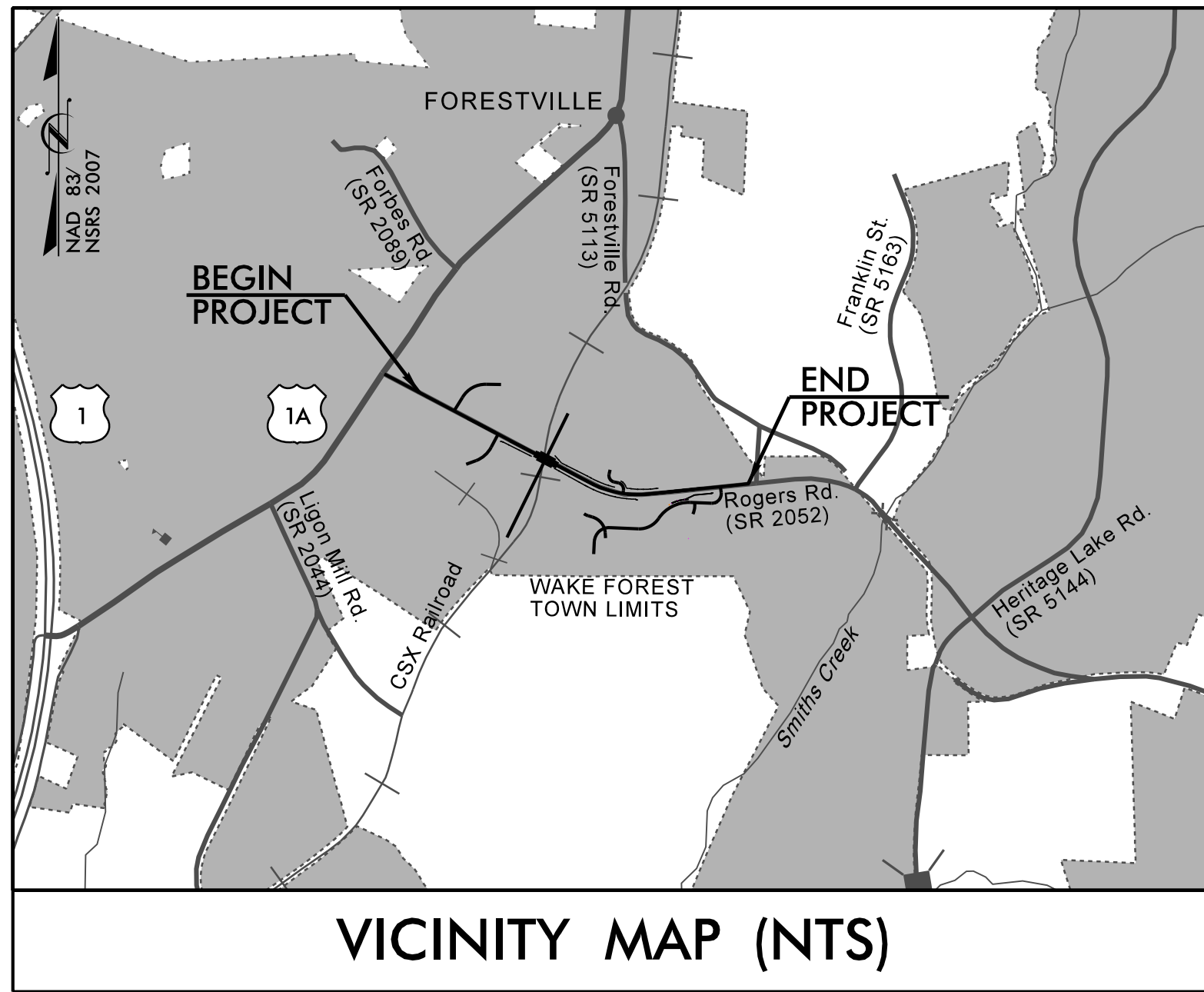


TIP PROJECT: P-5707



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITY CONSTRUCTION PLANS
WAKE COUNTY

LOCATION: ROGERS ROAD (SR 2052) GRADE SEPARATION
OVER CSX RAILROAD (CROSSING NO. 633 905 Y)
AT MILE POST S 142.53

TYPE OF WORK: WATER AND SEWER RELOCATION

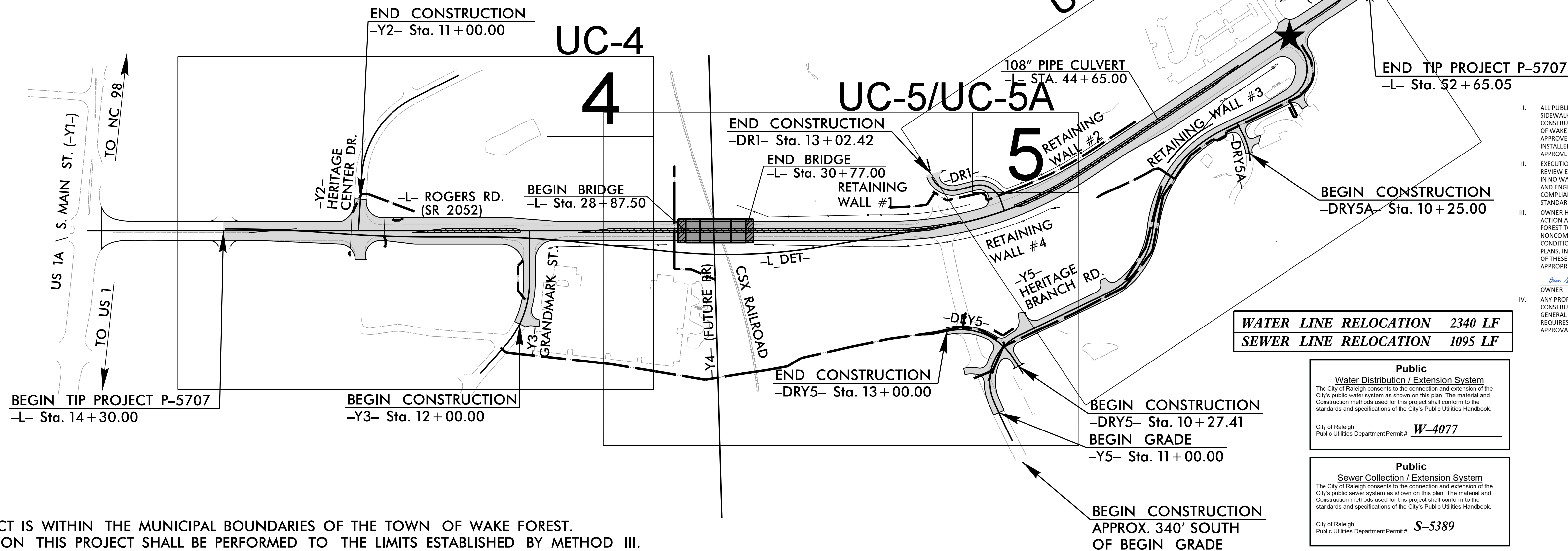
T.I.P. NO.	SHEET NO.
P-5707	UC-1

ATTENTION CONTRACTORS

The Contractor responsible for the extension of water, sewer, and/or reuse, as approved in these plans, is responsible for contacting the Infrastructure Inspections Division and schedule a Pre-construction meeting on the Development Portal prior to beginning any construction. Raleigh Water must be contacted at (919) 996-4540 at least twenty-four hours prior to beginning any work activity around critical water and sewer infrastructure.

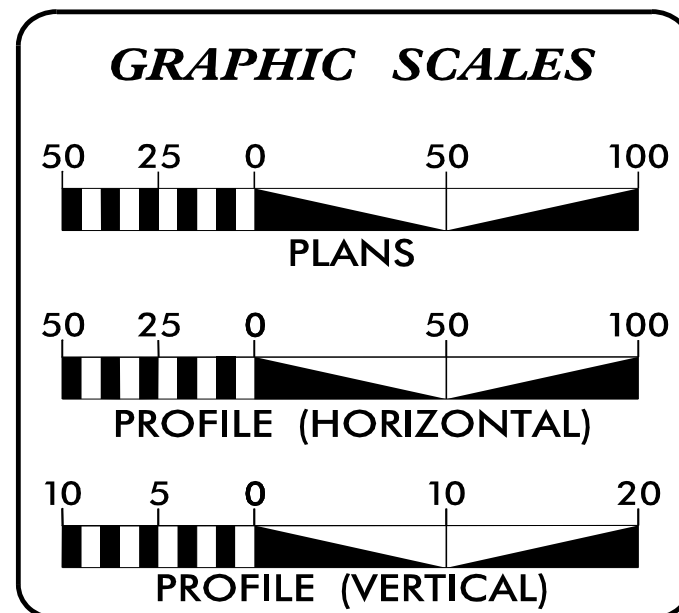
Failure to notify City Departments in advance of beginning construction, will result in the issuance of monetary fines, and require reinstallation of any water or sewer facilities not inspected as a result of this notification failure.

Failure to call for inspection, install a downstream plug, have permitted plans on the jobsite, or any other violation of City of Raleigh Standards will result in a fine and possible exclusion from future work in the City of Raleigh.



NOTES:

- THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE TOWN OF WAKE FOREST.
- CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.



SHEET NO.:	DESCRIPTION:
UC-1	TITLE SHEET
UC-2	UTILITY SYMBOLOGY
UC-3	NOTES
UC-3A THRU UC-3E	DETAILS
UC-4 THRU UC-6A	UTILITY CONSTRUCTION SHEETS
UC-7 THRU UC-10	PROFILE SHEETS

WATER AND SEWER
OWNERS ON PROJECT

- (A) WATER - CITY OF RALEIGH
(B) SANITARY SEWER - CITY OF RALEIGH

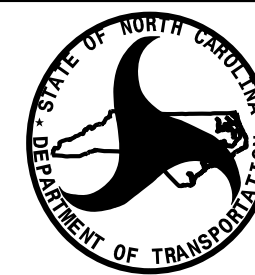
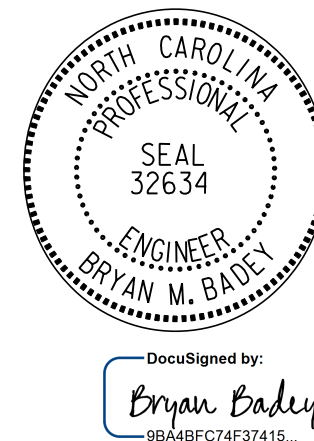
PREPARED IN THE OFFICE OF



BRYAN BADEY, PE CONSULTANT CONTACT #1
MARIKO PYATT, PE CONSULTANT CONTACT #2

SEAL

8/20/2026



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

2024 STANDARD SPECIFICATIONS

NABIL HAMDAN, PE UTILITIES REGIONAL ENGINEER
TEVIN ASAMOAH UTILITIES ENGINEER
DAYTON MARTIN UTILITIES AREA COORDINATOR
MARK COLE UTILITIES COORDINATOR

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES PLAN SHEET SYMBOLS

PROJECT REFERENCE NO.	SHEET NO.
P-5707	UC-2

Public
Water Distribution / Extension System
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City of Raleigh
Public Utilities Department Permit # **W-4077**

Public
Sewer Collection / Extension System
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City of Raleigh
Public Utilities Department Permit # **S-5389**

PROPOSED WATER SYMBOLS

Water Line (Sized as Shown)	12" WL
11¼ Degree Bend	
22½ Degree Bend	
45 Degree Bend	
90 Degree Bend	
Plug	
Tee	
Cross	
Reducer	
Gate Valve	GV
Butterfly Valve	BV
Tapping Valve	TGV
Line Stop	LS
Line Stop with Bypass	LS/BP
Blow Off	BO
Fire Hydrant	PEH
Relocate Fire Hydrant	REH
Remove Fire Hydrant	REM FH
Water Meter	PWM
Relocate Water Meter	RWM
Remove Water Meter	REM WM
Water Pump Station	PST(W)
RPZ Backflow Preventer	PRPZ
DCV Backflow Preventer	PBFP
Relocate RPZ Backflow Preventer	RRPZ
Relocate DCV Backflow Preventer	RBFP

PROPOSED SEWER SYMBOLS

Gravity Sewer Line (Sized as Shown)	12" SS
Force Main Sewer Line (Sized as Shown)	12" FSS
Manhole (Sized per Note)	
Sewer Pump Station	PST(SS)

PROPOSED MISCELLANOUS UTILITIES SYMBOLS

Power Pole	
Telephone Pole	
Joint Use Pole	
Telephone Pedestal	TEL PED
Utility Line by Others (Type as Shown)	PROP O/H POW LINES
Trenchless Installation	12" TL INSTALL
Encasement by Open Cut	24" ENCAS BY OC
Encasement	24" ENCASEMENT

Thrust Block	
Air Release Valve	AR
Utility Vault	UV
Concrete Pier	CP
Steel Pier	SP
Plan Note	NOTE
Pay Item Note	PAY ITEM

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	AATUR
End of Information	E.O.I.

*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	A/G Sanitary Sewer
*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

5/26/2026
R:\16_Utilities\Engineering\UC\Proj\N5707_Ut_notes_UC03_psh.dgn
10:00

UTILITY CONSTRUCTION

PROJECT REFERENCE NO.		SHEET NO.
P-5707		UC-3
DESIGNED BY: MEP	DocuSigned by: <i>Bryan M. Bady</i> BMB6C74E37415 NORTH CAROLINA PROFESSIONAL ENGINEER BRYAN M. BADY	
DRAWN BY: MEP		
CHECKED BY: BMB		
APPROVED BY: BMB		
REVISED:		
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151		8/20/2026 UTILITY CONSTRUCTION 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 2024.

2. THE EXISTING UTILITIES BELONG TO CITY OF RALEIGH. THE UTILITY OWNER TO CONTACT IS TODD TOLER (919) 996-3476

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. 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 RESERVOIR 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 &/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 THE PUBLIC UTILITIES DIRECTOR. 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 WATERMAIN, 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; MAINTAIN 18' MIN. VERTICAL SEPARATION AT ALL SANITARY SEWER & RCP STORMDRAIN CROSSINGS. WHERE ADEQUATE SEPARATIONS CANNOT BE ACHIEVED, SPECIFY DIP MATERIALS & A CONCRETE CRADLE HAVING 6" MIN. CLEARANCE (PER CORPUD DETAILS W- 41 & S-49).
- F) ALL OTHER UNDERGROUND UTILITIES SHALL CROSS WATER & SEWER FACILITIES WITH 18" MIN. VERTICAL SEPARATION REQUIRED.

2. CONTRACTOR SHALL PROVIDE 30 DAYS ADVANCE WRITTEN NOTICE TO OWNER FOR ANY WORK REQUIRED WITHIN AN EXISTING CITY OF RALEIGH UTILITY EASEMENT TRAVERSING PRIVATE PROPERTY.

3. 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 THE CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT.

4. SEWER BYPASS PUMPING – A BYPASS PLAN SEALED BY AN NC PROFESSIONAL ENGINEER SHALL BE PROVIDED TO THE ENGINEER PRIOR TO PUMPING OPERATIONS FOR APPROVAL.

5. 3.0' MINIMUM COVER IS REQUIRED ON ALL WATER MAINS & SEWER FORCE MAINS. 4.0' MINIMUM COVER IS REQUIRED ON ALL REUSE MAINS.

6. ANY WATER OR SEWER SERVICES ON PRIVATE PROPERTY THAT WILL BE INSTALLED UNDER CONSTRUCTION DRAWINGS MAY REQUIRE A PLUMBING UTILITY PERMIT IN THE CITY OF RALEIGH. CONSULT WITH THE ENGINEERING INSPECTION COORDINATOR DURING THE PRE-CONSTRUCTION MEETING ON THE NECESSARY PERMITS.

7. INSTALL SEWER SERVICES WITH CLEANOUTS LOCATED AT ROW OR EASEMENT LINE & SPACED PER THE CURRENT NC PLUMBING CODE.

8. 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.

9. GREASE INTERCEPTOR / OIL WATER SEPARATOR SIZING CALCULATIONS & INSTALLATION SPECIFICATIONS SHALL BE APPROVED BY THE RW FOG PROGRAM COORDINATOR PRIOR TO ISSUANCE OF A UC AND/OR BUILDING PERMIT. CONTACT (919) 996-4516 OR FOG@RALEIGHNC.GOV FOR MORE INFORMATION.

10. CROSS-CONNECTION CONTROL PROTECTION DEVICES ARE REQUIRED BASED ON THE DEGREE OF HEALTH HAZARD INVOLVED AS LISTED IN APPENDIX B OF THE RULES GOVERNING PUBLIC WATER SYSTEMS IN NORTH CAROLINA.

11. THE DEVICES SHALL MEET THE AMERICAN SOCIETY OF SANITARY ENGINEERING (ASSE) STANDARDS AND BE ON THE UNIVERSITY OF SOUTHERN CALIFORNIA APPROVAL LIST.

12. THE DEVICE AND INSTALLATION SHALL MEET THE GUIDELINES OF APPENDIX A – GUIDELINES AND REQUIREMENTS FOR THE CROSS CONNECTION PROGRAM IN RALEIGH'S SERVICE AREA.

13. 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. CONTACT CROSS.CONNECTION@RALEIGHNC.GOV FOR MORE INFORMATION.

14. PRIVATE SUB-METERING - NO RESALE OF WATER SHALL OCCUR WITHOUT APPROVAL OF THE NORTH CAROLINA UTILITY COMMISSION. SUB-METERING SHALL BE IN ACCORDANCE WITH SECTION 1400 OF THE "SAFE DRINKING WATER ACT".

