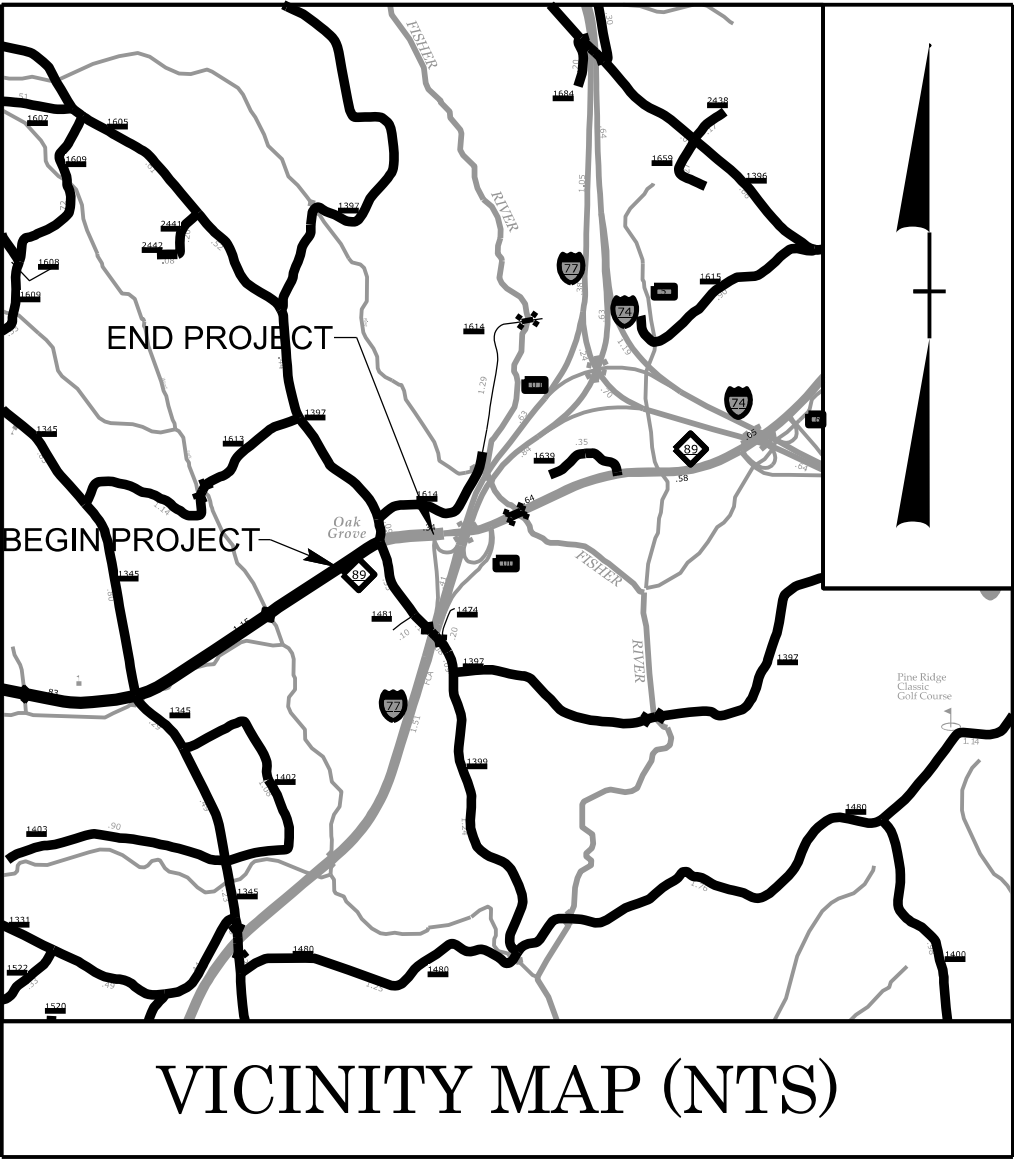


TIP PROJECT: R-5901



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5901	UC-1	9

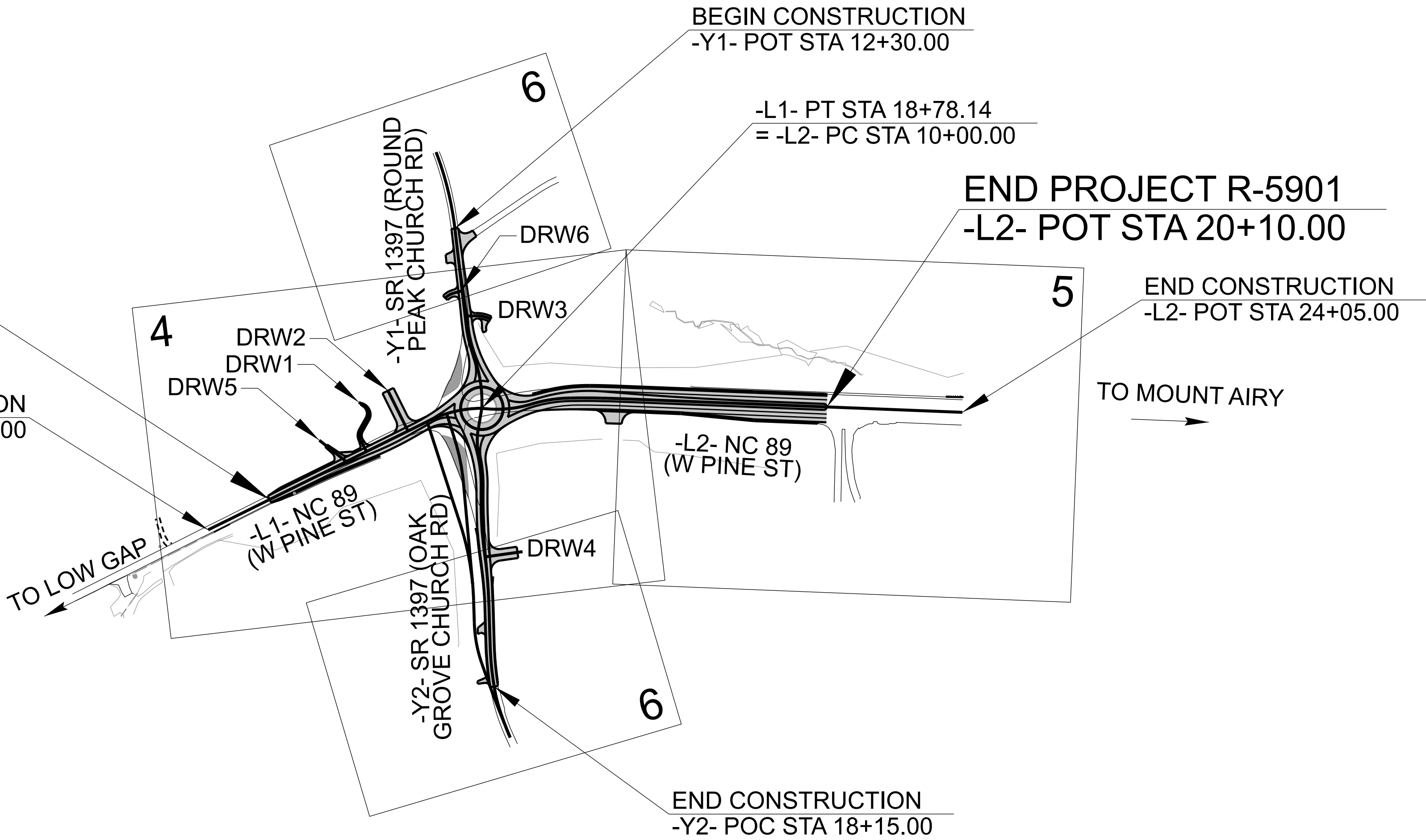
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UNLESS ALL SIGNATURES COMPLETED

UTILITY CONSTRUCTION PLANS
SURRY COUNTY

LOCATION: INTERSECTION IMPROVEMENTS AT NC 89
(W. PINE ST) AND SR 1397 (ROUND PEAK
CHURCH RD/OAK GROVE CHURCH RD)
TYPE OF WORK: GRAVITY SEWER & WATER LINE RELOCATION

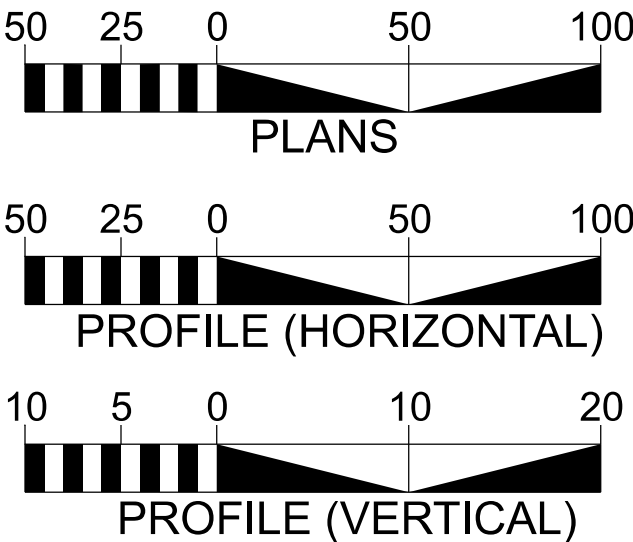
BEGIN PROJECT R-5901
-L1- POT STA 12+00.00

BEGIN CONSTRUCTION
-L1- PC STA 10+00.00



NAD 83/ 2011

GRAPHIC SCALES



INDEX OF SHEETS

SHEET:	DESCRIPTION:
UC-1	TITLE SHEET
UC-2	UTILITY SYMBOLOGY
UC-3	NOTES
UC-3A	SEWER DETAILS
US-3B	WATER DETAILS
UC-4	UTILITY CONSTRUCTION
UC-4A	PROFILES SS-1 & WL-1
UC-4B	PROFILE WL-2
UC-4C	PROFILE WL-2

WATER AND SEWER
OWNERS ON PROJECT

(A) SANITARY SEWER: CITY OF MT AIRY
(B) WATER: TOWN OF DOBSON

SEAL

6/30/2025

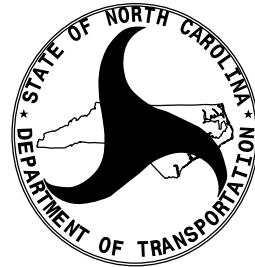


Signed by:
Roger D. Jones
0418F08B82C747C...



