

09.08/99

TIP PROJECT: R-5020B

T.I.P. NO.	SHEET NO.
R-5020B	UC-1
DOCUMENT NOT CONSIDERED FINAL UNTIL ALL SIGNATURES ARE COMPLETED	

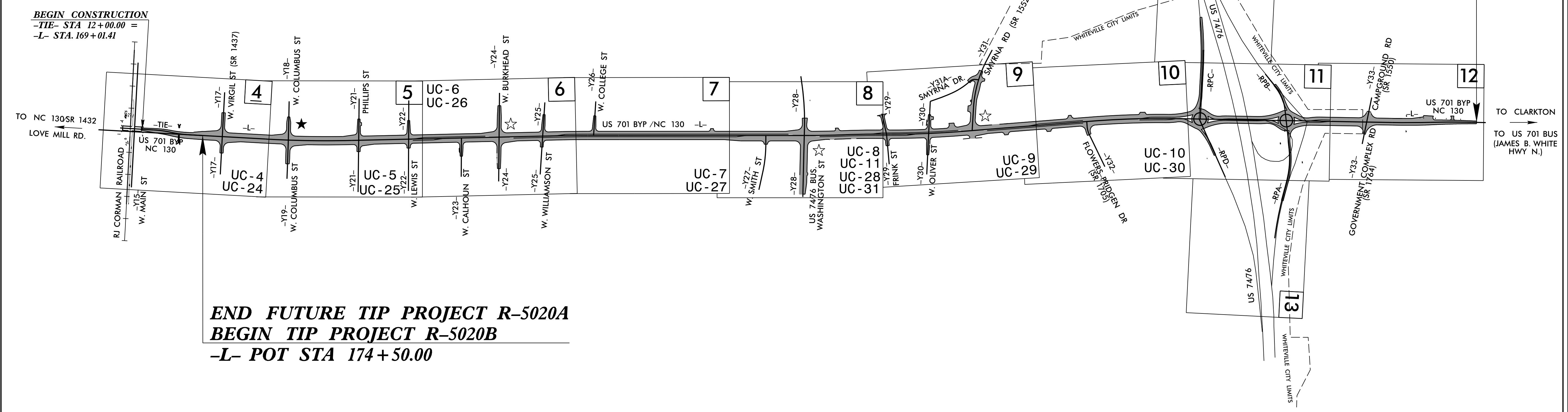
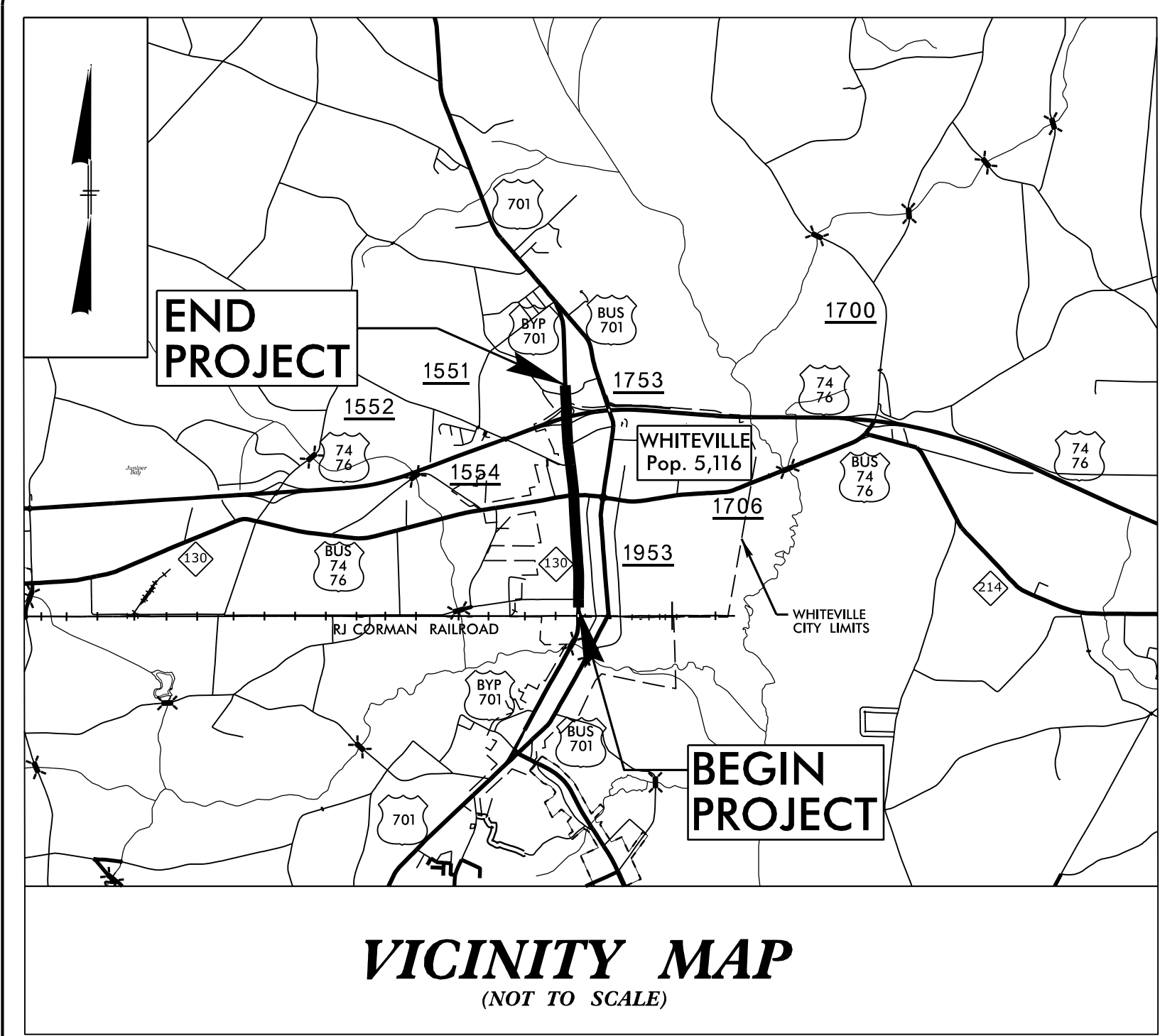
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

**UTILITY CONSTRUCTION PLANS
COLUMBUS COUNTY**

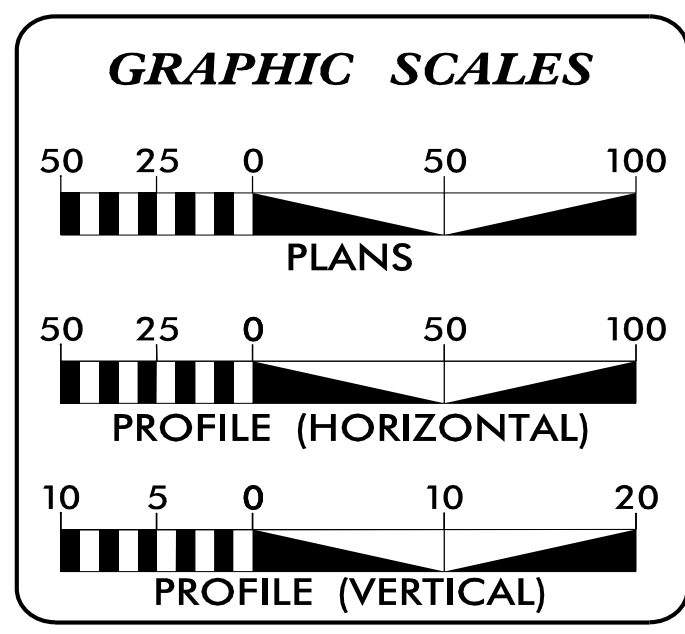
**LOCATION: US 701 BYPASS (MADISON STREET-JK
POWELL BLVD.) FROM SR 1437
(VIRGIL AVENUE) TO US 74/76**

**TYPE OF WORK: WATER AND SEWER
REPLACEMENT AND RELOCATION**

**END TIP PROJECT R-5020B
-L- POT STA 289 + 75.00**



**END FUTURE TIP PROJECT R-5020A
BEGIN TIP PROJECT R-5020B
-L- POT STA 174 + 50.00**



SHEET NO.:	DESCRIPTION:
UC-1	UC TITLE SHEET
UC-2	UTILITY SYMBOLOGY
UC-3	NOTES
UC-3A THRU UC-3K	DETAILS
UC-4 THRU UC-11	WATER LINE PLAN SHEETS
UC-12 THRU UC-23	WATER LINE PROFILE SHEETS
UC-24 THRU UC-31	SEWER LINE PLAN SHEETS
UC-32 THRU UC-39	SEWER LINE PROFILE SHEETS

WATER AND SEWER OWNERS ON PROJECT

CITY OF WHITEVILLE
317 S. MADISON STREET
WHITEVILLE, NC 24872

PREPARED IN THE OFFICE OF

Engineers • Planners • Scientists • Construction Managers
4505 Falls of Neuse Road, Suite 400
Raleigh, NC 27609
Phone (919) 783-9214 • Fax (919) 783-9266
License No. C-764

DINKISSA KEREYU, P.E. PROJECT ENGINEER
MARCO MENENDEZ, P.E. PROJECT MANAGER
ANGELICA PURA PROJECT DESIGNER

SEAL

**DIVISION OF HIGHWAYS
DIVISION 6**

558 GILLESPIE ST.
FAYETTEVILLE, NC 28301
FAX (919) 250-4151

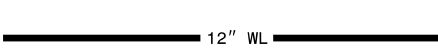























RICK HANDLIN UTILITIES AREA COORDINATOR
RANDY ROGERS UTILITIES AREA COORDINATOR
RICK BOUNDS UTILITIES COORDINATOR

28-AUG-2020 08:49
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\$\$\$\$\$USERNAME\$\$\$\$\$





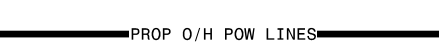
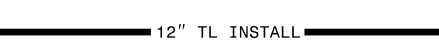
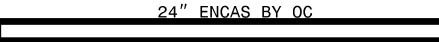
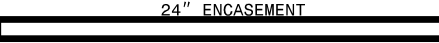
STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

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	REM FH
Water Meter	
Relocate Water Meter	
Remove Water Meter	REM WM
Water Pump Station	
RPZ Backflow Preventer	
DCV Backflow Preventer	
Relocate RPZ Backflow Preventer	
Relocate DCV Backflow Preventer	

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		*Underground Power Line	
Telephone Pole		*Underground Telephone Cable	
Joint Use Pole		*Underground Telephone Conduit	
Utility Pole		*Underground Fiber Optics Telephone Cable	
Utility Pole with Base		*Underground TV Cable	
H-Frame Pole		*Underground Fiber Optics TV Cable	
Power Transmission Line Tower		*Underground Gas Pipeline	
Water Manhole		Aboveground Gas Pipeline	
Power Manhole		*Underground Water Line	
Telephone Manhole		Aboveground Water Line	
Sanitary Sewer Manhole		*Underground Gravity Sanitary Sewer Line	
Hand Hole for Cable		Aboveground Gravity Sanitary Sewer Line	
Power Transformer		*Underground SS Forced Main Line	
Telephone Pedestal		Underground Unknown Utility Line	
CATV Pedestal		SUE Test Hole	
Gas Valve		Water Meter	
Gas Meter		Water Valve	
Located Miscellaneous Utility Object		Fire Hydrant	
Abandoned According to Utility Records	AATUR	Sanitary Sewer Cleanout	
End of Information	E.O.I.		

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

5/14/99
 10-MN-2020-11-09
 R-5020B-UC-2
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 REV: 2/1/2012

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 2018.
2. THE EXISTING UTILITIES BELONG TO CITY OF WHITEVILLE.
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. THE CITY OF WHITEVILLE MAINTAINS OPERATIONAL CONTROL OF THE WATER SYSTEM DURING CONSTRUCTION ACTIVITIES AND THEIR NEEDS REGARDING ANY CUSTOMER SERVICE REQUIREMENTS, INCLUDING REPAIRS TO THE EXISTING SYSTEM TAKE PRECEDENCE OVER CONSTRUCTION ACTIVITIES OF THE CONTRACTOR INCLUDING SCHEDULED ACTIVITIES. THE CONTRACTOR WILL WORK CLOSELY WITH THE OWNER AND INSURE MINIMAL DISRUPTION OF SERVICES TO THE CUSTOMERS. IT IS UNDERSTOOD THERE WILL BE SOME INTERRUPTIONS.

PROJECT SPECIFIC NOTES:

1. ALL PROPOSED WATER LINE PIPING AND PROPOSED FORCE MAIN SEWER PIPING SHALL BE AWWA C900 PVC WITH A MINIMUM SDR OF 21, OR, WHERE SHOWN ON PLANS, DUCTILE IRON PIPE CONFORMING TO ANSI/AWWA C151/A21.51.
2. ALL PROPOSED SANITARY SEWER GRAVITY PIPING SHALL BE ASTM D3034 PVC WITH A MINIMUM SDR OF 35, OR, WHERE SHOWN ON THE PLANS, DUCTILE IRON PIPE CONFORMING TO ANSI/AWWA C151/A21.51.
3. ALL PROPOSED SEWER SERVICE LINES SHALL BE SCHEDULE 40 PVC.
4. ALL PROPOSED WATER SERVICE LINES SHALL BE 200 CTS PVC.
5. WHERE PROPOSED PIPE IS REPLACING EXISTING PIPE TO BE ABANDONED, AT LEAST FIVE FEET OF SEPARATION MUST BE MAINTAINED BETWEEN THE TWO PIPES.
6. AT LEAST THREE FEET OF SEPARATION MUST BE MAINTAINED BETWEEN PROPOSED SANITARY SEWER SERVICE LINES AND PROPOSED WATER SERVICE LINES.
7. CONSTRUCTION SHALL TAKE PLACE SUCH THAT SERVICE INTERRUPTION OCCURS ONLY BETWEEN THE HOURS OF 9:30 PM AND 5:30 AM. THE CONTRACTOR SHALL ENSURE THAT AFFECTED WATER AND SEWER CUSTOMERS ARE NOTIFIED 48 HOURS IN ADVANCE OF SERVICE INTERRUPTION.
8. FOR ABANDONMENT OF UTILITY MANHOLES, THE CONTRACTOR SHALL REMOVE MANHOLE RING AND FILL THE MANHOLE BARREL WITH NO. 57 STONE TO THE LEVEL INDICATED IN SECTION 1530 OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.
9. WHERE THE PLANS INDICATE PROPOSED MANHOLES TO BE CONSTRUCTED IN A PROPOSED TRAFFIC ISLAND, CONTRACTOR SHALL ENSURE THAT THE MANHOLE IS ENTIRELY WITHIN THE TRAFFIC ISLAND.
10. THE CONTRACTOR SHALL FOLLOW ALL SPECIAL PROVISIONS ASSOCIATED WITH HANDLING OF EXISTING ASBESTOS CEMENT PIPING.

11. UTILITY MANHOLES WITHIN THE ROADWAY SHALL BE TRAFFIC BEARING MANHOLES. UTILITY MANHOLES WITHIN THE PROPOSED MEDIAN ARE NOT REQUIRED TO BE TRAFFIC BEARING.
12. THE CITY OF WHITEVILLE WILL MAINTAIN OPERATIONAL CONTROL OF THE WATER SYSTEM DURING CONSTRUCTION ACTIVITIES. THE CITY'S NEEDS REGARDING ANY CUSTOMER SERVICE REQUIREMENTS, INCLUDING REPAIRS TO THE EXISTING SYSTEM, TAKE PRECEDENCE OVER CONSTRUCTION ACTIVITIES. THE CONTRACTOR WILL WORK CLOSELY WITH THE CITY OF WHITEVILLE TO ENSURE MINIMAL DISRUPTION OF SERVICE TO THE CUSTOMERS. IT IS UNDERSTOOD THERE WILL BE SOME DISRUPTIONS.
13. FOR PROPOSED UTILITY MANHOLES LOCATED WITHIN A MONOLITHIC ISLAND, THE MANHOLE SHALL BE INSTALLED ENTIRELY IN THE ISLAND, AND FLUSH WITH TOP OF THE ISLAND.
14. CONTRACTOR SHALL INSTALL ALL INSERTION VALVES WITH THRUST COLLARS PRIOR TO ANY OTHER WATER LINE WORK.

PROJECT REFERENCE NO. R-5020B	SHEET NO. UC-3
DESIGNED BY: <i>MM</i>	
DRAWN BY: <i>AP</i>	
CHECKED BY: <i>MM</i>	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
 Engineers • Planners • Scientists • Construction Managers 4509 Falls of Neuse Road, Suite 400 Raleigh, NC 27609 Phone (919) 783-9214 • Fax (919) 783-9266 License No. C-764	

UTILITY CONSTRUCTION

5/14/99
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 R-5020B UTILITY CONSTRUCTION

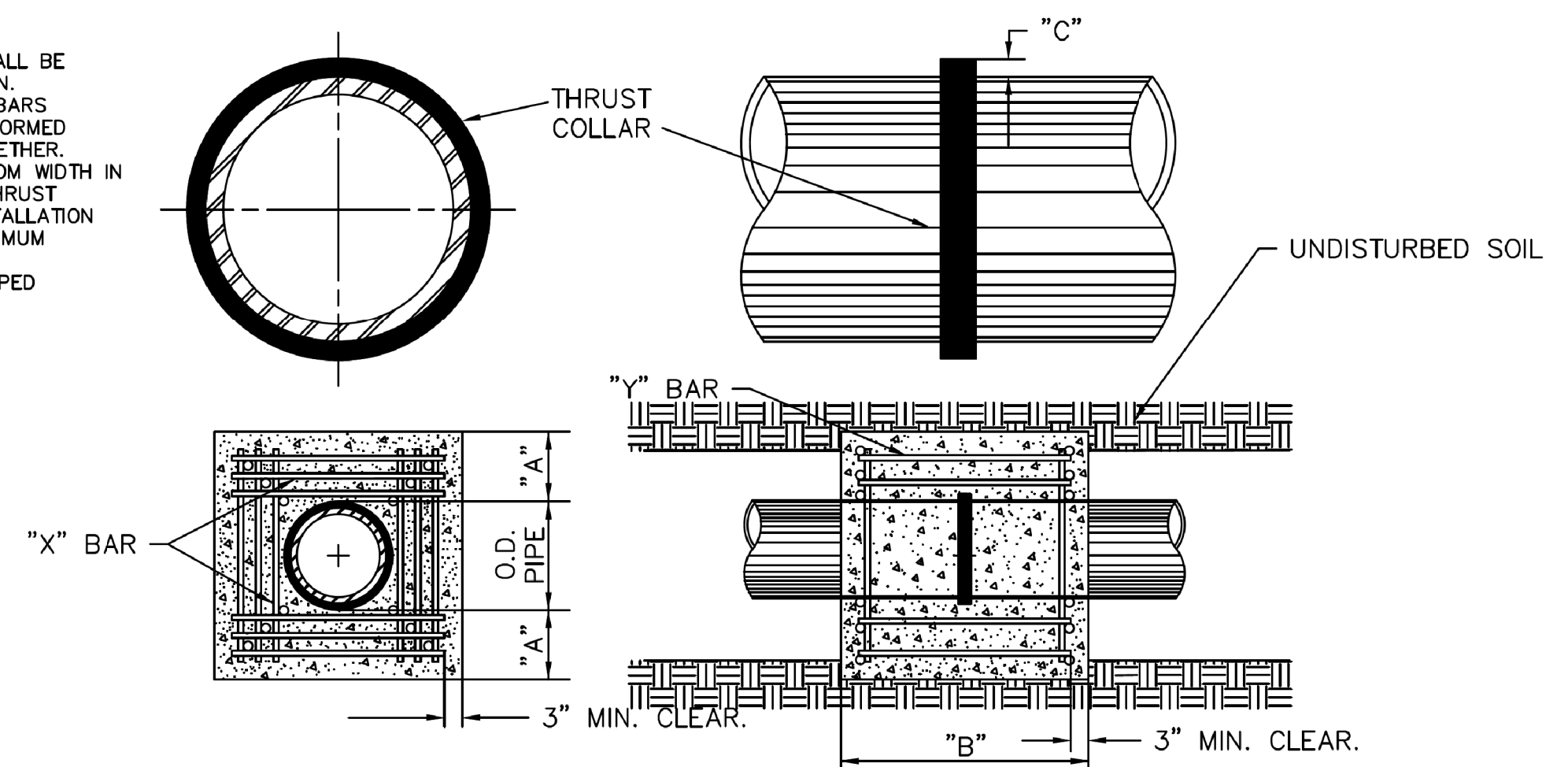
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GENERAL WATER DETAILS

PROJECT REFERENCE NO. <i>R-5020B</i>	SHEET NO. <i>UC-3B</i>
DESIGNED BY: <i>DK</i>	
DRAWN BY: <i>AP</i>	
CHECKED BY: <i>MM</i>	
APPROVED BY:	
REVISED:	9/3/2020
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY 	

UTILITY CONSTRUCTION
 DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED

- NOTES:
1. CONCRETE SHALL BE 2500 P.S.I. MIN.
 2. REINFORCING BARS SHALL BE DEFORMED AND TIED TOGETHER.
 3. TRENCH BOTTOM WIDTH IN VICINITY OF THRUST BLOCK(S) INSTALLATION SHALL BE MINIMUM WIDTH.
 4. BACKFILL TAMPED IN 6" LAYERS.



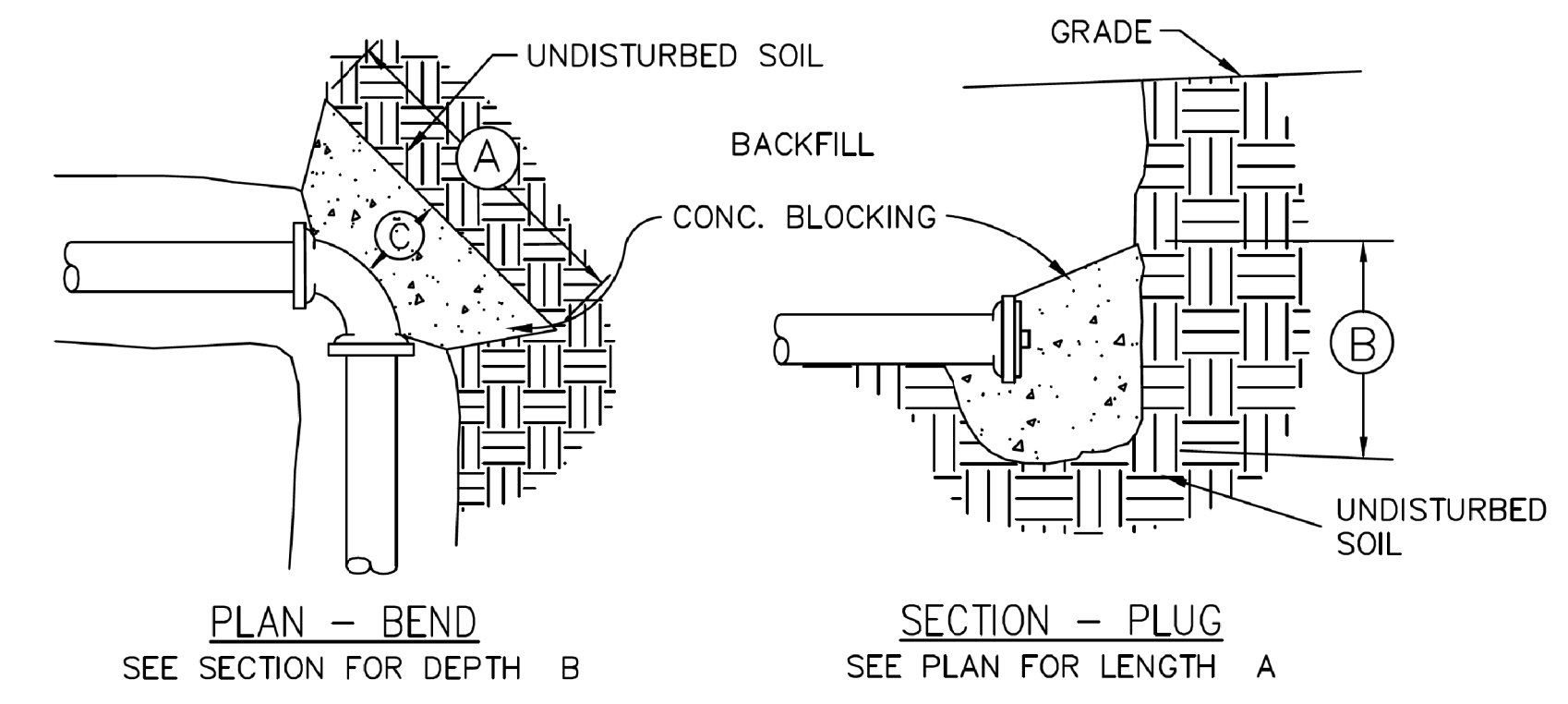
REINFORCING REQUIREMENTS

REINFORCING BAR SCHEDULE					
I.D. PIPE	REBAR SIZE	"X" BAR LENGTH	"X" BAR WGT.	"Y" BAR LENGTH	NO. REQD.
6"-36"	#5	2'-2"+O.D. PIPE	1.043 LBS./FT	1'-1"	X-24, Y-12
48"	#6	3'-0"+O.D. PIPE	1.502 LBS./FT	1'-3"	X-24, Y-12

REINFORCING BAR SCHEDULE				
I.D. PIPE	"A"	"B"	"C" - 6"-16", 20"-24", 30"-36", 48"	
6"-36"	1'-4"	1'-7"	2"	3"
48"	1'-8"	1'-9"		6"

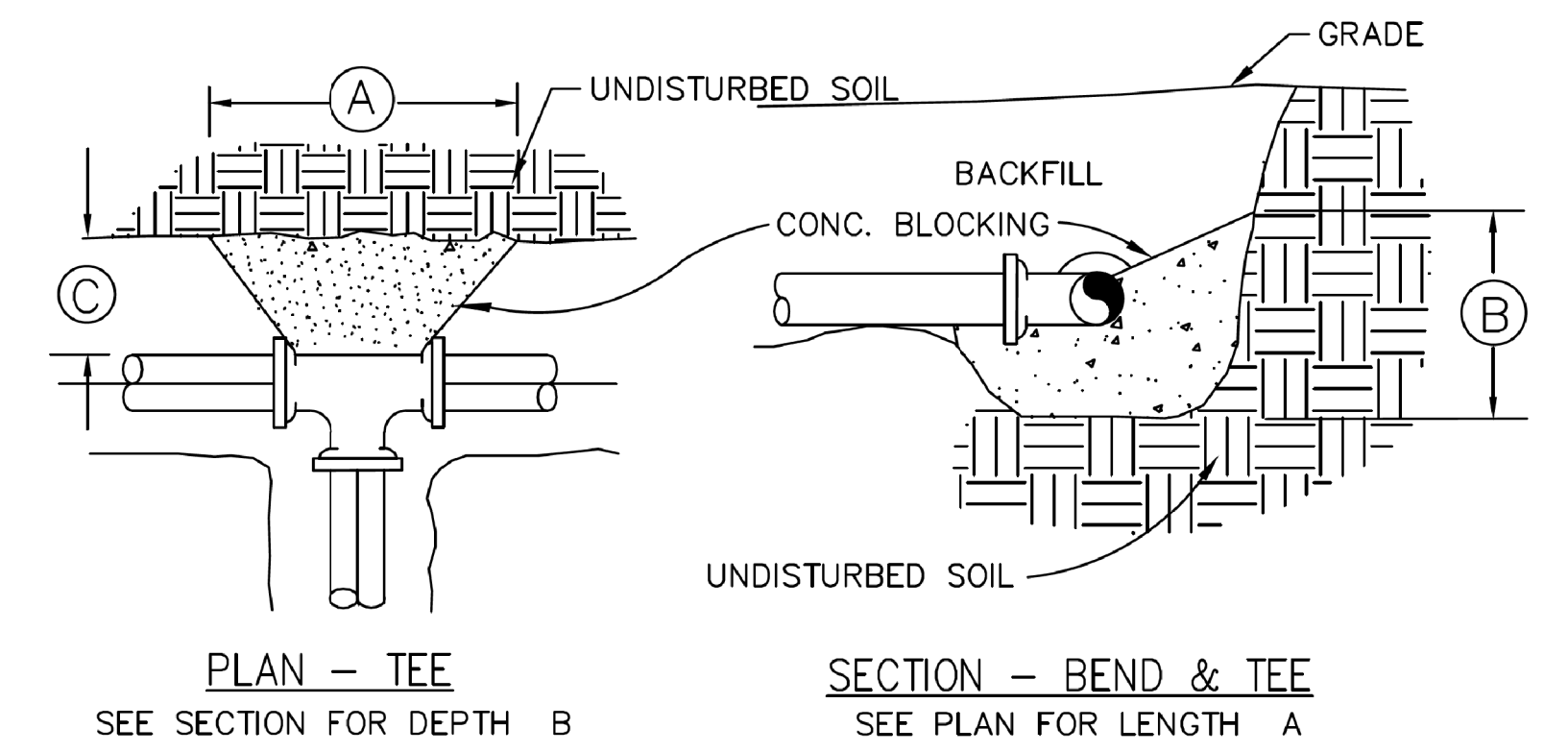
THRUST COLLAR FOR WATER MAINS
 DETAIL W-13

BLOCKING DIMENSIONS			
PIPE SIZE	(A)	(B)	(C)
UP TO 10"	4' - 0"	2' - 6"	1' - 6"
12" TO 16"	5' - 0"	4' - 0"	2' - 0"
18" TO 24"	8' - 0"	6' - 0"	3' - 0"



NOTES:

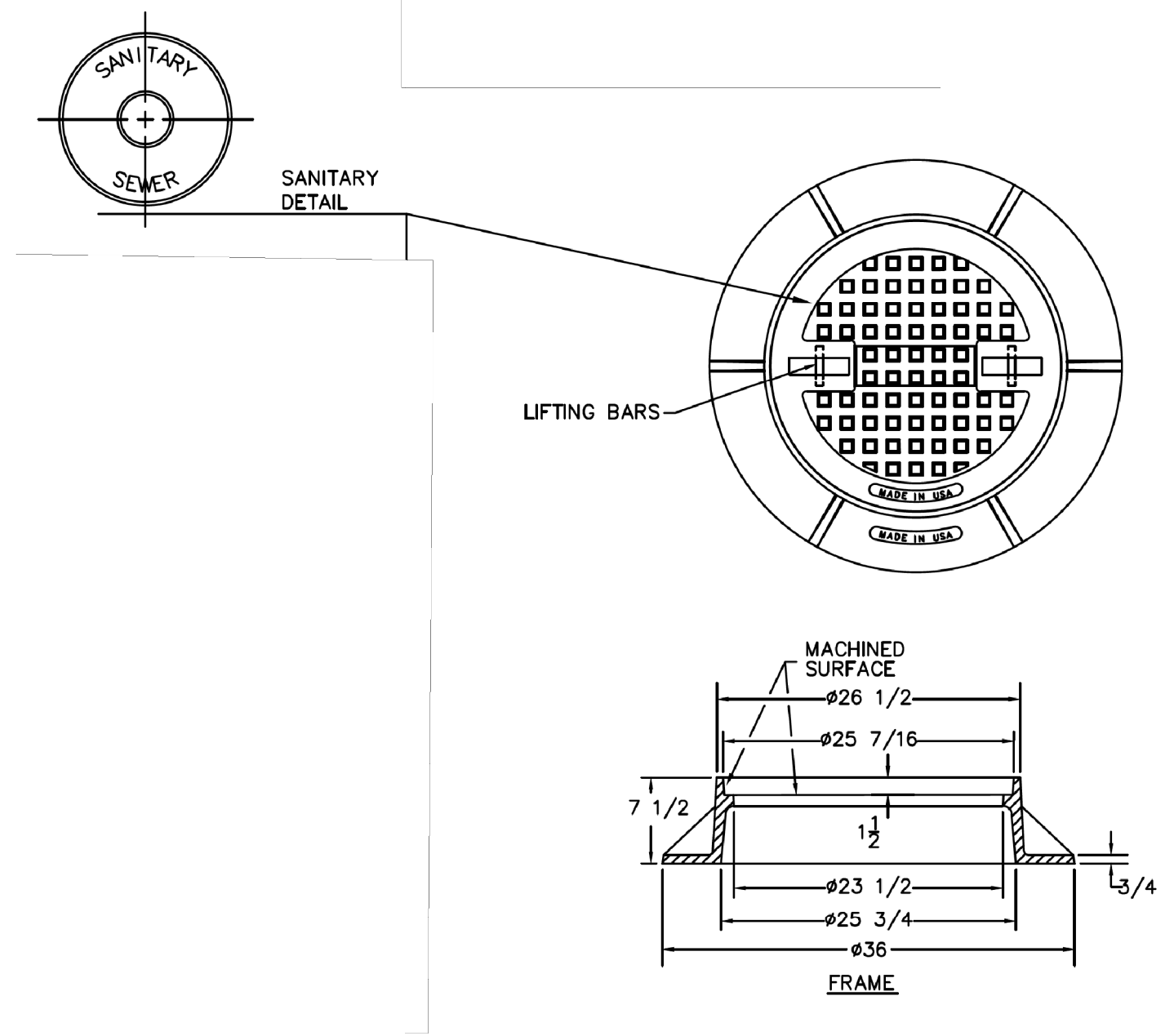
1. 2500 P.S.I. CONC.
2. REMOVE LOOSE EARTH AND POUR AGAINST UNDISTURBED SOIL.
3. BACKFILL TO EXISTING/FINISH GRADE AFTER CONCRETE HAS CURED FOR 24 HOURS.
4. CONCRETE SHALL NOT COVER FLANGES, BOLTS, MEGA-LUGS, RODS, ETC.



