

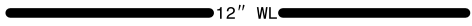

























5/14/99

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS


PROJECT REFERENCE NO.	SHEET NO.
HL-0033	UC-2

UTILITIES PLAN SHEET SYMBOLS






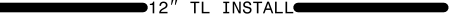


PROPOSED WATER SYMBOLS








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

PROPOSED SEWER SYMBOLS





















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



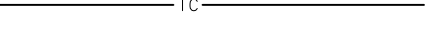
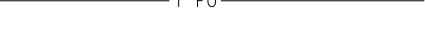















PROPOSED MISCELLANEOUS UTILITIES SYMBOLS



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

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

EXISTING UTILITIES SYMBOLS

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

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

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

5/14/99

UTILITY CONSTRUCTION

GENERAL NOTES:

1. THE PROPOSED UTILITY CONSTRUCTION SHALL MEET THE APPLICABLE REQUIREMENTS OF THE NC DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" DATED JANUARY 2024.

2. THE EXISTING UTILITIES BELONG TO THE TOWN OF CARY. PROPOSED DESIGN OF TOWN OF CARY UTILITIES BASED ON THEIR STANDARDS AND SPECIFICATIONS.

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.


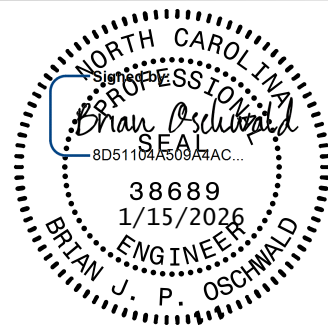
8. MAKE CONNECTIONS BETWEEN EXISTING AND PROPOSED UTILITIES AT TIMES MOST CONVENIENT TO THE PUBLIC, WITHOUT ENDANGERING THE UTILITY SERVICE, AND IN ACCORDANCE WITH THE UTILITY OWNER'S REQUIREMENTS. MAKE CONNECTIONS ON WEEKENDS, AT NIGHT, AND ON HOLIDAYS IF NECESSARY.

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 LINES TO BE 350 PSI PRESSURE CLASS DIP AND WHERE INDICATED ON UC-7, SHALL BE D.I.R.J. (DUCTILE IRON RESTRAINED JOINT). NO ADDITIONAL PAYMENT SHALL BE MADE FOR JOINT RESTRAINT. RESTRAINED JOINTS SHALL BE INCIDENTAL TO THE COST OF THE WATER LINE.

2. ADD ANY ITEMS (REMOVED, REPLACED, NEW OR NOT USED) TO OWNER'S INVENTORY.

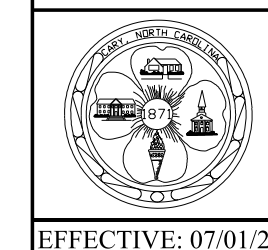
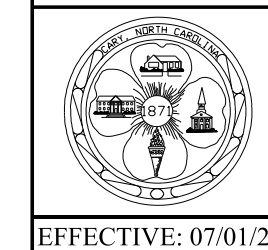
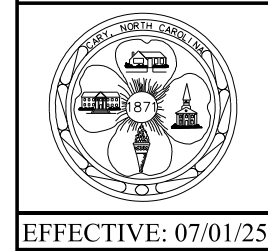
<div>PREPARED IN THE OFFICE OF:</div> <div></div> <div>120 North Boylan Avenue Raleigh, NC 27603-1423 919.828.0531 Fax 919.834.3559 License Number: F-0115</div>	PROJECT REFERENCE NO.		SHEET NO.								
	HL-0033		UC-3								
	DESIGNED BY: DGM										
	DRAWN BY: TK										
	CHECKED BY: WBJ										
APPROVED BY: WBJ			<div></div>								
REVISED:											
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION											
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151											
VERTICAL SCALE 5' 0 5' 10'				HORIZONTAL SCALE 25' 0 25' 50'							
WATER LINE CONSTRUCTION SHOWN ON THIS SHEET						Document Not Considered Final Unless All Signatures Completed UTILITY CONSTRUCTION PLANS ONLY					