Public

Water Distribution / Extension System

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City of Raleigh
Public Utilities Department Permit #

W-4077

Public

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City of Raleigh
Public Utilities Department Permit #

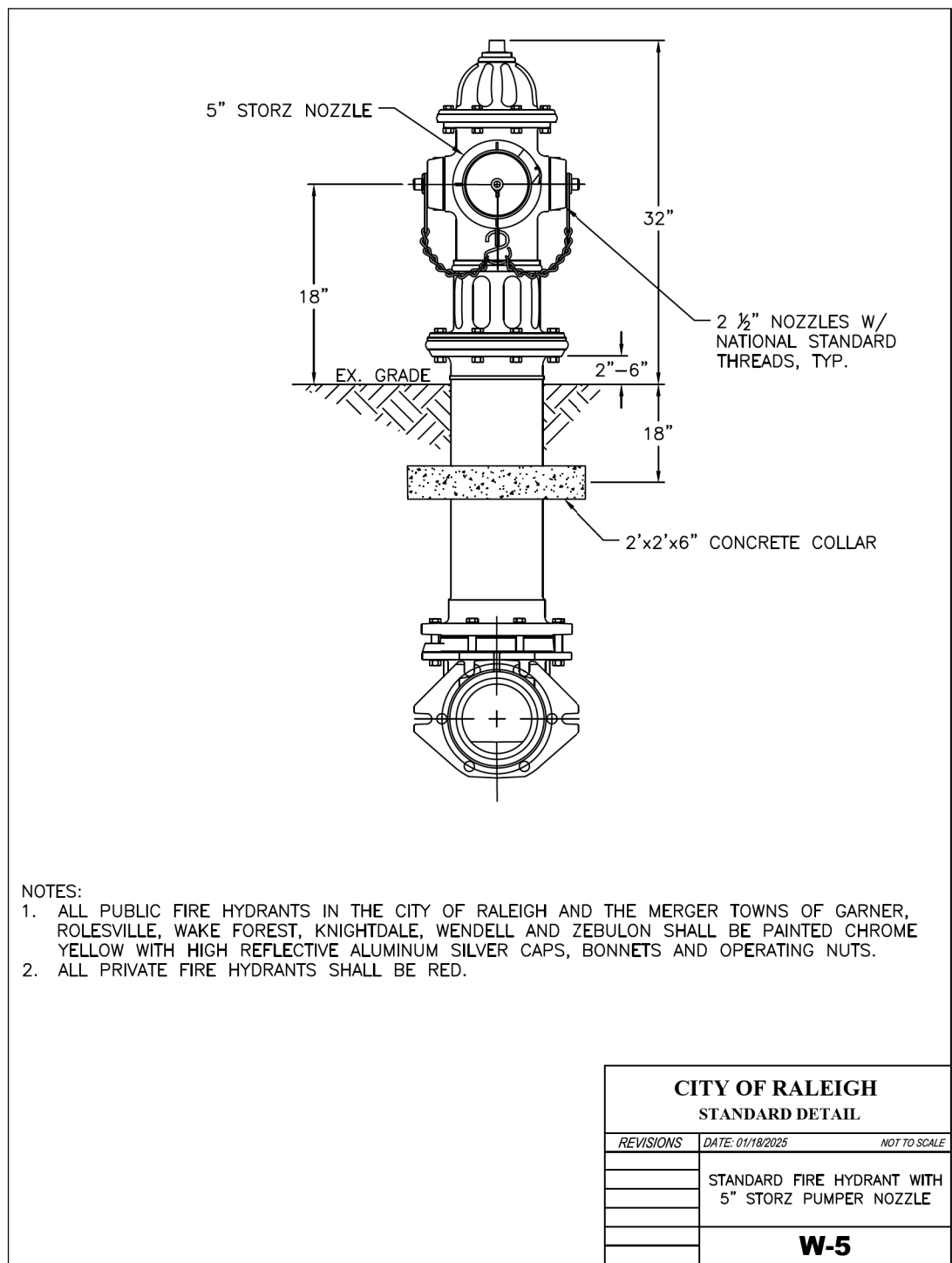
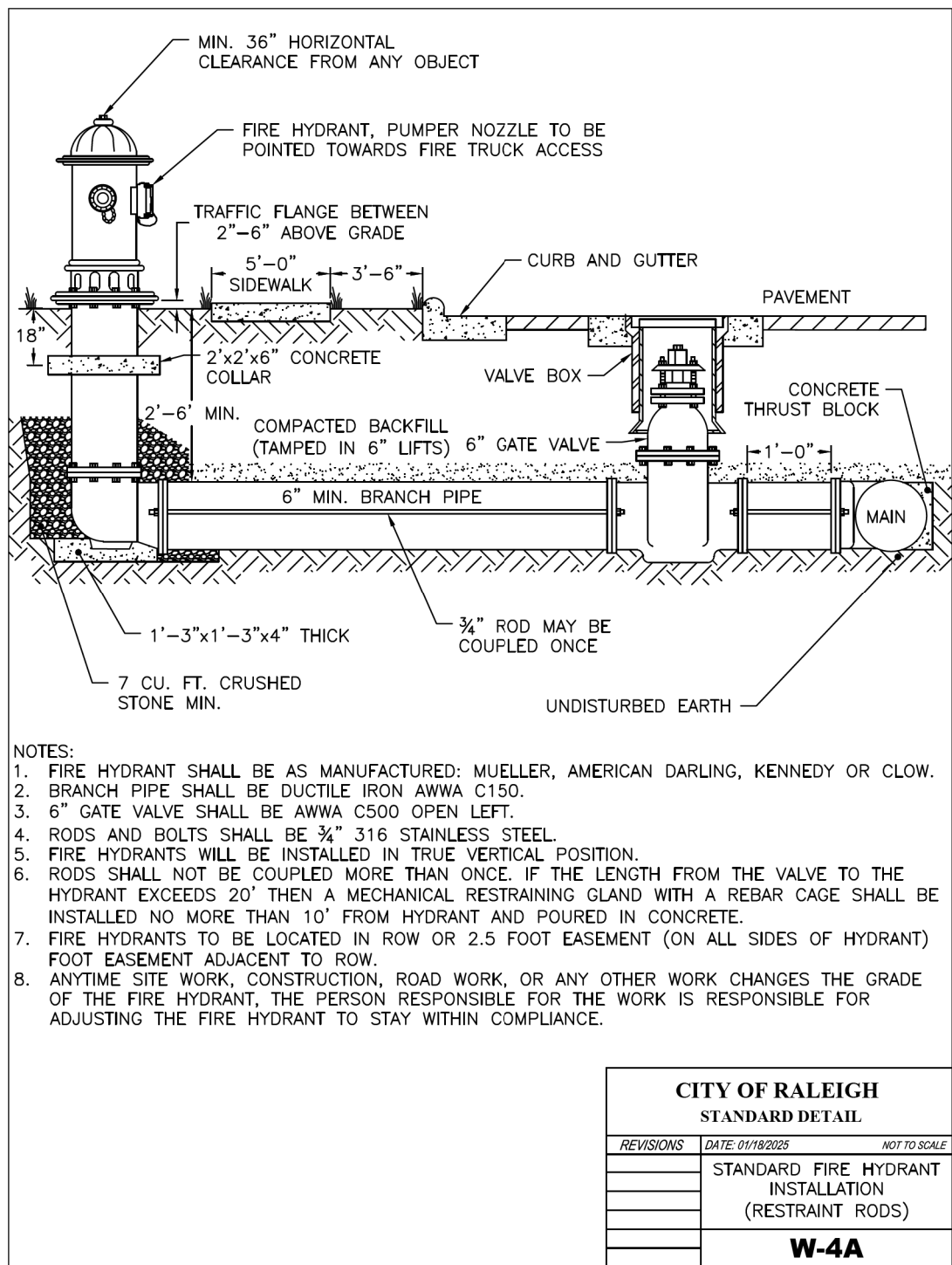
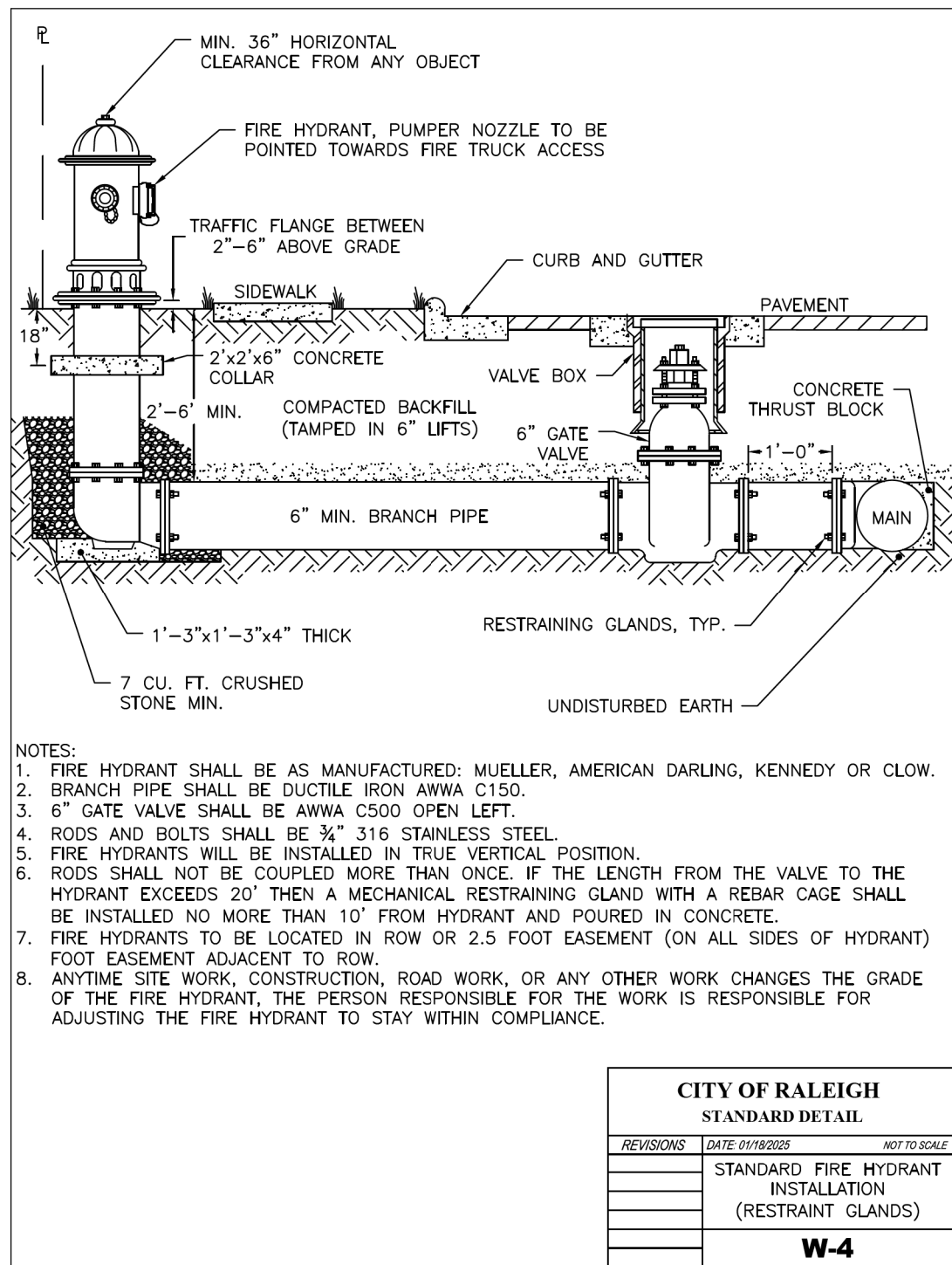
S-5389

RK&K

P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112

Engineers | Construction Managers | Planners | Scientists
www.rkk.com

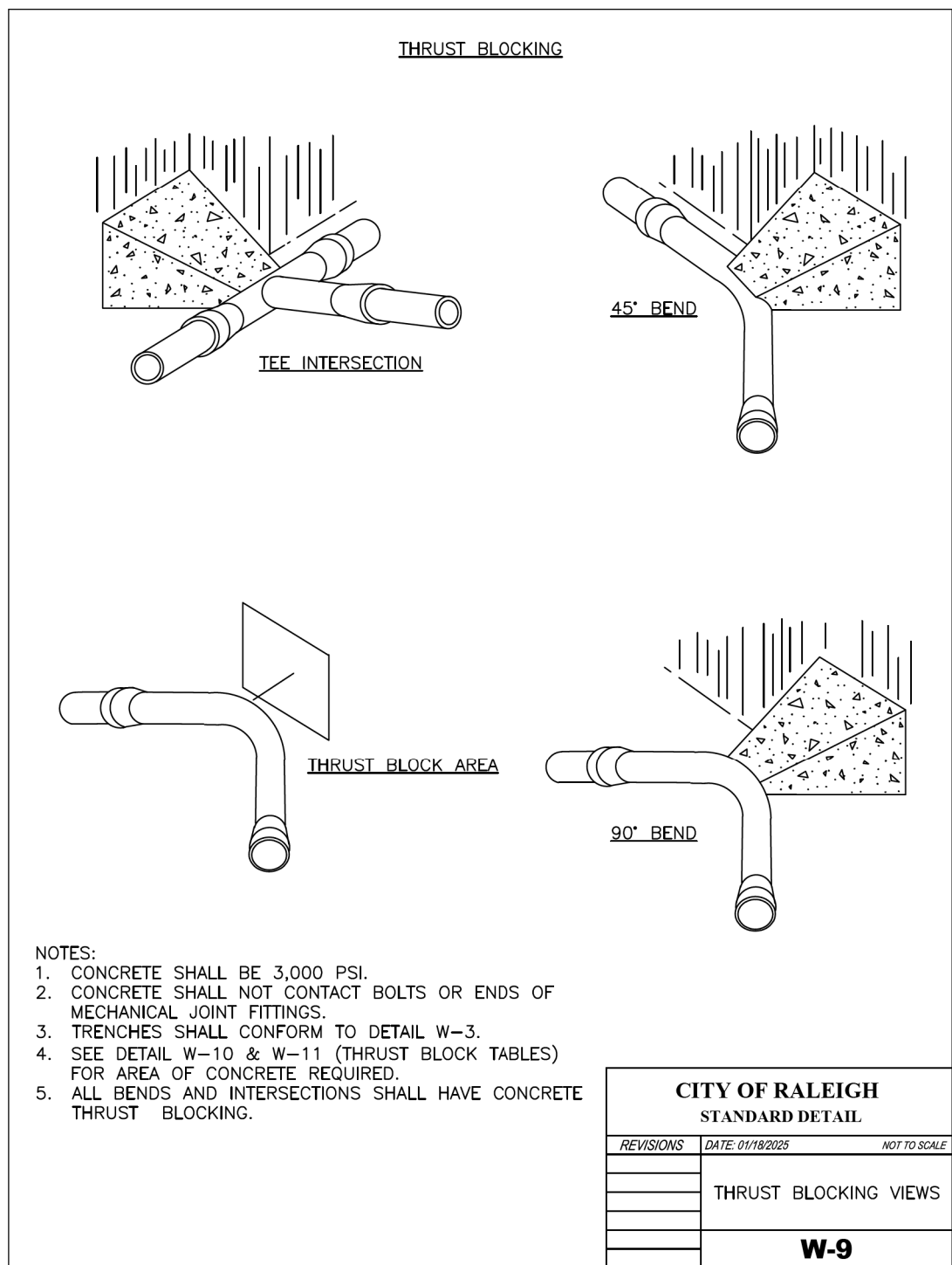
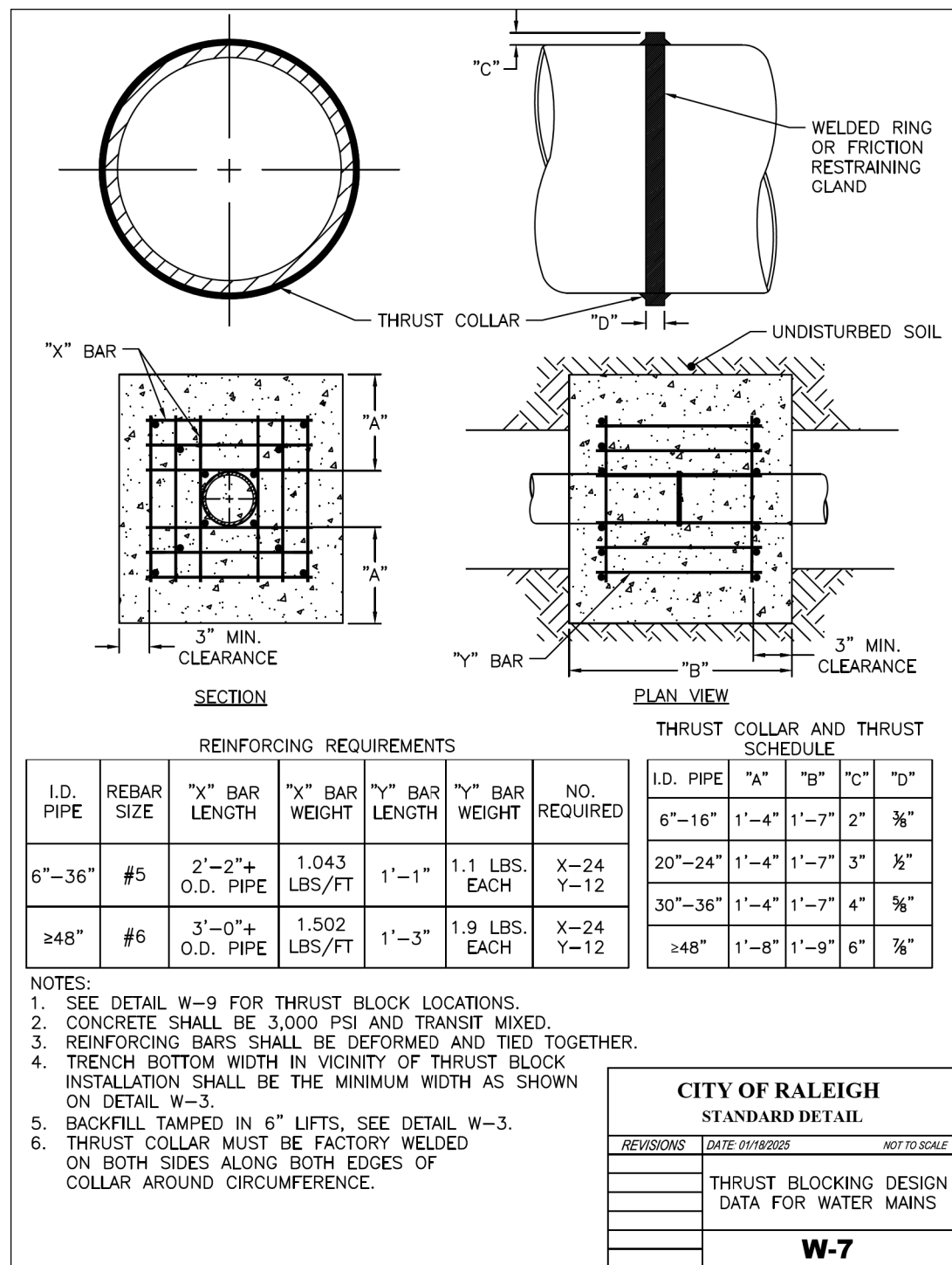
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Public Utilities Department Permit # **S-5389**



