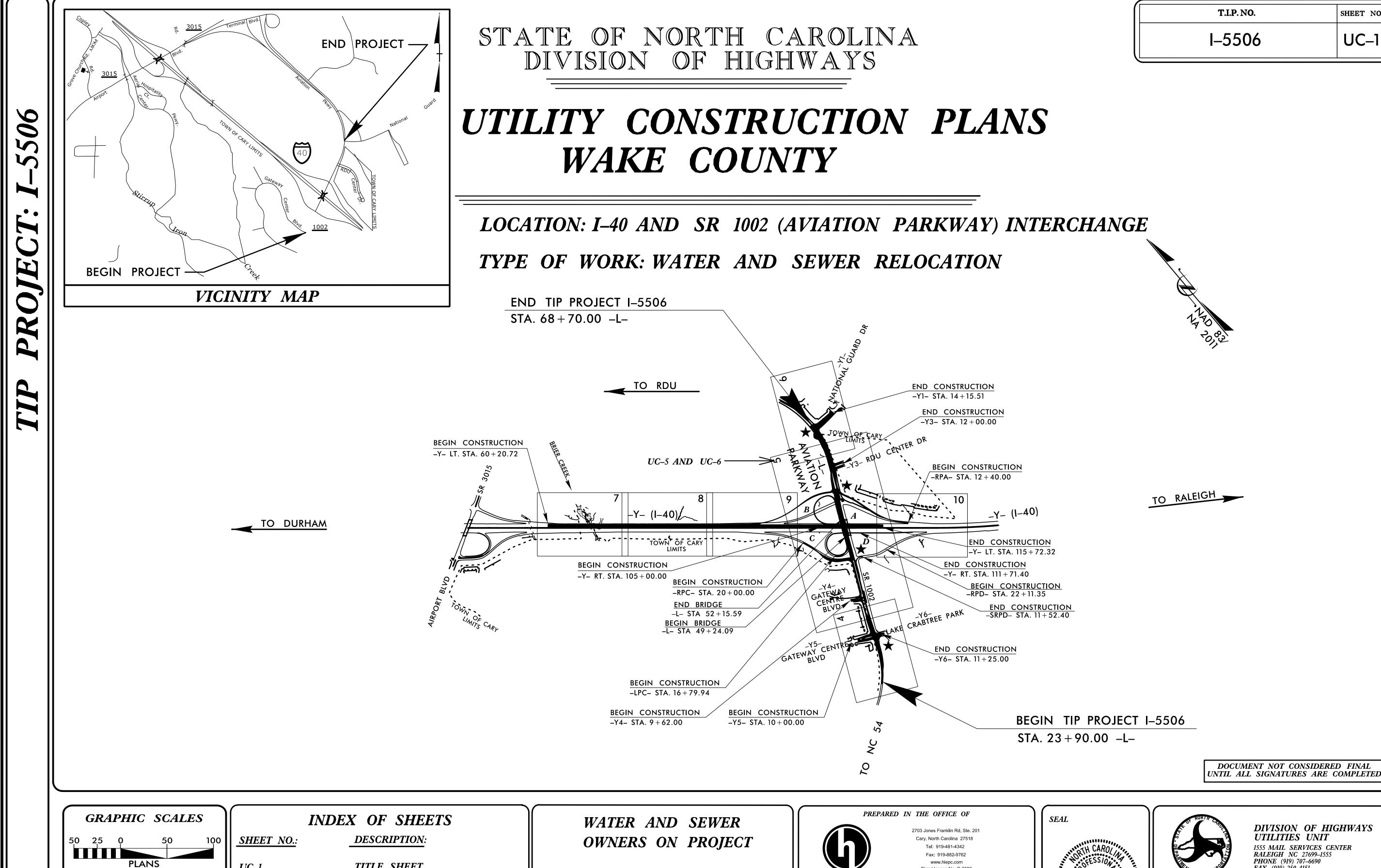
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*UC-3A-3B* UC-4A-4D

PROFILE (HORIZONTAL)

PROFILE (VERTICAL)

TITLE SHEET UTILITY SYMBOLOGY **NOTES DETAILS** WATERLINE PROFILE SHEET FORCE MAIN PROFILE SHEET

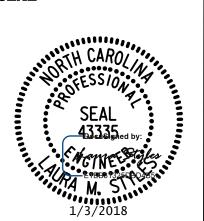
(A) WATER - TOWN OF CARY (B) SANITARY SEWER - TOWN OF CARY



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LAURA STYLES, P.E. CONSULTANT CONTACT #1 TYLER HIGHFILL, P.E. CONSULTANT CONTACT #2





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

ALI KOUCHEKI, P.E. UTILITIES ENGINEER

DONNA JACKSON, P.E. UTILITIES REGIONAL ENGINEER

KYLE PLEASANT UTILITIES AREA COORDINATOR

# STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

# UTILITIES PLAN SHEET SYMBOLS

#### PROPOSED WATER SYMBOLS

# Water Line (Sized as Shown) -----11½ Degree Bend ······ 22½ Degree Bend ..... 45 Degree Bend ······ 90 Degree Bend ······ 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 ----- PS(W) 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 per Note)

Sewer Pump Station ------PS(SS)

(Sized as Shown)

#### PROPOSED MISCELLANOUS UTILITIES SYMBOLS

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

### EXISTING UTILITIES SYMBOLS

\*Underground Power Line ......