PREPARED IN THE OFFICE OF
NC FIRM LICENSE NO: C-1506
301 FAYETTEVILLE ST. SUITE 1500
RALEIGH, NC 27601
PHONE (919)882-7839

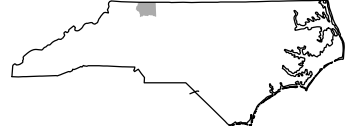
SAM CULLUM, PE	CONSULTANT CONTACT #1
ROGER JONES, PE	CONSULTANT CONTACT #2
CHRISTIAN SHUPING	CONSULTANT CONTACT #3



DIVISION OF HIGHWAYS
DIVISION ELEVEN

801 STATESVILLE RD.
NORTH WILKESBORO, 28659
PHONE (336)903-9101
FAX (336)667-4549

BRANDON GREER
DIVISION UTILITY ENGINEER



DESIGNED BY:	CAS
DRAWN BY:	CAS
CHECKED BY:	SLC
APPROVED BY:	RDJ
REVISED:	

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

6/30/2025



Signed by:
Roger D. Jones
0419F068B2C747C...

NC FIRM LICENSE NO: C-1506
301 FAYETTEVILLE ST SUITE 1500
RALEIGH, NC 27601
(919) 882-7839

REVISIONS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

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)	
Waterline Installation	
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	
*Remove Underground Water Line	
*Underground Gravity Sanitary Sewer Line	
*Remove 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	

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 AND UTILITY OWNER'S STANDARDS.
2. THE EXISTING SEWER UTILITIES BELONG TO THE CITY OF MOUNT AIRY, CITY ENGINEER - LEVI HIATT (336)786-3593. ACCORDINGLY, THE EXISTING WATER UTILITIES BELONG TO THE TOWN OF DOBSON, PUBLIC WORKS DIRECTOR - MICHAEL FRAZIER (336)356-8962.
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, AND UTILITY OWNER. 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, AND UTILITY OWNER. PERFORM ALL WORK IN ACCORDANCE WITH THE APPLICABLE PLUMBING CODES.
4. THE UTILITY OWNERS OWN 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 OWNERS ARE NOT BINDING UPON THE DEPARTMENT OR THIS CONTRACT UNLESS AUTHORIZED BY THE ENGINEER. AGREEMENTS BETWEEN THE UTILITY OWNERS 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 BY NCDOT ENGINEER AND UTILITY OWNERS PRIOR TO DELIVERY TO THE PROJECT. SEE 1500-7, " SUBMITTALS AND RECORDS" IN SECTION 1500 OF THE STANDARD SPECIFICATIONS.

10. THE RELOCATION OF SEWER FOR THIS PROJECT IS DEEMED PERMITTED BY NCDEQ PER 15A NCAC 02T. 0303. AT THE COMPLETION OF THE PROJECT, NCDEQ REQUIRES THE SEWER PROVIDER, THE CITY OF MOUNT AIRY TO RETAIN A RECORD DRAWING IN THEIR FILES.
- PROJECT SPECIFIC NOTES:
1. 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.
2. USE BENDS WHEN PIPE DEFLECTION IS NOT SUFFICIENT AS INSTRUCTED BY THE ENGINEER.
3. REFERENCE GENERAL NOTE #6. IT IS ANTICIPATED THAT REDUCER FITTINGS MAY BE NECESSARY AT CONNECTIONS TO EXISTING LINES. THE COST FOR REDUCER FITTINGS SHOULD BE INCLUDED IN THE COST OF THE LINE INSTALLATION.
4. R-5901 UC PHASE NOTES (REFERENCE TRANSPORTATION MANAGEMENT PLANS)
PHASE 2: INSTALL WATER AND SEWER LINES UNDER -Y1-.
PHASE 3B: INSTALL WATER LINES ADJACENT TO -Y2- AND UNDER -L-.
WORK WITH TMP AND INSTALL DRAINAGE 0412 AND 0413 PRIOR TO JACK AND BORE UNDER -L-.
5. WITH THE APPROVAL OF THE ENGINEER, THE PHASED INSTALLATION MAY BE MODIFIED, PROVIDED SERVICE REMAINS ACTIVE FOR ALL END USERS.

STANDARD DRAWINGS LIST, CITY OF MOUNT AIRY:

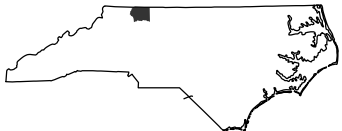
GN-110	TYPICAL ENCASEMENT
SS-101	SEWER TAP AND STUB OUT
SS-102	PRE-CAST SEWER MANHOLE
WS-104	FIRE HYDRANT
WS-105	THRUST BLOCK
WS-106	THRUST COLLAR
WS-107	VALVE BOX AND PAD
WS-108	2" BLOWOFF
WS-109	AIR / VACUUM RELEASE

UTILITY CONSTRUCTION

R-5901

UC3


NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WAKE COUNTY



UTILITY DESIGN UNIT

UTILITY CONSTRUCTION
PLANS ONLY


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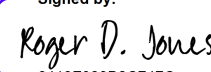


DESIGNED BY:	CAS
DRAWN BY:	CAS
CHECKED BY:	SLC
APPROVED BY:	RDJ
REVISED:	

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

6/30/2025



Signed by:

6419F06B0C747C...

NC FIRM LICENSE NO: C-1506
301 FAYETTEVILLE ST SUITE 1500
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(919) 882-7839