REACTION BEARING AREAS FOR HORIZONTAL WATER PIPE BENDS BASED ON TEST PRESSURE OF 200 PSI										
ALL AREAS GIVEN IN SQUARE FEET										
SIZE OF BEND	DEGREE OF BEND	STATIC THRUST IN POUNDS	Moderately DRY CLAY 4,000 LBS./FT²	SOFT CLAY 2,000 LBS./FT²	1,600 LBS./FT² GRAVEL/ COARSE SAND	8,000 LBS./FT² DRY CLAY (ALWAYS FIRM)	SAND, COMPACT FIRM 8,000 LBS./FT²	SAND— CLEAN DRY 4,000 LBS./FT²	SOIL 1,000 LBS./FT² QUICKSAND (VERY POOR)	ROCK— POOR TO GOOD 10,000 LBS./FT²
6"	11 ½'	1,108	1	1	1	1	1	1	2	1
	22 ½'	2,207	1	2	2	1	1	1	3	1
	45°	4,328	2	3	3	1	1	2	5	1
	90°	7,996	2	4	5	1	1	2	8	1
	PLUG	5,655	2	3	4	1	1	2	6	1
8"	11 ½'	1,970	1	1	2	1	1	1	2	1
	22 ½'	3,922	1	2	3	1	1	1	4	1
	45°	7,694	2	4	5	1	1	2	8	1
	90°	14,215	4	8	9	2	2	4	15	2
	PLUG	10,053	3	5	6	2	2	3	10	1
12"	11 ½'	4,433	2	3	3	1	1	2	5	1
	22 ½'	8,826	3	5	6	2	2	3	9	1
	45°	17,312	5	9	11	3	3	5	18	2
	90°	31,983	8	16	19	4	4	8	32	4
	PLUG	22,619	6	12	14	3	3	6	23	3
16"	11 ½'	7,881	2	4	5	1	1	2	8	1
	22 ½'	15,691	4	8	10	2	2	4	16	2
	45°	30,779	8	16	19	4	4	8	31	4
	90°	56,861	15	29	35	8	8	15	57	6
	PLUG	40,213	10	21	25	5	5	10	41	5

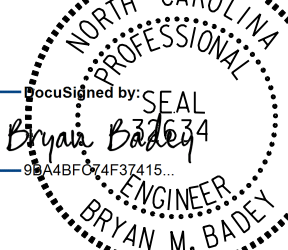
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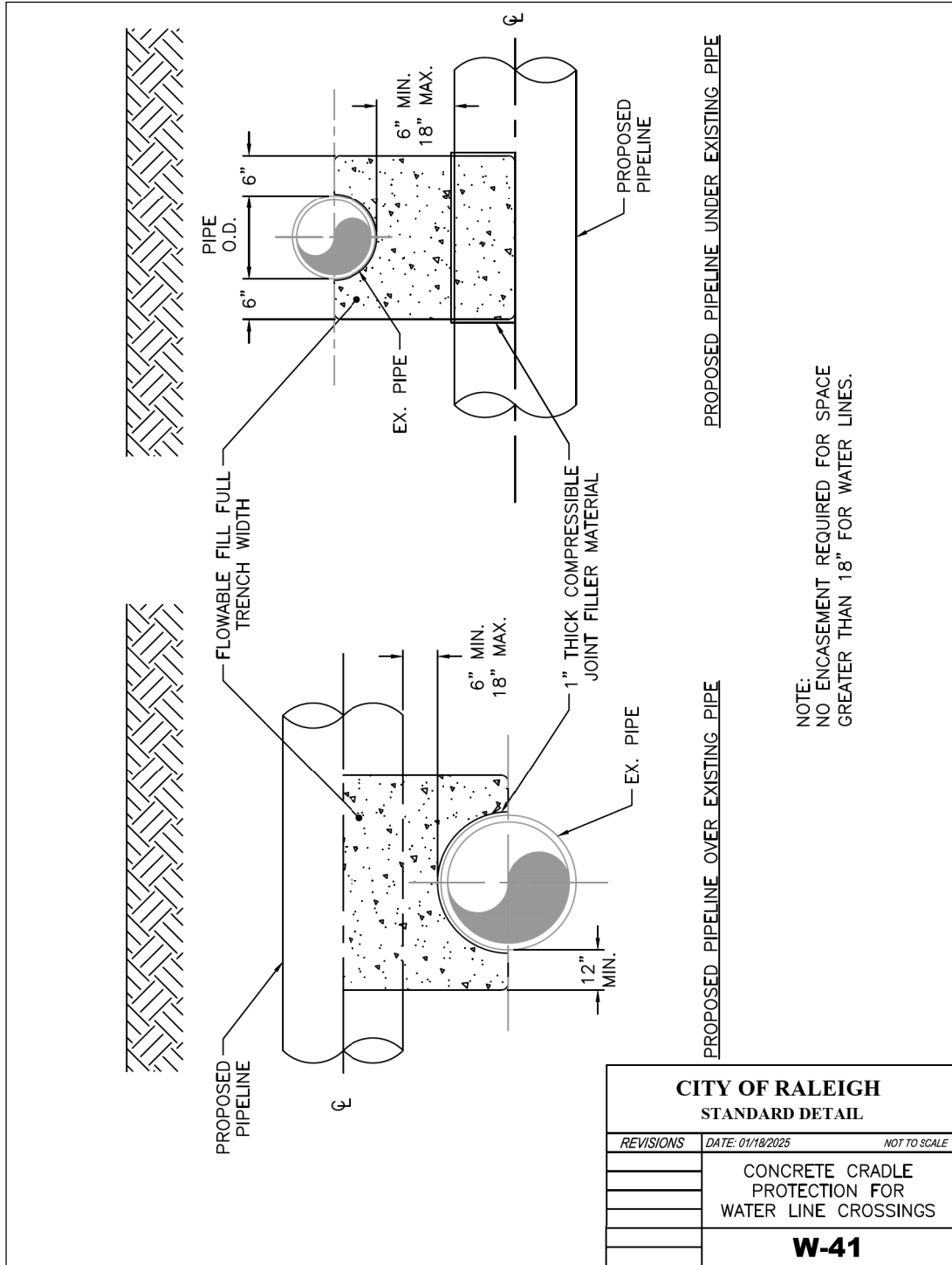
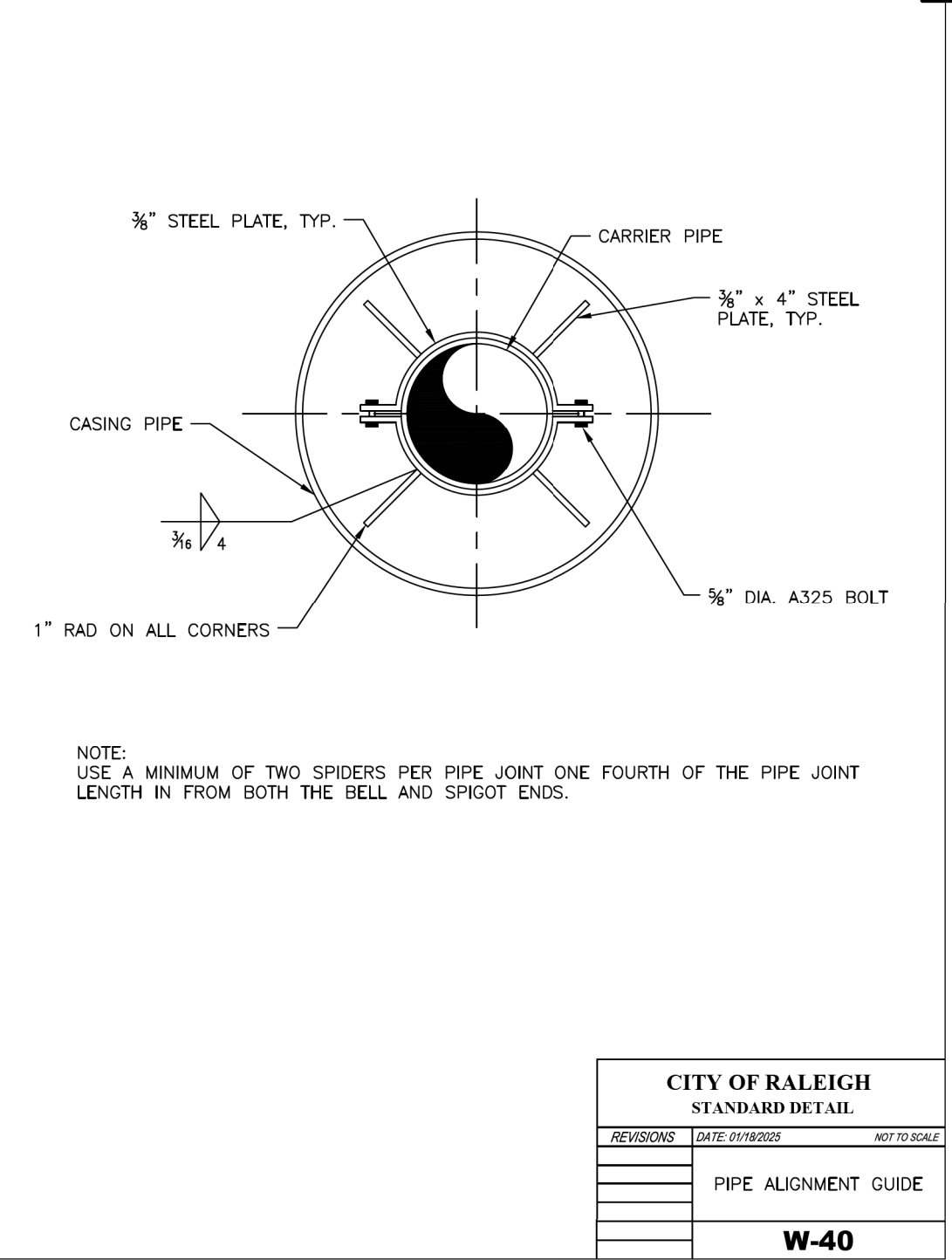
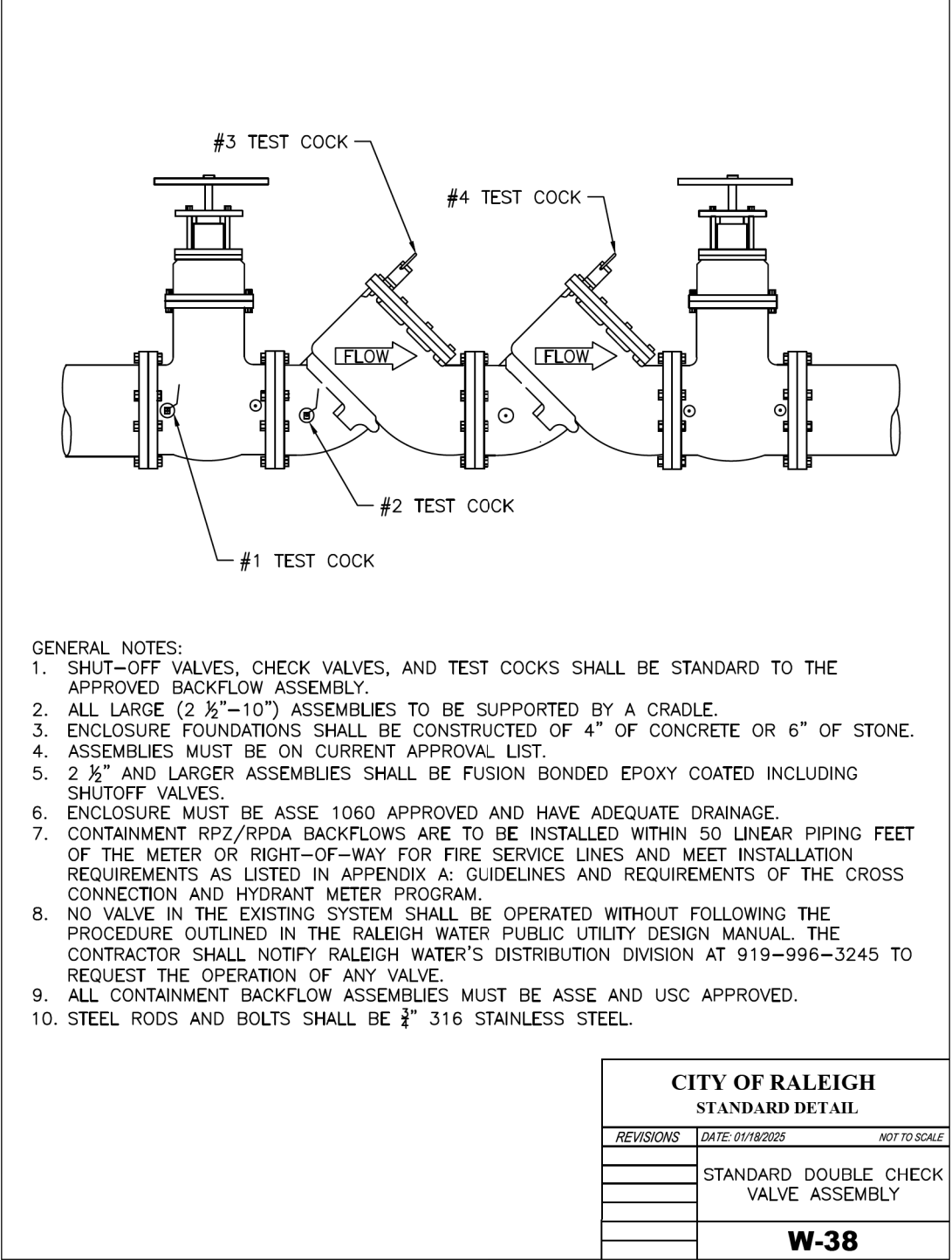
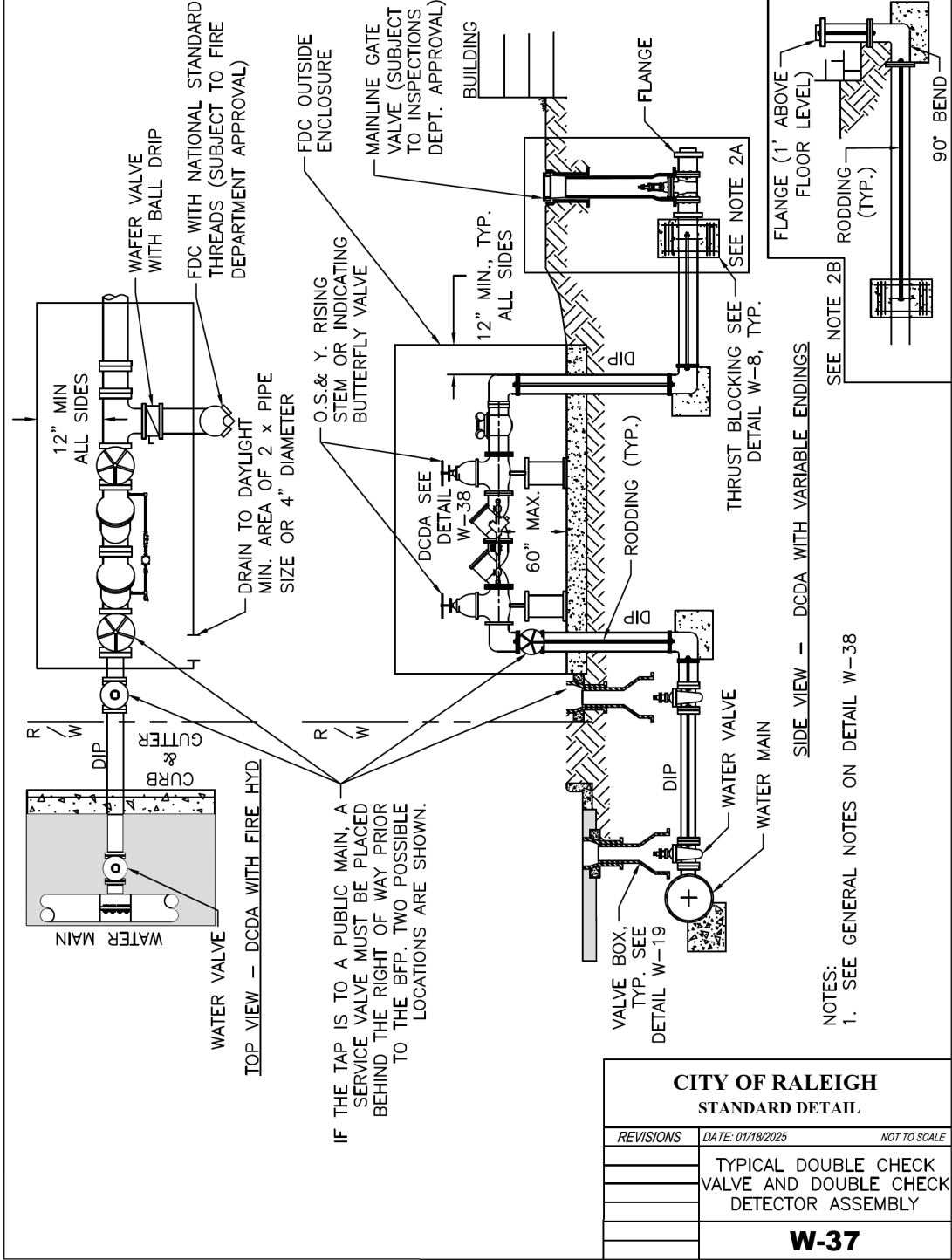
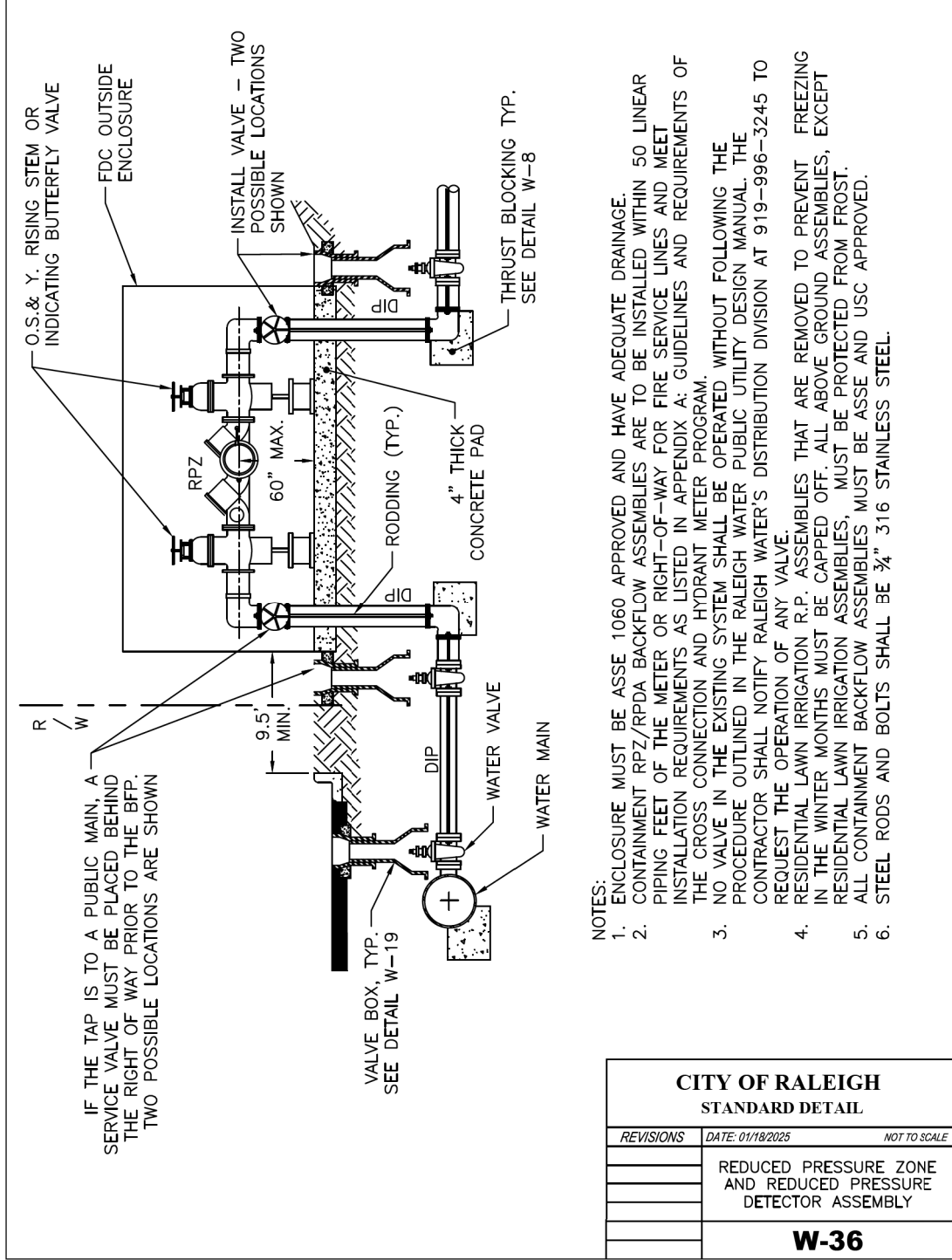
- REACTION BEARING AREAS ARE IN SQUARE FEET MEASURED IN A VERTICAL PLANE IN THE TRENCH SIDE AT AN ANGLE OF 90° TO THE THRUST VECTOR.
- USE 6" 90° BEND VALUE FOR HYDRANTS FOR ADDITIONAL SAFETY FACTOR.

