

09.08/99

T.I.P. NO.	SHEET NO.
U-5738	UC-1

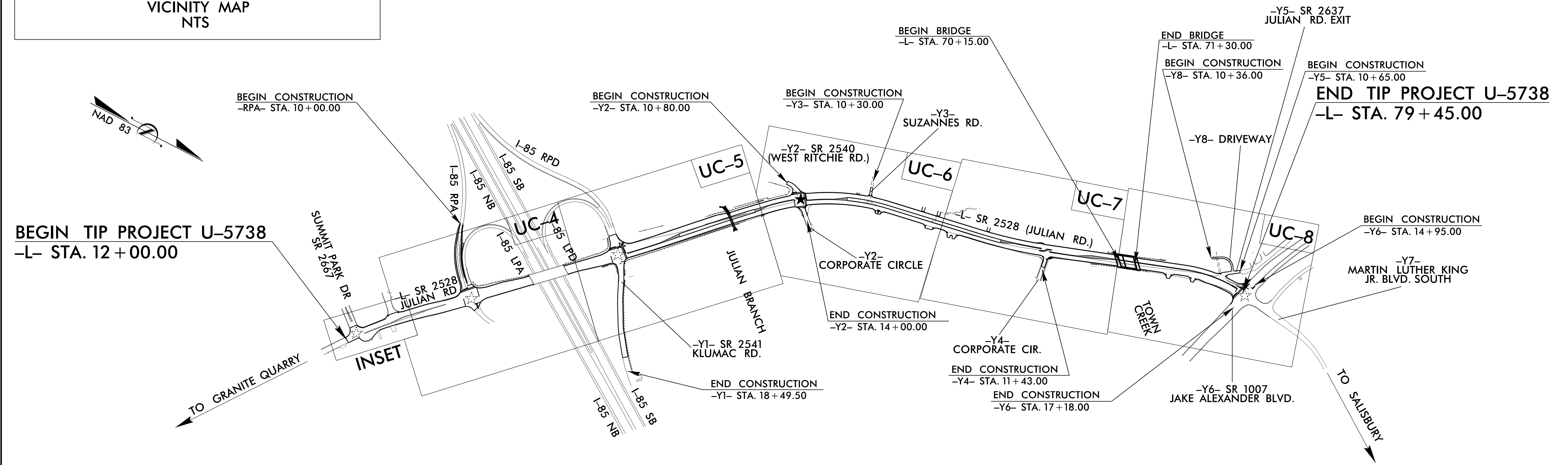
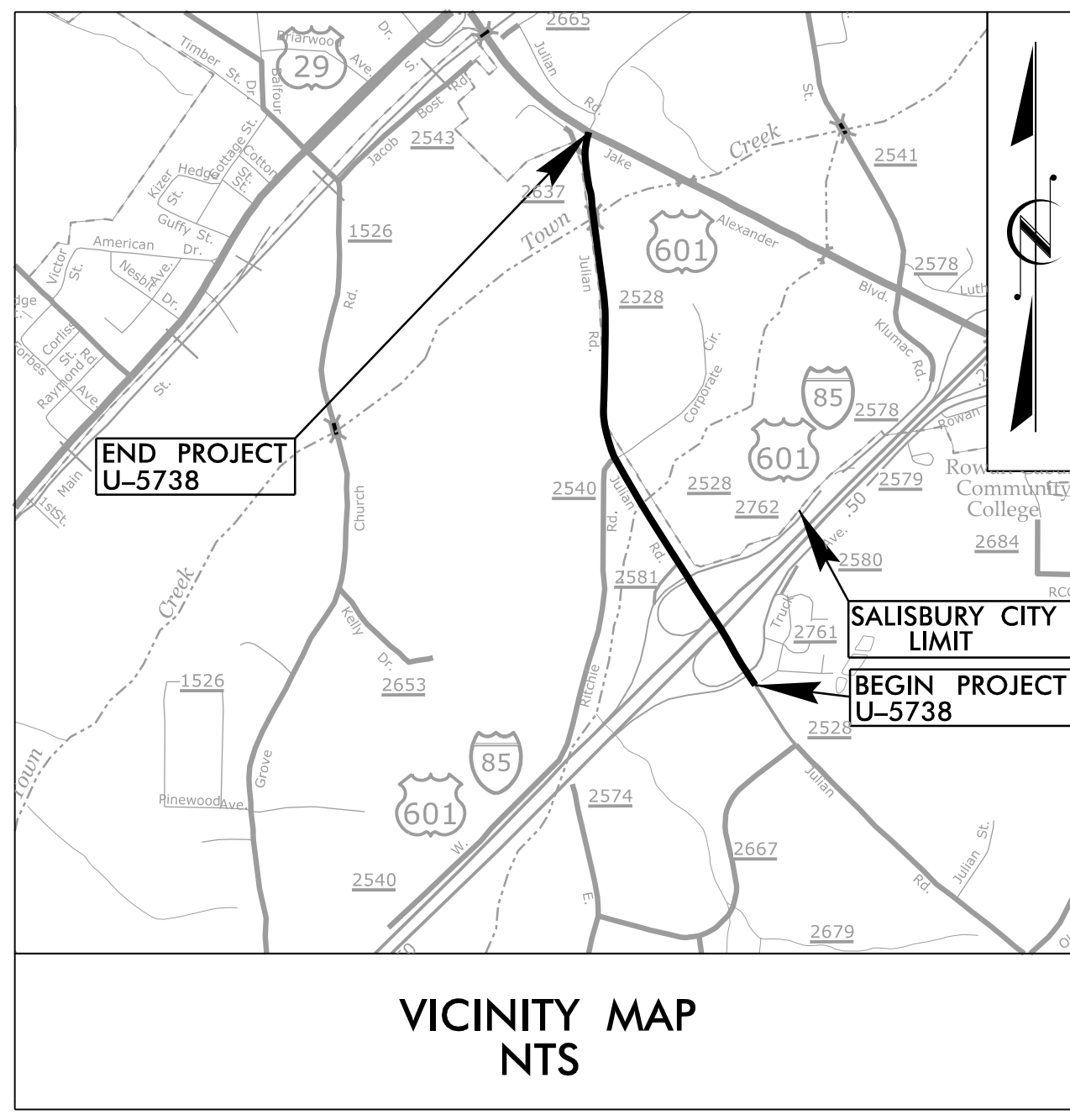
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

**UTILITIES CONSTRUCTION PLANS
ROWAN COUNTY**

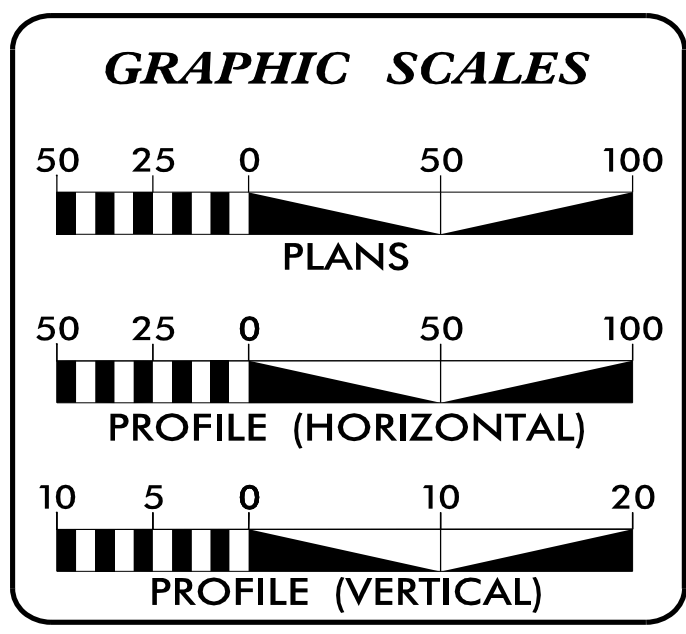
**LOCATION: SR 2528 (JULIAN ROAD) FROM
SR 2667 (SUMMIT PARK DRIVE) TO
US 601 (JAKE ALEXANDER BOULEVARD) IN SALISBURY**

TYPE OF WORK: WATER AND SANITARY SEWER RELOCATION

TIP PROJECT: U-5738



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 THRU UC-3A	NOTES
UC-3B THRU UC-3E	DETAILS
UC-4 THRU UC-10	UTILITY CONSTRUCTION SHEETS

WATER AND SEWER OWNERS ON PROJECT

(A) WATER - SALISBURY-ROWAN UTILITIES

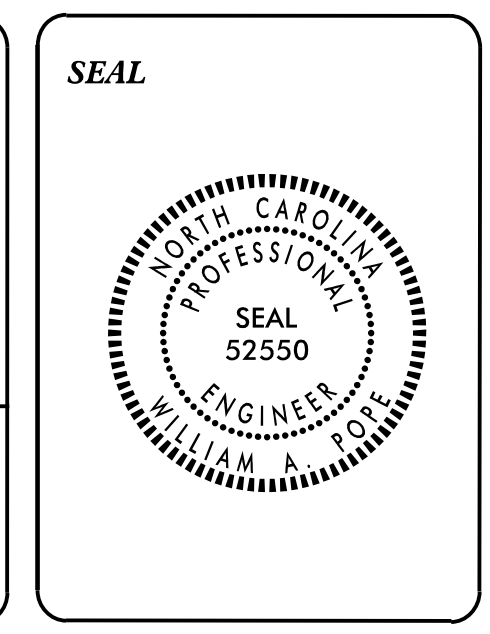
(B) SANITARY SEWER - SALISBURY-ROWAN UTILITIES

PREPARED IN THE OFFICE OF

SEPI
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DAVID TRANTHAM UTILITIES ENGINEER
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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES PLAN SHEET SYMBOLS

PROPOSED WATER SYMBOLS

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

PROPOSED SEWER SYMBOLS

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

PROPOSED MISCELLANEOUS UTILITIES SYMBOLS

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

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

NOTE
PAY ITEM

EXISTING UTILITIES SYMBOLS

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

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

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GENERAL NOTES:

1. THE PROPOSED UTILITY CONSTRUCTION SHALL MEET THE APPLICABLE REQUIREMENTS OF THE SALISBURY-ROWAN UTILITIES(SRU) AND NC DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" AND STANDARD DRAWINGS DATED JANUARY 2018.

2. THE EXISTING WATER MAIN AND SANITARY SEWER MAIN BELONG TO SALISBURY-ROWAN UTILITIES (SRU) (I.E. UTILITY OWNER).

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, AND SALISBURY-ROWAN UTILITIES. PERFORM ALL WORK IN ACCORDANCE WITH THE APPLICABLE PLUMBING CODES.

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 AND SALISBURY-ROWAN UTILITIES. 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 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 UTILITY 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. PROPOSED WATER LINE SHALL BE PC (PRESSURE CLASS) 350 D.I.R.J. (DUCTILE IRON RESTRAINED JOINT) PIPE, FITTINGS, VALVES AND UTILITY CONTROLS

2. PROPOSED SANITARY SEWER LINE SHALL BE PC (PRESSURE CLASS) 350 D.I. (DUCTILE IRON) PIPE, FITTINGS WITH PIPE INTERIOR PROTECTIVE COATINGS.

2. ALL FITTINGS SHALL BE DUCTILE IRON, RESTRAINED JOINT, SHALL HAVE A MINIMUM WORKING PRESSURE RATING OF 350 PSI, A MINIMUM IRON STRENGTH OF 25,000 PSI AND BE DOMESTIC MANUFACTURED

3. CONTRACTOR'S ATTENTION IS DIRECTED TO SECTIONS 102, 107, AND 1550 OF THE STANDARD SPECIFICATIONS CONCERNING TRENCHLESS INSTALLATION. IT IS CONTRACTOR'S RESPONSIBILITY TO HAVE BORE DESIGNED AND SEALED BY A LICENSED NORTH CAROLINA PROFESSIONAL ENGINEER. NO DAMAGE IS ALLOWED TO STREAM, WETLANDS, OR BUFFER ZONES.

4. THE CONTRACTOR SHALL COORDINATE ISOLATION OF THE EXISTING WATER MAIN FOR TIE-INS WITH SALISBURY-ROWAN UTILITIES. IF TEMPORARY SHUT DOWN IS REQUIRED THE CONTRACTOR WILL COORDINATE THIS SHUT DOWN WITH SALIBURY-ROWAN UTILITIES IN A MANNER THAT IS MOST CONVENIENT FOR CUSTOMERS AND SALISBURY-ROWAN UTILITIES.

5. EXISTING WATER VALVES SHALL ONLY BE OPERATED BY SALISBURY-ROWAN UTILITIES PERSONNEL.

6. CONTRACTOR TO PLACE CONCRETE THRUST COLLAR AROUND THE EXISTING DUCTILE IRON (DI) PIPE AS SHOWN IN THE PLANS.

7. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL REQUIRED TESTS, REVIEWING THE RESULTS AND ENSURING THAT ALL WORK NOT IN CONFORMANCE IS CORRECTED OR REPLACED. THE SRU INSPECTOR SHALL BE COPIED ON ALL TEST RESULTS WHICH DO NOT MEET THE STANDARD SPECIFICATIONS. THE CONTRACTOR SHALL KEEP RECORDS AND RESULTS OF ALL TESTS, INCLUDING TESTS ON FAILED WORK WHICH HAS BEEN CORRECTED THROUGH THE WARRANTY PERIOD.

AT THE END OF THE JOB, PRIOR TO ACCEPTANCE BY SRU, THE CONTRACTOR SHALL SUBMIT A NOTARIZED STATEMENT CERTIFYING THAT HE HAS REVIEWED THE TEST RESULTS AND THAT ALL TEST RESULTS WERE ACCEPTABLE AND/OR HE HAS CORRECTED ANY DEFICIENCIES.

UTILITY CONSTRUCTION

THIS CERTIFICATION SHALL BE MADE BY AN OFFICER OR PRINCIPAL OF THE COMPANY, AND SHALL BE IN THE FOLLOWING FORM:

I, (NAME) (TITLE) OF (COMPANY) CERTIFY THAT ON (NAME OF JOB) TESTING HAS BEEN DONE IN ACCORDANCE WITH THE SPECIFICATIONS AND STANDARDS OF THE CITY OF SALISBURY'S MANUAL OF STANDARDS AND THAT I HAVE REVIEWED THOSE TEST RESULTS AND REPAIRED, CORRECTED, OR REPLACED ANY WORK NOT PASSING THE REQUIRED TEST.

8. WATER USED FOR TESTING, FLUSHING, DISINFECTION, ETC., MAY BE PURCHASED FROM THE CITY OF SALISBURY AT PREVAILING RATES (BULK WATER PERMIT REQUIRED). THE USE OF WATER (TIME AND QUANTITY) SHALL BE COORDINATED WITH THE SRU INSPECTOR. SOURCES OTHER THAN CITY OF SALISBURY MAY BE USED IF APPROVED BY THE SRU INSPECTOR. A CITY OF SALISBURY APPROVED (JUMPER) BACKFLOW DEVICE (RP) MUST BE USED WHEN WATER IS OBTAINED FROM EXISTING WATER MAIN (EXISTING WATER LINE TO NEW WATER LINE). WHEN A FIRE HYDRANT IS USED TO SUPPLY WATER FOR FLUSHING, TESTING, ETC. A CITY OF SALISBURY APPROVED BACKFLOW DEVICE (RP) MUST BE USED ON THE FIRE HYDRANT TO PREVENT ANY POSSIBLE BACKFLOW TO THE CITY'S WATER SYSTEM.

A 4" TEMPORARY BACKFLOW DEVICE (RP) WILL BE REQUIRED TO FILL, PRESSURE TEST, CHLORINATE, FLUSH, AND FOR BACTERIOLOGICAL TESTING OF THE NEW WATER LINE (ALL ITEMS MUST BE COMPLETED BEFORE THE NEW WATER LINE CAN BE TIED-IN).

A SRU INSPECTOR MUST BE PRESENT FOR ALL TESTING AND TIE-INS. SRU INSPECTOR WILL ALSO SPOT CHECK ALL CONSTRUCTION (MINIMUM 2-DAY ADVANCE NOTICE IS REQUIRED FOR TESTING AND PRIOR TO THE START OF CONSTRUCTION ADDITIONAL ADVANCE NOTICE WILL BE REQUIRED FOR SHUTTING OFF WATER).

A TEMPORARY 2" BLOW-OFF STUBBED ABOVE GROUND WILL BE REQUIRED FOR FLUSHING AND TESTING PURPOSES.

ITEM	MINIMUM ADVANCE FREQUENCY	NCDOT/CITY/SRU PRESENCE REQUIRED	MIN. NOTICE (*4)
WATER			
FLUSHING (*1)	AT END OF CONSTRUCTION (*2)	YES	1 HOUR
PRESSURE TESTING (*1)	AT END OF CONSTRUCTION	YES	48 HOURS
STERILIZATION (*1) LAB CONFIRMATION OF FREE CHLORINE LEVEL	AT END OF CONSTRUCTION	YES	24 HOURS
BACTERIOLOGICAL TESTING (LAB)	AT END OF CONSTRUCTION 8:00 AM TO 12:00 PM MONDAY - THURSDAY	YES	1 HOUR
SANITARY SEWER GRAVITY			
CCTV (*3)	AT END OF CONSTRUCTION (*2)	YES	48 HOURS
AIRTEST (*1)	AT END OF CONSTRUCTION	YES	48 HOURS
DEFLECTION	NO SOONER THAN 30 DAYS AFTER FINAL BACKFILL	YES	48 HOURS
MANHOLE VACUUM TESTING	DURING OR AT THE END OF CONSTRUCTION	YES	48 HOURS

9. SCHEDULE OF TESTS AND NOTIFICATIONS

10. THE WATER LINE SHALL BE TESTED FOR LEAKAGE. THE WATER LEAKAGE TEST IS A TWO PART TEST; PART A (PRESSURE LOSS) AND PART B ALLOWABLE LEAKAGE. PART A & PART B MUST PASS FOR THE TEST TO BE CONSIDERED SUCCESSFUL.

LEAKAGE TESTS SHALL BE CONDUCTED ON A SCHEDULE AGREED UPON BY THE SRU INSPECTOR, ENGINEER OR ENGINEER'S REPRESENTATIVE AND THE CONTRACTOR. CITY/SRU INSPECTION IS REQUIRED DURING THE TESTS WITH A MINIMUM 48-HOUR NOTICE (2 BUSINESS DAYS).

WATER SERVICES (TAP, SERVICE LINE AND METER SETTER) SHALL BE INSTALLED PRIOR TO WATER LINE LEAKAGE TEST.

THE PIPE SHALL BE FILLED WITH POTABLE WATER FOR A PERIOD OF 24 HOURS BEFORE TESTING BEGINS. IT SHALL BE ENSURED THAT THE PIPE IS FULL OF WATER AND ALL AIR HAS BEEN REMOVED BEFORE TESTING. CONTRACTOR SHALL PRETEST THE WATER LINE PRIOR TO SCHEDULING A TEST WITH ENGINEER AND SRU INSPECTOR.

THE WATER LINE SHALL BE TESTED AT 1.25 TIMES THE HIGHEST WORKING PRESSURE ALONG THE SECTION, OR 200 PSIG, WHICHEVER IS GREATER. THE TEST SHALL BE OF AT LEAST 2 HOURS DURATION AND THE PRESSURE MAY NOT DROP MORE THAN 5 PSIG DURING THE TEST.

