

STATE OF NORTH CAROLINA

DIVISION OF HIGHWAYS

UTILITIES PLAN SHEET SYMBOLS

LKC

Engineering
Landscape Architecture
Surveying

LKC Engineering, PLLC
140 Aqua Shed Court
Aberdeen, NC 28315
O: 910.420.1437
F: 910.637.0096
lkceengineering.com
License No. P-1095

PROJECT REFERENCE NO.
R-5709C

DESIGNED BY: LJP

DRAWN BY: AGP

CHECKED BY: BGL

APPROVED BY: -

REVISED: -

NORTH CAROLINA
DEPARTMENT OF
TRANSPORTATION

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

UTILITY CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA
PROFESSIONAL
SEAL
50633
ENGINEER
LOGAN J. PARSONS

DocuSign
Logan Parsons
AS15FC9387EDC485
9/10/2024

PROPOSED WATER SYMBOLS

Water Line (Sized as Shown)	
11¼ Degree Bend	++
22½ Degree Bend	+x
45 Degree Bend	+x
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	PFH
Relocate Fire Hydrant	RFH
Remove Fire Hydrant	REM FH
Water Meter	PWM
Relocate Water Meter	RWM
Remove Water Meter	REM WM
Water Pump Station	PSTW
RPZ Backflow Preventer	RPZ
DCV Backflow Preventer	DBFP
Relocate RPZ Backflow Preventer	RRPZ
Relocate DCV Backflow Preventer	RDBFP

PROPOSED SEWER SYMBOLS

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

PROPOSED MISCELLANEOUS UTILITIES SYMBOLS

Power Pole	○
Telephone Pole	○-
Joint Use Pole	○-
Telephone Pedestal	TEL PED
Utility Line by Others (Type as Shown)	
Trenchless Installation	
Encasement by Open Cut	
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.●.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	A/G Gas
*Underground Water Line	
Aboveground Water Line	A/G Water
*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)

UTILITY CONSTRUCTION HOKE COUNTY

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3345C6292020C66E
9/10/2024

CONSTRUCTION NOTES:

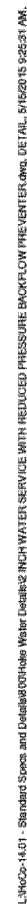
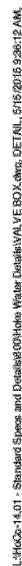
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- THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PROTECTING ALL EXISTING WATER SERVICE CONNECTIONS DURING CONSTRUCTION. ANY DAMAGE WHICH OCCURS AS A RESULT OF THE CONSTRUCTION SHALL BE REPAIRED AT NO ADDITIONAL COST TO THE OWNER. IN THE EVENT OF A TEMPORARY SERVICE INTERRUPTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER AND BEGIN REPAIRS.
- ALL PIPING FOR PRESSURE MAINS SHALL BE PRESSURE TESTED, GRAVITY LINES SHALL BE AIR TESTED, AND MANHOLES SHALL BE VACUUM TESTED, ALL IN ACCORDANCE WITH THE DETAILED SPECIFICATIONS AND SPECIAL PROVISIONS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER 24 HOURS IN ADVANCE OF ALL SCHEDULED TESTING.
- ALL WORK PERFORMED WITHIN NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RIGHTS-OF-WAY SHALL BE PERFORMED IN STRICT ACCORDANCE WITH THE NCDOT CONSTRUCTION AND MAINTENANCE OPERATIONS SUPPLEMENT TO THE MANUAL OR UNIFORM TRAFFIC CONTROL DEVICES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PERFORMING THE WORK AND ADHERING TO THE RIGHT-OF-WAY ENCROACHMENT CONTRACT SPECIAL PROVISIONS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE OWNER TO ACCURATELY DETERMINE THE LOCATION OF EXISTING WATER MAINS AND SEWER LINES WITHIN THE PROJECT AREA. THE CONTRACTOR SHALL TAKE ADDITIONAL CAUTION IN EXCAVATING AROUND THE SERVICE LINES AND MAINS WHILE WORKING WITHIN THIS PROJECT. ANY DAMAGE TO THE MAINS OR SERVICE LINES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- THE CONTRACTOR SHALL REMOVE AND REPLACE EXISTING CULVERTS AND DRAINAGE STRUCTURES AS NECESSARY DURING THE CONSTRUCTION OF THE UTILITY LINES. ANY DAMAGE TO THE CULVERTS SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. SPECIAL CIRCUMSTANCES (I.E. UNREINFORCED CONCRETE PIPE) SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY IN ORDER TO RECEIVE ANY NECESSARY.
- THE CONTRACTOR IS INSTRUCTED TO CONTROL SEDIMENTATION RUNOFF BY METHODS APPROVED BY THE ENGINEERS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT. THE CONTRACTOR IS REMINDED THAT ALL WORK SHALL MEET ALL APPLICABLE REQUIREMENTS OF THE RULES AND REGULATIONS OF EROSION AND SEDIMENT CONTROL AS PUBLISHED BY THE DEPARTMENT OF NC ENVIRONMENTAL QUALITY.
- THE CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS INDICATING THE ACTUAL AS-BUILT CONDITION OF THE PROJECT AT COMPLETION. AS-BUILTS WILL BE FURNISHED AT OR PRIOR TO FINAL INSPECTION BY THE ENGINEER. AS-BUILTS WILL BE REVIEWED BY THE ENGINEERS REPRESENTATIVE PRIOR TO APPROVAL OF MONTHLY PROGRESS PAYMENTS. MARK-UP COPIES OF THE DRAWINGS INDICATING ALL DIMENSIONS AND ELEVATIONS ARE ACCEPTABLE AS AS-BUILT DRAWINGS.

GENERAL NOTES:

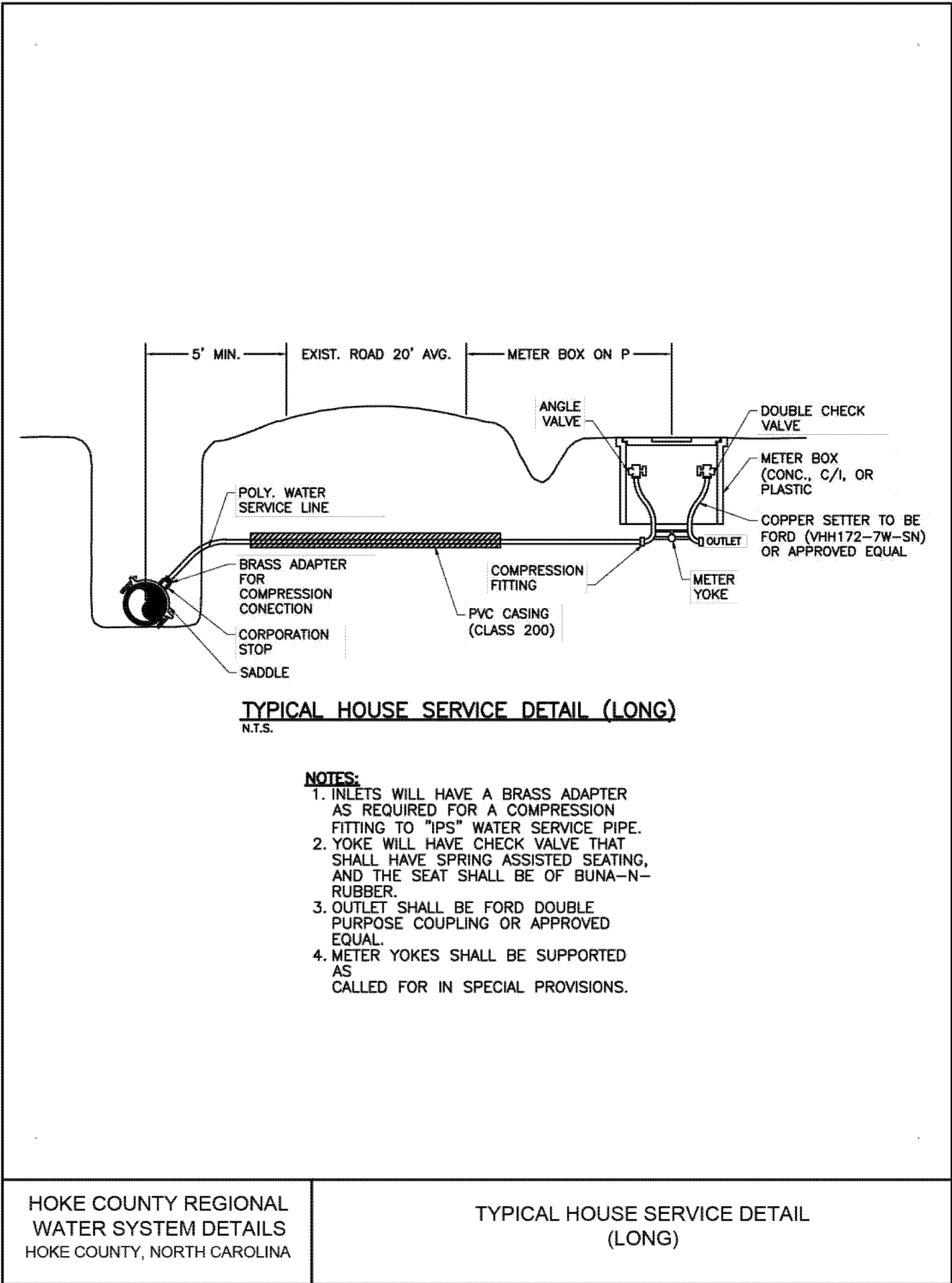
- THE PROPOSED UTILITY CONSTRUCTION SHALL MEET THE APPLICABLE REQUIREMENTS OF THE NC DEPARTMENT OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES DATED JANUARY 2024.
- THE EXISTING UTILITIES BELONG TO HOKE COUNTY.
- ALL WATER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND 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.
- THE UTILITY OWNER OWNS 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 BY THE ENGINEER. AGREEMENTS BETWEEN THE UTILITY OWNER AND CONTRACTOR FOR THE WORK THAT IS NOT PART OF THIS CONTRACT ARE ALLOWED, BUT ARE NOT BINDING UPON THE DEPARTMENT.
- 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 OWNER'S REPRESENTATIVES INFORMED OF WORK PROGRESS AND PROVIDE OPPORTUNITY FOR INSPECTION OF CONSTRUCTION AND TESTING.
- 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.
- 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.
- 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.

PROJECT SPECIFIC NOTES:

- ALL PROPOSED WATER LINE TO BE SDR21 PVC UNLESS NOTED OTHERWISE ON PLANS. ALL DUCTILE IRON PIPE SHALL BE PC350. AND DUCTILE IRON FORCE MAIN SHALL HAVE AN EPOXY INTERIOR LINING.
- WELL IN ADVANCE OF BEGINNING UTILITY WORK, SOFT DIGS SHALL BE PERFORMED BY CONTRACTOR TO VERIFY ACTUAL WATER LINE DEPTH AND MATERIAL AT PROPOSED TIE-IN LOCATIONS.
- LAY PIPE STRAIGHT IN ALIGNMENT AND GRADIENT OR FOLLOW TRUE CURVES AS NEARLY AS POSSIBLE. DO NOT DEFLECT ANY JOINT MORE THAN THE MAXIMUM DEFLECTION RECOMMENDED BY THE MANUFACTURER.
- LKC, HOKE COUNTY, AND NCDOT TO REVIEW/ APPROVE RELEVANT SUBMITTALS.
- ANY SERVICE INTERRUPTIONS SHALL BE SCHEDULED FOR MINIMAL IMPACT TO CUSTOMERS AND APPROVED BY LKC, AND HOKE COUNTY.
- THE CONTRACTOR SHALL NOTIFY LKC, AND HOKE COUNTY IN ADVANCE OF THE FOLLOWING ACTIVITIES:
 - START OF UTILITY CONSTRUCTION- 48 HOURS
 - MAIN LINE SERVICE INTERRUPTIONS- 96 HOURS
 - PRESSURE TESTING- 24 HOURS
 - DISINFECTION- 24 HOURS
- LKC, HOKE COUNTY, AND NCDOT HAVE RIGHT-OF-ENTRY TO THE PROJECT SITE.
- THE PROPOSED PIPELINE SHALL BE INSTALLED AT THE DEPTHS SHOWN IN THE PROFILE TO AVOID HIGH POINTS THAT CAN TRAP AIR. ALL COST FOR INSTALLATION IN DEEPER CUTS SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT AND SHOULD BE INCLUDED IN THE PRICE FOR FORCE MAIN AND WATER MAIN INSTALLATION.

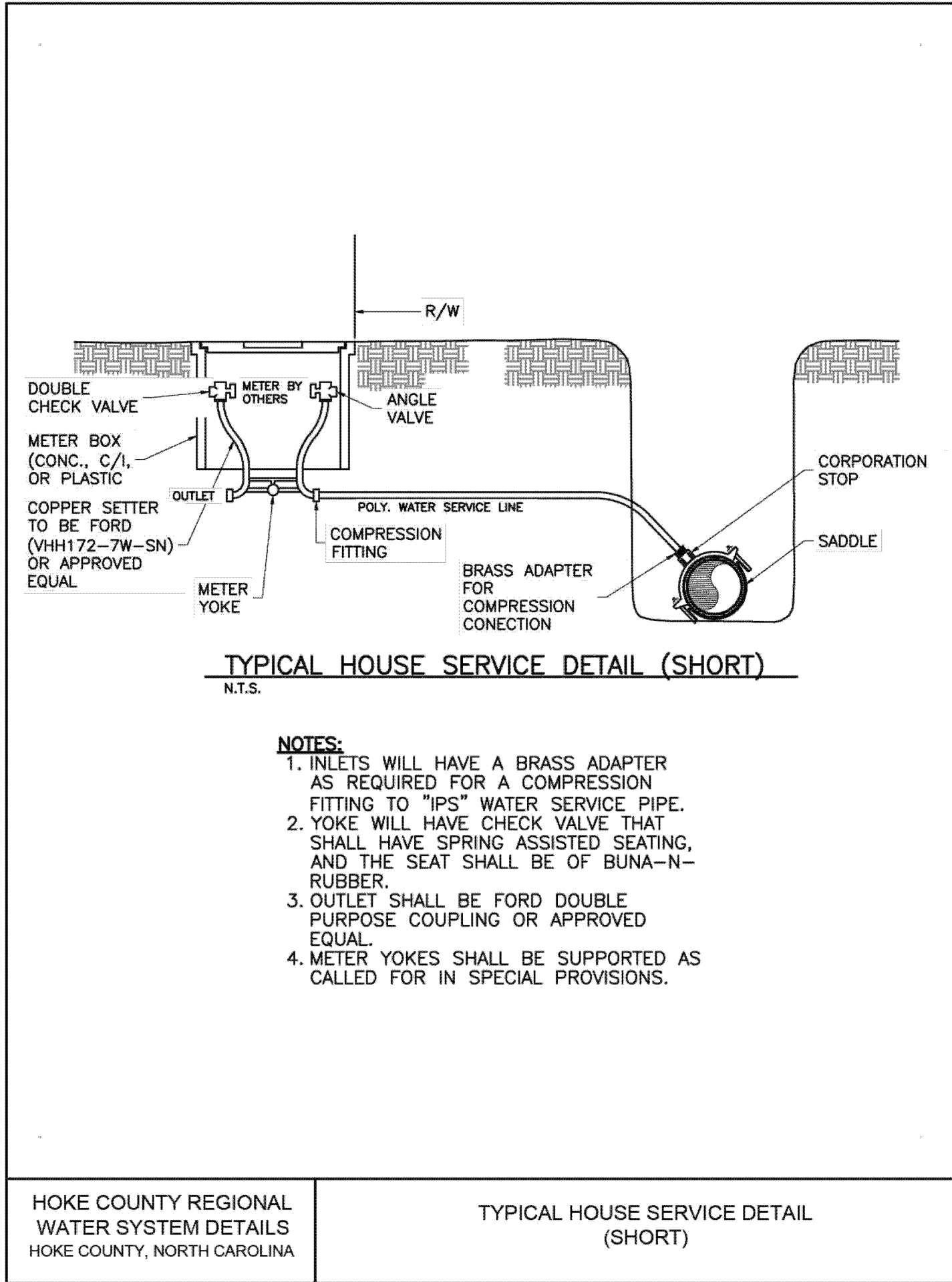


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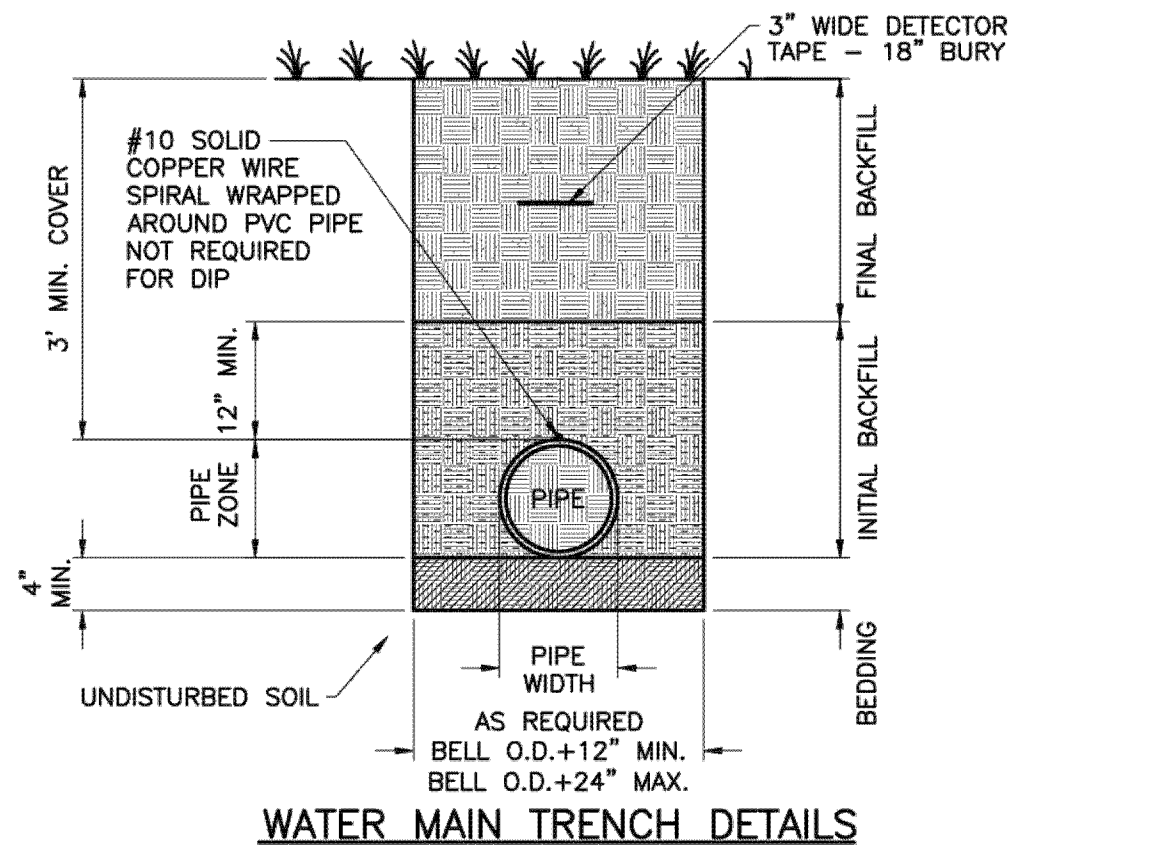
HOKE COUNTY REGIONAL
WATER SYSTEM DETAILS
HOKE COUNTY, NORTH CAROLINA

TYPICAL HOUSE SERVICE DETAIL
(LONG)



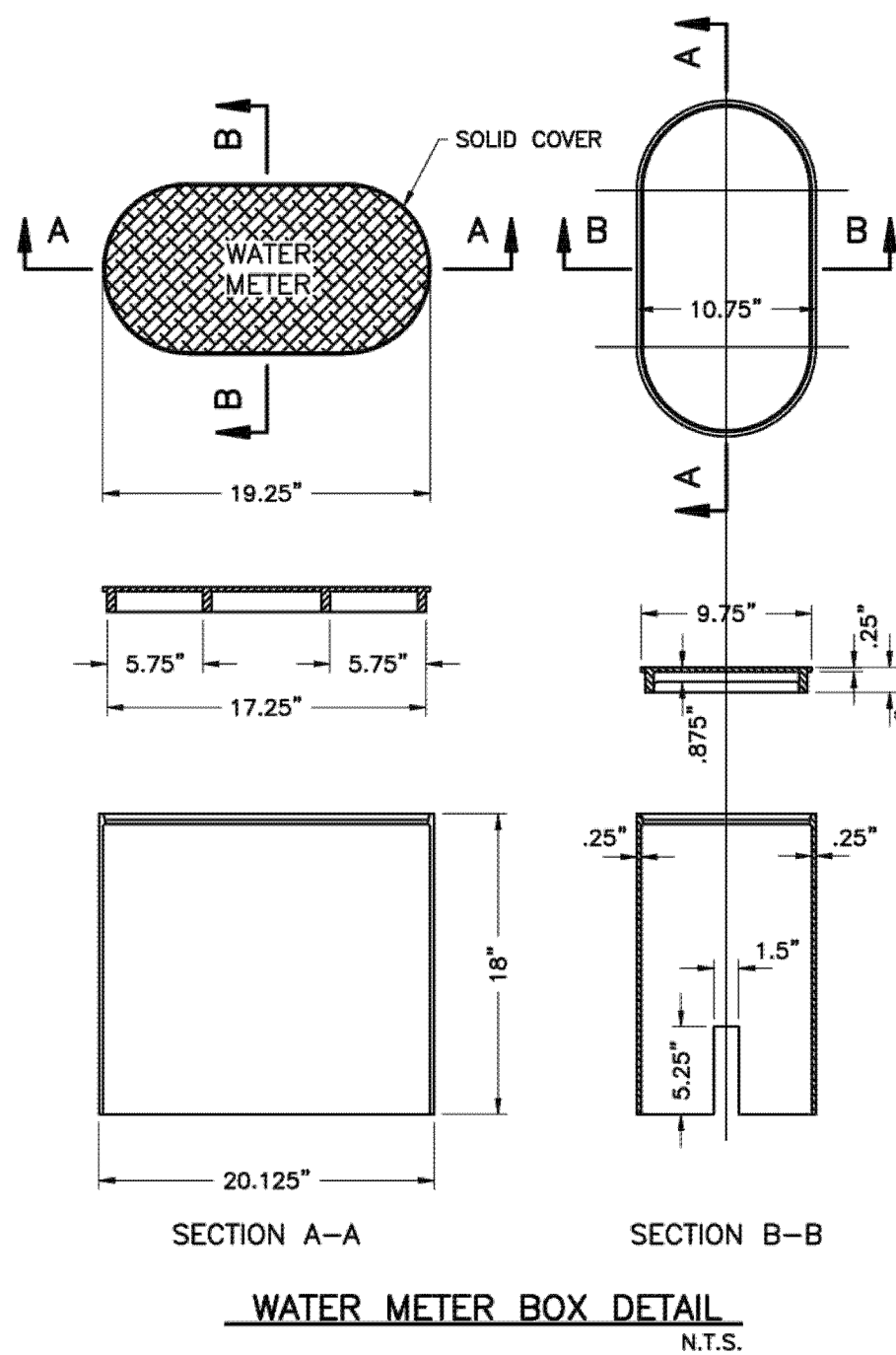
HOKE COUNTY REGIONAL
WATER SYSTEM DETAILS
HOKE COUNTY, NORTH CAROLINA

TYPICAL HOUSE SERVICE DETAIL
(SHORT)



HOKE COUNTY REGIONAL
WATER SYSTEM DETAILS
HOKE COUNTY, NORTH CAROLINA

WATER MAIN TRENCH DETAILS



HOKE COUNTY REGIONAL
WATER SYSTEM DETAILS
HOKE COUNTY, NORTH CAROLINA

WATER METER BOX DETAIL

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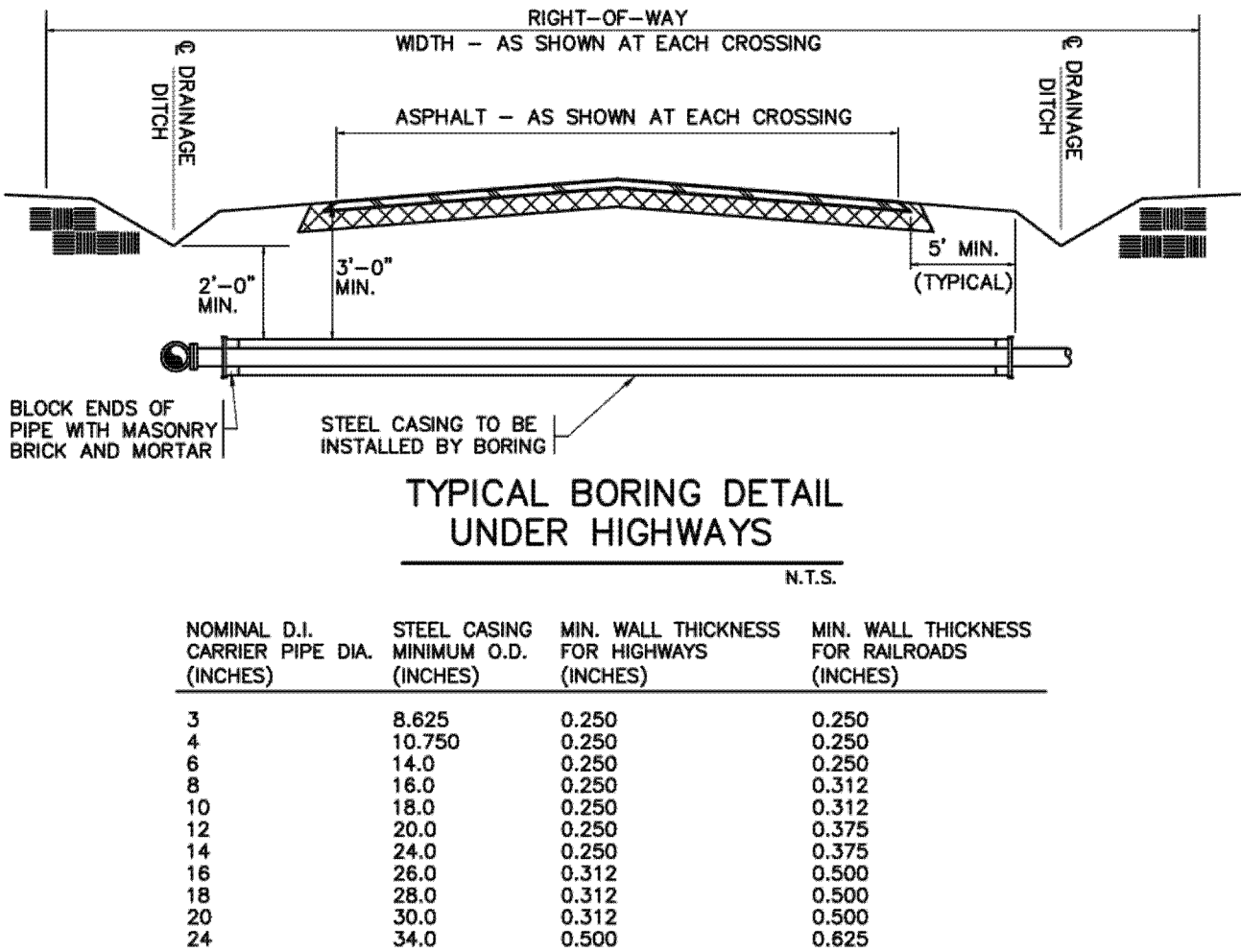
UTILITY CONSTRUCTION

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50633
LOGAN J. PARSONS

DocuSigned by:
Logan Parsons
9/10/2024



HOKE COUNTY REGIONAL
WATER SYSTEM DETAILS
HOKE COUNTY, NORTH CAROLINA

TYPICAL BORING DETAIL UNDER
HIGHWAYS

N.T.S



N.T.S.



OPEN CUT AND PATCH DETAILS



TYPICAL GRAVEL ROAD SECTION



PRESSURE REDUCING VALVE ASSEMBLY

SIZE MAY VARY – SEE PLAN SHEET FOR DIAMETER

ALL ITEMS UNLESS EXPLICITLY CALLED OUT,
ARE INCLUDED IN THE PAY ITEM FOR
PRESSURE REDUCING VALVE ASSEMBLY FOUND
ON PAGE UC-5A OF THE SPECIAL PROVISIONS

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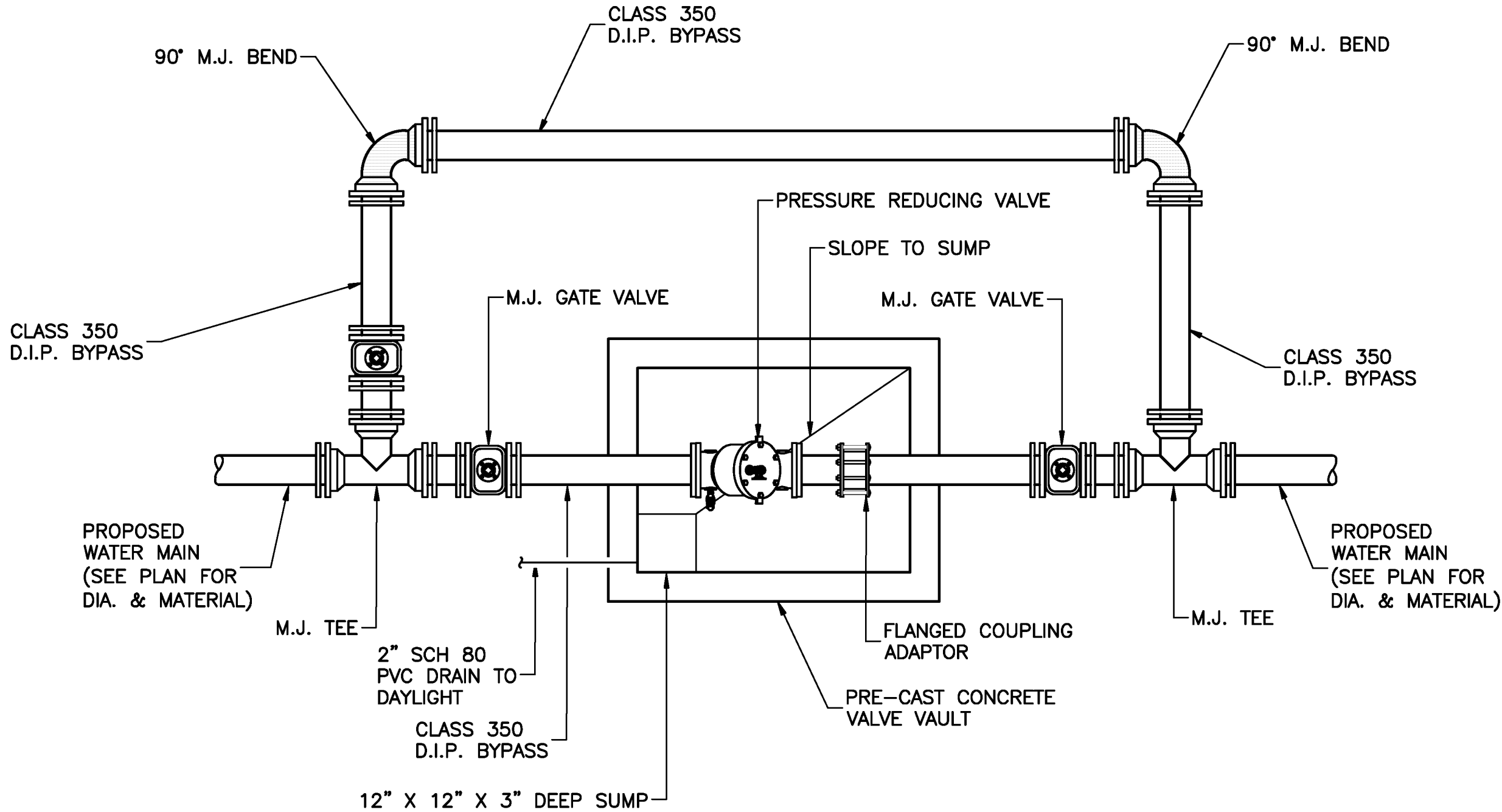
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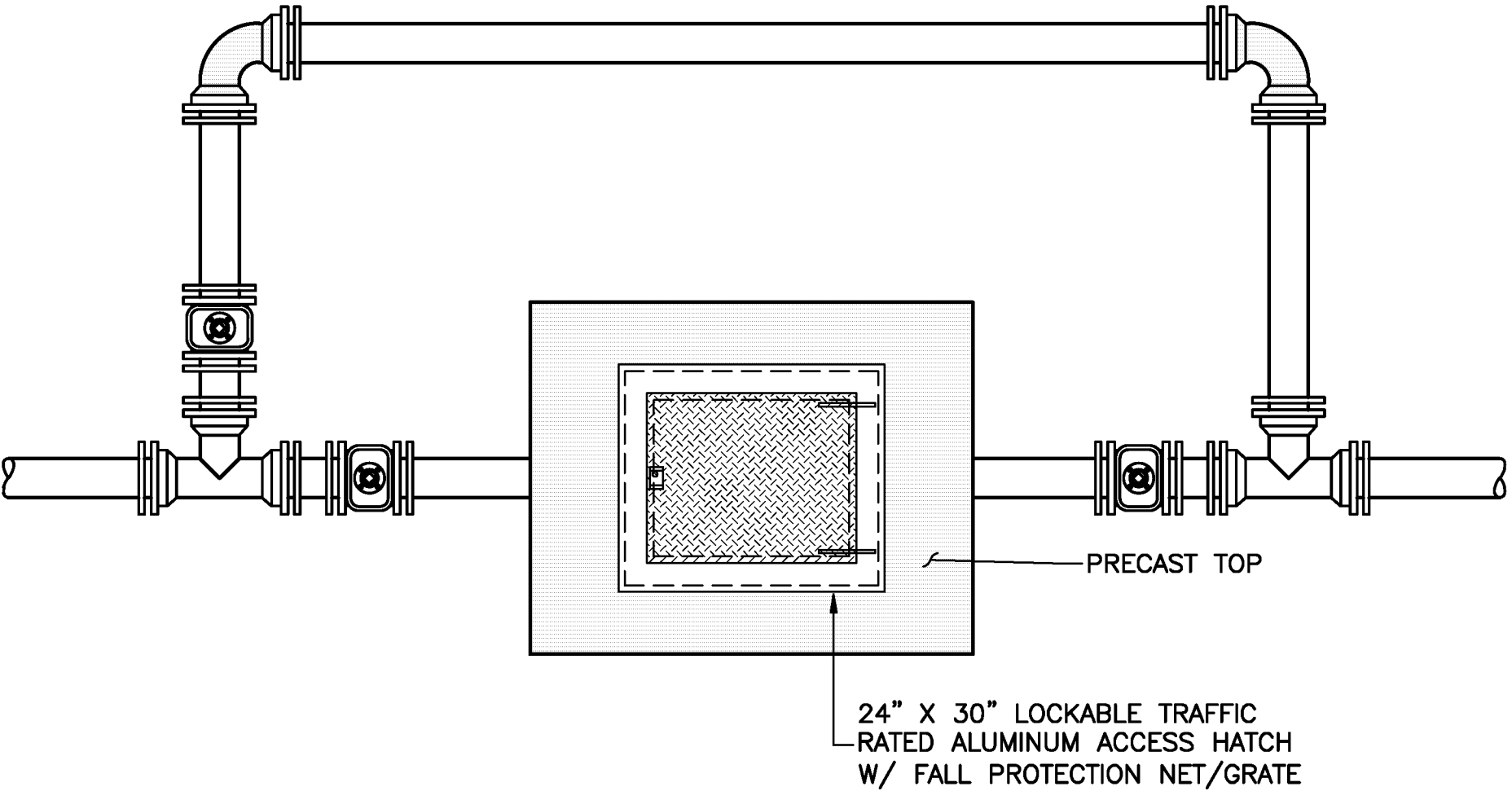
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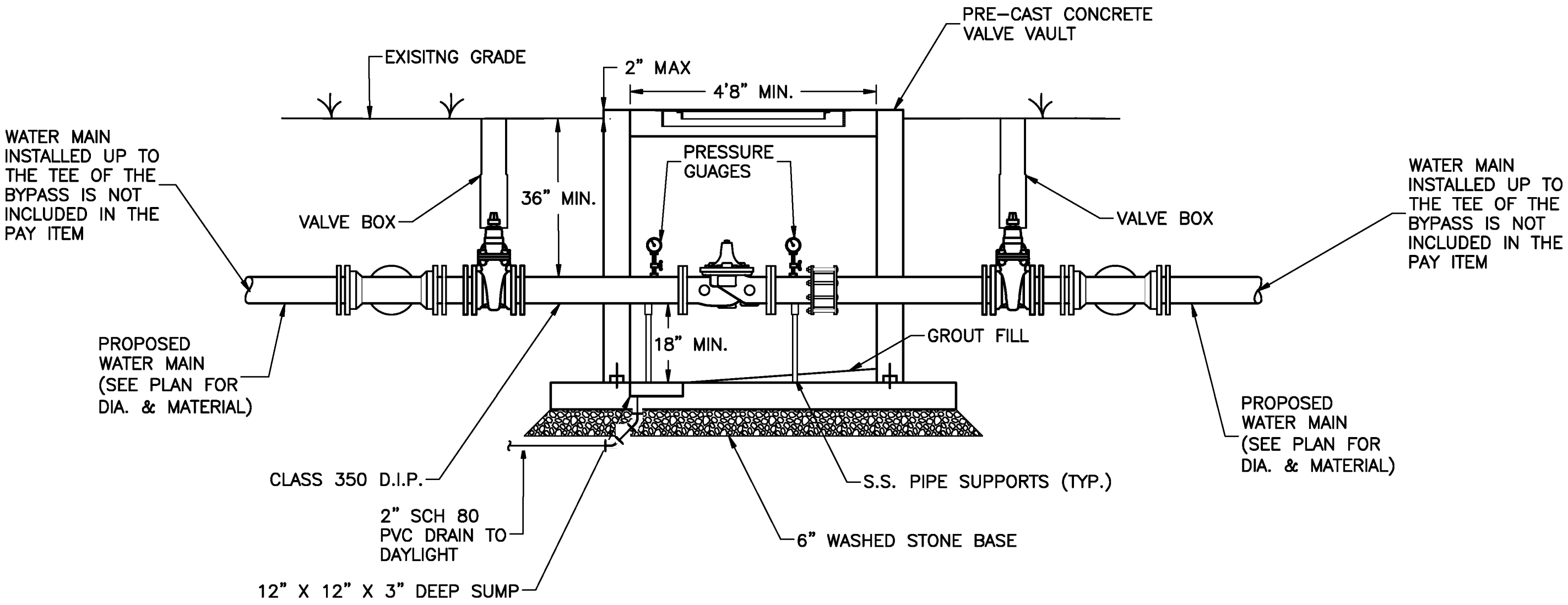
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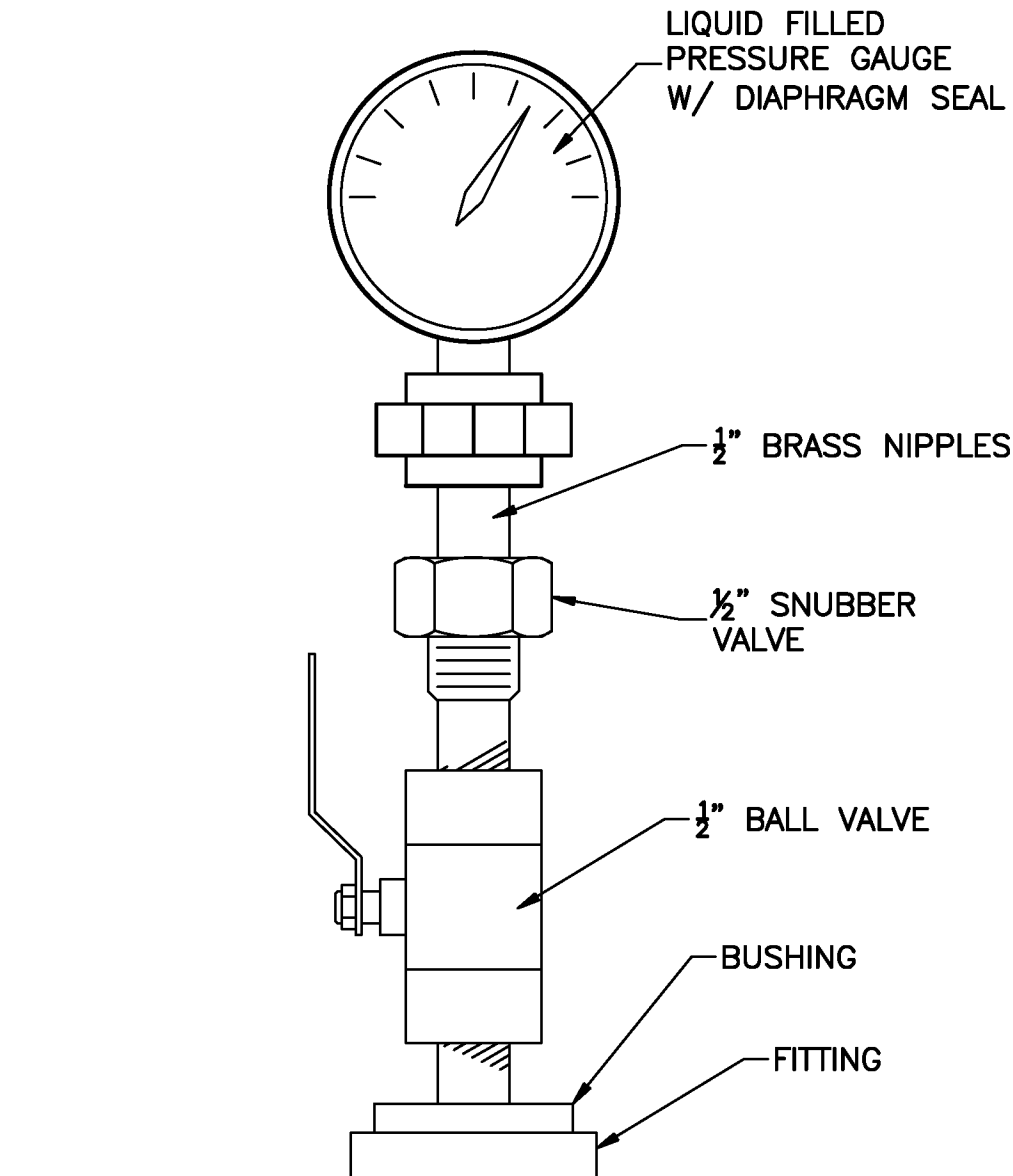
PRV PIPING PLAN VIEW
NOT TO SCALE



PRV VAULT COVER
NOT TO SCALE



PRV PIPING PROFILE VIEW
NOT TO SCALE



GAUGE ASSEMBLY DETAIL
N.T.S.