REVISIONS



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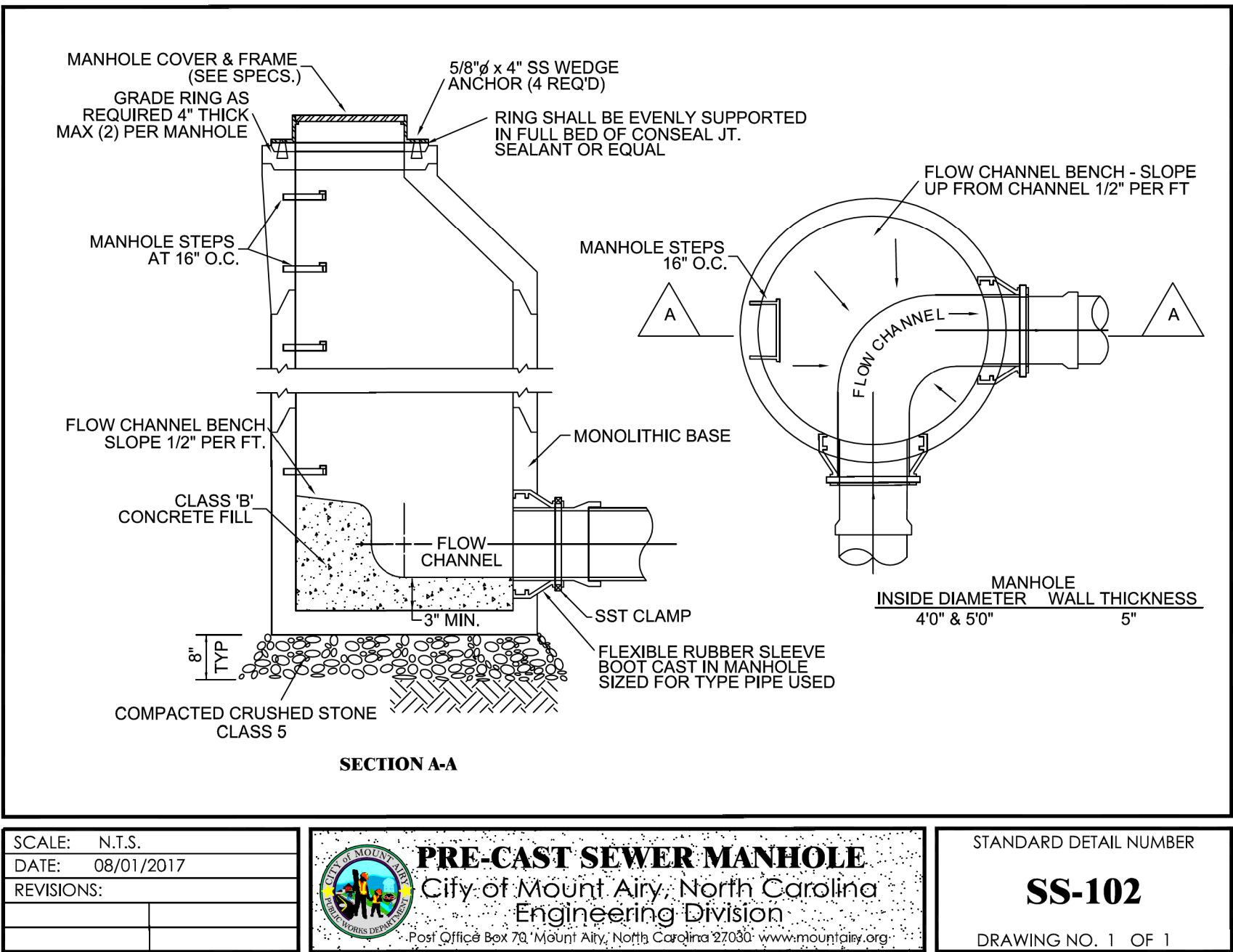
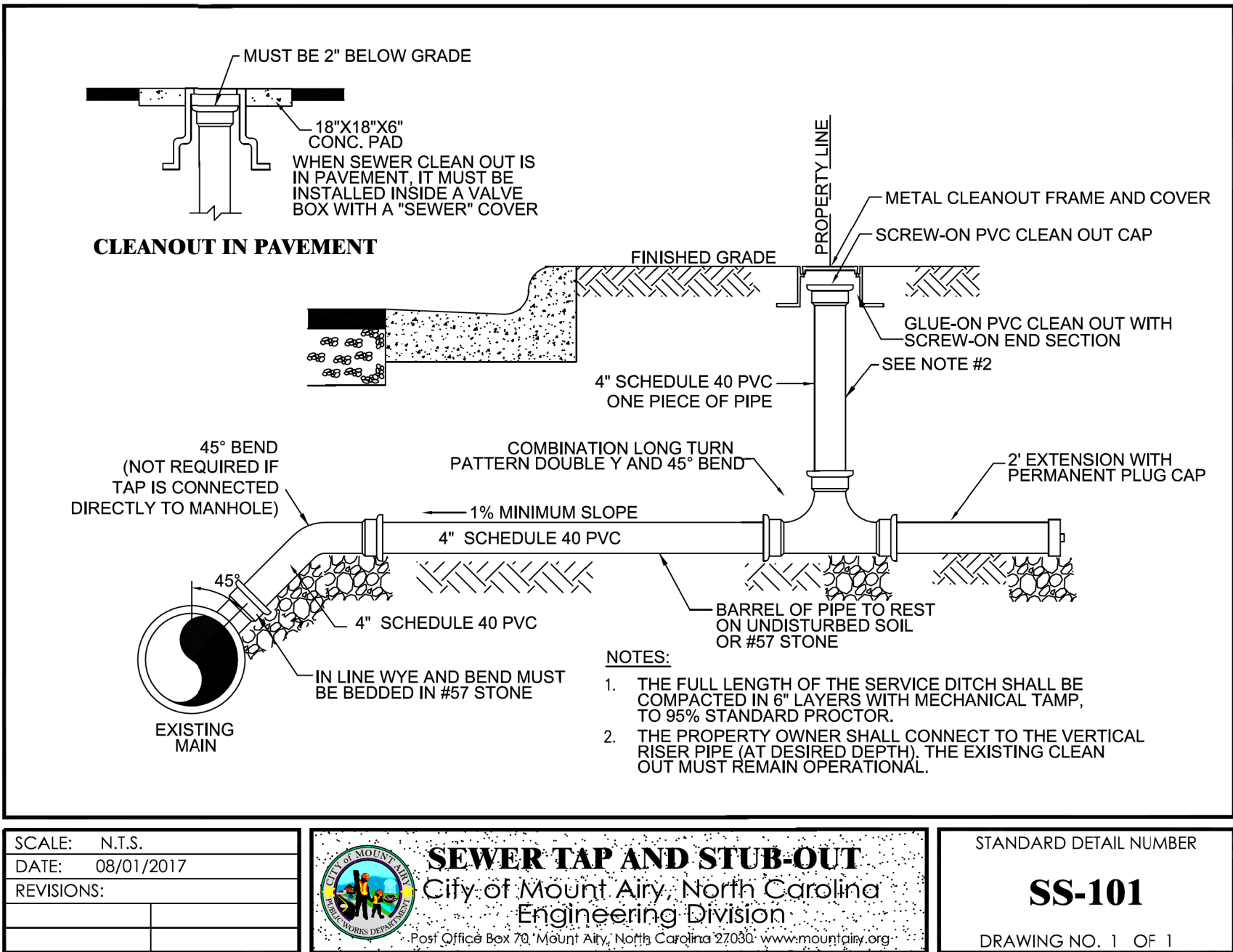
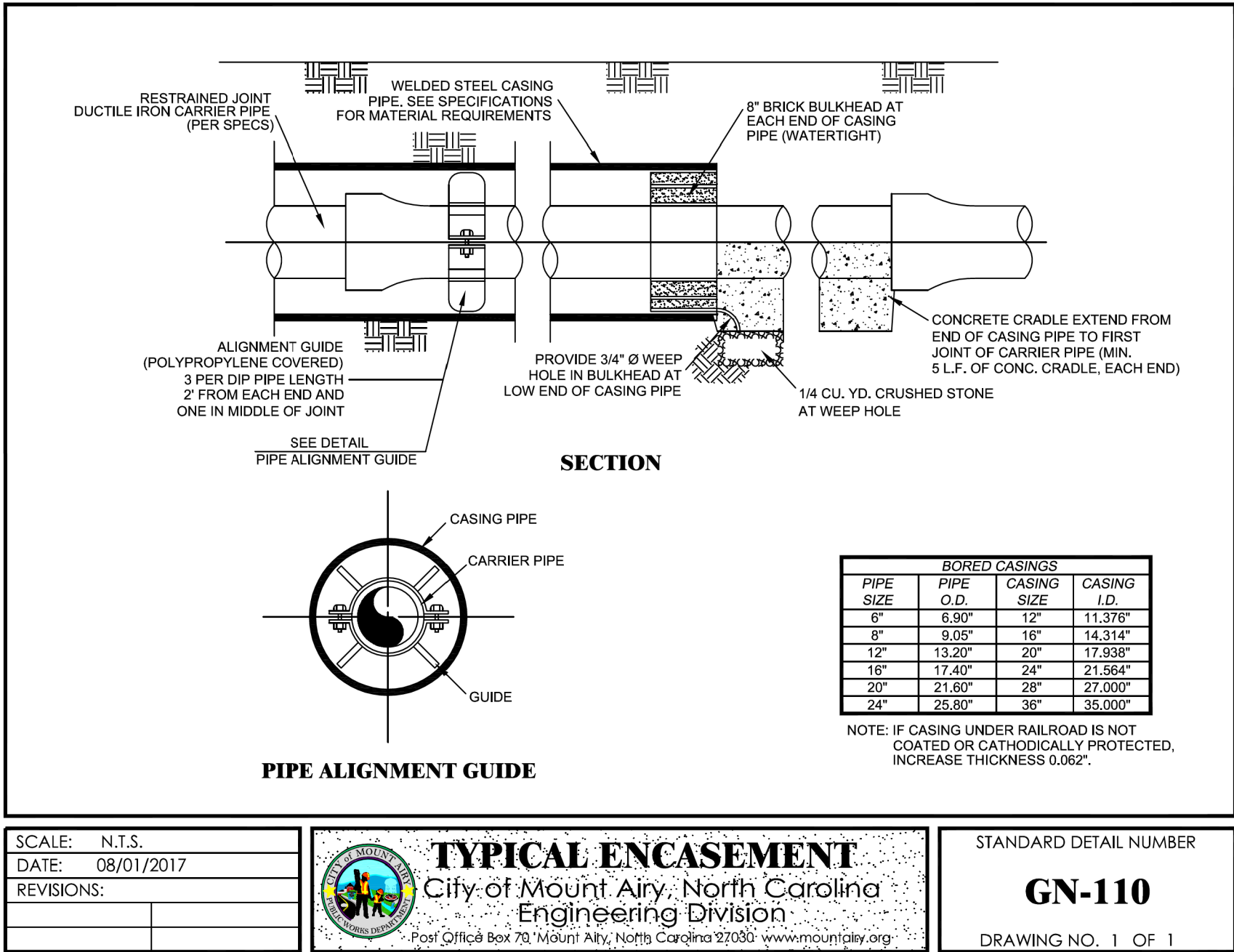
Signed by:
Roger D. Jones
6419F06B02C747C...

NC FIRM LICENSE NO: C-1506
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RALEIGH, NC 27601
(919) 882-7839

REVISIONS

PROJECT TYPICAL DETAILS

NOTE: USE CITY OF MT AIRY DETAILS FOR TOWN OF DOBSON WATER





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DRAWN BY:	CAS
CHECKED BY:	SLC
APPROVED BY:	RDJ
REVISED:	