THRUST BLOCKS
 DETAIL W-12

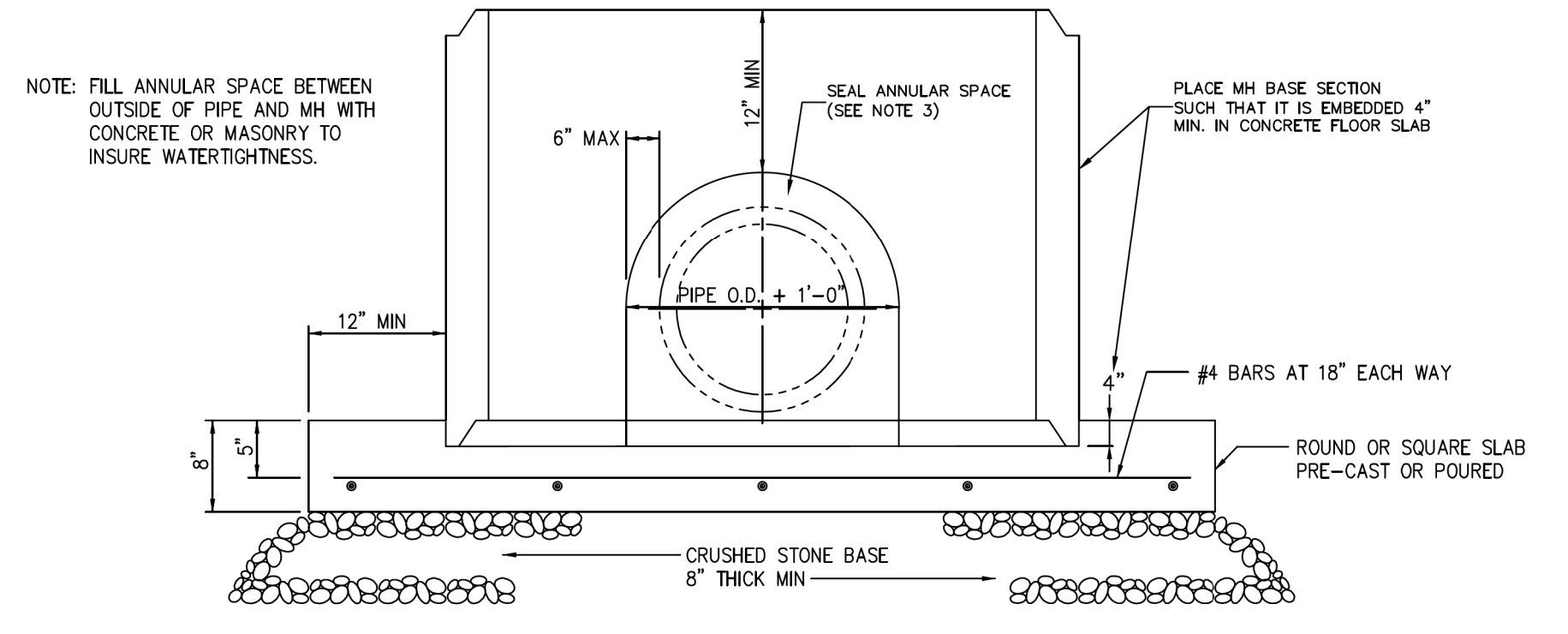
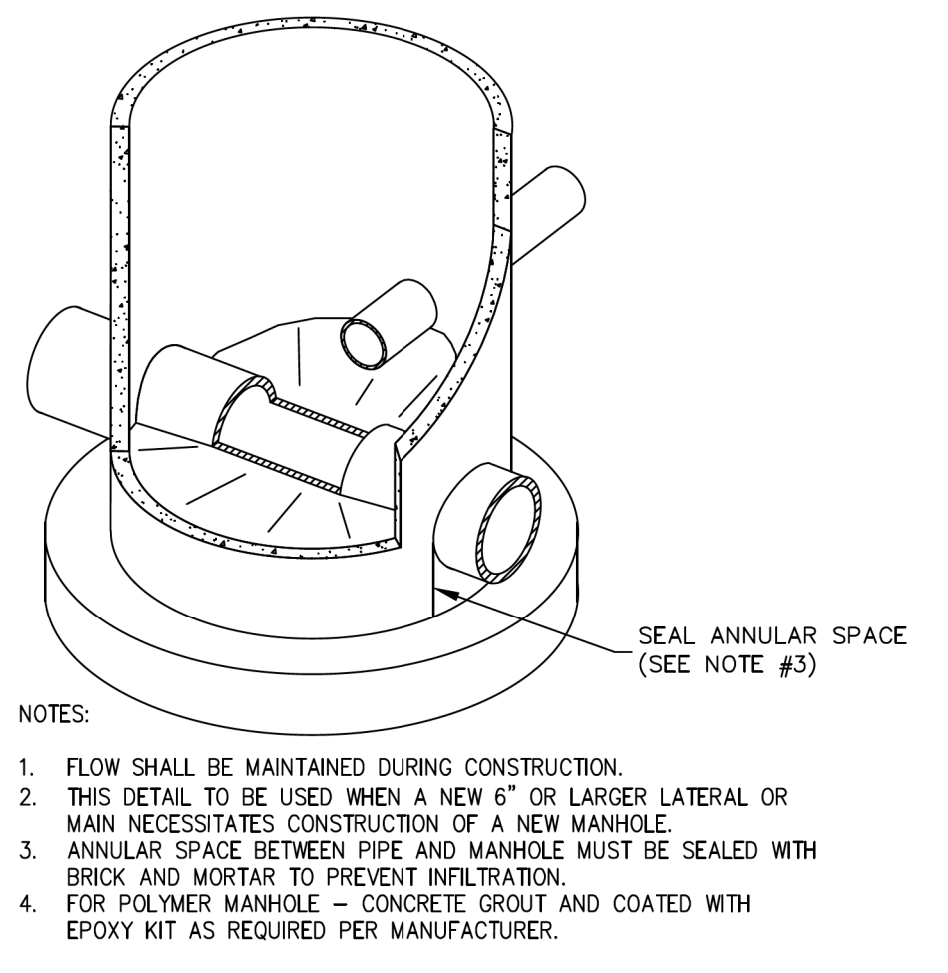
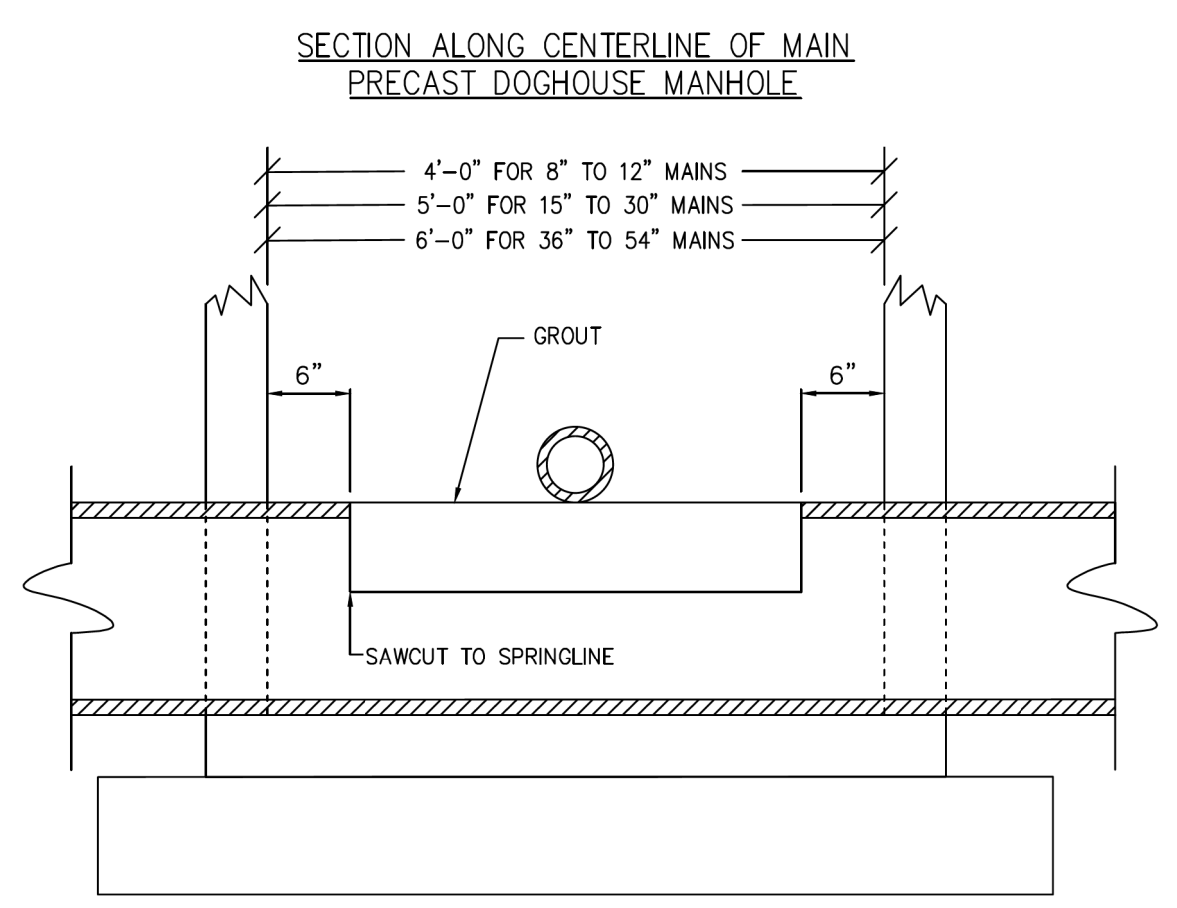
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 R-5020B-022018-00
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MANUFACTURER	MODEL NUMBER
US FOUNDRY	725 RING / DP-SSG COVER
US FOUNDRY	710 RING / DP-SSG COVER
CAPITAL FOUNDRY	MH-3000
EAST JORDAN IRON WORKS	202711 RING / 202746 COVER
GENERAL FOUNDRIES	GFI-7126 / GFI-41261

STANDARD MANHOLE RING AND COVER
DETAIL S-2

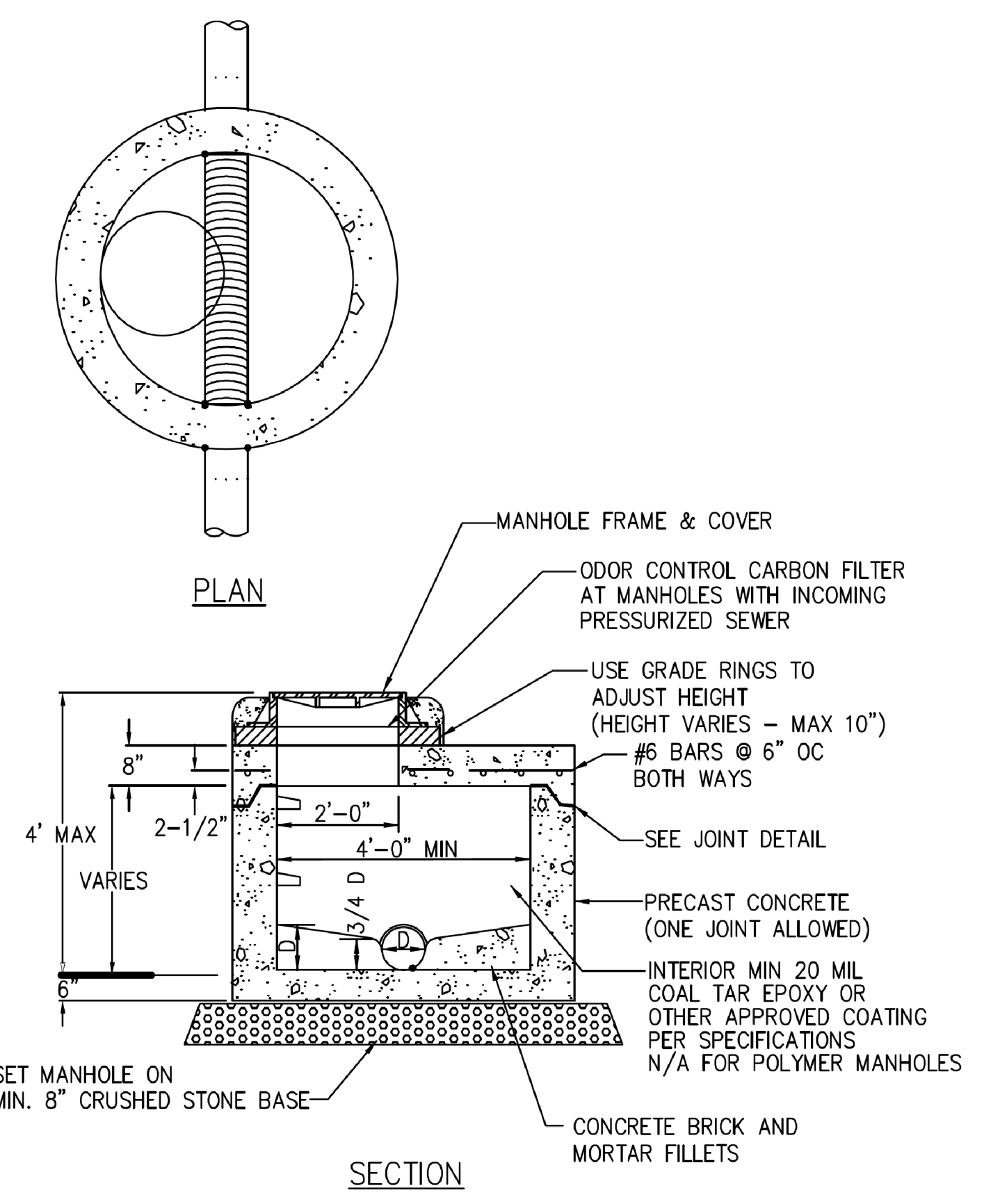


PRECAST CONCRETE DOGHOUSE MANHOLE
DETAIL S-4

GENERAL SEWER DETAILS

PROJECT REFERENCE NO. R-5020B	SHEET NO. UC-3C
DESIGNED BY: DK	
DRAWN BY: AP	
CHECKED BY: MM	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY Engineers • Planners • Scientists • Construction Managers 4509 Falls of Neuse Road, Suite 400 Raleigh, NC 27609 Phone (919) 783-9214 • Fax (919) 783-9266 License No. C-764	

UTILITY CONSTRUCTION
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SHALLOW PRECAST CONCRETE
MANHOLE WITH FLAT TOP
DETAIL S-5

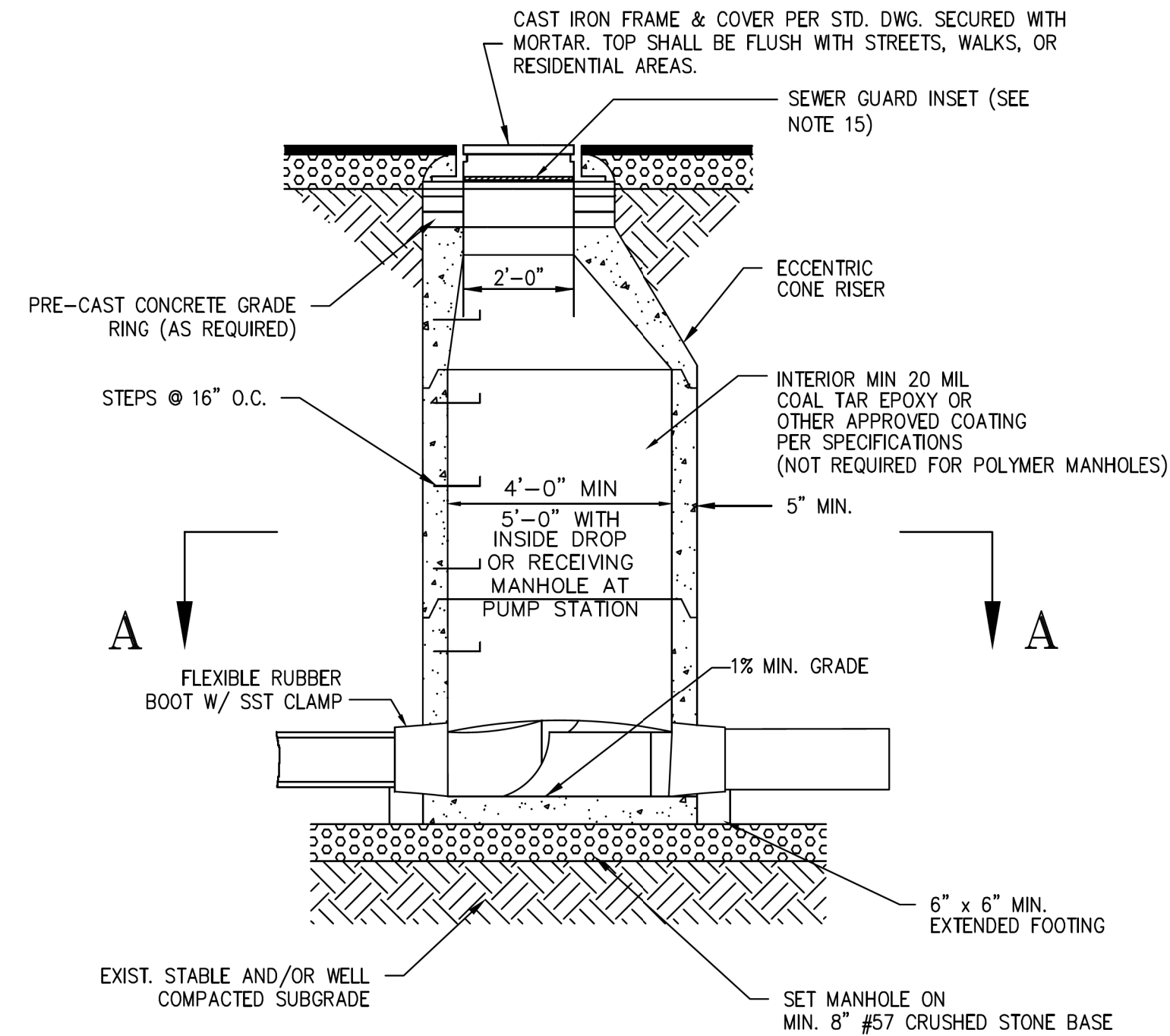
5/14/99

GENERAL SEWER DETAILS

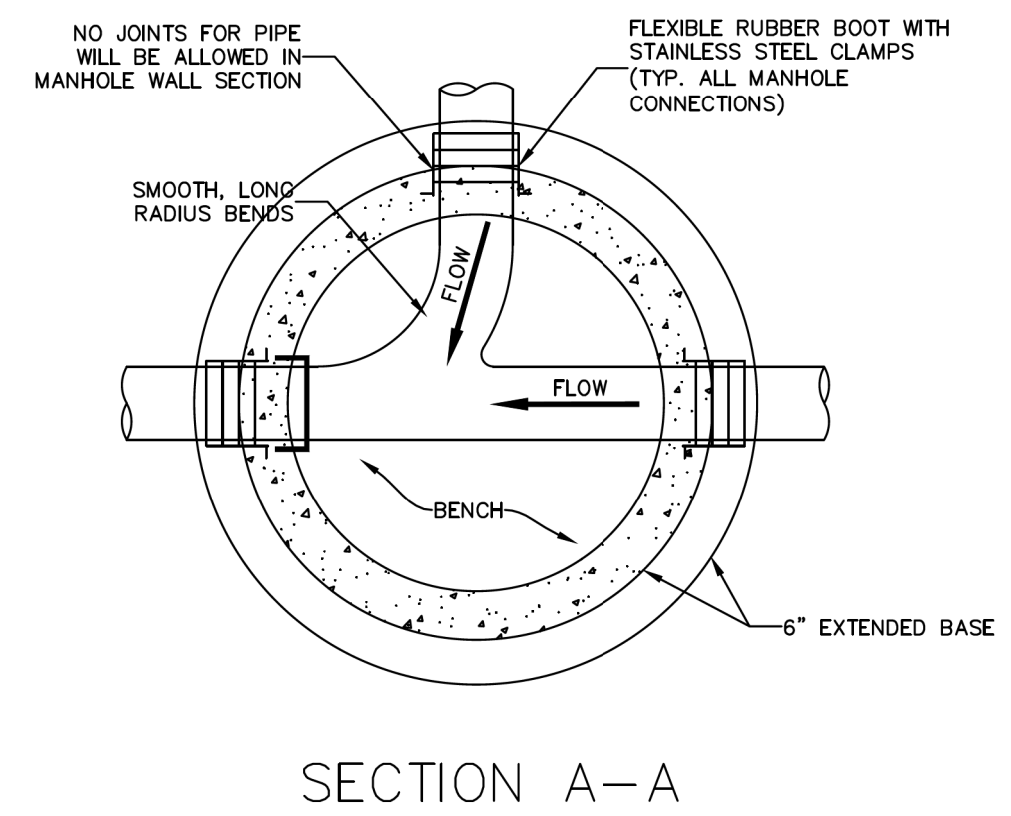
PROJECT REFERENCE NO. <i>R-5020B</i>	SHEET NO. <i>UC-3D</i>
DESIGNED BY: <i>DK</i>	
DRAWN BY: <i>AP</i>	
CHECKED BY: <i>MM</i>	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
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NOTES:

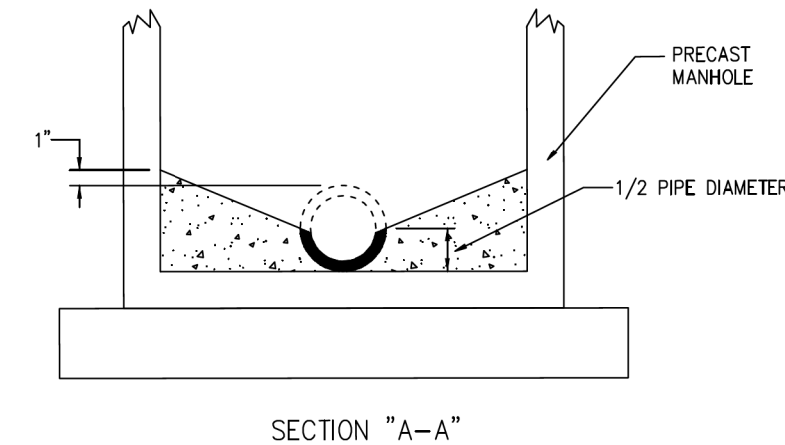
1. PRECAST CONCRETE MANHOLES SHALL MEET OR EXCEED THE REQUIREMENTS OF ASTM C 478. ALL SURFACES SHALL BE SMOOTH AND EVEN TEXTURED WITH A MINIMUM OF HONEYCOMB, FIN, AND OTHER IMPERFECTIONS.
2. JOINTS BETWEEN MANHOLE SECTIONS SHALL BE SEALED WATERTIGHT USING EITHER O-RING GASKETS CONFORMING WITH ASTM C 443 OR BUTYL RESIN CONFORMING WITH AASHTO M-198.
3. EXTERIOR JOINTS SHALL BE SEALED WITH A 4" WIDE BUTYL RUBBER WRAP.
4. NOT USED
5. HOLES FOR CONNECTION OF PIPE TO MANHOLE SHALL BE PRECAST OR CORED. DIAMETER OF HOLE SHALL NOT EXCEED OUTSIDE DIAMETER OF PIPE BY MORE THAN 3 INCHES.
6. CONNECTIONS OF PIPE TO MANHOLE SHALL BE MADE WATERTIGHT USING RESILIENT CONNECTORS CONFORMING TO ASTM C 923 OR NEOPRENE BOOTS EMBEDDED IN PRECAST BASE WITH STAINLESS STEEL COMPRESSION BANDS.
7. MANHOLE INVERTS SHALL BE INSTALLED USING BRICK AND MORTAR, OR MANHOLES MAY BE PRECAST, MONOLITHIC SECTIONS WITH FORMED INVERTS.
8. LIFT HOLES SHALL BE PLUGGED AND FILLED FLUSH WITH MORTAR.
9. ALL BRICK AND MORTAR SHALL RECEIVE A 1/2" MORTAR PARGE COAT ON INSIDE AND OUTSIDE.
10. ALL SPACE BETWEEN PIPE AND OPENING INSIDE OF MANHOLE TO BE GROUTED WITH TYPE S MORTAR.
11. SEWER MAIN PENETRATIONS AND/OR SERVICE LATERAL PENETRATIONS ENTERING AT 30" OR LESS ABOVE THE MANHOLE BENCH SHALL HAVE A SLIDE CONSTRUCTED OF BRICK AND MORTAR (SEE DETAIL).
12. ALL PENETRATIONS ENTERING MANHOLE AT GREATER THAN 30" SHALL BE AN INSIDE DROP MANHOLE (SEE DETAIL).
13. INSIDE DROP MANHOLES, AND PUMP STATION RECEIVING MANHOLES SHALL BE MINIMUM 5' DIAMETER MANHOLES.
14. SANITARY SEWER MANHOLES SHALL BE COATED WITH COAL TAR EPOXY 20 MILS THROUGHOUT THE INSIDE OF THE MANHOLE.
15. ALL MANHOLES SHALL HAVE A SEWER GUARD INSERT INSTALLED - PLASTIC IS ALLOWED IN NON-TRAFFIC AREAS - STAINLESS STEEL INSERT PANS ARE REQUIRED IN TRAFFIC AREAS
16. MANHOLES SHALL BE TRAFFIC BEARING WITH A MINIMUM HS-20 LOAD ALLOWANCE.



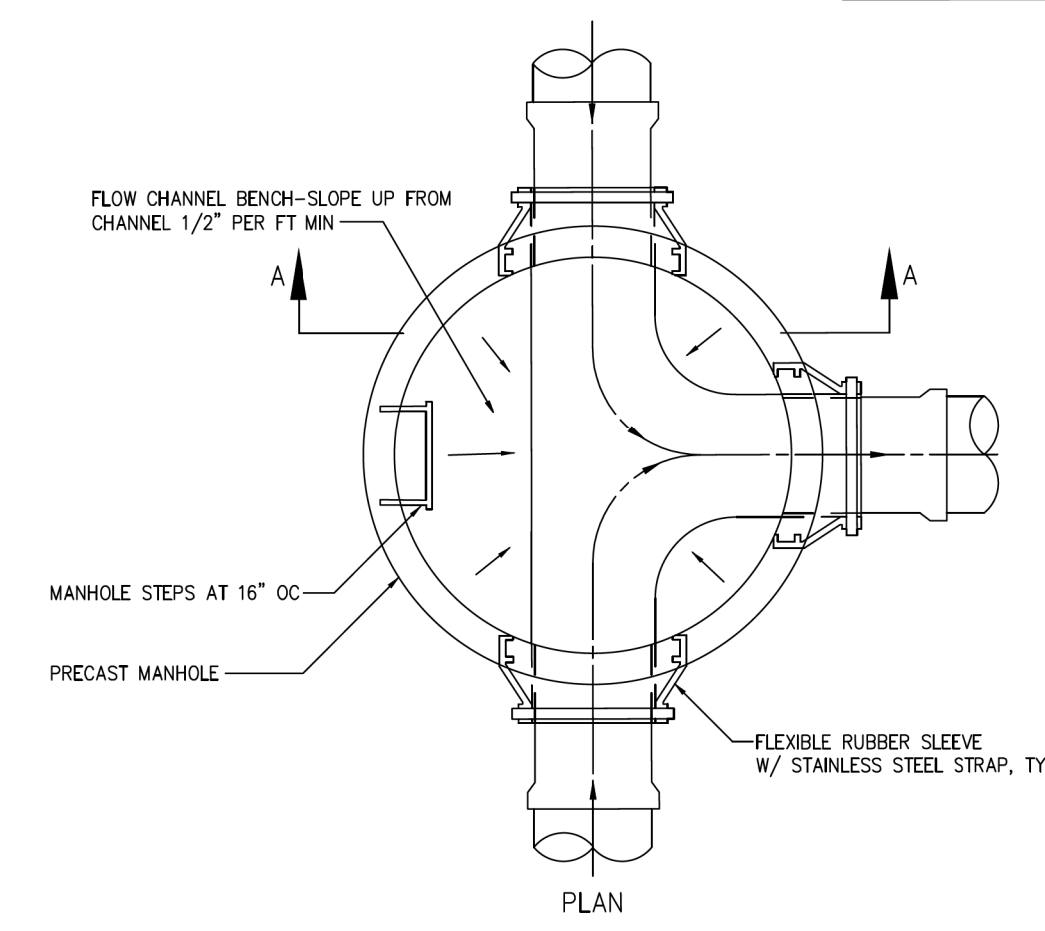
PRECAST CONCRETE MANHOLE
DETAIL S-1



SECTION A-A



SECTION "A-A"



TYPICAL MANHOLE INVERTS
DETAIL S-9

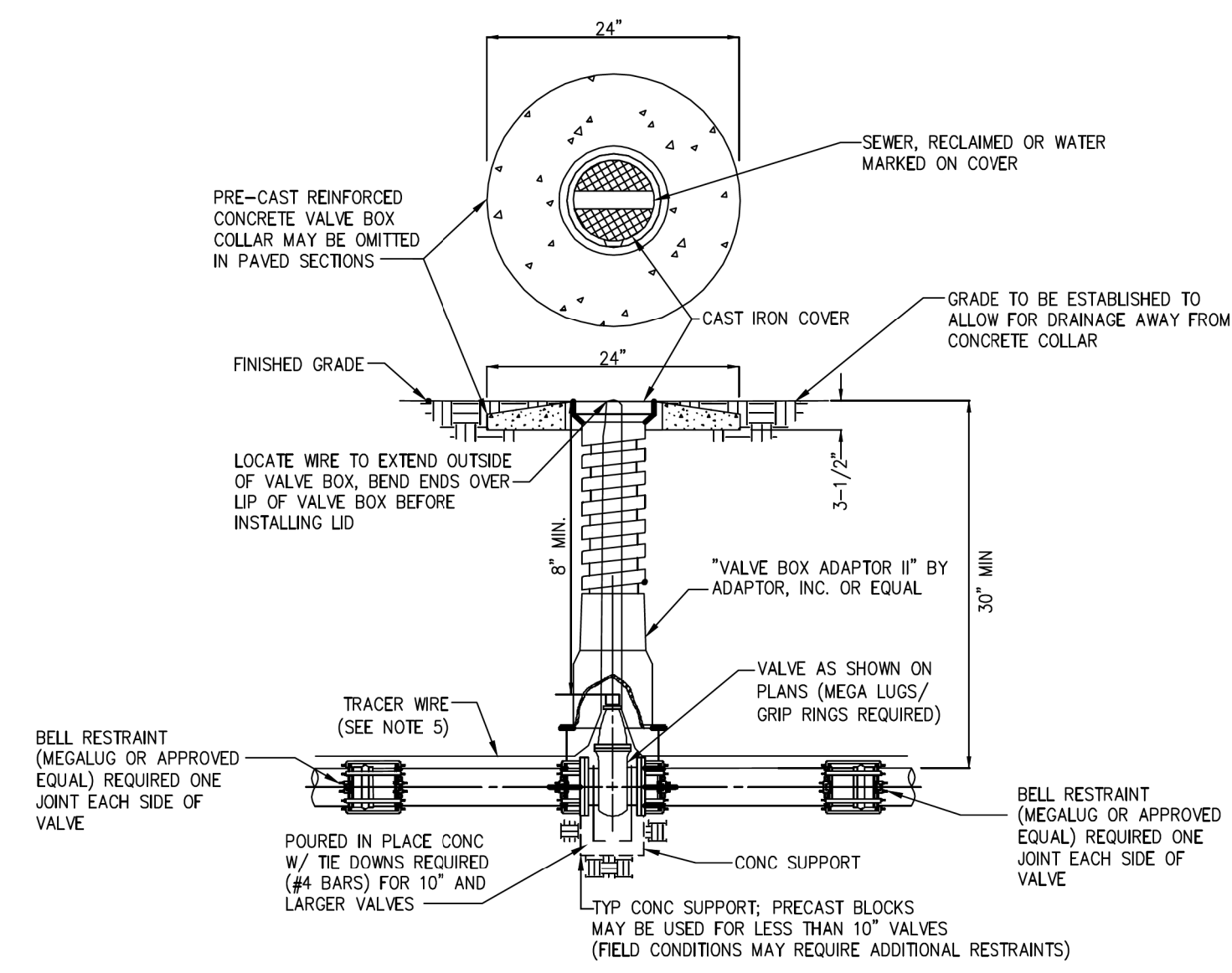
UTILITY CONSTRUCTION
 DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED

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5/14/99

GENERAL WATER & SEWER DETAILS

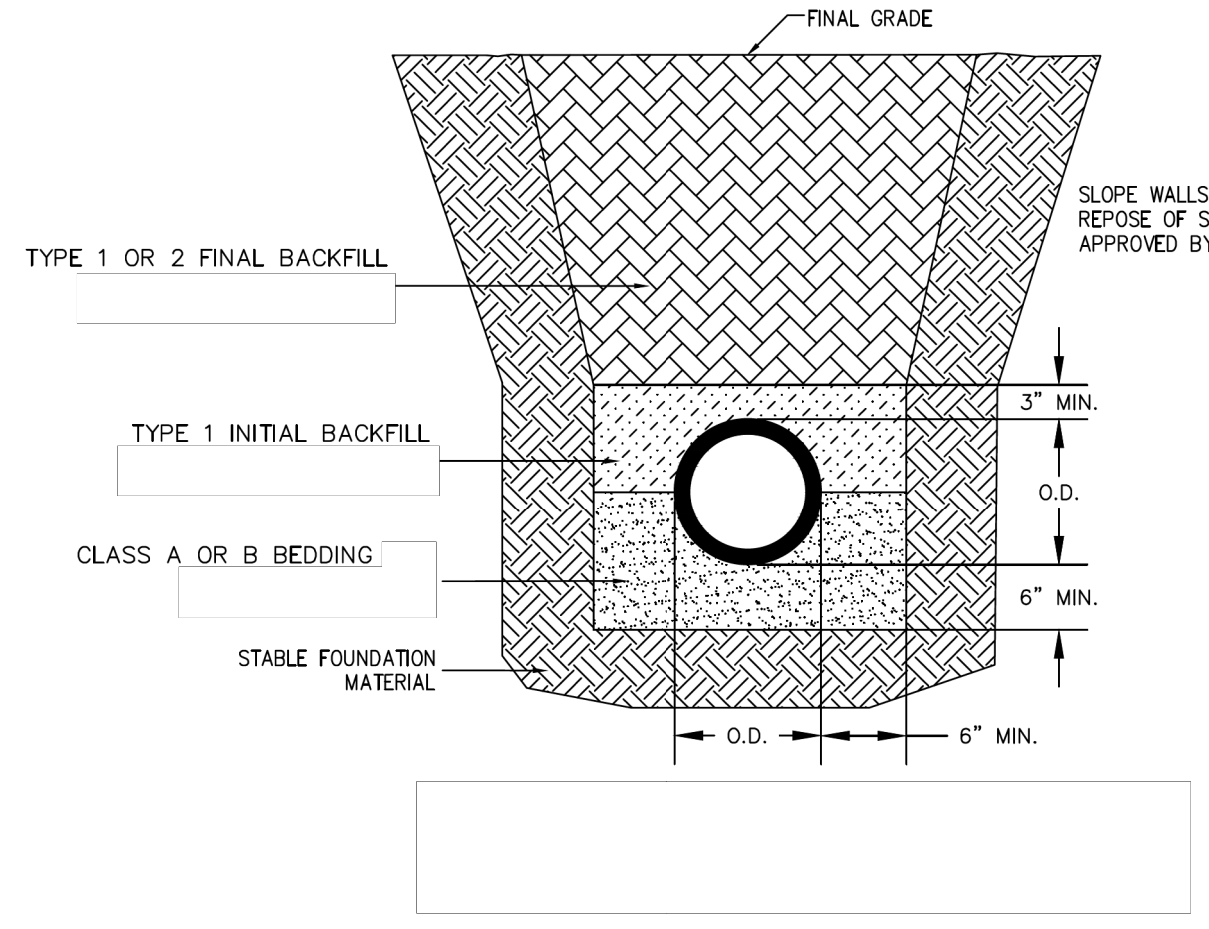
PROJECT REFERENCE NO. R-5020B	SHEET NO. UC-3E
DESIGNED BY: DK	
DRAWN BY: AP	
CHECKED BY: MM	
APPROVED BY:	
REVISID:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY 	



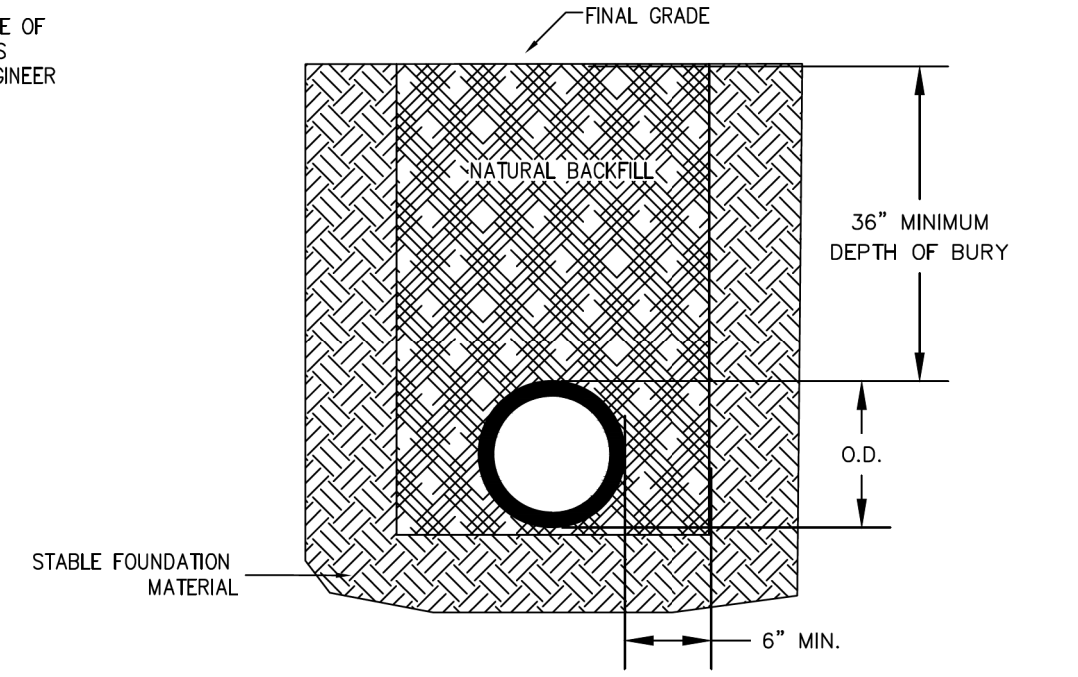
- NOTES:**
- TOP OF VALVE BOX AND COLLAR SHALL BE PAINTED GREEN FOR SEWER FM, PURPLE FOR RECLAIMED WATER, AND BLUE FOR WATER.
 - EXTENSION STEM WILL BE REQUIRED TO BE WITHIN 2 FEET OF THE SURFACE IF OPERATING NUT WOULD OTHERWISE BE OVER 5 FEET BELOW GRADE. EXTENSIONS SHALL BE PERMANENTLY ATTACHED TO VALVE NUT AND SHALL BE PROVIDED WITH HORIZONTAL SPACERS FOR VERTICAL ALIGNMENT WITHIN THE VALVE BOX.
 - MINIMUM CLEARANCE TO EXTENSION IS 8".
 - WIRE COLORS REQUIRED: SEWER-GREEN/WATER-BLUE/RECLAIMED WATER-PURPLE OR GREEN WITH PURPLE STRIPE
 - 12 GA. COPPERHEAD SUPER FLEX TRACER WIRE OR APPROVED EQUAL.

