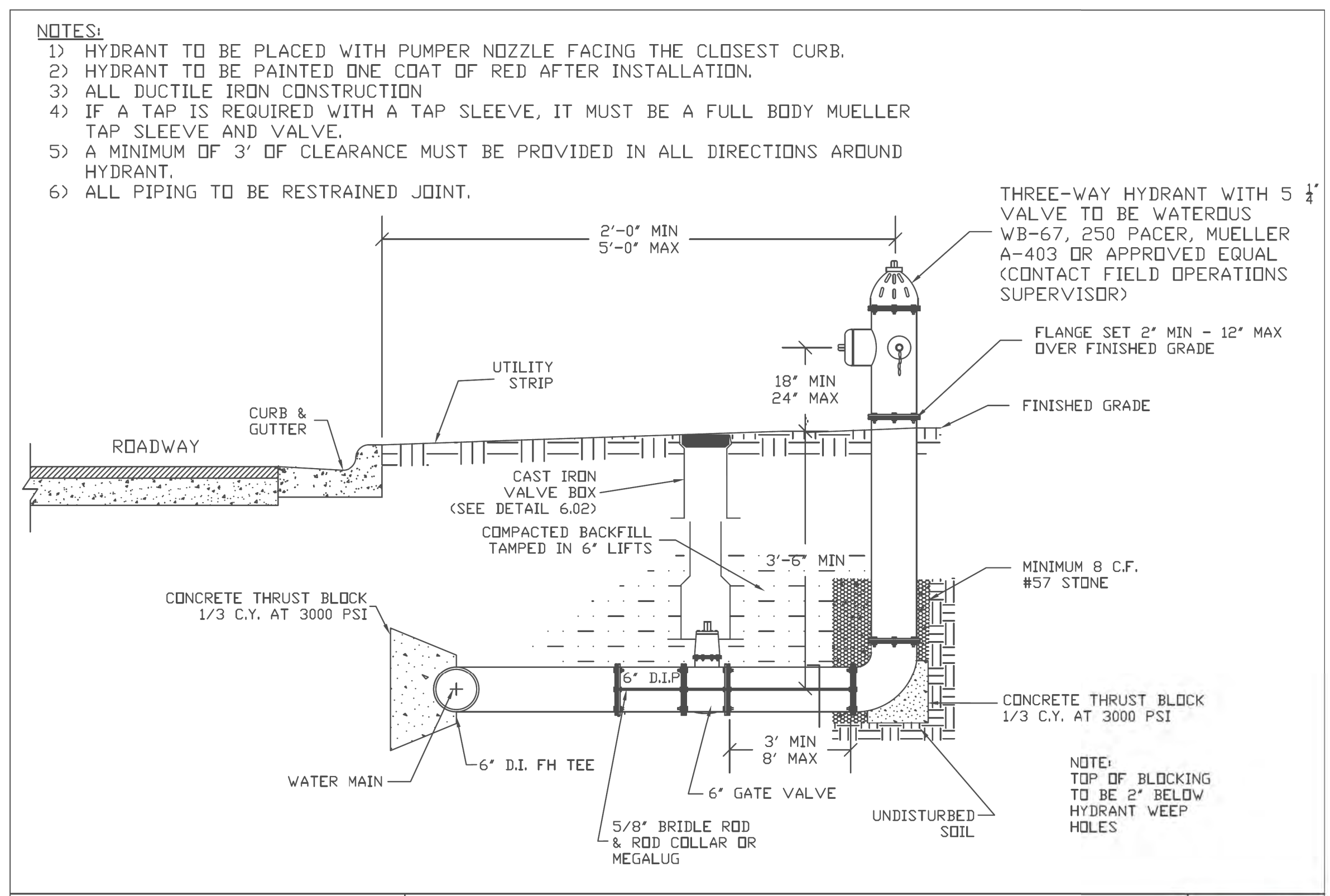
| SHELBY STANDARD DETAILS - 2021 | | STANDARD 3/4" OR 1" METER ASSEMBLY |  6.03 |
|--------------------------------|-----------|------------------------------------|---|
| DATE | REVISIONS | | |
| | | | |

4 STANDARD 3/4" METER ASSEMBLY
03B



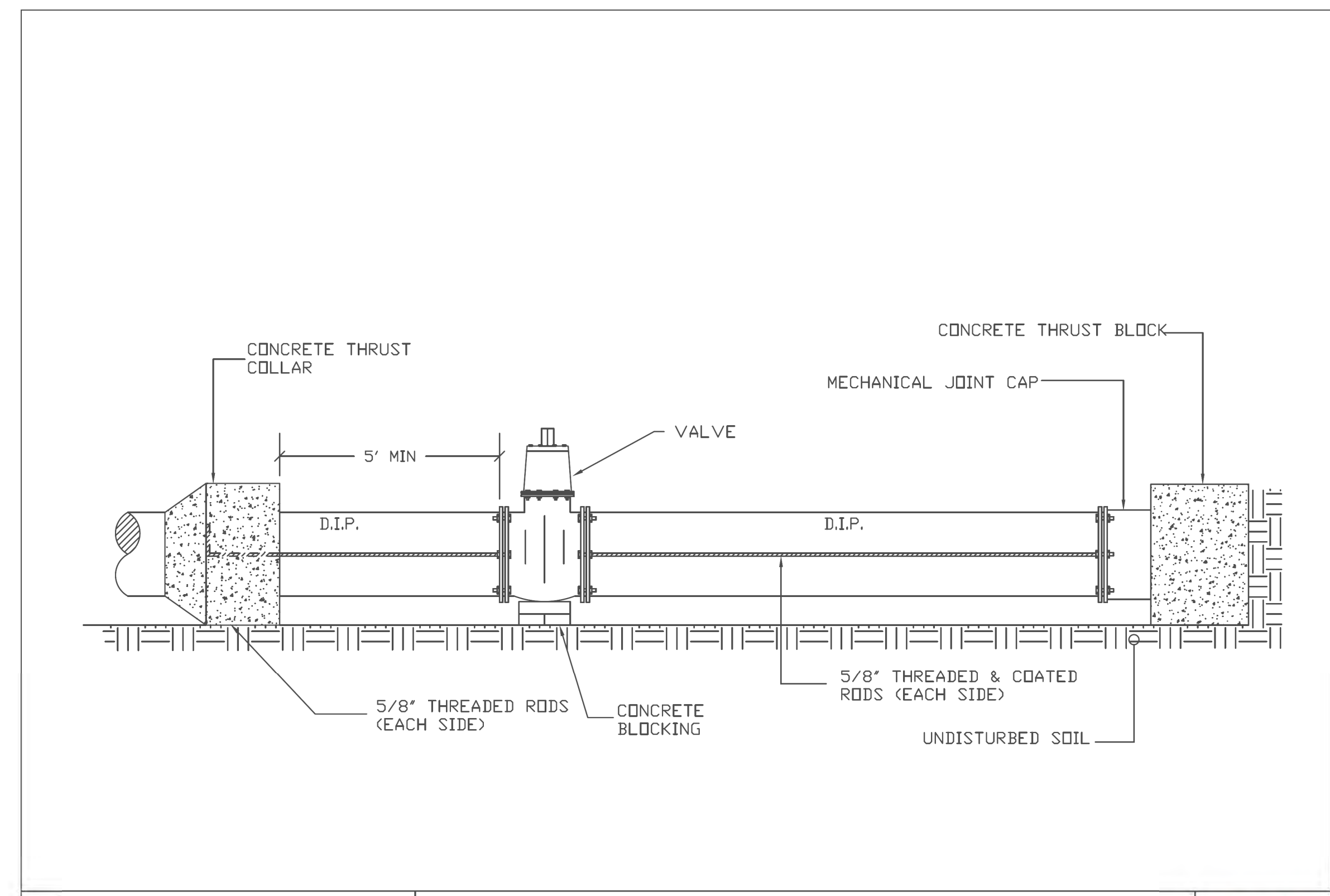
| SHELBY STANDARD DETAILS - 2021 | | BLOW OFF |  6.09 |
|--------------------------------|-----------|----------|--|
| DATE | REVISIONS | | |
| | | | |

5 BLOW OFF ASSEMBLY
03B



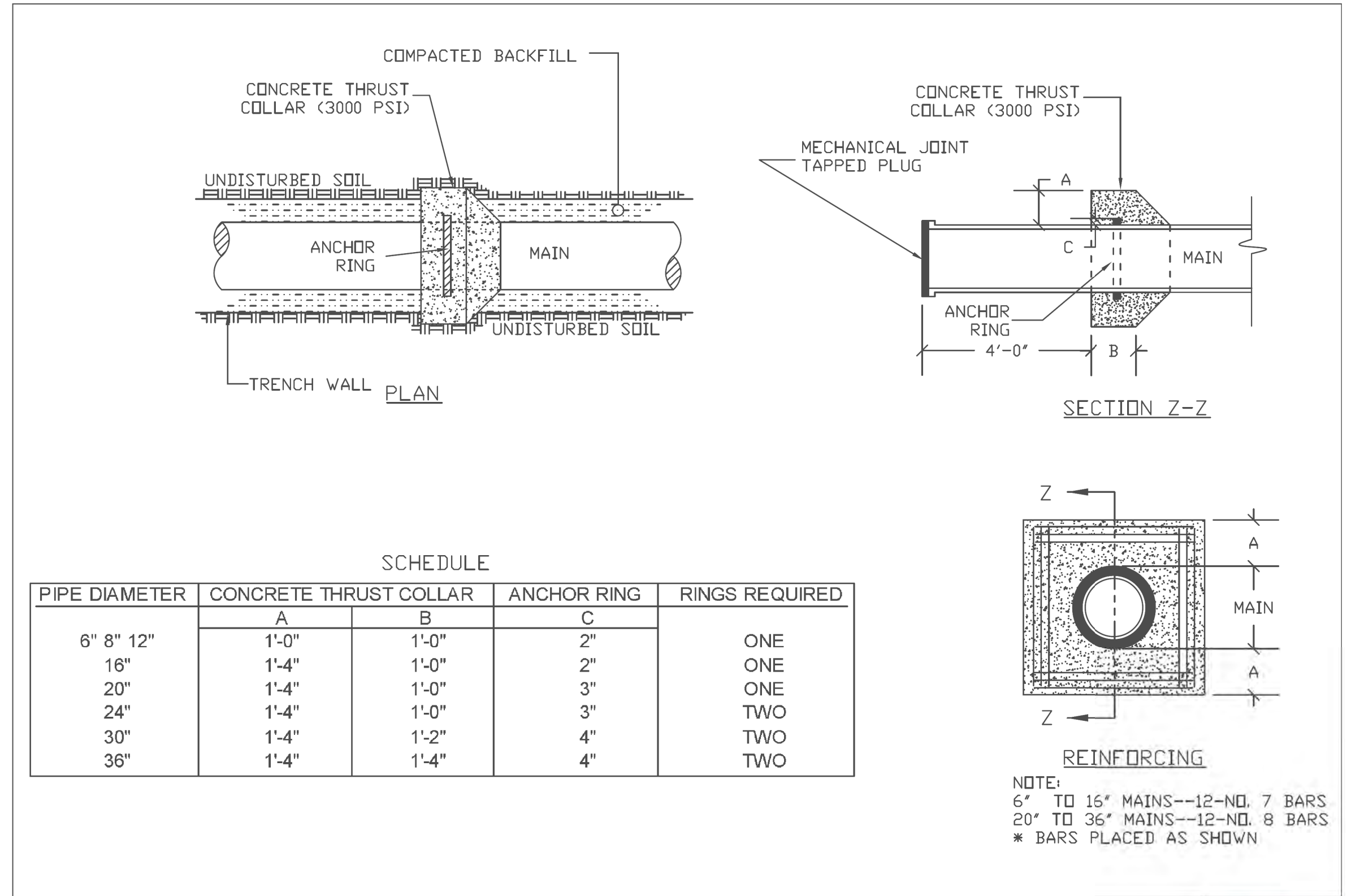
| SHELBY STANDARD DETAILS - 2021 | | STANDARD HYDRANT INSTALLATION | Shelby |
|--------------------------------|-----------|-------------------------------|--------|
| DATE | REVISIONS | | |
| | | | 6.06 |

6 STANDARD HYDRANT INSTALLATION
03C



| SHELBY STANDARD DETAILS - 2021 | | STANDARD CAPPING DETAIL | Shelby |
|--------------------------------|-----------|-------------------------|--------|
| DATE | REVISIONS | | |
| | | | 6.10 |

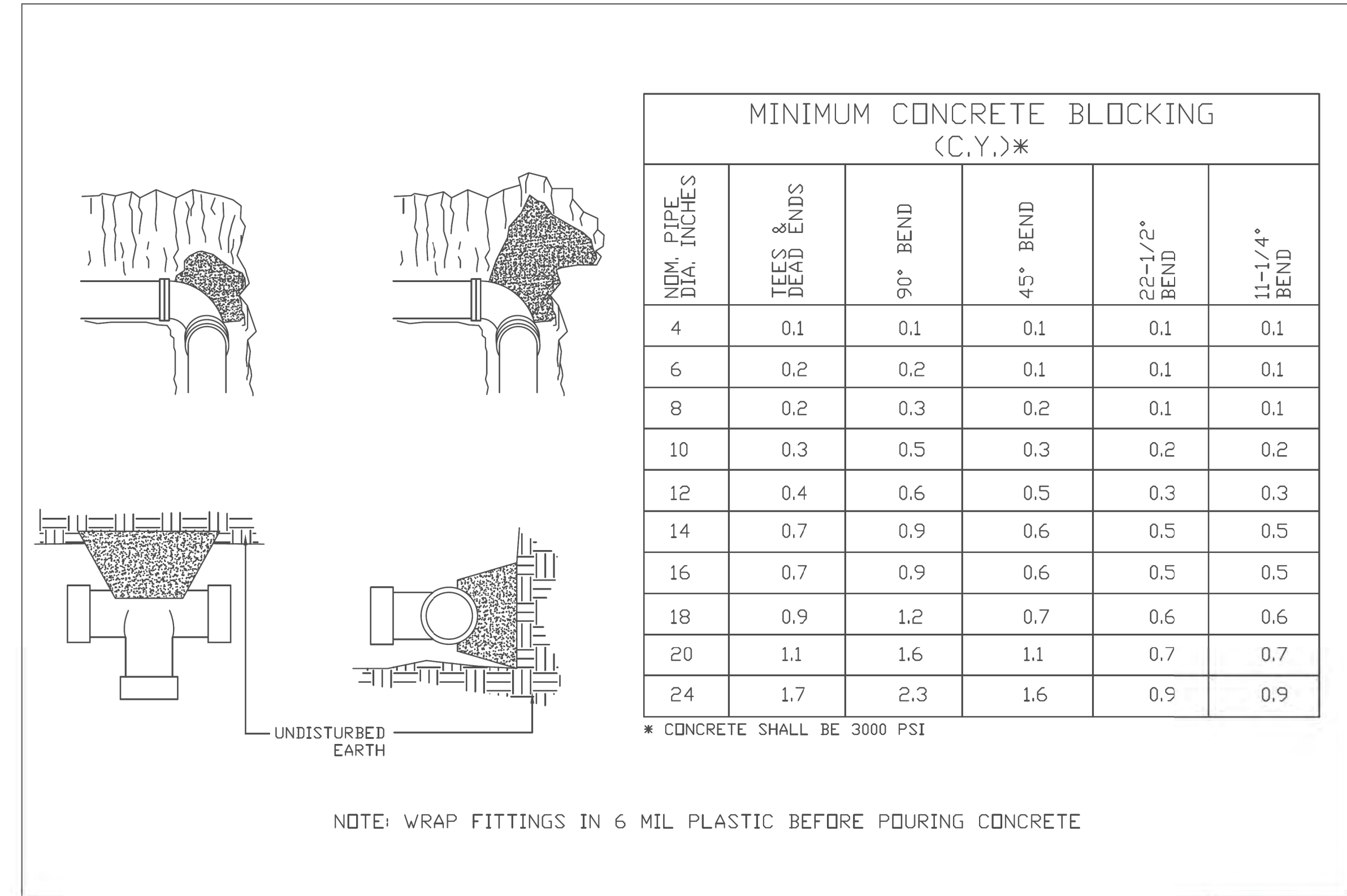
7 STANDARD CAPPING DETAIL
03C



| PIPE DIAMETER | CONCRETE THRUST COLLAR | | ANCHOR RING | RINGS REQUIRED |
|---------------|------------------------|-------|-------------|----------------|
| | A | B | C | |
| 6" 8" 12" | 1'-0" | 1'-0" | 2" | ONE |
| 16" | 1'-4" | 1'-0" | 2" | ONE |
| 20" | 1'-4" | 1'-0" | 3" | ONE |
| 24" | 1'-4" | 1'-0" | 3" | TWO |
| 30" | 1'-4" | 1'-2" | 4" | TWO |
| 36" | 1'-4" | 1'-4" | 4" | TWO |

| SHELBY STANDARD DETAILS - 2021 | | STANDARD THRUST COLLAR INSTALLATION | Shelby |
|--------------------------------|-----------|-------------------------------------|--------|
| DATE | REVISIONS | | |
| | | | 6.11 |

8 STANDARD THRUST COLLAR INSTALLATION
03C



| NOM. PIPE DIA. INCHES | TEES & DEAD ENDS | 90° BEND | 45° BEND | 22-1/2° BEND | 11-1/4° BEND |
|-----------------------|------------------|----------|----------|--------------|--------------|
| 4 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 6 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 |
| 8 | 0.2 | 0.3 | 0.2 | 0.1 | 0.1 |
| 10 | 0.3 | 0.5 | 0.3 | 0.2 | 0.2 |
| 12 | 0.4 | 0.6 | 0.5 | 0.3 | 0.3 |
| 14 | 0.7 | 0.9 | 0.6 | 0.5 | 0.5 |
| 16 | 0.7 | 0.9 | 0.6 | 0.5 | 0.5 |
| 18 | 0.9 | 1.2 | 0.7 | 0.6 | 0.6 |
| 20 | 1.1 | 1.6 | 1.1 | 0.7 | 0.7 |
| 24 | 1.7 | 2.3 | 1.6 | 0.9 | 0.9 |

* CONCRETE SHALL BE 3000 PSI

| SHELBY STANDARD DETAILS - 2021 | | STANDARD REACTION BLOCKING | Shelby |
|--------------------------------|-----------|----------------------------|--------|
| DATE | REVISIONS | | |
| | | | 6.12 |

9 STANDARD REACTION BLOCKING
03C

| | |
|---|----------------------------|
| PROJECT REFERENCE NO. R-2707D | SHEET NO. UC-03C |
| DESIGNED BY: LEW | |
| DRAWN BY: GMM | |
| CHECKED BY: LLP | |
| APPROVED BY: | |
| REVISED: | |
| NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151 | |

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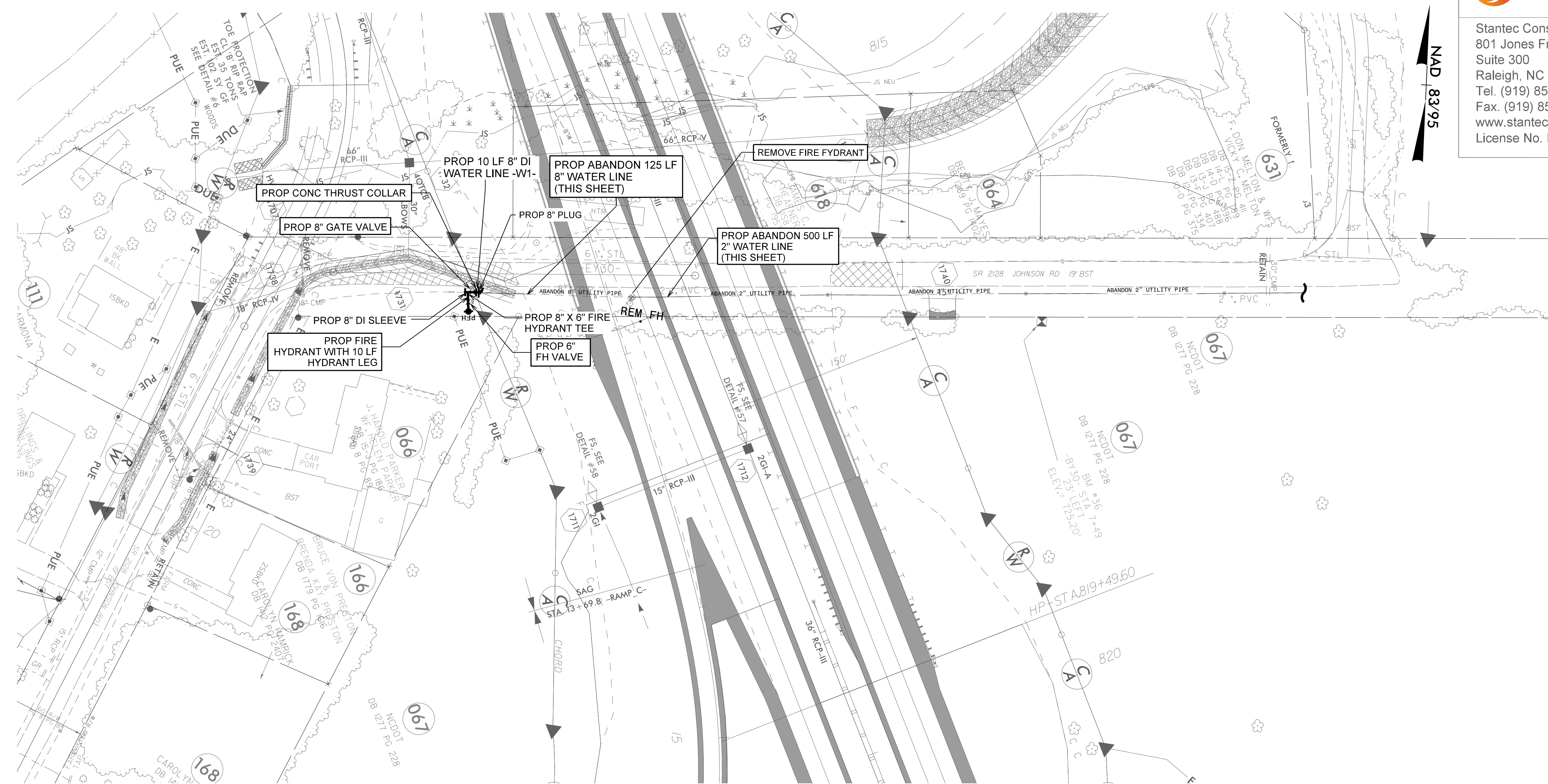
UTILITY CONSTRUCTION



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| | | | |
|---|---------|---------------------------------|-------|
| PROJECT REFERENCE NO. | R-2707D | SHEET NO. | UC-04 |
| DESIGNED BY: | LEW | | |
| DRAWN BY: | GMM | | |
| CHECKED BY: | LLP | | |
| APPROVED BY: | | | |
| REVISED: | | | |
| NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151 | | UTILITY CONSTRUCTION PLANS ONLY | |
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UTILITY CONSTRUCTION AGREEMENT PLANS



NAD 83/95

NOTES:

1. MAINTAIN MINIMUM 36" COVER BELOW FINAL GRADE FOR ALL WATER LINES.
2. ABANDON WATER LINE IN LOCATIONS SHOWN. ABANDONMENT INCLUDES ALL FITTINGS AND APPURTENANCES. ABANDONMENT OF THE WATER LINE TO BE IN ACCORDANCE WITH THE CITY OF SHELBY'S REQUIREMENTS.

| |
|--|
| PROP WATER LINE -W- 10 LF 8" DI RJ PIPE THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 305 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS. ABANDON 125 LF EXIST 8" WATER LINE ABANDON 500 LF EXIST 2" WATER LINE |
|--|

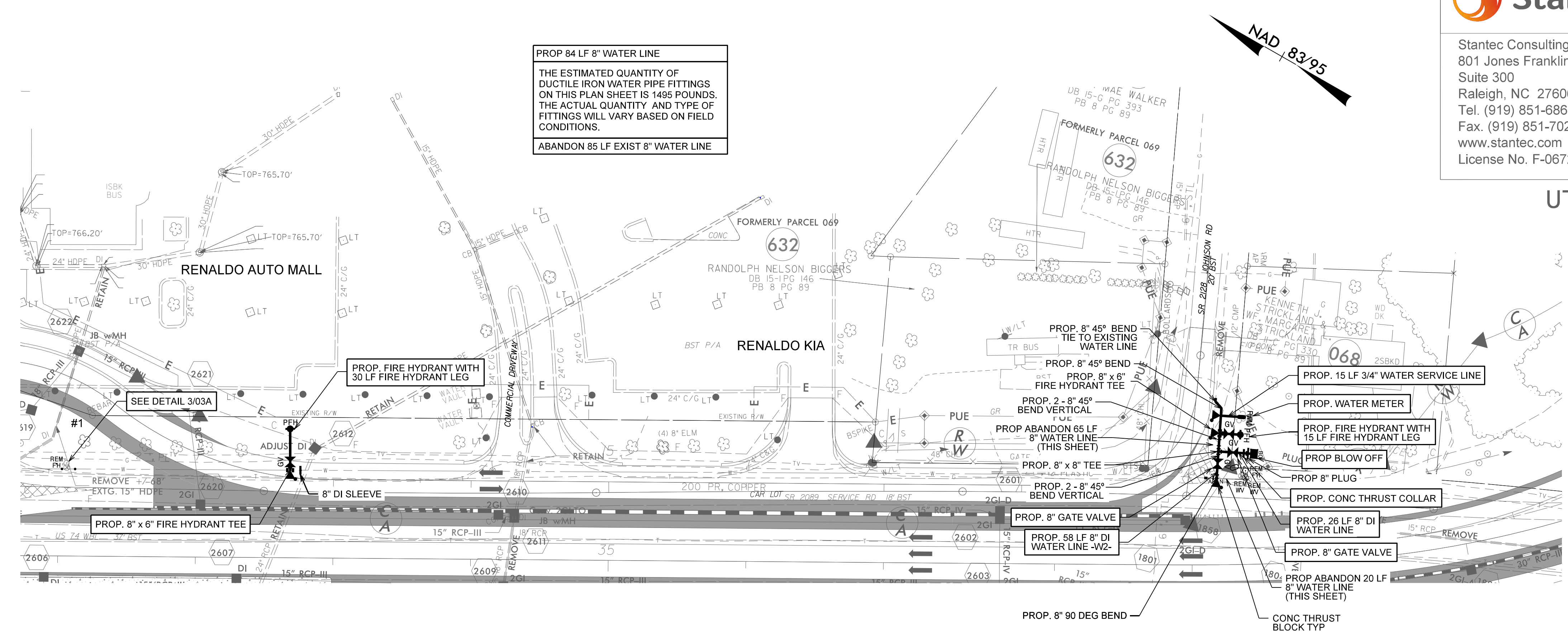




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| | | | |
|--|---------|---------------------------------|-------|
| PROJECT REFERENCE NO. | R-2707D | SHEET NO. | UC-05 |
| DESIGNED BY: | LEW | | |
| DRAWN BY: | GMM | | |
| CHECKED BY: | LLP | | |
| APPROVED BY: | | | |
| REVISED: | | | |
| UTILITIES ENGINEERING SEC. | | UTILITY CONSTRUCTION PLANS ONLY | |
| DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED | | | |

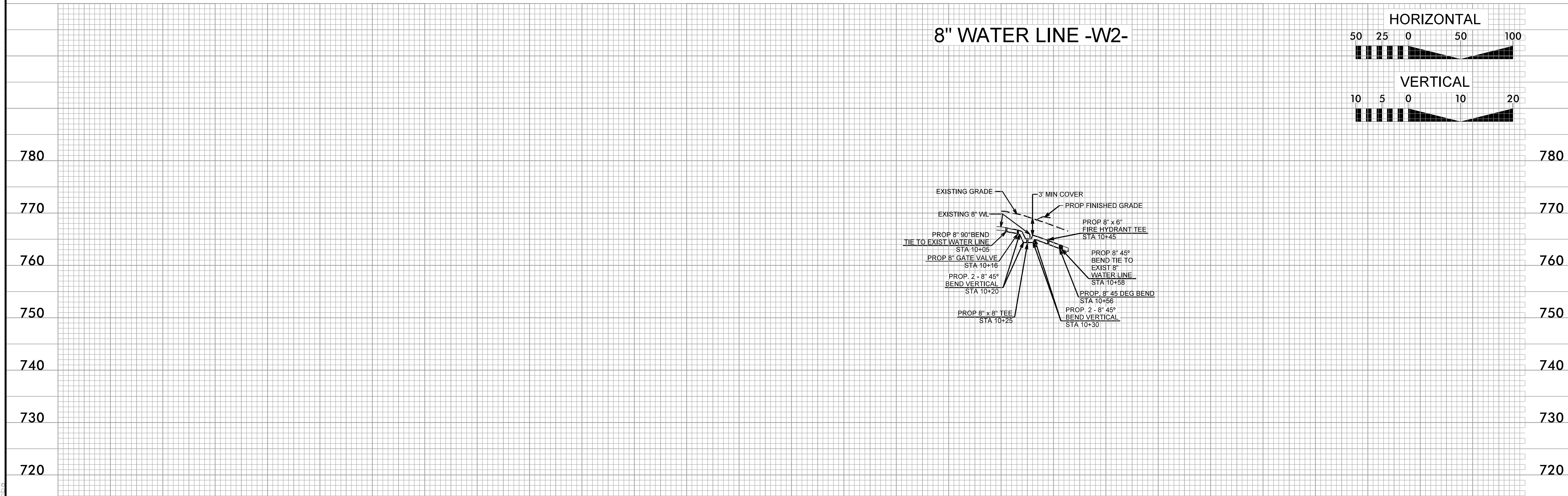
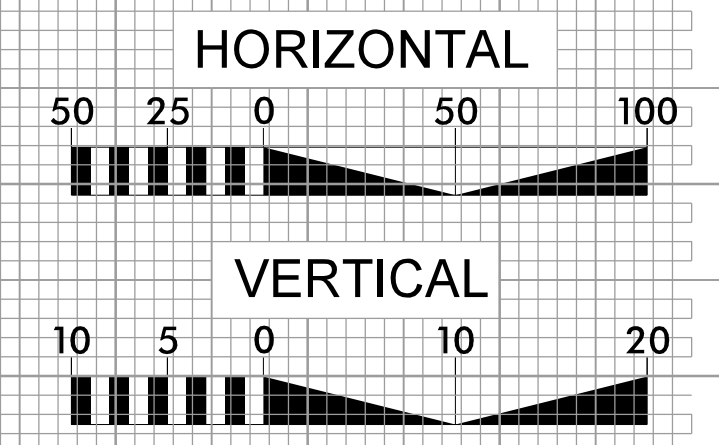
PROP 84 LF 8" WATER LINE
THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 1495 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.
ABANDON 85 LF EXIST 8" WATER LINE



UTILITY CONSTRUCTION

- NOTES:
1. MAINTAIN MINIMUM 36" COVER BELOW FINAL GRADE FOR ALL WATER LINES.
 2. WHERE PROPOSED WATER CROSSES UNDER A CLOSED/PIPED DRAINAGE SYSTEM PROVIDE 2 FT MINIMUM VERTICAL CLEARANCE.
 3. ABANDON WATER LINE IN LOCATIONS SHOWN IN ABANDONMENT INCLUDES ALL FITTINGS AND APPURTENANCES ABANDONMENT OF THE WATER LINE TO BE IN ACCORDANCE WITH THE CITY OF SHELBY'S REQUIREMENTS.

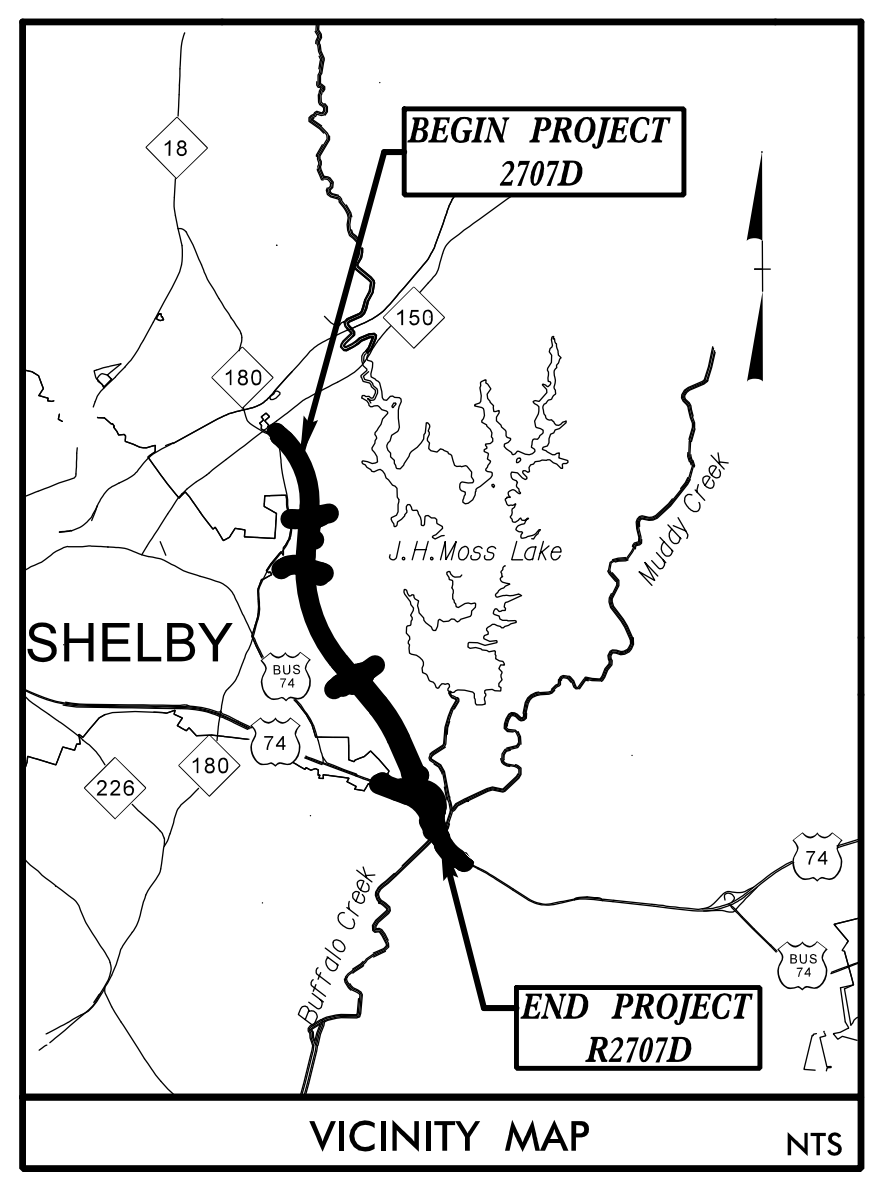
8" WATER LINE -W2-



6/2/2023
C:\Users\lton\Documents\transportation\dms42729\R2707D_ut_psh05copy.dgn

TIP PROJECT: R-2707D

| | |
|------------|-----------|
| T.I.P. NO. | SHEET NO. |
| R-2707D | UC-1 |

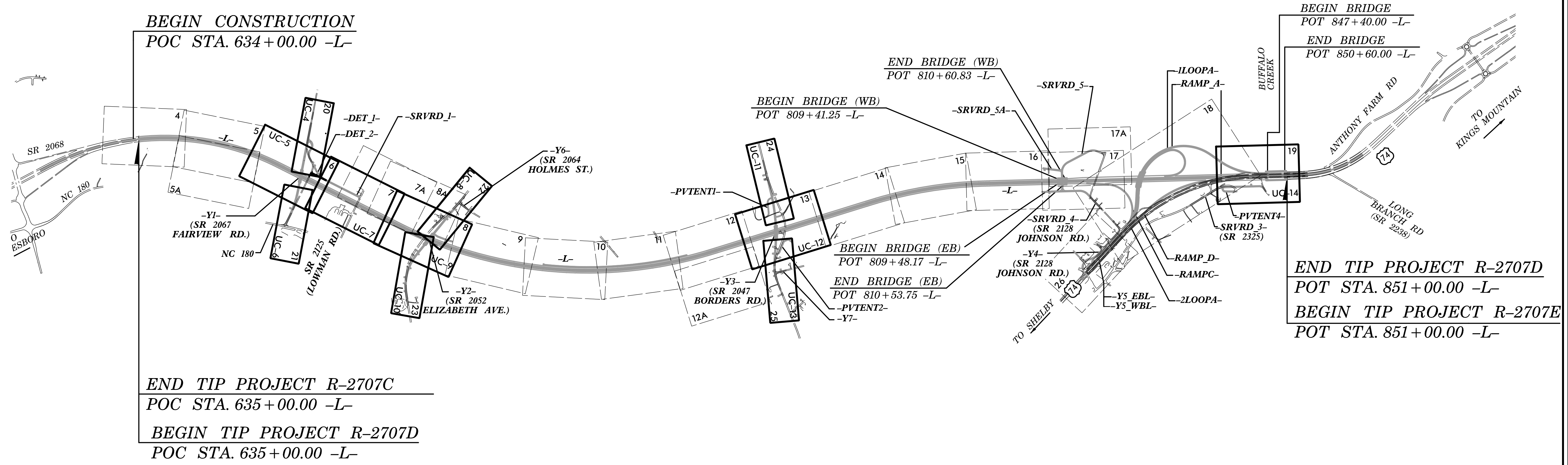
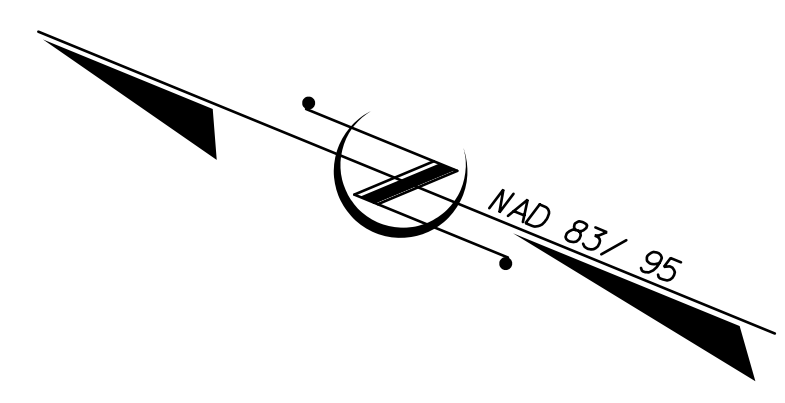


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

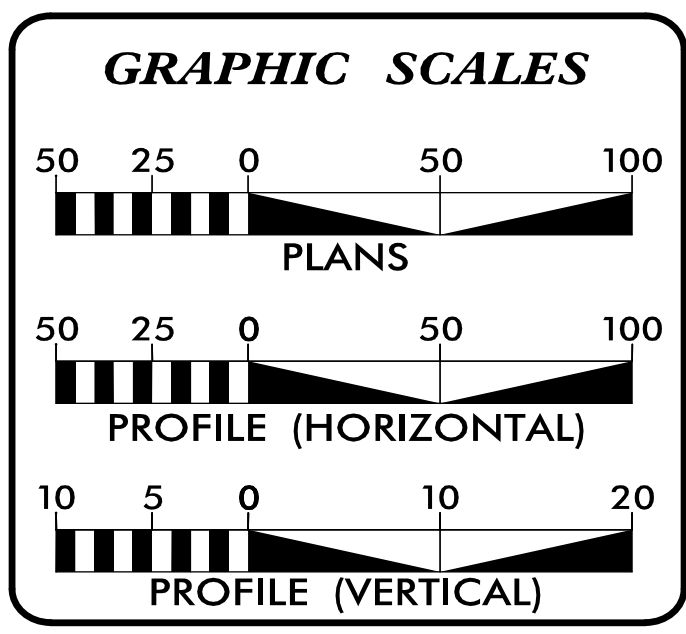
UTILITY CONSTRUCTION PLANS CLEVELAND COUNTY

**LOCATION: US 74 SHELBY BYPASS FROM EAST OF NC 150
TO EXISTING US 74 WEST OF SR 2238 (LONG BRANCH ROAD)**

TYPE OF WORK: WATERLINE RELOCATION



DOCUMENT NOT CONSIDERED FINAL
UNTIL ALL SIGNATURES ARE COMPLETED



INDEX OF SHEETS

| SHEET NO.: | DESCRIPTION: |
|----------------|-----------------------------|
| UC-1 | TITLE SHEET |
| UC-2 | UTILITY SYMBOLOGY |
| UC-3 | NOTES |
| UC-3A TO UC-3B | DETAILS |
| UC-4 TO UC-14 | UTILITY CONSTRUCTION SHEETS |
| UC-15 TO UC-17 | PROFILE SHEETS |

WATER AND SEWER OWNERS ON PROJECT

(A) WATER - CLEVELAND COUNTY WATER

PREPARED IN THE OFFICE OF

TGS ENGINEERS
804-C N. LAFAYETTE ST
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

B. CHAD HOUSER, PE, PLS UTILITY DESIGN ENGINEER

SEAL

3/13/2023

**DIVISION OF HIGHWAYS
DIVISION 12**
1710 E. MARION ST
SHELBY NC 28151
PHONE (704) 552-4200

CHAD DREWERY DIVISION UTILITY ENGINEER
WARREN ANDERSON DIVISION UTILITY COORDINATOR
LARRY CARPENTER DIVISION CONSTR. ENGINEER

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 | |
| 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 | | *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 | | Sanitary Sewer Cleanout | |
| End of Information | | | |

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

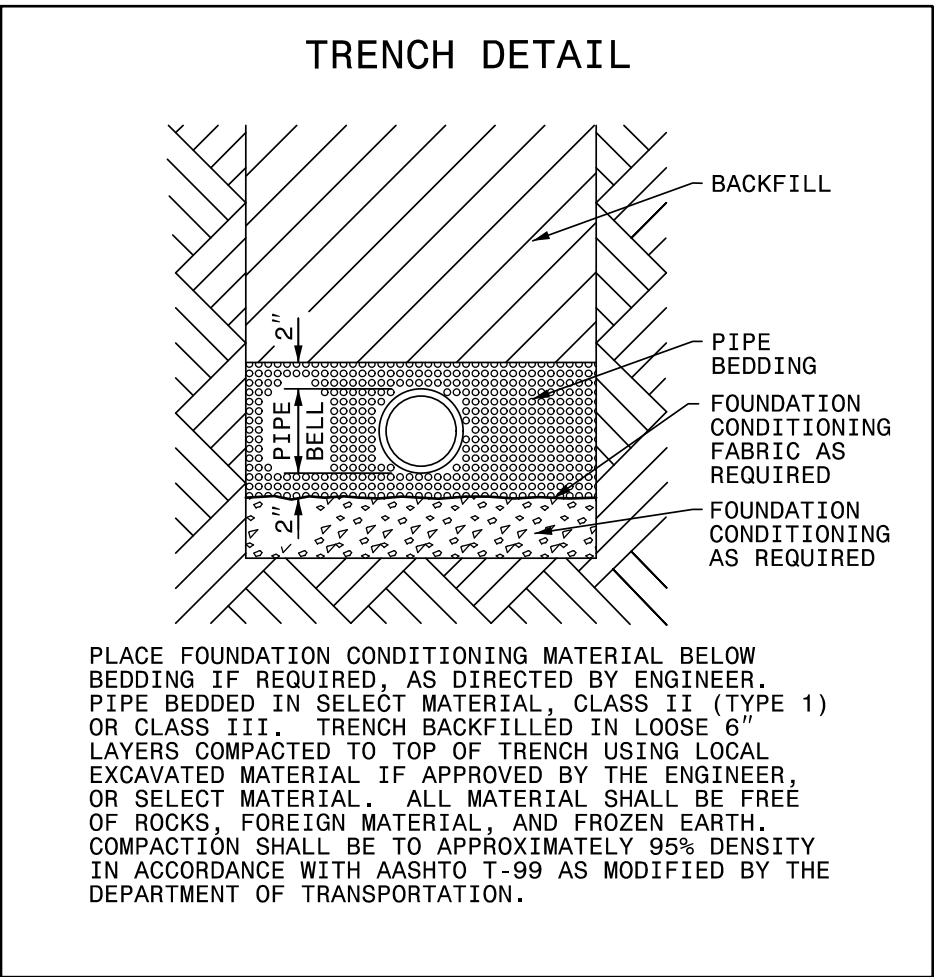
UTILITY CONSTRUCTION

| | |
|---|-----------|
| PROJECT REFERENCE NO. | SHEET NO. |
| R-2707D | UC-3 |
| DESIGNED BY: BCH | |
| DRAWN BY: KSA | |
| CHECKED BY: | |
| APPROVED BY: | |
| REVISED: | |
| NORTH CAROLINA DEPARTMENT OF TRANSPORTATION | |
| DIVISION 12 PHONE: (980)552-4200 | |
| UTILITY CONSTRUCTION PLANS ONLY | |

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 2018.
2. THE EXISTING UTILITIES BELONG TO CLEVELAND COUNTY 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. 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 LINE 4 TO 12 INCHES IN DIAMETER, SHALL BE DUCTILE IRON PIPE - PRESSURE CLASS 350 AND UTILIZE FLEXIBLE PUSH-ON RESTRAINED JOINTS.
2. ALL PROPOSED STEEL ENCASEMENTS SHALL BE SMOOTH WALL WITH A MINIMUM THICKNESS OF 0.188 INCHES FOR 12" AND SMALLER OR 0.25 INCHES FOR LARGER THAN 12".
3. ALL WATER LINE FITTINGS 4 TO 12 INCHES IN DIAMETER, SHALL BE PRESSURE CLASS 350 DUCTILE IRON RESTRAINED JOINT IN ACCORDANCE WITH ANSI A21.10 / AWWA C110 AND ANSI A21.4 / AWWA C104.
4. WATER LINE UTILIZING RESTRAINED JOINTS SHALL BE TYTON JOINT, HP LOK, AMERICAN "FAST GRIP", US PIPE "FIELD-LOK" OR APPROVED EQUAL.
5. ALL WATERLINE SHALL HAVE COATED TRACER WIRE NO SMALLER THAN 14 AWG SOLID COPPER.
6. ALL VALVES - 2" THROUGH 12" SHALL BE RESILIENT WEDGE GATE, CAST IRON BODY, CONFORMING TO AWWA C509, LATEST VERSION. SEALING MECHANISM SHALL PROVIDE ZERO LEAKAGE AT THE WATER WORKING PRESSURE AGAINST THE LINE FLOW FROM EITHER DIRECTION AND BE DESIGNED SUCH THAT NO EXPOSED METAL SEAMS, EDGES, SCREWS, ETC. ARE WITHIN THE WATERWAY IN THE CLOSED POSITION. THE GATE SHALL NOT BE WEDGED INTO A POCKET NOR SLIDE ACROSS THE SEATING SURFACE TO OBTAIN TIGHT CLOSURE. ALL INTERNAL AND EXTERNAL FERROUS SURFACES OF THE VALVE, INCLUDING THE INTERIOR OF THE GATE, SHALL BE COATED WITH A PROTECTIVE COATING CONFORMING TO AWWA C550, LATEST VERSION. COATING SHALL BE APPLIED TO CASTINGS PRIOR TO ASSEMBLY TO ASSURE ALL EXPOSED AREAS WILL BE COVERED. VALVES SHALL BE RATED AT 200 PSI WORKING PRESSURE. UNLESS OTHERWISE NOTED, UNDERGROUND VALVES SHALL HAVE AN OPERATING NUT AND EXPOSED VALVES SHALL HAVE A HAND WHEEL OPERATOR. OPERATING NUT SHALL BE 2"X2", OPEN LEFT.
7. EACH VALVE BURIED IN THE GROUND SHALL BE PROVIDED WITH AN APPROVED TYPE OF VALVE BOX AND COVER. THE BOXES SHALL BE ADJUSTABLE SCREW TYPE 24-INCH OR 36-INCH.
8. ALL VALVE BOXES SHALL BE CONSTRUCTED OF CAST IRON THAT COMPLIES WITH THE REQUIREMENTS OF ASTM A48. VALVE BOXES SHALL BE THE APPROPRIATE RANGE OF ADJUSTMENT FOR THE SITE AND CONTRACTOR SHOULD MINIMIZE THE USE OF EXTENSIONS.