UTILITY CONSTRUCTION CITY OF RAEFORD

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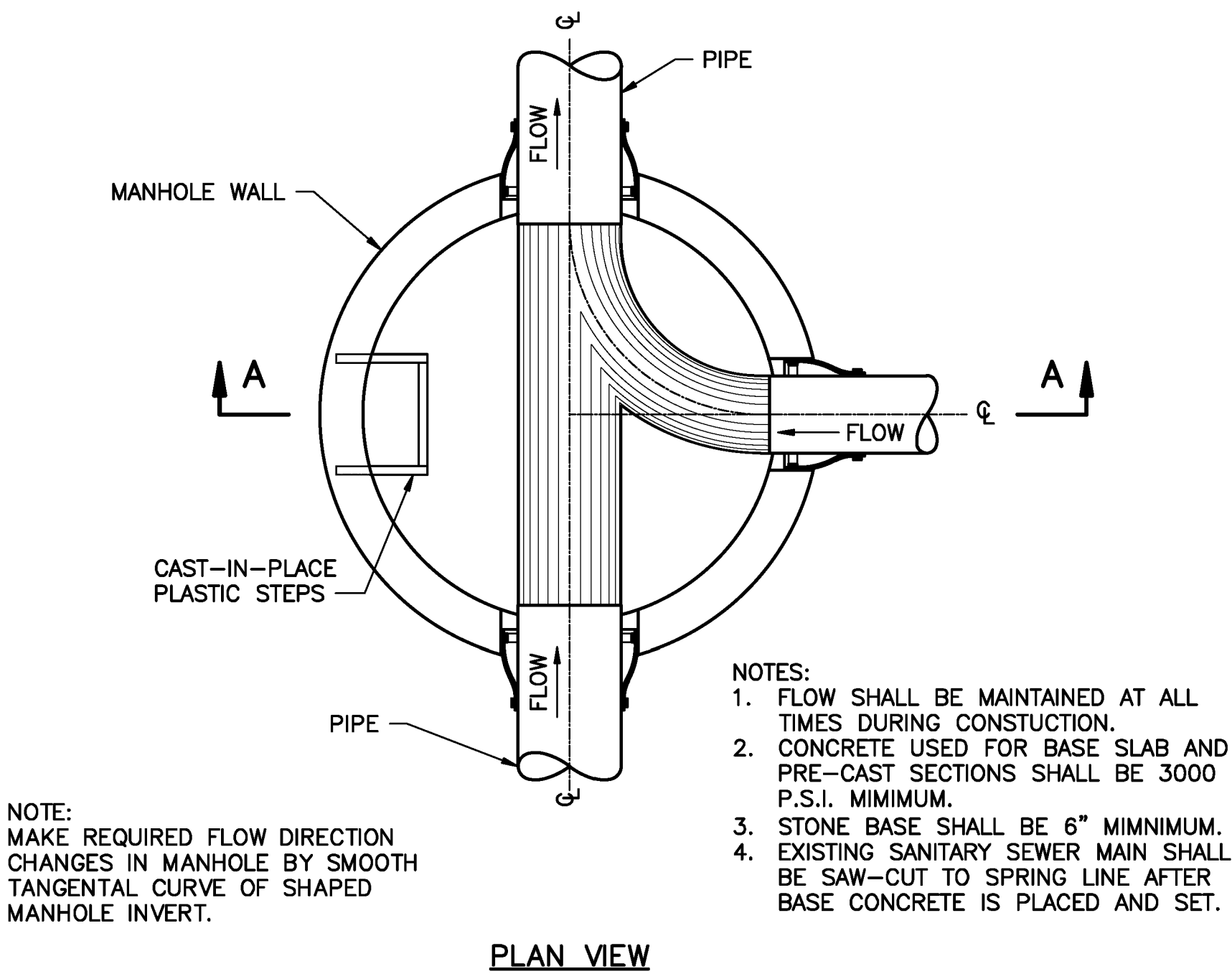
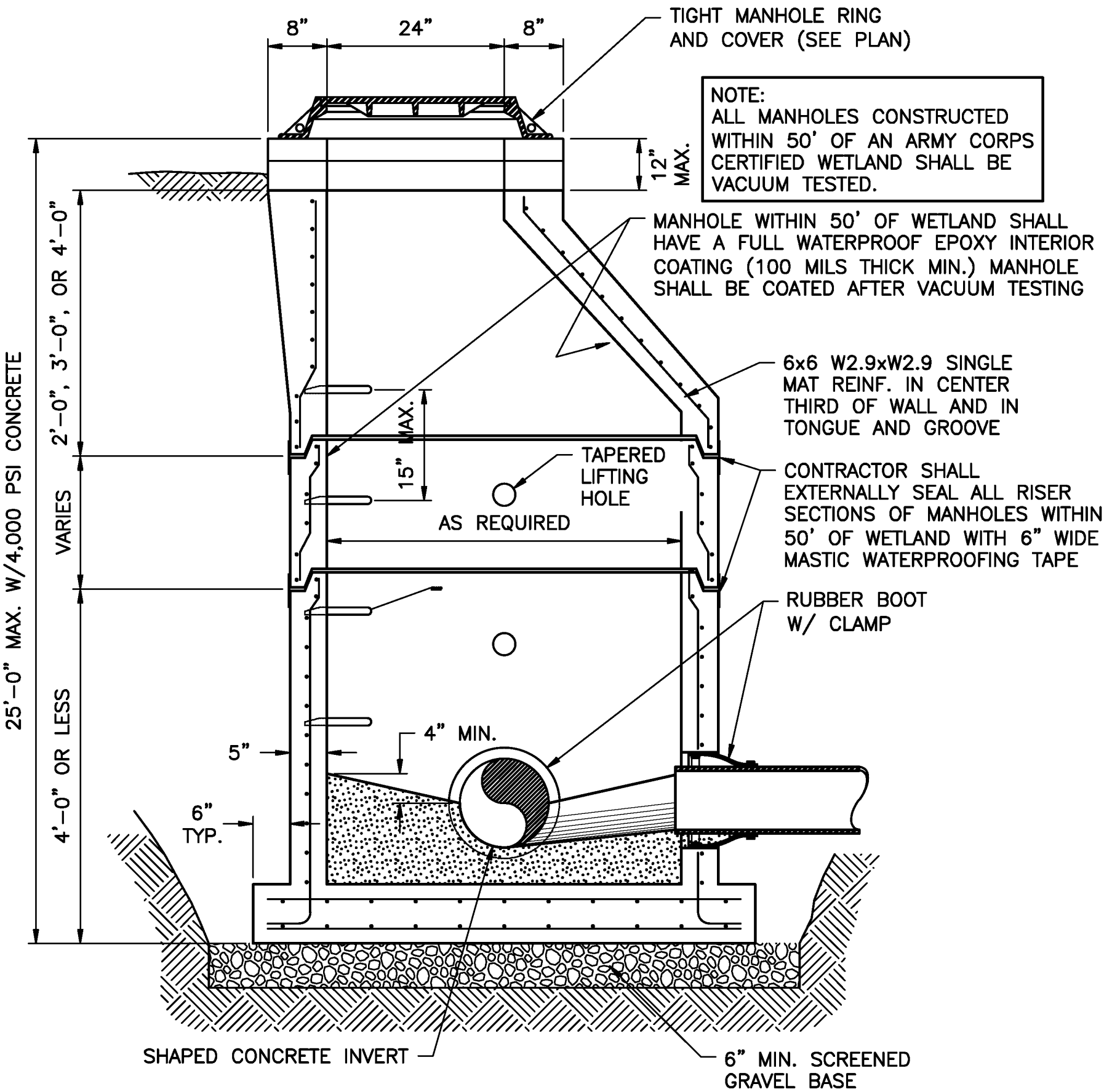
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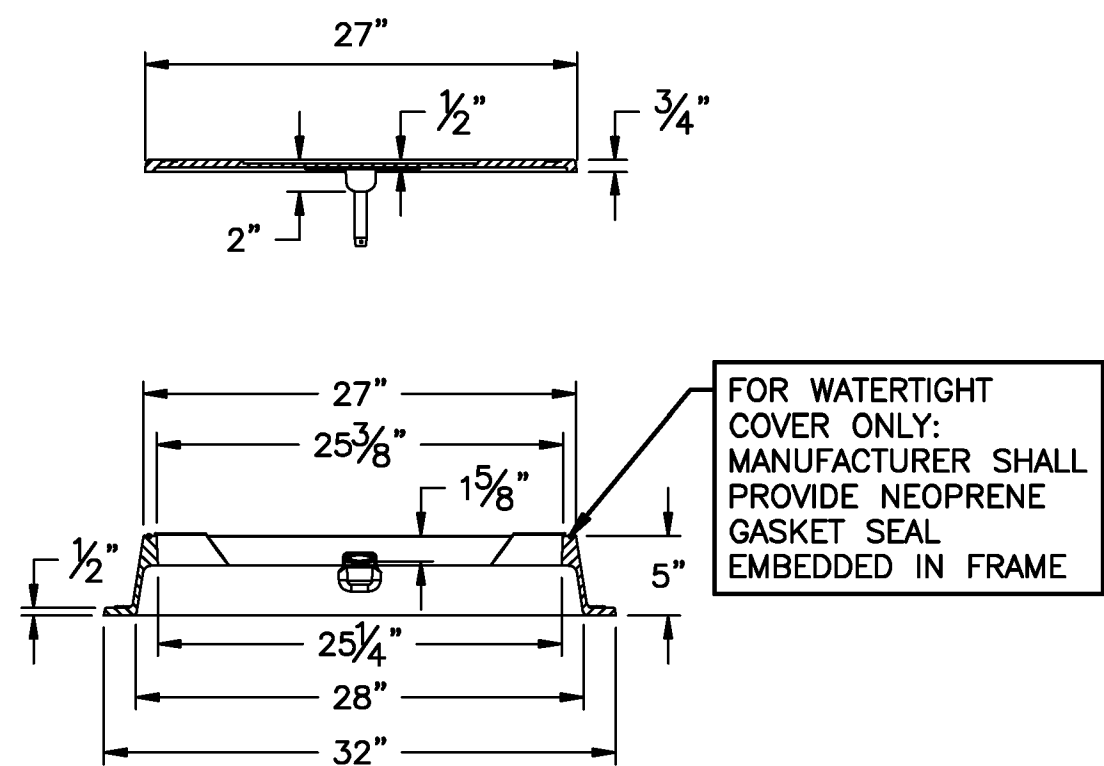
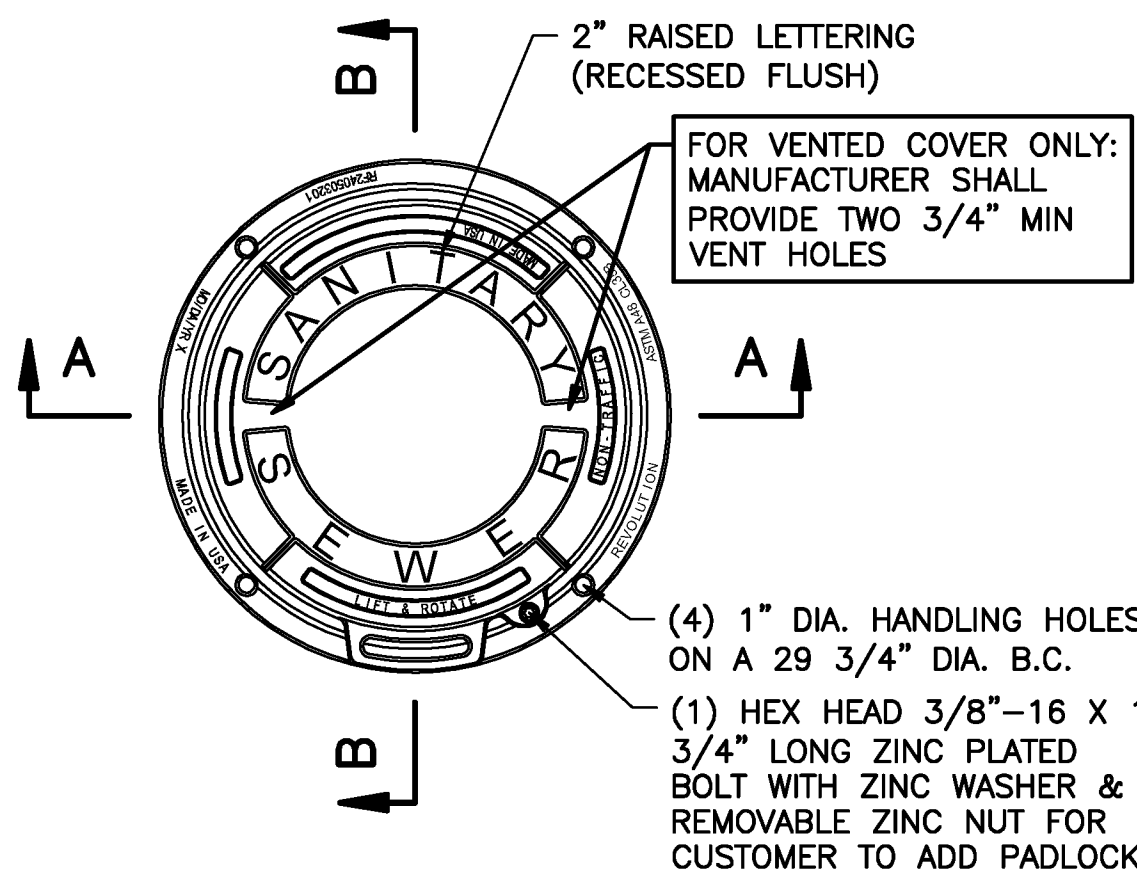
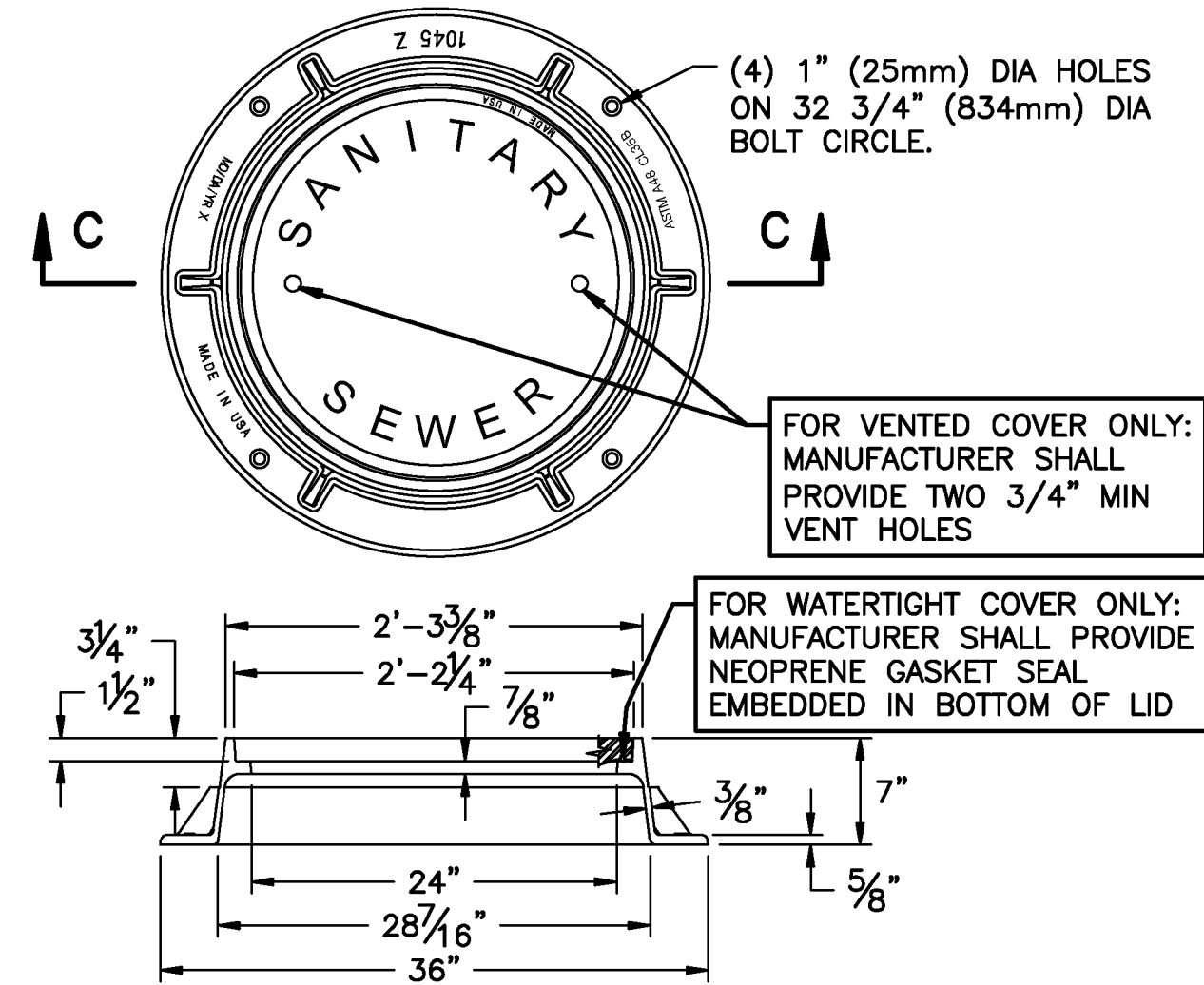
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- THE UTILITY OWNER OWNS EXISTING UTILITY FACILITIES AND WILL OWN THE NEW UTILITY FACILITIES AFTER ACCEPTANCE BY THE DEPARTMENT. THE DEPARTMENT OWNS THE CONSTRUCTION CONTRACT AND HAS ADMINISTRATIVE AUTHORITY. COMMUNICATIONS AND DECISIONS BETWEEN THE CONTRACTOR AND UTILITY OWNER ARE NOT BINDING UPON THE DEPARTMENT OR THIS CONTRACT UNLESS AUTHORIZED BY THE BY THE ENGINEER. AGREEMENTS BETWEEN THE UTILITY OWNER AND CONTRACTOR FOR THE WORK THAT IS NOT PART OF THIS CONTRACT ARE ALLOWED, BUT ARE NOT BINDING UPON THE DEPARTMENT.
- 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 OWNER'S REPRESENTATIVES INFORMED OF WORK PROGRESS AND PROVIDE OPPORTUNITY FOR INSPECTION OF CONSTRUCTION AND TESTING.
- 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.
- 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.
- 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.

PROJECT SPECIFIC NOTES:

- ALL PROPOSED WATER LINE TO BE SDR21 PVC UNLESS NOTED OTHERWISE ON PLANS. ALL DUCTILE IRON PIPE SHALL BE PC350. AND DUCTILE IRON FORCE MAIN SHALL HAVE AN EPOXY INTERIOR LINING.
- WELL IN ADVANCE OF BEGINNING UTILITY WORK, SOFT DIGS SHALL BE PERFORMED BY CONTRACTOR TO VERIFY ACTUAL WATER LINE DEPTH AND MATERIAL AT PROPOSED TIE-IN LOCATIONS.
- LAY PIPE STRAIGHT IN ALIGNMENT AND GRADIENT OR FOLLOW TRUE CURVES AS NEARLY AS POSSIBLE. DO NOT DEFLECT ANY JOINT MORE THAN THE MAXIMUM DEFLECTION RECOMMENDED BY THE MANUFACTURER.
- LKC, CITY OF RAEFORD, AND NCDOT TO REVIEW/ APPROVE RELEVANT SUBMITTALS.
- ANY SERVICE INTERRUPTIONS SHALL BE SCHEDULED FOR MINIMAL IMPACT TO CUSTOMERS AND APPROVED BY LKC, AND CITY OF RAEFORD.
- THE CONTRACTOR SHALL NOTIFY LKC AND CITY OF RAEFORD IN ADVANCE OF THE FOLLOWING ACTIVITIES:
 - START OF UTILITY CONSTRUCTION- 48 HOURS
 - MAIN LINE SERVICE INTERRUPTIONS- 96 HOURS
 - PRESSURE TESTING- 24 HOURS
 - DISINFECTION- 24 HOURS
- LKC, CITY OF RAEFORD, AND NCDOT HAVE RIGHT-OF-ENTRY TO THE PROJECT SITE.
- THE PROPOSED PIPELINE SHALL BE INSTALLED AT THE DEPTHS SHOWN IN THE PROFILE TO AVOID HIGH POINTS THAT CAN TRAP AIR. ALL COST FOR INSTALLATION IN DEEPER CUTS SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT AND SHOULD BE INCLUDED IN THE PRICE FOR FORCE MAIN AND WATER MAIN INSTALLATION.



PRECAST MANHOLE DETAIL



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PROJECT REFERENCE NO.
R-5709C

DESIGNED BY: JRM

DRAWN BY: BCS

CHECKED BY: JRM

APPROVED BY: -

REVISED: -

NORTH CAROLINA
DEPARTMENT OF
TRANSPORTATION

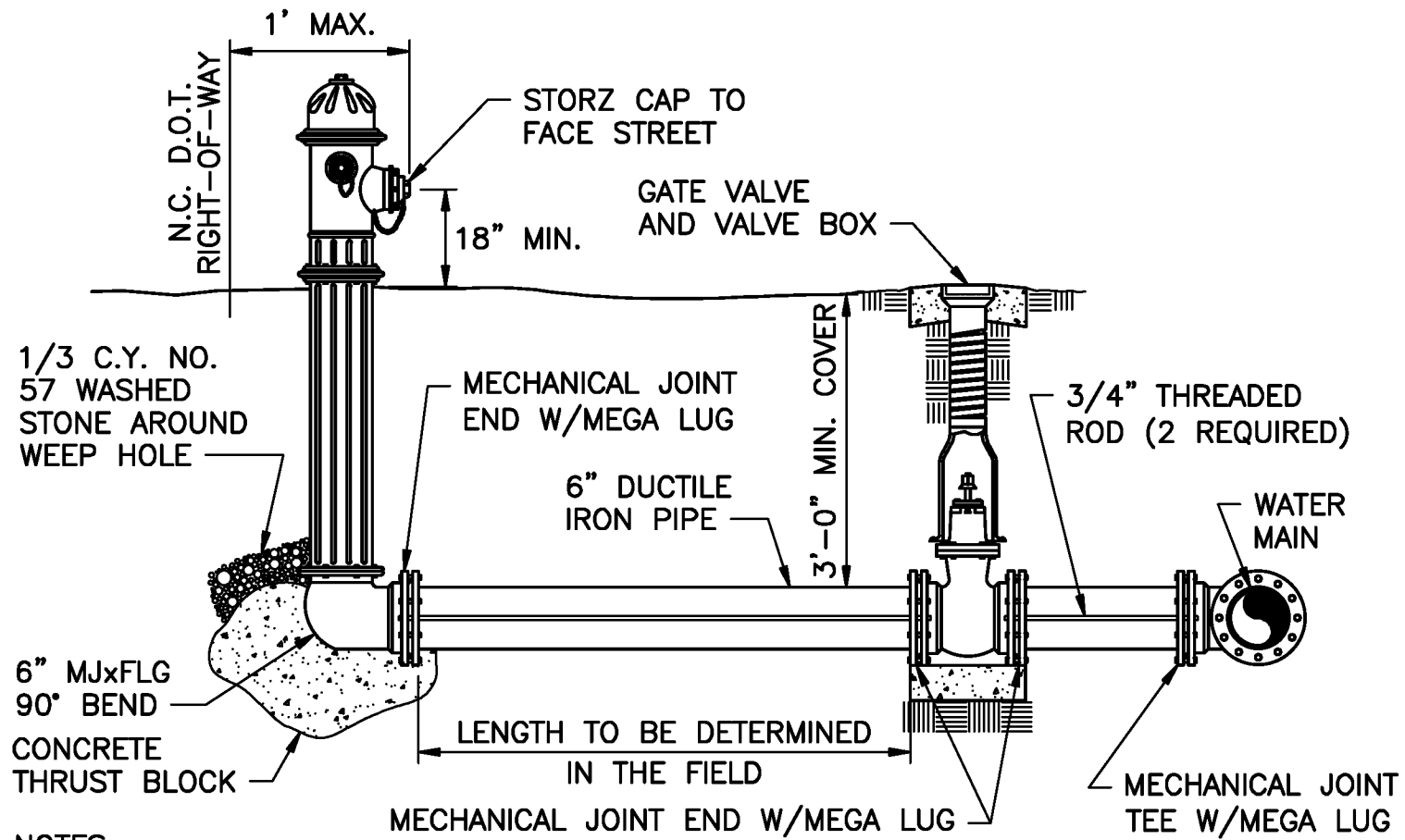
UTILITIES ENGINEERING SEC.
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FAX: (919) 250-4151

UTILITY CONSTRUCTION

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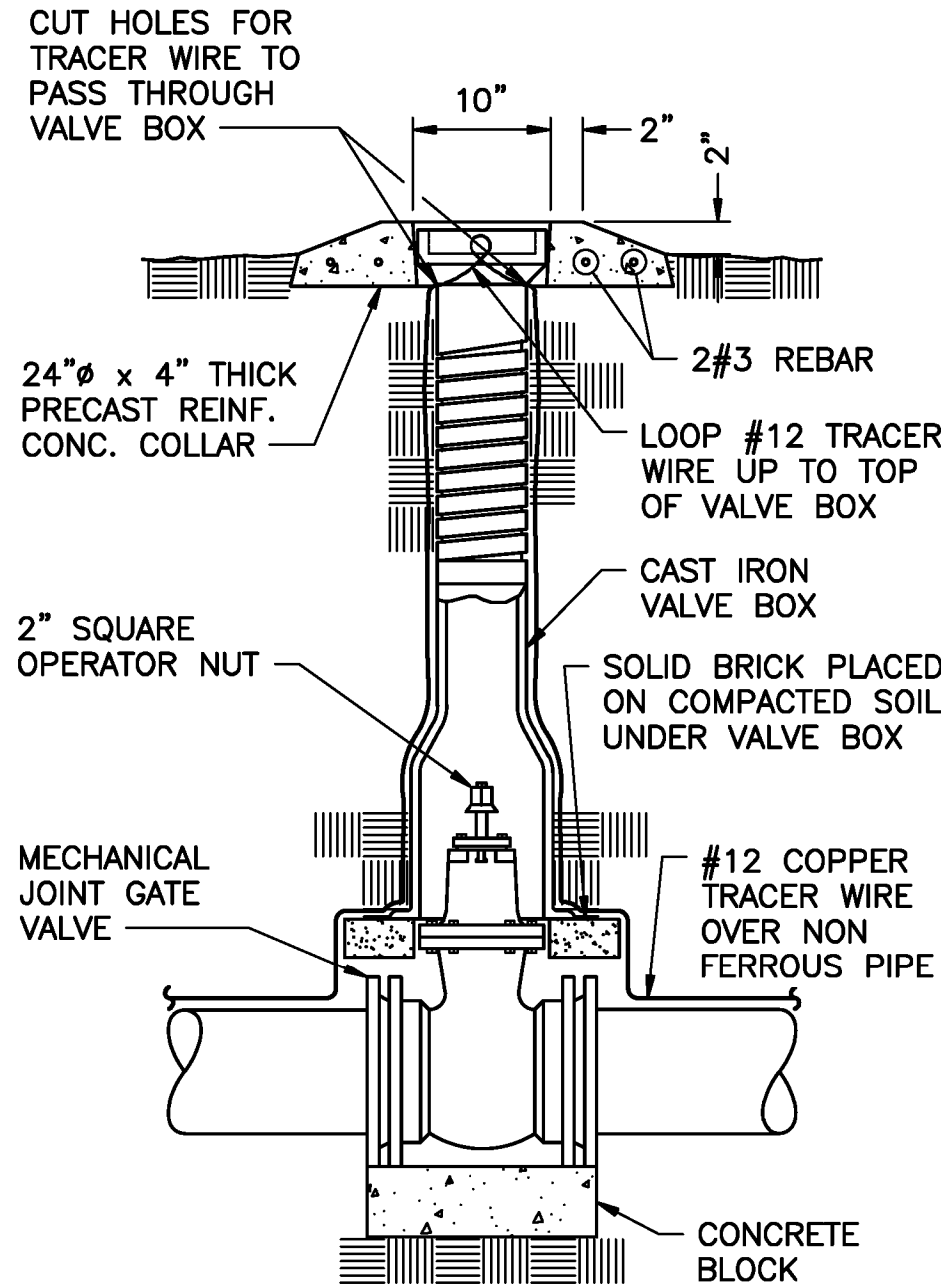
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PROFESSIONAL
SEAL
50633
ENGINEER
LOGAN J. PARSONS

DocuSigned by:
Logan Parsons
9/10/2024

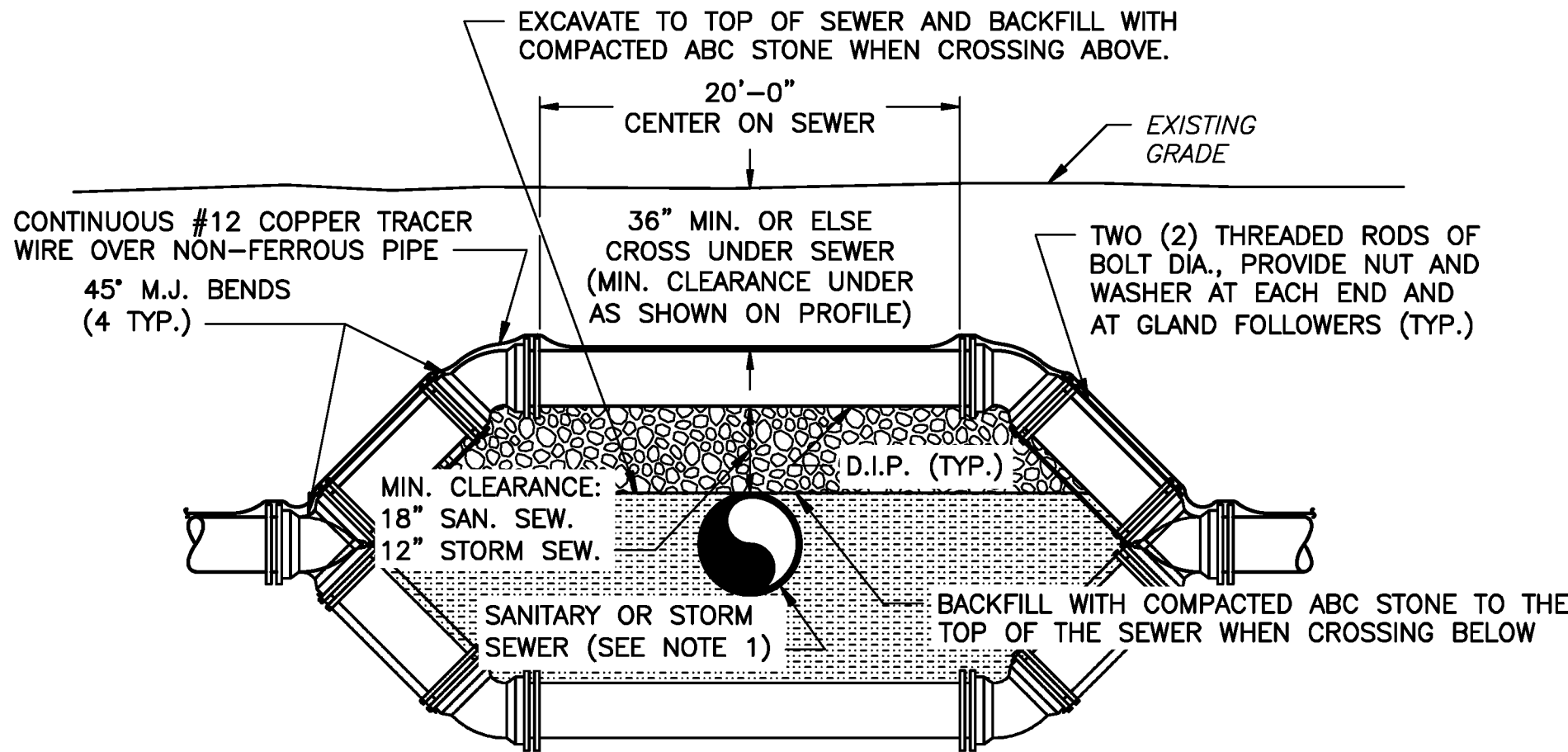


- NOTES:
1. FIRE HYDRANTS SHALL BE INSTALLED NO MORE THAN ONE FOOT WITHIN THE N.C. D.O.T. RIGHT-OF-WAY.
 2. THE DISTANCE FROM THE WATER MAIN TO THE FIRE HYDRANT VARIES. THE CONTRACTORS BID PRICE FOR FIRE HYDRANT ASSEMBLIES SHALL INCLUDE THE COST FOR THE VARYING FIRE HYDRANT LEG LENGTH.
 3. COSTS TO INSTALL THE FIRE HYDRANT TO GRADE SHALL BE PAID BY THE CONTRACTOR.

FIRE HYDRANT AND VALVE DETAIL



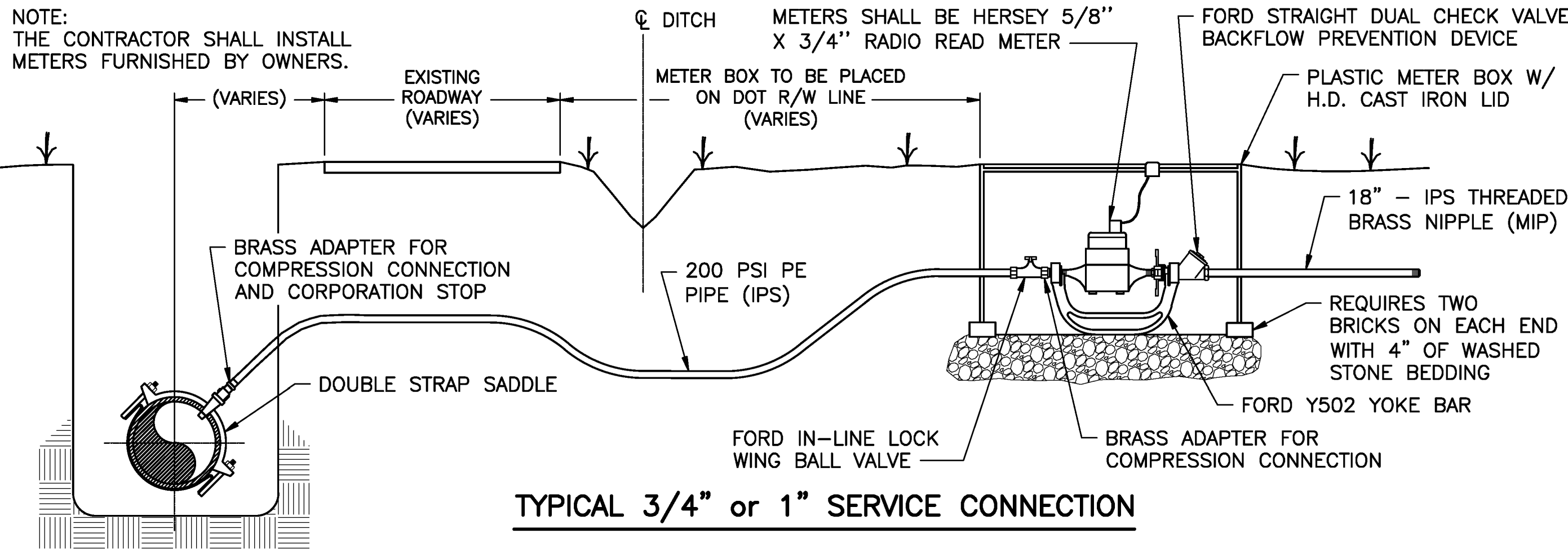
GATE VALVE ASSEMBLY



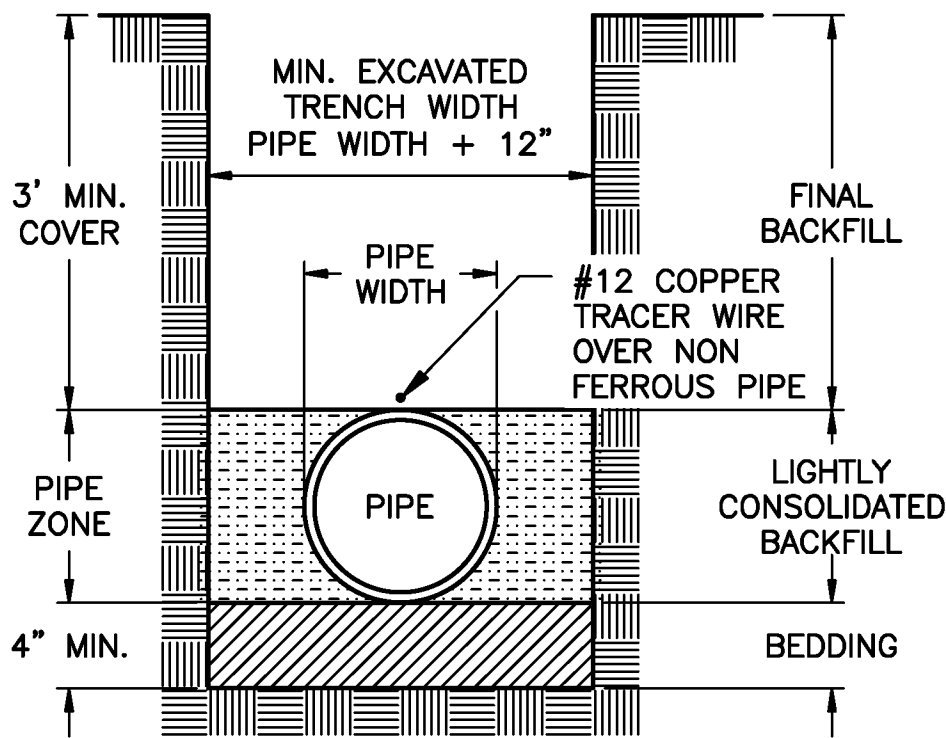
- NOTES:
1. WHEN IT IS NECESSARY FOR A WATER MAIN TO CROSS UNDER A SEWER, BOTH THE WATER MAIN AND THE SEWER SHALL BE CONSTRUCTED OF FERROUS MATERIALS AND WITH JOINTS EQUIVALENT TO WATER MAIN STANDARDS FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE POINT OF CROSSING. A SECTION OF WATER MAIN PIPE SHALL BE CENTERED AT THE POINT OF CROSSING.
 2. ALLOWABLE PIPE AND/OR JOINT DEFLECTIONS MAY BE USED IN LIEU OF BENDS TO ACHIEVE REQUIRED CLEARANCE OVER OR UNDER SEWER.

SANITARY AND STORM SEWER CROSSING DETAIL

N.T.S.



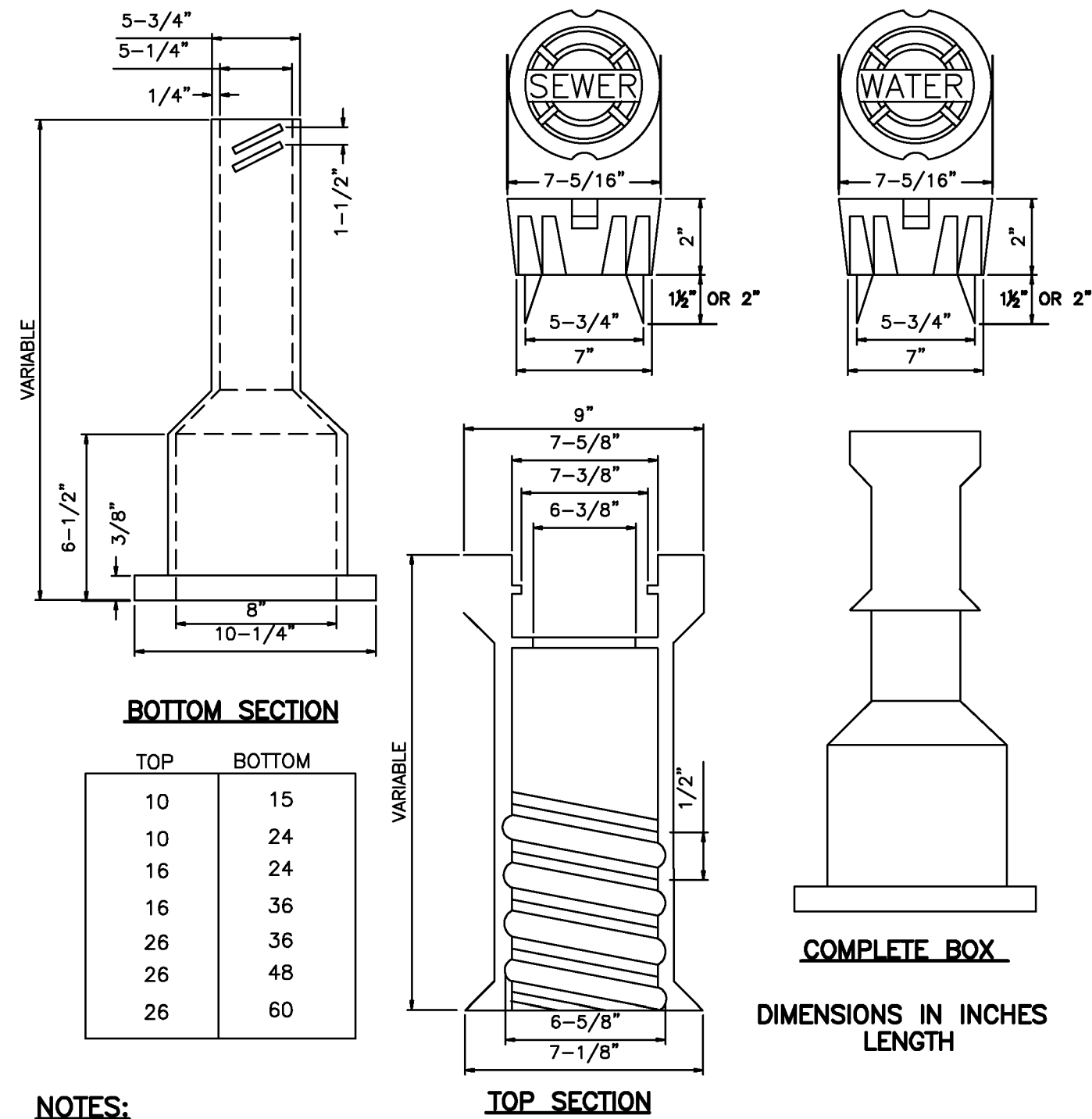
TYPICAL 3/4" or 1" SERVICE CONNECTION



- NOTES:
1. BEDDING SHALL BE 4" MINIMUM LOOSE SOIL, FREE FROM ROCKS, AND SHALL PROVIDE UNIFORM SUPPORT FOR THE FULL LENGTH OF PIPE.
 2. BACKFILL PER NCDOT STANDARDS.

