

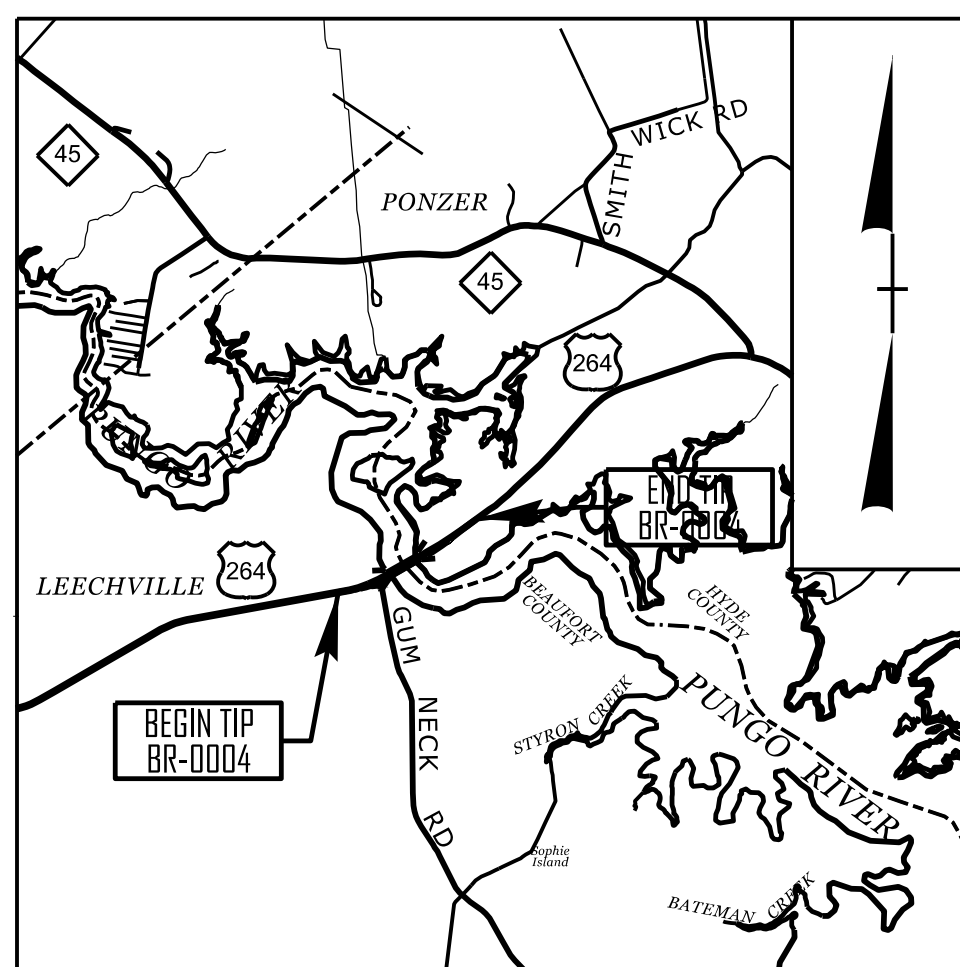
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

**UTILITY CONSTRUCTION PLANS
BEAUFORT AND HYDE COUNTY**

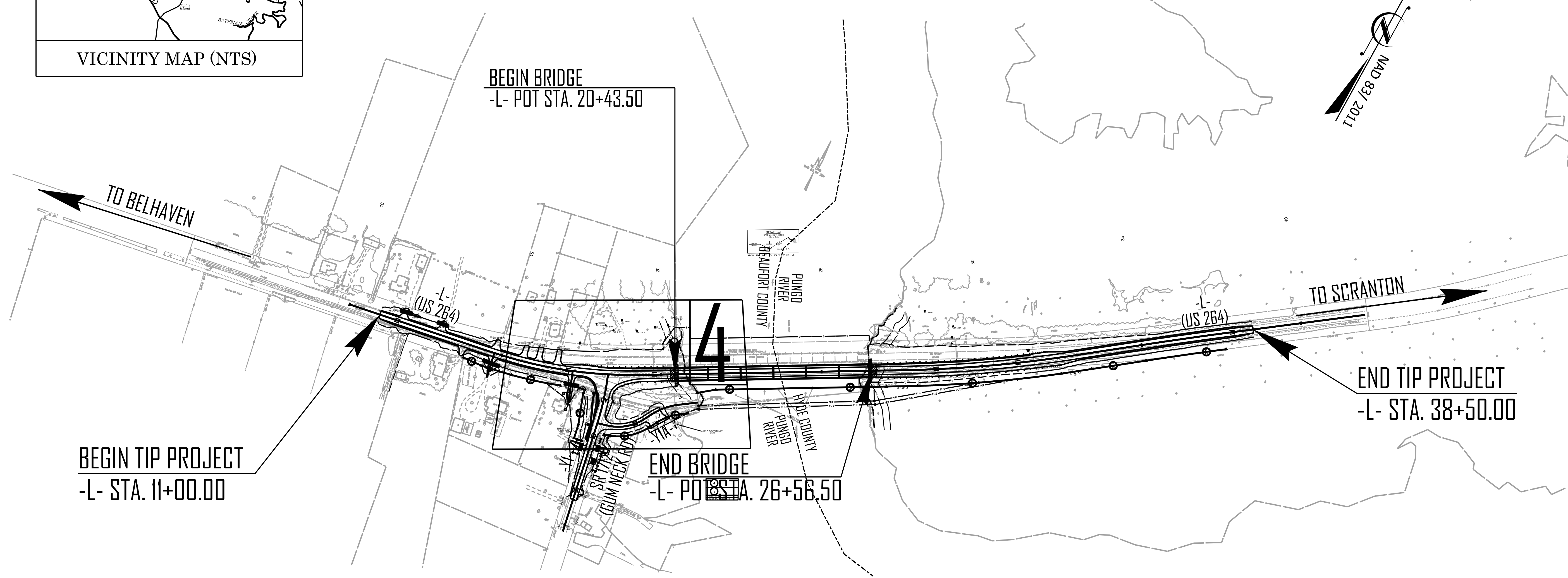
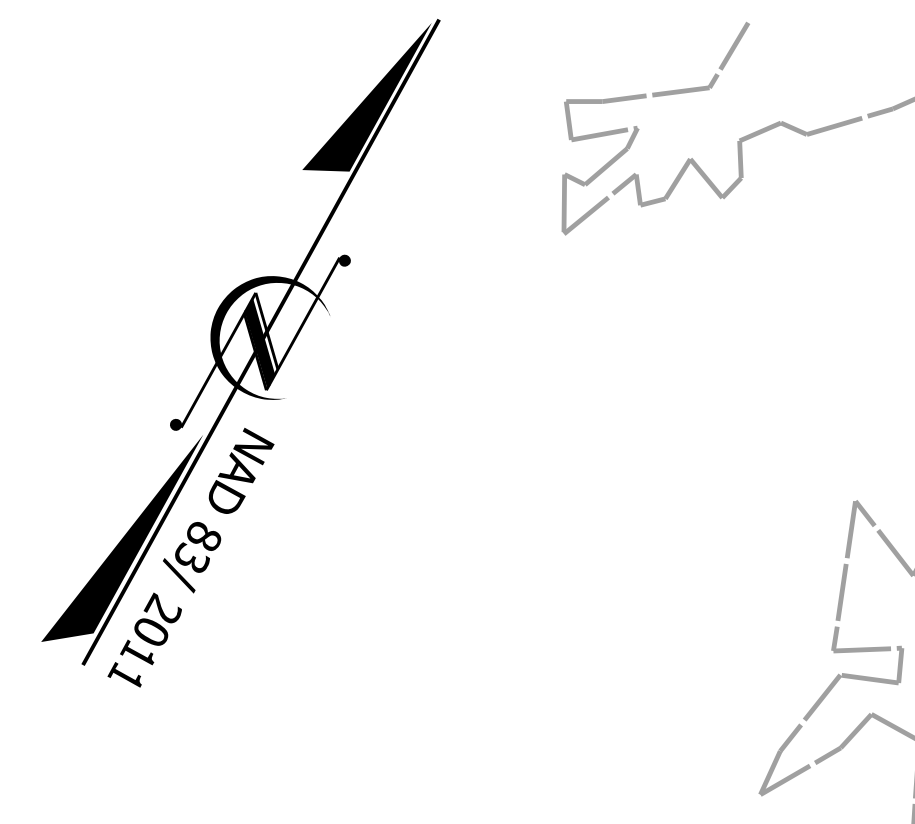
LOCATION: BRIDGE NO. 66 ON US. 264 OVER PUNGO RIVER
TYPE OF WORK: WATER LINE IMPROVEMENTS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BR-0004	UC-1	
67004.1.1	NA	PE	