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6/30/2025



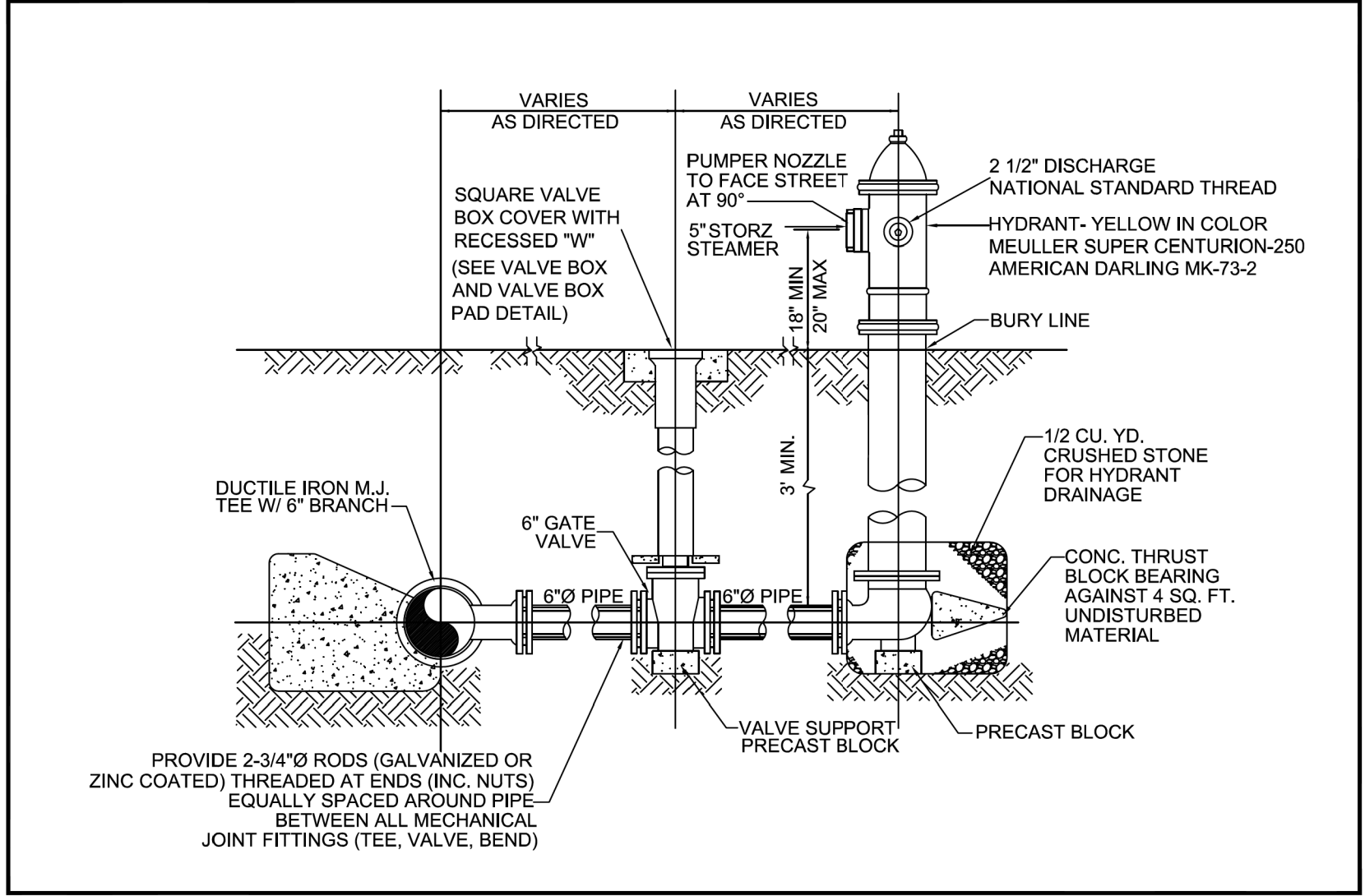
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Roger D. Jones
0419F086B2C747C...

NC FIRM LICENSE NO: C-1506
301 FAYETTEVILLE ST SUITE 1500
RALEIGH, NC 27601
(919) 882-7839

REVISIONS

PROJECT TYPICAL DETAILS

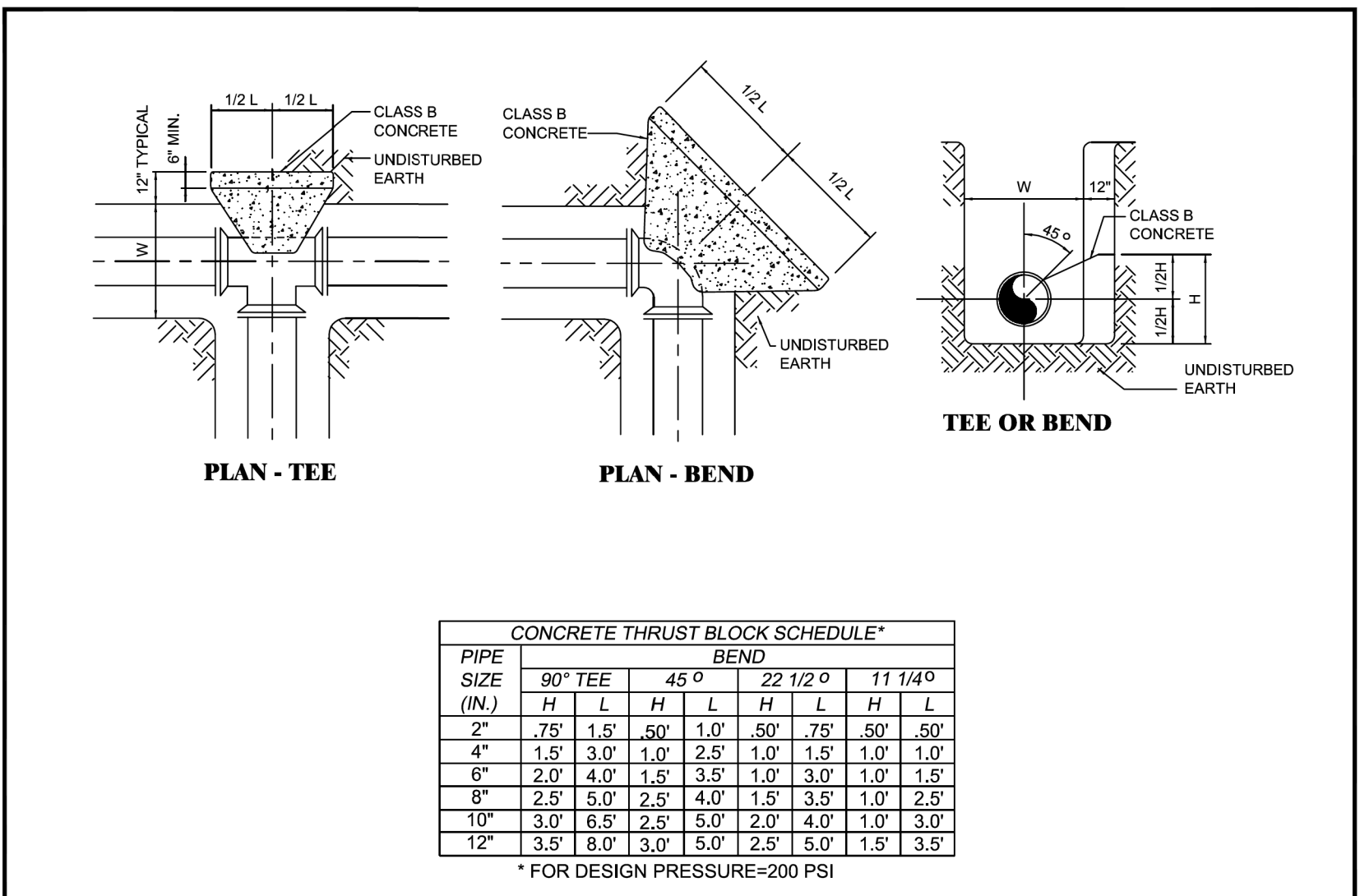
NOTE: USE CITY OF MT AIRY DETAILS FOR TOWN OF DOBSON WATER



SCALE: N.T.S.
DATE: 08/01/2017
REVISIONS:

FIRE HYDRANT
City of Mount Airy, North Carolina
Engineering Division
Post Office Box 70, Mount Airy, North Carolina 27030 www.mountairy.org

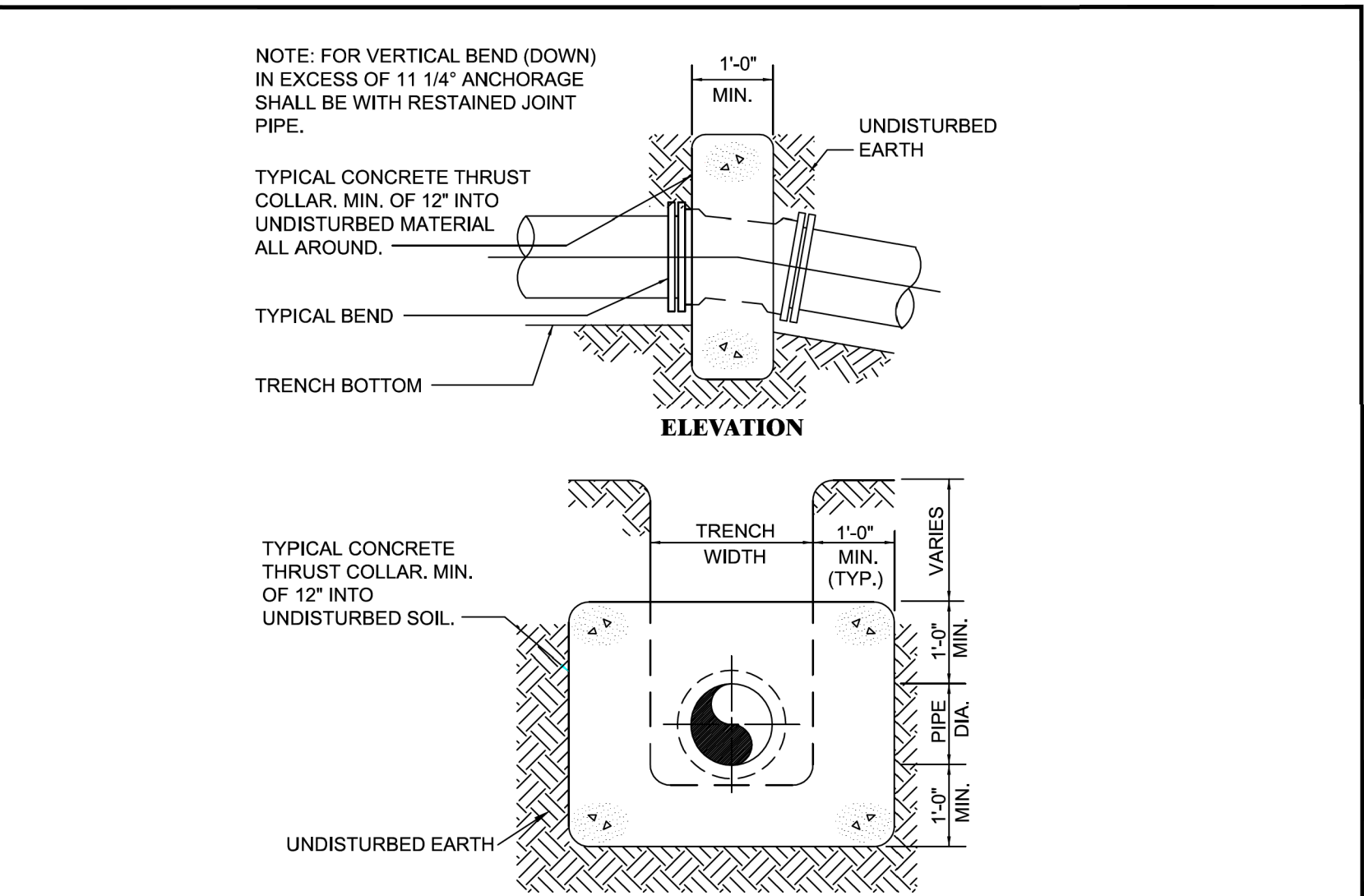
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WS-104
DRAWING NO. 1 OF 1