TRENCH DETAIL

TYPE 3 LAYING CONDITIONS



- NOTES:
1. VALVE BOX SHALL HAVE RAISED LETTERS "SEWER" CAST INTO COVER.
 2. VALVE BOX ACCOMMODATES 4" THRU 12" VALVES.
 3. VALVE BOX SHALL HAVE 3/8" HOLE DRILLED IN TOP SECTION THRU WHICH A 1/2" X 1 1/2" GALVANIZED BOLT SHALL BE USED TO SECURE A 12GA. THHN TRACER WIRE FOR NON-FERROUS PIPE. A 1/2" WASHER SHALL BE USED BETWEEN NUT AND INSIDE OF BOX. TIGHTEN HAND TIGHT.
 4. SCREW TYPE VALVE BOXES ARE REQUIRED.
 5. DIMENSIONS SHOWN MAY VARY DEPENDING UPON THE MANUFACTURER.

VALVE BOX DETAIL

N.T.S.

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PROJECT REFERENCE NO.
R-5709C

DESIGNED BY: **JRM**

DRAWN BY: **BCS**

CHECKED BY: **JRM**

APPROVED BY: -

REVISED: -

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SHEET NO.
UC-3.8

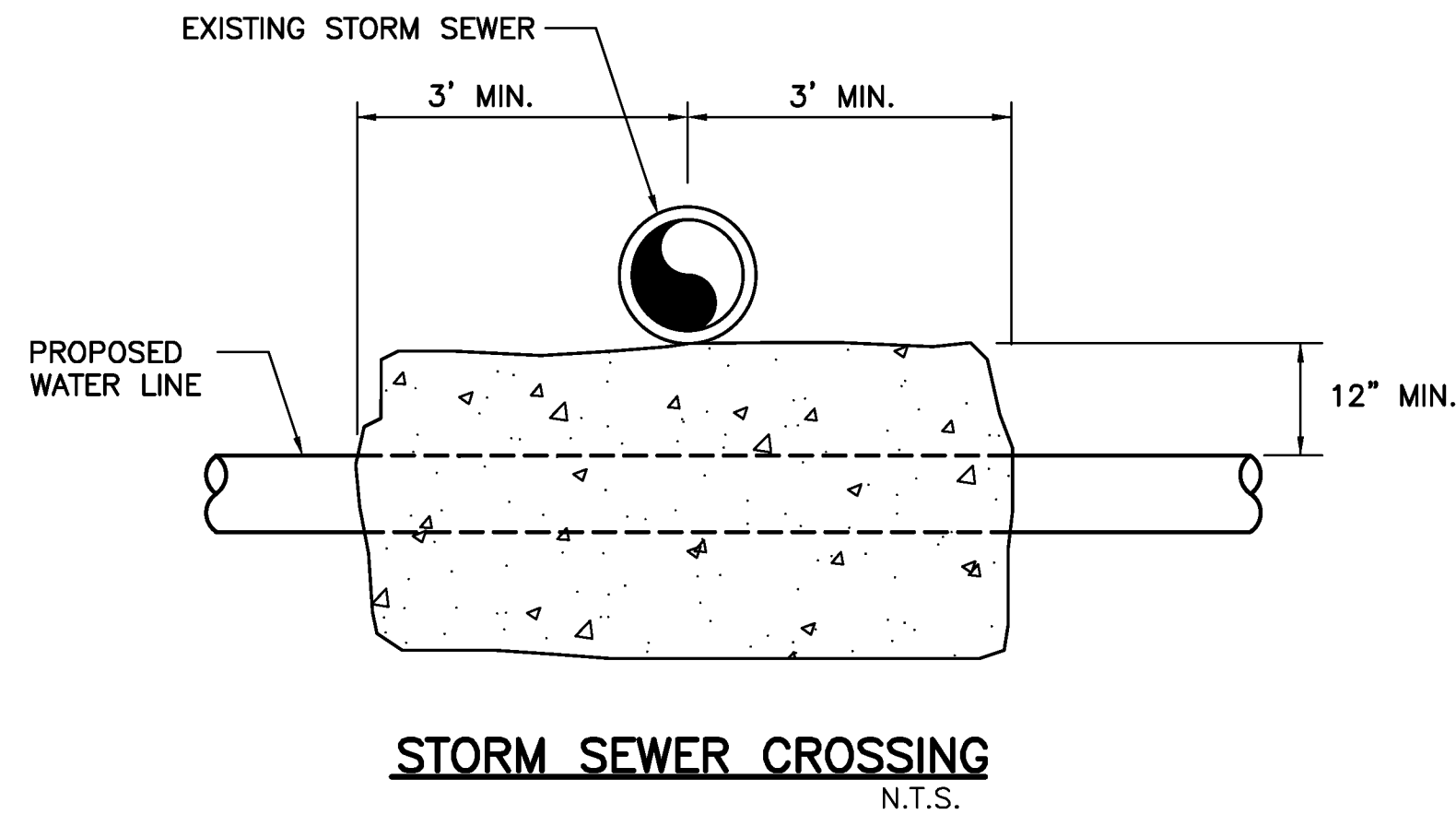
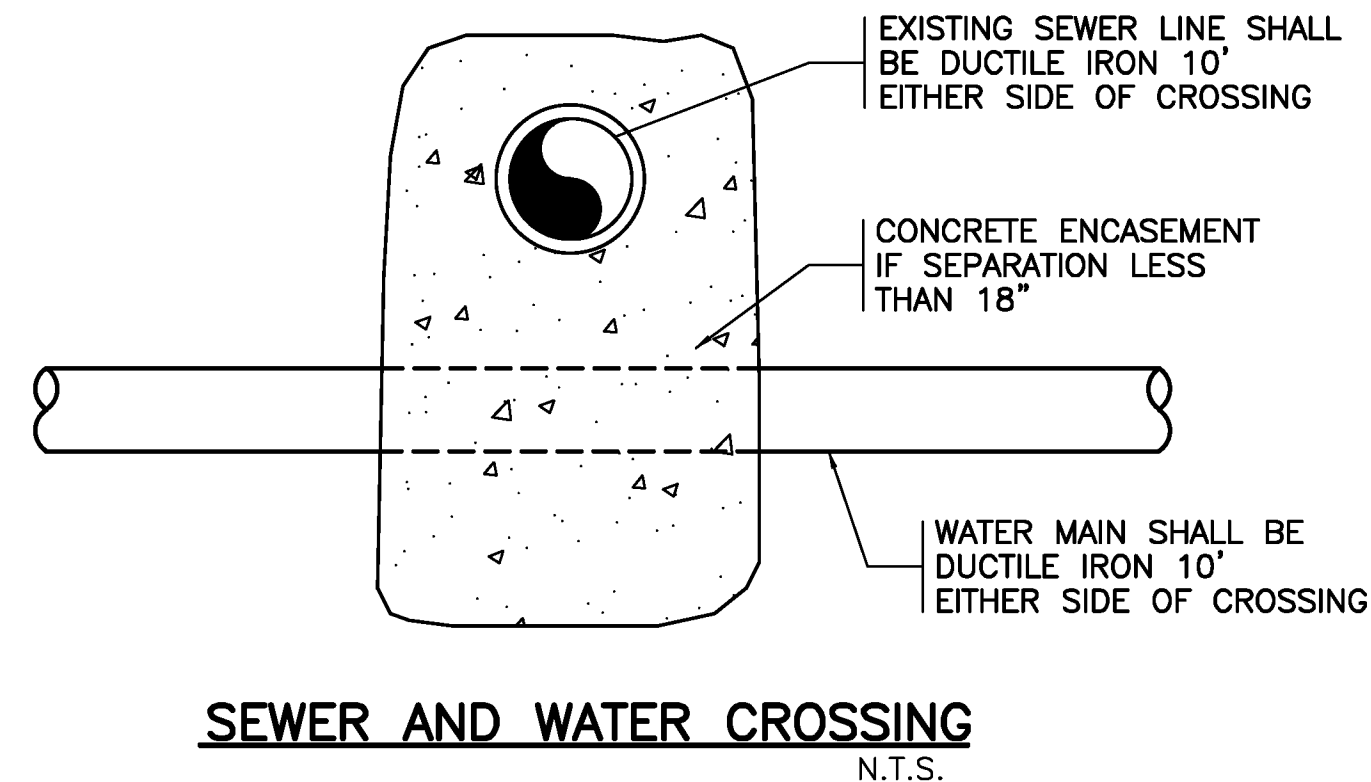
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LOGAN J. PARSONS

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Logan Parsons
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UTILITY CONSTRUCTION

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	DESIGNED BY: LJP		
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	REVISED: -		
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	UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	DocuSign A315C3397FDC465 9/10/2024	
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- VERTICAL BENDS**
N.T.S.

PROJECT TYPICAL DETAILS

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DESIGNED BY: LJP

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REVISED: -

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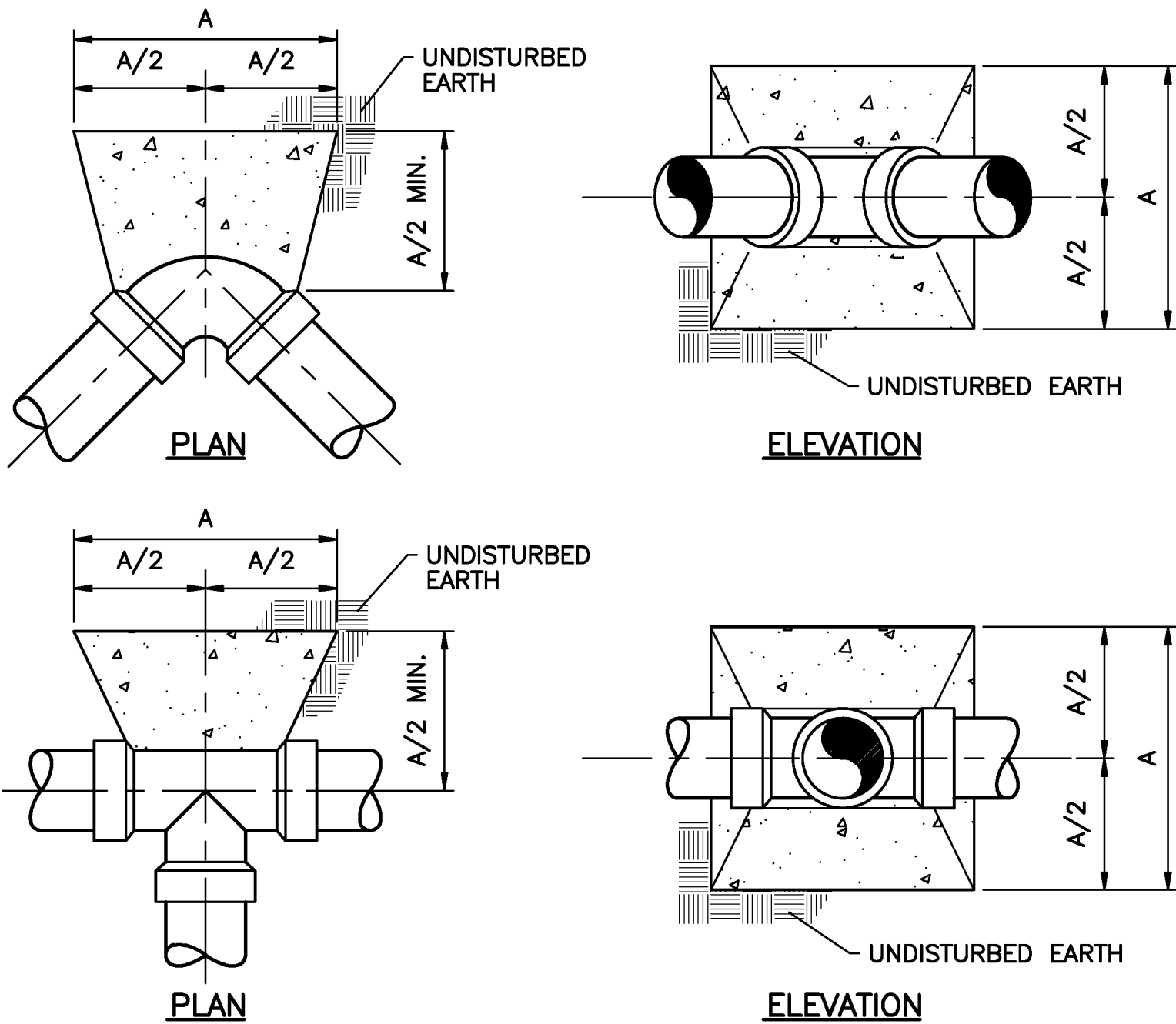
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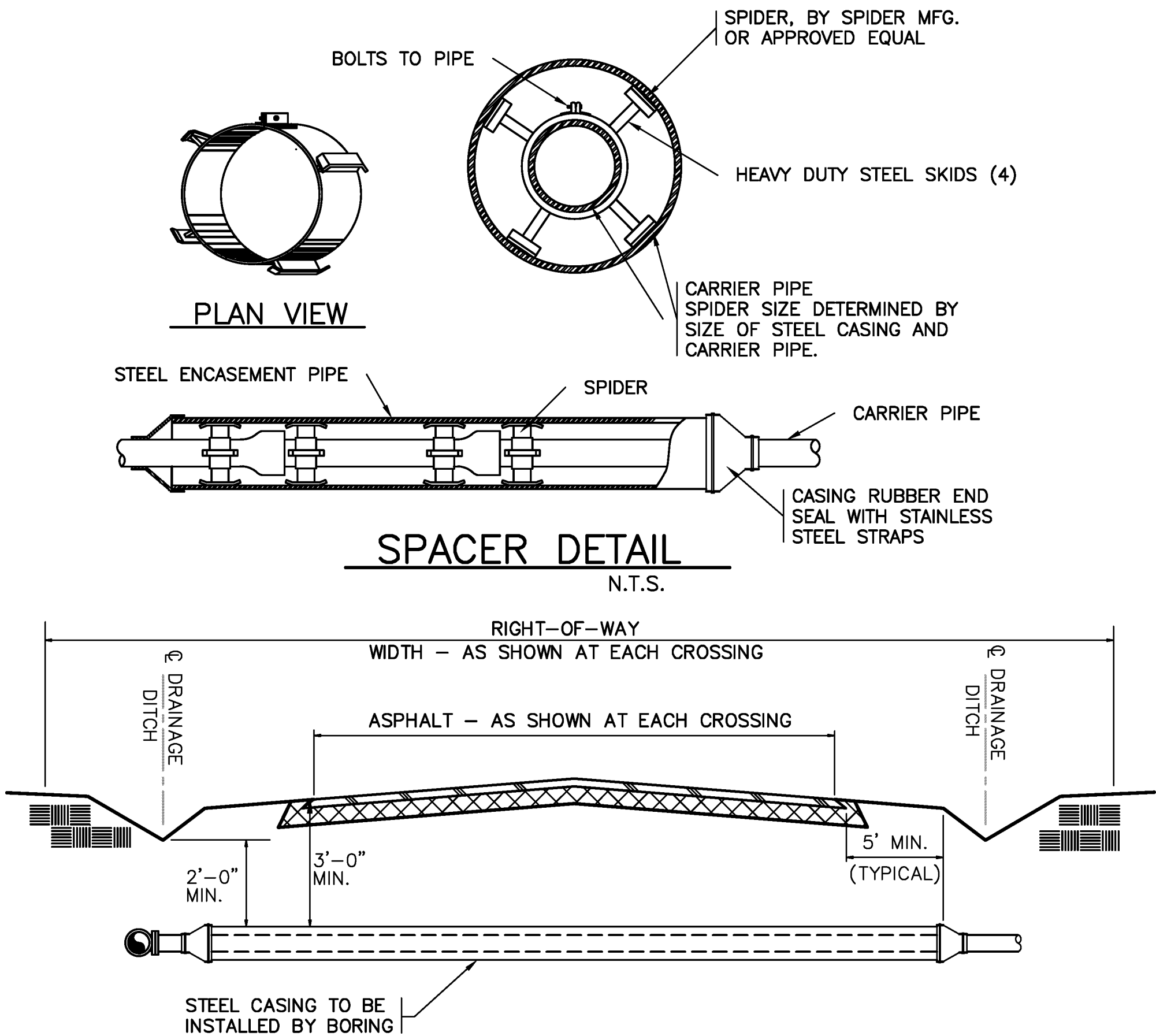
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AS15FC387EDFC485
9/10/2024



- NOTES:
- 1. THRUST BLOCKS SHALL BE CONSTRUCTED OF 2500 P.S.I. CONCRETE.
 - 2. INSTALL TAR PAPER AROUND BEND OR FITTING TO PREVENT BONDING OF CONCRETE.

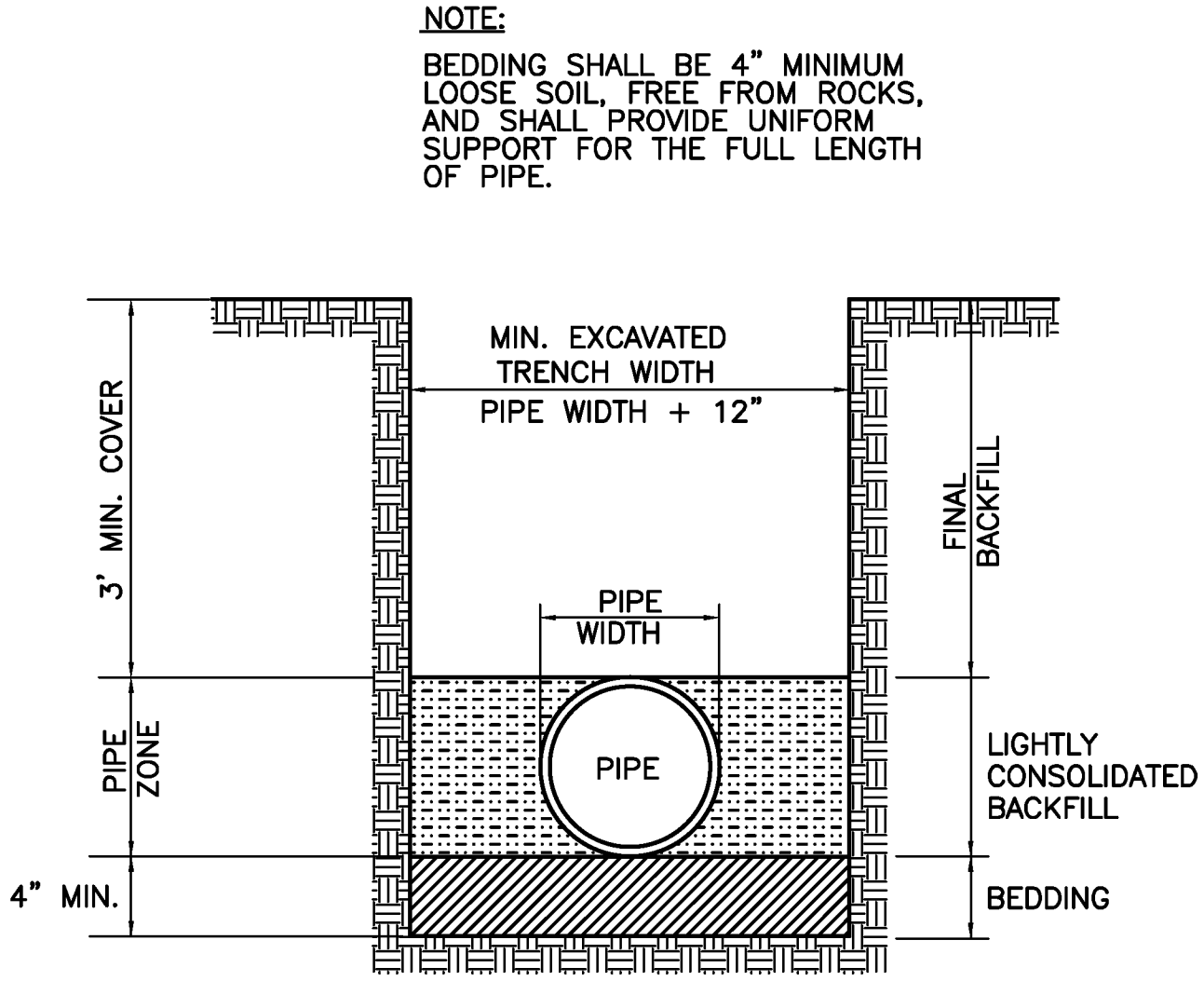
BEND / FITTING	DIMENSION A (FEET)								
	PIPE SIZE (NOM. DIA. IN INCHES)								
	4	6	8	10	12	16	18	20	24
90° BEND	1.4	2.0	2.7	3.4	4.0	5.4	6.0	6.7	8.0
45° BEND	1.0	1.5	2.0	2.5	3.0	4.0	4.5	5.0	5.9
22 1/2° BEND	0.8	1.1	1.5	1.8	2.2	2.9	3.2	3.6	4.3
11 1/4° BEND	0.5	0.8	1.0	1.3	1.5	2.0	2.3	2.5	3.0
TEE BRANCH/DEAD END	1.2	1.7	2.3	2.9	3.4	4.5	5.1	5.7	6.8

CONCRETE THRUST BLOCK DETAIL
FOR PRESSURE MAIN HORIZONTAL BENDS AND TEES
N.T.S.



TYPICAL BORING DETAIL
UNDER HIGHWAYS
N.T.S.

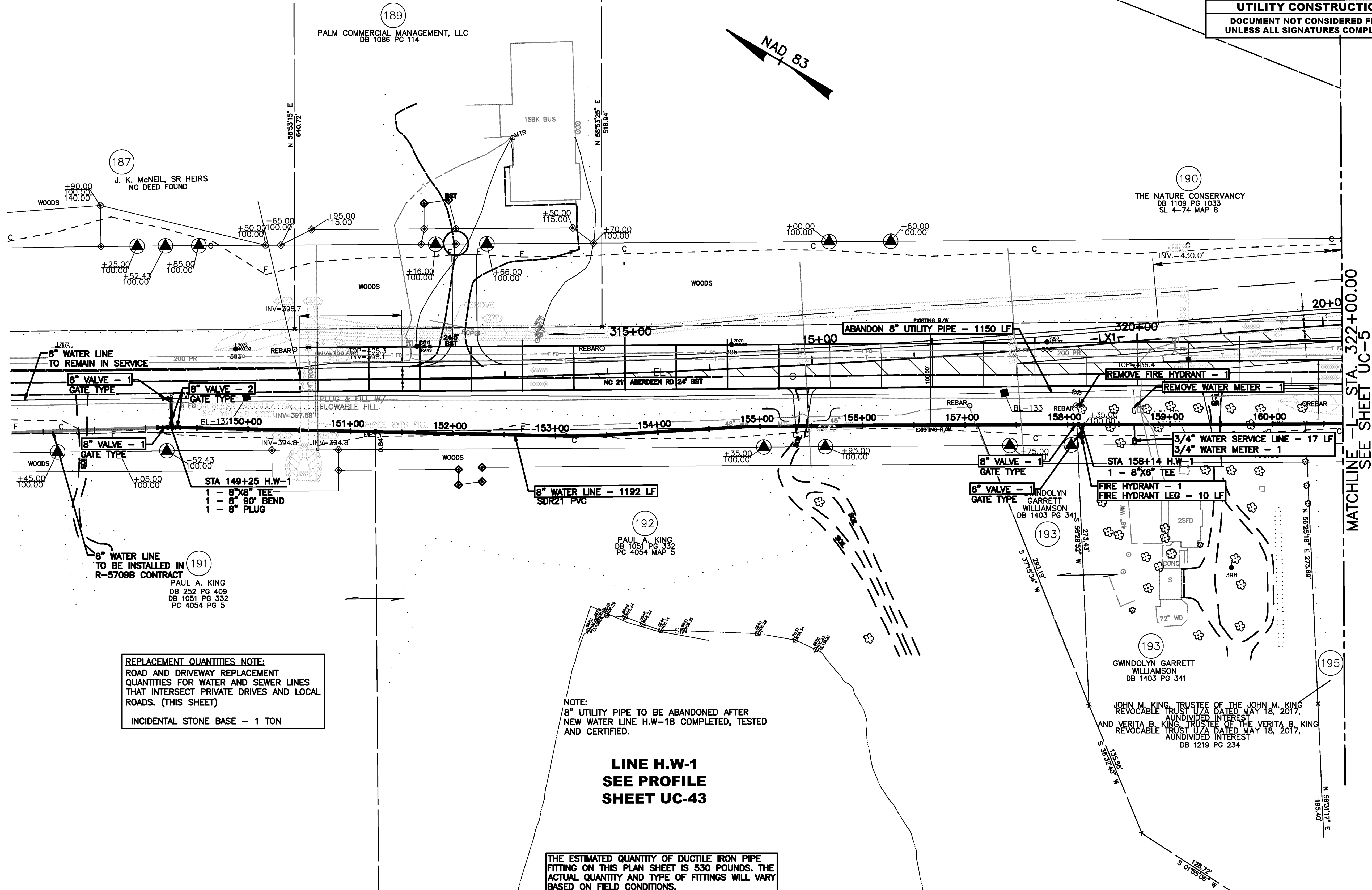
NOMINAL D.I. CARRIER PIPE DIA. (INCHES)	STEEL CASING MINIMUM O.D. (INCHES)	MIN. WALL THICKNESS FOR HIGHWAYS (INCHES)	MIN. WALL THICKNESS FOR RAILROADS (INCHES)
3	8.625	0.250	0.250
4	10.750	0.250	0.250
6	14.0	0.250	0.250
8	16.0	0.250	0.312
10	18.0	0.250	0.312
12	20.0	0.250	0.375
14	24.0	0.250	0.375
16	26.0	0.312	0.500
18	28.0	0.312	0.500
20	30.0	0.312	0.500
24	34.0	0.500	0.625



TRENCH DETAIL
TYPE 3 LAYING CONDITIONS
N.T.S.

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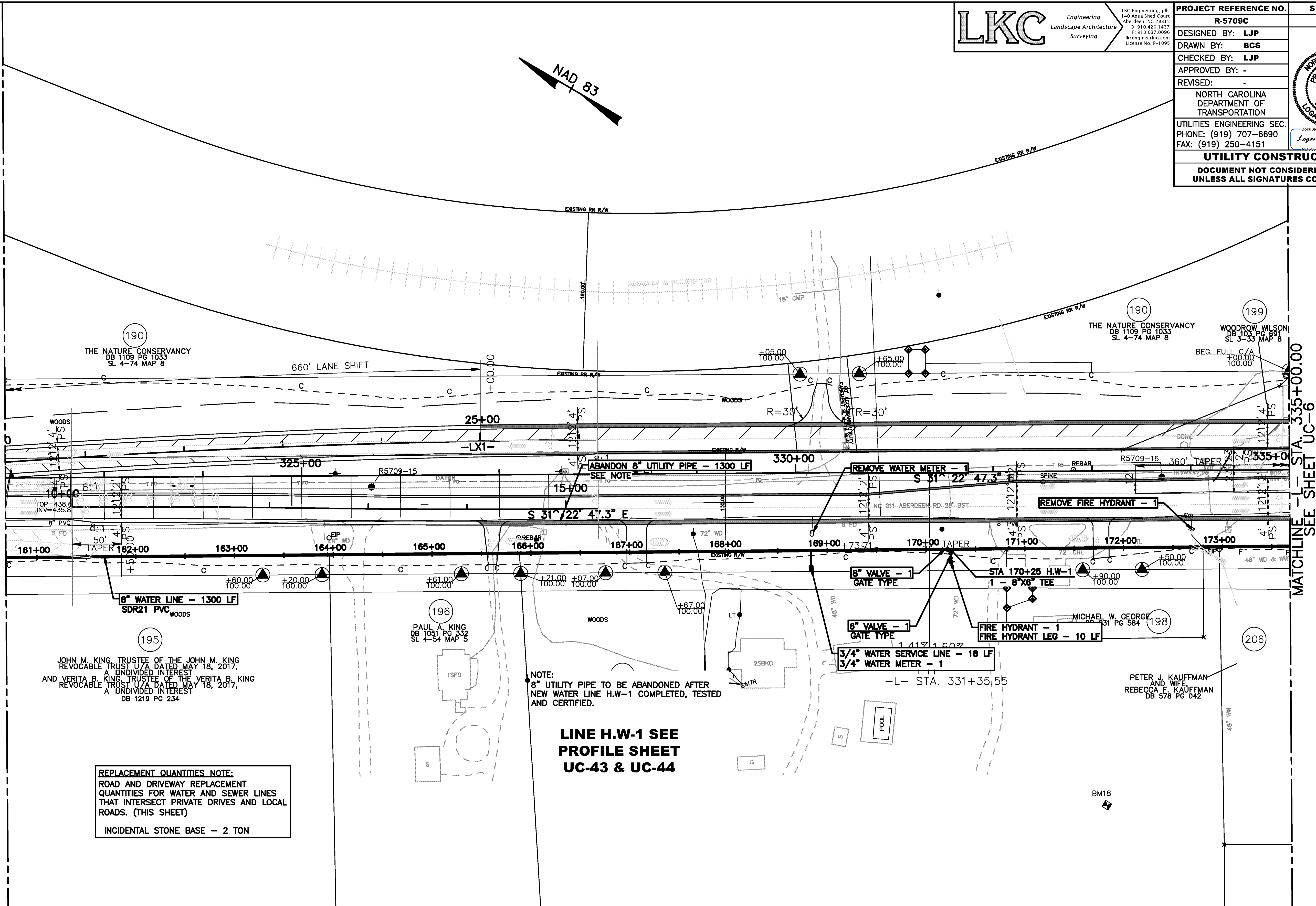


THE ESTIMATED QUANTITY OF DUCTILE IRON PIPE FITTING ON THIS PLAN SHEET IS 530 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

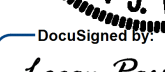
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		DESIGNED BY: LJP		
		DRAWN BY: BCS		
		CHECKED BY: LJP		
		APPROVED BY: -		
		REVISED: -		
		NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		
		UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	DocuSign Envelope ID: 8A5C9C9C-4E90-4060-9310-2910A70204 Logan Parsons Professional Engineer 9/10/2024	
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R-5709C		UC-5	
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**LINE H.W-1 SEE
PROFILE SHEET
UC-43 & UC-44**

THE ESTIMATED QUANTITY OF DUCTILE IRON PIPE FITTING ON THIS PLAN SHEET IS 175 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

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SEE SHEET UC-5

1. PORTIONS OF CASING MAY BE INSTALLED BY OPEN TRENCH METHOD WHERE APPROVED BY THE ENGINEER AND NC DOT.
2. LOCATIONS OF BORE AND RECEIVING PITS OTHER THAN AS SHOWN ON PLANS SHALL BE APPROVED BY THE ENGINEER AND NC DOT PRIOR TO THEIR EXCAVATION.
3. CASING UNDER EXISTING ROADWAY MUST BE INSTALLED BY BORE AND JACK UNLESS OTHERWISE NOTED.
4. SITE GRADING WILL CHANGE OVER THE LIFE OF THE PROJECT AND MAY REQUIRE FULL LENGTH BORE AND JACK DEPENDING UPON THE TIMING OF CASING PLACEMENT.
5. ABUTTING CASING PIPES SHALL BE JOINED WITH A CIRCUMFERENTIAL FULL PENETRATION BUTT WELD TO MAKE THEM A SINGLE WATERTIGHT CASING. WELDS MUST NOT OBSTRUCT CARRIER PIPE SPIDERS. SEE TYPICAL BORING DETAIL UNDER HIGHWAYS. SHEET UC-3.26

ROAD AND DRIVEWAY REPLACEMENT
QUANTITIES FOR WATER AND SEWER LINES
THAT INTERSECT PRIVATE DRIVES AND LOCAL
ROADS. (THIS SHEET)

ASPHALT PLANT MIX, PAVEMENT REPAIR
(FULL DEPTH DRIVEWAY) - 7 TON

INCIDENTAL STONE BASE - 5 TON

NOTE:
8" UTILITY PIPE TO BE ABANDONED AFTER
NEW WATER LINE H.W-1 COMPLETED, TESTED
AND CERTIFIED.

**LINE H.W-1
SEE PROFILE
SHEET UC-44**

THE ESTIMATED QUANTITY OF DUCTILE IRON PIPE
FITTING ON THIS PLAN SHEET IS 1,000 POUNDS.
THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL
VARY BASED ON FIELD CONDITIONS.

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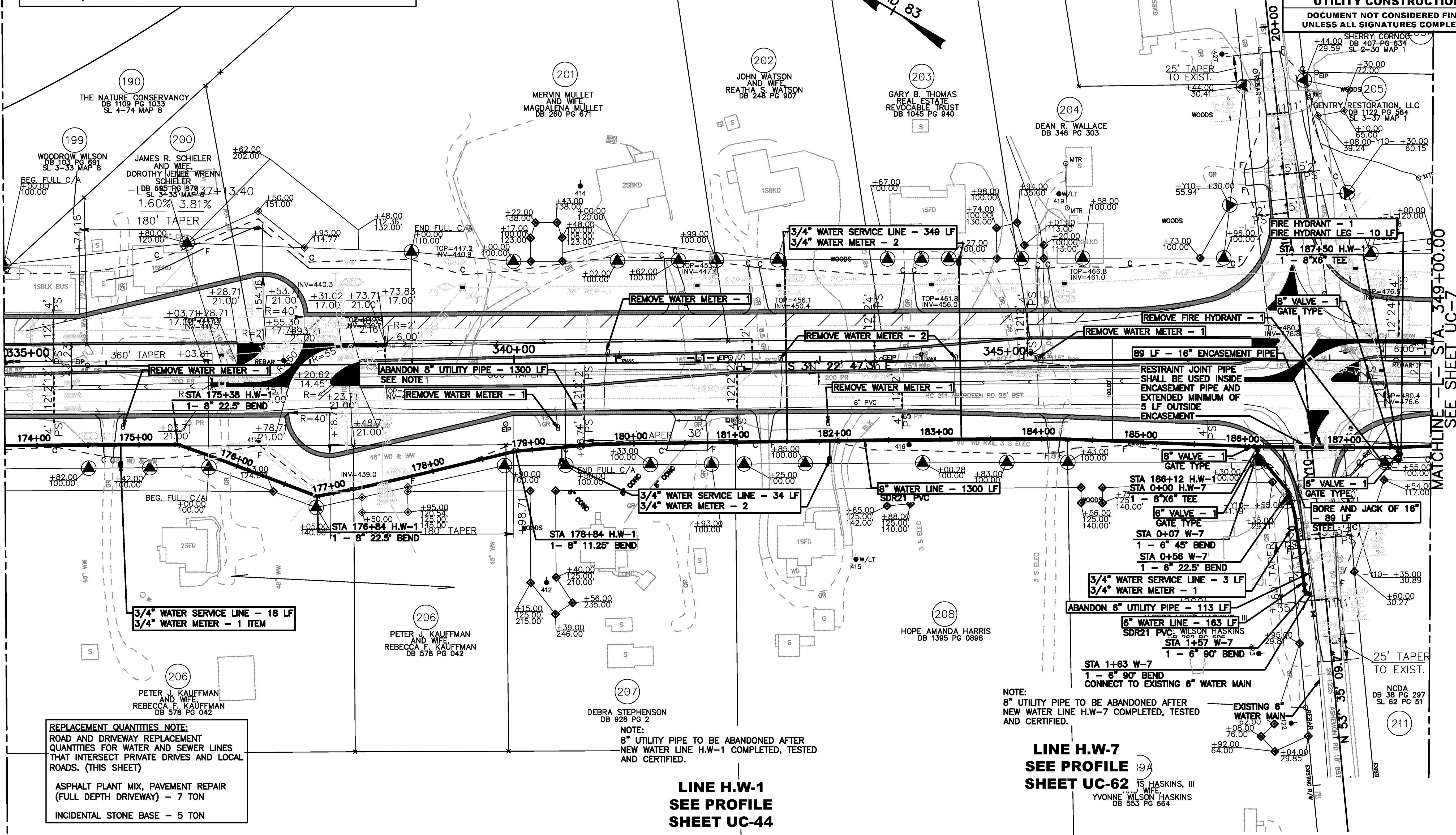
PROJECT REFERENCE NO.	
R-5709C	
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UTILITY CONSTRUCTION

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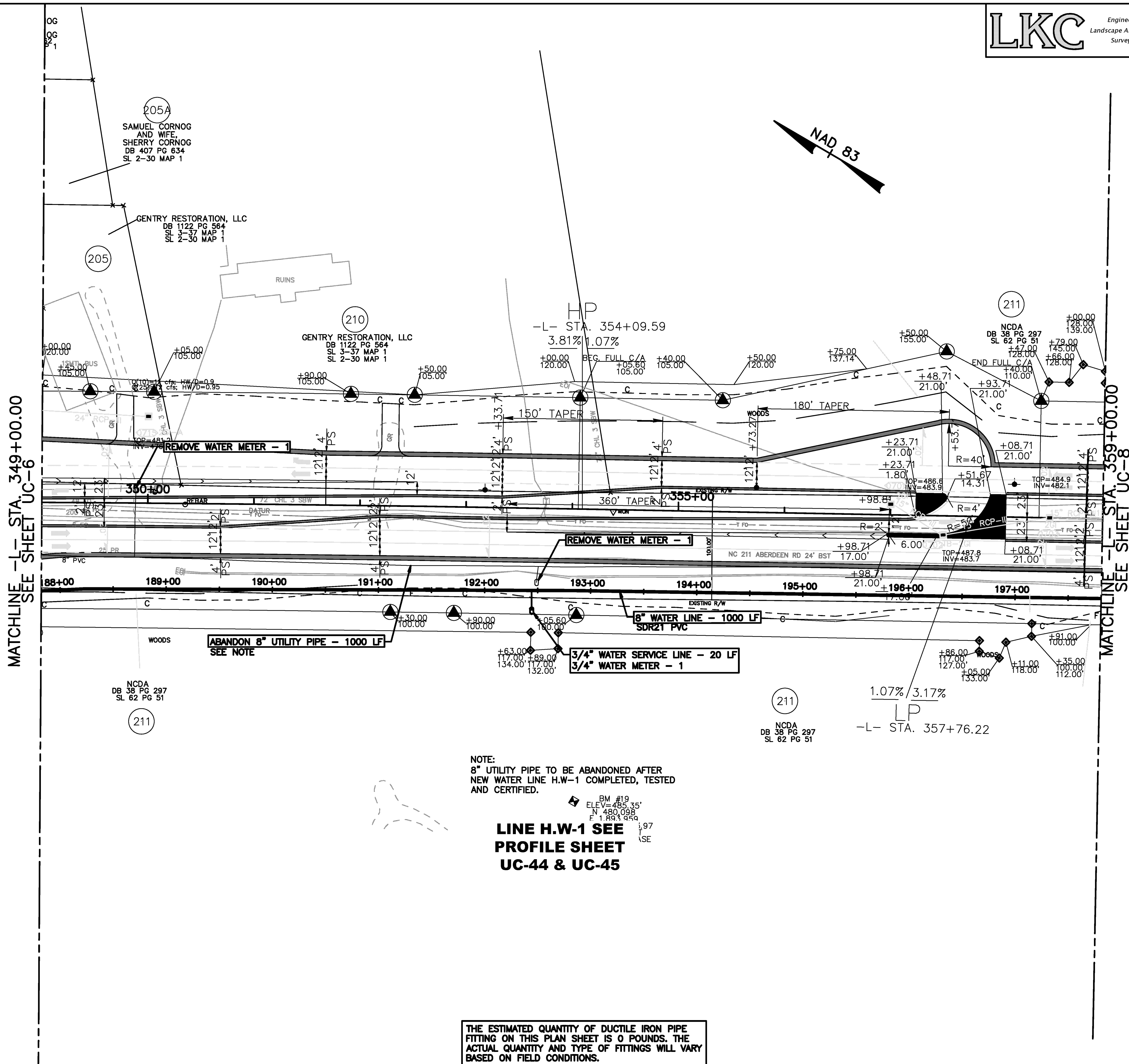
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9/10/2022