UTILITY CONSTRUCTION

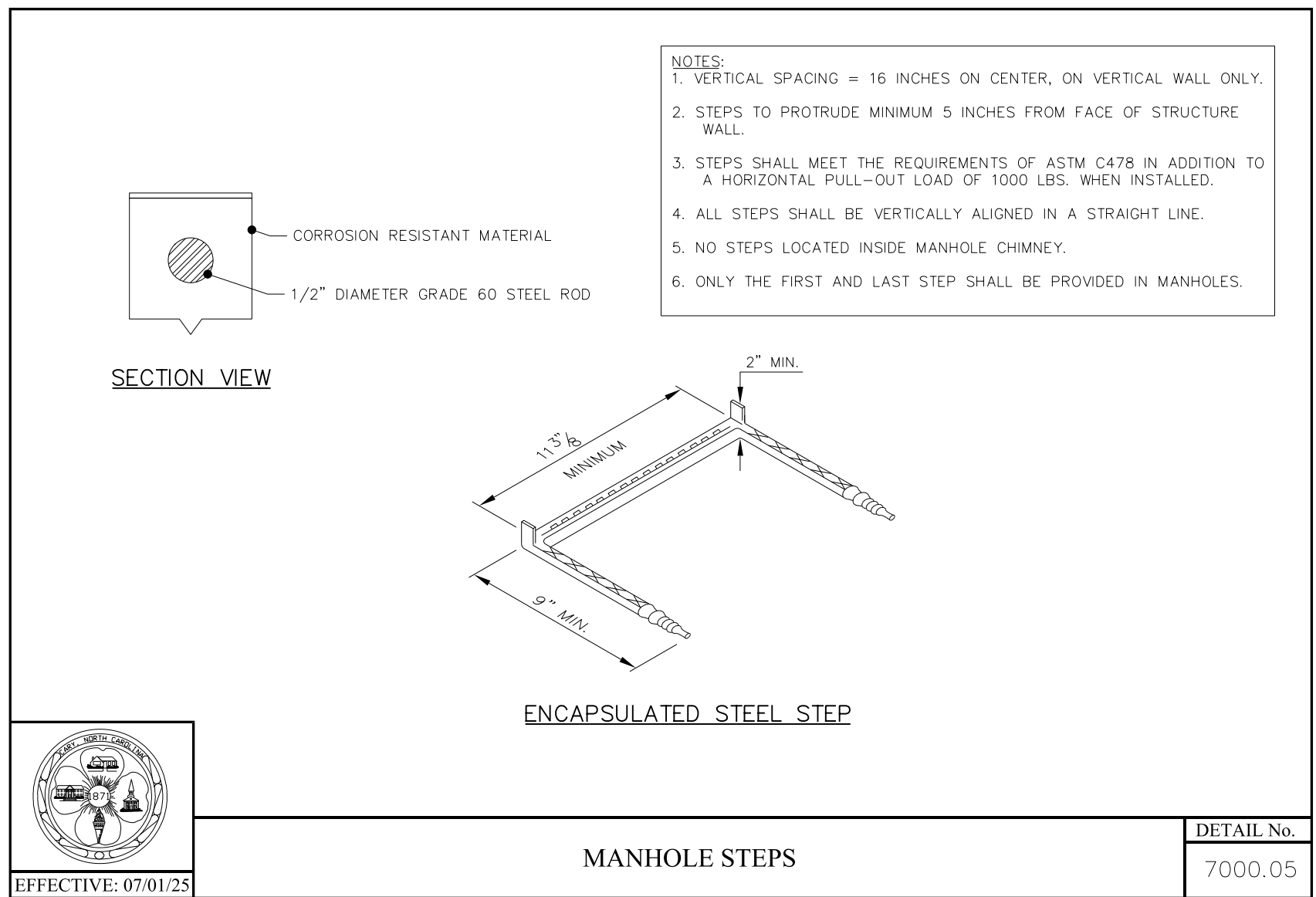
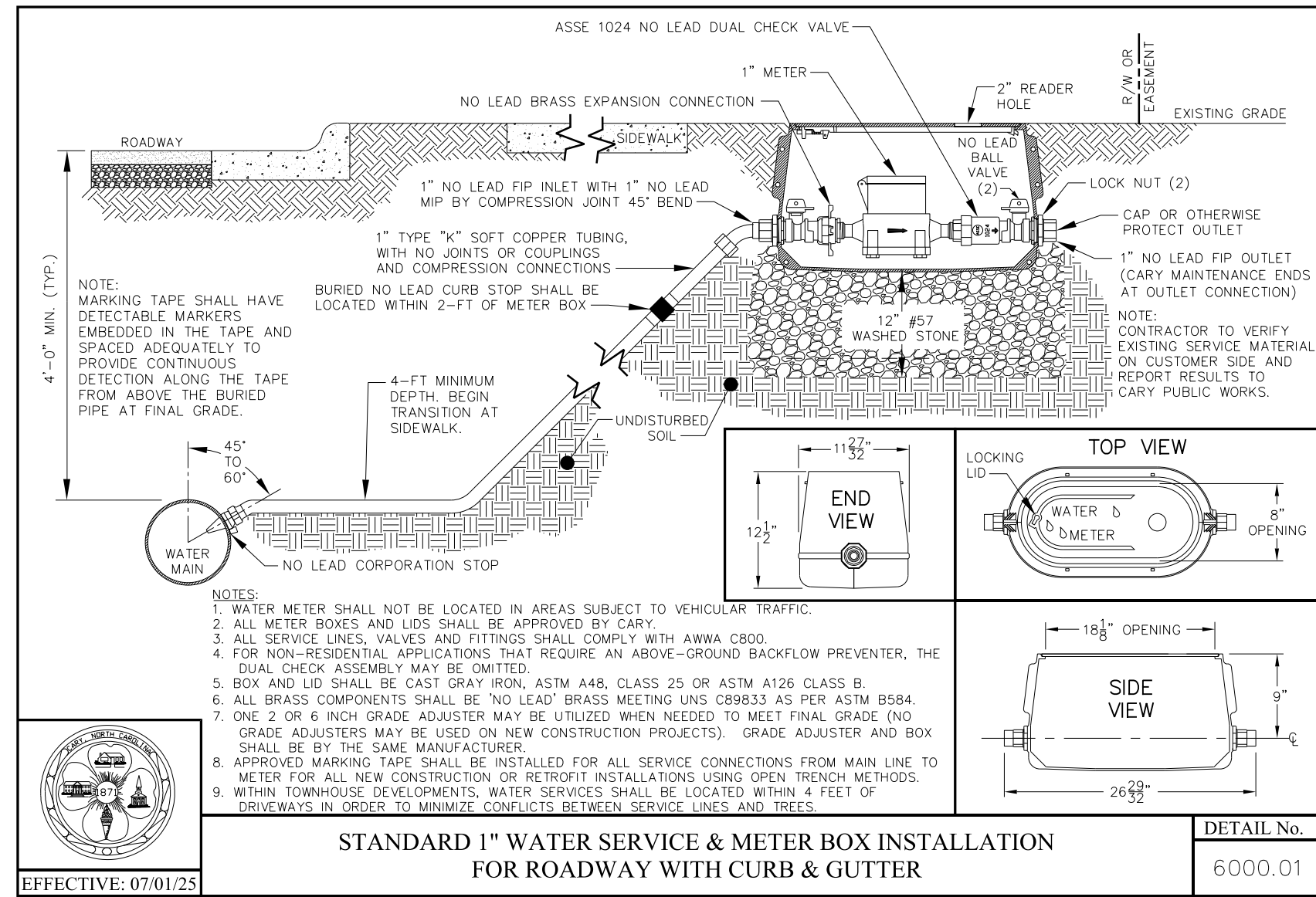