VALVE BOX
DETAIL WS-9

- DEPTH < 20 FEET - CLASS "A" BEDDING**
- UNDERCUT TRENCH BOTTOM 6 INCHES MINIMUM BELOW PIPE
 - FILL PIPE TO SPRING LINE WITH NO. 57 STONE
- DEPTH > 20 FEET - CLASS "B" BEDDING**
- UNDERCUT TRENCH BOTTOM 6 INCHES MINIMUM BELOW PIPE
 - FILL TO 6 INCHES ABOVE PIPE WITH NO. 57 STONE
- INSTALLATIONS THAT EXCEED 20 FEET DEPTH SHALL BE DR-18 C900 MINIMUM OR PER MANUFACTURERS RECOMMENDATIONS

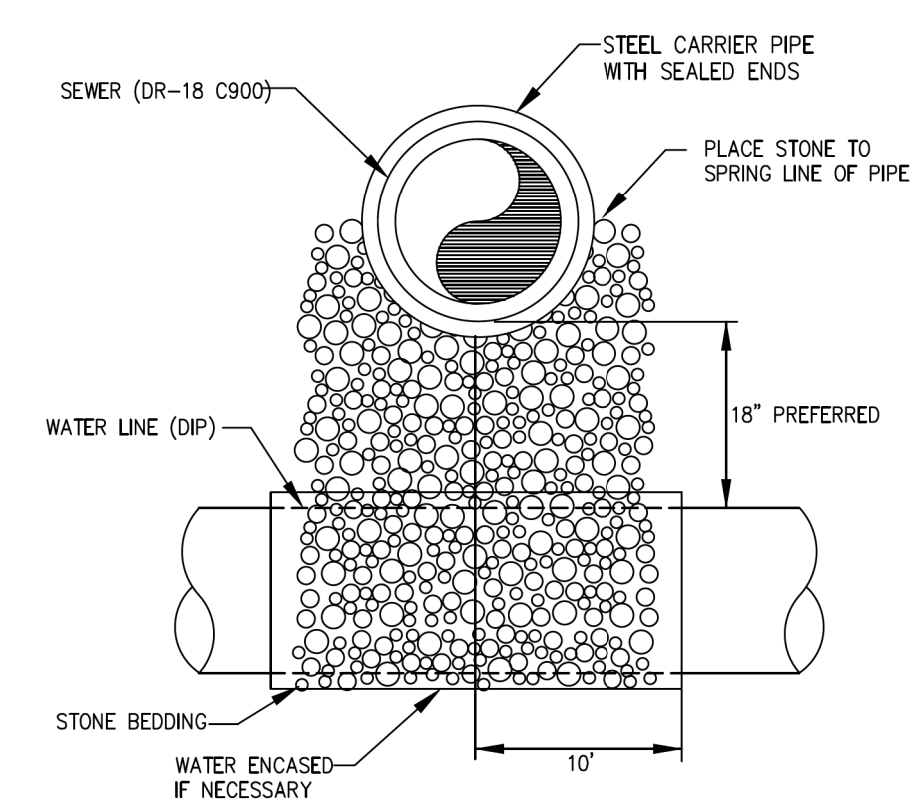


GRAVITY SEWER
PIPE TRENCH/BEDDING DETAIL
DETAIL WS-22



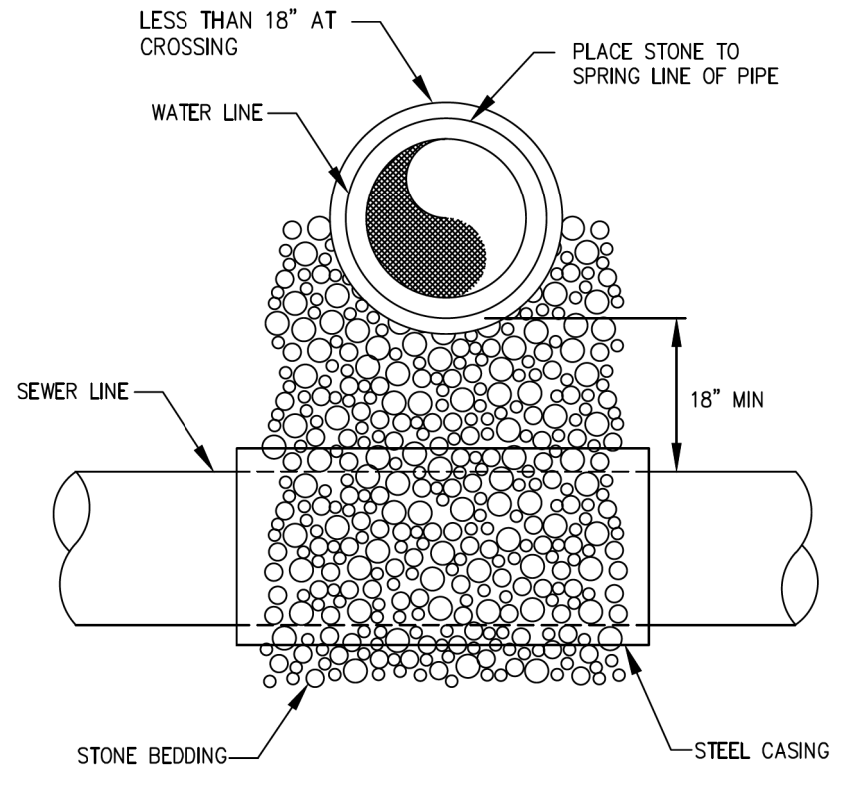
WATERMAIN AND/OR SEWER FORCEMAIN (PRESSURE PIPE)
PIPE TRENCH/BEDDING DETAIL
DETAIL WS-22A

UTILITY CONSTRUCTION
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- NOTES:**
- BOTH THE WATER MAIN AND THE SEWER MAIN SHALL BE FERROUS MATERIALS WITH JOINTS EQUIVALENT TO WATER MAIN STANDARDS FOR A MINIMUM DISTANCE OF 10 FEET ON EACH SIDE OF THE CROSSING.
 - ALTERNATIVELY, PIPES MAY BE SLEEVED WITH FERROUS MATERIALS FOR A MINIMUM DISTANCE OF 10 FEET ON EACH SIDE OF THE CROSSING

SEWER CROSSING ABOVE WATER LINE



- NOTES:**
- SOIL REPLACED UNDER THE WATER MAIN SHALL BE COMPACTED.
 - IF THE WATER MAIN CROSSES AT LESS THAN 18" ABOVE THE SEWER MAIN BOTH THE WATER MAIN AND THE SEWER MAIN SHALL BE FERROUS MATERIALS WITH JOINTS EQUIVALENT TO WATER MAIN STANDARDS FOR A MINIMUM DISTANCE OF 10 FEET ON EACH SIDE OF THE CROSSING, OR THEY MAY HAVE FERROUS SLEEVES PUT AROUND THEM.

SEWER CROSSING BELOW WATER LINE

SEWER OFFSETS ABOVE
AND BELOW WATER MAINS
DETAIL WS-21

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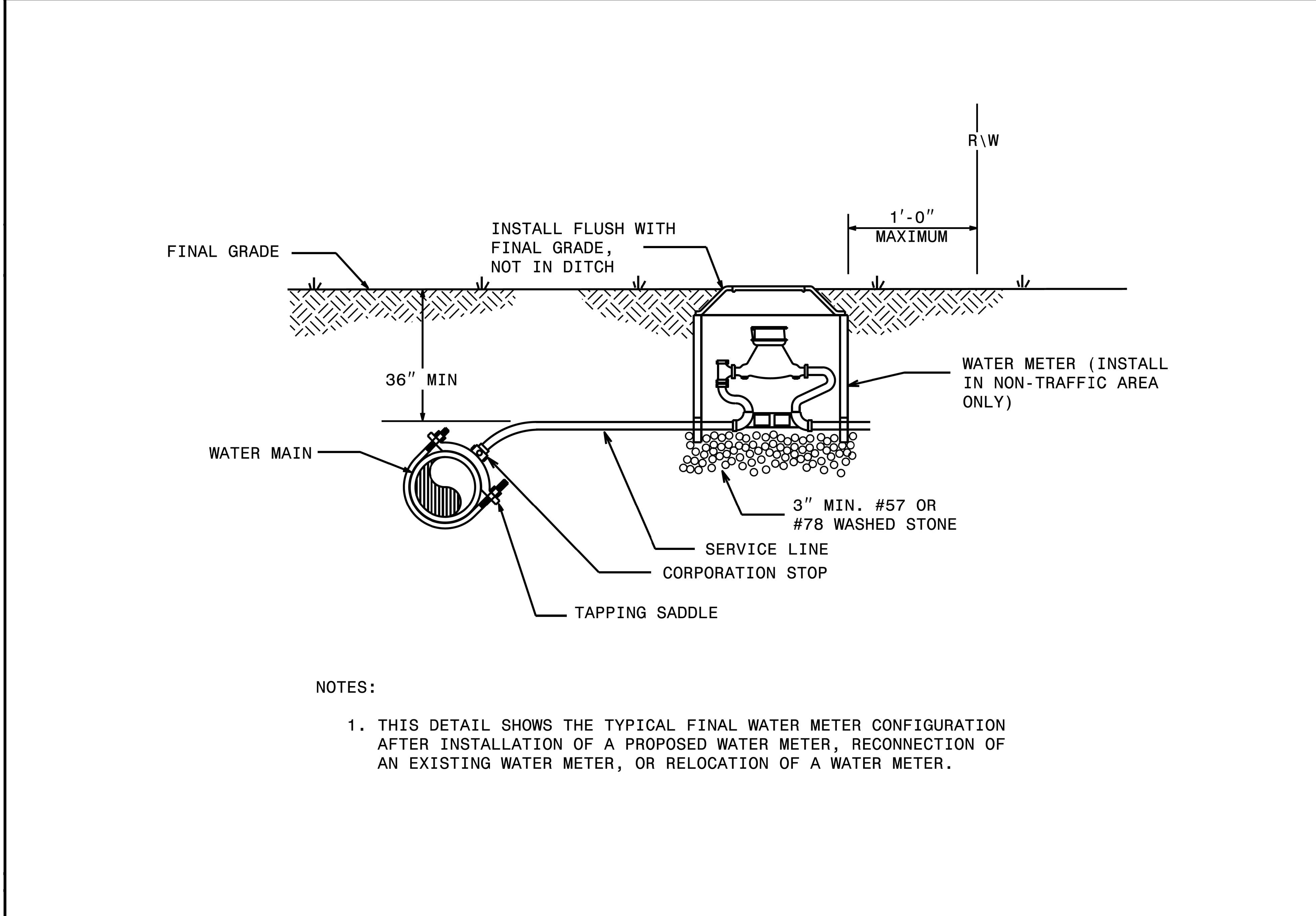
5/14/99

WATER METER STANDARD DRAWING DETAIL

PROJECT REFERENCE NO. R-5020B	SHEET NO. UC-3F
DESIGNED BY: DK	
DRAWN BY: AP	
CHECKED BY: MM	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

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NOTES:

1. THIS DETAIL SHOWS THE TYPICAL FINAL WATER METER CONFIGURATION AFTER INSTALLATION OF A PROPOSED WATER METER, RECONNECTION OF AN EXISTING WATER METER, OR RELOCATION OF A WATER METER.

1-18
 STATE OF
 NORTH CAROLINA
 DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
WATER METER

SHEET 1 OF 1
1515.01

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 5/14/99

5/14/99

FIRE HYDRANT STANDARD DRAWING DETAIL

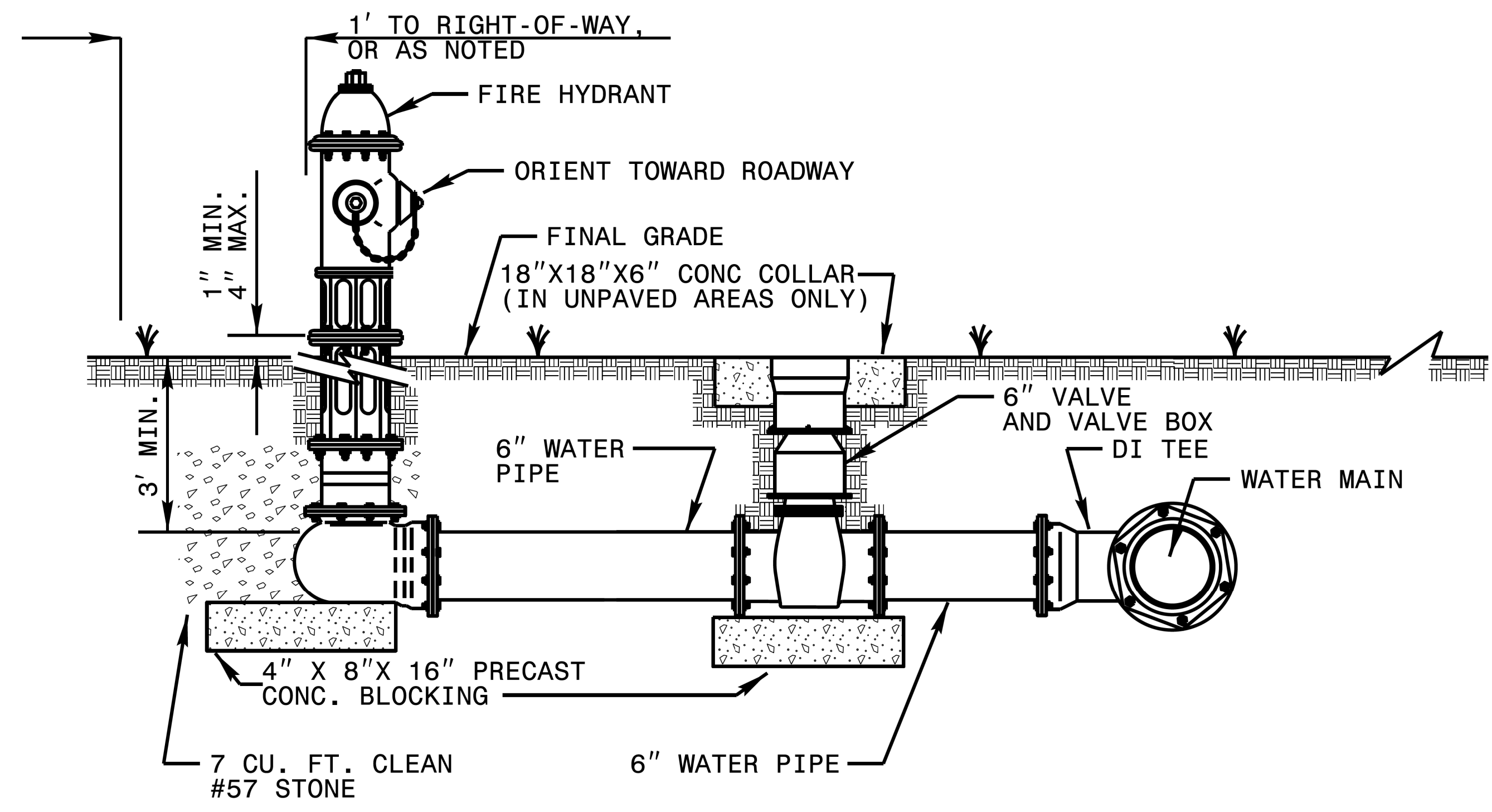
PROJECT REFERENCE NO. R-5020B	SHEET NO. UC-36
DESIGNED BY: DK	
DRAWN BY: AP	
CHECKED BY: MM	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY 	

UTILITY CONSTRUCTION

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NOTES:

1. THIS DETAIL SHOWS THE TYPICAL FINAL FIRE HYDRANT CONFIGURATION AFTER INSTALLATION OF A PROPOSED FIRE HYDRANT, RECONNECTION OF AN EXISTING FIRE HYDRANT, OR RELOCATION OF A FIRE HYDRANT.
2. KEEP DRAIN PORTS FREE FROM OBSTRUCTION.
3. RESTRAIN ALL PIPE JOINTS AND FITTINGS. ACCEPTABLE TYPES OF RESTRAINT INCLUDE RESTRAINING GLANDS; RESTRAINED, PUSH-ON JOINTS; AND 3/4" BITUMINOUS COATED, ALL-THREAD RESTRAINING RODS. THRUST BLOCKS ARE NOT AN ACCEPTABLE TYPE OF RESTRAINT.
4. FOR RELOCATED OR RECONNECTED FIRE HYDRANTS, VERIFY THE VALVE IS RESTRAINED TO THE MAIN. PROVIDE APPROPRIATE RESTRAINT.
5. HYDRANT LOCATION APPLIES TO PROPOSED AND RELOCATED FIRE HYDRANTS.
6. LOCATE FIRE HYDRANT WITH 3' HORIZONTAL CLEARANCE FROM ABOVE GROUND OBJECTS.
7. PROVIDE A MINIMUM OF 3' COVER OVER ALL SECTIONS OF HORIZONTAL PIPE. USE FITTINGS AS NECESSARY.
8. TAPPING SLEEVES MAY BE USED ON EXISTING MAINS IN LIEU OF DI TEES.
9. LOCATE FIRE HYDRANT OUTSIDE OF THE VEHICLE RECOVERY AREA, ADJACENT TO THE R/W LINE, OR IN A PROTECTED AREA.



STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
FIRE HYDRANT

SHEET 1 OF 1
1515.02

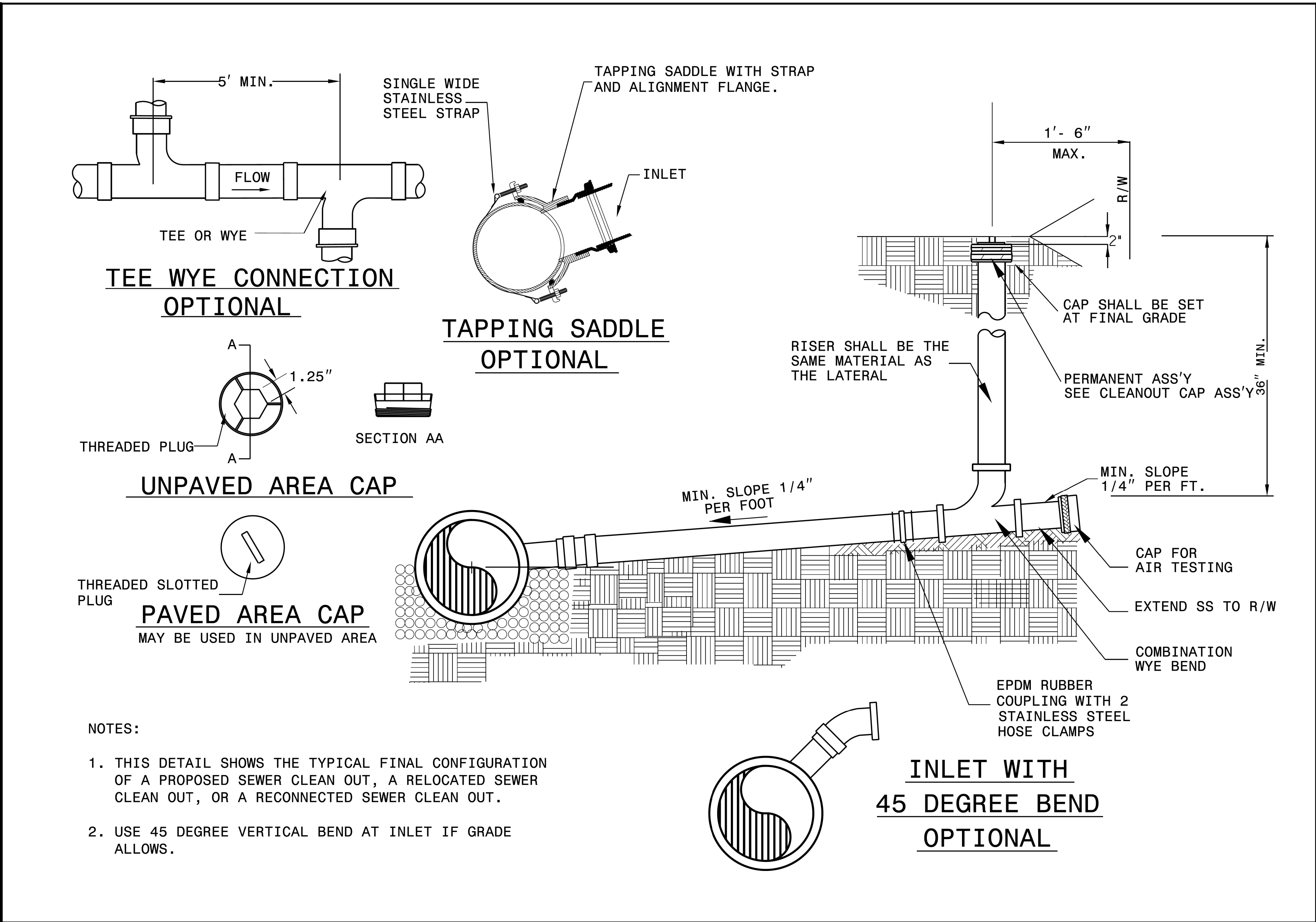
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 R-5020B-ut_UC03A.dtl.dgn
 5/14/99

SEWER CLEAN OUT STANDARD DRAWING DETAIL

PROJECT REFERENCE NO. <i>R-5020B</i>	SHEET NO. <i>UC-3H</i>
DESIGNED BY: <i>DK</i>	
DRAWN BY: <i>AP</i>	
CHECKED BY: <i>MM</i>	
APPROVED BY:	
REVISED:	9/3/2020
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
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UTILITY CONSTRUCTION

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STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

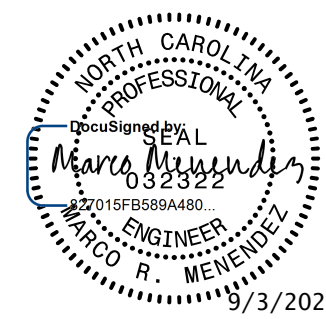

ROADWAY STANDARD DRAWING FOR
SEWER CLEAN OUT

SHEET 1 OF 1
1520.01

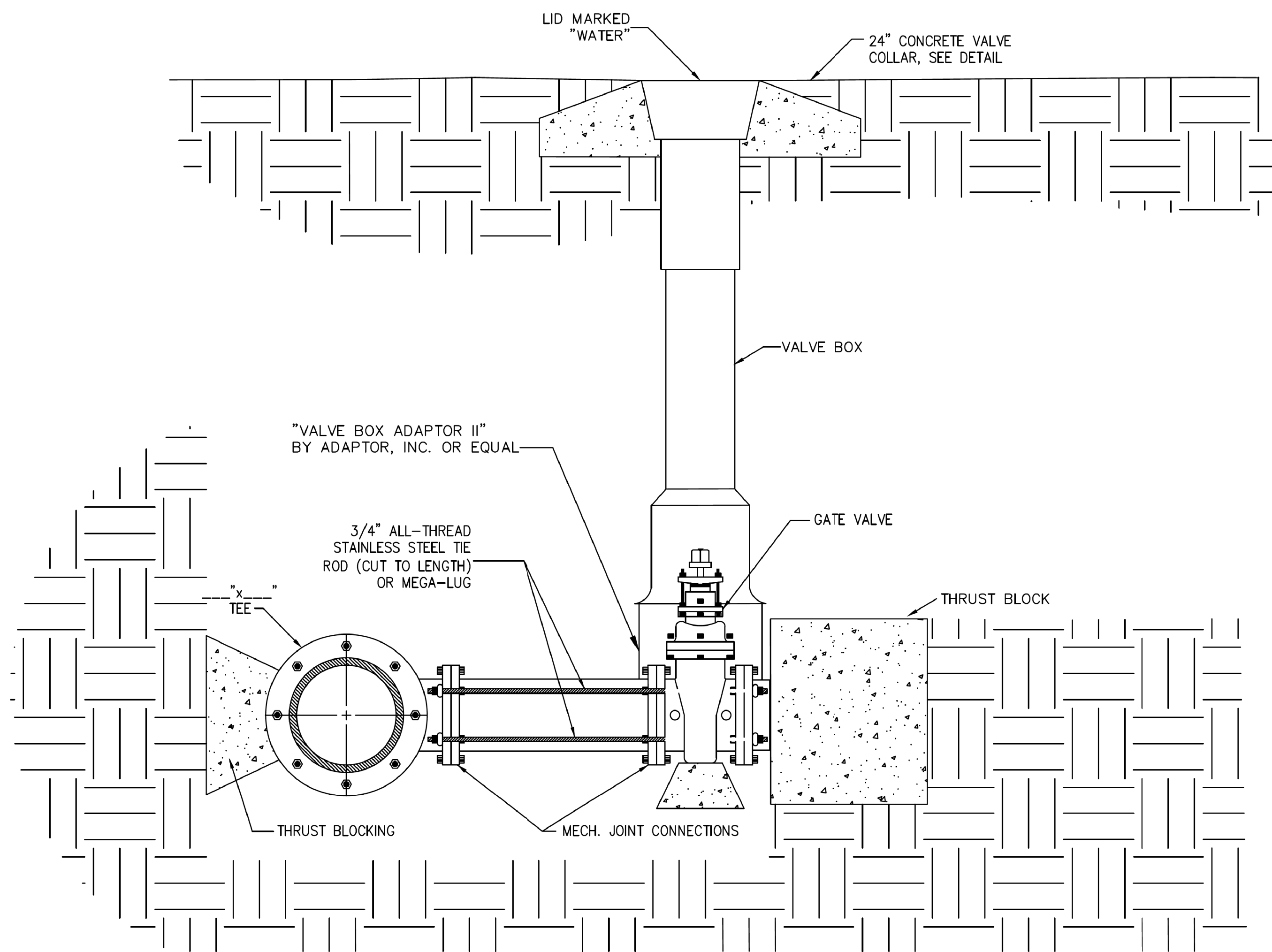
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5/14/99

BRANCH STUB-OUT FOR FUTURE CONNECTION (6-INCH DIA AND LARGER MAIN)

PROJECT REFERENCE NO. <i>R-5020B</i>	SHEET NO. <i>UC-3K</i>
DESIGNED BY: <i>DK</i>	
DRAWN BY: <i>AP</i>	
CHECKED BY: <i>MM</i>	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION 9/3/2020	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	UTILITY CONSTRUCTION PLANS ONLY
 KCI <small>Engineers • Planners • Scientists • Construction Managers</small> <small>4509 Falls of Neuse Road, Suite 400</small> <small>Raleigh, NC 27609</small> <small>Phone (919) 783-9214 • Fax (919) 783-9266</small> <small>License No. C-764</small>	

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NOTES:

1. CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL FITTINGS.
2. ALL TIE RODS AND NUTS TO BE STAINLESS STEEL.
3. LENGTH OF PIPE SHALL BE MINIMUM NEEDED TO INSTALL FITTINGS. VALVE SHALL BE BOLTED DIRECTLY TO TEE WHENEVER POSSIBLE.

ROD REQUIREMENTS	
BRANCH SIZE	NO. OF RODS
4"	2 EA.
6"	2 EA.
8"	4 EA.
12"	4 EA.
16"	6 EA.
20"	6 EA.
24"	6 EA.

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 R-5020B-ut_UC03A.dwg
 5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-5020B	UC-6
DESIGNED BY: DK	
DRAWN BY: AP	
CHECKED BY: MM	
APPROVED BY:	
REVISED:	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151
KCI Engineers • Planners • Scientists • Construction Managers 4519 Falls of Noe Road, Suite 400 Raleigh, NC 27609 Phone (919) 783-9214 • Fax (919) 783-9266 License No. C-794	

NOTES:

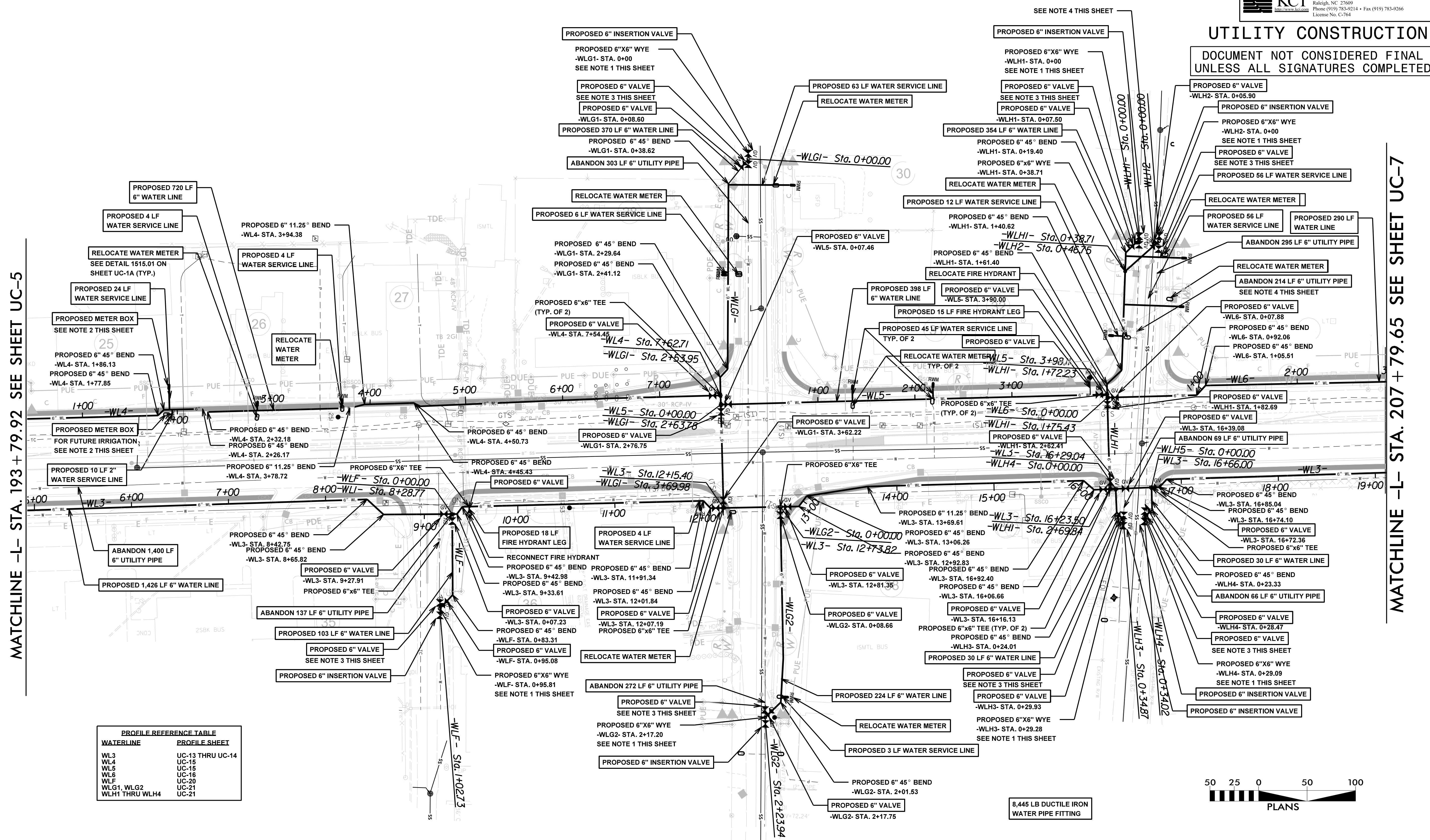
1. SEE SHEET UC-3A FOR CONNECTION TO EXISTING AC WATER LINE DETAIL.
2. PROPOSED WATER METER BOX FOR FUTURE METER BY CITY OF WHITEVILLE.
3. FOLLOWING CONSTRUCTION OF THE PROPOSED WATER LINE, ABANDON VALVE IN PLACE.
4. EXISTING PIPE TO BE ABANDONED SHALL BE REMOVED AS NECESSARY BY CONTRACTOR FOR THE PROPOSED PIPE INSTALLATION.

