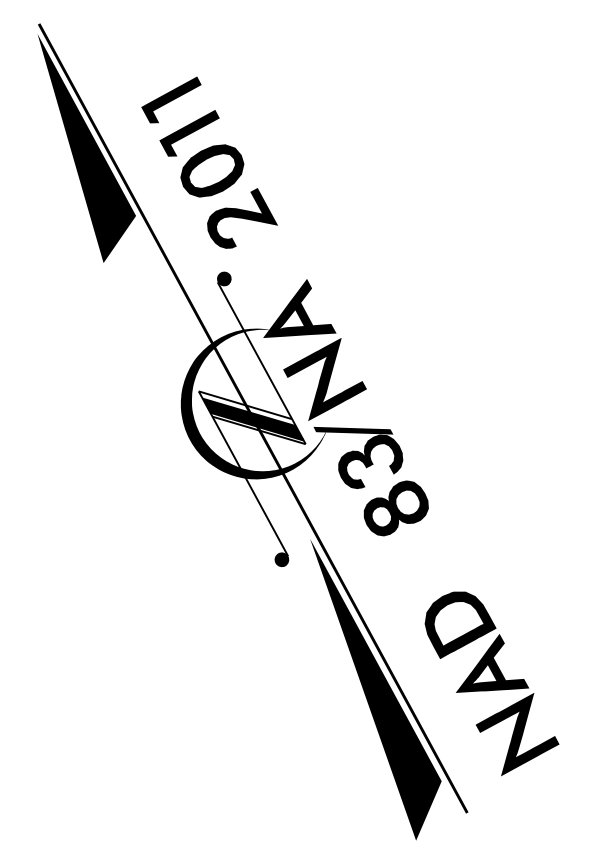


T.I.P. NO.	SHEET NO.
U-6202	UC-01

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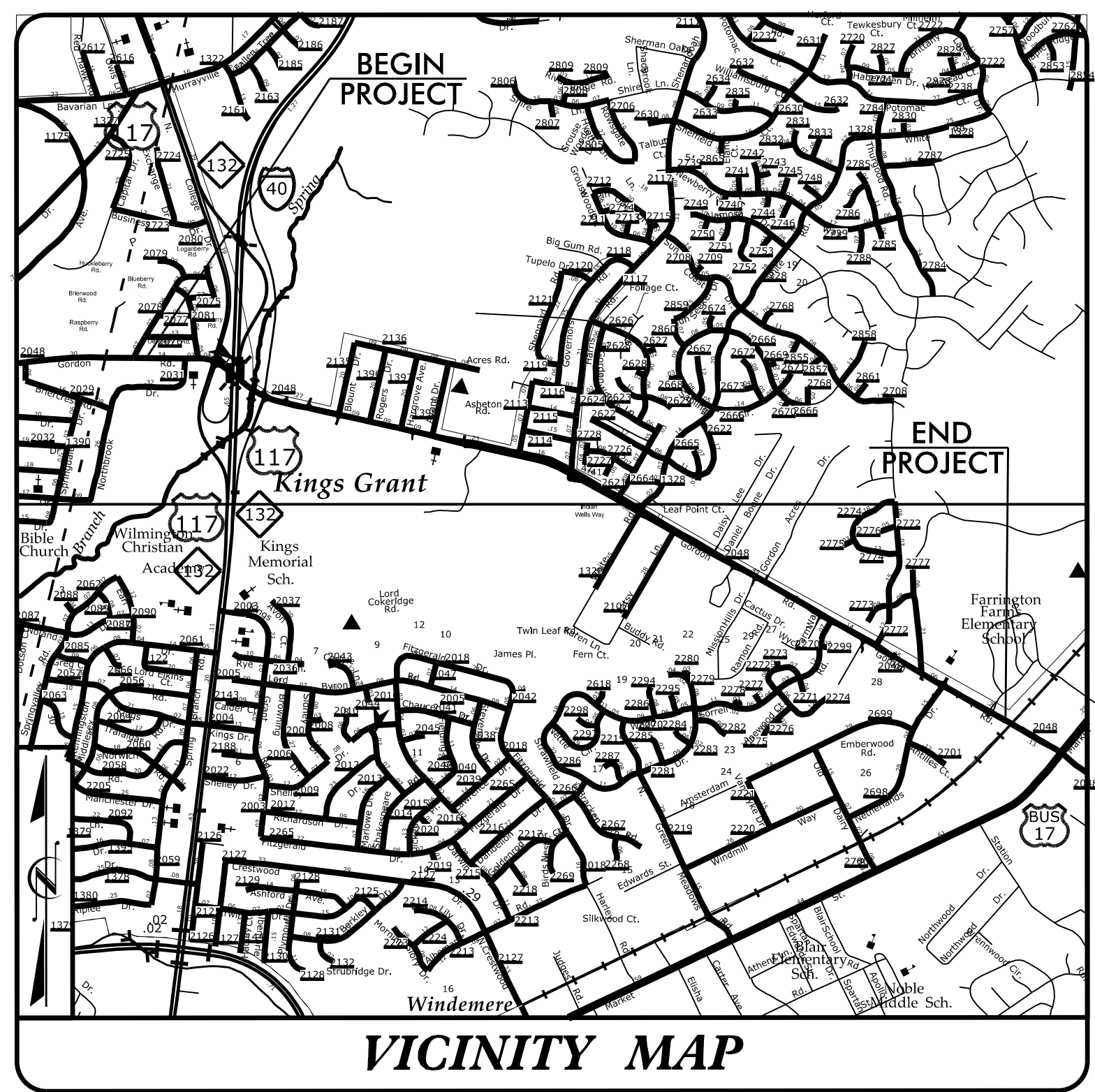


STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

UTILITY CONSTRUCTION PLANS NEW HANOVER COUNTY

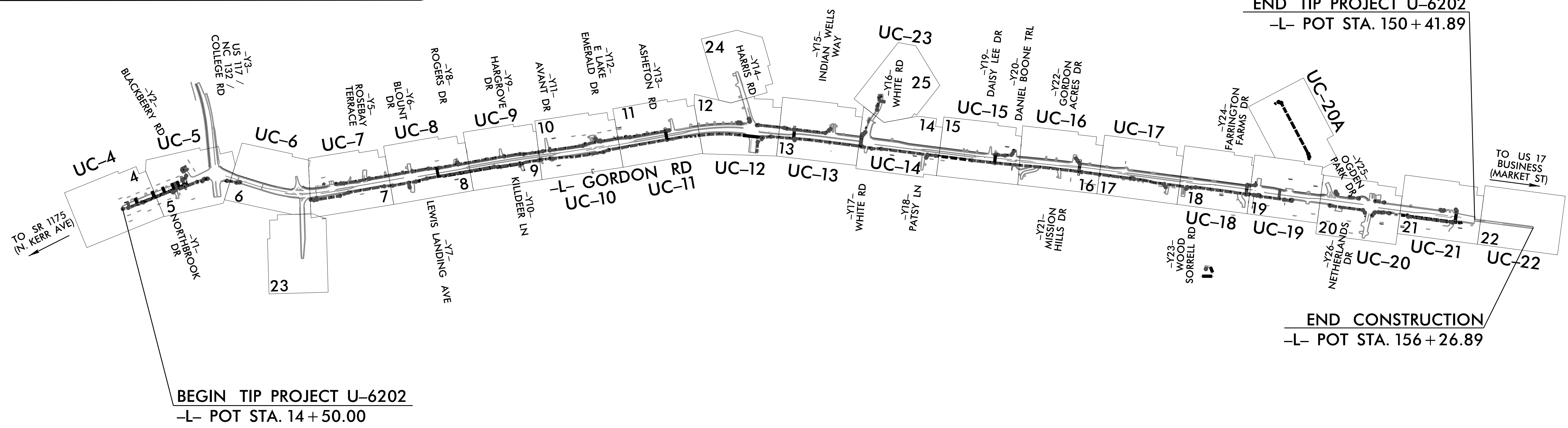
LOCATION: SR 2048 (GORDON ROAD) FROM WEST OF INTERSTATE-40
TO WEST OF US 17 BUS (MARKET STREET)

TYPE OF WORK:
WATER LINE AND SANITARY SEWER RELOCATION



VICINITY MAP

TIP PROJECT: U-6202



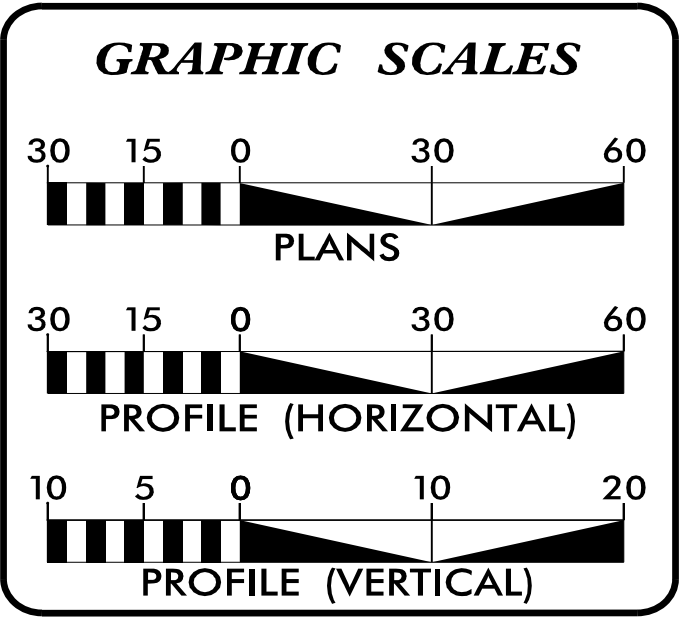
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-L- POT STA. 150 + 41.89

END CONSTRUCTION
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BEGIN TIP PROJECT U-6202
-L- POT STA. 14 + 50.00

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CONTRACT:



INDEX OF SHEETS

SHEET NO.:	DESCRIPTION:
UC-01	TITLE SHEET
UC-02	UTILITY SYMBOLOLOGY
UC-03 TO UC-03A	UTILITY NOTES
UC-03B TO UC-03G	DETAIL SHEETS
UC-04 TO UC-23	PLAN SHEETS
UC-24 TO UC-41A	PROFILE SHEETS

WATER AND SEWER OWNERS ON PROJECT

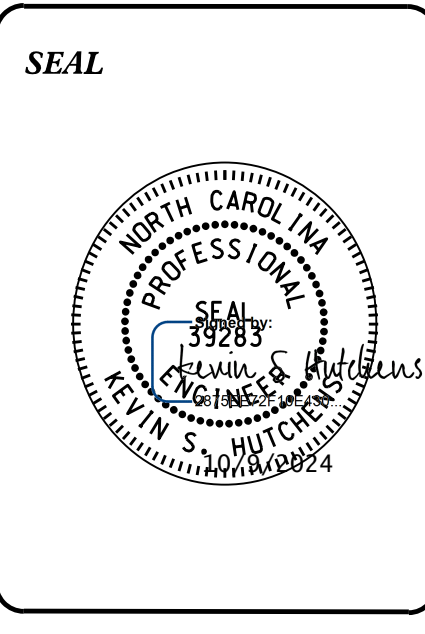
(A) WATER - CAPE FEAR PUBLIC UTILITY AUTHORITY (CFPUA)
(B) SANITARY SEWER - CFPUA

PREPARED IN THE OFFICE OF

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KEVIN S. HUTCHENS, PE PROJECT ENGINEER
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ERIC C. MATUSZEWSKI DIVISION UTILITY COORDINATOR

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UTILITY CONSTRUCTION

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GENERAL NOTES:

1. THE PROPOSED UTILITY CONSTRUCTION SHALL MEET THE APPLICABLE REQUIREMENTS OF THE NC DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" DATED JANUARY 2024 AND THE CAPE FEAR PUBLIC UTILITY AUTHORITY (CFPUA) STANDARD SPECIFICATIONS AND DETAILS, LATEST EDITION (JANUARY 2019).
2. THE EXISTING WATER AND SEWER UTILITIES BELONG TO CAPE FEAR PUBLIC UTILITY AUTHORITY (CFPUA).

CONTACT: DAVID DAILEY
PHONE: 910-332-6626
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 SANITARY SEWER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF WATER RESOURCES, WATER QUALITY SECTION. PERFORM ALL WORK IN ACCORDANCE WITH THE APPLICABLE PLUMBING CODES.
4. THE UTILITY OWNER OWNS THE EXISTING UTILITY FACILITIES AND WILL OWN THE NEW UTILITY FACILITIES AFTER ACCEPTANCE BY THE DEPARTMENT. THE DEPARTMENT OWNS THE CONSTRUCTION CONTRACT AND HAS ADMINISTRATIVE AUTHORITY. COMMUNICATIONS AND DECISIONS BETWEEN THE CONTRACTOR AND UTILITY OWNER ARE NOT BINDING UPON THE DEPARTMENT OR THIS CONTRACT UNLESS AUTHORIZED BY THE ENGINEER. AGREEMENTS BETWEEN THE UTILITY OWNER AND CONTRACTOR FOR THE WORK THAT IS NOT PART OF THIS CONTRACT OR IS SECONDARY TO THIS CONTRACT ARE ALLOWED, BUT ARE NOT BINDING UPON THE DEPARTMENT.
5. PROVIDE ACCESS FOR THE DEPARTMENT PERSONNEL AND THE OWNER'S REPRESENTATIVES TO ALL PHASES OF CONSTRUCTION. NOTIFY DEPARTMENT PERSONNEL AND THE UTILITY OWNER TWO WEEKS PRIOR TO COMMENCEMENT OF ANY WORK AND ONE WEEK PRIOR TO SERVICE INTERRUPTION. KEEP UTILITY OWNERS' REPRESENTATIVES INFORMED OF WORK PROGRESS AND PROVIDE OPPORTUNITY FOR INSPECTION OF CONSTRUCTION AND TESTING.