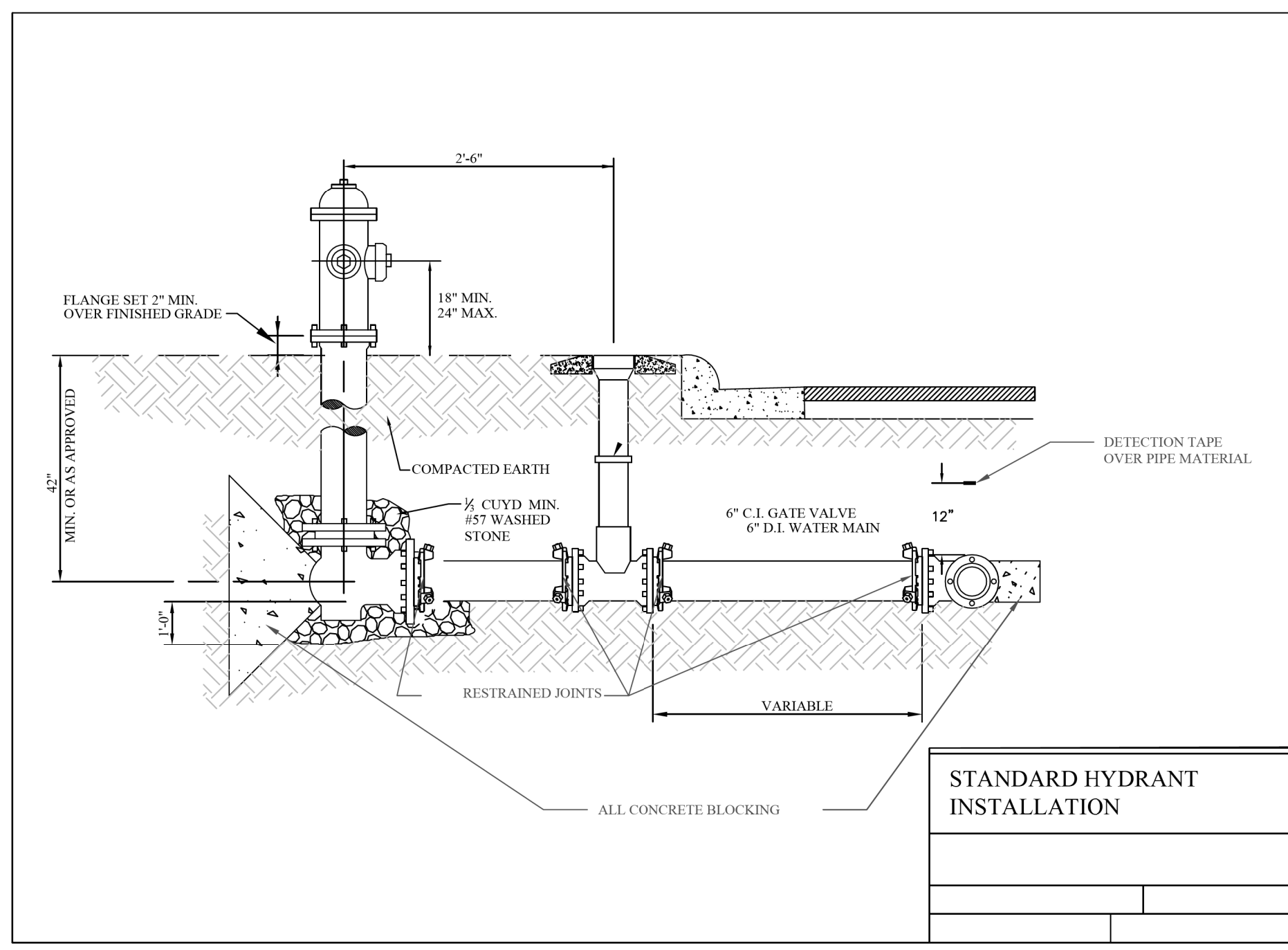
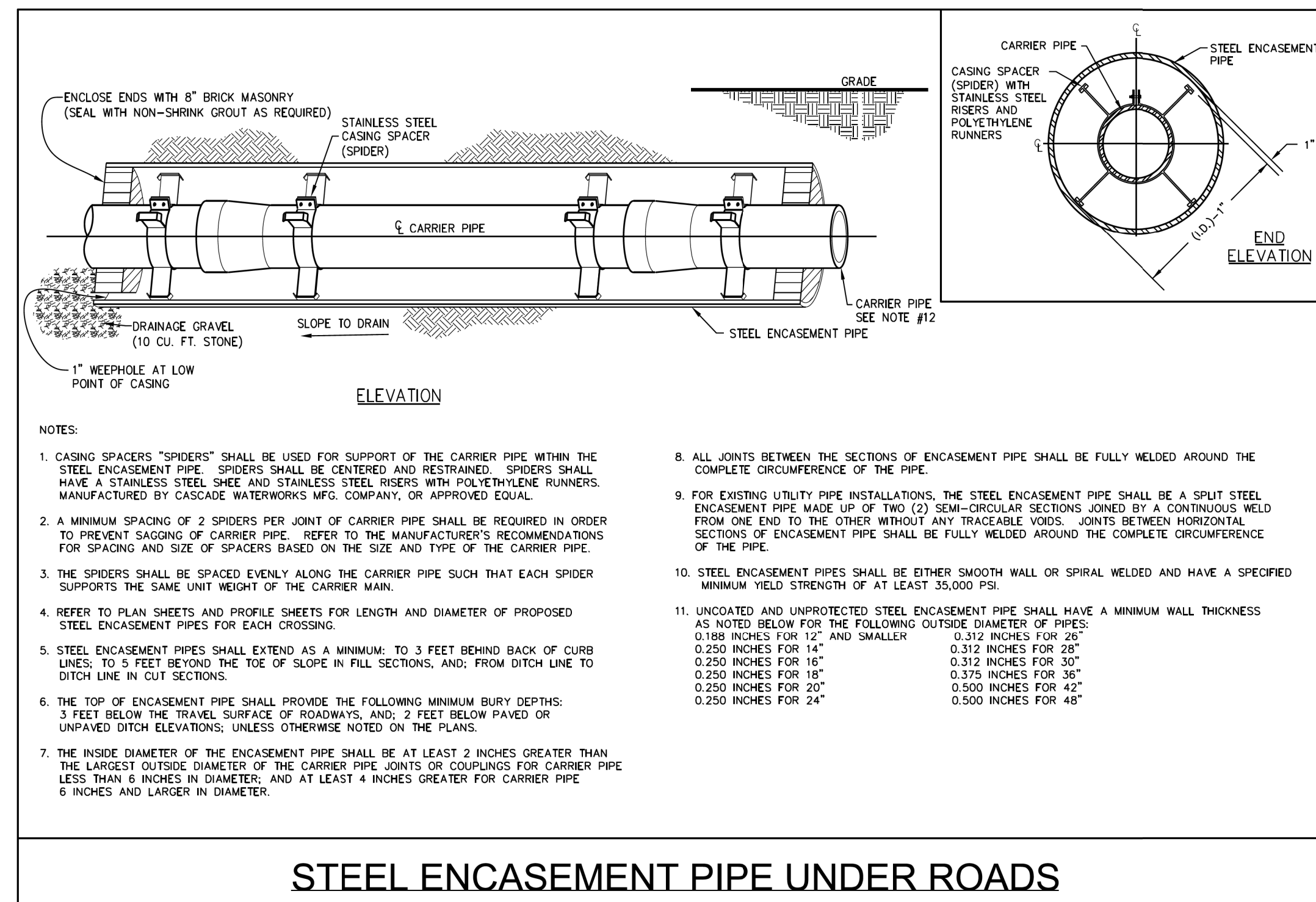
9. PROVIDE THRUST RESTRAINT ON THE EXISTING WATER LINE WHERE TIE-INS ARE MADE AS NECESSARY.
10. CONTRACTOR SHALL NOT OPERATE ANY VALVES ON THE EXISTING UTILITY SYSTEMS. CONTRACTOR SHALL CONTACT THE UTILITY OWNER TO CONDUCT STRATEGIC OPERATION OF VALVES FOR SERVICE INTERRUPTION IN ORDER TO PERFORM SPECIFIC WORK.
11. 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.
12. ALL MATERIALS, EQUIPMENT, LABOR, AND WORKSMANSHIP SHALL BE IN ACCORDANCE WITH NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.
13. UTILITY OWNER MUST BE PRESENT FOR ANY TESTING OR CONNECTIONS TO THE EXISTING SYSTEM INCLUDING BUT NOT LIMITED TO ALL TAPS AND TEMPORARY CONSTRUCTION CONNECTIONS. A NOTICE OF 72 HOURS MUST BE PROVIDED.

UTILITY CONSTRUCTION
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

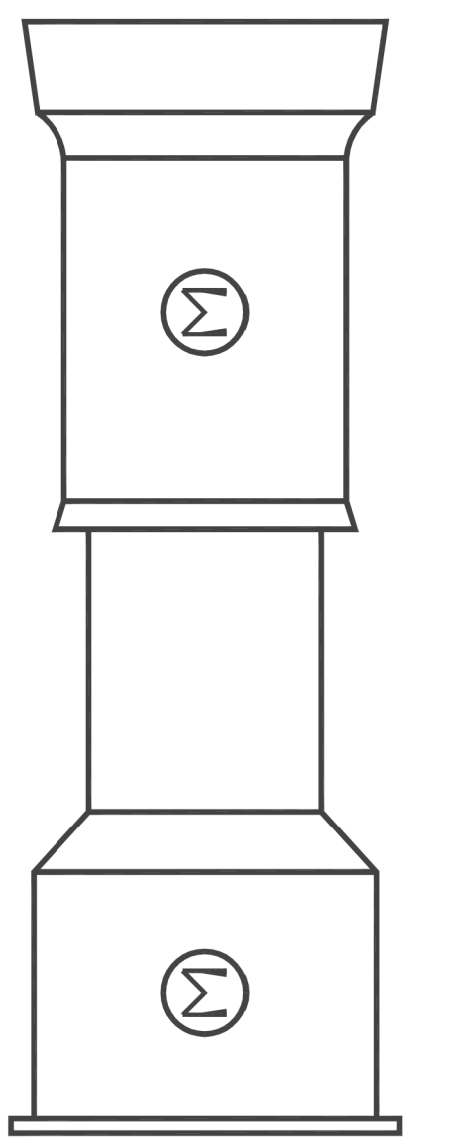
WATER TYPICAL DETAILS

| | |
|--|---------------------------|
| PROJECT REFERENCE NO. R-2707D | SHEET NO. UC-3A |
| DESIGNED BY: BCH | |
| DRAWN BY: KSA | |
| CHECKED BY: | |
| APPROVED BY: | |
| REVISED: | |
| NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION 12 PHONE: (980)552-4200 | |
| UTILITY CONSTRUCTION PLANS ONLY | |

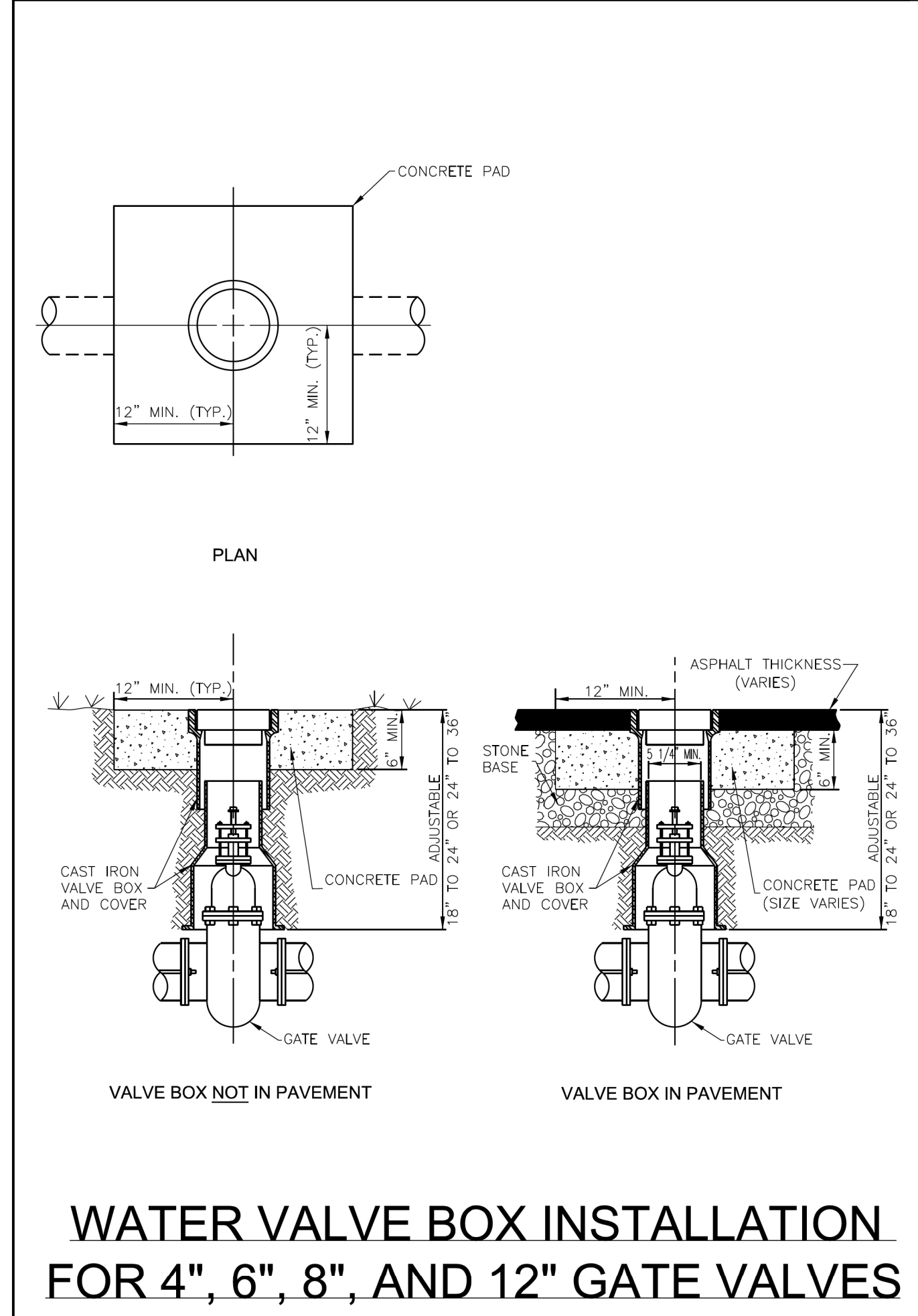
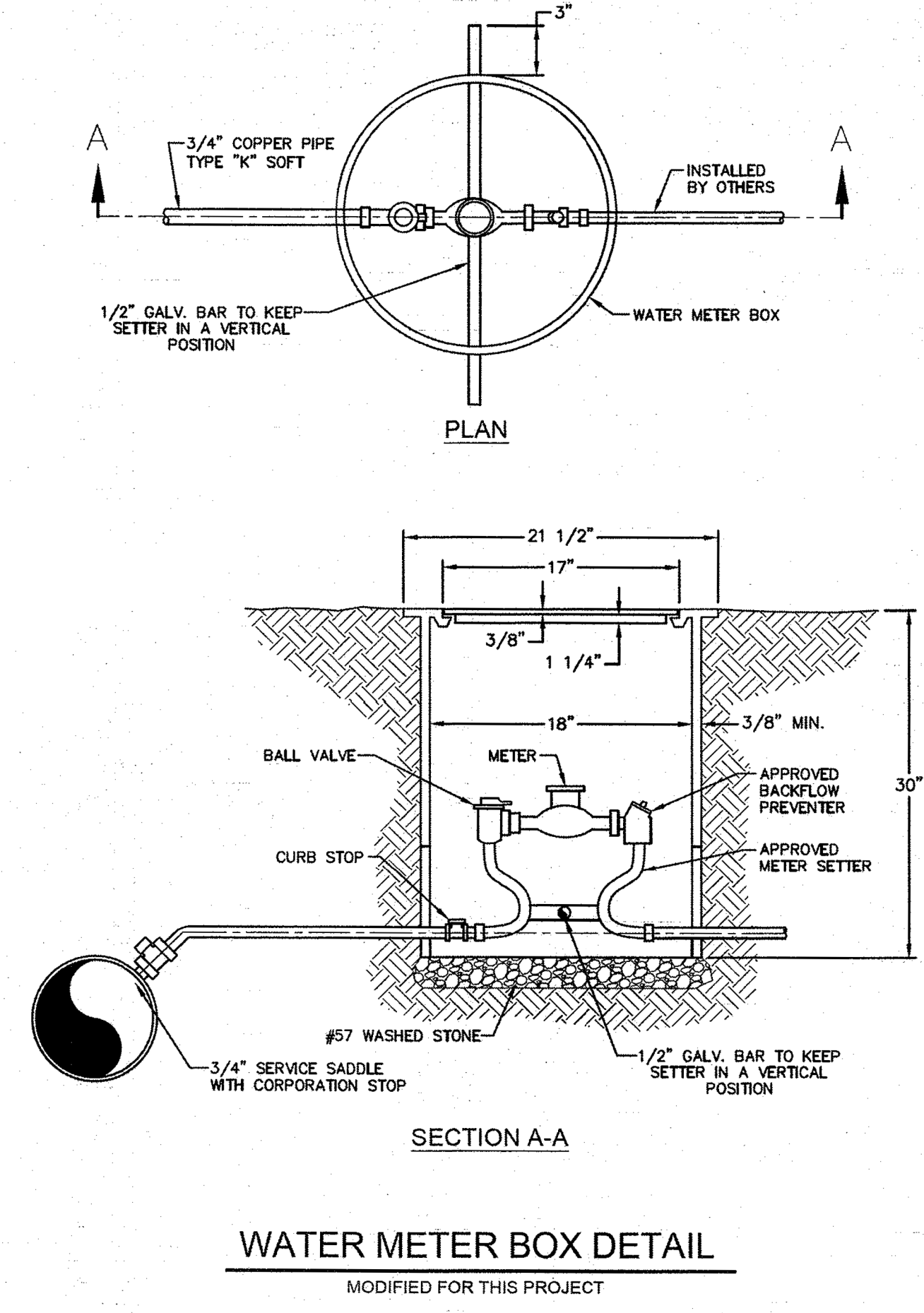
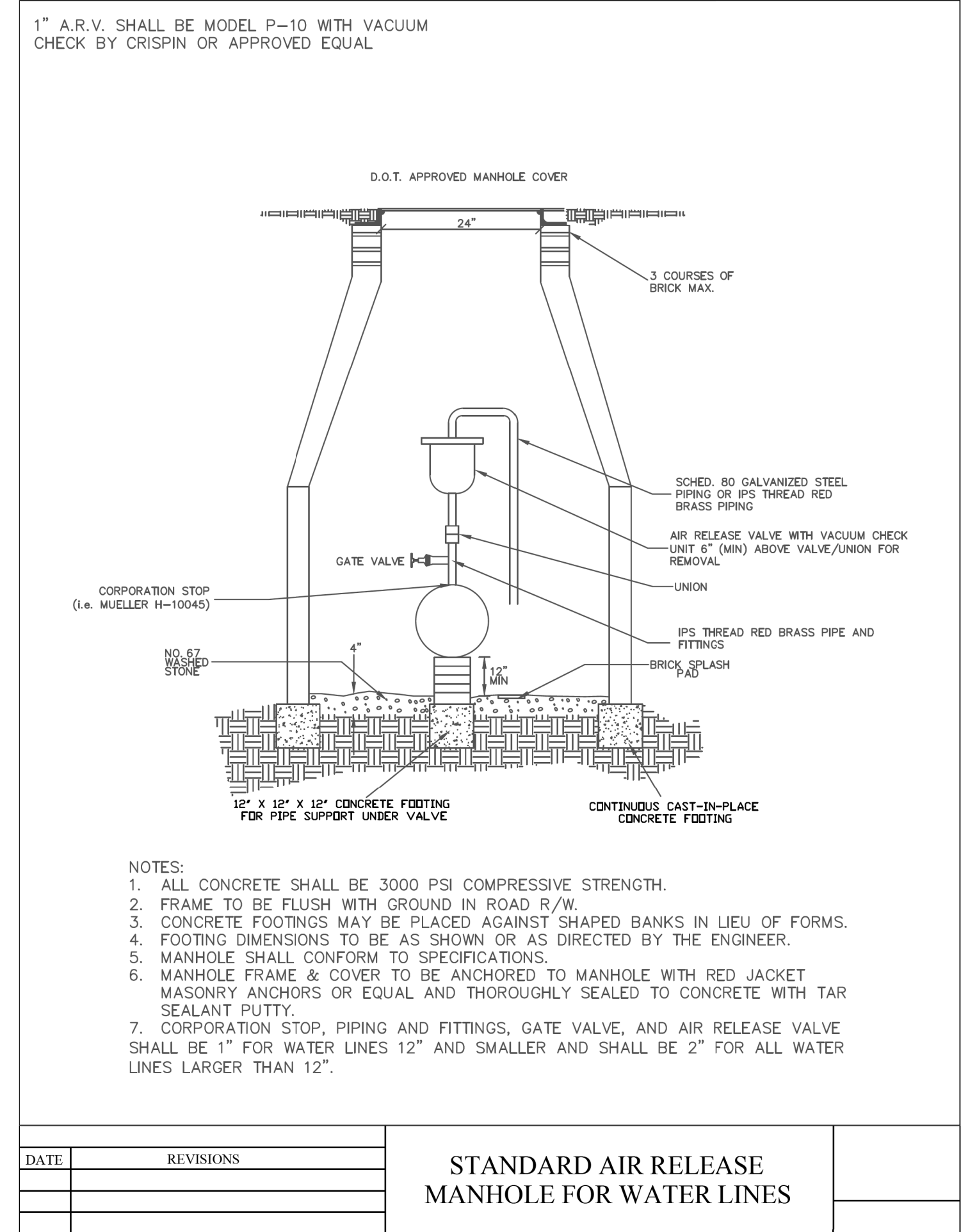
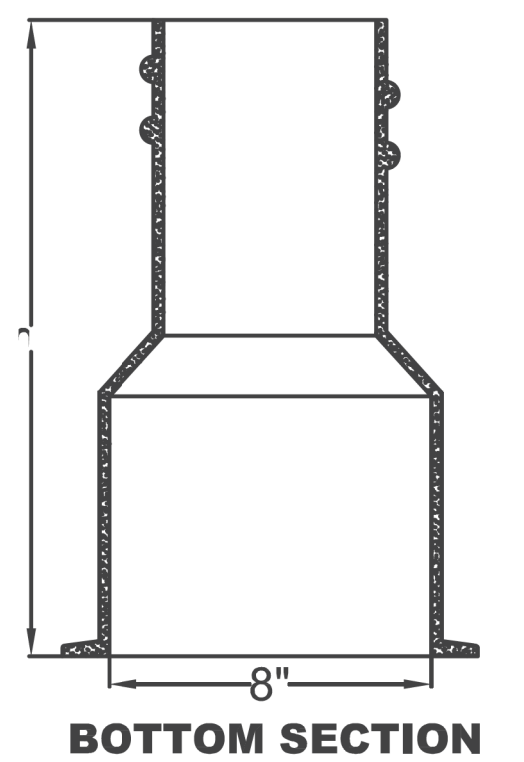
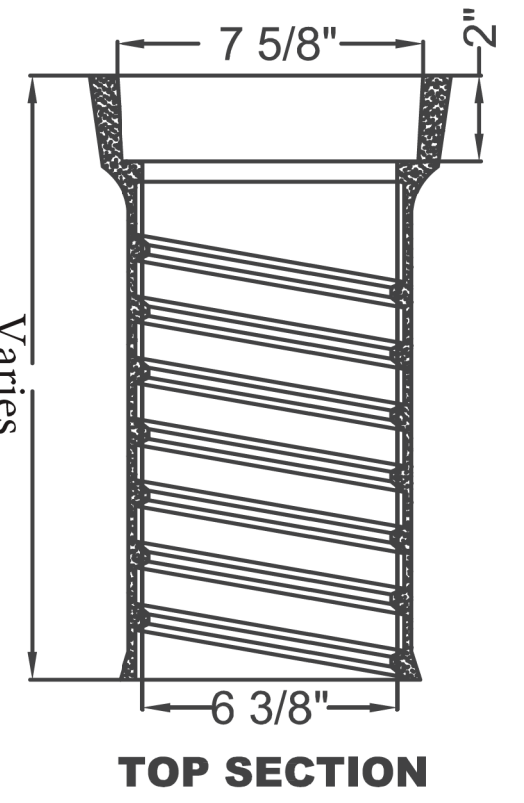
UTILITY CONSTRUCTION
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



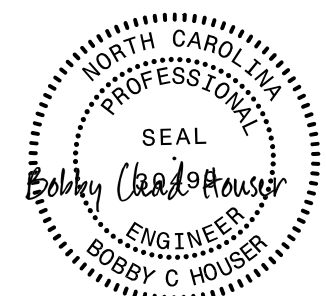
SCREW TYPE



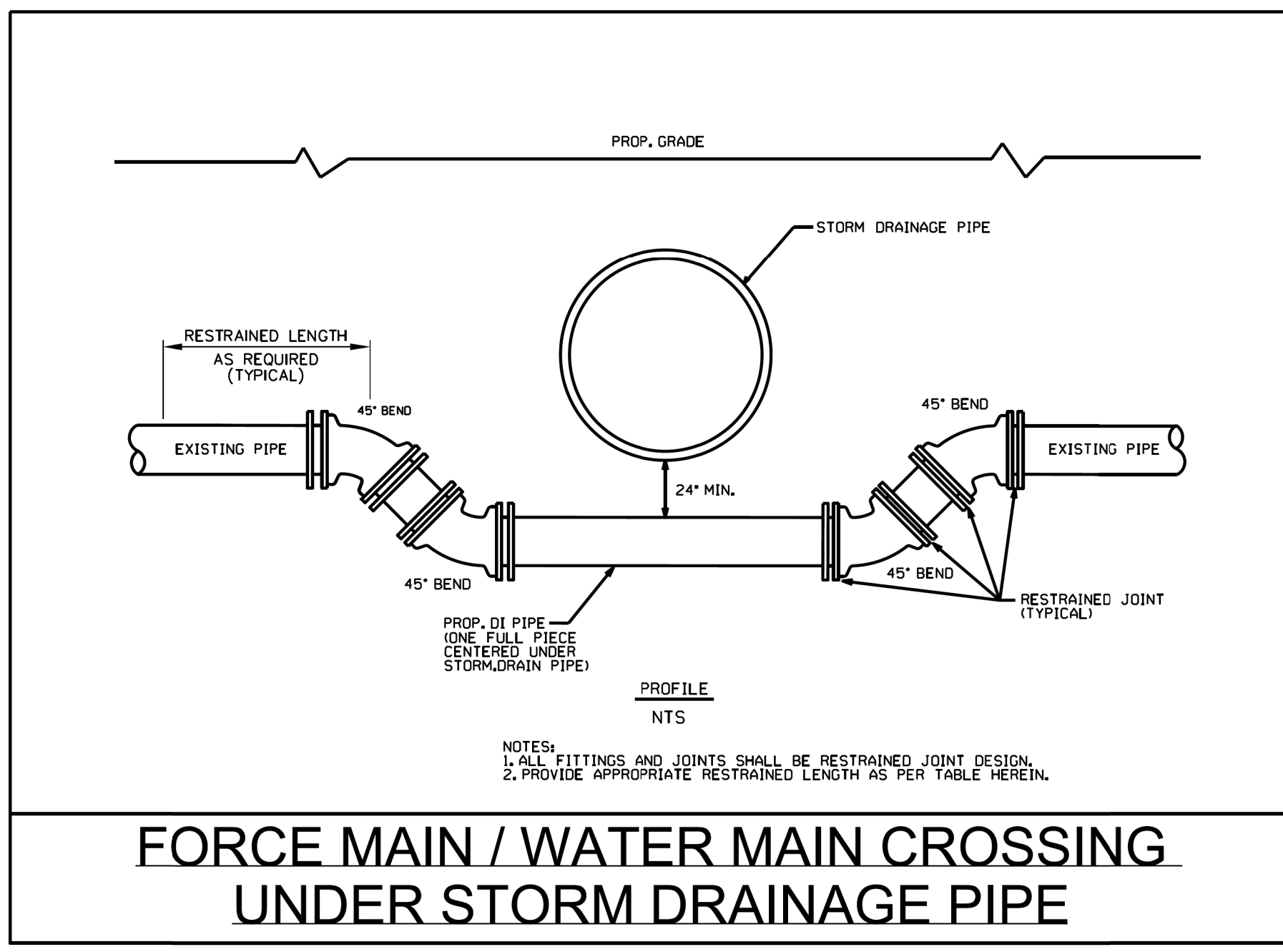
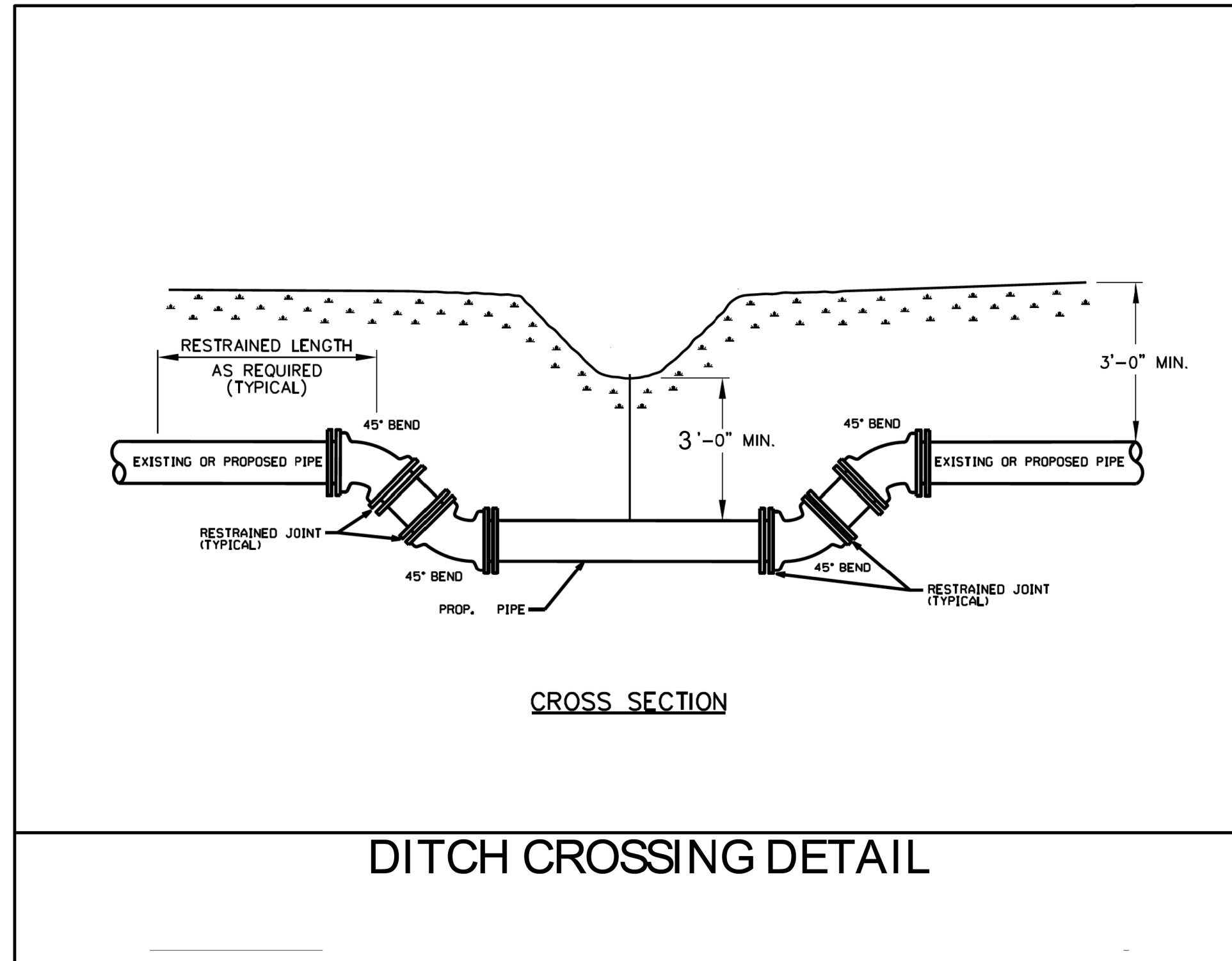
VALVE BOX COMPLETE