See Sheet 1A For Index of Sheets



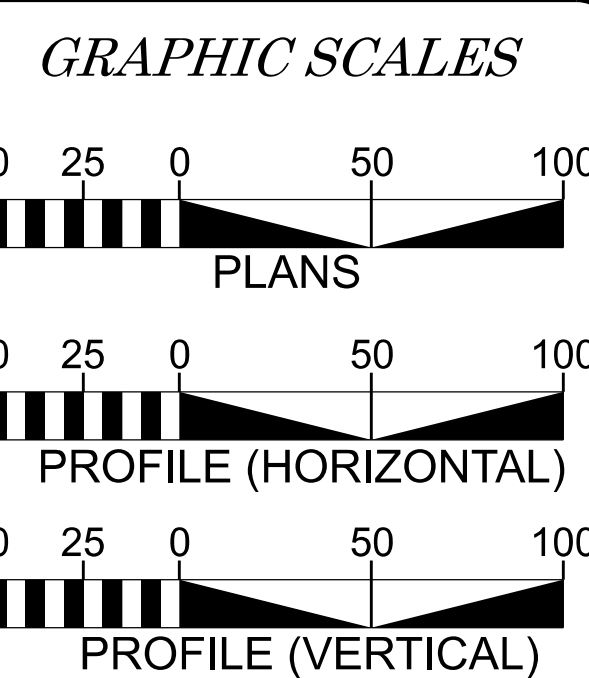
VICINITY MAP (NTS)



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

CONTRACT: BR-0004

CONTRACT: BR-0004



INDEX OF SHEETS

SHEET NO.:	DESCRIPTION:
UC-1	TITLE SHEET
UC-2	UTILITY SYMBOLOGY
UC-3	NOTES
UC-3A - UC-3B	DETAILS
UC-4	UTILITY CONSTRUCTION PLAN AND PROFILE SHEET

WATER AND SEWER OWNERS ON PROJECT

(A) WATER BEAUFORT COUNTY



PREPARED IN THE OFFICE OF

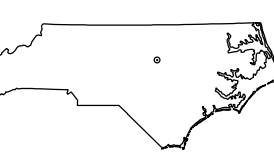
HDR HDR Engineering, Inc. of the Carolinas
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

Joe Langston, PE CONSULTANT CONTACT #1
Matthew Watt, PE CONSULTANT CONTACT #2
Katie Rougeot CONSULTANT CONTACT #3

DIVISION OF HIGHWAYS UTILITIES UNIT
1555 MAIL SERVICES CENTER
RALEIGH, NC 27699-1555
PHONE (919) 707-6690
FAX (919) 250-4151

XXXX UTILITIES REGIONAL ENGINEER
XXXX UTILITIES ENGINEER
XXXX UTILITIES AREA COORDINATOR
Brian Long SAM, LLC UTILITIES COORDINATOR

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS



REVISIONS

UTILITIES PLAN SHEET SYMBOLS

PROPOSED WATER SYMBOLS

Water Line (Sized as Shown)	
11¼ Degree Bend	
22½ Degree Bend	
45 Degree Bend	
90 Degree Bend	
Plug	
Tee	
Cross	
Reducer	
Gate Valve	
Butterfly Valve	
Tapping Valve	
Line Stop	
Line Stop with Bypass	
Blow Off	
Fire Hydrant	
Relocate Fire Hydrant	
Remove Fire Hydrant	
Water Meter	
Relocate Water Meter	
Remove Water Meter	
Water Pump Station	
RPZ Backflow Preventer	
DCV Backflow Preventer	
Relocate RPZ Backflow Preventer	
Relocate DCV Backflow Preventer	

PROPOSED SEWER SYMBOLS

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

PROPOSED MISCELLANEOUS UTILITIES SYMBOLS

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

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

EXISTING UTILITIES SYMBOLS

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

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

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

UTILITY CONSTRUCTION

GENERAL NOTES:

1. THE PROPOSED UTILITY CONSTRUCTION SHALL MEET THE APPLICABLE REQUIREMENTS OF THE NC DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" DATED JANUARY 2024 OR BEAUFORT COUNTY WATER DEPARTMENT'S (BCWD) SPECIFICATIONS WHICHEVER IS MORE STRINGENT.

2. THE EXISTING WET UTILITIES BELONG TO THE BCWD (UTILITY OWNER/OWNER). CONTACT IS ERICK JENNINGS AT 252-975-0720.

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 UTILITY OWNER. 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. CONTRACTOR SHALL DETERMINE DEPTH OF EXISTING UTILITIES (WATER AND FORCE MAIN) PRIOR TO CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING NECESSARY ADJUSTMENTS TO CONNECT TO THE EXISTING INFRASTRUCTURE PER THE TOWNS AND NCDOT CRITERIA.

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. 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.

9. PROPOSED WATER LINE SHALL BE SDR 21 CLASS 200 PVC UNLESS OTHERWISE NOTED ON THE DRAWINGS.

10. 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 RIVER, WETLANDS, OR BUFFER ZONES.

11. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR SITE SAFETY ASSOCIATED WITH THE WORK UNDER THIS PROJECT AND FOR COMPLIANCE WITH ALL FEDERAL, STATE, AND LOCAL HEALTH AND SAFETY LAWS, CODES, REGULATIONS, AND ORDINANCES INCLUDING BUT NOT LIMITED TO THOSE CURRENTLY MANDATED BY THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).

12. ALL EROSION CONTROL DEVICES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE MOST CURRENT STANDARDS OF THE LAND QUALITY SECTION OF THE NCDOT.

13. STABILIZATION STONE UNDER PIPING TO BE PLACED AS REQUIRED BY BCWD INSPECTOR WHEN CONDITIONS WARRANT.

14. AS A MINIMUM REQUIREMENT, ALL GRADED AREAS NOT UNDER PAVEMENT AND WITHIN THE RIGHT-OF-WAY AND/OR EASEMENTS SHALL BE PREPARED, FERTILIZED AND LIMED, SEEDED, AND MULCHED IMMEDIATELY UPON COMPLETION OF CONSTRUCTION AS FOLLOWS (APPLICATION RATE PER 1,000 SQUARE FEET):

15. PRIOR TO REQUESTING A FINAL INSPECTION, THE CONTRACTOR MUST SUBMIT RECORD DRAWINGS AND ENGINEER'S CERTIFICATION TO THE ENGINEERING DIVISION'S RECORD CENTER. THE OWNER MUST ALSO SUBMIT THE CONSTRUCTION CHECKLIST TO THE BCWD INSPECTOR.

16. ALL WORK MUST CARRY A ONE-YEAR WARRANTY TO COVER ALL DEFECTS IN MATERIALS AND WORKMANSHIP.

17. A BCWD INSPECTOR SHALL BE PRESENT WHEN MAKING OR TERMINATING WATER AND SEWER CONNECTIONS INTO NEW OR EXISTING WATER AND SEWER LINES.

18. CROSS-CONNECTION CONTROL PROTECTION DEVICES ARE REQUIRED BASED ON DEGREE OF HEALTH HAZARD INVOLVED AS LISTED IN APPENDIX B OF THE RULES GOVERNING PUBLIC WATER SYSTEMS IN NORTH CAROLINA. THESE GUIDELINES ARE THE MINIMUM REQUIREMENTS. THE DEVICES SHALL MEET AMERICAN SOCIETY OF SANITARY ENGINEERING (ASSE) STANDARDS OR BE ON THE UNIVERSITY OF SOUTHERN CALIFORNIA APPROVAL LIST. THE DEVICES SHALL BE INSTALLED AND TESTED (BOTH INITIAL AND PERIODIC TESTING THEREAFTER) IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS OR THE LOCAL CROSS-CONNECTION CONTROL PROGRAM, WHICHEVER IS MORE STRINGENT.

PROJECT SPECIFIC NOTES:

1. REMOVAL OF EXCAVATED MATERIALS AND DAILY CLEANUP OPERATIONS SHALL BE PERFORMED IN COMPLIANCE WITH THE SPECIFICATIONS AND TO THE SATISFACTION OF THE OWNER/ENGINEER, AND/OR NCDOT.

2. ALL DEBRIS SHALL BE REMOVED FROM THE SITE.

3. ALL TREE PROTECTION AND EROSION AND SEDIMENTATION CONTROLS SHALL BE IMPLEMENTED BEFORE CONSTRUCTION COMMENCES AND SHALL NOT BE REMOVED UNTIL RE-VEGETATION HAS BEEN ESTABLISHED.

4. ANY AGREEMENT BETWEEN THE CONTRACTOR AND PROPERTY OWNERS SHALL BE MADE IN WRITING AND COPIED TO THE OWNER.

5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING THE ENGINEER WITH A SET OF SURVEY RECORD (AS-BUILT) DRAWINGS PREPARED BY A NORTH CAROLINA REGISTERED LAND SURVEYOR CERTIFYING THE ACCURACY OF THE SURVEY HORIZONTAL AND VERTICAL LOCATIONS TO ONE TENTH (0.10) OF A FOOT. SURVEY SHALL BE TIED TO THE NORTH CAROLINA STATE PLANE COORDINATE SYSTEM (NAD83 FEET) HORIZONTALLY, AND ELEVATIONS SHALL BE NORTH AMERICAN VERTICAL DATUM (NAVD83). SURVEY POINT INFORMATION SHALL BE PROVIDED IN AN ELECTRONIC FORMAT FILE OR AN ASCII POINT TEXT FILE [X-Y-Z COORDINATES].