6. THE PLANS DEPICT THE BEST AVAILABLE INFORMATION FOR THE LOCATION, SIZE, AND TYPE OF MATERIAL FOR ALL EXISTING UTILITIES. MAKE INVESTIGATIONS FOR DETERMINING THE EXACT LOCATION, SIZE, AND TYPE MATERIAL OF THE EXISTING FACILITIES AS NECESSARY FOR THE CONSTRUCTION OF THE PROPOSED UTILITIES AND FOR AVOIDING DAMAGE TO EXISTING FACILITIES. REPAIR ANY DAMAGE INCURRED TO EXISTING FACILITIES TO THE ORIGINAL OR BETTER CONDITION AT NO ADDITIONAL COST TO THE DEPARTMENT.
7. MAKE FINAL CONNECTIONS OF THE NEW WORK TO THE EXISTING SYSTEM WHERE INDICATED ON THE PLANS, AS REQUIRED TO FIT THE ACTUAL CONDITIONS, OR AS DIRECTED.
8. MAKE CONNECTIONS BETWEEN EXISTING AND PROPOSED UTILITIES AT TIMES MOST CONVENIENT TO THE PUBLIC, WITHOUT ENDANGERING THE UTILITY SERVICE, AND IN ACCORDANCE WITH THE UTILITY OWNER'S REQUIREMENTS. MAKE CONNECTIONS ON WEEKENDS, AT NIGHT, AND ON HOLIDAYS IF NECESSARY.
9. ALL UTILITY MATERIALS SHALL BE APPROVED PRIOR TO DELIVERY TO THE PROJECT. SEE 1500-7, " SUBMITTALS AND RECORDS" IN SECTION 1500 OF THE STANDARD SPECIFICATIONS.
10. CONTRACTOR SHALL NOT OPERATE ANY VALVES ON THE EXISTING UTILITY SYSTEMS. CONTRACTOR SHALL CONTACT THE UTILITY OWNER TO CONDUCT STRATEGIC OPERATION OF VALVES FOR SERVICE INTERRUPTION IN ORDER TO PERFORM SPECIFIC WORK.

PROJECT SPECIFIC NOTES:

1. CONTRACTOR'S ATTENTION IS DIRECTED TO THE UTILITY CONSTRUCTION PROJECT SPECIAL PROVISIONS PROVIDED ALONG WITH THIS PLAN SET.
2. CONTRACTOR'S ATTENTION IS DIRECTED TO SECTIONS 102, 107, AND 1550 OF THE STANDARD SPECIFICATIONS CONCERNING TRENCHLESS INSTALLATION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO HAVE THE BORE(S) DESIGNED AND SEALED BY A LICENSED NORTH CAROLINA PROFESSIONAL ENGINEER. NO DAMAGE IS ALLOWED TO THE ROADS, RIVERS, WETLANDS, OR BUFFER ZONES.
3. PVC PIPE MANUFACTURED MORE THAN 12 MONTHS BEFORE INSTALLATION DATE WILL NOT BE ACCEPTED.
4. ALL WATER LINE, WATER SERVICES, SANITARY SEWER MAIN, AND SANITARY SEWER SERVICES SHALL BE INSTALLED WITH A CONTINUOUS TRACER WIRE FOR LOCATION PURPOSES BY MEANS OF AN ELECTRONIC TRACER.
5. WATER LINE PIPE 4-INCHES THROUGH 24-INCHES SHALL BE EITHER PVC OR DUCTILE IRON AND CERTIFIED NSF-61 FOR POTABLE WATER USE. PVC PIPE SHALL BE AWWA C900 DR-18 WITH D.I.P. EQUIVALENT OUTSIDE DIAMETERS. DUCTILE IRON PIPE SHALL CONFORM WITH AWWA C151 WITH A PRESSURE CLASS OF 350 AND FM APPROVED AND UL LISTED FOR PIPE 4-INCHES THROUGH 12-INCHES.
6. DUCTILE IRON PIPE AND FITTINGS MUST HAVE ISO 9001 OR LATER CERTIFICATION, OR BE POURED IN A FOUNDRY LOCATED IN THE U.S.A.
7. ALL WATER LINE FITTINGS SHALL BE DUCTILE IRON, MECHANICAL JOINT OR RESTRAINED JOINT FITTINGS. FITTINGS SHALL BE FULL BODY OR COMPACT BODY CONFORMING WITH ANSI/AWWA C110/A21.10 OR ANSI/AWWA C153/A21.53, RESPECTIVELY, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. FITTINGS 4-INCH THROUGH 24-INCH DIAMETER SHALL HAVE A MINIMUM PRESSURE RATING OF 350 PSI. RESTRAINED JOINT FITTINGS SHALL HAVE THE SAME MANUFACTURER AS THE RESTRAINED JOINT PIPE. MECHANICAL JOINT FITTINGS SHALL UTILIZE A RESTRAINING GLAND RESTRAINT SYSTEM. THRUST BLOCKS ARE NOT PERMITTED, UNLESS APPROVED BY THE ENGINEER AND THE UTILITY OWNER.
8. ALL PROPOSED FITTINGS (BENDS, TEES, CROSSES, REDUCERS, PLUGS, ETC.) SHALL BE ADEQUATELY RESTRAINED BY THE USE OF RESTRAINED JOINT CONSTRUCTION AND/OR CAST IN PLACE CONCRETE THRUST RESTRAINTS.
9. TRENCHLESS INSTALLATION OF WATER LINE, 4" THROUGH 24", SHALL UTILIZE FUSIBLE PVC C900 DR-18 PIPE WITH D.I.P. EQUIVALENT OUTSIDE DIAMETERS. RECORDS OF TRENCHLESS INSTALLATION MUST BE SUBMITTED TO UTILITY OWNER UPON COMPLETION.
10. EXISTING WATER METERS TO REMAIN SHALL BE RECONNECTED TO THE EXISTING / PROPOSED WATER MAIN WITH EITHER NEW OR EXISTING WATER SERVICE LINES DEPENDING ON THE MATERIAL TYPE. IF THE EXISTING SERVICE IS POLY, A NEW SERVICE MUST BE INSTALLED FROM THE MAIN AND THE EXISTING SERVICE SHALL BE ABANDONED. IF THE EXISTING SERVICE IS COPPER, IT MAY BE EXTENDED PER CFPUA'S STANDARDS.
11. EXISTING WATER METERS TO BE RELOCATED SHALL BE CONNECTED TO THE EXISTING / PROPOSED WATER LINE WITH EITHER NEW OR EXISTING WATER SERVICE LINES DEPENDING ON THE MATERIAL TYPE. IF THE EXISTING SERVICE IS POLY, A NEW SERVICE MUST BE INSTALLED FROM THE MAIN AND THE EXISTING SERVICE SHALL BE ABANDONED. IF THE EXISTING SERVICE IS COPPER, IT MAY BE EXTENDED PER CFPUA'S STANDARDS. ANY EXTENSIONS OR MODIFICATIONS TO THE EXISTING SERVICE LINES ON THE CUSTOMER SIDE OF THE WATER METER SHALL BE SHALL BE INCIDENTAL TO THE RELOCATION OF THE WATER METER. IF THE EXISTING MATERIALS ARE FOUND TO BE UNSUITABLE (I.E. GALVANIZED OR LEAD), THEN CONTRACTOR SHALL USE COPPER WATER PIPE AND TUBING CONFORMING TO ASTM B88 SOFT ANNEALED TYPE K. USE FLARED OR COMPRESSION TYPE FITTINGS CONFORMING TO ANSI/AWWA C800.
12. ALL WATER METERS SHALL BE INSTALLED WITH THE BACK (CUSTOMER SIDE) OF THE METER BOX AT THE RIGHT-OF-WAY LINE AND AT PROPOSED GRADE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

UTILITY CONSTRUCTION

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PROJECT SPECIFIC NOTES (CONTINUED):