WATER TYPICAL DETAILS

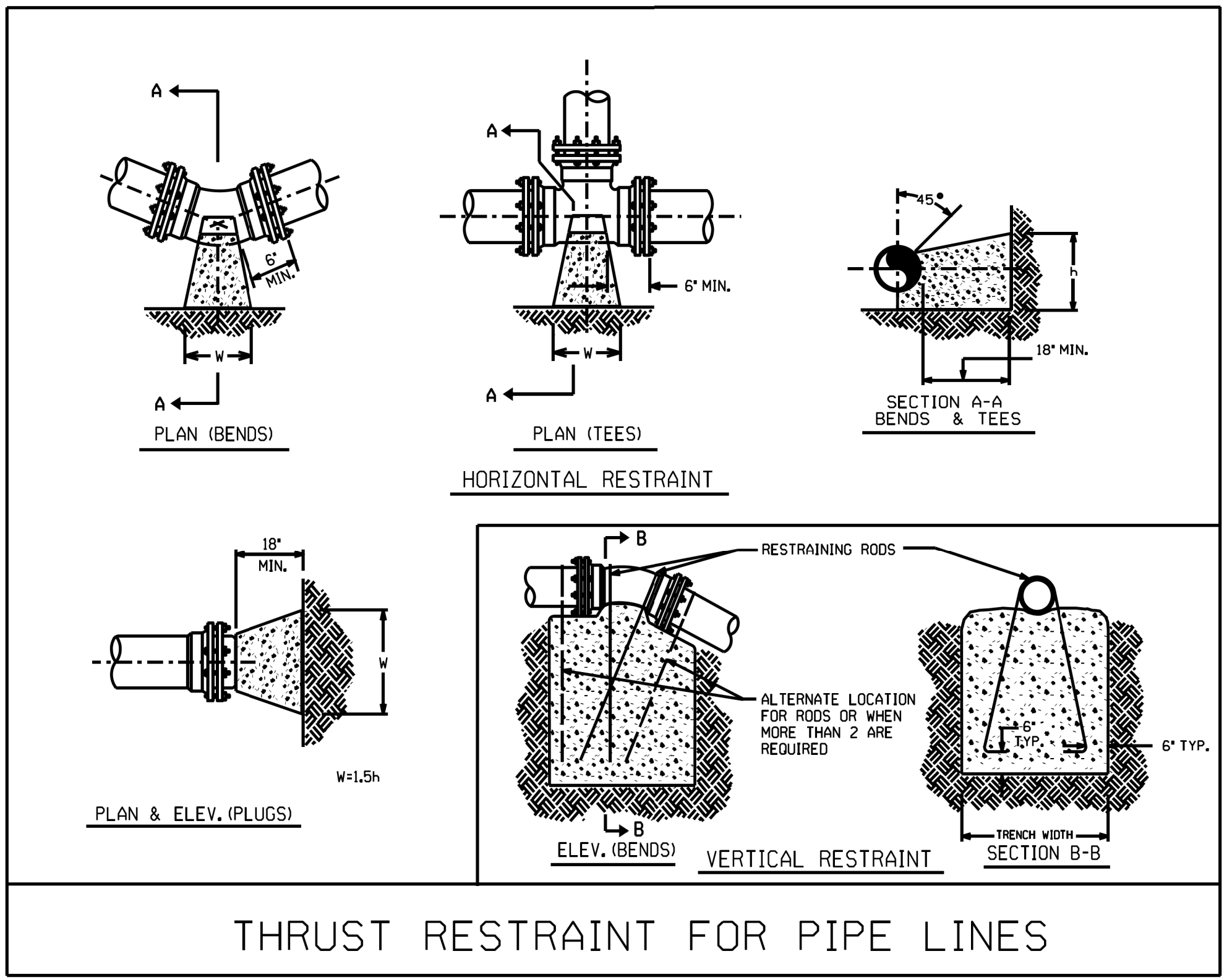
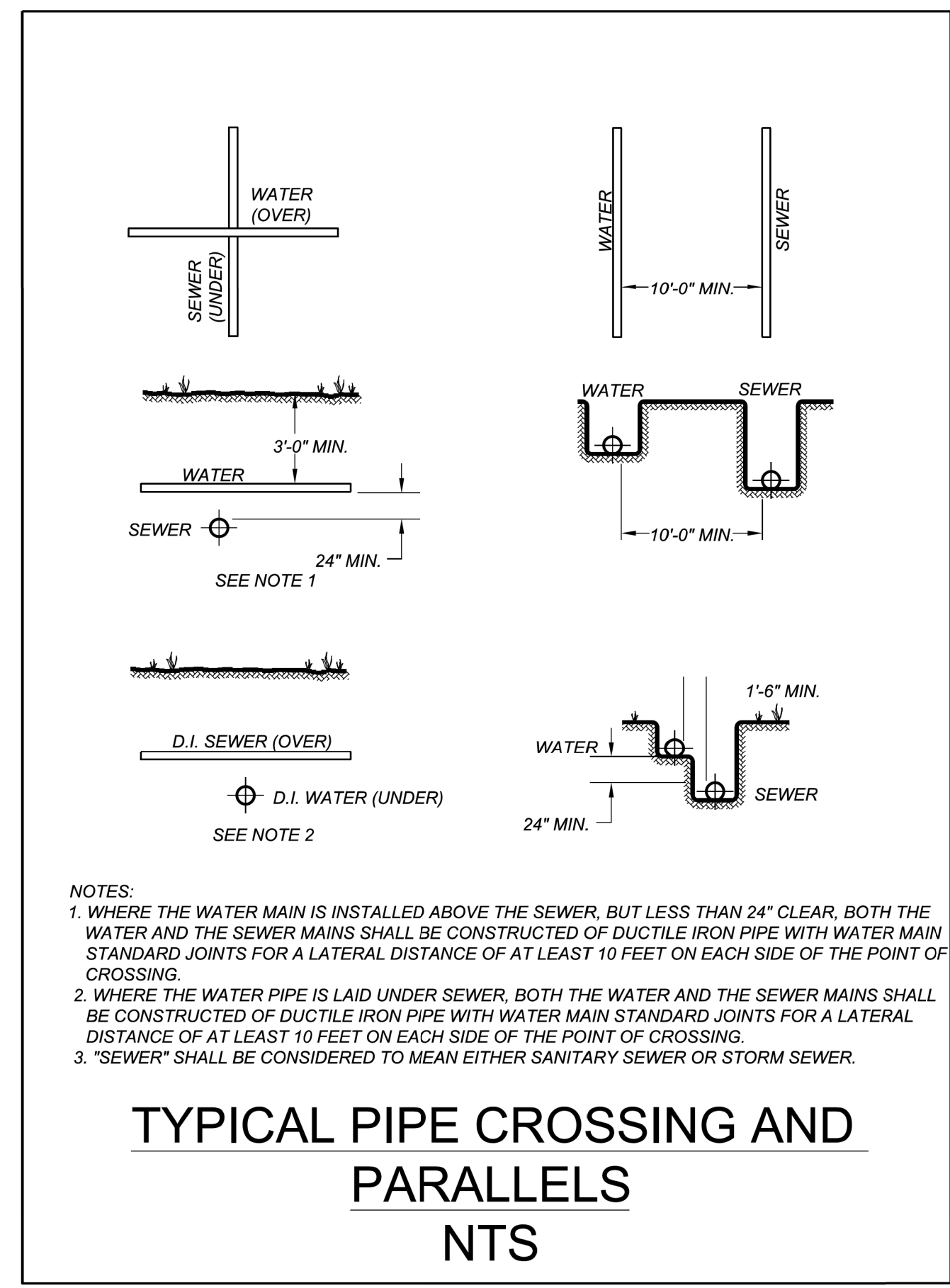
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| PROJECT REFERENCE NO. R-2707D | SHEET NO. UC-3B |
| DESIGNED BY: BCH | |
| DRAWN BY: KSA | |
| CHECKED BY: | |
| APPROVED BY: | |
| REVISED: | |
|  | |
| NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION 12 PHONE: (980)552-4200 | |
| UTILITY CONSTRUCTION PLANS ONLY | |

UTILITY CONSTRUCTION
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



RESTRAINED JOINT DESIGN TABLE FOR DUCTILE IRON PIPE

| FITTING | REQUIRED RESTRAINED LENGTH (FT) OF BARE D.I. PIPE BY DEPTH OF COVER | | | | | | | | |
|----------------------------------|---|------|------|------|------|------|------|-------|-------|
| | 3 FT | 4 FT | 5 FT | 6 FT | 7 FT | 8 FT | 9 FT | 10 FT | |
| HORIZONTAL BENDS | | | | | | | | | |
| 6 INCH DIA - 11.25 DEG | 3 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | |
| 6 INCH DIA - 22.5 DEG | 5 | 4 | 4 | 3 | 3 | 3 | 3 | 2 | |
| 6 INCH DIA - 45 DEG | 11 | 9 | 8 | 7 | 7 | 6 | 5 | 5 | |
| 6 INCH DIA - 90 DEG | 26 | 22 | 19 | 17 | 16 | 14 | 13 | 12 | |
| 8 INCH DIA - 11.25 DEG | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | |
| 8 INCH DIA - 22.5 DEG | 7 | 6 | 5 | 5 | 4 | 4 | 3 | 3 | |
| 8 INCH DIA - 45 DEG | 14 | 12 | 10 | 9 | 8 | 8 | 7 | 7 | |
| 8 INCH DIA - 90 DEG | 33 | 29 | 25 | 23 | 20 | 19 | 17 | 16 | |
| 12 INCH DIA - 11.25 DEG | 5 | 4 | 4 | 3 | 3 | 3 | 2 | 2 | |
| 12 INCH DIA - 22.5 DEG | 9 | 8 | 7 | 6 | 6 | 5 | 5 | 5 | |
| 12 INCH DIA - 45 DEG | 20 | 17 | 15 | 13 | 12 | 11 | 10 | 10 | |
| 12 INCH DIA - 90 DEG | 47 | 41 | 36 | 33 | 29 | 27 | 25 | 23 | |
| 16 INCH DIA - 11.25 DEG | 6 | 5 | 5 | 4 | 4 | 3 | 3 | 3 | |
| 16 INCH DIA - 22.5 DEG | 12 | 11 | 9 | 8 | 8 | 7 | 6 | 6 | |
| 16 INCH DIA - 45 DEG | 25 | 22 | 19 | 17 | 16 | 14 | 13 | 12 | |
| 20 INCH DIA - 11.25 DEG | 7 | 6 | 6 | 5 | 5 | 4 | 4 | 4 | |
| 20 INCH DIA - 22.5 DEG | 15 | 13 | 11 | 10 | 9 | 9 | 8 | 7 | |
| 20 INCH DIA - 45 DEG | 31 | 27 | 24 | 21 | 19 | 18 | 16 | 15 | |
| 20 INCH DIA - 90 DEG | 74 | 65 | 57 | 52 | 47 | 43 | 40 | 37 | |
| VERTICAL BENDS - DOWN | | | | | | | | | |
| 6 INCH DIA - 11.25 DEG | 7 | 6 | 6 | 5 | 4 | 4 | 4 | 3 | |
| 6 INCH DIA - 22.5 DEG | 15 | 13 | 11 | 10 | 9 | 8 | 8 | 7 | |
| 6 INCH DIA - 45 DEG | 31 | 27 | 23 | 21 | 19 | 17 | 16 | 15 | |
| 8 INCH DIA - 11.25 DEG | 10 | 8 | 7 | 6 | 6 | 5 | 5 | 5 | |
| 8 INCH DIA - 22.5 DEG | 19 | 17 | 15 | 13 | 12 | 11 | 10 | 9 | |
| 8 INCH DIA - 45 DEG | 40 | 35 | 30 | 27 | 25 | 22 | 21 | 19 | |
| 12 INCH DIA - 11.25 DEG | 14 | 12 | 10 | 9 | 8 | 8 | 7 | 7 | |
| 12 INCH DIA - 22.5 DEG | 28 | 24 | 21 | 19 | 17 | 16 | 14 | 13 | |
| 12 INCH DIA - 45 DEG | 57 | 50 | 44 | 39 | 35 | 32 | 30 | 28 | |
| 16 INCH DIA - 11.25 DEG | 18 | 15 | 14 | 12 | 11 | 10 | 9 | 9 | |
| 16 INCH DIA - 22.5 DEG | 36 | 31 | 27 | 25 | 22 | 20 | 19 | 17 | |
| 16 INCH DIA - 45 DEG | 74 | 65 | 57 | 51 | 46 | 42 | 39 | 36 | |
| 20 INCH DIA - 11.25 DEG | 22 | 19 | 17 | 15 | 14 | 12 | 11 | 11 | |
| 20 INCH DIA - 22.5 DEG | 44 | 38 | 34 | 30 | 27 | 25 | 23 | 21 | |
| 20 INCH DIA - 45 DEG | 91 | 79 | 70 | 63 | 57 | 52 | 48 | 44 | |
| VERTICAL BENDS - UP | | | | | | | | | |
| 6 INCH DIA - 11.25 DEG | 3 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | |
| 6 INCH DIA - 22.5 DEG | 5 | 4 | 3 | 3 | 3 | 3 | 3 | 2 | |
| 6 INCH DIA - 45 DEG | 11 | 9 | 8 | 7 | 7 | 6 | 5 | 5 | |
| 8 INCH DIA - 11.25 DEG | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | |
| 8 INCH DIA - 22.5 DEG | 7 | 6 | 5 | 5 | 4 | 4 | 3 | 3 | |
| 8 INCH DIA - 45 DEG | 14 | 12 | 10 | 9 | 8 | 8 | 7 | 7 | |
| 12 INCH DIA - 11.25 DEG | 5 | 4 | 4 | 3 | 3 | 3 | 2 | 2 | |
| 12 INCH DIA - 22.5 DEG | 9 | 8 | 7 | 6 | 6 | 5 | 5 | 5 | |
| 12 INCH DIA - 45 DEG | 20 | 17 | 15 | 13 | 12 | 11 | 10 | 10 | |
| 16 INCH DIA - 11.25 DEG | 6 | 5 | 5 | 4 | 4 | 3 | 3 | 3 | |
| 16 INCH DIA - 22.5 DEG | 12 | 11 | 9 | 8 | 8 | 7 | 6 | 6 | |
| 16 INCH DIA - 45 DEG | 25 | 22 | 19 | 17 | 16 | 14 | 13 | 12 | |
| 20 INCH DIA - 11.25 DEG | 7 | 6 | 6 | 5 | 5 | 4 | 4 | 4 | |
| 20 INCH DIA - 22.5 DEG | 15 | 13 | 11 | 10 | 9 | 9 | 8 | 7 | |
| 20 INCH DIA - 45 DEG | 31 | 27 | 24 | 21 | 19 | 18 | 16 | 15 | |
| DEAD ENDS / VALVES | | | | | | | | | |
| 6 INCH DIA | 50 | 45 | 41 | 38 | 35 | 33 | 31 | 29 | |
| 8 INCH DIA | 65 | 59 | 54 | 50 | 46 | 43 | 40 | 38 | |
| 10 INCH DIA | 80 | 72 | 66 | 61 | 56 | 52 | 49 | 46 | |
| 12 INCH DIA | 94 | 85 | 78 | 72 | 66 | 62 | 58 | 54 | |
| 16 INCH DIA | 123 | 111 | 102 | 94 | 87 | 81 | 76 | 71 | |
| 20 INCH DIA | 151 | 137 | 125 | 115 | 107 | 100 | 93 | 88 | |
| REDUCERS | | | | | | | | | |
| 3 FT | 30 | 4 FT | 45 | 5 FT | 6 FT | 7 FT | 8 FT | 9 FT | 10 FT |
| 12 INCH X 8 INCH | 50 | 45 | 41 | 38 | 35 | 33 | 31 | 29 | |
| TEES | | | | | | | | | |
| 3 FT | 30 | 4 FT | 45 | 5 FT | 6 FT | 7 FT | 8 FT | 9 FT | 10 FT |
| 8" RUN X 8" BRANCH : RL = 1 FT | 64 | 58 | 53 | 48 | 44 | 41 | 38 | 36 | |
| 8" RUN X 8" BRANCH : RL = 5 FT | 59 | 52 | 47 | 42 | 39 | 35 | 32 | 30 | |
| 12" RUN X 12" BRANCH : RL = 1 FT | 84 | 77 | 70 | 65 | 62 | 58 | 54 | 51 | |
| 12" RUN X 12" BRANCH : RL = 5 FT | 88 | 79 | 71 | 65 | 59 | 54 | 50 | 47 | |



ASSUMPTIONS
LAVING CONDITION = TYPE 4
SOIL DESIGNATION = COHESIVE-GRANULAR
DESIGN PRESSURE = 200 PSI (TEST PRESSURE)
SAFETY FACTOR = 1.5

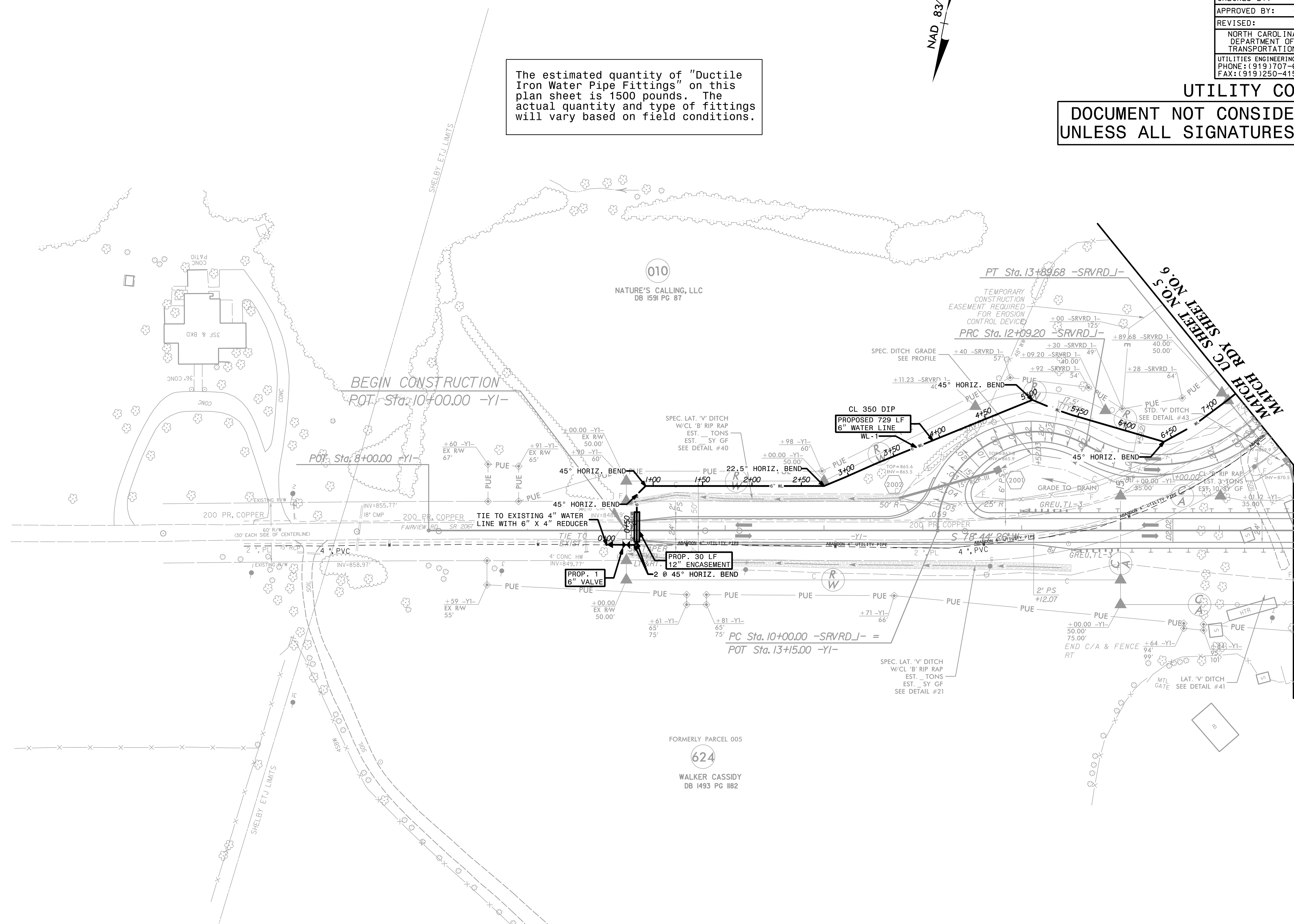
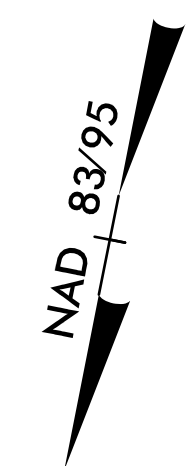
NOTES
1. RESTRAINED LENGTH IS MEASURED AS FOLLOWS:
A. HORIZONTAL/VERTICAL BENDS: ALONG EACH SIDE OF BEND.
B. HORIZONTAL/VERTICAL BENDS - OFFSET: ALONG THE OUTER SIDE OF EACH BEND.
ALL PIPE BETWEEN THE TWO BENDS SHALL BE RESTRAINED JOINT.
2. WHEN IT IS NOT POSSIBLE TO INSTALL THE RESTRAINED LENGTHS AS NOTED BY THIS TABLE, CONTRACTOR SHALL INSTALL THE APPROPRIATE CONCRETE THRUST RESTRAINTS AS PER THE DETAILS HEREIN.

| | |
|---------------------------------|---|
| PROJECT REFERENCE NO. | SHEET NO. |
| R-2707D | JC-4/RDY-20 |
| DESIGNED BY: BCH | |
| DRAWN BY: BCH | |
| CHECKED BY: | |
| APPROVED BY: | |
| REVISER: | 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

The estimated quantity of "Ductile Iron Water Pipe Fittings" on this plan sheet is 1500 pounds. The actual quantity and type of fittings will vary based on field conditions.