THESE DRAWINGS SHALL AT A MINIMUM SHOW THE FINAL ELEVATIONS AND HORIZONTAL LOCATIONS FOR THE FOLLOWING:

ALL RELOCATIONS, INCLUDING VAULTS, BELOW GRADE FITTINGS, VALVES, FIRE HYDRANTS AND OTHER APPURTENANCES ALONG THE WATER LINE ALIGNMENT. CONTRACTOR SHALL PROVIDE THE ENGINEER WITH A LETTER CERTIFYING TO THEIR COMPLIANCE WITH THE CONTRACT DRAWINGS.

6. CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION STAKING.

7. BORE PITS, TRENCHES AND ALL OTHER EXCAVATIONS WHERE SLOPE IS 1:1 OR STEEPER FROM EDGE OF ROADWAY MUST INCLUDE POSITIVE SHORING MEETING NCDOT AND OSHA REQUIREMENTS. ALL SHORING SYSTEMS MUST BE DESIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED IN NORTH CAROLINA.

8. NOT ALL TREES OR VEGETATION ARE SHOWN ON DRAWINGS. DO NOT REMOVE VEGETATION OUTSIDE LIMITS OF DISTURBANCE. ANY TREES SCARRED DURING CONSTRUCTION SHALL HAVE THE SCARS TRIMMED AND PAINTED WITH ASPHALT-BASE TREE PAINT.

9. BASE TOPOGRAPHIC SURVEY AND SUE SERVICES PROVIDED BY NCDOT.

10. BASE GEOTECHNICAL INVESTIGATION SERVICES PROVIDED BY NCDOT.

11. RELOCATE ALL MAIL BOXES WITHIN LIMITS OF DISTURBANCE AS REQUIRED BY SECTION 107-12 OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES. COORDINATE THIS WORK WITH THE U.S. POSTAL SERVICE.

12. REMOVE AND RESET FENCES AS NOTED ON THE PLANS AND/OR AS DIRECTED BY THE ENGINEER.

13. PROTECT ALL TREES AND SHRUBS OUTSIDE OF CUT/FILL LINES. IN ADDITION TO THOSE THAT RECEIVE TREE/SHRUB PROTECTION BARRIERS. THE CONTRACTOR IS ALSO REQUESTED TO SAVE OTHER EXISTING TREES AND SHRUBS AS DIRECTED BY THE ENGINEER. WHEN ROOT PRUNING IS NECESSARY, CUT ROOTS CLEANLY USING A DISC TRENCHER. ALL TREE PROTECTION AND EROSION AND SEDIMENTATION CONTROLS SHALL BE IMPLEMENTED BEFORE CONSTRUCTION COMMENCES AND SHALL NOT BE REMOVED UNTIL RE-VEGETATION HAS BEEN ESTABLISHED.

14. SAWCUT EXISTING ASPHALT AND/OR CONCRETE SURFACES PRIOR TO REMOVAL UNLESS OTHERWISE DIRECTED BY THE ENGINEER. SAW CUT WIDTH SHALL BE 1 FOOT MINIMUM FROM THE EXISTING EDGE OF PAVEMENT. SAW CUT PAVEMENT SHALL BE REPLACED AS WELL AS ADDITIONAL PAVEMENT REQUIRED TO TIE-IN TO FACE OF CURB AND GUTTER.

15. REPLACE ANY DISTURBED PAVEMENT FROM FINISHED GRADE TO THE SUB-GRADE. THE CONTRACTOR WILL CONSTRUCT THE BASE AND INTERMEDIATE COURSES IN ACCORDANCE WITH THE TYPICAL PAVEMENT SECTION. THE CONTRACTOR SHALL PROVIDE TRANSITIONS (RAMPED ASPHALT) TO THE FINISH GRADE. TO PREVENT ABRUPT CHANGES IN THE RIDING SURFACE, IN CASE THE PLANTS ARE CLOSED AND ASPHALT IS UNAVAILABLE FOR THE FINAL SURFACE COURSE UNTIL LATE WINTER/EARLY SPRING. CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL SURFACE COURSE.

16. TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE PLANS AND NOTES HEREIN, CITY CRITERIA INCLUDING NCDOT STANDARDS, AND THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

17. CONTRACTOR SHALL INCLUDE REPLACEMENT OF DRIVEWAYS IN THE LIMITS OF DISTURBANCE BACK TO EDGE OF RIGHT-OF-WAY.

18. CONTRACTOR SHALL USE ADEQUATE SHORING METHODS TO ENSURE: A. COMPLIANCE WITH OSHA REGULATIONS. B. PROTECTION OF EXISTING PAVEMENT AND ROAD SHOULDERS. C. CONSTRUCTION ACTIVITIES ARE CONFINED TO RIGHTS-OF-WAY OR EASEMENTS AS INDICATED.

19. CONTRACTOR TO REPAIR/REPLACE ALL MAINTAINED PAVEMENT DAMAGED BY CONSTRUCTION ACTIVITIES TO SATISFACTION OF NCDOT AND BCWD.

20. THE CONTRACTOR SHALL RECONSTRUCT ALL ROAD SHOULDERS, DRAINAGE DITCHES AND SWALES DISTURBED BY CONSTRUCTION ACTIVITIES TO THEIR ORIGINAL GRADE AND LOCATION.

21. TRAFFIC CONTROL SHALL BE MAINTAINED IN ACCORDANCE WITH NCDOT SPECIFICATIONS AND REQUIREMENTS.

22. ALL HOLES, TRENCHES, AND OTHER HAZARDOUS AREAS SHALL BE ADEQUATELY PROTECTED BY BARRICADES, LIGHTS OR OTHER PROTECTIVE DEVICES.

23. TAKE PROPER PRECAUTIONS NOT TO DISTURB EXISTING PROPERTY CORNERS. ANY NECESSARY REMOVAL AND RESETTING OF PROPERTY IRONS SHALL BE DONE BY A REGISTERED LAND SURVEYOR.

UTILITIES

1. PRIOR TO CONSTRUCTION, NOTIFY ALL UTILITY OWNERS WHOSE FACILITIES MAY BE AFFECTED TO DETERMINE UTILITY LOCATIONS. THE CONTRACTOR SHALL PROTECT ALL UTILITIES FROM DAMAGE CAUSED BY HIS OPERATIONS OR THOSE OF HIS AGENTS. THE CONTRACTOR SHALL HOLD THE BCWD HARMLESS FOR ANY THIRD-PARTY INCONVENIENCE CREATED BY WORK OF HIS OWN FORCES OR THAT OF HIS AGENTS.

2. IN THE EVENT OF DAMAGE TO EXISTING UTILITIES, CONTRACTOR SHALL STOP WORK IMMEDIATELY, TAKE NECESSARY PRECAUTIONS TO PREVENT INJURY OR FURTHER DAMAGE, AND NOTIFY PROPER AUTHORITIES. CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING/REPAIRING ALL EXISTING STRUCTURES, CONDUITS, OR OTHER UTILITIES DAMAGED BY CONTRACTOR'S OPERATIONS.

-FOR UTILITY LOCATE MEMBERS, CALL NORTH CAROLINA ONE-CALL @ 1-800-632-4949.
-FOR LOCATES OF UTILITIES NOT MEMBERS OF NORTH CAROLINA ONE-CALL CONTACT THE SPECIFIC UTILITY COMPANY.

3. CONTRACTOR SHALL ANTICIPATE HAND DIGGING AROUND EXISTING WATER SERVICES, SANITARY SEWER LATERALS, AND OTHER UTILITIES.

4. FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS. SUBMITTED SEPARATELY.

5. FOR TRAFFIC CONTROL PLANS, SEE TRANSPORTATION MANAGEMENT PLANS. SUBMITTED SEPARATELY.

6. WATER DISTRIBUTION SHALL BE INSTALLED AT A MINIMUM OF 3' DEEP.

7. CONTRACTOR SHALL COORDINATE WATER AND SEWER SERVICE CONNECTIONS AND ANY SERVICE SHUT DOWNS AND PROVIDE 24 HOURS OF NOTICE TO BCWD.

8. PLUG ALL PIPE OPENINGS AND FILL ANY EXPOSED TRENCHES AT THE END OF THE DAY.

WATER AND SEWER

1. ALL MATERIAL & CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH BCWD OR NCDOT DESIGN STANDARDS, DETAILS & SPECIFICATIONS, LATEST EDITION.