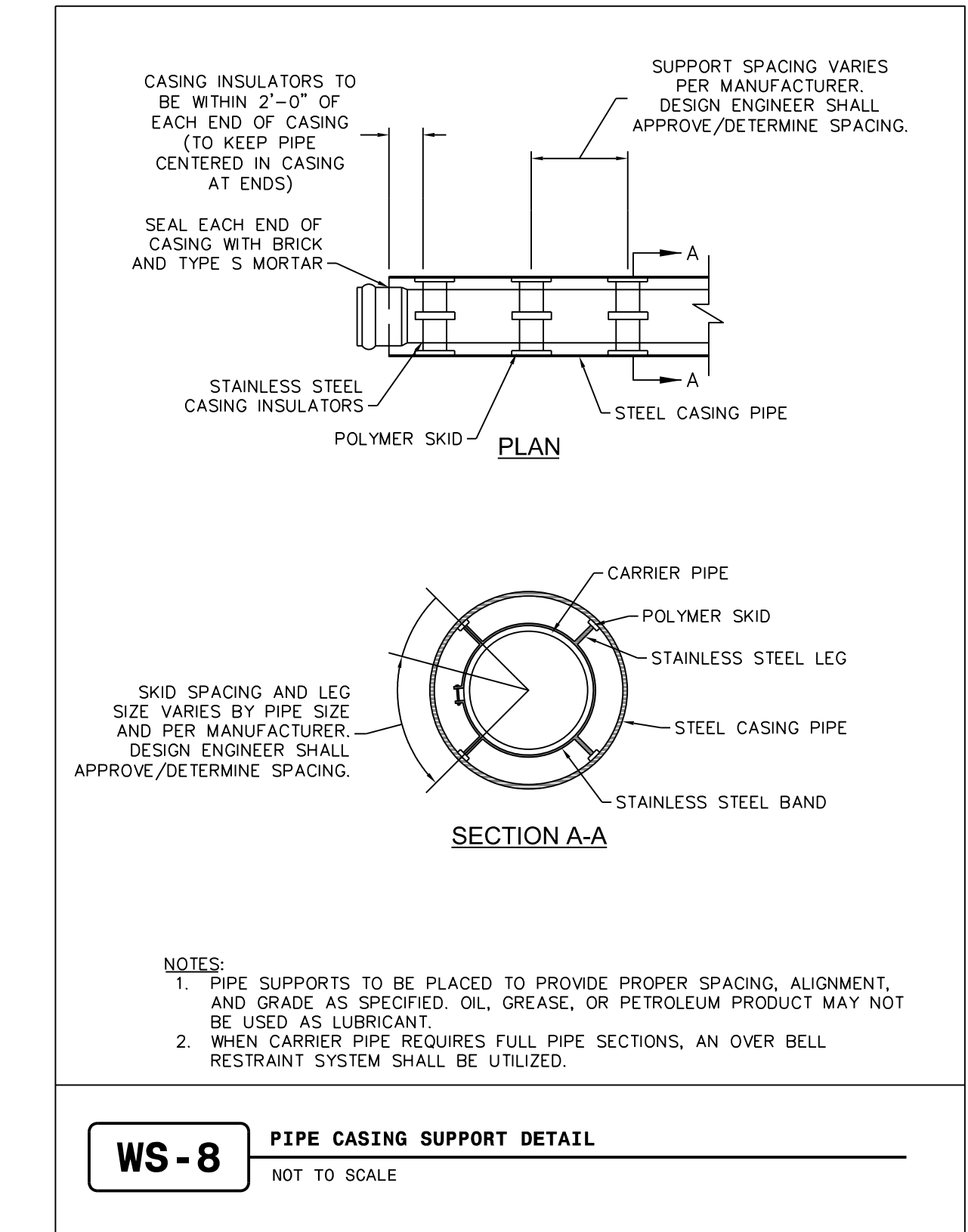
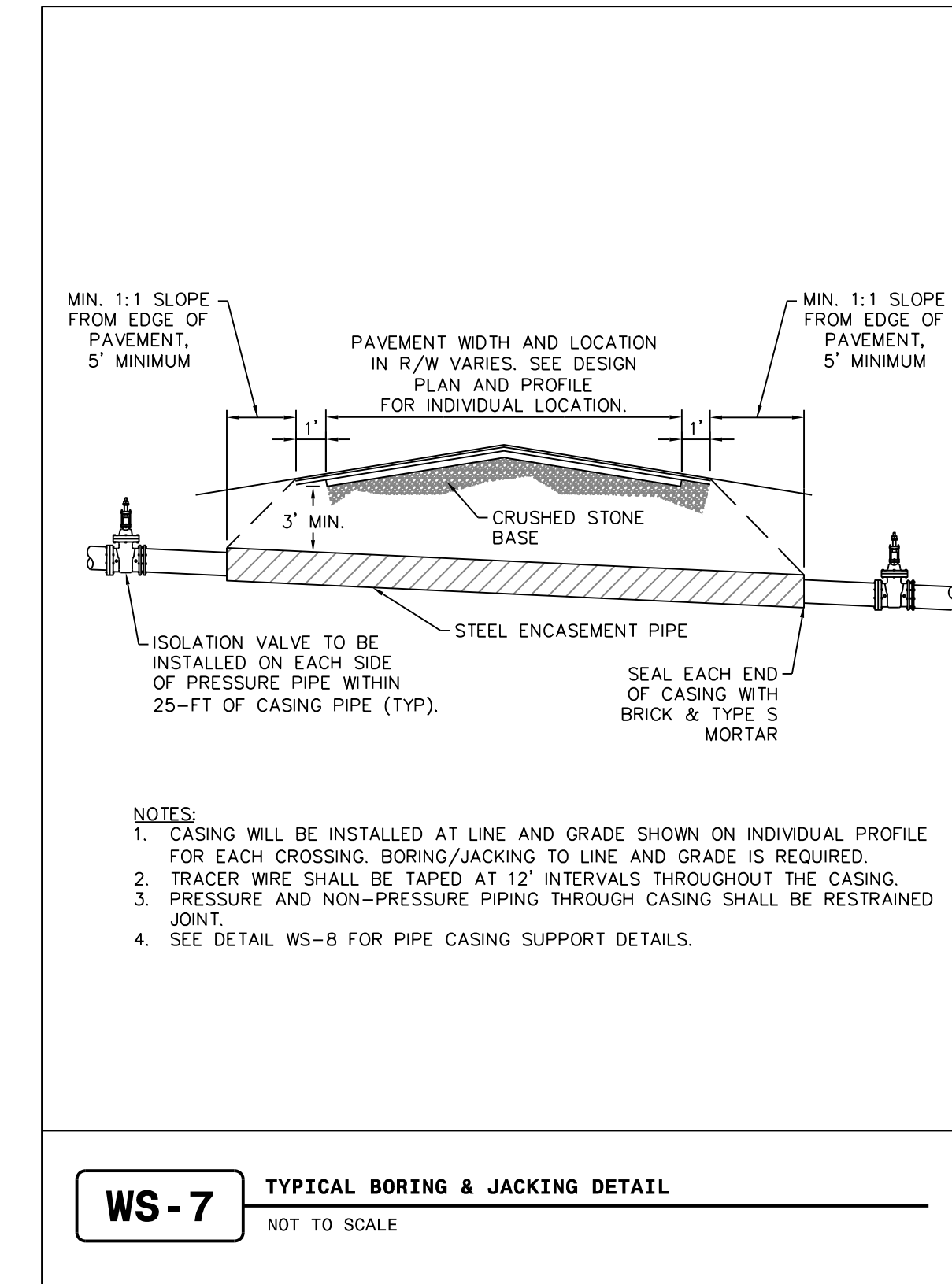
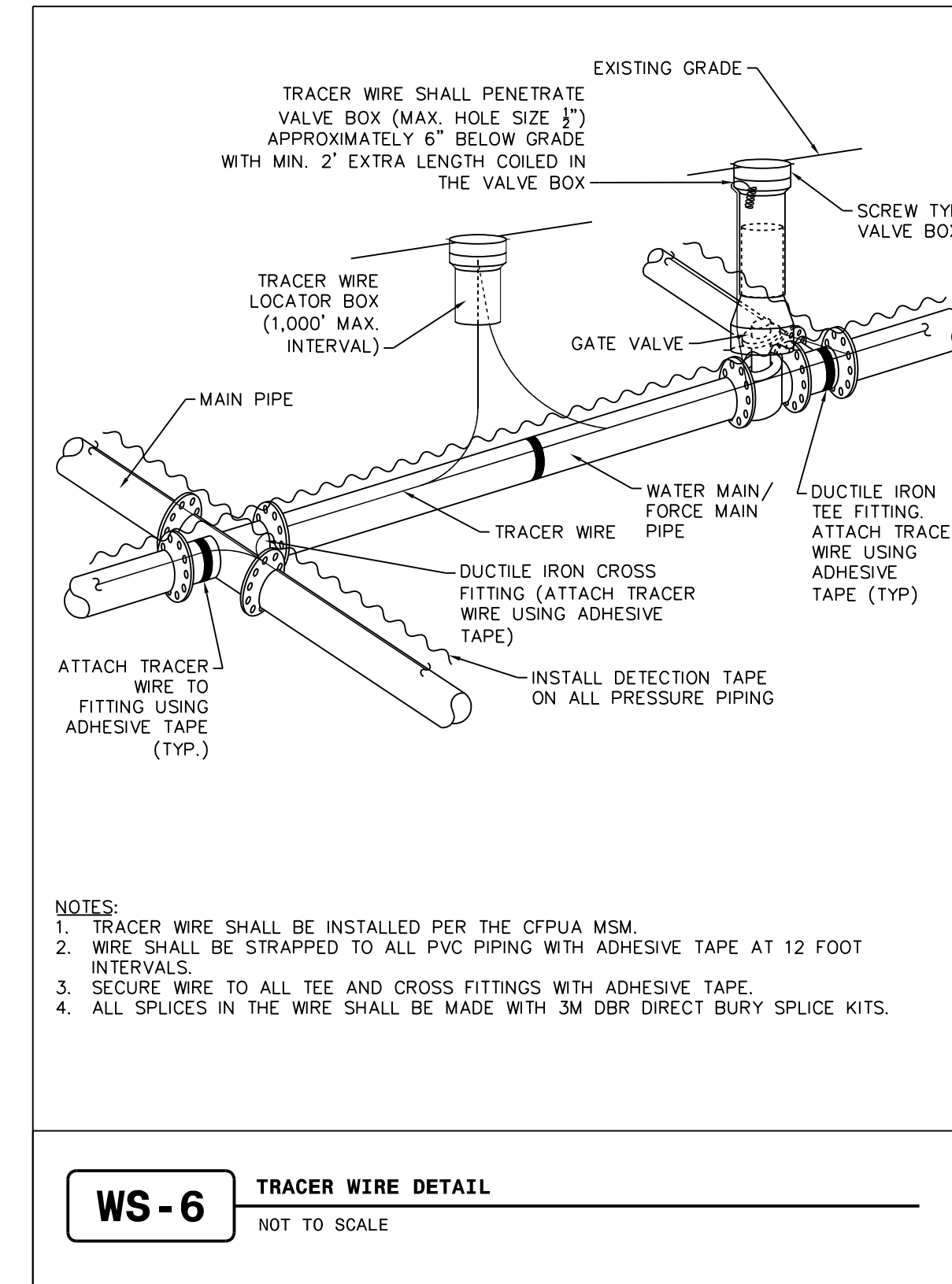
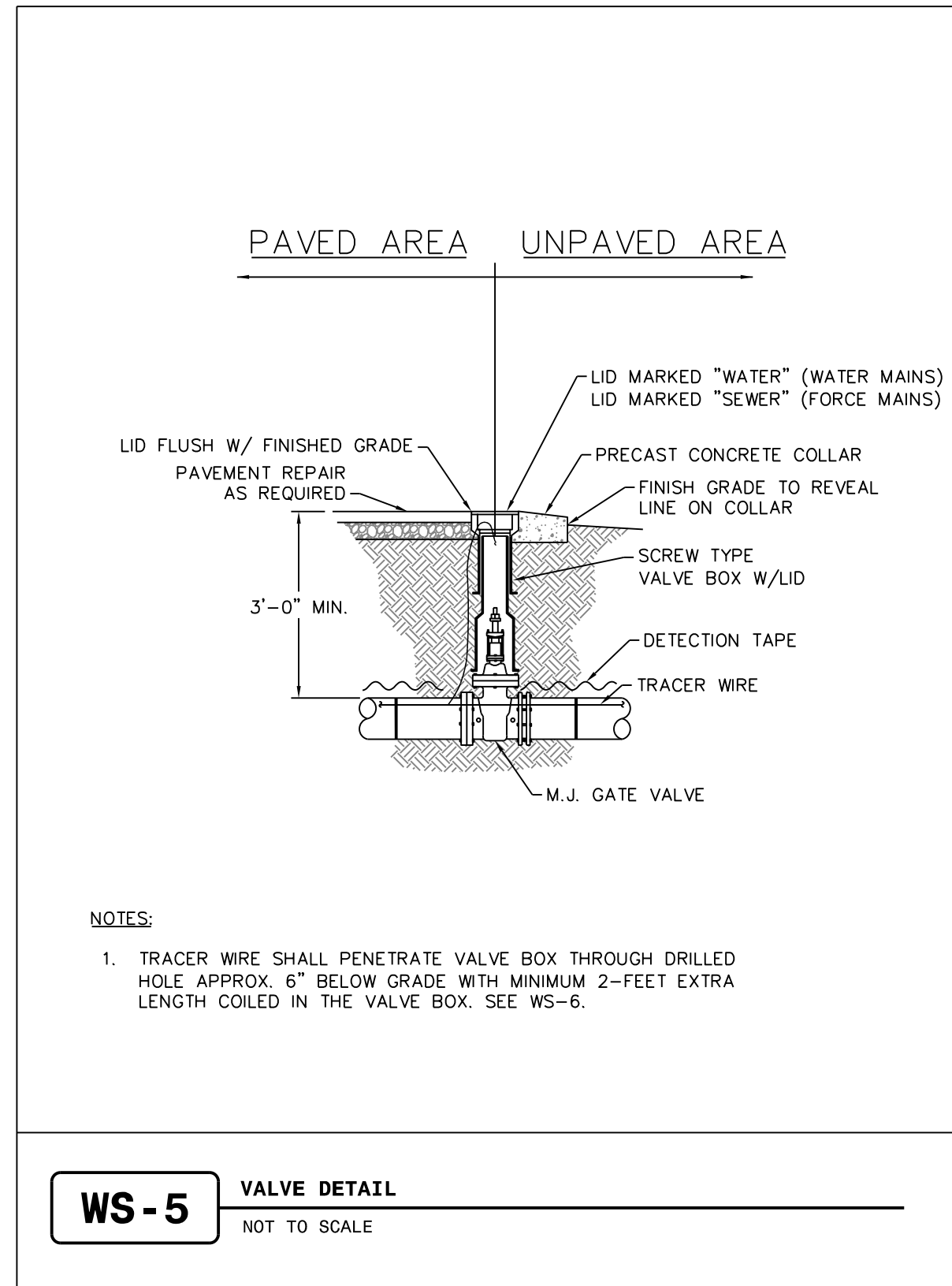
- 13. EXISTING WATER SERVICE LINES BETWEEN THE EXISTING WATER LINE AND THE REMOVED WATER METER SHALL BE ABANDONED IN PLACE OR REMOVED AS NEEDED AS PER SECTION 1530 OF THE NCDOT SPECIFICATIONS OR AS DIRECTED BY THE ENGINEER.
- 14. HYDRANTS AND WATER METERS LABELLED TO BE REMOVED SHALL NOT BE USED AS NEW MATERIALS IN THE PROPOSED CONSTRUCTION UNLESS OTHERWISE DIRECTED BY THE UTILITY OWNER'S REPRESENTATIVE.
- 15. EXISTING HYDRANTS AND WATER METERS TO BE REMOVED AND/OR RELOCATED SHALL BE RETURNED TO THE UTILITY OWNER FOR INSPECTION. CONTRACTOR SHALL DELIVER THESE UTILITY ITEMS TO A MUTUALLY AGREED UPON LOCATION. ALL OTHER PARTS, PIPING, AND METER BOXES REMOVED FROM THE SYSTEM SHALL REMAIN THE PROPERTY OF THE CONTRACTOR AND BE PROPERLY DISPOSED OF IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS. CONTRACTOR TO RELOCATE/REPLACE AS CONDITIONS REQUIRE.
- 16. ALL HYDRANTS, PROPOSED OR RELOCATED, SHALL BE INSTALLED 2 FEET BEHIND THE SIDEWALK, OR WITHIN ONE FOOT TO 18 INCHES OF THE R/W LINE, OR AS DIRECTED BY THE ENGINEER.
- 17. WATER METER BOXES SHALL NOT BE INSTALLED WITHIN PAVED OR SIDEWALK AREA UNLESS APPROVED BY UTILITY OWNER.
- 18. WATER METER BOXES SHALL BE LOCATED A MINIMUM OF 5 FEET FROM ALL PROPERTY CORNERS.
- 19. ALL WATER AND SEWER SERVICES SHALL BE INSTALLED PERPENDICULAR TO THE MAIN AND TERMINATE AT THE RIGHT-OF-WAY LINE.
- 20. ALL STAINLESS STEEL FASTENERS SHALL BE OF GRADE 316.
- 21. SANITARY SEWER CLEANOUTS SHALL BE LOCATED A MINIMUM OF 12 FEET FROM ALL PROPERTY CORNERS. CLEAN OUT SHOULD BE RELOCATED ADJACENT TO EXISTING SEWER CONNECTION.
- 22. ALL SEWER SERVICES CONNECTING INTO DUCTILE IRON SEWER MAINS SHALL ALSO BE CONSTRUCTED OF DUCTILE IRON PIPE.
- 23. NO FLEXIBLE COUPLINGS SHALL BE USED.
- 24. SEWER GUARDS ARE REQUIRED AT ALL MANHOLES. STAINLESS STEEL SEWER GUARDS ARE REQUIRED AT MANHOLES LOCATED IN TRAFFIC AREAS.
- 25. UNUSED SERVICES SHALL NOT BE ABANDONED WITHOUT THE WRITTEN AUTHORIZATION FROM CFPWA. ABANDONED WATER SERVICES SHALL BE DISCONNECTED FROM THE WATER MAIN.
- 26. A MINIMUM OF 10 FEET OF SEWER MAIN SHALL BE REPLACED FOR NEW SEWER SERVICE CONNECTIONS TO EXISTING CLAY PIPE GRAVITY SEWER MAINS. THE EXISTING CLAY PIPE MUST BE CCTV'D PRIOR TO AND AFTER THE TAP HAS BEEN INSTALLED.
- 27. 8-INCH AND LARGER SEWER SERVICE LINES SHALL CONNECT TO A MANHOLE ONLY.
- 28. MANHOLE DIAMETER SHALL BE FOUR (4) FEET FOR DEPTHS UP TO 12 FEET.
- 29. MANHOLE DIAMETER SHALL BE FIVE (5) FEET FOR DEPTHS GREATER THAN 12 FEET AND FOR INSIDE DROP CONNECTIONS. MANHOLES 12 FEET OR GREATER IN DEPTH ARE REQUIRED TO BE POLYCRETE.
- 30. MANHOLE TOP ELEVATION SHALL BE AT OR ABOVE FINISHED GRADE IN UNPAVED AREAS AND AT FINISHED GRADE IN PAVED AREAS. THE USE OF STEEL GRADE ADJUSTMENT RINGS IS PROHIBITED.
- 31. USE WATER TIGHT RING AND MANHOLE COVER IN FLOOD PLAINS OR AREAS SUBJECT TO FLOODING.
- 32. PROVIDE A MINIMUM OF SIX (6) INCHES OF SEPARATION BETWEEN EDGE OF MANHOLE PIPE CORE HOLES AND THE MANHOLE BARREL JOINTS. PROVIDE A MINIMUM OF ONE (1) FOOT SEPARATION BETWEEN EDGES OF MANHOLE PIPE CORE HOLES. CORING THROUGH THE MANHOLE CONE SECTION IS NOT ALLOWED.