SCALE: N.T.S.
DATE: 08/01/2017
REVISIONS:

THRUST BLOCK
City of Mount Airy, North Carolina
Engineering Division
Post Office Box 70, Mount Airy, North Carolina 27030 www.mountairy.org

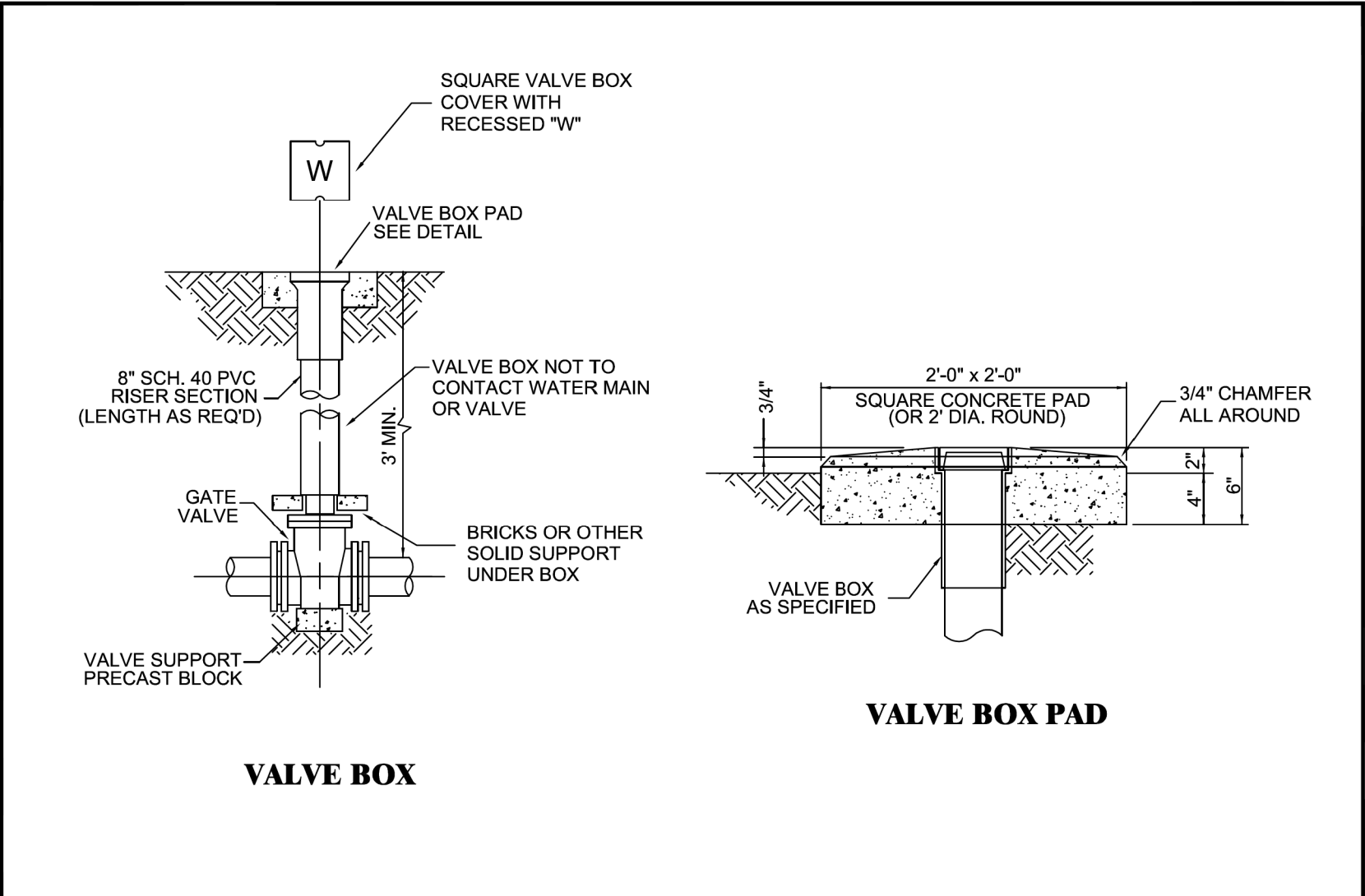
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DRAWING NO. 1 OF 1



SCALE: N.T.S.
DATE: 08/01/2017
REVISIONS:

THRUST COLLAR
City of Mount Airy, North Carolina
Engineering Division
Post Office Box 70, Mount Airy, North Carolina 27030 www.mountairy.org

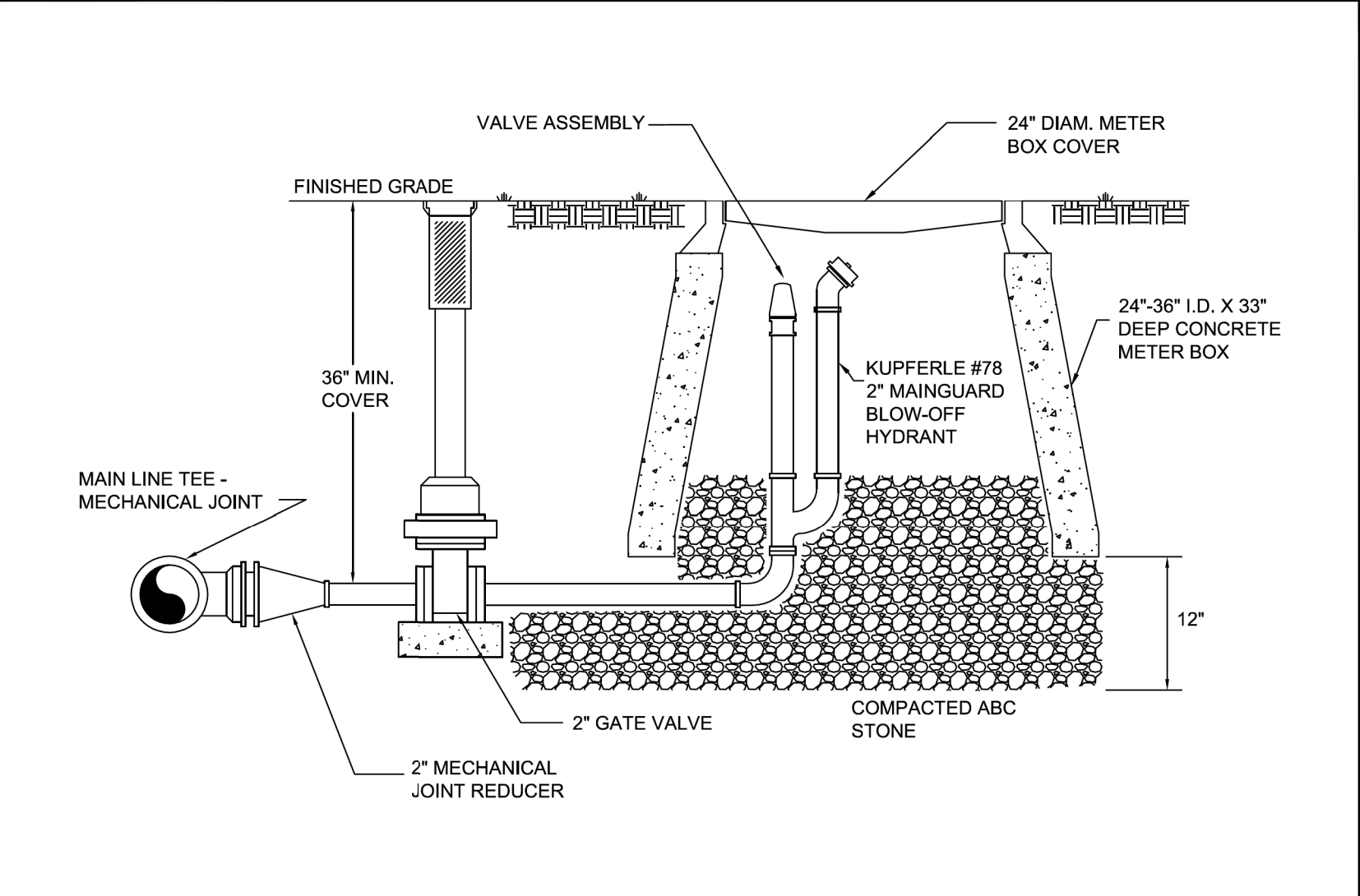
STANDARD DETAIL NUMBER
WS-106
DRAWING NO. 1 OF 1



SCALE: N.T.S.
DATE: 08/01/2017
REVISIONS:

VALVE BOX AND PAD
City of Mount Airy, North Carolina
Engineering Division
Post Office Box 70, Mount Airy, North Carolina 27030 www.mountairy.org