2. UTILITY SEPARATION REQUIREMENTS:

a) A DISTANCE OF 100' SHALL BE MAINTAINED BETWEEN SANITARY SEWER & ANY PRIVATE OR PUBLIC WATER SUPPLY SOURCE SUCH AS AN IMPOUNDED RESERVIOR USED AS A SOURCE OF DRINKING WATER. IF ADEQUATE LATERAL SEPARATION CANNOT BE ACHIEVED, FERROUS SANITARY SEWER PIPE SHALL BE SPECIFIED & INSTALLED TO WATERLINE SPECIFICATIONS. HOWEVER, THE MINIMUM SEPARATION SHALL NOT BE LESS THAN 25' FROM A PRIVATE WELL OR 50' FROM A PUBLIC WELL.

b) WHEN INSTALLING WATER AND/OR SEWER MAINS, THE HORIZONTAL SEPARATION BETWEEN UTILITIES SHALL BE 10'. IF THIS SEPARATION CANNOT BE MAINTAINED DUE TO EXISTING CONDITIONS, THE VARIATION ALLOWED IS THE WATER MAIN IN A SEPARATE TRENCH WITH THE ELEVATION OF THE WATER MAIN AT LEAST 18" ABOVE THE TOP OF THE SEWER & MUST BE APPROVED BY BCWD. ALL DISTANCES ARE MEASURED FROM OUTSIDE DIAMETER TO OUTSIDE DIAMETER.

c) WHERE IT IS IMPOSSIBLE TO OBTAIN PROPER SEPARATION, OR ANYTIME A SANITARY SEWER PASSES OVER A WATER MAIN, DIP MATERIALS OR STEEL ENCASEMENT EXTENDED 10' ON EACH SIDE OF CROSSING MUST BE SPECIFIED & INSTALLED TO WATERLINE SPECIFICATIONS.

d) 5.0' MINIMUM HORIZONTAL SEPARATION IS REQUIRED BETWEEN ALL SANITARY SEWER & STORM SEWER FACILITIES. UNLESS DIP MATERIAL IS SPECIFIED FOR SANITARY SEWER.

e) MAINTAIN 18" MIN. VERTICAL SEPARATION AT ALL WATERMAIN & RCP STORM DRAIN CROSSINGS. UNLESS 18" MIN. VERTICAL SEPARATION AT ALL SANITARY SEWER & RCP STORM DRAIN CROSSINGS. WHERE ADEQUATE SEPARATIONS CANNOT BE ACHIEVED, SPECIFY DIP MATERIALS & A CONCRETE CRADLE HAVING 6" MIN. CLEARANCE.

f) ALL OTHER UNDERGROUND UTILITIES SHALL CROSS WATER & SEWER FACILITIES WITH 18" MIN. VERTICAL SEPARATION REQUIRED.

3. ANY NECESSARY FIELD REVISIONS ARE SUBJECT TO REVIEW & APPROVAL OF AN AMENDED PLAN AND/OR BCWD, PRIOR TO CONSTRUCTION.

4. CONTRACTOR SHALL MAINTAIN CONTINUOUS WATER & SEWER SERVICE TO EXISTING RESIDENCES & BUSINESSES THROUGHOUT CONSTRUCTION OF PROJECT. ANY NECESSARY SERVICE INTERRUPTIONS SHALL BE PRECEDED BY A 24 HOUR ADVANCE NOTICE TO BCWD.

5. 3.0' MINIMUM COVER IS REQUIRED ON ALL WATER MAINS.

6. PRESSURE REDUCING VALVES ARE REQUIRED ON ALL WATER SERVICES EXCEEDING 80 PSI; BACKWATER VALVES ARE REQUIRED ON ALL SANITARY SEWER SERVICES HAVING BUILDING DRAINS LOWER THAN 1.0' ABOVE THE NEXT UPSTREAM MANHOLE.

7. ALL ENVIRONMENTAL PERMITS APPLICABLE TO THE PROJECT MUST BE OBTAINED FROM NCDWQ, USACE &/OR FEMA FOR ANY RIPARIAN BUFFER, WETLAND &/OR FLOODPLAIN IMPACTS (RESPECTIVELY) PRIOR TO CONSTRUCTION.

8. NCDOT/ RAILROAD ENCROACHMENT AGREEMENTS ARE REQUIRED FOR ANY UTILITY WORK (INCLUDING MAIN EXTENSIONS & SERVICE TAPS) WITHIN STATE OR RAILROAD ROW PRIOR TO CONSTRUCTION.

9. CROSS-CONNECTION CONTROL PROTECTION DEVICES ARE REQUIRED BASED ON DEGREE OF HEALTH HAZARD INVOLVED AS LISTED IN APPENDIX-B OF THE RULES GOVERNING PUBLIC WATER SYSTEMS IN NORTH CAROLINA. THESE GUIDELINES ARE THE MINIMUM REQUIREMENTS. THE DEVICES SHALL MEET AMERICAN SOCIETY OF SANITARY ENGINEERING (ASSE) STANDARDS OR BE THE UNIVERSITY OF SOUTHERN CALIFORNIA APPROVAL LIST. THE DEVICES SHALL BE INSTALLED AND TESTED (BOTH INITIAL AND PERIODIC TESTING THEREAFTER) IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS OR THE LOCAL CROSS-CONNECTION CONTROL PROGRAM, WHICHEVER IS MORE STRINGENT.

WATER

1. CONTRACTOR SHALL SCHEDULE A WATER MAIN SHUT DOWN TO CUT IN BENDS AND/OR FITTINGS FOR THE RELOCATED WATER MAIN. ALL SCHEDULING, PERMITS, FEES AND OTHER WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

2. CONTRACTOR SHALL ABANDON EXISTING WATER MAIN IN PLACE EXCEPT WHERE REMOVAL IS REQUIRED FOR PROPOSED WORK OR WHERE NOTED. WITHIN THE RIGHT-OF-WAY OF NCDOT MAINTAINED ROADS, CONTRACTOR SHALL FILL ABANDONED WATER MAINS WITH FLOWABLE FILL. ABANDON EXISTING WATER MAINS PER NCDOT 2024 STANDARD SPECIFICATION SECTION 1530.

3. EXISTING WATER MAIN SHALL REMAIN IN SERVICE UNTIL PROPOSED WATER MAIN HAS BEEN TESTED, DISINFECTED AND APPROVED.

4. EXISTING WATER SERVICES AND FIRE HYDRANTS SHALL BE CONNECTED TO PROPOSED WATER MAIN AFTER PROPOSED WATER MAIN HAS BEEN TESTED, DISINFECTED AND APPROVED.

5. FOR ALL WATER SERVICES TO BE CONNECTED TO THE PROPOSED WATER MAIN, CONTRACTOR SHALL REPLACE ALL WATER SERVICE PIPING IN POOR CONDITION, AS DIRECTED BY THE ENGINEER. TO DETERMINE WATER SERVICE PIPING MATERIAL AND CONDITION, CONTRACTOR SHALL EXPOSE, IN THE PRESENCE OF THE ENGINEER, EACH WATER SERVICE AT THE TIE TO THE EXISTING MAIN, APPROXIMATELY TWO FEET FROM THE METER ON THE WATER MAIN SIDE, AND APPROXIMATELY TWO FEET FROM THE METER BOXES ON THE SERVICE SIDE.

6. WATER VALVES ABANDONED IN PLACE SHALL BE ABANDONED IN THE CLOSED POSITION.

7. PROVIDE GRIP RINGS AT ALL WATER MAIN BENDS, TEES, AND CAPS UNLESS OTHERWISE NOTED.

8. FOR ALL WATER SERVICES DISTURBED BY CONSTRUCTION, BOTH INACTIVE AND ACTIVE, RECONNECT.

9. TRACER WIRE MUST BE ATTACHED TO ALL NEWLY INSTALLED PIPE AS REQUIRED BY NC GENERAL STATUTES CHAPTER 87-121G. USE # 12 AWG SOLID-COPPER WIRE WITH BLUE INSULATION FOR TRACER WIRE. BEAUFORT COUNTY WILL CONDUCT A CONTINUITY TEST ON ALL TRACER WIRE AFTER INSTALLATION.

10. BEAUFORT COUNTY WILL COLLECT ALL BACTERIOLOGICAL SAMPLES FOR RELOCATION PROJECTS. A BEAUFORT COUNTY REPRESENTATIVE SHALL BE PRESENT FOR ALL PRESSURE TEST, CHLORINATION, AND FLUSHING OF ALL NEW WATER LINES.