- 33. CUT-IN MANHOLES ARE REQUIRED AT CONNECTIONS TO EXISTING GRAVITY SEWER MAINS. DOG HOUSE MANHOLES CONSTRUCTED OVER EXISTING GRAVITY SEWER MAINS ARE NOT ALLOWED.
- 34. ALL CONNECTIONS TO EXISTING MANHOLES AND EXISING GRAVITY SEWER MAINS MUST BE MADE IN THE PRESCENCE OF THE UTILITY OWNER'S REPRESENTATIVE.
- 35. SEWER SERVICES THAT HAVE BEEN EXTENDED WILL REQUIRE POST CCTV INSPECTION OF ENTIRE SERVICE LINE (FROM MAIN TO CLEAN OUT).
- 36. INCIDENT ACTION PLAN REQUIRED FOR ALL SEWER RELOCATIONS REQUIRING A BY-PASS PLAN.
- 37. ALL WATER METER BOXES, VALVE BOXES, FIRE HYDRANTS AND SEWER CLEAN-OUTS SHALL BE INSTALLED FLUSH WITH FINAL GRADE. THIS INCLUDES ANY CFPWA APPURTENANCES INADVERTENTLY OMITTED FROM THE PLANS. THE WATER METER AND SETTER MUST FIT WITHIN THE METER BOX AND REMAIN ACCESSIBLE BY CFPWA AT ALL TIMES DURING CONSTRUCTION.
- 38. BACKFLOW PREVENTERS MUST BE INSTALLED AT GRADE AND MUST REMAIN ACCESSIBLE BY CFPWA AND PROPERTY OWNERS AT ALL TIMES. ALL SEWER SERVICES THAT ARE REINSTALLED OR REPAIRED, SHALL BE CCTV'D FOR CFPWA'S REVIEW.
- 39. ALL SEWER SERVICES THAT ARE TYING INTO A MANHOLE SHALL BE CORED TO MATCH THE HIGHEST AVAILABLE INVERT WHILE MAINTAINING A MINIMUM 3-FEET OF COVER. CONTRACTOR MUST COORDINATE ALL SEWER SERVICE INSTALLATIONS WITH THE UTILITY OWNER TO ENSURE THERE IS A MINIMUM 18-INCH SEPARATION AT WATER MAIN CROSSINGS. ALL SEWER SERVICES THAT ARE REINSTALLED OR REPAIRED SHALL BE CCTV'D FOR CFPWA'S REVIEW.
- 40. CONTRACTOR MUST SURVEY ALL WATER AND SEWER INSTALLATIONS IN ACCORDANCE WITH CFPWA'S TECHNICAL STANDARDS. THE SURVEY SHALL THEN BE INCORPORATED INTO A FINAL SET OF ENGINEERED AS-BUILTS. THE SURVEY SHALL BE PROVIDED ALONG WITH A FINAL SET OF ENGINEERED AS-BUILTS TO CFPWA FOR A FORMAL REVIEW. CONTRACTOR'S MARK UPS ON THE DESIGN PLANS WILL NOT BE ACCEPTABLE AS AN AS-BUILT SUBMITTAL. THE FINAL INSTALLATION SURVEY SHALL INCLUDE EVERY 50' OF THE UTILITY MAIN, EVERY HORIZONTAL AND VERTICAL DIRECTION CHANGE (EVERY FITTING), ALL VALVES, AND ALL UTILITY CROSSINGS.
- 41. ALL SERVICES SHALL MAINTAIN A MINIMUM OF 18-INCHES OF HORIZONTAL SEPARATION AWAY FROM STORM DRAIN UTILITIES, AND AT NO TIME SHALL THEY EVER BE INSTALLED UNDERNEATH A CATCH BASIN.
- 42. HORIZONTAL BENDS IN SEWER SERVICES ARE PROHIBITED WITHIN THE RIGHT-OF-WAY.
- 43. FORCE MAIN SEWER PIPE SHALL BE EITHER PVC SDR-21 OR DUCTILE IRON CLASS 350.
- 44. GRAVITY SEWER PIPE SHALL BE EITHER PVC SDR-35 OR DUCTILE IRON CLASS 350.
- 45. ALL PROPOSED RESIDENTIAL WATER SERVICES SHALL BE 1-INCH DIAMETER PIPE.
- 46. ALL PROPOSED COMMERCIAL WATER SERVICES SHALL BE THE SAME DIAMETER AS EXISTING.
- 47. ALL PROPOSED RESIDENTIAL SEWER SERVICES SHALL BE 4-INCH DIAMETER PIPE.
- 48. ALL PROPOSED COMMERCIAL SEWER SERVICES SHALL BE 6-INCH DIAMETER PIPE.
- 49. OPEN TRENCH CONSTRUCTION SHALL PROVIDE (A) 3-FEET MINIMUM COVER FROM FINAL GRADE TO TOP-OF-PIPE, AND (B) 1.5-FEET MINIMUM SEPARATION AT UTILITY CROSSINGS WHENEVER POSSIBLE.
- 50. ANY PIPES THAT ARE INSTALLED WITH EITHER (A) LESS THAN 3-FEET OF COVER, (B) LESS THAN 2-FEET OF SEPARATION FROM A BOX CULVERT, OR (C) LESS THAN 1.5-FEET OF SEPARATION AT UTILITY CROSSINGS MUST BE DUCTILE IRON.
- 51. WATER LINES SHALL NOT BE INSTALLED ANY GREATER THAN 5-FEET TO THE BOTTOM-OF-PIPE UNLESS OTHERWISE SHOWN.