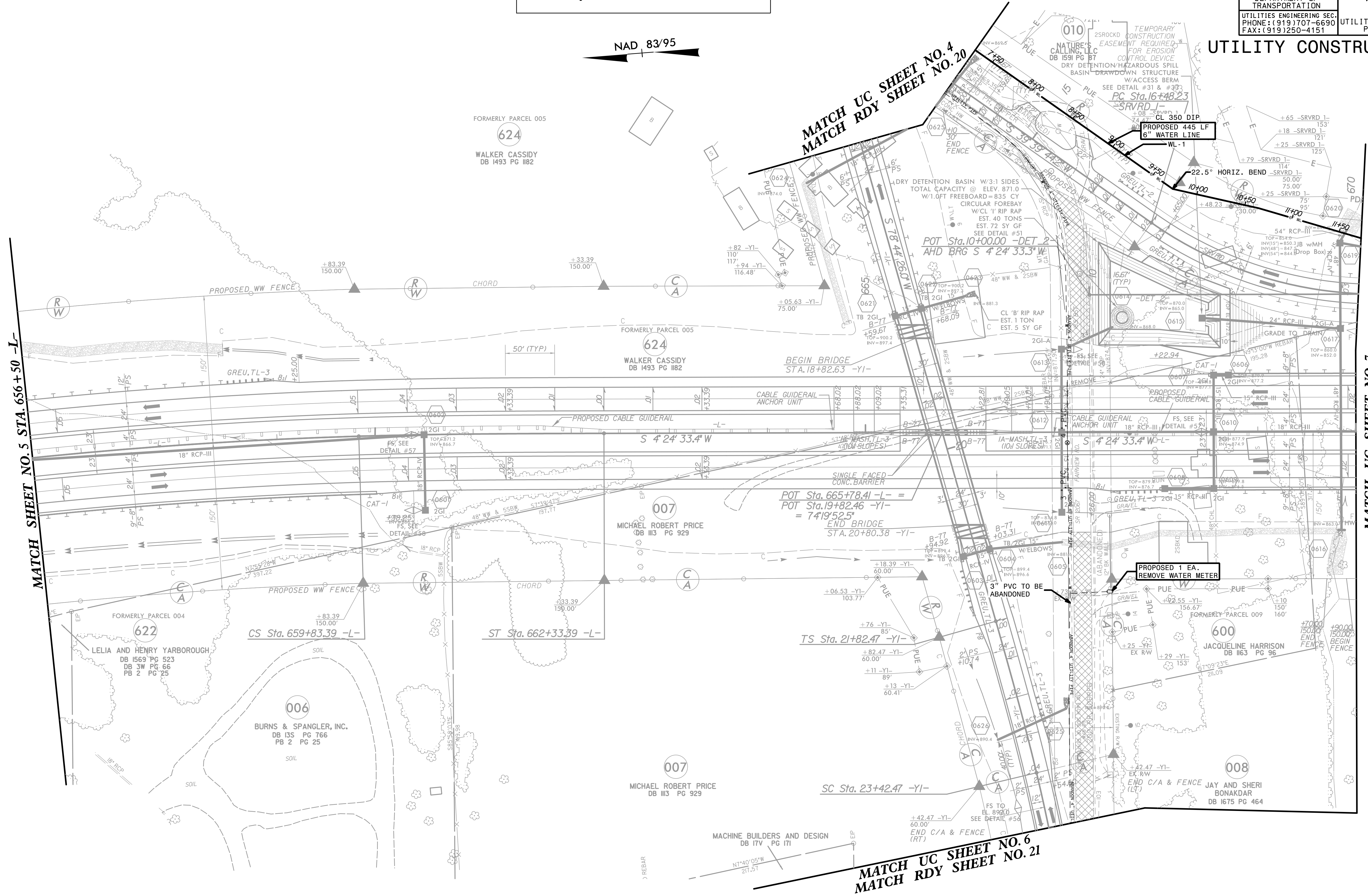
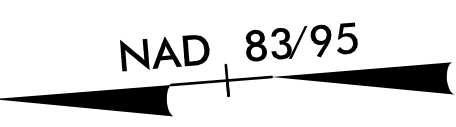


MATCH UC SHEET NO. 5
MATCH RDY SHEET NO. 6

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

| | |
|--|--|
| PROJECT REFERENCE NO. | SHEET NO. |
| R-2707D | UC-5/RDY-6 |
| DESIGNED BY: BCH |  |
| DRAWN BY: BCH | |
| CHECKED BY: | |
| APPROVED BY: | |
| REVISED: | |
| NORTH CAROLINA DEPARTMENT OF TRANSPORTATION | |
| UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151 | UTILITY CONSTRUCTION PLANS ONLY |

The estimated quantity of "Ductile Iron Water Pipe Fittings" on this plan sheet is 1000 pounds. The actual quantity and type of fittings will vary based on field conditions.



MATCH SHEET NO. 5 STA. 656 + 50 -L-

MATCH UC SHEET NO. 7
MATCH RDY SHEET NO. 7

MATCH UC SHEET NO. 6
MATCH RDY SHEET NO. 21

UTILITY CONSTRUCTION

FORMERLY PARCEL 005
624
WALKER CASSIDY
DB 1493 PG 1182

FORMERLY PARCEL 005
624
WALKER CASSIDY
DB 1493 PG 1182

007
MICHAEL ROBERT PRICE
DB 113 PG 929

FORMERLY PARCEL 004
622
LELIA AND HENRY YARBOROUGH
DB 1569 PG 523
DB 3W PG 66
PB 2 PG 25

006
BURNS & SPANGLER, INC.
DB 135 PG 766
PB 2 PG 25

007
MICHAEL ROBERT PRICE
DB 113 PG 929

FORMERLY PARCEL 009
600
JACQUELINE HARRISON
DB 1163 PG 96

008
JAY AND SHERI
BONAKDAR
DB 1675 PG 464

MACHINE BUILDERS AND DESIGN
DB 17V
PG 171

MATCH UC SHEET NO. 4
MATCH RDY SHEET NO. 20

POT Sta. 10+00.00 -DET 2
AHD BRG S 4 24 33.3 W

BEGIN BRIDGE
STA. 18+82.63 -YI-

POT Sta. 665+78.41 -L- =
POT Sta. 19+82.46 -YI- =
74'19'52.5"

END BRIDGE
STA. 20+80.38 -YI-

TS Sta. 21+82.47 -YI-

SC Sta. 23+42.47 -YI-

END C/A & FENCE
(RT)

PROPOSED 445 LF
6" WATER LINE
WL-1

PROPOSED 1 EA.
REMOVE WATER METER

3" PVC TO BE
ABANDONED

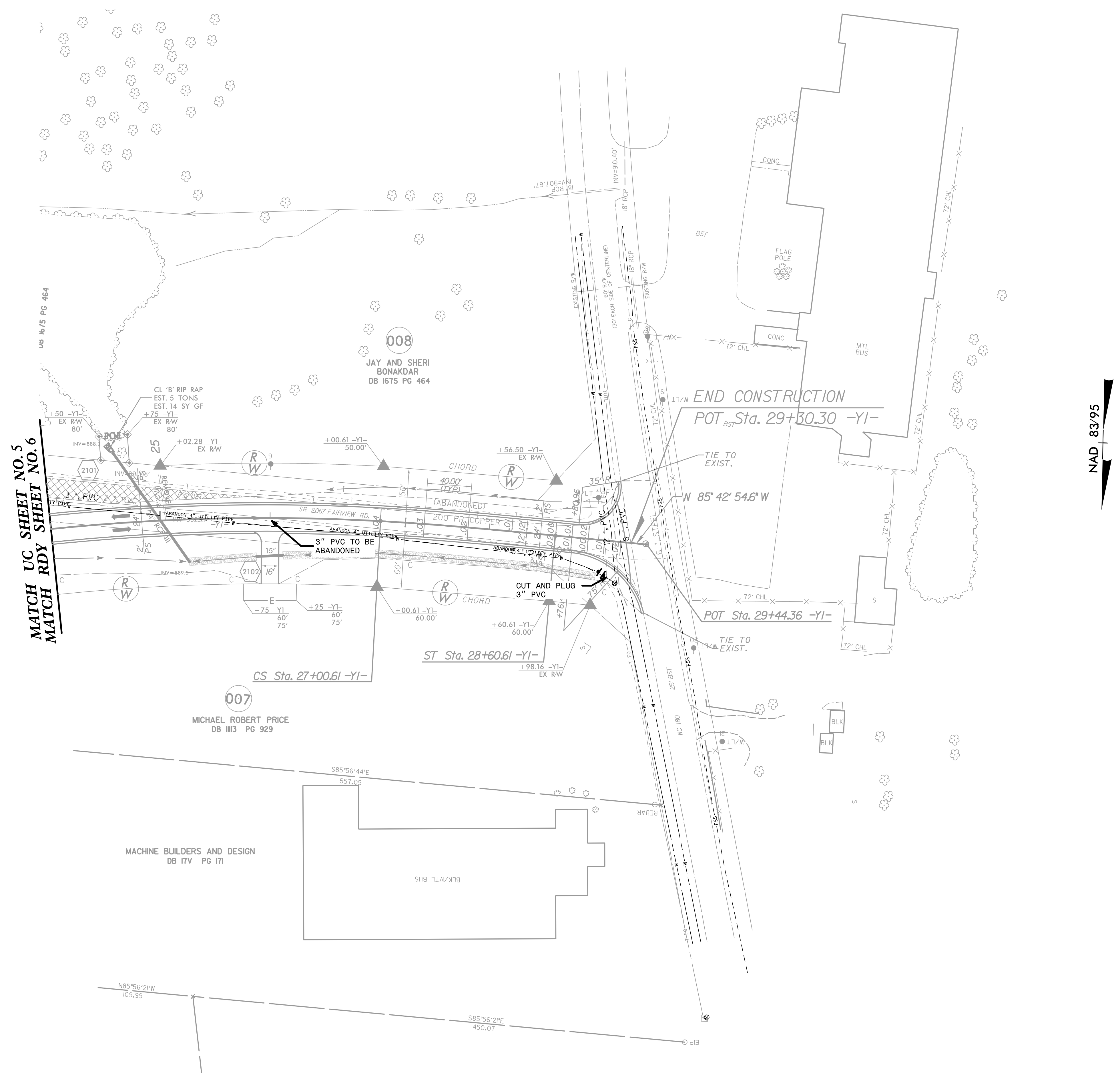
FS TO
EL. 892.0
SEE DETAIL #58

END C/A & FENCE
(RT)

| | |
|--|------------------------------------|
| PROJECT REFERENCE NO. | SHEET NO. |
| R-2707D | UC-6/RDY-21 |
| DESIGNED BY: BCH | |
| DRAWN BY: BCH | |
| CHECKED BY: | |
| 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

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NAD 83/95

MATCH UC SHEET NO. 5
MATCH RDY SHEET NO. 6

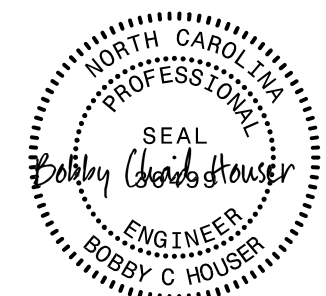
007
MICHAEL ROBERT PRICE
DB III3 PG 929

008
JAY AND SHERI
BONAKDAR
DB I675 PG 464

MACHINE BUILDERS AND DESIGN
DB I7V PG 171

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

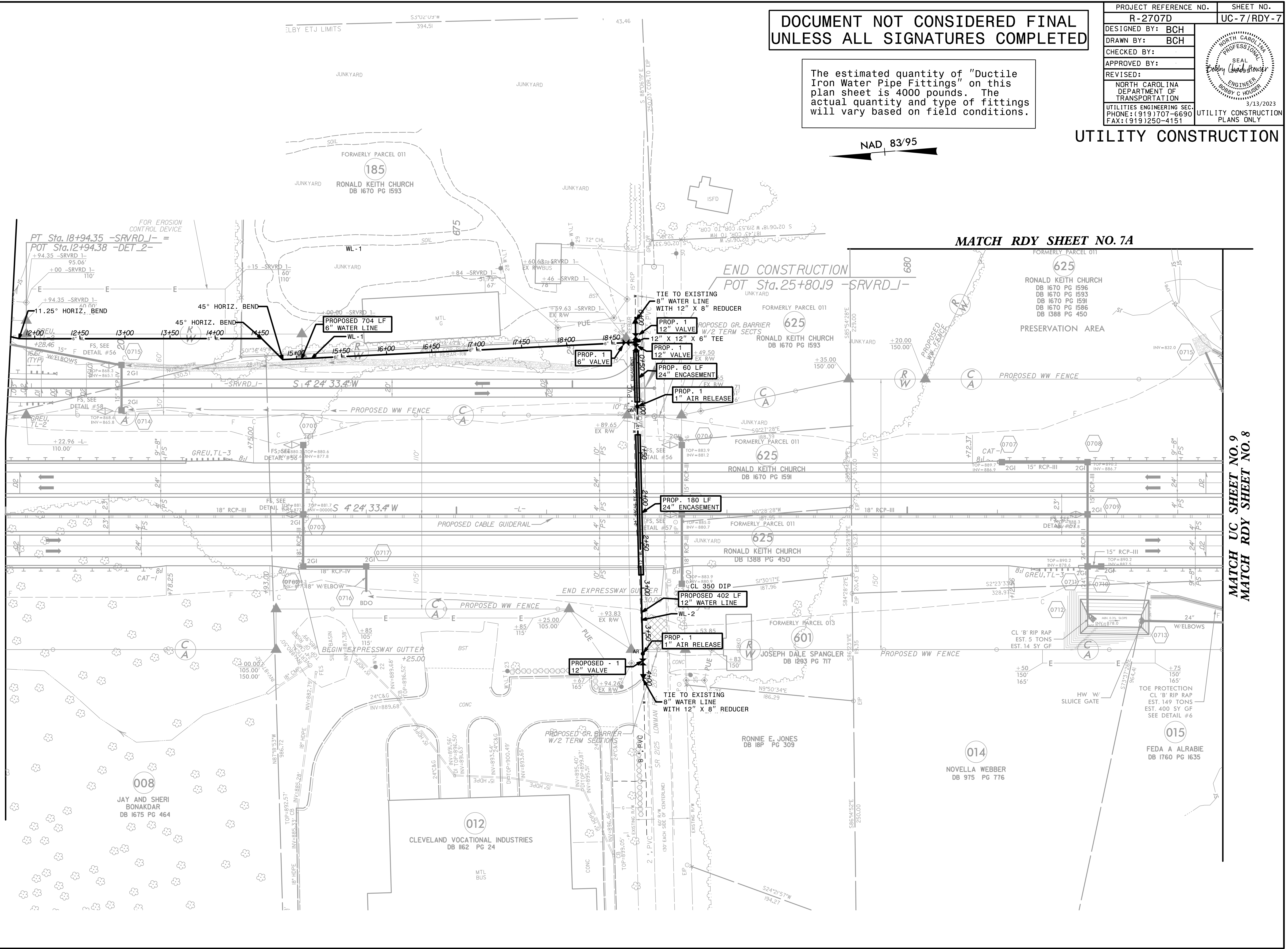
The estimated quantity of "Ductile
Iron Water Pipe Fittings" on this
plan sheet is 4000 pounds. The
actual quantity and type of fittings
will vary based on field conditions.

| | |
|--|---|
| PROJECT REFERENCE NO. | SHEET NO. |
| R-2707D | UC-7/RDY-7 |
| DESIGNED BY: BCH |  |
| DRAWN BY: BCH | |
| 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 | |

UTILITY CONSTRUCTION

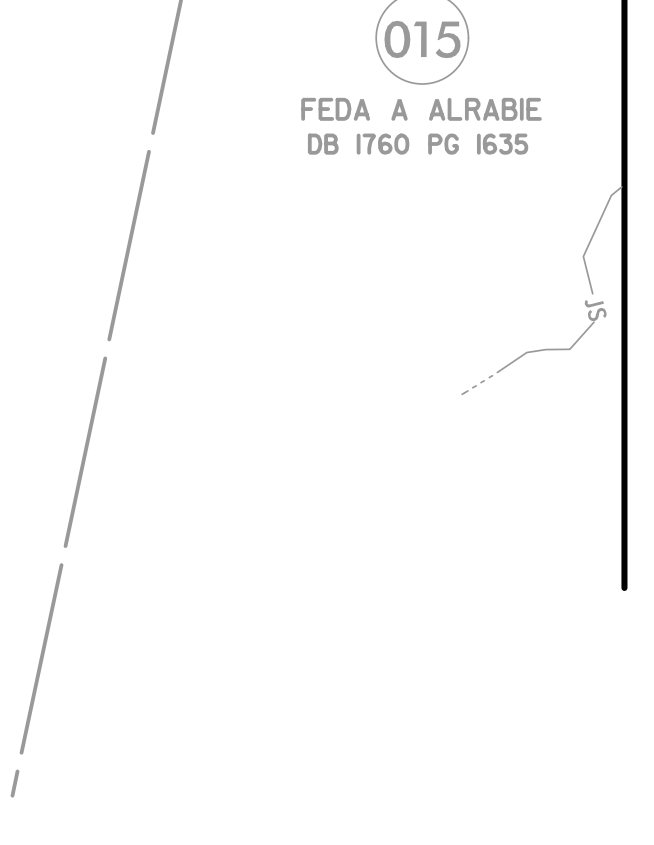
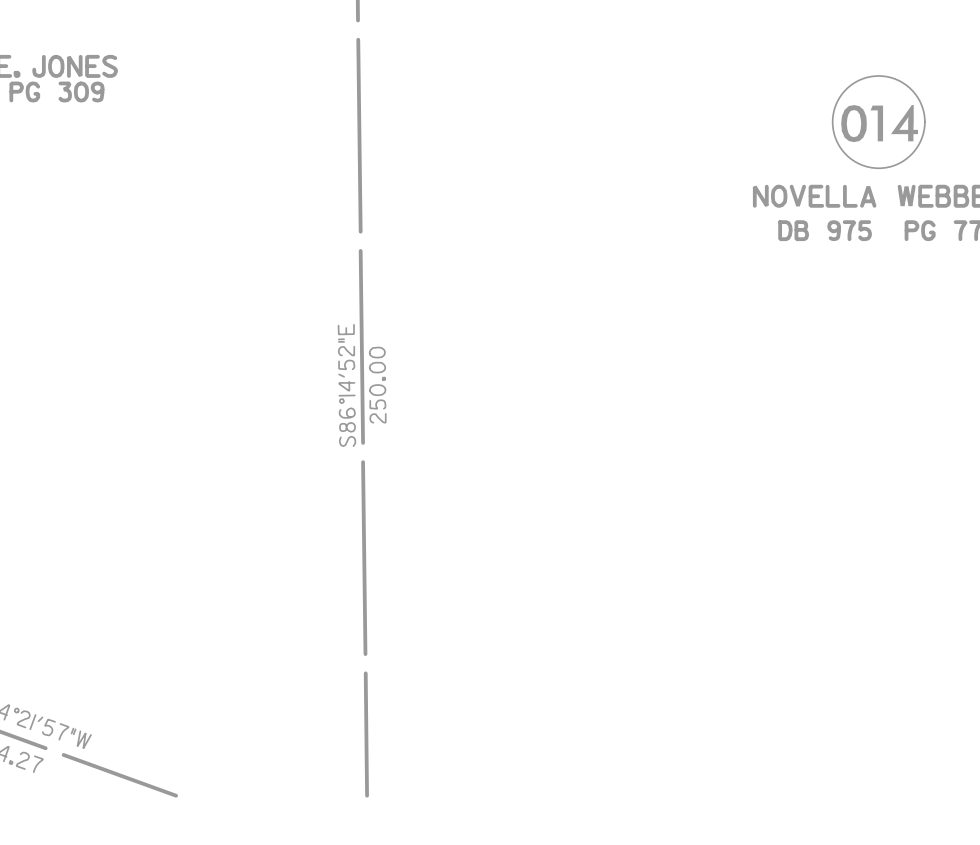
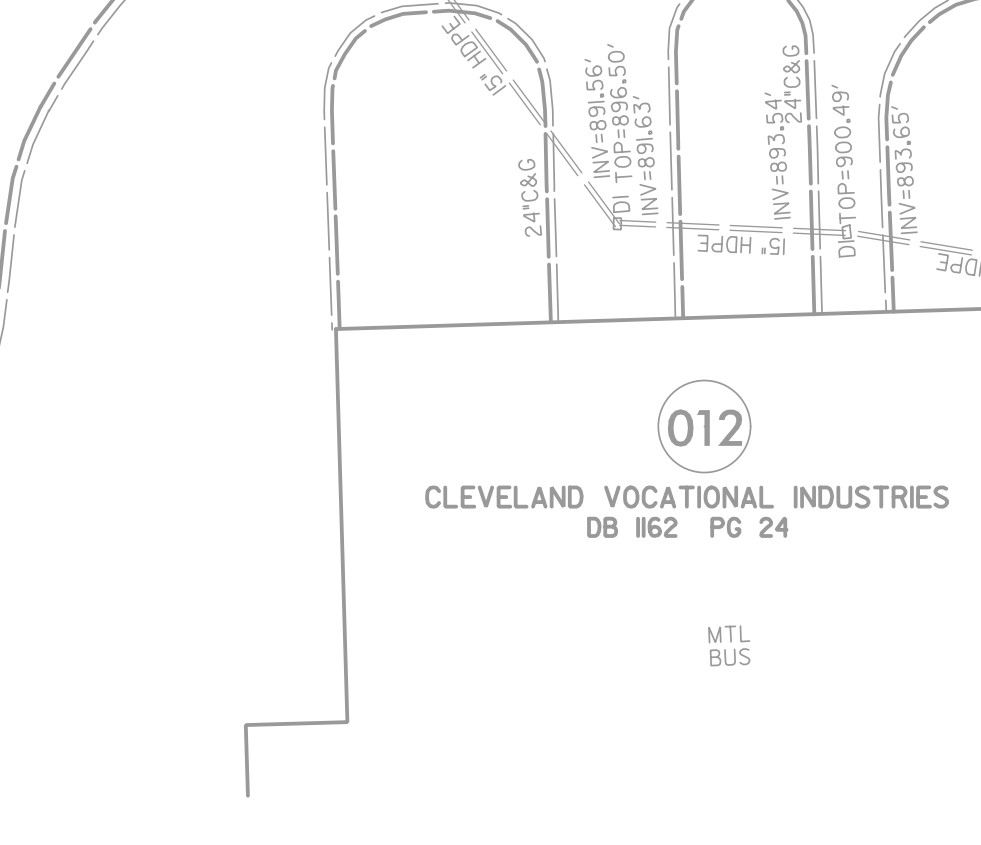
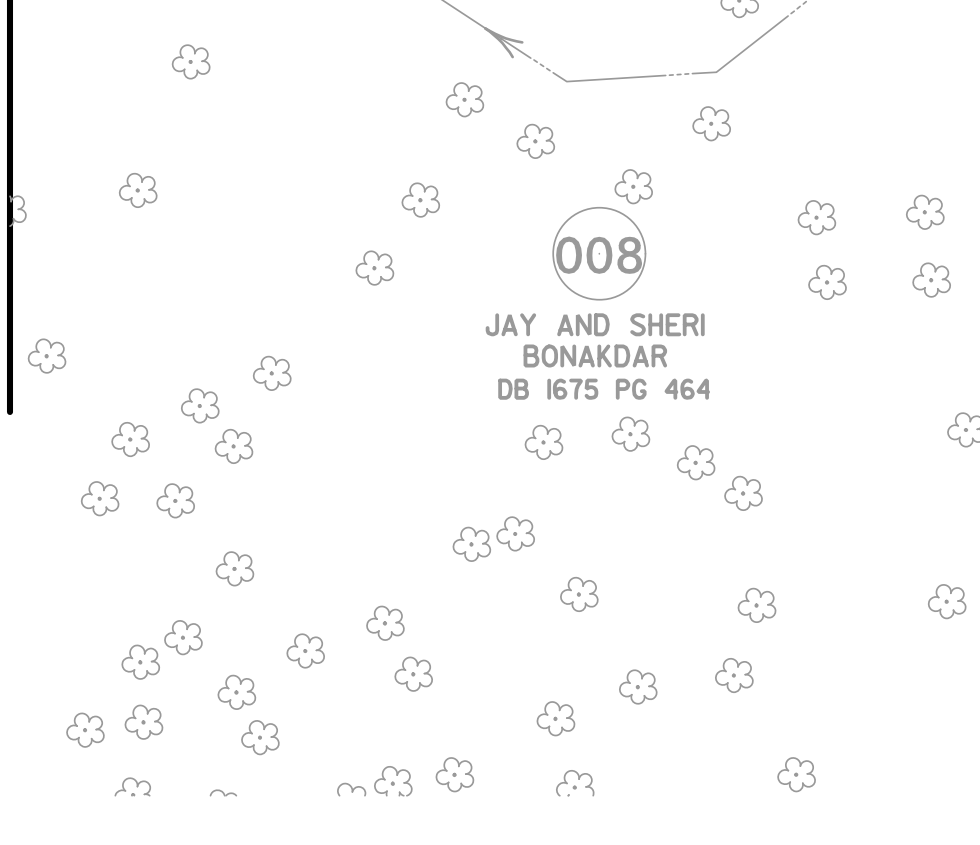
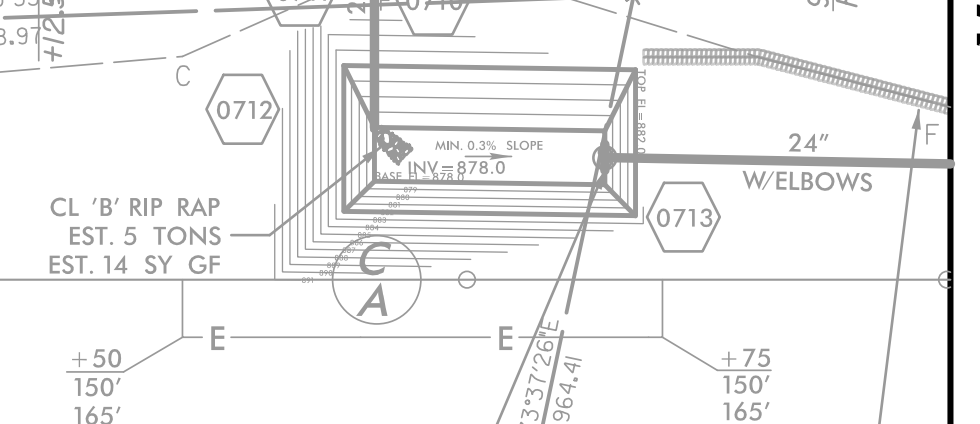
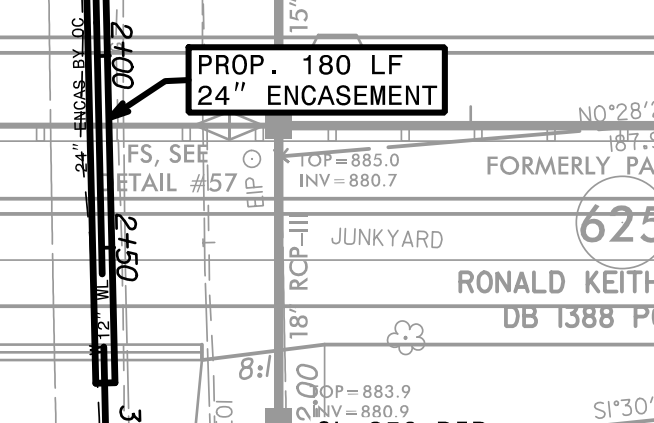
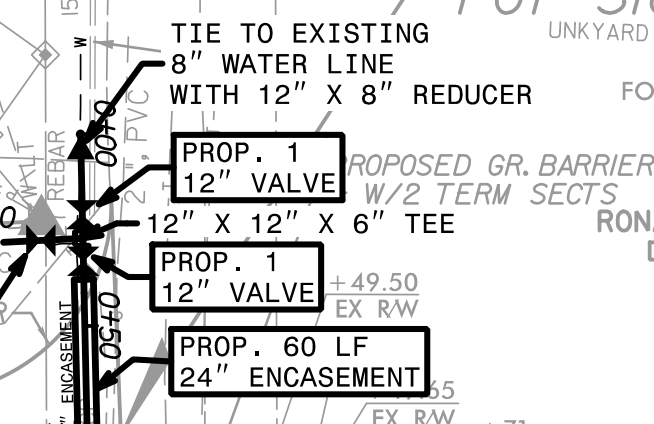
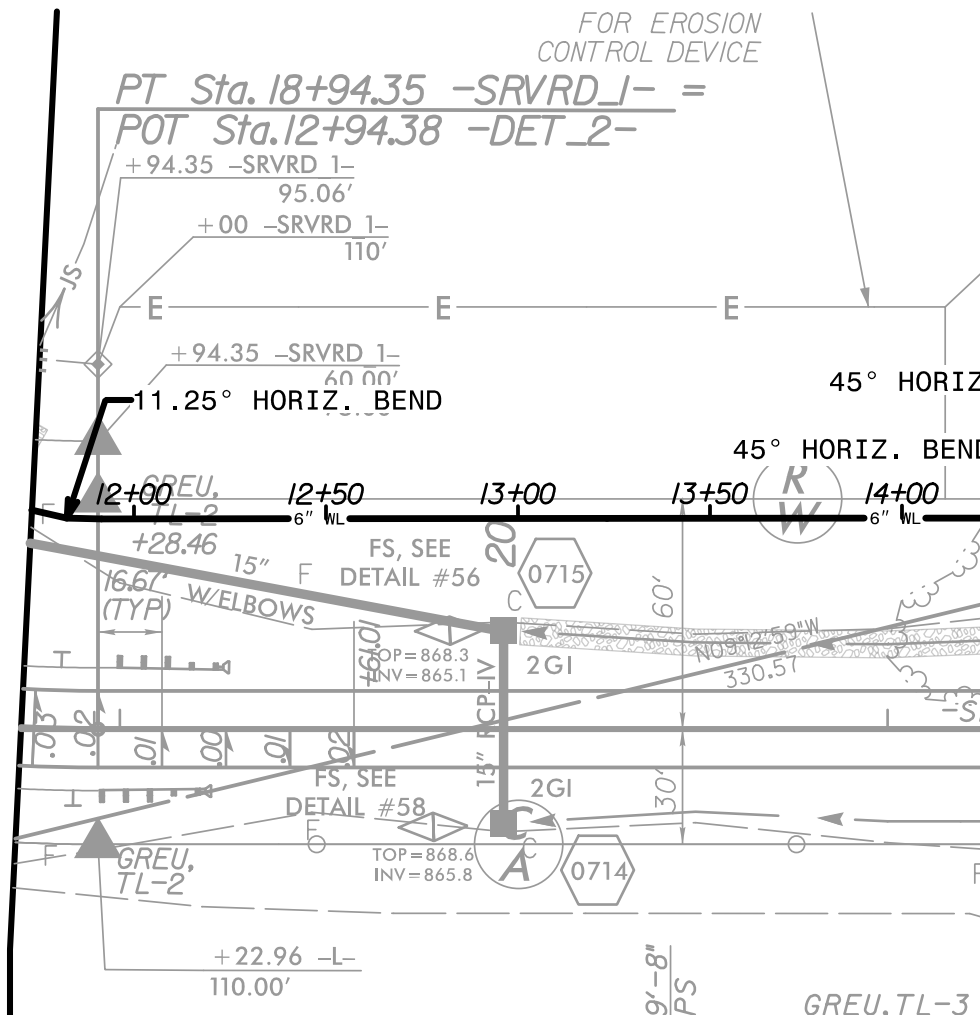
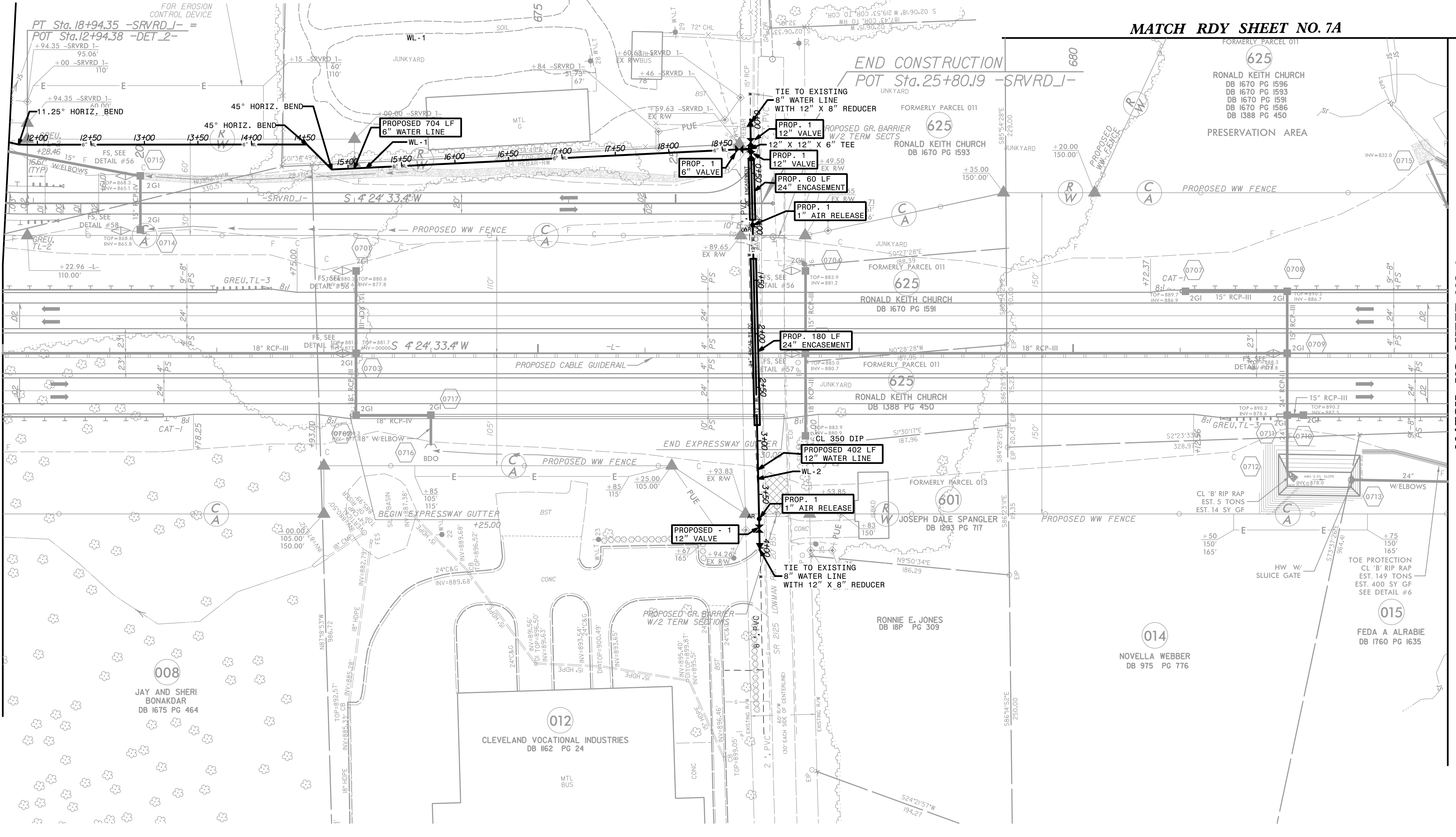
NAD 83/95