Power Pole	•
Telephone Pole	<b>→</b>
Joint Use Pole	<b>+</b>
Utility Pole	•
Utility Pole with Base	•
H-Frame Pole	•—•
Power Transmission Line Tower	$\boxtimes$
Water Manhole	<b>w</b>
Power Manhole	P
Telephone Manhole	•
Sanitary Sewer Manhole	•
Hand Hole for Cable	<b>F</b>
Power Transformer	<b>2</b>
Telephone Pedestal	
CATV Pedestal	
Gas Valve	<b>♦</b>
Gas Meter	<b>\$</b>
Located Miscellaneous Utility Object	Θ
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

onder ground	1 GWG1 EING	
*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	A/G Gas
*Underground	Water Line	
Aboveground	Water Line	A/G Water
*Underground	Gravity Sanitary Sewer Line	ss
Aboveground	Gravity Sanitary Sewer Line	A/G Sanitary Sewer
	SS Forced Main Line	
Underground	Unknown Utility Line	
SUE Test Hol	Le	•
Water Meter		0
Water Valve		⊗
Fire Hydrant	<u> </u>	<b>♦</b>
	ver Cleanout ······	

*For Existing Utilities See Plan Sheet 1C
Utility Line Drawn from Record
(Type as Shown)

# UTILITY CONSTRUCTION

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

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 2018.
- 2. THE EXISTING UTILITIES BELONG TO THE TOWN OF CARY, NORTH CAROLINA.
- 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 UTILITY 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, BUT ARE NOT BINDING UPON THE DEPARTMENT.
- 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:

## UTILITY CONSTRUCTION

- 1. WORK SHALL COMPLY WITH APPLICABLE STATE, FEDERAL, AND LOCAL CODES. OBTAIN REQUIRED LICENSES AND PERMITS AT CONTRACTOR EXPENSE UNLESS PREVIOUSLY OBTAINED BY THE OWNER AND PROVIDED IN THE CONTRACT DOCUMENTS.
- 2. SANITARY SEWER CONSTRUCTION SHALL CONFORM TO NCDEQ REGULATIONS AND TO TOWN OF CARY STANDARDS AND SPECIFICATIONS. ALL MATERIALS SHALL BE ON THE TOWN'S APPROVED PRODUCT LIST.
- 3. KEEP A COMPLETE SET OF CONTRACT DOCUMENTS, PERMITS, EASEMENTS, AND AGREEMENTS WITH PRIVATE PROPERTY OWNERS ON CONSTRUCTION SITE. OWNER WILL FURNISH DESCRIPTION OF EASEMENTS UPON REQUEST.
- 4. NOTIFY ENGINEER IMMEDIATELY IF FIELD CONDITIONS VARY FROM THE INFORMATION PROVIDED IN THE CONTRACT DOCUMENTS.
- 5. DEVIATION FROM THESE PLANS WITHOUT THE PRIOR WRITTEN CONSENT OF THE OWNER OR THE ENGINEER MAY BE CAUSE FOR THE WORK TO BE UNACCEPTABLE.
- 6. COORDINATE WORK WITH THE TOWN OF CARY. PLAN AND CONSTRUCT WORK TO CAUSE MINIMAL INCONVENIENCE TO THE OWNER AND PUBLIC. ADJUST WORK TO ACCOMMODATE OWNER REQUESTS.
- 7. COORDINATE SUPPORT OF EXISTING UTILITY POLES WITH THE UTILITY OWNER AS REQUIRED FOR TRENCH EXCAVATION. PAY FOR ASSOCIATED COSTS.
- 8. LOCATION OF BURIED COMMUNICATION AND DATA CABLES WILL VARY DUE TO INSTALLATION TECHNIQUES. COORDINATE WORK WITH CONFLICTING COMMUNICATION AND DATA CABLES AND ADJUST AS NECESSARY FOR WORK. UTILITY COORDINATION SHALL BE ACCOUNTED FOR IN CONTRACTOR?S PROJECT SCHEDULE AND COST.
- 9. LOCATION OF EXISTING UTILITIES PROVIDED ON THE DRAWINGS IS APPROXIMATE. ENGINEER HAS ATTEMPTED TO LOCATE AND INDICATE EXISTING UTILITIES ON THE DRAWINGS; HOWEVER, THIS INFORMATION IS SHOWN FOR THE CONTRACTOR'S CONVENIENCE ONLY. DETERMINE THE SIZE, DEPTH, MATERIAL, AND LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION. TAKE MEASURES NECESSARY TO PROVIDE FOR PROTECTION OF EXISTING UTILITIES. ENGINEER AND OWNER ASSUME NO RESPONSIBILITY FOR THE LOCATIONS OF UTILITIES SHOWN OR NOT SHOWN ON THE DRAWINGS.
- 10. PRIOR TO DIGGING, CONTACT NC811 FOR UTILITY LOCATIONS. CONTACT ANY UTILITY COMPANY WHOSE UTILITIES ARE NOT LOCATED BY NC 811 FOR LOCATION OF THEIR UTILITIES PRIOR TO STARTING CONSTRUCTION. REPAIR OR REPLACE UTILITIES DAMAGED BY THE CONTRACTOR AS DIRECTED BY UTILITY OWNER. RESTORE UTILITIES TO PRECONSTRUCTION CONDITION AT CONTRACTOR'S EXPENSE.
- 11. LIMIT CONSTRUCTION ACTIVITY TO ROAD RIGHT-OF-WAYS AND OWNER EASEMENTS. REFER TO DETAILS FOR TRENCH WIDTH REQUIREMENTS.
- 12. WHERE CONTRACTOR DETERMINES THAT ENCROACHMENT ONTO PRIVATE PROPERTY IS NECESSARY FOR CONSTRUCTION AND AN EASEMENT HAS NOT BEEN PROVIDED, CONTACT INDIVIDUAL PROPERTY OWNERS AND OBTAIN WRITTEN APPROVAL FOR THAT ENCROACHMENT. PROVIDE A COPY OF THIS APPROVAL TO OWNER AND ENGINEER.
- 13. MAINTAIN A MEANS FOR INGRESS/EGRESS TO EACH PROPERTY.
- 14. PROVIDE TRAFFIC CONTROL AND ERECT AND MAINTAIN SUITABLE BARRIERS, FENCES, SIGNS, OR OTHER ADEQUATE PROTECTION, INCLUDING FLAG MEN AND WATCHMEN AS NECESSARY TO ENSURE THE SAFETY OF THE PUBLIC AND OWNER AND ENGINEER PERSONNEL. CONSTRUCTION SIGNAGE SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF "CONSTRUCTION AND MAINTENANCE OPERATIONS SUPPLEMENT TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".
- 15. INSTALL ALL SIGNS AS REQUIRED BY NCDOT ALONG STATE ROADWAYS AND BY THE TOWN OF CARY ALONG CITY STREETS.
- 16. PROTECT EXISTING VEGETATION OUTSIDE OF THE CLEARING LIMITS FROM DAMAGE.
- 17. UNLESS OTHERWISE INDICATED, EXISTING GRADE ELEVATIONS ARE ALONG THE PIPE ALIGNMENT.
- 18. MEASURE PIPE LENGTHS AND DISTANCES BETWEEN STRUCTURES FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE ALONG A HORIZONTAL PLANE.
- 19. PROVIDE STAKEOUT SURVEY. DO NOT RELY ON EXISTING STAKING.
- 20. PRIOR TO DISTURBANCE, VIDEO PROJECT CORRIDOR INCLUDING EACH DRIVEWAY, SIDEWALK, STRUCTURE, ETC., TO BE DISTURBED. RESTORE DISTURBED AREAS AND ITEMS TO PRECONSTRUCTION CONDITION, SUBMIT VIDEO TO OWNER AND ENGINEER PRIOR TO BEGINNING WORK.
- 21. MATERIAL CLEARED AND GRUBBED SHALL BE PROPERLY DISPOSED OF OFF-SITE AT A STATE APPROVED DISPOSAL SITE. OBTAIN OWNER APPROVAL FOR LANDSCAPE REMOVAL.
- 22. PAVEMENT CUTS SHALL BE SAW CUT ALONG A STRAIGHT CONTINUOUS EDGE.
- 23. TRENCH WIDTHS SHALL BE IN STRICT ACCORDANCE WITH THE "TRENCH EXCAVATION LIMITS?SHOWN ON THE DRAWINGS. TRENCHES SHALL BE CLOSED DURING NON-WORK HOURS EXCEPT WHERE COVERING WITH STEEL PLATING IS SPECIFICALLY APPROVED BY ENGINEER.
- 24. WHERE EXISTING UTILITIES CONFLICT WITH TRENCHES, SUPPORT AND PROTECT OR REMOVE AND RESTORE THOSE UTILITIES AS DIRECTED BY UTILITY OWNER. FURNISH AND INSTALL SHEETING REQUIRED FOR INSTALLATION OF THE UTILITY AND PROTECTION OF EXISTING UTILITIES. EXCAVATIONS SHALL BE KEPT WITHIN THE PROJECT LIMITS AND TO A MINIMUM.
- 25. MINIMUM PIPE COVER FOR SANITARY SEWER SHALL BE 4 FEET UNLESS DUCTILE IRON PIPE IS USED AND LESS COVER IS SPECIFICALLY APPROVED BY ENGINEER.
- 26. REMOVE AND REPLACE CONFLICTING MAIL BOXES, CULVERTS, HEADWALL, ORNAMENTAL STRUCTURES, ETC. WITHIN THE RIGHT OF WAY. CONFLICTING TREES WITHIN THE RIGHT-OF-WAY SHALL BE REMOVED BUT NOT REPLACED EXCEPT WHERE REPLACEMENT OF LANDSCAPING IS REQUIRED.
- 27. REPLACE TRAFFIC ISLANDS, CURBS, AND CONCRETE DRIVEWAYS TO THE FIRST EXPANSION JOINT BEYOND THE TRENCH EXCAVATION LIMITS AND TO THE FULL WIDTH. TRAFFIC ISLANDS, CURBS, AND CONCRETE DRIVEWAYS SHALL MATCH EXISTING.