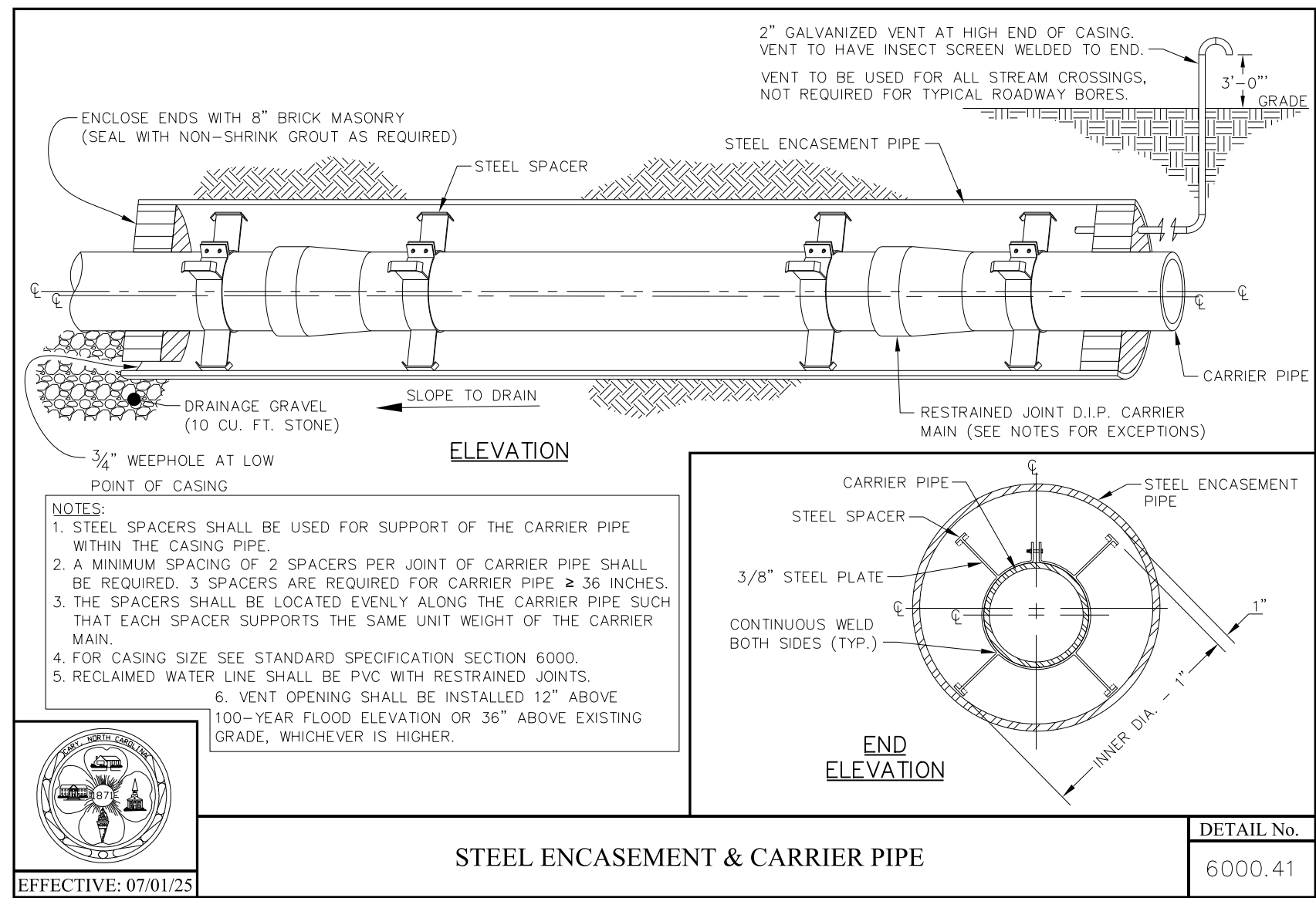
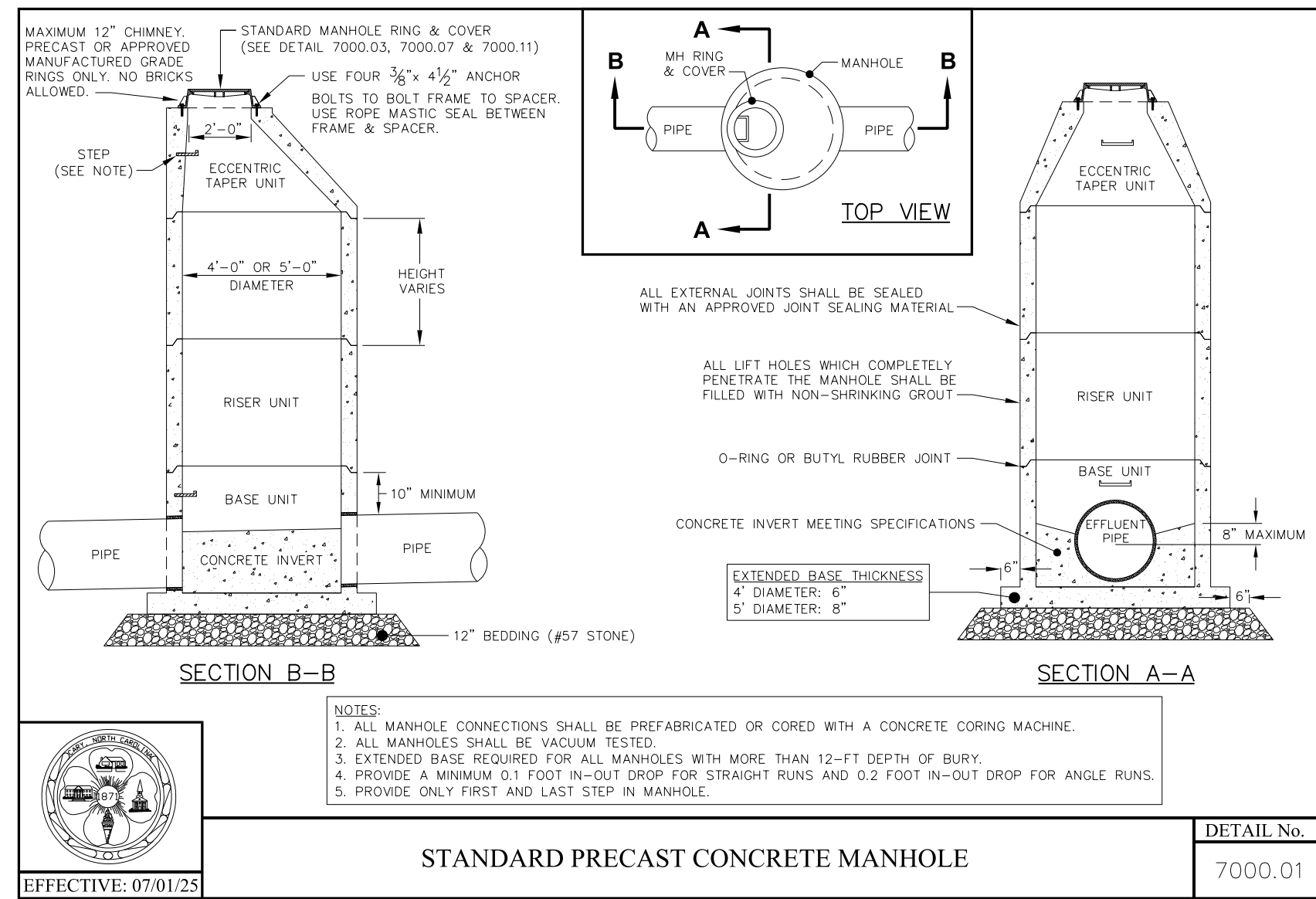
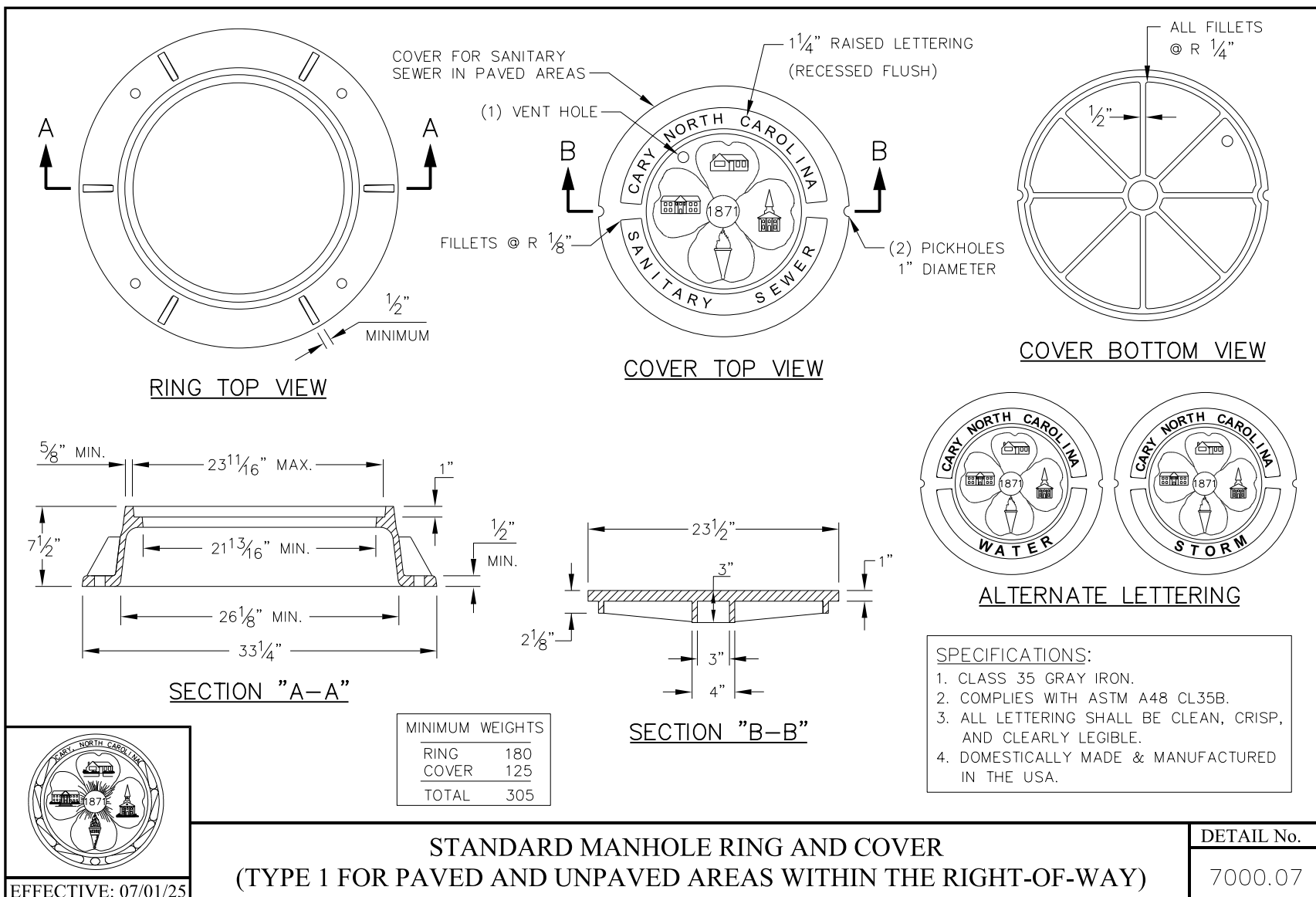