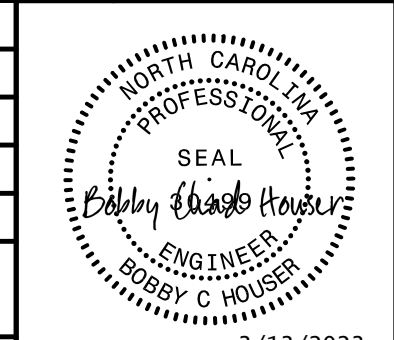
MATCH SHEET UC NO. 5
MATCH SHEET RDY NO. 6



MATCH RDY SHEET NO. 7A

MATCH UC SHEET NO. 9
MATCH RDY SHEET NO. 8



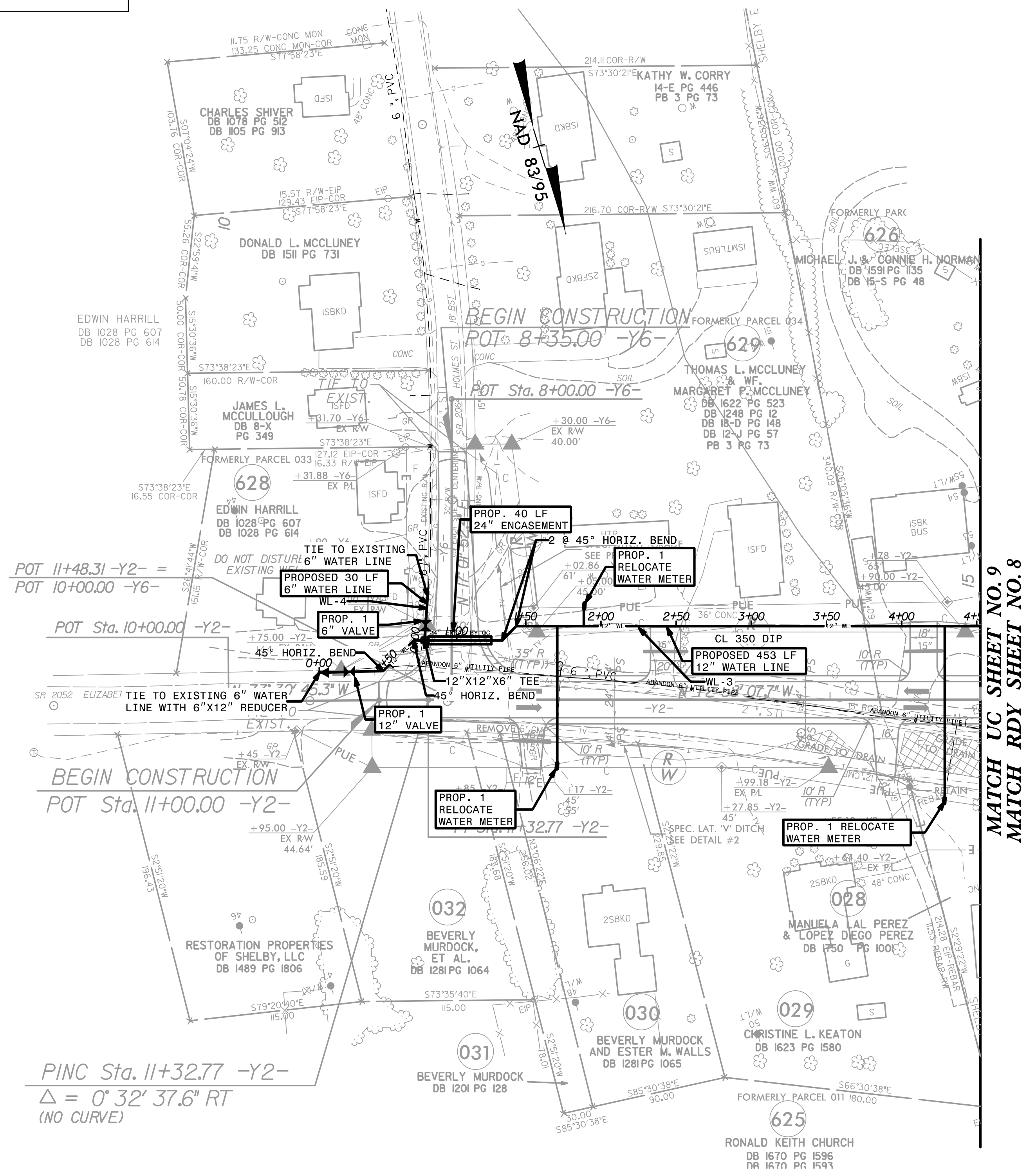
| | |
|--|--|
| PROJECT REFERENCE NO. | SHEET NO. |
| R-2707D | JC-8/RDY-22 |
| DESIGNED BY: BCH |  |
| DRAWN BY: BCH | |
| CHECKED BY: | |
| APPROVED BY: | |
| REVISED: | |
| NORTH CAROLINA DEPARTMENT OF TRANSPORTATION | |
| UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151 | UTILITY CONSTRUCTION PLANS ONLY |

The estimated quantity of "Ductile Iron Water Pipe Fittings" on this plan sheet is 1000 pounds. The actual quantity and type of fittings will vary based on field conditions.

The estimated quantity of "Water Service Line" on this plan sheet is 250 linear feet. The actual quantity will vary based on field conditions and will be determined during construction.


UTILITY CONSTRUCTION

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



MATCH UC SHEET NO. 9
MATCH RDY SHEET NO. 8

PINC Sta. 11+32.77 -Y2-
 $\Delta = 0^\circ 32' 37.6" RT$
 (NO CURVE)

| | |
|--|--|
| PROJECT REFERENCE NO. | SHEET NO. |
| R-2707D | UC-9/RDY-8 |
| DESIGNED BY: BCH |  |
| DRAWN BY: BCH | |
| CHECKED BY: | |
| APPROVED BY: | |
| REVISED: | 3/13/2023 |
| NORTH CAROLINA DEPARTMENT OF TRANSPORTATION | |
| UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151 | UTILITY CONSTRUCTION PLANS ONLY |

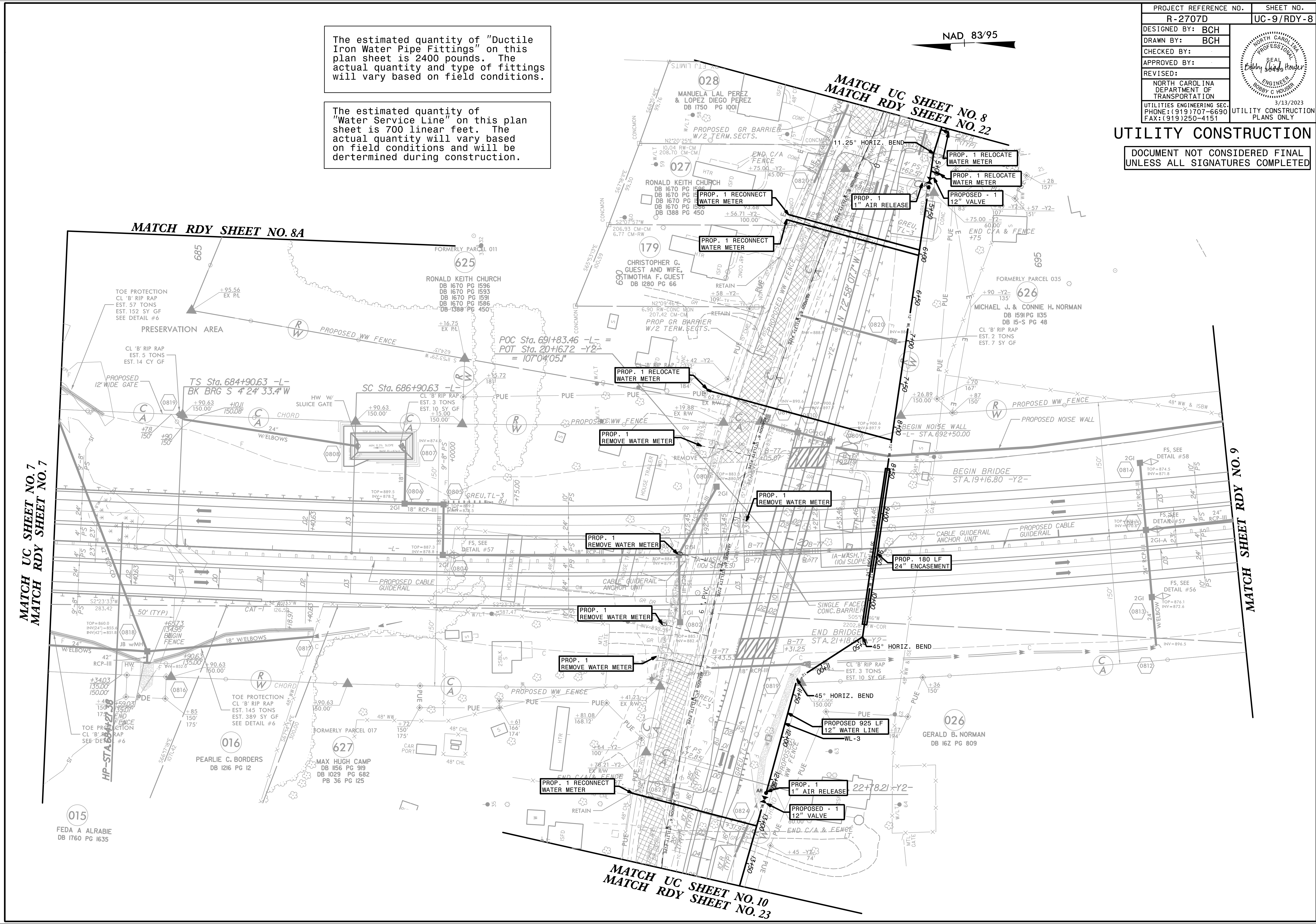
UTILITY CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

The estimated quantity of "Ductile Iron Water Pipe Fittings" on this plan sheet is 2400 pounds. The actual quantity and type of fittings will vary based on field conditions.

The estimated quantity of "Water Service Line" on this plan sheet is 700 linear feet. The actual quantity will vary based on field conditions and will be determined during construction.

NAD 83/95



MATCH UC SHEET NO. 7
MATCH RDY SHEET NO. 7

MATCH SHEET RDY NO. 9

MATCH RDY SHEET NO. 8A

MATCH UC SHEET NO. 8
MATCH RDY SHEET NO. 22

MATCH UC SHEET NO. 10
MATCH RDY SHEET NO. 23

015
FEDA A ALRABIE
DB 1760 PG 1635

016
PEARLIE C. BORDERS
DB 1216 PG 12

027
MAX HUGH CAMP
DB 156 PG 919
DB 1029 PG 682
DB 36 PG 125

025
RONALD KEITH CHURCH
DB 1670 PG 1596
DB 1670 PG 1593
DB 1670 PG 1591
DB 1670 PG 1586
DB 1388 PG 450

027
RONALD KEITH CHURCH
DB 1670 PG 1596
DB 1670 PG 1593
DB 1670 PG 1591
DB 1670 PG 1586
DB 1388 PG 450

027
CHRISTOPHER G. GUEST AND WIFE,
TIMOTHIA F. GUEST
DB 1280 PG 66

026
GERALD B. NORMAN
DB 16Z PG 809

026
MICHAEL J. & CONNIE H. NORMAN
DB 1591 PG 135
DB 15-S PG 48

PROPOSED GR BARRIER
W/2 TERM. SECTS.

PROPOSED GR BARRIER
W/2 TERM. SECTS.

BEGIN BRIDGE
STA. 19+16.80 -Y2-

BEGIN BRIDGE
STA. 21+18.00 -Y2-

BEGIN BRIDGE
STA. 21+18.00 -Y2-

BEGIN BRIDGE
STA. 21+18.00 -Y2-

BEGIN BRIDGE
STA. 21+18.00 -Y2-

BEGIN BRIDGE
STA. 21+18.00 -Y2-

POC Sta. 691+83.46 -L- =
POT Sta. 20+16.72 -Y2-
= 107°04'05.1"

TS Sta. 684+90.63 -L-
BK BRG S 4°24'33.4"W

SC Sta. 686+90.63 -L-
BK BRG S 4°24'33.4"W

BEGIN NOISE WALL
-L- STA. 692+50.00

BEGIN NOISE WALL
-L- STA. 692+50.00

BEGIN NOISE WALL
-L- STA. 692+50.00

BEGIN NOISE WALL
-L- STA. 692+50.00

BEGIN NOISE WALL
-L- STA. 692+50.00

BEGIN NOISE WALL
-L- STA. 692+50.00

BEGIN NOISE WALL
-L- STA. 692+50.00

BEGIN NOISE WALL
-L- STA. 692+50.00

TOE PROTECTION
CL 'B' RIP RAP
EST. 5 TONS
EST. 152 SY GF
SEE DETAIL #6

TOE PROTECTION
CL 'B' RIP RAP
EST. 5 TONS
EST. 152 SY GF
SEE DETAIL #6

TOE PROTECTION
CL 'B' RIP RAP
EST. 5 TONS
EST. 152 SY GF
SEE DETAIL #6

TOE PROTECTION
CL 'B' RIP RAP
EST. 5 TONS
EST. 152 SY GF
SEE DETAIL #6

TOE PROTECTION
CL 'B' RIP RAP
EST. 5 TONS
EST. 152 SY GF
SEE DETAIL #6

TOE PROTECTION
CL 'B' RIP RAP
EST. 5 TONS
EST. 152 SY GF
SEE DETAIL #6

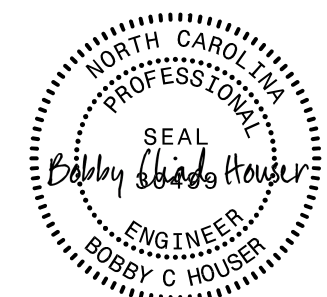
TOE PROTECTION
CL 'B' RIP RAP
EST. 5 TONS
EST. 152 SY GF
SEE DETAIL #6

TOE PROTECTION
CL 'B' RIP RAP
EST. 5 TONS
EST. 152 SY GF
SEE DETAIL #6

TOE PROTECTION
CL 'B' RIP RAP
EST. 5 TONS
EST. 152 SY GF
SEE DETAIL #6

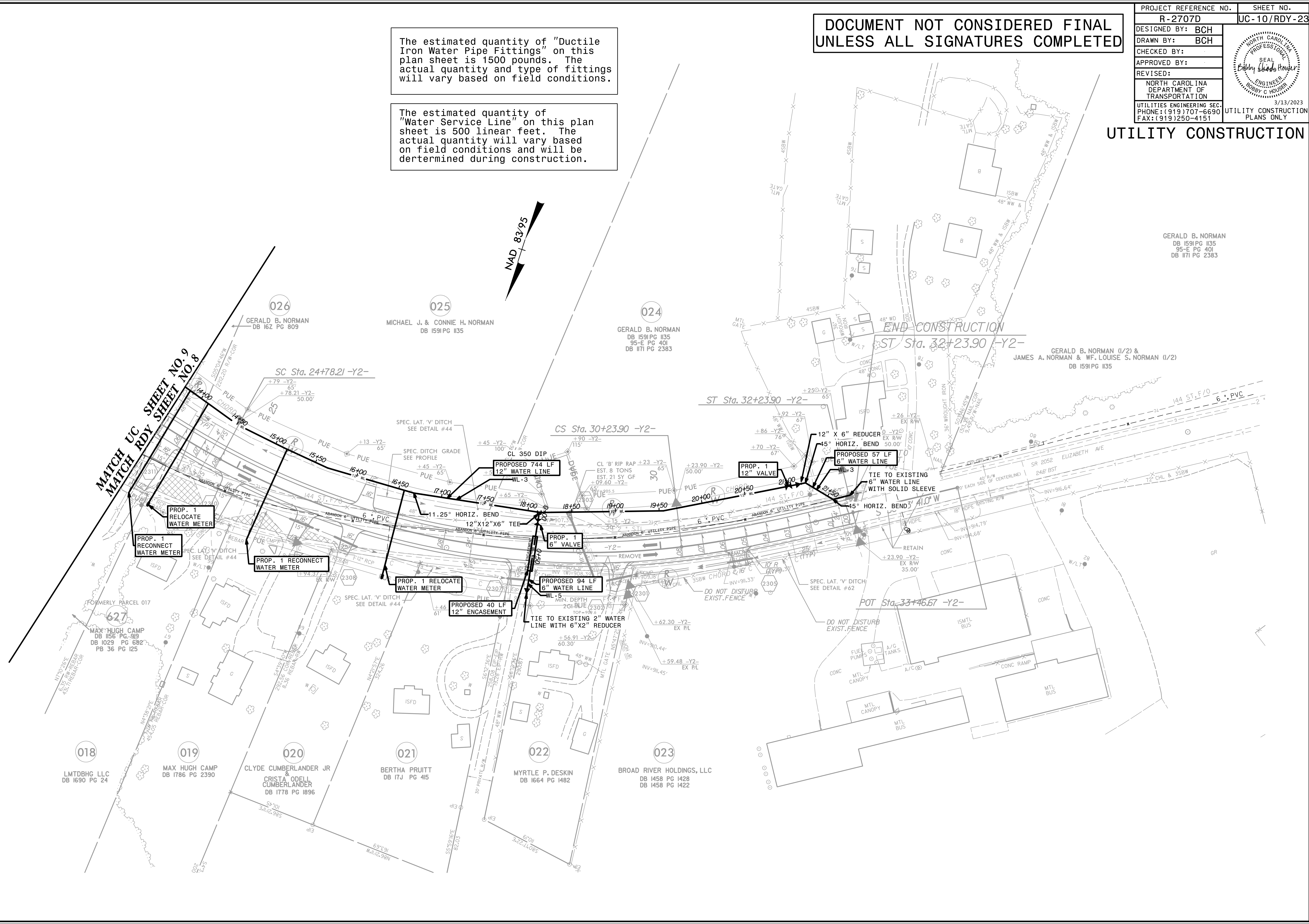
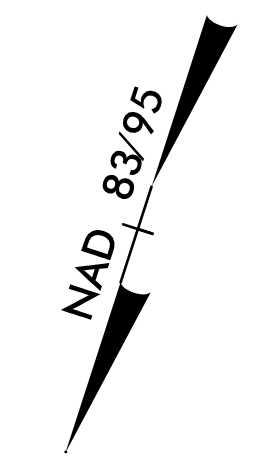
TOE PROTECTION
CL 'B' RIP RAP
EST. 5 TONS
EST. 152 SY GF
SEE DETAIL #6

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

| | |
|--|---|
| PROJECT REFERENCE NO. | SHEET NO. |
| R-2707D | UC-10/RDY-23 |
| DESIGNED BY: BCH |  |
| DRAWN BY: BCH | |
| CHECKED BY: | |
| APPROVED BY: | |
| REVISED: | 3/13/2023 |
| NORTH CAROLINA DEPARTMENT OF TRANSPORTATION | |
| UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151 | |
| UTILITY CONSTRUCTION PLANS ONLY | |

The estimated quantity of "Ductile Iron Water Pipe Fittings" on this plan sheet is 1500 pounds. The actual quantity and type of fittings will vary based on field conditions.