CITY OF RALEIGH STANDARD DETAIL	
REVISIONS	DATE 1/26/2025 NOT TO SCALE
	THRUST BLOCKING DESIGN QUANTITY TABLE

W-10

UTILITY CONSTRUCTION

PROJECT REFERENCE NO.		SHEET NO.	
P-5707		UC-3C	
DESIGNED BY: MEP			
DRAWN BY: MEP			
CHECKED BY: BMB			
APPROVED BY: BMB			
REVISED:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION			
UTILITIES ENGINEERING SEC.		8/20/2026	
PHONE: (919) 707-6690		UTILITY CONSTRUCTION	
FAX: (919) 250-4151		PLANS ONLY	

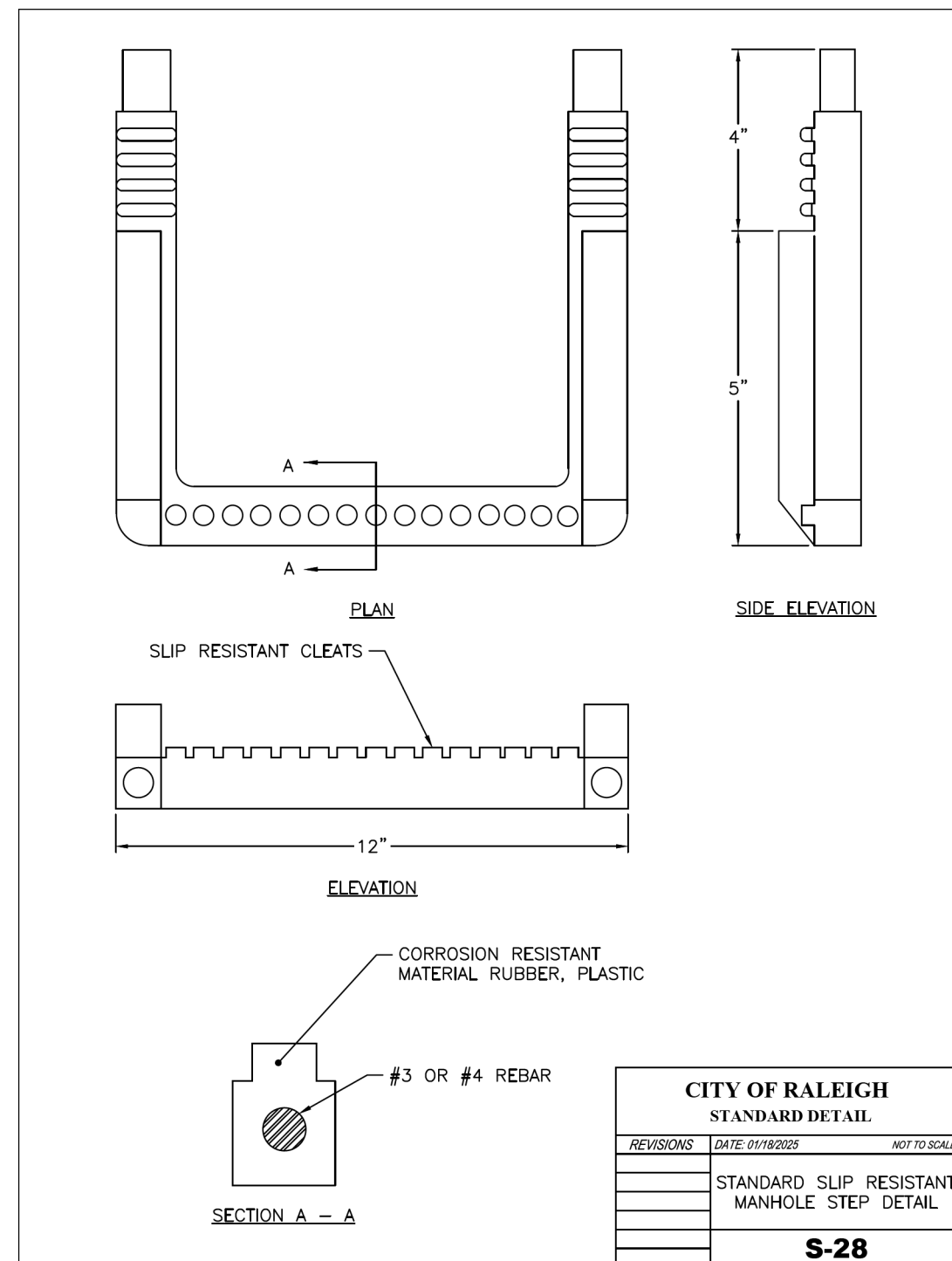
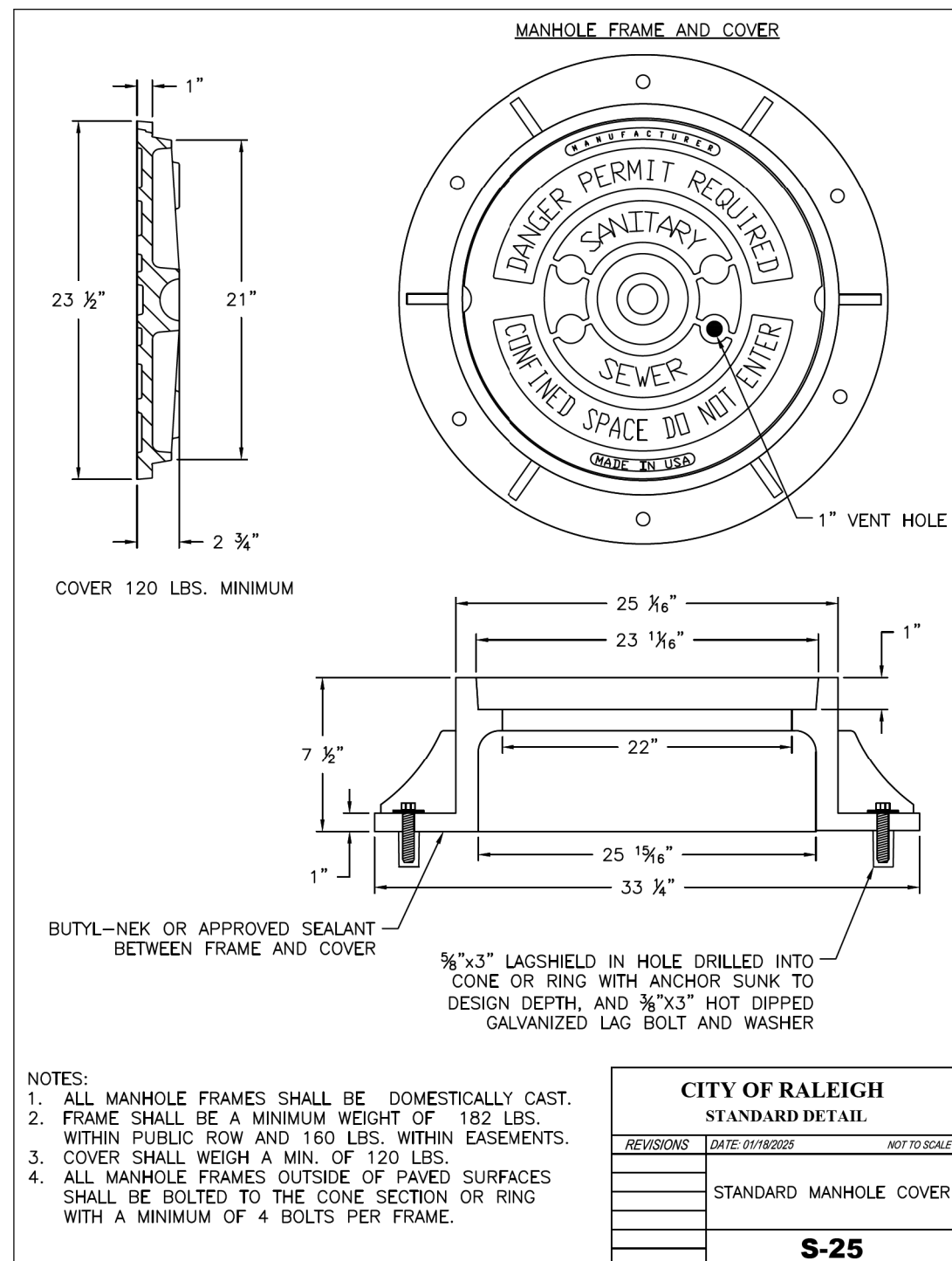
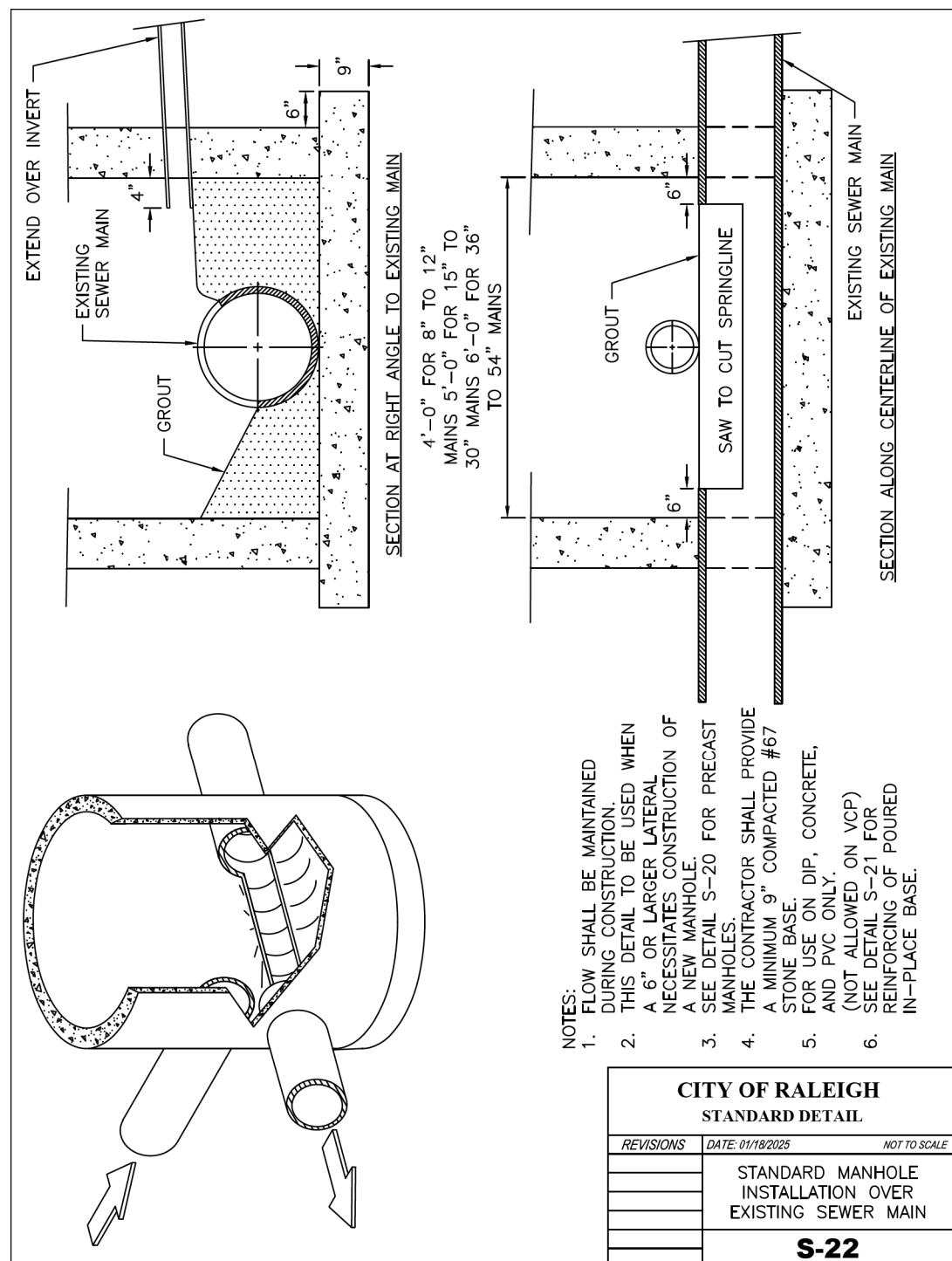
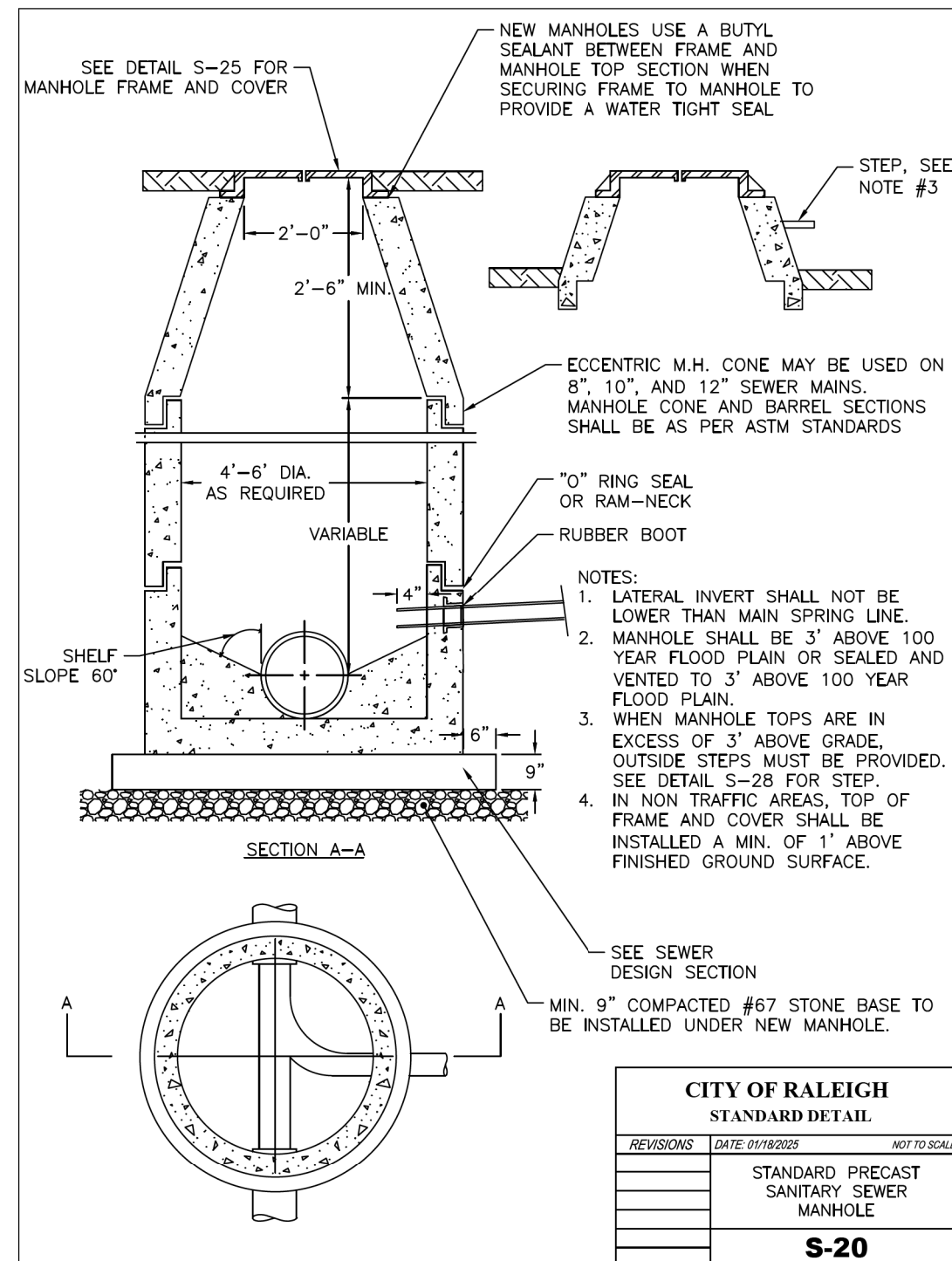
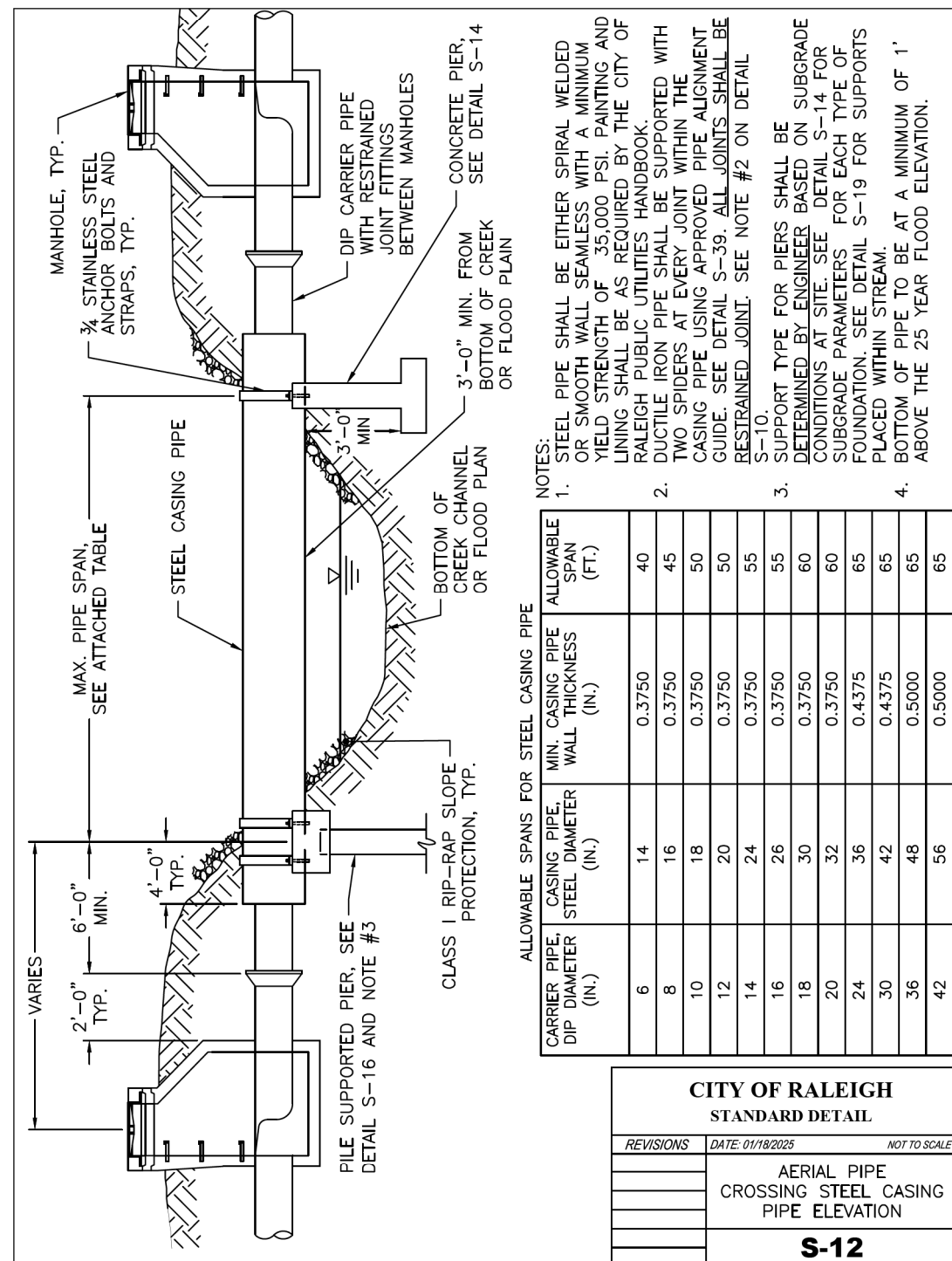
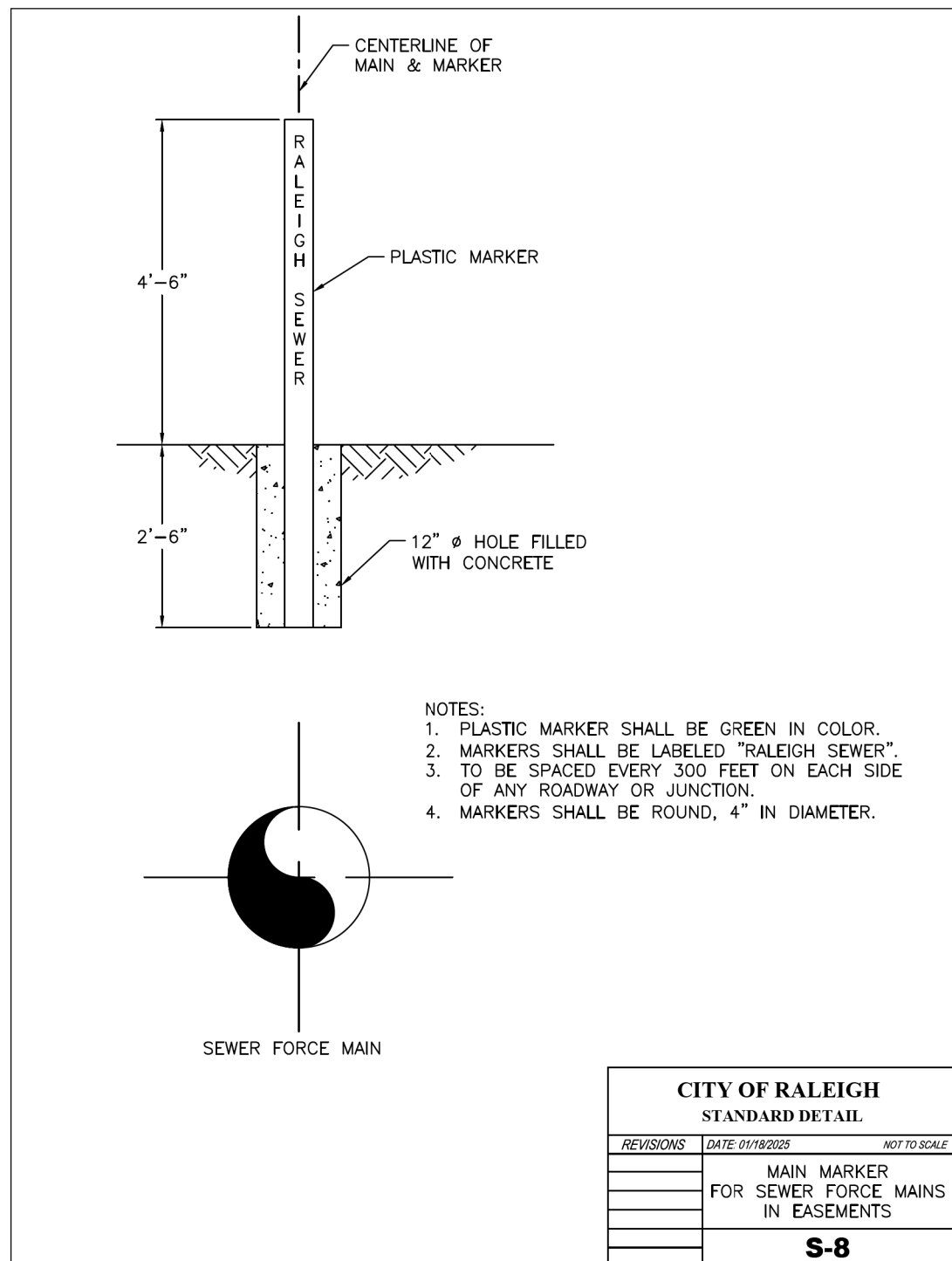


