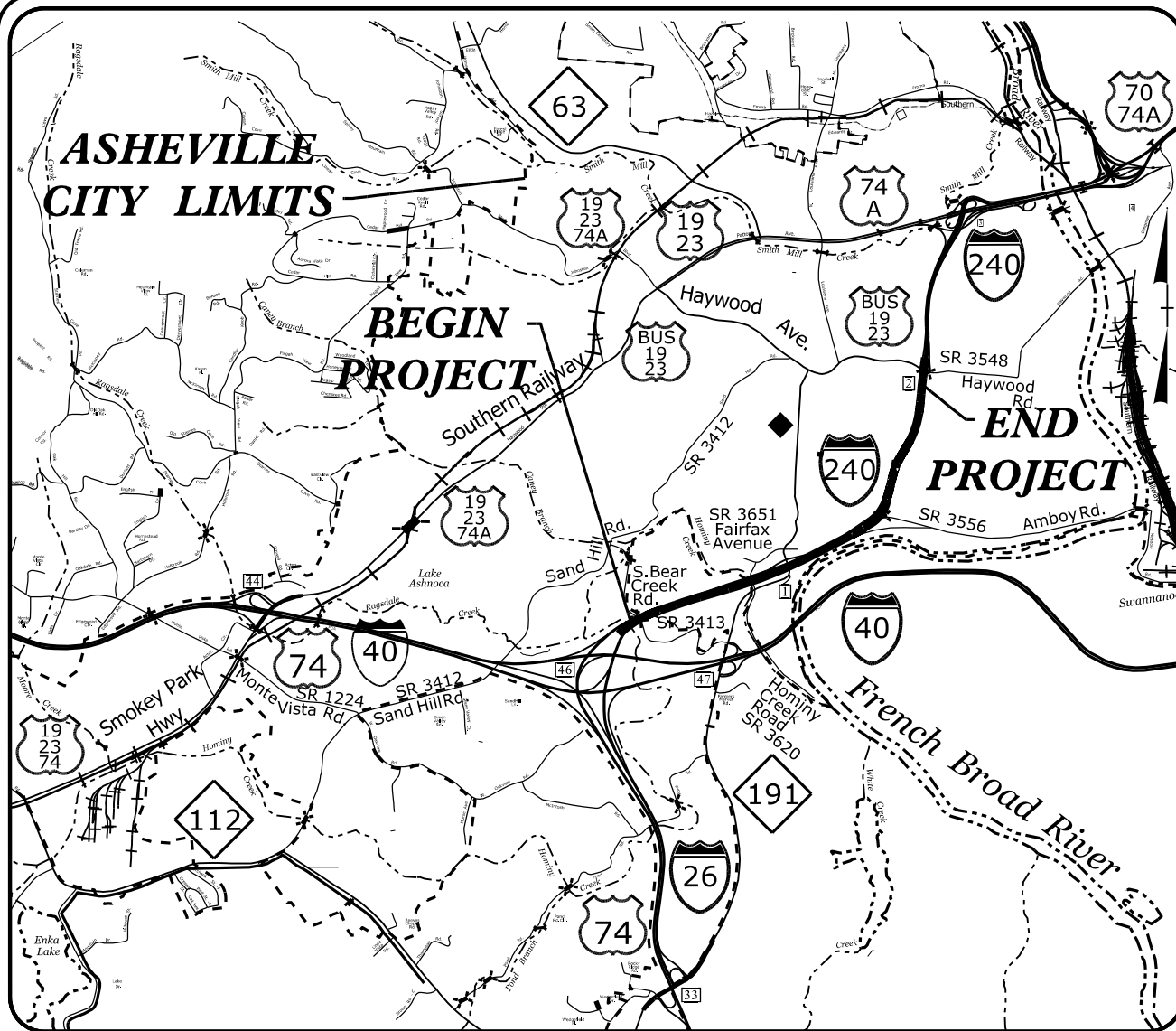


TIP PROJECT: I-2513AC



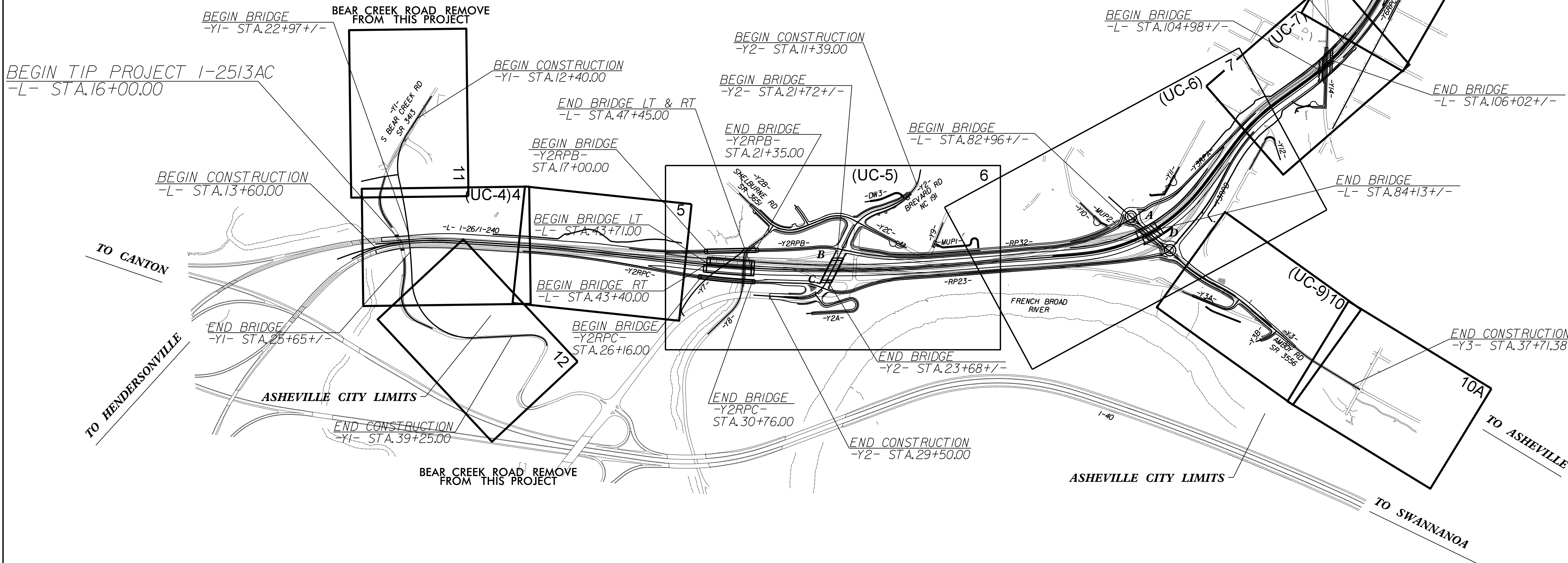
VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

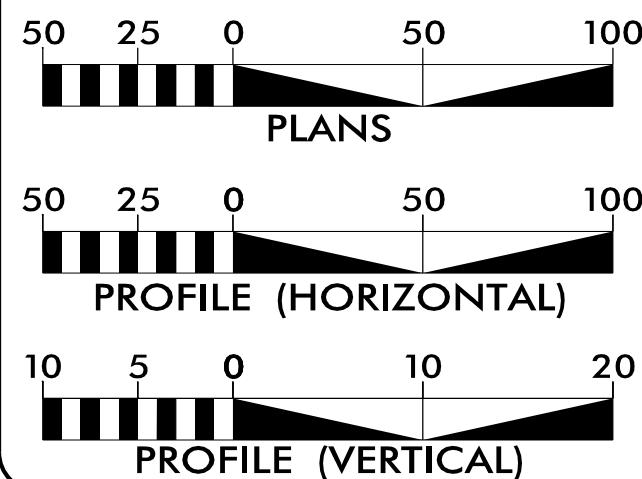
UTILITY CONSTRUCTION PLANS
BUNCOMBE COUNTY

LOCATION: I-26/I-40/I-240 INTERCHANGE TO SR 3548 (HAYWOOD RD)
TYPE OF WORK: WATER AND SEWER RELOCATIONS

END TIP PROJECT I-2513AC
-L- STA.108+00.00



GRAPHIC SCALES



SHEET NO.

UC-1
UC-2
UC-3
UC-3A THRU UC-3F
UC-4 THRU UC-9
UC-10 THRU UC-24

DESCRIPTION

TITLE SHEET
UTILITY SYMBOLOGY
NOTES
DETAILS
UTILITY CONSTRUCTION SHEETS
PROFILE SHEETS

WATER AND SEWER
OWNERS ON PROJECT

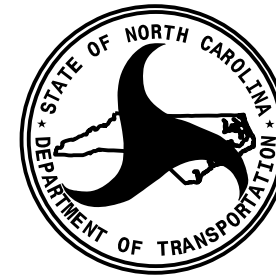
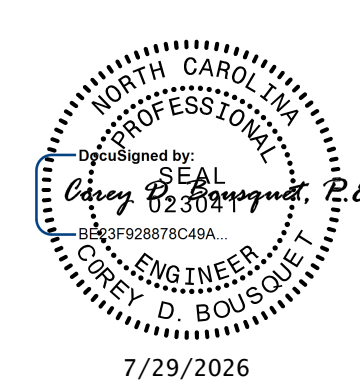
(A) CITY OF ASHEVILLE
(B) METROPOLITAN SEWERAGE DISTRICT

PREPARED IN THE OFFICE OF:



Clint L. Stevens, P.E. UTILITIES PROJECT MANAGER
Corey D. Bousquet, P.E. UTILITIES PROJECT ENGINEER
Jordan K. Chapman, E.I. UTILITIES PROJECT DESIGNER

SEAL

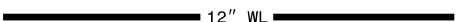


DIVISION OF HIGHWAYS
UTILITIES UNIT
1555 MAIL SERVICES CENTER
RALEIGH NC 27699-1555
PHONE (919) 707-6690
FAX (919) 250-4151

Donald E. Hampton WESTERN UTILITY MANAGER
Jong-Tae Yoon, P.E. UTILITY ENGINEER
Dayton C. Martin, III REGIONAL UTILITY COORDINATOR
Mark A. Cole SENIOR UTILITY COORDINATOR

UTILITIES PLAN SHEET SYMBOLS

PROPOSED WATER SYMBOLS

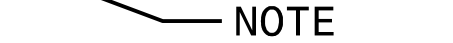
Water Line (Sized as Shown)	
11¼ Degree Bend	
22½ Degree Bend	
45 Degree Bend	
90 Degree Bend	
Plug	
Tee	
Cross	
Reducer	
Gate Valve	
Butterfly Valve	
Tapping Valve	
Line Stop	
Line Stop with Bypass	
Blow Off	
Fire Hydrant	
Relocate Fire Hydrant	
Remove Fire Hydrant	
Water Meter	
Relocate Water Meter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

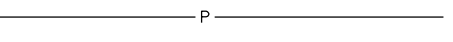
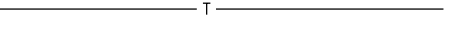
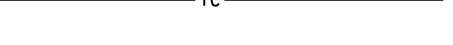
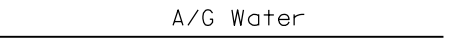
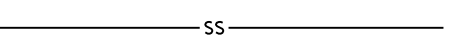
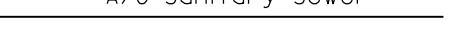
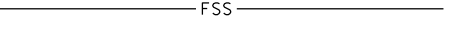
PROPOSED MISCELLANEOUS UTILITIES SYMBOLS

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)

UTILITY CONSTRUCTION



License No. C-2639

401 Harrison Oaks Blvd., Suite 220 Cary, NC 27513

DOCUMENT NOT CONSIDERED FINAL

UNLESS ALL SIGNATURES COMPLETED

PROJECT REFERENCE NO.		SHEET NO.	
I-2513 AC		UC-3	
DESIGNED BY: JKC		DESIGNED BY: SEAL APPROVED BY: CDB REVIS: 7/9/2026 7/9/2026 7/9/2026 SEAL DESIGNED BY: SEAL APPROVED BY: CDB REVIS: 7/9/2026	

DRAWN BY:			
CHECKED BY: CLS			
APPROVED BY: CDB			
REVISED:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		UTILITY CONSTRUCTION PLANS ONLY	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151			

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 ASHEVILLE AND METROPOLITAN SEWERAGE DISTRICT.

CONTACT PERSON FOR THE CITY OF ASHEVILLE IS:

CHAD PIERCE, PE
ENGINEERING SERVICES MANAGER
PH: 828-646-1281

CONTACT PERSON FOR THE METROPOLITAN SEWERAGE DISTRICT IS:

SAMUEL GETTLEMAN
PLANNING & DEVELOPMENT MANAGER
PH: 828-225-8270

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.

10. CONTRACTOR SHALL FIELD VERIFY THE VERTICAL AND HORIZONTAL ALIGNMENTS OF THE PROPOSED UTILITY TIE-IN POINTS SHOWN ON THE PLANS. ONCE THE TIE-IN POINTS AND GRADE OF PROPOSED UTILITY LINES ARE VERIFIED AS CORRECT, THE CONTRACTOR CAN BEGIN CONSTRUCTION ON THE PROPOSED UTILITY LINES.

11. ALL BYPASS PUMPING NECESSARY TO MAINTAIN EXISTING SEWER FLOW DURING THE INSTALLATION OF THE PROPOSED SEWER LINES WILL BE INCIDENTAL TO THE COST OF THE PROPOSED SEWER LINES. THE CONTRACTOR MAY NEED TO INSTALL TEMPORARY MANHOLES ALONG THE EXISTING SEWER LINES FOR BYPASS PUMPING. PORTABLE LINED TANKERS WILL BE REQUIRED FOR SOME OF THE BYPASS PUMPING.

12. ALL REQUIRED SHEET PILING WILL BE INCIDENTAL TO THE COST OF THE WATER AND SEWER LINES. ALL SHEET PILING SHALL MEET NCDOT SPECIFICATIONS. THE SHORING ADJACENT TO TRAFFIC ON STATE STREET WILL BE PAID FOR IN THE TRAFFIC CONTROL PLANS. ALL OTHER SHORING IS INCIDENTAL TO THE WATER AND SEWER LINES.

13. THE CONTRACTOR SHALL VERIFY ALL SEWER LINE GRADES ARE CORRECT PRIOR TO INSTALLING THE ENCASEMENTS AND SEWER LINES. VERIFY THE EXISTING SEWER LINE TIE IN POINT ELEVATIONS PRIOR TO INSTALLING THE SEWER LINES.

14. AT RETAINING WALL 15, DURING THE SEWER LINE 6 INSTALLATION ON (SHEET UC-6), THE CONTRACTOR SHALL GET SURVEY ELEVATIONS EVERY 10 FEET IN THE VICINITY WHERE THE SOIL NAILS EXIST ALONG RETAINING WALL 15.

15. TO KEEP THE WATER SERVICES ACTIVE, THE CONTRACTOR MAY NEED TO HAVE THE EXISTING AND PROPOSED WATER LINES ACTIVE AT THE SAME TIME UNTIL ALL WATER SERVICES ARE RELOCATED TO THE NEW WATER LINE. THE COST TO INSTALL TEMPORARY - (PIPE, VALVES, FITTINGS AND INCIDENTALS) NECESSARY TO KEEP THE EXISTING AND PROPOSED WATER LINES ACTIVE DURING THE WATER METER AND FIRE HYDRANT RELOCATIONS WILL BE INCIDENTAL TO THE COSTS OF THE PROPOSED WATER LINES.

PROJECT SPECIFIC NOTES:

1. ALL PROPOSED WATER LINES AND FITTINGS SHALL BE RESTRAINED JOINT.

2. 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. IT'S

3. THE CONTRACTOR IS RESPONSIBLE TO DESIGN THE SHEET PILING NECESSARY FOR SHORING TRENCHES, BORE PITS, AND RECEIVING PITS, ALL SHEET PILING DESIGN SHALL BE SEALED BY A NORTH CAROLINA PROFESSIONAL ENGINEER.

4. WATER AND SEWER LINE CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF ASHEVILLE, METROPOLITAN SEWERAGE DISTRICT STANDARD DETAILS/SPECIAL PROVISIONS AND NCDOT 2024 STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES. THE PIPE BEDDING WILL BE IN ACCORDANCE WITH THE DETAILS SHOWN IN THE PLANS. ALL PAY ITEMS WILL BE IN ACCORDANCE WITH NCDOT 2024 STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES AND THE PROJECT SPECIAL PROVISION.

5. THE THRUST BLOCKING REQUIRED FOR THE 24" WATER LINE TIE-INS SHOWN ON SHEET UC-5 SHALL BE DESIGNED AND SEALED BY A NC PROFESSIONAL ENGINEER. THE CITY OF ASHEVILLE WILL NEED TO APPROVE THE THRUST BLOCKING BEFORE BEING INSTALLED.

6. ALL WATERLINES ARE TO BE INSTALLED IN ACCORDANCE WITH THE CITY OF ASHEVILLE WATER RESOURCES DESIGN & CONSTRUCTION MANUAL.

7. ALL CONSTRUCTION IS TO BE PERFORMED BY A NORTH CAROLINA LICENSED UTILITY CONTRACTOR. ALL EXISTING UTILITIES ARE TO BE LOCATED USING 811 AT LEAST 72 HOURS BEFORE DIGGING.

8. ALL WATER APPURTENANCE COMPONENTS ARE TO BE MADE USING LEAD FREE MATERIALS.

9. ALL FIRE HYDRANTS, WATER METERS, VAULTS, BACKFLOWS, AND OTHER APPURTENANCES ARE TO BE LOCATED IN RELATIVELY FLAT AREAS AND OUTSIDE PAVEMENT OR DRIVEWAYS.

10. RESTRAINED JOINTS BY AN APPROVED PIPE MANUFACTURER ARE TO BE USED FOR ALL PUBLIC WATERLINES WHERE THRUST RESTRAINING IS REQUIRED; HOWEVER, THRUST BLOCKS ARE PERMITTED WHERE CONNECTIONS ARE MADE TO EXISTING WATERLINES OR WHERE THE USE OF MECHANICAL RESTRAINT IS NOT FEASIBLE.

11. IN ORDER TO ENSURE PROPER PLACEMENT OF THE WATERLINES, METERS AND APPURTENANCES, PROPOSED ITEMS WILL NEED TO BE STAKED PRIOR TO CONSTRUCTION.

12. STAKING OF THE R/W LIMITS, ROADWAYS, CURBLINE OR EOP, SIDEWALK, PROPOSED STRUCTURES, TREES, PROPERTY CORNERS, WATERLINES, VAULTS, BACKFLOWS, APPURTENANCES, ETC. IS REQUIRED PRIOR TO INSTALLATION OF THE WATERLINE.

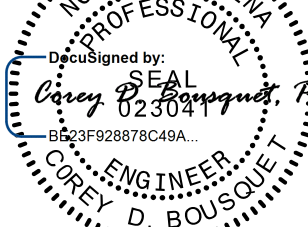
13. METROPOLITAN SEWERAGE DISTRICT DOES NOT ALLOW DOGHOUSE MANHOLES.

14. THE CONTRACTOR WILL BE RESPONSIBLE TO DETERMINE WHERE ALL THE ACTIVE SEWER SERVICE LINE CONNECTIONS ARE LOCATED TO ENSURE THERE WILL BE NO DISRUPTION TO ANY OF EXISTING SEWER SERVICE LINES DURING CONSTRUCTION OF THIS PROJECT. ALL COST TO MAINTAIN THE EXISTING SEWER SERVICE LINES DURING THE DURATION OF THIS PROJECT WILL BE INCIDENTAL TO THE COSTS OF THE PROPOSED SEWER SERVICE LINES.