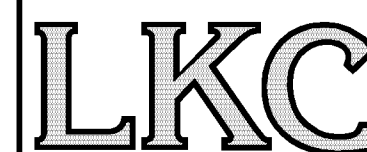
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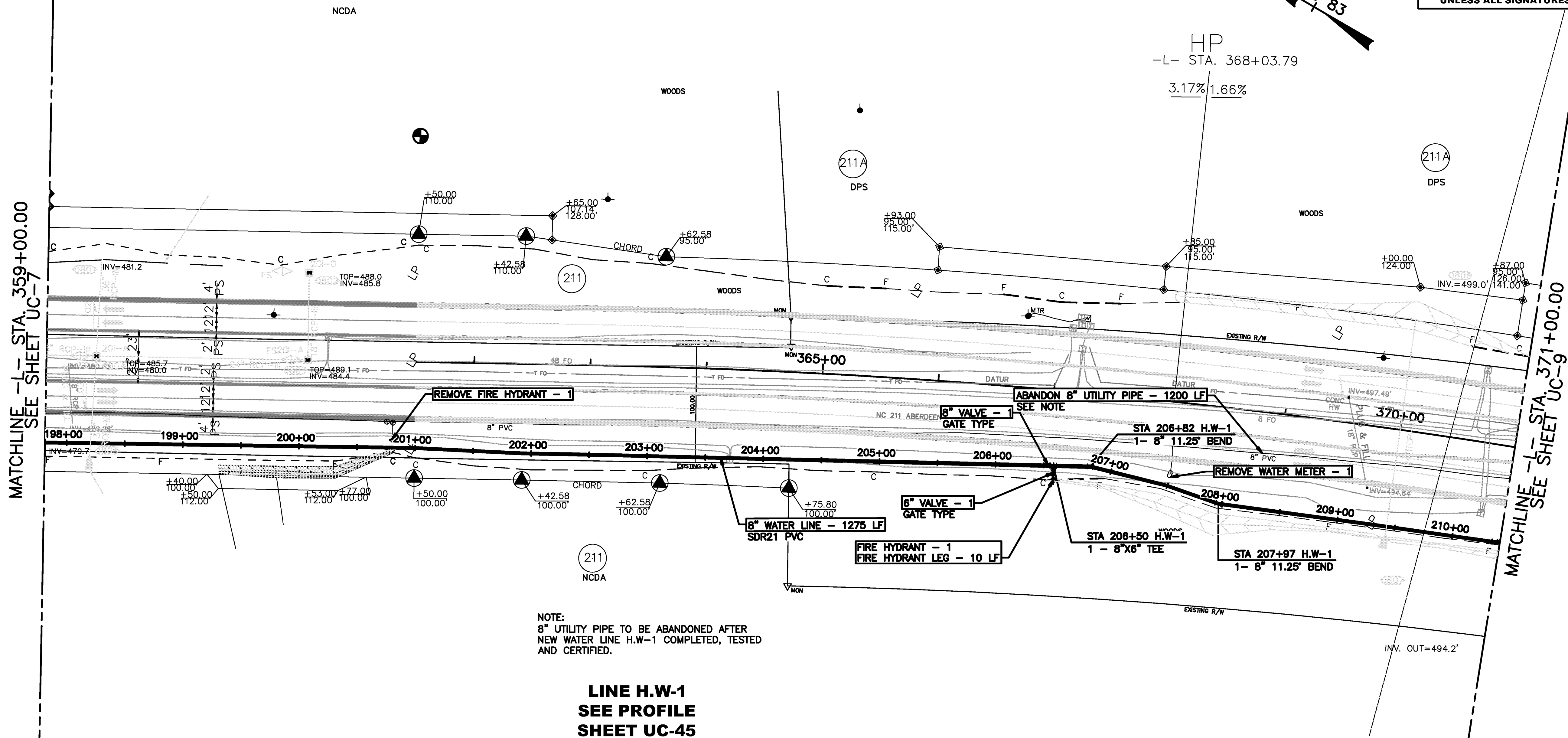


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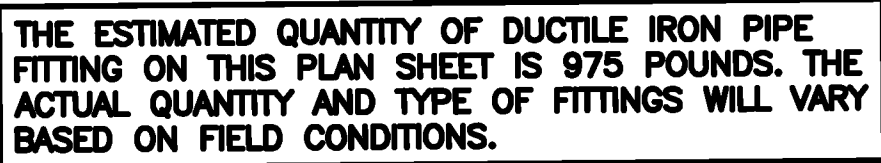
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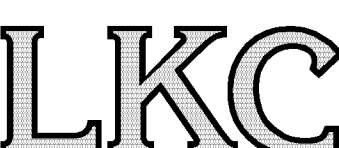
PROJECT REFERENCE NO. R-5709C	SHEET NO. UC-7
	DESIGNED BY: LJP
	DRAWN BY: BCS
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	APPROVED BY: -
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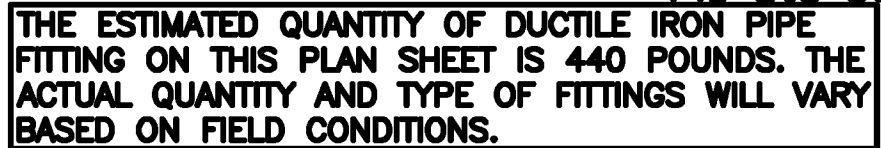
 LKC Engineering Landscape Architecture Surveying LKC Engineering, PLLC 140 Aqua Shed Court Aberdeen, NC 28315 O: 910.420.1437 F: 910.637.0006 lkceengineering.com License No. P-1095	PROJECT REFERENCE NO. R-5709C		SHEET NO. UC-8	
	DESIGNED BY: LJP		 DocuSign Envelope ID: A315C628-97D04F65 9/10/2024	
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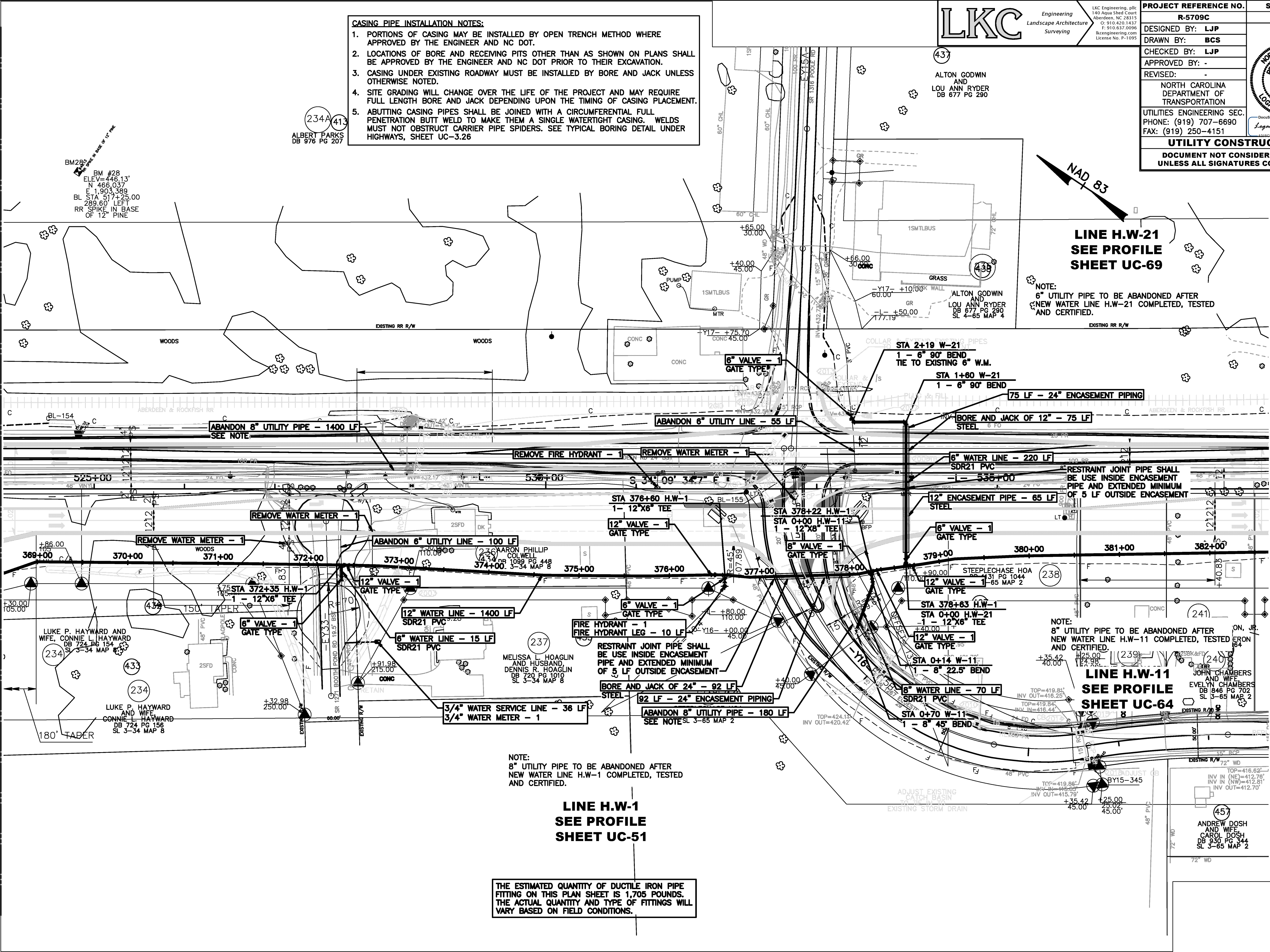


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	DESIGNED BY: LJP DRAWN BY: BCS CHECKED BY: LJP APPROVED BY: - REVISED: - NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	 DocuSigned by <i>Logan Parsons</i> /s/LOGANJPARSONS 9/10/2024	
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Pls Sta 509+24.05
IRON PIPE 47.0"

MATCHLINE -L- STA. 524+00.00 SEE SHEET UC-19



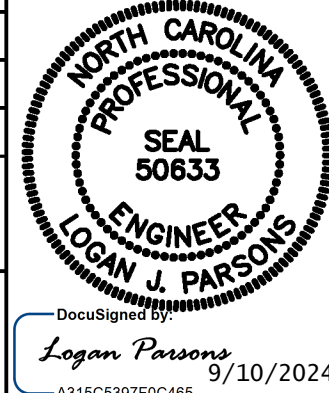
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LKC

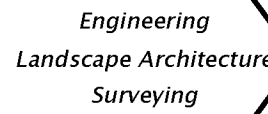
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UTILITY CONSTRUCTION
DOCUMENT NOT CONSIDERED FINAL
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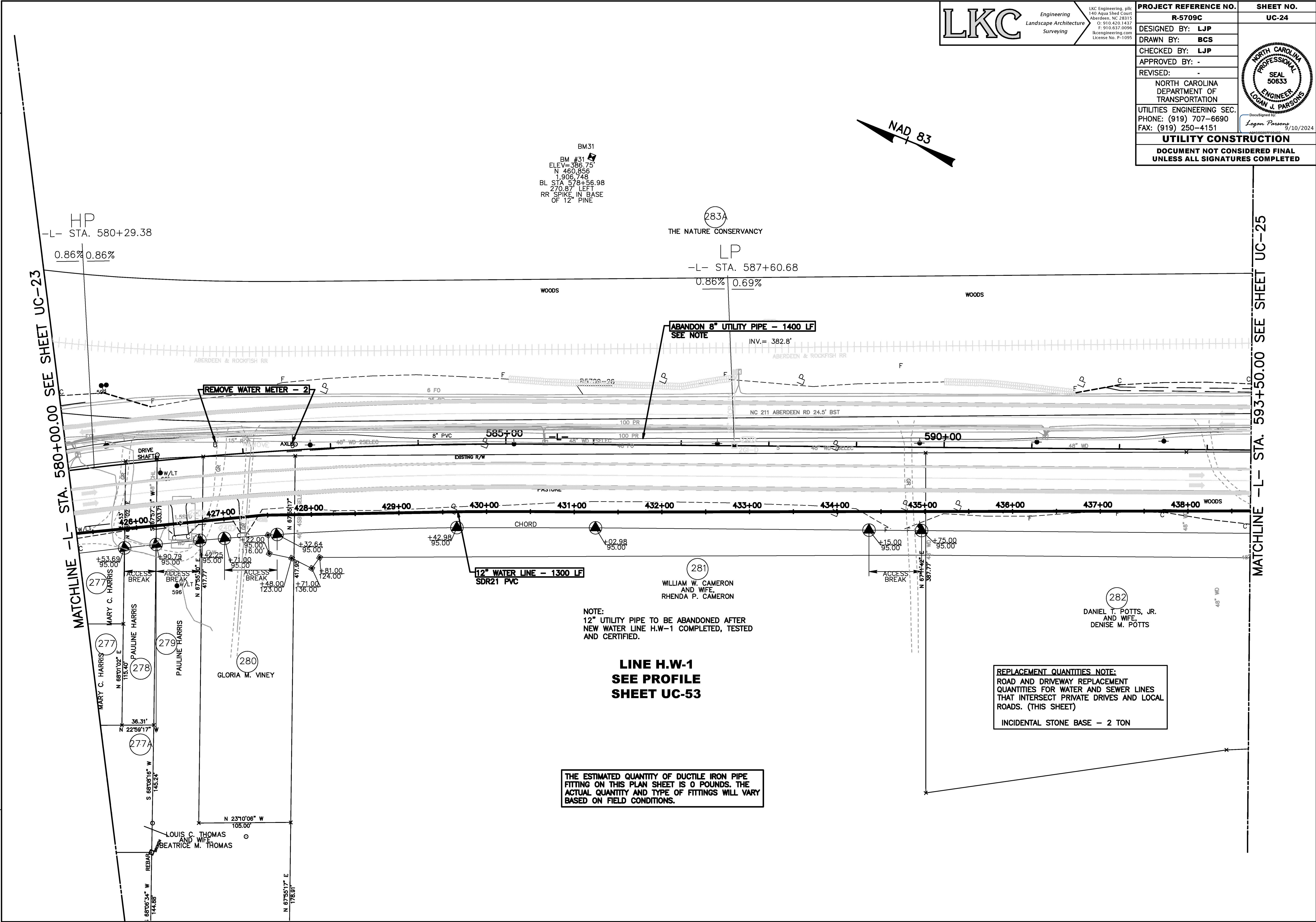


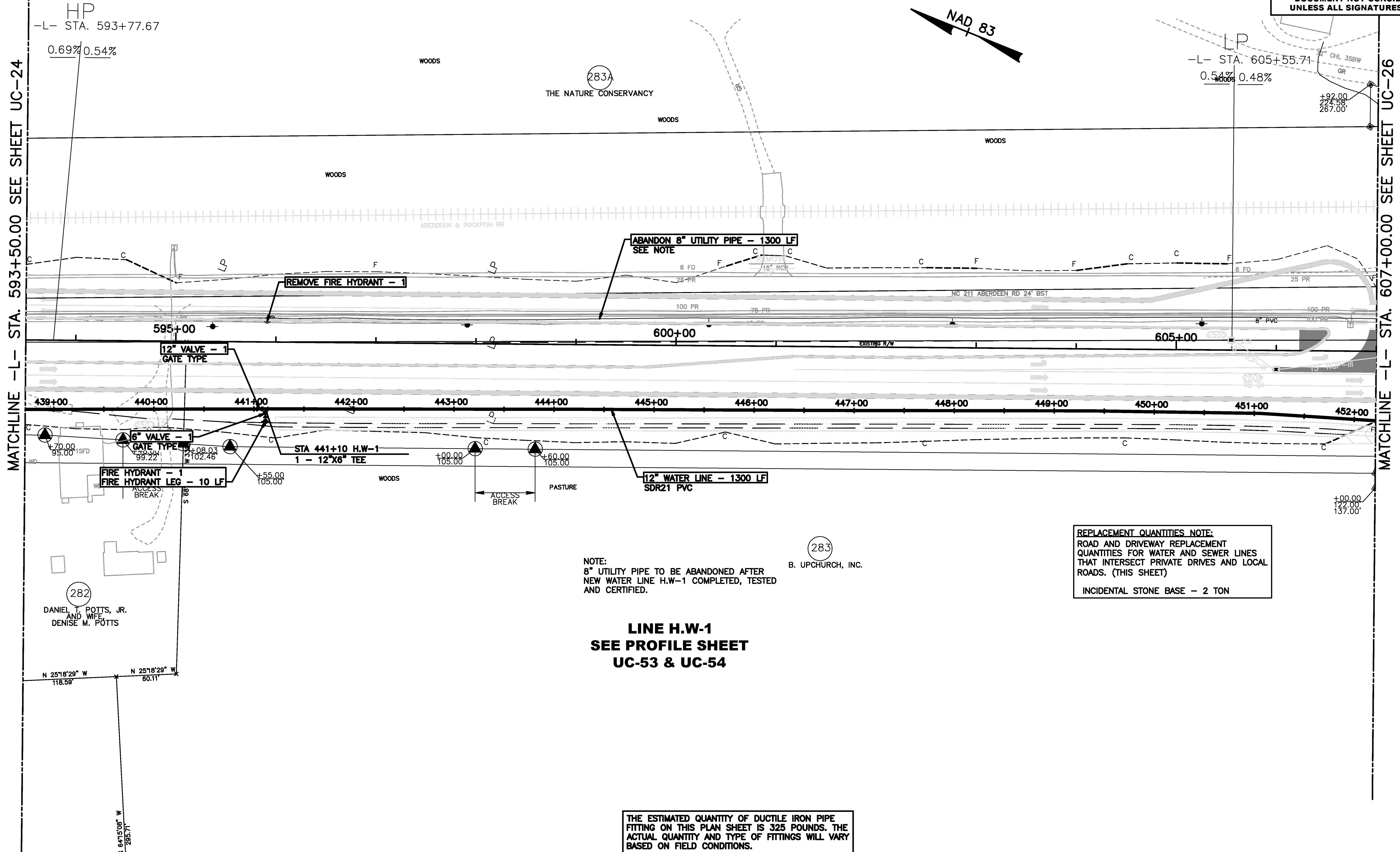
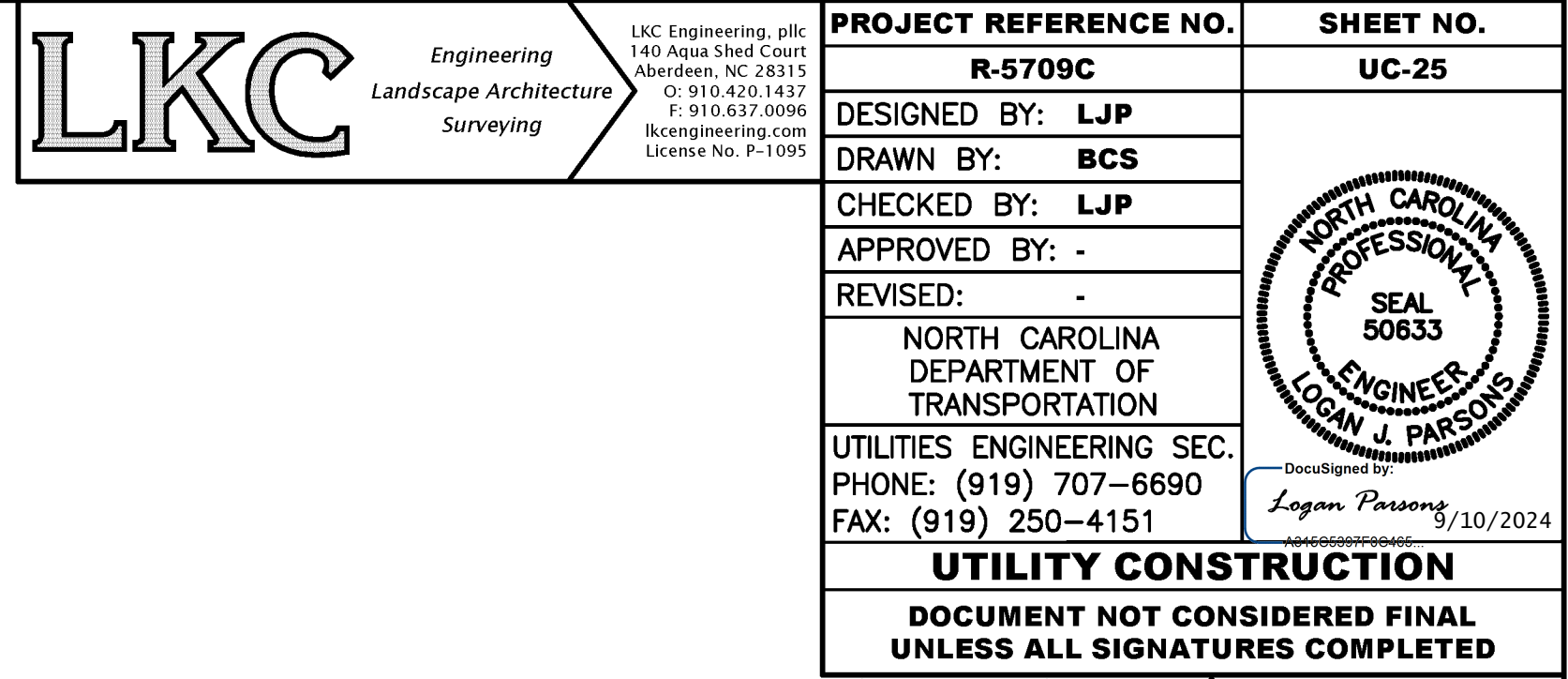
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140 Aqua Shed Court
Aberdeen, NC 28315
O: 910.420.1437
F: 910.637.0096
lkceengineering.com
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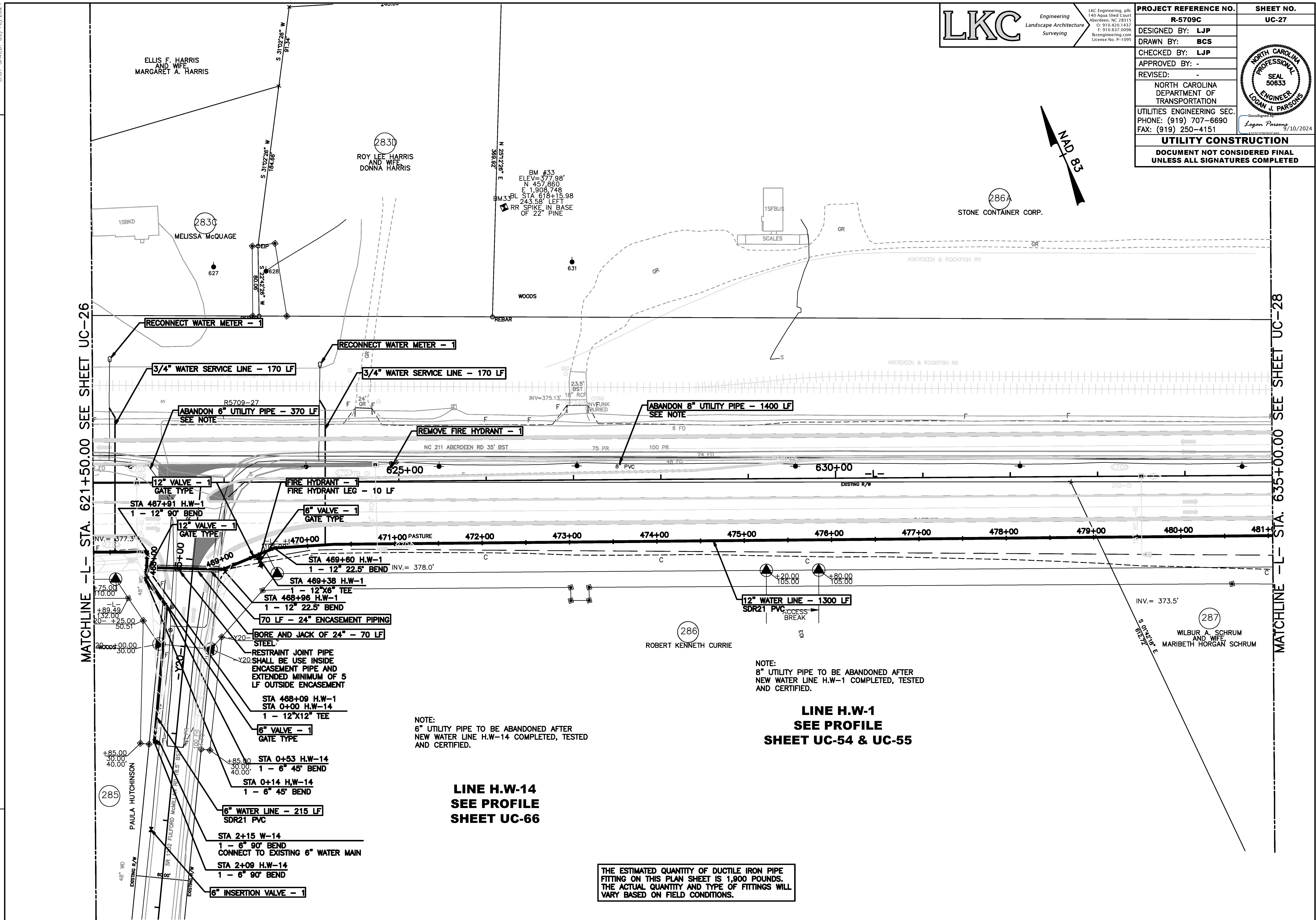
DocuSigned by:
Logan Parsons
9/10/2024

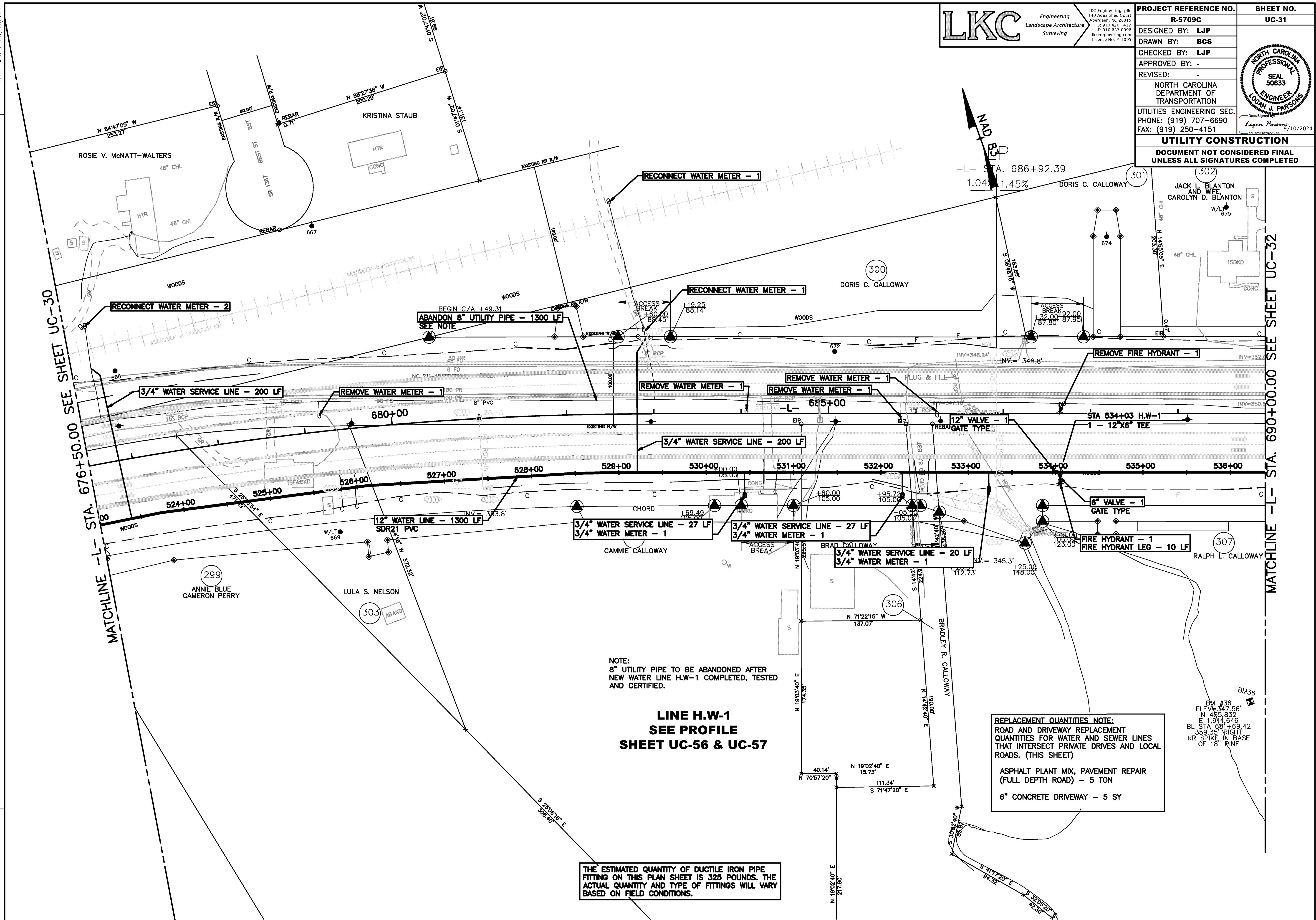
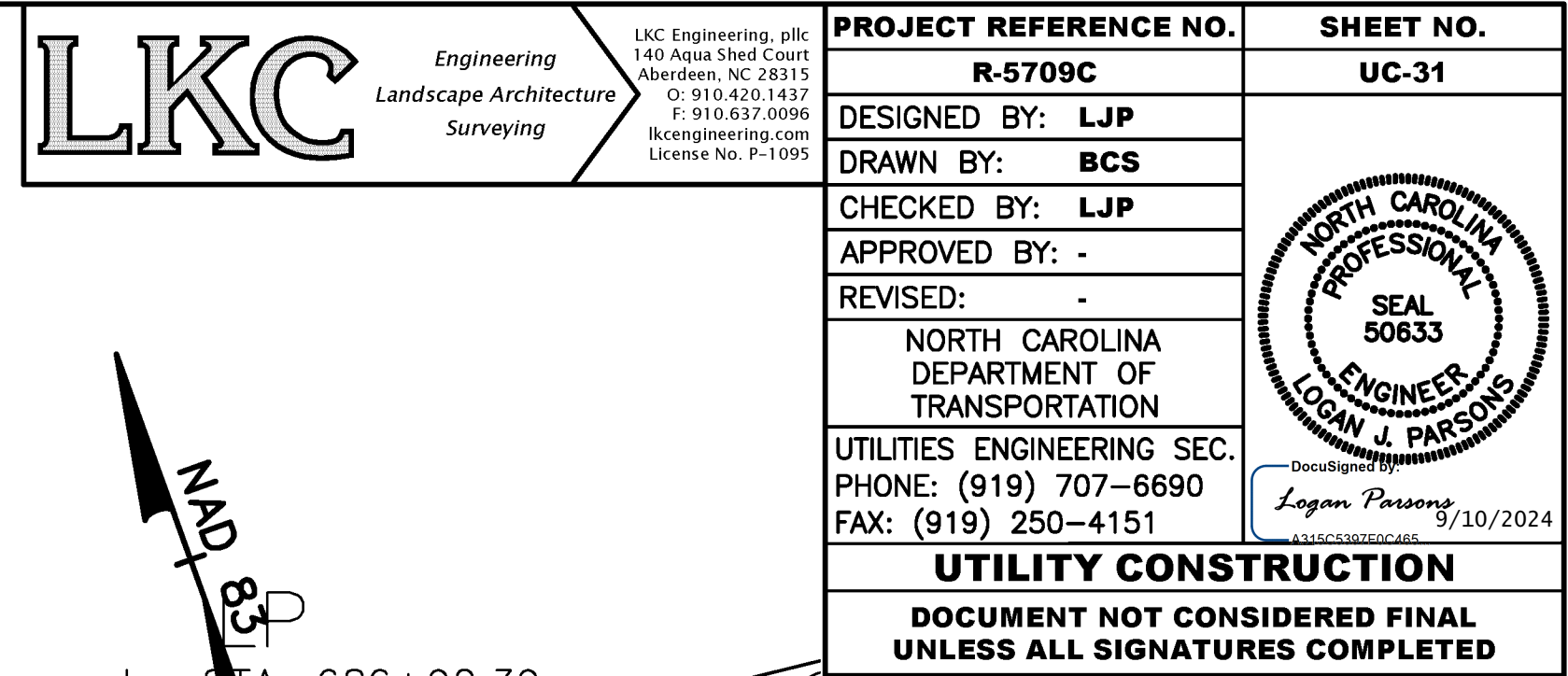






REVISIONS

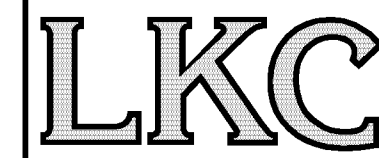




THE ESTIMATED QUANTITY OF DUCTILE IRON PIPE FITTING ON THIS PLAN SHEET IS 325 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

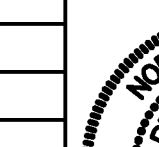
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REVISIONS

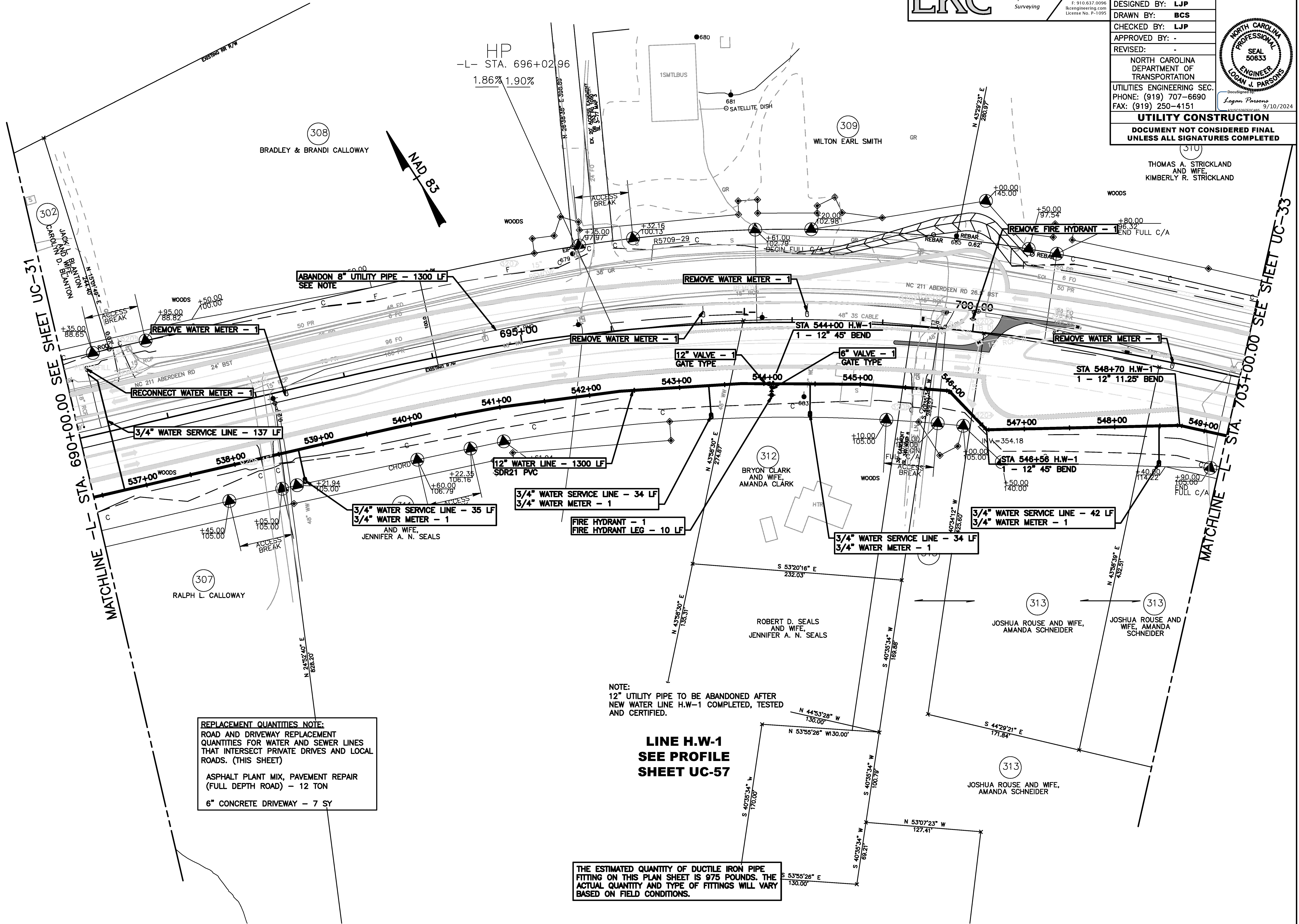


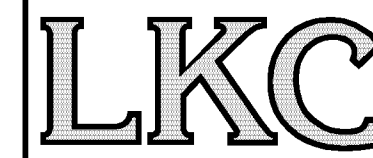
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PROJECT REFERENCE NO.		SHEET NO.	
R-5709C		UC-32	
DESIGNED BY: LJP			
DRAWN BY: BCS			
CHECKED BY: LJP			
APPROVED BY: -			
REVISED: -			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		Decided by  <i>Logan Parsons</i> A LICENSED PROFESSIONAL ENGINEER	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151		9/10/2024	
UTILITY CONSTRUCTION			
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THOMAS A. STRICKLAND
AND WIFE,
KIMBERLY R. STRICKLAND





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PROJECT REFERENCE NO.	SHEET NO.
R-5709C	UC-33
DESIGNED BY: LJP	
DRAWN BY: BCS	
CHECKED BY: LJP	
APPROVED BY: -	
REVISED: -	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
Designed by  Logan Parsons LANTSPROF00436 9/10/2024	
UTILITY CONSTRUCTION	
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NOTE:
6" UTILITY PIPE TO BE ABANDONED AFTER
NEW WATER LINE H.W-15 COMPLETED, TESTED
AND CERTIFIED.

**LINE H.W-15
SEE PROFILE
SHEET UC-66**

LP
-L- STA. 716+96.
2.50% \ 2.84%

NOTE:
12" UTILITY PIPE TO BE ABANDONED AFTER
NEW WATER LINE H.W-1 COMPLETED, TESTED
AND CERTIFIED.