ALL EXPOSED PIPE, FITTINGS, VALVES AND HYDRANTS SHALL BE VISUALLY EXAMINED DURING THE TEST.

PIPE HAVING MORE THAN ALLOWED LEAKAGE SHALL BE REPAIRED. ALL VISIBLE LEAKS SHALL BE REPAIRED REGARDLESS OF THE AMOUNT OF LEAKAGE.



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PROJECT REFERENCE NO.	SHEET NO.
U-5738	UC-3
DESIGNED BY: WAP	
DRAWN BY: WAP	
CHECKED BY: MET	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

11. VALVES
VALVES SHALL BE FIELD TESTED AS DIRECTED BY AWWA SPECIFICATION C500 AND C504 AS APPLICABLE.

(A) DURING THE LAST STAGES OF THE TEST AND WITHOUT ANY REDUCTION IN PRESSURE, FIRST THE HYDRANT VALVES WILL BE CLOSED, THEN PROGRESSING IN AN ORDERLY MANNER FROM THE END OPPOSITE FROM THE TEST PUMP, EACH MAIN LINE VALVE WILL BE CLOSED AND PRESSURE RELEASED TO DETERMINE IF IT IS HOLDING PRESSURE (MINIMUM 30 MINUTES).

VALVES SHALL BE TESTED ON A SCHEDULE AGREED UPON BY THE SRU INSPECTOR AND THE CONTRACTOR. CITY/SRU INSPECTION IS REQUIRED DURING THE TESTS.

12. STERILIZATION
SAMPLING TAPS SHALL BE PROVIDED EVERY 1,000 FEET AND AT THE END OF EACH BRANCH. TAPS SHALL BE LOCATED AND CONSTRUCTED SO SAMPLES MAY BE EASILY COLLECTED WITHOUT DANGER TO PERSONNEL OR LIKELIHOOD OF SAMPLE CONTAMINATION.

SAMPLING TAPS MAY BE USED AS BLOW-OFFS. THE NUMBER AND LOCATION OF THE TAPS/BLOW-OFFS MUST BE APPROVED BY THE SRU INSPECTOR. HYDRANTS MAY NOT BE USED FOR BACTERIOLOGICAL SAMPLING.

ALL PARTS OF A POTABLE WATER SYSTEM (INCLUDING SERVICE LINES) SHALL BE STERILIZED IN ACCORDANCE WITH AWWA C601 AND THESE SPECIFICATIONS. PREVENTIVE AND CORRECTIVE MEASURES DURING CONSTRUCTION (AWWA C601) SHOULD BE ADHERED TO DURING CONSTRUCTION TO ENSURE SUCCESS OF THE STERILIZATION PROCESS.

LINES SHALL BE INITIALLY CHLORINATED TO 100 MG/L.

LINES MUST HAVE A MINIMUM FREE CHLORINE RESIDUAL OF 24 MG/L AFTER 24 HOURS.

*1 - SCHEDULE OF WATER USE, INCLUDING ESTIMATE OF AMOUNT, RATE, DAY, TIME AND DURATION MUST BE FILED TEN (10) DAYS PRIOR TO NEED. WATER USE IS SUBJECT TO CITY OF SALISBURY APPROVAL AND AT PREVAILING RATES.
*2 - OR AS SCHEDULED WITH THE SRU INSPECTOR.
*3 - AS DIRECTED BY SRU INSPECTOR.
*4 - MINIMUM NOTICE - SUBJECT TO THE AVAILABILITY OF A SRU INSPECTOR.

UTILITY CONSTRUCTION

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12. (CONTINUED) WHEN THE CONTRACTOR HAS DETERMINED THAT THE LINE HAS BEEN CHLORINATED TO THE PROPER LEVEL, HE SHALL REQUEST A LABORATORY CONFIRMATION OF THE FREE CHLORINE LEVEL. ADVANCE NOTICE SHALL BE GIVEN TO THE SRU INSPECTOR PRIOR TO REQUESTING SAMPLING FOR CHLORINE LEVEL CONCENTRATION (ON SITE TEST) AS REQUIRED IN THE SCHEDULE OF TESTS AND NOTIFICATIONS. IN LIEU OF USING CITY RESOURCES, THE CONTRACTOR MAY USE AN APPROVED CERTIFIED TESTING LAB; HOWEVER, CITY/SRU INSPECTION OF THE TEST IS REQUIRED.

AFTER THE REQUIRED CONTACT TIME (24 HOURS), THE CONTRACTOR SHALL HAVE THE CHLORINE RESIDUAL TESTED AND IF THE CHLORINE LEVELS ARE AT LEAST 24 MG/L THEN THE CONTRACTOR CAN FLUSH THE LINE AND ALL APPURTENANCES WITH SALISBURY DISTRIBUTION WATER UNTIL COMPLETELY PURGED.

NO BACTERIOLOGICAL SAMPLES WILL BE COLLECTED AT POINTS WHERE THE FREE CHLORINE RESIDUAL EXCEEDS THE AMBIENT DISTRIBUTION SYSTEM FREE RESIDUAL BY MORE THAN 0.5 MG/L.

CARE MUST BE TAKEN TO DISCHARGE THE CHLORINATED WATER IN A MANNER WHICH WILL NOT ENDANGER PLANT OR ANIMAL LIFE OR BE UNSAFE. CHLORINATED WATER MUST BE DISCHARGED IN AN ENVIRONMENTALLY SAFE MANNER AND IN ACCORDANCE WITH ALL FEDERAL, STATE, AND/OR LOCAL LAWS AND REGULATIONS. CHLORINATED STERILIZATION WATER SHALL NOT BE DISCHARGED INTO THE CITY'S SEWER OR STORM DRAIN SYSTEMS. CONTRACTOR MUST TREAT THE CHLORINATED WATER TO MEET NORTH CAROLINA QUALITY DISCHARGE STANDARDS.

BACTERIOLOGICAL TESTING/SAMPLING SHALL BE REQUESTED ON THE SAME DAY THE LINE IS FLUSHED. BACTERIOLOGICAL TESTING WILL BE PERFORMED BY THE CITY/SRU LABORATORY MONDAY THROUGH THURSDAY PRIOR TO 12:00 P.M. AT LEAST 24-HOUR NOTICE SHALL BE GIVEN THE SRU INSPECTOR/LAB PRIOR TO SAMPLING. THE SRU INSPECTOR WILL COLLECT AND DELIVER THE SAMPLES TO THE LAB (TESTING FEE APPLIES).

EACH SAMPLE SHALL BE MARKED LEGIBLY, IDENTIFYING WITH LETTERS OR NUMBERS EACH SAMPLING POINT.

UTILITY CONSTRUCTION



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13. SANITARY SEWER FLUSHING AT COMPLETION OF WORK, LINES SHALL BE THOROUGHLY CLEANED BY FLUSHING WITH WATER TO REMOVE ALL DIRT AND DEBRIS. PIPELINE SHALL BE FLUSHED AT A RATE OF AT LEAST 2.5 FEET PER SECOND FOR A DURATION SUITABLE TO THE NCDOT/SRU INSPECTOR. CITY WATER MAY BE USED (WHEN AVAILABLE AND A BULK WATER PERMIT IS PURCHASED) TO FLUSH SEWER LINES OR AN APPROVED SOURCE OF NON-POTABLE WATER (WATER MUST BE FREE OF ANY CHEMICALS, SILT, OR DEBRIS) MY BE USED TO FLUSH SEWER LINES. ALL FLUSH WATER MUST BE COLLECTED IN A PLEGGED MANHOLE AND PUMPED OUT. SEWER FLUSH WATER SHALL NOT BE ALLOWED TO ENTER THE CITY'S SEWER SYSTEM.

14. SANITARY SEWER OBSTRUCTIONS/VISUAL INSPECTION. THE PIPE SHALL BE VISUALLY INSPECTED FROM MANHOLE TO MANHOLE USING LIGHTS, MIRRORS, OR OTHER DEVICES (CCTV) FOR VISUAL INSPECTION. ALL OBSTRUCTIONS SHALL BE REMOVED, AND THE LINES FROM ONE MANHOLE TO THE NEXT SHALL EXHIBIT A FULLY CIRCULAR PATTERN. LINES WHICH DO NOT EXHIBIT A TRUE LINE AND GRADE OR HAVE STRUCTURAL DEFECTS SHALL BE CORRECTED TO MEET SPECIFICATIONS. THE NCDOT/SRU INSPECTOR MAY REQUIRE INSPECTION BY TELEVISION CAMERA (CCTV) OF ANY SEWER LINES OR LATERALS.

THE CCTV EQUIPMENT MUST PROVIDE ADEQUATE LIGHT FOR THE CAMERA AND BE OF HIGH VIDEO QUALITY (INCLUDING THE VIDEO TAPES OR DVD) TO PROPERLY SHOW THE INSIDE OF THE PIPE. EACH LINE AND LATERAL MUST BE MARKED WITH AN IDENTIFYING NUMBER AND SHOWN ON THE VIDEO TAPE OR DVD AND A LOG OF ANY PROBLEMS FOUND, ALONG WITH THE LINE NUMBER AND FOOTAGE AND/OR LATERAL NUMBER MUST BE INCLUDED WITH THE VIDEO TAPES OR DVD. ALL TESTING SHALL BE DONE AT NO COST TO THE NCDOT, SRU NOR CITY OF SALISBURY.

15. SANITARY SEWER LEAKAGE LEAKAGE TESTS SHALL BE CONDUCTED ON A SCHEDULE AGREED UPON BY THE NCDOT/SRU INSPECTOR, ENGINEER, AND THE CONTRACTOR. ENGINEER OR THE ENGINEER'S DESIGNATED REPRESENTATIVE MUST BE ON SITE FOR ALL REQUIRED TESTING. NCDOT/SRU INSPECTION IS REQUIRED DURING LEAKAGE TESTS. LOW PRESSURE AIR TESTING SHALL BE USED TO TEST FOR LEAKAGE IN SEWER LINES AND LATERALS. THE TEST SHALL BE IN ACCORDANCE WITH ASTM F 1417 AS MODIFIED HEREIN. THE PIPELINE IS CONSIDERED ACCEPTABLE IF WHEN TESTED AT A PRESSURE OF 4.0 PSI (OR GREATER THAN THE AVERAGE BACK PRESSURE OF ANY GROUND WATER THAT MAY SUBMERGE THE PIPE) THE SECTION UNDER TEST DOES NOT LOSE MORE THAN 0.5 PSIG WITHIN THE ALLOTTED TEST TIME (SEE APPENDIX B). NCDOT/SRU INSPECTION OF THE TEST IS REQUIRED.

16. SANITARY SEWER DEFLECTION TEST NO SOONER THAN THIRTY(30) DAYS AFTER FINAL BACK FILL INSTALLATION, EACH SECTION OF PVC PIPE SHALL BE CHECKED FOR VERTICAL DEFLECTION USING A RIGID "GO-NO/GO" (MANDREL) DEVICE. THE MANDREL USED FOR THE DEFLECTION TEST SHALL HAVE A DIAMETER NOT LESS THAN 95 PERCENT OF THE BASE INSIDE DIAMETER OR AVERAGE INSIDE DIAMETER OF PIPE DEPENDING ON WHICH IS SPECIFIED IN THE ASTM SPECIFICATION, TO WHICH THE PIPE IS MANUFACTURED. THE PIPE SHALL BE MEASURED IN COMPLIANCE WITH ASTM D2122 STANDARD TEST METHOD OF DETERMINING DIMENSIONS OF THERMOPLASTIC PIPE AND FITTINGS. THE TEST SHALL BE PERFORMED WITHOUT MECHANICAL PULLING DEVICES. VERTICAL DEFLECTION SHALL NOT EXCEED 5% OF THE INSIDE PIPE DIAMETER. PIPE EXCEEDING THE ALLOWABLE LIMIT SHALL BE REPAIRED AND RE TESTED. ENGINEER OR THE ENGINEER'S DESIGNATED REPRESENTATIVE MUST BE ON SITE FOR ALL REQUIRED TESTING. NCDOT/SRU INSPECTION OF THE TEST IS REQUIRED.

17. SANITARY SEWER MANHOLE VACUUM TEST ALL TESTING SHALL BE PERFORMED IN THE PRESENCE OF THE ENGINEER OR DESIGNATED REPRESENTATIVE. EVERY MANHOLE SHALL BE CHECKED FOR AIR TIGHTNESS PRIOR TO SETTING OF THE MANHOLE RING AND COVER. ALL MANHOLES, WHETHER WITH PRECAST BASE SECTIONS OR Poured-IN-PLACE BASE, SHALL BE VACUUM TESTED. ALL LIFT HOLES SHALL BE PLUGGED WITH A NON-SHRINK GROUT. ALL PIPES ENTERING OR LEAVING THE MANHOLE SHALL BE PLUGGED, TAKING CARE TO SECURELY BRACE THE PLUG FROM BEING DRAWN INTO THE MANHOLE DURING THE TEST. CITY INSPECTION OF THE TEST IS REQUIRED WITH A 48 HOUR MINIMUM NOTICE. ALL MANHOLES REGARDLESS OF SEWER LINE SIZE (PUBLIC OR PRIVATE) SHALL BE TESTED AND INSPECTED TO NCDOT/SRU UNIFORM CONSTRUCTION STANDARDS AND SPECIFICATIONS REQUIREMENTS.

1. THE VACUUM EQUIPMENT TEST HEAD SHALL BE PLACED AT THE INSIDE OF THE TOP OF THE CONE SECTION, THE SEAL INFLATED IN ACCORDANCE WITH THE MANUFACTURE'S RECOMMENDATIONS.

2. A VACUUM OF 10-INCHES OF MERCURY SHALL BE DRAWN AND THE VACUUM PUMP SHUT OFF.

3. WITH THE VALVES CLOSED, THE TIME SHALL BE MEASURED FOR THE VACUUM TO DROP TO 9-INCHES OF MERCURY.

4. THE TEST TIME SHALL BE CORRELATED TO THE MANHOLE AS FOLLOWS:
48" = 60 SECONDS, 60" = 75 SECONDS
72" = 97 SECONDS, 96" = 133 SECONDS
120" = 170 SECONDS

5. IF THE MANHOLE FAILS THE INITIAL TEST, NECESSARY REPAIRS SHALL BE MADE AT THE CONTRACTOR'S EXPENSE WITH AN APPROVED NON-SHRINK GROUT ON THE OUTSIDE OF THE MANHOLE WHILE THE MANHOLE IS BEING DRAWN.

6. THE RE-TESTING AND REPAIRING SCHEDULE CYCLE SHALL CONTINUE UNTIL THE MANHOLE PASSES THE TEST.

WATER LINES - GENERAL NOTES:

1. Concrete blocking (3000 psi) to be placed at all bends or as required unless Mega Lugs or restrained joints are used.

2. Standard depth of cover to be 3 feet except at valve or hydrant locations or other special situations. Cover is based on elevation below edge or pavement or as indicated on the plans.

3. Provide poured in place concrete pads (18" x 18" x 6") (or concrete "donuts" may be used as an alternative at the discretion of the Utilities Inspector) at all valve boxes.

4. Extensions for valve boxes, when required, are to be valve boxes or DIP (no PVC or C900).

5. All pavement cuts, concrete or asphalt, are to be replaced according to the standard details or as required by the North Carolina Department of Transportation.

6. Pavement cuts are to be replaced immediately after backfilling of initial cut either with permanent replacement or a temporary replacement of 10" of base if approved by the City (for City maintained streets) or DOT (for state maintained streets).

7. Repairs to main breaks:
(a) Solid sleeves to be used for connecting spigot ends shall be of the long body type.
(b) All repairs shall be inspected by City before backfilling.

8. In any instance where it will be necessary to have the water shut off on existing mains in order to make a tie-in, the work must be done by City forces or a contractor working for the City, scheduled 48 hours to 7 days in advance depending on the location and types of businesses that will be affected.

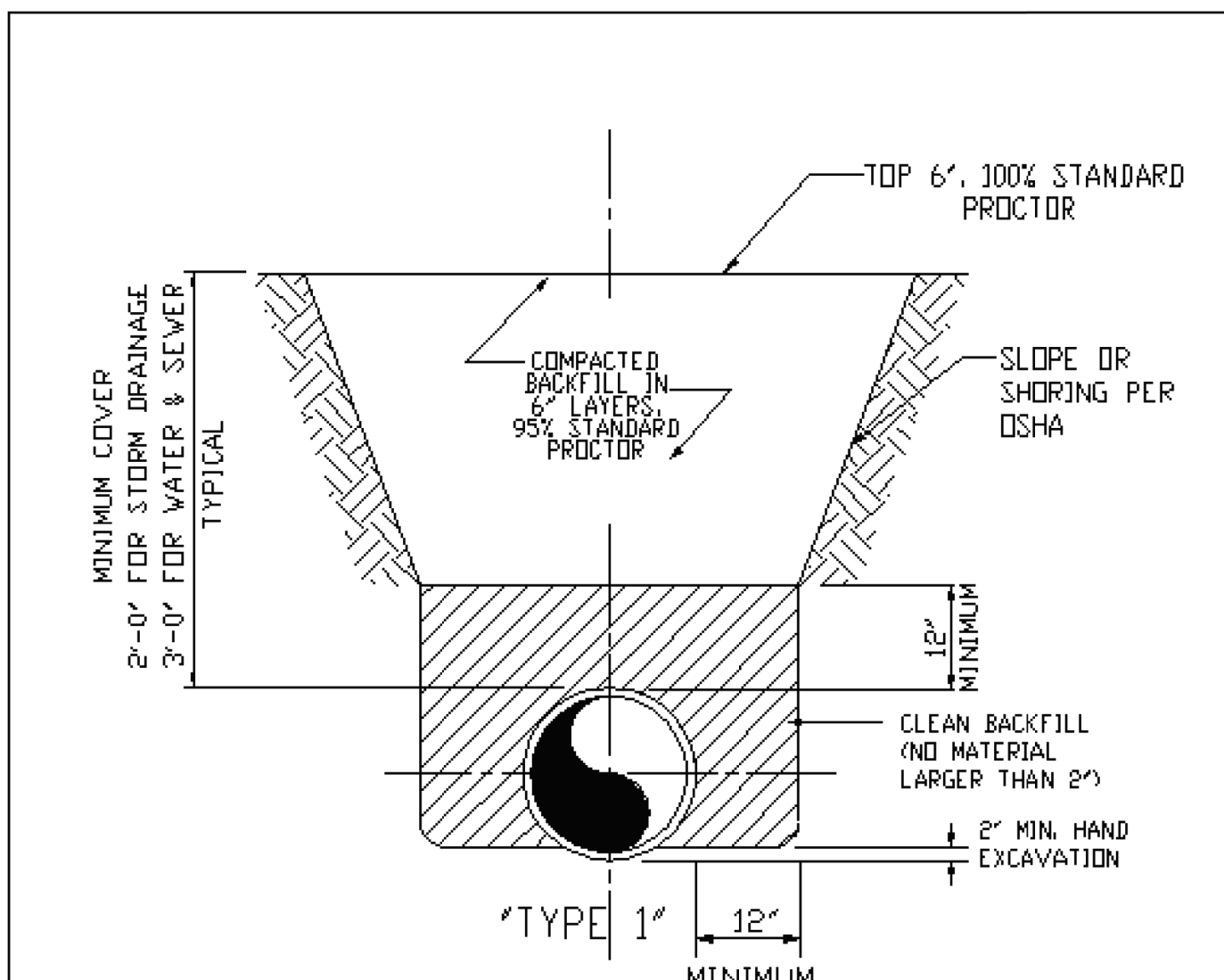
9. When a water main crosses an existing sewer main, the contractor is to replace the sewer pipe spanning the ditch with ductile pipe when the following conditions occur:

(a) Anytime a water main is installed under a sewer main.
(b) When a water main is over a sewer main and the vertical distance between the two mains is 18" or less (minimum 12" clearance between water and sewer lines).