METROPOLITIAN SEWERAGE DISTRICT DETAILS

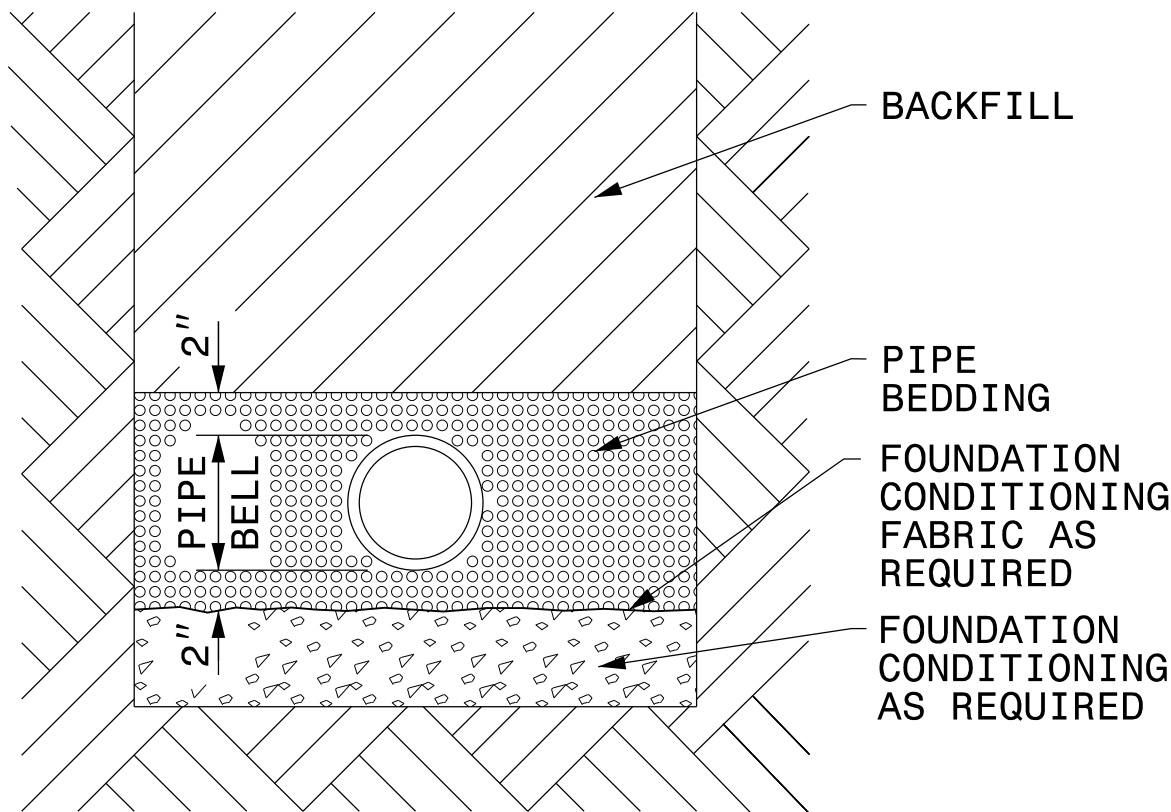


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UNLESS ALL SIGNATURES COMPLETED

PROJECT REFERENCE NO.		SHEET NO.	
I-2513 AC		UC-3A	
DESIGNED BY: JKC			
DRAWN BY: JKC			
CHECKED BY: CLS			
APPROVED BY: CDB			
REVISED:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION			
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151		UTILITY CONSTRUCTION PLANS ONLY	

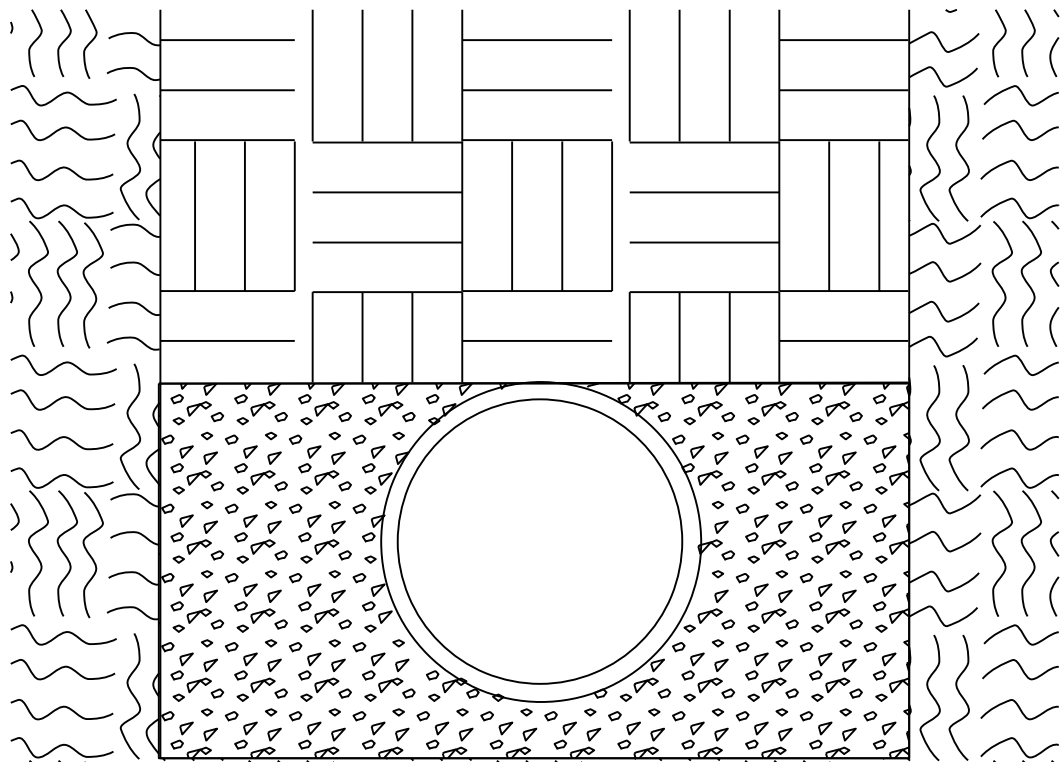
UTILITY CONSTRUCTION

TRENCH DETAIL

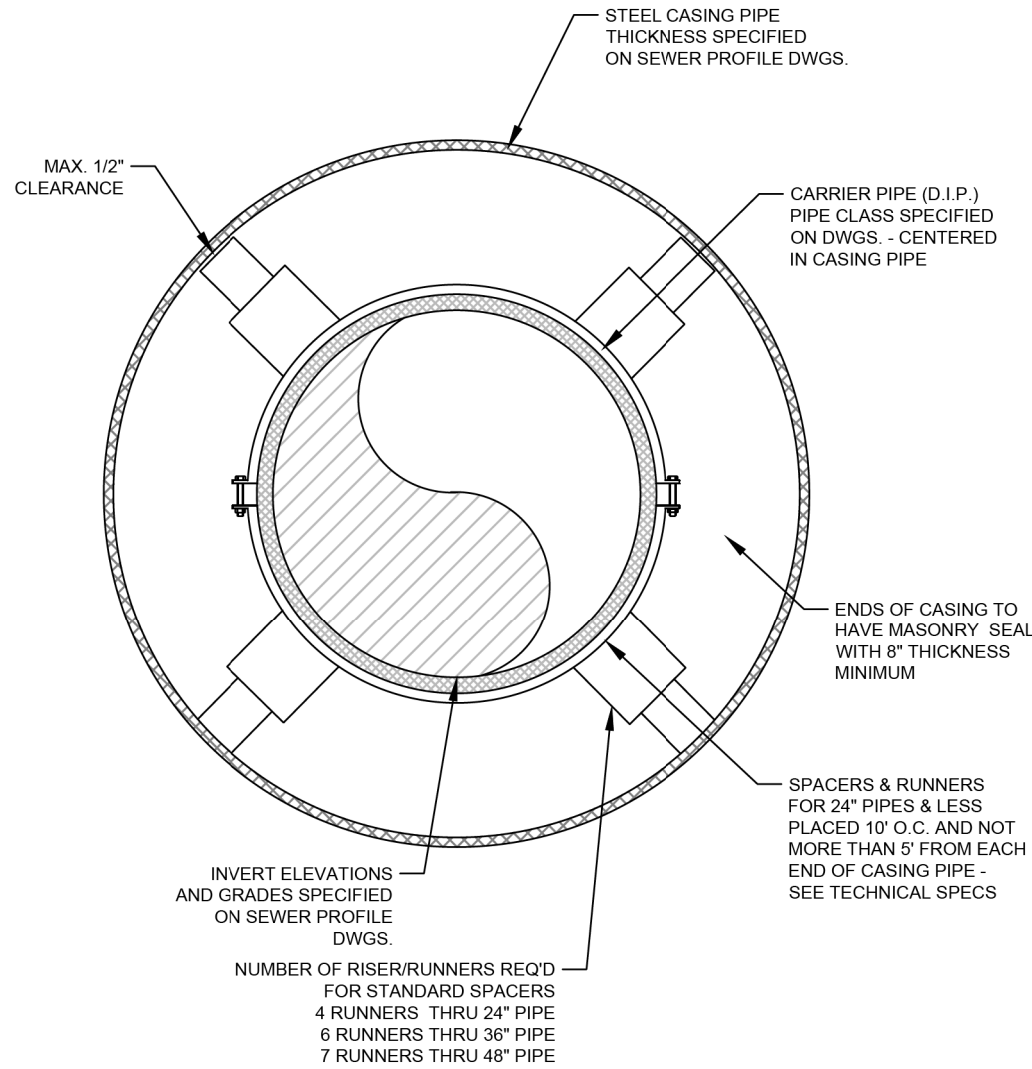


PLACE FOUNDATION CONDITIONING MATERIAL BELOW BEDDING IF REQUIRED, AS DIRECTED BY ENGINEER. PIPE BEDDED IN SELECT MATERIAL, CLASS II (TYPE 1) OR CLASS III. TRENCH BACKFILLED IN LOOSE 6" LAYERS COMPACTED TO TOP OF TRENCH USING LOCAL EXCAVATED MATERIAL IF APPROVED BY THE ENGINEER, OR SELECT MATERIAL. ALL MATERIAL SHALL BE FREE OF ROCKS, FOREIGN MATERIAL, AND FROZEN EARTH. COMPACTION SHALL BE TO APPROXIMATELY 95% DENSITY IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED BY THE DEPARTMENT OF TRANSPORTATION.

TYPE "5"
(BEDDING FOR D.I. PIPE)



PIPE BEDDED IN LOOSE 6" LAYERS OF GRANULAR MATERIAL COMPACTED TO TOP OF PIPE, 4" MINIMUM UNDER PIPE. TRENCH BACKFILLED IN LOOSE 6" LAYERS COMPACTED TO TOP OF TRENCH USING LOCAL EXCAVATED MATERIAL, IF APPROVED BY THE ENGINEER, OR SELECT MATERIAL. ALL MATERIAL SHALL BE FREE OF ROCKS, FOREIGN MATERIAL, AND FROZEN EARTH. COMPACTION SHALL BE TO APPROX. 95% DENSITY IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED BY THE DEPARTMENT OF TRANSPORTATION.

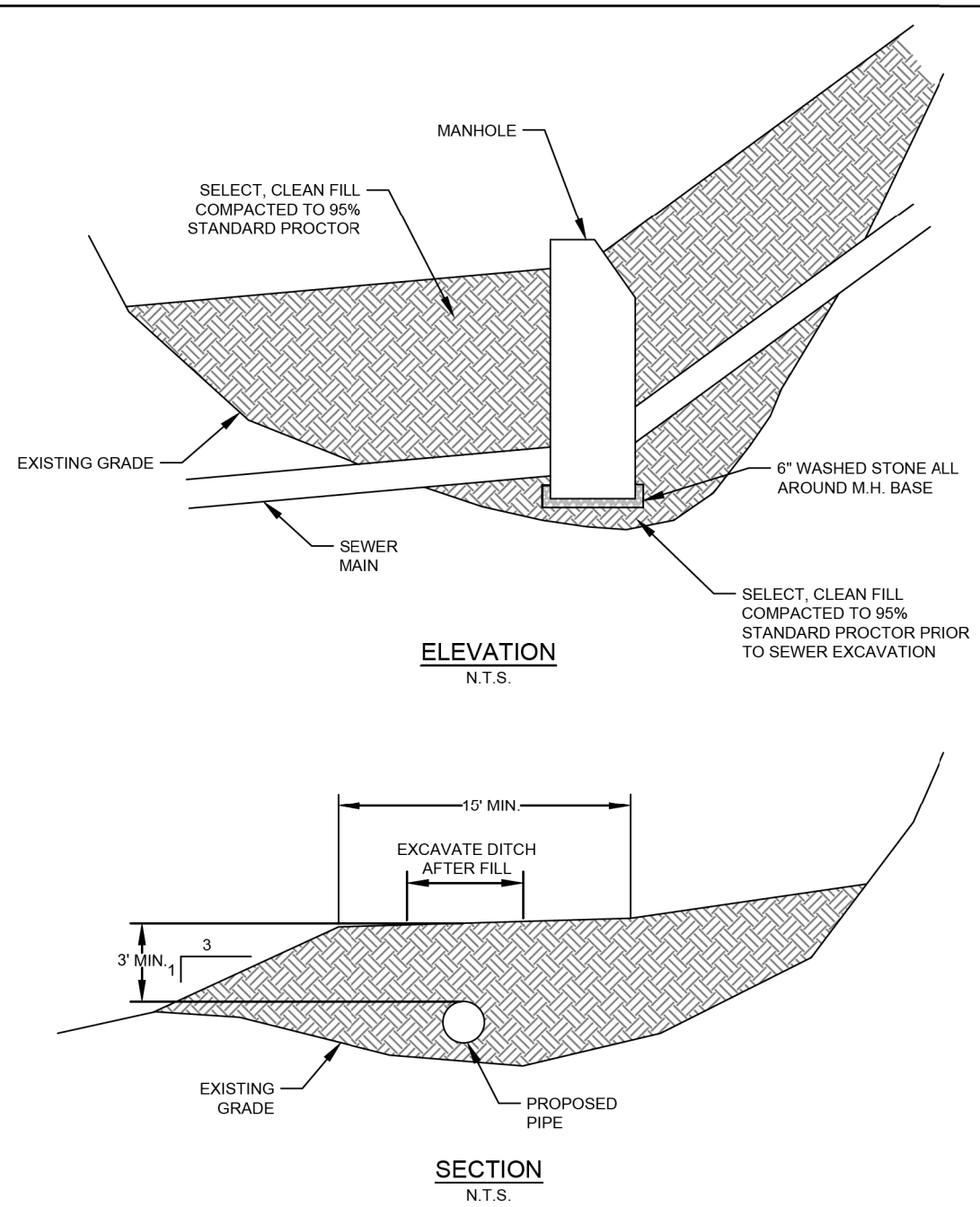


STANDARD DETAIL	
Metropolitan Sewerage District of Buncombe County, North Carolina	
BORE & ENCASEMENT DETAIL	
DATE APPROVED: MARCH 2017	2.14 - 01

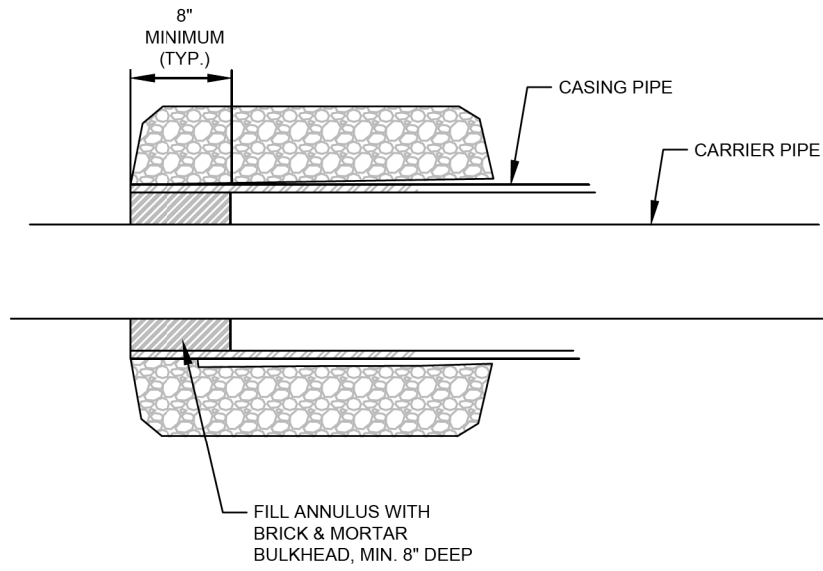
Maximum Depth of Cover for Ductile Iron Pipe w/ Cement Lining						
Pipe Size	Class	Type 1	Type 2	Type 3	Type 4	Type 5
4	350	53	61	69	85	100
6	350	26	31	37	47	65
8	350	16	20	25	34	50
10	350	11	15	19	28	45
12	350	10	13	16	26	44
14	250	-	11	15	23	36
14	300	-	13	17	26	42
14	350	-	14	19	27	44
16	250	-	11	15	24	34
16	300	-	13	17	26	39
16	350	-	15	20	28	44
18	250	-	10	14	22	31
18	300	-	13	17	26	36
18	350	-	15	19	28	41
20	250	-	10	14	22	30
20	300	-	13	17	26	35
20	350	-	15	19	28	38
24	200	-	8	12	17	25
24	250	-	11	15	20	29
24	300	-	13	17	24	32
24	350	-	15	19	28	37
30	200	-	8	12	16	24
24	250	-	11	15	19	27
30	300	-	12	16	21	29
30	350	-	15	19	25	33
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36	350	-	15	19	24	32
42	200	-	8	12	15	22
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42	350	-	15	19	23	32
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60	350	-	15	18	22	30
64	200	-	8	11	14	21
64	250	-	10	13	16	24
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64	350	-	15	17	21	29

SOURCE: Ductile Iron Pipe for Wastewater Applications, DIPRA 2006

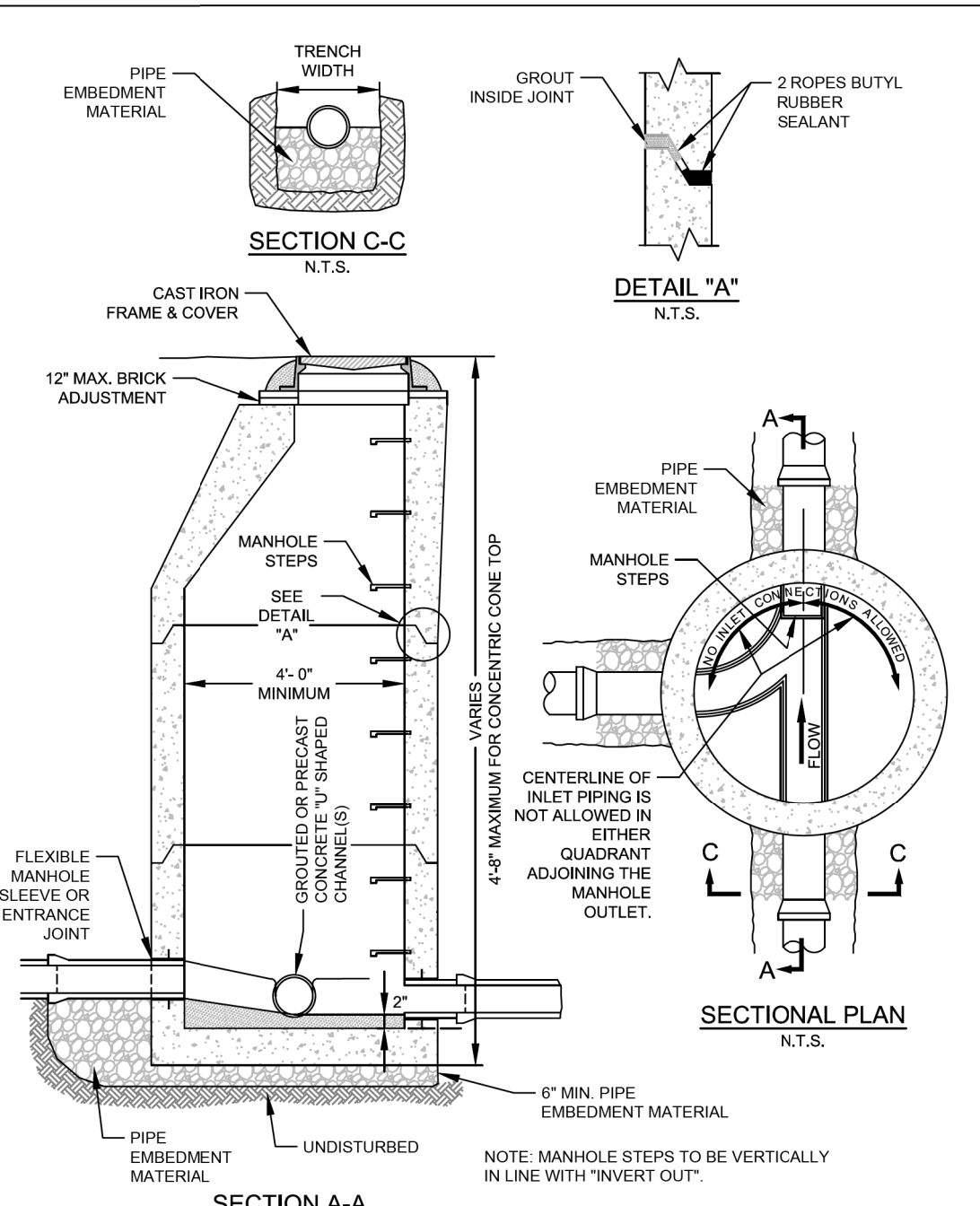
STANDARD DETAIL	
Metropolitan Sewerage District of Buncombe County, North Carolina	
TYPICAL TRENCH DETAIL FOR DUCTILE IRON PIPE - 2	
DATE APPROVED: MARCH 2017	2.05 - 02



STANDARD DETAIL	
Metropolitan Sewerage District of Buncombe County, North Carolina	
SEWER MAIN FILL	
DATE APPROVED: MARCH 2017	2.01 - 04



STANDARD DETAIL	
Metropolitan Sewerage District of Buncombe County, North Carolina	
BORE & JACK ANNULUS DETAIL	
DATE APPROVED: MARCH 2017	2.14 - 02