Public
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City of Raleigh
Public Utilities Department Permit # **W-4077**

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City of Raleigh
Public Utilities Department Permit # **S-5389**



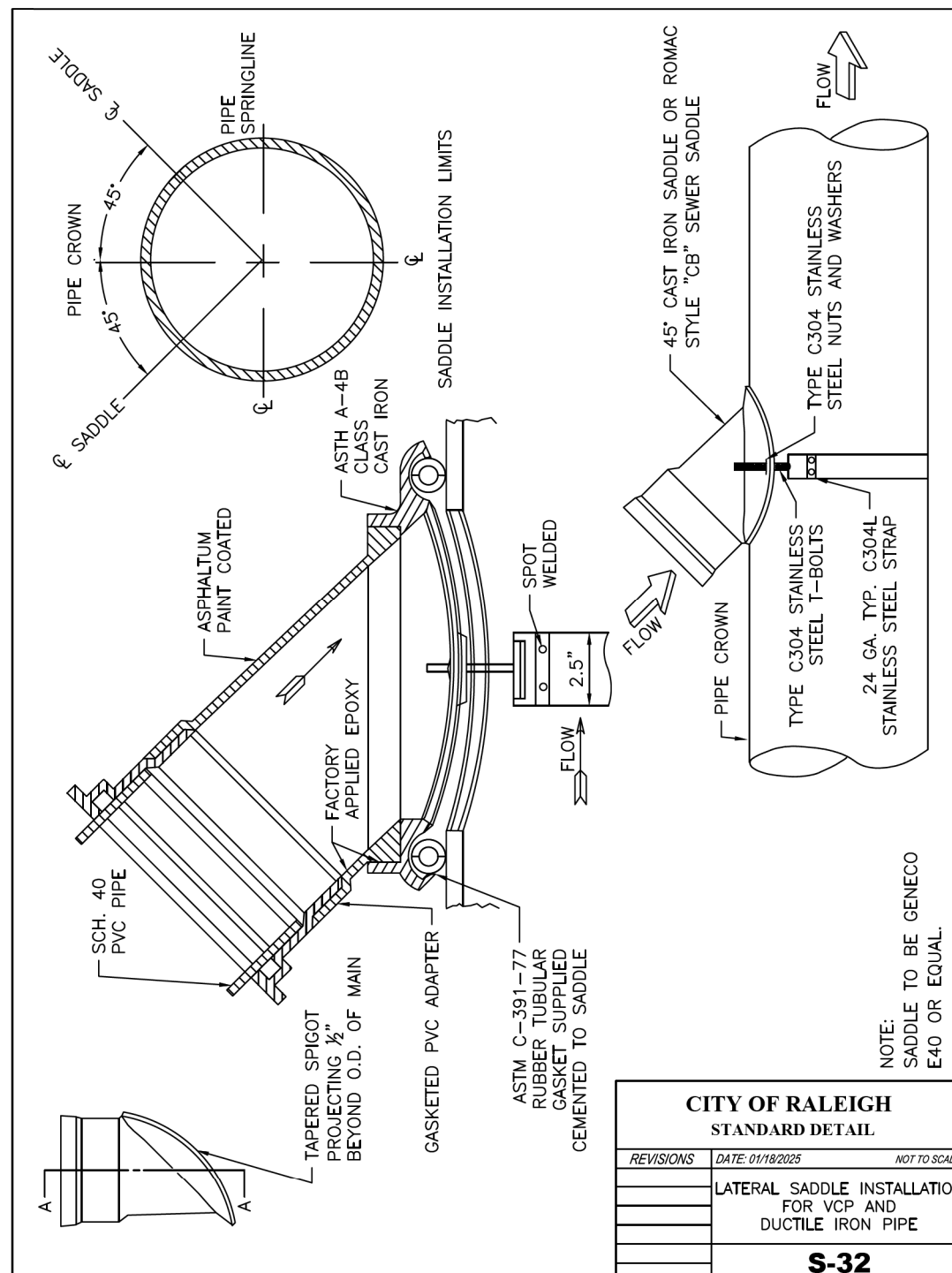
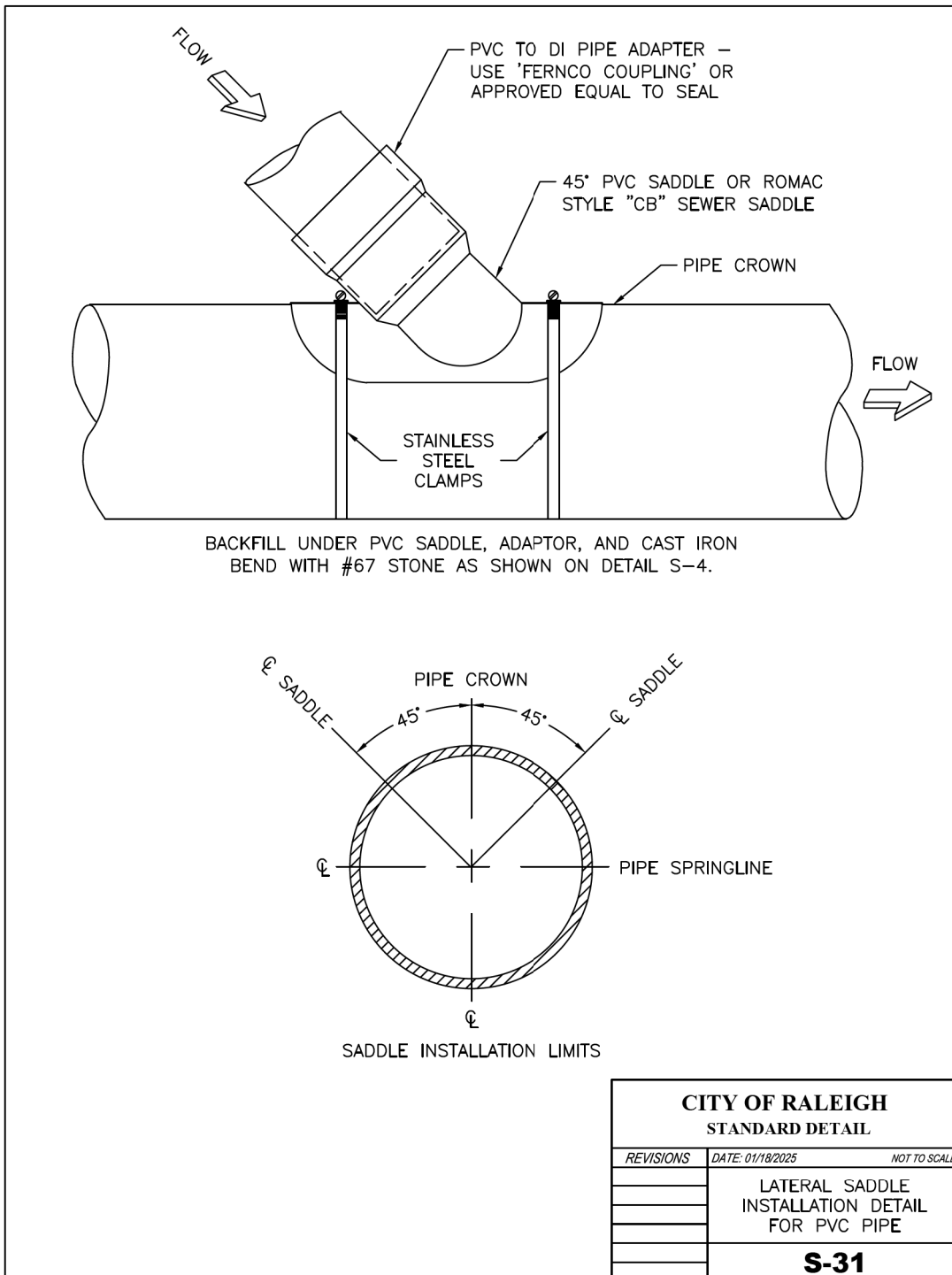
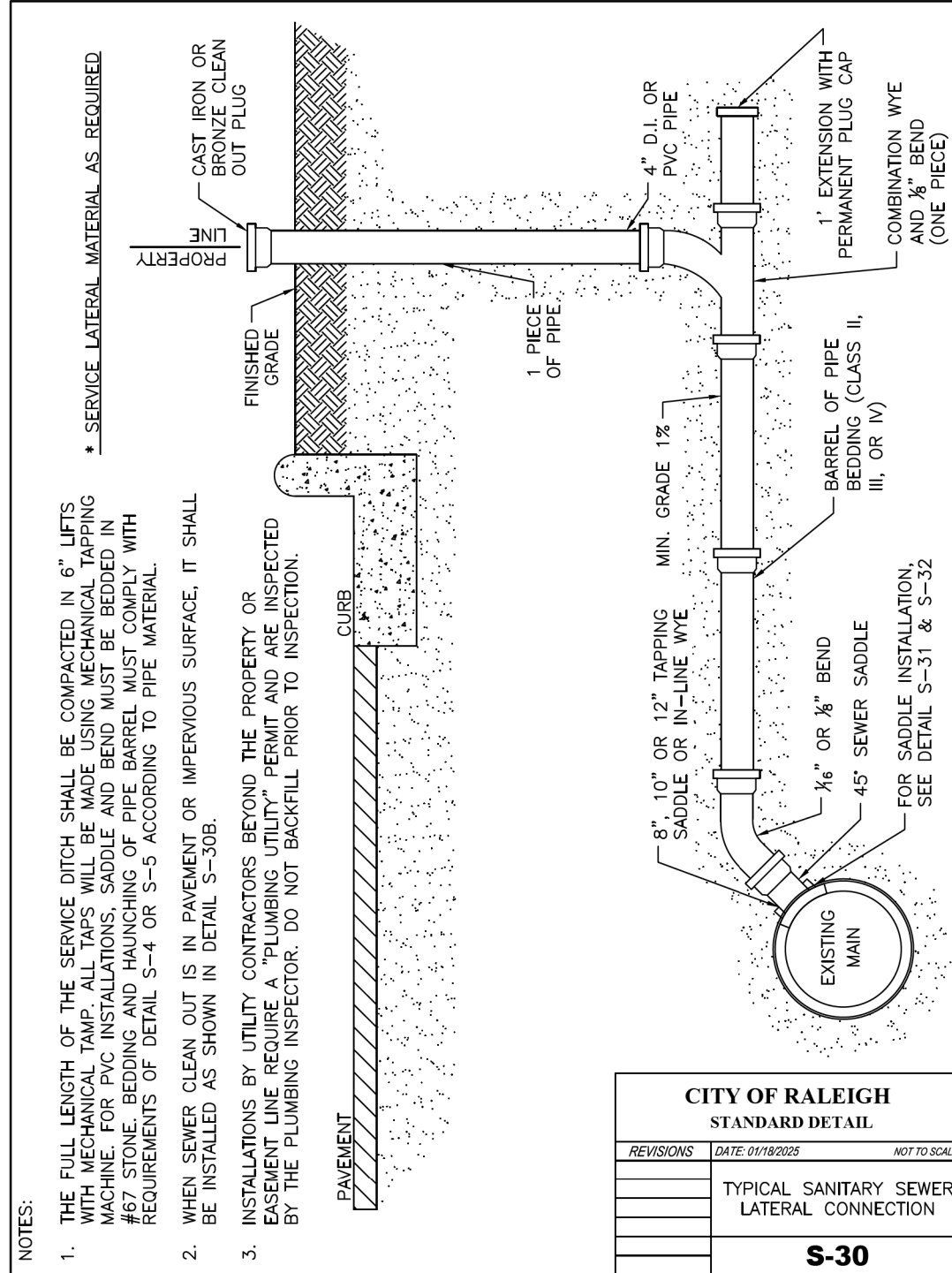
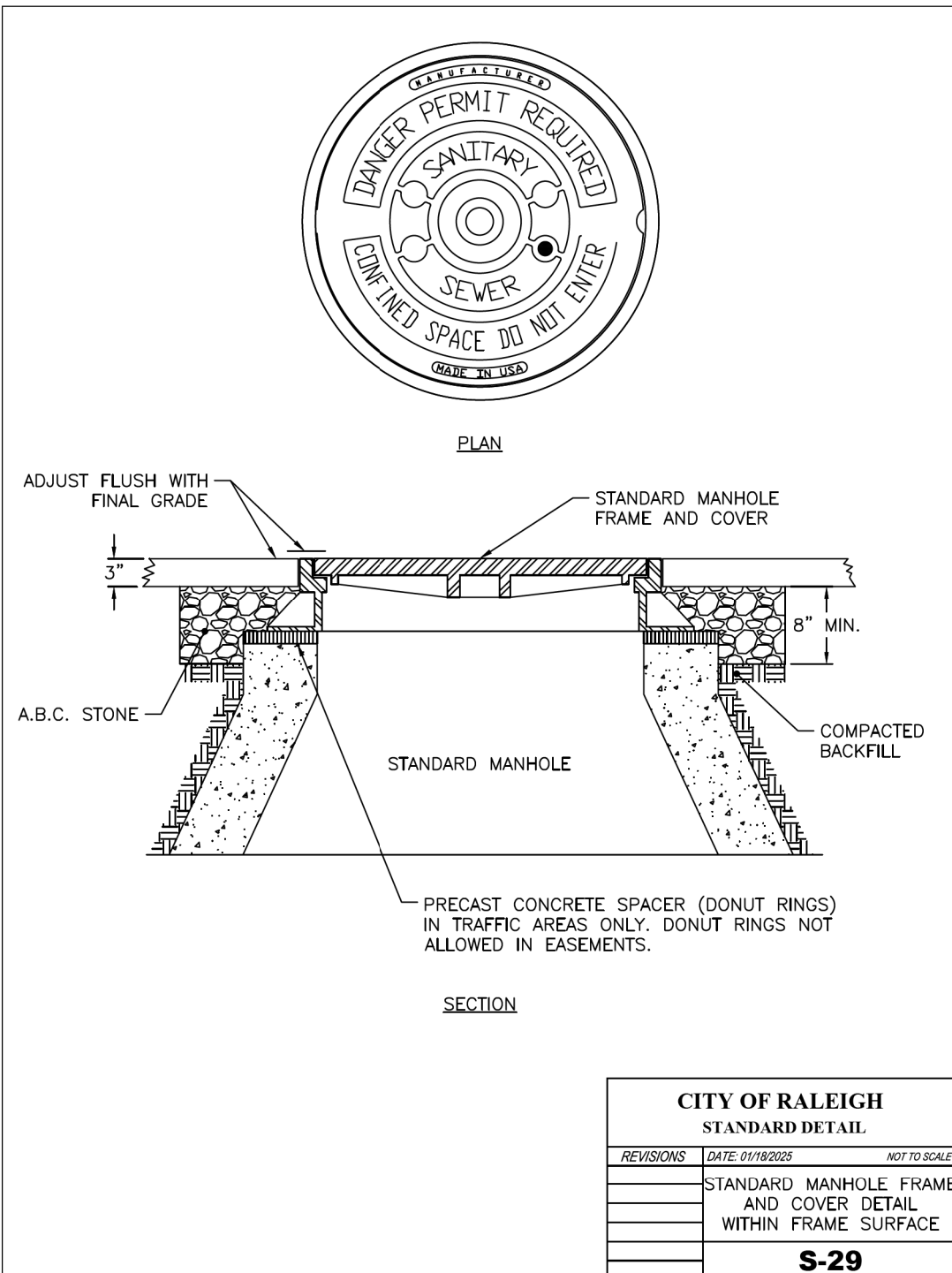
Public
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Public Utilities Department Permit # S-5389

UTILITY CONSTRUCTION

PROJECT REFERENCE NO.		SHEET NO.	
P-5707		UC-3E	
DESIGNED BY: MEP			