11. BEAUFORT COUNTY SHALL OPEN AND CLOSE ALL VALVES ON THE EXISTING WATER LINE.

BR-0004

UC-3

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WARE COUNTY



UTILITY DESIGN UNIT

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

UTILITIES
ENGINEER

DESIGNED BY:

DRAWN BY: CGM

CHECKED BY:

APPROVED BY:

REVISED:

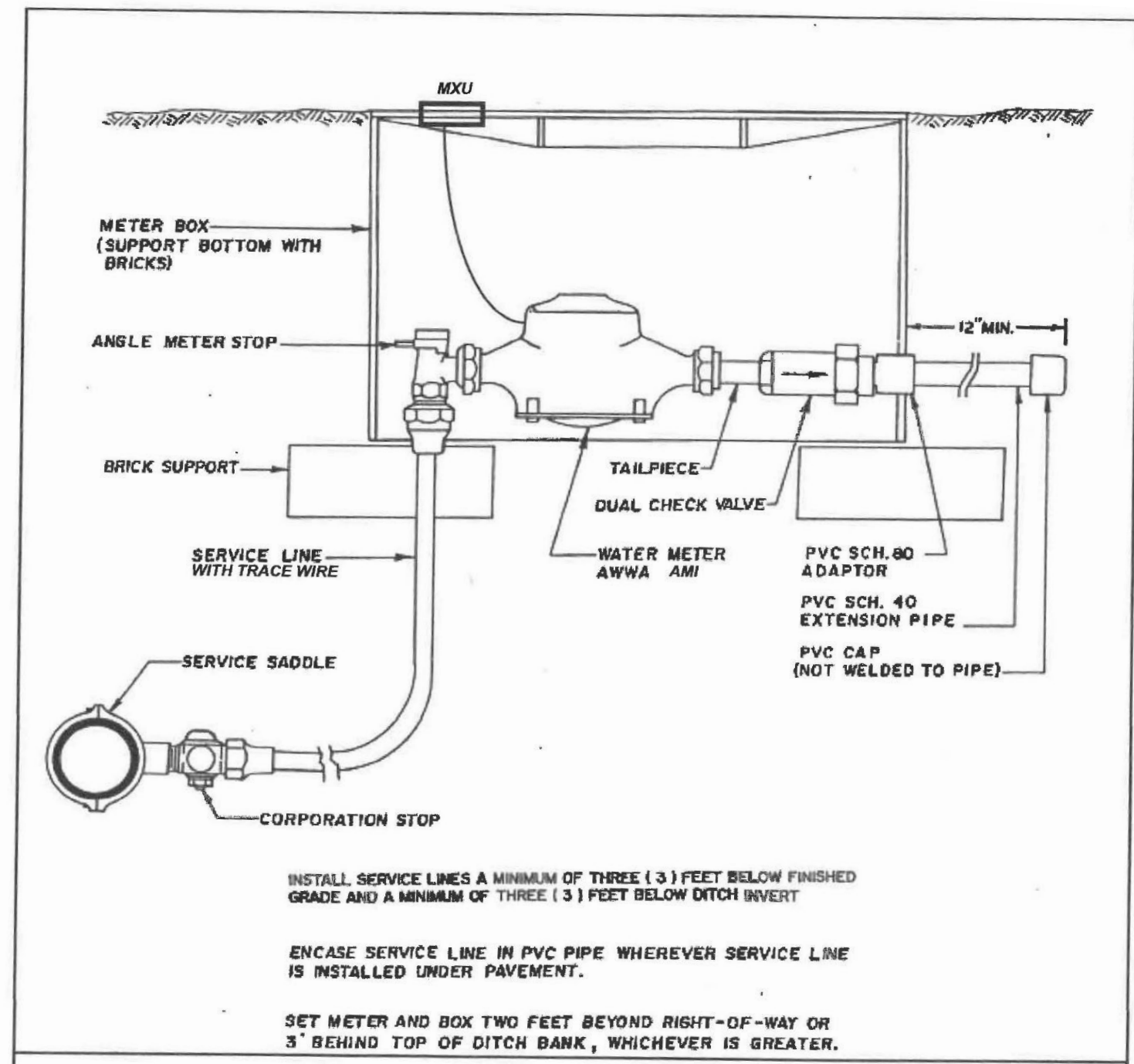
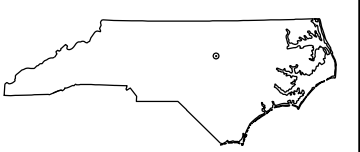
UTILITIES ENGINEERING SEC.
PHONE:(919)707-6690
FAX:(919)250-4151

PREPARED BY

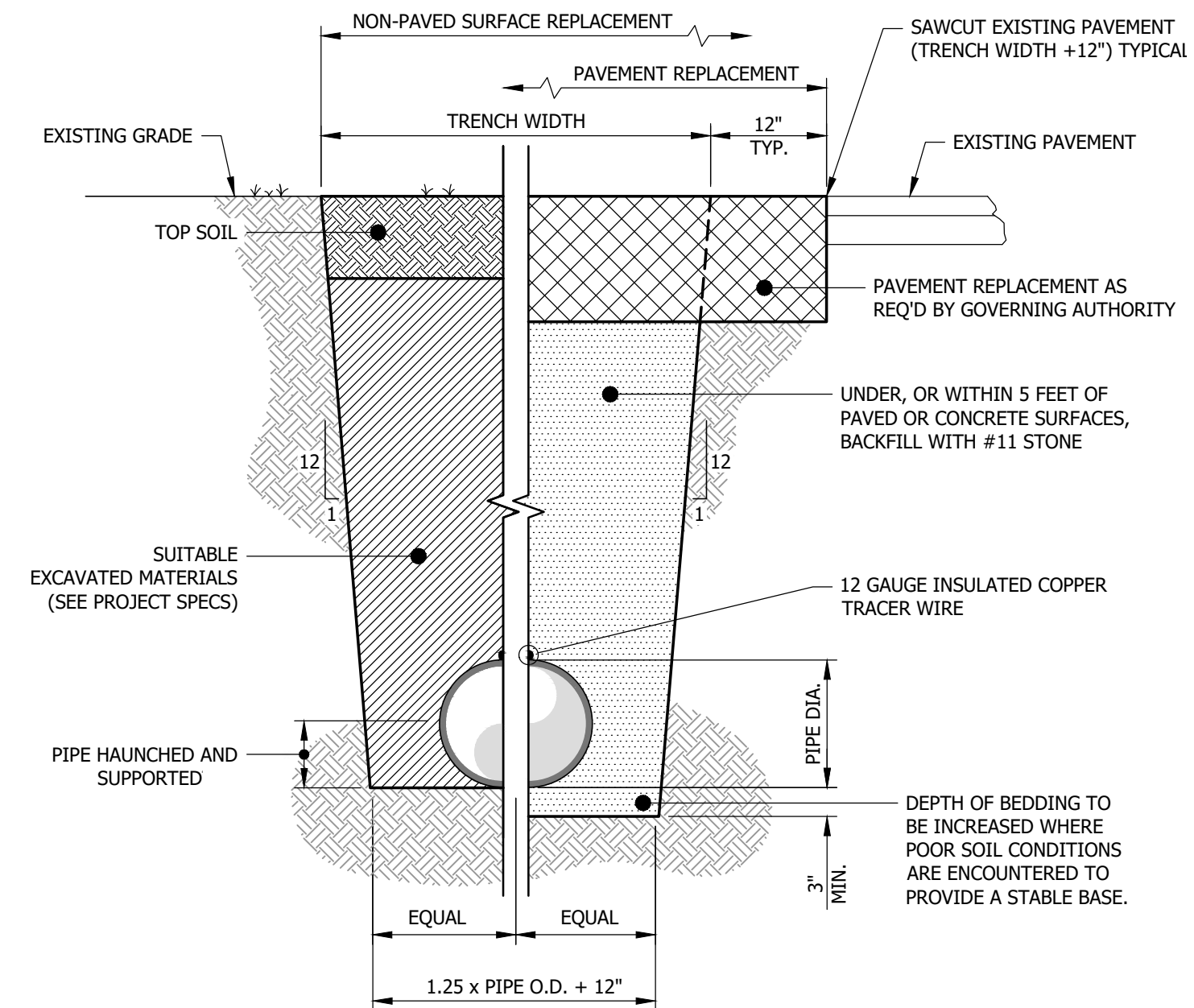
HDR Engineering, Inc. of the Carolinas
202 Fayetteville St., Suite 600 Raleigh, NC 27601
N.C. E.I.T.S. License Number: F-0116