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UTILITY CONSTRUCTION DETAILS


WATER & SEWER - 1

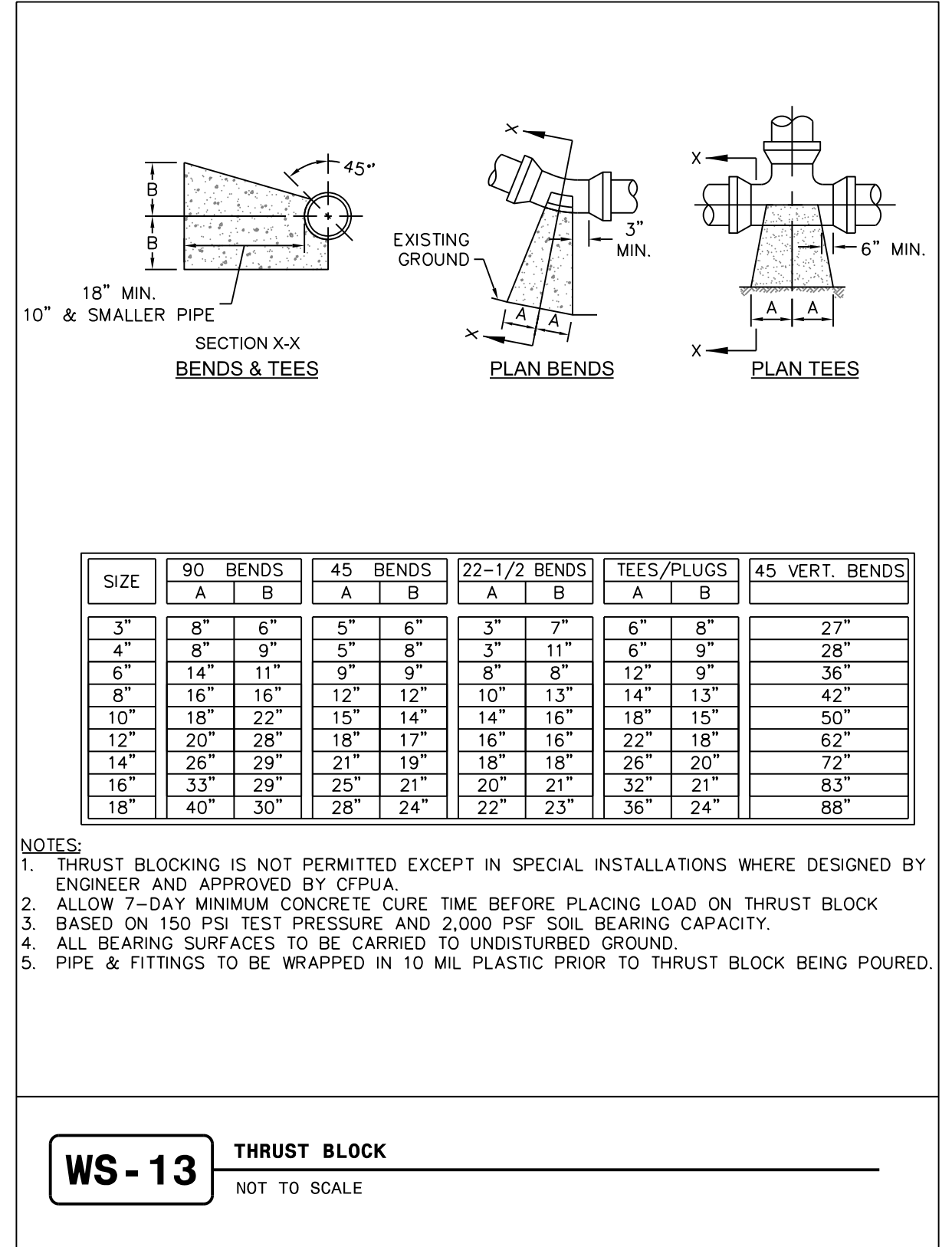
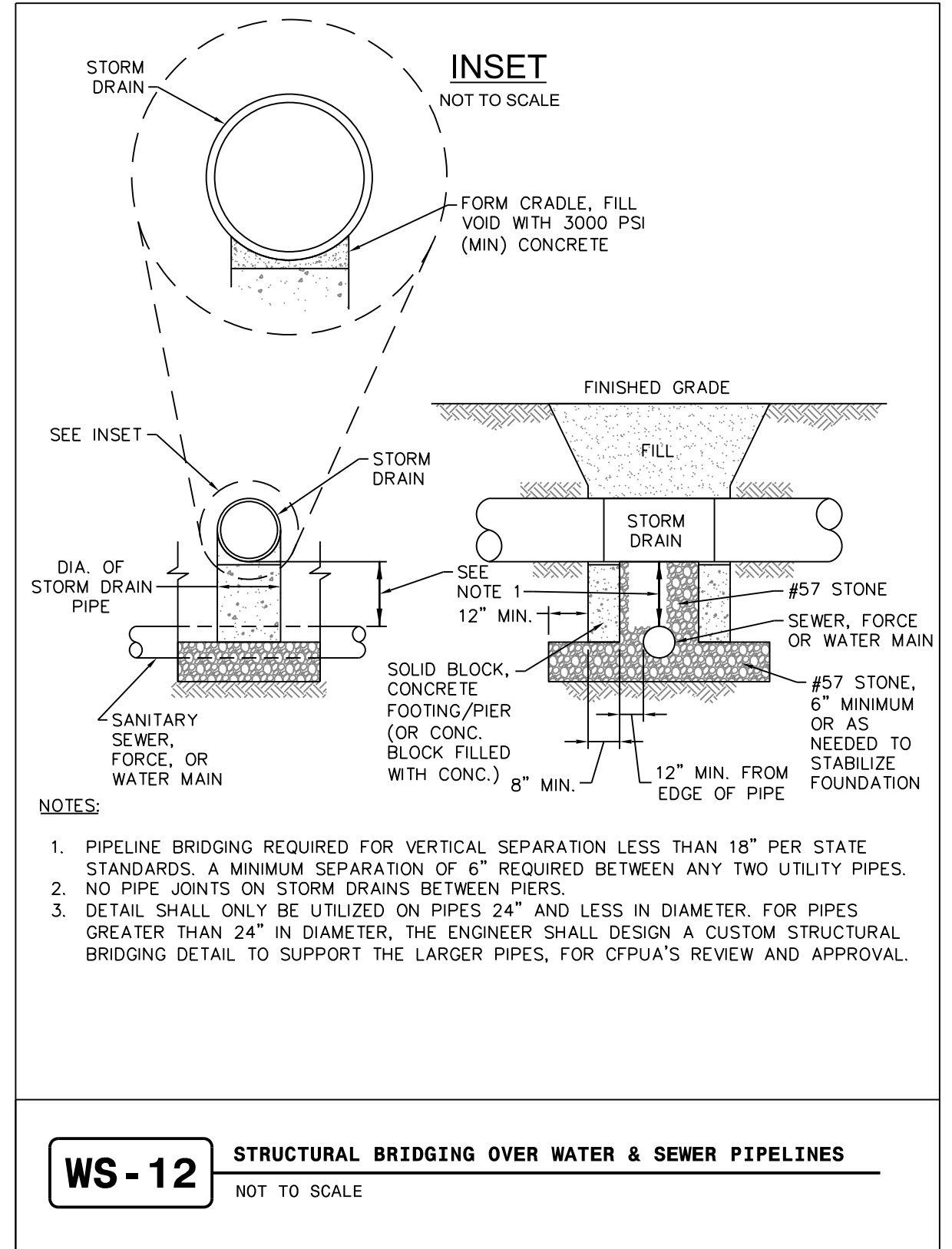
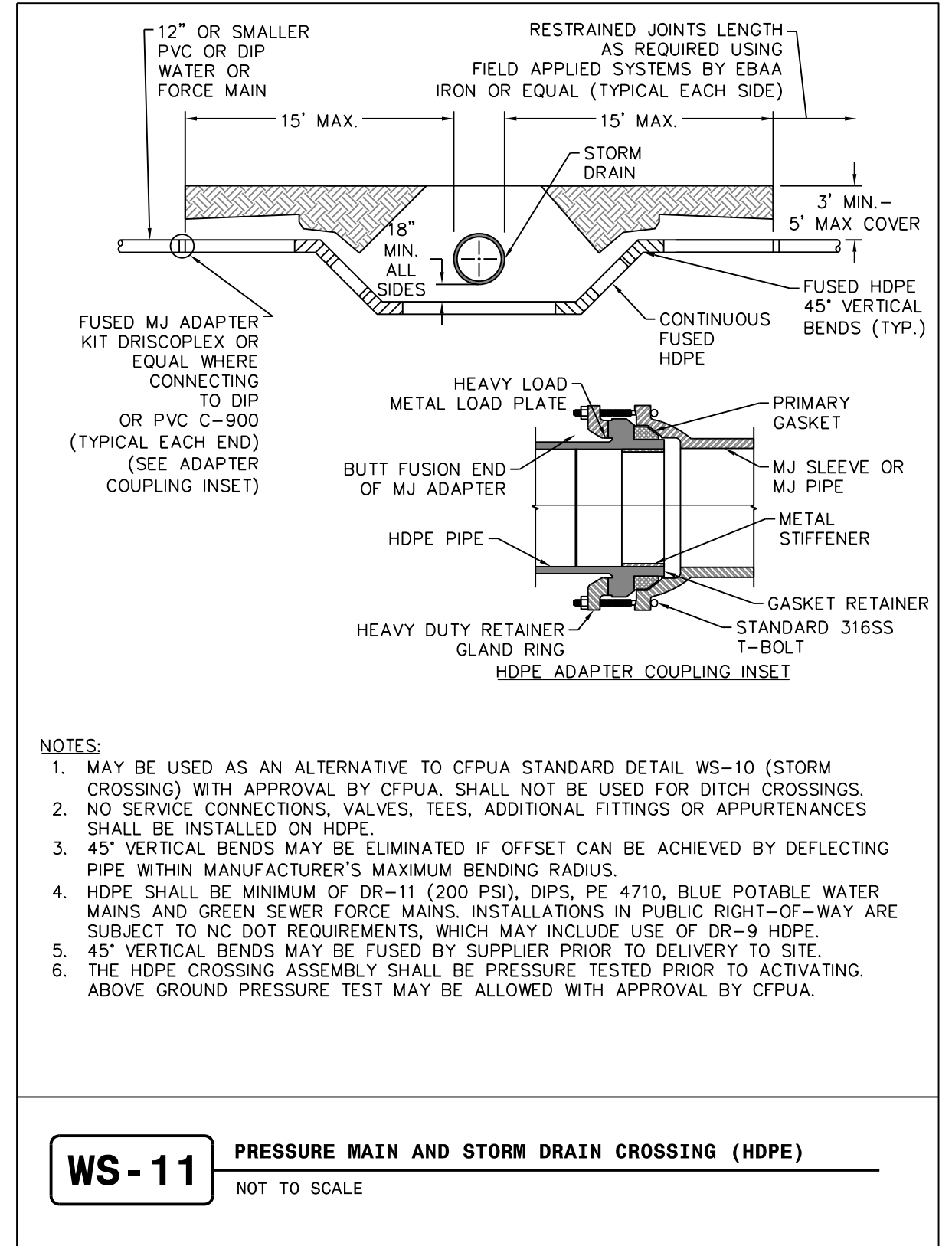
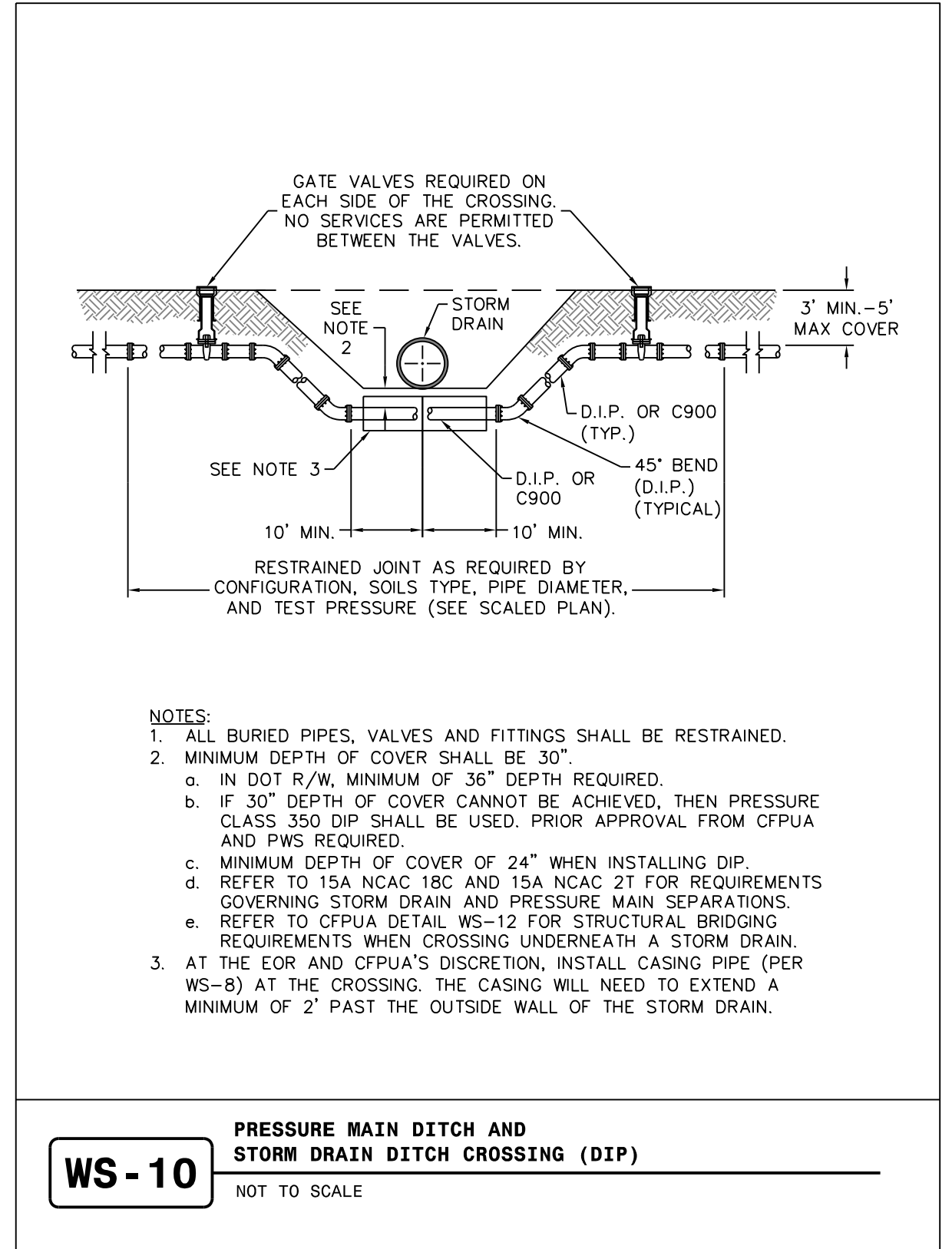
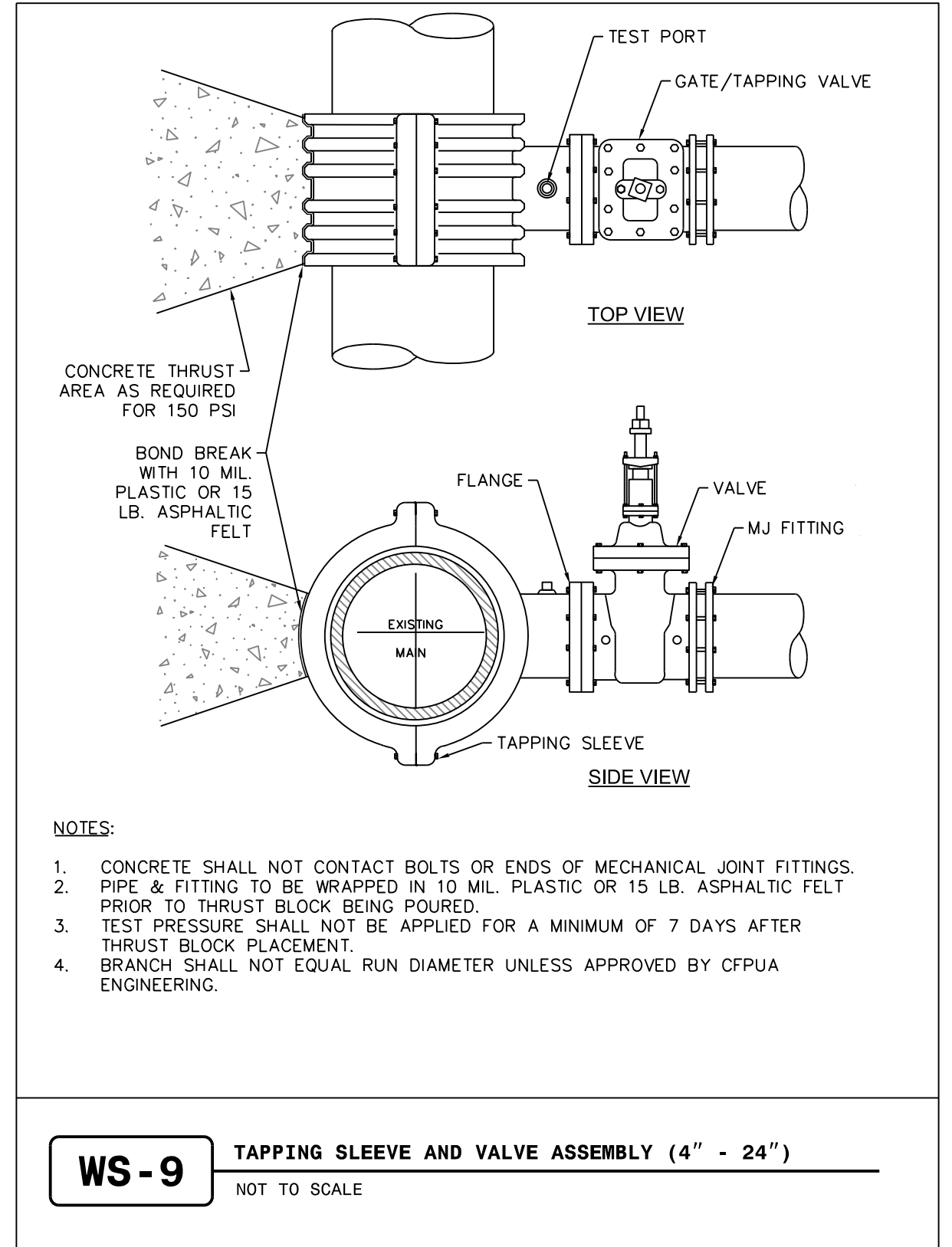
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UTILITY CONSTRUCTION DETAILS