**LINE H.W-1
SEE PROFILE
SHEET UC-57 & UC-58**

THE ESTIMATED QUANTITY OF DUCTILE IRON PIPE FITTING ON THIS PLAN SHEET IS 950 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

REPLACEMENT QUANTITIES NOTE:
ROAD AND DRIVEWAY REPLACEMENT
QUANTITIES FOR WATER AND SEWER LINES
THAT INTERSECT PRIVATE DRIVES AND LOCAL
ROADS. (THIS SHEET)

6" CONCRETE DRIVEWAY - 5 SY
INCIDENTAL STONE BASE - 1 TON

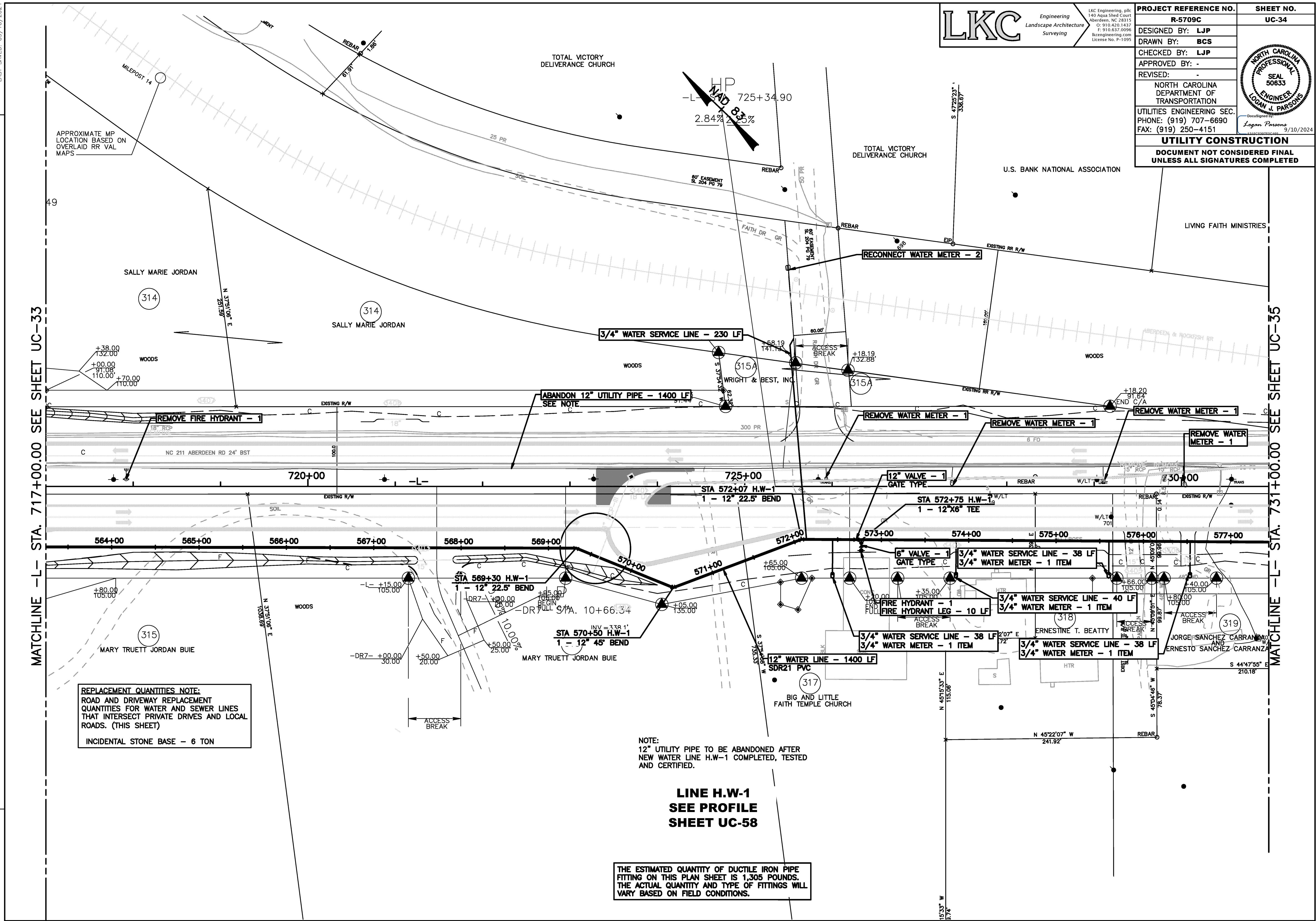
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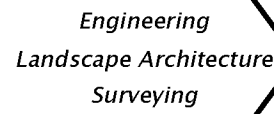
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LAST SAVED: 09/10/2024

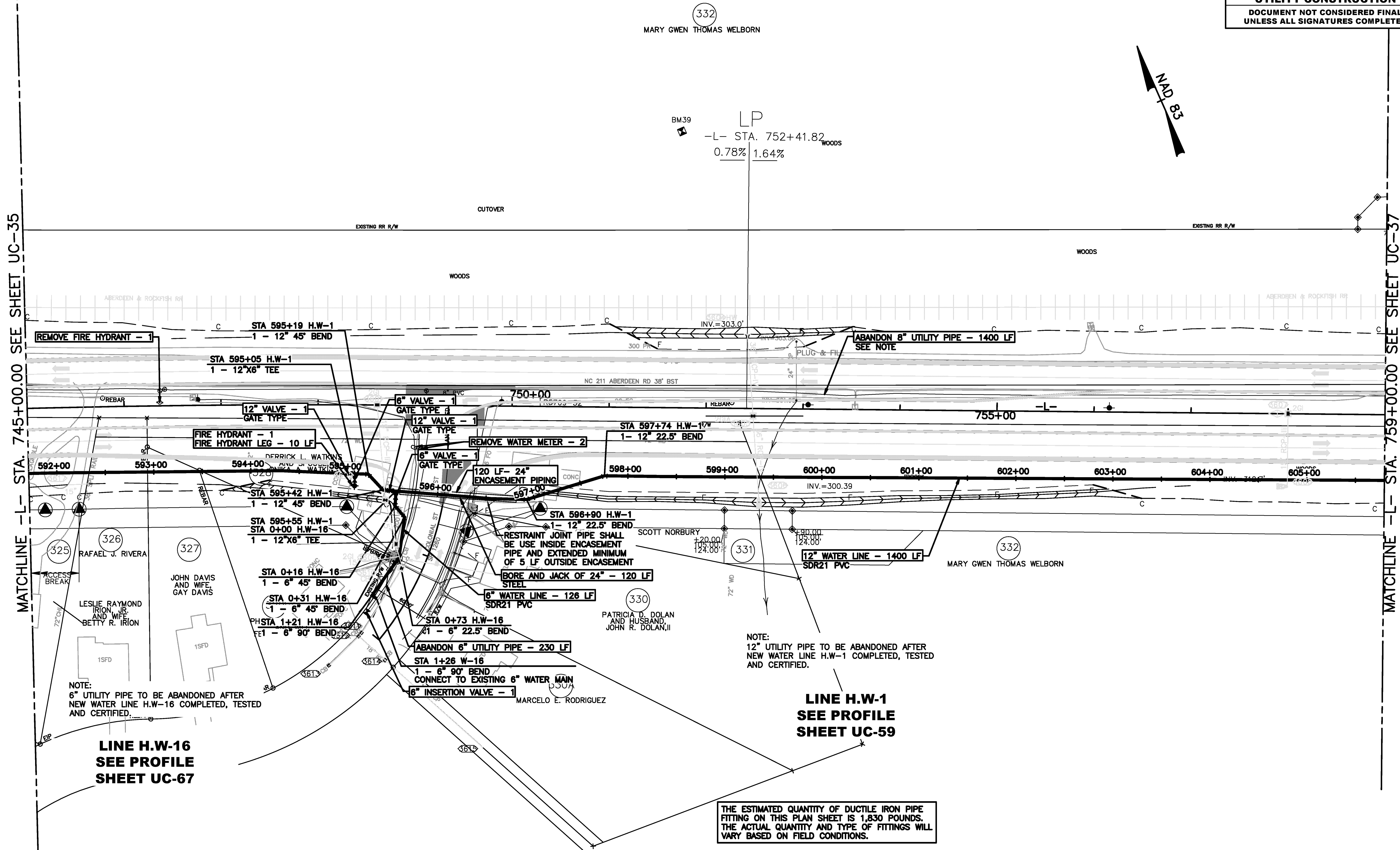
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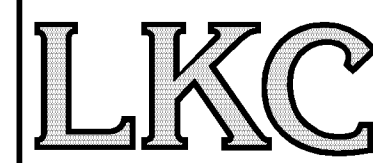
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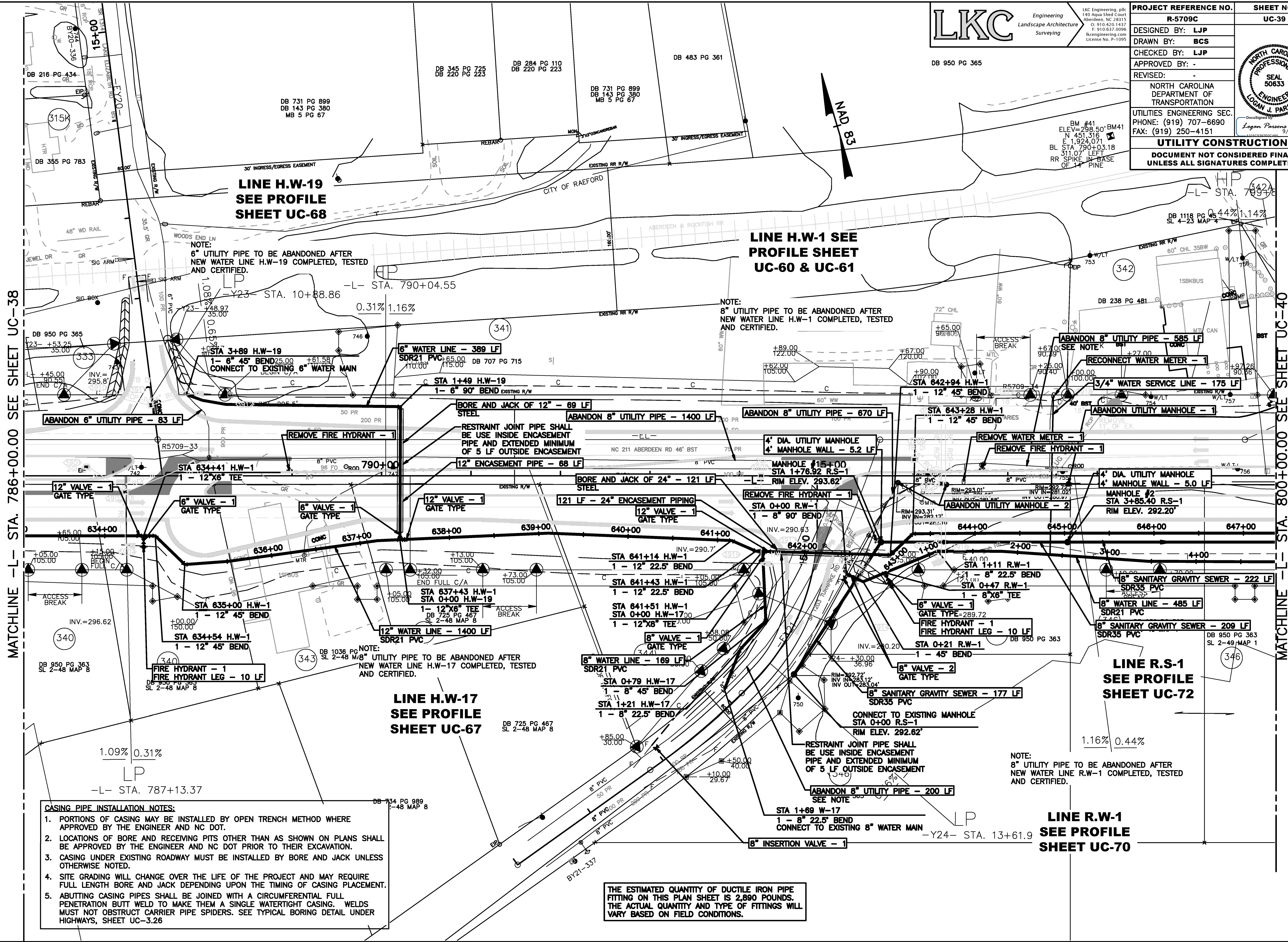
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140 Aqua Shed Court
Aberdeen, NC 28315
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F: 910.637.0098
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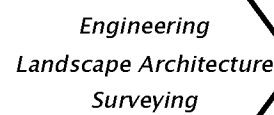
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BM #41
ELEV=298.50' BM4
N 451,316
E 1,924,071

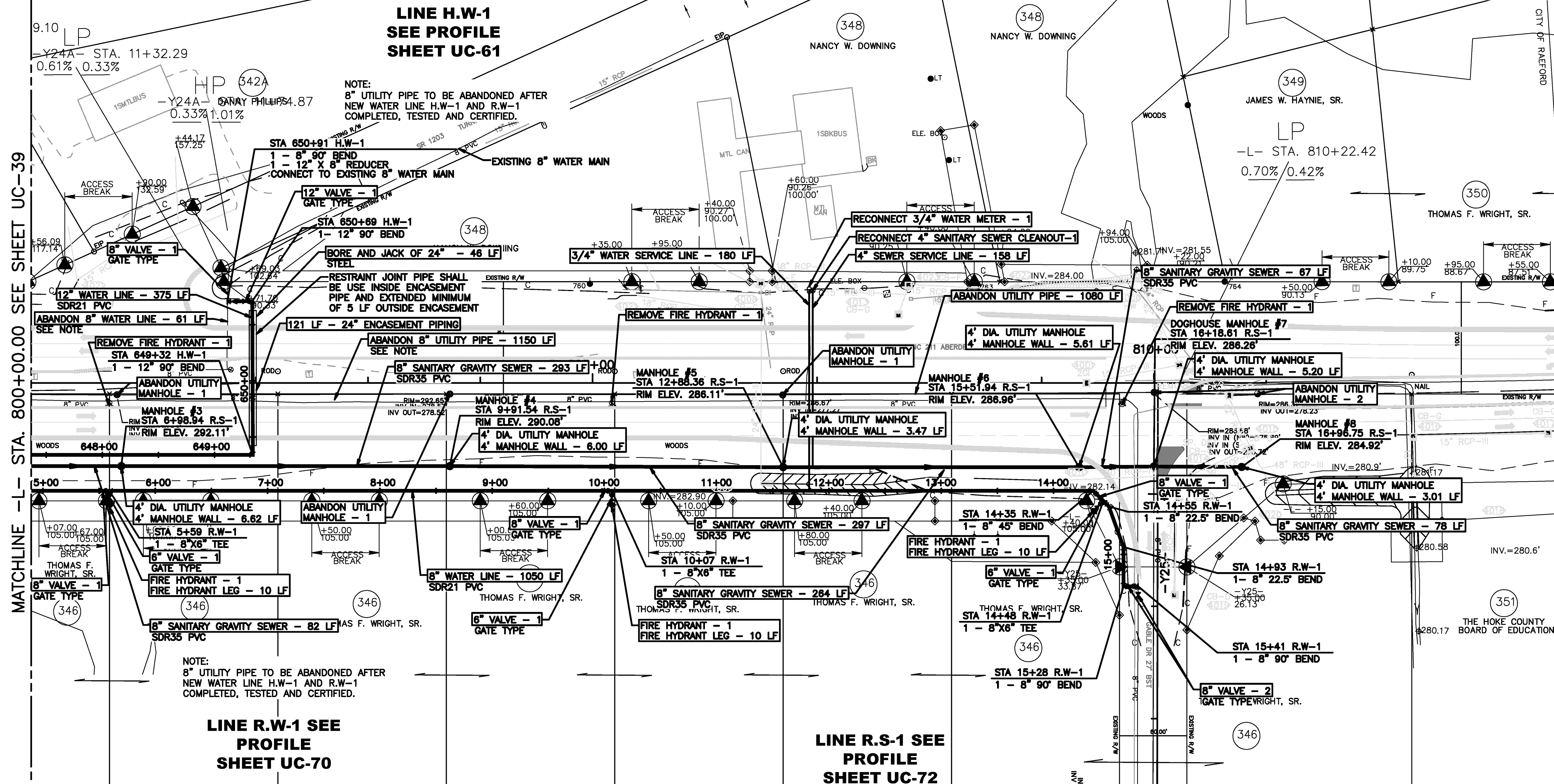
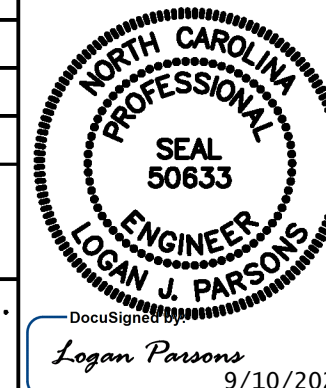
PROJECT REFERENCE NO.	SHEET NO.
R-5709C	UC-39
DESIGNED BY: LJP	
DRAWN BY: BCS	
CHECKED BY: LJP	
APPROVED BY: -	
REVISED: -	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
Downloaded by <i>Logan Parsons</i> Date: 9/10/2024	
UTILITY CONSTRUCTION	
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**THE ESTIMATED QUANTITY OF DUCTILE IRON PIPE
FITTING ON THIS PLAN SHEET IS 2,890 POUNDS.
THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL
VARY BASED ON FIELD CONDITIONS.**



2024 12 11 10 9 8 7 6 5 4 3 2 1	PROJECT REFERENCE NO. R-5709C	SHEET NO. UC-40
	DESIGNED BY: LJP	
	DRAWN BY: BCS	
	CHECKED BY: LJP	
	APPROVED BY: -	
	REVISED: -	
	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	Docket # _____ <i>Logan Parsons</i> LICENSED PROFESSIONAL ENGINEER 9/10/2024	
UTILITY CONSTRUCTION		
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- CASING PIPE INSTALLATION NOTES:**
1. PORTIONS OF CASING MAY BE INSTALLED BY OPEN TRENCH METHOD WHERE APPROVED BY THE ENGINEER AND NC DOT.
 2. LOCATIONS OF BORE AND RECEIVING PITS OTHER THAN AS SHOWN ON PLANS SHALL BE APPROVED BY THE ENGINEER AND NC DOT PRIOR TO THEIR EXCAVATION.
 3. CASING UNDER EXISTING ROADWAY MUST BE INSTALLED BY BORE AND JACK UNLESS OTHERWISE NOTED.
 4. SITE GRADING WILL CHANGE OVER THE LIFE OF THE PROJECT AND MAY REQUIRE FULL LENGTH BORE AND JACK DEPENDING UPON THE TIMING OF CASING PLACEMENT.
 5. ABUTTING CASING PIPES SHALL BE JOINED WITH A CIRCUMFERENTIAL FULL PENETRATION BUTT WELD TO MAKE THEM A SINGLE WATERTIGHT CASING. WELDS MUST NOT OBSTRUCT CARRIER PIPE SPIDERS. SEE TYPICAL BORING DETAIL UNDER HIGHWAYS, SHEET UC-3.26

THE ESTIMATED QUANTITY OF DUCTILE IRON PIPE
FITTING ON THIS PLAN SHEET IS 1,070 POUNDS.
THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL
VARY BASED ON FIELD CONDITIONS.

MATCHLINE -L- STA. 814+00.00 SEE SHEET UC-40

1. PORTIONS OF CASING MAY BE INSTALLED BY OPEN TRENCH METHOD WHERE APPROVED BY THE ENGINEER AND NC DOT.
2. LOCATIONS OF BORE AND RECEIVING PITS OTHER THAN AS SHOWN ON PLANS SHALL BE APPROVED BY THE ENGINEER AND NC DOT PRIOR TO THEIR EXCAVATION.
3. CASING UNDER EXISTING ROADWAY MUST BE INSTALLED BY BORE AND JACK UNLESS OTHERWISE NOTED.
4. SITE GRADING WILL CHANGE OVER THE LIFE OF THE PROJECT AND MAY REQUIRE FULL LENGTH BORE AND JACK DEPENDING UPON THE TIMING OF CASING PLACEMENT.
5. ABUTTING CASING PIPES SHALL BE JOINED WITH A CIRCUMFERENTIAL FULL PENETRATION BUTT WELD TO MAKE THEM A SINGLE WATER TIGHT CASING. WELDS MUST NOT OBSTRUCT CARRIER PIPE SPIDERS. SEE TYPICAL BORING DETAIL UNDER HIGHWAYS, SHEET UC-3.26

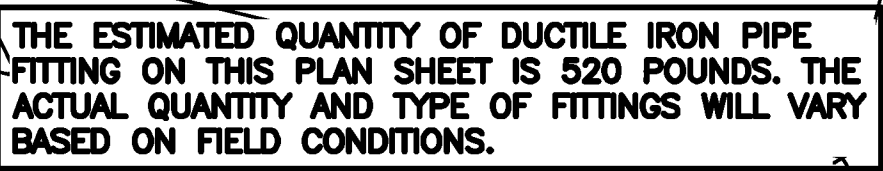
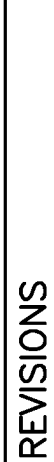
THE ESTIMATED QUANTITY OF DUCTILE IRON PIPE FITTING ON THIS PLAN SHEET IS 580 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

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Logan Parsons
9/10/2024

MATCHLINE -L- STA. 828+00.00 SEE SHEET UC-42

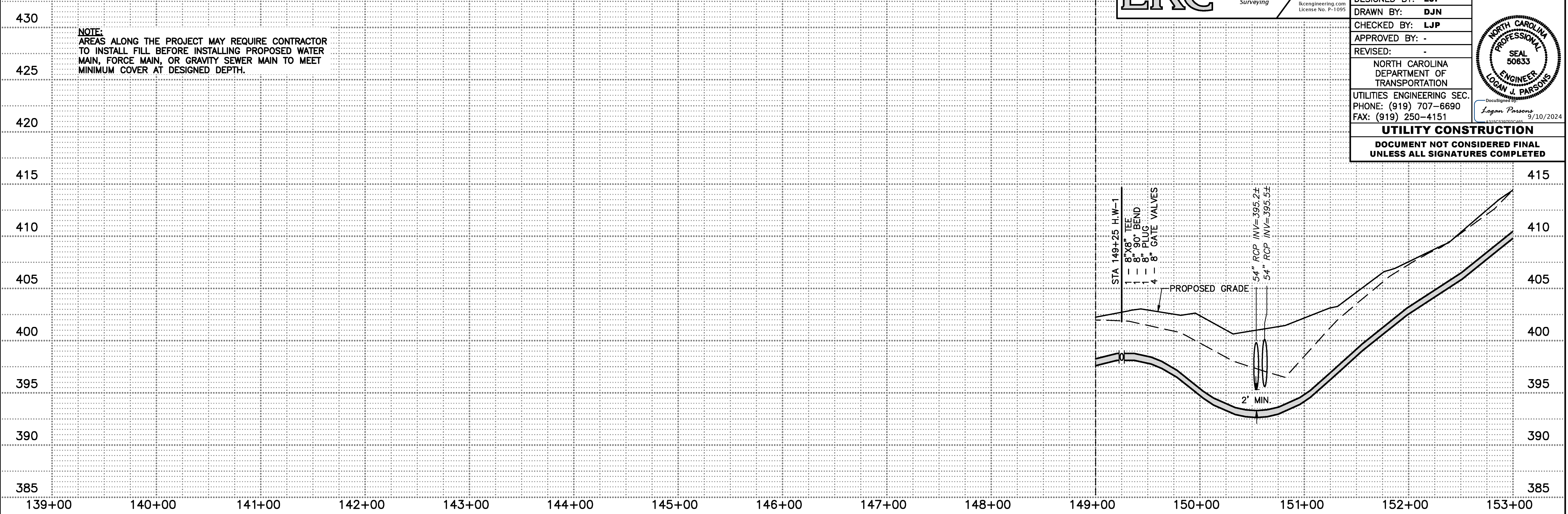


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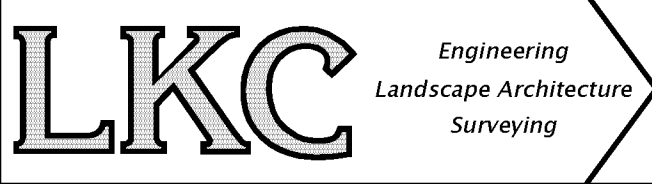
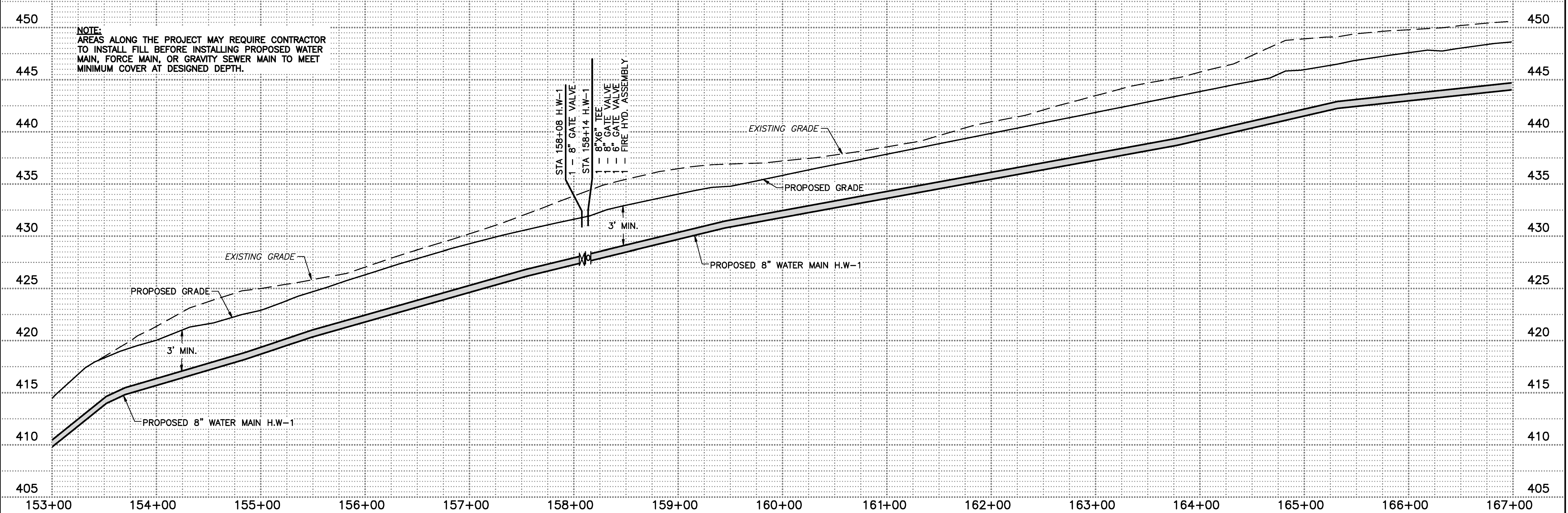
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REVISIONS

LINE H.W-1 SEE PLAN SHEET UC-4



LINE H.W-1 SEE PLAN SHEET UC-4 & UC-5



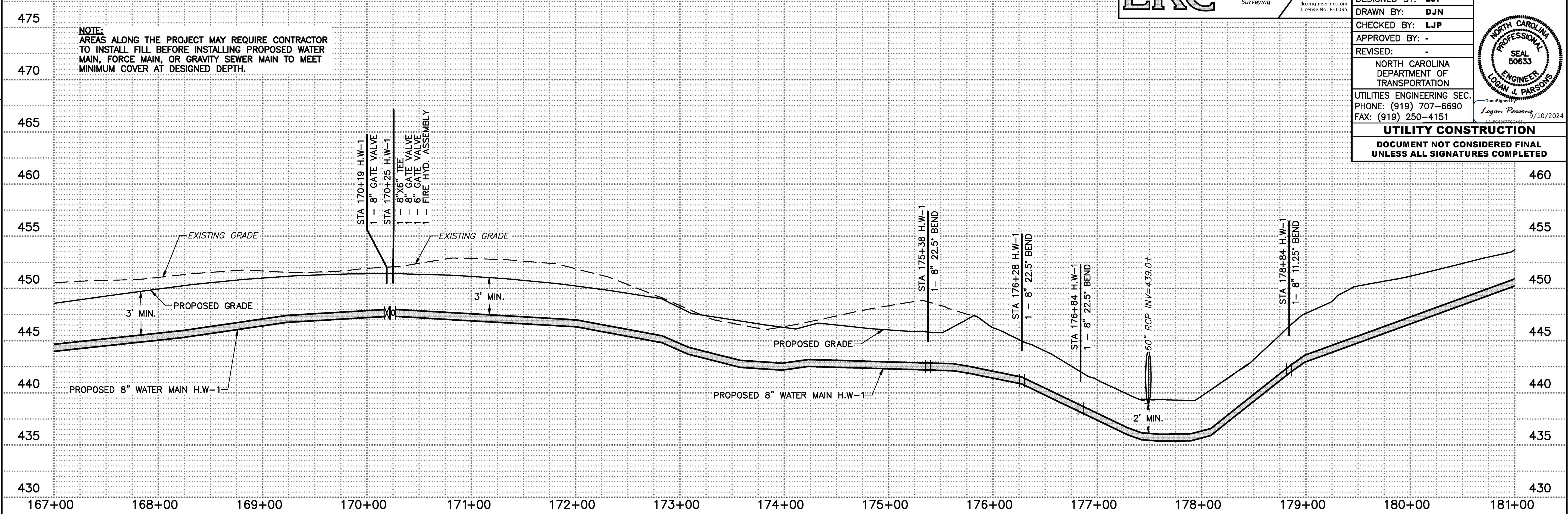
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140 Aqua Shed Court
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PROJECT REFERENCE NO.		SHEET NO.	
R-5709C		UC-43	
DESIGNED BY: LJP			
DRAWN BY: DJN			
CHECKED BY: LJP			
APPROVED BY: -			
REVISED: -			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		DocuSign eSignature Logan Parsons 9/10/2024	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151			
UTILITY CONSTRUCTION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

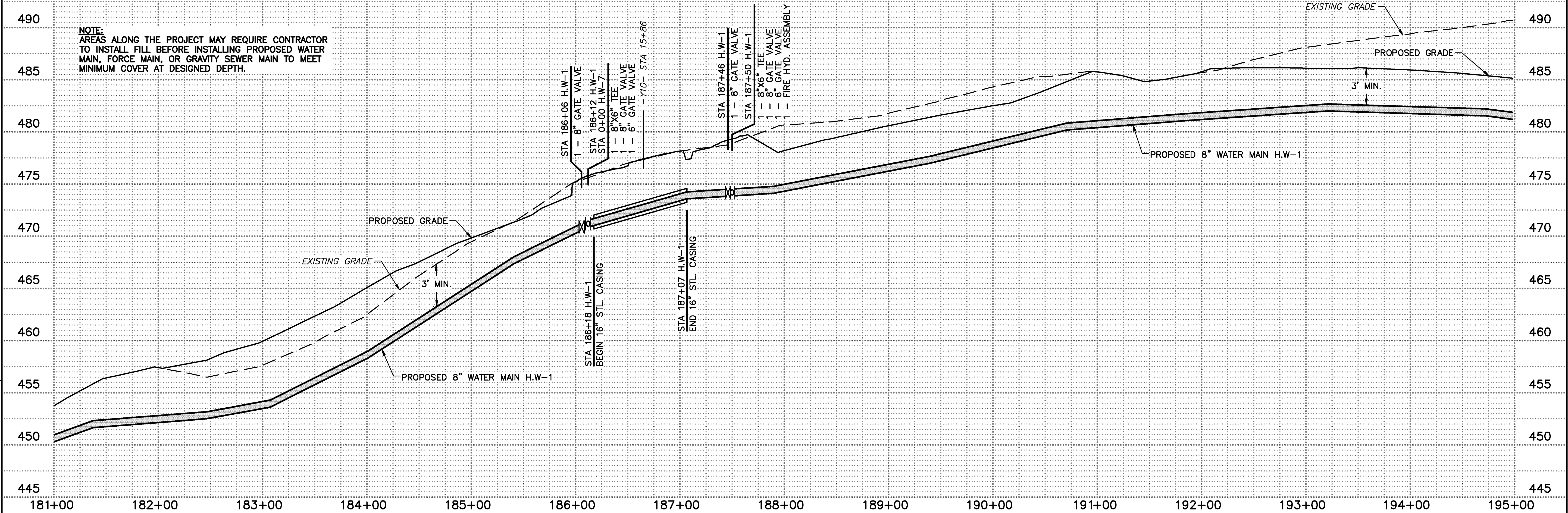
DocuSign
Logan Parsons
9/10/2024

REVISIONS

LINE H.W-1 SEE PLAN SHEET UC-5 & UC-6



LINE H.W-1 SEE PLAN SHEET UC-6 & UC-7

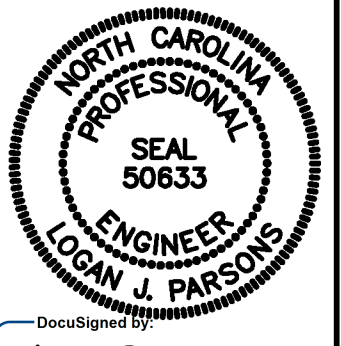


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PROJECT REFERENCE NO.	SHEET NO.
R-5709C	UC-44
DESIGNED BY: LJP	
DRAWN BY: DJN	
CHECKED BY: LJP	
APPROVED BY: -	
REVISED: -	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

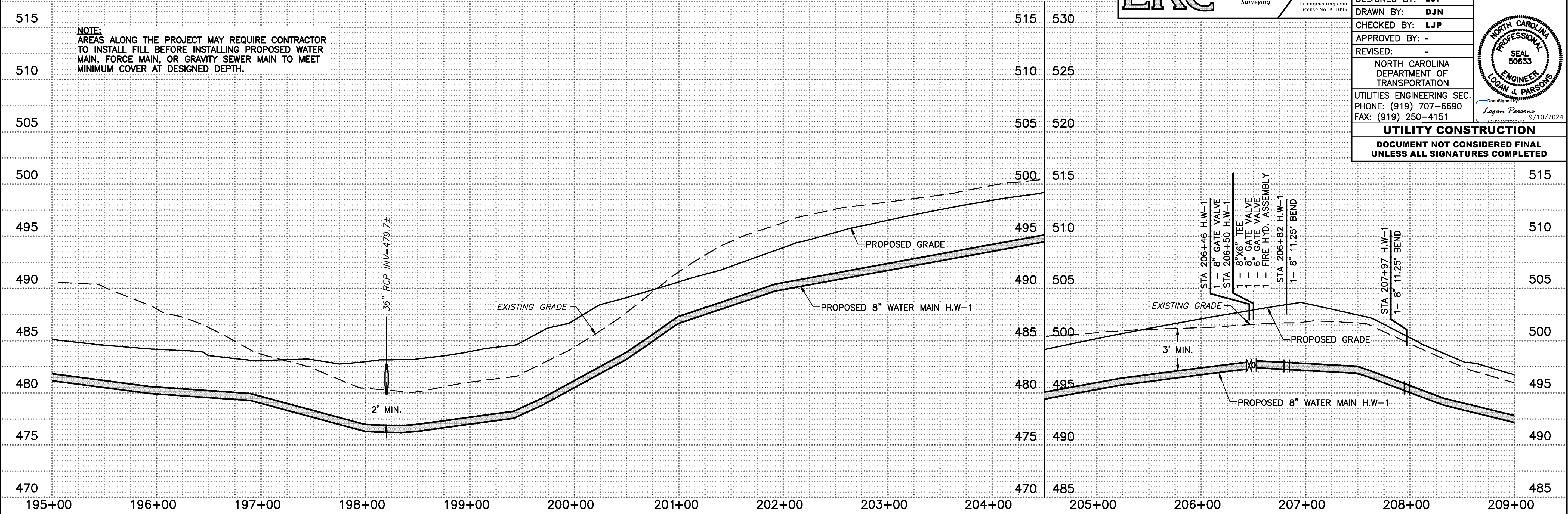


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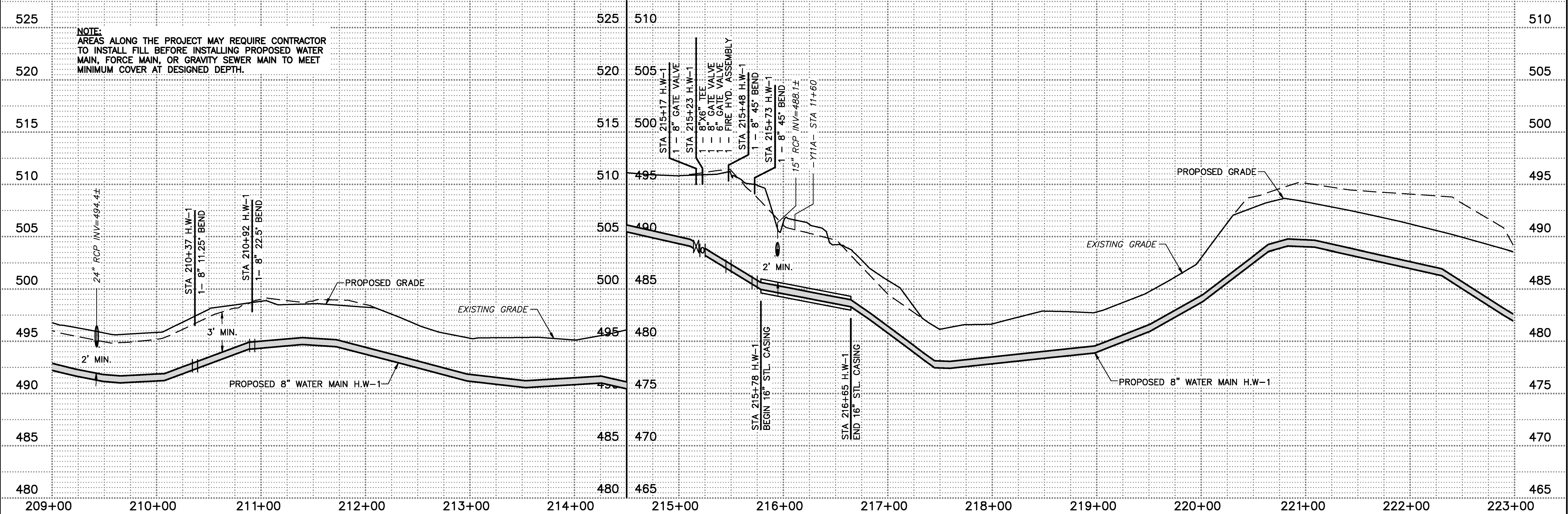
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REVISIONS

LINE H.W-1 SEE PLAN SHEET UC-7 & UC-8



LINE H.W-1 SEE PLAN SHEET UC-8 & UC-9



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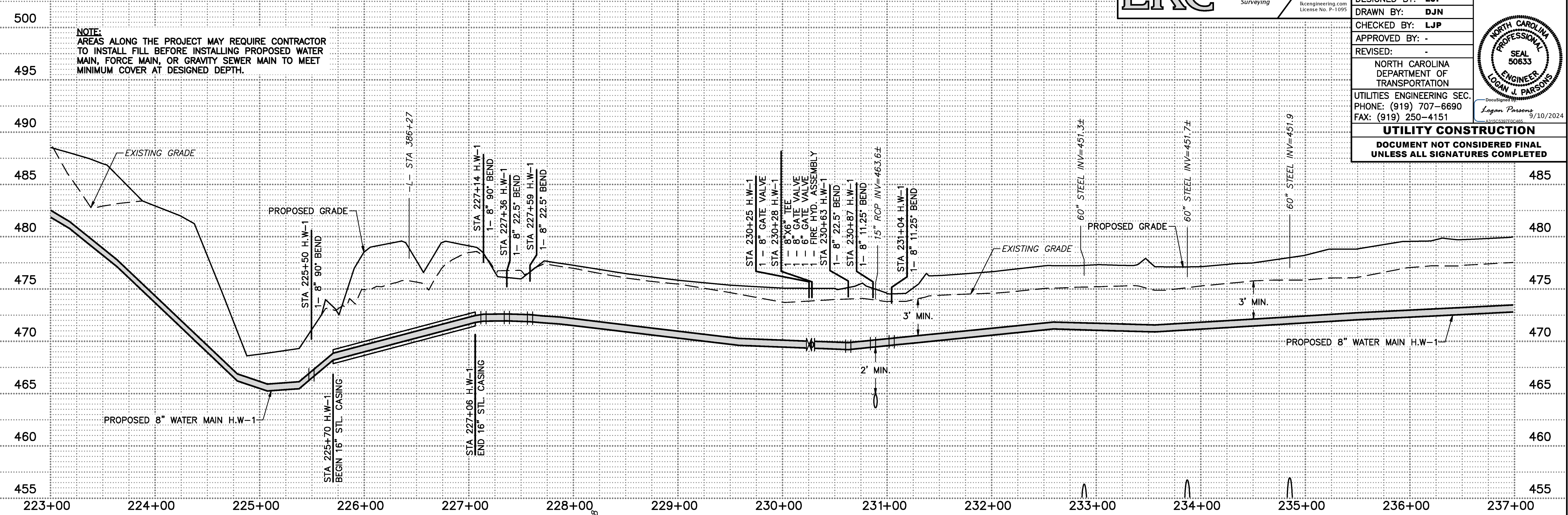
LKC Engineering, PLLC
140 Aqua Shed Court
Raleigh, NC 27615
O: 919.420.1437
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lkceengineering.com
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PROJECT REFERENCE NO.	SHEET NO.
R-5709C	UC-45
DESIGNED BY: LJP	
DRAWN BY: DJN	
CHECKED BY: LJP	
APPROVED BY: -	
REVISED: -	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION	
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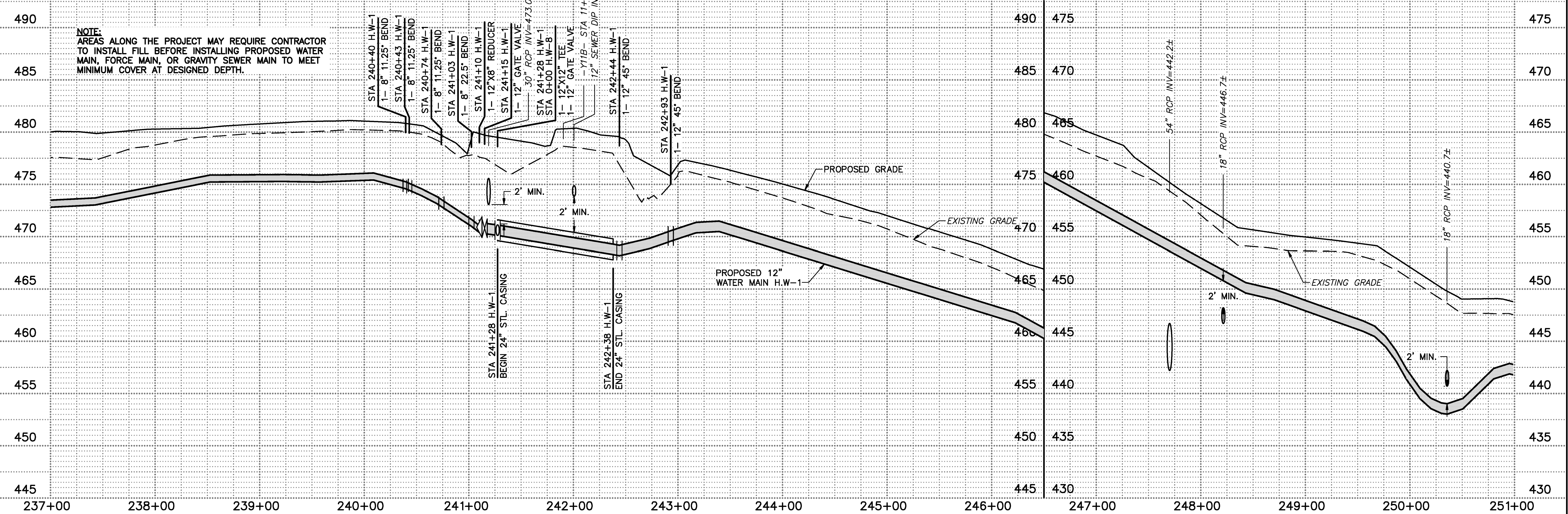


Logan Parsons
9/10/2024

LINE H.W-1 SEE PLAN SHEET UC-9 & UC-10



LINE H.W-1 SEE PLAN SHEET UC-10 & UC-11

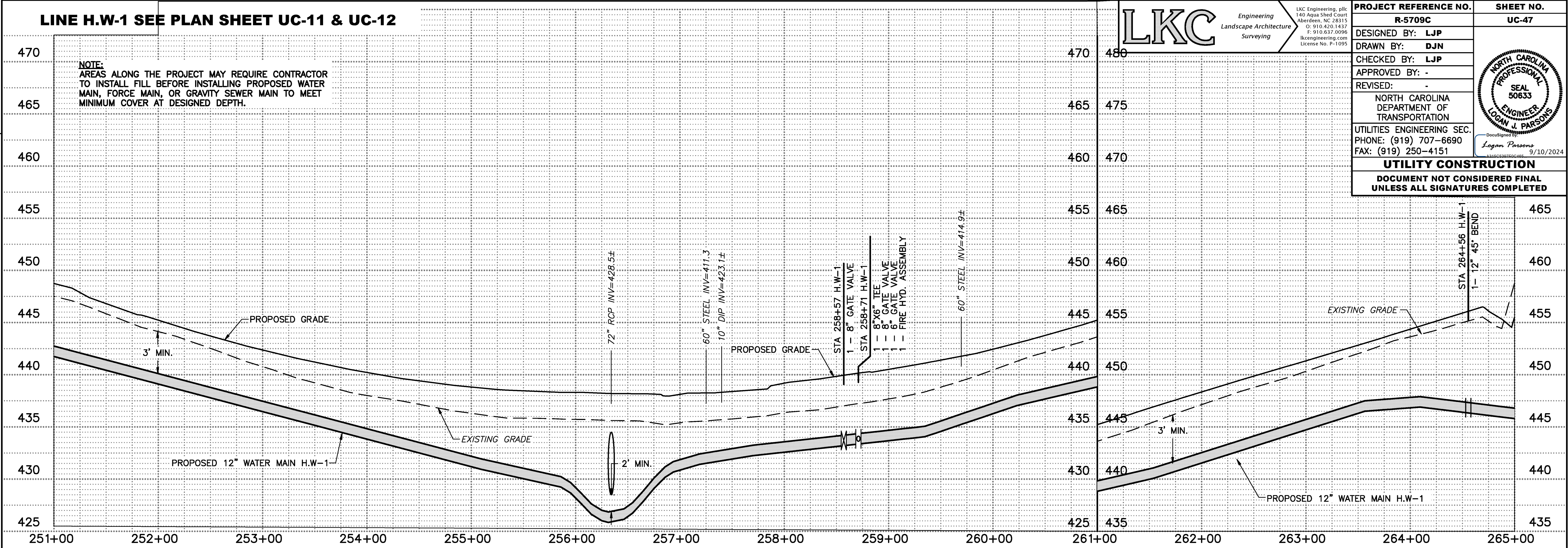


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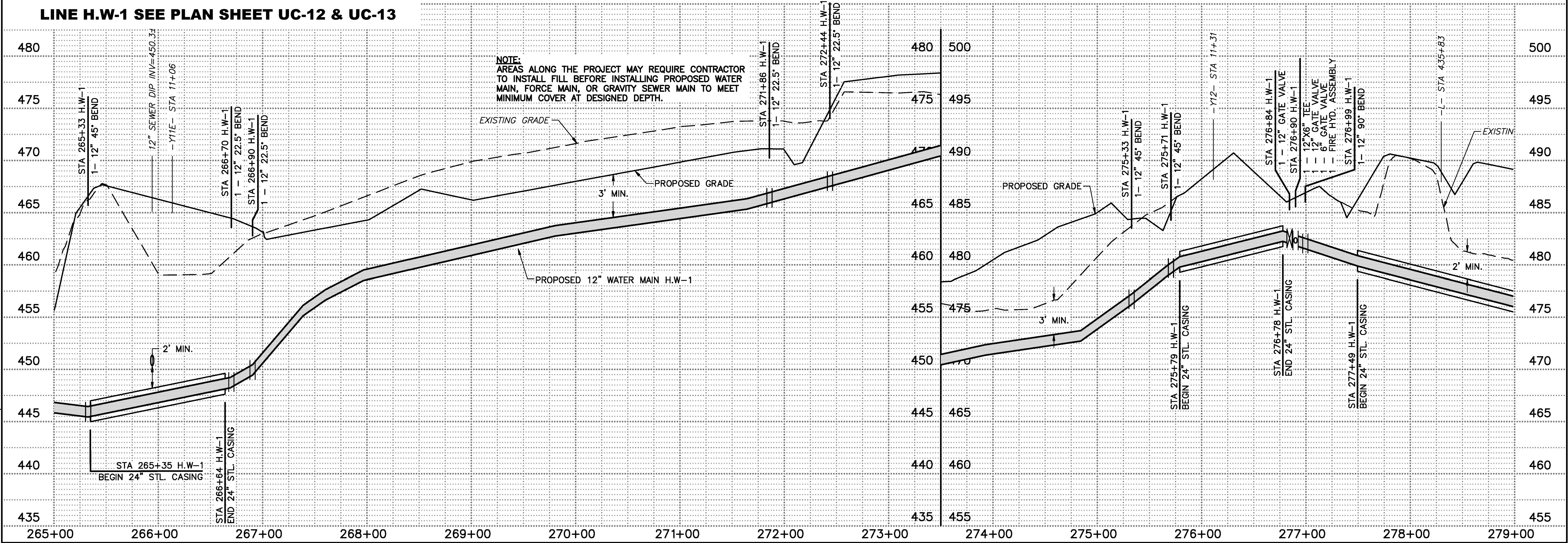
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REVISIONS