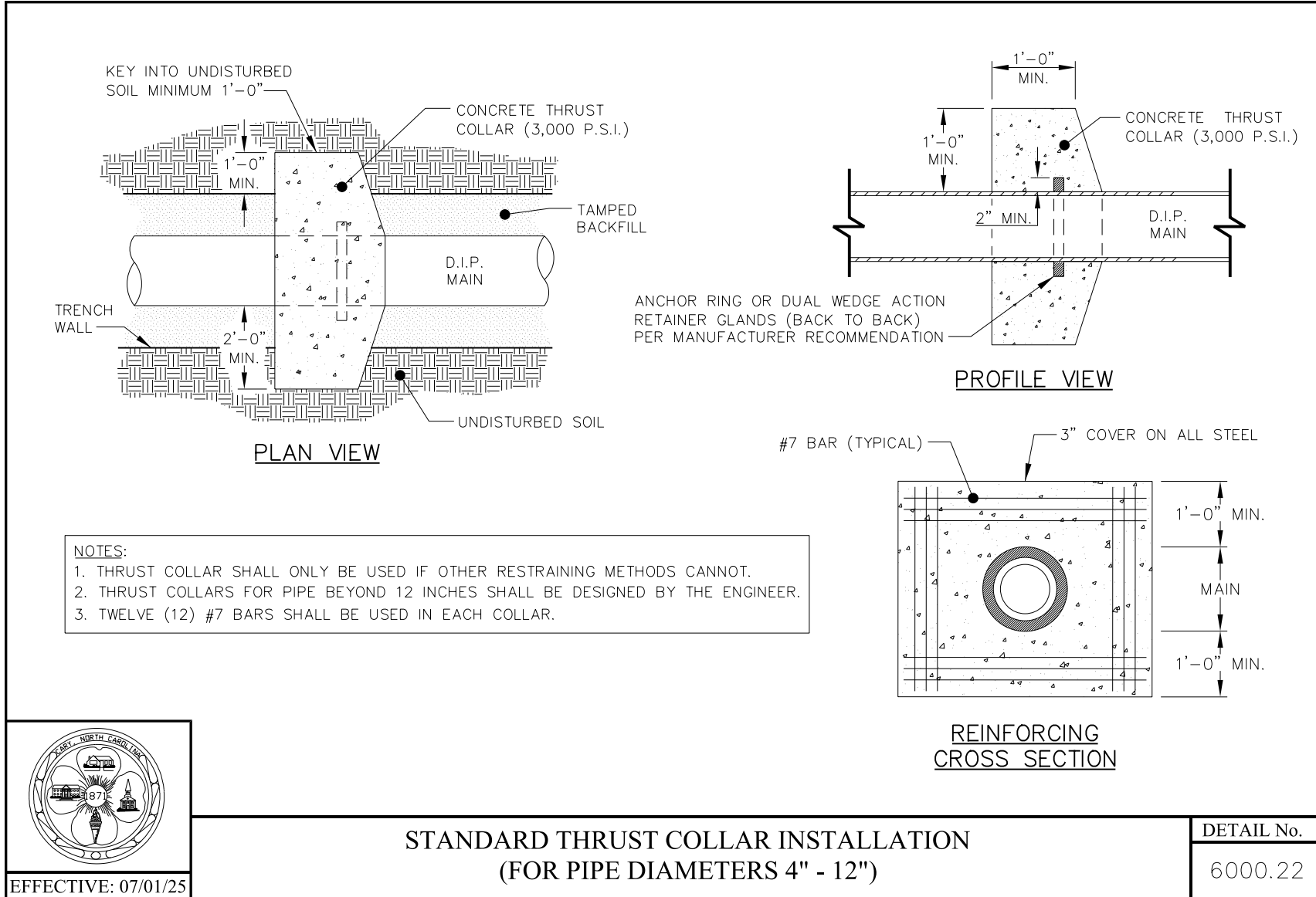
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UTILITY CONSTRUCTION