10. Water mains shall be installed with a minimum of 10' horizontal separation from sewer lines. Where this is not possible, both the water line and sewer line shall be ductile iron pipe.

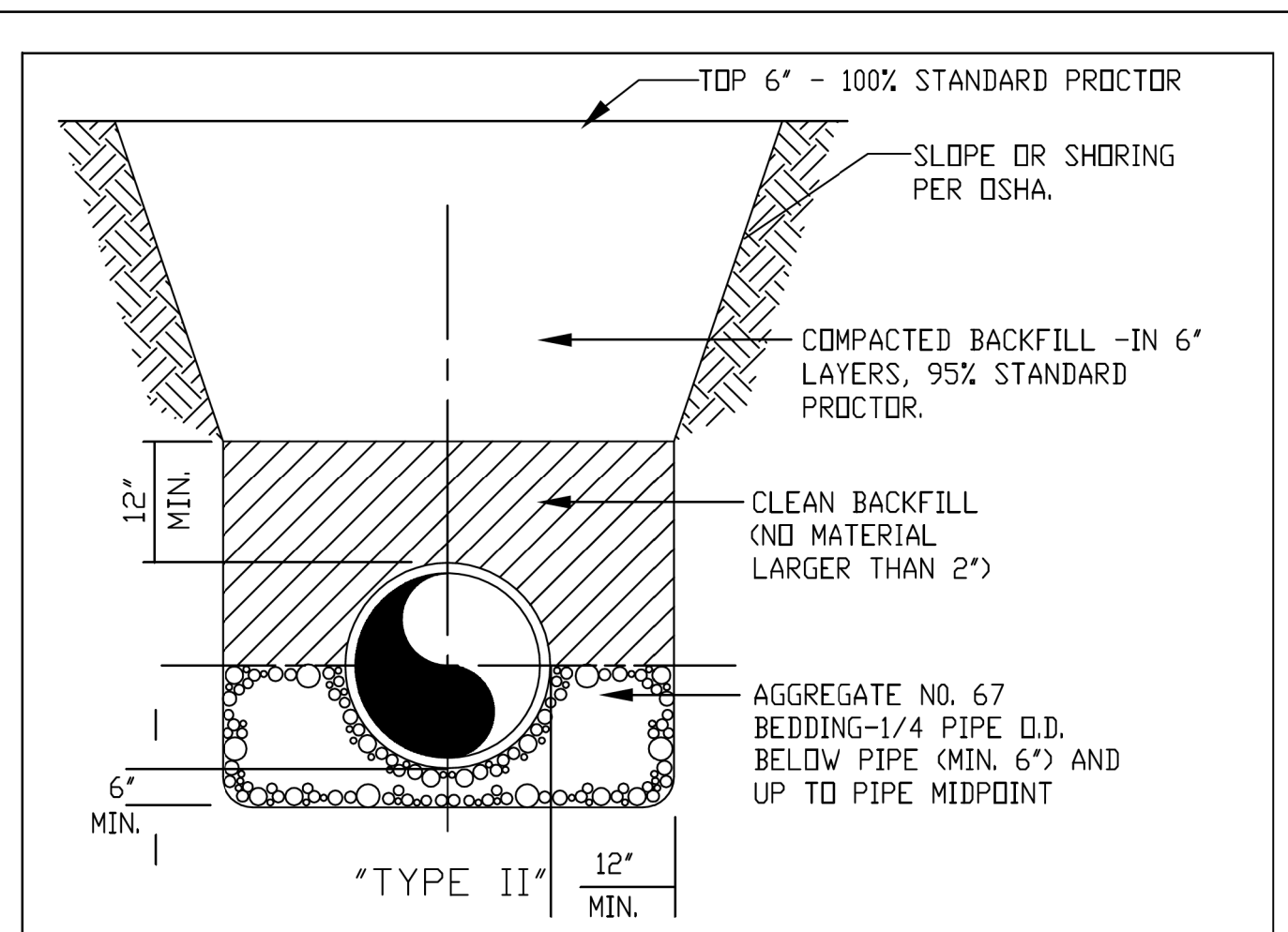
11. Water lines shall be disinfected and hydrostatically tested in accordance with all State and City of Salisbury requirements.

12. All plans shall meet all Federal, State, City of Salisbury, and Salisbury-Rowan Utilities regulations, design criteria, and construction standards.



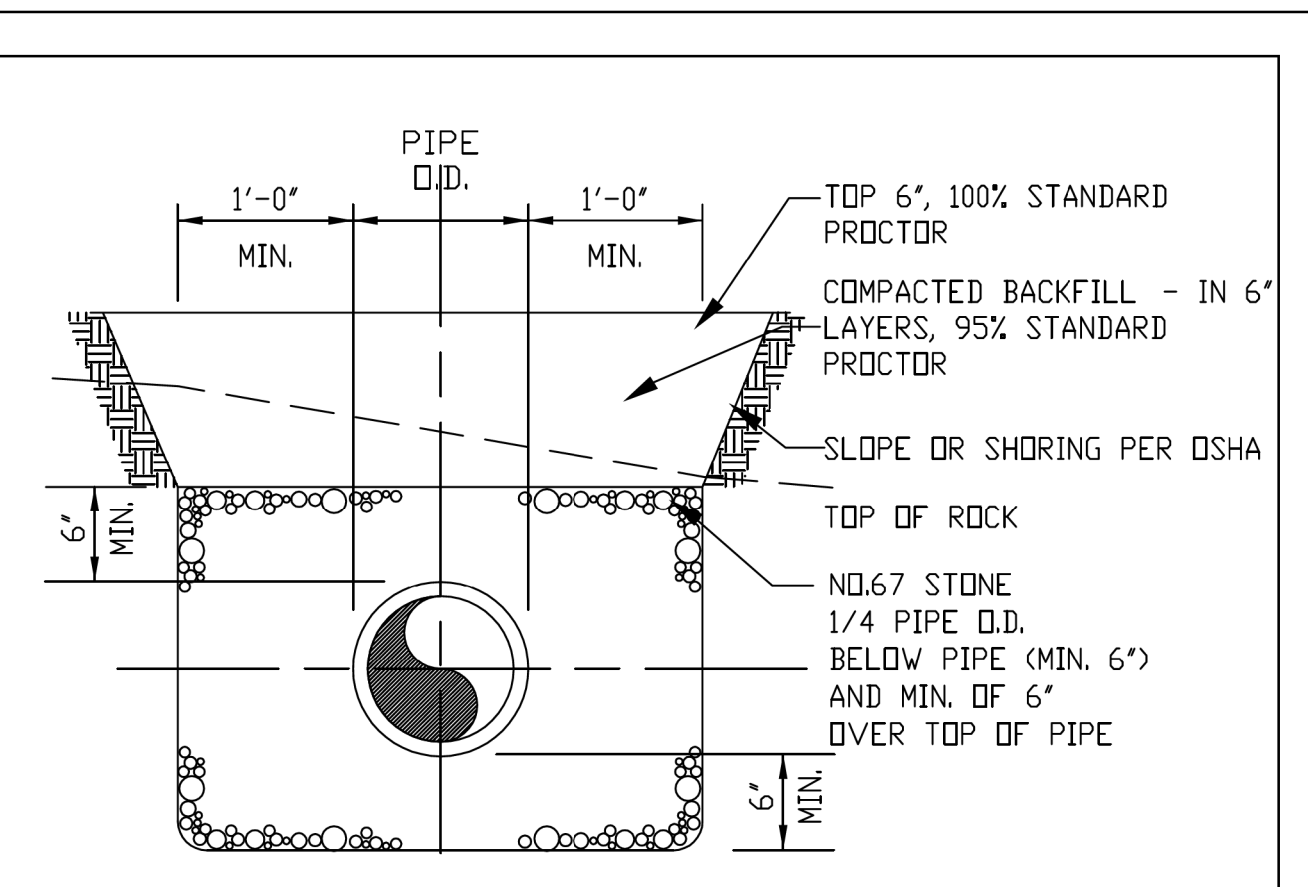
- NOTES:**
- FOR USE WITH ALL DIP, RCP AND VCP UNLESS CONDITIONS OF POOR OR SATURATED SOIL OR ROCK ARE PRESENT.
 - HAND EXCAVATE TO CONFORM TO PIPE BARREL.
 - EXCAVATE AT PIPE BELLS SO BELL DOES NOT SUPPORT PIPE.
 - TRENCH SIDE SLOPES SHALL BE IN ACCORDANCE WITH OSHA REQUIREMENTS. SUPPORT OR SHORE WHEN TRENCH IS MORE THAN 5' DEEP AND 8' LONG. BEGIN SIDE SLOPE, IF USED, APPROX. 18" ABOVE TOP OF PIPE.
 - BACKFILL OF TRENCHES SHALL BE ACCOMPLISHED IMMEDIATELY AFTER THE PIPE IS LAID. COMPACTION REQUIREMENTS SHALL BE ATTAINED BY THE USE OF MECHANICAL TAMPS ONLY. EACH AND EVERY LAYER OF BACKFILL SHALL BE PLACED LOOSE IN 6" LAYERS AND THOROUGHLY COMPACTED INTO PLACE.
 - UNDER NO CIRCUMSTANCES SHALL WATER BE PERMITTED TO RISE IN UNBACKFILLED TRENCHES AFTER THE PIPE HAS BEEN PLACED.
 - ALL MATERIAL SHALL HAVE AN IN PLACE DENSITY OF 100% TO A DEPTH 6" BELOW THE FINISHED GRADE OF BACKFILL MATERIAL, AND 95% AT GREATER THAN 6" BELOW GRADE.

CITY OF SALISBURY, N.C.	STANDARD DETAIL	DATE: JANUARY 1, 1991
PIPELINE INSTALLATION		NOT TO SCALE
TYPE 1 BEDDING		STANDARD P-1



- NOTES:**
- FOR USE WITH ALL PVC WATER PIPE, UNLESS CONDITIONS OF POOR OR SATURATED SOIL OR ROCK ARE PRESENT.
 - TRENCH SIDE SLOPES SHALL BE IN ACCORDANCE WITH OSHA REQUIREMENTS. SUPPORT OR SHORE WHEN TRENCH IS MORE THAN 5' DEEP AND 8' LONG. BEGIN SIDE SLOPE, IF USED, APPROX. 18" ABOVE TOP OF PIPE.
 - BACKFILLING OF TRENCHES SHALL BE ACCOMPLISHED IMMEDIATELY AFTER THE PIPE IS LAID. COMPACTION REQUIREMENTS SHALL BE ATTAINED BY THE USE OF MECHANICAL TAMPS ONLY. EACH AND EVERY LAYER OF BACKFILL SHALL BE PLACED LOOSE IN 6" LAYERS AND THOROUGHLY COMPACTED INTO PLACE.
 - UNDER NO CIRCUMSTANCES SHALL WATER BE PERMITTED TO RISE IN UNBACKFILLED TRENCHES AFTER THE PIPE HAS BEEN PLACED.
 - ALL MATERIAL SHALL HAVE AN IN PLACE DENSITY OF 100% TO A DEPTH 6" BELOW THE FINISHED GRADE OF THE BACKFILL MATERIAL, AND 95% AT GREATER THAN 6" BELOW GRADE.

CITY OF SALISBURY, N.C.	STANDARD DETAIL	DATE: JANUARY 1, 1991
PIPELINE INSTALLATION		NOT TO SCALE
TYPE II BEDDING		STANDARD P-2



- NOTES:**
- FOR USE WITH ALL PVC GRAVITY SEWER AND SEWER FORCE MAIN PIPE AND WHEN CONDITIONS OF POOR OR SATURATED SOIL OR ROCK ARE PRESENT, REGARDLESS OF PIPE MATERIAL.
 - TRENCH SIDE SLOPES SHALL BE IN ACCORDANCE WITH OSHA REQUIREMENTS. SUPPORT OR SHORE WHEN TRENCH IS MORE THAN 5' DEEP AND 8' LONG. BEGIN SIDE SLOPE, IF USED, APPROX. 18" ABOVE TOP OF PIPE.
 - BACKFILLING OF TRENCHES SHALL BE ACCOMPLISHED IMMEDIATELY AFTER THE PIPE IS LAID. COMPACTION REQUIREMENTS SHALL BE ATTAINED BY THE USE OF MECHANICAL TAMPS ONLY. EACH AND EVERY LAYER OF BACKFILL SHALL BE PLACED LOOSE IN 6" LAYERS AND THOROUGHLY COMPACTED INTO PLACE.
 - UNDER NO CIRCUMSTANCES SHALL WATER BE PERMITTED TO RISE IN UNBACKFILLED TRENCHES AFTER THE PIPE HAS BEEN PLACED.
 - ALL MATERIAL SHALL HAVE AN IN PLACE DENSITY OF 100% TO A DEPTH 6" BELOW THE FINISHED GRADE OF THE BACKFILL MATERIAL, AND 95% AT GREATER THAN 6" BELOW GRADE.

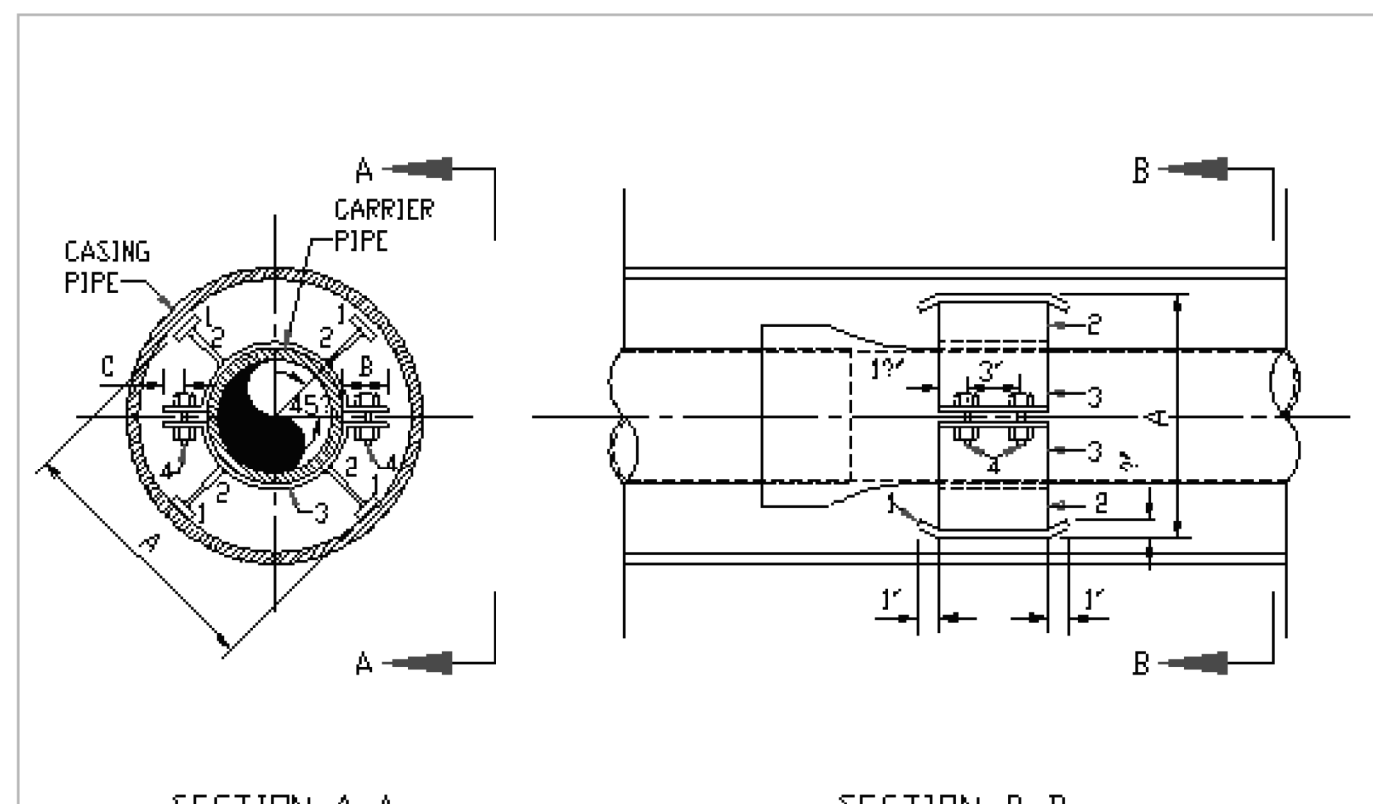
CITY OF SALISBURY, N.C.	STANDARD DETAIL	DATE: JANUARY 1, 1991
PIPELINE INSTALLATION		NOT TO SCALE
TYPE III BEDDING		STANDARD P-3

PROJECT REFERENCE NO.	SHEET NO.
U-5738	UC-3B
DESIGNED BY: WAP	
DRAWN BY: WAP	
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

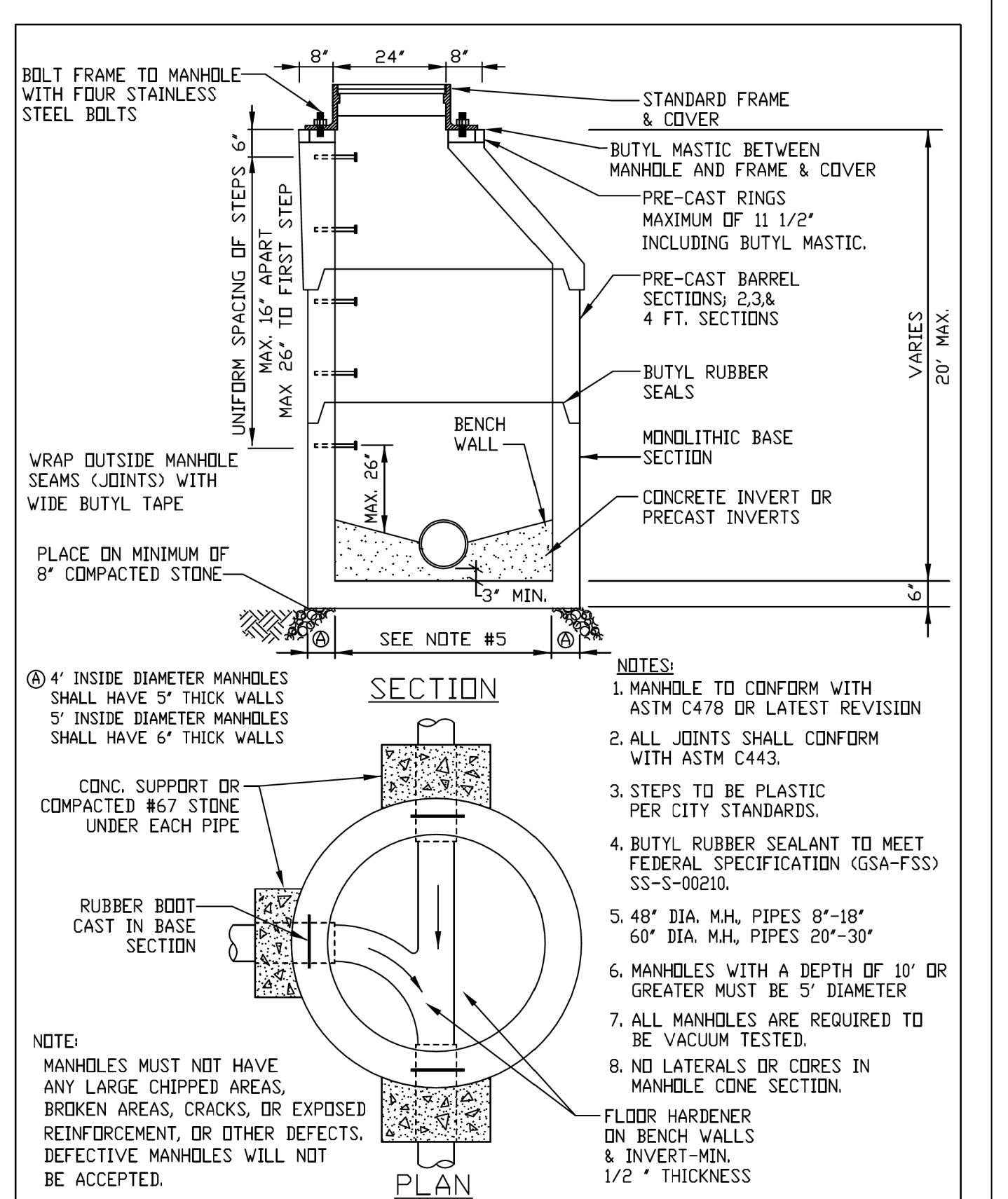
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PROJECT TYPICAL DETAILS