LINE H.W-1 SEE PLAN SHEET UC-11 & UC-12



LINE H.W-1 SEE PLAN SHEET UC-12 & UC-13



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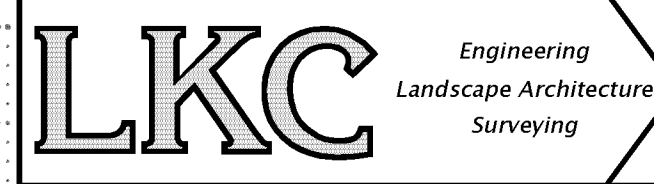
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R-5709C	UC-47
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DRAWN BY: DJN	
CHECKED BY: LJP	
APPROVED BY: -	
REVISED: -	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
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LINE H.W-1 SEE PLAN SHEET UC-14 & UC-15



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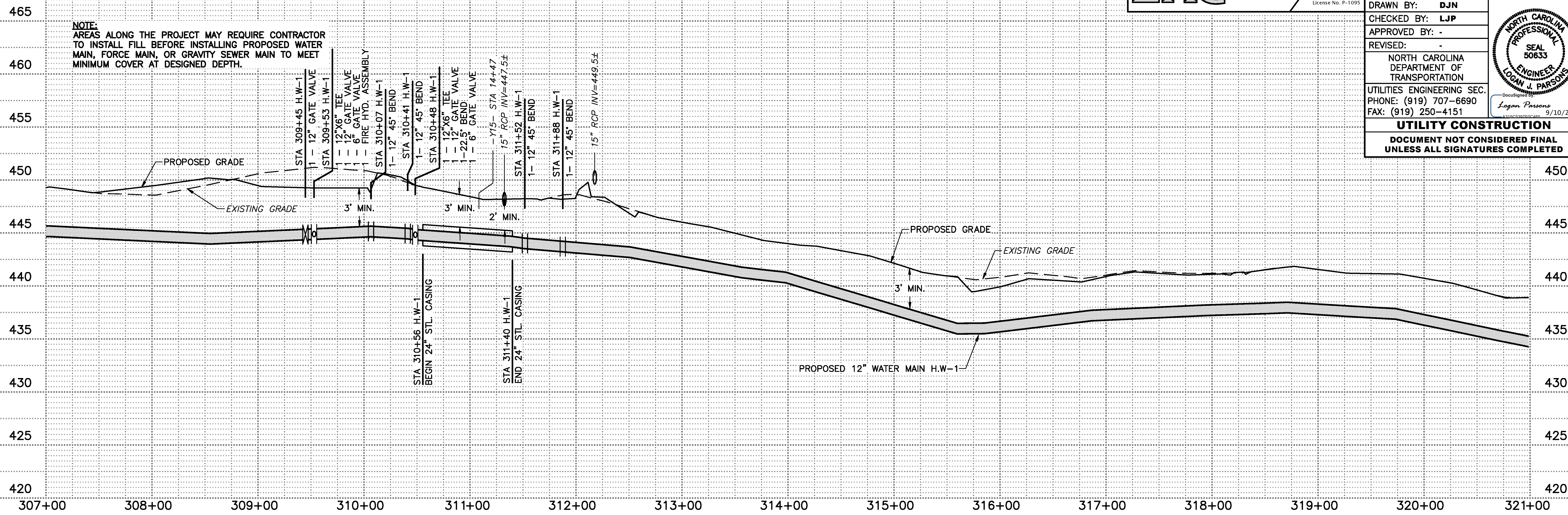
PROJECT REFERENCE NO.	SHEET NO.
R-5709C	UC-48
DESIGNED BY: LJP	
DRAWN BY: DJN	
CHECKED BY: LJP	
APPROVED BY: -	
REVISED: -	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
 Logan Parsons A PROFESSIONAL ENGINEER 9/10/2024	
UTILITY CONSTRUCTION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



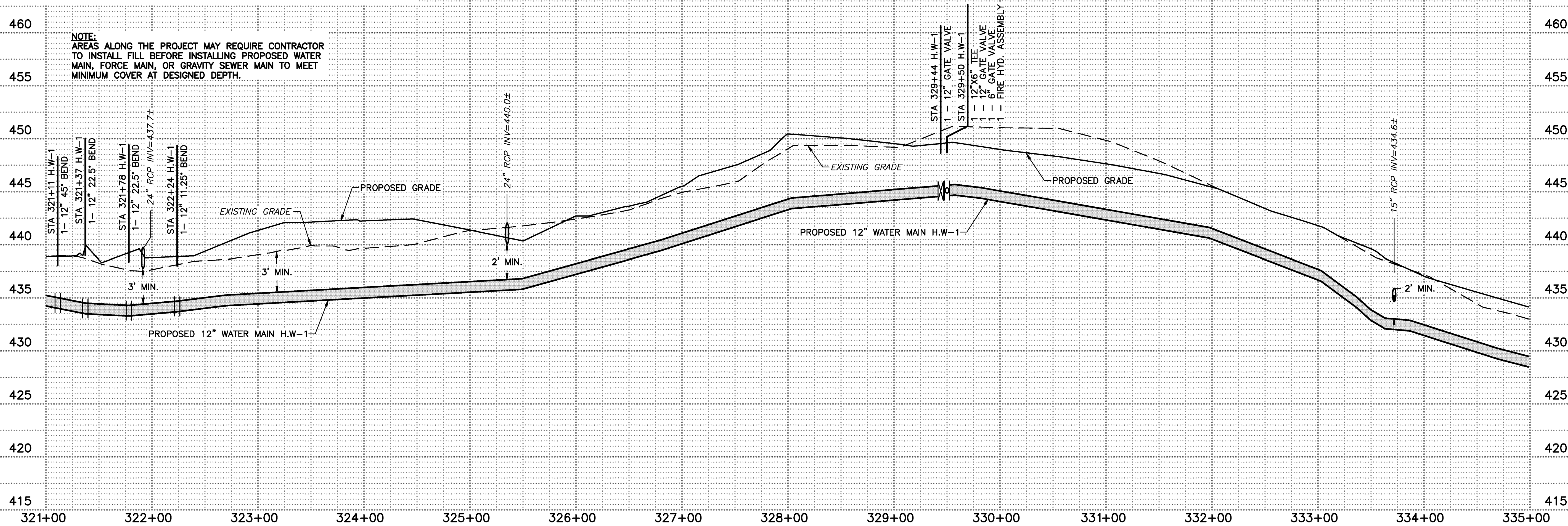
Designed by:
Logan Parsons
9/10/2024

LAST SAVED: 09/10/2024

NOTE:
AREAS ALONG THE PROJECT MAY REQUIRE CONTRACTOR TO INSTALL FILL BEFORE INSTALLING PROPOSED WATER MAIN, FORCE MAIN, OR GRAVITY SEWER MAIN TO MEET MINIMUM COVER AT DESIGNED DEPTH.



NOTE:
AREAS ALONG THE PROJECT MAY REQUIRE CONTRACTOR TO INSTALL FILL BEFORE INSTALLING PROPOSED WATER MAIN, FORCE MAIN, OR GRAVITY SEWER MAIN TO MEET MINIMUM COVER AT DESIGNED DEPTH.



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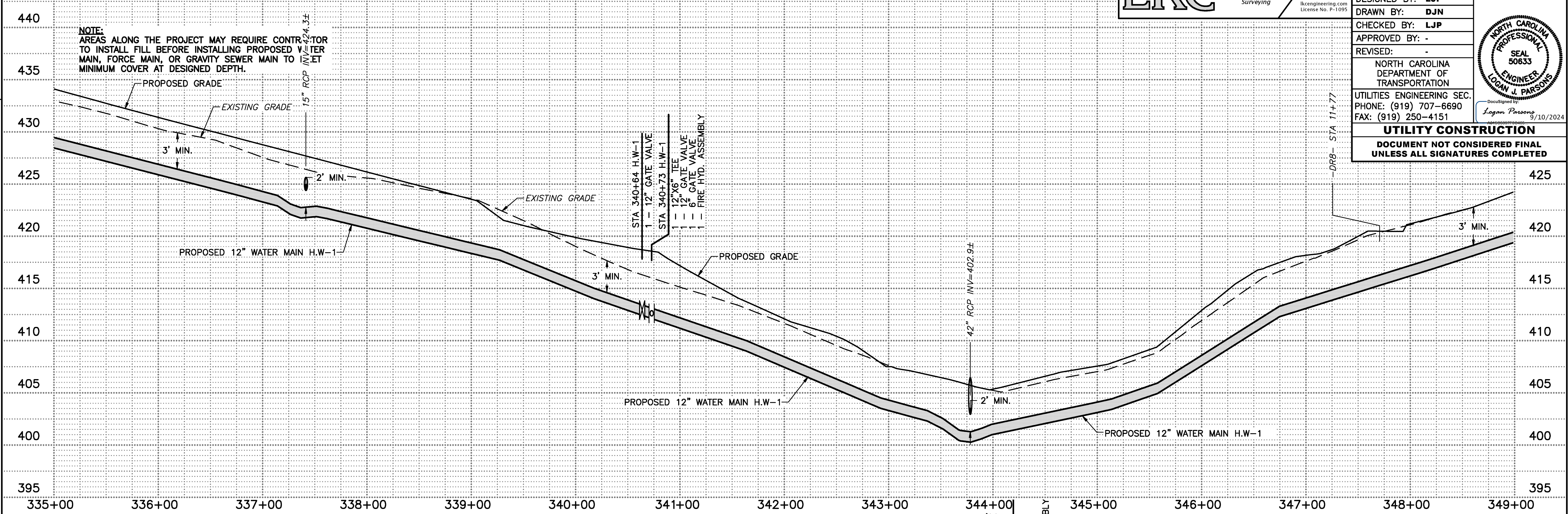
LKC Engineering, PLLC
140 Aqua Shed Court
Aberdeen, NC 28315
O: 910.420.1433
F: 910.637.0094
lkceengineering.com
License No. P-1091

PROJECT REFERENCE NO.	SHEET NO.
R-5709C	UC-49
DESIGNED BY: LJP	
DRAWN BY: DJN	
CHECKED BY: LJP	
APPROVED BY: -	
REVISED: -	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
Drawn by: <i>Logan Parsons</i> Date: 9/10/2024	
UTILITY CONSTRUCTION	
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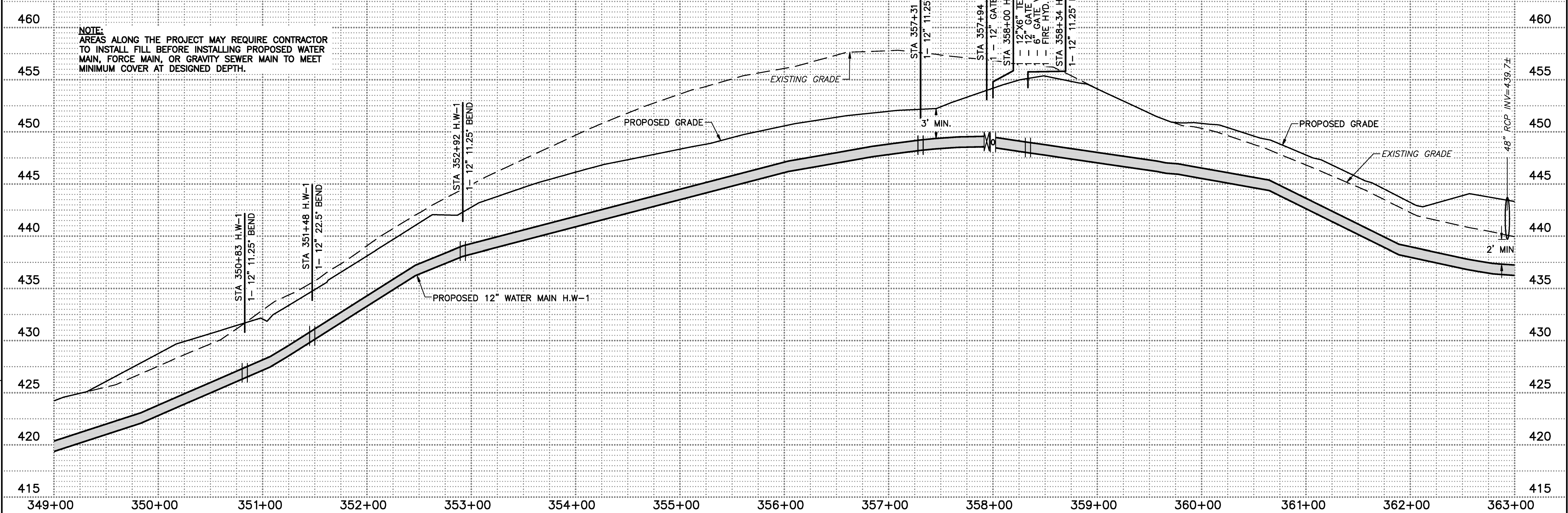
DocuSigned by:
Logan Parsons
9/10/202

REVISIONS

LINE H.W-1 SEE PLAN SHEET UC-17 & UC-18



LINE H.W-1 SEE PLAN SHEET UC-18 & UC-19

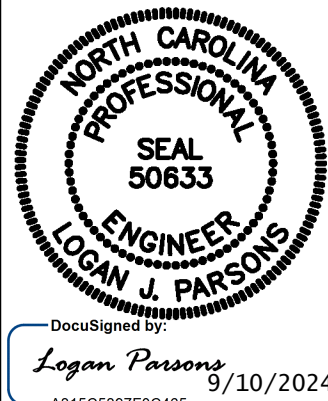


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PROJECT REFERENCE NO.	SHEET NO.
R-5709C	UC-50
DESIGNED BY: LJP	
DRAWN BY: DJN	
CHECKED BY: LJP	
APPROVED BY: -	
REVISED: -	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

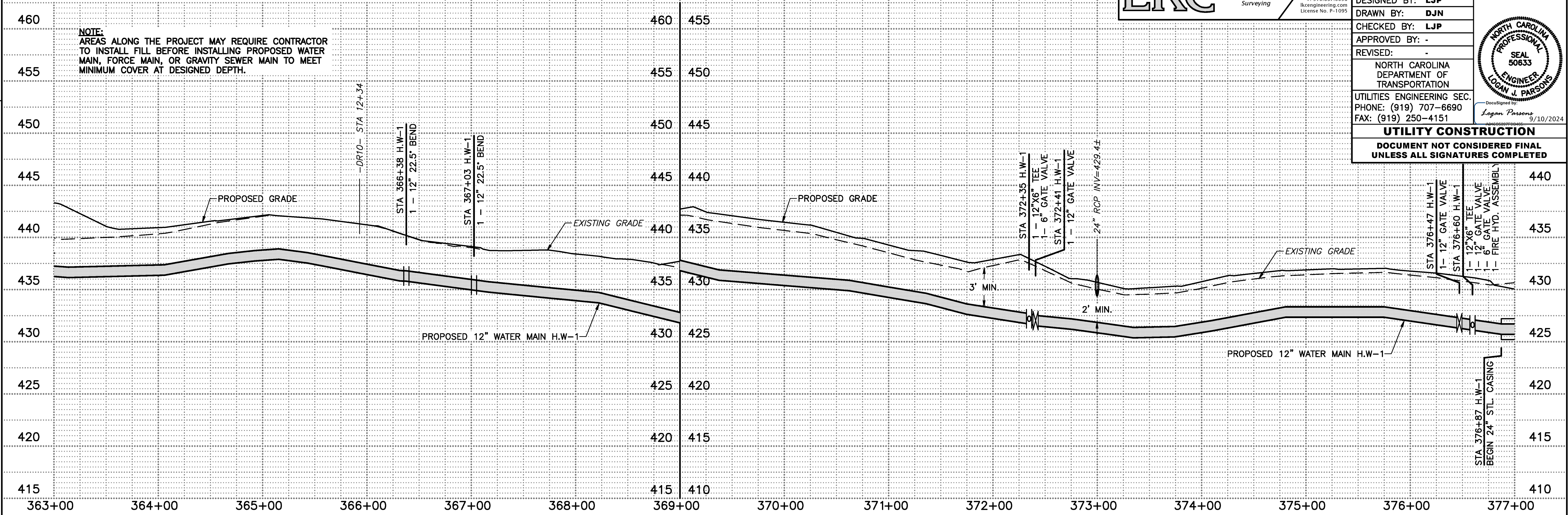


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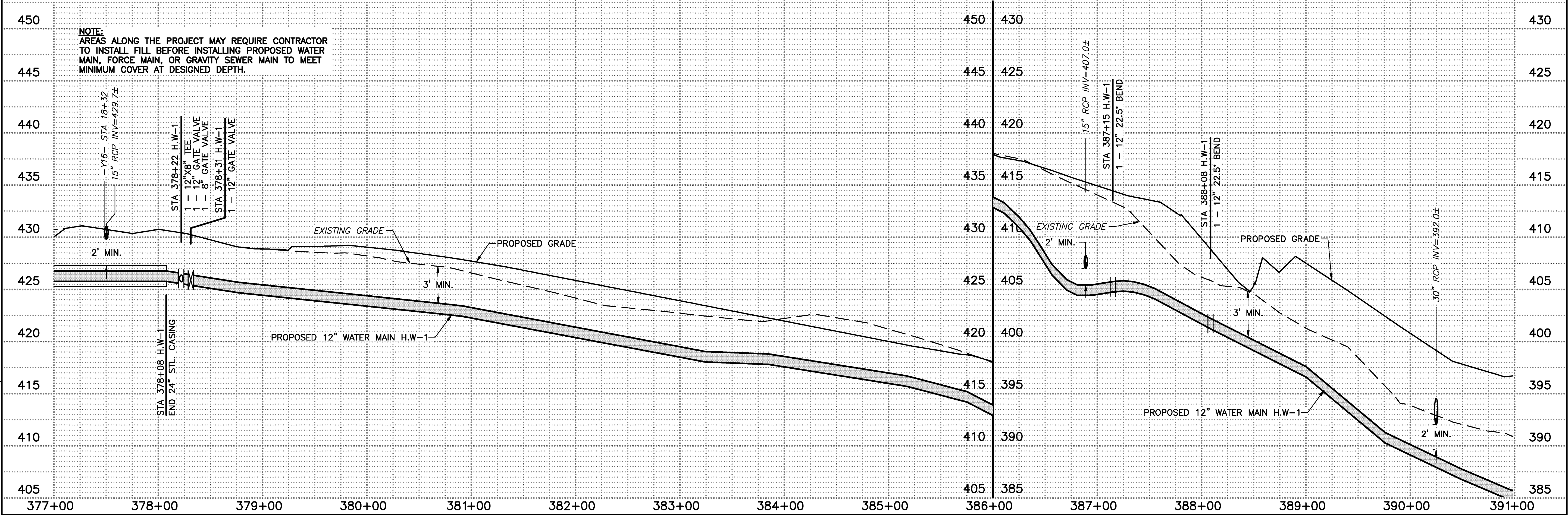
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REVISIONS

LINE H.W-1 SEE PLAN SHEET UC-19 & UC-20



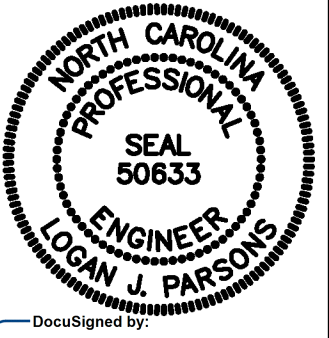
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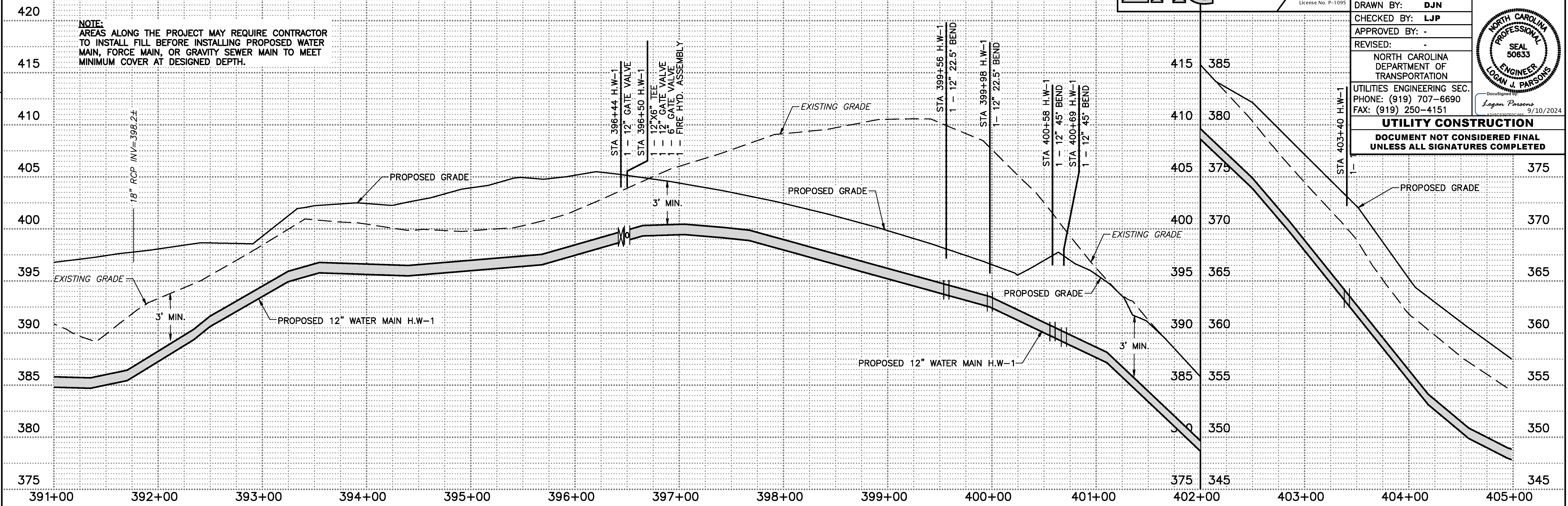
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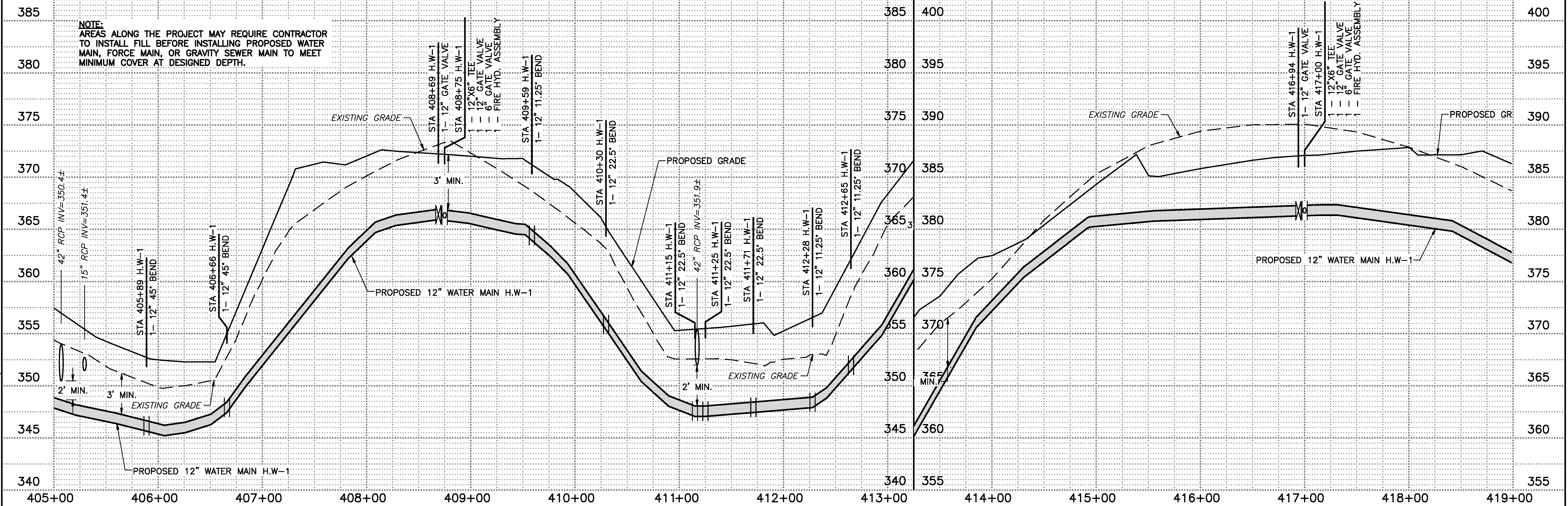
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PROJECT REFERENCE NO.	SHEET NO.
R-5709C	UC-51
DESIGNED BY: LJP	
DRAWN BY: DJN	
CHECKED BY: LJP	
APPROVED BY: -	
REVISED: -	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
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APPROVED BY: -
REVISED: -

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Logan Parsons
a licensed professional
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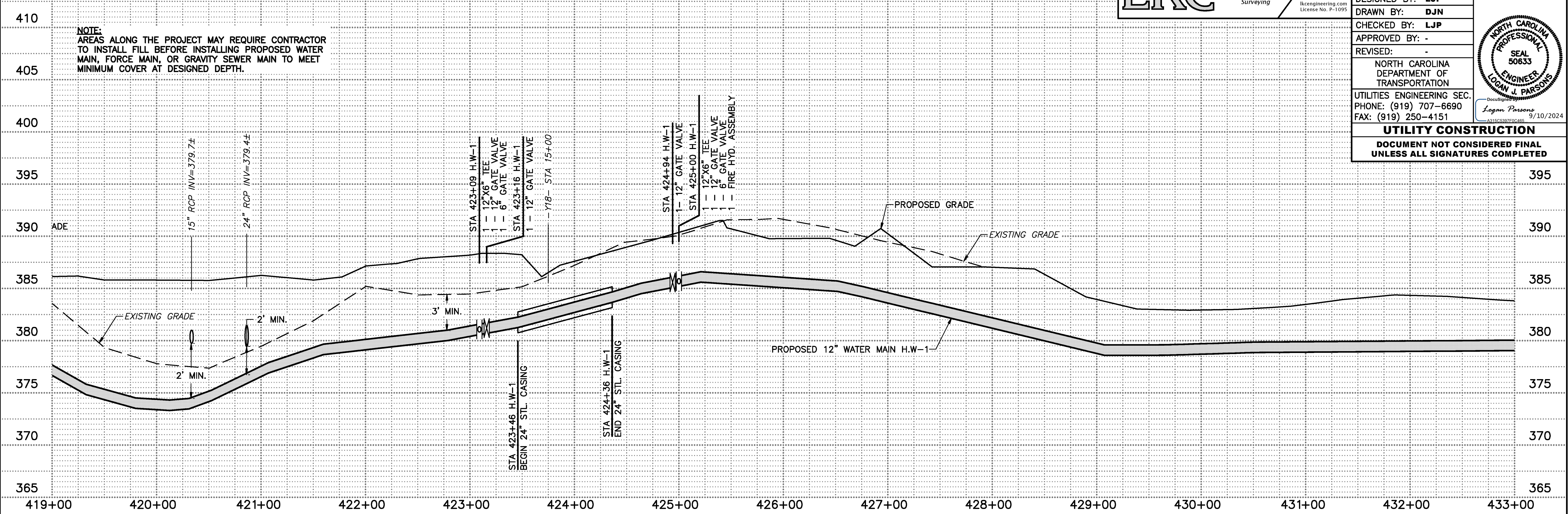
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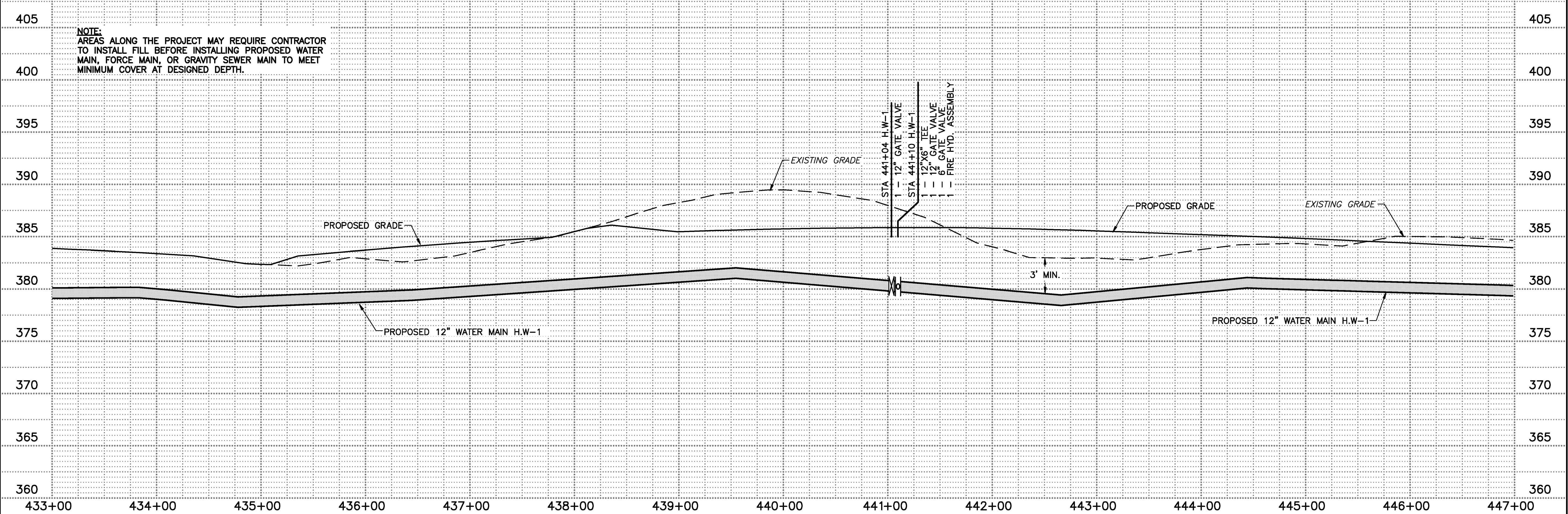
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REVISIONS

LINE H.W-1 SEE PLAN SHEET UC-23 & UC-24



LINE H.W-1 SEE PLAN SHEET UC-24 & UC-25



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PROJECT REFERENCE NO.	SHEET NO.
R-5709C	UC-53
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DRAWN BY: DJN	
CHECKED BY: LJP	
APPROVED BY: -	
REVISED: -	
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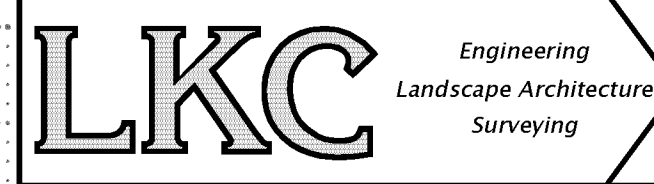


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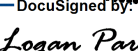
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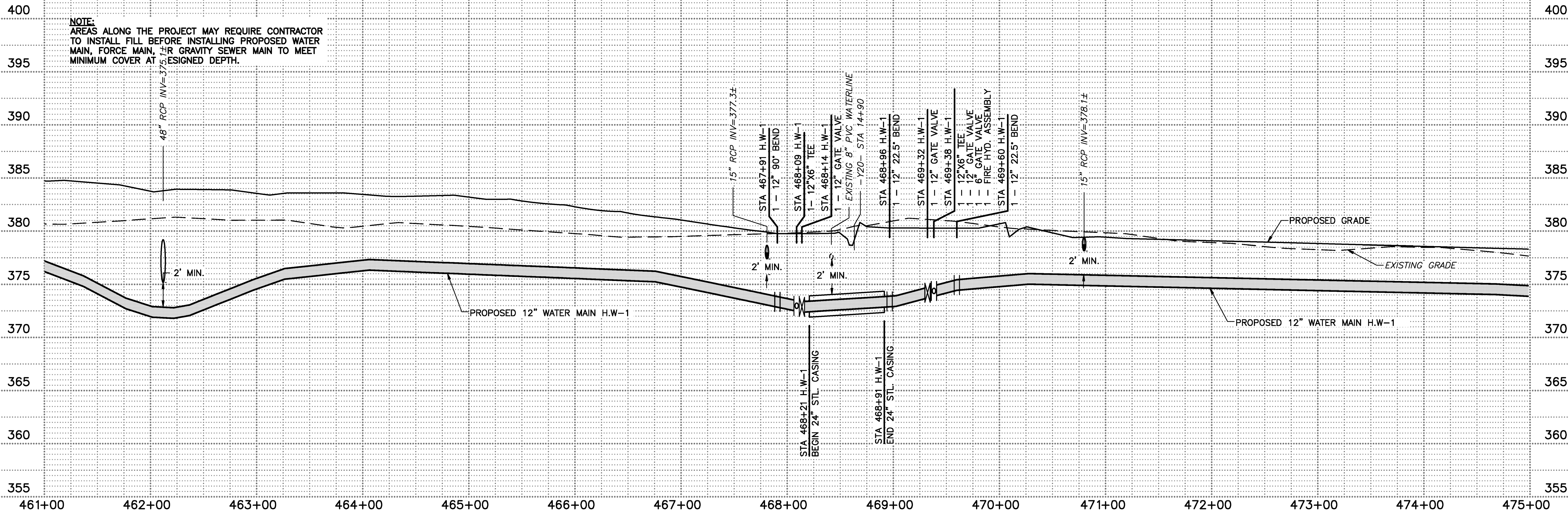
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R-5709C		UC-54	
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DRAWN BY: DJN			
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APPROVED BY: -			
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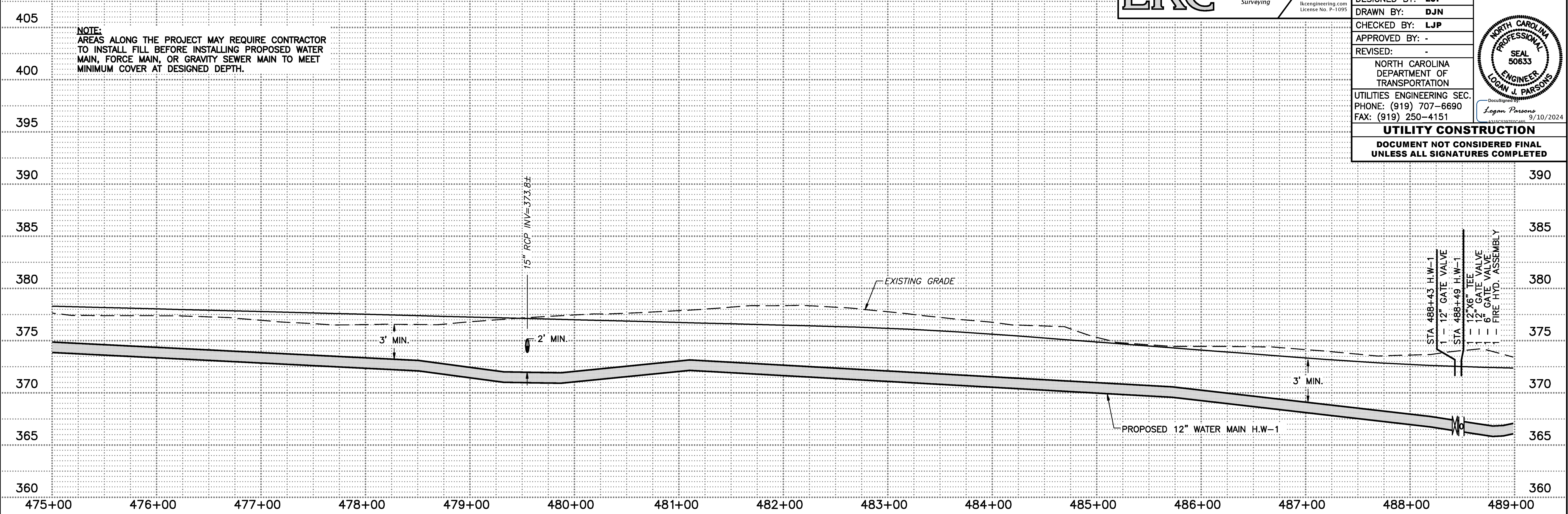


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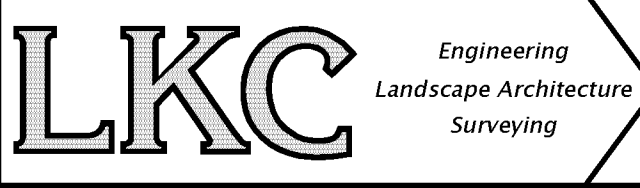
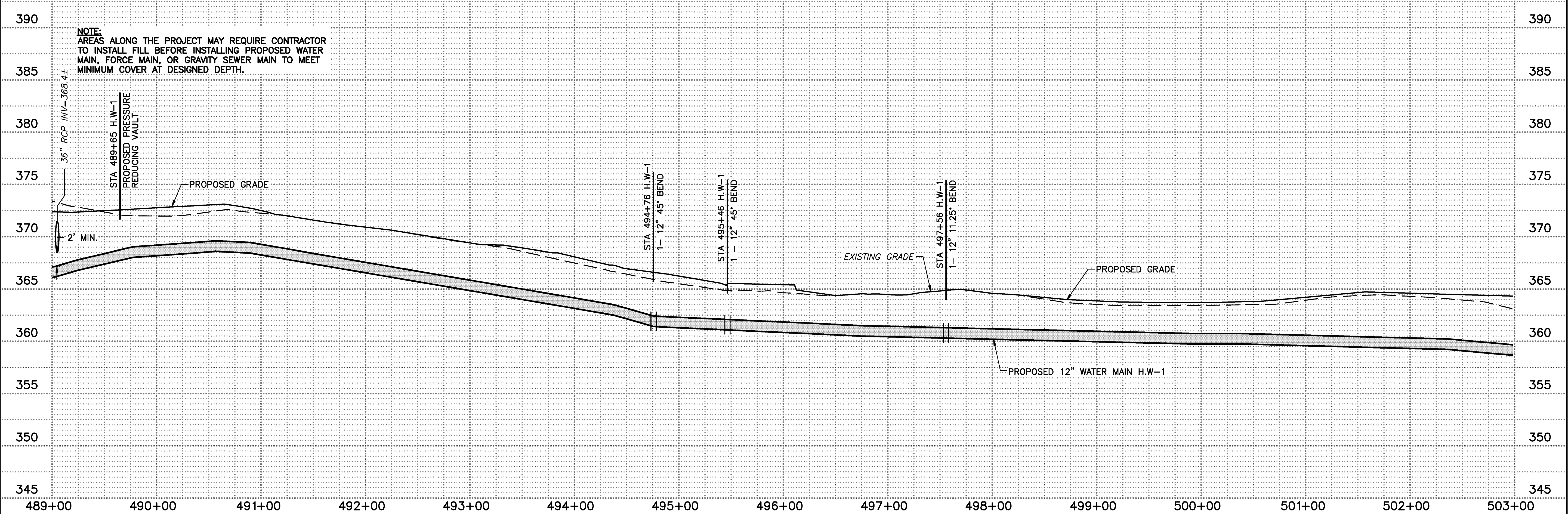
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REVISIONS