PROJECT CONSTRUCTION DETAILS



PREPARED IN THE OFFICE OF:

120 North Boylan Avenue Raleigh, NC 27603-1423
919.828.0531 Fax 919.834.3559
License Number: F-0115

PROJECT REFERENCE NO.

HL-0033

SHEET NO.

UC-3B

DESIGNED BY: DGM

DRAWN BY: TK

CHECKED BY: WBJ

APPROVED BY: WBJ

REVISED:

NORTH CAROLINA
DEPARTMENT OF
TRANSPORTATION

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

VERTICAL SCALE

5' 0 5' 10'

HORIZONTAL SCALE

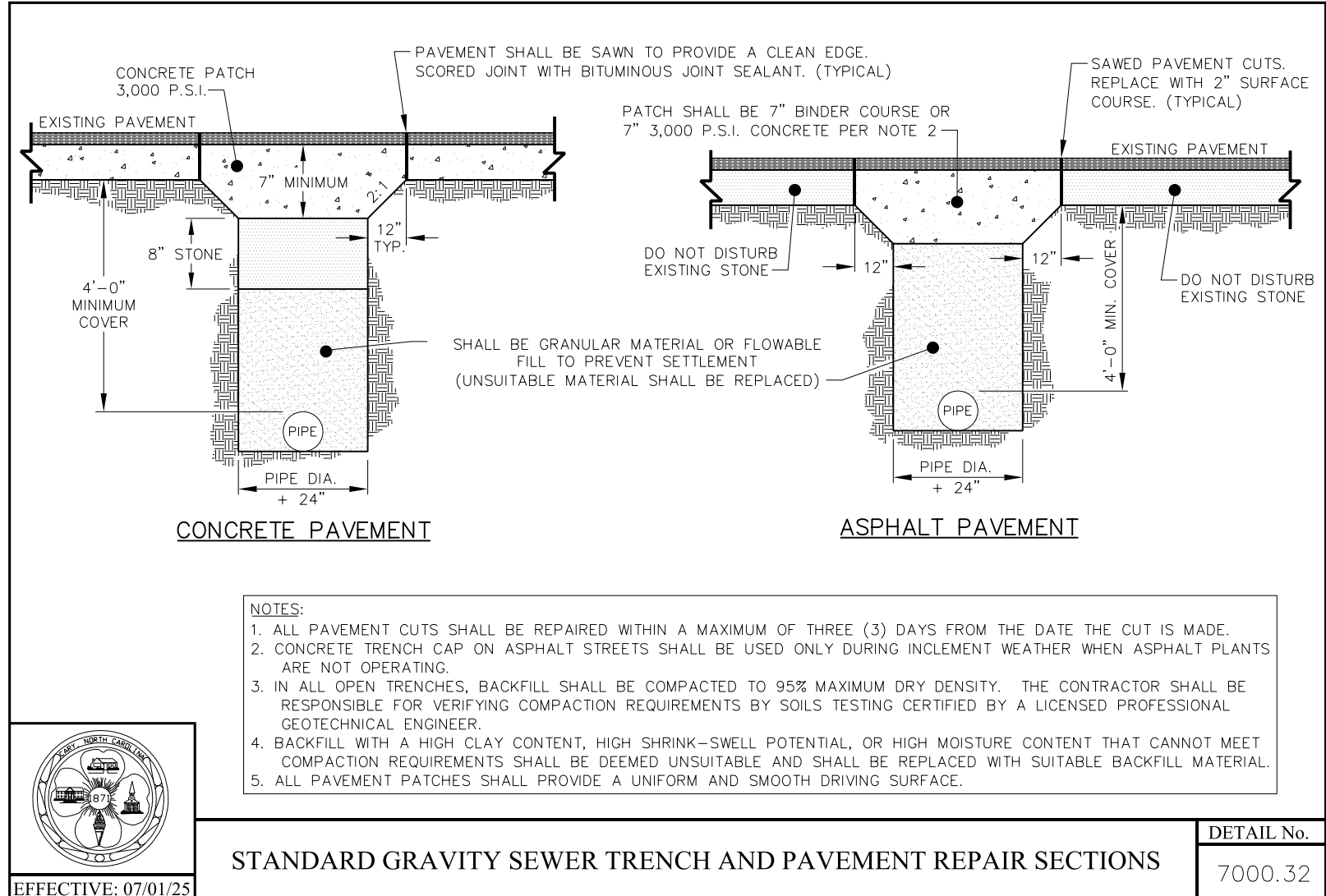
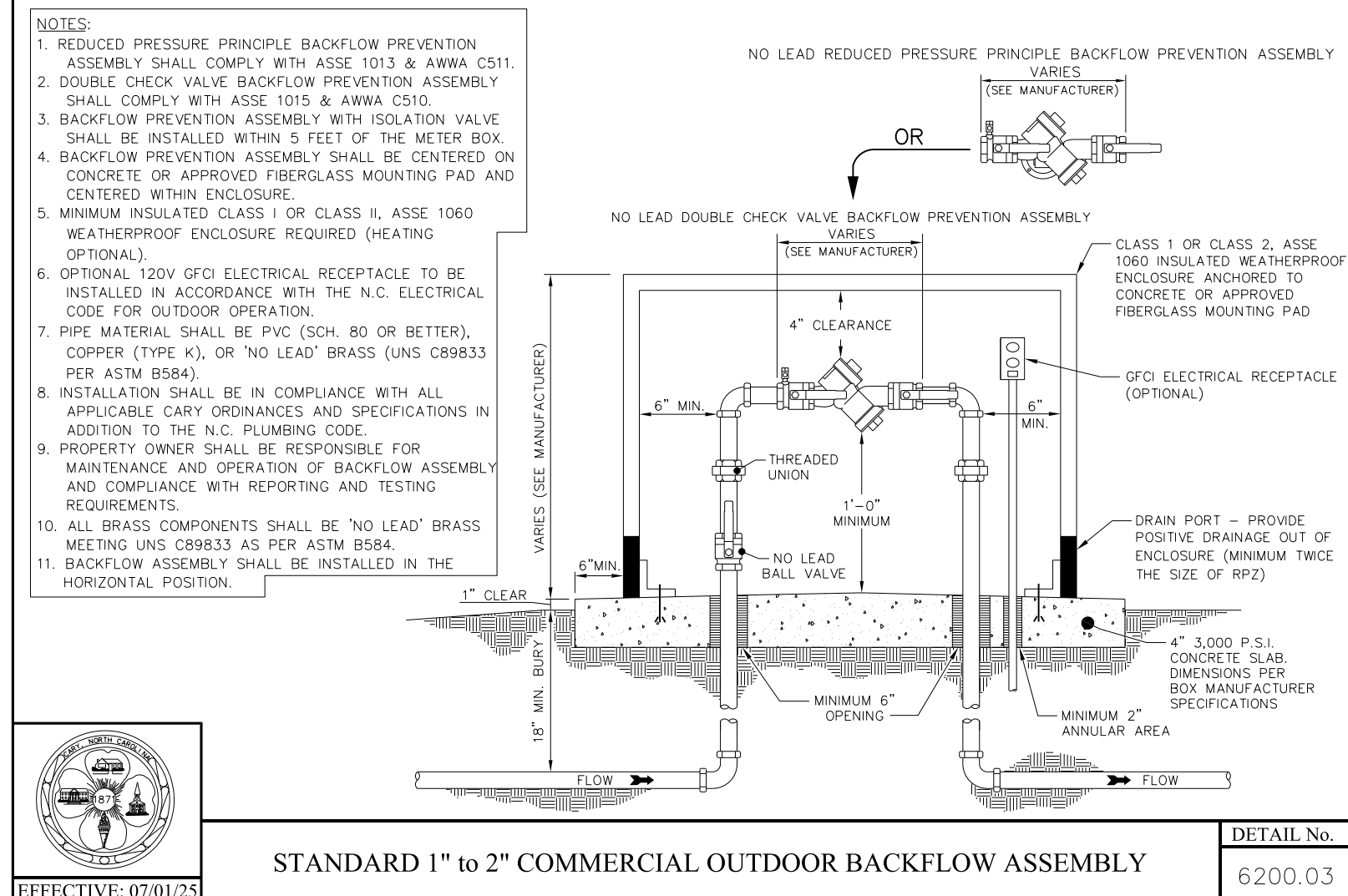
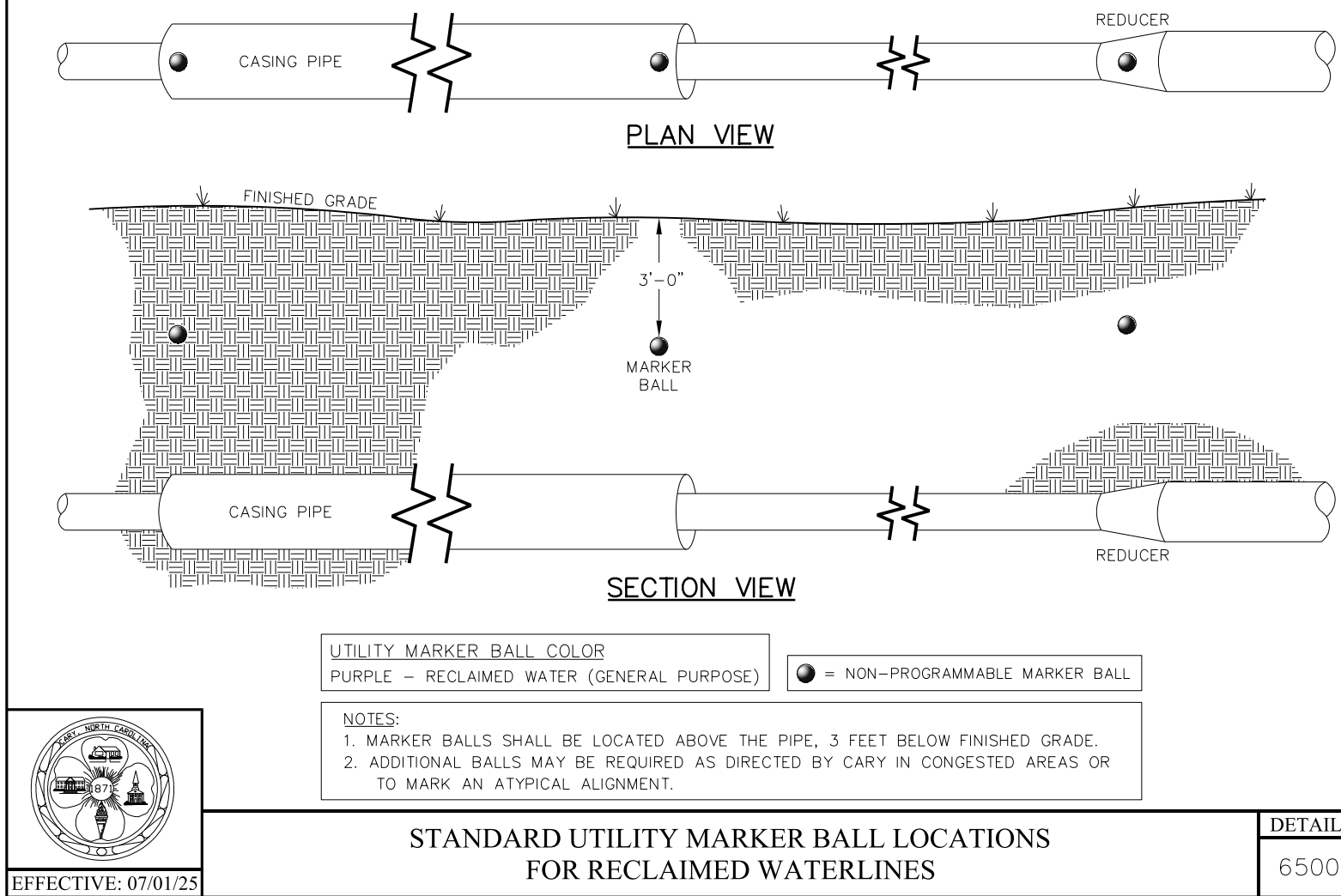
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WATER LINE CONSTRUCTION
SHOWN ON THIS SHEET