REVISIONS



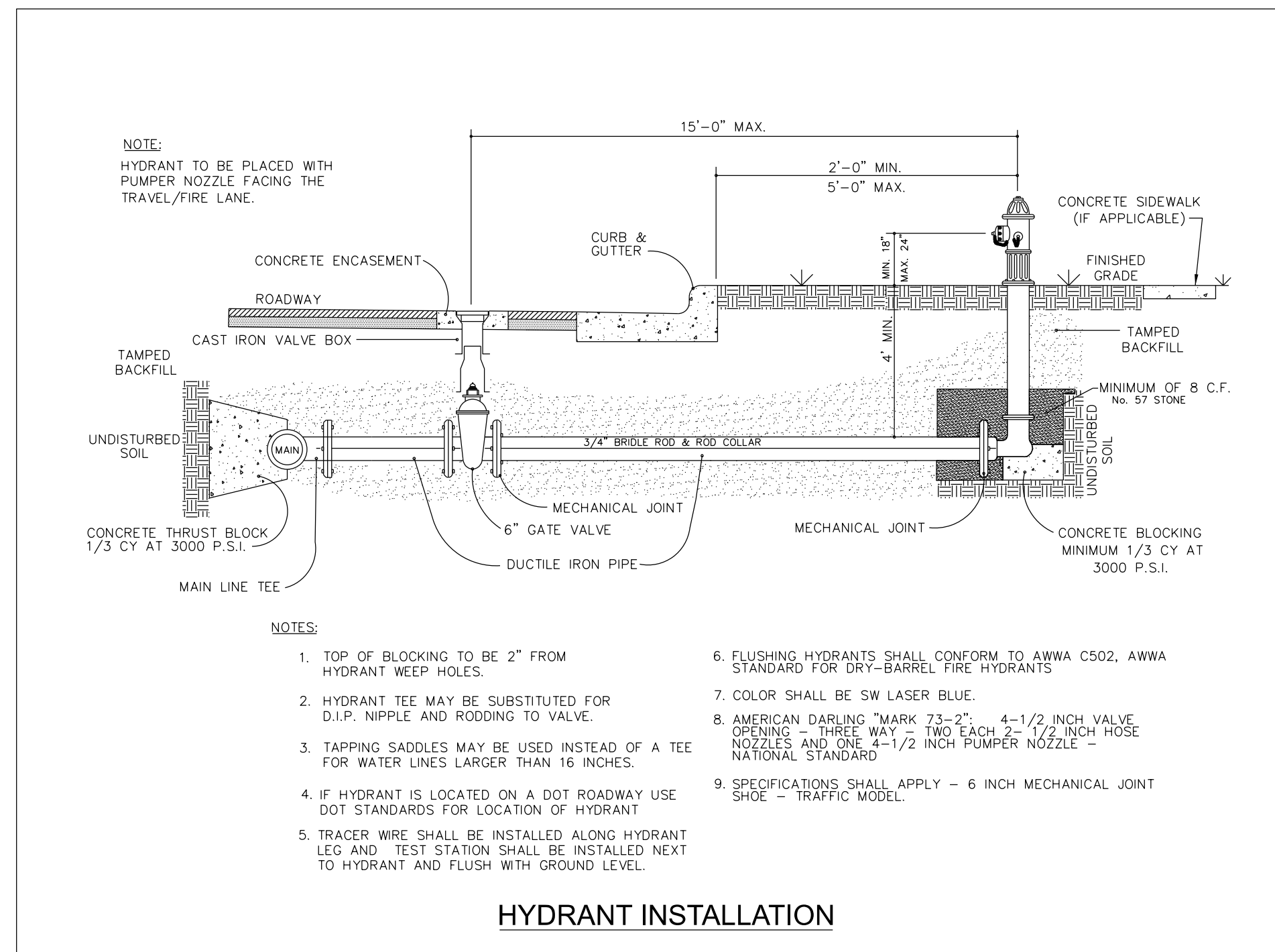
3/4 INCH AND 1 INCH WATER SERVICE
AND METER BOX INSTALLATION



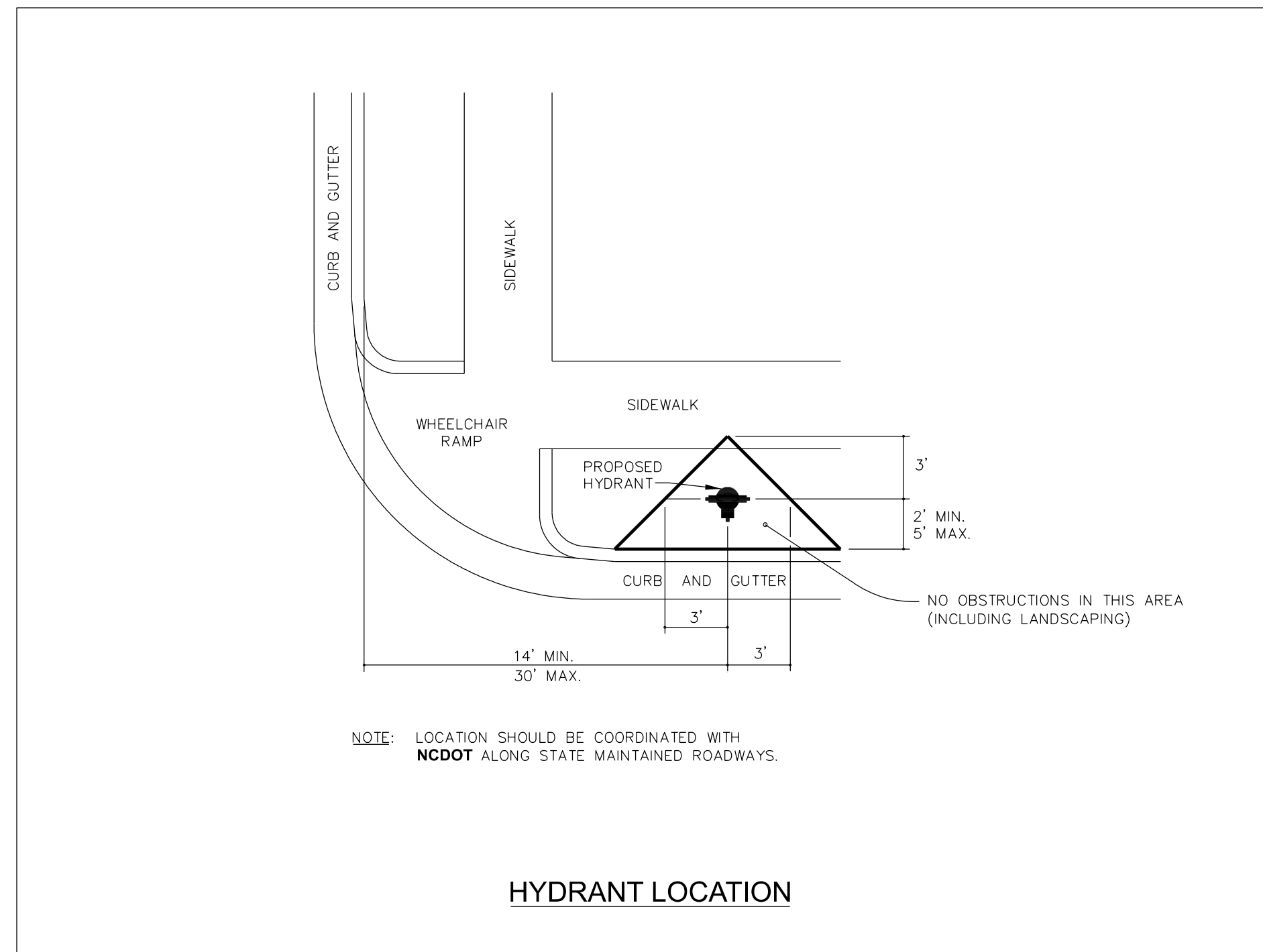
NOTES:

- 4" TO 16" SDR 21 PVC, C900 OR DUCTILE IRON PIPE
- SEE PLAN AND PROFILE FOR DEPTH OF COVER. MAINTAIN 48" MINIMUM.
- MATERIALS SHALL EXCLUDE ORGANICS AS DEFINED BY ASTM D2321, CLASS V.
- PIPE TO BE SUPPORTED ALONG THE ENTIRE LENGTH BY A FIRM TRENCH BOTTOM OR BEDDING.