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28. MAINTAIN EMERGENCY VEHICLE ACCESS TO PROPERTY AND FIRE HYDRANTS.

29. SLOPES SHALL BE 3:1 OR FLATIER, UNLESS OTHERWISE SHOWN.

30. RIP-RAP SHALL HAVE A MINIMUM DEPTH OF 1.5 TIMES THE MAXIMUM STONE DIAMETER AND SHALL HAVE A LAYER OF TYPE II GEOTEXTILE SEPARATOR PLACED BETWEEN THE SOIL AND STONE.

31. INSTALL EROSION AND SEDIMENTATION CONTROL DEVICES ACCORDING TO NORTH CAROLINA SEDIMENT AND EROSION CONTROL STANDARDS AND AS DIRECTED BY THE ENGINEER. MAINTAIN DEVICES SO THEY FUNCTION AS INTENDED. AFTER COMPLETION OF THE PROJECT, REMOVE EROSION CONTROL DEVICES WHERE A GOOD STAND OF GRASS HAS BEEN ESTABLISHED AND EROSION IS NO LONGER EVIDENT. REMOVE THE REMAINDER OF THE EROSION CONTROL DEVICES AS OTHER AREAS ARE ESTABLISHED. REMOVE EROSION CONTROL DEVICES ONLY WHEN APPROVED BY ENGINEER.

32. AREAS DISTURBED BY GRADING, EXCAVATION, AND GENERAL CONSTRUCTION SHALL BE SEEDED, MULCHED, AND RESTORED IN ACCORDANCE WITH THE NORTH CAROLINA SEDIMENT AND EROSION CONTROL STANDARDS.

PHONE: (919)707-6690 UTILITY 300 STRUCTION PLANS ONLY FAX: (919)250-4151

PROJECT REFERENCE NO. | SHEET NO.

UTILITY CONSTRUCTION

PROJECT REFERENCE NO. SHEET NO.

UC - 4A

DESIGNED BY: LMS

DRAWN BY:

CHECKED BY: TWH

APPROVED BY: LMS

REVISED:

NORTH CAROLINA
DEPARTMENT OF
TRANSPORTATION

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

UC - 4A

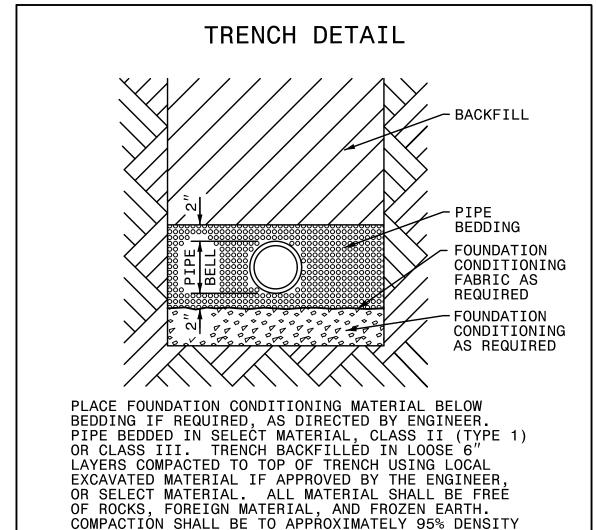
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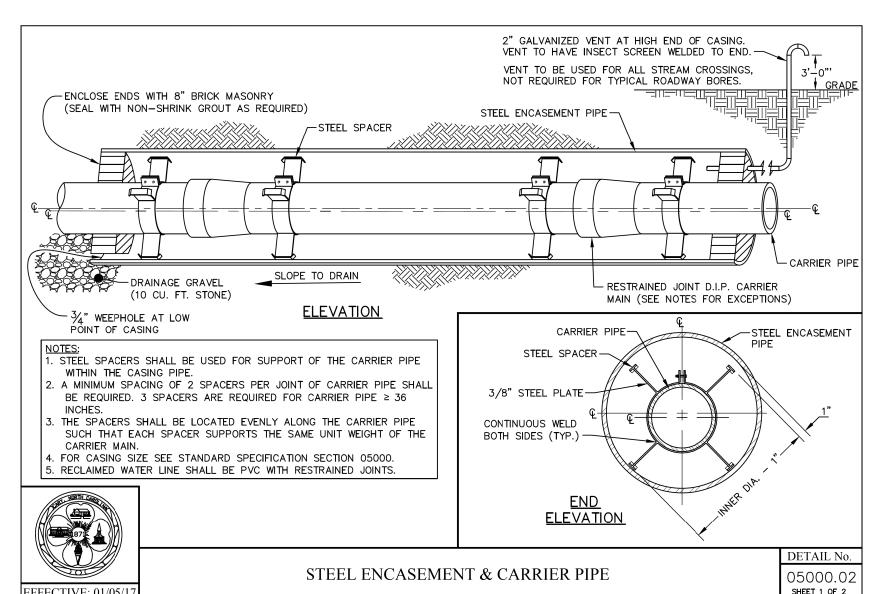
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#### UTILITY CONSTRUCTION