DRAWN BY: MEP			
CHECKED BY: BMB			
APPROVED BY: BMB			
REVISED:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		8/20/2026	
UTILITIES ENGINEERING SEC PHONE: (919) 707-6690 FAX: (919) 250-4151		UTILITY CONSTRUCTION PLANS ONLY	



Public
Water Distribution / Extension System

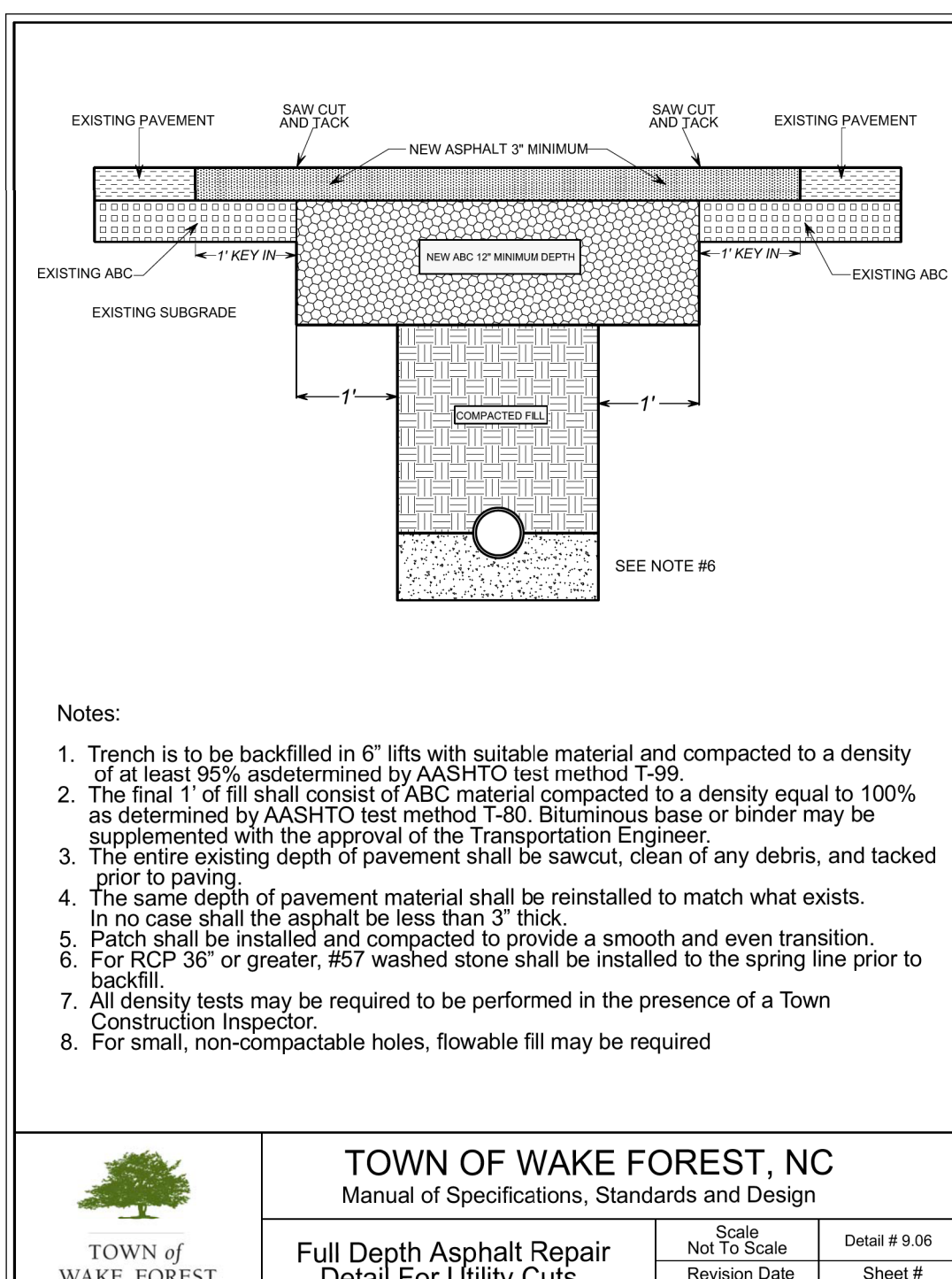
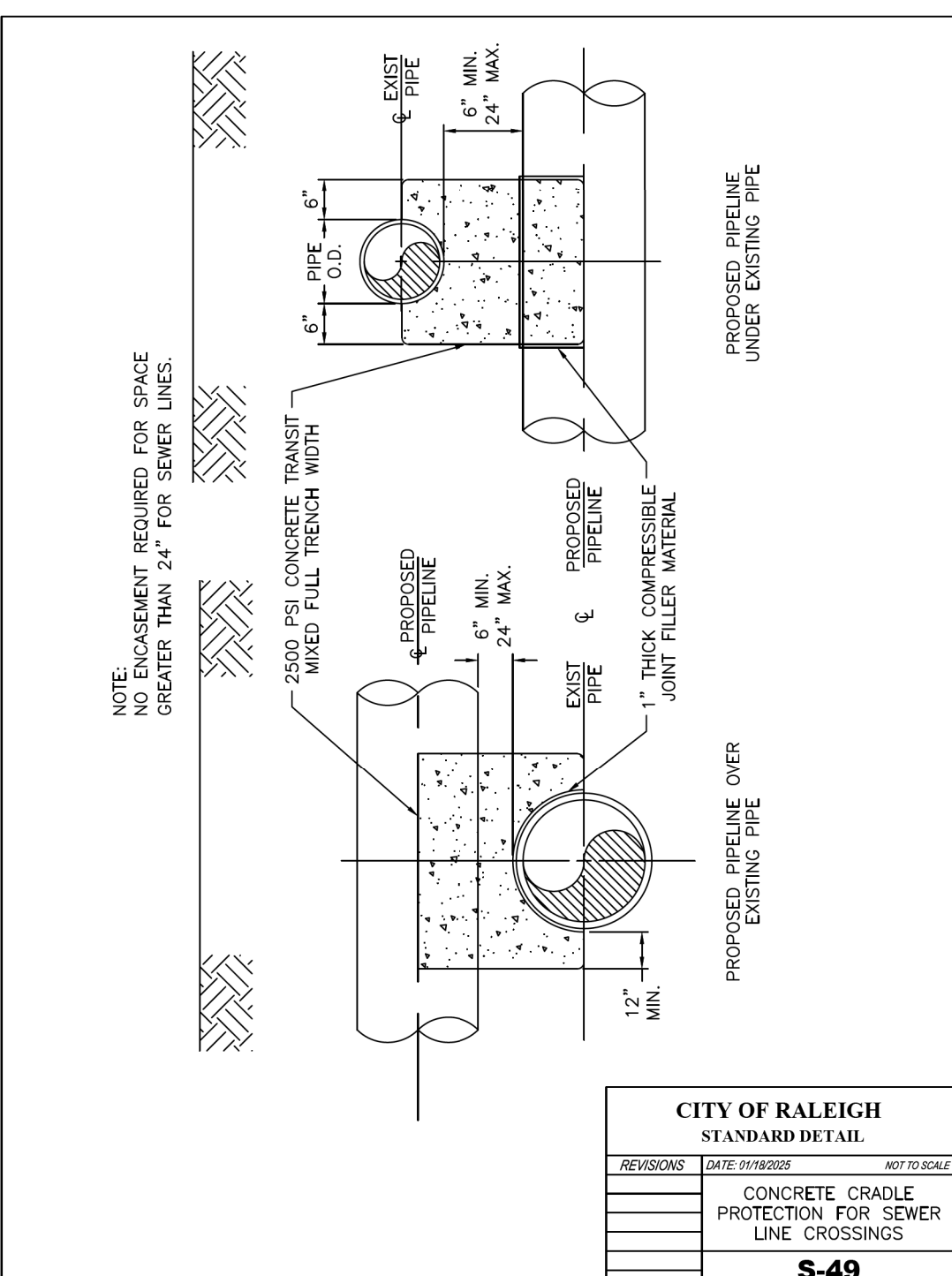
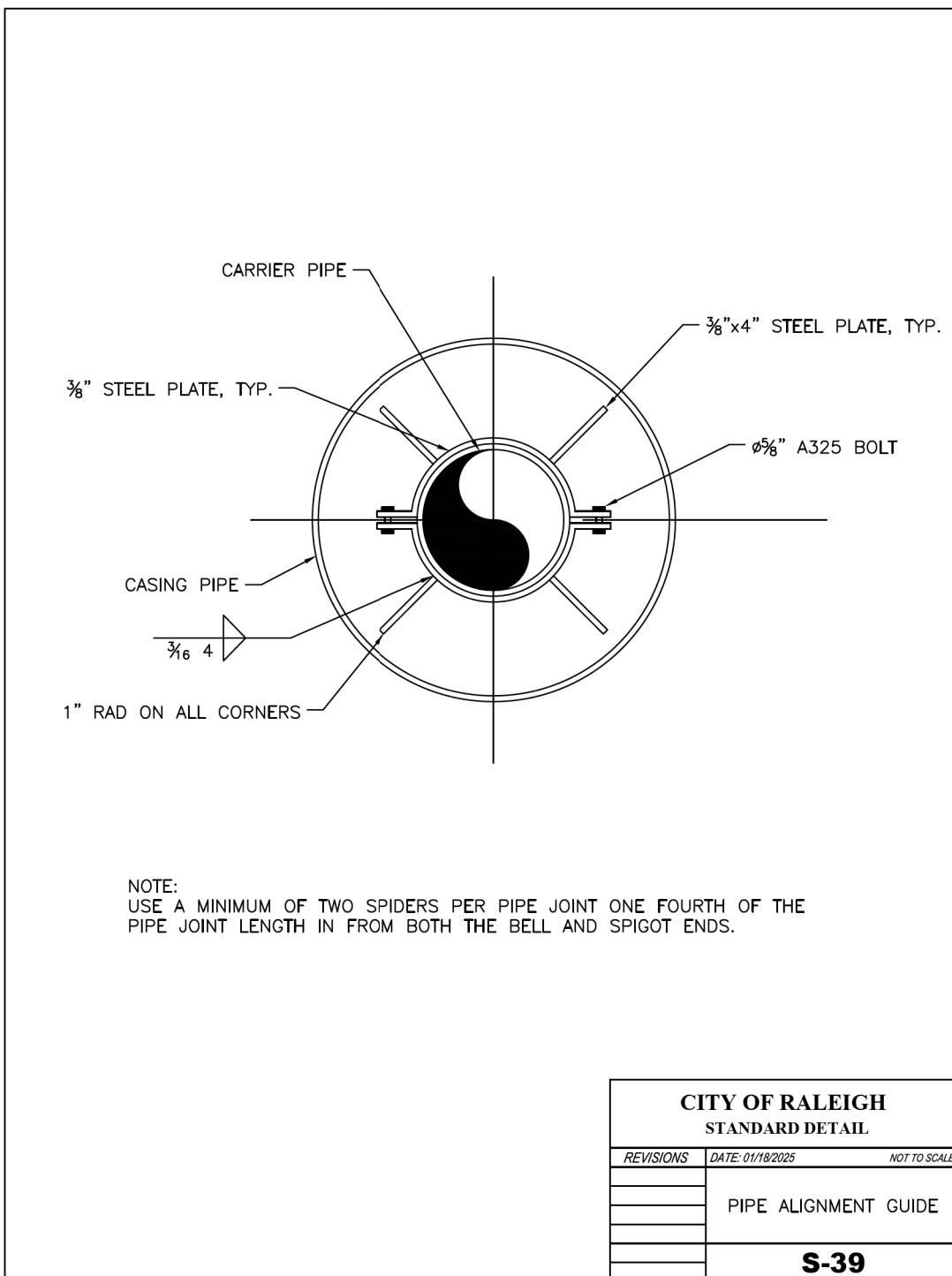
The City of Raleigh consents to the connection and extension of the City's public water system as shown on this plan. The material and Construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook.