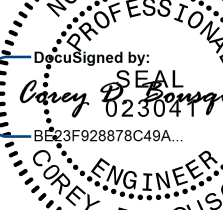


MANHOLE NOTES:	N.T.S	
1. FOR MANHOLES LARGER THAN 4 FT. DIA. MAINTAIN FULL MANHOLE DIA. TO 6 FT. ABOVE INVERT BENCH.		
2. FOR 5 FT. AND 6 FT. DIA. MANHOLES, USE A TRANSITION CONE TO REDUCE TO 4 FT. DIA. FOR 7 FT. TO 10 FT. DIA. MANHOLES, USE A TRANSITION TOP TO REDUCE TO 4 FT. DIA.		
		</

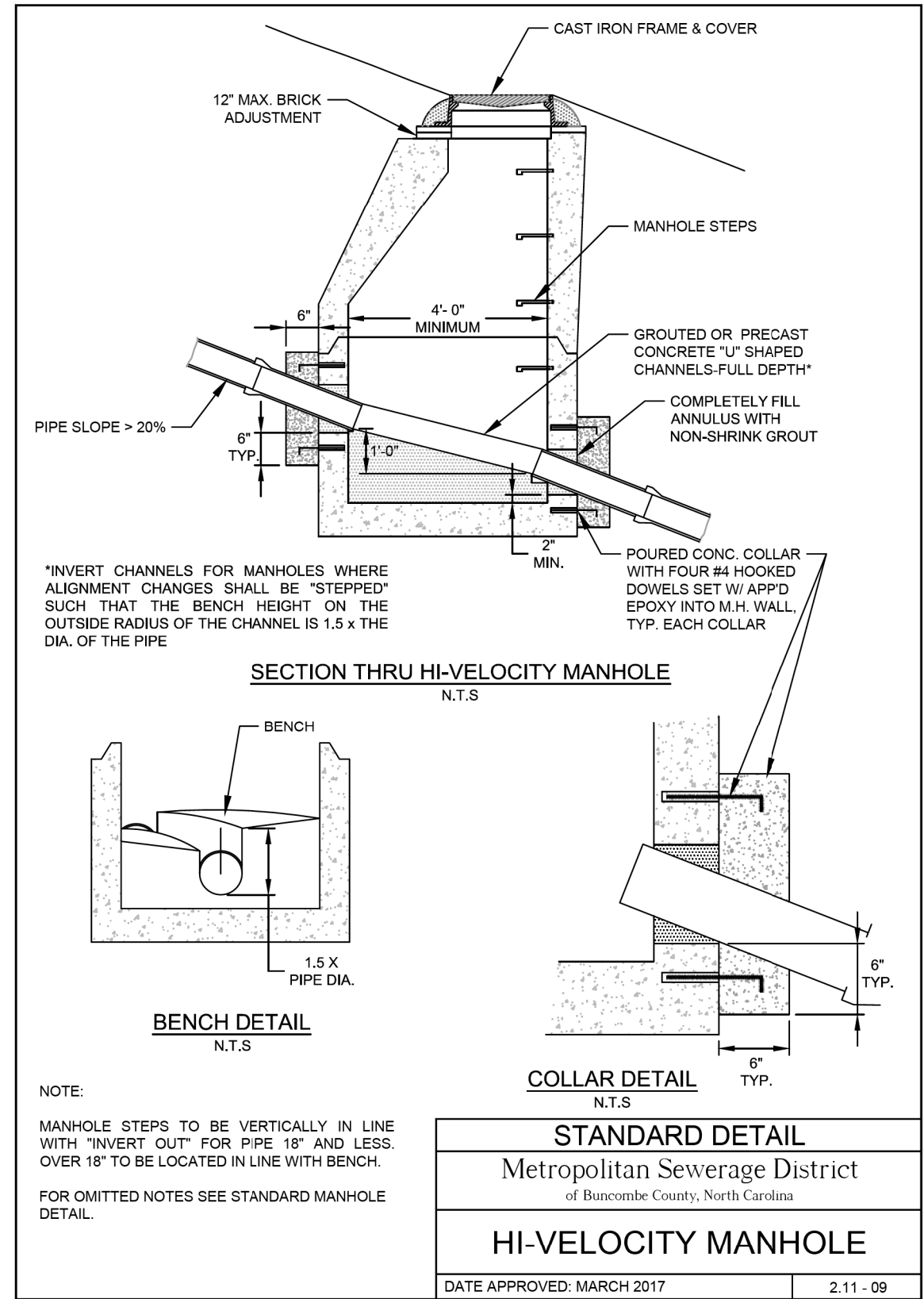
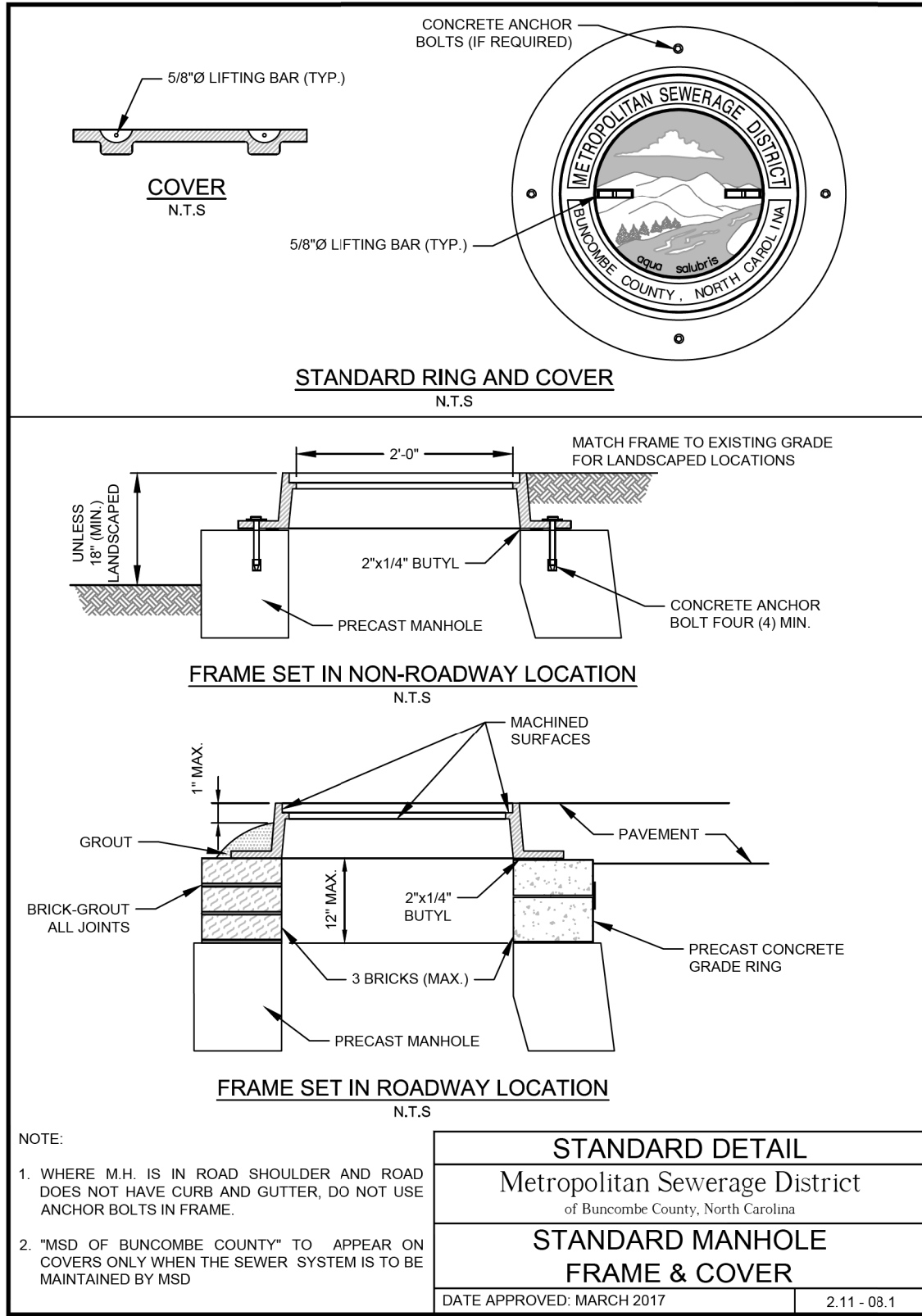
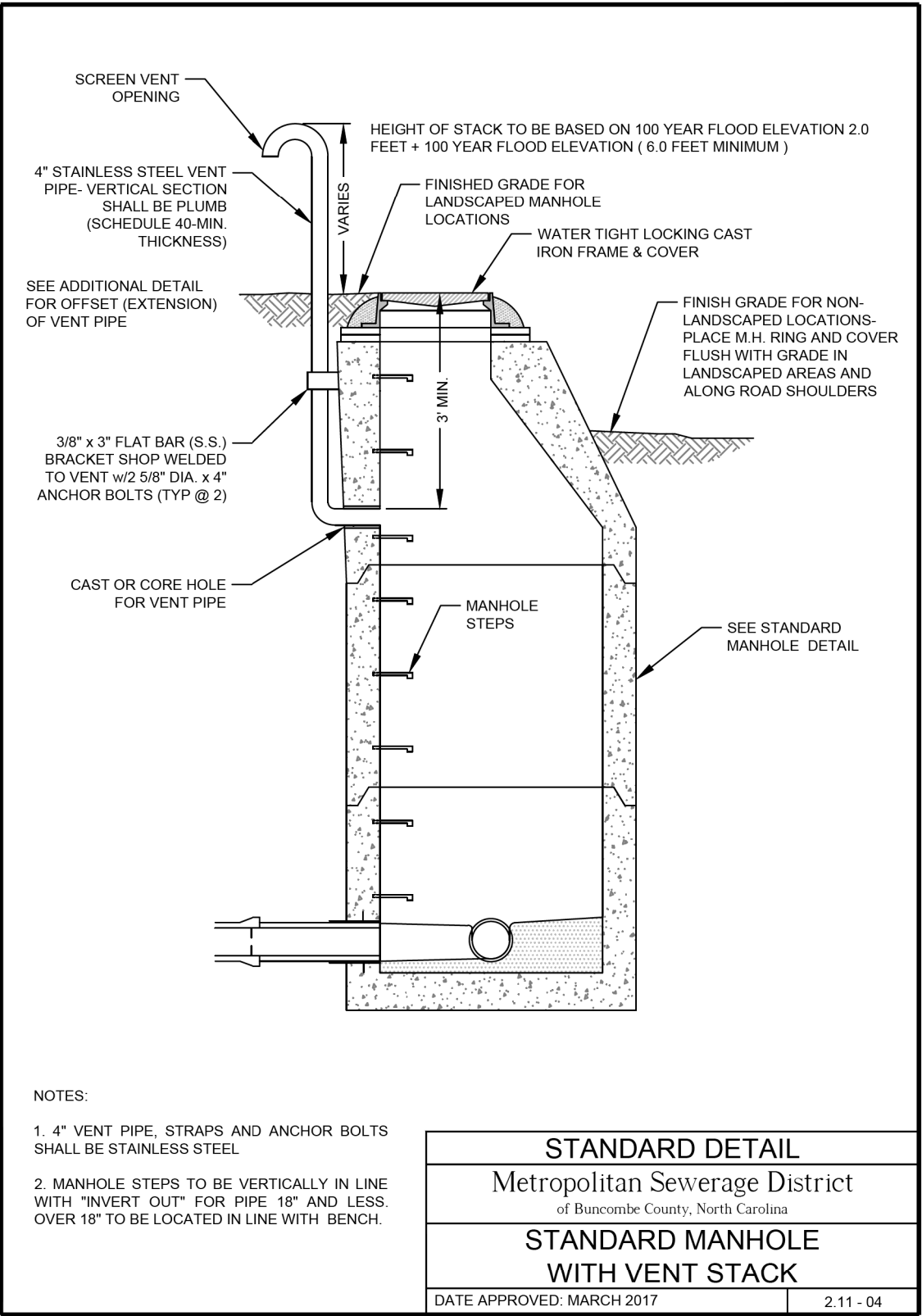
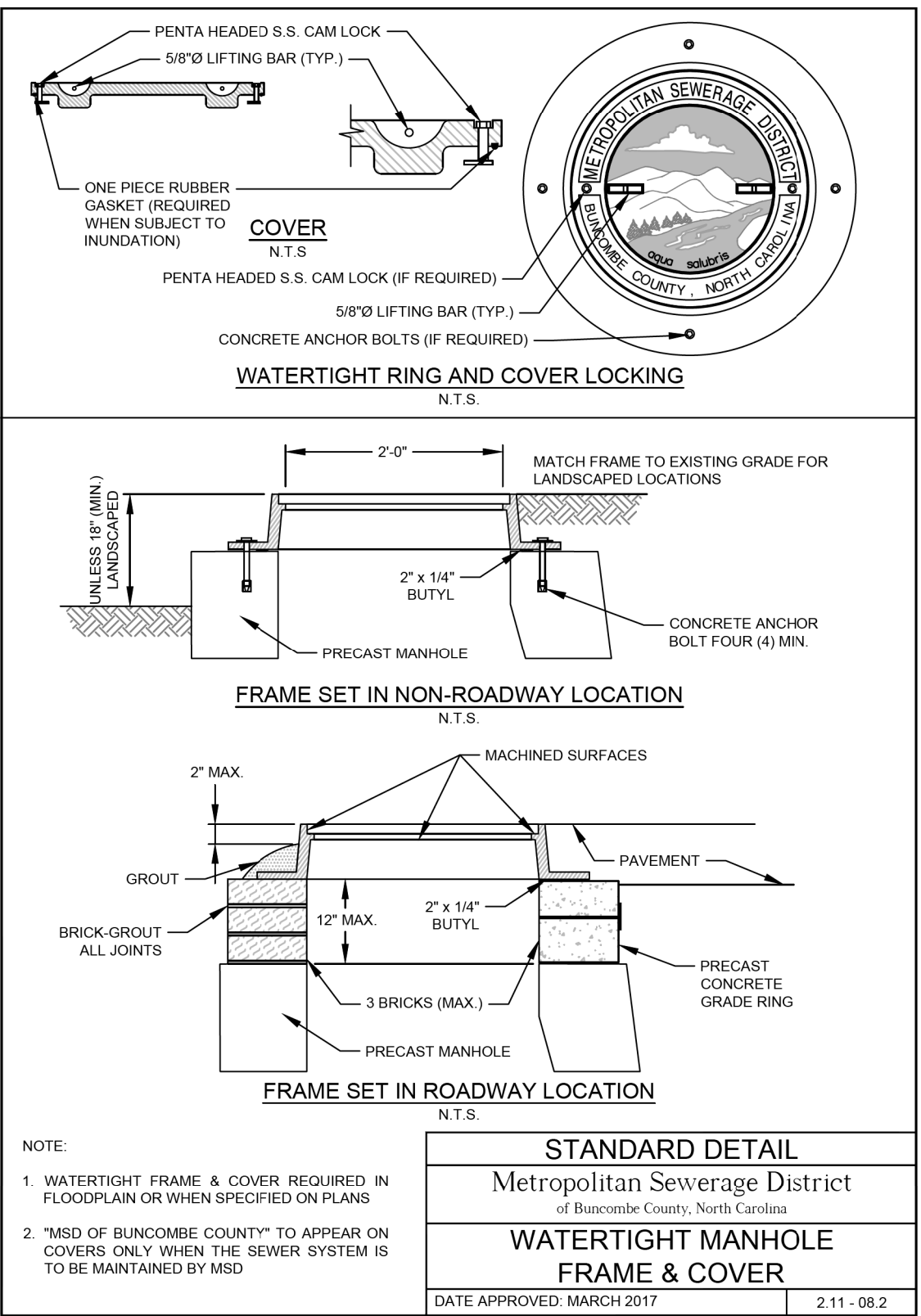
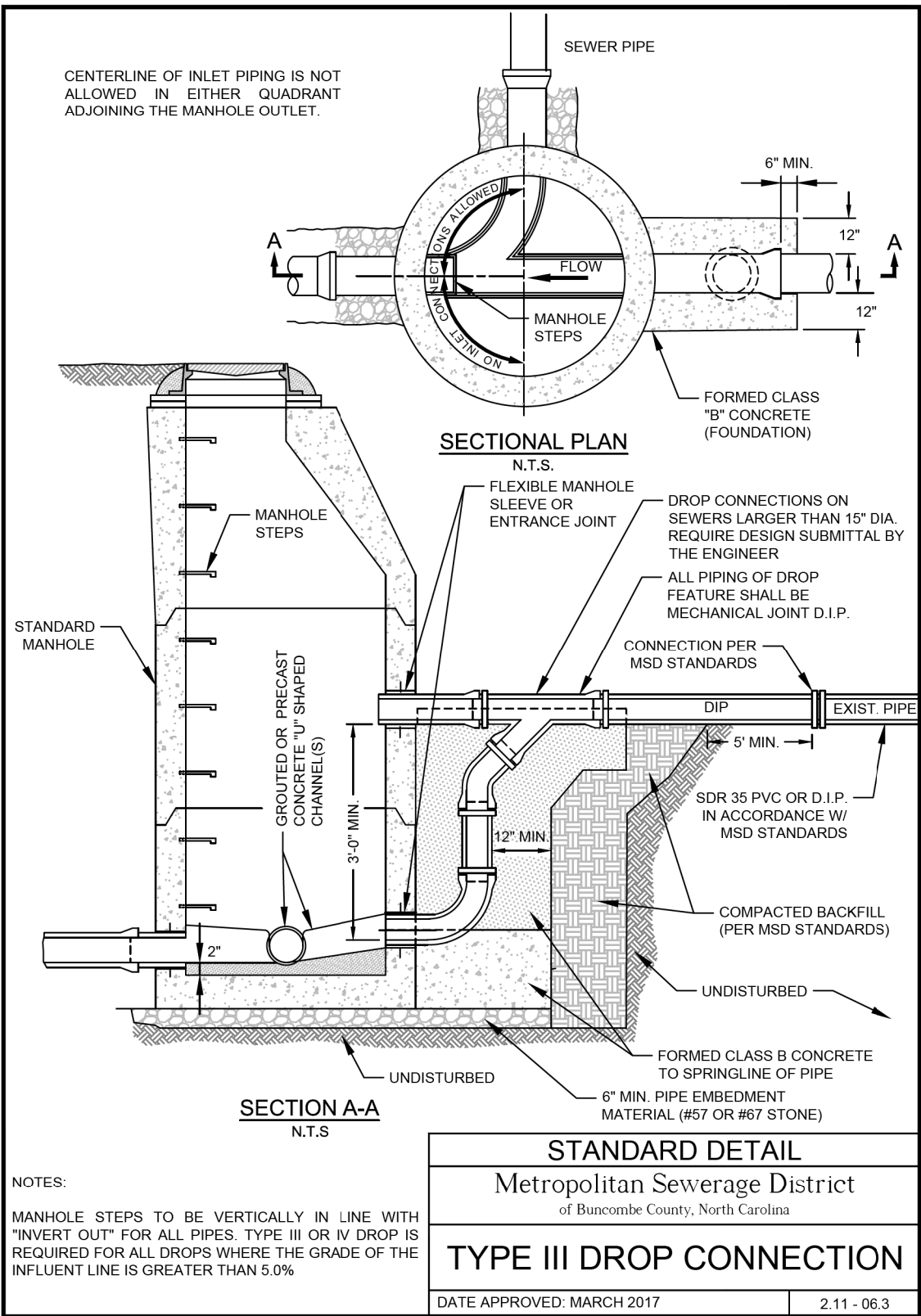
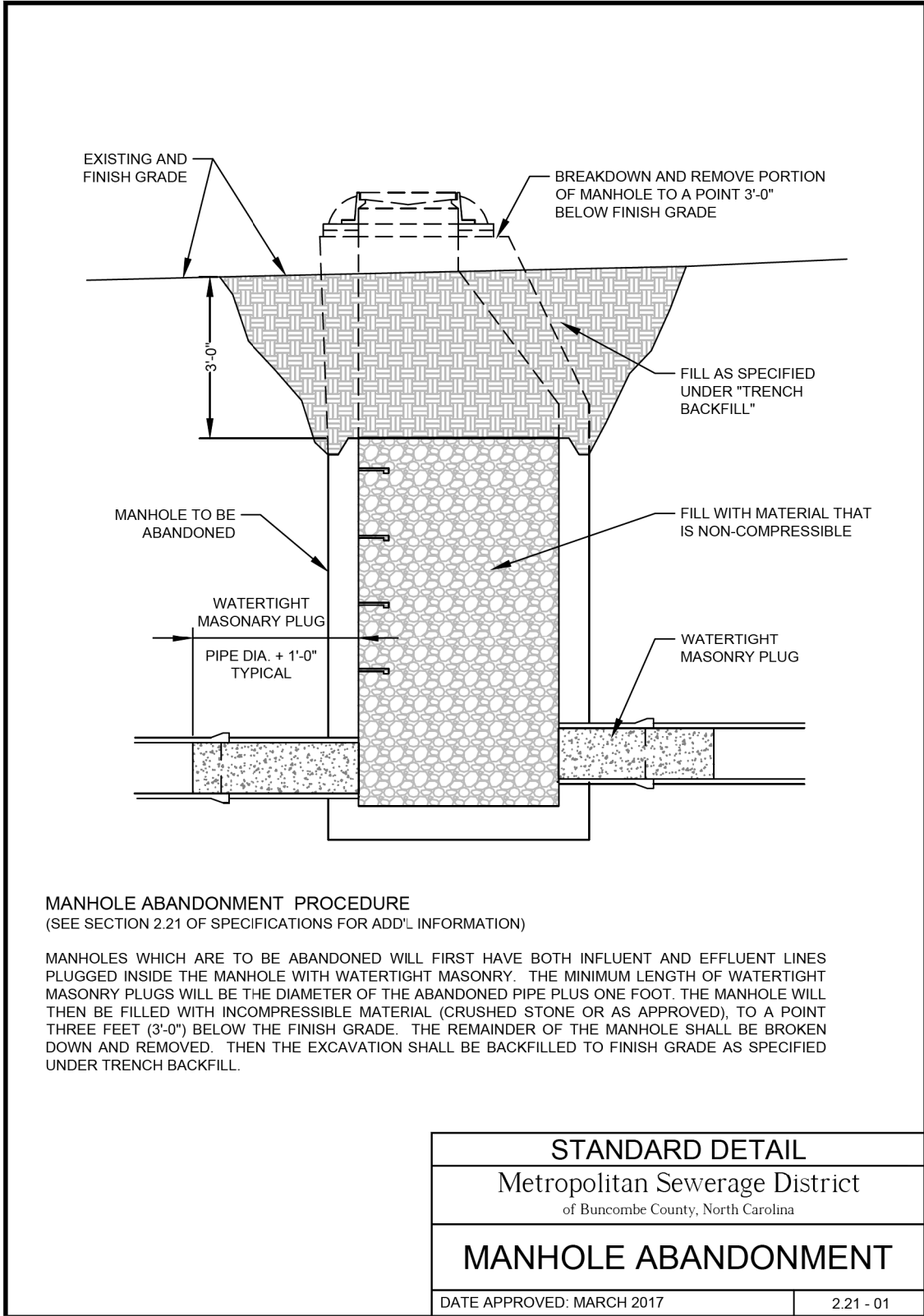
METROPOLITIAN SEWERAGE DISTRICT DETAILS