WATER LINE



UTILITY CONSTRUCTION

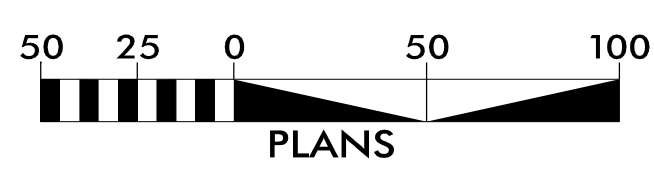
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MATCHLINE -L- STA. 193 + 79.92 SEE SHEET UC-5

MATCHLINE -L- STA. 207 + 79.65 SEE SHEET UC-7

PROFILE REFERENCE TABLE	
WATERLINE	PROFILE SHEET
WL3	UC-13 THRU UC-14
WL4	UC-15
WL5	UC-15
WL6	UC-16
WL7	UC-20
WL8	UC-21
WL9	UC-21
WL10	UC-21
WL11	UC-21
WL12	UC-21
WL13	UC-21
WL14	UC-21
WL15	UC-21
WL16	UC-21
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WL93	UC-21
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WL95	UC-21
WL96	UC-21
WL97	UC-21
WL98	UC-21
WL99	UC-21
WL100	UC-21



8,445 LB DUCTILE IRON WATER PIPE FITTING

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-5020B	UC-7
DESIGNED BY: DK	
DRAWN BY: AP	
CHECKED BY: MM	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY Engineers • Planners • Scientists • Construction Managers 4595 Falls of Noe Road, Suite 400 Raleigh, NC 27609 Phone (919) 783-9214 • Fax (919) 783-9266 License No. C-794	

NOTES:

1. SEE SHEET UC-3A FOR CONNECTION TO EXISTING AC WATER LINE DETAIL.
2. FOLLOWING CONSTRUCTION OF THE PROPOSED WATER LINE, ABANDON VALVE IN PLACE.
3. EXISTING PIPE TO BE ABANDONED SHALL BE REMOVED AS NECESSARY BY CONTRACTOR FOR THE PROPOSED PIPE INSTALLATION.
4. PROPOSED WATER METER BOX FOR FUTURE METER BY OTHERS.

WATER LINE

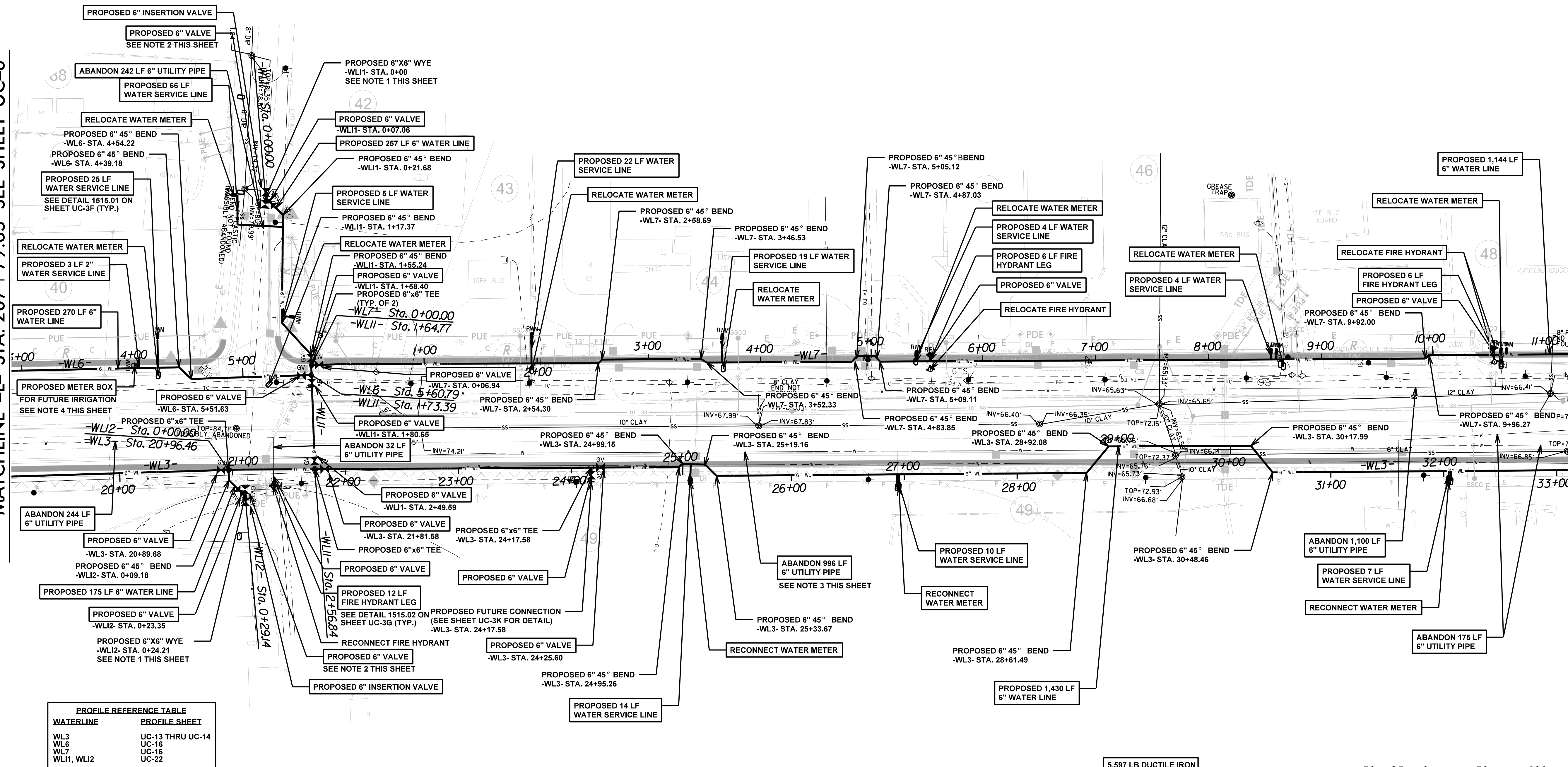


UTILITY CONSTRUCTION

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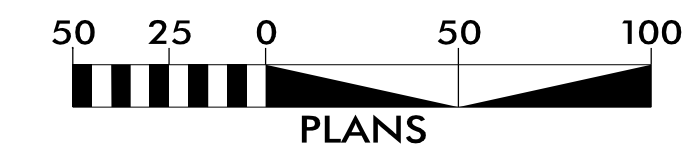
MATCHLINE -L- STA. 207 + 79.65 SEE SHEET UC-6

MATCHLINE -L- STA. 221 + 83.11 SEE SHEET UC-8



PROFILE REFERENCE TABLE	
WATERLINE	PROFILE SHEET
WL3	UC-13 THRU UC-14
WL6	UC-16
WL7	UC-16
WL11, WL12	UC-22

5,597 LB DUCTILE IRON WATER PIPE FITTING



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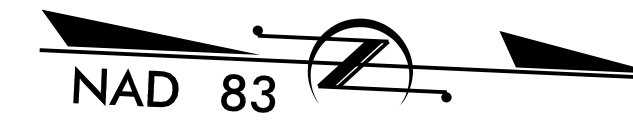
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-5020B	UC-8
DESIGNED BY: DK	
DRAWN BY: AP	
CHECKED BY: MM	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
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NOTES:

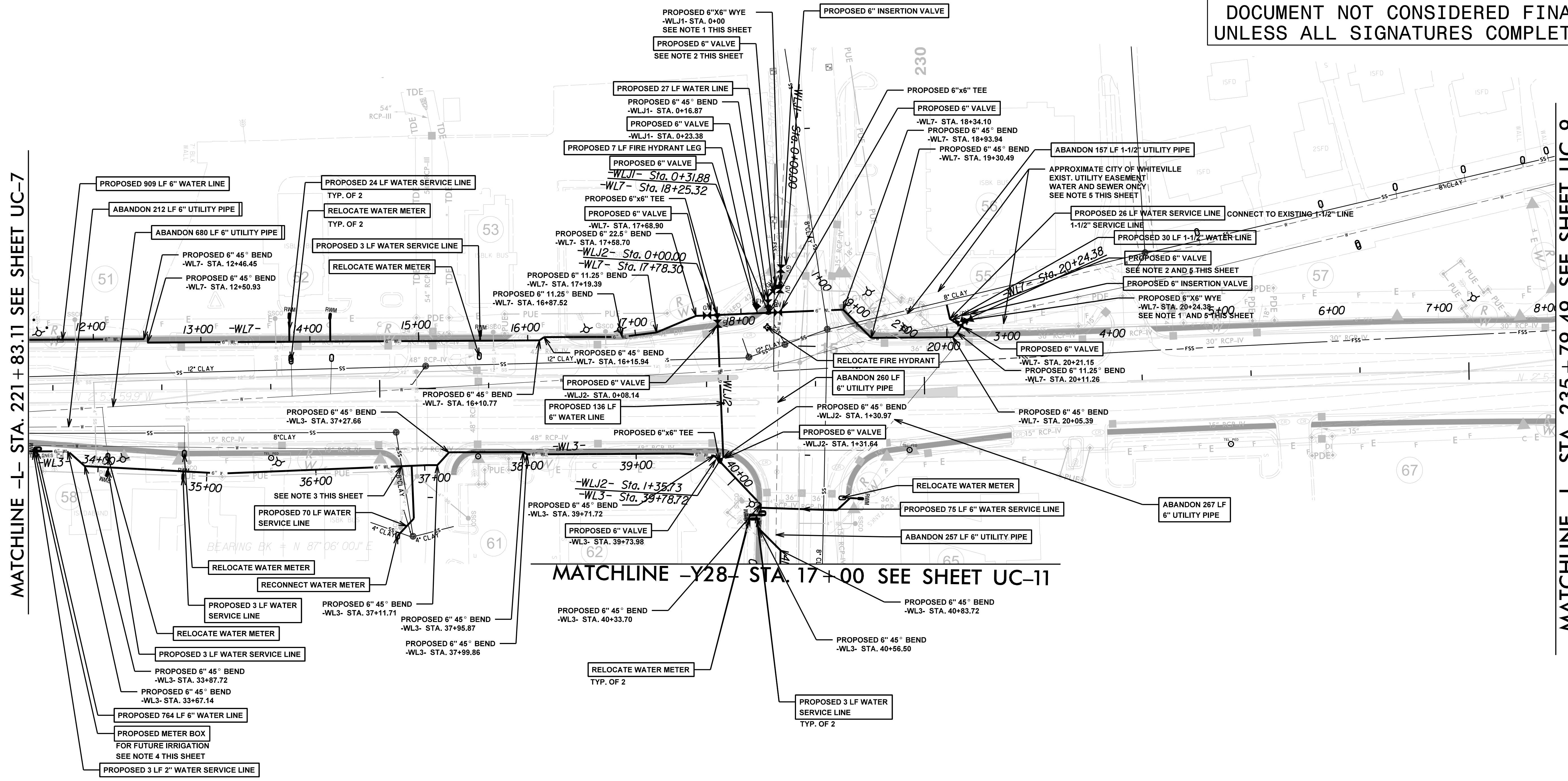
- SEE SHEET UC-3A FOR CONNECTION TO EXISTING AC WATER LINE DETAIL.
- FOLLOWING CONSTRUCTION OF PROPOSED WATER LINE, ABANDON VALVE IN PLACE.
- EXISTING PIPE TO BE ABANDONED SHALL BE REMOVED AS NECESSARY BY CONTRACTOR FOR THE PROPOSED PIPE INSTALLATION.
- PROPOSED WATER METER BOX FOR FUTURE METER BY OTHERS.
- CONTRACTOR SHALL RESTORE PAVEMENT AND ANY OTHER ITEMS TO ORIGINAL CONDITION FOLLOWING CONSTRUCTION OF THE WATER LINE WITHIN THE CITY OF WHITEVILLE UTILITY EASEMENT.

WATER LINE



UTILITY CONSTRUCTION

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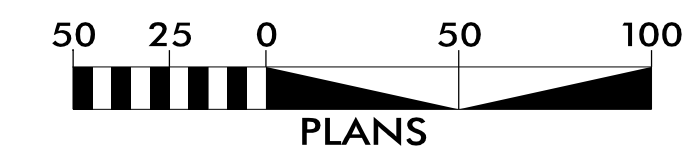
MATCHLINE -L- STA. 221 + 83.11 SEE SHEET UC-7

MATCHLINE -Y28- STA. 17 + 00 SEE SHEET UC-11

MATCHLINE -L- STA. 235 + 79.49 SEE SHEET UC-9

PROFILE REFERENCE TABLE	
WATERLINE	PROFILE SHEET
WL3	UC-14 THRU UC-15
WL7	UC-16, UC-17
WLJ1, WLJ2	UC-22

4,972 LB DUCTILE IRON WATER PIPE FITTING



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NOTES:

1. SEE SHEET UC-3A FOR CONNECTION TO EXISTING AC WATER LINE DETAIL.
2. FOLLOWING CONSTRUCTION OF THE PROPOSED WATER LINE, ABANDON VALVE IN PLACE.
3. EXISTING PIPE TO BE ABANDONED SHALL BE REMOVED AS NECESSARY BY CONTRACTOR FOR THE PROPOSED PIPE INSTALLATION.
4. CONTRACTOR SHALL ENSURE THAT THE PROPOSED WATER MAIN IS INSTALLED AT LEAST 10 FEET LATERALLY FROM PROPOSED OR EXISTING (NOT TO BE ABANDONED) SANITARY FORCE MAIN PIPING.
5. PROPOSED WATER METER BOX FOR FUTURE METER BY OTHERS.



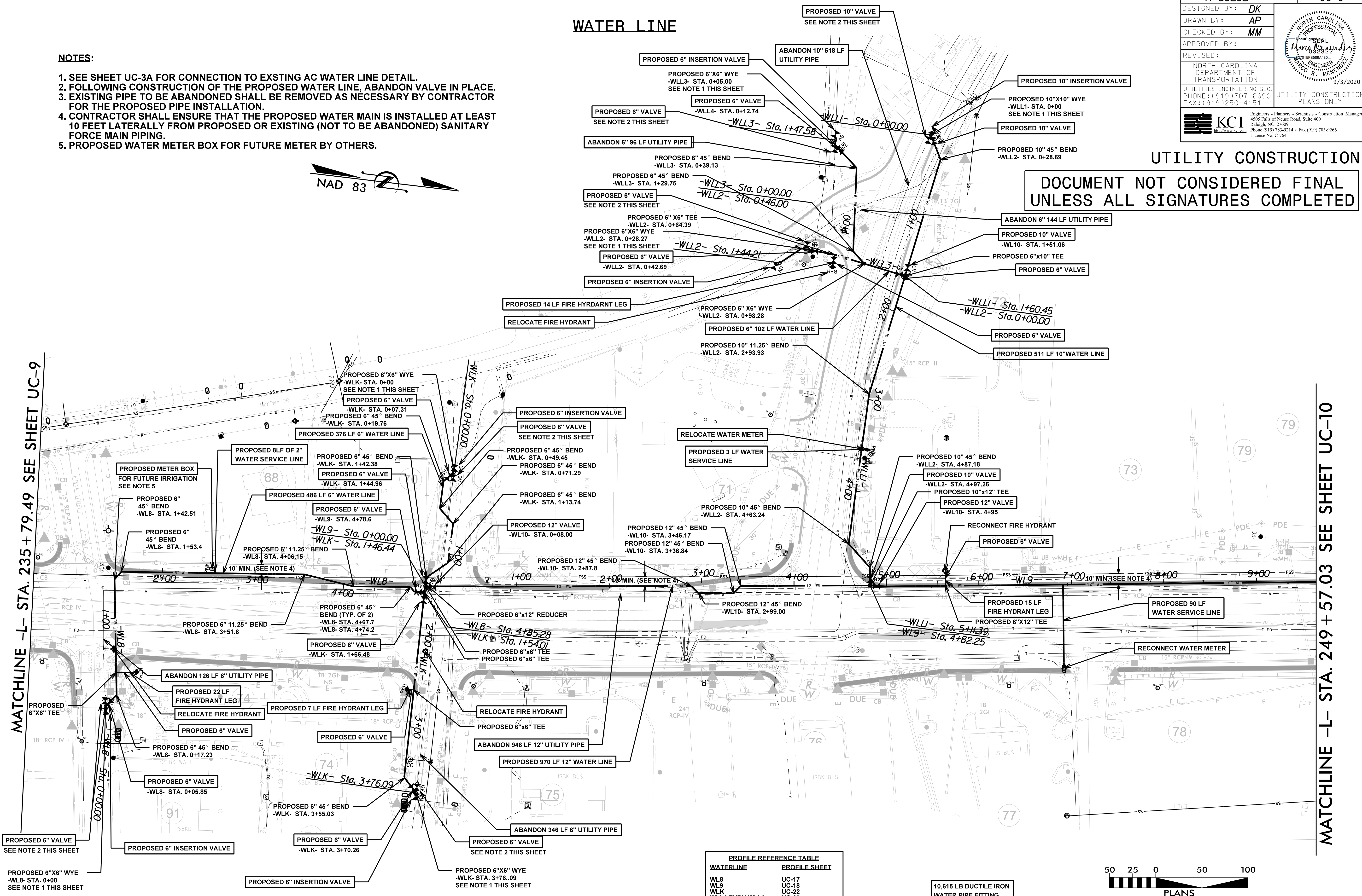
WATER LINE

UTILITY CONSTRUCTION

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MATCHLINE -L- STA. 235 + 79.49 SEE SHEET UC-9

MATCHLINE -L- STA. 249 + 57.03 SEE SHEET UC-10



PROFILE REFERENCE TABLE	
WATERLINE	PROFILE SHEET
WL8	UC-17
WL9	UC-18
WLK	UC-22
WLL1 THRU WLL3	UC-23

10,616 LB DUCTILE IRON
WATER PIPE FITTING



WATER LINE



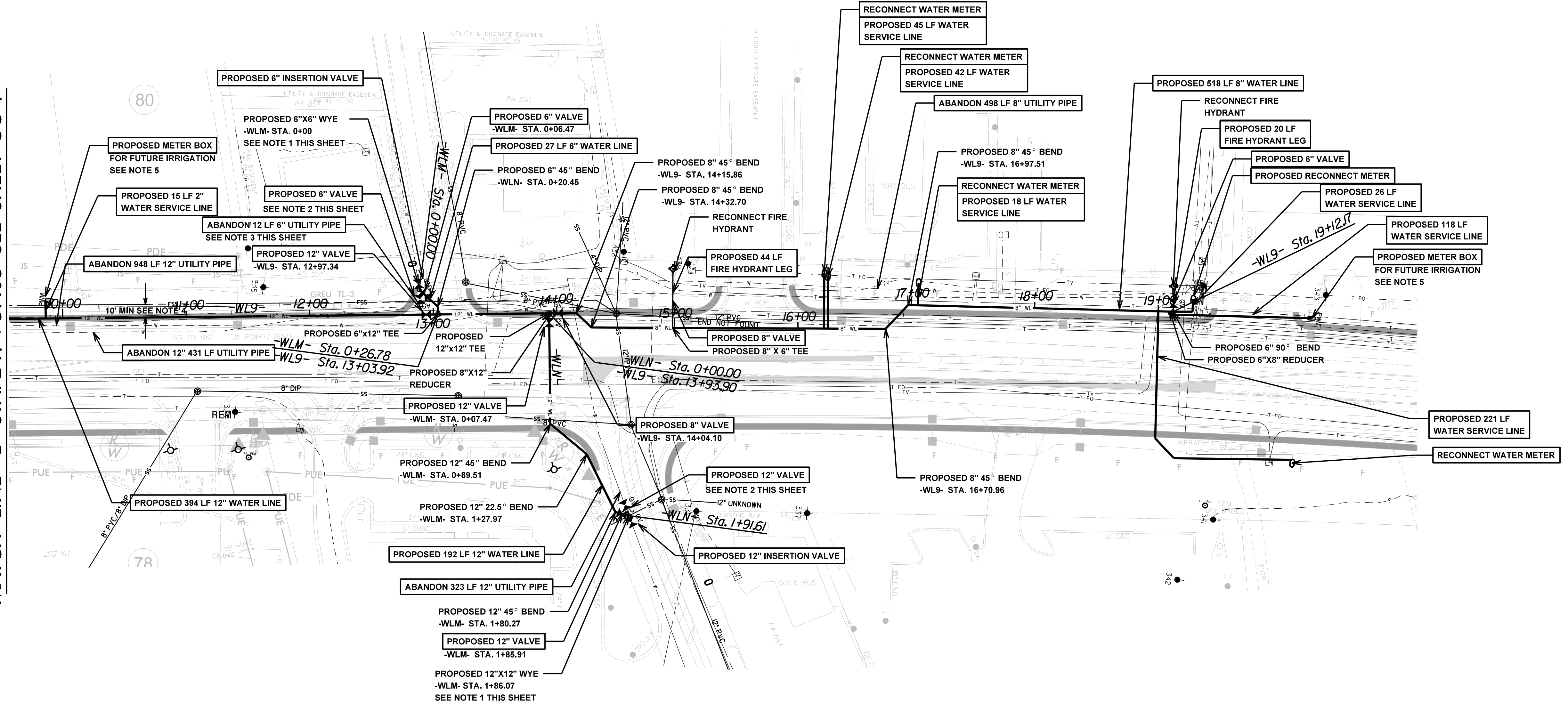
NOTES:

1. SEE SHEET UC-3A FOR CONNECTION TO EXISTING AC WATER LINE DETAIL.
2. FOLLOWING CONSTRUCTION OF THE PROPOSED WATER LINE, ABANDON VALVE IN PLACE.
3. EXISTING PIPE TO BE ABANDONED SHALL BE REMOVED AS NECESSARY BY CONTRACTOR FOR THE PROPOSED PIPE INSTALLATION.
4. CONTRACTOR SHALL ENSURE THAT THE PROPOSED WATER MAIN IS INSTALLED AT LEAST 10 FEET LATERALLY FROM PROPOSED OR EXISTING (NOT TO BE ABANDONED) SANITARY FORCE MAIN PIPING.
5. PROPOSED WATER METER BOX FOR FUTURE METER BY OTHERS.

UTILITY CONSTRUCTION

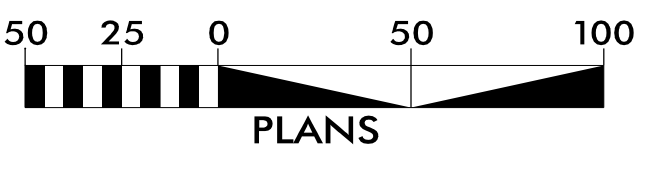
DOCUMENT NOT CONSIDERED FINAL
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MATCH LINE -L- STA. 249 + 57.03 SEE SHEET UC-9



PROFILE REFERENCE TABLE	
WATERLINE	PROFILE SHEET
WLN	UC-18
WLM	UC-23
WLN	UC-23

3,841 LB DUCTILE IRON
 WATER PIPE FITTING



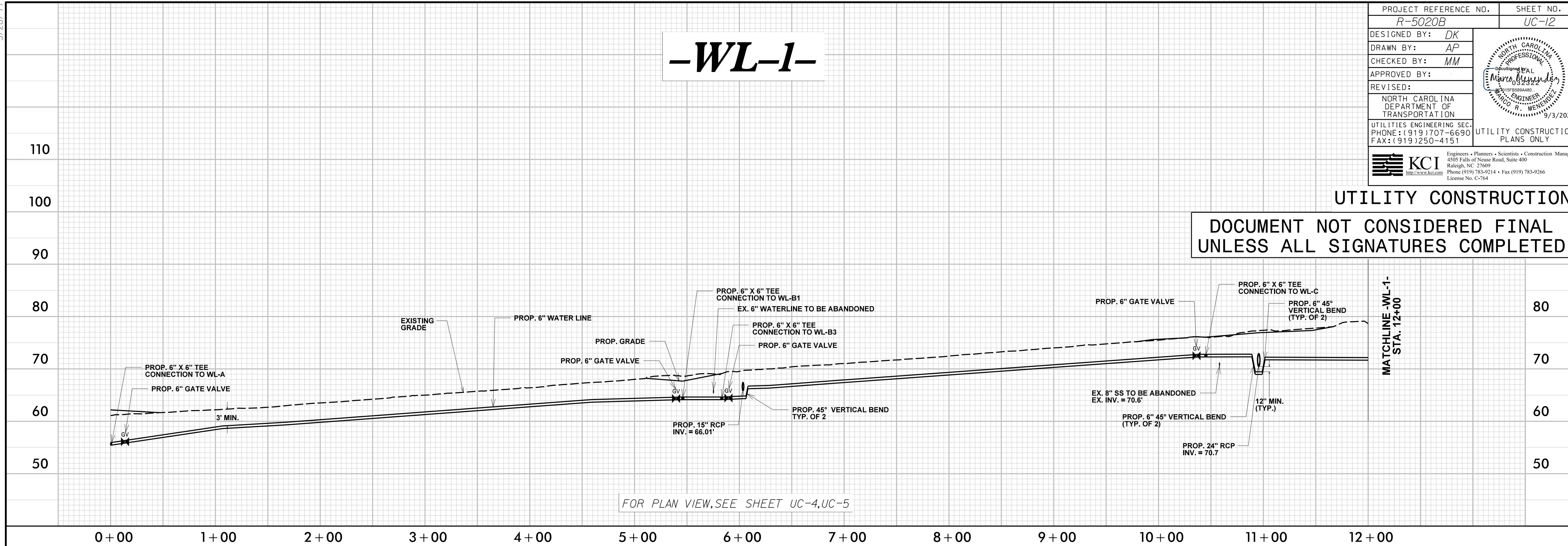
5/28/99

PROJECT REFERENCE NO. R-5020B	SHEET NO. UC-12
DESIGNED BY: DK	
DRAWN BY: AP	
CHECKED BY: MM	
APPROVED BY:	
REVISOR:	9/3/2020
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151 UTILITY CONSTRUCTION PLANS ONLY	
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-WL-1-

UTILITY CONSTRUCTION

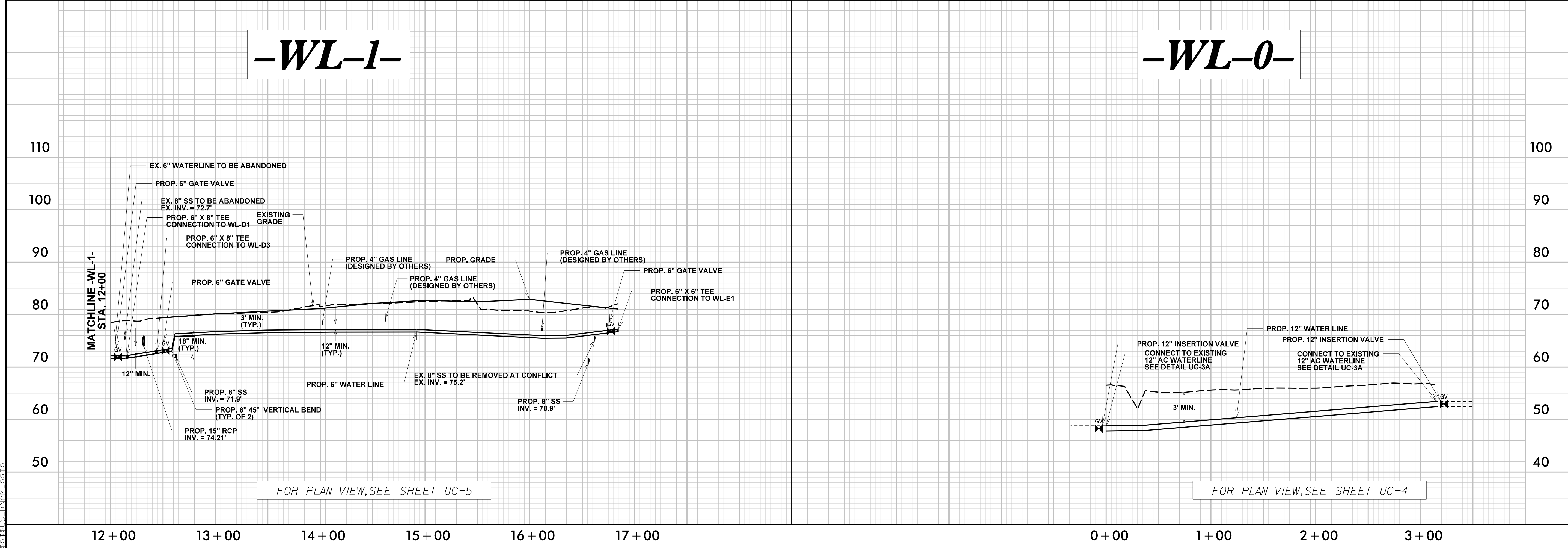
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



FOR PLAN VIEW, SEE SHEET UC-4, UC-5

-WL-1-

-WL-0-



FOR PLAN VIEW, SEE SHEET UC-5

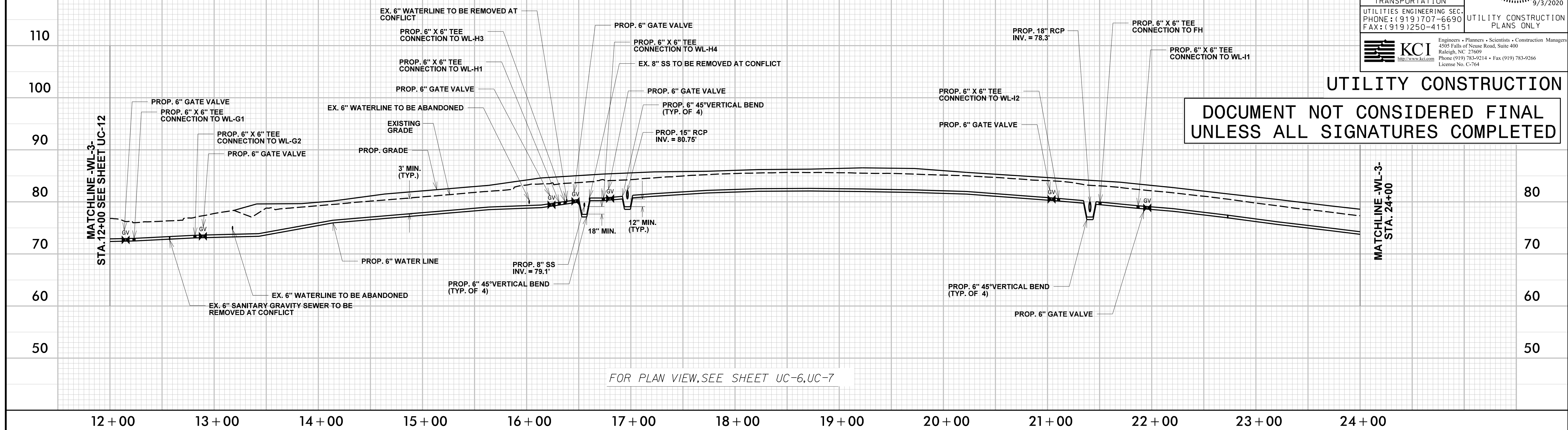
FOR PLAN VIEW, SEE SHEET UC-4

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5/28/99

PROJECT REFERENCE NO. R-5020B	SHEET NO. UC-14
DESIGNED BY: DK	
DRAWN BY: AP	
CHECKED BY: MM	
APPROVED BY:	
REVISD:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151 UTILITY CONSTRUCTION PLANS ONLY	
KCI Engineers • Planners • Scientists • Construction Managers 4508 Falls of Neuse Road, Suite 400 Raleigh, NC 27609 Phone (919) 783-9214 • Fax (919) 783-9266 License No. C-764	