38689
1/15/2025
ENGINEER
JOHN V. P. OSCHMANN


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PROJECT CONSTRUCTION DETAILS

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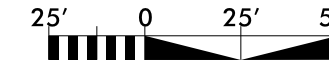
120 North Boylan Avenue Raleigh, NC 27603-1423
919.828.0531 Fax 919.834.3559
License Number: F-0115

VERTICAL SCALE



5' 0 5' 10'

HORIZONTAL SCALE



25' 0 25' 50'

WATER LINE CONSTRUCTION
SHOWN ON THIS SHEET

PROJECT REFERENCE NO.
HL-0033

SHEET NO.
UC-3C

DESIGNED BY: DGM

DRAWN BY: TK

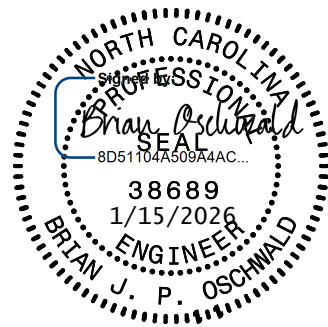
CHECKED BY: WBJ

APPROVED BY: WBJ

REVISED:

NORTH CAROLINA
DEPARTMENT OF
TRANSPORTATION

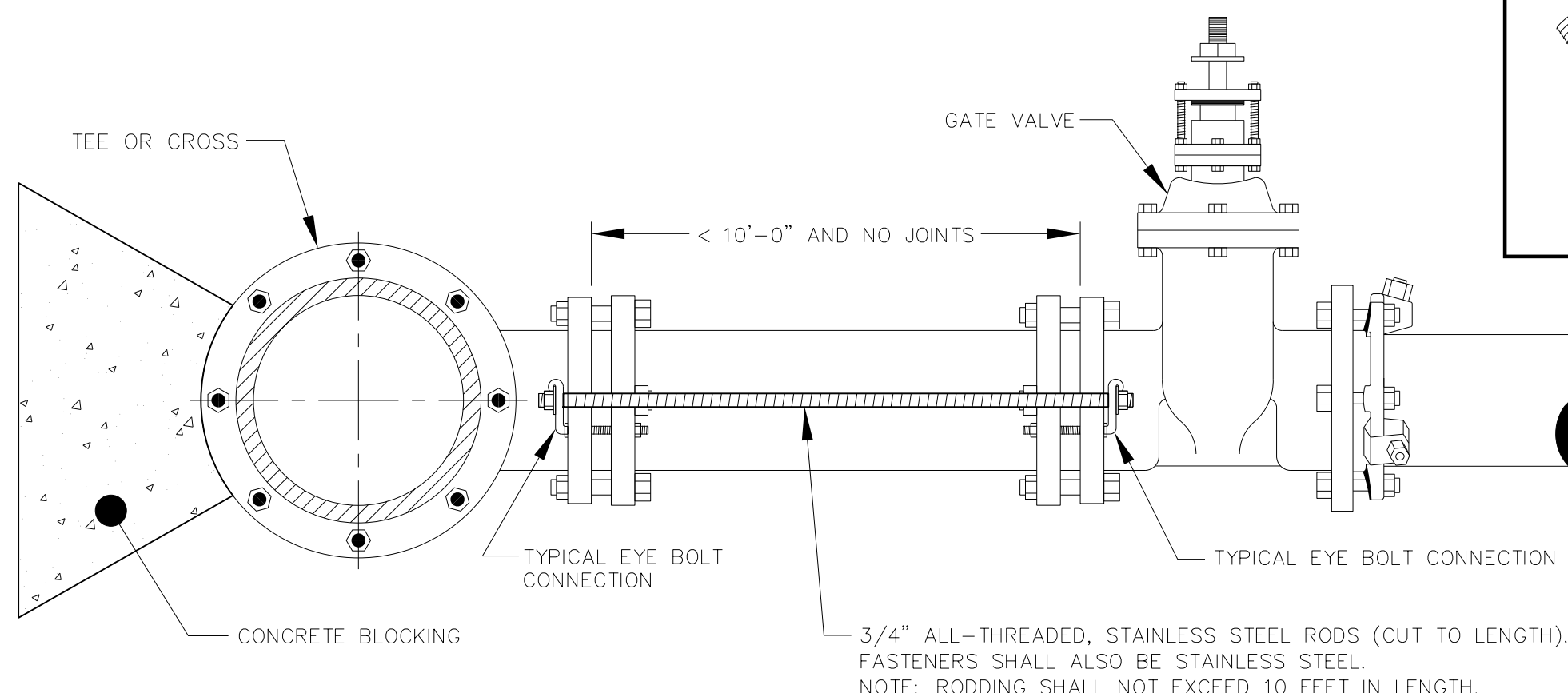
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FAX: (919) 250-4151

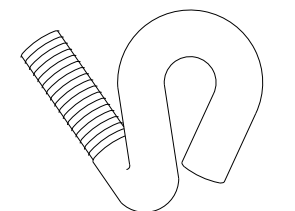


38689
1/15/2026
ENGINEER
BRIAN P. OSCHWALD

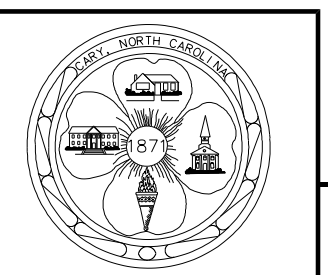
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TYPICAL
EYE BOLT