City of Raleigh
Public Utilities Department Permit # ***W-4077***

Public
Sewer Collection / Extension System

The City of Raleigh consents to the connection and extension of the City's public sewer system as shown on this plan. The material and Construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook.

City of Raleigh
Public Utilities Department Permit # **S-5389**



NOTES

1. A BYPASS PLAN SEALED BY A NC PROFESSIONAL ENGINEER MUST BE SUBMITTED TO PUBLIC UTILITIES PRIOR TO PUMPING OPERATIONS TO COORDINATE WITH ADMINISTRATION ENGINEERING STAFF. PUMPS SHOULD BE SIZED TO HANDLE THE PEAK DAILY FLOW (2.5 TIMES THE AVERAGE DAILY FLOW) FOR THE LINE OR AREA OF WORK. THE CONTRACTOR SHALL SECURE PUMPS FROM A PUMP SUPPLIER ACCORDING TO THE PROVIDED FLOW INFORMATION. PUMPING OPERATIONS MUST BE MONITORED 24 HOURS A DAY FOR EACH DAY OF THE PUMPING OPERATION BY QUALIFIED PERSONNEL IN ORDER TO RESPOND TO PROBLEMS OR FAILURES. 100% REDUNDANCY IS REQUIRED FOR PUMPING OPERATIONS. IN ADDITION, BACK UP PUMPS ARE TO BE CONNECTED TO THE BYPASS FORCE MAIN TO FACILITATE IMMEDIATE USE UPON FAILURE OF THE PRIMARY PUMPS.

2. WATERLINE -W1-Y3- TO BE INSTALLED AFTER WATERLINE -W2- AND -W4-Y5- IS INSTALLED AND IN SERVICE.

3. WATERLINE -W6-DR1- TO BE INSTALLED LAST TO PREVENT ANY MAJOR SHUTDOWNS.

4. INSERTION VALVE SHOULD BE LOCATED APPROXIMATELY 91 FEET FROM THE POINT WHERE THE PIPE WILL BE CUT.

EXIST. UTILITY MANHOLE 'A'
STA. 10+00.00 -S1-L-
STA. 11+77.00 -S2-L-
STA. 11+15.55 -Y2-, 2.46'RT
RIM EL. = 350.60
INV. IN = 338.50
INV. IN = 338.28 (EXIST.)
INV. IN = 338.24 (EXIST.)
INV. OUT = 338.00
INV. OUT = 336.26 (ABAN.)

PROP. 64 LF 8" SANITARY
GRAVITY SEWER LINE
DI PIPE PC350

PROP. 5' DIA UTILITY MANHOLE
6.78 LF 5' UTILITY MANHOLE WALL
MH #1 STA. 10+64.20 -S1-L-
STA. 18+37.13 -L-, 57.72'LT
RIM EL. = 351.62
INV. IN = 339.04 (EXIST.)
INV. OUT = 338.84

PLUG MANHOLE WALL
PLUG MANHOLE WALL

ABANDON 81 LF 8" UTILITY PIPE
SEWER PIPE
LOCATED PER OWNER'S GIS

LOCATED PER OWNER'S GIS CONTRACTOR
TO VERIFY SIZE OF EXISTING WATERLINE

PROP. WATER METER
RELOCATE DCV BACKFLOW
PREVENTION ASSEMBLY
PROP. 12 LF 2" WATER
SERVICE LINE

CONTRACTOR TO VERIFY
SIZE BEFORE RELOCATING

PROP. 8 LF 2" WATER
SERVICE LINE
RELOCATE WATER METER, DCV
BACKFLOW PREVENTION ASSEMBLY

CONTRACTOR TO VERIFY
SIZE BEFORE RELOCATING

RELOCATE 8" DCV BACKFLOW
PREVENTION ASSEMBLY

TIE TO EXISTING WATER LINE
6" 45° DI BEND VERTICAL
AND DI SLEEVE

ABANDON 29 LF 6" UTILITY PIPE

WATER LINE

PROP. 22 LF 8" SANITARY
GRAVITY SEWER LINE
DI PIPE PC350

PROP. 5' DIA UTILITY MANHOLE
12.81 LF OF 5' UTILITY MANHOLE WALL

MH #2 STA. 11+55.00 -S2-L
STA. 11+16.88 -Y2-, 24.42'RT
RIM EL. = 353.41
INV. IN = 335.80
INV. OUT = 334.60

PROP. 155 LF 8" SANITARY
GRAVITY SEWER LINE
DI PIPE PC350

ABANDON 73 LF 8" UTILITY PIPE
SEWER LINE

REMOVE MANHOLE

ABANDON 26 LF 12" UTILITY PIPE

WATER LINE

PROP. 5' DIA UTILITY MANHOLE
12.40 LF 5' UTILITY MANHOLE WALL

MH #1 STA. 10+00.00 -S2-L
STA. 20+32.72 -L-, 60.34'LT
RIM EL. = 350.20
INV. IN = 331.99
INV. IN = 331.83 (ABAN.)
INV. IN = 337.03 (EXIST.)
INV. OUT = 331.79 (EXIST.)

REMOVE UTILITY MANHOLE
REPLACE EXISTING 4' DIA.
MANHOLE WITH 5' DIA. MANHOLE

PLUG MANHOLE WALL

ABANDON 115 LF
8" UTILITY PIPE

TIE TO EXISTING WATER LINE
12" 45° DI BEND VERTICAL
AND DI SLEEVE

RELOCATE DCV BACKFLOW
PREVENTION ASSEMBLY (2)
CONTRACTOR TO VERIFY
SIZE BEFORE RELOCATING

12" 45° DI BEND VERTICAL

PROP. 30 LF 12" WATER LINE
DI PIPE PC350

12" 45° DI BEND VERTICAL

TIE TO EXISTING WATER LINE
12" 45° DI BEND VERTICAL

6" 45° DI BEND VERTICAL

PROP. 37 LF 6" WATER LINE
DI PIPE PC350

6" 45° DI BEND VERTICAL

TIE TO EXISTING WATER LINE
6" 45° DI BEND VERTICAL

PROP. 12" VALVE
INSERTION VALVE

PROP. 12" TAPPING
SLEEVE & VALVE

12" DI 45° BEND HORIZONTAL

RETAIN EXISTING WATER LINE

REMOVE FIRE HYDRANT

15" RCP INVERT 367.15'

LOCATED PER OWNER'S GIS
CONTRACTOR TO VERIFY
SEWER IS ABANDONED

PROP. 12" DI PLUG

ABANDON 337 LF OF
12" UTILITY PIPE
WATER LINE

15" RCP INVERT 356.27'
TOP OF WATERLINE 350.60'

PROP. WATER METER
26 LF SERVICE LINE

TIE TO EXISTING WATERLINE USING
12" 45° DI BEND HORIZONTAL
AND DI SLEEVE

12" 45° DI BEND HORIZONTAL

PROP. WATER METER
26 LF SERVICE LINE

ABANDON 122 LF OF
12" UTILITY PIPE

WATER LINE

TIE TO EXISTING WATERLINE USING
12" 45° DI BEND HORIZONTAL

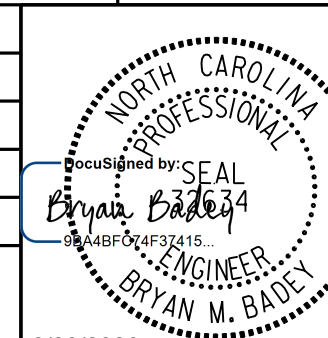
PROP. 12" VALVE
INSERTION VALVE
SEE NOTE 4

CONTRACTOR SHALL NOT DISTURB
TIE-BACKS FOR WALL DURING
WATER LINE INSTALLATION

PROP. 406 LF
12" WATER LINE
DI PIPE PC350

12" DI 45° BEND
HORIZONTAL

NOTE:
THE ESTIMATED QUANTITY OF DUCTILE IRON
WATER PIPE FITTINGS ON THIS PLAN SHEET
IS 2675 POUNDS. THE ACTUAL QUANTITY AND
TYPE OF FITTINGS WILL VARY BASED ON
FIELD CONDITIONS.

PROJECT REFERENCE NO.	SHEET NO.
P-5707	UC-4
DESIGNED BY: MEP	
DRAWN BY: MEP	
CHECKED BY: BMB	
APPROVED BY: BMB	
REVISED:	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION 8/20/2026 UTILITY CONSTRUCTION PLANS ONLY
UTILITIES ENGINEERING SEC.	
PHONE: (919) 707-6690 FAX: (919) 250-4151	

UTILITY CONSTRUCTION

MATCHLINE -L- STA. 27+00 SEE SHEET UC-5

Public
Water Distribution / Extension System
The City of Raleigh consents to the connection and extension of the City's public water system as shown on this plan. The material and Construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook.

City of Raleigh
Public Utilities Department Permit # W-4077

Public
Sewer Collection / Extension System
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City of Raleigh
Public Utilities Department Permit # S-5389



P: (919) 878-9560
8801 Six Forks Road, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112

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FOR -W1-Y3- PROFILE SEE SHT UC-7
FOR -W2- PROFILE SEE SHT UC-7
FOR -S1-L- PROFILE SEE SHT UC-9
FOR -S2-L- PROFILE SEE SHT UC-9

1. WATERLINE -W6-DR1- TO BE INSTALLED AFTER FILL HAS BEEN PLACED FOR THE CONSTRUCTION OF ROGERS RD TO PREVENT ANY MAJOR SHUTDOWNS.
2. WATERLINE -W5-L- TO BE INSTALLED AFTER -W6-DR1-.

FRANKLYN VILLAGE LLC
DB 8236 PG 922
BM-2003 PG 784

H&C HOLDINGS LLC
DB 13306 PG 1894
CM 2009 PG 51241

PROP. 6" LINE
STOP WITH BYPASS

12" WATER
DI 45° BEND

PROP. 168 LF
12" WATER LINE
DI PIPE PC350

INV=303.73 INV=303.44

HERITAGE PROFESSIONAL
PARK OWNERS
ASSOCIATION INC
DB 11574 PG 2603
BM 2003 PG 784

FRANKLYN VILLAGE LLC

PROJECT REFERENCE NO. **P-5707** SHEET NO. **UC-5**

DESIGNED BY: **MEP**

DRAWN BY: **MEP**

CHECKED BY: **BMB**

APPROVED BY: **BMB**

REVISED:

NORTH CAROLINA
DEPARTMENT OF
TRANSPORTATION

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

8/20/2026

UTILITY CONSTRUCTION
PLANS ONLY

Seal: NORTH CAROLINA PROFESSIONAL ENGINEER
Bryan W. Baides
BRYAN W. BAIDES

MADE 8/31/2007

WATER RELOCATION ONLY

Public
Sewer Collection / Extension System

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MATCHLINE

MATCHLINE
-L- STA. 38 + 50
SEE SHEET UC-0

MATCHLINE
SEE SHEET UC-6

Y-5-STA. 15+25

13+00

PROP. 12" LINE STOP WITH BYPASS

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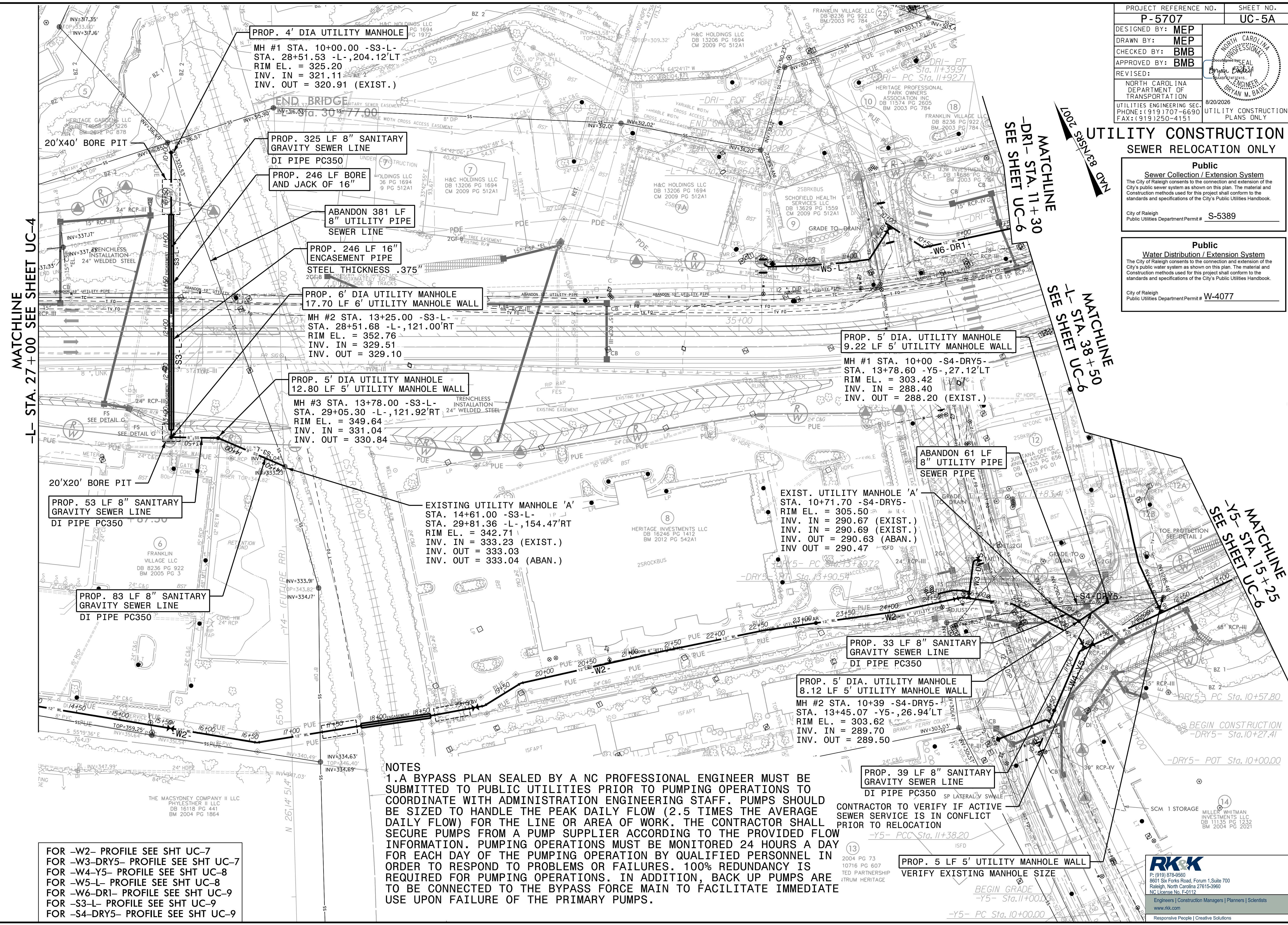
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PROJECT REFERENCE NO.	SHEET NO.
P-5707	UC-5A
DESIGNED BY: MEP	North Carolina Professional Engineer Seal Ryan M. Bailey 1544674432415 ENGINEER RYAN M. BAILEY
DRAWN BY: MEP	
CHECKED BY: BMB	
APPROVED BY: BMB	
REVISED:	8/20/2026 UTILITY CONSTRUCTION PLANS ONLY
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