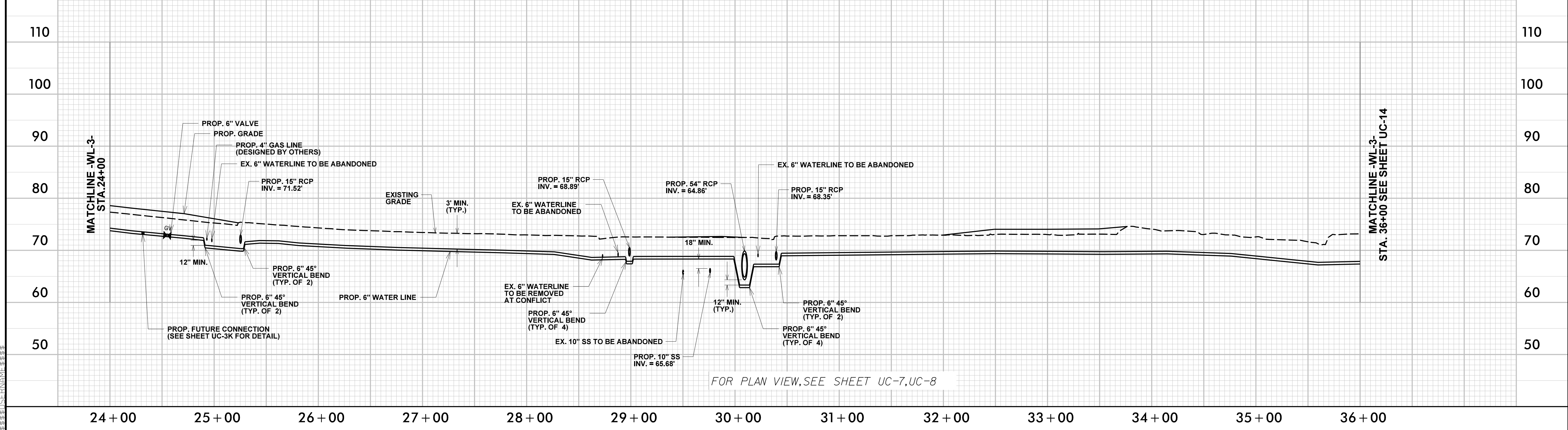
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UTILITY CONSTRUCTION
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

FOR PLAN VIEW, SEE SHEET UC-6, UC-7

-WL-3-



FOR PLAN VIEW, SEE SHEET UC-7, UC-8

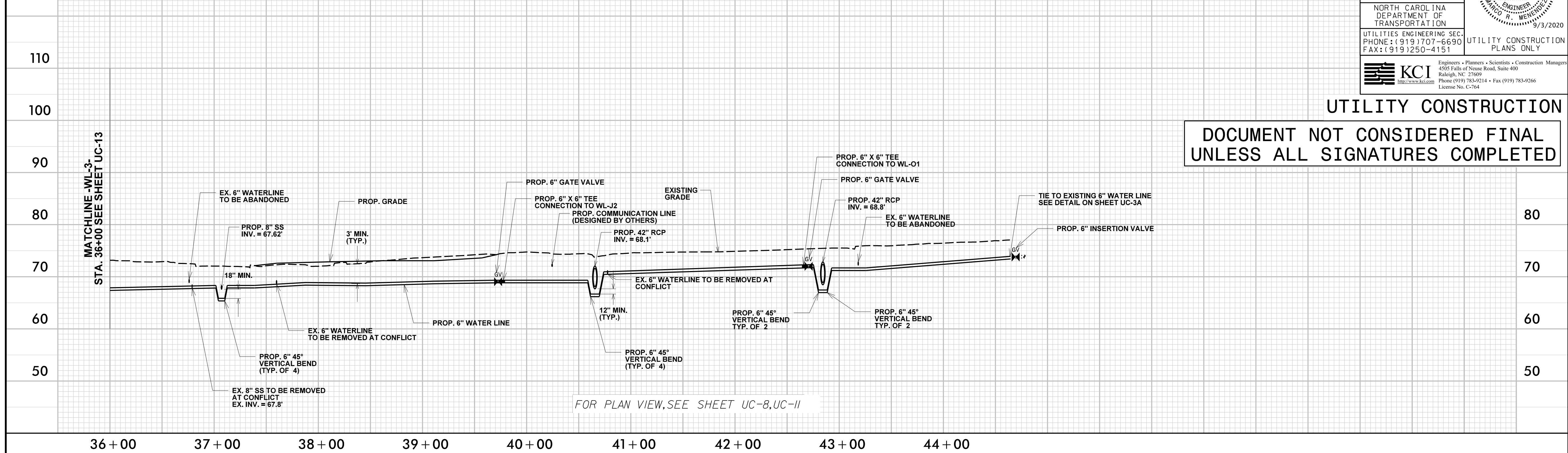
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5/28/99

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PROJECT REFERENCE NO. R-5020B	SHEET NO. UC-15
DESIGNED BY: DK	
DRAWN BY: AP	
CHECKED BY: MM	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
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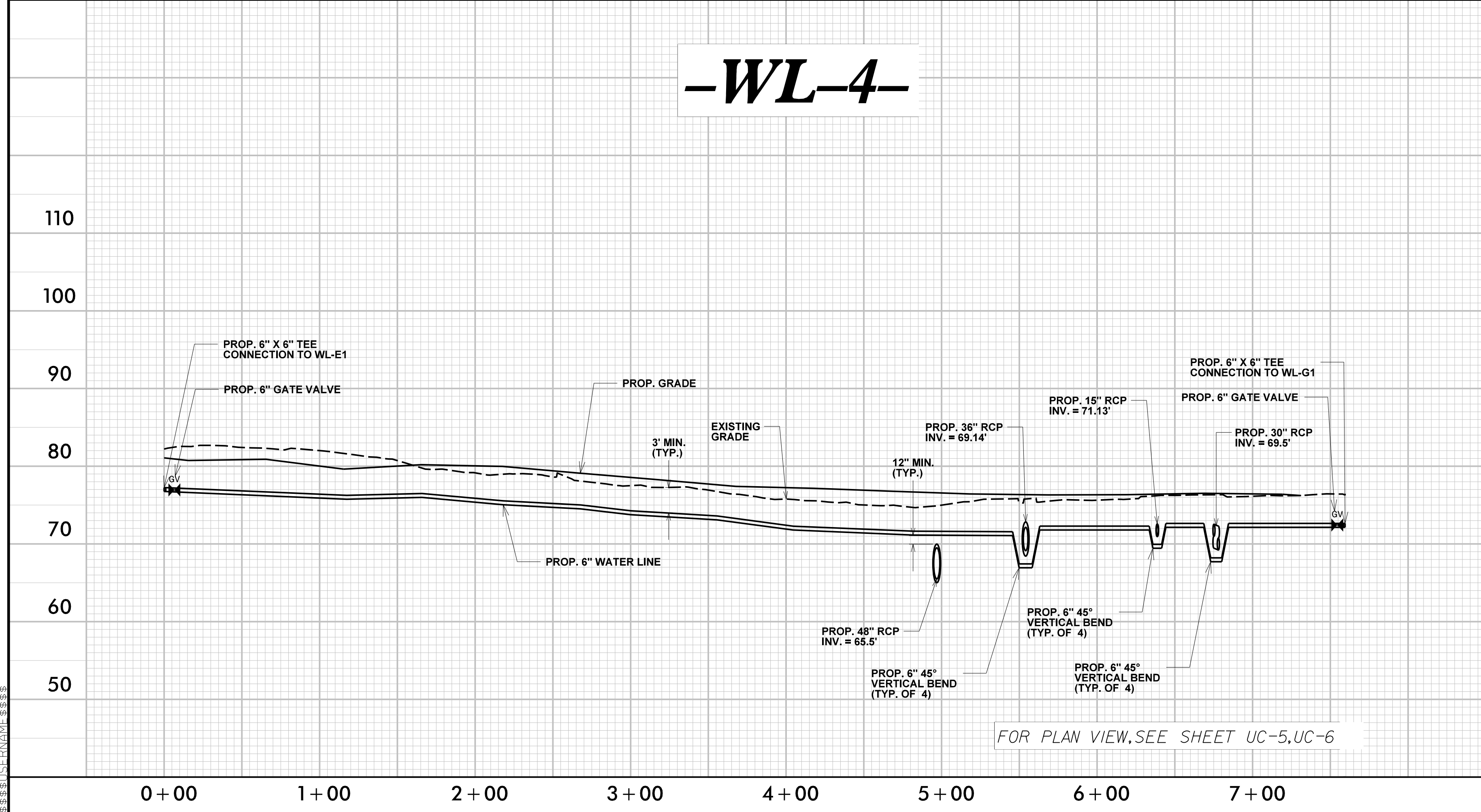
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**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

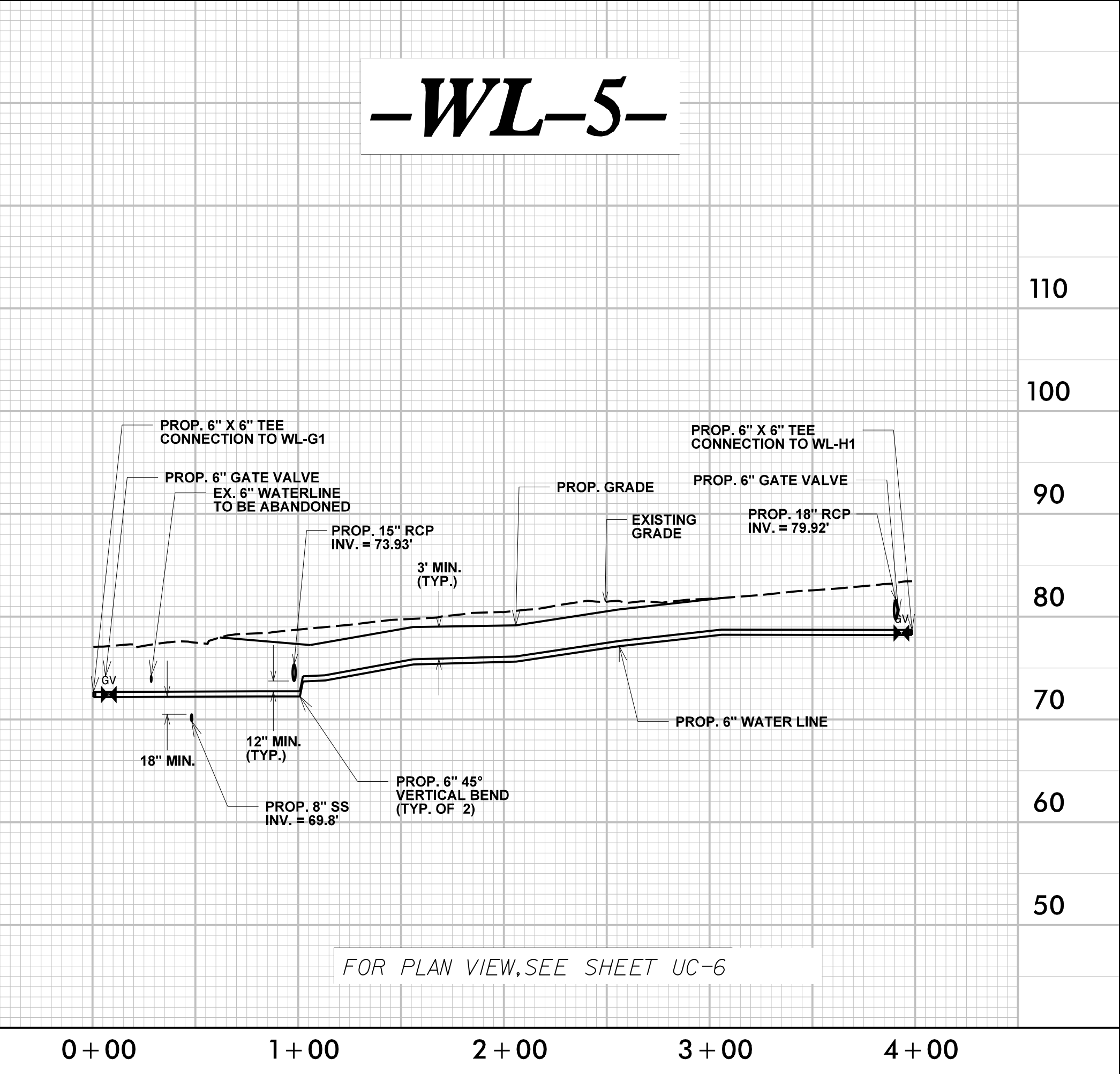
UTILITY CONSTRUCTION

-WL-4-



FOR PLAN VIEW, SEE SHEET UC-5, UC-6

-WL-5-

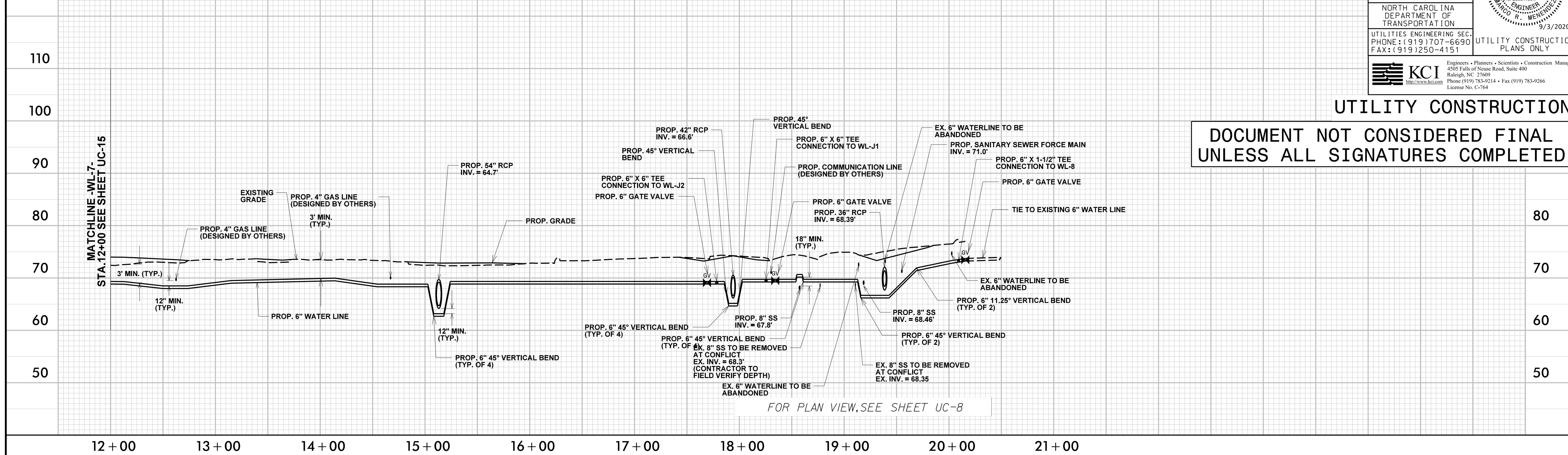


FOR PLAN VIEW, SEE SHEET UC-6

5/28/99

PROJECT REFERENCE NO. R-5020B	SHEET NO. UC-17
DESIGNED BY: DK	
DRAWN BY: AP	
CHECKED BY: MM	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151 UTILITY CONSTRUCTION PLANS ONLY	
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-WL-7-

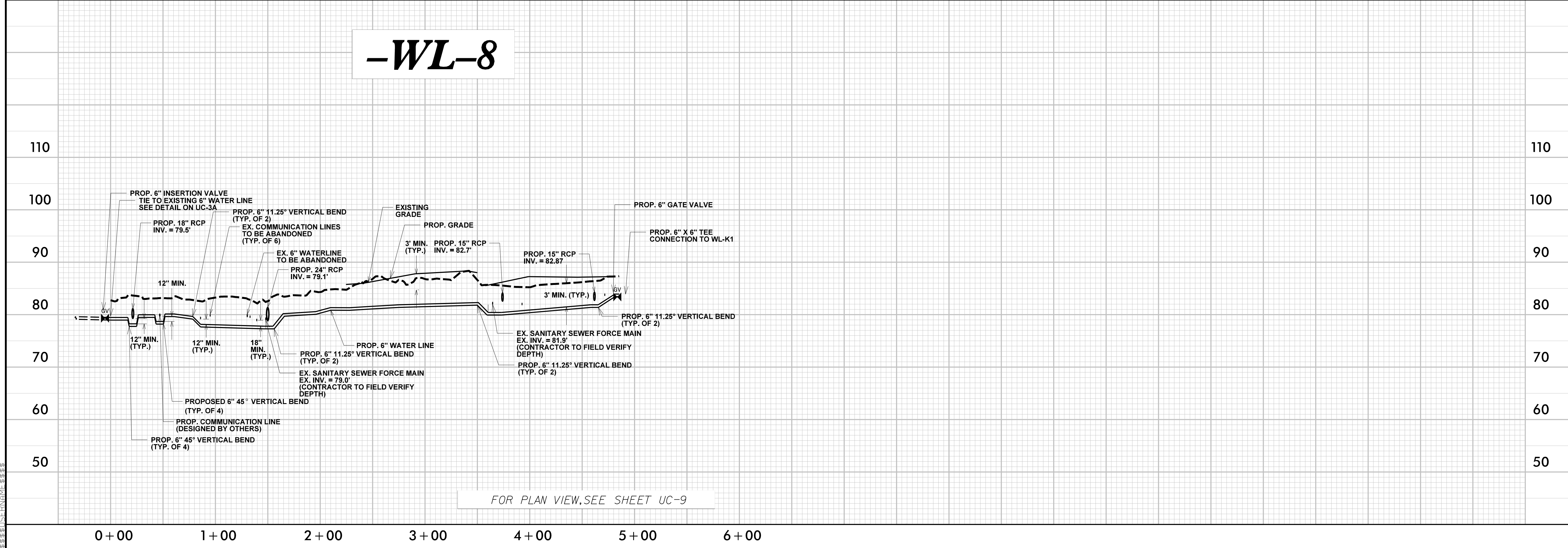


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UNLESS ALL SIGNATURES COMPLETED**

UTILITY CONSTRUCTION

FOR PLAN VIEW, SEE SHEET UC-8

-WL-8-



FOR PLAN VIEW, SEE SHEET UC-9

7/1 AUG 2020 10:58:39 NCDDT R-5020B US 701 Widening Water Sanitary Water Line Profiles\R-5020B.ut.wtr_UC13_14_15.pfl.dgn
 5/28/99

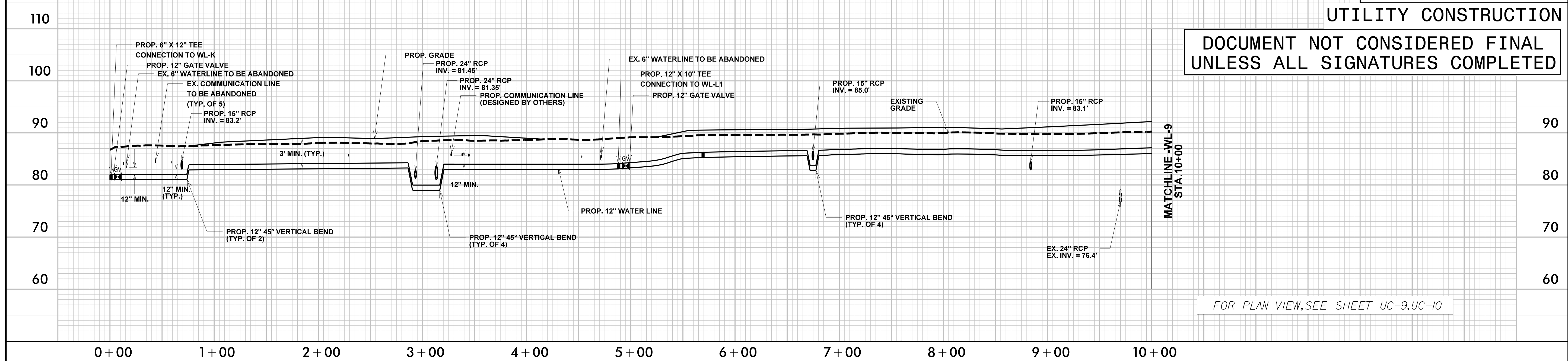
5/28/99

PROJECT REFERENCE NO. R-5020B	SHEET NO. UC-18
DESIGNED BY: DK	
DRAWN BY: AP	
CHECKED BY: MM	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151 UTILITY CONSTRUCTION PLANS ONLY	
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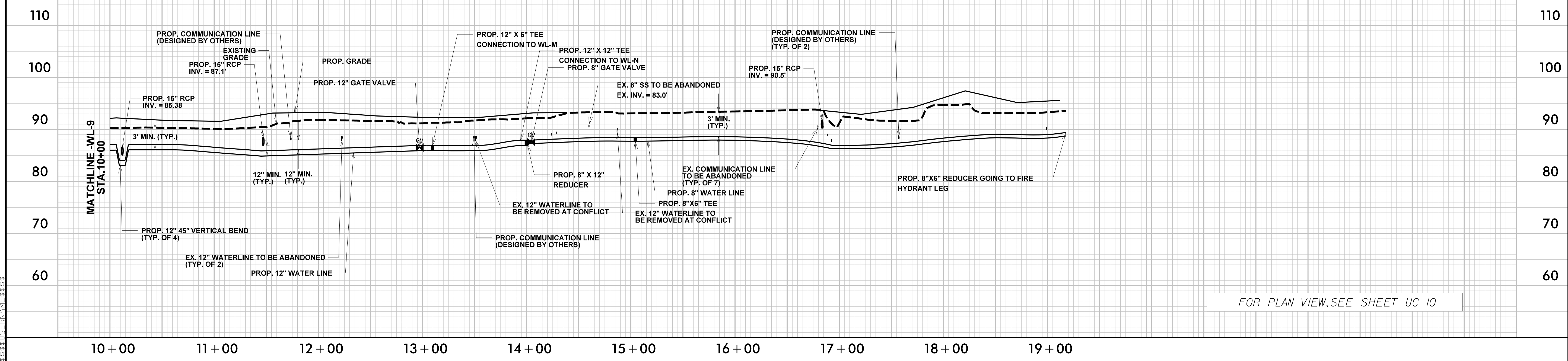
UTILITY CONSTRUCTION

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FOR PLAN VIEW, SEE SHEET UC-9, UC-10

-WL-9



FOR PLAN VIEW, SEE SHEET UC-10

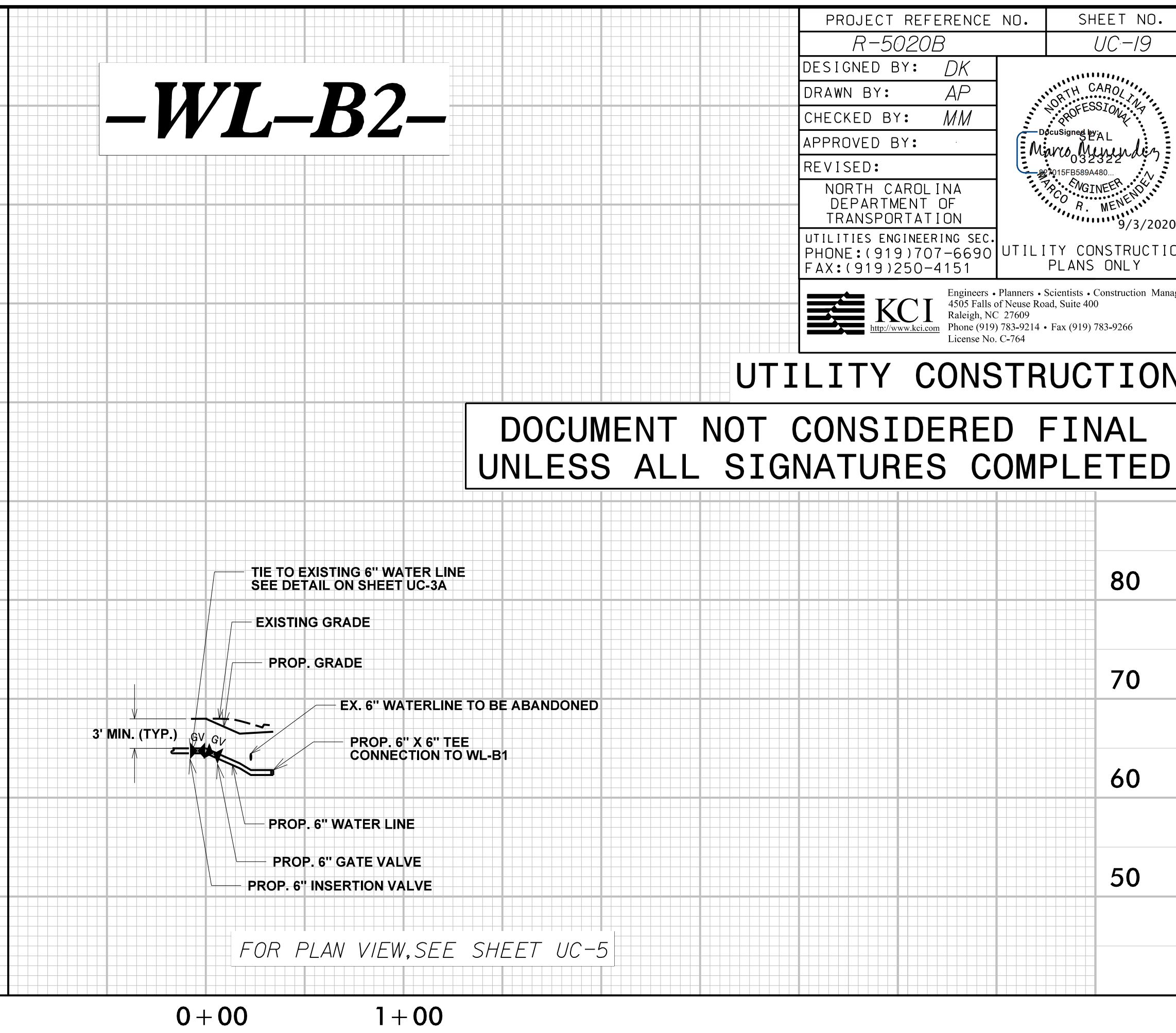
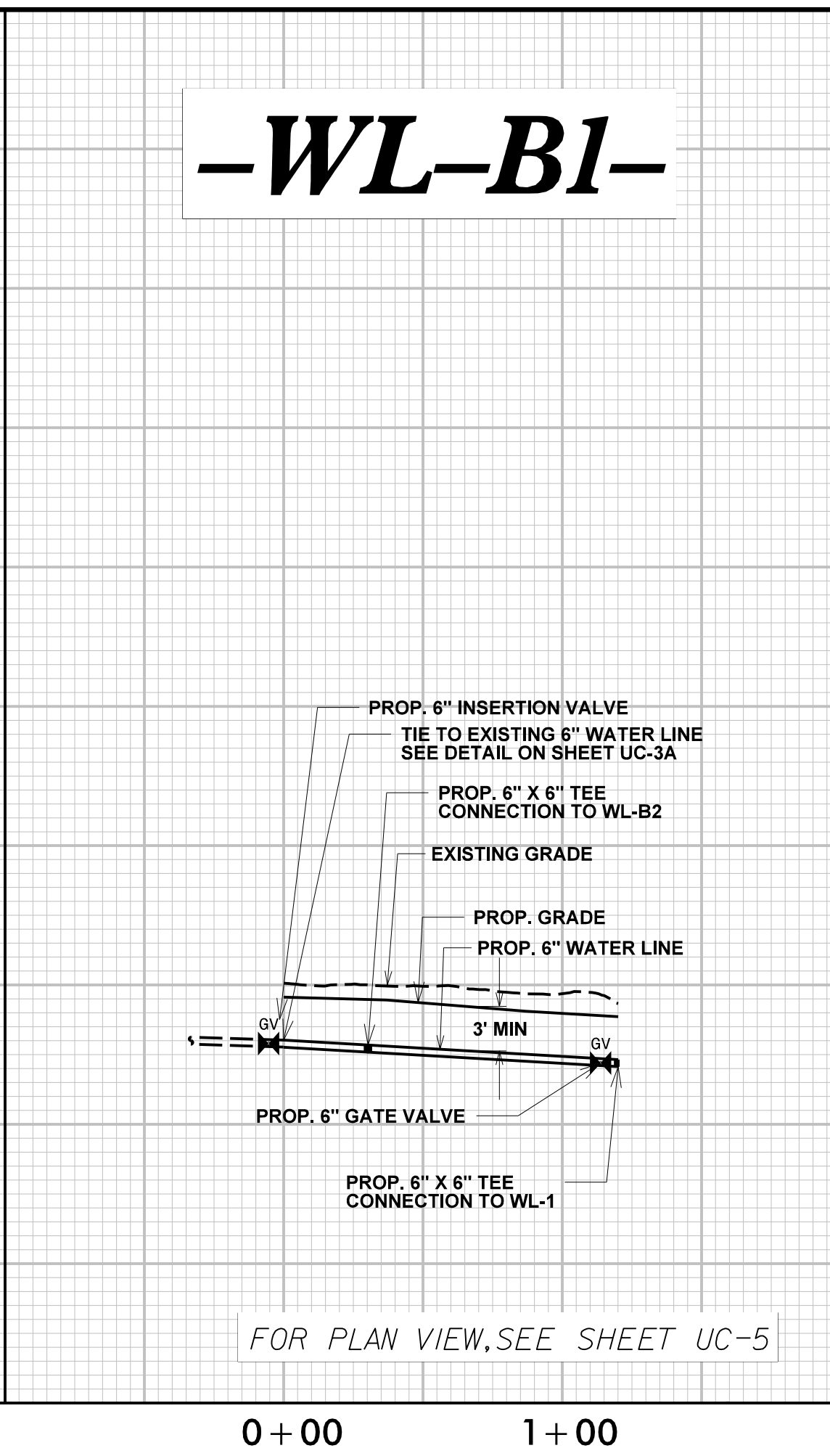
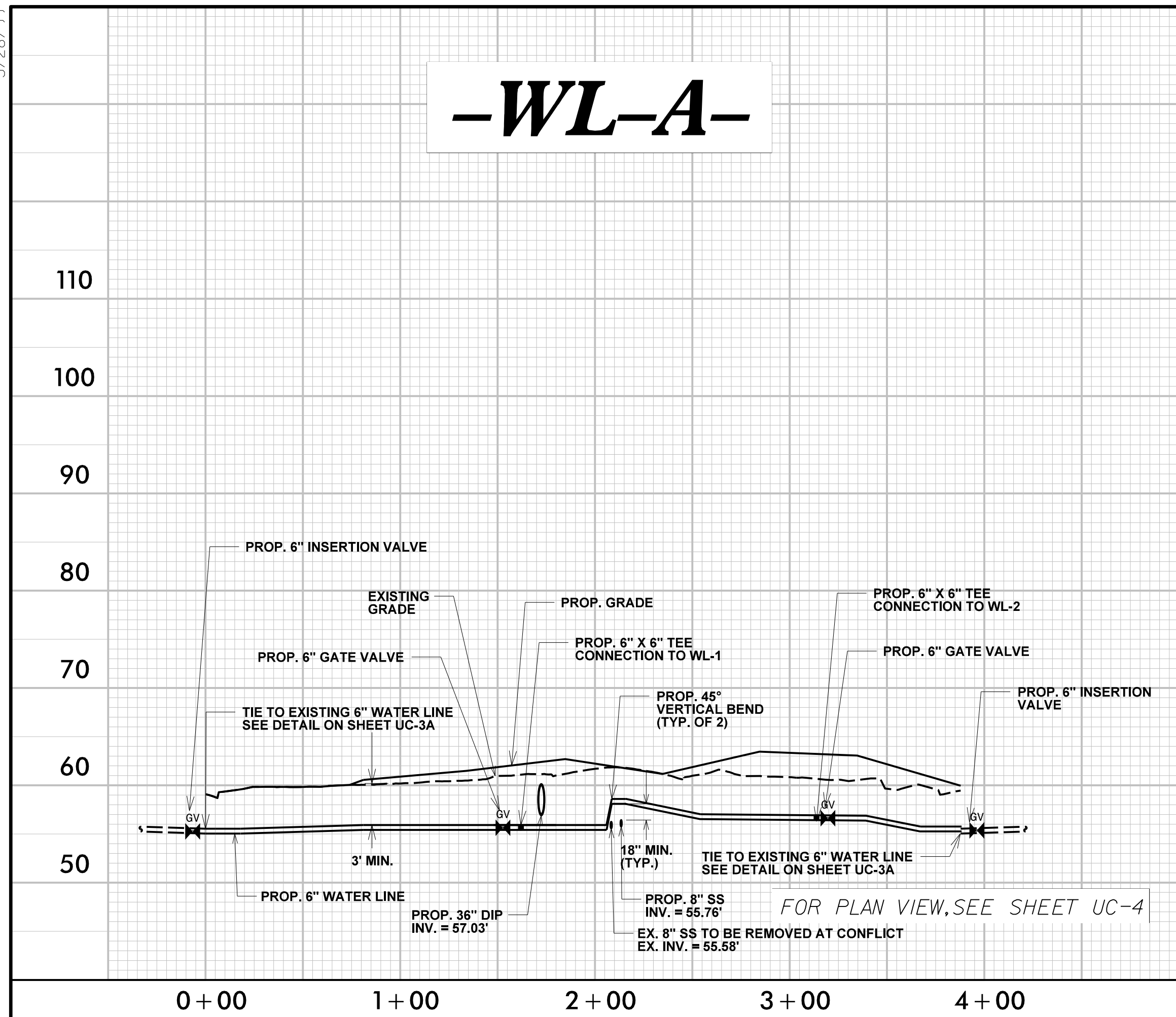
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5/28/99