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

PROJECT REFERENCE NO.		SHEET NO.
I-2513 AC		UC-3B
DESIGNED BY:	JKC	
DRAWN BY:	JKC	
CHECKED BY:	CLS	
APPROVED BY:	CDB	
REVISED:		
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 Ax: (919) 250-4151		UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION



09-JUL-2026 12:44:33 PROJECTS\2020\A2020\01_AECOM_I-2513AC_Design\Utilities\Engineering\UC\Proj\I2513AC_ut_dtl\UC3B_psh.dgn

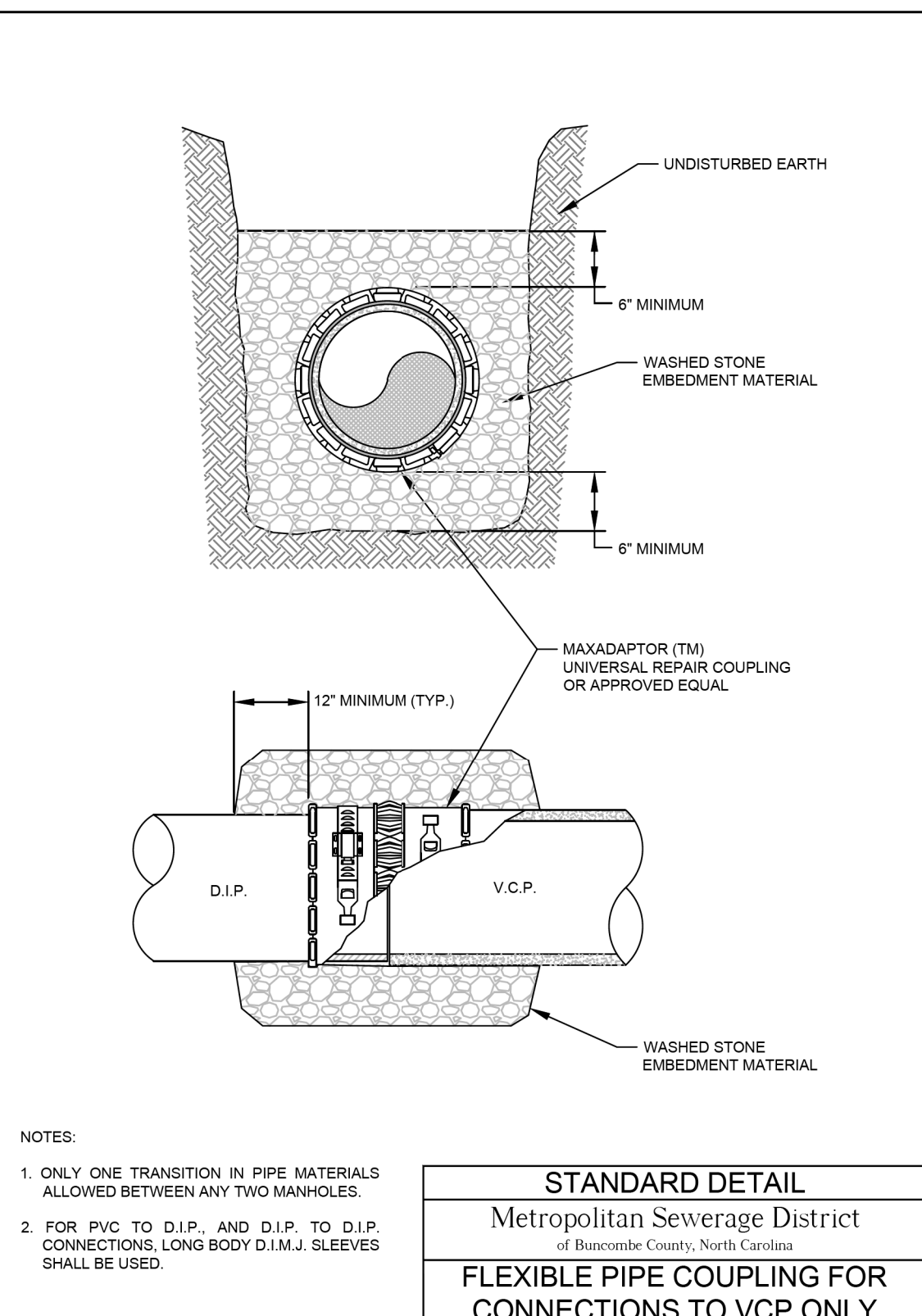
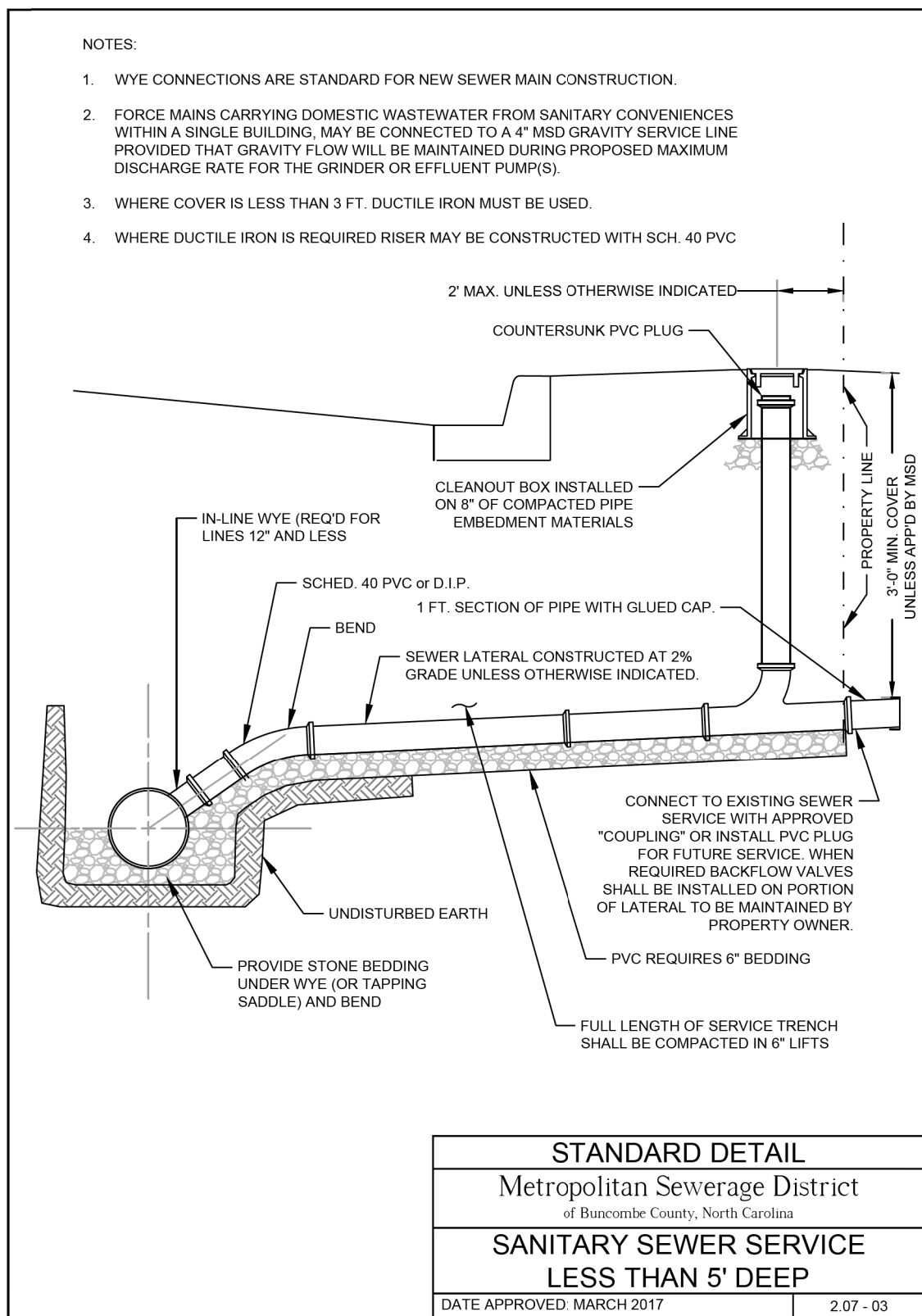
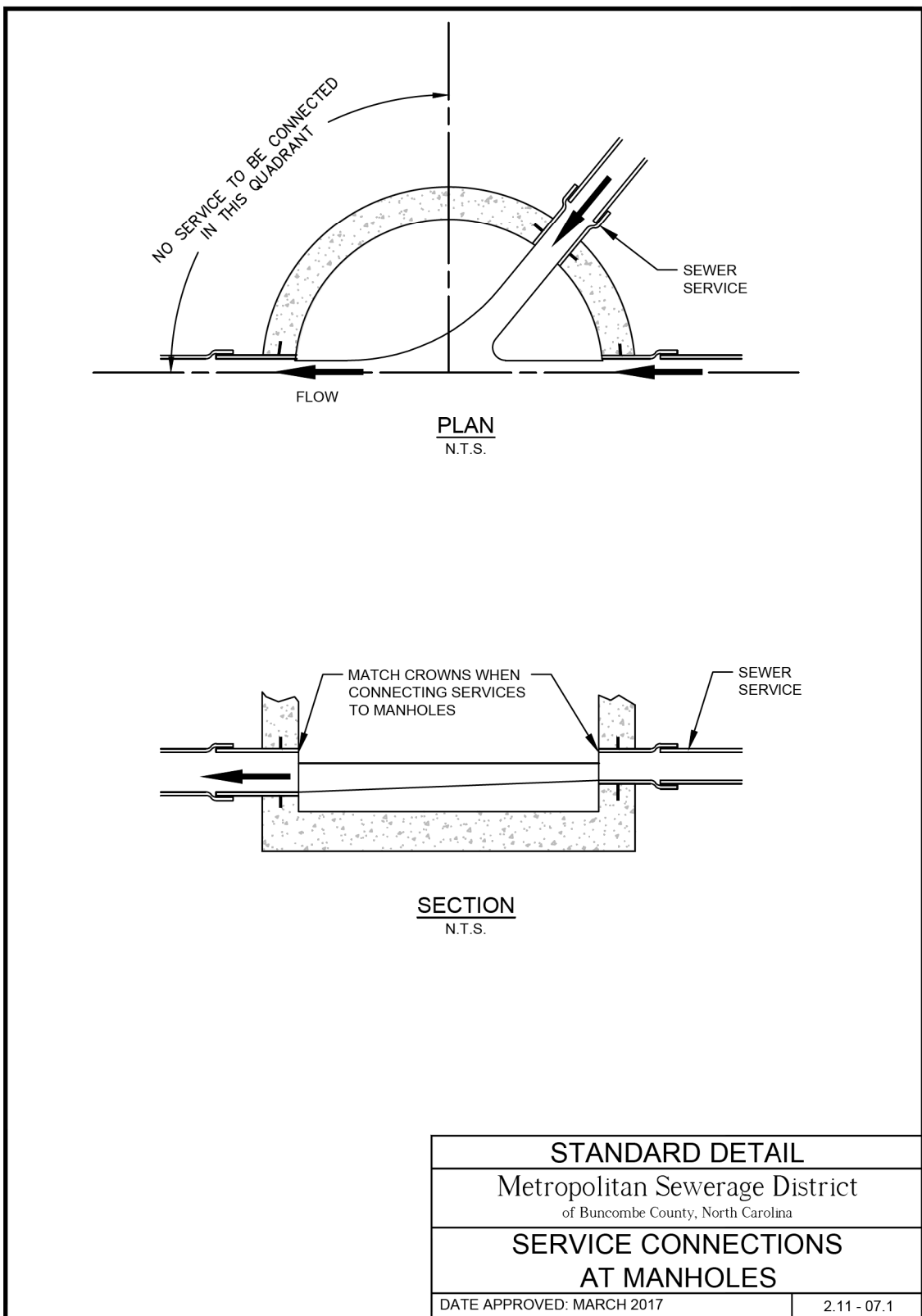
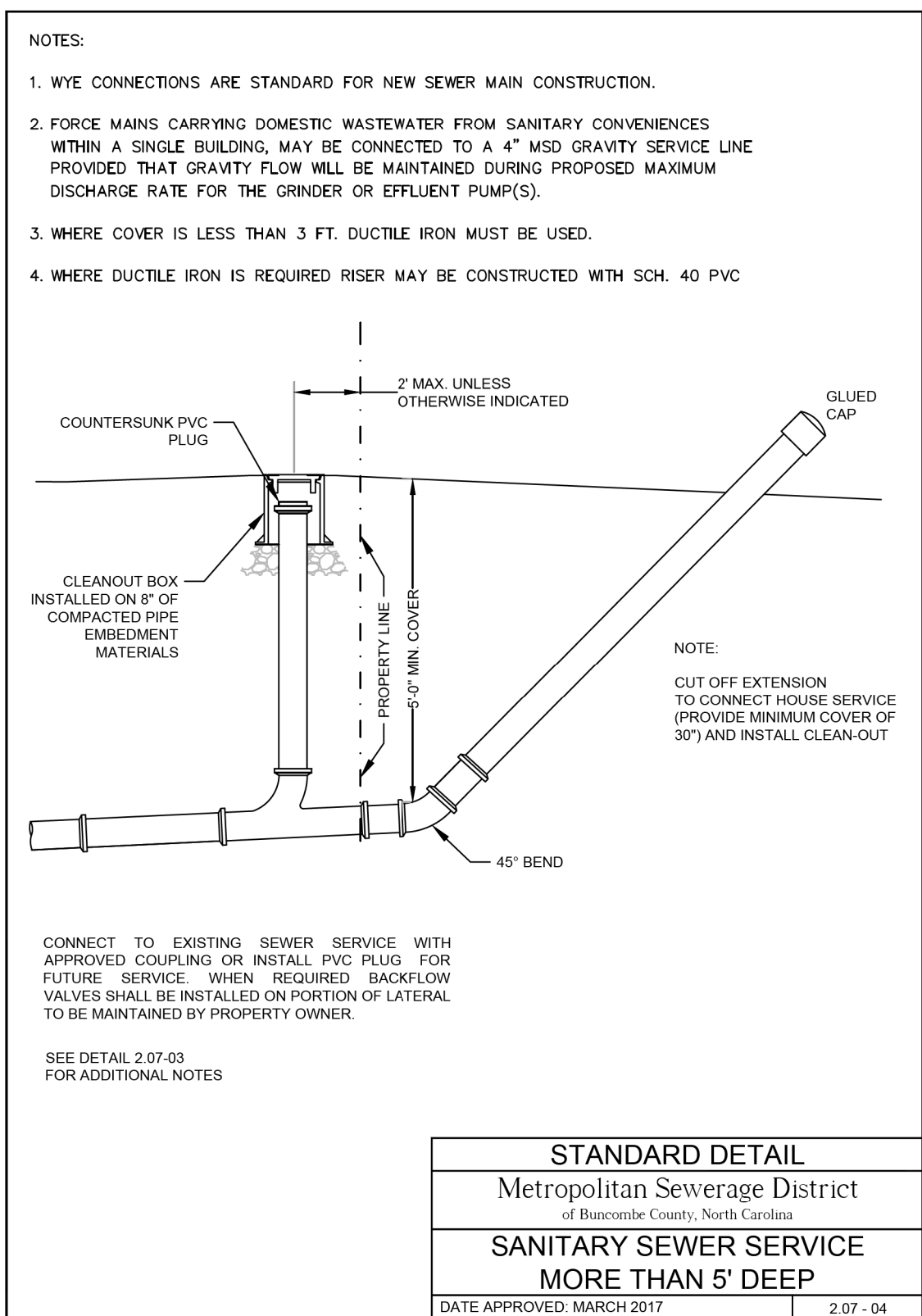
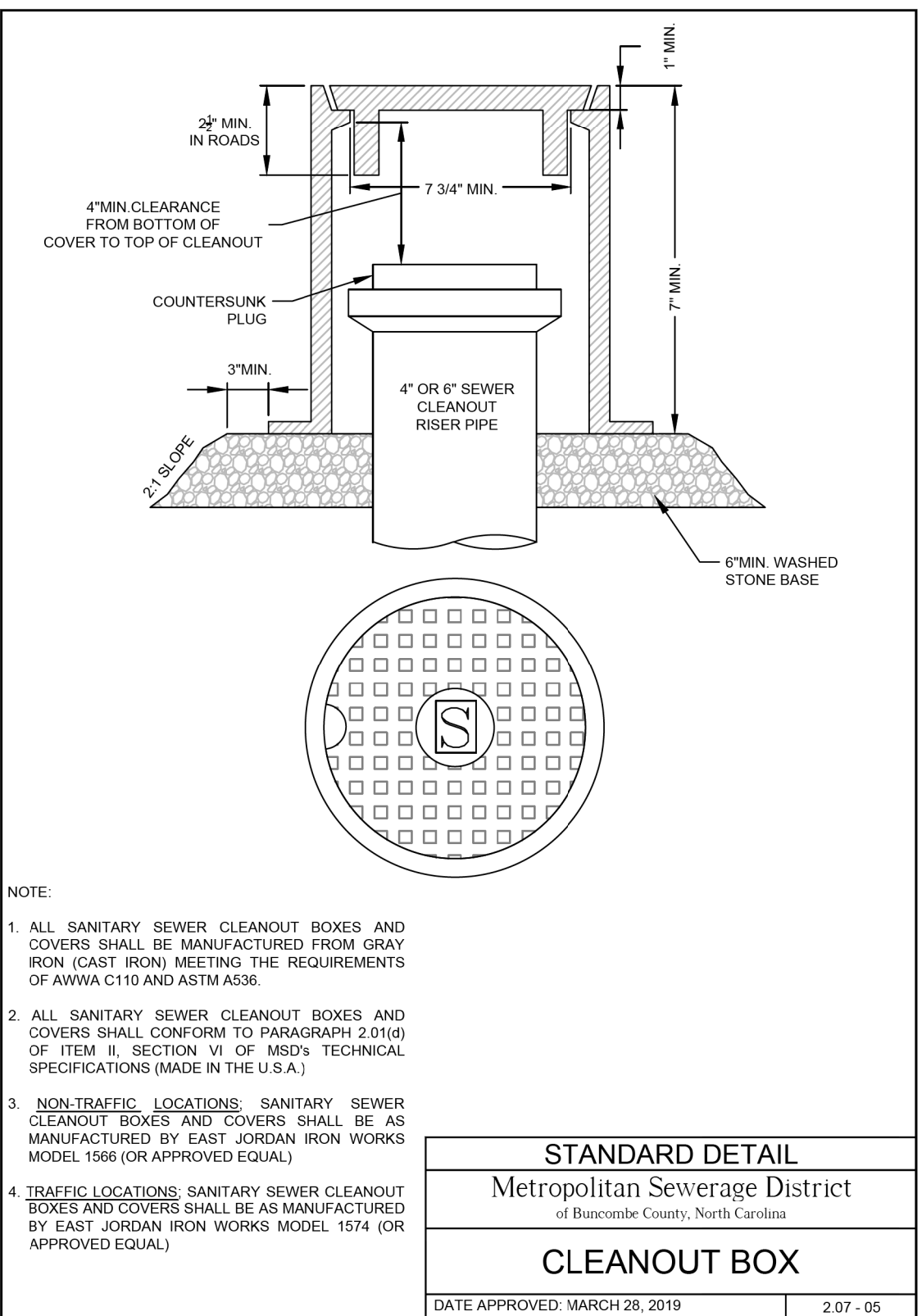
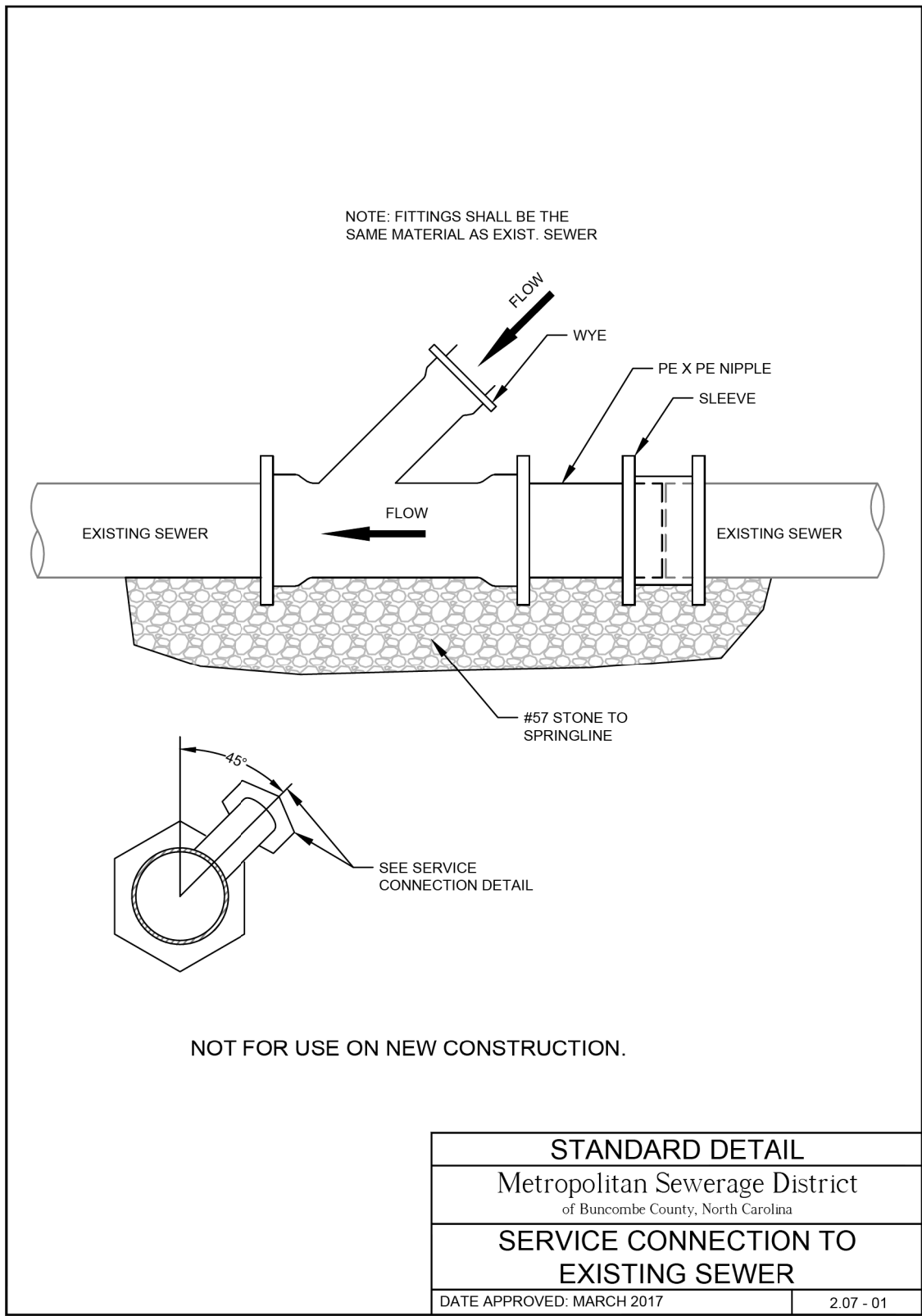
METROPOLITIAN SEWERAGE DISTRICT DETAILS