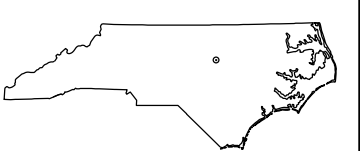
TYPICAL WATER MAIN TRENCH



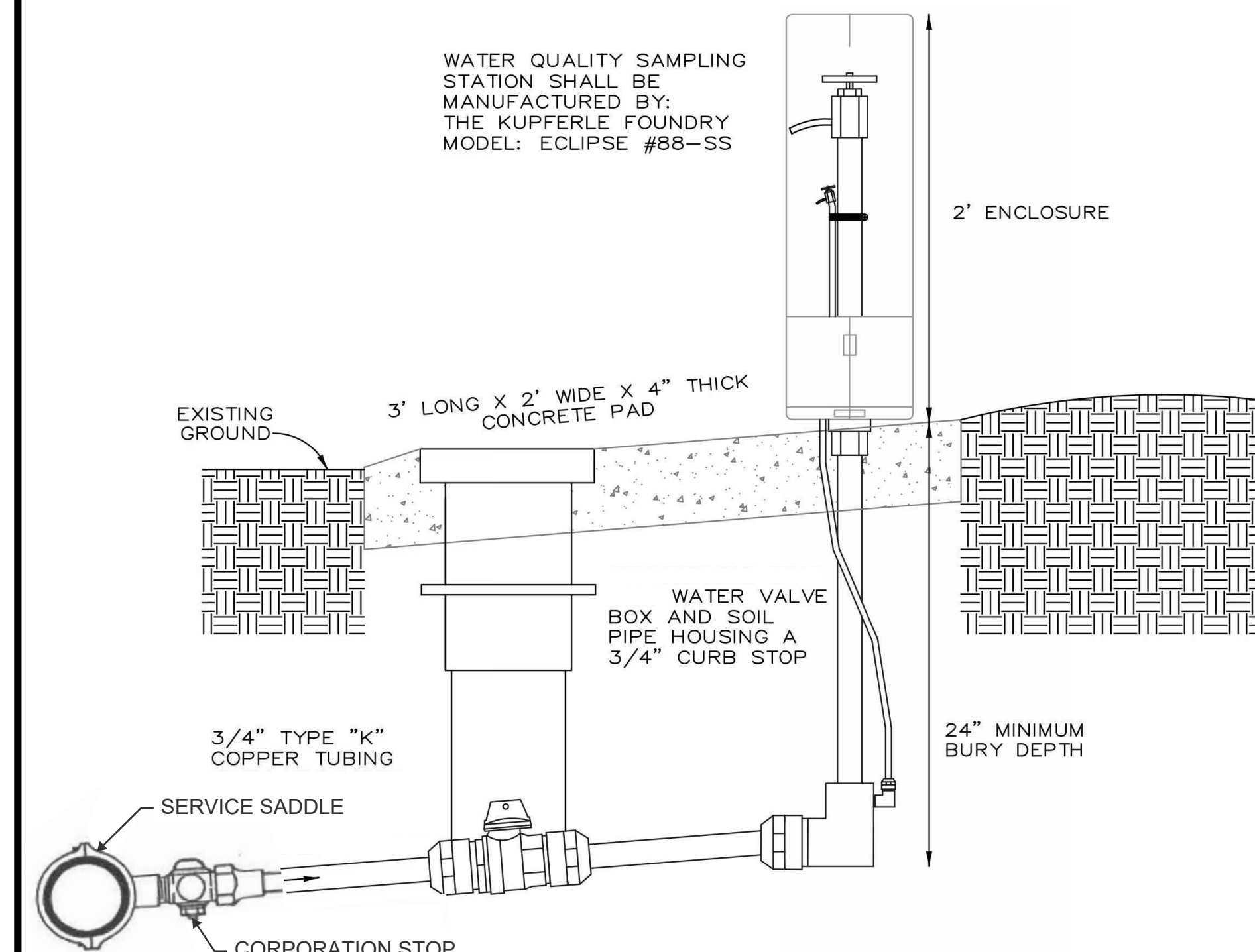
HYDRANT INSTALLATION



HYDRANT LOCATION

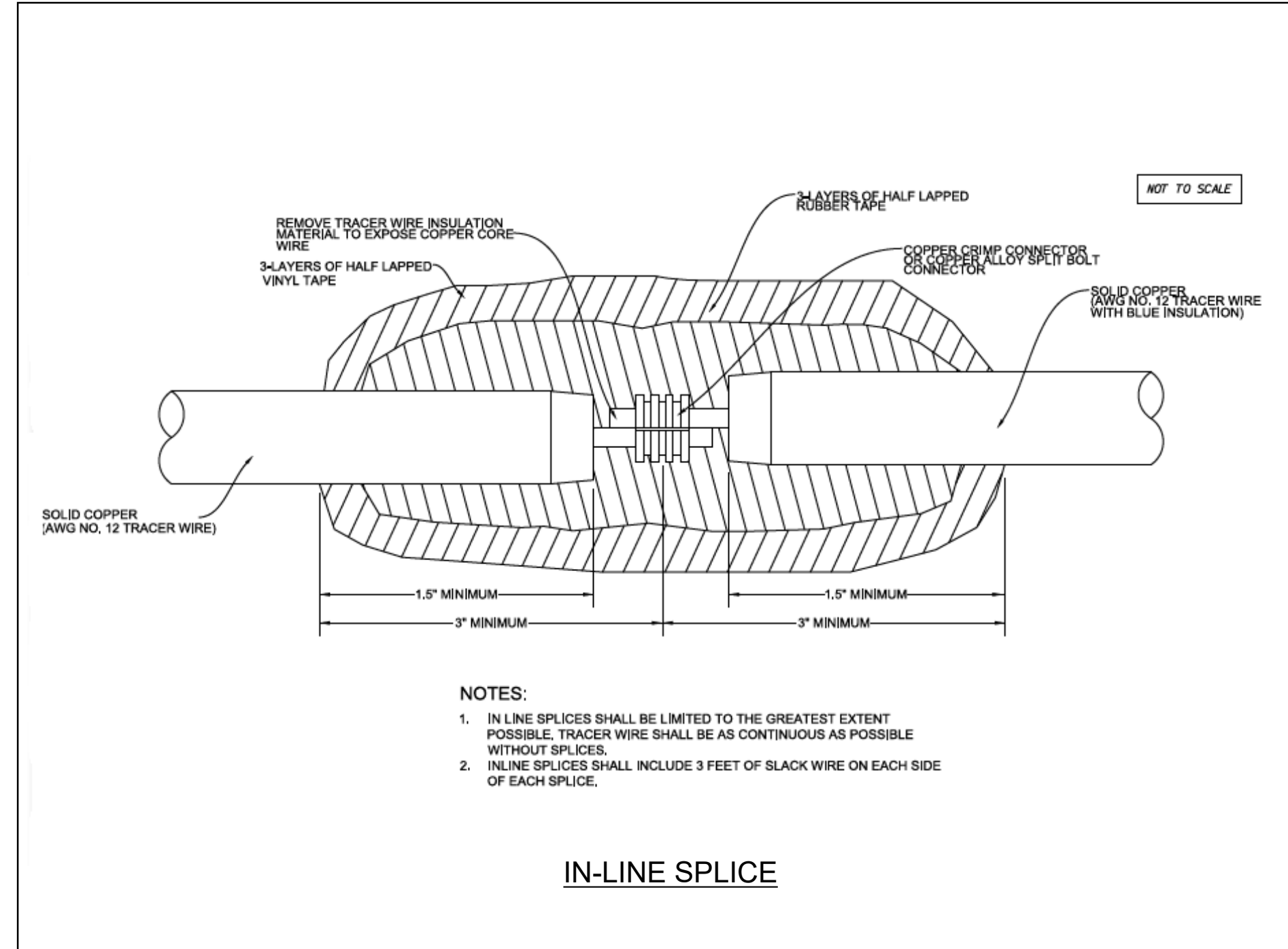


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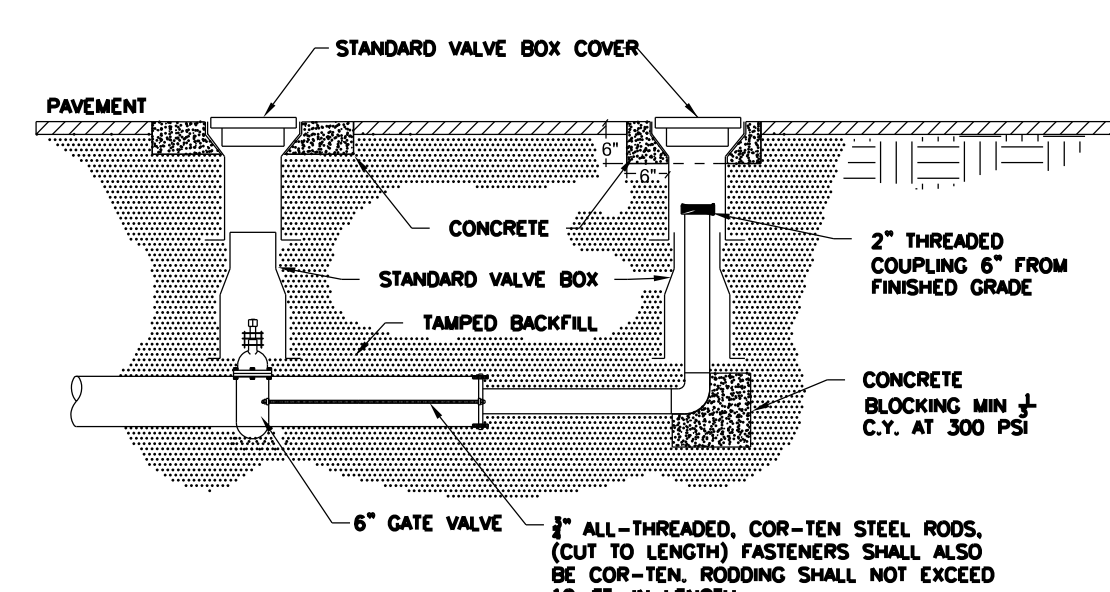
1. SAMPLING STATION SHALL ONLY BE CONNECTED TO A BEAUFORT COUNTY PUBLICLY MAINTAINED WATER MAIN, AND NEVER CONNECTED TO ANY LATERAL, FIRE HYDRANT, AIR RELEASE, SURGE OR BLOW OFF ASSEMBLY.
2. SAMPLING STATION SHALL BE INSTALLED TRUE AND PLUMB TO THE SURROUNDING GRADES PRIOR TO PLACEMENT OF THE CONCRETE PAD.
3. SAMPLING STATION SHALL BE ENCLOSED IN A LOCKABLE NON-REMOVABLE ALUMINUM EPOXY COATED BOX WITH A HINGED OPENING.
4. SAMPLING STATION SHALL HAVE ALL WORKING PARTS MADE OF STAINLESS STEEL, WITH A 2' BURY DEPTH STEM.
5. CONCRETE PAD SHALL BE SLOPED AWAY FROM SAMPLING STATION AND SHALL BE FLUSH WITH THE SURROUNDING GRADES.
6. ALL UNDERGROUND PIPING SHALL BE TYPE "K" COPPER TUBING WITH APPROVED BRASS COMPRESSION FITTINGS.