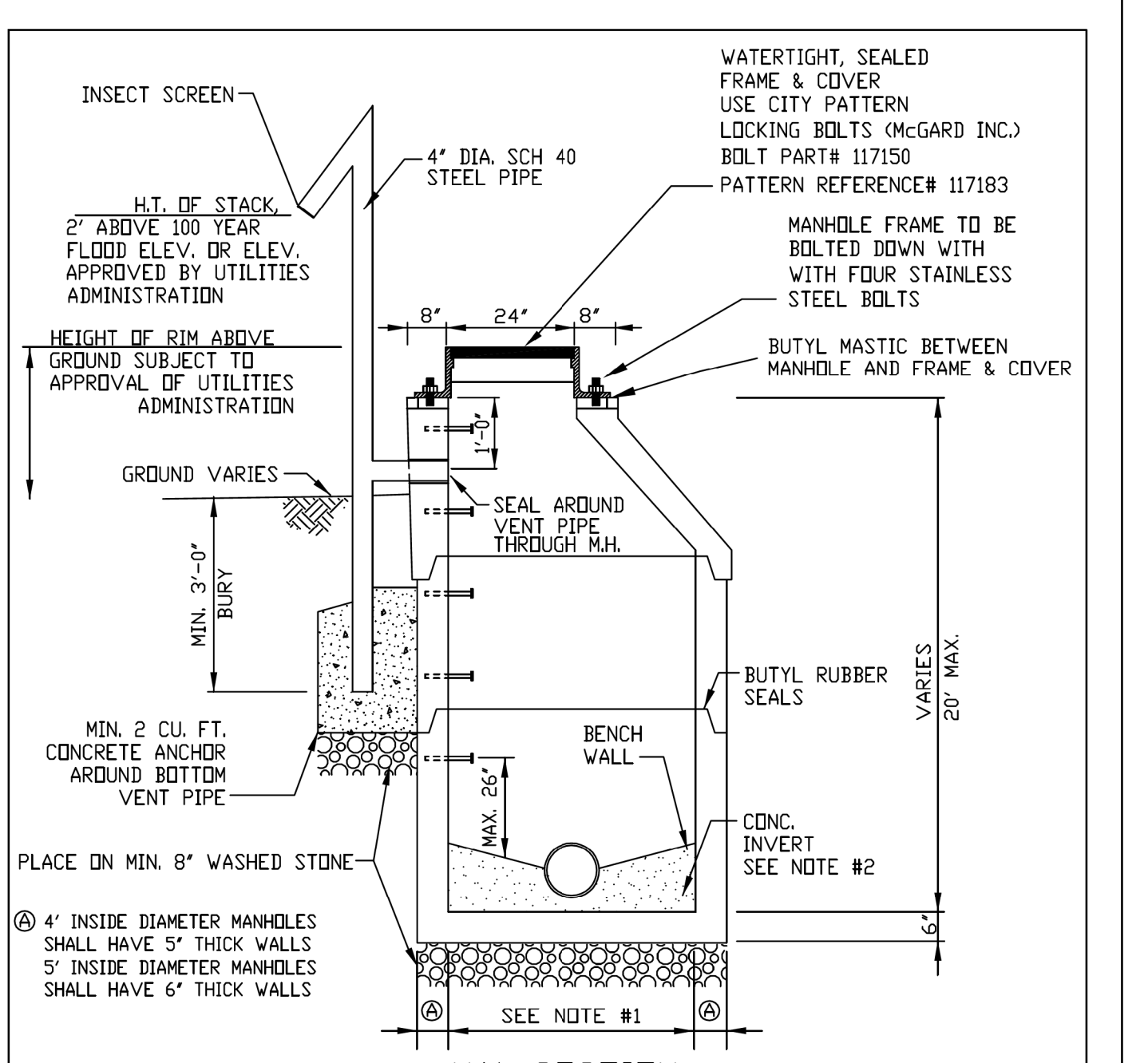
CARRIER PIPE I.D.	CARRIER PIPE O.D.	CASING PIPE		PIPE SUPPORT ASSEMBLY MARK NUMBERS				DIMENSIONS			
		Wt/W	R/R	1	2	3	4	A	B	C	
4"	4.80"	12.75"	0.188"	0.250"	8" x 2" x 2"	6" x 1" x 2"	6" x 2"	??	10.90"	12"	??
6"	6.30"	12.75"	0.188"	0.250"	8" x 2" x 2"	6" x 1" x 2"	6" x 2"	??	10.90"	12"	??
8"	9.85"	16.00"	0.250"	0.281"	8" x 2" x 2"	6" x 2" x 2"	6" x 2"	??	14.05"	12"	??
10"	11.0"	18.00"	0.250"	0.281"	8" x 2" x 2"	6" x 2" x 2"	6" x 2"	??	16.31"	12"	??
12"	13.20"	20.00"	0.250"	0.344"	8" x 2" x 2"	6" x 2" x 2"	6" x 2"	??	17.70"	12"	??
14"	15.20"	24.00"	0.250"	0.344"	8" x 2" x 2"	6" x 2" x 2"	6" x 2"	??	21.00"	22"	12"
16"	17.40"	30.00"	0.312"	0.469"	8" x 2" x 2"	6" x 2" x 2"	6" x 2"	??	27.40"	3"	12"
18"	19.50"	30.00"	0.312"	0.469"	8" x 2" x 2"	6" x 2" x 2"	6" x 2"	??	27.50"	3"	12"
20"	21.60"	30.00"	0.312"	0.469"	8" x 2" x 2"	6" x 2" x 2"	6" x 2"	??	27.60"	3"	12"
24"	25.80"	36.00"	0.275"	0.469"	8" x 4" x 2"	6" x 2" x 2"	6" x 2"	??	32.05"	3"	12"
30"	32.80"	42.00"	0.469"	0.469"	12" x 4" x 2"	10" x 2" x 2"	10" x 2"	??	32.75"	3"	12"
36"	38.30"	48.00"	0.500"	0.500"	12" x 4" x 2"	10" x 2" x 2"	10" x 2"	??	45.05"	3"	12"

CITY OF SALISBURY, N.C.	STANDARD DETAIL	DATE: JANUARY 1, 1991
PIPELINE INSTALLATION		NOT TO SCALE
PIPE SUPPORT ASSEMBLY		STANDARD P-6



- NOTES:**
- MANHOLE TO CONFORM WITH ASTM C478 OR LATEST REVISION.
 - ALL JOINTS SHALL CONFORM WITH ASTM C443.
 - STEPS TO BE PLASTIC PER CITY STANDARDS.
 - BUTYL RUBBER SEALANT TO MEET FEDERAL SPECIFICATION (GSA-FSS) SS-S-00210.
 - 4.8" DIA. M.H. PIPES 8"-18" 6.0" DIA. M.H. PIPES 20"-30"
 - MANHOLES WITH A DEPTH OF 10' OR GREATER MUST BE 5' DIAMETER.
 - ALL MANHOLES ARE REQUIRED TO BE VACUUM TESTED.
 - NO LATERALS OR CORES IN MANHOLE CONE SECTION.
 - FLOOR HARDENER ON BENCH WALLS & INVERT-MIN. 1/2" THICKNESS.

CITY OF SALISBURY, N.C.	STANDARD DETAIL	DATE: OCTOBER 17, 2006 AMENDED: MAY 19, 2009
SEWER SYSTEMS		NOT TO SCALE
PRECAST MANHOLE		STANDARD SS-1



- NOTES:**
- 4'-0" I.D. FOR 18" & SMALLER PIPES. 5'-0" I.D. FOR 21" & LARGER PIPES.
 - PRECAST CONCRETE INVERTS MAY BE USED IN LIEU OF POURED BASES.
 - MANHOLES MUST NOT HAVE ANY LARGE CHIPPED AREAS, BROKEN AREAS, CRACKS, OR EXPOSED REINFORCEMENT, OR OTHER DEFECTS. DEFECTIVE MANHOLES WILL NOT BE ACCEPTED.
 - STEEL PIPE TO HAVE AN INSIDE COAL-TAR LINING. 3/32 INCH MINIMUM THICKNESS. THE OUTSIDE SHALL BE SAND OR GRIT BLASTED AND COATED WITH TWO COATS OF URETHANE PAINT SUCH AS TNEC 73-EN-DURA SHIELD FOR A TOTAL DRY FILM THICKNESS OF 5 MILS. COLOR TO BE 'OLIVE GREEN'.
 - MANHOLES WITH A DEPTH OF 10.0' OR GREATER MUST BE 5' DIAMETER.
 - WRAP OUTSIDE MANHOLE SEAMS (JOINTS) WITH A WIDE BUTYL TAPE.

CITY OF SALISBURY, N.C.	STANDARD DETAIL	DATE: OCTOBER 17, 2006 AMENDED: MAY 19, 2009
SEWER SYSTEMS		NOT TO SCALE
MANHOLE VENT		STANDARD SS-4

DESIGNED BY: WAP
DRAWN BY: WAP
CHECKED BY:
APPROVED BY:
REVISED:



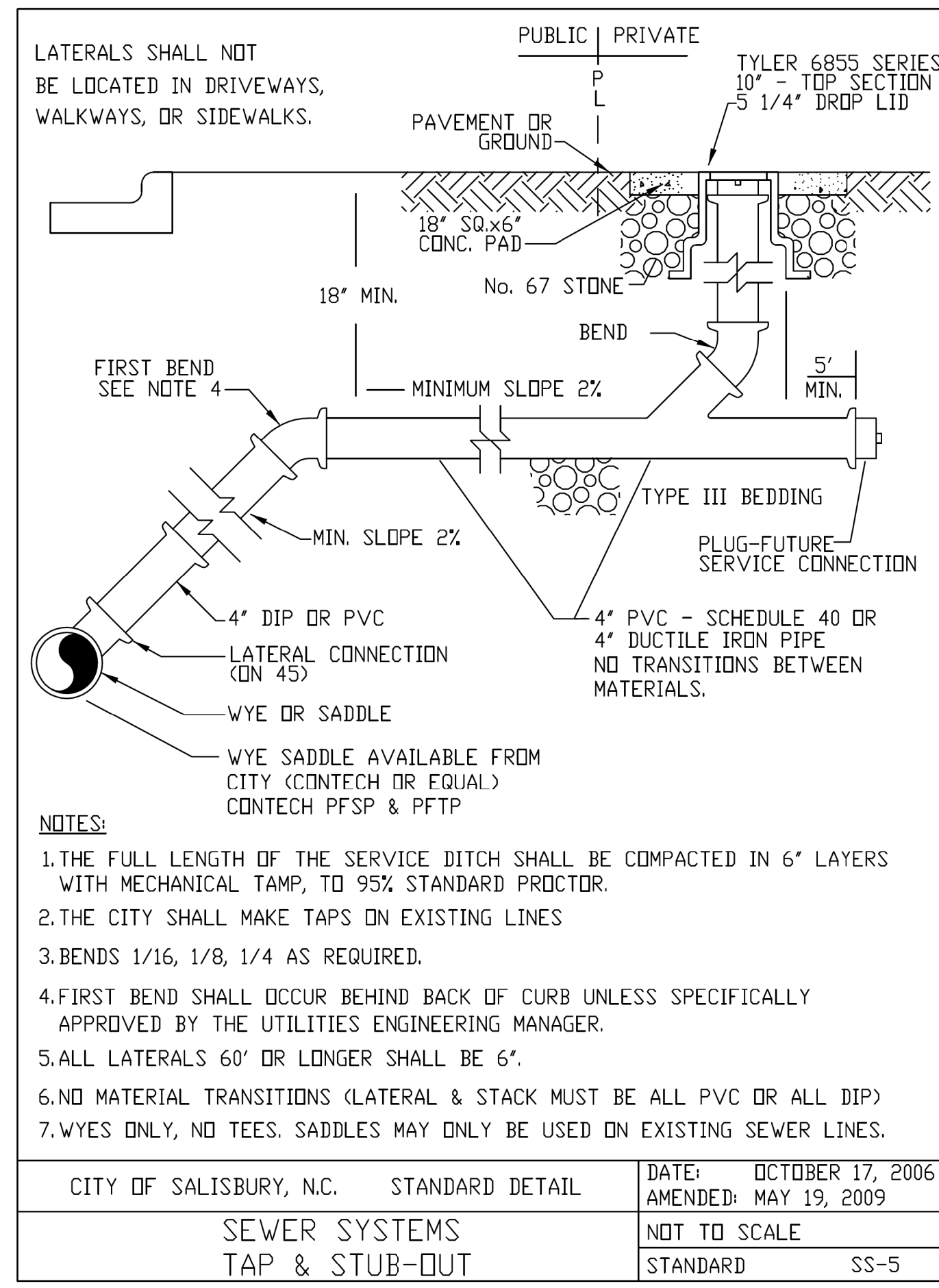
NORTH CAROLINA
DEPARTMENT OF
TRANSPORTATION
UTILITY ENGINEERING SEC.
PHONE: (919) 707-6690
FAX: (919) 250-4151

UTILITY CONSTRUCTION
PLANS ONLY

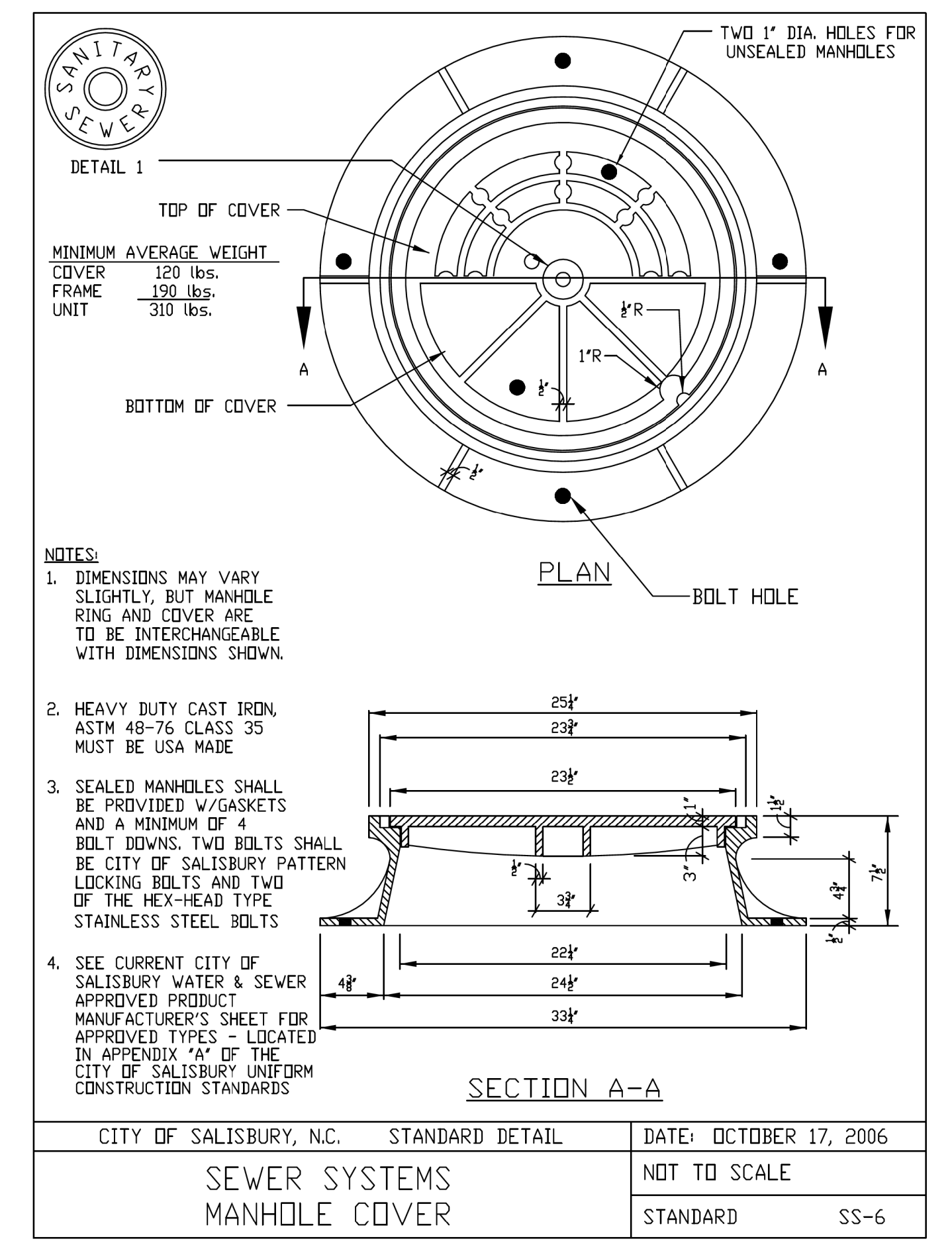
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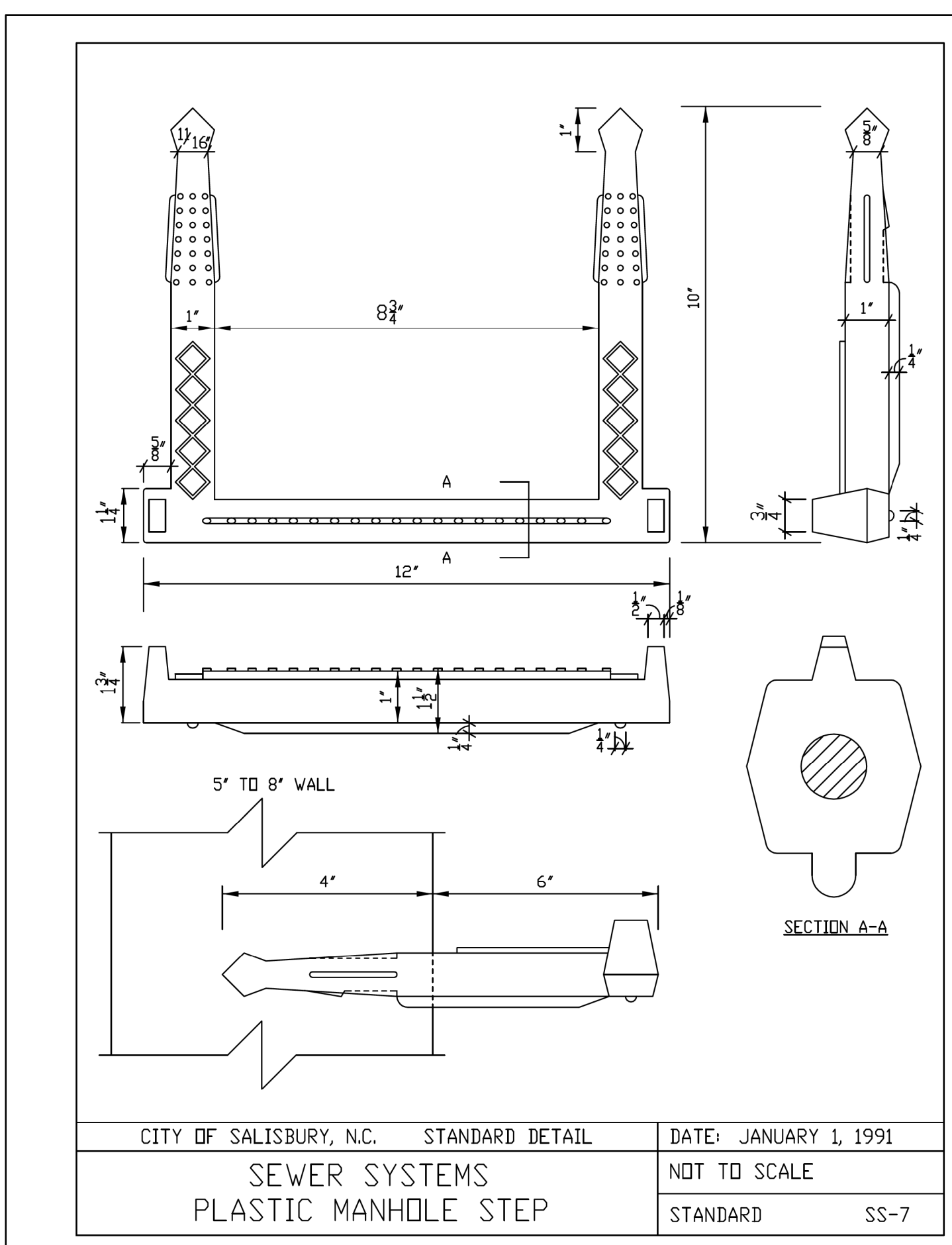
PROJECT
TYPICAL
DETAILS