The estimated quantity of "Water Service Line" on this plan sheet is 500 linear feet. The actual quantity will vary based on field conditions and will be determined during construction.



GERALD B. NORMAN
DB 1591 PG 1135
95-E PG 401
DB 1171 PG 2383

GERALD B. NORMAN (1/2) &
JAMES A. NORMAN & WF. LOUISE S. NORMAN (1/2)
DB 1591 PG 1135

018
LMTDBHG LLC
DB 1690 PG 24

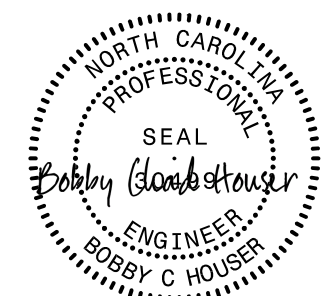
019
MAX HUGH CAMP
DB 1786 PG 2390

020
CLYDE CUMBERLANDER JR
&
CRISTA ODELL
CUMBERLANDER
DB 1778 PG 1896

021
BERTHA PRUITT
DB 17J PG 415

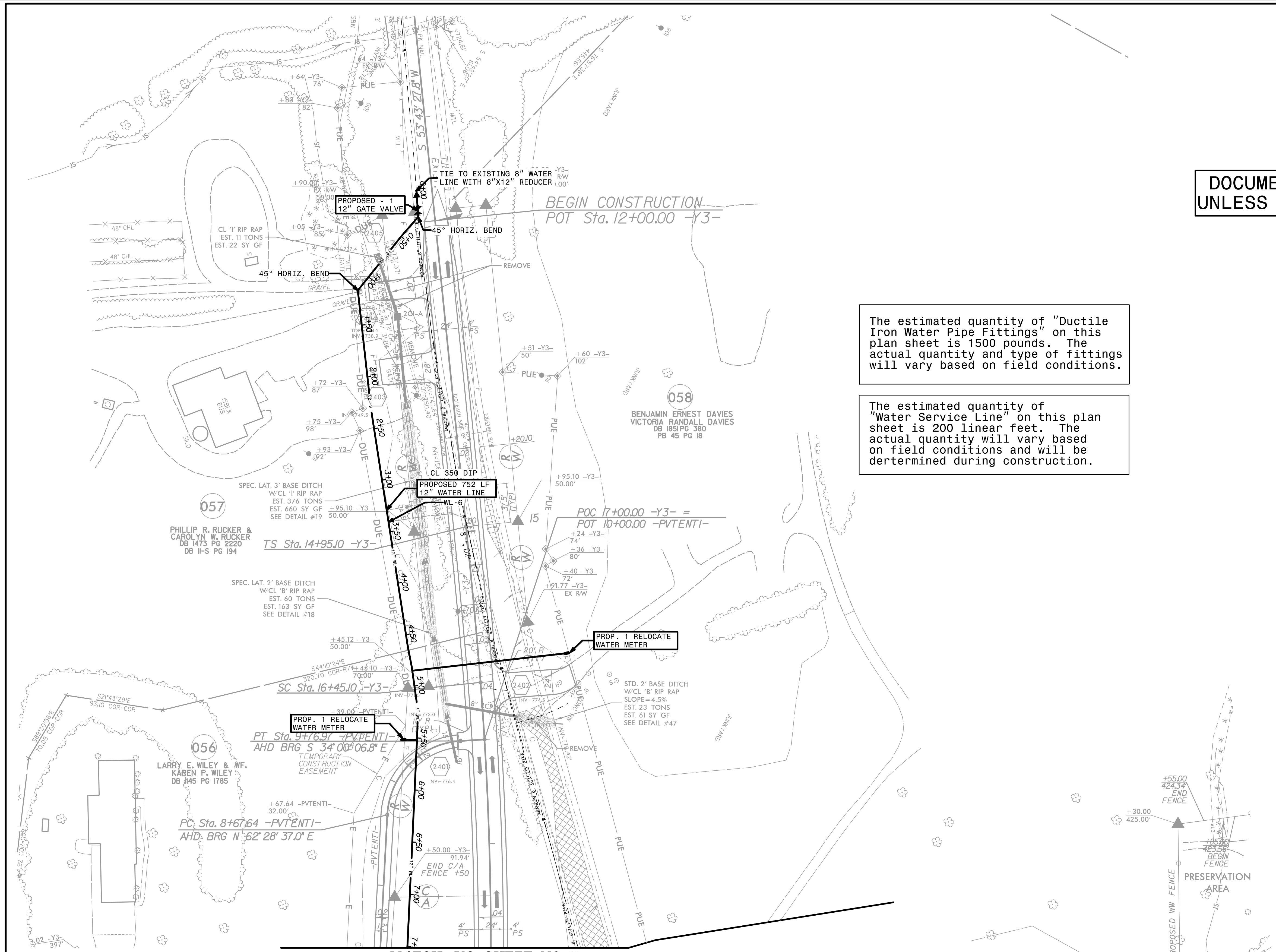
022
MYRTLE P. DESKIN
DB 1664 PG 1482

023
BROAD RIVER HOLDINGS, LLC
DB 1458 PG 1428
DB 1458 PG 1422

| | |
|--|---|
| PROJECT REFERENCE NO. | SHEET NO. |
| R-2707D | UC-11/RDY-24 |
| DESIGNED BY: BCH |  |
| DRAWN BY: BCH | |
| CHECKED BY: | |
| APPROVED BY: | |
| REVISED: | |
| NORTH CAROLINA DEPARTMENT OF TRANSPORTATION | |
| UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151 | UTILITY CONSTRUCTION PLANS ONLY |

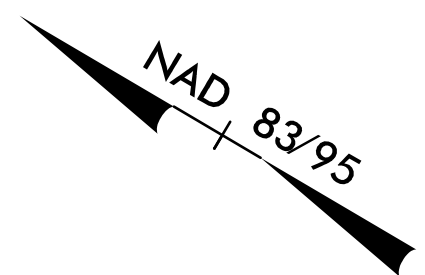
UTILITY CONSTRUCTION

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

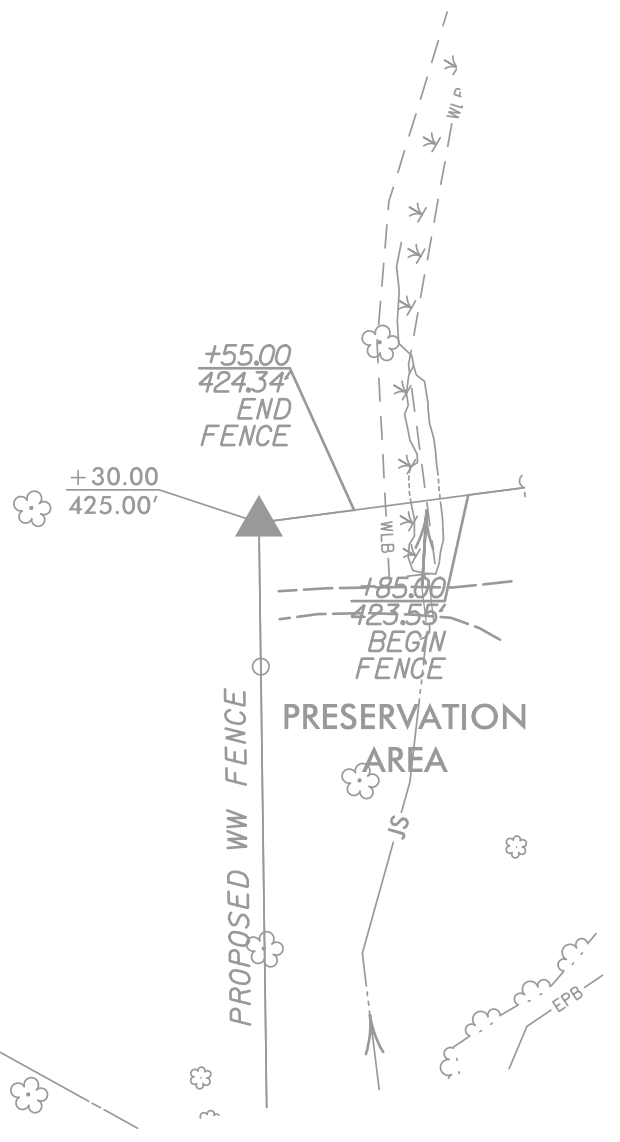



The estimated quantity of "Ductile Iron Water Pipe Fittings" on this plan sheet is 1500 pounds. The actual quantity and type of fittings will vary based on field conditions.

The estimated quantity of "Water Service Line" on this plan sheet is 200 linear feet. The actual quantity will vary based on field conditions and will be determined during construction.



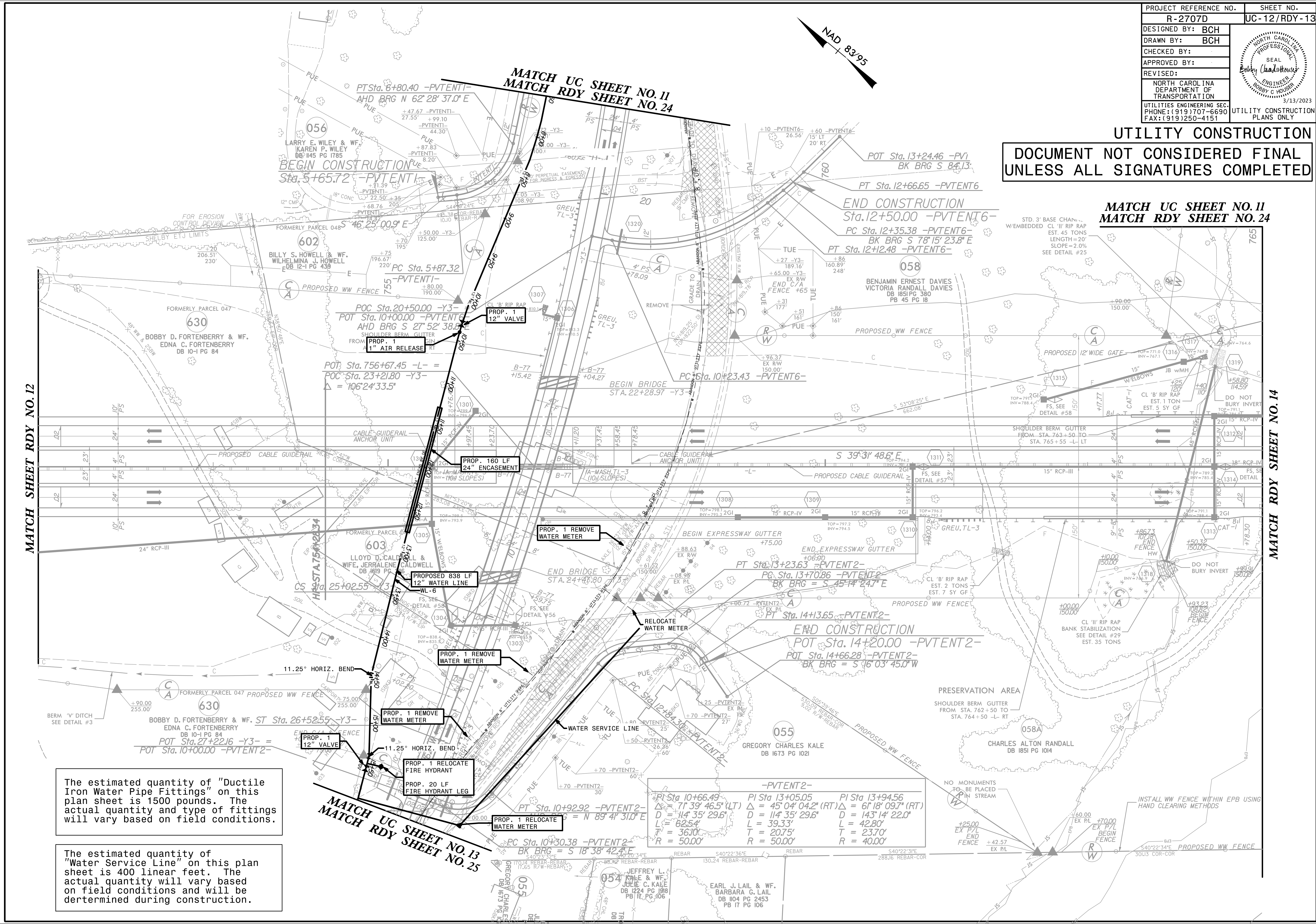
**MATCH UC SHEET NO.12
MATCH RDY SHEET NO.13**



| | |
|--|--|
| PROJECT REFERENCE NO. | SHEET NO. |
| R-2707D | UC-12/RDY-13 |
| DESIGNED BY: BCH |  |
| DRAWN BY: BCH | |
| CHECKED BY: | |
| 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

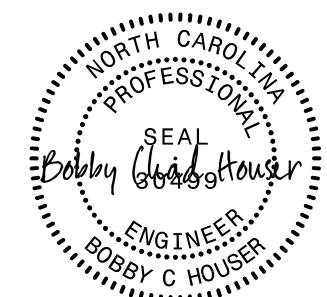
**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**



The estimated quantity of "Ductile Iron Water Pipe Fittings" on this plan sheet is 1500 pounds. The actual quantity and type of fittings will vary based on field conditions.

The estimated quantity of "Water Service Line" on this plan sheet is 400 linear feet. The actual quantity will vary based on field conditions and will be determined during construction.

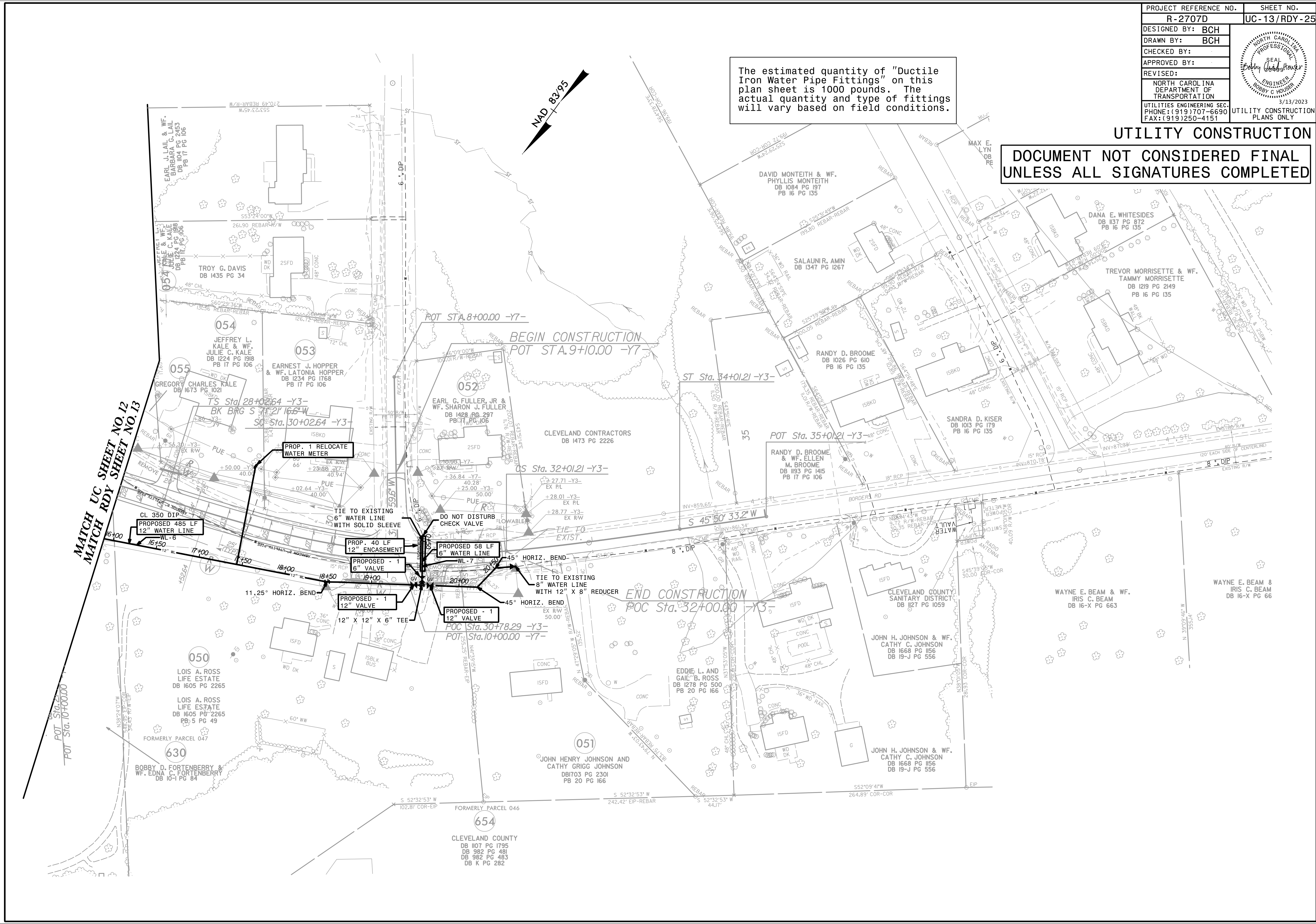
| -PVENT2- | | |
|-------------------------------|-------------------------------|-------------------------------|
| PI Sta 10+66.49 | PI Sta 13+05.05 | PI Sta 13+94.56 |
| $\Delta = 71' 39" 46.5" (LT)$ | $\Delta = 45' 04" 04.2" (RT)$ | $\Delta = 61' 18" 09.7" (RT)$ |
| $D = 114' 35" 29.6'$ | $D = 114' 35" 29.6'$ | $D = 143' 14" 22.0'$ |
| $L = 62.54'$ | $L = 39.33'$ | $L = 42.80'$ |
| $T = 36.10'$ | $T = 20.75'$ | $T = 23.70'$ |
| $R = 50.00'$ | $R = 50.00'$ | $R = 40.00'$ |

| | |
|--|---|
| PROJECT REFERENCE NO. | SHEET NO. |
| R-2707D | UC-13/RDY-25 |
| DESIGNED BY: BCH |  |
| DRAWN BY: BCH | |
| CHECKED BY: | |
| APPROVED BY: | |
| REVISED: | |
| NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151 UTILITY CONSTRUCTION PLANS ONLY | |

The estimated quantity of "Ductile Iron Water Pipe Fittings" on this plan sheet is 1000 pounds. The actual quantity and type of fittings will vary based on field conditions.

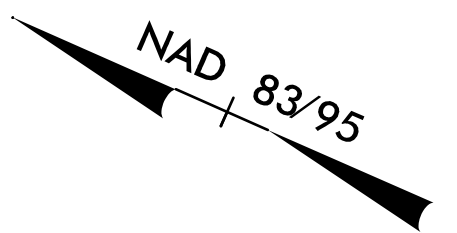
UTILITY CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



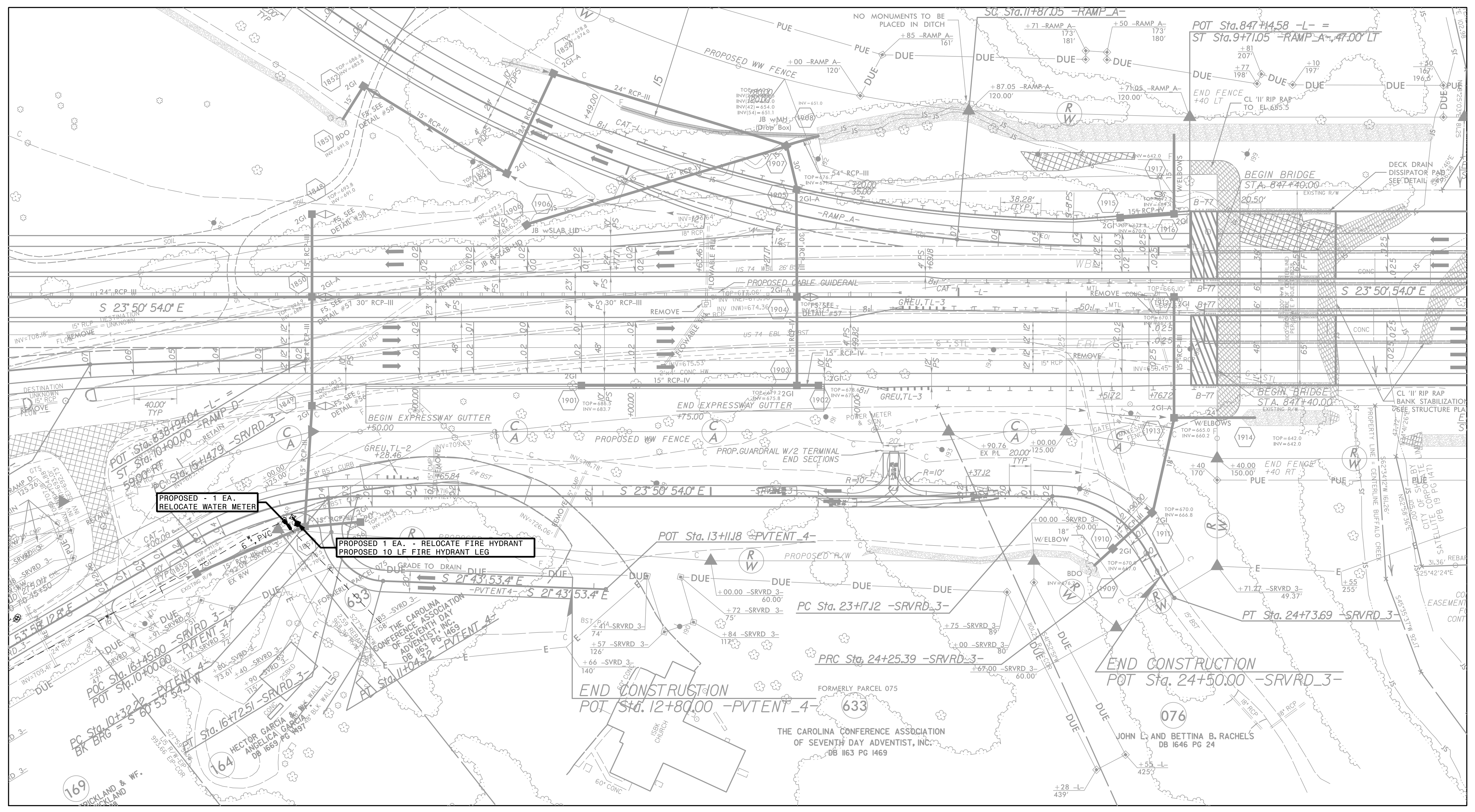
| | |
|--|------------------------------------|
| PROJECT REFERENCE NO. R-2707D | SHEET NO. UC-14/RDY-19 |
| DESIGNED BY: BCH | |
| DRAWN BY: BCH | |
| CHECKED BY: | |
| APPROVED BY: | |
| REVISED: | |
| NORTH CAROLINA DEPARTMENT OF TRANSPORTATION | UTILITY CONSTRUCTION PLANS ONLY |
| UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151 | |

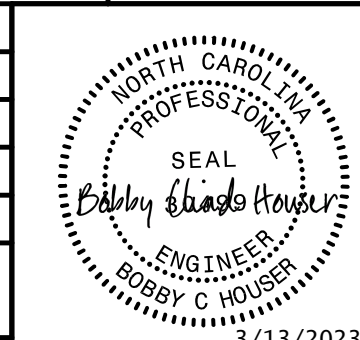
The estimated quantity of "Water Service Line" on this plan sheet is 20 linear feet. The actual quantity will vary based on field conditions and will be determined during construction.