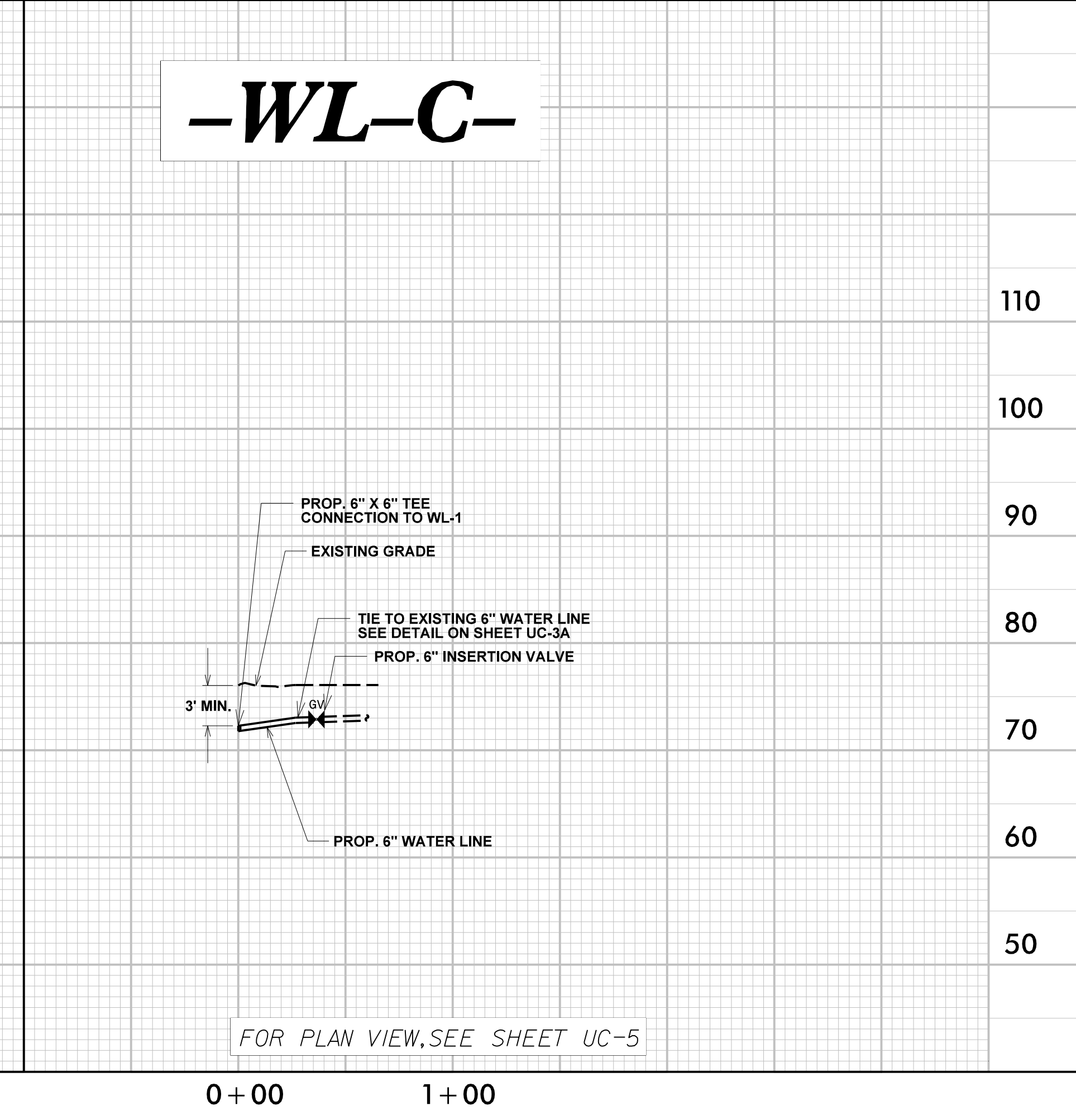
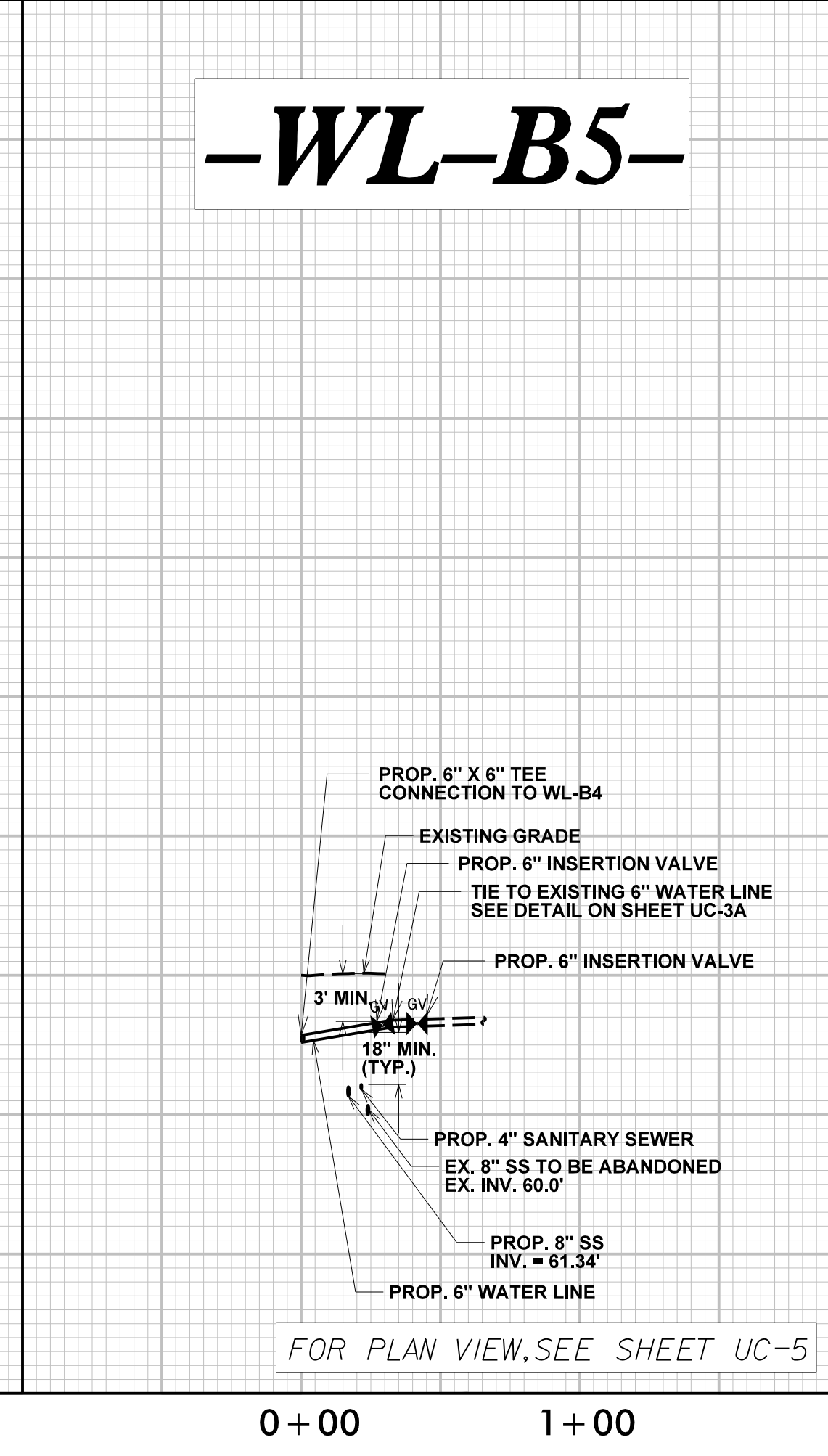
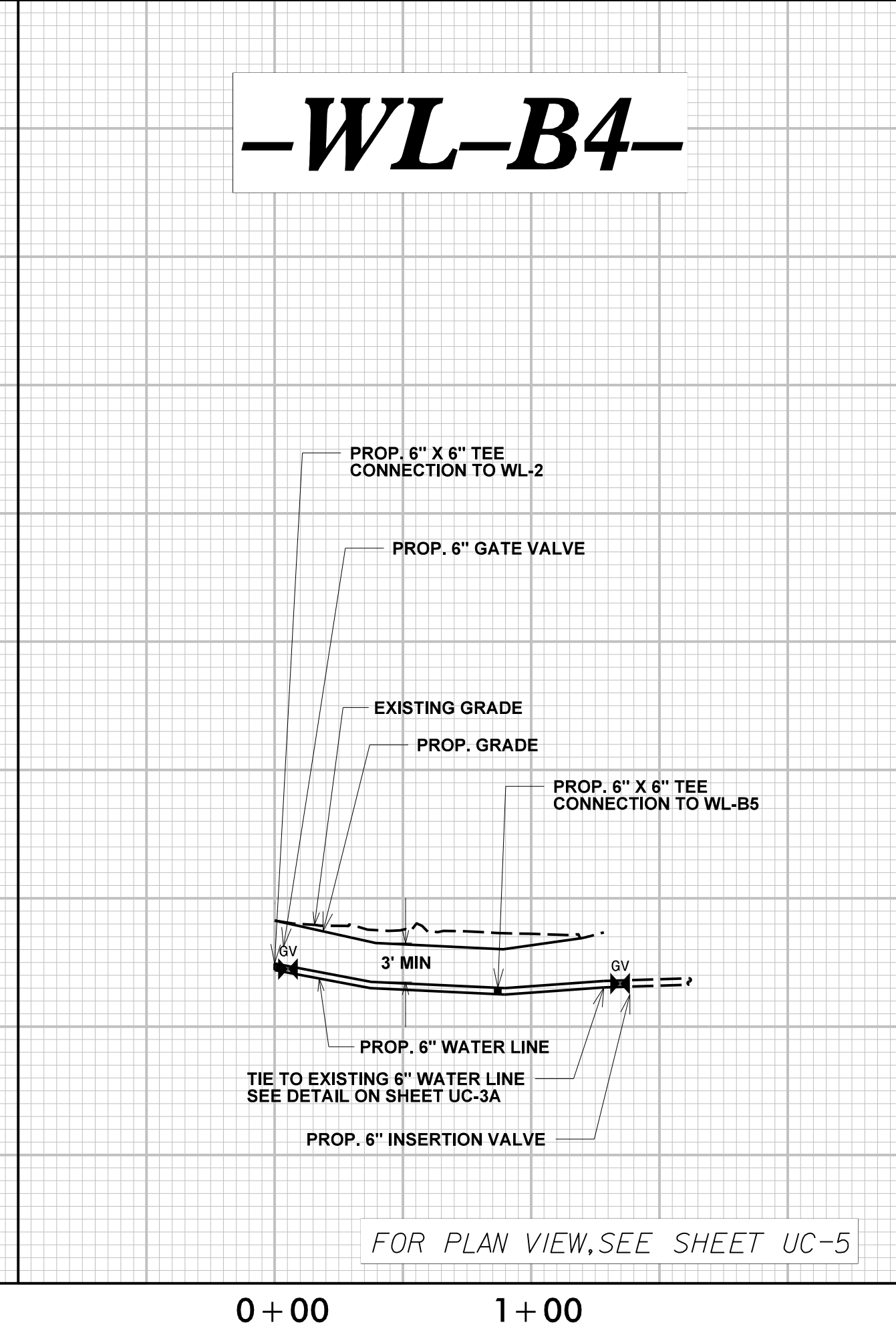
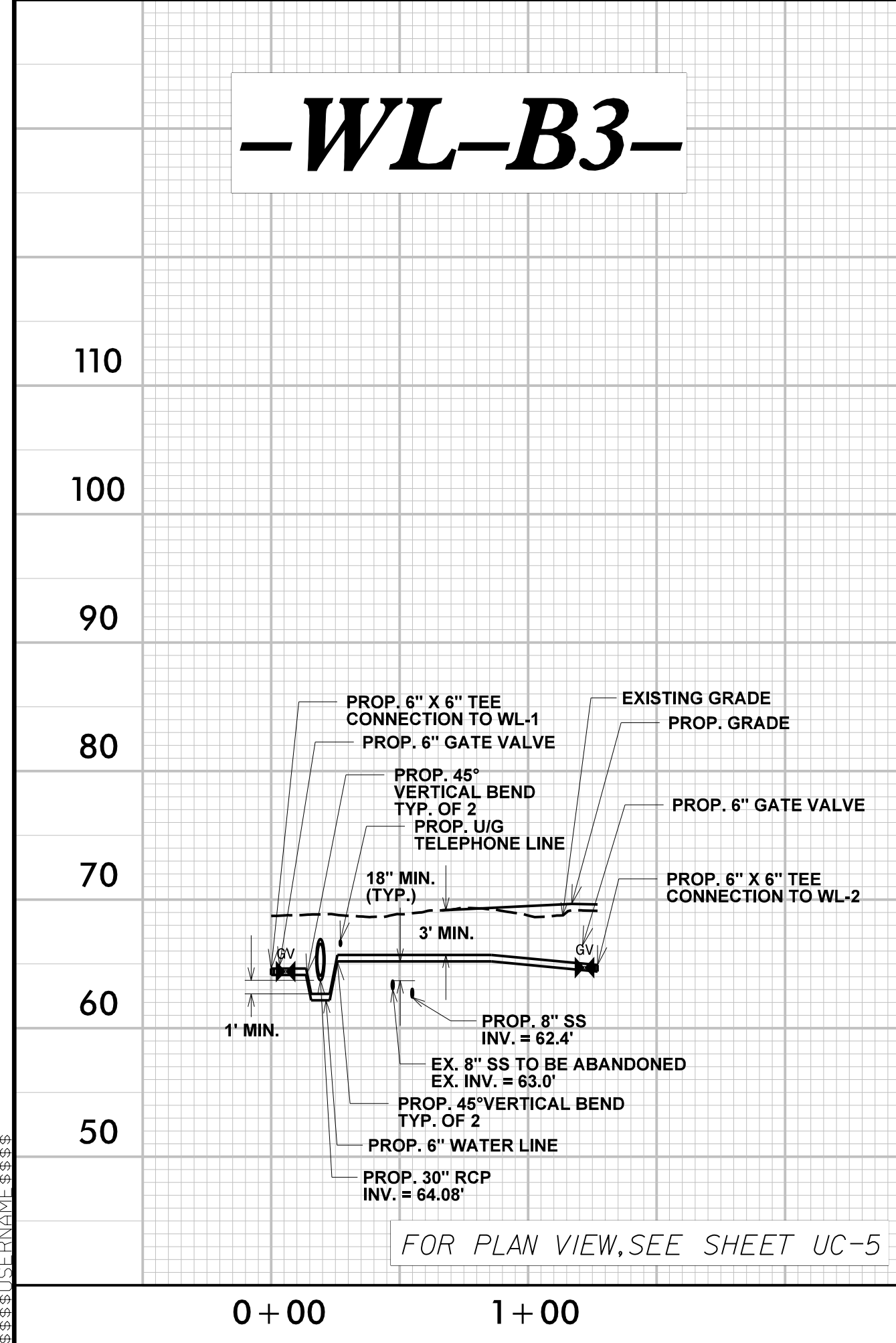
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DESIGNED BY: DK	
DRAWN BY: AP	
CHECKED BY: MM	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
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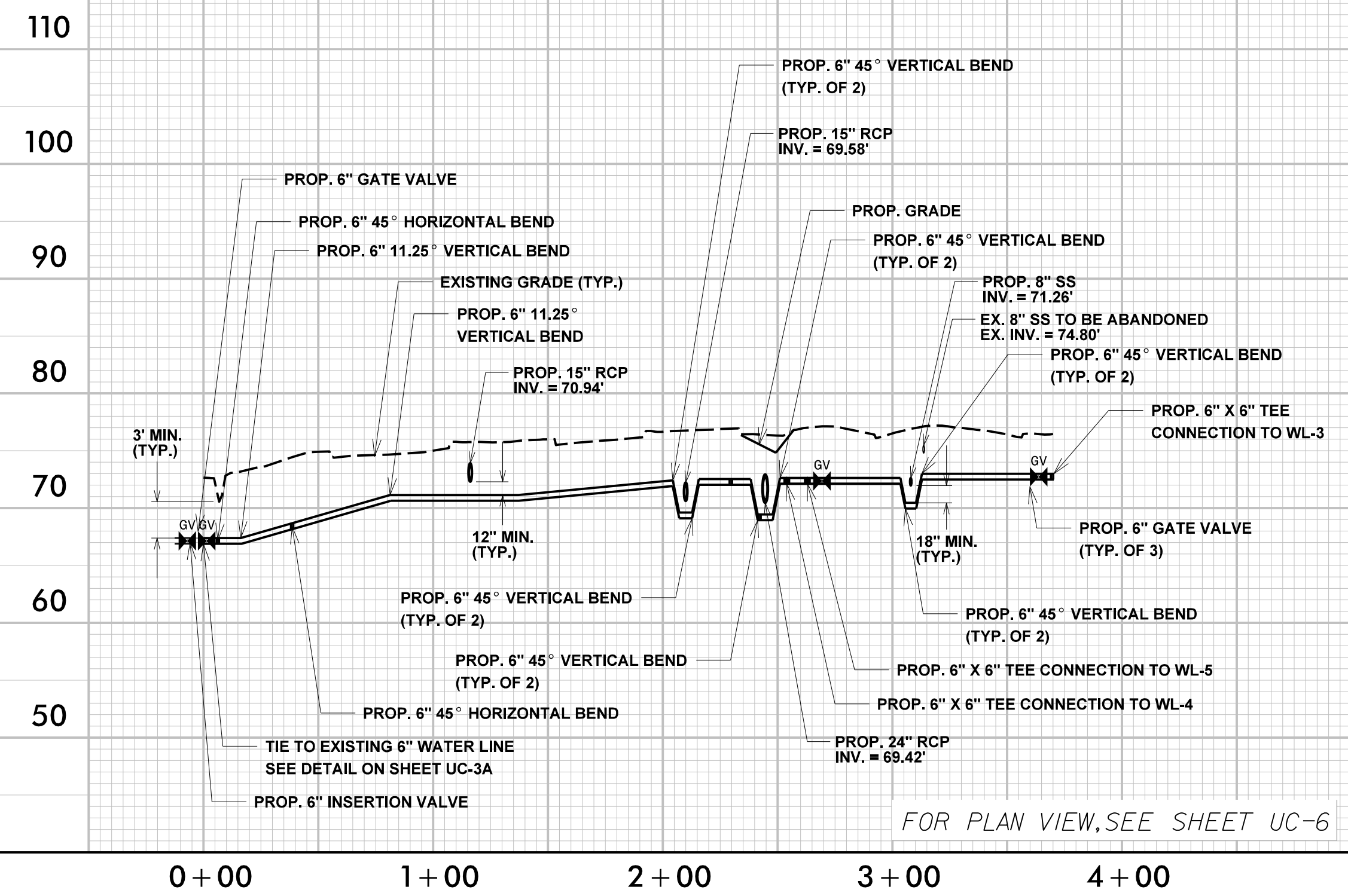
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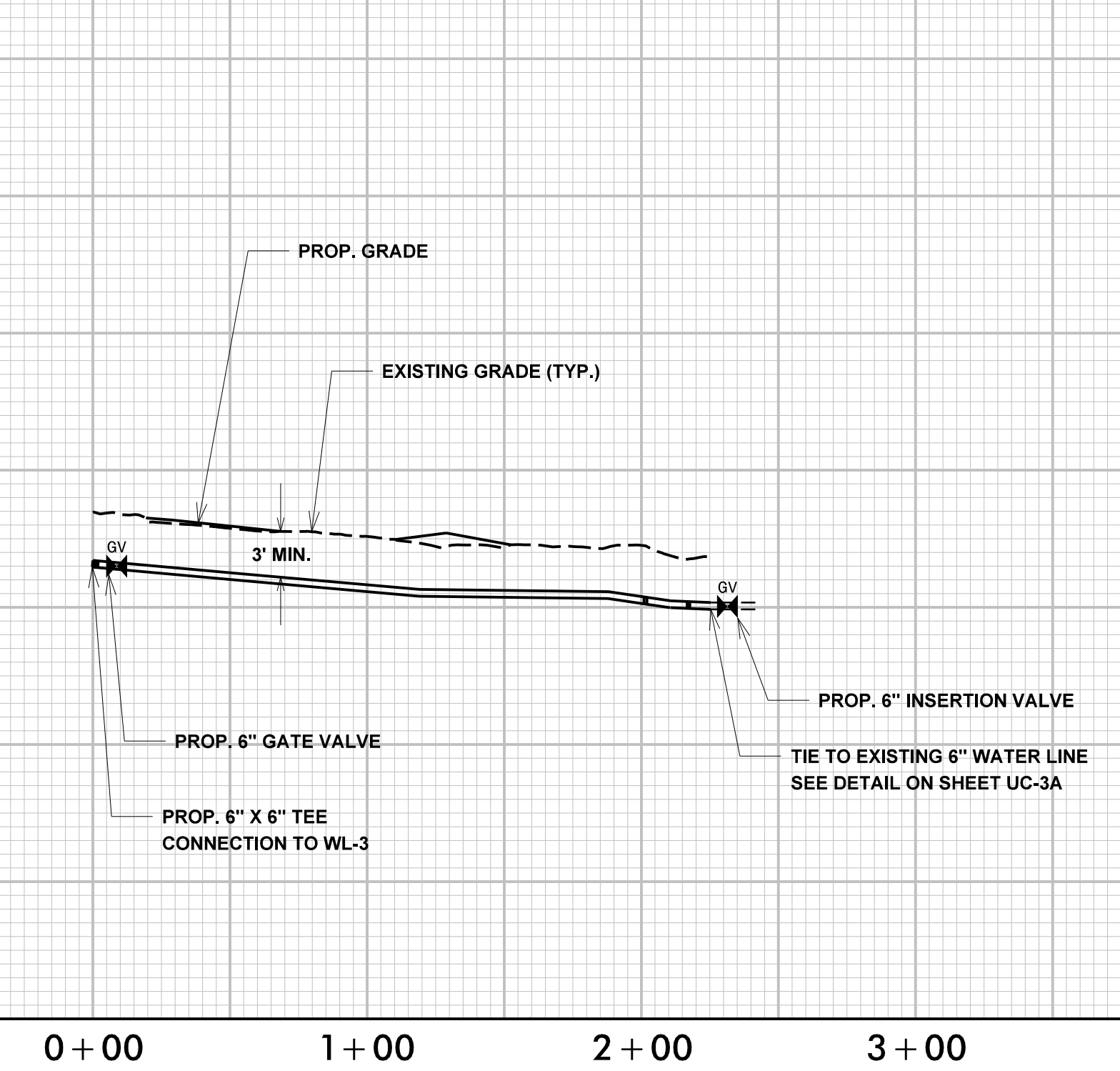
5/28/20

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DESIGNED BY: MM	
DRAWN BY: CS	
CHECKED BY: MM	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
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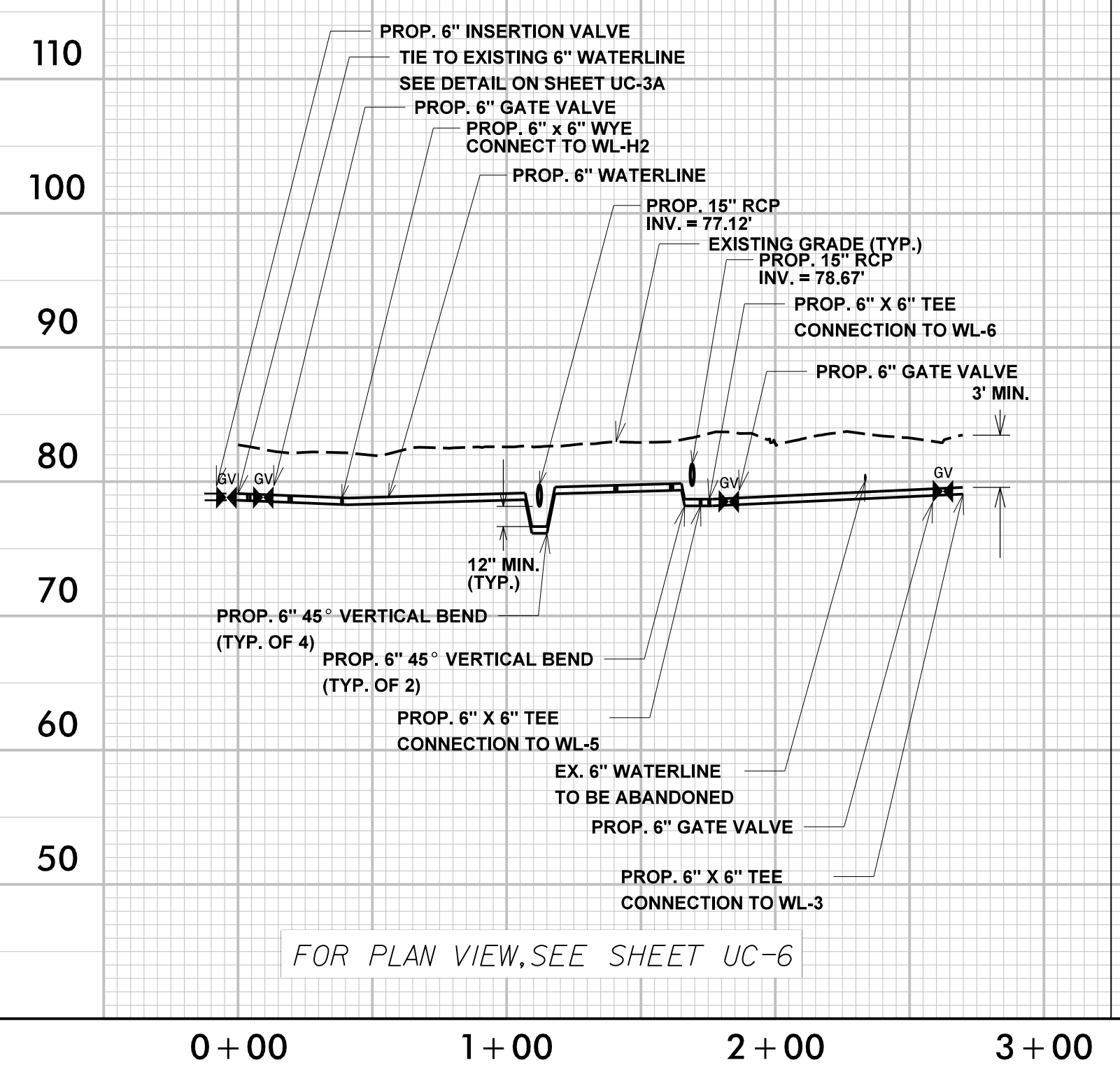
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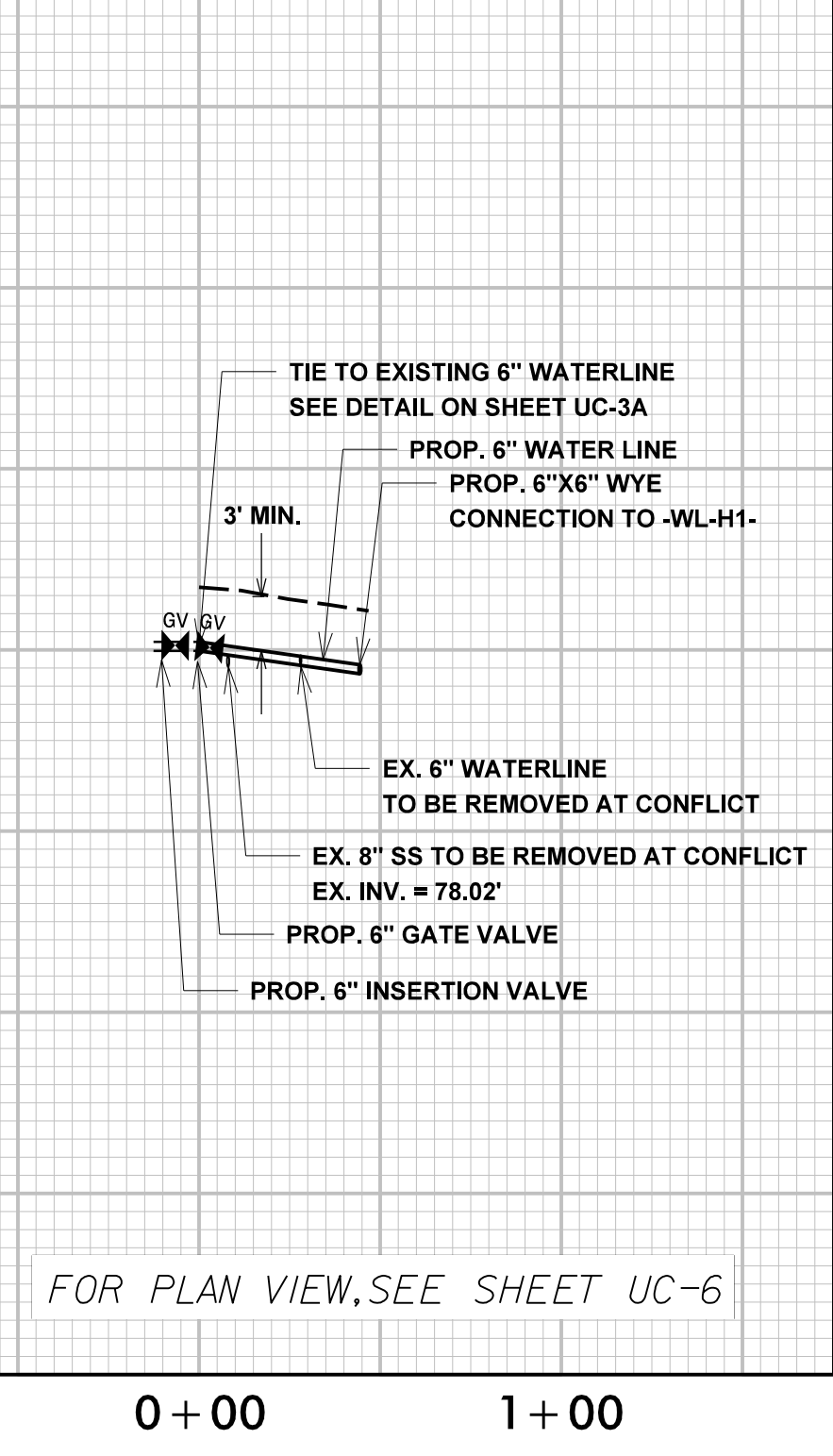
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DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

FOR PLAN VIEW, SEE SHEET UC-6

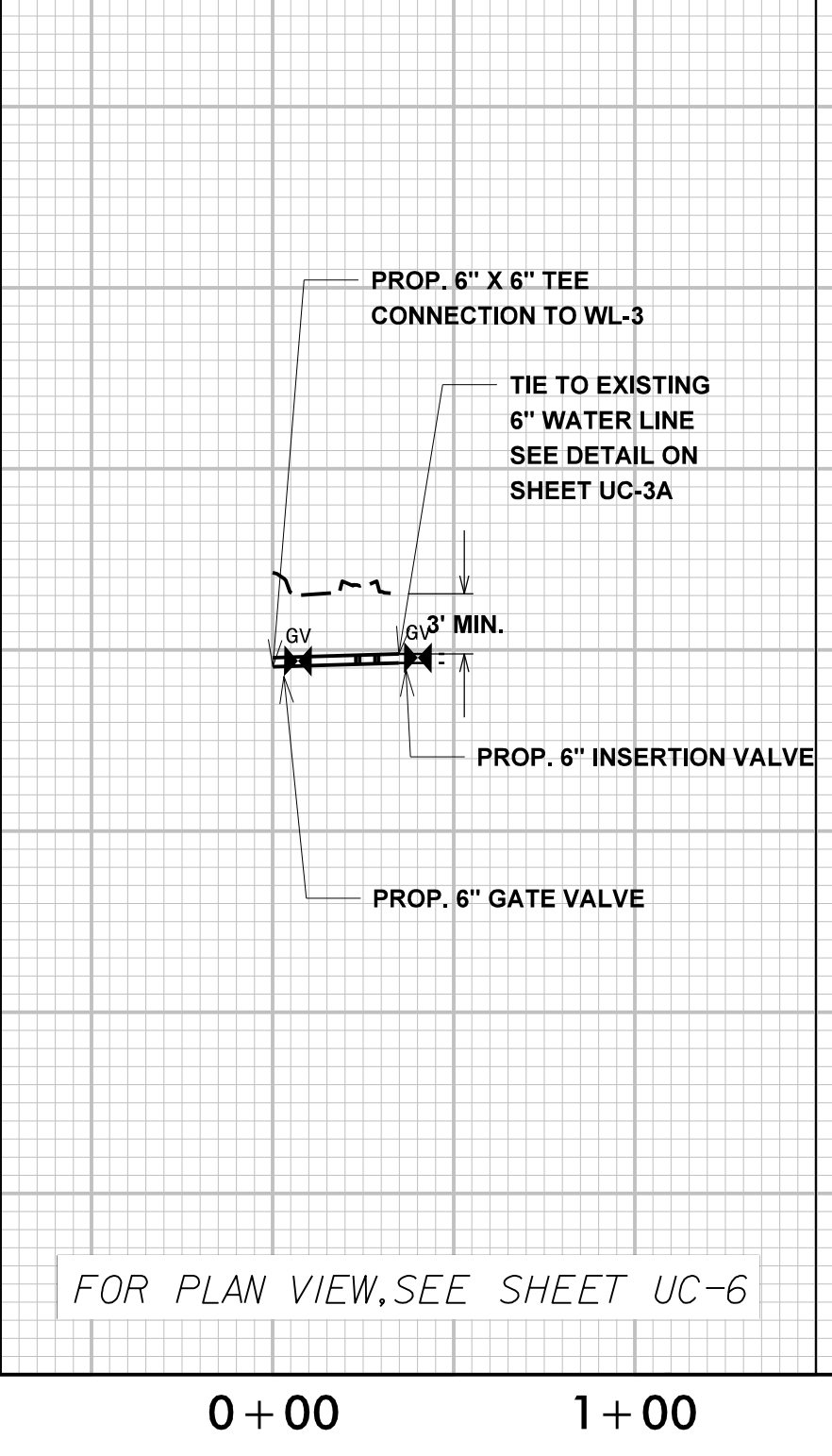
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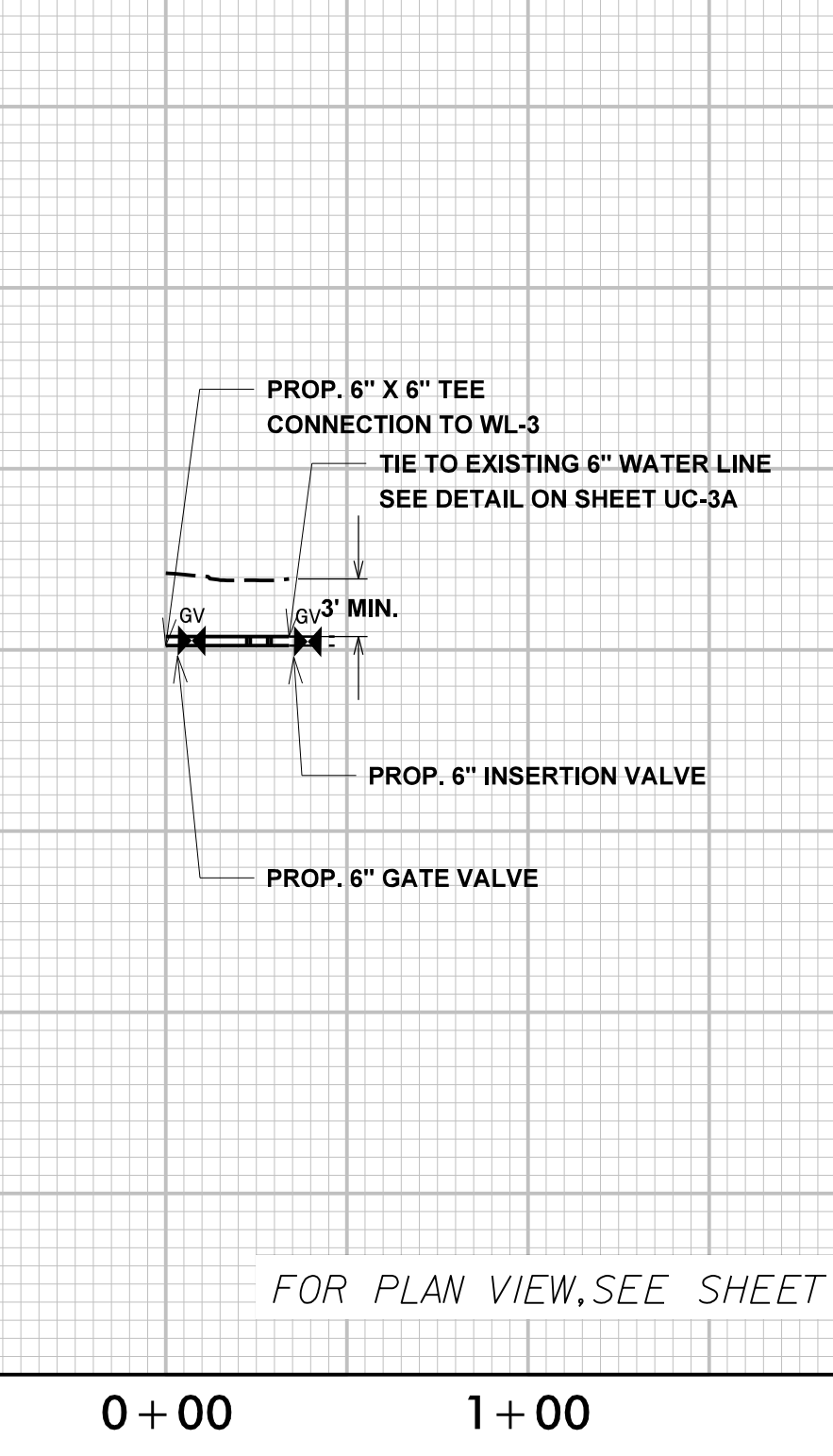
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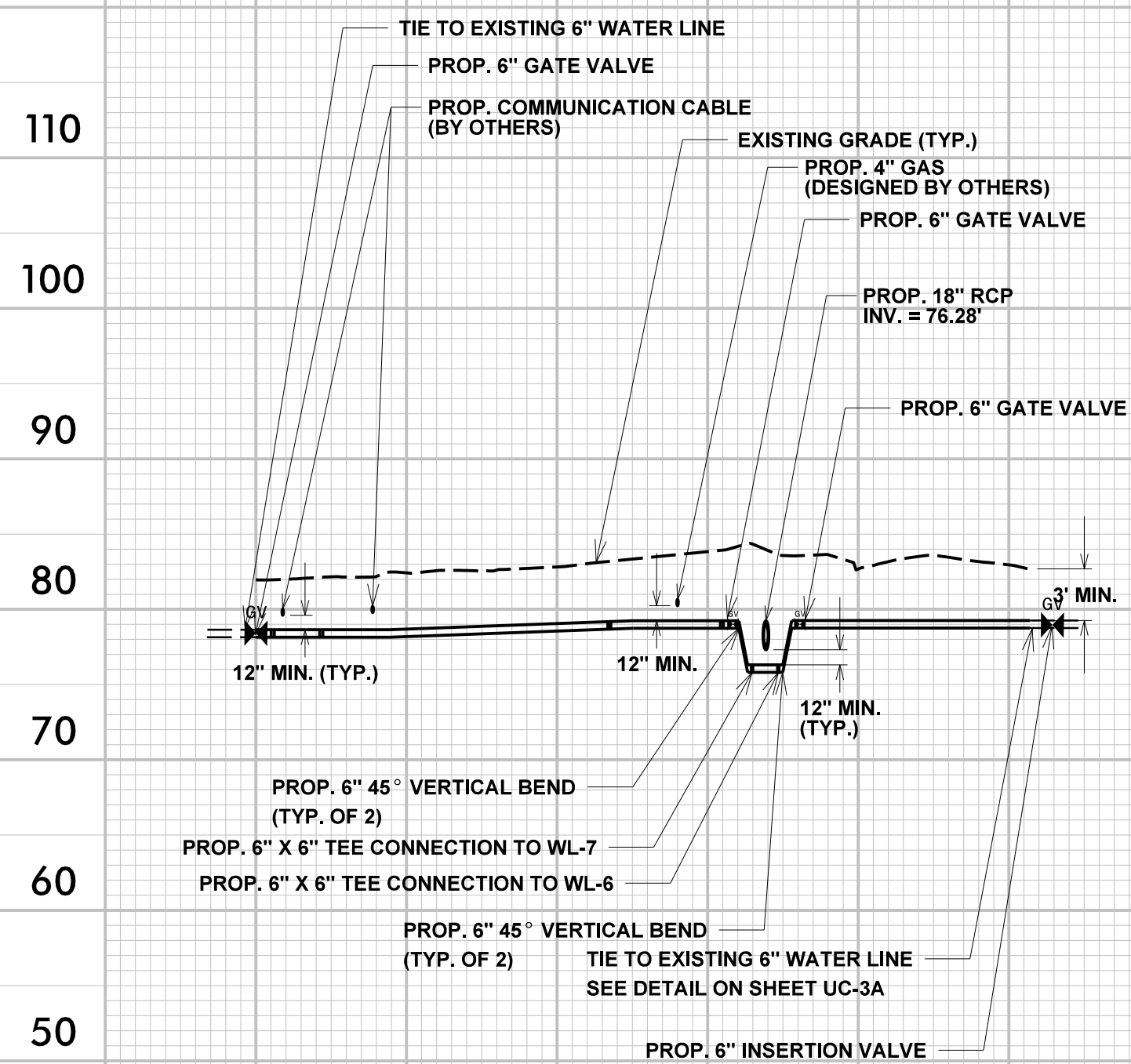