WATER & SEWER - 2

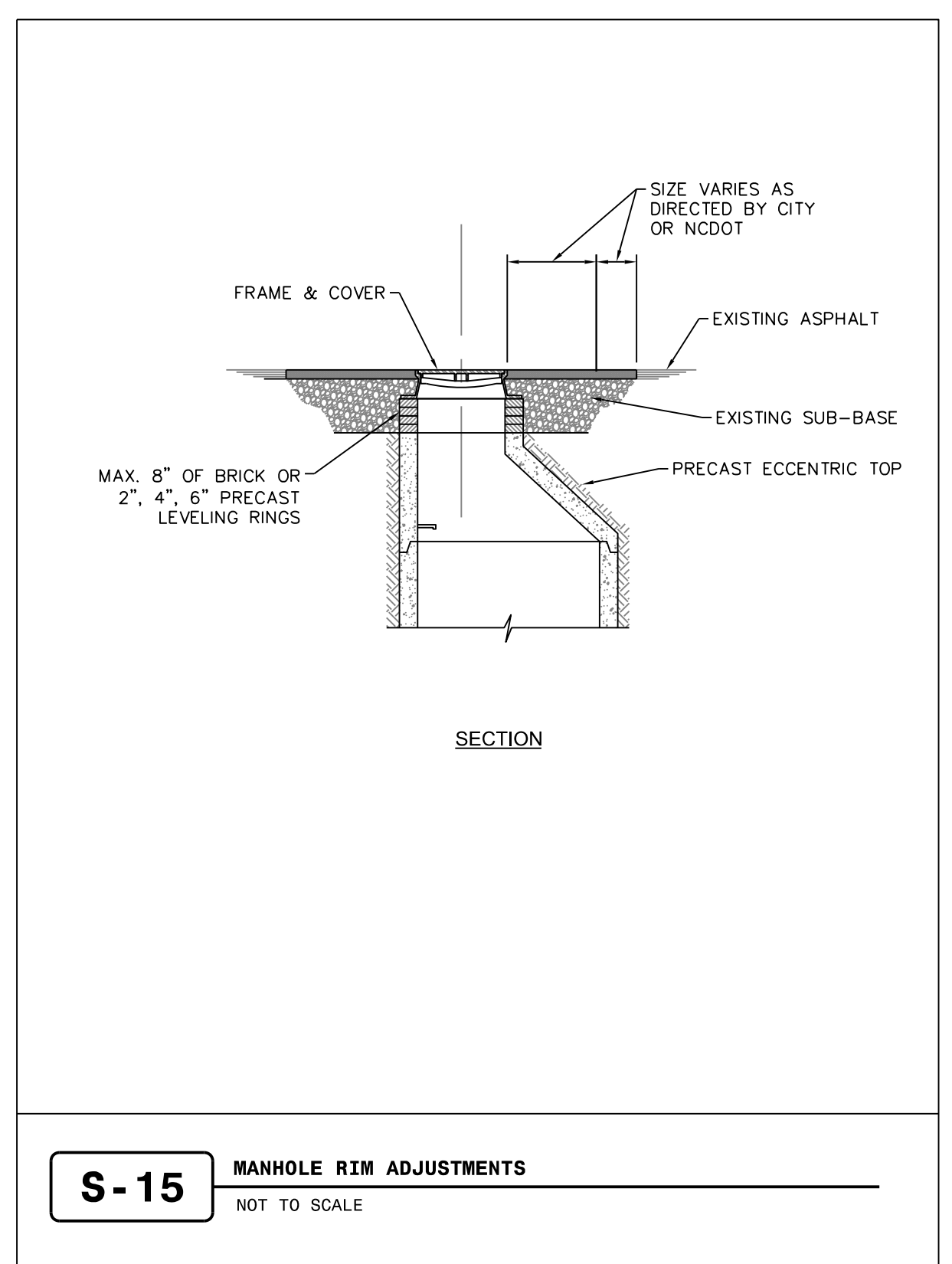
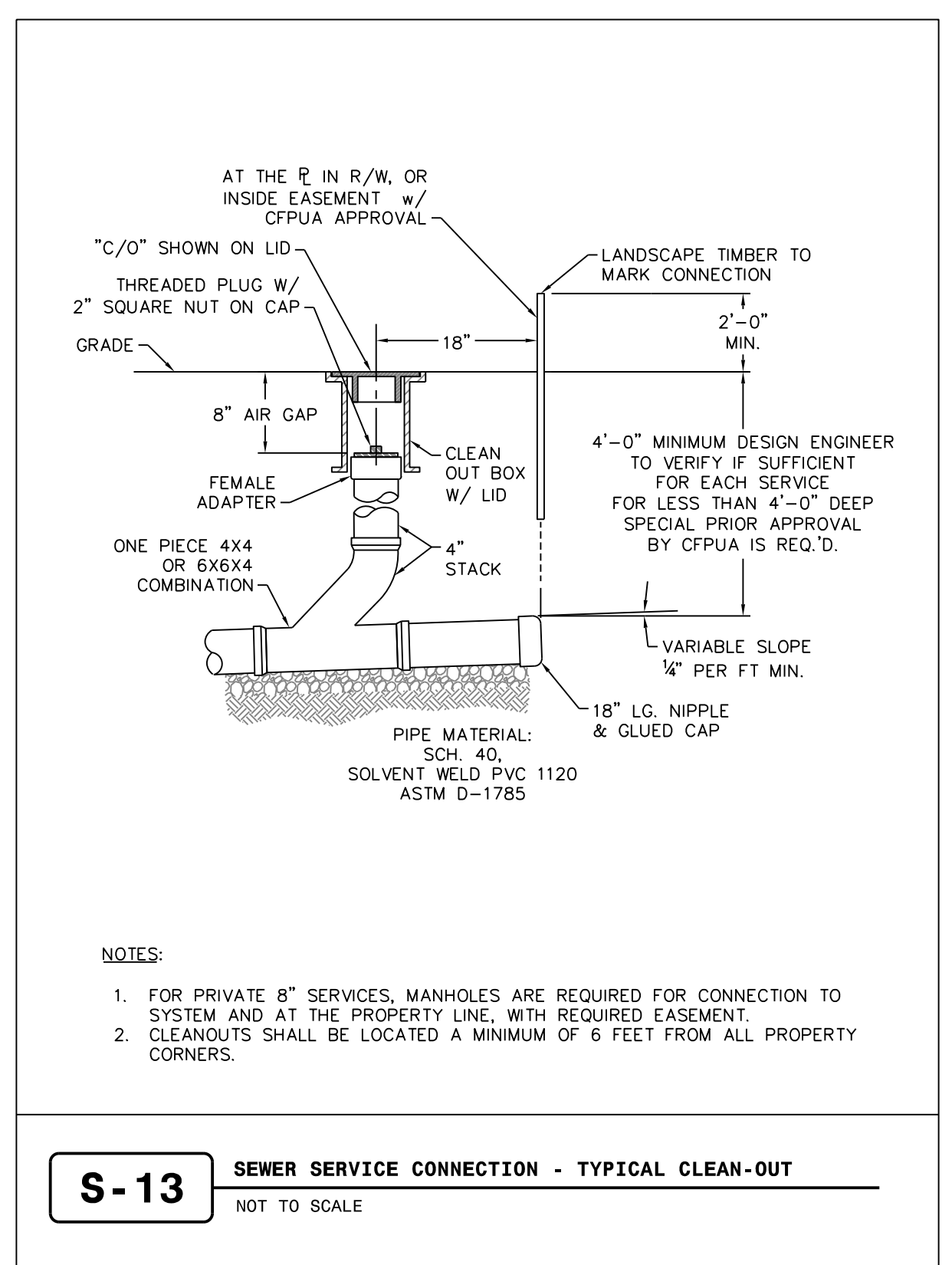
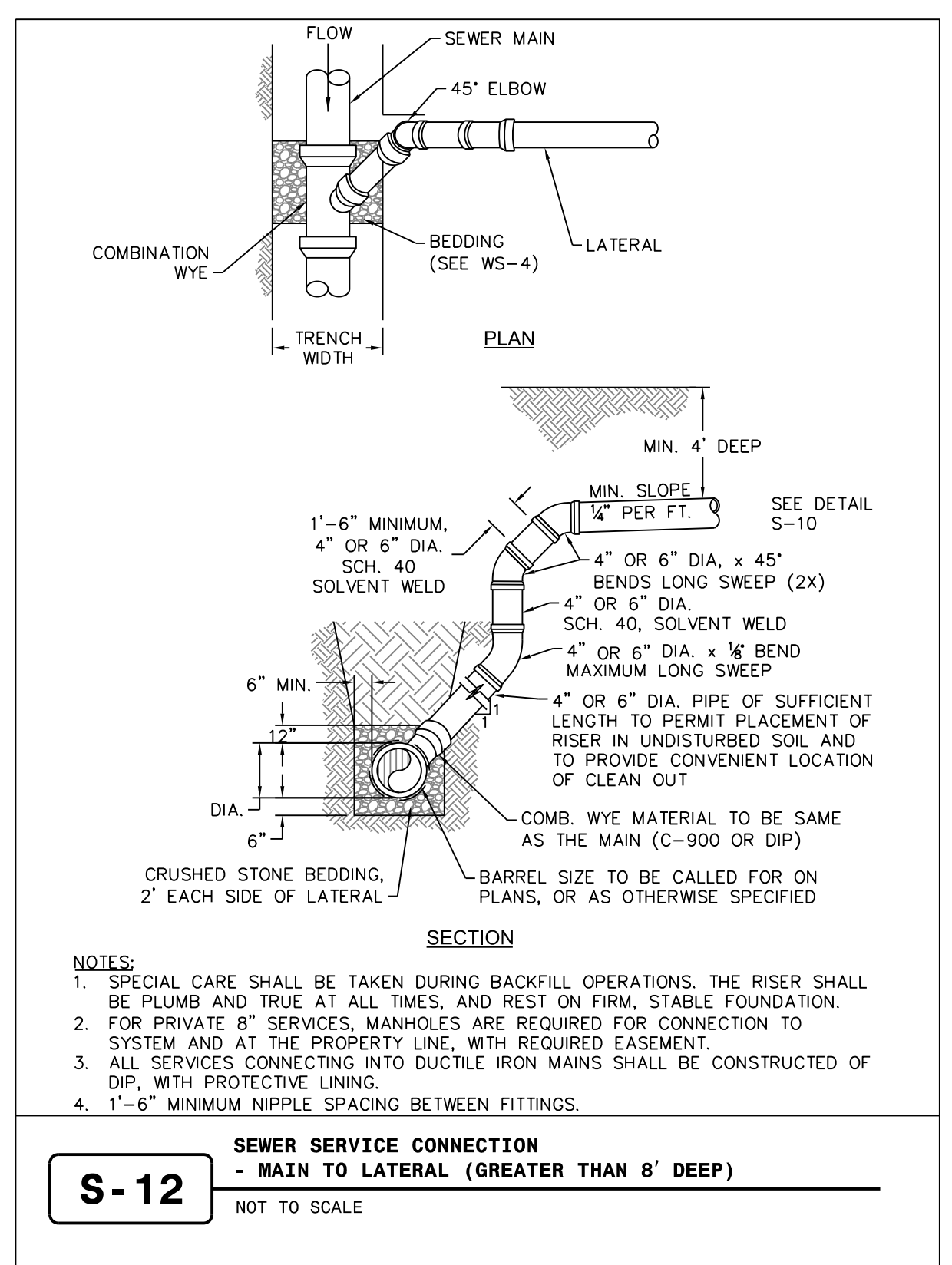
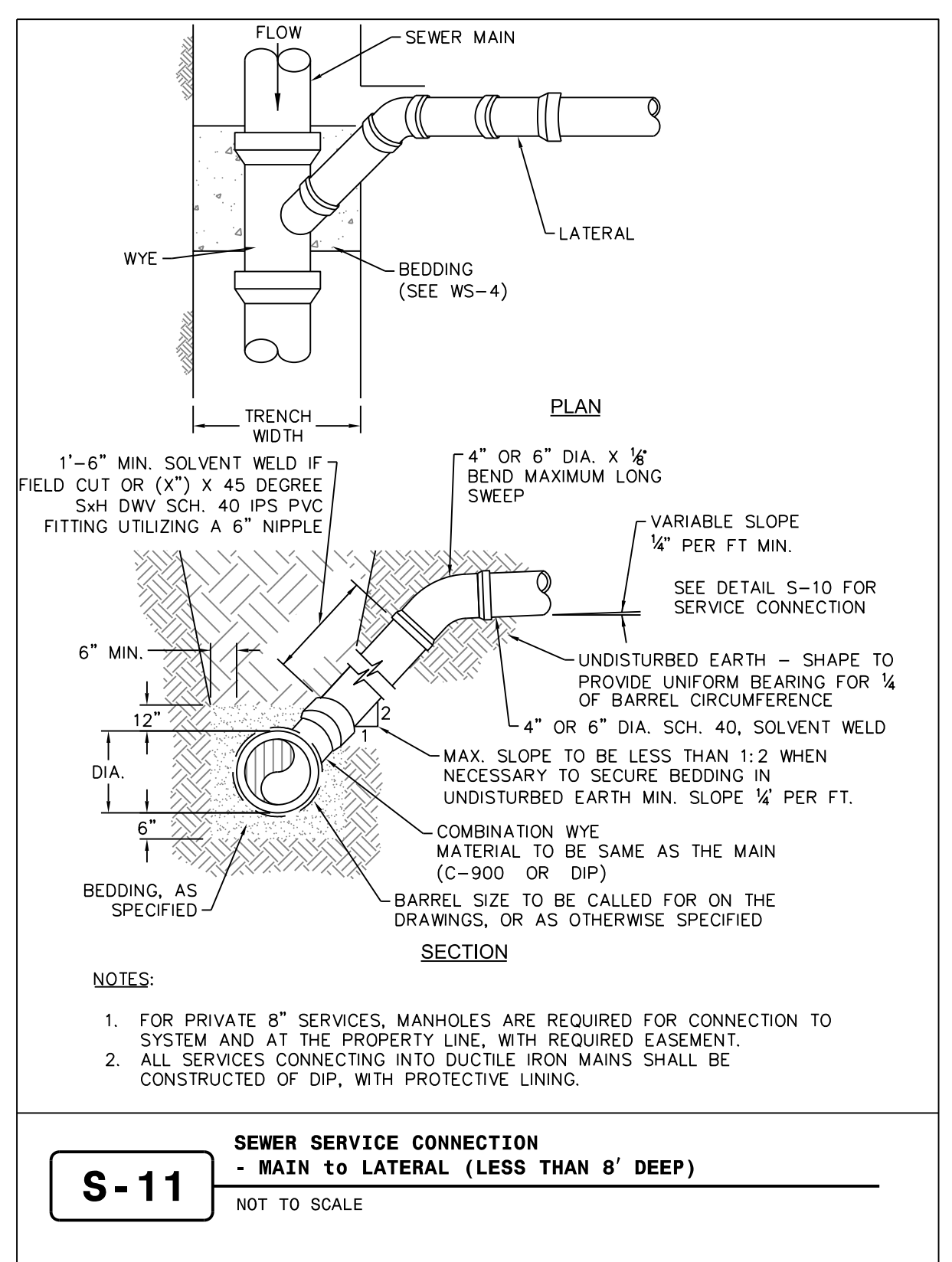
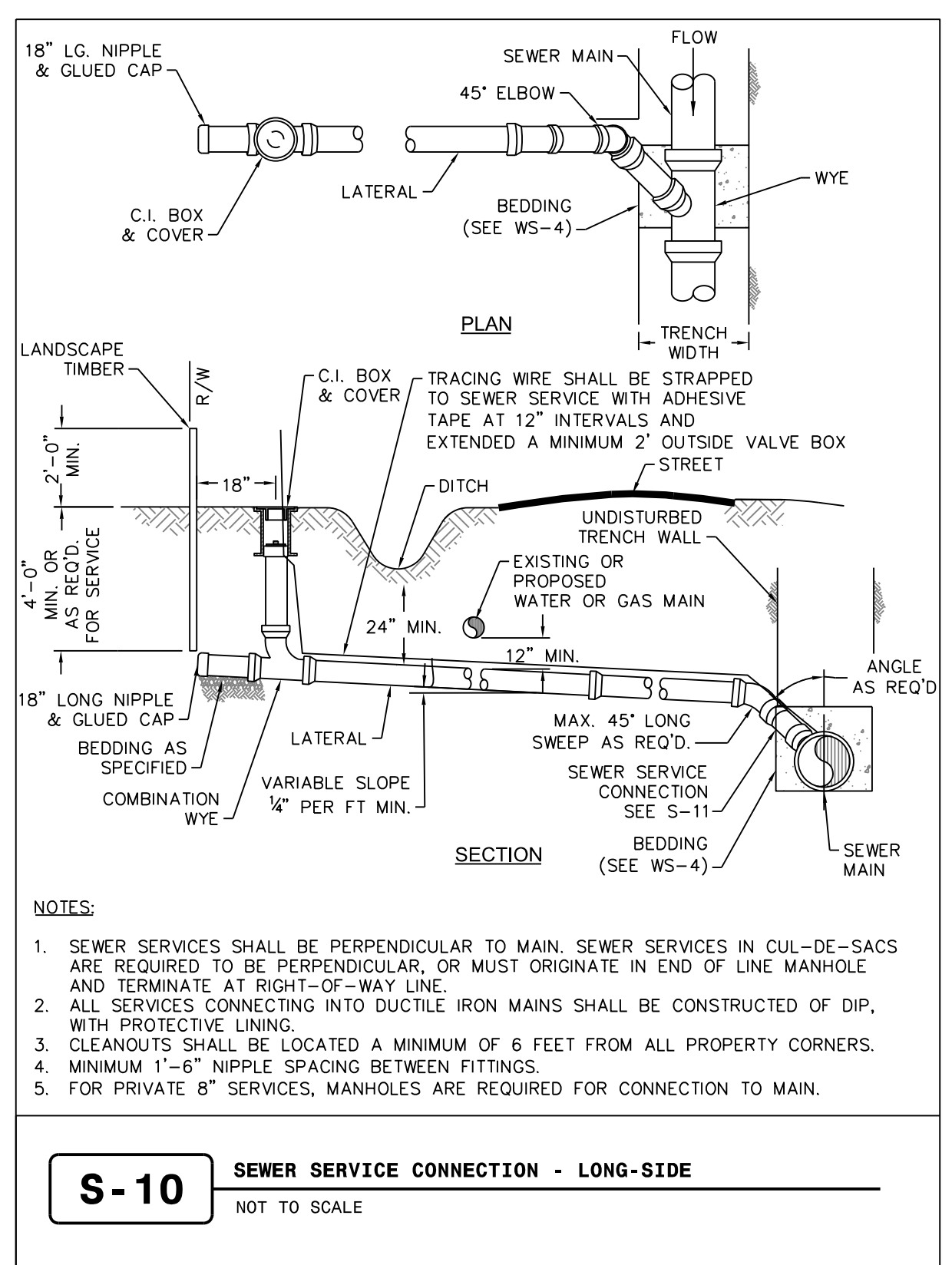
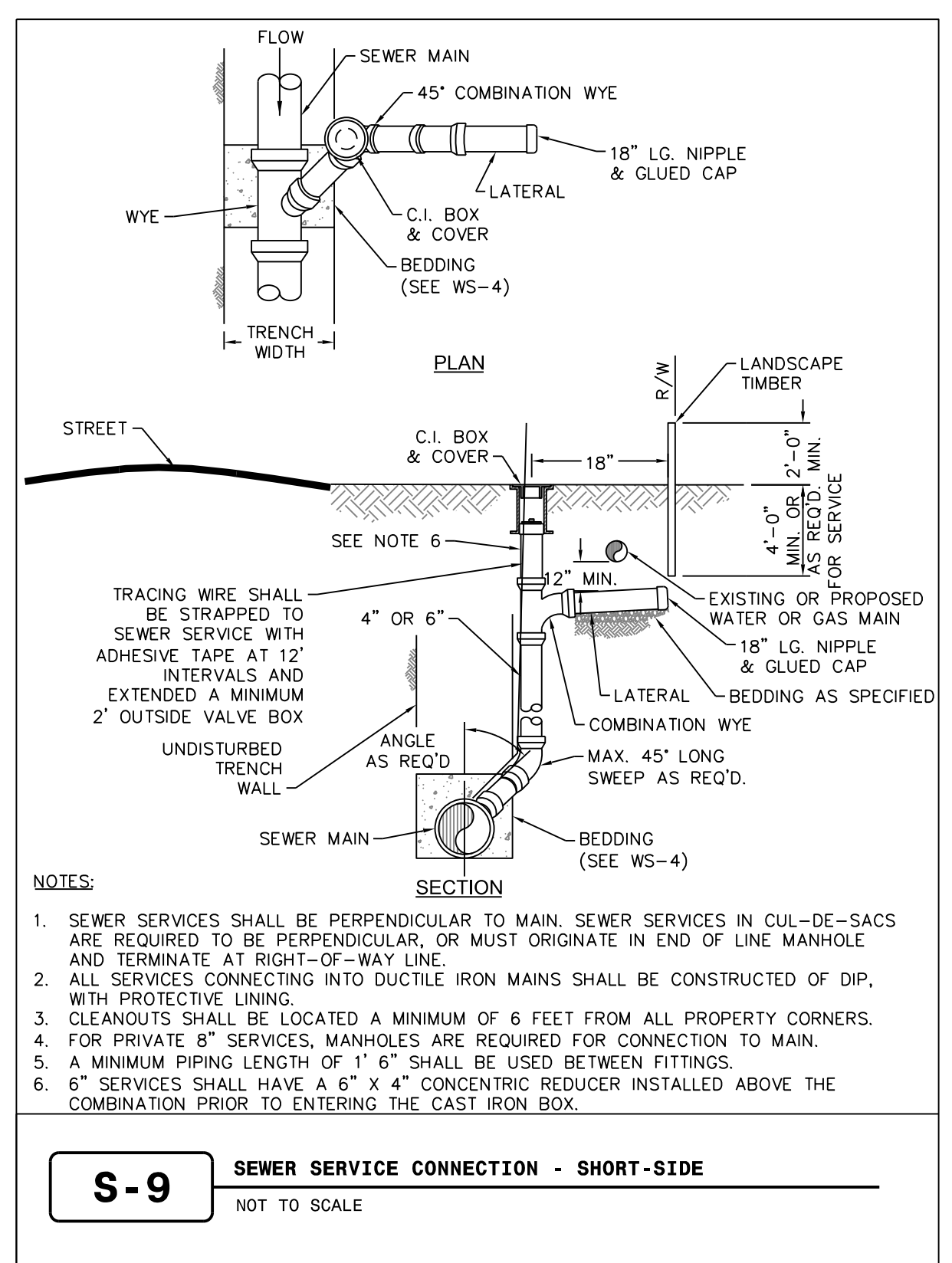
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UTILITY CONSTRUCTION DETAILS SEWER - 2