LINE H.W-1 SEE PLAN SHEET UC-27 & UC-28

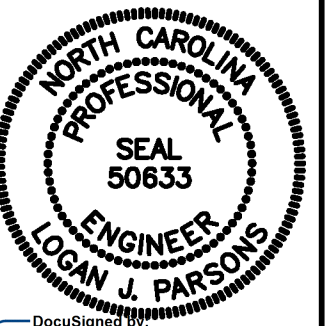


LINE H.W-1 SEE PLAN SHEET UC-28 & UC-29



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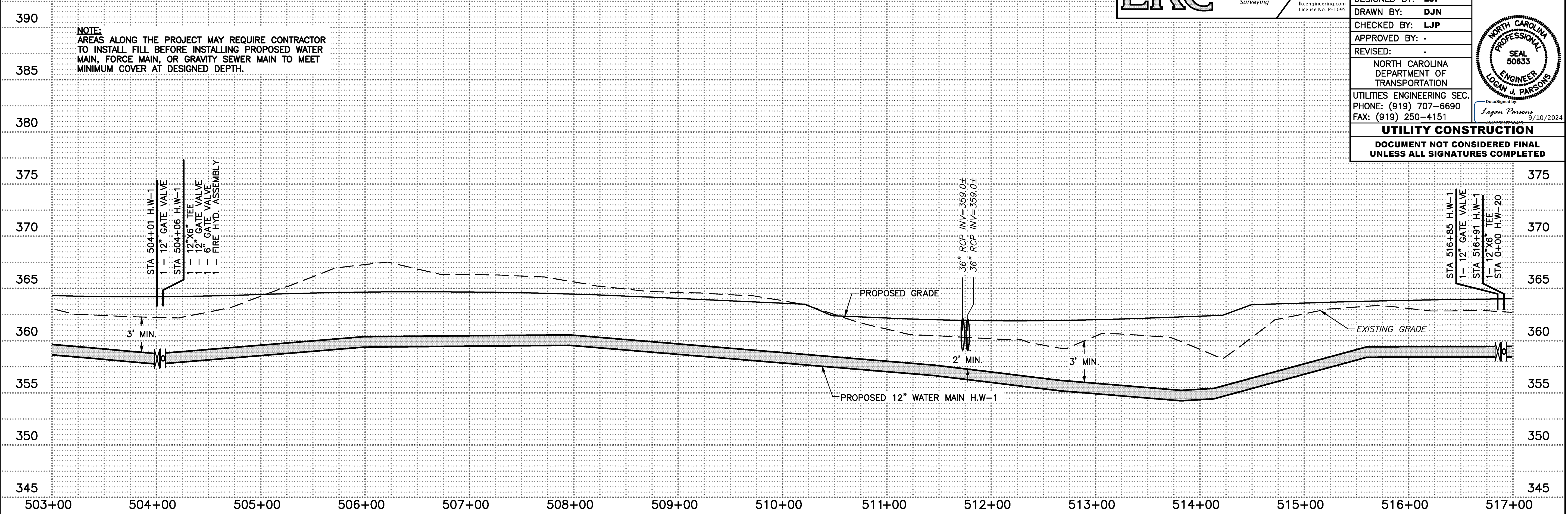
PROJECT REFERENCE NO.	SHEET NO.
R-5709C	UC-55
DESIGNED BY: LJP	
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CHECKED BY: LJP	
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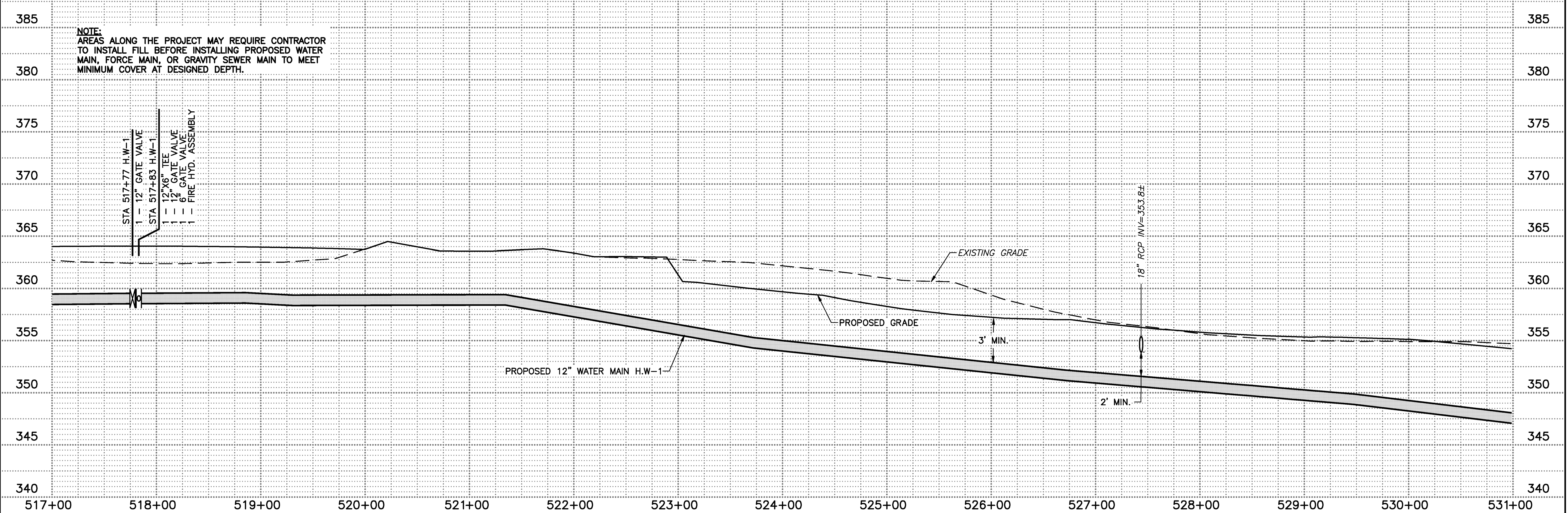
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LINE H.W-1 SEE PLAN SHEET UC-29 & UC-30



LINE H.W-1 SEE PLAN SHEET UC-30 & UC-31



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PROJECT REFERENCE NO.	SHEET NO.
R-5709C	UC-56
DESIGNED BY: LJP	
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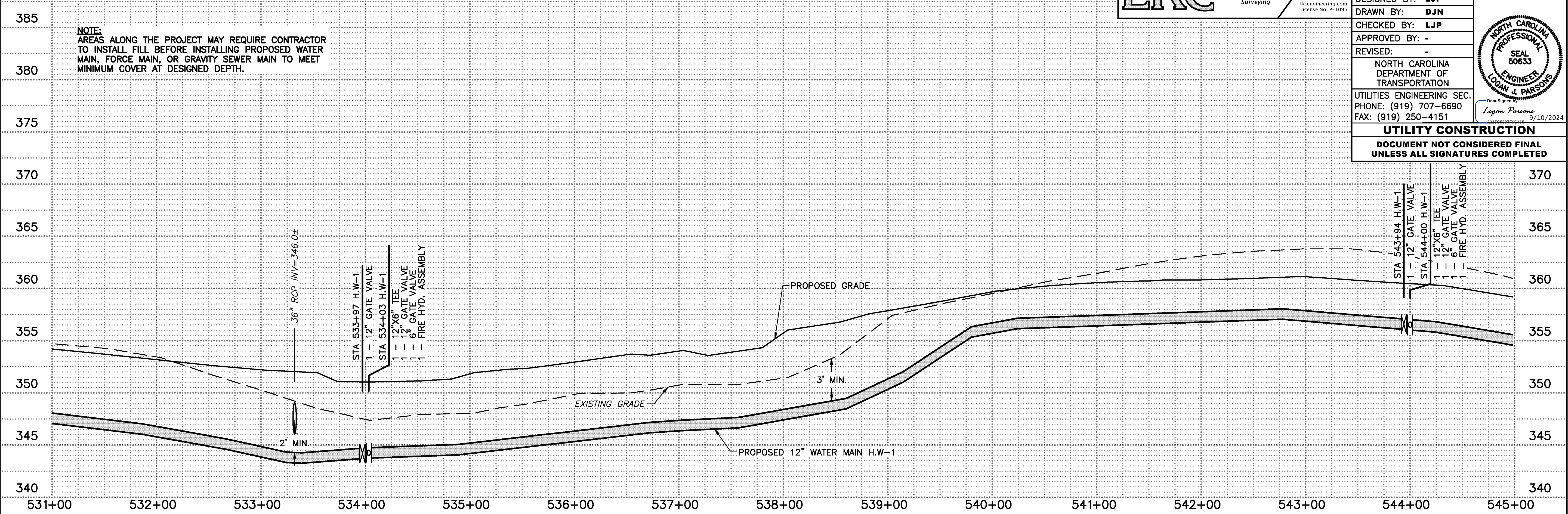
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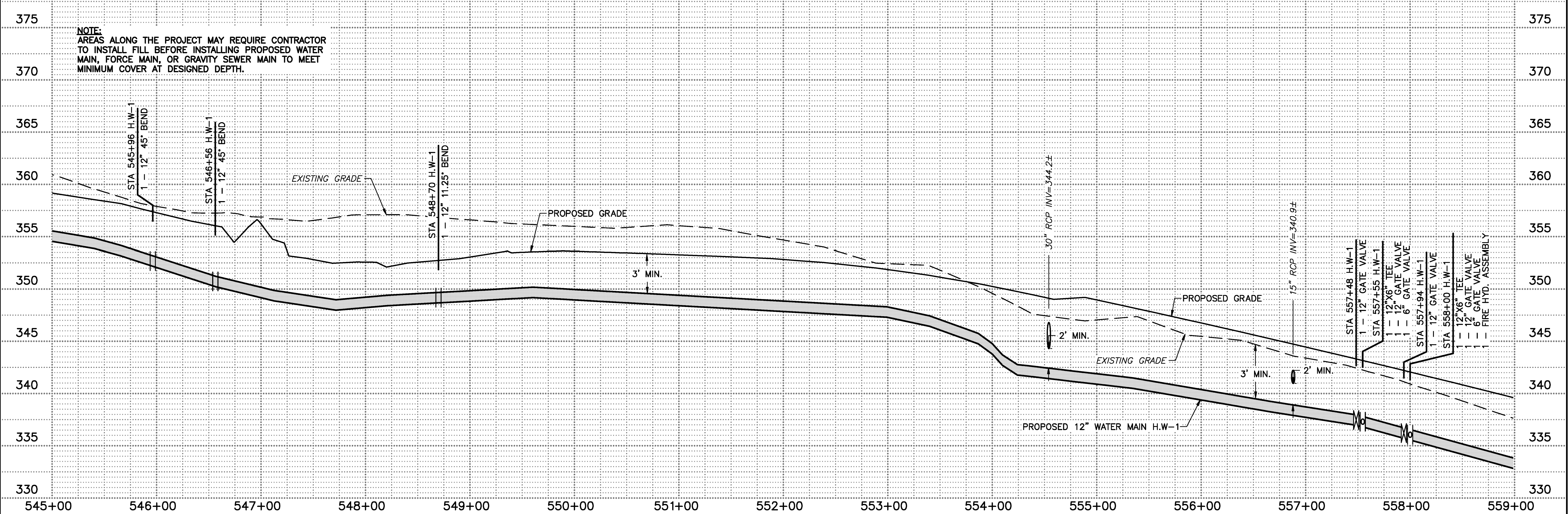
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LINE H.W-1 SEE PLAN SHEET UC-32 & UC-33



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PROJECT REFERENCE NO.	SHEET NO.
R-5709C	UC-57
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DRAWN BY: DJN	
CHECKED BY: LJP	
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REVISED: -	
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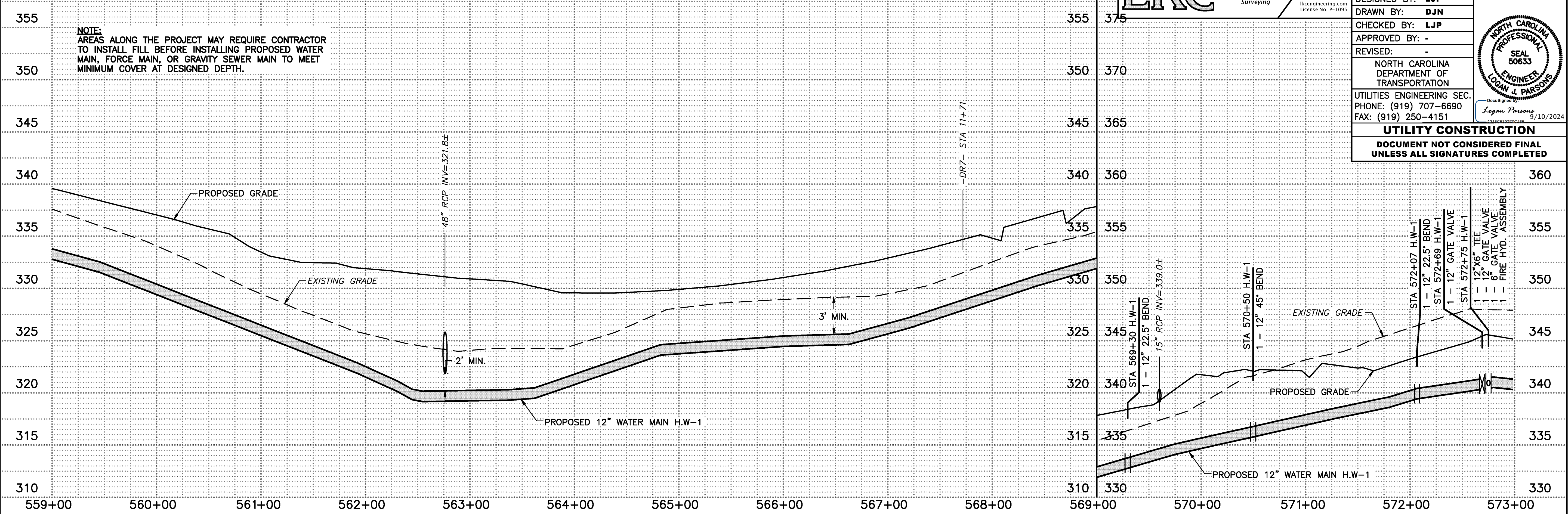
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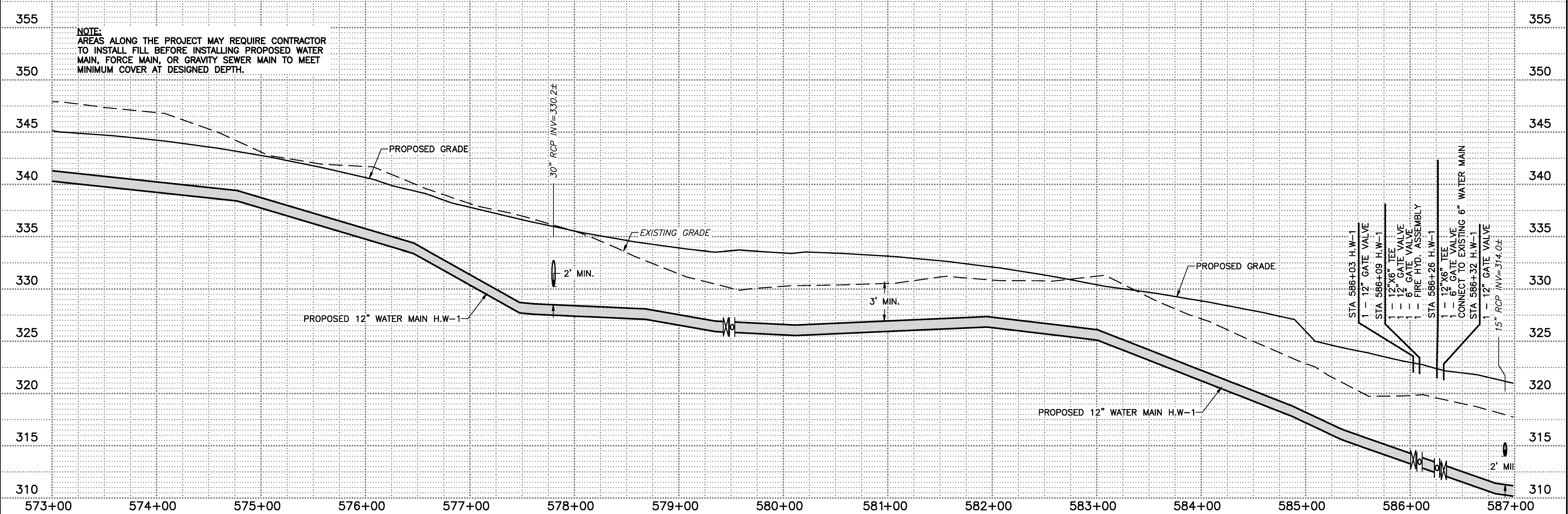
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REVISIONS

LINE H.W-1 SEE PLAN SHEET UC-33 & UC-34



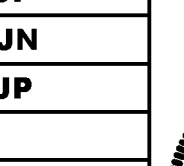
LINE H.W-1 SEE PLAN SHEET UC-34 & UC-35



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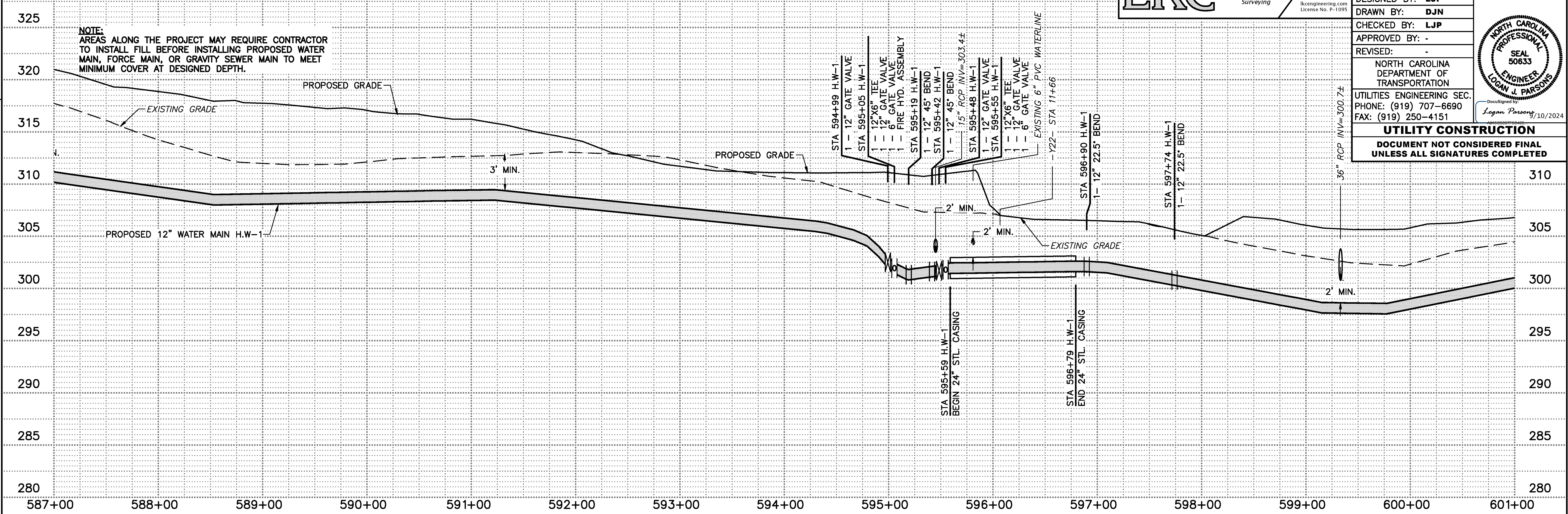
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PROJECT REFERENCE NO.	SHEET NO.
R-5709C	UC-58
DESIGNED BY: LJP	
DRAWN BY: DJN	
CHECKED BY: LJP	
APPROVED BY: -	
REVISED: -	
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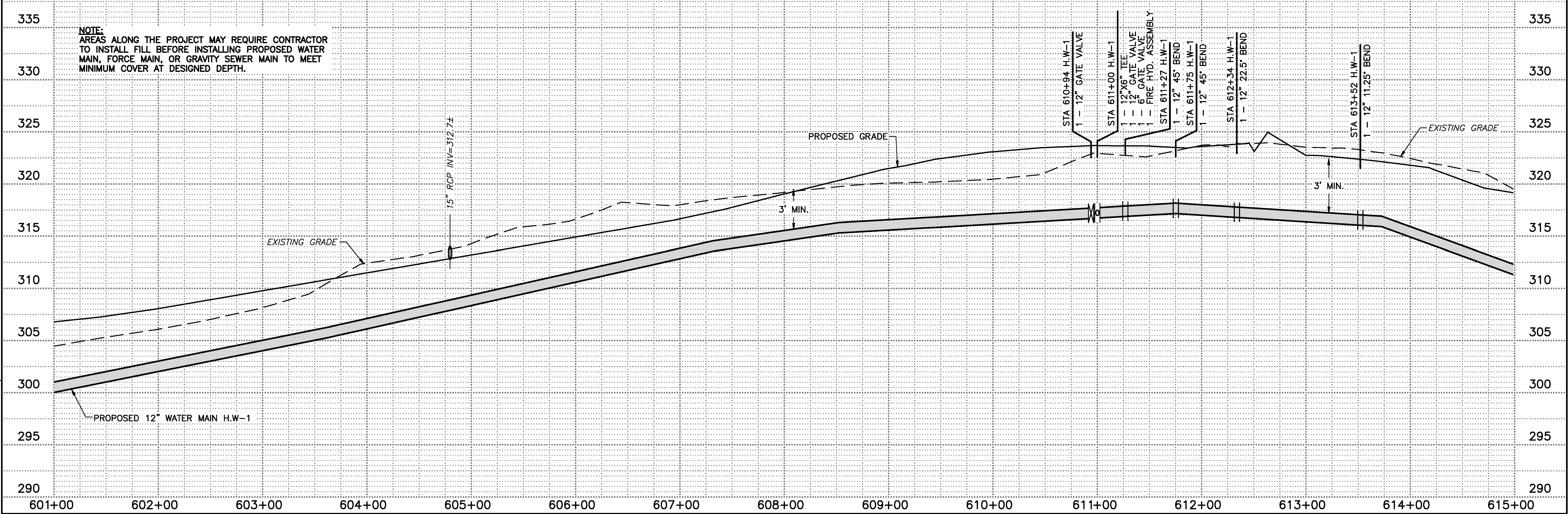
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REVISIONS

LINE H.W-1 SEE PLAN SHEET UC-35 & UC-36



LINE H.W-1 SEE PLAN SHEET UC-36 & UC-37

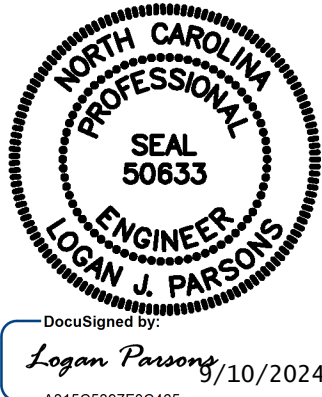


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PROJECT REFERENCE NO.	SHEET NO.
R-5709C	UC-59
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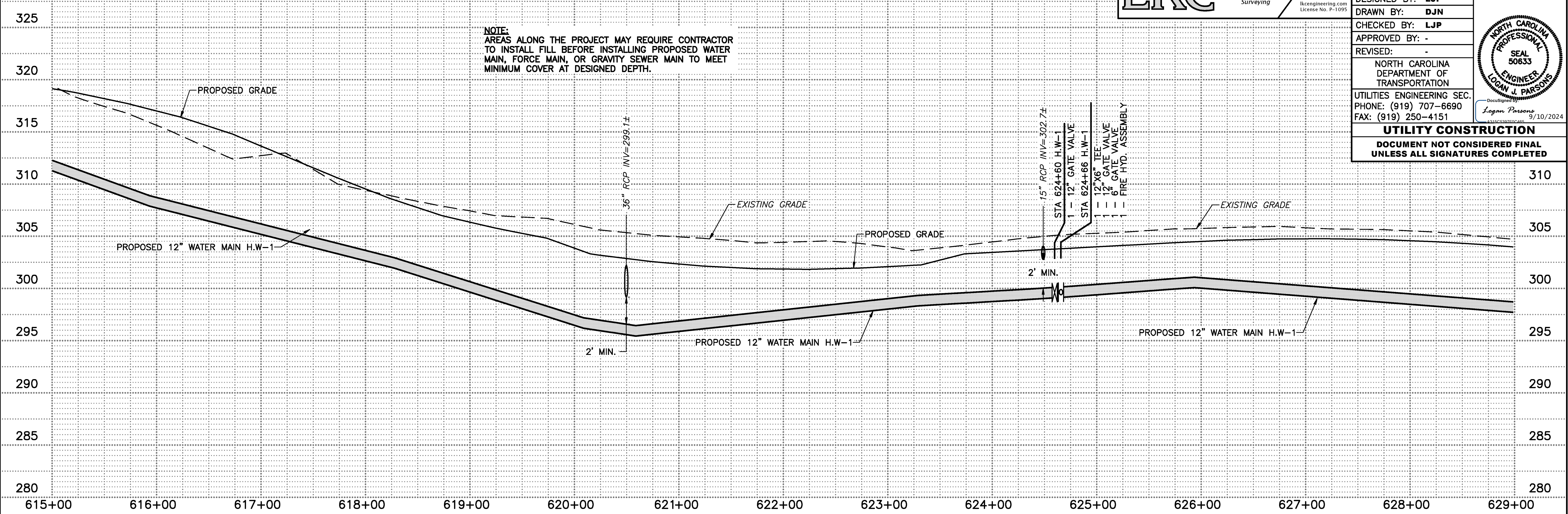
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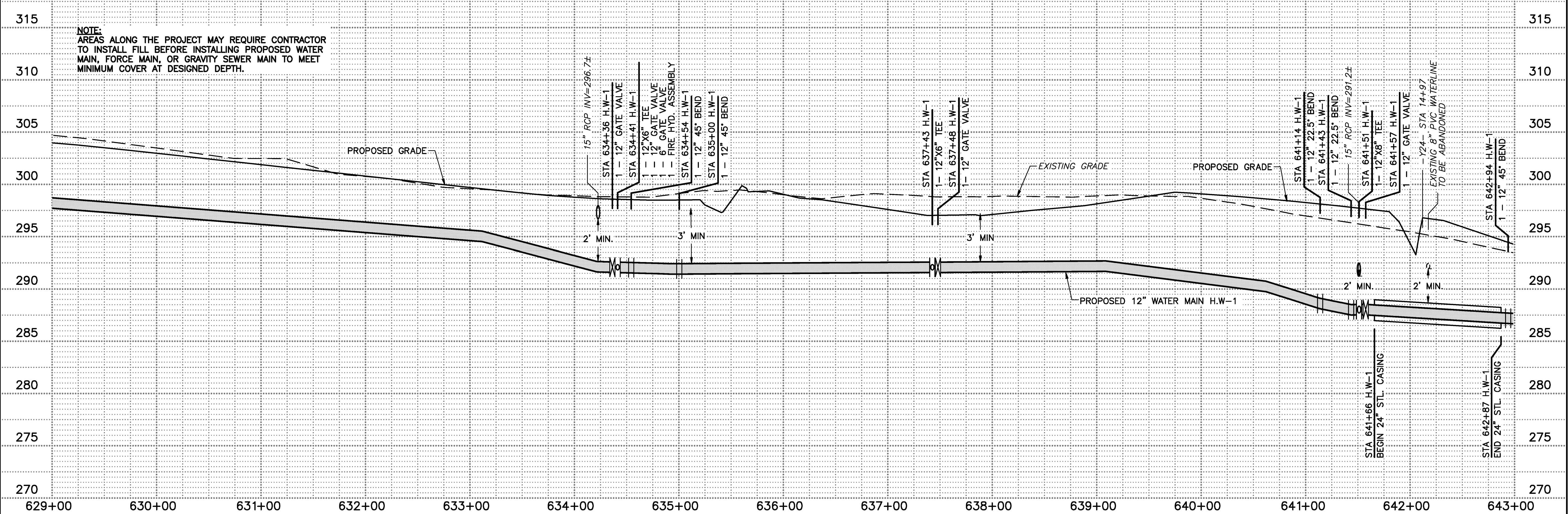
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REVISIONS

LINE H.W-1 SEE PLAN SHEET UC-37 & UC-38



LINE H.W-1 SEE PLAN SHEET UC-38 & UC-39



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PROJECT REFERENCE NO.	SHEET NO.
R-5709C	UC-60
DESIGNED BY: LJP	
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CHECKED BY: LJP	
APPROVED BY: -	
REVISED: -	
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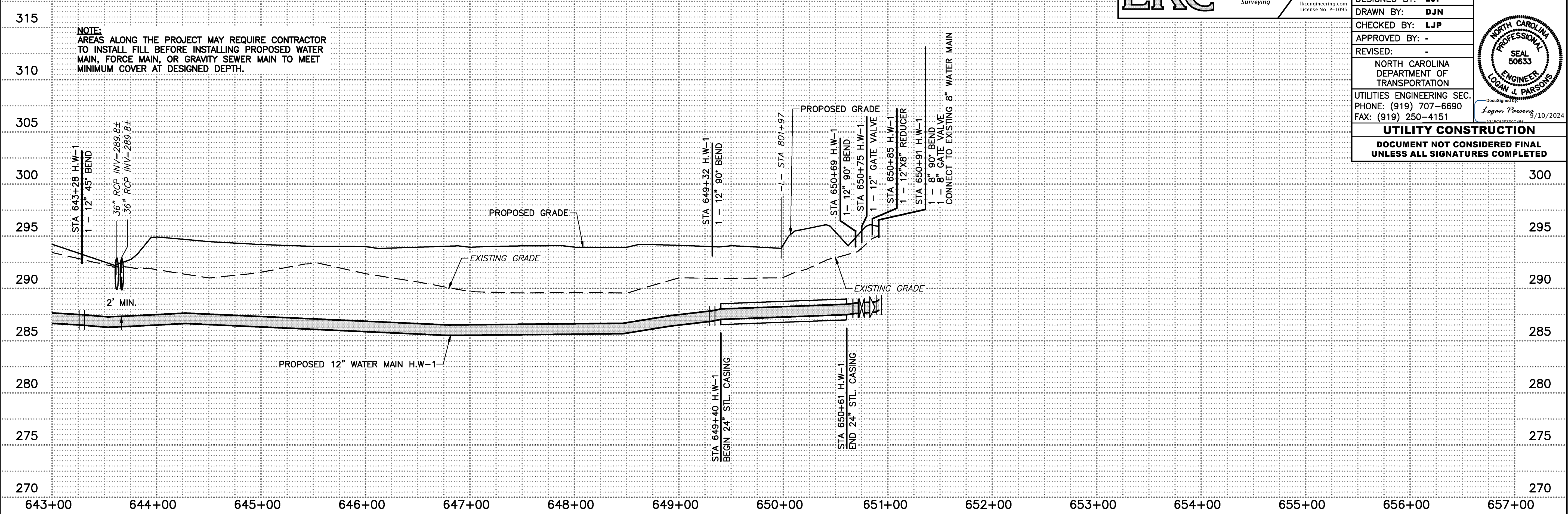
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PROJECT REFERENCE NO.		SHEET NO.	
R-5709C		UC-61	
DESIGNED BY: LJP			
DRAWN BY: DJN			
CHECKED BY: LJP			
APPROVED BY: -			
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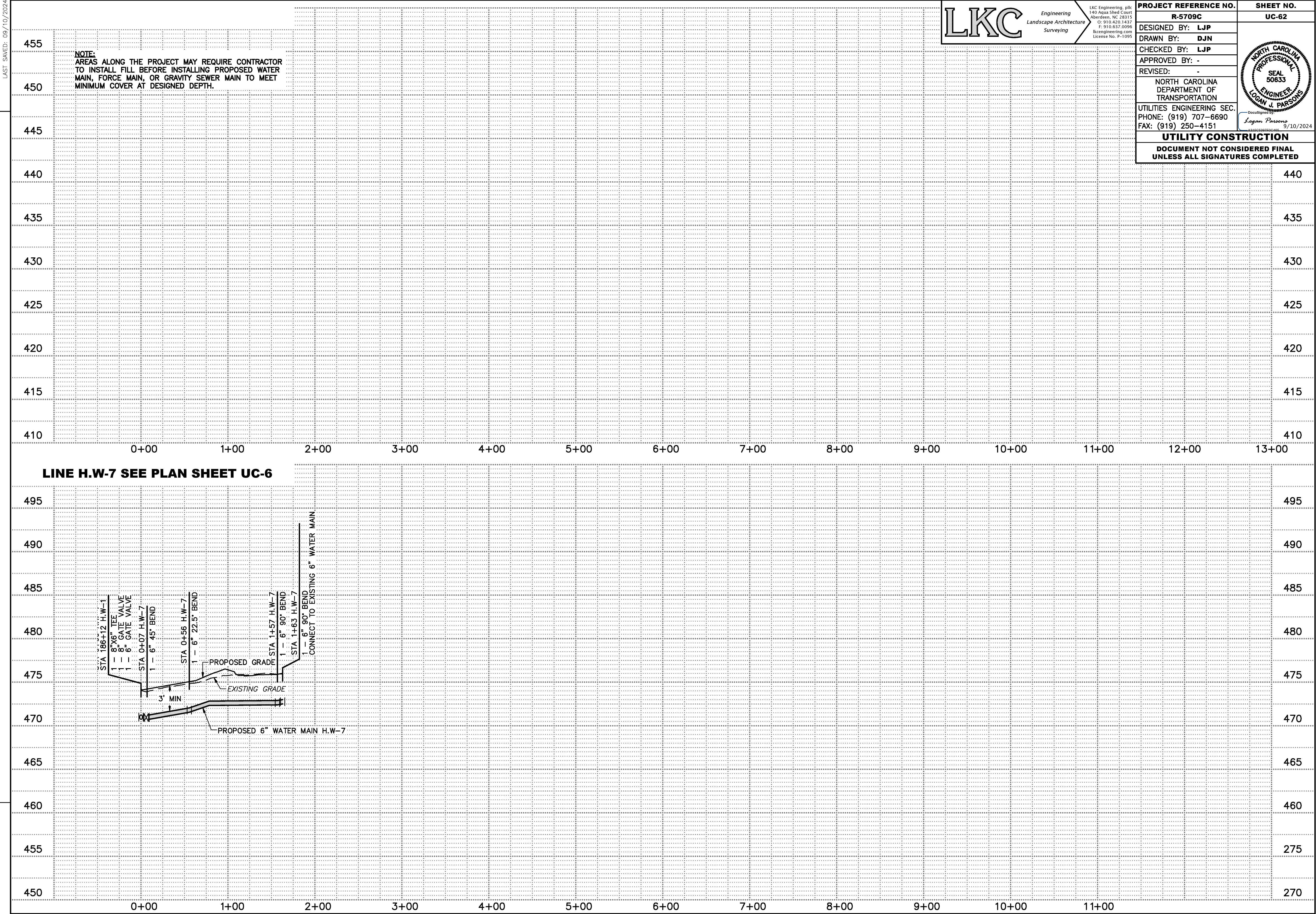
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PROJECT REFERENCE NO.
R-5709C

DESIGNED BY: LJP

DRAWN BY: DJN

CHECKED BY: LJP

APPROVED BY: -

REVISED: -

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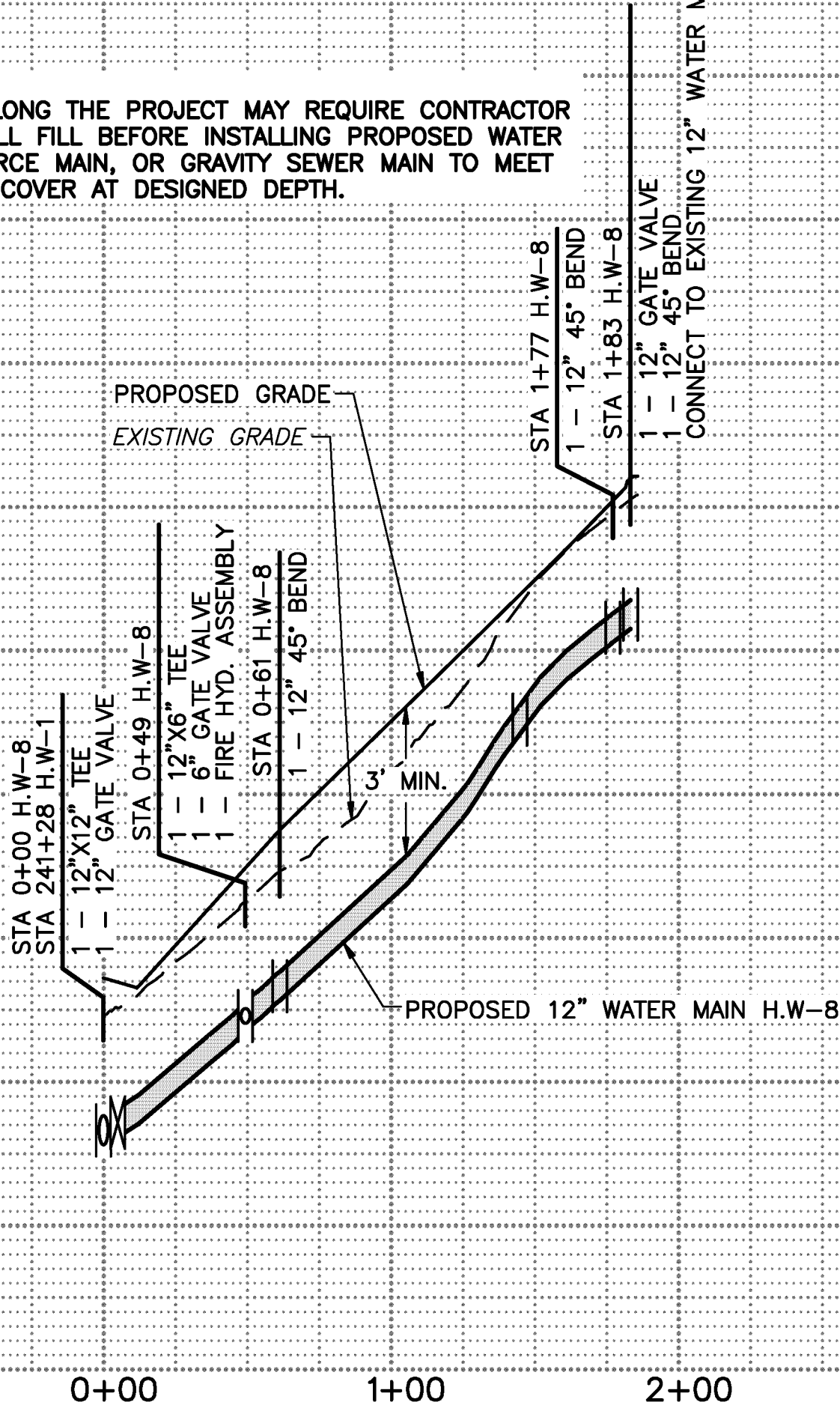
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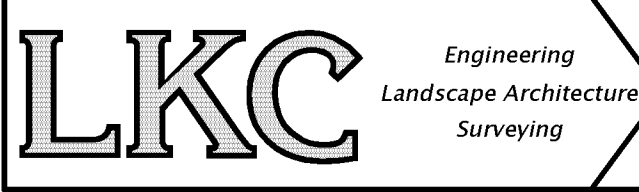
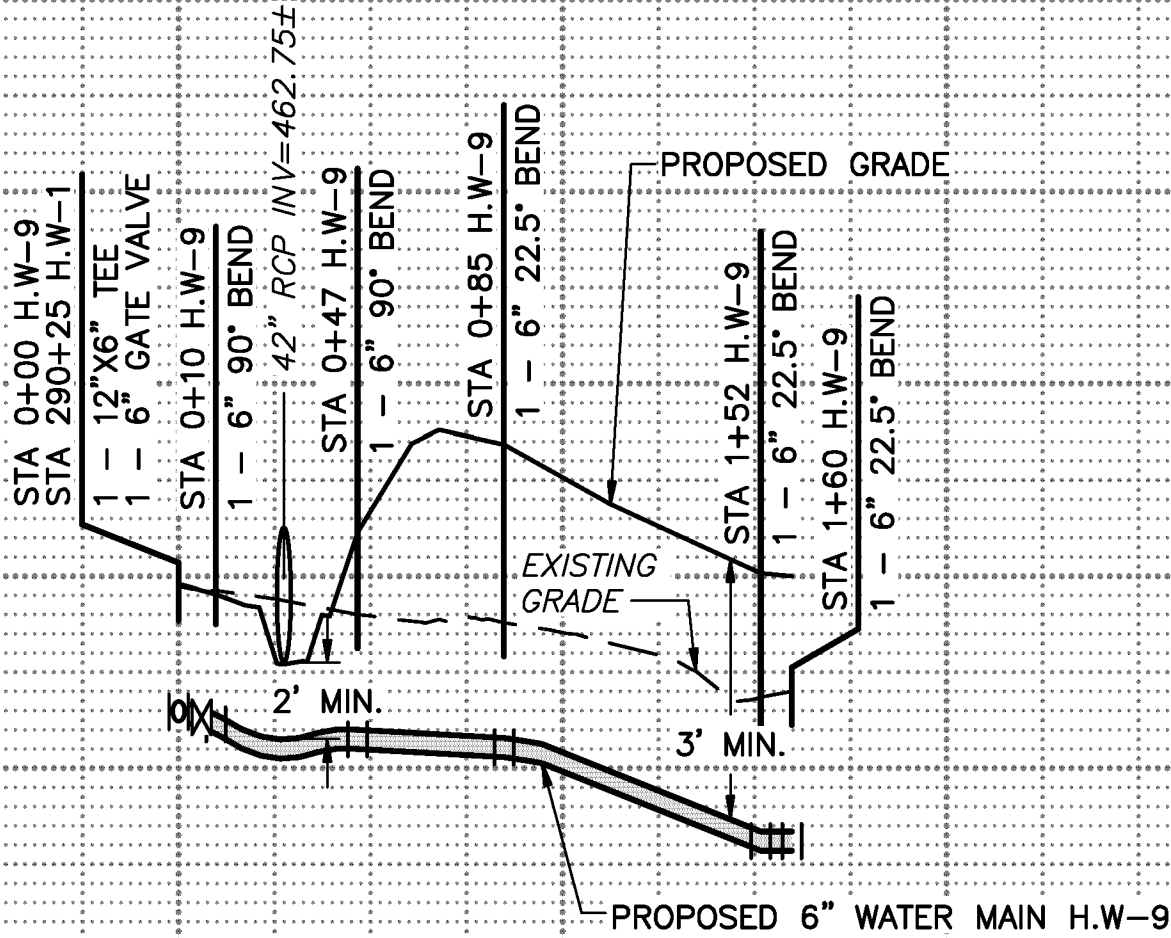
LINE H.W-8 SEE PLAN SHEET UC-11

NOTE:
AREAS ALONG THE PROJECT MAY REQUIRE CONTRACTOR TO INSTALL FILL BEFORE INSTALLING PROPOSED WATER MAIN, FORCE MAIN, OR GRAVITY SEWER MAIN TO MEET MINIMUM COVER AT DESIGNED DEPTH.