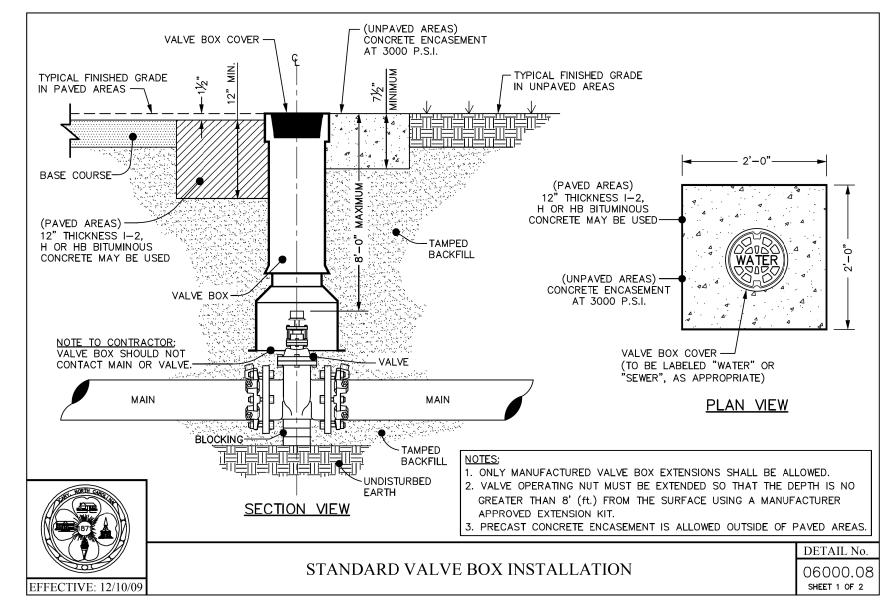


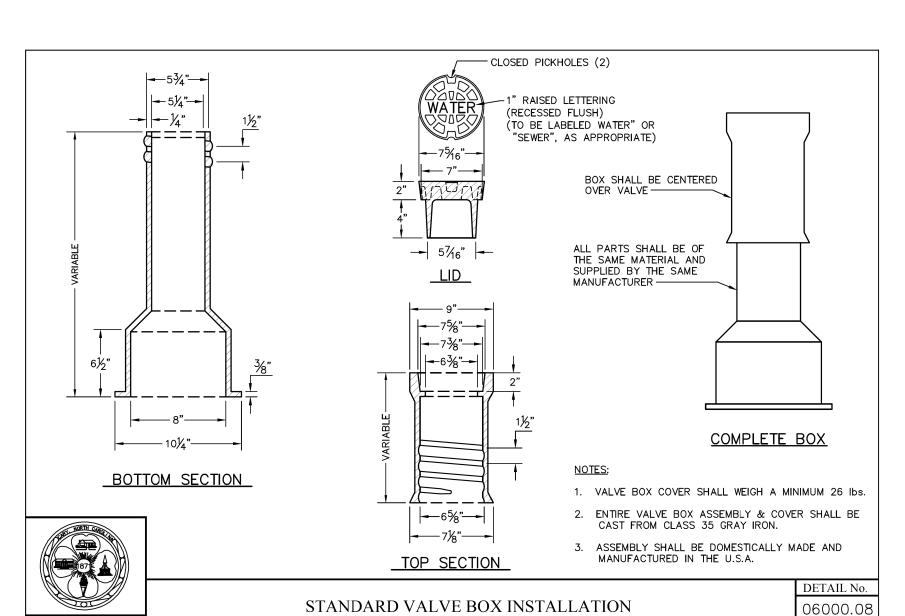
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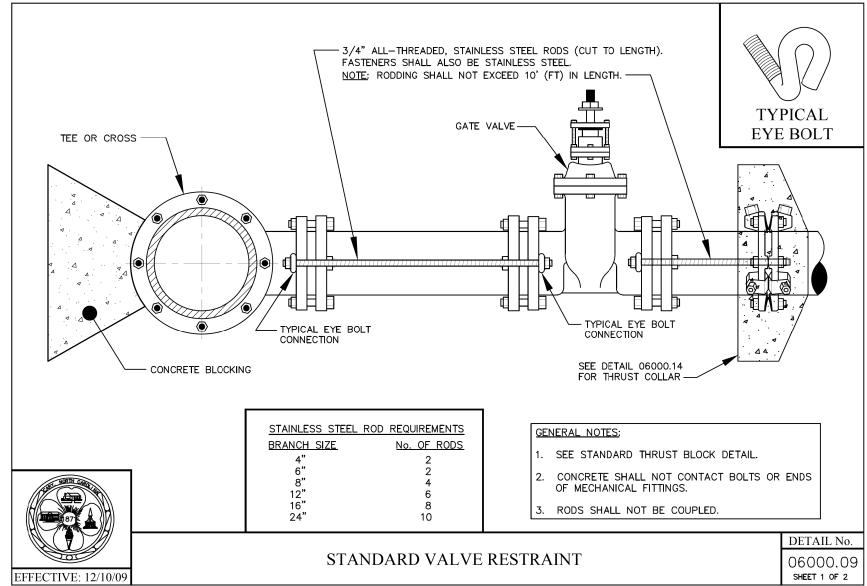
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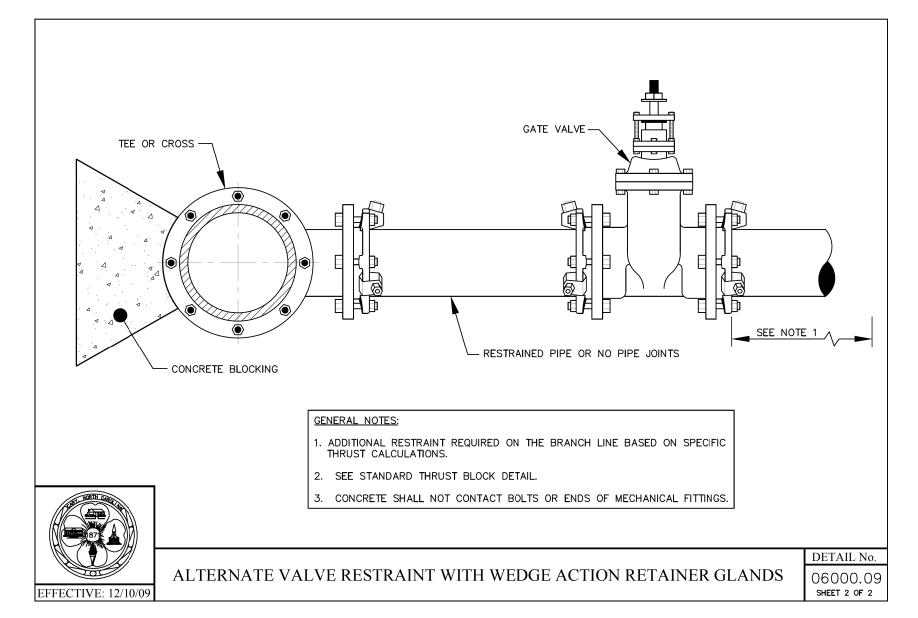


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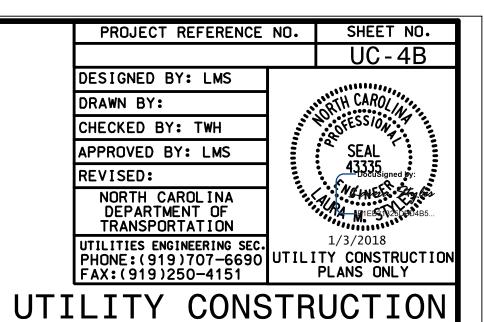