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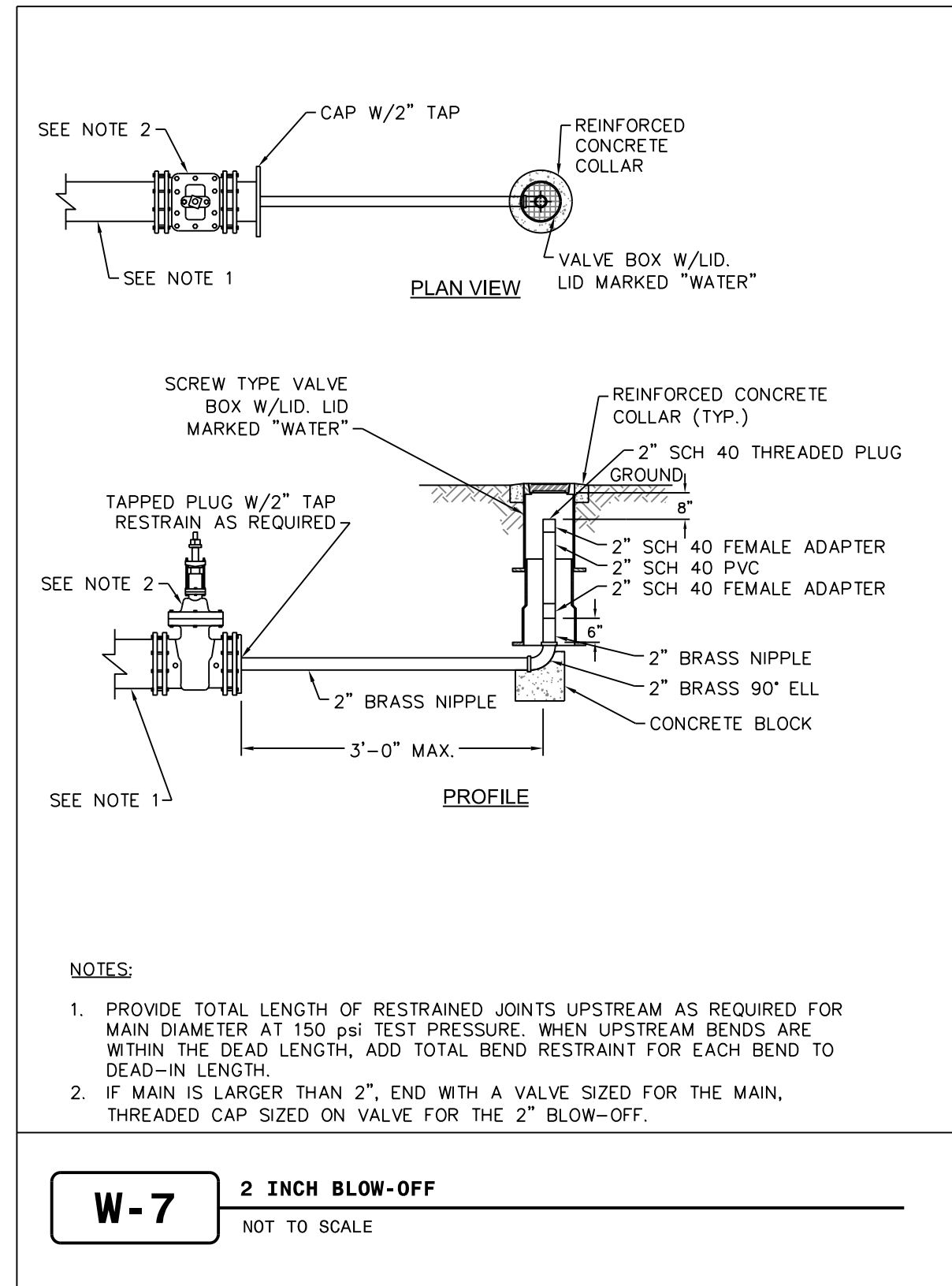


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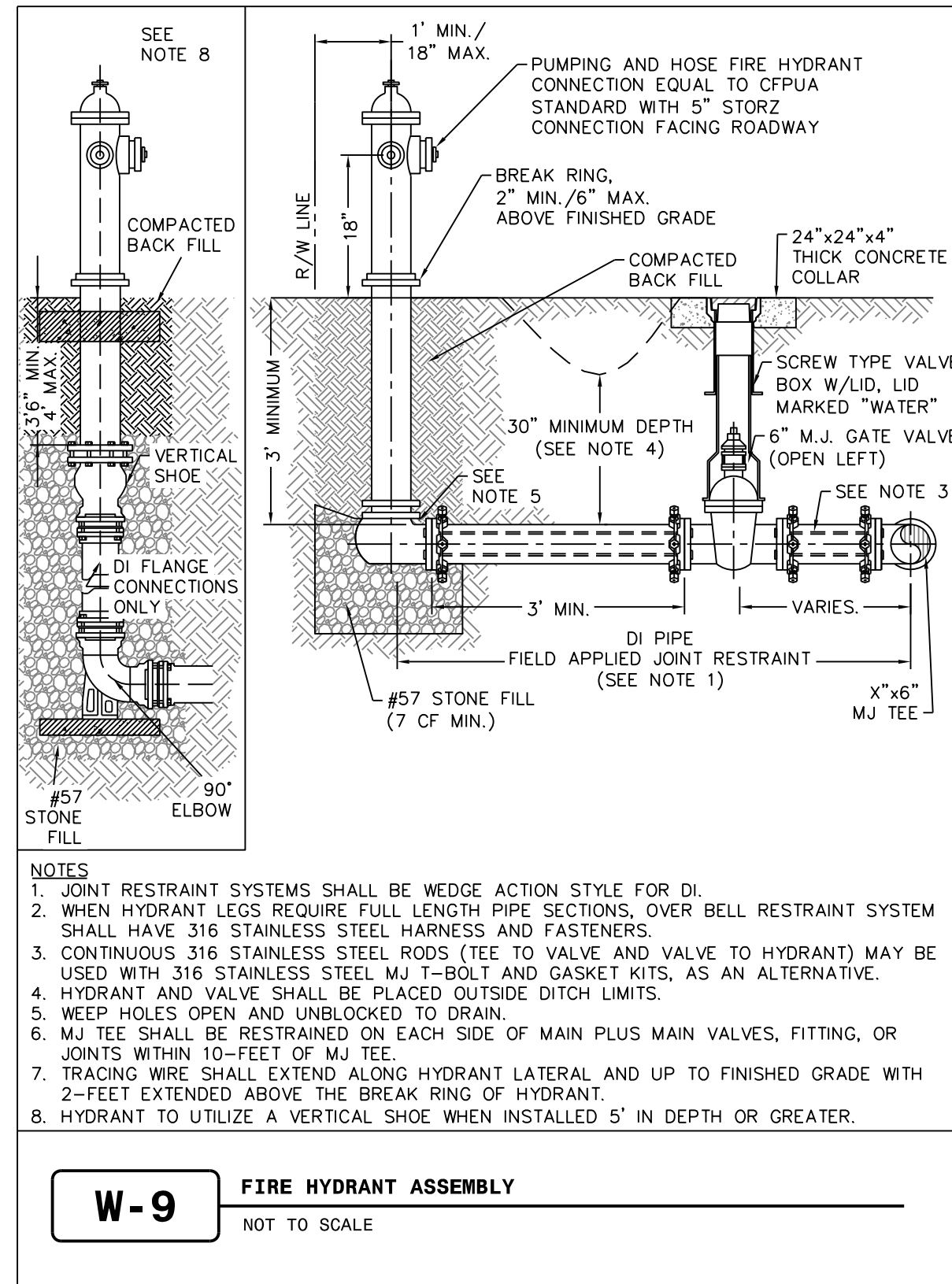
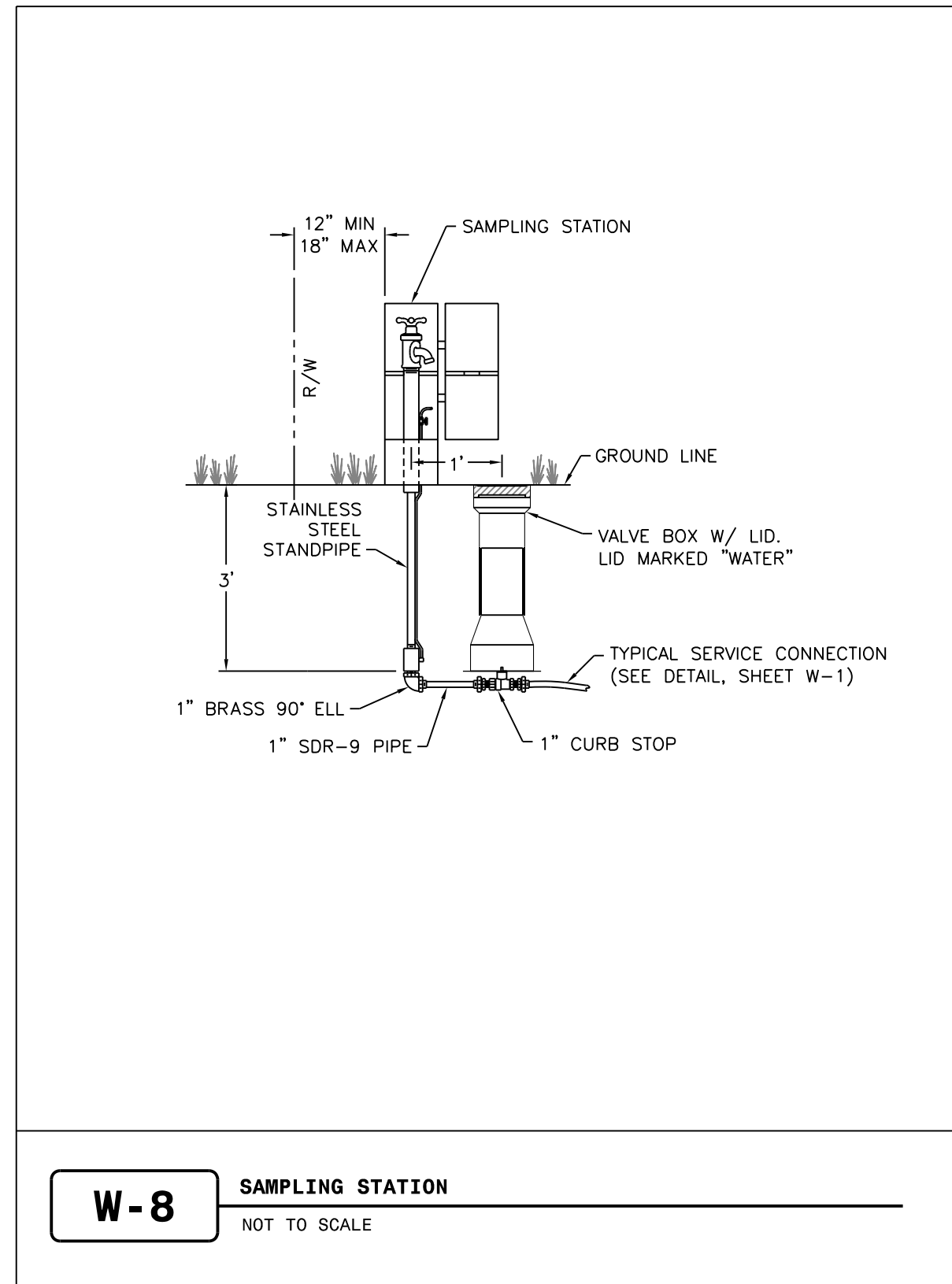
UTILITY CONSTRUCTION DETAILS