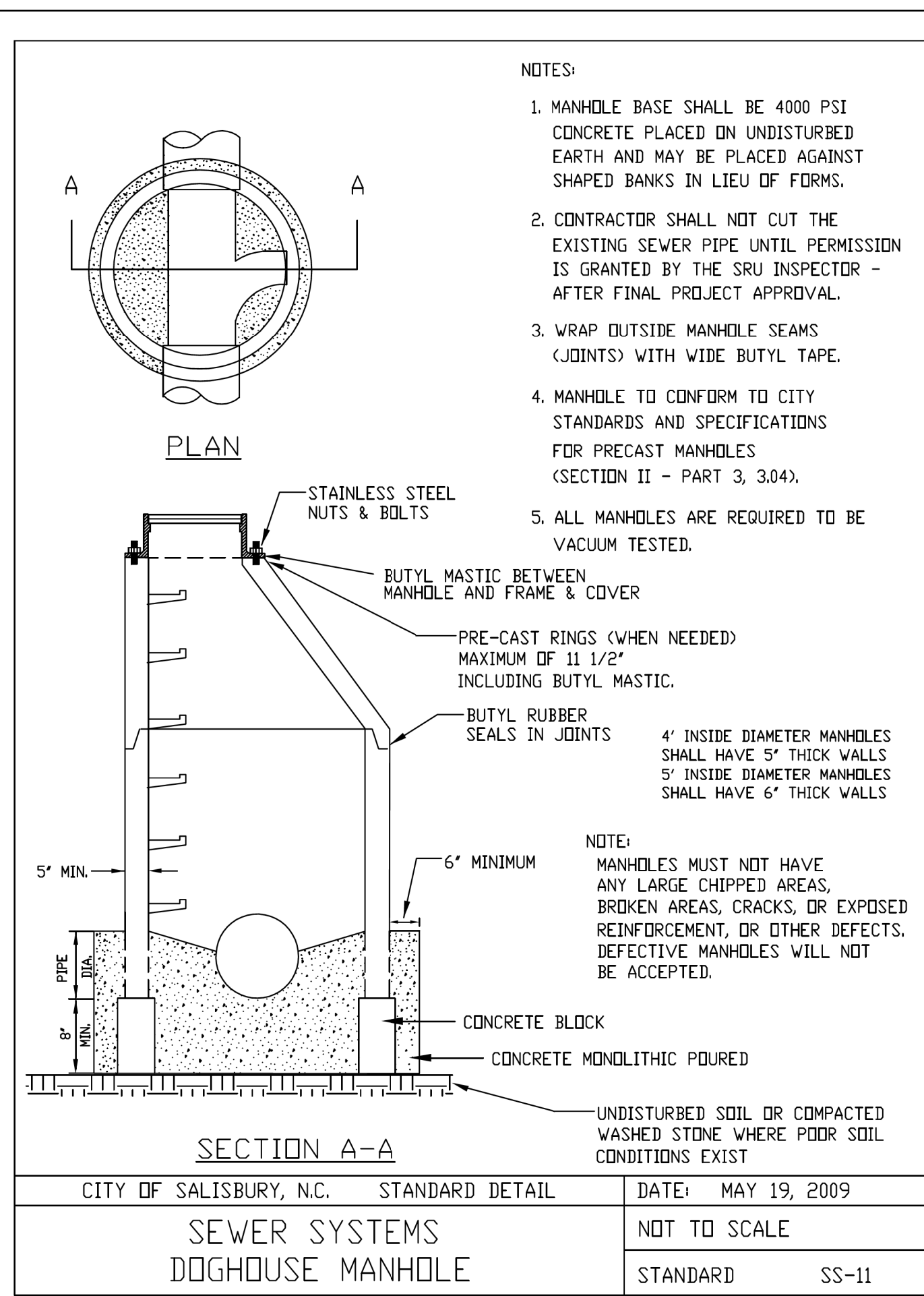
CITY OF SALISBURY, N.C. STANDARD DETAIL DATE: OCTOBER 17, 2006 AMENDED: MAY 19, 2009
SEWER SYSTEMS TAP & STUB-OUT NOT TO SCALE STANDARD SS-5



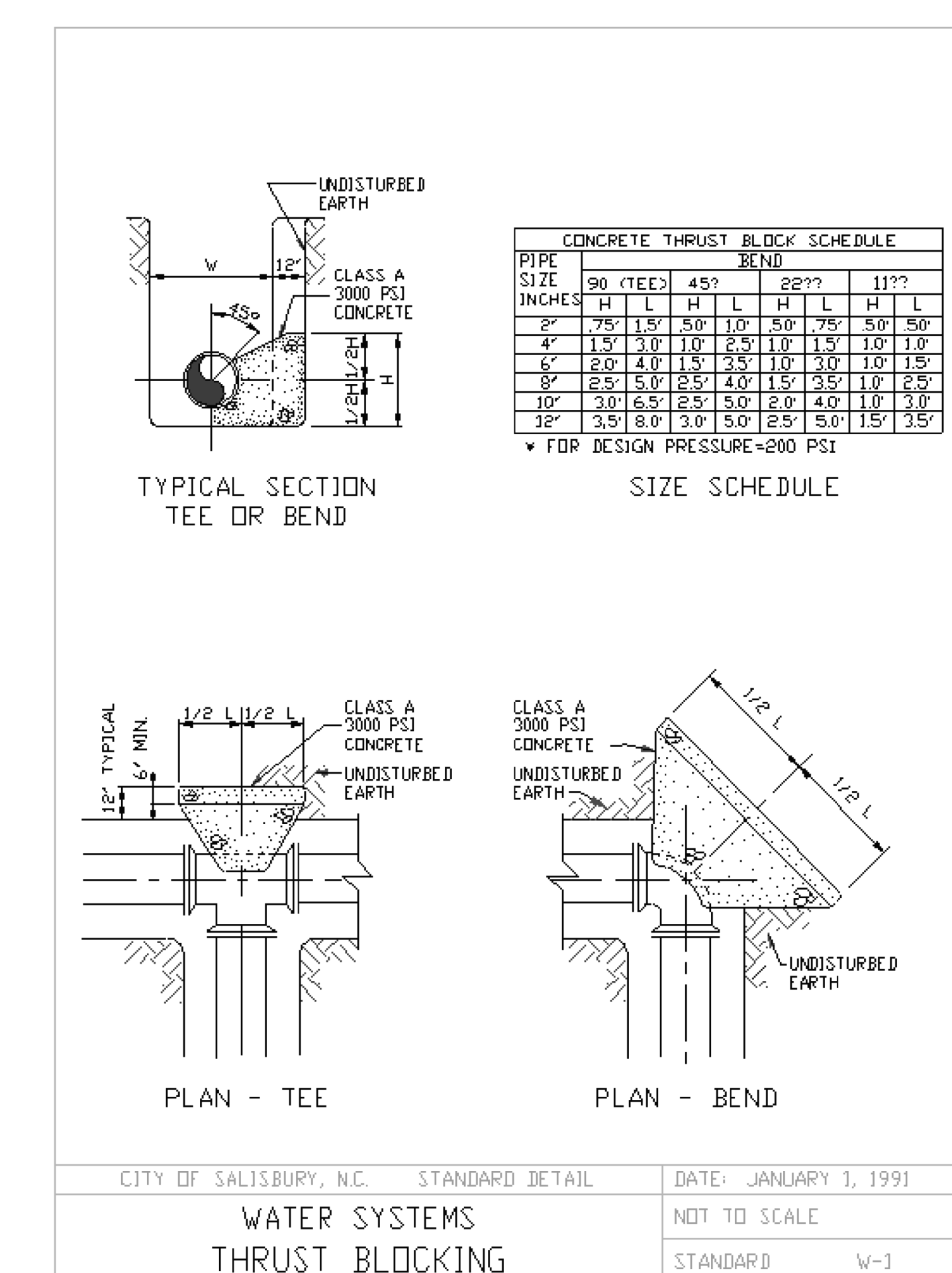
CITY OF SALISBURY, N.C. STANDARD DETAIL DATE: OCTOBER 17, 2006
SEWER SYSTEMS MANHOLE COVER NOT TO SCALE STANDARD SS-6



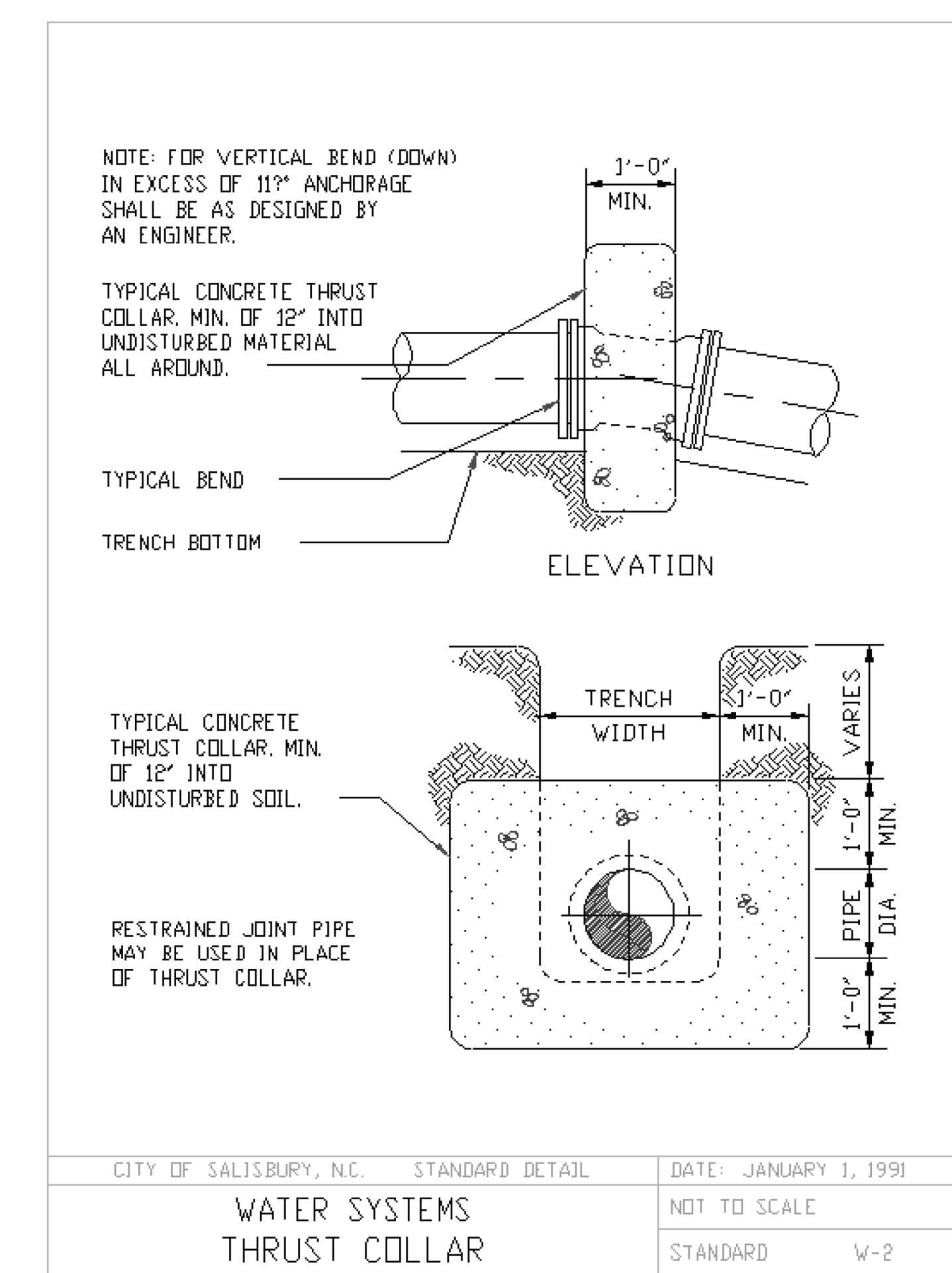
CITY OF SALISBURY, N.C. STANDARD DETAIL DATE: JANUARY 1, 1991
SEWER SYSTEMS PLASTIC MANHOLE STEP NOT TO SCALE STANDARD SS-7