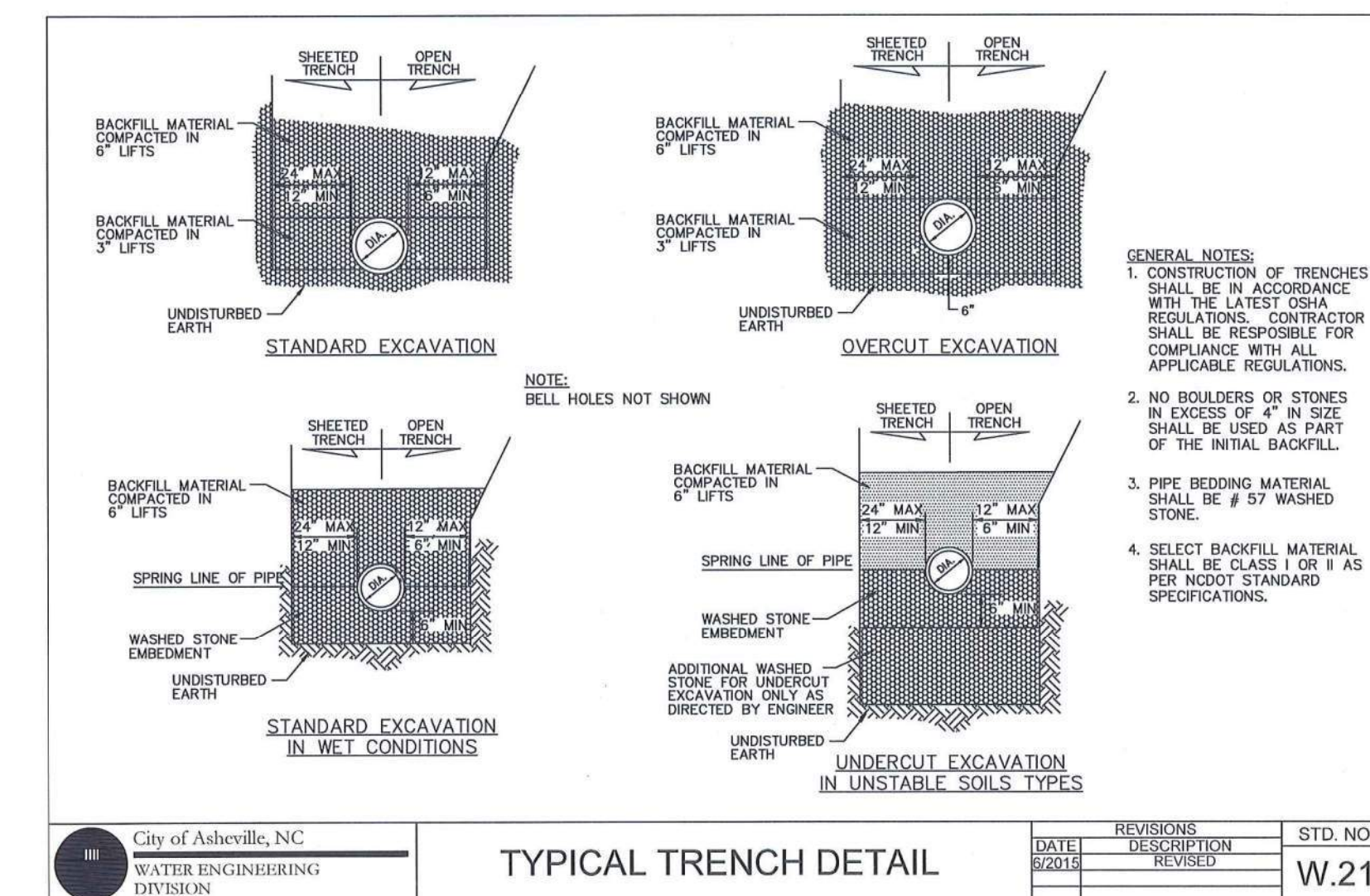
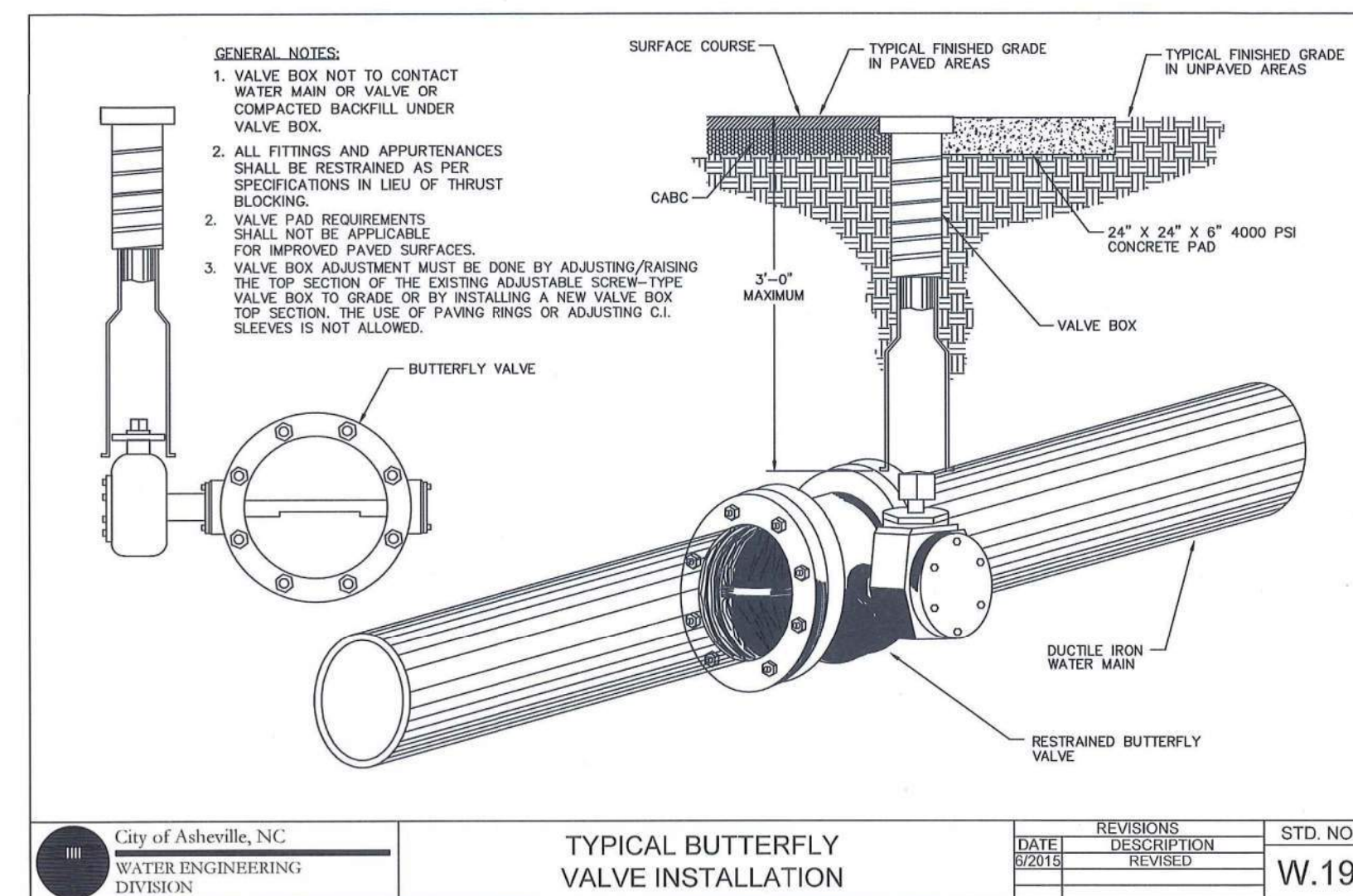
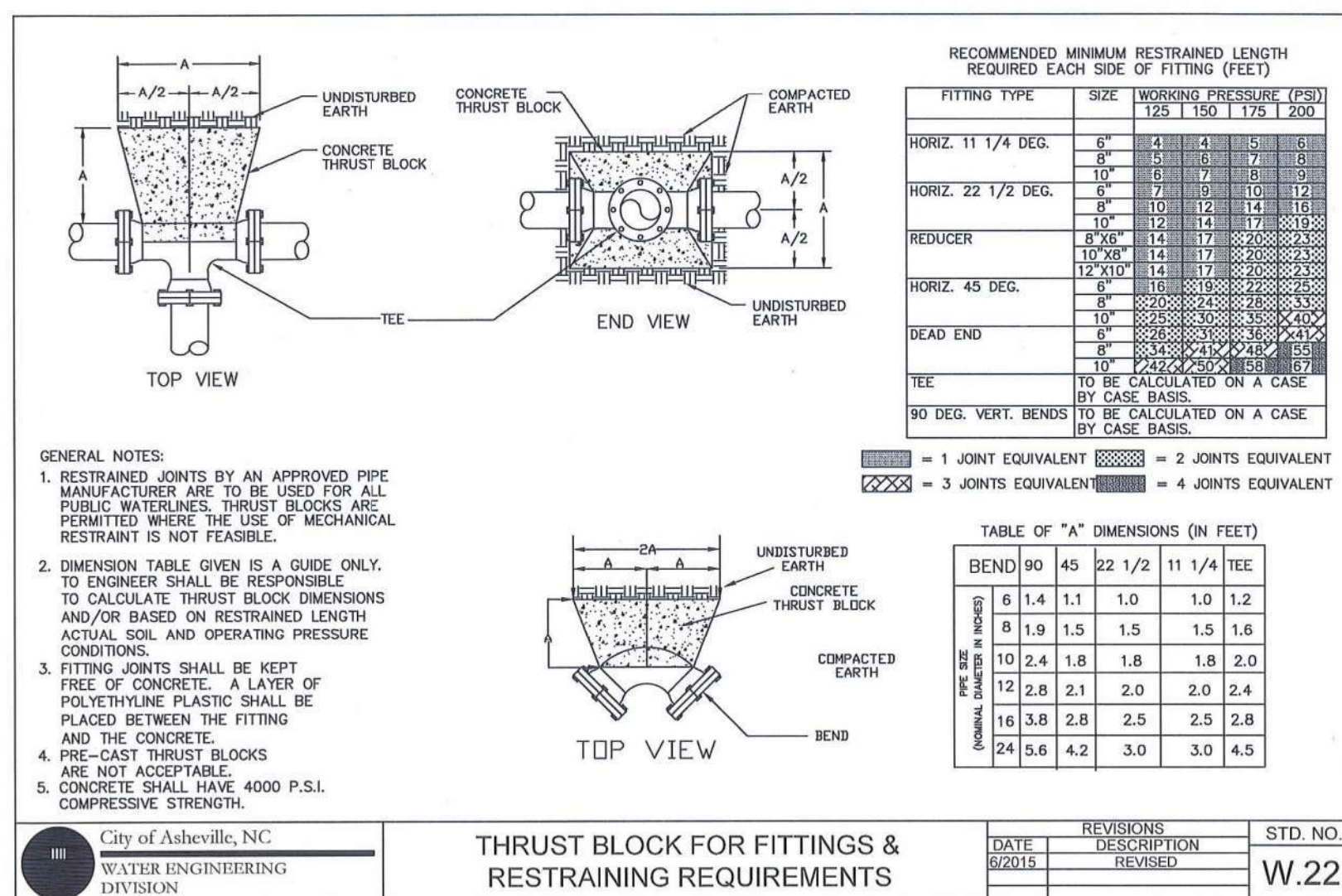
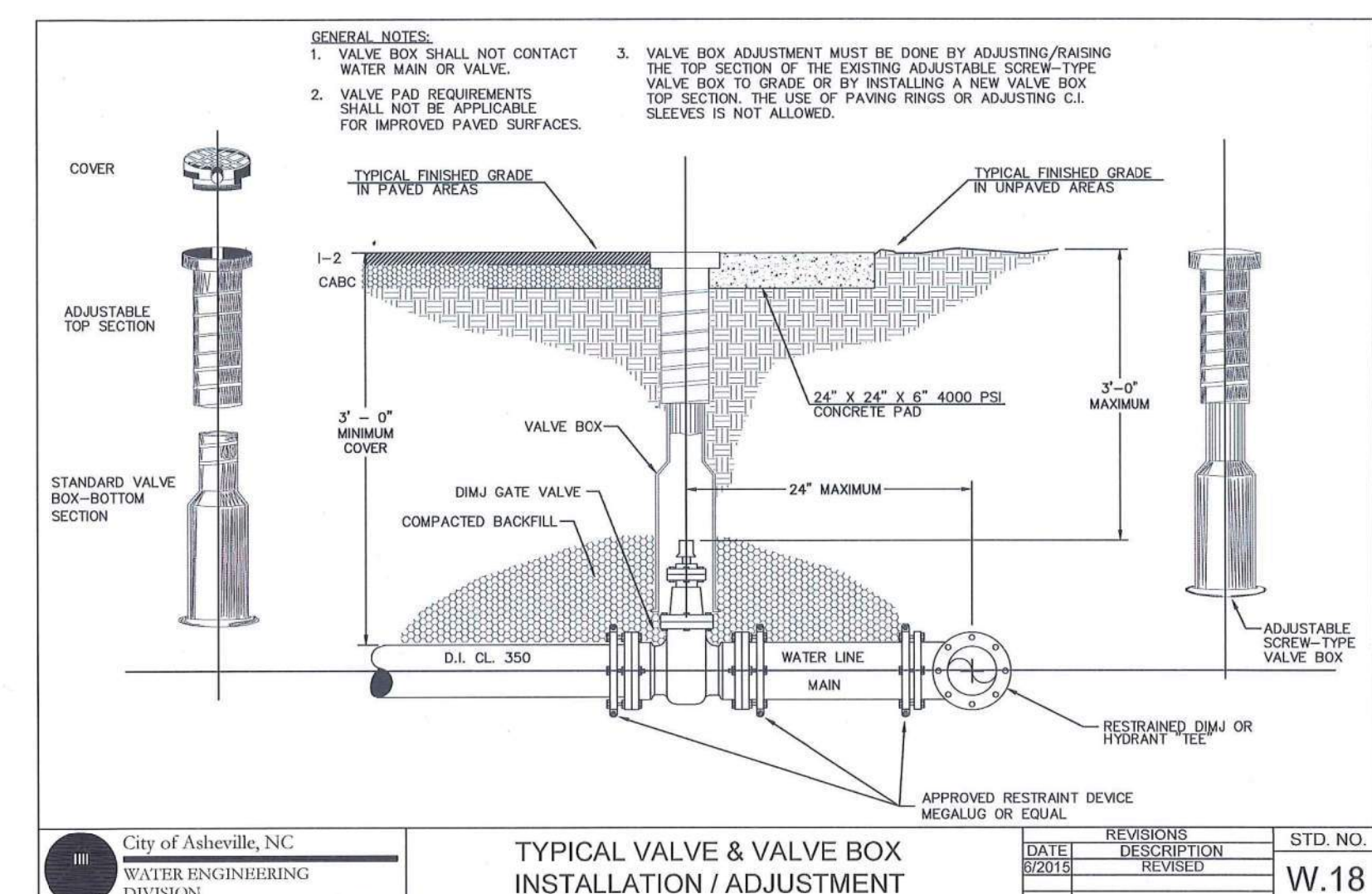
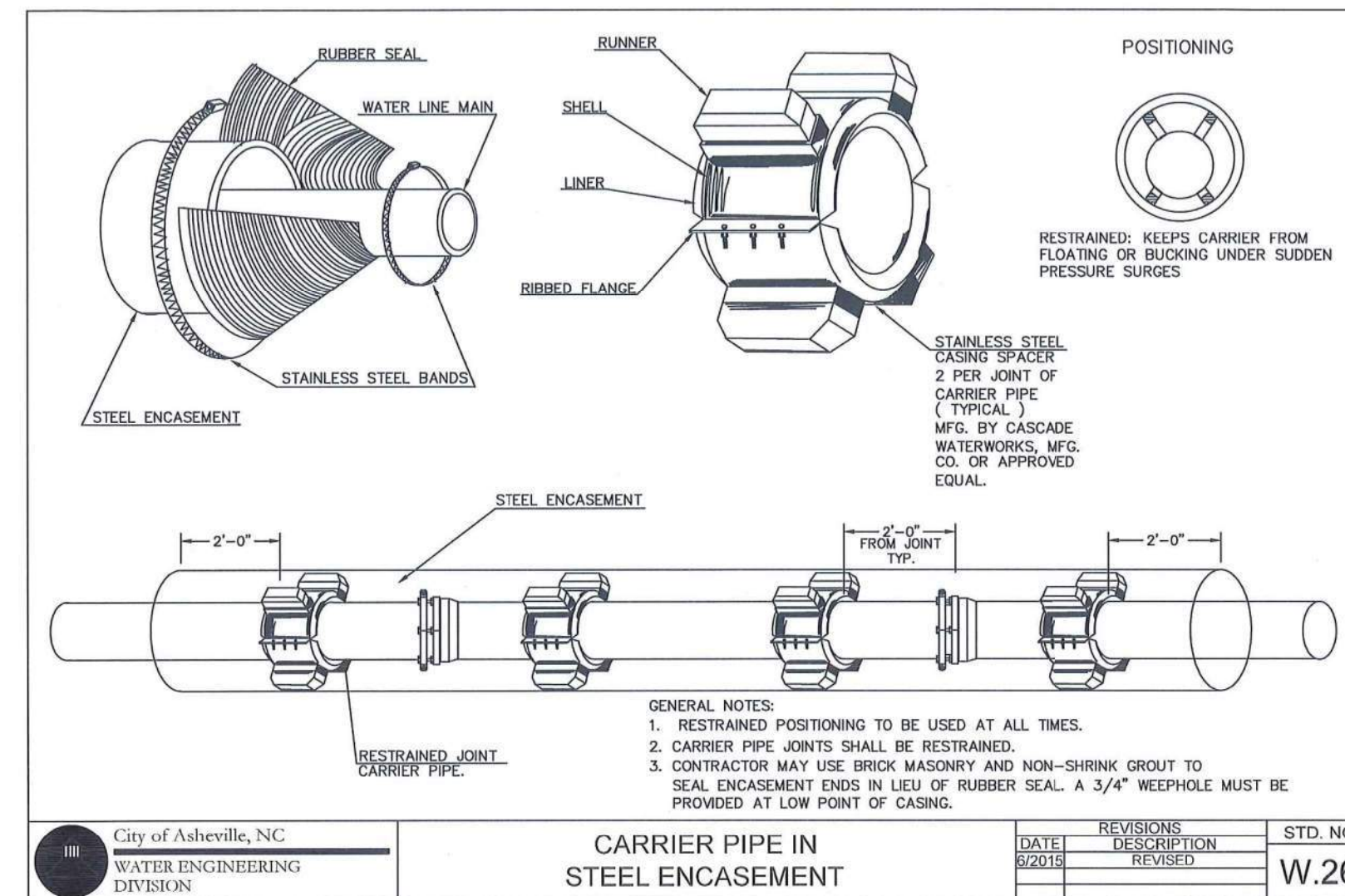
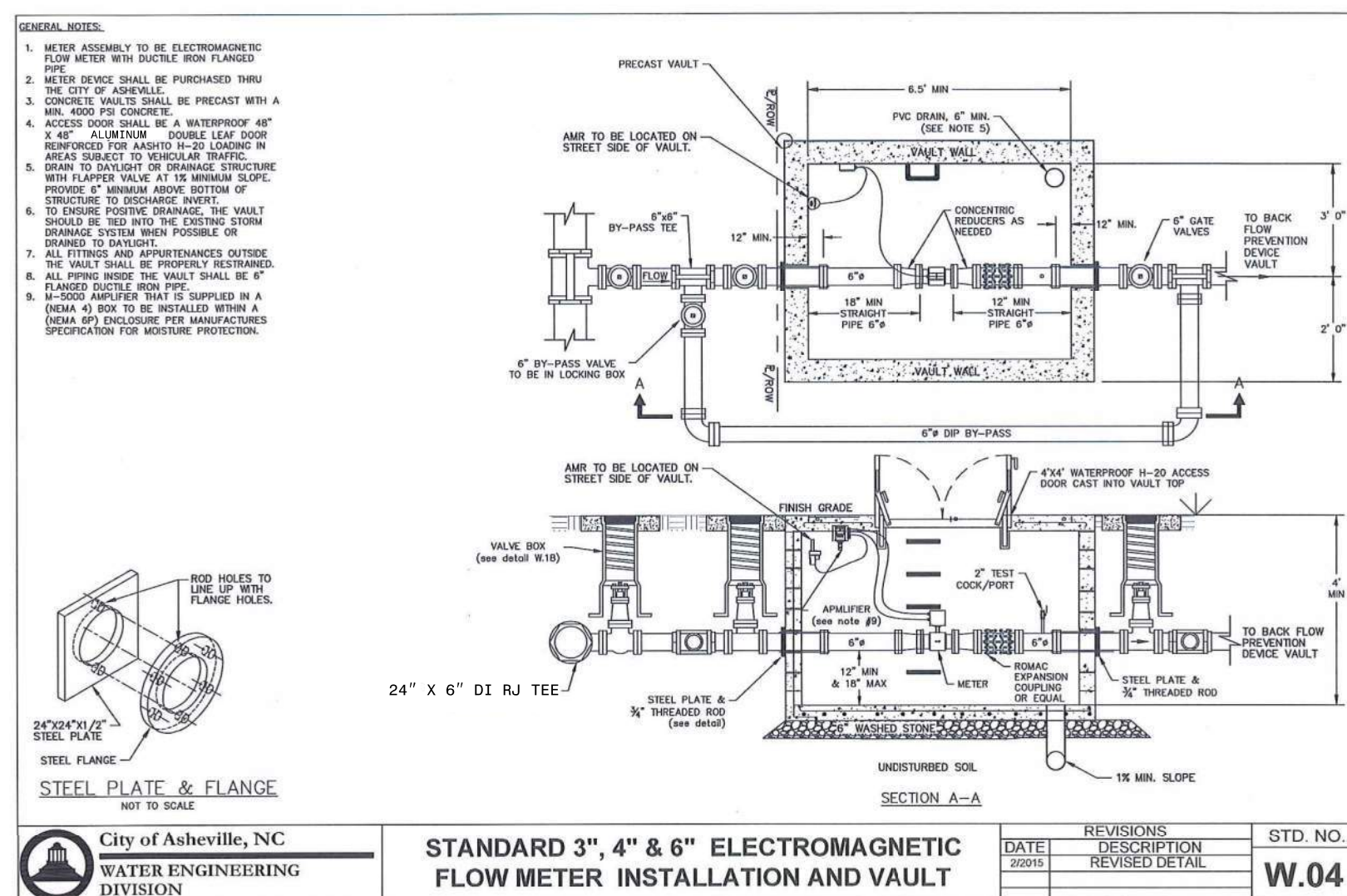
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