EFFECTIVE: 07/01/25

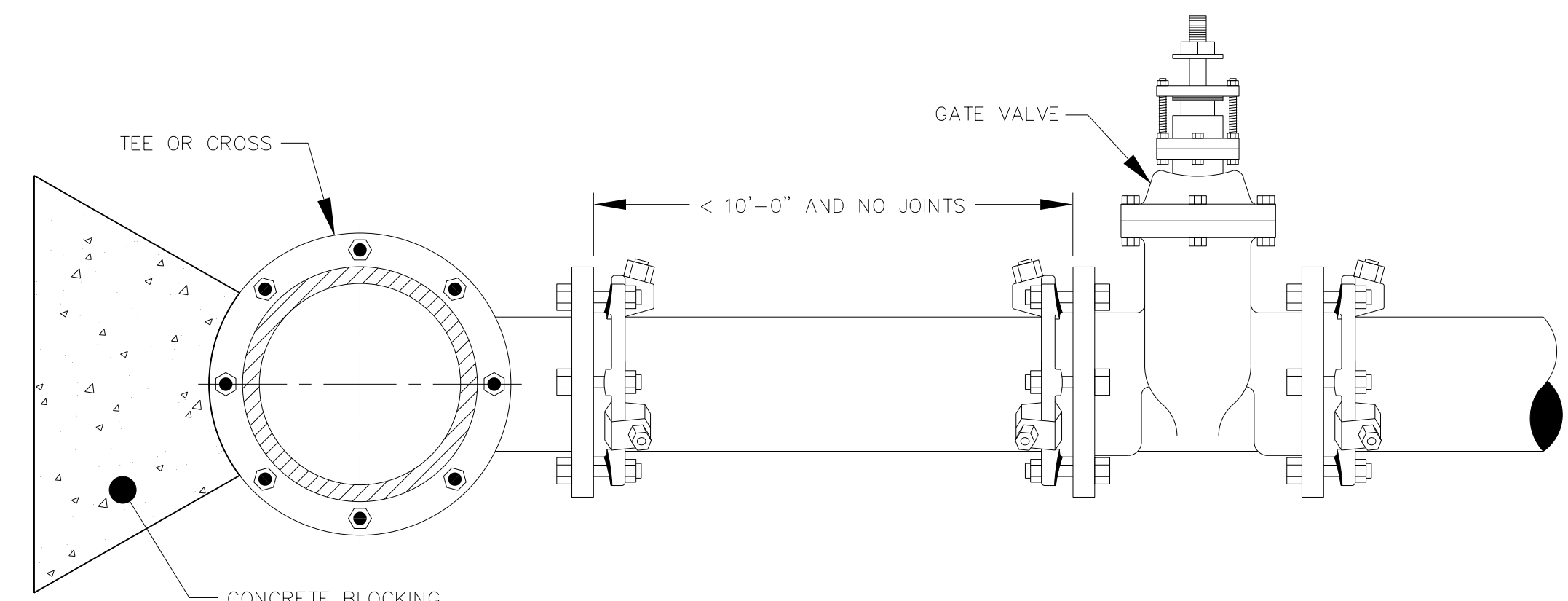
STAINLESS STEEL ROD REQUIREMENTS	
BRANCH SIZE	No. OF RODS
4"	2
6"	2
8"	4
12"	6
16"	8

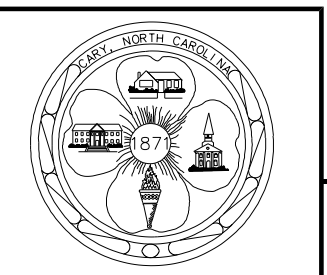
GENERAL NOTES:

1. SEE STANDARD THRUST BLOCK DETAIL.
2. CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL FITTINGS.
3. RODS SHALL NOT BE COUPLED.
4. ADDITIONAL JOINT RESTRAINT REQUIRED IN EACH DIRECTION (NOT SHOWN) FOR ALL VALVES TO OPERATE AS A DEAD END.

STANDARD VALVE RESTRAINT WITH RODDING
AT A TEE OR CROSS UP TO 16" IN DIAMETER

DETAIL No.
6000.14





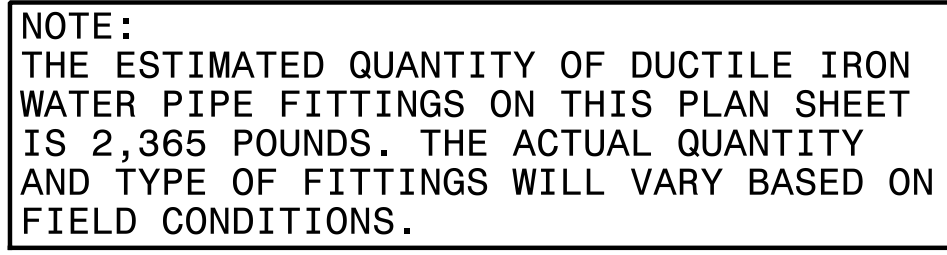
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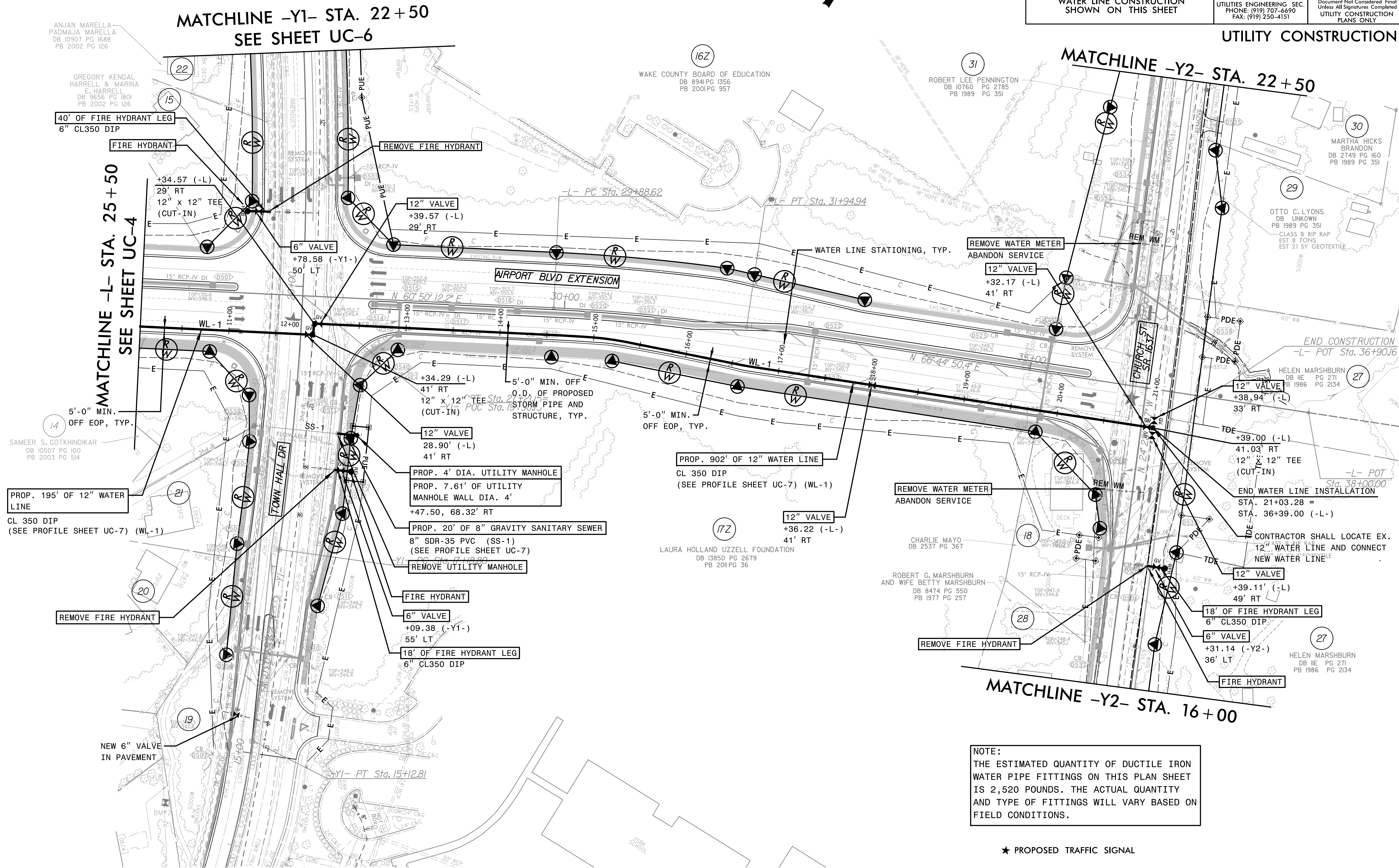
GENERAL NOTES:

1. SEE STANDARD THRUST BLOCK DETAIL.
2. CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL FITTINGS.
3. ADDITIONAL JOINT RESTRAINT REQUIRED IN EACH DIRECTION (NOT SHOWN) FOR ALL VALVES TO OPERATE AS A DEAD END.

ALTERNATE VALVE RESTRAINT WITH WEDGE ACTION RETAINER GLANDS
AT A TEE OR CROSS

DETAIL No.
6000.15






5/14/99


5/14/99

PREPARED IN THE OFFICE OF:




120 North Boylan Avenue Raleigh, NC 27603-1423
919.828.0531 Fax 919.834.3559
License Number: F-0115

VERTICAL SCALE



5' 0 5' 10'

HORIZONTAL SCALE



25' 0 25' 50'

WATER LINE CONSTRUCTION
SHOWN ON THIS SHEET

PROJECT REFERENCE NO.

HL-0033

SHEET NO.

UC-6

DESIGNED BY: DGM

DRAWN BY: TK

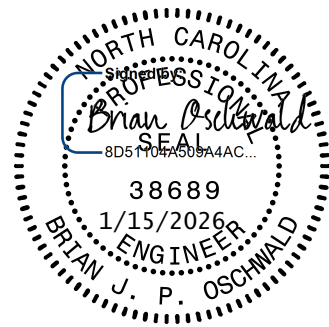
CHECKED BY: WBJ

APPROVED BY: WBJ

REVISED:

NORTH CAROLINA
DEPARTMENT OF
TRANSPORTATION

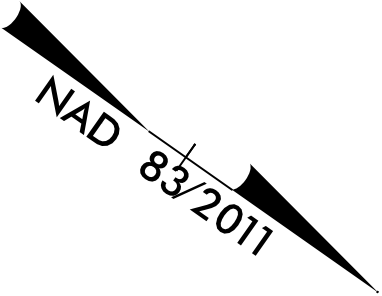
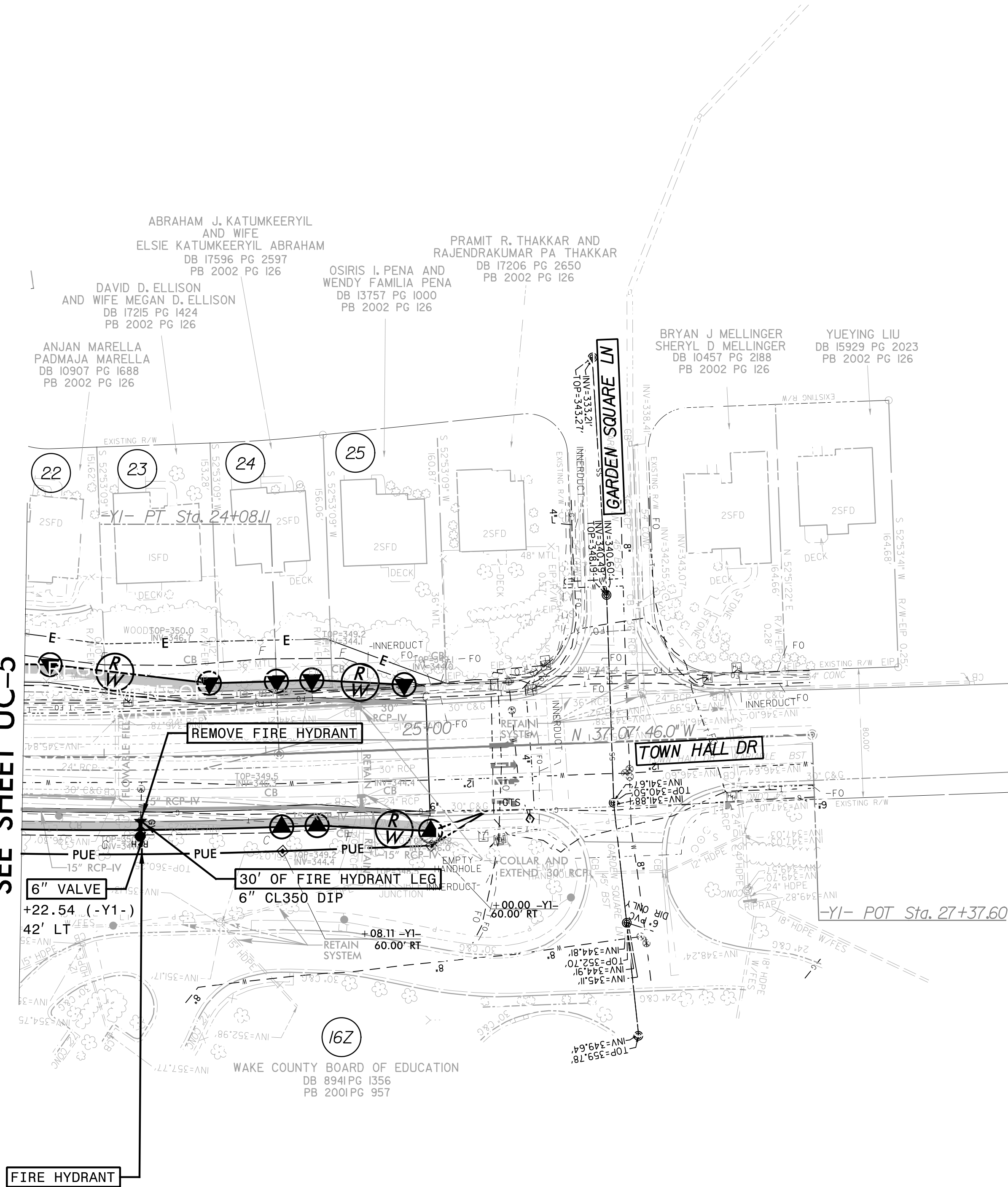
UTILITIES ENGINEERING SEC.
PHONE: (919) 707-6690
FAX: (919) 250-4151



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Unless All Signatures Completed
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PLANS ONLY

UTILITY CONSTRUCTION

MATCHLINE -Y1- STA. 22 + 50
SEE SHEET UC-5



PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