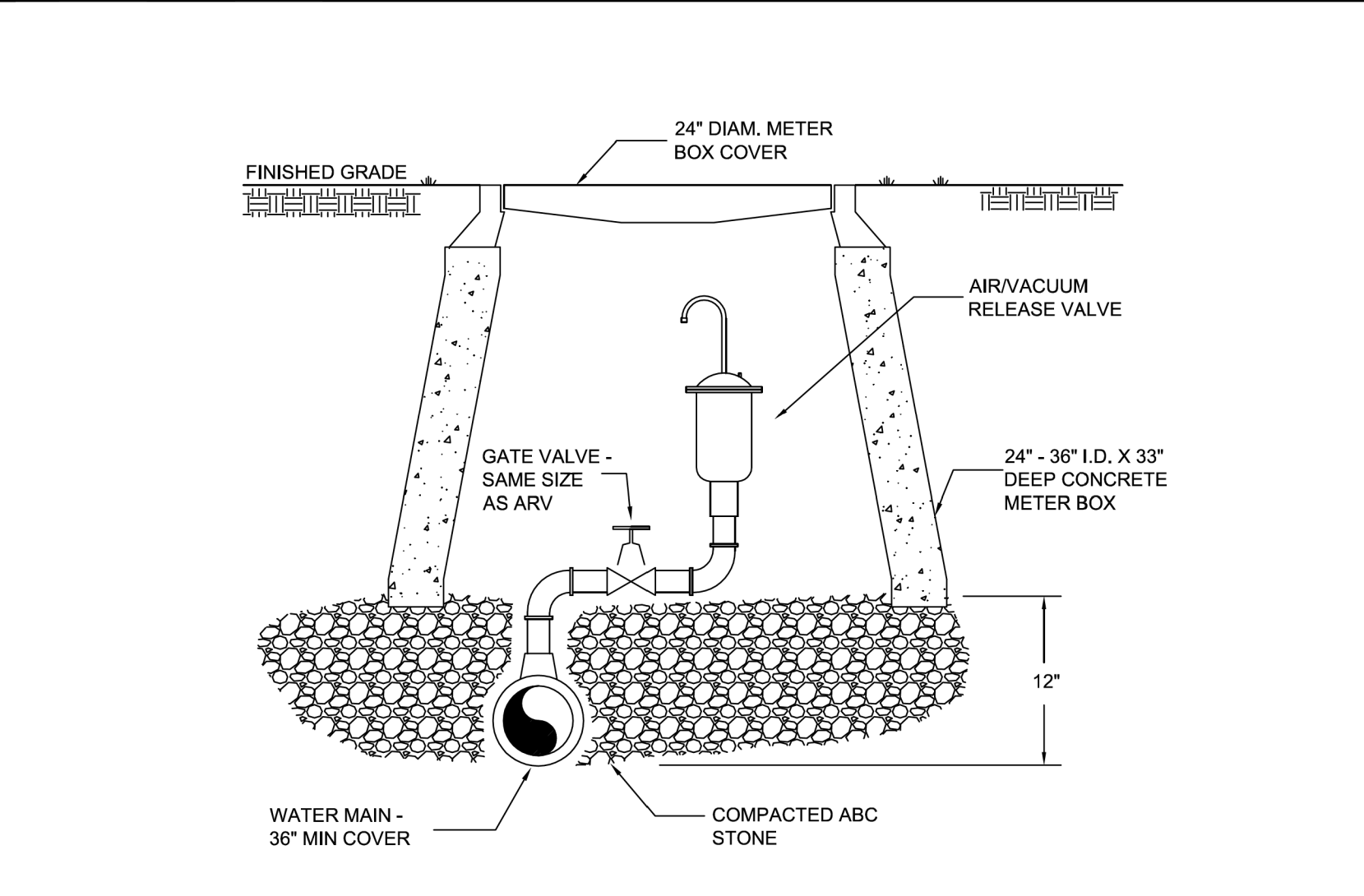
STANDARD DETAIL NUMBER
WS-107
DRAWING NO. 1 OF 1



SCALE: N.T.S.
DATE: 08/01/2017
REVISIONS:

2" BLOWOFF
City of Mount Airy, North Carolina
Engineering Division
Post Office Box 70, Mount Airy, North Carolina 27030 www.mountairy.org

STANDARD DETAIL NUMBER
WS-108
DRAWING NO. 1 OF 1



SCALE: N.T.S.
DATE: 08/01/2017
REVISIONS:

AIR/VACUUM RELEASE
City of Mount Airy, North Carolina
Engineering Division
Post Office Box 70, Mount Airy, North Carolina 27030 www.mountairy.org

STANDARD DETAIL NUMBER
WS-109
DRAWING NO. 1 OF 1

SS-1 PIPE DATA SEWER CROSSING -Y1- STA 16+90.41					
MATERIAL	START	STOP	LENGTH (FT)	MIN DEPTH (FT)	INSTALLATION METHOD
8" DUCTILE IRON	STA 00+00.00	STA 01+41.85	142 LF	12.0'	OPEN TRENCH
16" STEEL	STA 00+00.00	STA 01+41.85	142 LF	12.0'	OPEN TRENCH

WATER INSTALLATION SEQUENCE:					
1. TGV AND LINE INSTALLATION FROM SHEETZ UNDER -Y2- TO TGV NORTH OF -L-.					
2. INSTALL NEW GATE VALVE IN EXISTING LINE NORTH AND EAST OF NEW TGV VIA WATER CUT-OFF INSTALLATION OR VALVE INSERTION.					
3. PARTIALLY CERTIFY NEW WATERLINE.					
4. INSTALL LINE STOP NEAR SHEETZ FOR EXISTING WATERLINE JUST BEYOND WATER METERS, BACKFLOW PREVENTORS, AND LOCATION OF PROPOSED HYDRANT.					
5. ISOLATE THE EXISTING -Y2- LINE FROM THE NEW, ALONG WITH THE EAST SIDE VALVE IN THE SECOND SEQUENCE (TOWN OF DOBSON STATES THERE ARE NO CUSTOMERS IN THIS SECTION). DURING CONSTRUCTION, WATER WILL BE FED FROM TWO DIRECTIONS.					
6. REMOVE THE EXISTING WATERLINE BEYOND THE LINE STOP TO THE POINT OF NEW CONSTRUCTION FOR THE PROPOSED WATERLINE CONNECTION ON THE EAST AND WEST SIDE OF Y-1.					
7. INSTALL PROPOSED LINE FROM THE EXISTING CONNECTION POINT, WEST OF Y-1 TO THE EXISTING CONNECTION POINT EAST OF Y-1.					
8. PRIOR TO OPERATION, CERTIFY THE NEW INSTALLATIONS.					
9. AFTER CERTIFICATION, PLACE IN OPERATION.					

WL-1 PIPE DATA WATER CROSSING -Y1- STA 16+55.54					
MATERIAL	START	STOP	LENGTH (FT)	MIN DEPTH (FT)	INSTALLATION METHOD
8" DUCTILE IRON RESTRAINED JOINT	STA 00+00.00	STA 01+94.67	195 LF	3.0'	OPEN CUT
8" DUCTILE IRON	STA 01+94.67	STA 02+24.55	30 LF	3.0'	OPEN CUT
16" STEEL	STA 00+46.57	STA 01+20.86	75 LF	3.0'	OPEN CUT

WL-1 PIPE DATA WATER CROSSING -Y1- STA 16+55.54				
FITTING	LOCATION	QUANTITY	UNIT WEIGHT	COMBINED WEIGHT
45° (HORIZ.) BEND	STA 00+00.00	1	150 LB.	150 LB.

EXISTING UTILITY PIPE REMOVAL QUANTITIES	
MATERIAL	QUANTITY
6" PVC	71 LF
8" DI - WATER	273 LF
8" DI - SEWER	141 LF
8" PVC	125 LF
10" HDPE	251 LF