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5/28/99

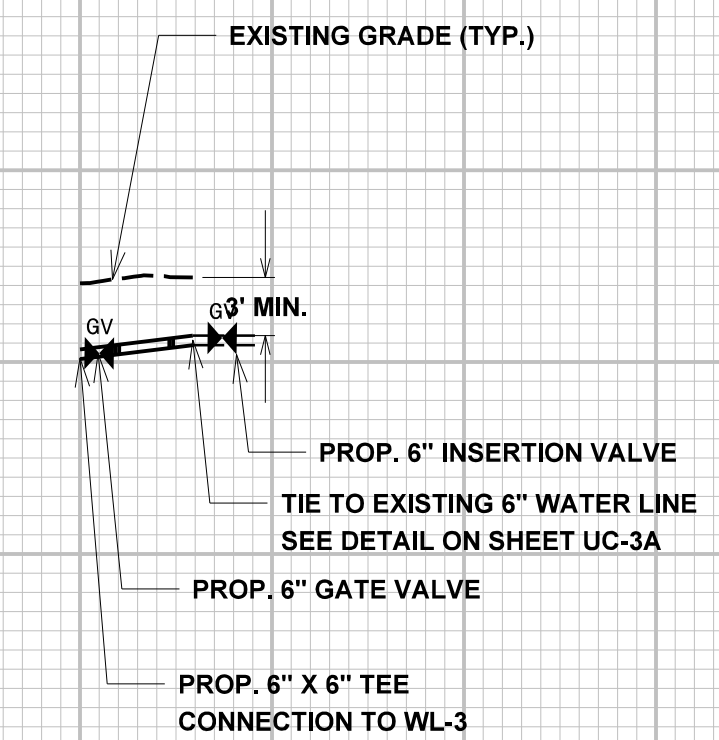
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DESIGNED BY: <i>MM</i>	
DRAWN BY: <i>CS</i>	
CHECKED BY: <i>MM</i>	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
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-WL-I1-



FOR PLAN VIEW, SEE SHEET UC-7

-WL-I2-

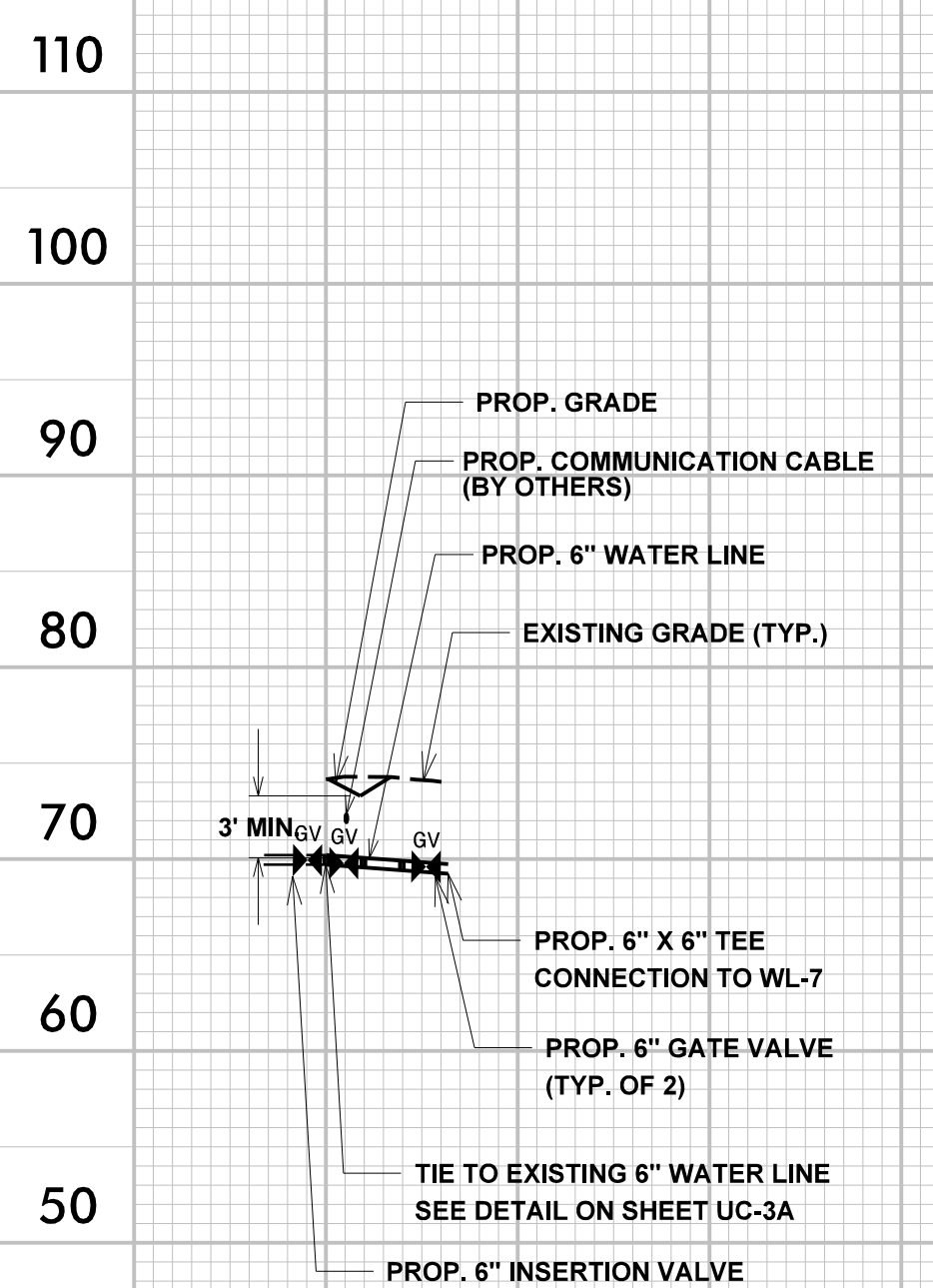


FOR PLAN VIEW, SEE SHEET UC-7

UTILITY CONSTRUCTION

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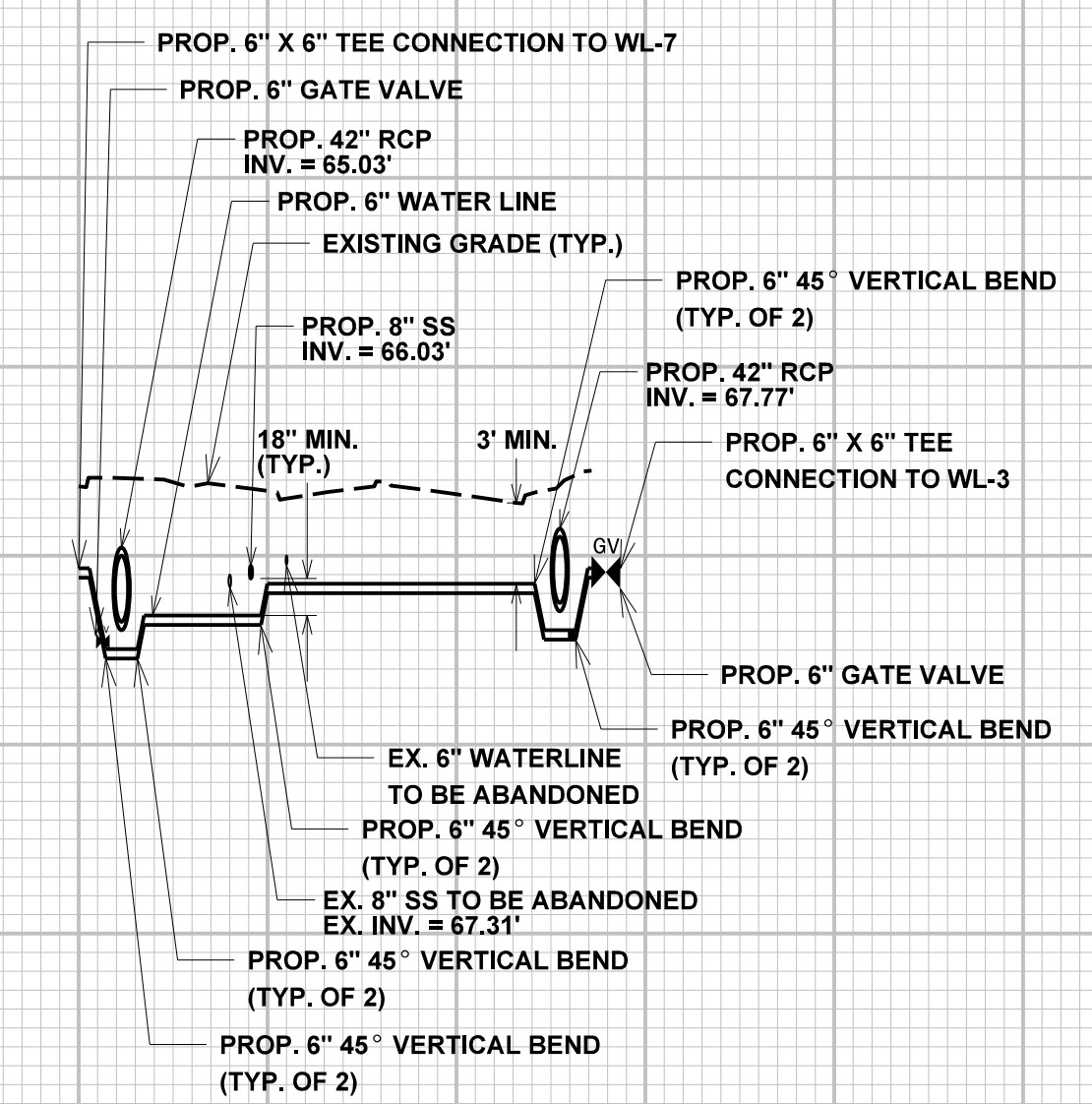
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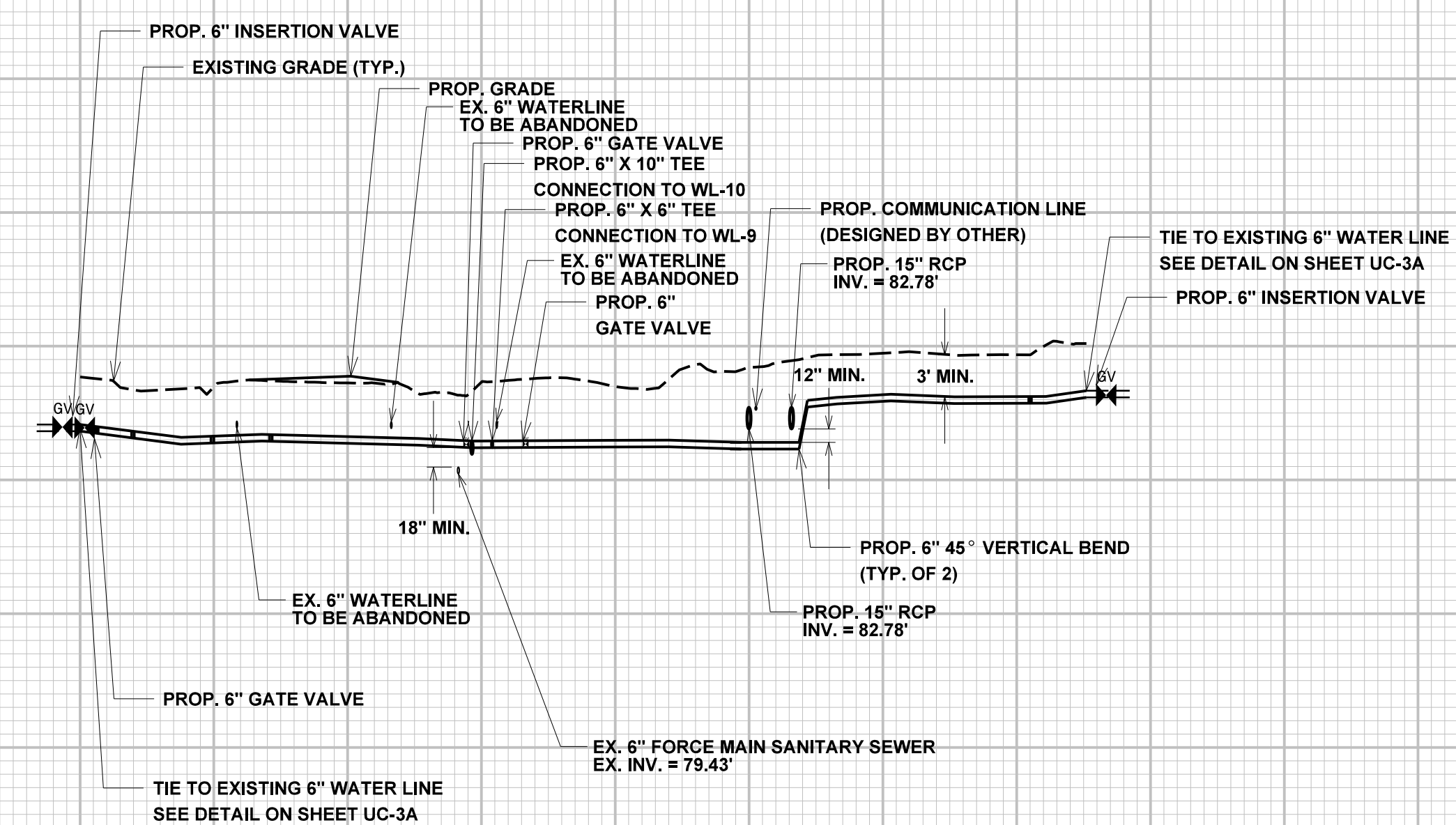
FOR PLAN VIEW, SEE SHEET UC-8

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FOR PLAN VIEW, SEE SHEET UC-8



-WL-K-



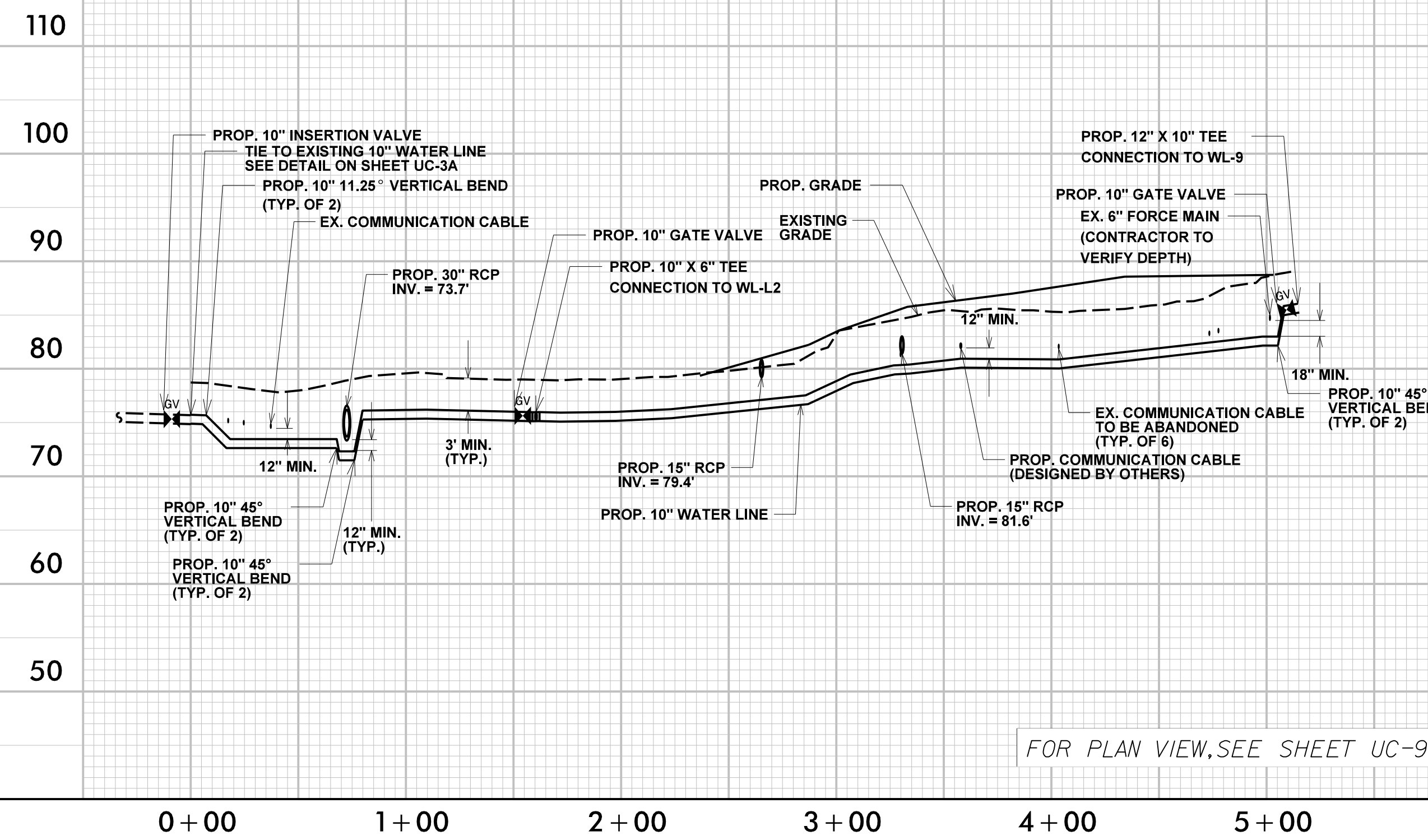
FOR PLAN VIEW, SEE SHEET UC-9

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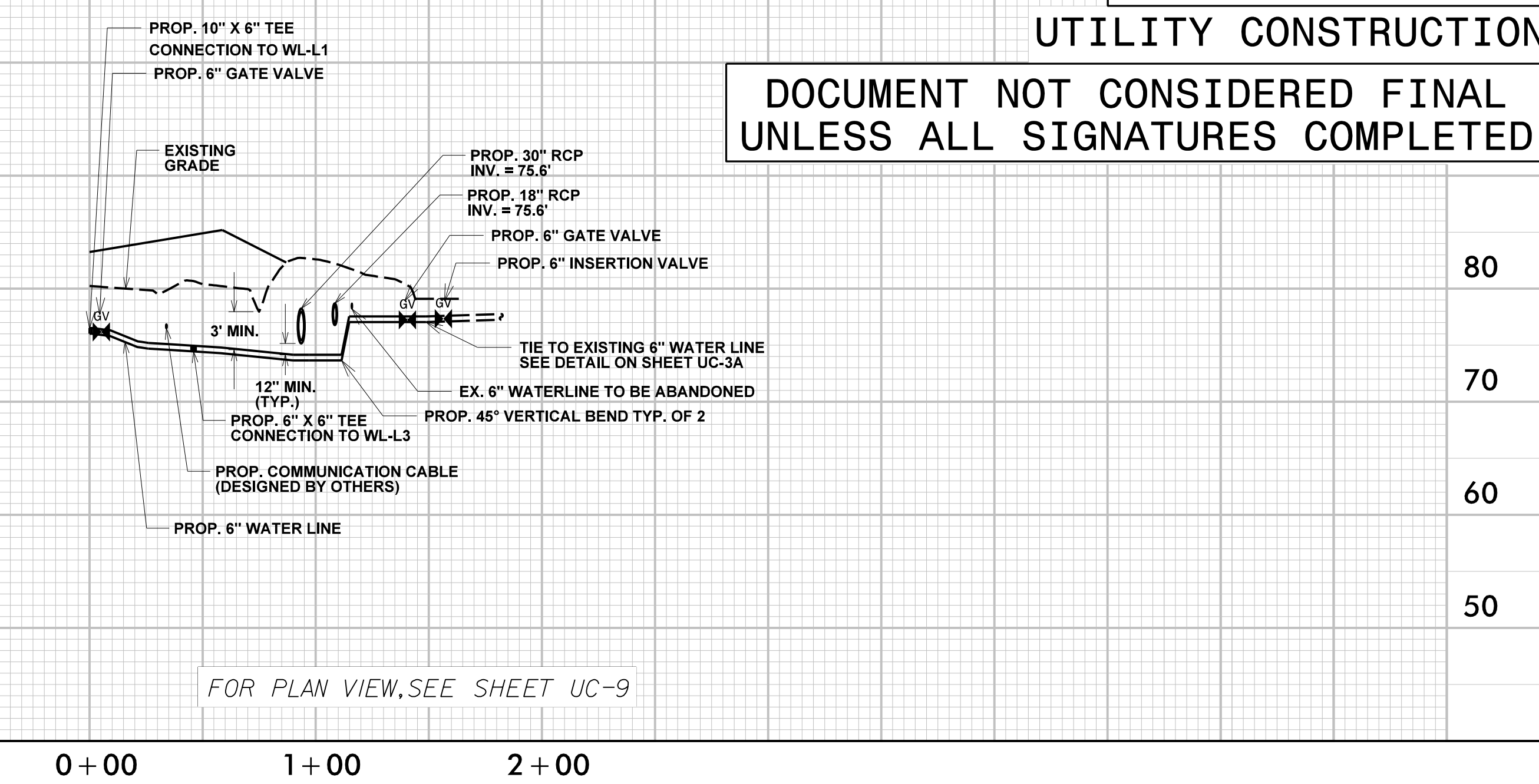
5/28/99

PROJECT REFERENCE NO. R-5020B	SHEET NO. UC-23
DESIGNED BY: DK	
DRAWN BY: AP	
CHECKED BY: MM	
APPROVED BY:	
REVISED BY:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	UTILITY CONSTRUCTION PLANS ONLY
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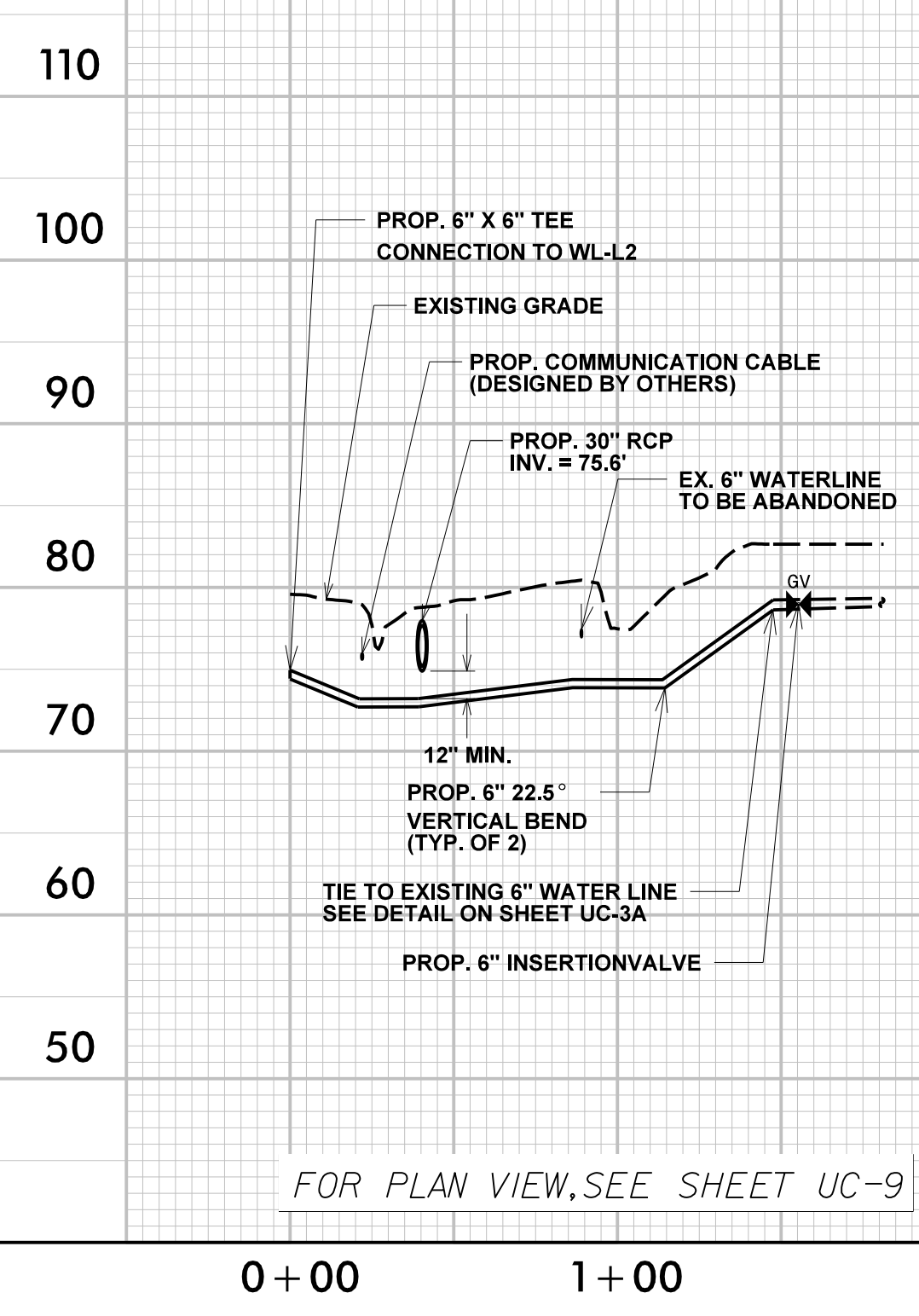
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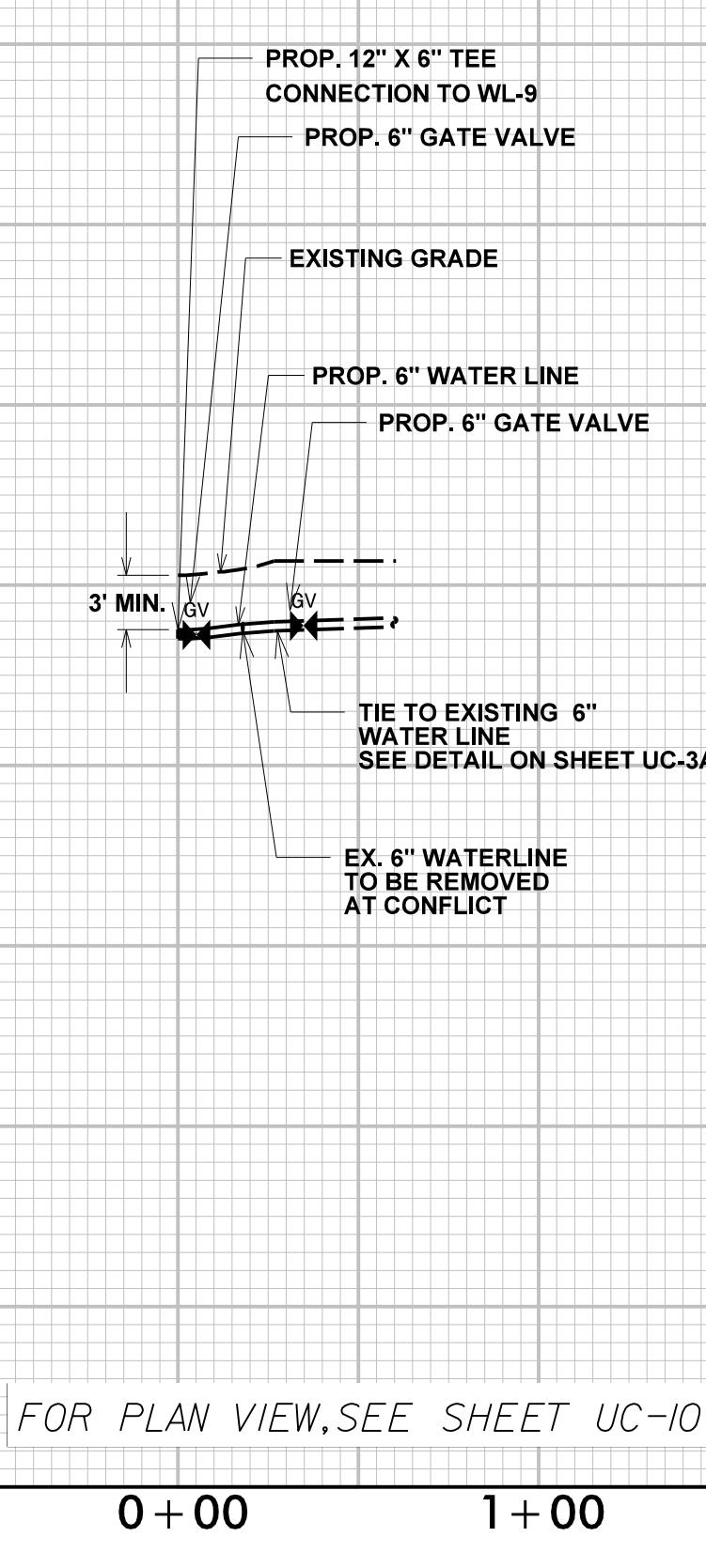
UTILITY CONSTRUCTION