SAMPLING STATION

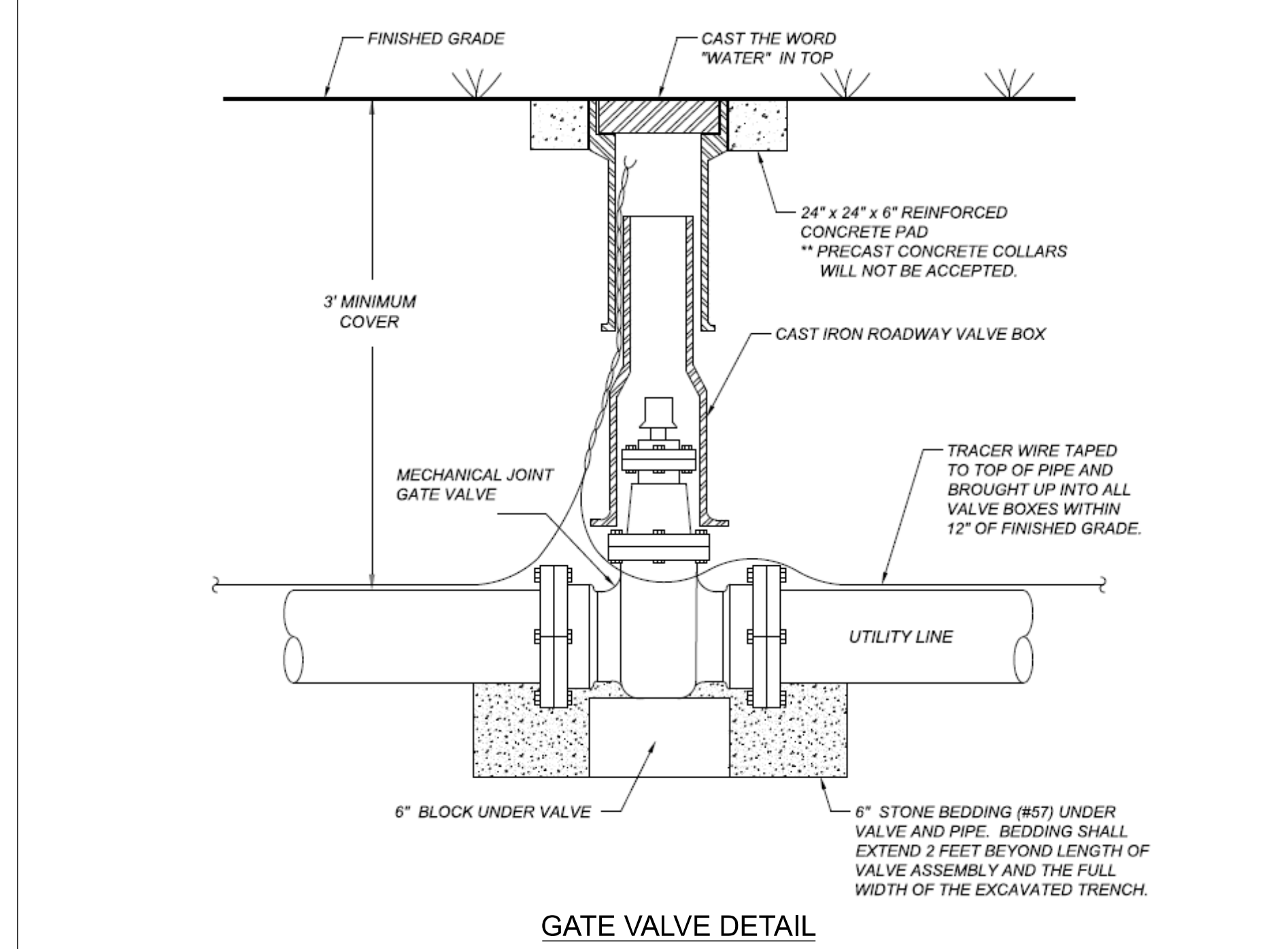


- NOTES:
1. IN-LINE SPLICES SHALL BE LIMITED TO THE GREATEST EXTENT POSSIBLE. TRACER WIRE SHALL BE AS CONTINUOUS AS POSSIBLE WITHOUT SPLICES.
 2. IN-LINE SPLICES SHALL INCLUDE 3 FEET OF SLACK WIRE ON EACH SIDE OF EACH SPLICE.

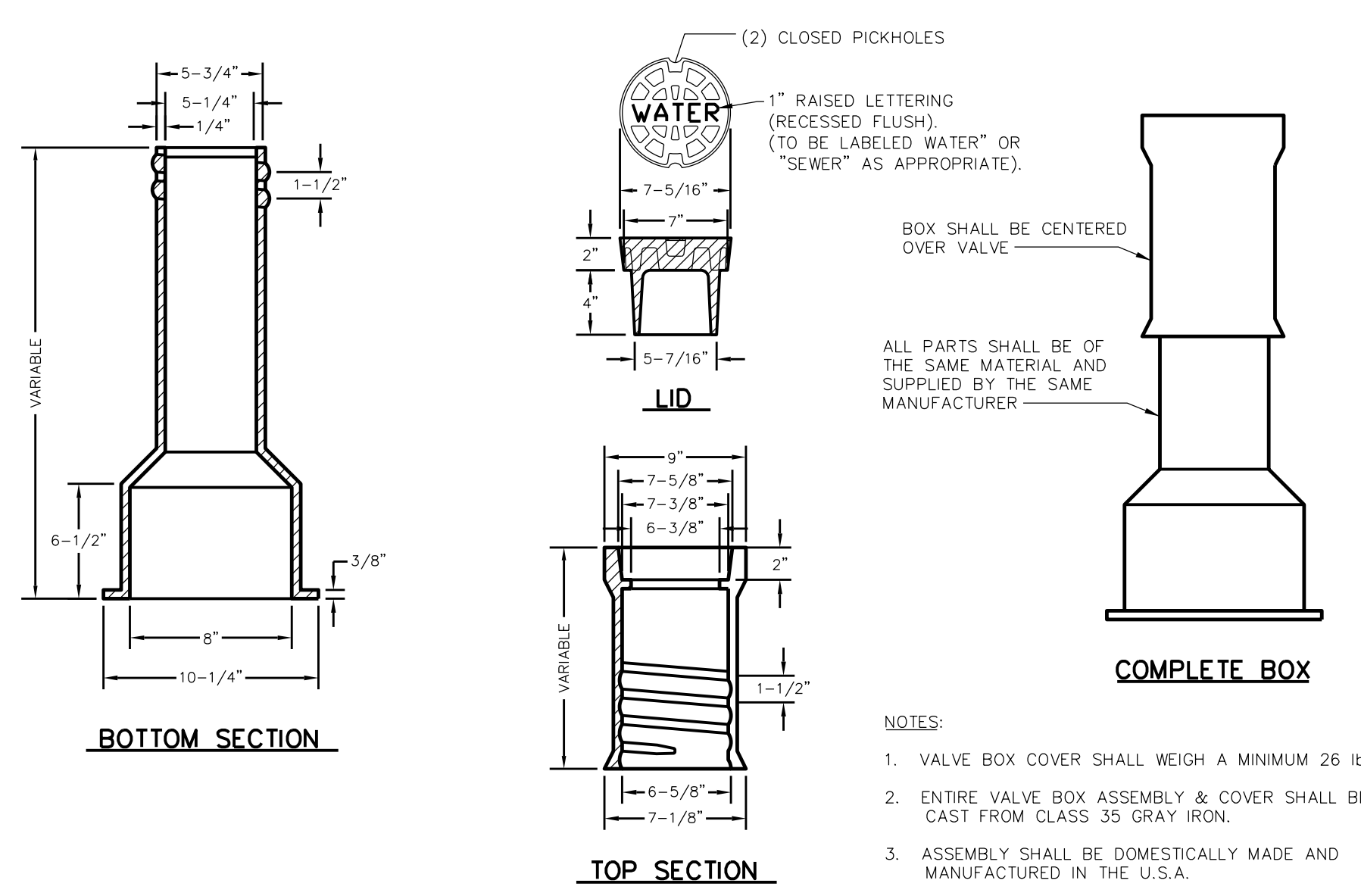
IN-LINE SPLICE



2 INCH BLOW-OFF ASSEMBLY



GATE VALVE DETAIL



VALVE BOX INSTALLATION

- NOTES:
1. VALVE BOX COVER SHALL WEIGH A MINIMUM 26 lbs.
 2. ENTIRE VALVE BOX ASSEMBLY & COVER SHALL BE CAST FROM CLASS 35 GRAY IRON.
 3. ASSEMBLY SHALL BE DOMESTICALLY MADE AND MANUFACTURED IN THE U.S.A.