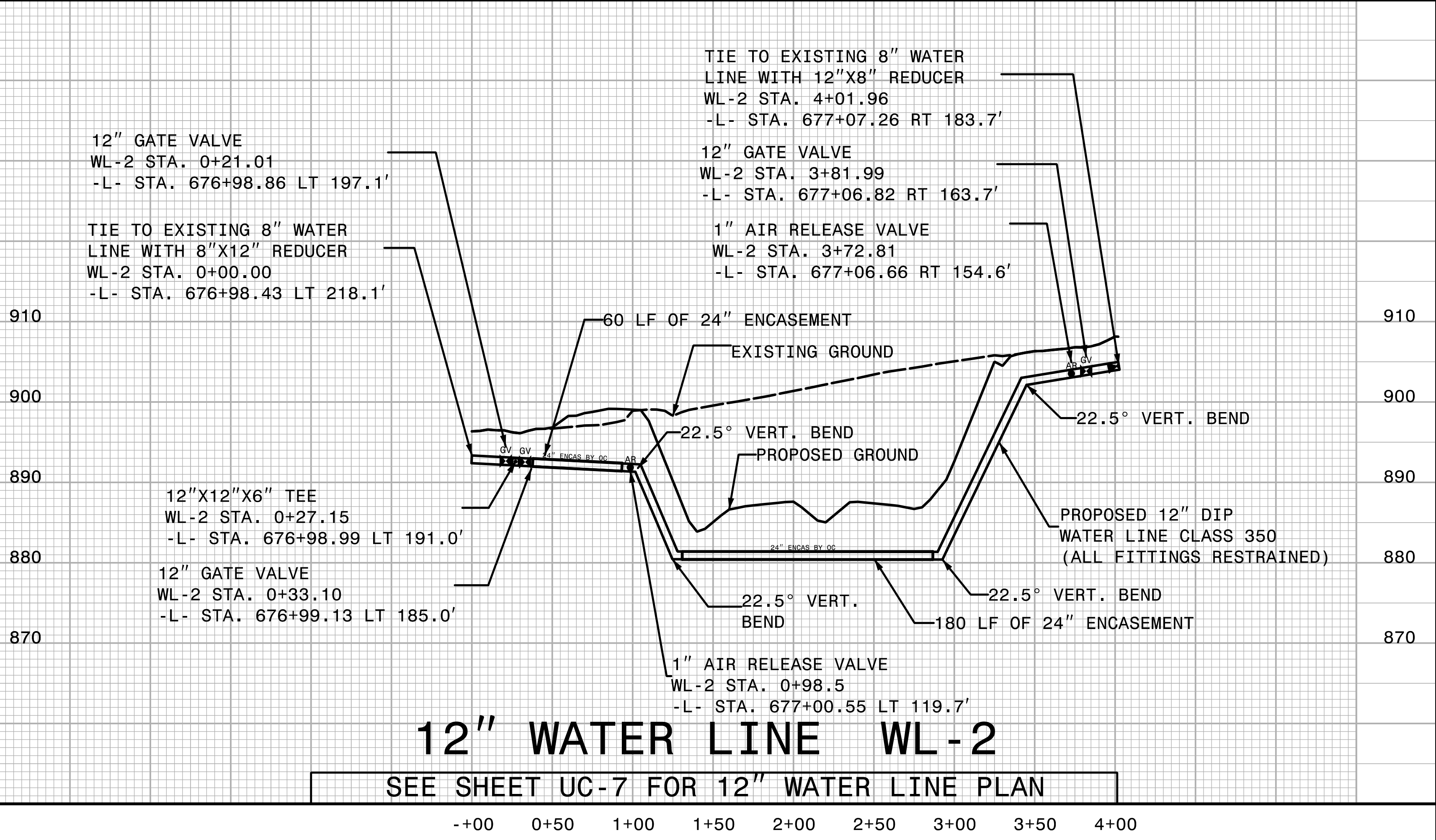
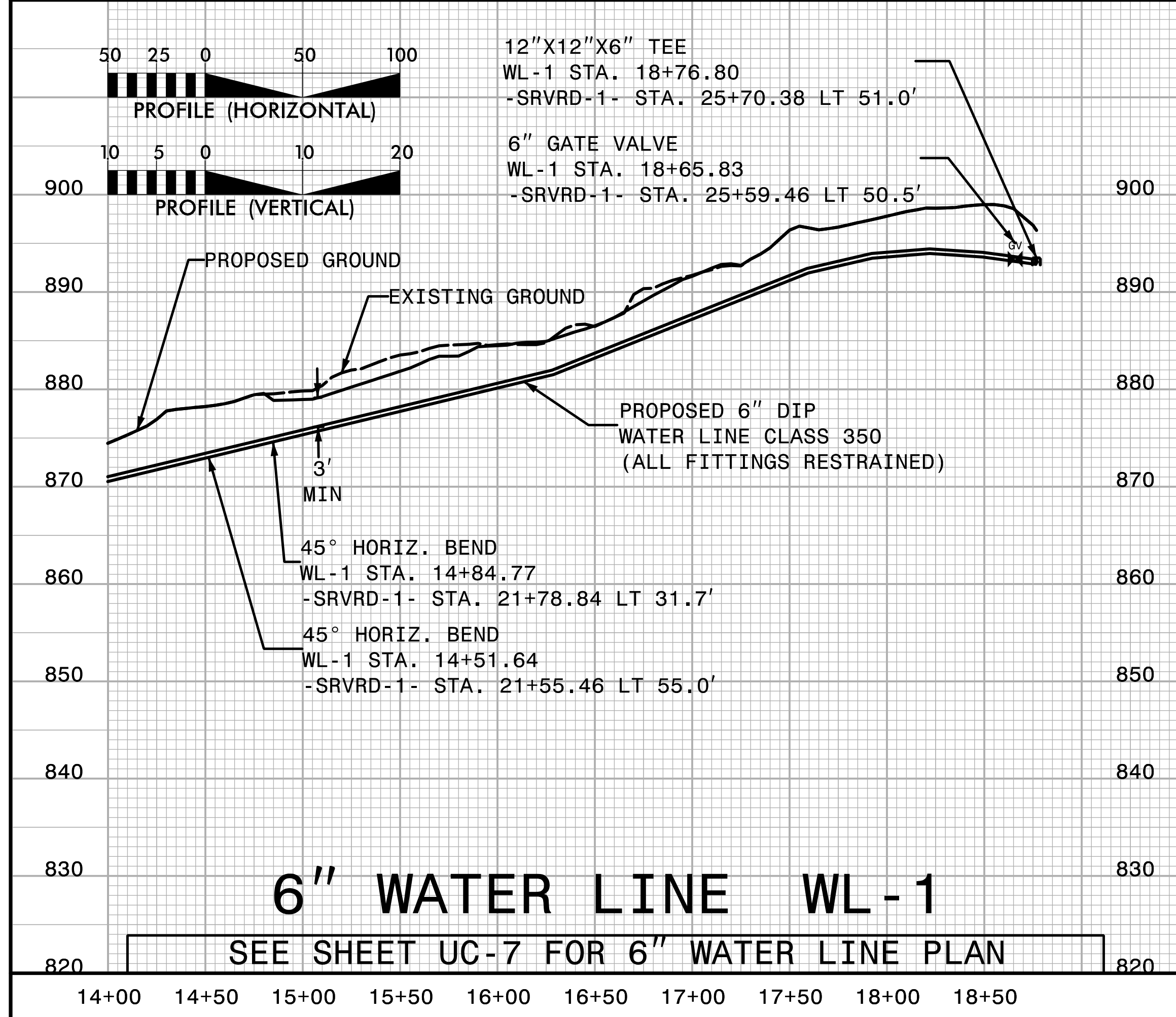
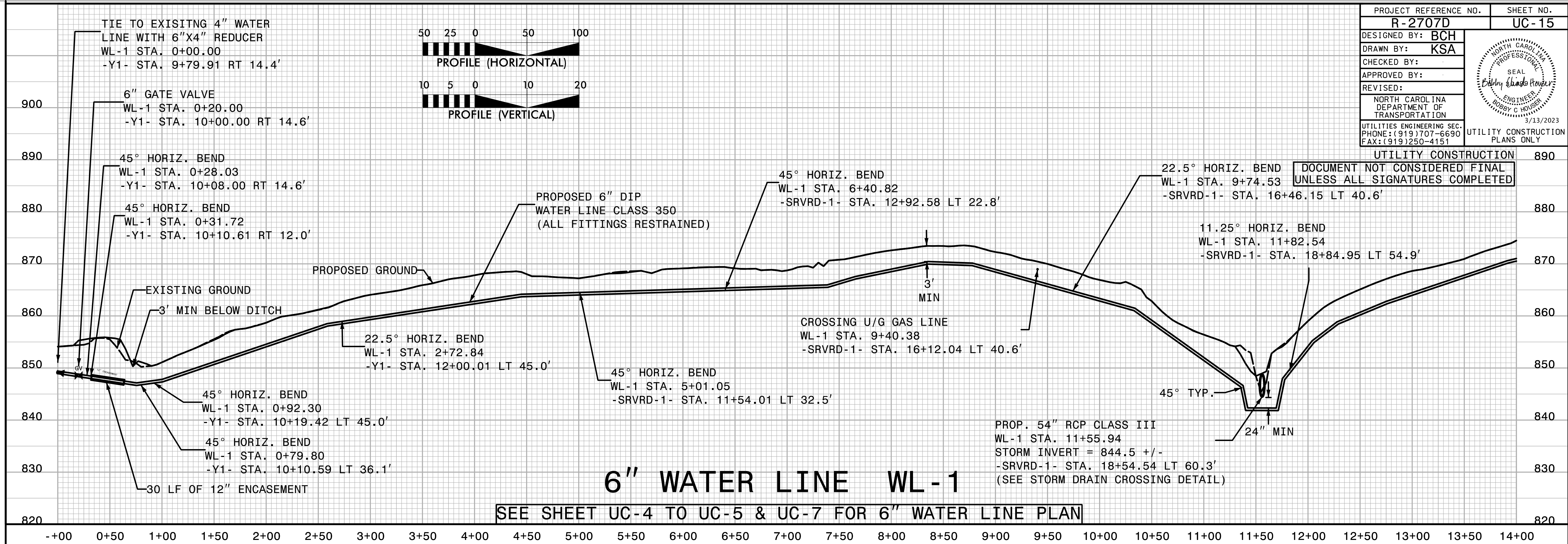


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| DRAWN BY: KSA | |
| CHECKED BY: | |
| APPROVED BY: | |
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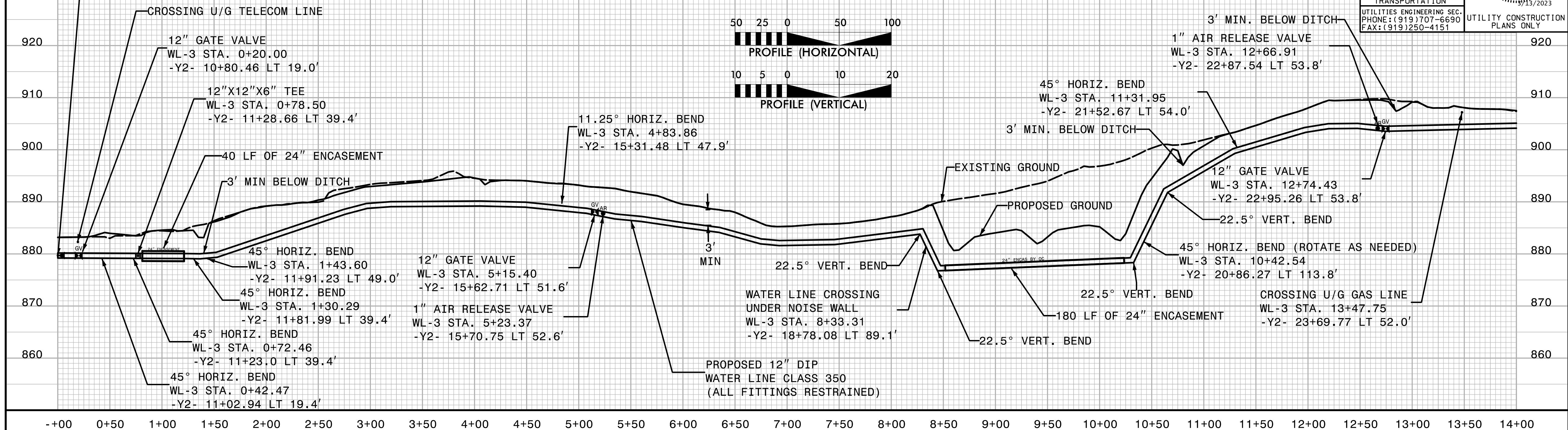


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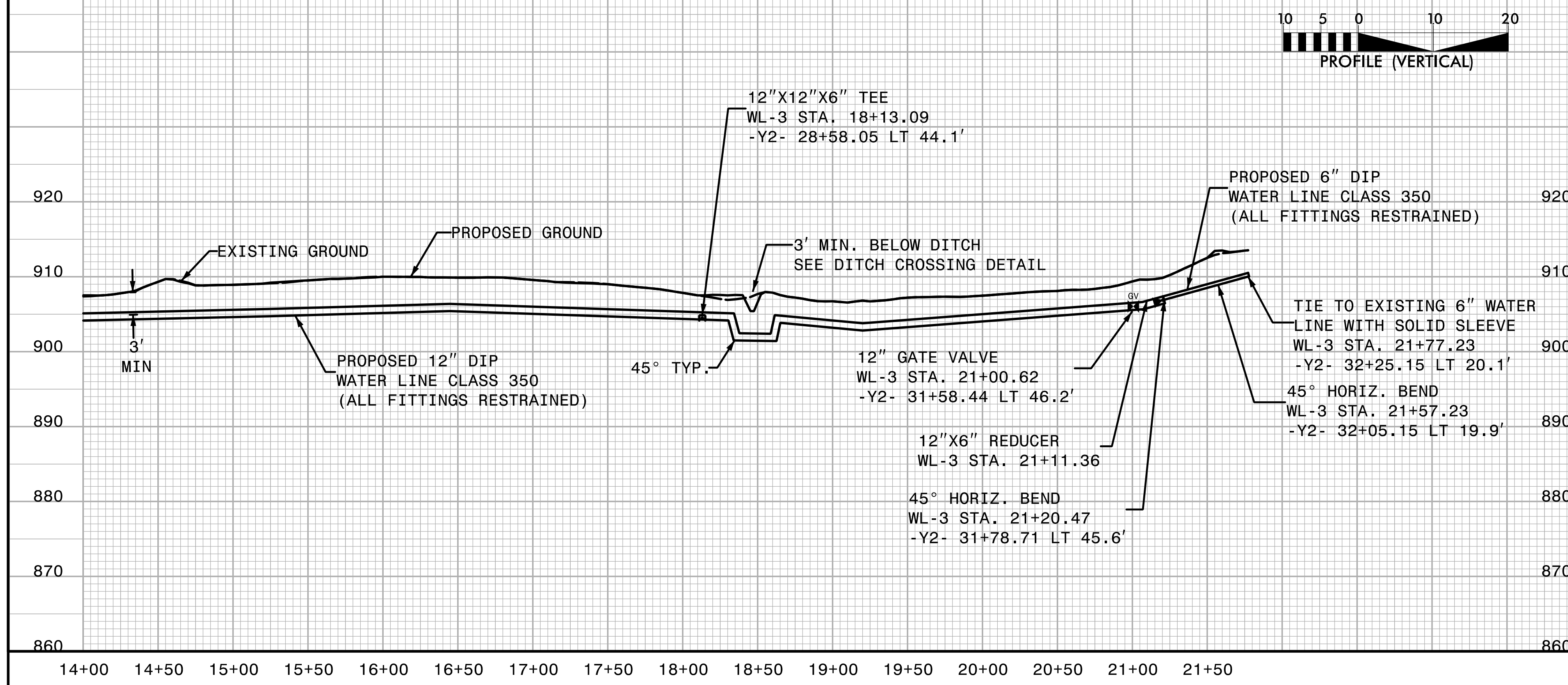
12" WATER LINE WL-3

SEE SHEET UC-8 TO UC-10 FOR 12" WATER LINE PLAN



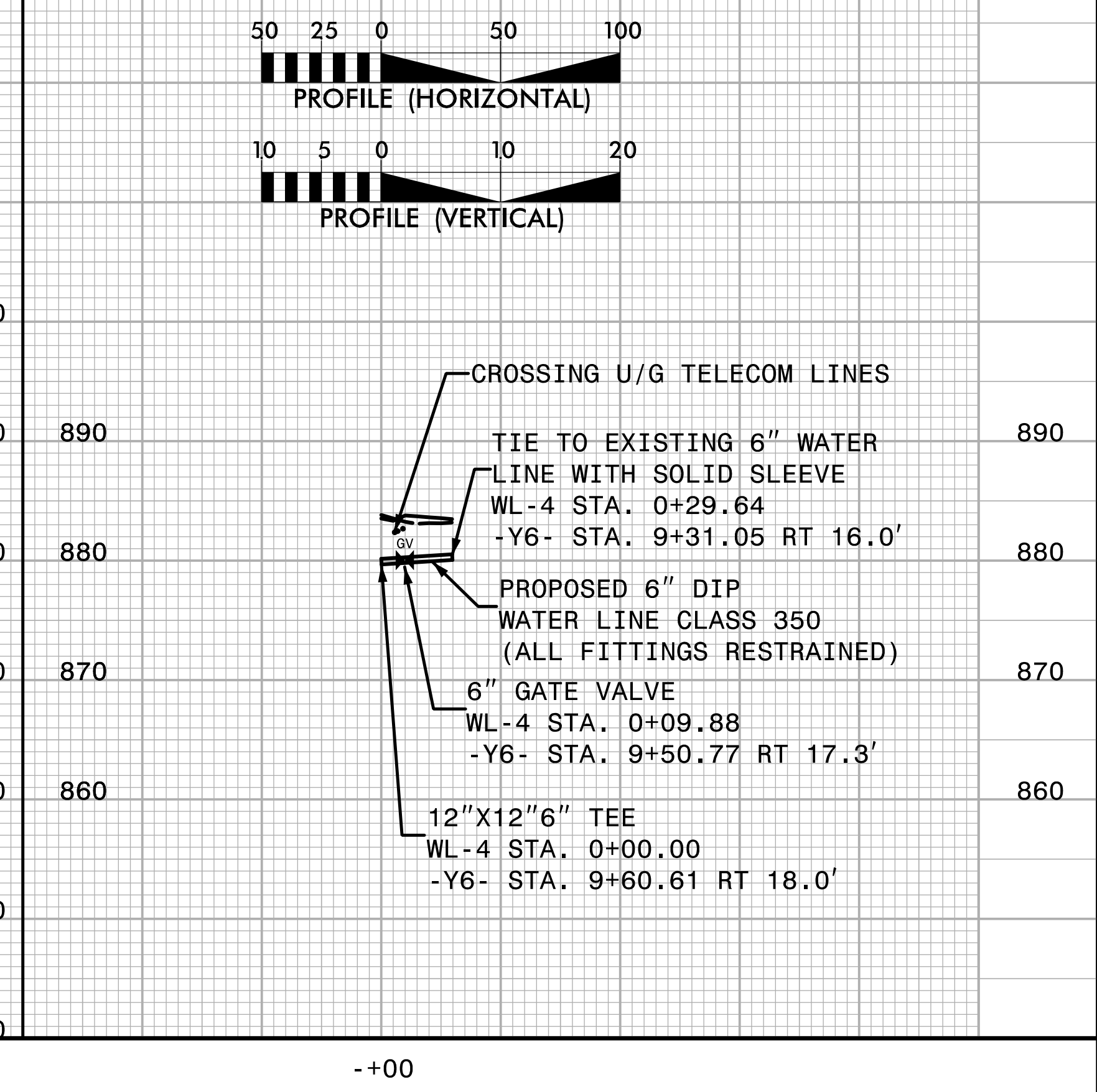
12" WATER LINE WL-3

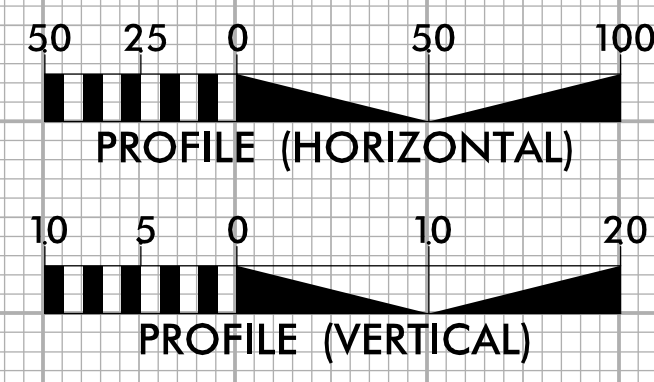
SEE SHEET UC-10 FOR 12" WATER LINE PLAN



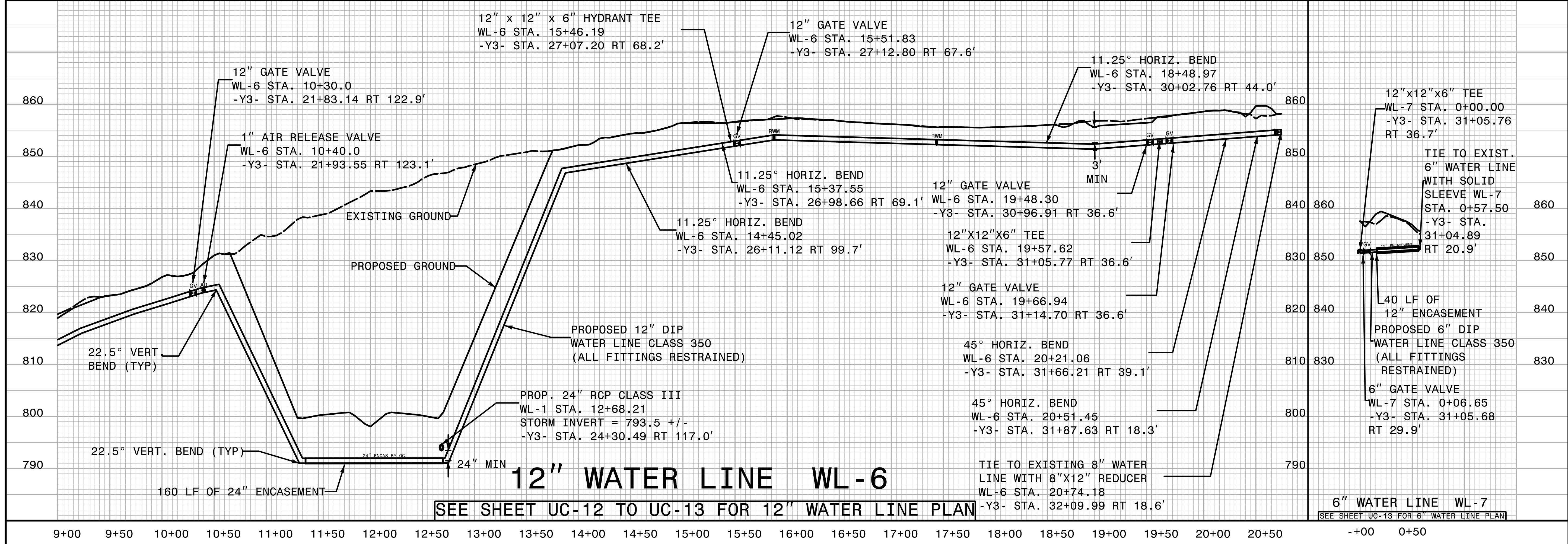
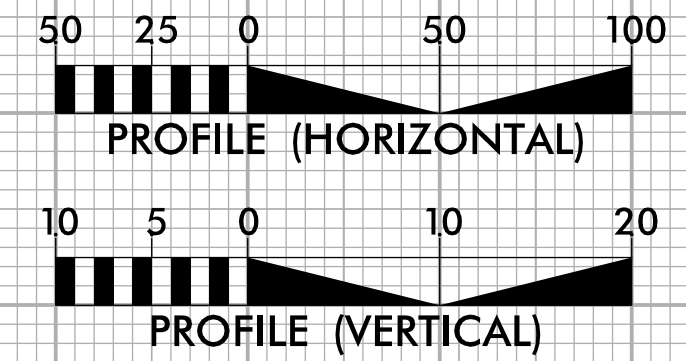
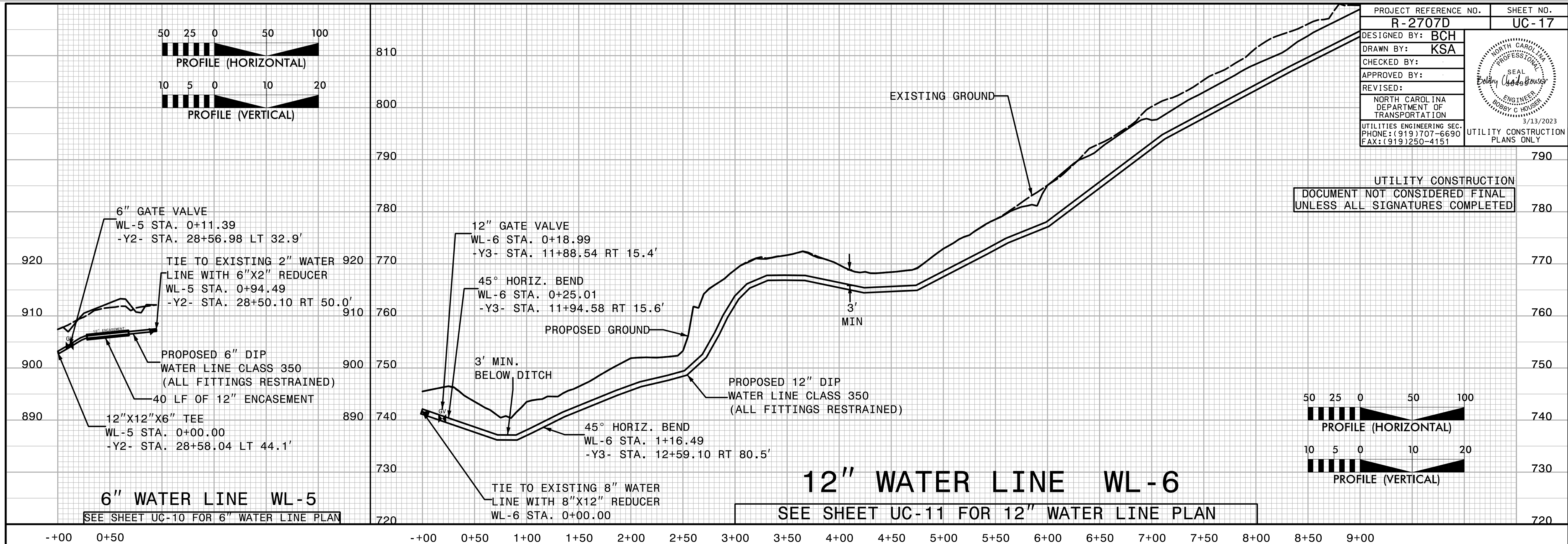
6" WATER LINE WL-4

SEE SHEET UC-8 FOR 6" WATER LINE PLAN





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| PROJECT REFERENCE NO. R-2707D | SHEET NO. UC-17 |
| DESIGNED BY: BCH | |
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6" WATER LINE WL-7
SEE SHEET UC-13 FOR 6" WATER LINE PLAN