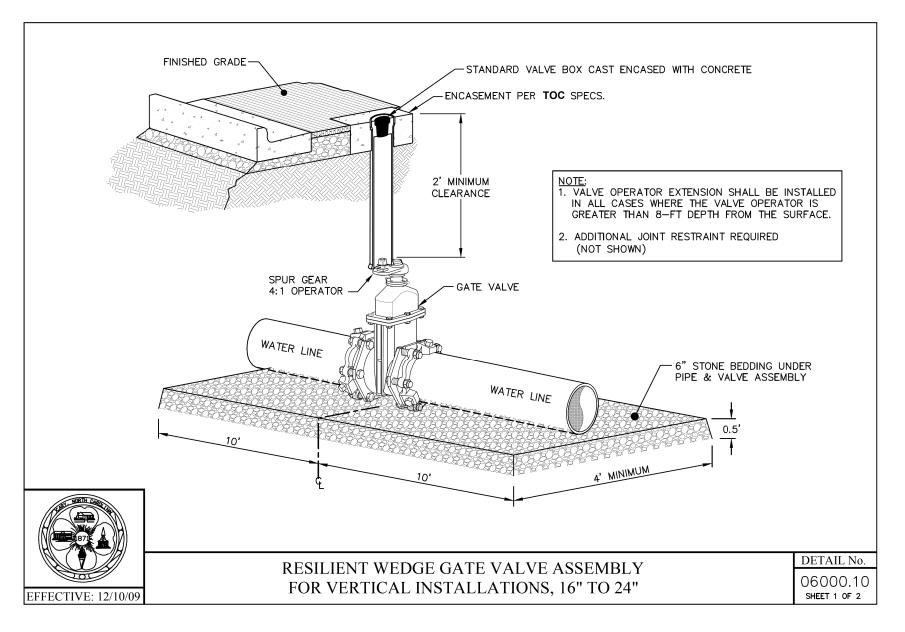


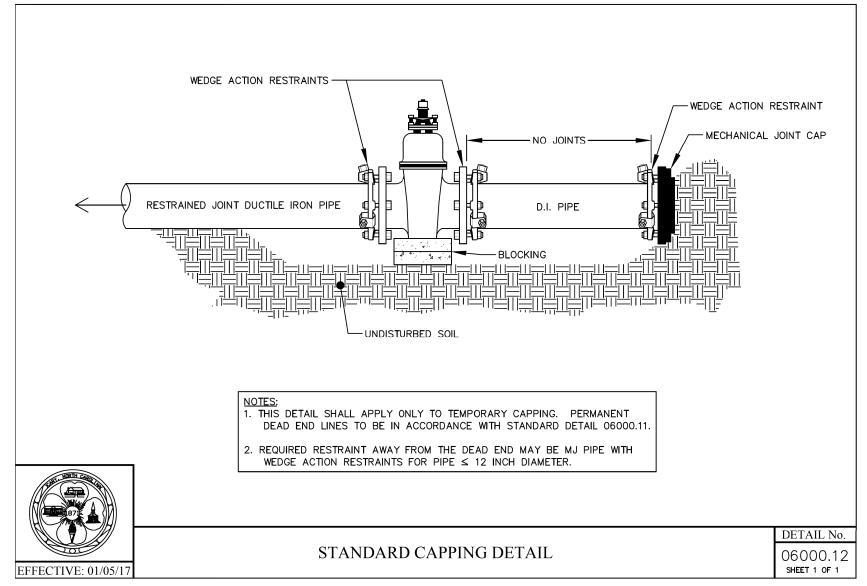


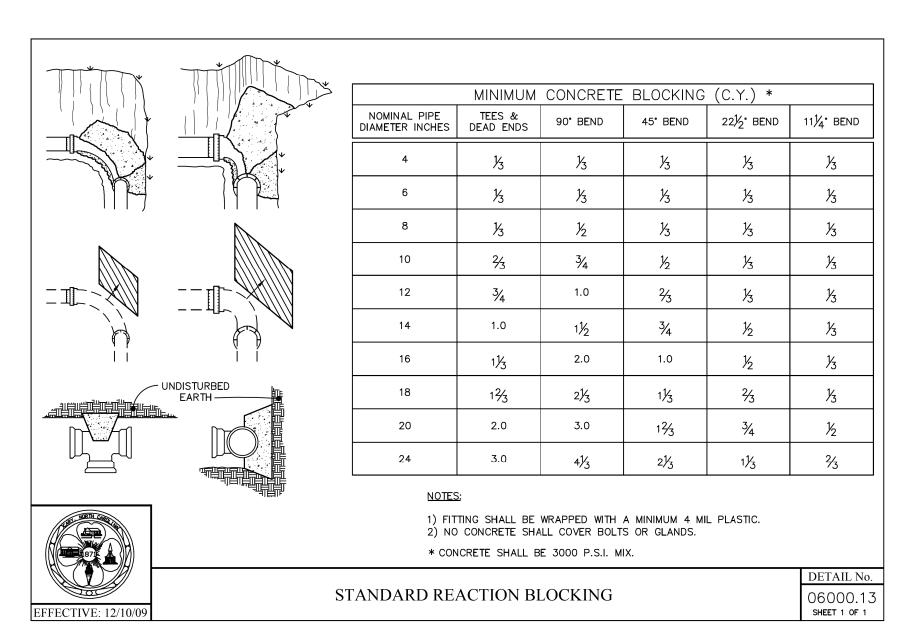


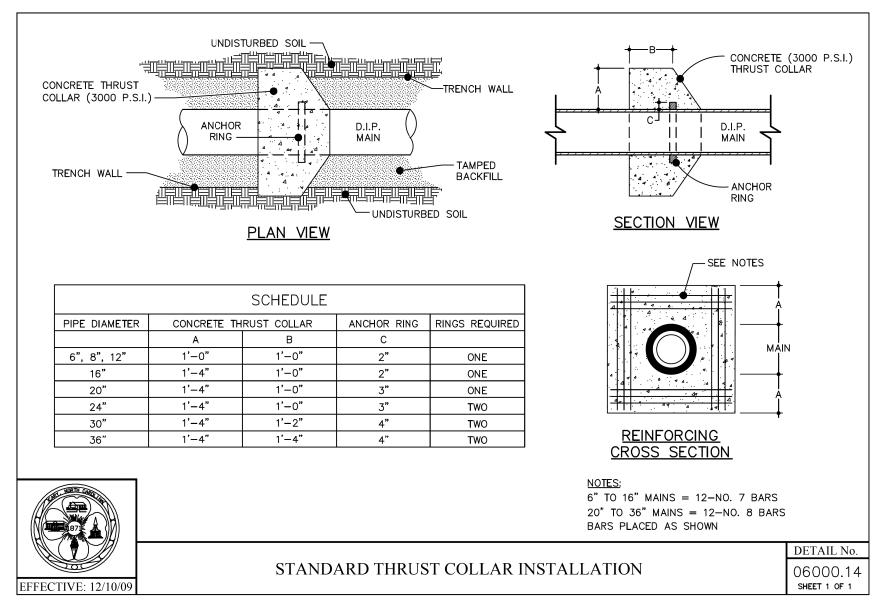