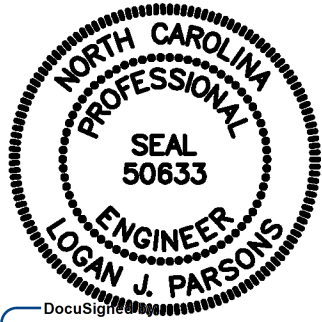
LINE H.W-9 SEE PLAN SHEET UC-14

NOTE:
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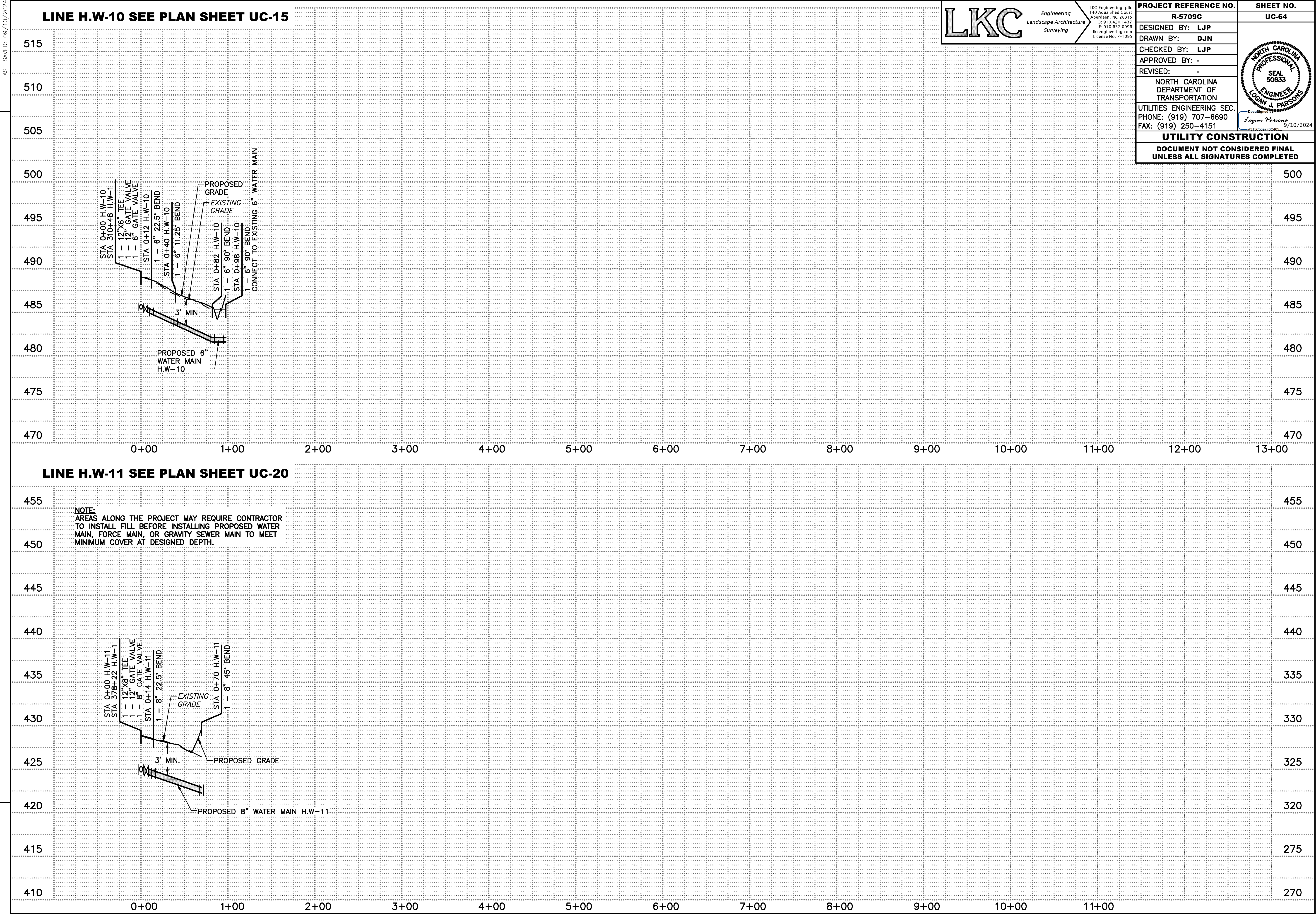


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PROJECT REFERENCE NO.	SHEET NO.
R-5709C	UC-63
DESIGNED BY: LJP	NORTH CAROLINA PROFESSIONAL SEAL 50633 ENGINEER LOGAN J. PARSONS DocuSign Logan Parsons A315C5397F0C465 9/10/2024
DRAWN BY: DJN	
CHECKED BY: LJP	
APPROVED BY: -	
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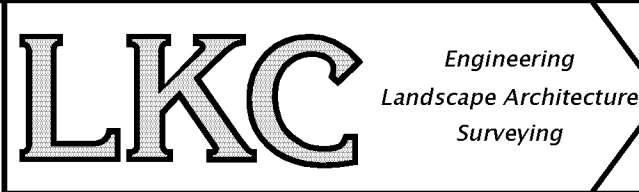
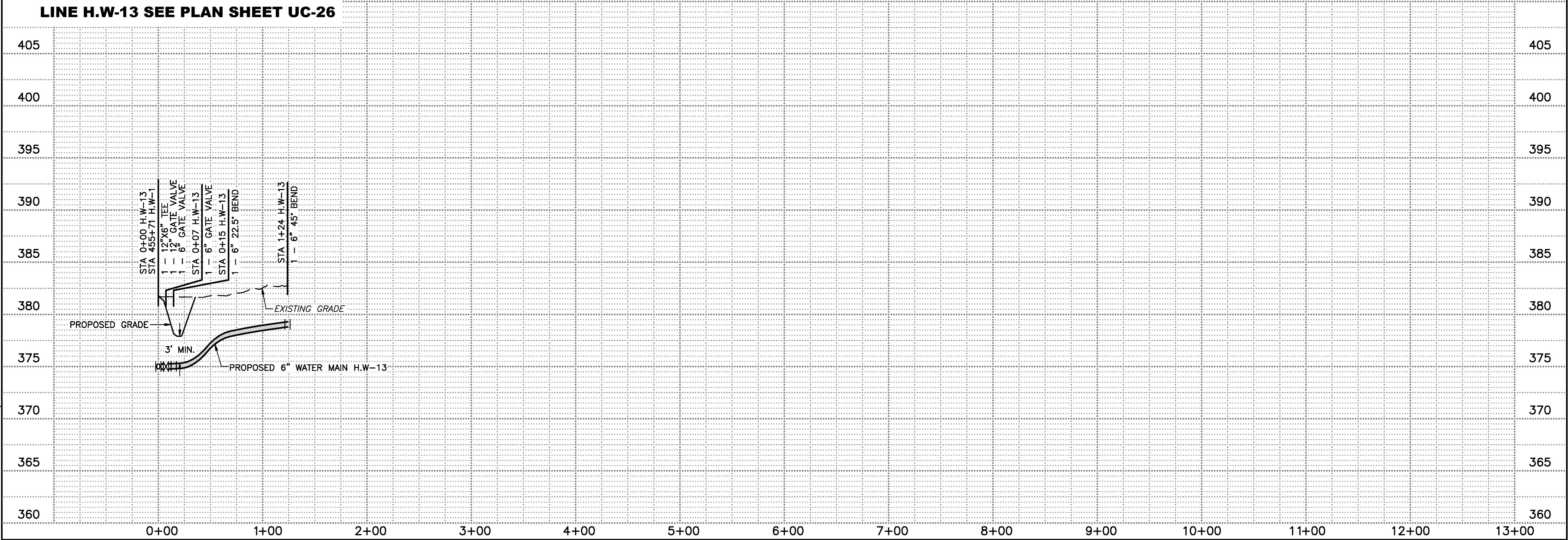
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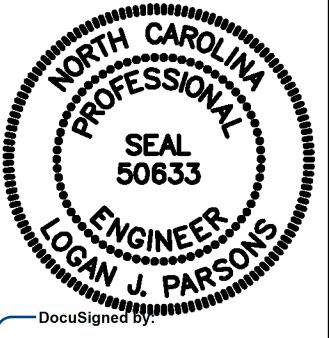
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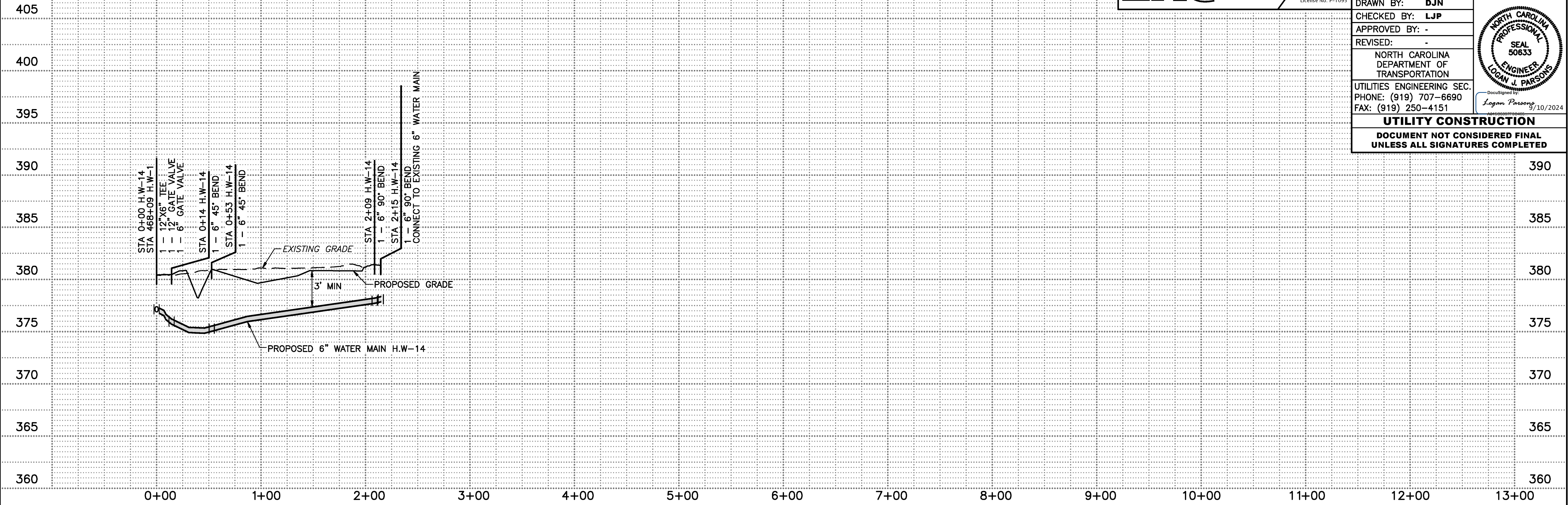


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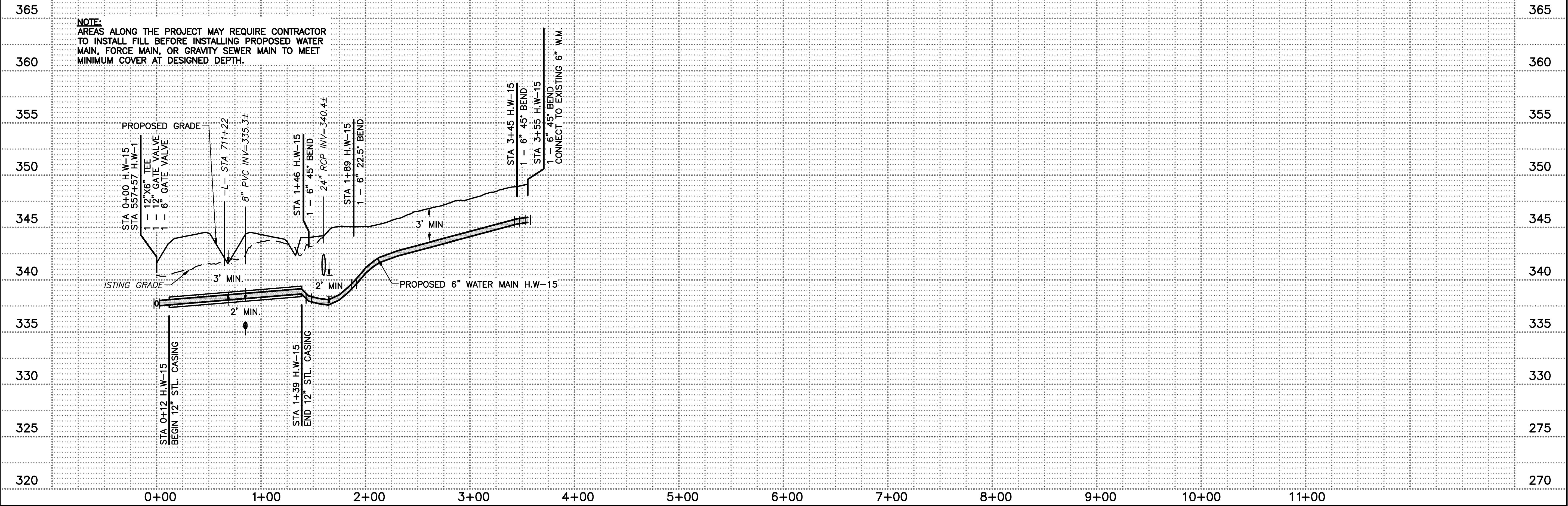
PROJECT REFERENCE NO.	SHEET NO.
R-5709C	UC-65
DESIGNED BY: LJP	
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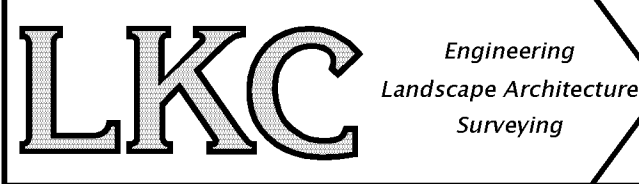
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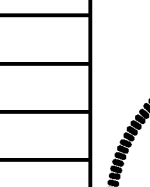
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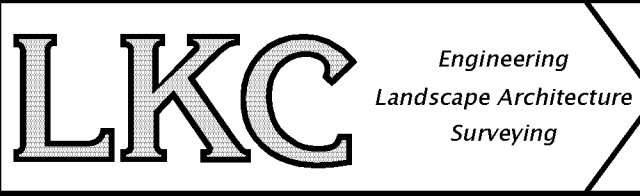
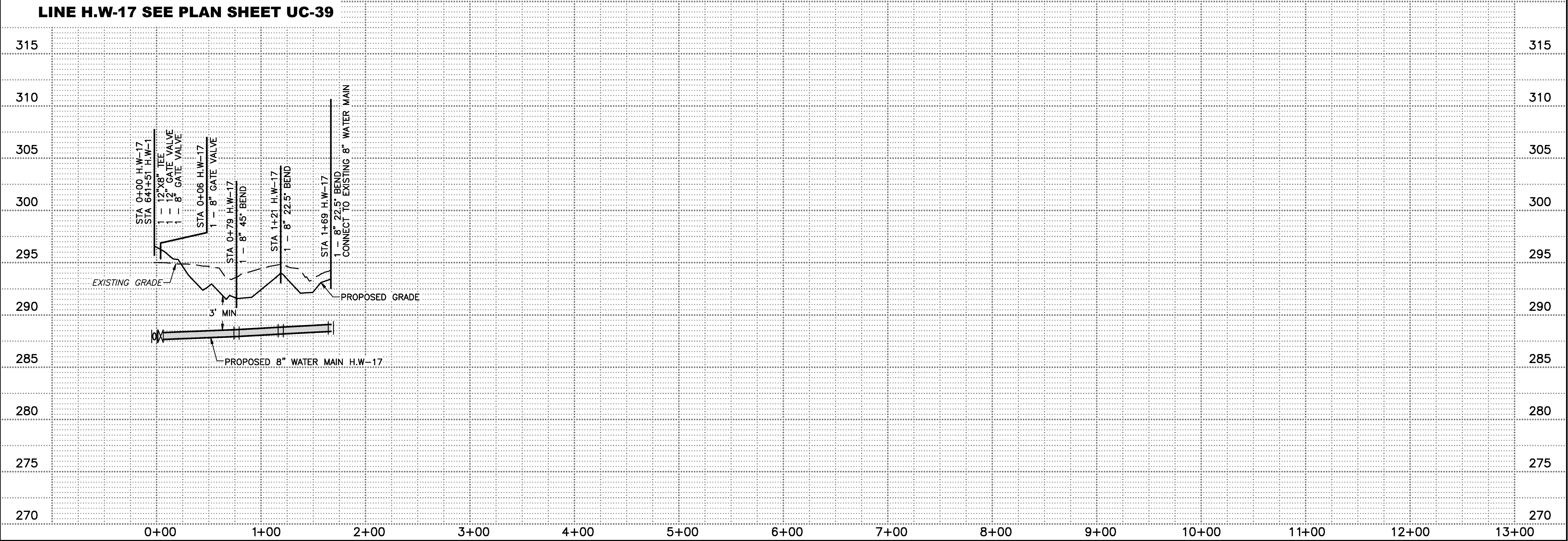
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LINE H.W-16 SEE PLAN SHEET UC-36



LINE H.W-17 SEE PLAN SHEET UC-39



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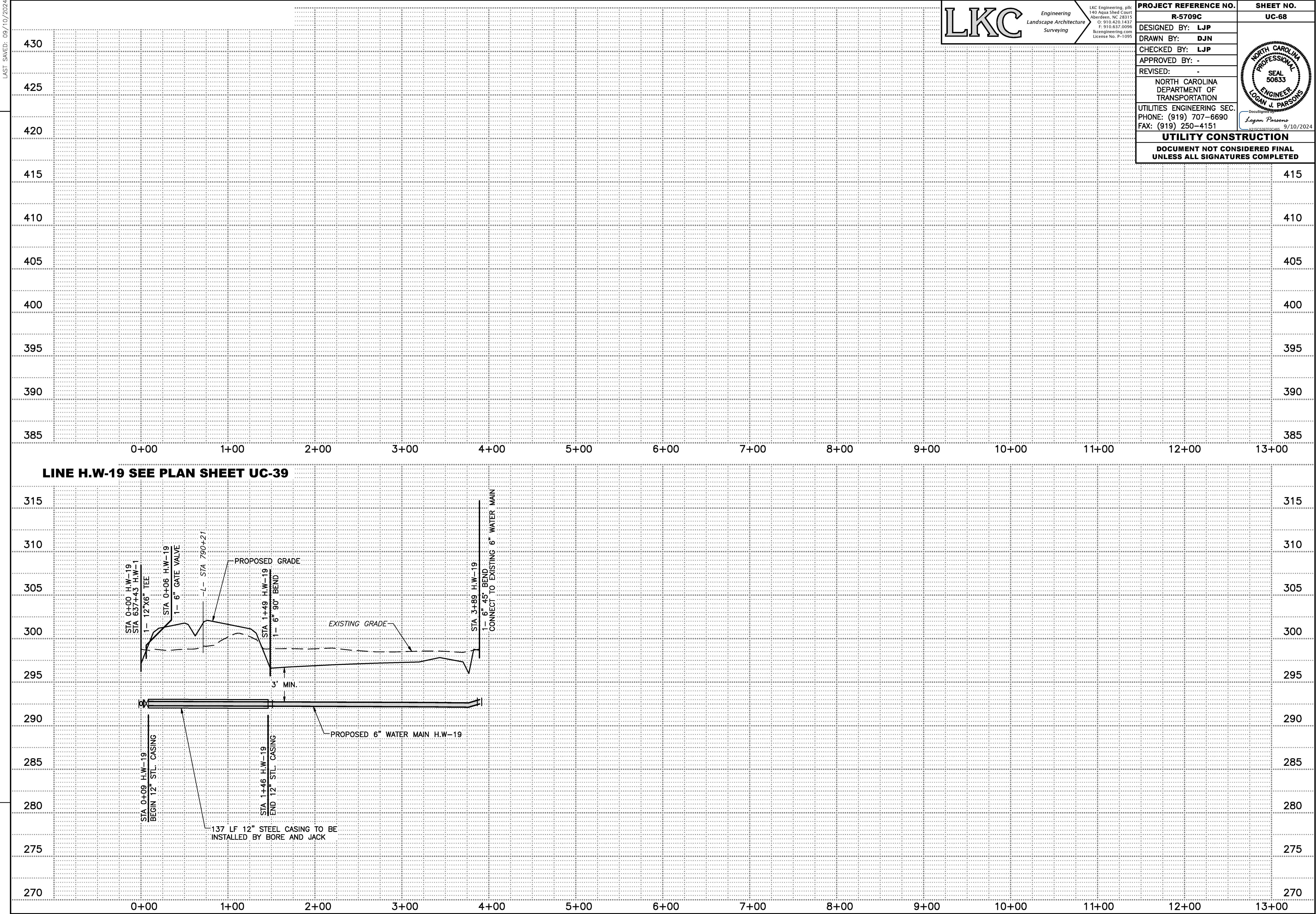
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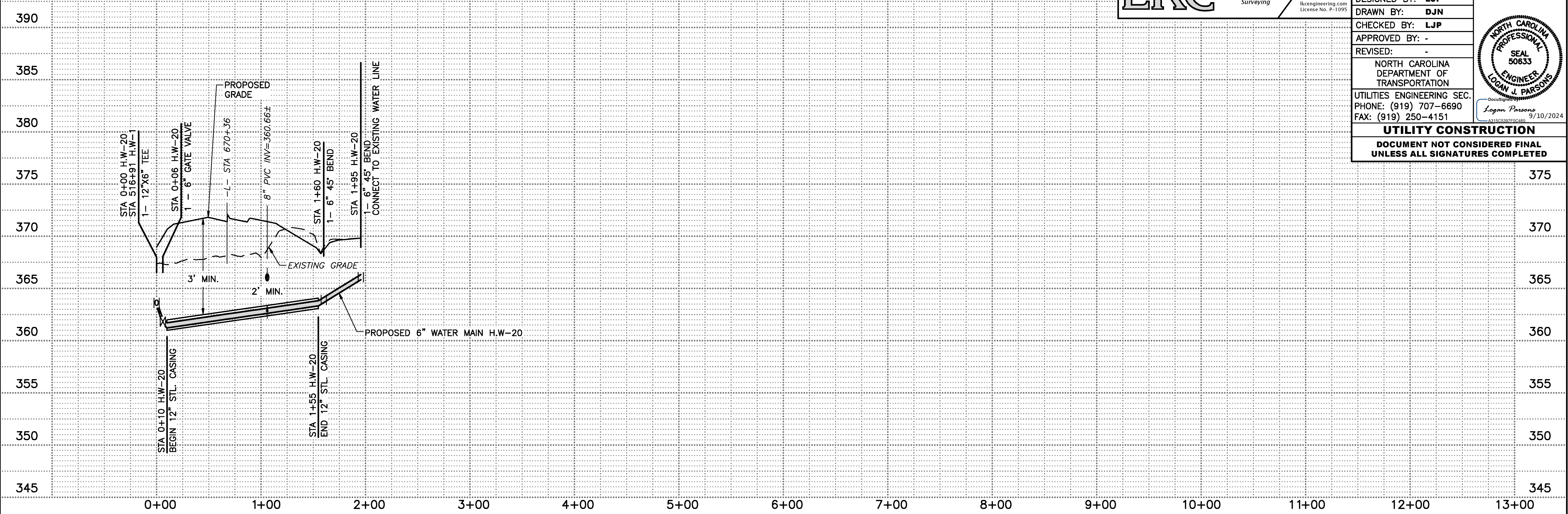
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LINE H.W-20 SEE PLAN SHEET UC-30



LINE H.W-21 SEE PLAN SHEET UC-20



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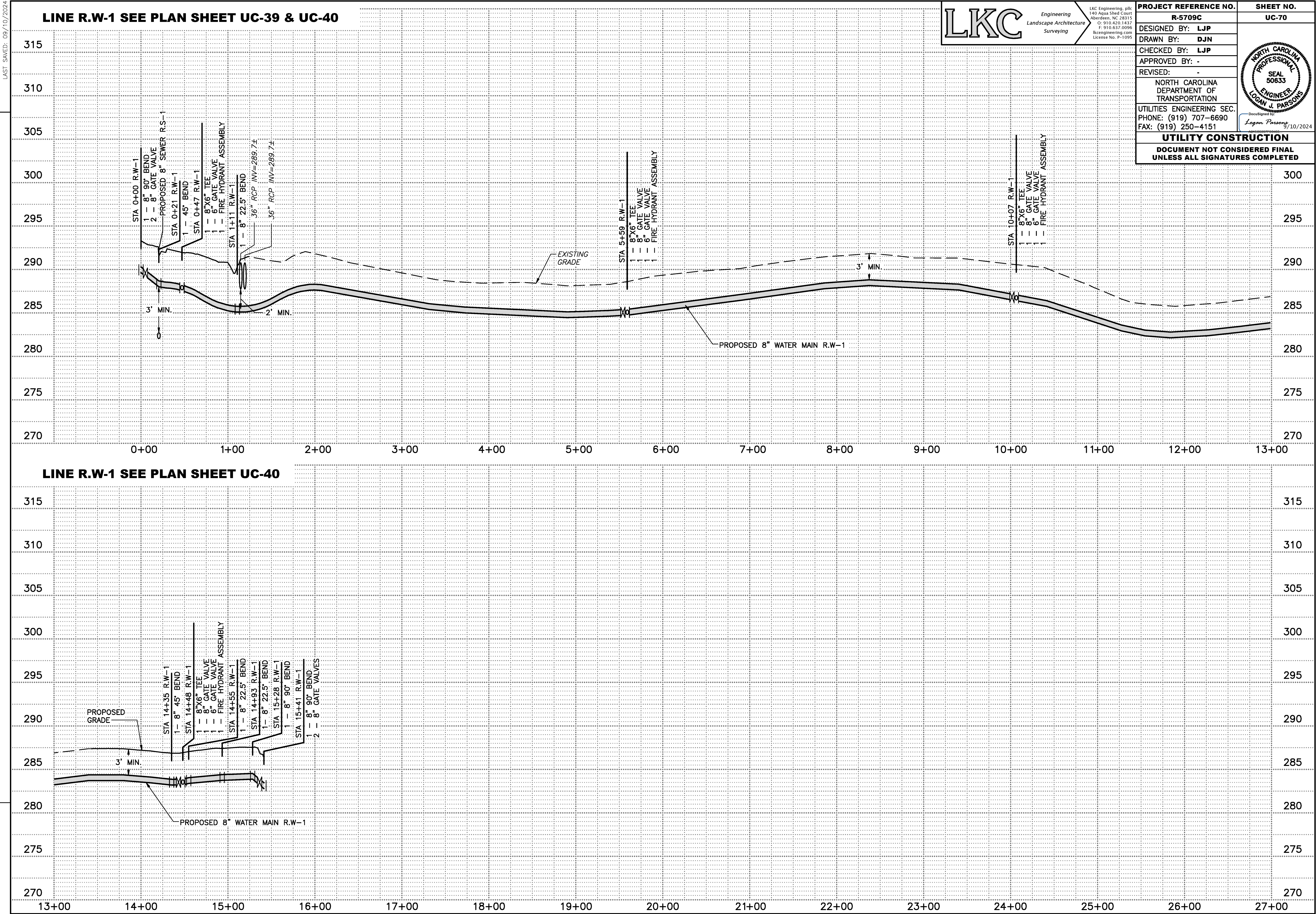
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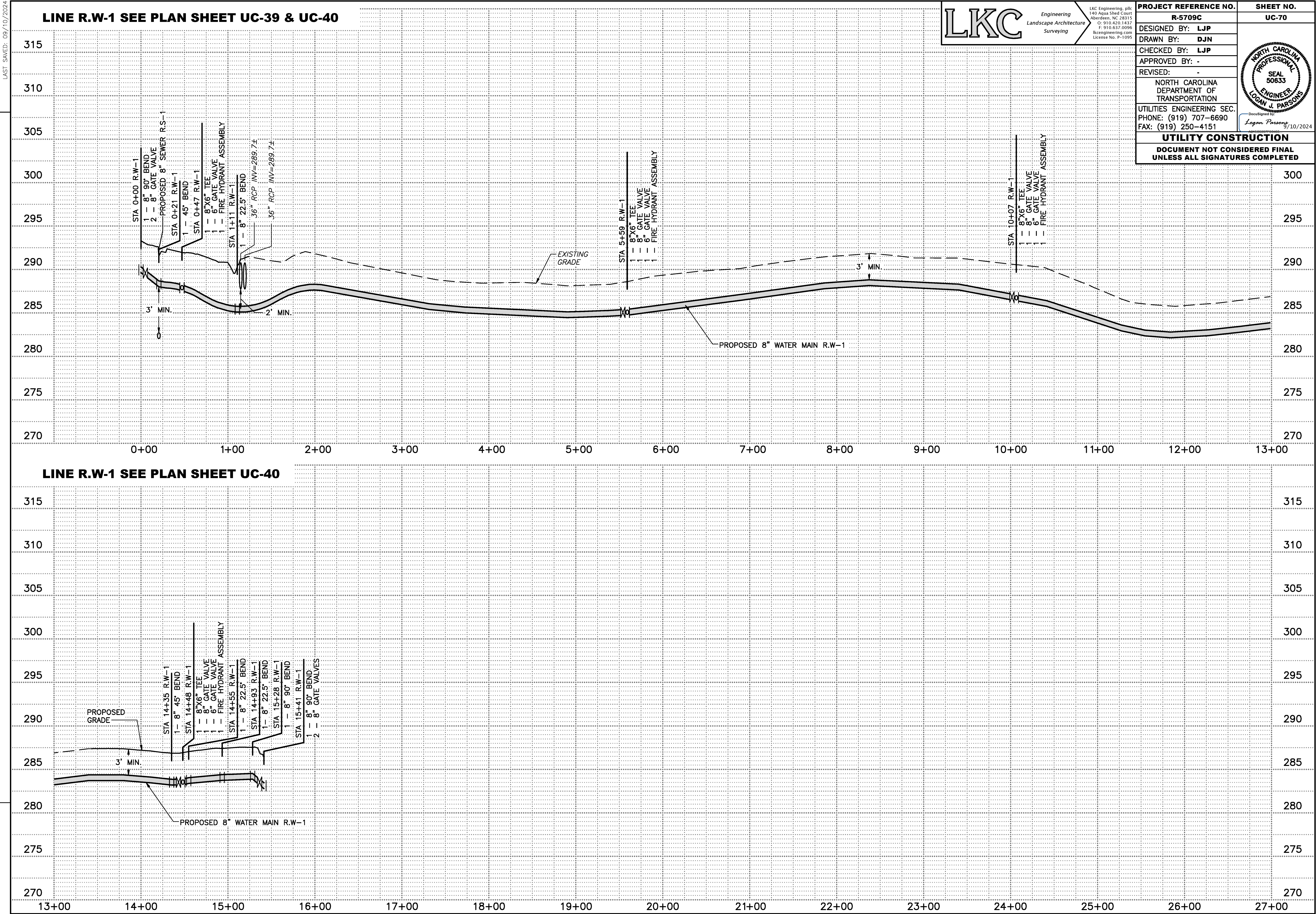
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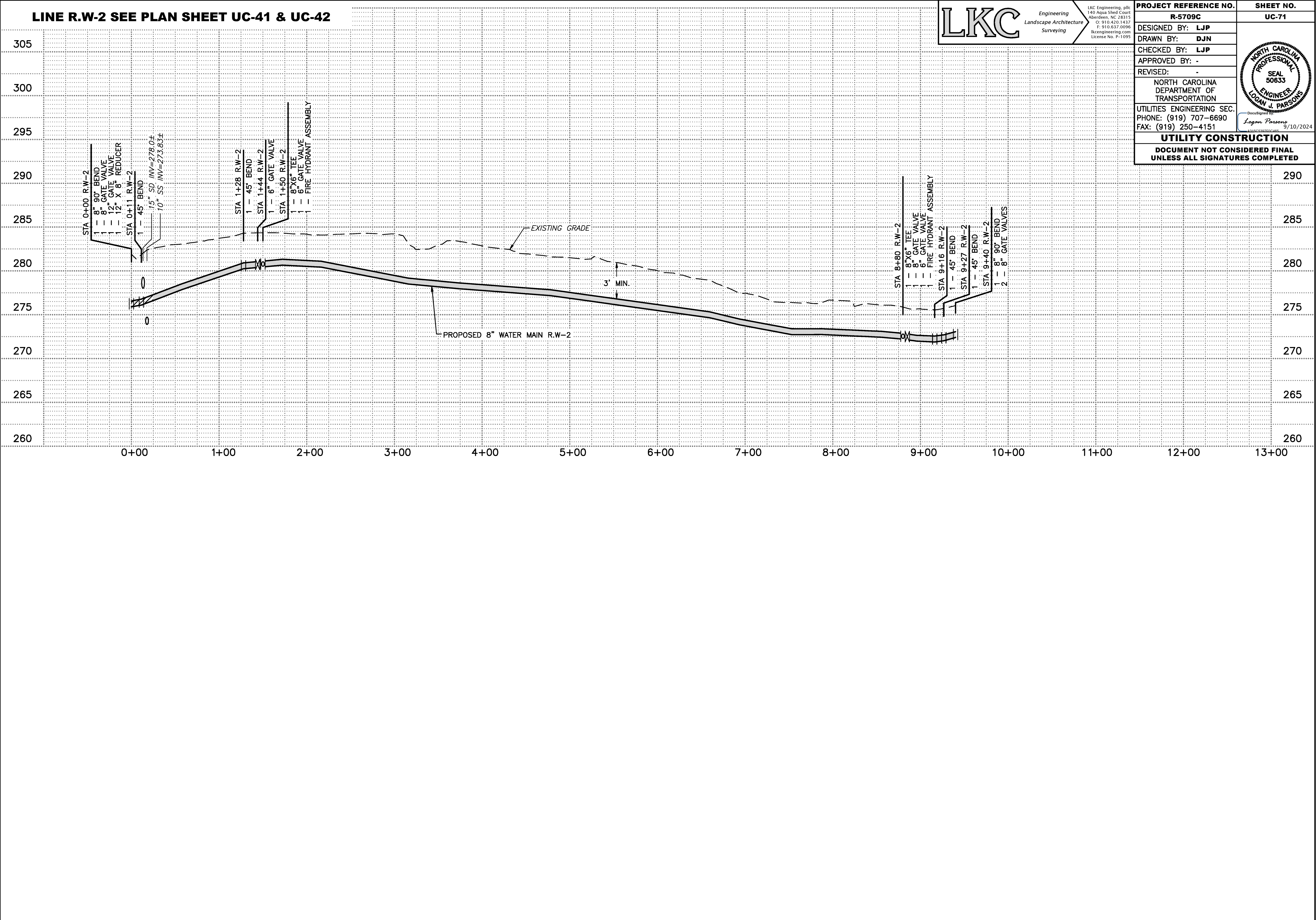
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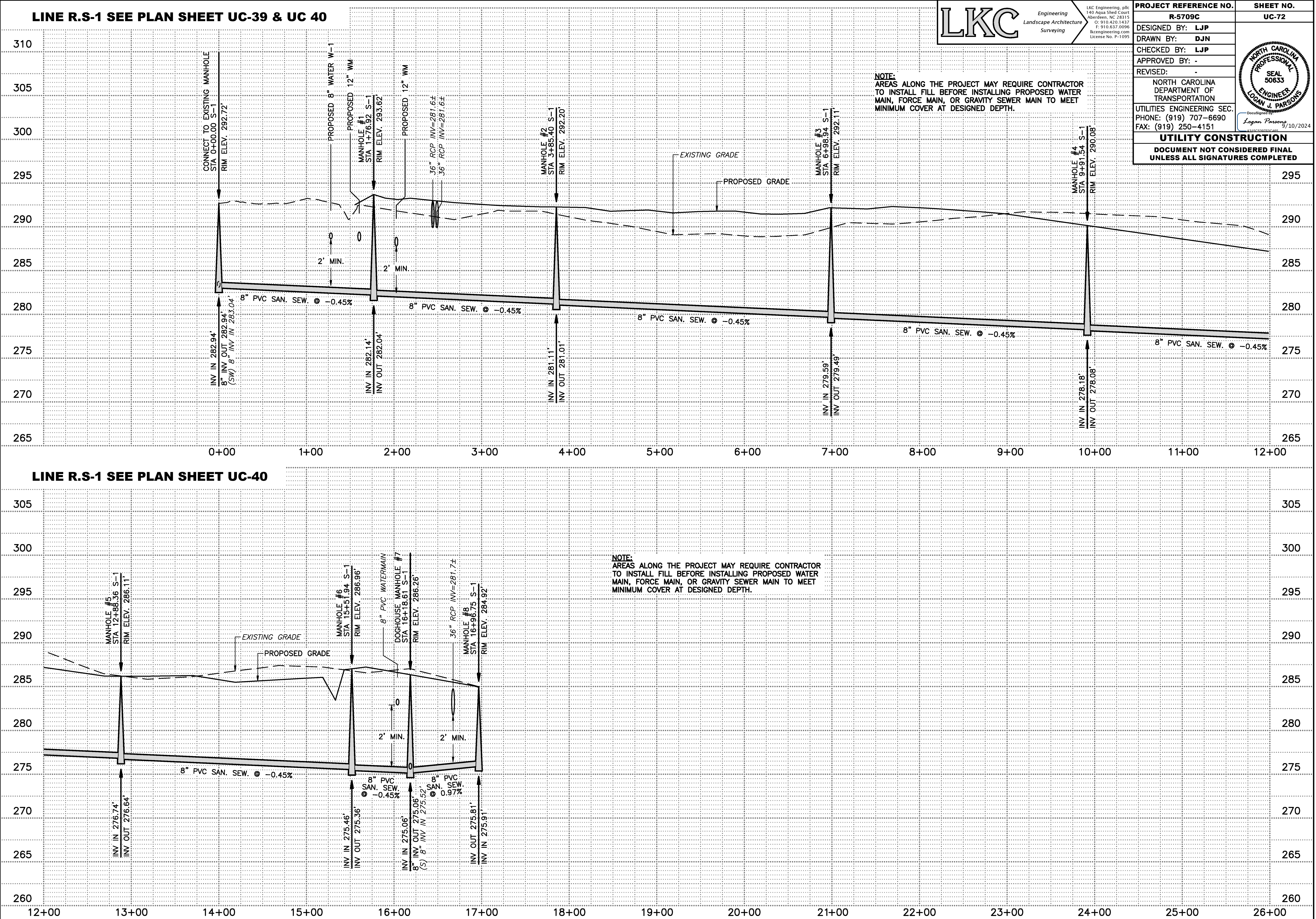
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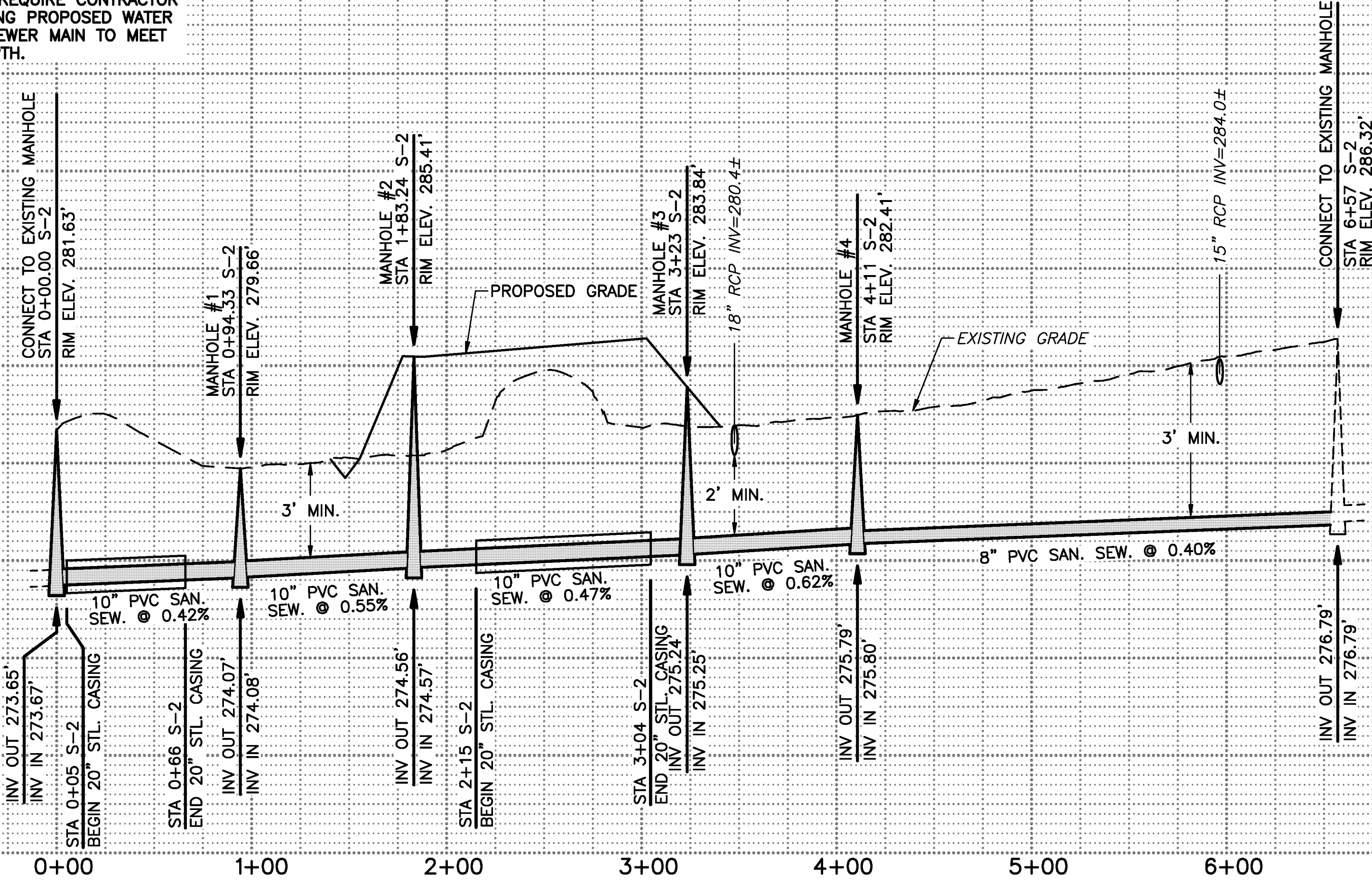


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LINE R.S-2 SEE PLAN SHEET UC-41

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PROJECT REFERENCE NO.	SHEET NO.
R-5709C	UC-73
DESIGNED BY: LJP	NORTH CAROLINA PROFESSIONAL SEAL 50633 ENGINEER LOGAN J. PARSONS DocuSign Envelope ID: A316C69202D0C48E Logan Parsons 9/10/2024
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