BEGIN PROJECT R-5901
-L1- POT STA 12+00.00

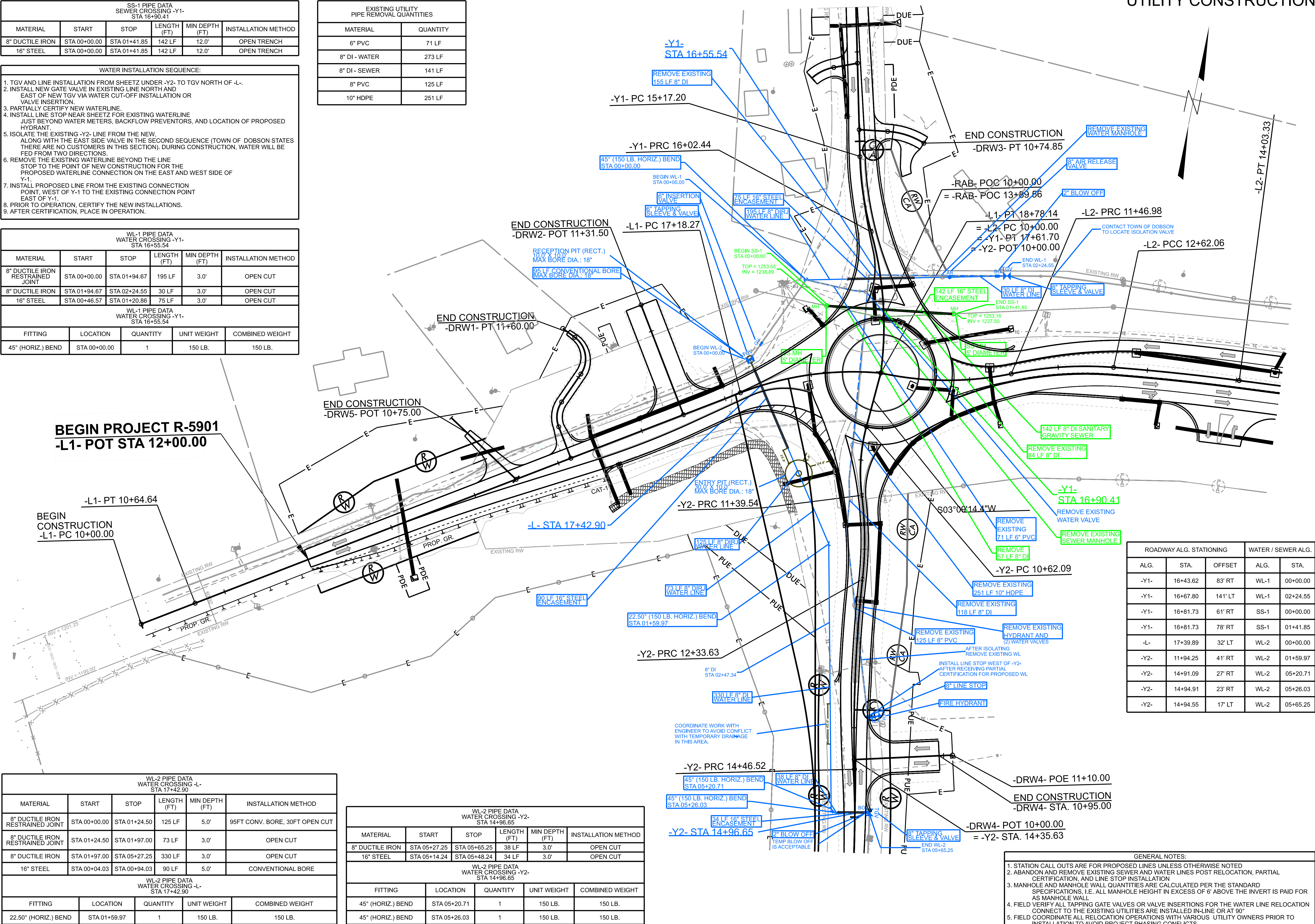
BEGIN CONSTRUCTION
-L1- PC 10+00.00

WL-2 PIPE DATA WATER CROSSING -L- STA 17+42.90					
MATERIAL	START	STOP	LENGTH (FT)	MIN DEPTH (FT)	INSTALLATION METHOD
8" DUCTILE IRON RESTRAINED JOINT	STA 00+00.00	STA 01+24.50	125 LF	5.0'	95FT CONV. BORE, 30FT OPEN CUT
8" DUCTILE IRON RESTRAINED JOINT	STA 01+24.50	STA 01+97.00	73 LF	3.0'	OPEN CUT
8" DUCTILE IRON	STA 01+97.00	STA 05+27.25	330 LF	3.0'	OPEN CUT
16" STEEL	STA 00+04.03	STA 00+94.03	90 LF	5.0'	CONVENTIONAL BORE

WL-2 PIPE DATA WATER CROSSING -L- STA 17+42.90				
FITTING	LOCATION	QUANTITY	UNIT WEIGHT	COMBINED WEIGHT
22.50° (HORIZ.) BEND	STA 01+59.97	1	150 LB.	150 LB.

WL-2 PIPE DATA WATER CROSSING -Y2- STA 14+96.65					
MATERIAL	START	STOP	LENGTH (FT)	MIN DEPTH (FT)	INSTALLATION METHOD
8" DUCTILE IRON	STA 05+27.25	STA 05+65.25	38 LF	3.0'	OPEN CUT
16" STEEL	STA 05+14.24	STA 05+48.24	34 LF	3.0'	OPEN CUT

WL-2 PIPE DATA WATER CROSSING -Y2- STA 14+96.65				
FITTING	LOCATION	QUANTITY	UNIT WEIGHT	COMBINED WEIGHT
45° (HORIZ.) BEND	STA 05+20.71	1	150 LB.	150 LB.
45° (HORIZ.) BEND	STA 05+26.03	1	150 LB.	150 LB.



UTILITY CONSTRUCTION

R-5901

UC4A

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WAKE COUNTY

UTILITY DESIGN UNIT

UTILITY CONSTRUCTION
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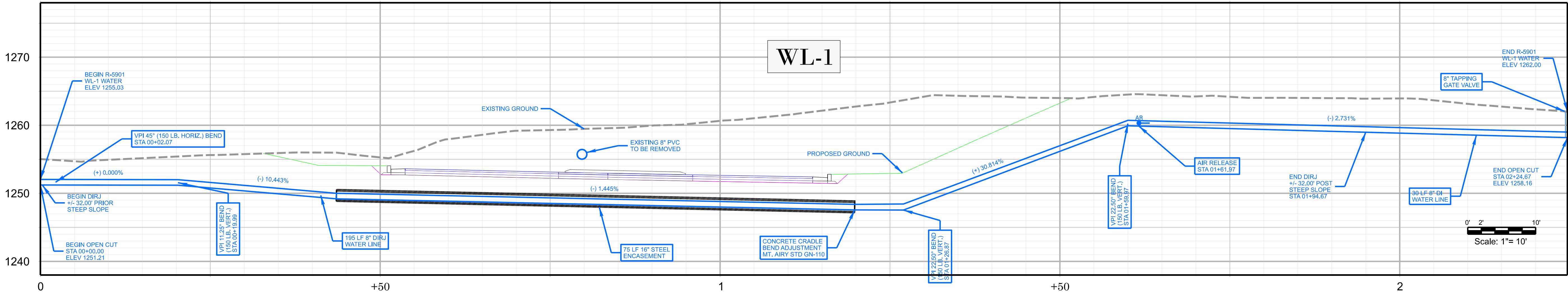
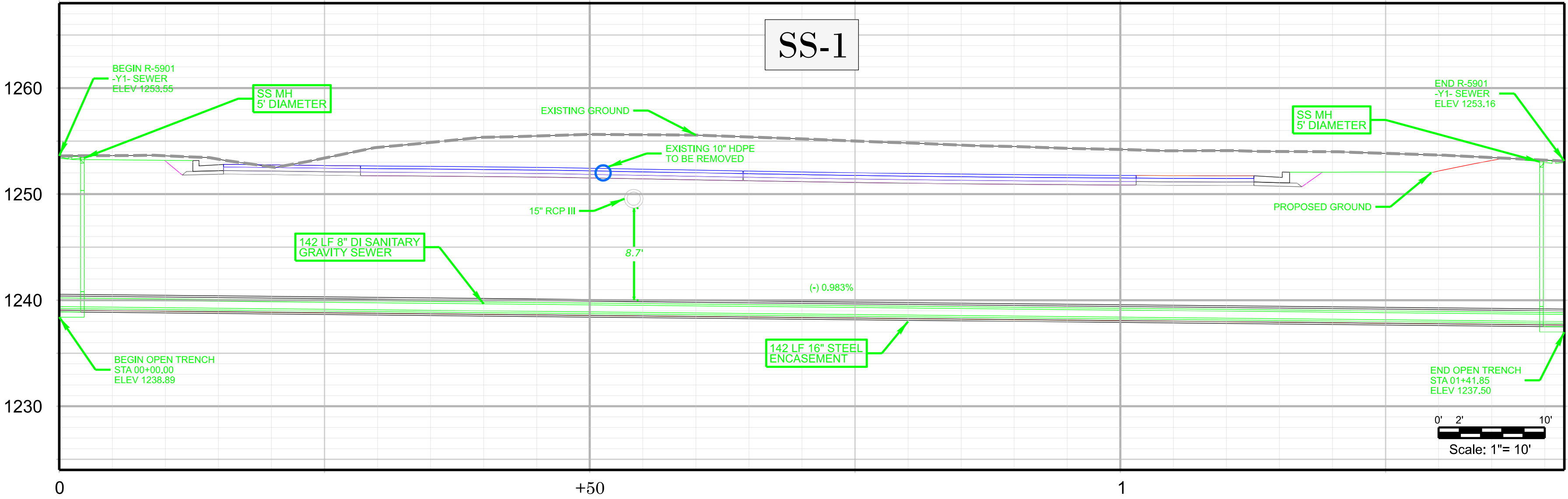
DESIGNED BY:	CAS
DRAWN BY:	CAS
CHECKED BY:	SLC
APPROVED BY:	RDJ
REVISED:	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

6/30/2025



Signed by:
Roger D. Jones
6419F06B02C747C...

NC FIRM LICENSE NO: C-1506
301 FAYETTEVILLE ST SUITE 1500
RALEIGH, NC 27601
(919) 882-7839



- GENERAL NOTES:
1. FIELD VERIFY THE LOCATION OF THE EXISTING WATERLINE TO AVOID PHASING AND CONSTRUCTION CONFLICTS
 2. USE DUCTILE IRON REINFORCED JOINTS FOR ALL PIPES WITH A SLOPE OF 10% OR GREATER

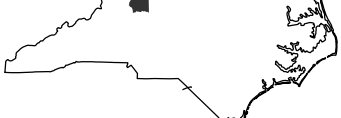
REVISIONS

UTILITY CONSTRUCTION

R-5901

UC 4B

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WAKE COUNTY



UTILITY DESIGN UNIT

UTILITY CONSTRUCTION
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DESIGNED BY:	CAS
DRAWN BY:	CAS
CHECKED BY:	SLC
APPROVED BY:	RDJ
REVISED:	