CITY OF SALISBURY, N.C. STANDARD DETAIL DATE: MAY 19, 2009
SEWER SYSTEMS DOGHOUSE MANHOLE NOT TO SCALE STANDARD SS-11



CITY OF SALISBURY, N.C. STANDARD DETAIL DATE: JANUARY 1, 1991
WATER SYSTEMS THRUST BLOCKING NOT TO SCALE STANDARD W-1

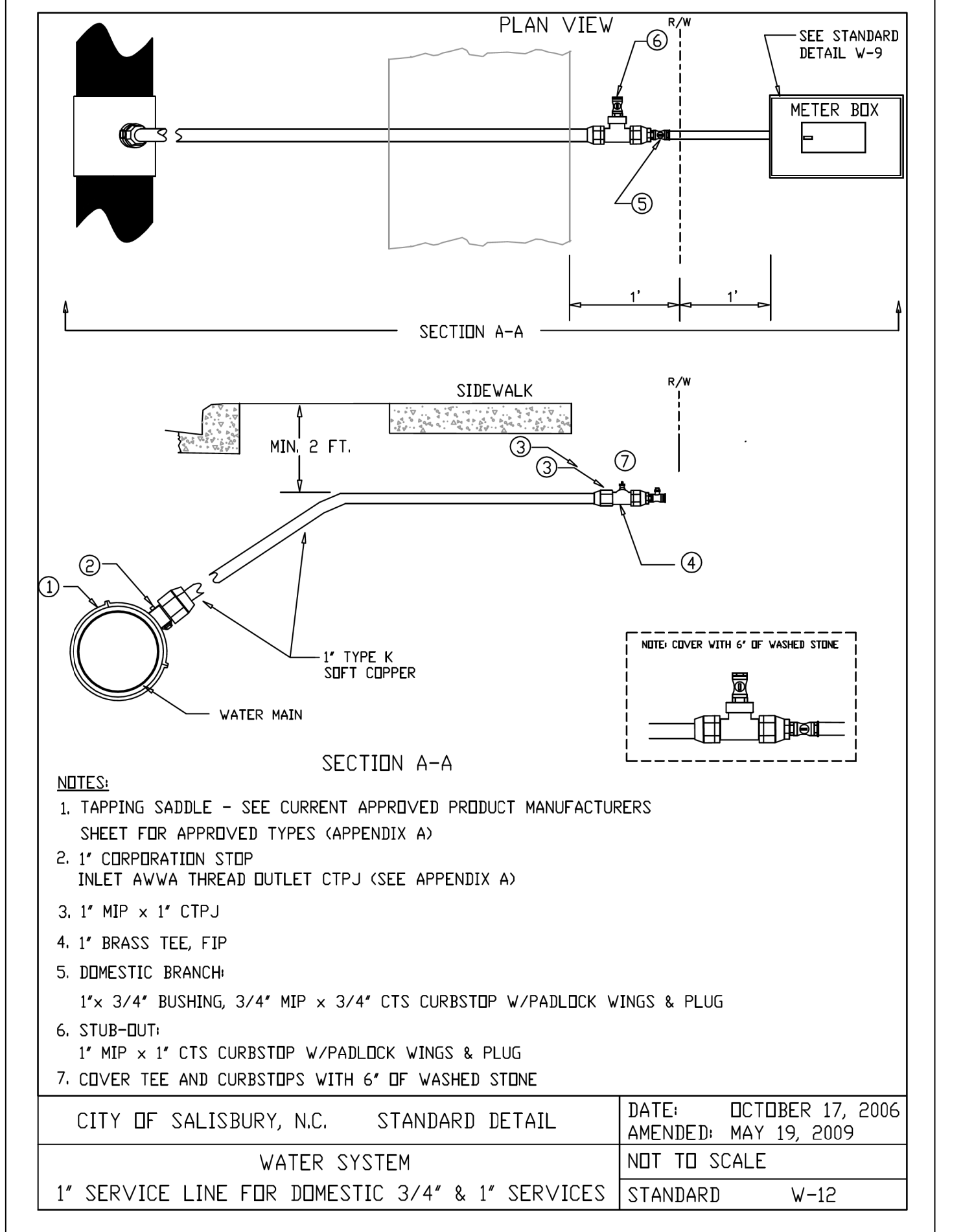
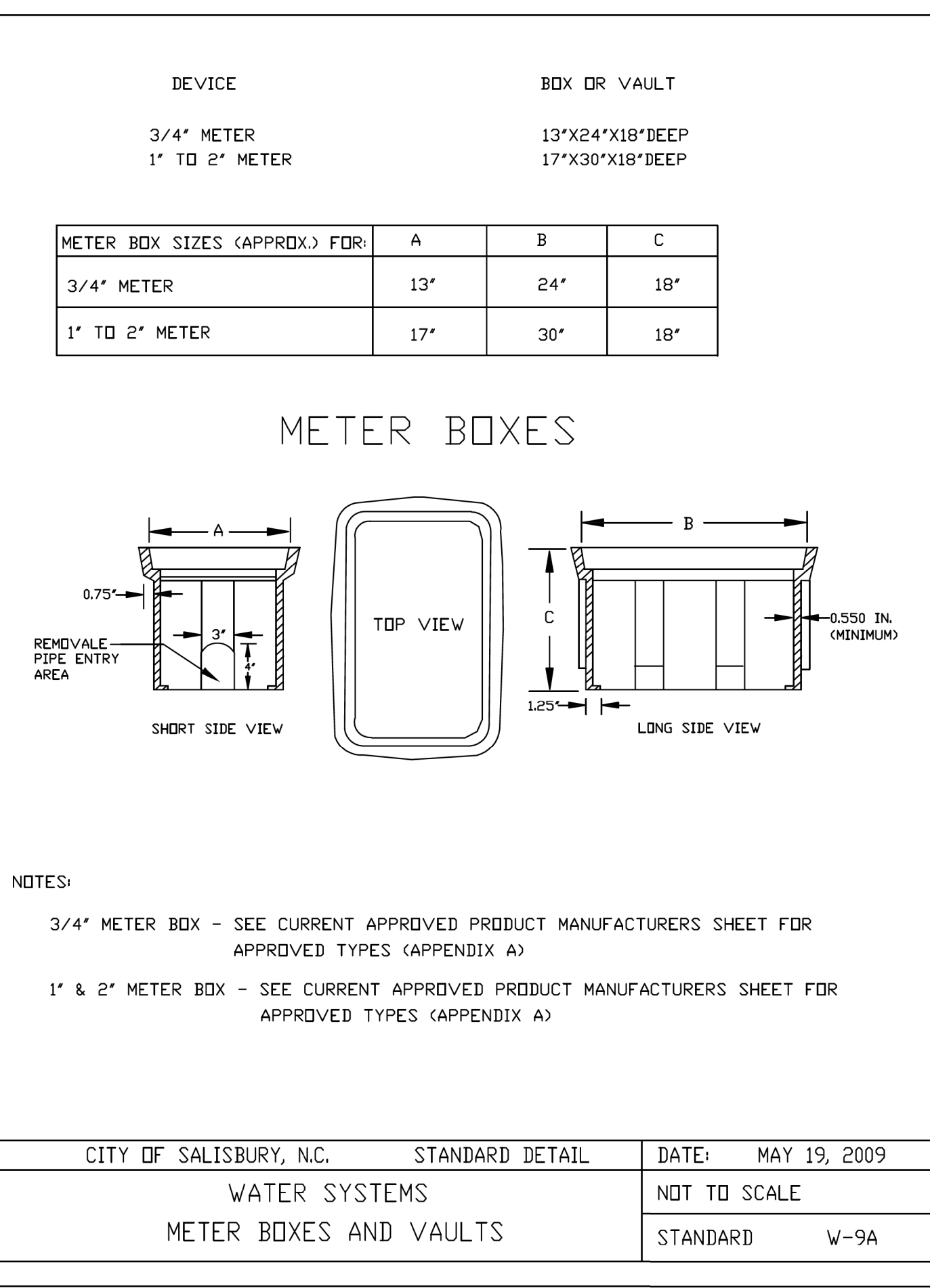
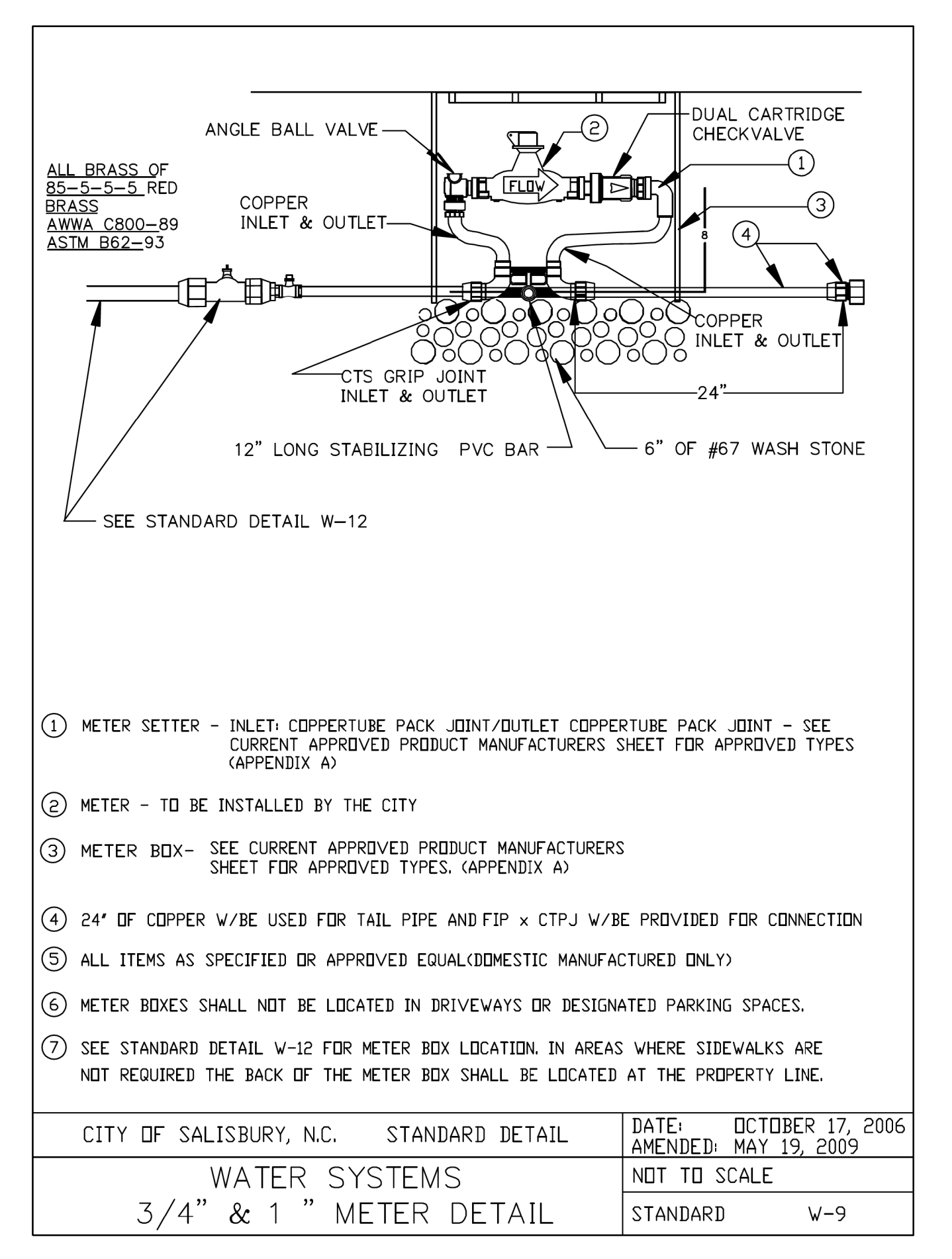
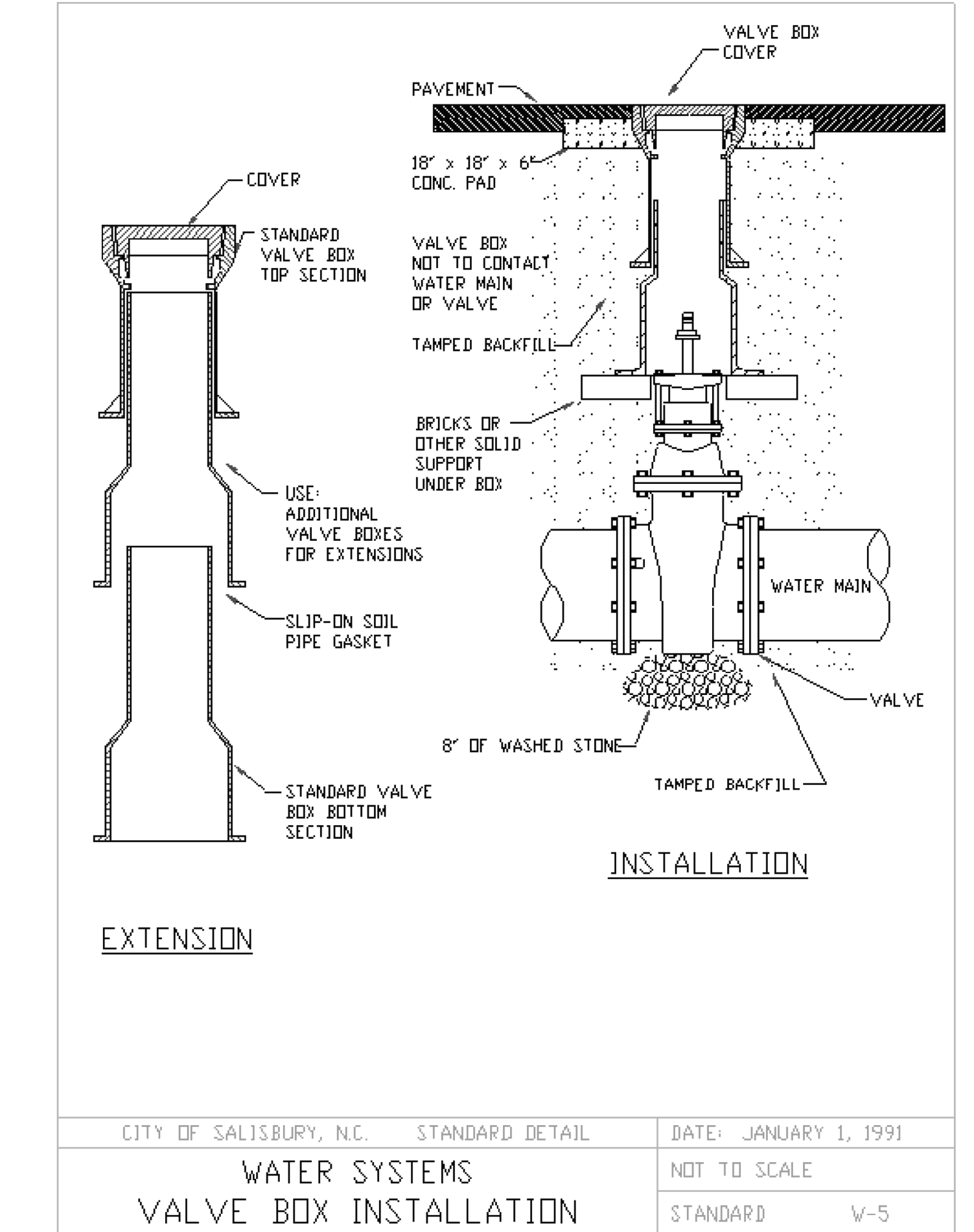
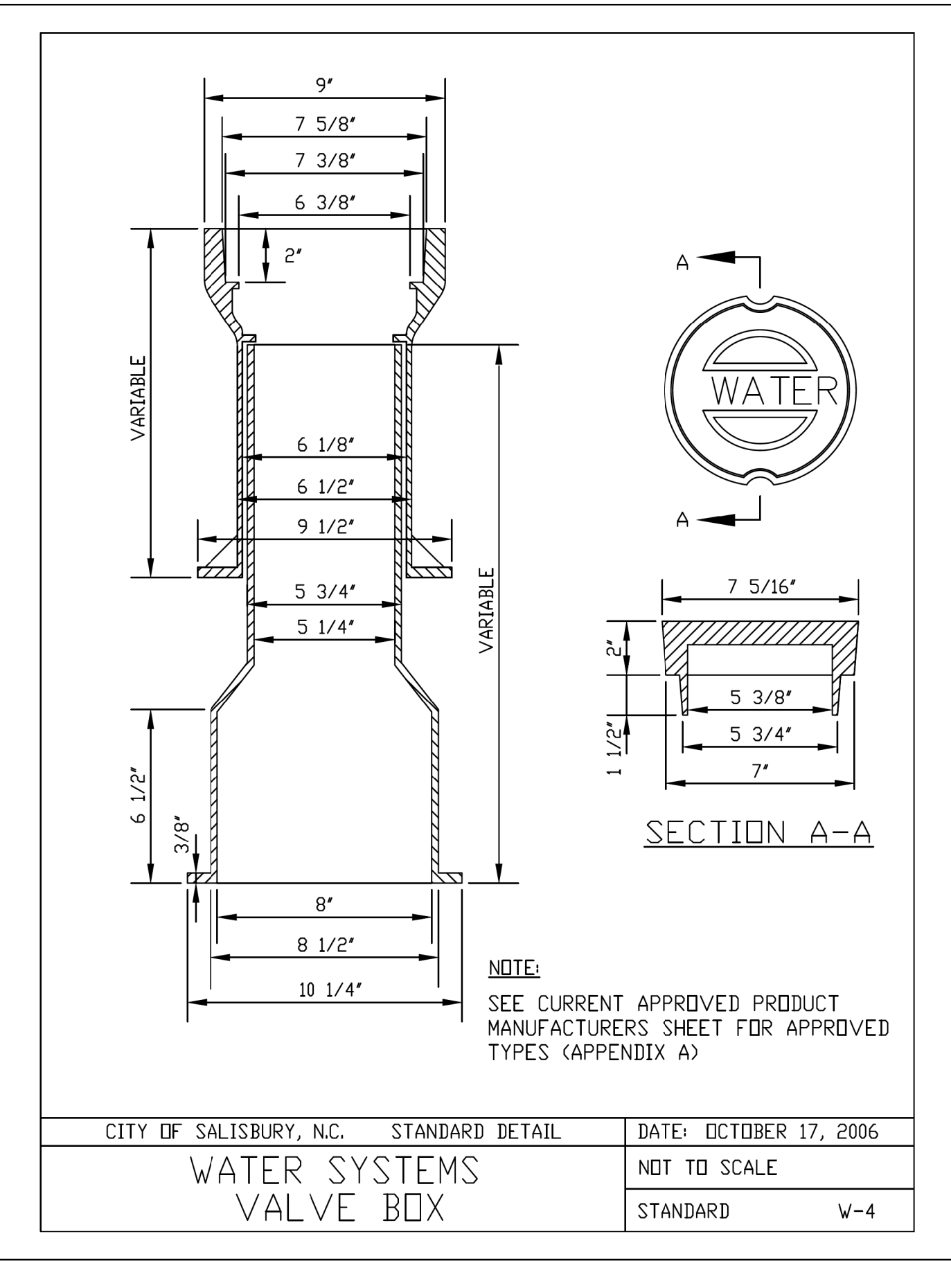
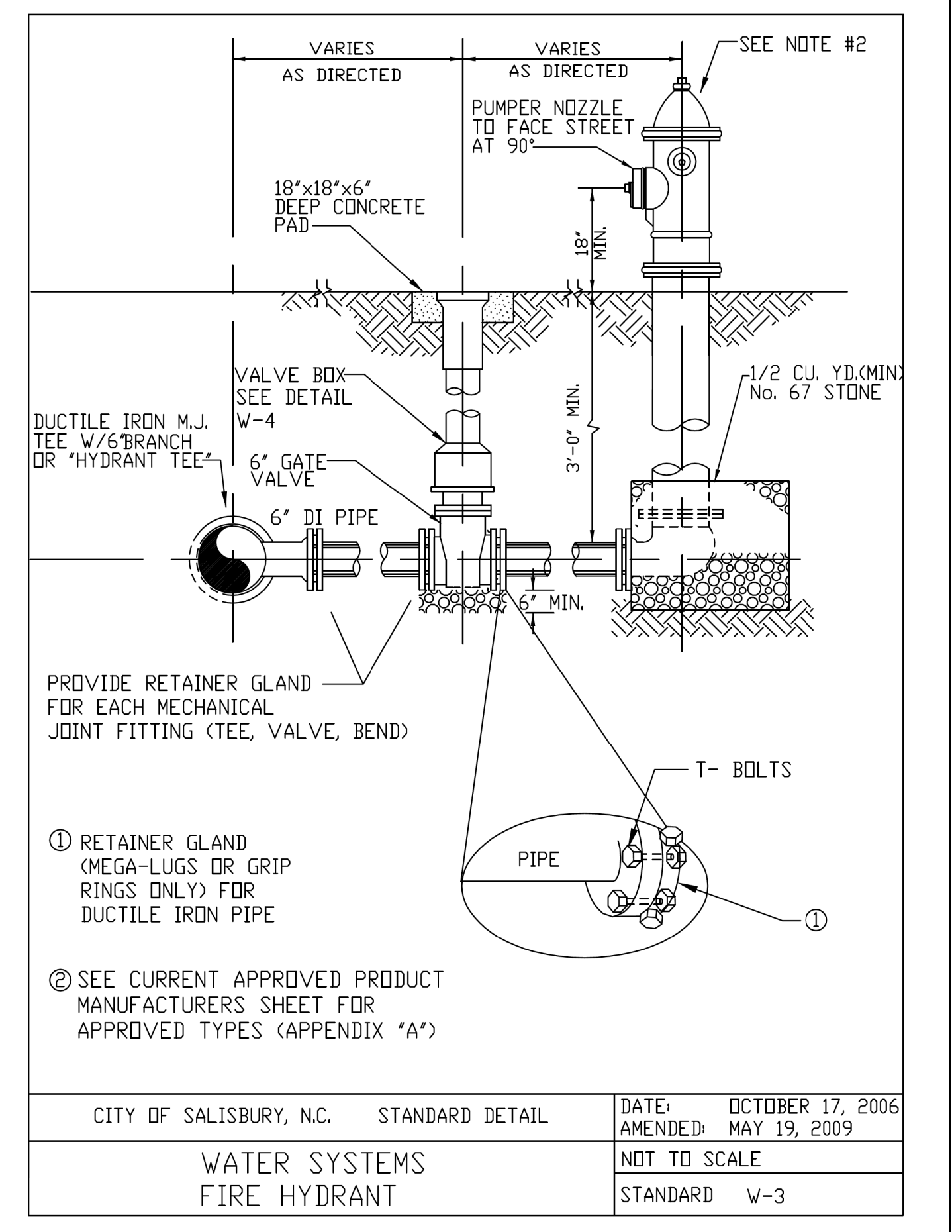



CITY OF SALISBURY, N.C. STANDARD DETAIL DATE: JANUARY 1, 1991
WATER SYSTEMS THRUST COLLAR NOT TO SCALE STANDARD W-2

UTILITY CONSTRUCTION

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PROJECT TYPICAL DETAILS



PROJECT REFERENCE NO.	SHEET NO.
U-5738	UC-3E
DESIGNED BY: WAP	
DRAWN BY: WAP	
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