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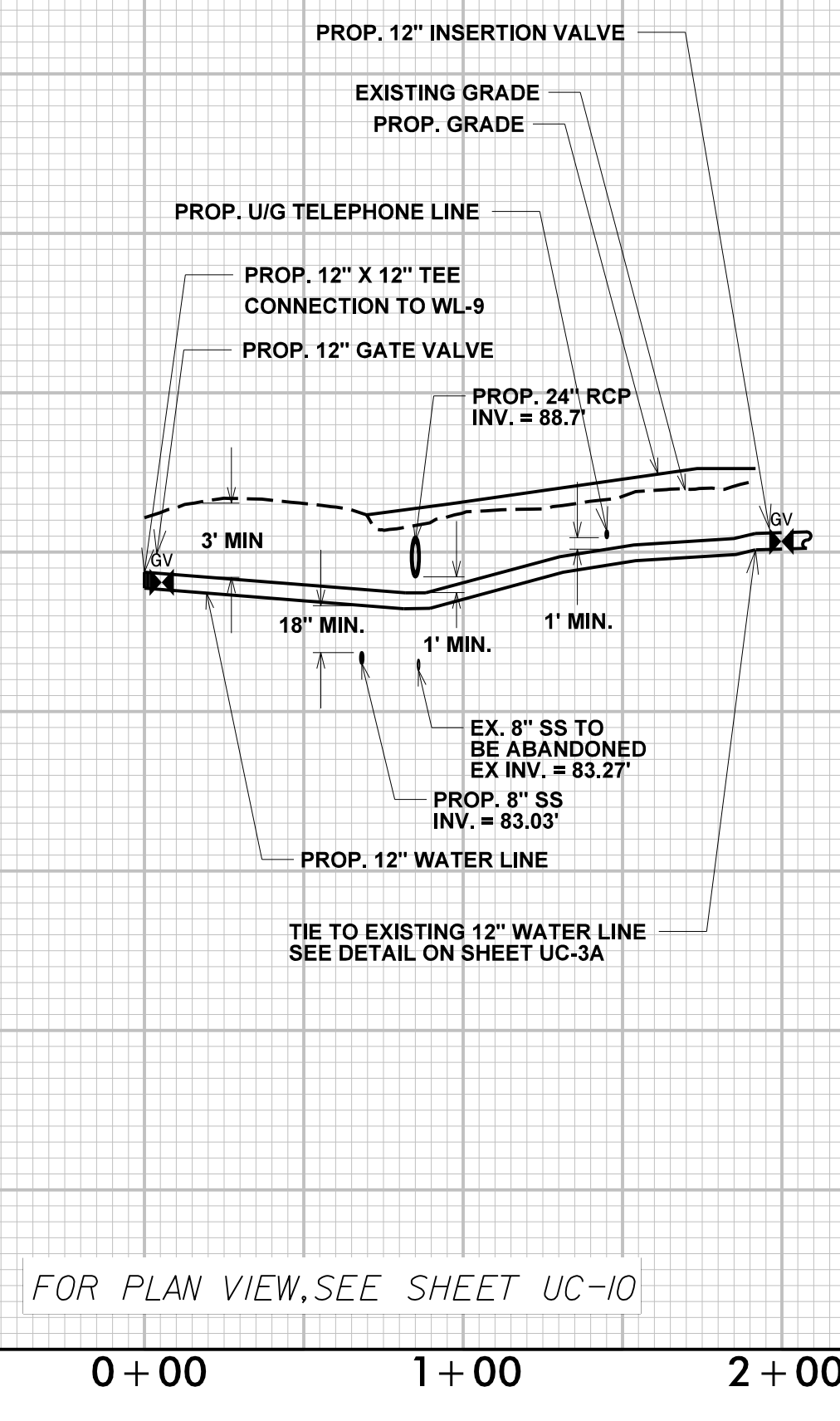
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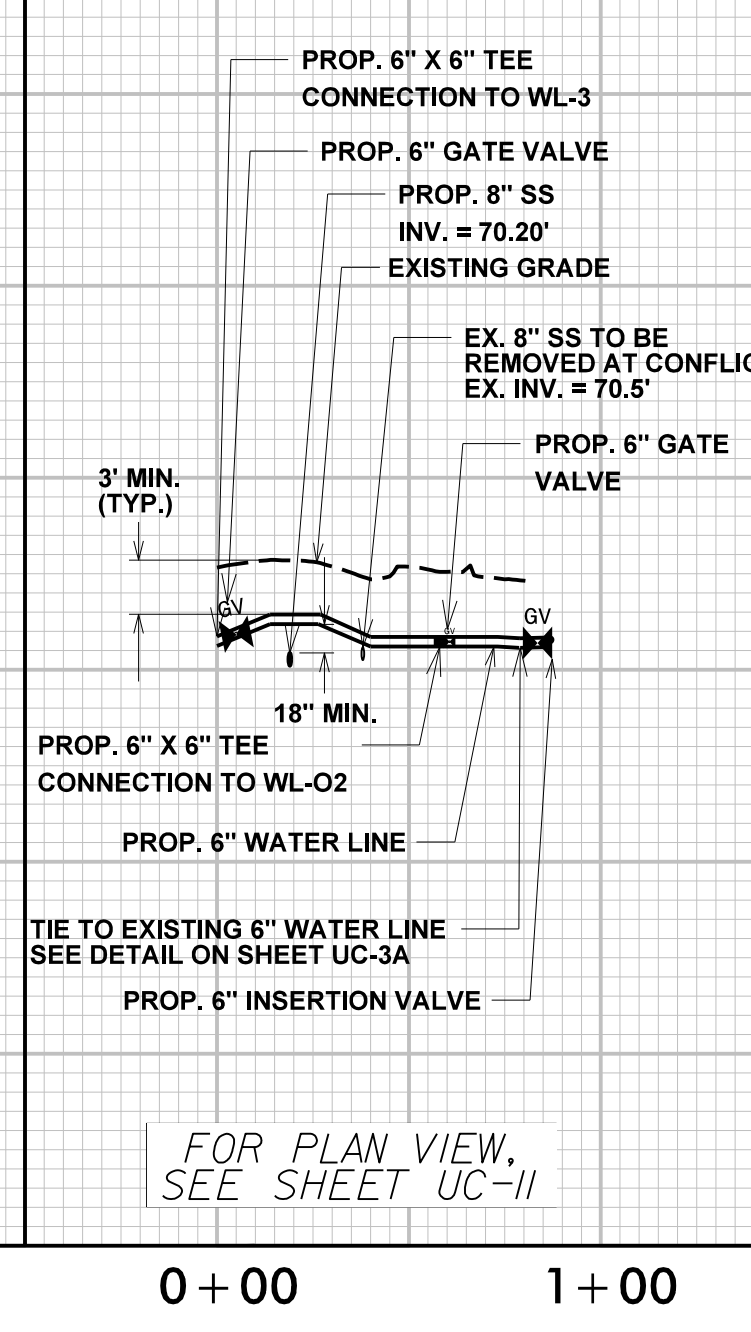
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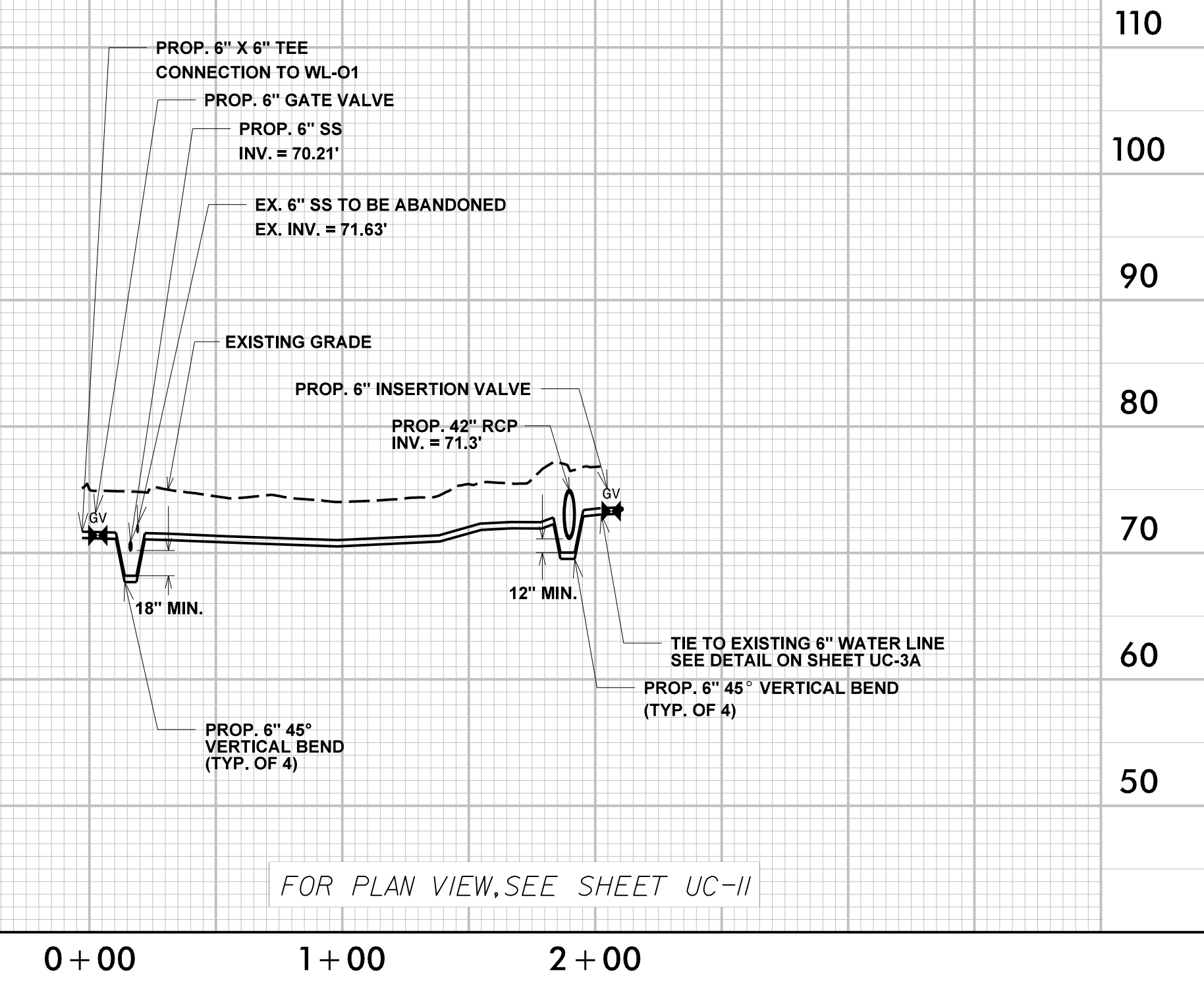
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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-5020B	UC-28
DESIGNED BY: DK	
DRAWN BY: AP	
CHECKED BY: MM	
APPROVED BY:	
REVISED:	9/3/2020
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
KCI Engineers • Planners • Scientists • Construction Managers 4509 Falls of Noe Road, Suite 400 Raleigh, NC 27609 Phone (919) 783-9214 • Fax (919) 783-9266 License No. C-764	

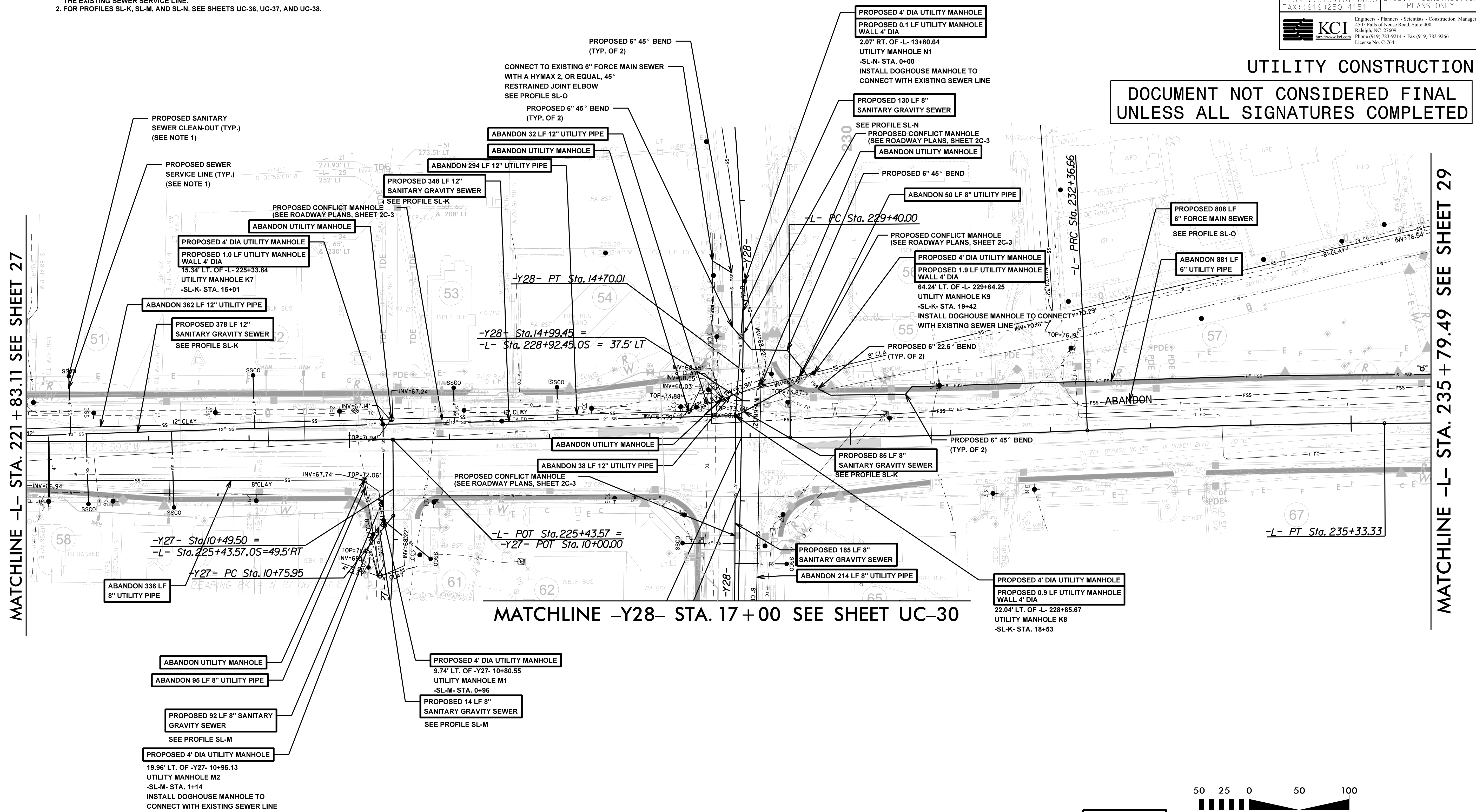
SANITARY SEWER



NOTE:
 1. CONTRACTOR SHALL FIELD LOCATE THE EXISTING SEWER SERVICE LINES, AND CONNECT THE PROPOSED CLEAN-OUT TO THE EXISTING SEWER SERVICE LINE.
 2. FOR PROFILES SL-K, SL-M, AND SL-N, SEE SHEETS UC-36, UC-37, AND UC-38.

UTILITY CONSTRUCTION

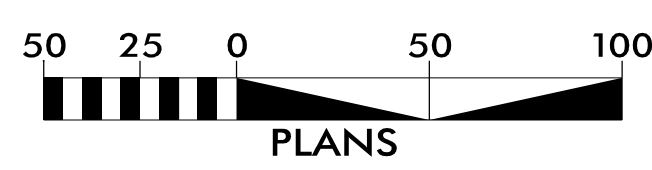
**DOCUMENT NOT CONSIDERED FINAL
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MATCHLINE -L- STA. 221 + 83.11 SEE SHEET 27

MATCHLINE -L- STA. 235 + 33.33 SEE SHEET 29

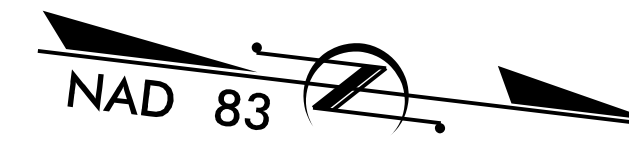
MATCHLINE -Y28- STA. 17 + 00 SEE SHEET UC-30



- 750 LB DUCTILE IRON SEWER PIPE FITTINGS
- PROPOSED 13 SANITARY SEWER CLEAN-OUTS
- PROPOSED 523 LF SEWER SERVICE LINE
- PROPOSED 138 LF 8" SEWER SERVICE LINE

03-SEP-2020 15:25 N:\2016\21001889\NCDOT_R-5020B\US 701 Widening\Water_Sanitary\R-5020B.ut_rdu8_UC28_psh.dgn
 USER:MMENDEN

SANITARY SEWER



- NOTE:**
1. CONTRACTOR SHALL FIELD LOCATE THE EXISTING SEWER SERVICE LINES, AND CONNECT THE PROPOSED CLEANOUT TO THE EXISTING SEWER SERVICE LINE.
 2. FOR PROFILES SL-P, SEE SHEET UC-39.

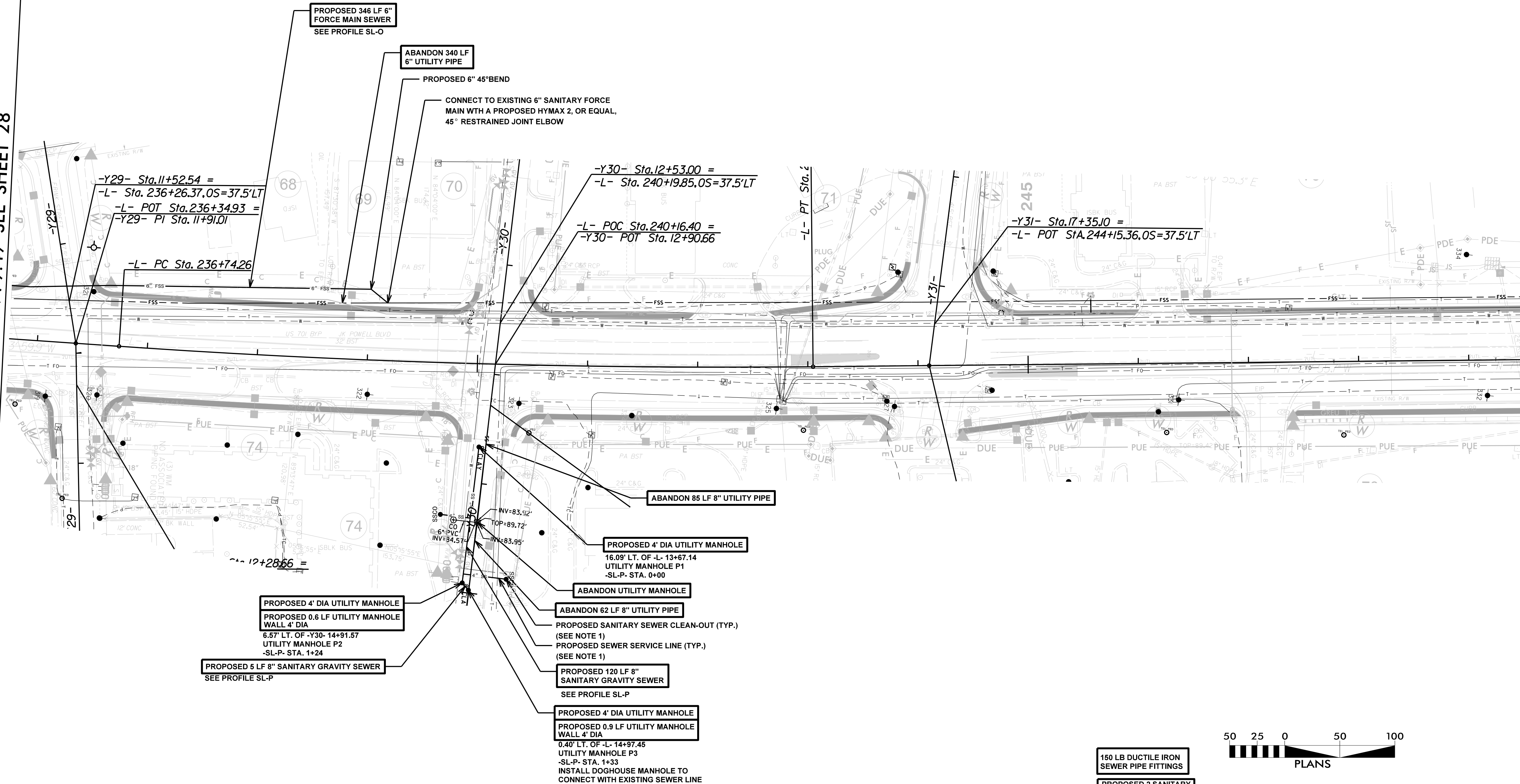
PROJECT REFERENCE NO. R-5020B	SHEET NO. UC-29
DESIGNED BY: DK	
DRAWN BY: AP	
CHECKED BY: MM	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
KCI Engineers • Planners • Scientists • Construction Managers 4519 Falls of Neuse Road, Suite 400 Raleigh, NC 27609 Phone (919) 783-9214 • Fax (919) 783-9266 License No. C-7164	

UTILITY CONSTRUCTION

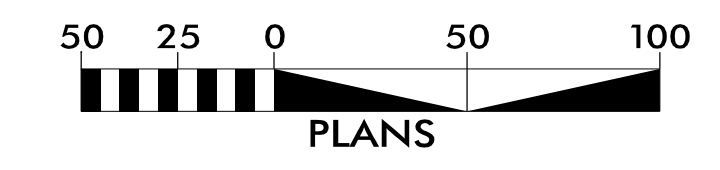
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MATCHLINE -L- STA. 235 + 79.49 SEE SHEET 28

MATCHLINE -L- STA. 249 + 57.03 SEE SHEET 30



- 150 LB DUCTILE IRON SEWER PIPE FITTINGS
- PROPOSED 2 SANITARY SEWER CLEAN-OUTS
- PROPOSED 39 LF SEWER SERVICE LINE
- PROPOSED 27 LF 6" SEWER SERVICE LINE



8/17/99

SANITARY SEWER

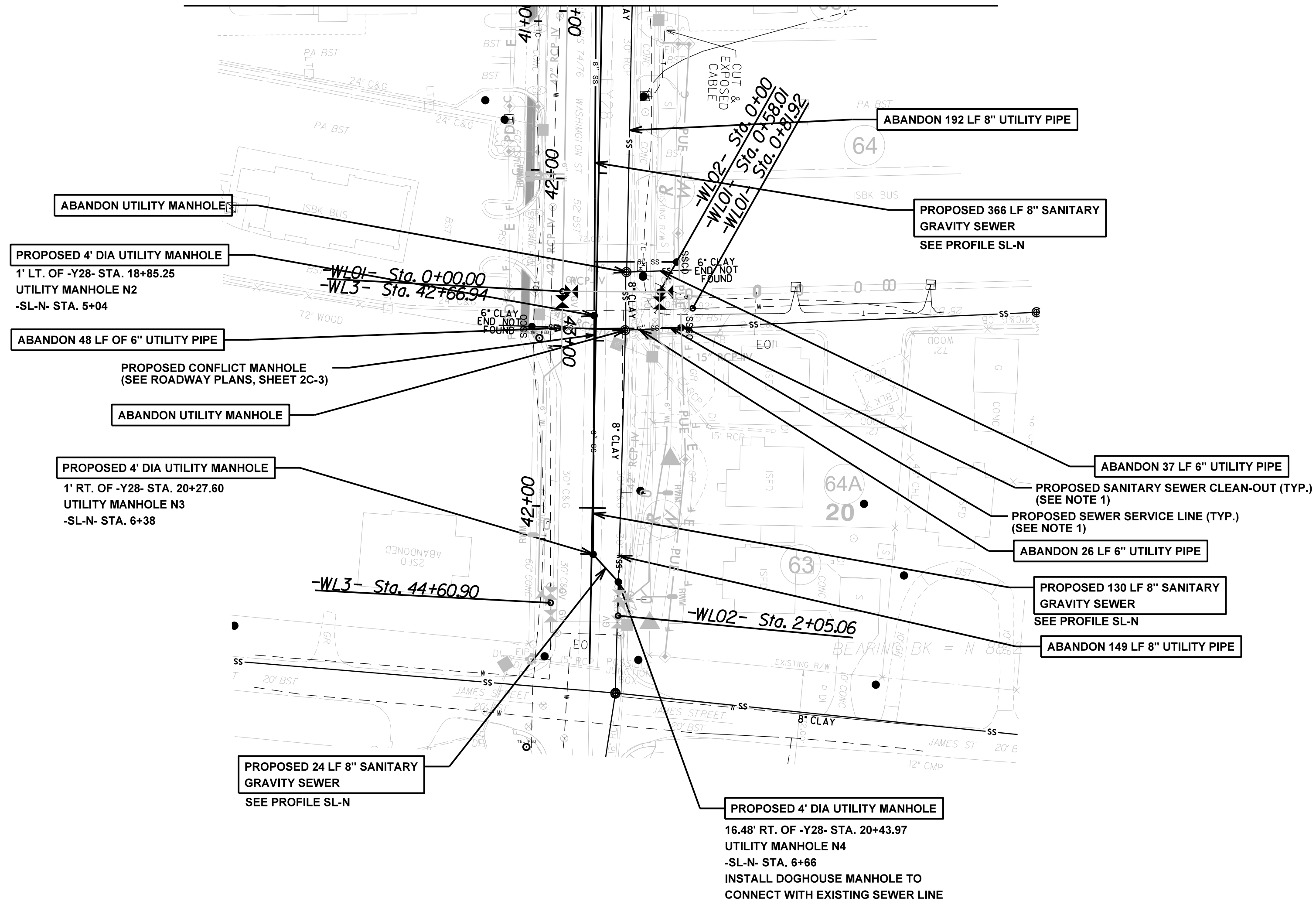


PROJECT REFERENCE NO. R-5020B	SHEET NO. UC-31
DESIGNED BY: DK	
DRAWN BY: AP	
CHECKED BY: MM	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
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UTILITY CONSTRUCTION

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MATCHLINE -Y28- STA. 17+00 SEE SHEET UC-28



- NOTES:**
- CONTRACTOR SHALL FIELD LOCATE THE EXISTING SEWER SERVICE LINES, AND CONNECT THE PROPOSED CLEANOUT TO THE EXISTING SEWER SERVICE LINE.
 - FOR PROFILES SL-N, SEE SHEET 38.

PROPOSED 2 SANITARY
SEWER CLEAN-OUTS

PROPOSED 89 LF
SEWER SERVICE LINE



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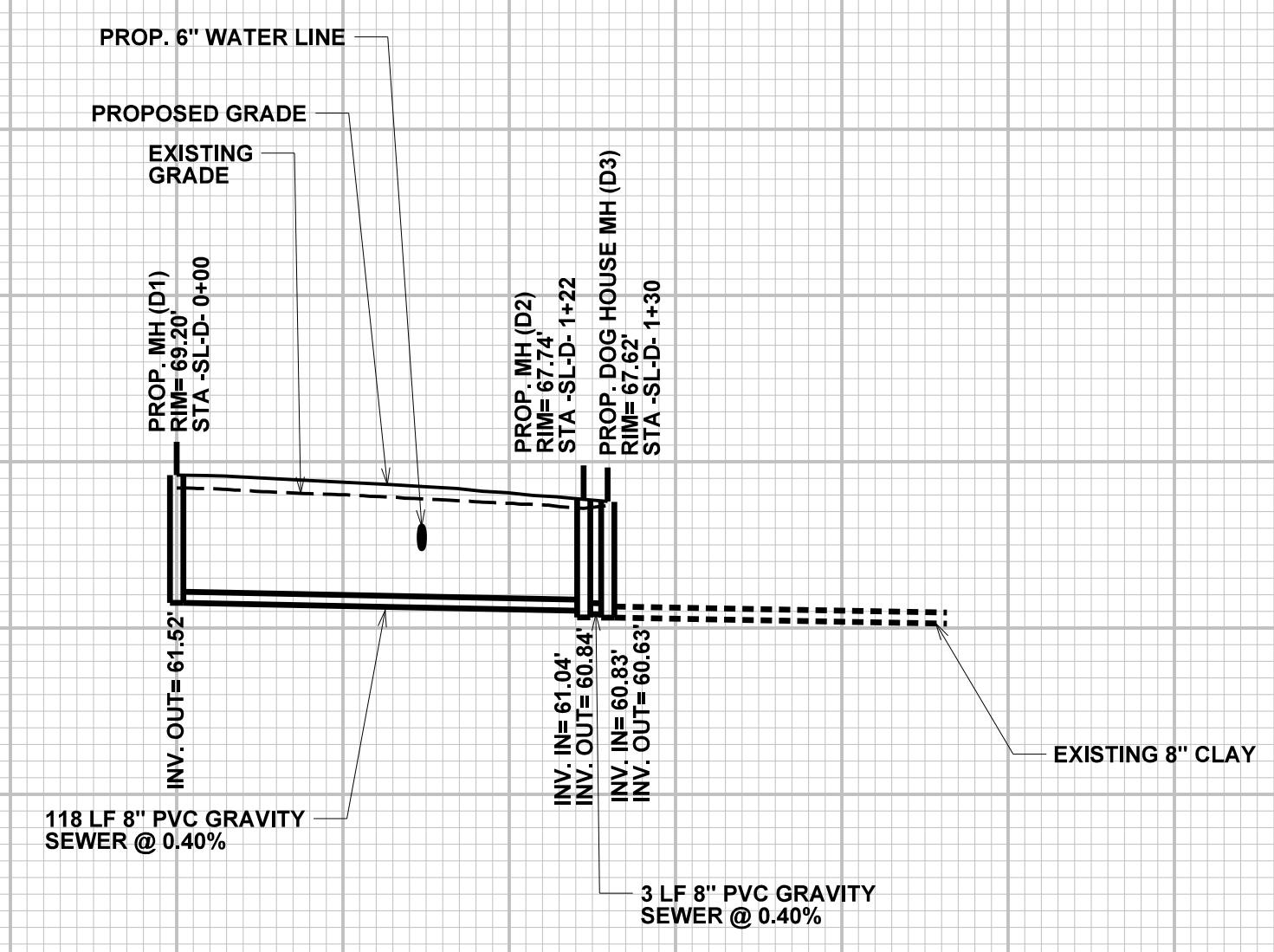
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PROJECT REFERENCE NO. R-5020B	SHEET NO. UC-33
DESIGNED BY: MM	
DRAWN BY: SW	
CHECKED BY: MM	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
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UTILITY CONSTRUCTION

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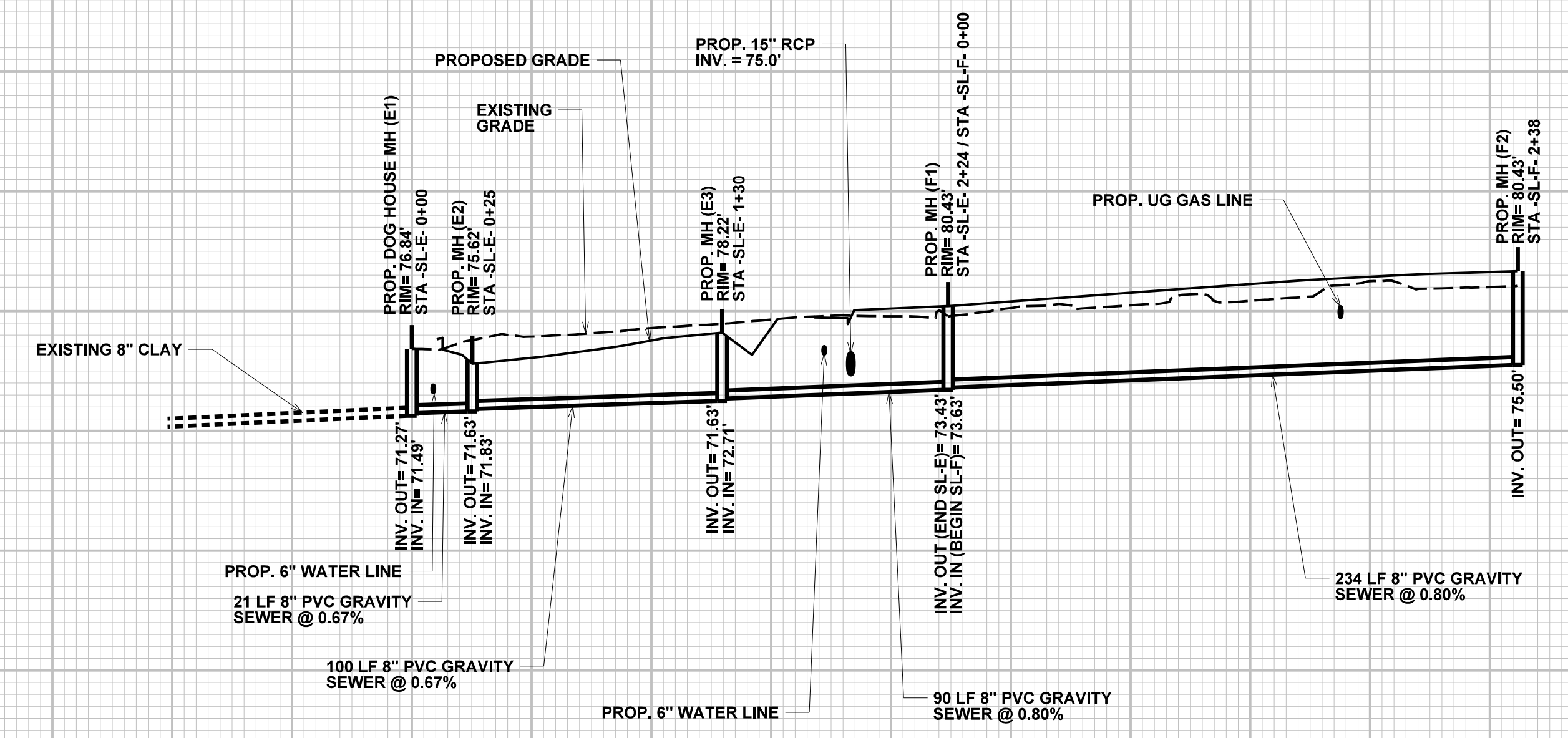


FOR PLAN VIEW, SEE SHEET UC-25

0+00 1+00 2+00

-SL-E- & -SL-F-

110
100
90
80
70
60
50



FOR PLAN VIEW, SEE SHEET UC-25

0+00 1+00 2+00 3+00

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