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

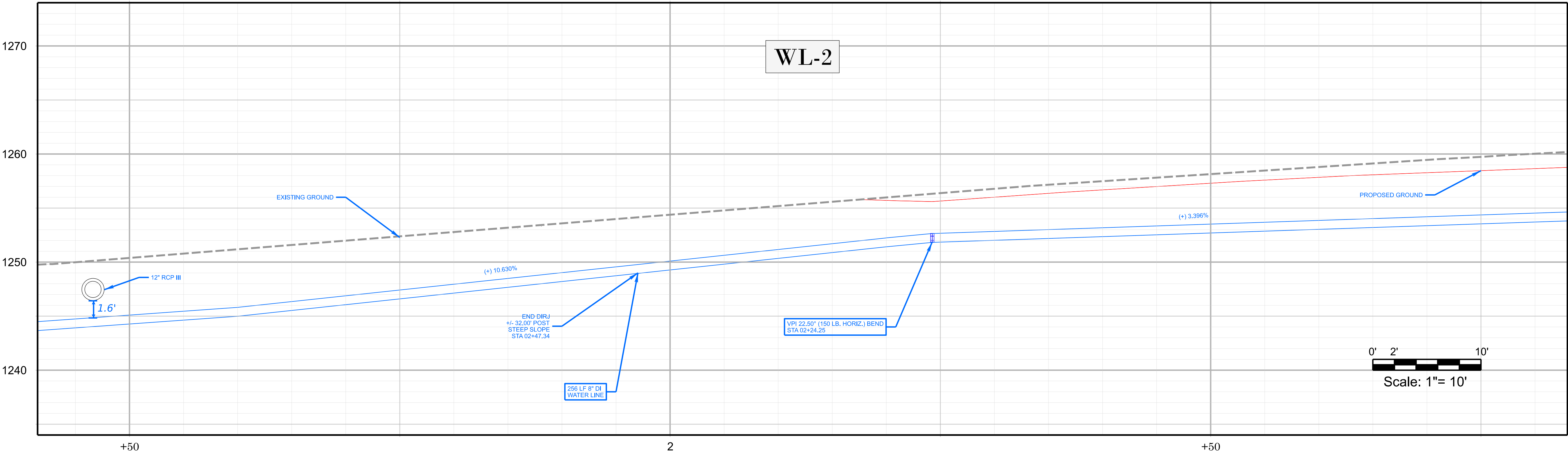
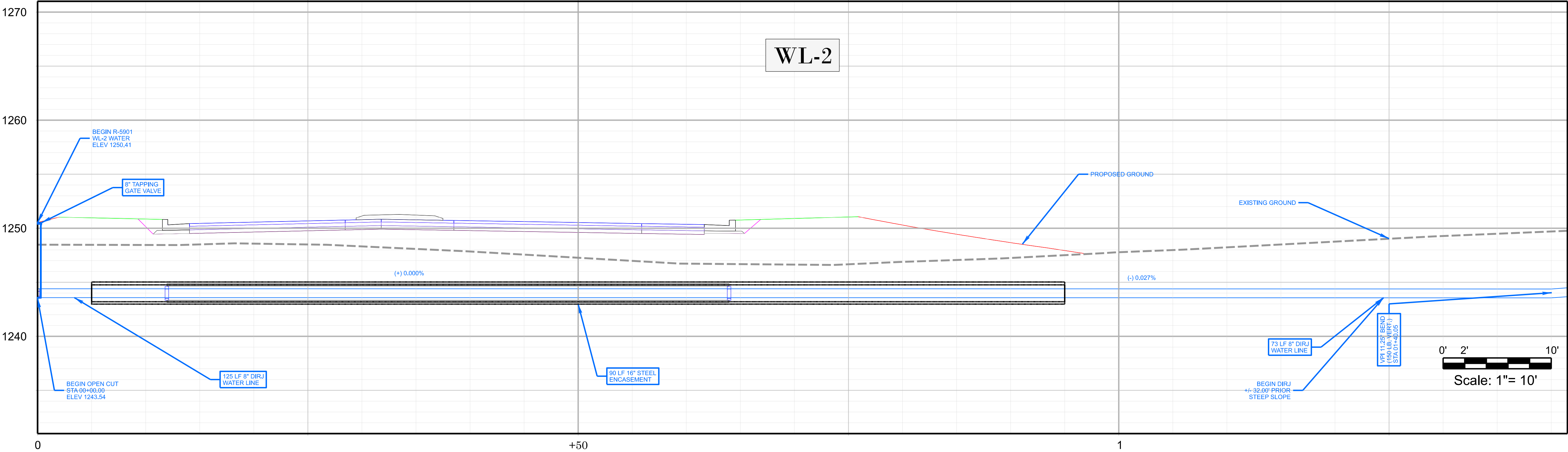
6/30/2025



Signed by:
Roger D. Jones
0419F06B02C747C...

NC FIRM LICENSE NO: C-1506
301 FAYETTEVILLE ST SUITE 1500
RALEIGH, NC 27601
(919) 882-7839

REVISIONS



- GENERAL NOTES:
1. FIELD VERIFY THE LOCATION OF THE EXISTING WATERLINE TO AVOID PHASING AND CONSTRUCTION CONFLICTS
 2. USE DUCTILE IRON REINFORCED JOINTS FOR ALL PIPES WITH A SLOPE OF 10% OR GREATER
 3. MAINTAIN 12" MINIMUM SEPARATION BETWEEN WATERLINE AND STORMWATER RCP

UTILITY CONSTRUCTION

R-5901

UC

4C

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WAKE COUNTY



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PLANS ONLY

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



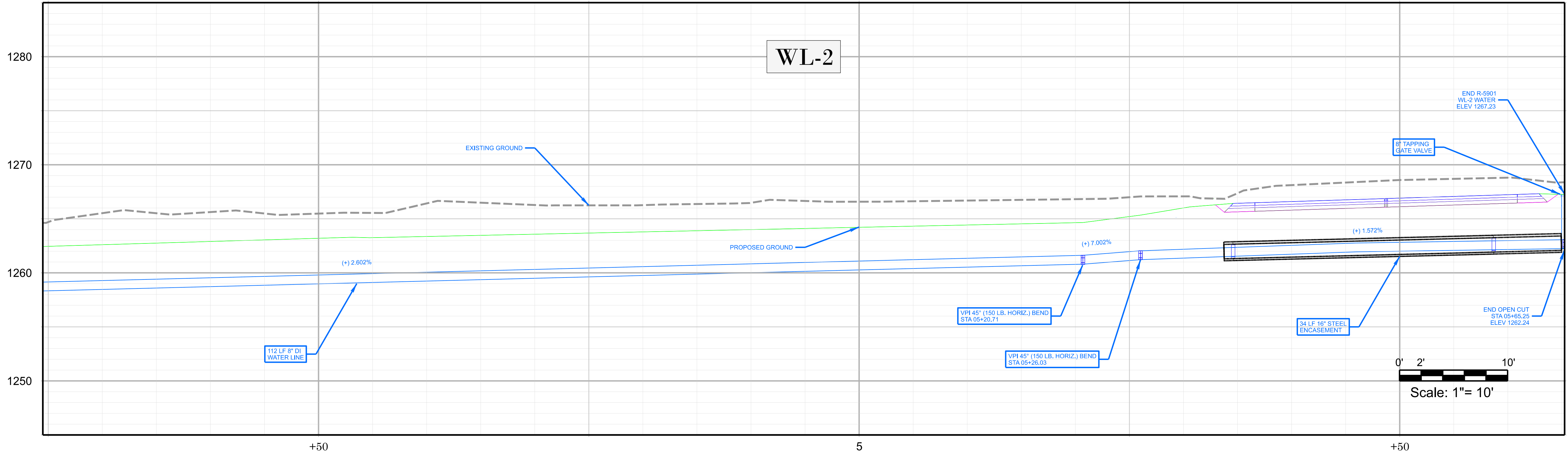
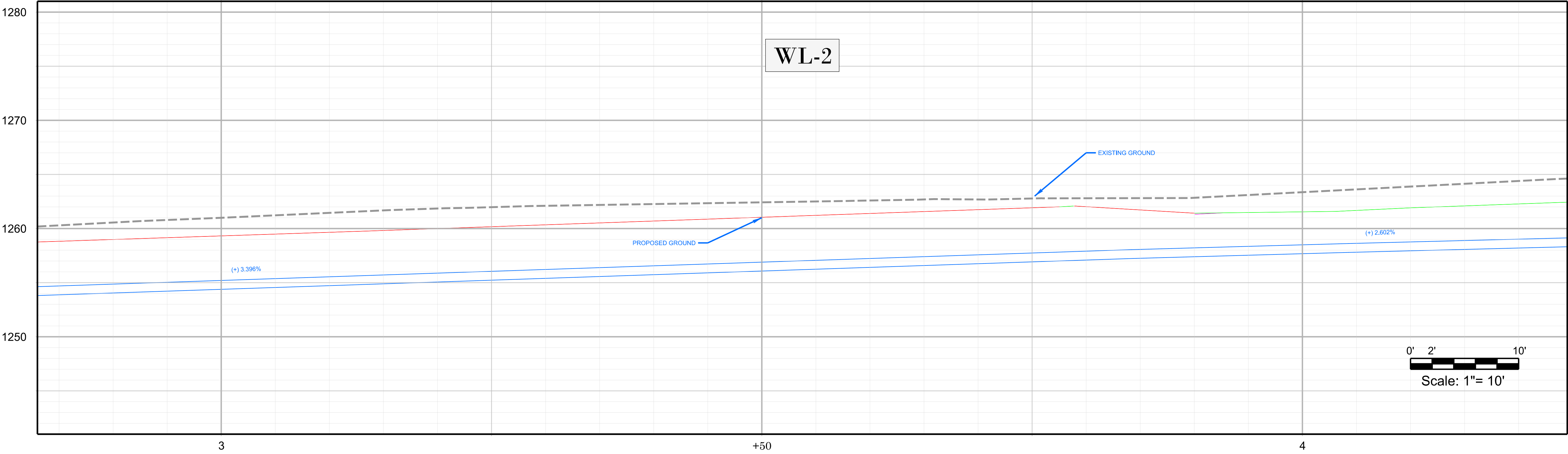
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6/30/2025



Signed by:
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REVISIONS



- GENERAL NOTES:
1. FIELD VERIFY THE LOCATION OF THE EXISTING WATERLINE TO AVOID PHASING AND CONSTRUCTION CONFLICTS
 2. USE DUCTILE IRON REINFORCED JOINTS FOR ALL PIPES WITH A SLOPE OF 10% OR GREATER