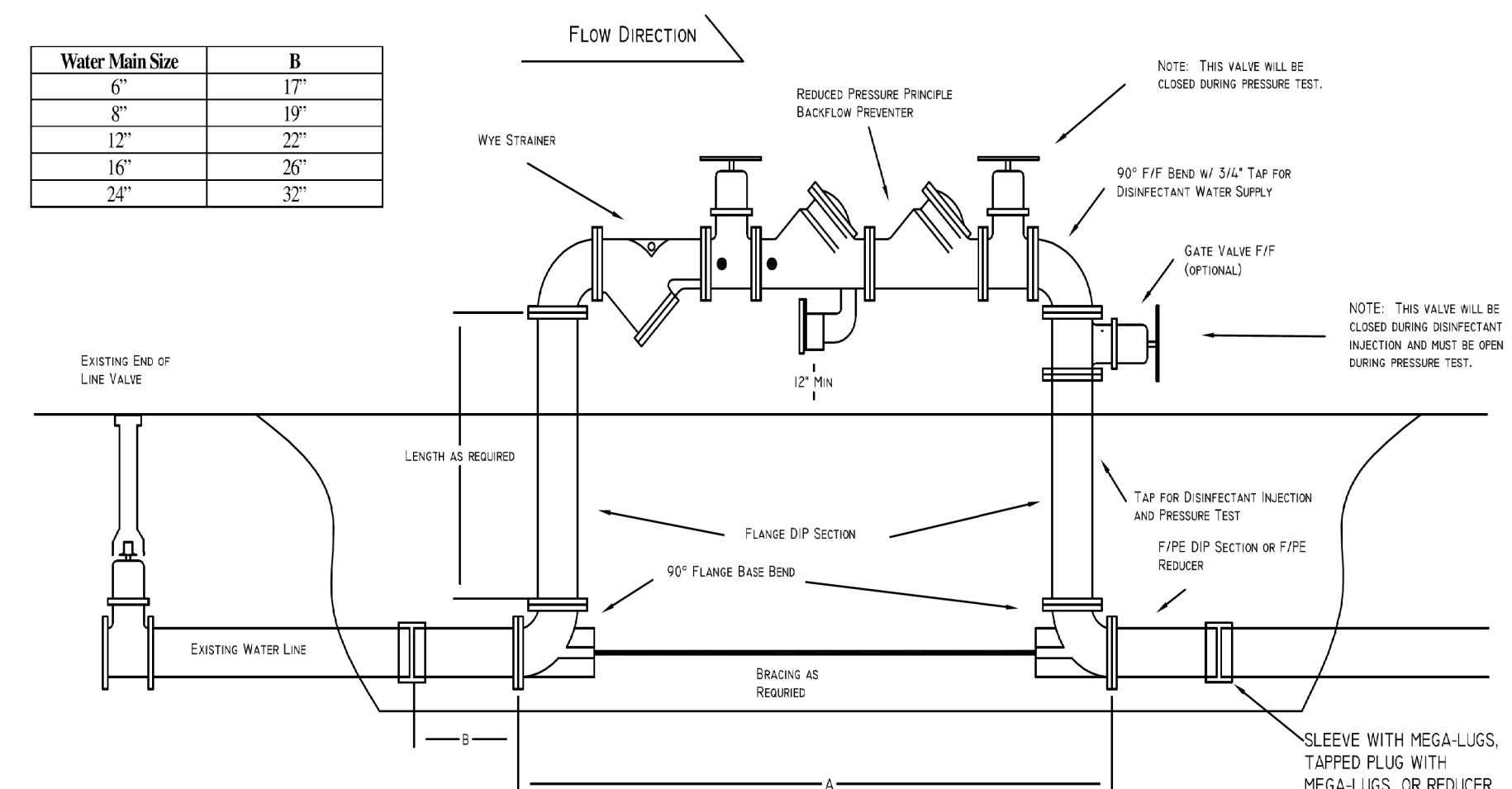
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**PROJECT
TYPICAL
DETAILS**

TEMPORARY BACKFLOW PREVENTION DEVICE (RP)

Backflow Device	A
4"	6' 3"
6"	9'
8"	11' 2"

Water Main Size	B
6"	17"
8"	19"
12"	22"
16"	26"
24"	32"



Water Main Size	Min Backflow Device Size	Min End of Line Blow-off
6" to 12"	4"	2"
16"	6"	4"
24"	8"	6"

NOTE: ALL PIPE INSTALLED BETWEEN THE EXISTING WATER LINE AND THE RP SHALL BE RESTRAINED JOINT PIPE.

TEMPORARY BACKFLOW PREVENTION DEVICE (RP) - TO BE REMOVED AFTER CONSTRUCTION IS COMPLETE (AS DIRECTED BY CITY INSPECTOR).

CITY OF SALISBURY, N.C.	STANDARD DETAIL	DATE: OCTOBER 17, 2006
		AMENDED: MAY 19, 2009
TEMPORARY BACKFLOW PREVENTION DEVICE FOR FILLING NEW LINES		NOT TO SCALE
		STANDARD W-13

5/14/99

11/1/2021 10:5738.UC.UC4.dgn

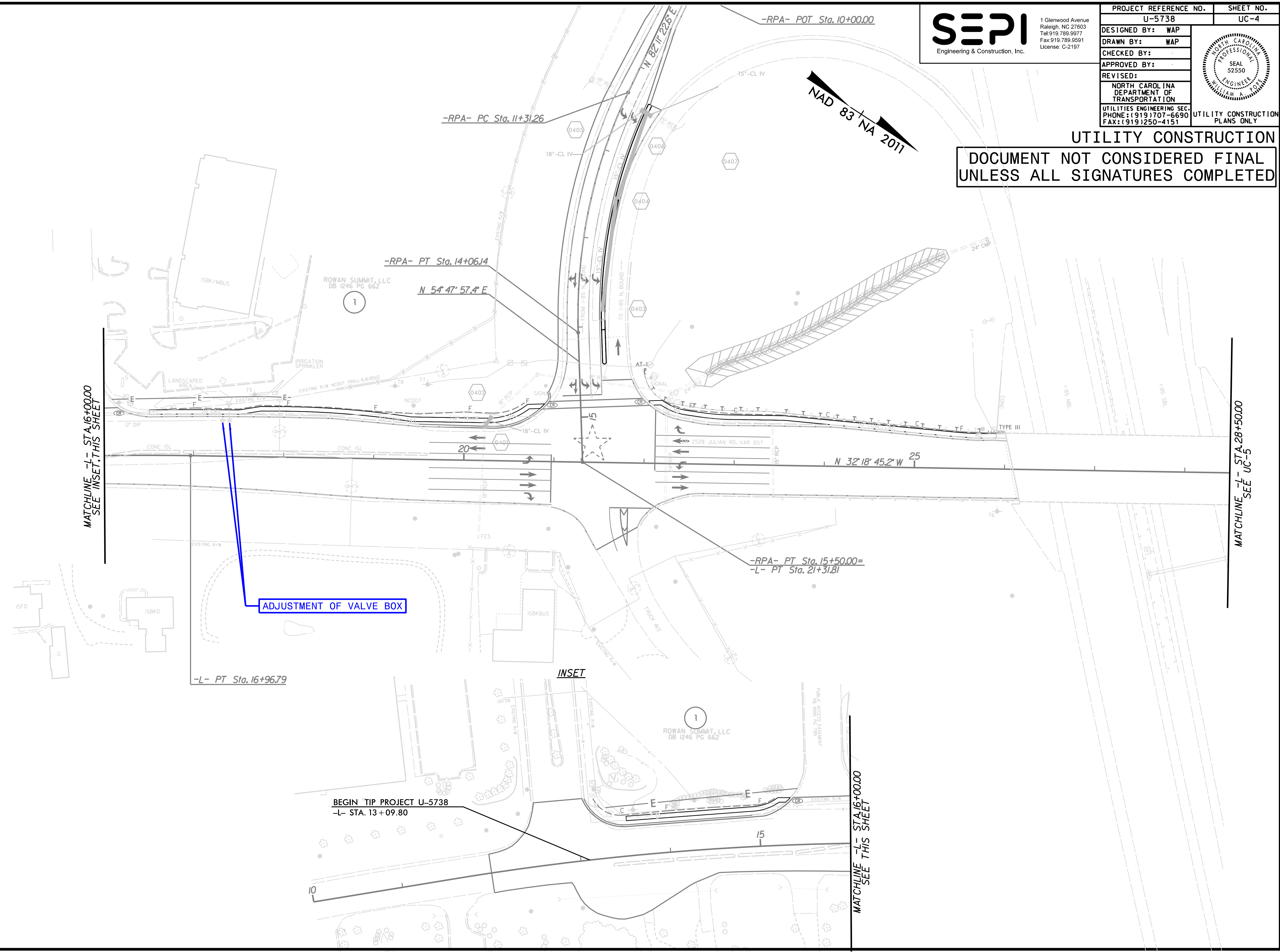


1 Glenwood Avenue
Raleigh, NC 27603
Tel: 919.789.9977
Fax: 919.789.9591
License: C-2197

PROJECT REFERENCE NO.	SHEET NO.
U-5738	UC-4
DESIGNED BY: WAP	
DRAWN BY: WAP	
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

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MATCHLINE -L- STA. 16+00.00
SEE INSET. THIS SHEET

MATCHLINE -L- STA. 28+50.00
SEE UC-5

ADJUSTMENT OF VALVE BOX

INSET

MATCHLINE -L- STA. 16+00.00
SEE THIS SHEET

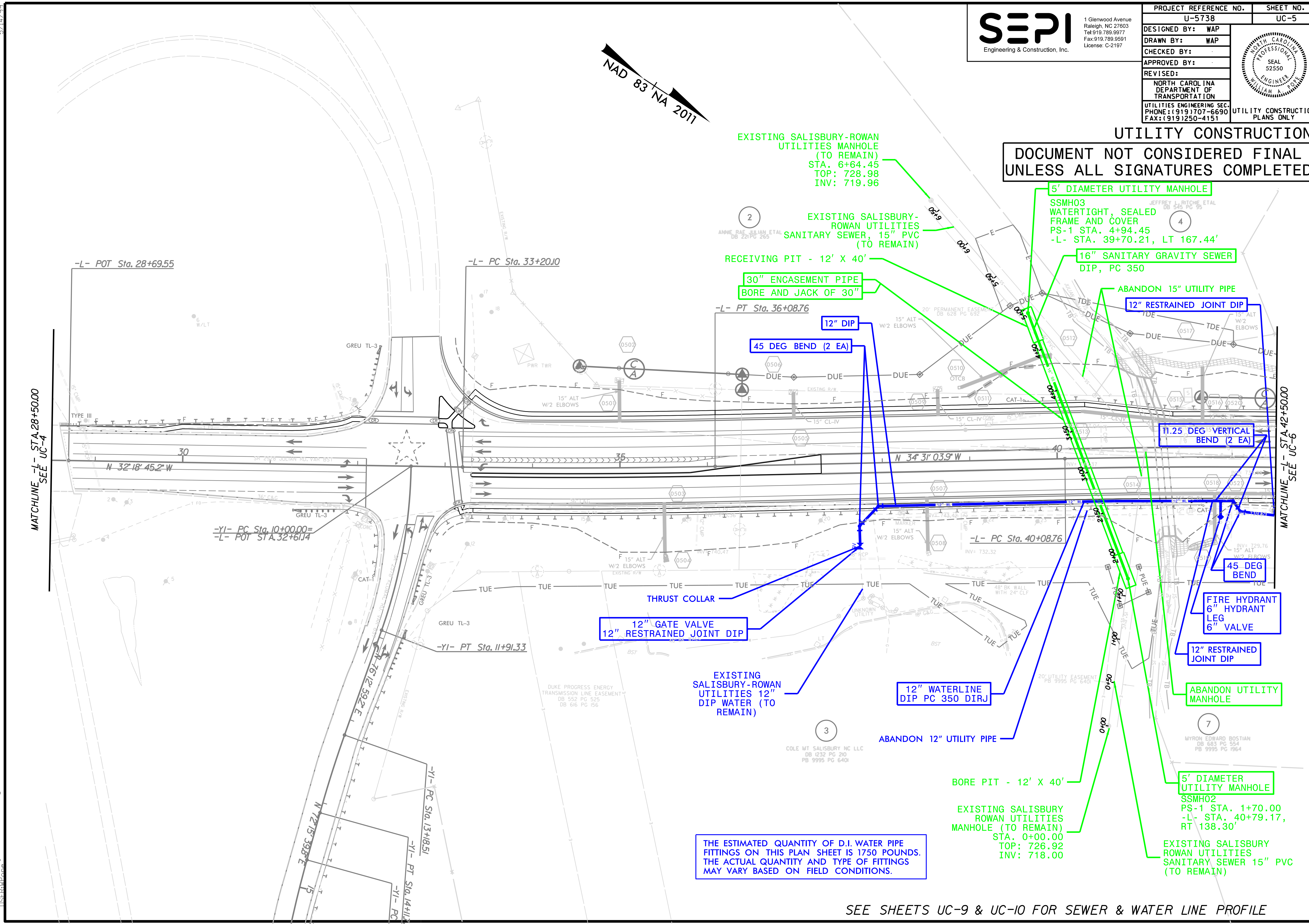
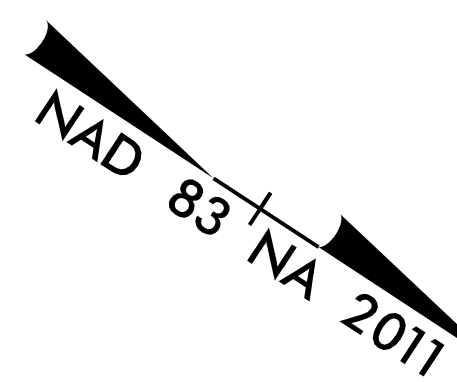


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PROJECT REFERENCE NO.	SHEET NO.
U-5738	UC-5
DESIGNED BY: WAP	
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REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITY CONSTRUCTION PLANS ONLY	

UTILITY CONSTRUCTION

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SEE SHEETS UC-9 & UC-10 FOR SEWER & WATER LINE PROFILE

5/14/2021 11:51:00 AM UC5.dgn
 MATCHLINE -L- STA. 28+50.00 SEE UC-4
 MATCHLINE -L- STA. 42+50.00 SEE UC-6

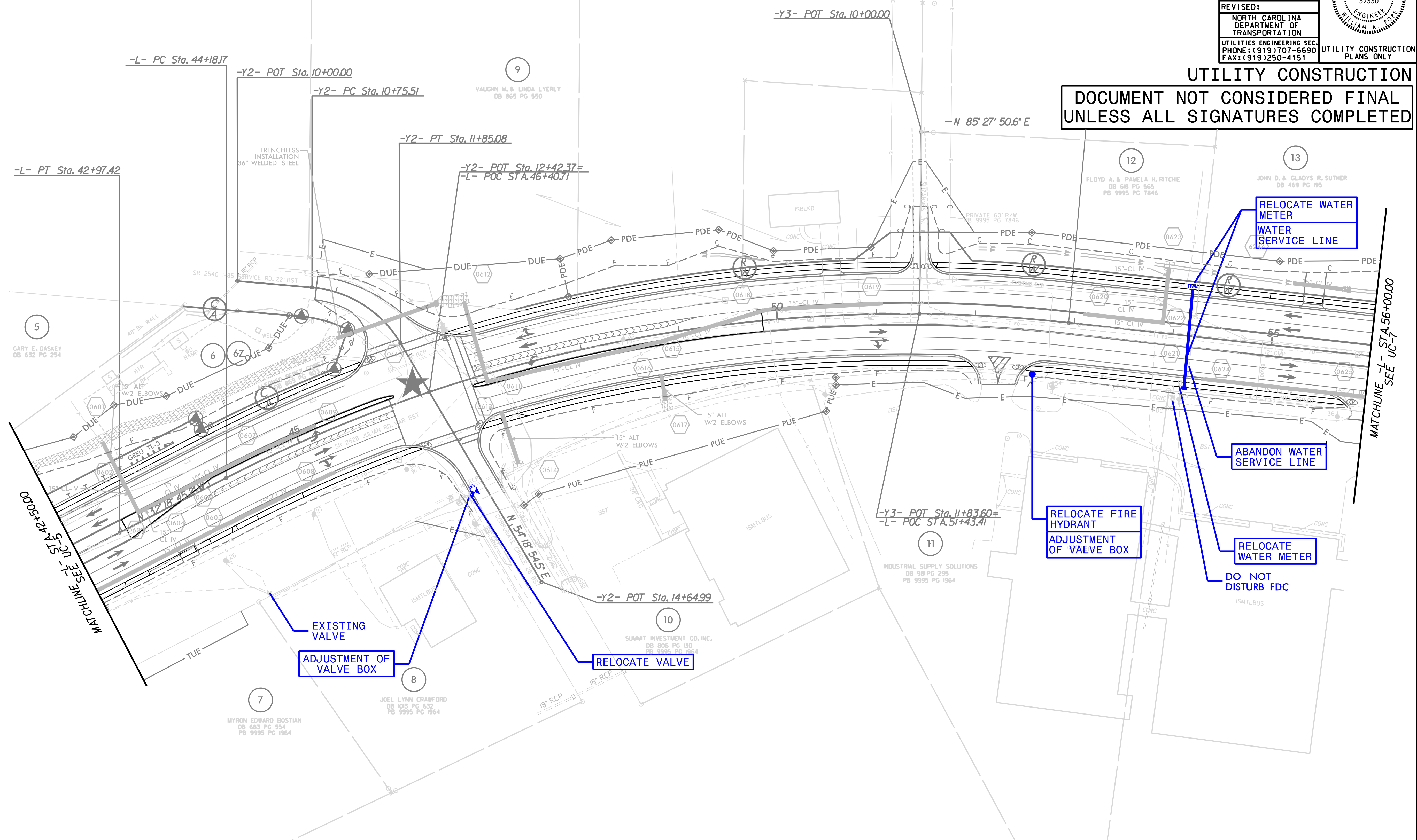
5/14/2011 11:57:38 AM UC6.dgn

NAD 83 NA 2011

SEPI
Engineering & Construction, Inc.
1 Glenwood Avenue
Raleigh, NC 27603
Tel: 919.789.9977
Fax: 919.789.9591
License: C-2197

PROJECT REFERENCE NO.	U-5738	SHEET NO.	UC-6
DESIGNED BY:	WAP		
DRAWN BY:	WAP		
CHECKED BY:			
APPROVED BY:			
REVISIONS:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		UTILITY CONSTRUCTION PLANS ONLY	
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UTILITY CONSTRUCTION
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THE ESTIMATED QUANTITY OF D.I. WATER PIPE FITTINGS ON THIS PLAN SHEET IS 535 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS MAY VARY BASED ON FIELD CONDITIONS.