UTILITY CONSTRUCTION SEWER RELOCATION ONLY

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Public
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City of Raleigh
Public Utilities Department Permit # W-4077



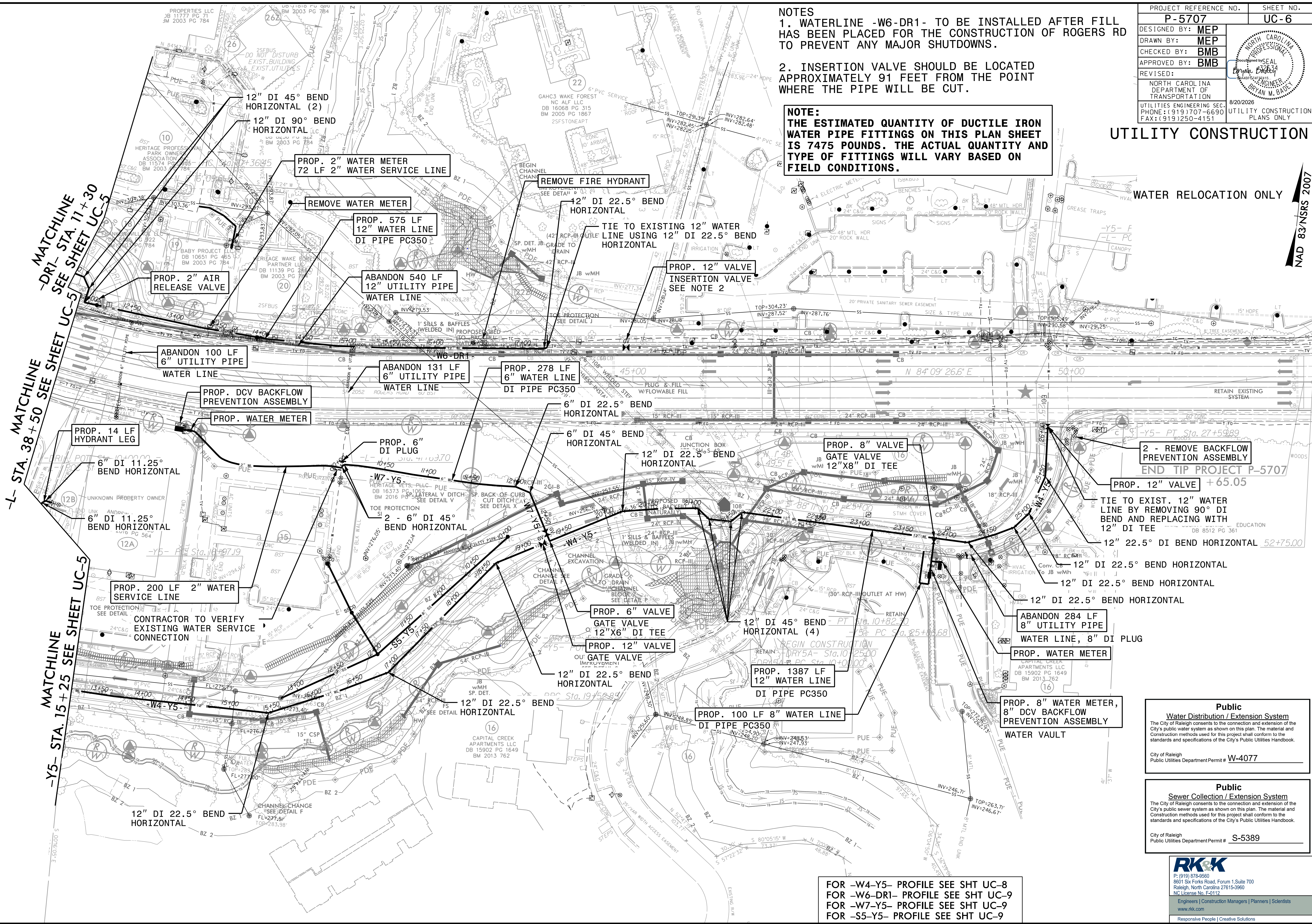
NOTES
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FOR -W2- PROFILE SEE SHT UC-7
FOR -W3-DRY5- PROFILE SEE SHT UC-7
FOR -W4-Y5- PROFILE SEE SHT UC-8
FOR -W5-L- PROFILE SEE SHT UC-8
FOR -W6-DR1- PROFILE SEE SHT UC-9
FOR -S3-L- PROFILE SEE SHT UC-9
FOR -S4-DRY5- PROFILE SEE SHT UC-9

5/26/2026
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5/26/2026
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adixon



PROJECT REFERENCE NO.	SHEET NO.
P-5707	UC-6
DESIGNED BY: MEP	North Carolina Professional Engineer Seal Ryan M. Bailey Professional Engineer 09/24/2015 09/24/2026
DRAWN BY: MEP	
CHECKED BY: BMB	
APPROVED BY: BMB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	8/20/2026
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	UTILITY CONSTRUCTION PLANS ONLY

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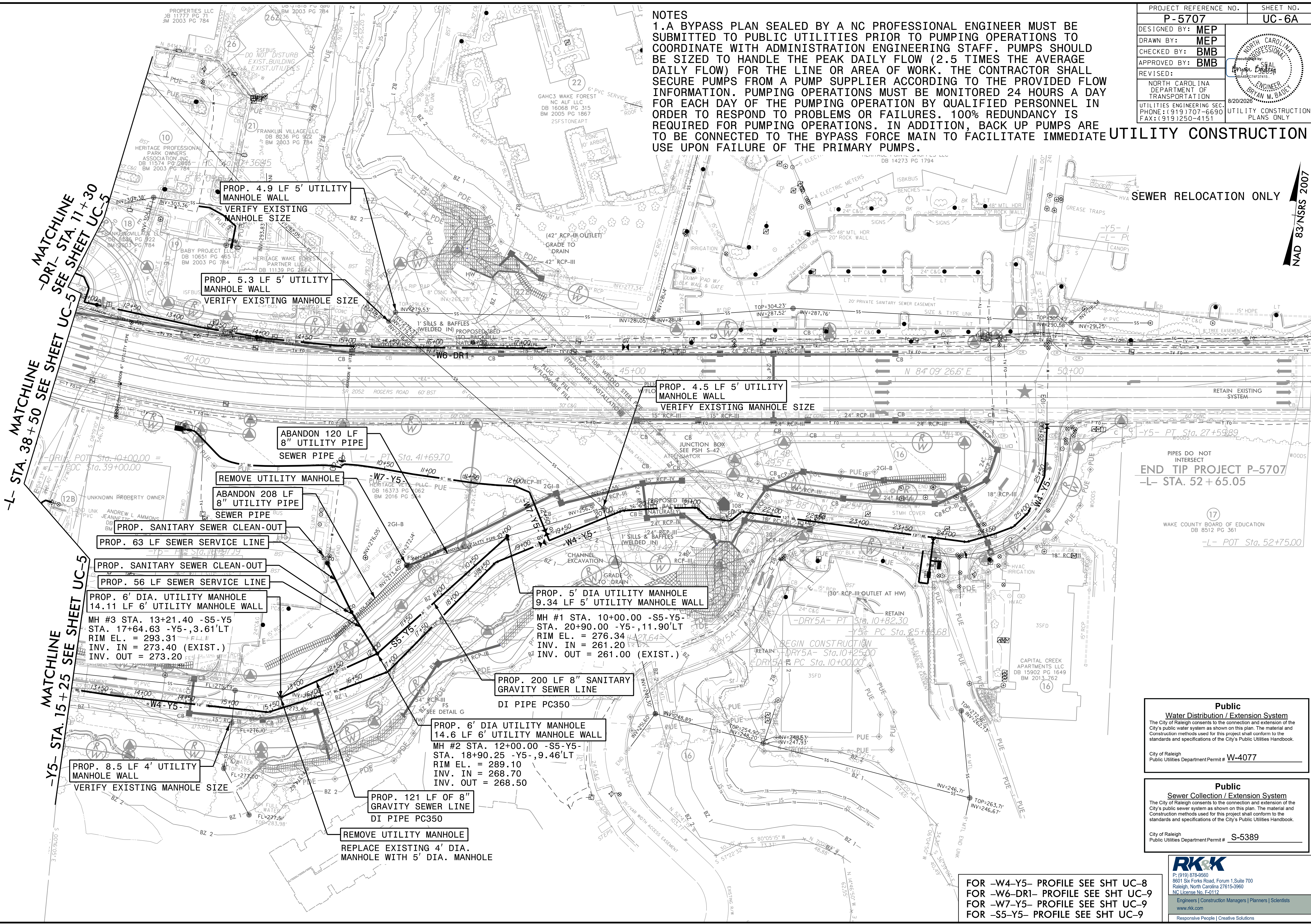
City of Raleigh
Public Utilities Department Permit # **W-4077**

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NOTES

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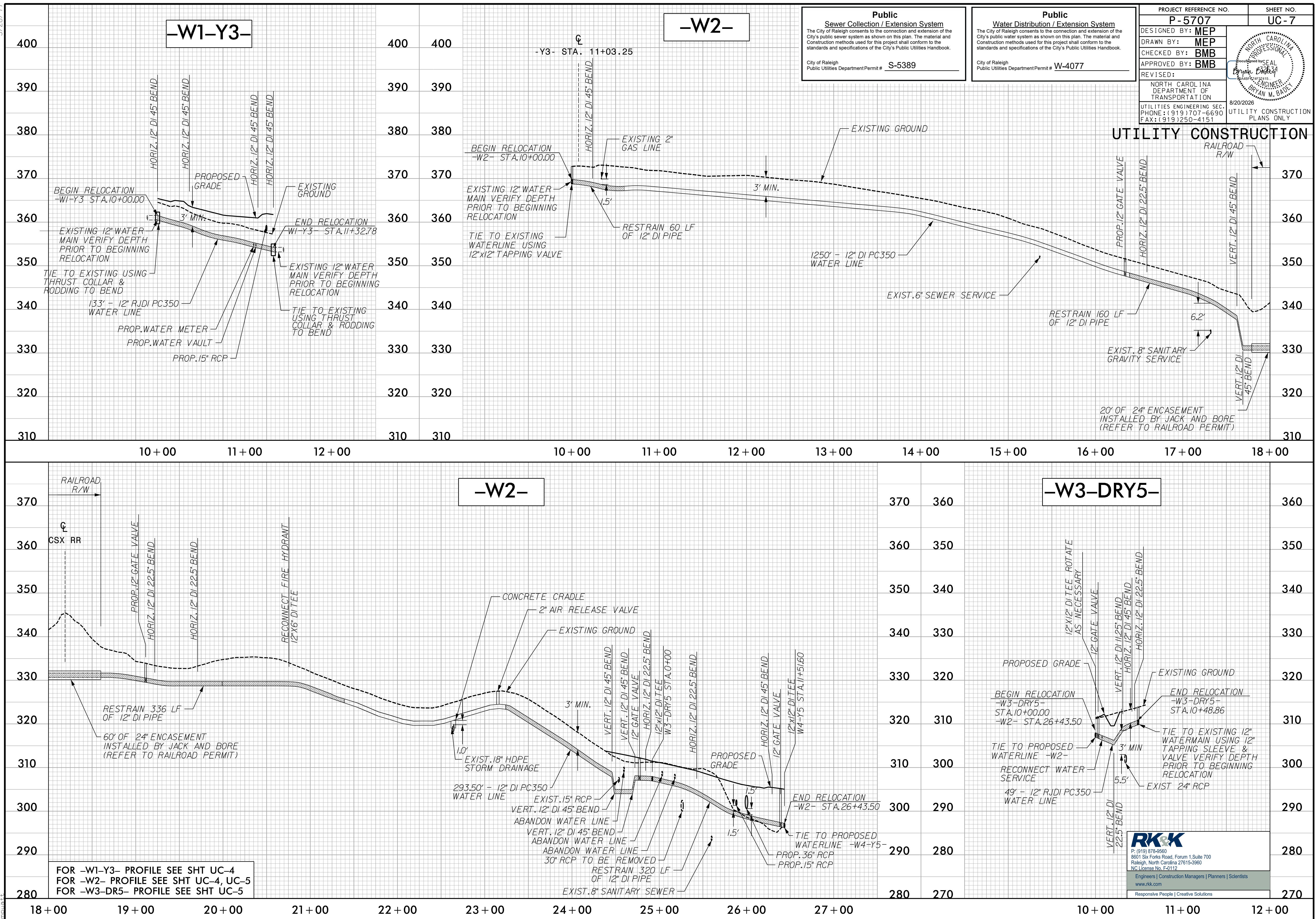
PROJECT REFERENCE NO. P-5707		SHEET NO. UC-6A	
DESIGNED BY: MEP			
DRAWN BY: MEP			
CHECKED BY: BMB			
APPROVED BY: BMB			
REVISED:		NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY			

FOR -W4-Y5- PROFILE SEE SHT UC-8
FOR -W6-DRI- PROFILE SEE SHT UC-9
FOR -W7-Y5- PROFILE SEE SHT UC-9
FOR -S5-Y5- PROFILE SEE SHT UC-9

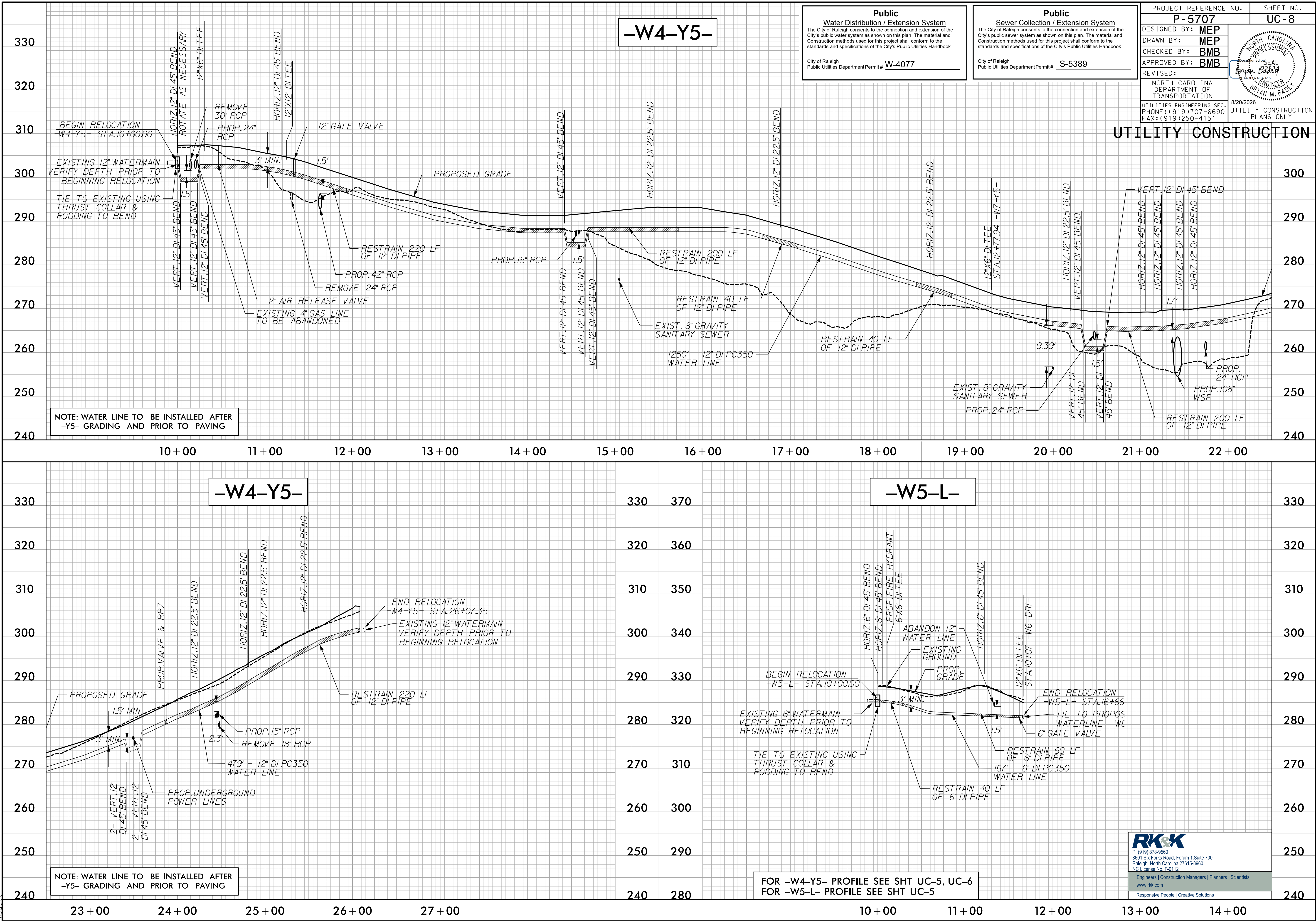
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Public
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Public Utilities Department Permit # **S-5389**



8/20/2026
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