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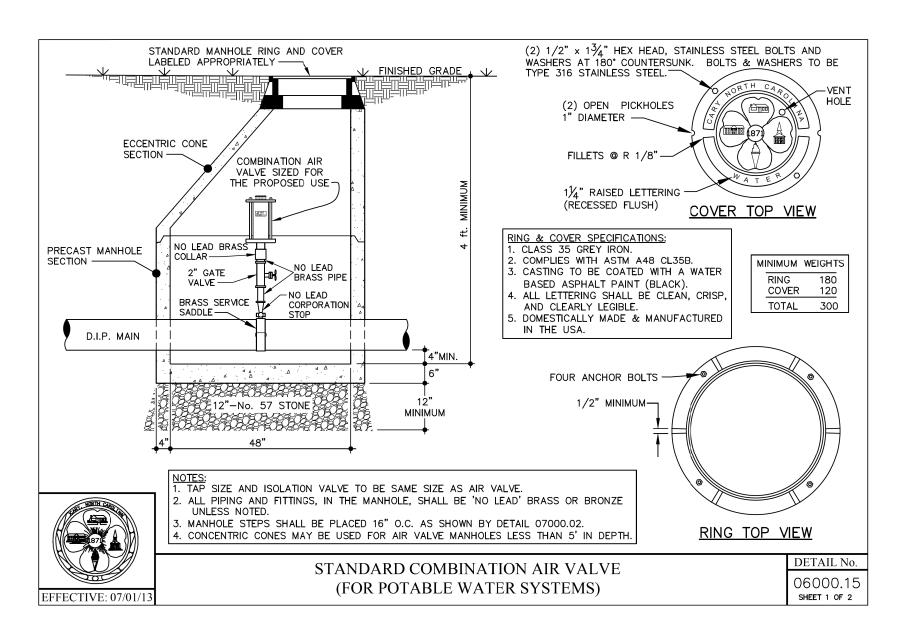












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