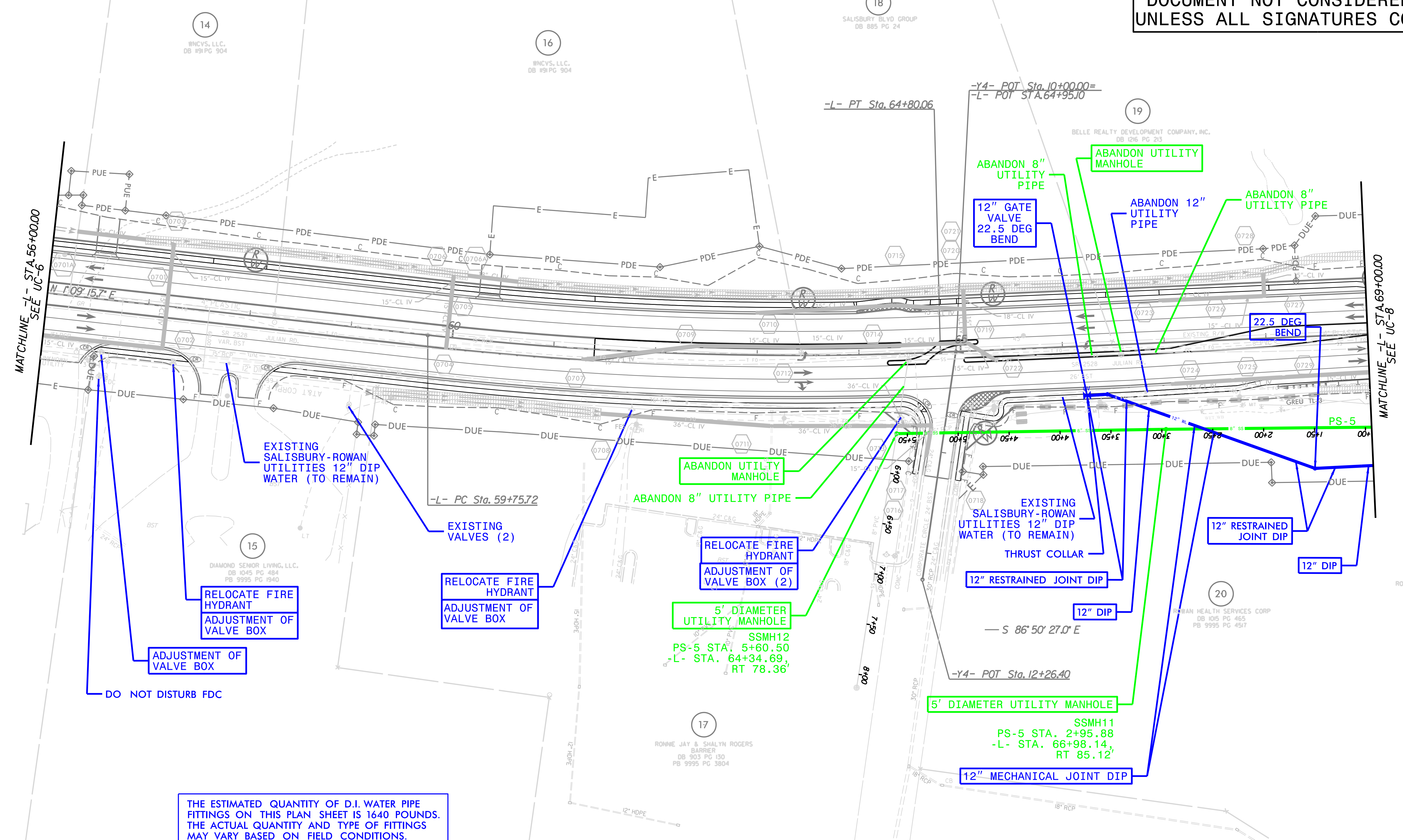
1 Glenwood Avenue
Raleigh, NC 27603
Tel: 919.789.9977
Fax: 919.789.9591
License: C-2197

PROJECT REFERENCE NO.	U-5738	SHEET NO.	UC-7
DESIGNED BY:	WAP		
DRAWN BY:	WAP		
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APPROVED BY:			
REVISED:			
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NAD 83 NA 2011

UTILITY CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



THE ESTIMATED QUANTITY OF D.I. WATER PIPE FITTINGS ON THIS PLAN SHEET IS 1640 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS MAY VARY BASED ON FIELD CONDITIONS.

SEE SHEET UC-9 & UC-10 FOR SEWER & WATER LINE PROFILE

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11/1/2001 U:\5738-UC-UC8.dgn
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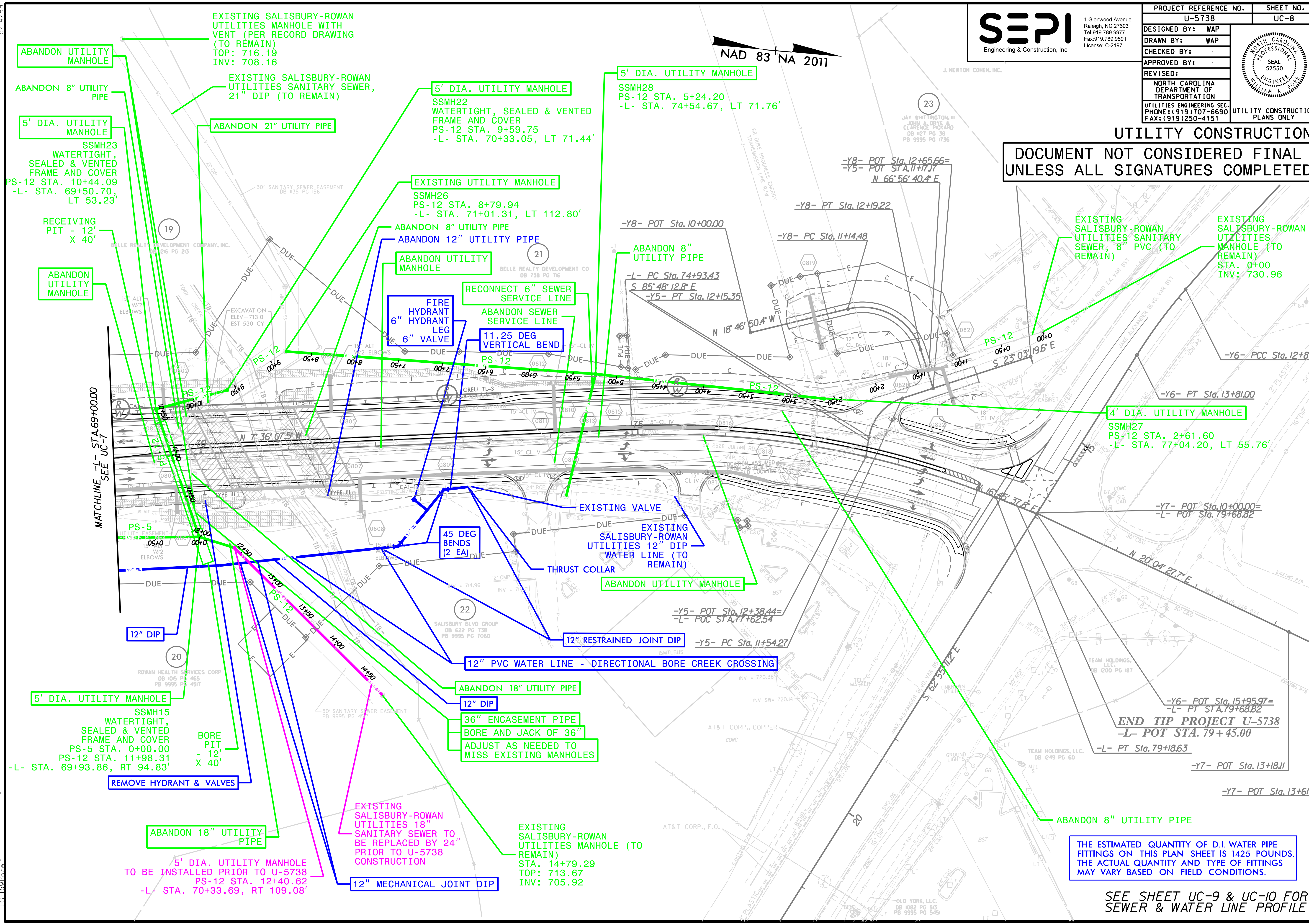


PROJECT REFERENCE NO.	U-5738
SHEET NO.	UC-8
DESIGNED BY:	WAP
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REVISED:	
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UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
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UTILITY CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



THE ESTIMATED QUANTITY OF D.I. WATER PIPE FITTINGS ON THIS PLAN SHEET IS 1425 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS MAY VARY BASED ON FIELD CONDITIONS.

SEE SHEET UC-9 & UC-10 FOR SEWER & WATER LINE PROFILE

5/14/99

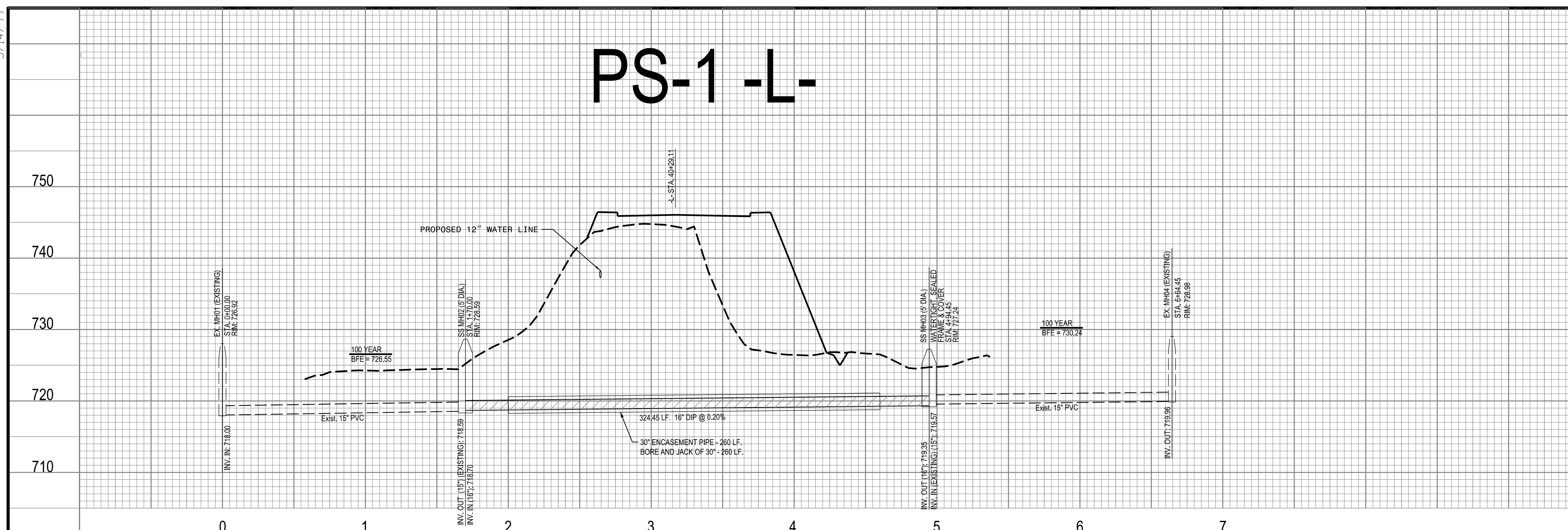


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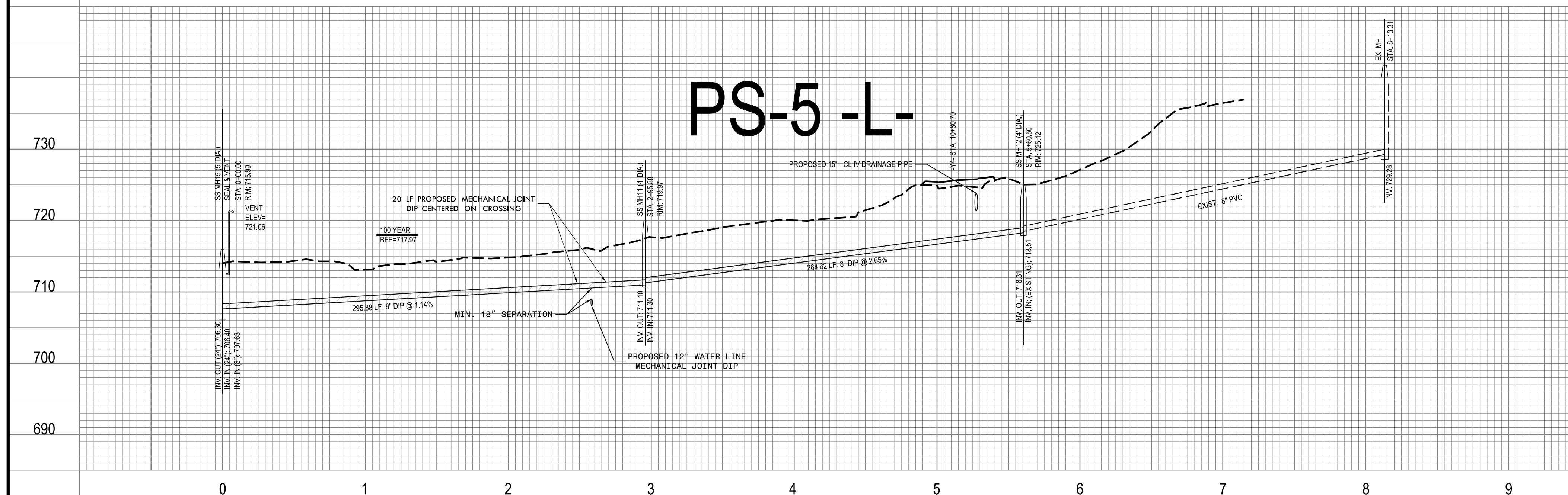
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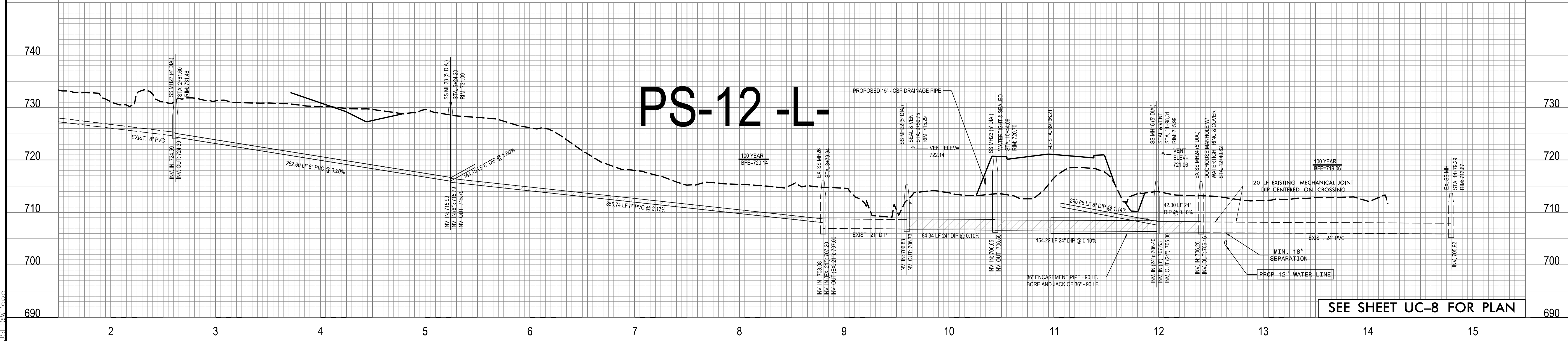
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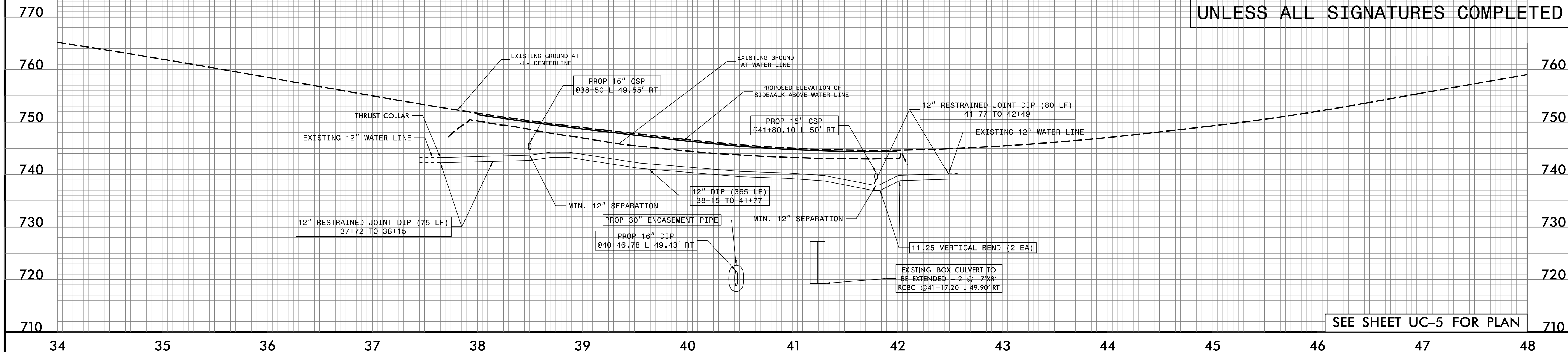


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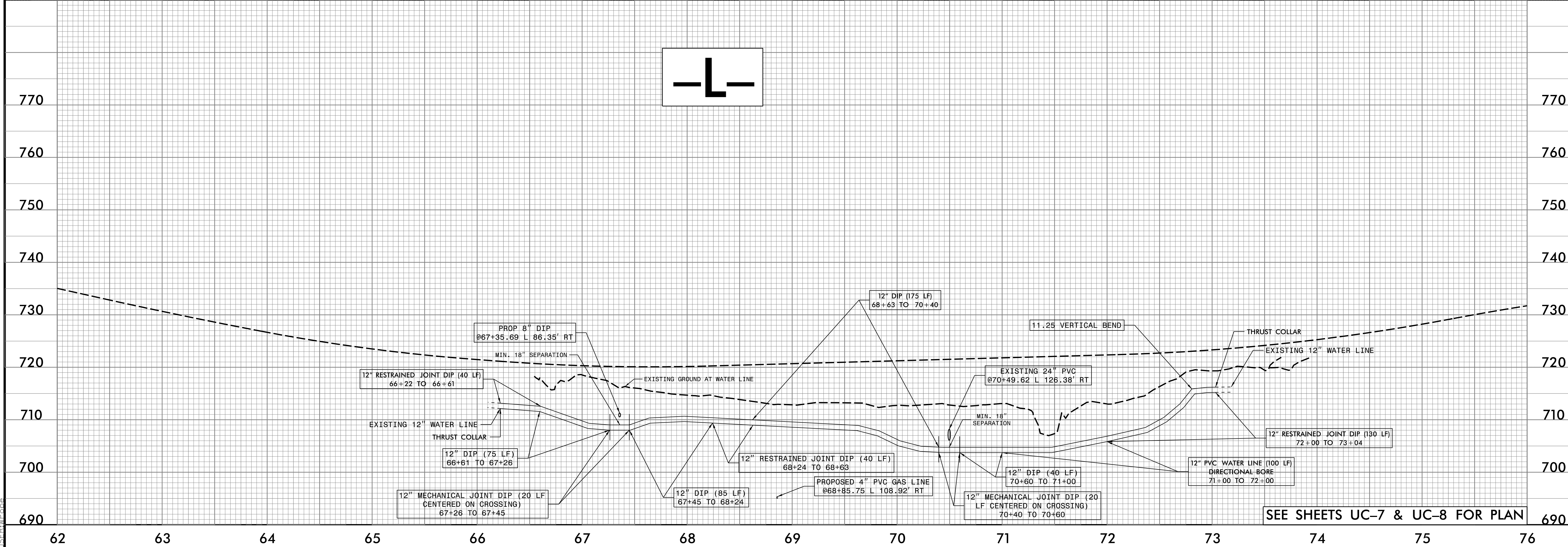
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