PROJECT REFERENCE NO.		SHEET NO.
I-2513 AC		UC-3C
DESIGNED BY:	JKC	Seal of Professional Engineer Cory D. Boush No. 023000000 Exp. 12/31/2026 State of North Carolina
DRAWN BY:	JKC	
CHECKED BY:	CLS	
APPROVED BY:	CDB	
REVISED:		
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		7/9/2026
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151		UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION



09-JUL-2026 12:44:33 PROJECTS\2020\A2020901\01_AECOM_I-2513AC_Design\Utilities\Engineering\UC\ProJ\I2513AC_ut_dtl\UC3C_psh.dgn



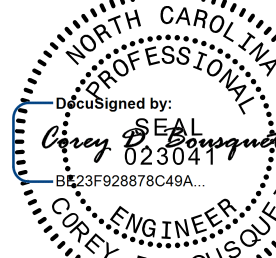
CITY OF ASHEVILLE DETAILS

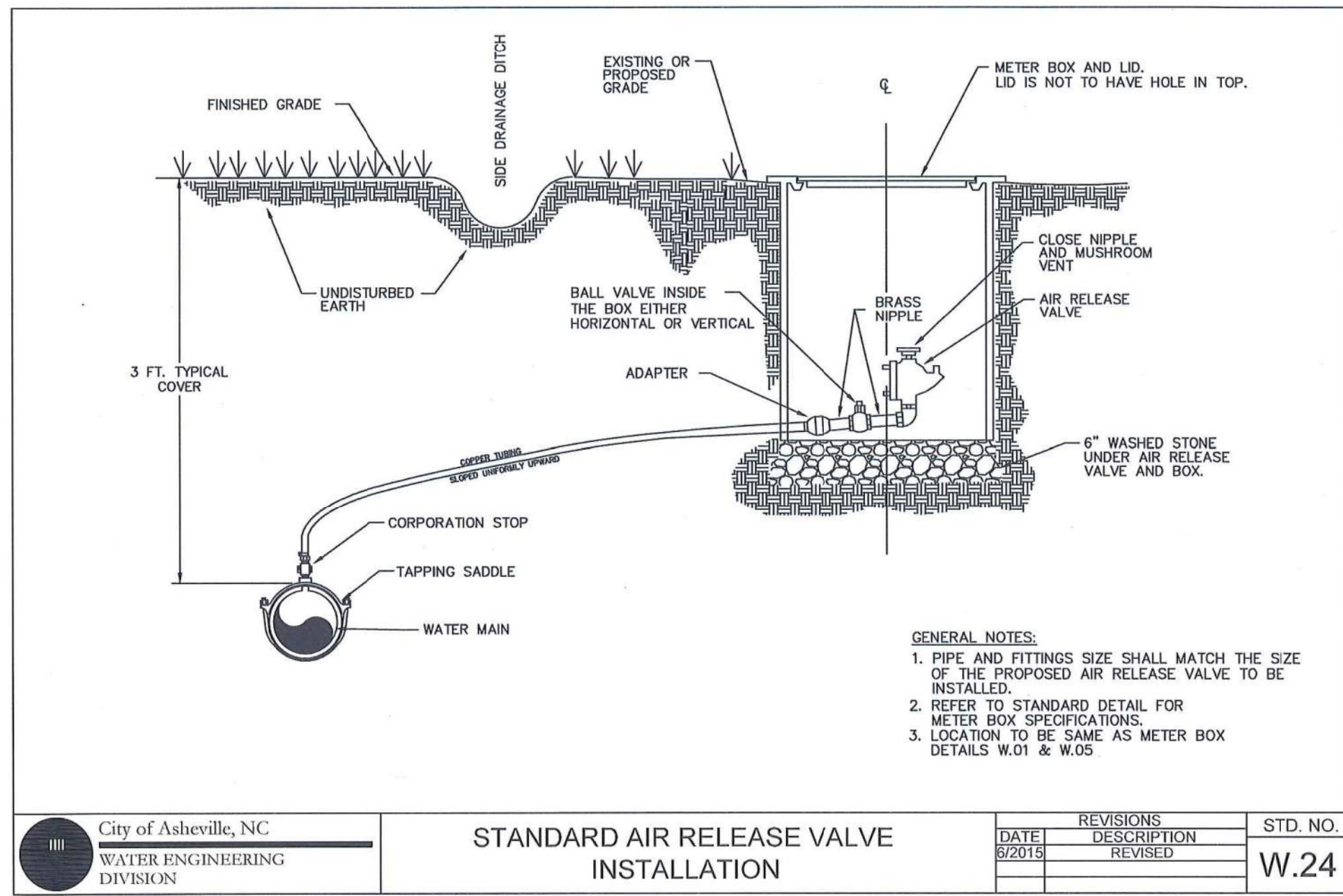
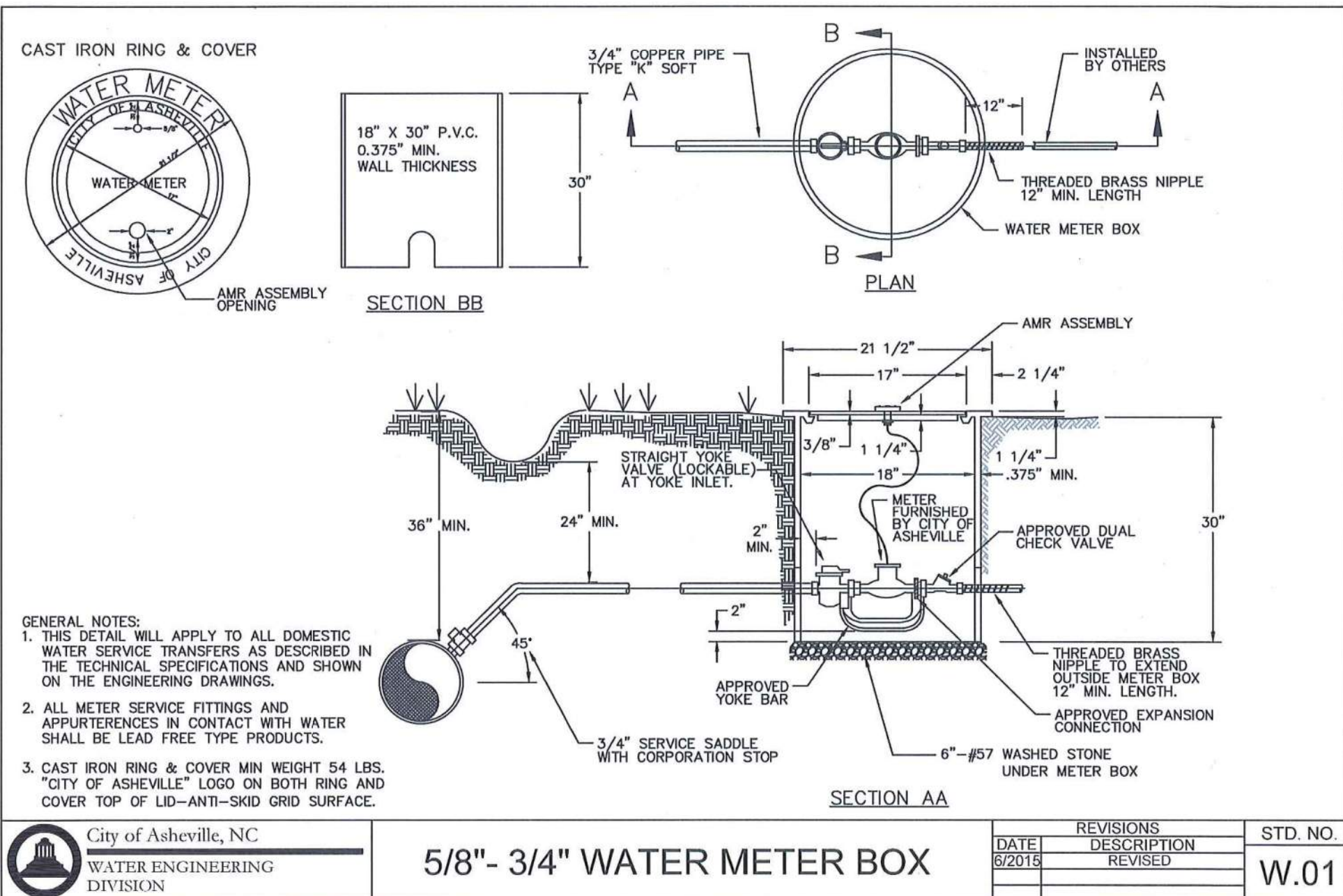
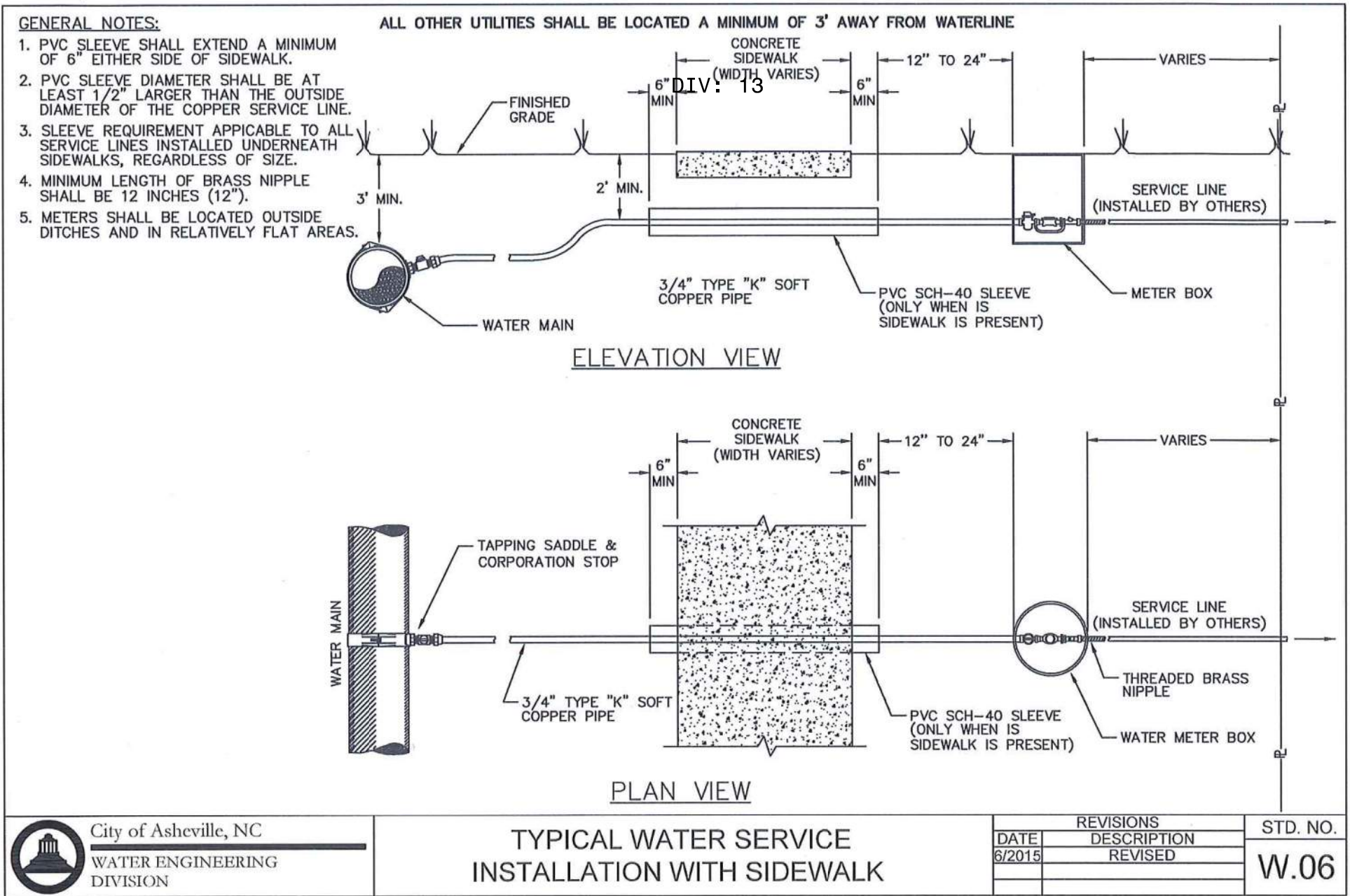
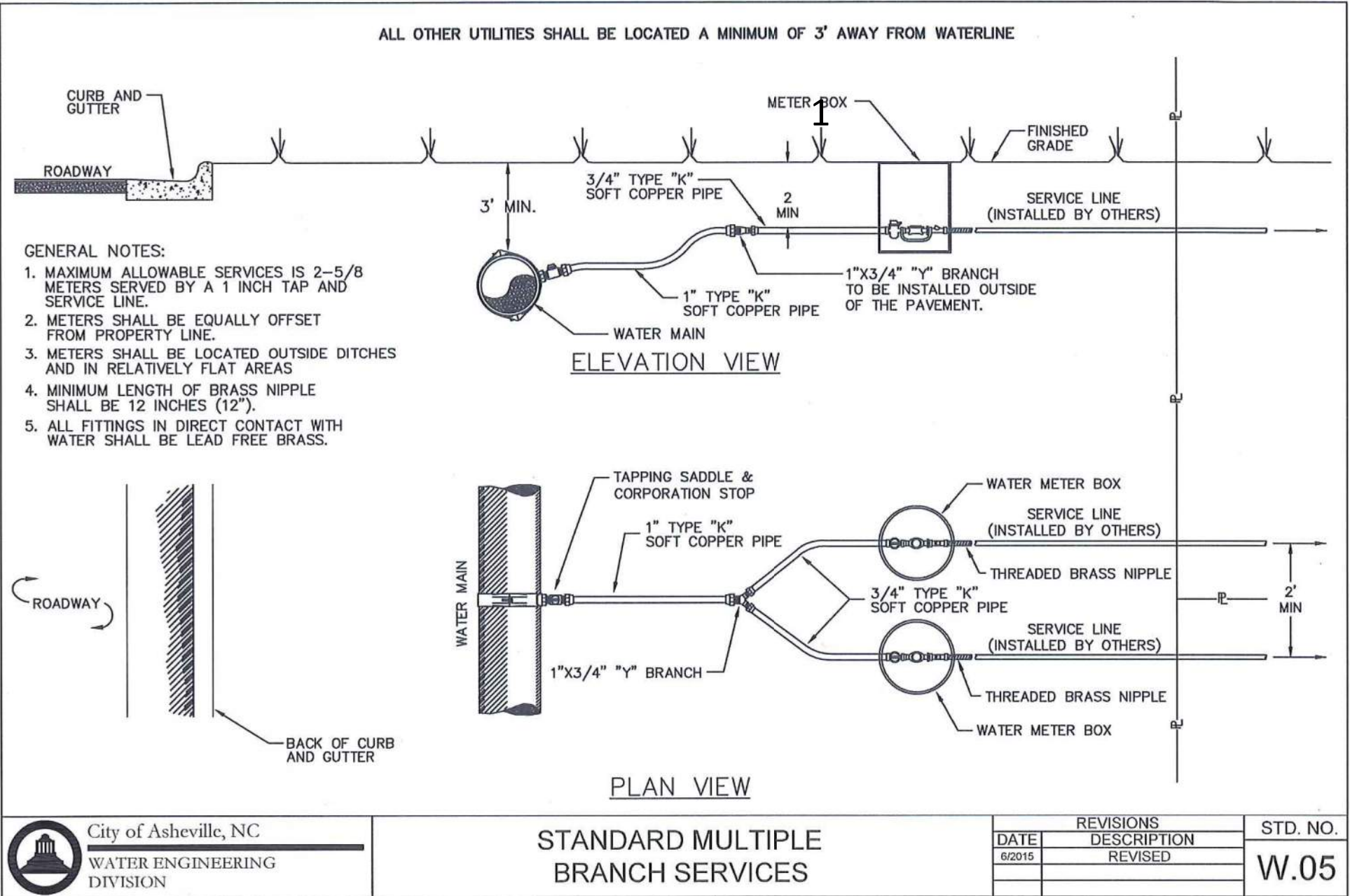
NOT TO SCALE



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

WATER AND SEWER PLANS

PROJECT REFERENCE NO.		SHEET NO.	
I-2513 AC		UC-3E	
DESIGNED BY: JKC			
DRAWN BY: JKC			
CHECKED BY: CLS			
APPROVED BY: CDB			
REVISED:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		UTILITY CONSTRUCTION PLANS ONLY	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151			



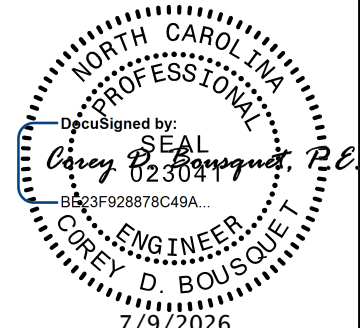
Air release valves shall be float-controlled automatic air release valves installed at all high points of waterlines. Air release valves must meet the requirements of AWWA C512.

CITY OF ASHEVILLE DETAILS



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ENGINEERING
License No. C-2639
401 Harrison Oaks Blvd., Suite 220 Cary, NC 27513

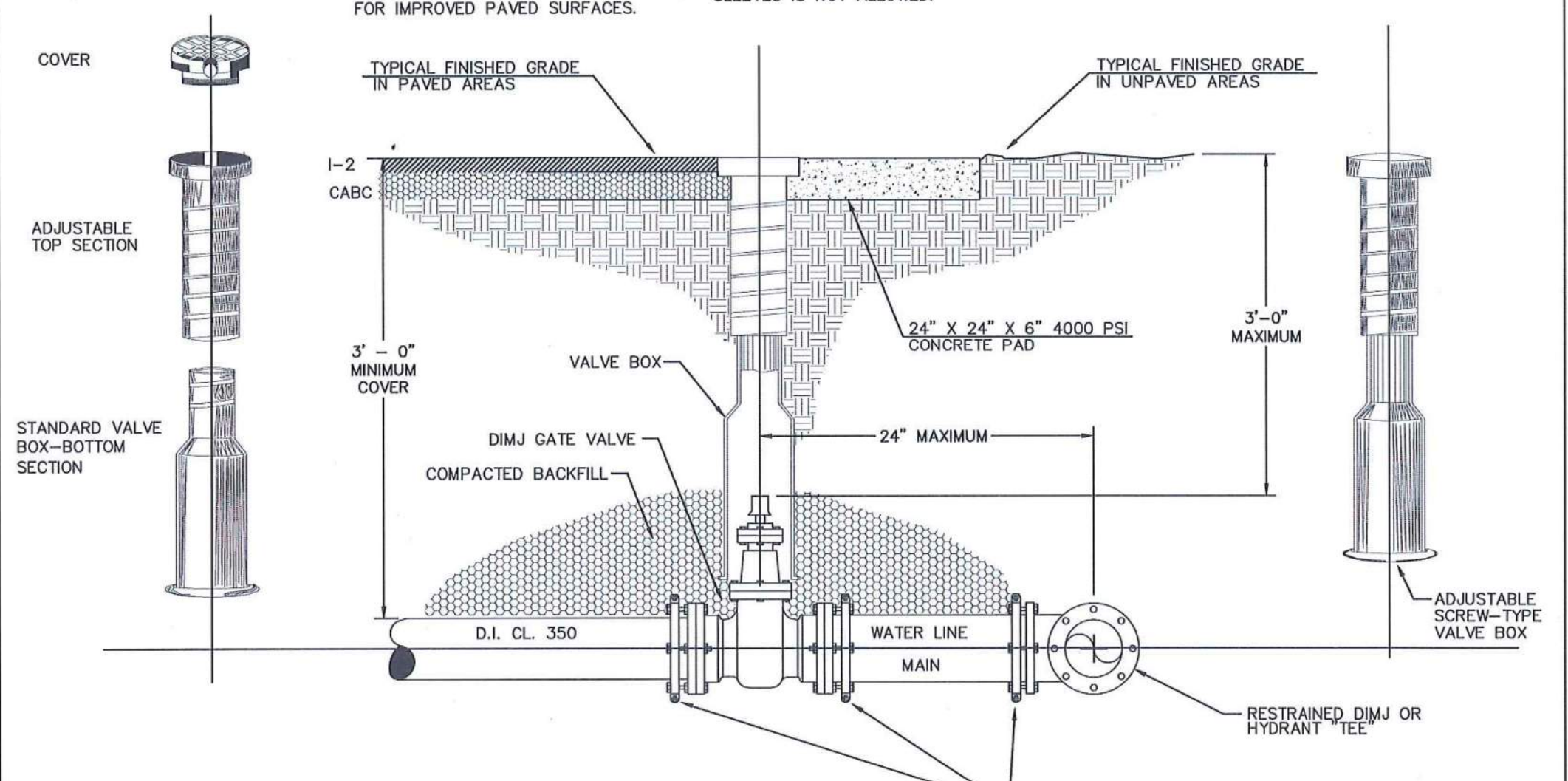
**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

PROJECT REFERENCE NO.		SHEET NO.
I-2513 AC		UC-3F
DESIGNED BY: JKC		
DRAWN BY: JKC		
CHECKED BY: CLS		
APPROVED BY: CDB		
REVISED:		
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		UTILITY CONSTRUCTION PLANS ONLY
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151		

UTILITY CONSTRUCTION

GENERAL NOTES:

1. VALVE BOX SHALL NOT CONTACT WATER MAIN OR VALVE.
2. VALVE PAD REQUIREMENTS SHALL NOT BE APPLICABLE FOR IMPROVED PAVED SURFACES.
3. VALVE BOX ADJUSTMENT MUST BE DONE BY ADJUSTING/RAISING THE TOP SECTION OF THE EXISTING ADJUSTABLE SCREW-TYPE VALVE BOX TO GRADE OR BY INSTALLING A NEW VALVE BOX TOP SECTION. THE USE OF PAVING RINGS OR ADJUSTING C.I. SLEEVES IS NOT ALLOWED.





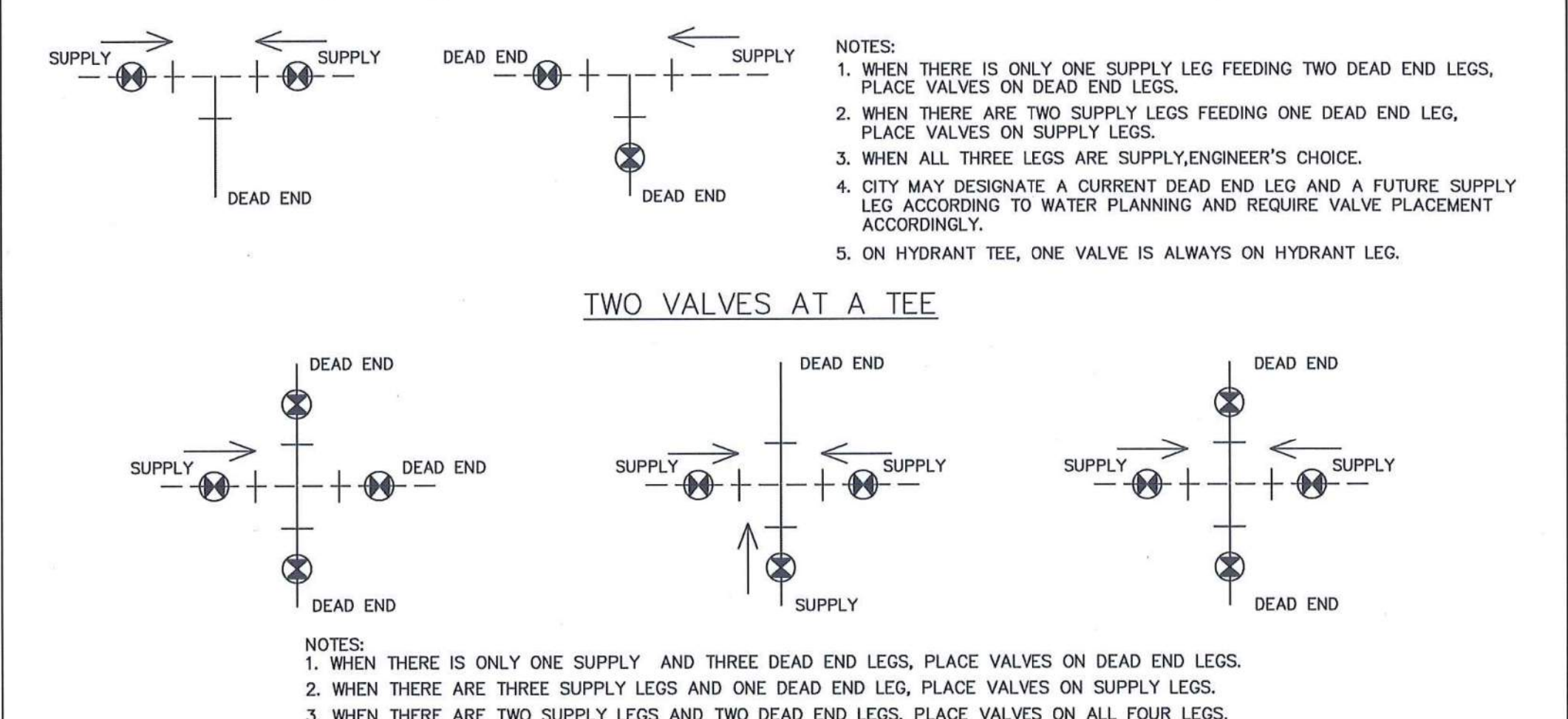
City of Asheville, NC
WATER ENGINEERING
DIVISION

TYPICAL VALVE & VALVE BOX
INSTALLATION / ADJUSTMENT

DATE	DESCRIPTION	STD. NO.
8/2015	REVISED	W.18

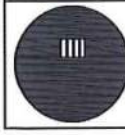
NOTES:

1. WHEN THERE IS ONLY ONE SUPPLY LEG FEEDING TWO DEAD END LEGS, PLACE VALVES ON DEAD END LEGS.
2. WHEN THERE ARE TWO SUPPLY LEGS FEEDING ONE DEAD END LEG, PLACE VALVES ON SUPPLY LEGS.
3. WHEN ALL THREE LEGS ARE SUPPLY,ENGINEER'S CHOICE.
4. CITY MAY DESIGNATE A CURRENT DEAD END LEG AND A FUTURE SUPPLY LEG ACCORDING TO WATER PLANNING AND REQUIRE VALVE PLACEMENT ACCORDINGLY.
5. ON HYDRANT TEE, ONE VALVE IS ALWAYS ON HYDRANT LEG.



NOTES:

1. WHEN THERE IS ONLY ONE SUPPLY AND THREE DEAD END LEGS, PLACE VALVES ON DEAD END LEGS.
2. WHEN THERE ARE THREE SUPPLY LEGS AND ONE DEAD END LEG, PLACE VALVES ON SUPPLY LEGS.
3. WHEN THERE ARE TWO SUPPLY LEGS AND TWO DEAD END LEGS, PLACE VALVES ON ALL FOUR LEGS.
4. CITY MAY REQUIRE VALVE PLACEMENT BASED ON CURRENT OR FUTURE NEEDS.
5. WHEN ONE LEG AT AN INTERSECTION IS A HYDRANT LEG,VALVE MUST BE PLACED ON A HYDRANT LEG. VALVING ON REMAINING LEGS TO BE PLACED AS THOUGH THEY MADE UP A TEE.
6. A "SUPPLY LEG" IS ANY LEG CONNECTED TO THE TREATED WATER SOURCE BY PIPING EQUAL AND OR GREATER THAN ITS SIZE AND SEPARATE FROM THE TEE OR CROSS BEING CONSIDERED.



City of Asheville, NC
WATER ENGINEERING
DIVISION

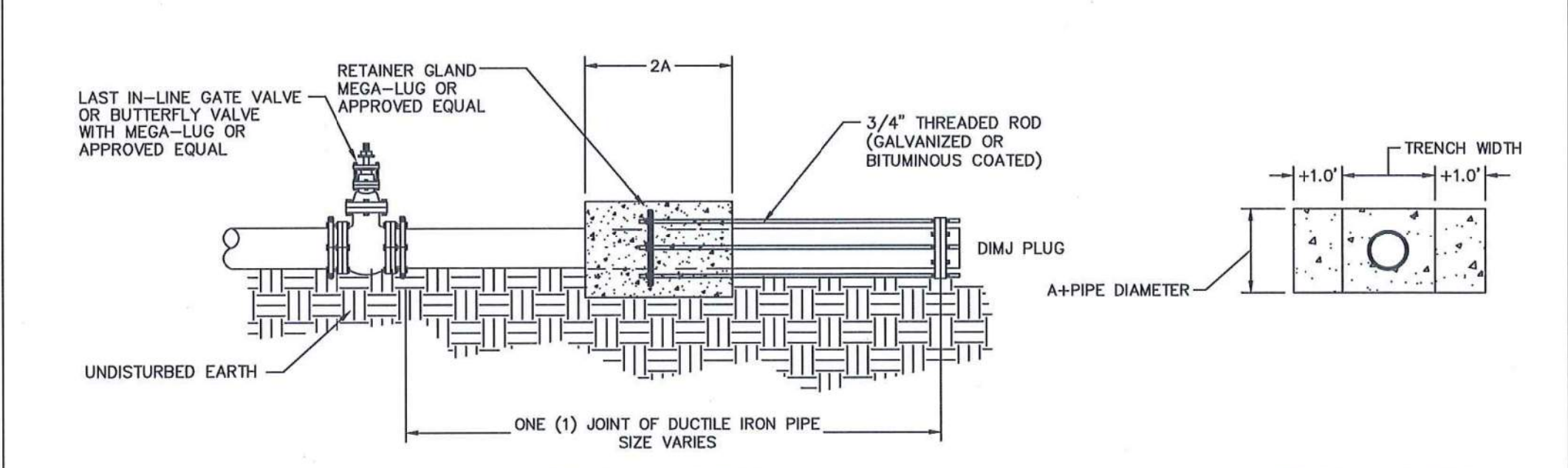
TYPICAL VALVING
CONFIGURATION

DATE	DESCRIPTION	STD. NO.
8/2015	REVISED	W.17

GENERAL NOTES

1. ALL FITTINGS MUST BE RESTRAINED AS SPECIFIED IN THE STANDARD SPECIFICATIONS AND DETAILS MANUAL.
2. DIMENSION TABLE GIVEN IS A GUIDE ONLY. ENGINEER SHALL BE RESPONSIBLE TO CALCULATE THRUST BLOCK DIMENSIONS BASED ON ACTUAL SOIL AND OPERATING
3. FITTING JOINTS SHALL BE KEPT FREE OF CONCRETE. A LAYER OF POLYETHYLENE PLASTIC SHALL BE PLACED BETWEEN THE FITTING AND THE CONCRETE.
4. CONTRACTOR HAS THE OPTION TO RESTRAIN PIPE JOINTS IN LIEU OF CONCRETE DEADMAN & RODDING.

PIPE SIZE (NOMINAL DIAMETER IN INCHES)						
	6	8	10	12	16	24
"A" DIMEN. IN FEET	1.2	1.6	2.0	2.4	2.8	4.5

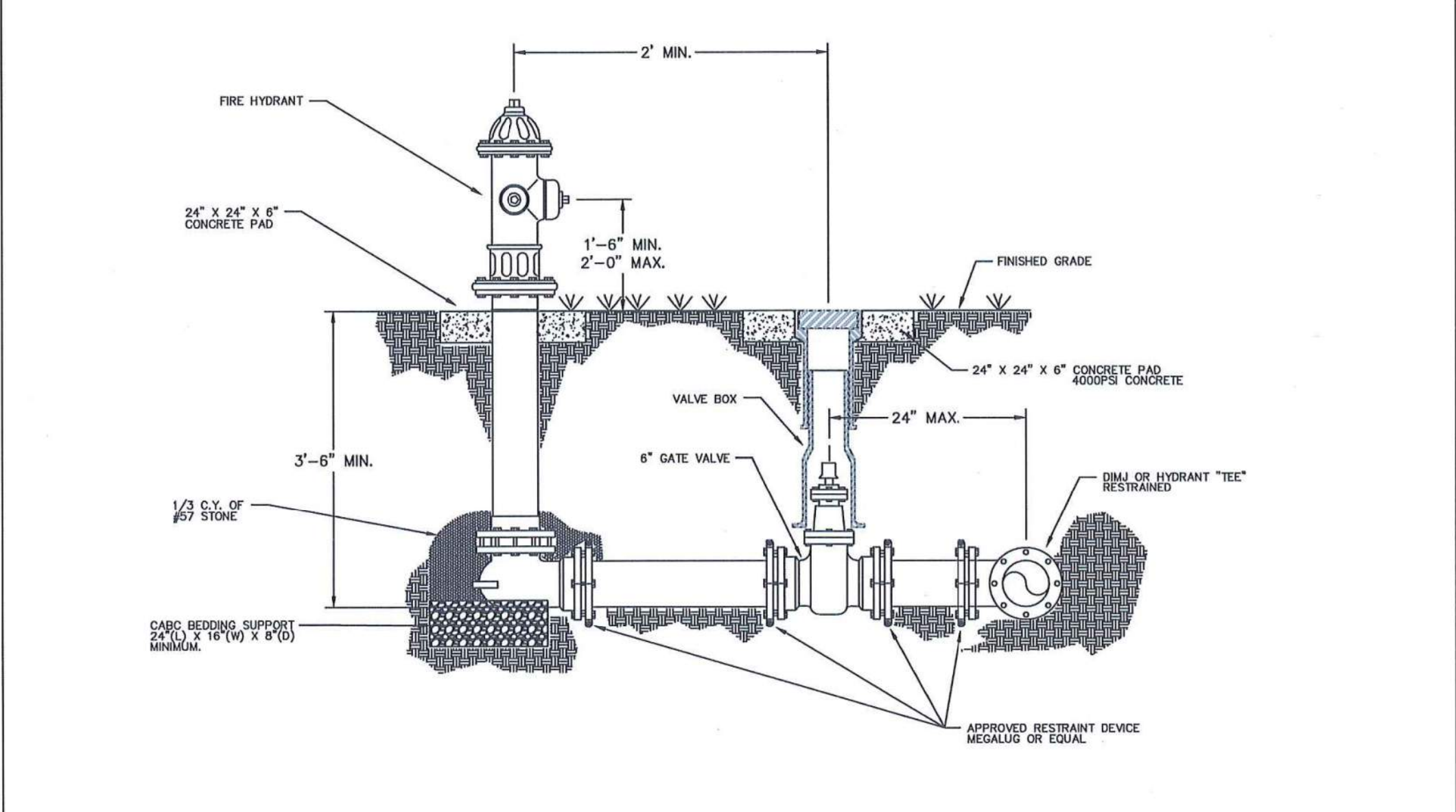




City of Asheville, NC
WATER ENGINEERING
DIVISION

END OF LINE PLUG

DATE	DESCRIPTION	STD. NO.
8/2015	REVISED	W.23





City of Asheville, NC
WATER ENGINEERING
DIVISION

FIRE HYDRANT INSTALLATION

DATE	DESCRIPTION	STD. NO.
8/2015	REVISED	W.16

S:\JUL-2025\12446-PROJECTS\2020\A2020\01_AECOM_I-2513AC\Design\Utilities\Engineering\UC\Proj\I2513AC.ut.dtl\UC3F_psh.dgn 8/2/2025 12:46 PM 3388111610

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ENGINEERING

License No. C-2639
401 Harrison Oaks Blvd., Suite 220 Cary, NC 27513

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UNLESS ALL SIGNATURES COMPLETED

PROJECT REFERENCE NO.
I-2513AC

SHEET NO.
UC-4

DESIGNED BY: JKC
DRAWN BY: JKC
CHECKED BY: CLS
APPROVED BY: CDB

REVISED:

NORTH CAROLINA
DEPARTMENT OF
TRANSPORTATION

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

UTILITY CONSTRUCTION
PLANS ONLY

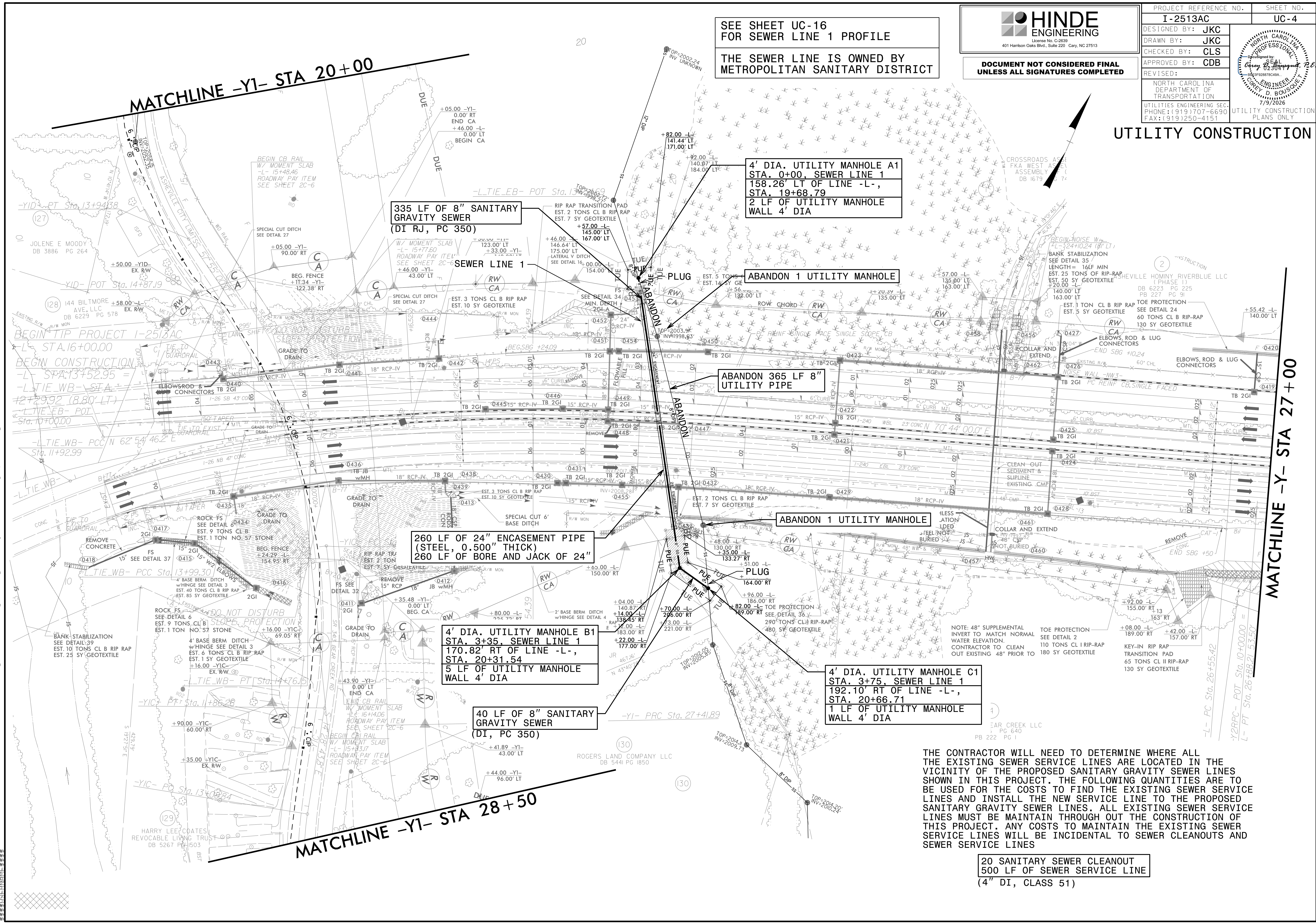
SEAL

Professional Engineer
No. 023044
Exp. 12/31/2026
Chris D. Boush

SEE SHEET UC-16
FOR SEWER LINE 1 PROFILE

THE SEWER LINE IS OWNED BY
METROPOLITAN SANITARY DISTRICT

UTILITY CONSTRUCTION



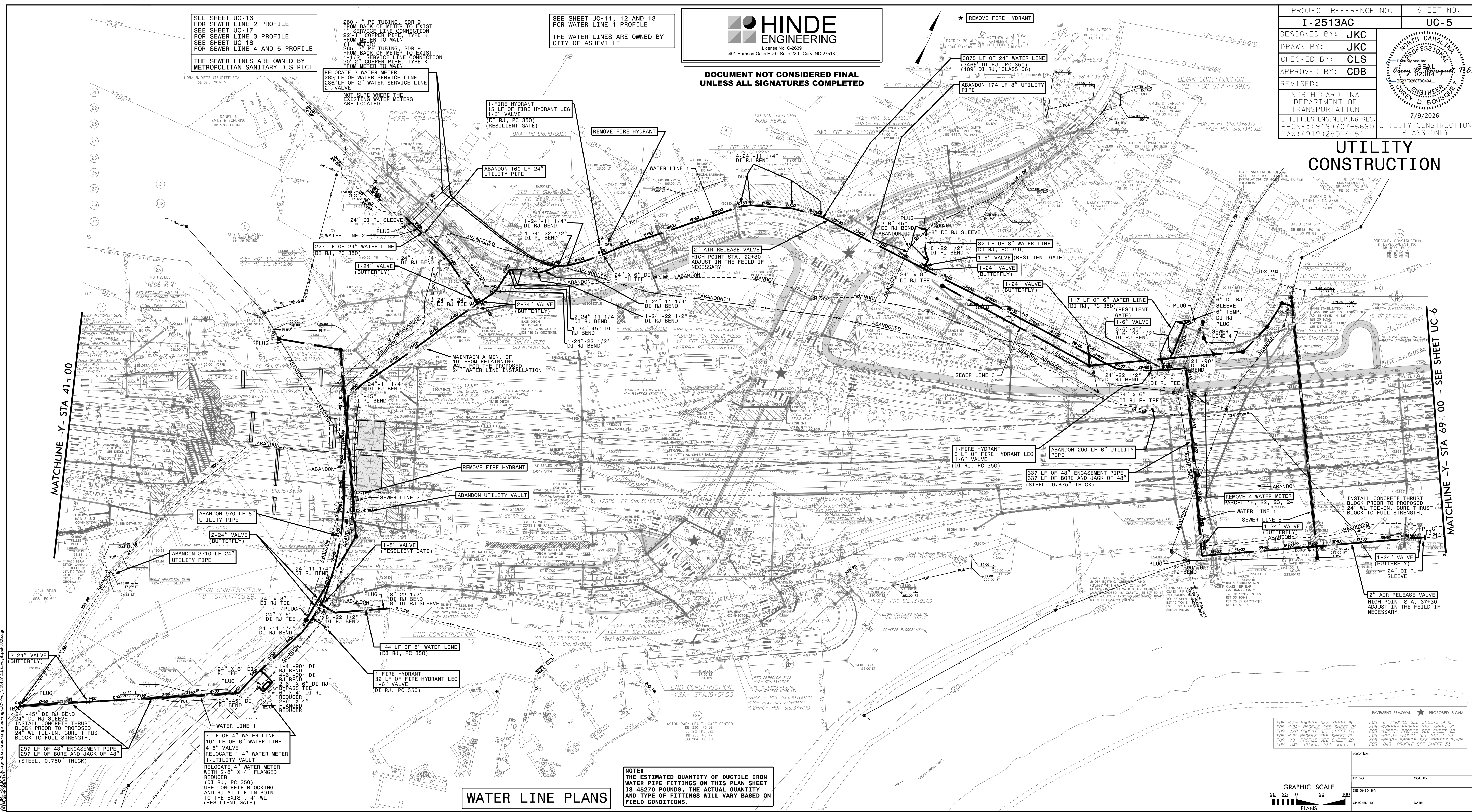
MATCHLINE -Y1- STA 20+00

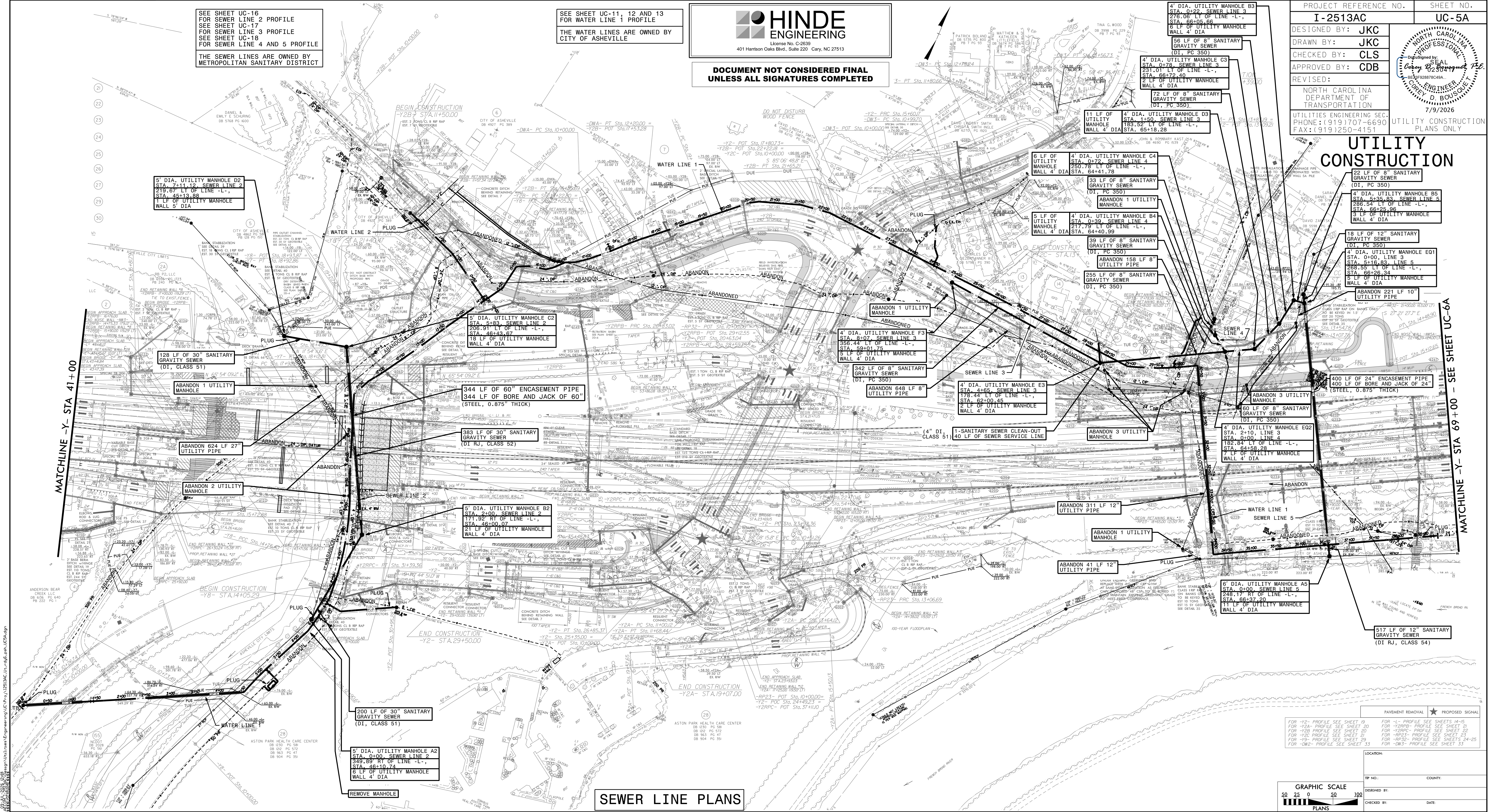
MATCHLINE -Y- STA 27+00

MATCHLINE -Y1- STA 28+50

THE CONTRACTOR WILL NEED TO DETERMINE WHERE ALL THE EXISTING SEWER SERVICE LINES ARE LOCATED IN THE VICINITY OF THE PROPOSED SANITARY GRAVITY SEWER LINES SHOWN IN THIS PROJECT. THE FOLLOWING QUANTITIES ARE TO BE USED FOR THE COSTS TO FIND THE EXISTING SEWER SERVICE LINES AND INSTALL THE NEW SERVICE LINE TO THE PROPOSED SANITARY GRAVITY SEWER LINES. ALL EXISTING SEWER SERVICE LINES MUST BE MAINTAIN THROUGH OUT THE CONSTRUCTION OF THIS PROJECT. ANY COSTS TO MAINTAIN THE EXISTING SEWER SERVICE LINES WILL BE INCIDENTAL TO SEWER CLEANOUTS AND SEWER SERVICE LINES

20 SANITARY SEWER CLEANOUT
500 LF OF SEWER SERVICE LINE
(4" DI, CLASS 51)





SEE SHEET UC-16
FOR SEWER LINE 2 PROFILE
SEE SHEET UC-17
FOR SEWER LINE 3 PROFILE
SEE SHEET UC-18
FOR SEWER LINE 4 AND 5 PROFILE
THE SEWER LINES ARE OWNED BY
METROPOLITAN SANITARY DISTRICT

SEE SHEET UC-11, 12 AND 13
FOR WATER LINE 1 PROFILE
THE WATER LINES ARE OWNED BY
CITY OF ASHEVILLE



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ENGINEERING
License No. C-2659
401 Harrison Oaks Blvd., Suite 220 Cary, NC 27513

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UNLESS ALL SIGNATURES COMPLETED**

PROJECT REFERENCE NO.
I-2513AC

SHEET NO.
UC-5A

DESIGNED BY: **JKC**

DRAWN BY: **JKC**

CHECKED BY: **CLS**

APPROVED BY: **CDB**

REVISED:

NORTH CAROLINA
DEPARTMENT OF
TRANSPORTATION

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

UTILITY CONSTRUCTION
PLANS ONLY

7/9/2026

Seal of the Professional Engineer
Cody D. Boussie
No. 28287
Exp. 7/9/2026

GRAPHIC SCALE
0 25 50 100
PLANS

FOR -Y2- PROFILE SEE SHEET 19
FOR -Y2A- PROFILE SEE SHEET 20
FOR -Y2B- PROFILE SEE SHEET 21
FOR -Y2C- PROFILE SEE SHEET 22
FOR -Y2D- PROFILE SEE SHEET 23
FOR -Y2E- PROFILE SEE SHEET 24
FOR -Y2F- PROFILE SEE SHEET 25
FOR -Y2G- PROFILE SEE SHEET 26
FOR -Y2H- PROFILE SEE SHEET 27
FOR -Y2I- PROFILE SEE SHEET 28
FOR -Y2J- PROFILE SEE SHEET 29
FOR -Y2K- PROFILE SEE SHEET 30
FOR -Y2L- PROFILE SEE SHEET 31
FOR -Y2M- PROFILE SEE SHEET 32
FOR -Y2N- PROFILE SEE SHEET 33

FOR -L- PROFILE SEE SHEETS 14-15
FOR -Y2BPC- PROFILE SEE SHEET 21
FOR -Y2BPC- PROFILE SEE SHEET 22
FOR -Y2BPC- PROFILE SEE SHEET 23
FOR -Y2BPC- PROFILE SEE SHEET 24
FOR -Y2BPC- PROFILE SEE SHEET 25
FOR -Y2BPC- PROFILE SEE SHEET 26
FOR -Y2BPC- PROFILE SEE SHEET 27
FOR -Y2BPC- PROFILE SEE SHEET 28
FOR -Y2BPC- PROFILE SEE SHEET 29
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FOR -Y2BPC- PROFILE SEE SHEET 32
FOR -Y2BPC- PROFILE SEE SHEET 33

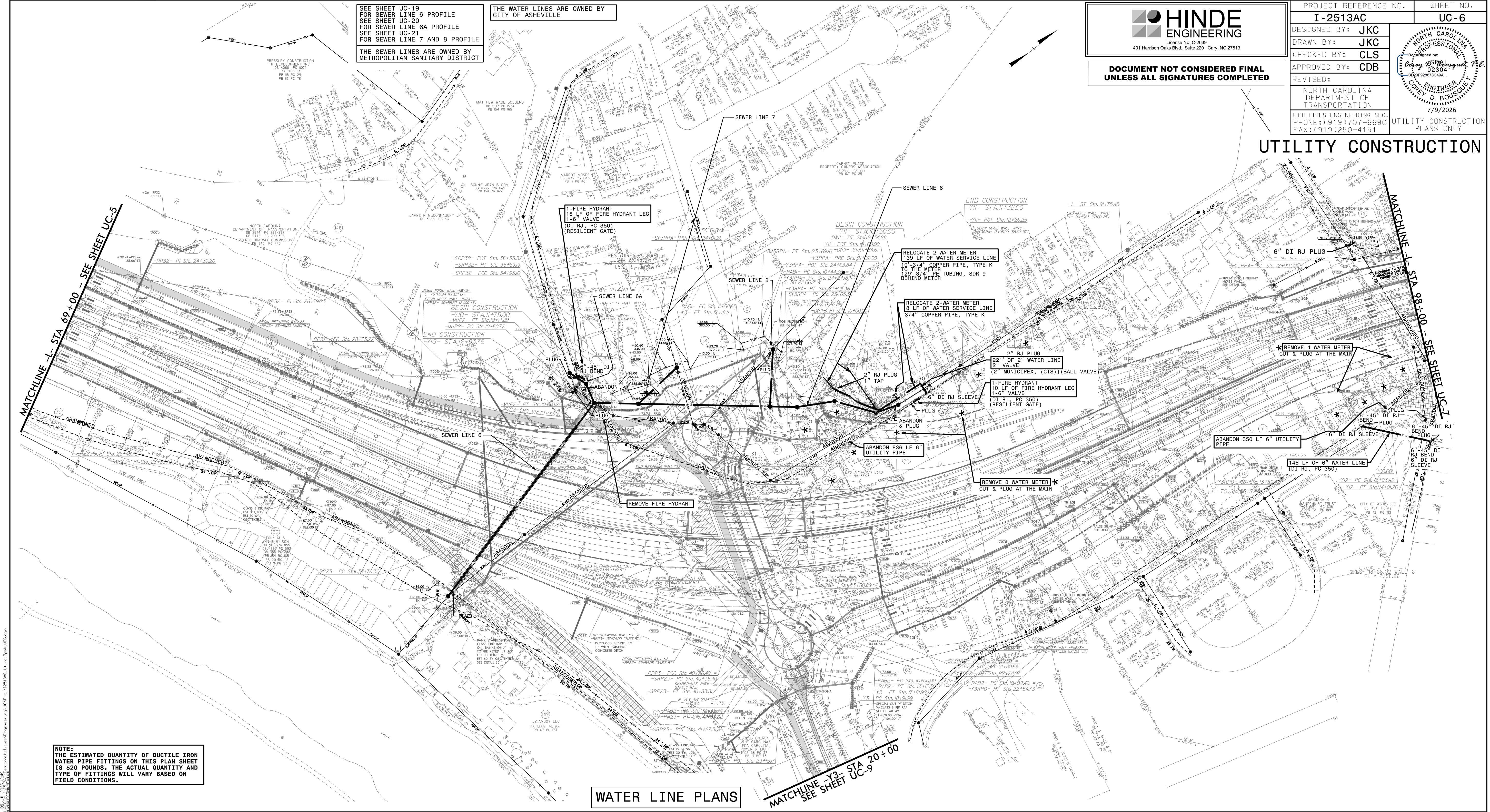
LOCATION:

TRP NO.: COUNTY:

DESIGNED BY: DATE:

CHECKED BY: DATE:

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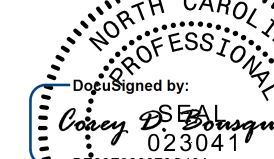
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2/2/2021 10:00 AM
S:\Server_Files\PROJECTS\2020\ASHEVILLE\Utility\UC-9\UC-9.dwg

SEE SHEET UC-19
FOR SEWER LINE 6 PROFILE
SEE SHEET UC-20
FOR SEWER LINE 6A PROFILE
SEE SHEET UC-21
FOR SEWER LINE 7 AND 8 PROFILE

THE WATER LINES ARE OWNED BY
CITY OF ASHEVILLE



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

PROJECT REFERENCE NO.		SHEET NO.
I-2513AC		UC-6
DESIGNED BY: JKC		
DRAWN BY: JKC		
CHECKED BY: CLS		
APPROVED BY: CDB		
REVISED:		
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151		
UTILITY CONSTRUCTION PLANS ONLY		

UTILITY CONSTRUCTION

NOTE:
THE ESTIMATED QUANTITY OF DUCTILE IRON
WATER PIPE FITTINGS ON THIS PLAN SHEET
IS 520 POUNDS. THE ACTUAL QUANTITY AND
TYPE OF FITTINGS WILL VARY BASED ON
FIELD CONDITIONS.

WATER LINE PLANS