WATER - 2

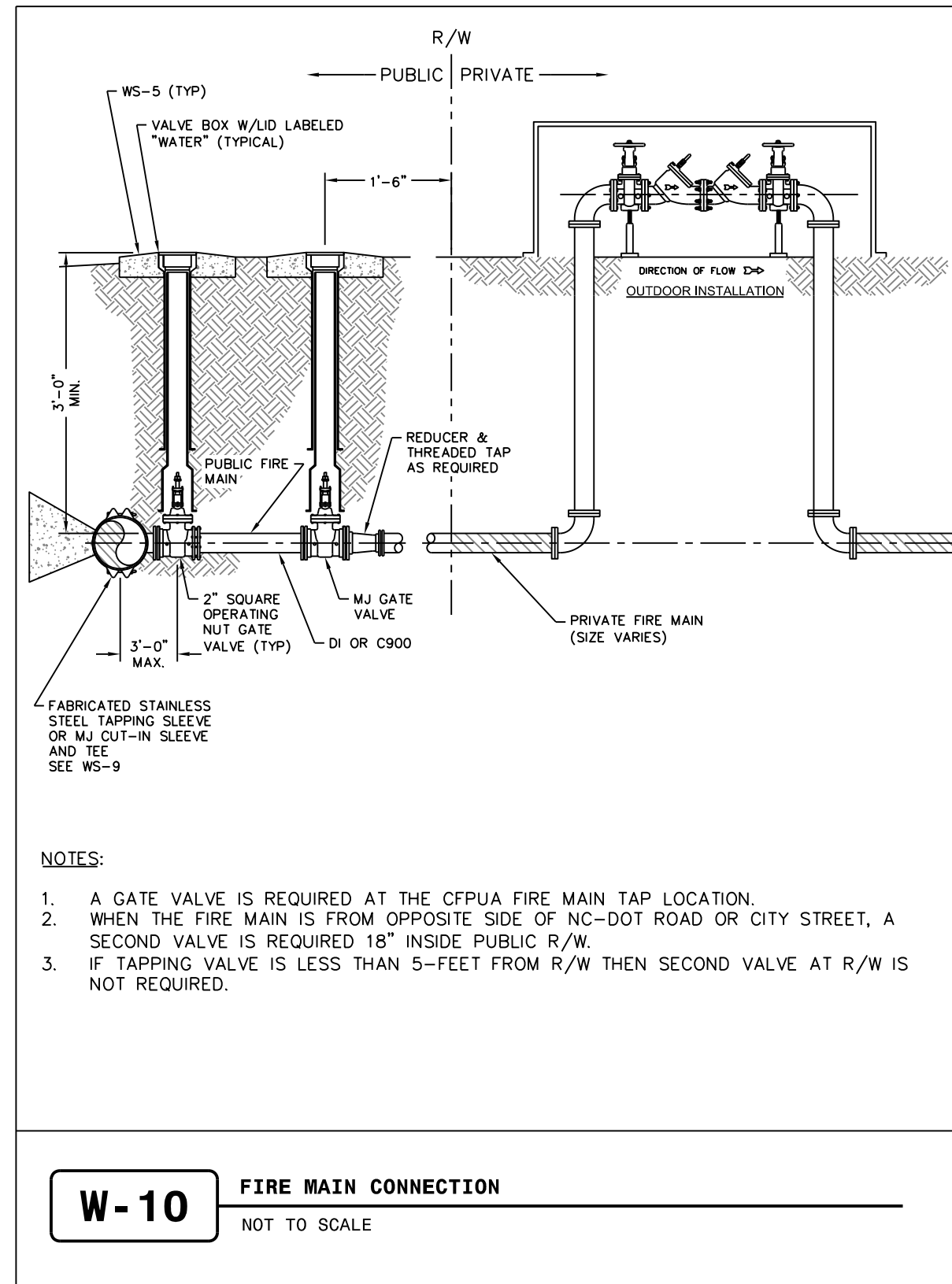
Weston Sampson WSE of North Carolina, PC 2052 Energy Drive Phone: 919.297.0220	NC License: C-4647 Apex, NC 27502 westonsampson.com	PROJECT REFERENCE NO.	SHEET NO.
		U-6202	UC-03G
UTILITY CONSTRUCTION DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		DESIGNED BY: CAR	
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- NOTES:**
1. PROVIDE TOTAL LENGTH OF RESTRAINED JOINTS UPSTREAM AS REQUIRED FOR MAIN DIAMETER AT 150 PSI TEST PRESSURE. WHEN UPSTREAM BENDS ARE WITHIN THE DEAD LENGTH, ADD TOTAL BEND RESTRAINT FOR EACH BEND TO DEAD-IN LENGTH.
 2. IF MAIN IS LARGER THAN 2", END WITH A VALVE SIZED FOR THE MAIN, THREADED CAP SIZED ON VALVE FOR THE 2" BLOW-OFF.



- NOTES:**
1. JOINT RESTRAINT SYSTEMS SHALL BE WEDGE ACTION STYLE FOR DI.
 2. WHEN HYDRANT LEGS REQUIRE FULL LENGTH PIPE SECTIONS, OVER BELL RESTRAINT SYSTEM SHALL HAVE 316 STAINLESS STEEL HARNESS AND FASTENERS.
 3. CONTINUOUS 316 STAINLESS STEEL RODS (TEE TO VALVE AND VALVE TO HYDRANT) MAY BE USED WITH 316 STAINLESS STEEL MJ T-BOLT AND GASKET KITS, AS AN ALTERNATIVE.
 4. HYDRANT AND VALVE SHALL BE PLACED OUTSIDE DITCH LIMITS.
 5. KEEP HOLES OPEN AND UNBLOCKED TO DRAIN.
 6. MJ TEE SHALL BE RESTRAINED ON EACH SIDE OF MAIN PLUS MAIN VALVES, FITTING, OR JOINTS WITHIN 10- FEET OF MJ TEE.
 7. TRACING WIRE SHALL EXTEND ALONG HYDRANT LATERAL AND UP TO FINISHED GRADE WITH 2- FEET EXTENDED ABOVE THE BREAK RING OF HYDRANT.
 8. HYDRANT TO UTILIZE A VERTICAL SHOE WHEN INSTALLED 5' IN DEPTH OR GREATER.



- NOTES:**
1. A GATE VALVE IS REQUIRED AT THE CFPUA FIRE MAIN TAP LOCATION.
 2. WHEN THE FIRE MAIN IS FROM OPPOSITE SIDE OF NC-DOT ROAD OR CITY STREET, A SECOND VALVE IS REQUIRED 18" INSIDE PUBLIC R/W.
 3. IF TAPPING VALVE IS LESS THAN 5- FEET FROM R/W THEN SECOND VALVE AT R/W IS NOT REQUIRED.

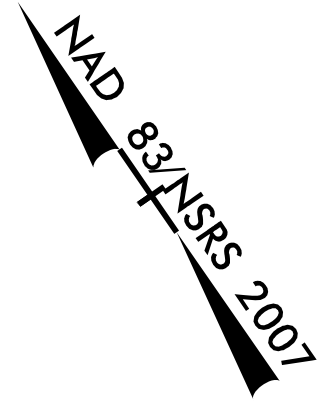
REFERENCE SHEET NOTES:
1. FOR WL3 PROFILE REFER TO SHEET UC-25.

THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 1,380 LBS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

GENERAL NOTES:
1. EXISTING WL TO REMAIN UNDER PAVEMENT FROM I-40 BRIDGES TO TRIPLE BOX CULVERT.

CURVATURE ABBREVIATIONS:
PC-W3A HORZ. = FIRST HORIZONTAL POINT-OF-CURVATURE ALONG WL3

PT-W3A HORZ. = FIRST HORIZONTAL POINT-OF-TANGENCY ALONG WL3



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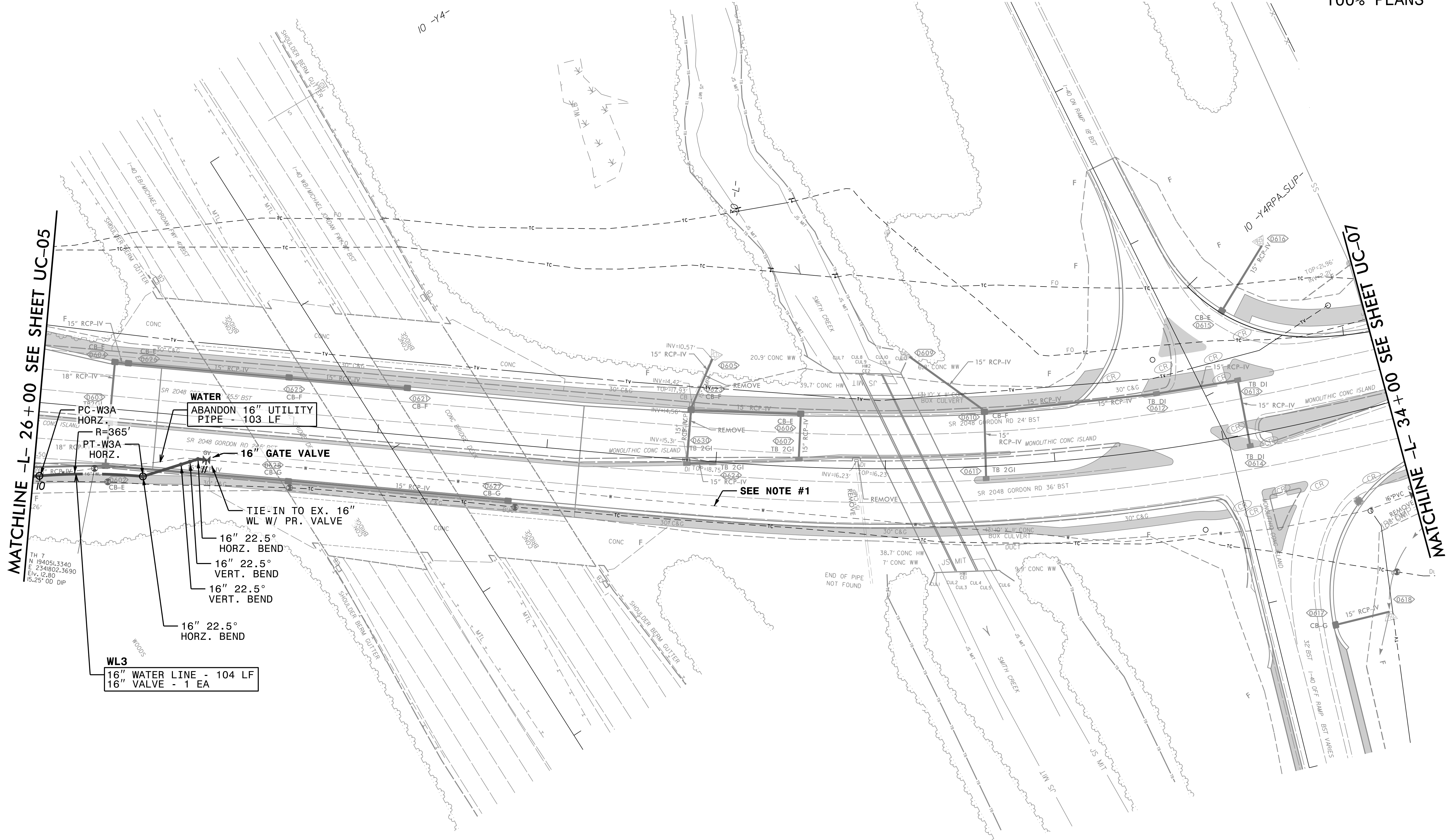
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WATER / SANITARY SEWER UTILITY OWNERS ON THIS SHEET: CFPWA
EXISTING UTILITIES:
WATER LINE 16"
GRAVITY SEWER 24"
CONTACT:
DAVID DAILEY (WATER & SEWER)
PHONE: (910) 332-6626

PROJECT REFERENCE NO. U-6202	SHEET NO. UC-06
DESIGNED BY: CAR	
DRAWN BY: CAR	
CHECKED BY: KSH	
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MATCHLINE -L- 26+00 SEE SHEET UC-05

MATCHLINE -L- 34+00 SEE SHEET UC-07

WL3
16" WATER LINE - 104 LF
16" VALVE - 1 EA

WATER
ABANDON 16" UTILITY PIPE - 103 LF

16" GATE VALVE

TIE-IN TO EX. 16" WL W/ PR. VALVE

16" 22.5° HORZ. BEND

16" 22.5° VERT. BEND

16" 22.5° VERT. BEND

16" 22.5° HORZ. BEND

SEE NOTE #1

END OF PIPE NOT FOUND

GENERAL NOTES:

1. PARCELS SERVED BY CFPWA SEWER DO NOT HAVE CLEANOUTS TO GRADE AND/OR ARE NOT DEPICTED IN THE FS FILE. CONTRACTOR SHALL VERIFY LOCATION OF SEWER SERVICE LINES AND VERIFY NO CONFLICTS EXIST WITH THE PROPOSED DRAINAGE WORK SHOWN ON THIS SHEET.
2. CFPWA MAP DEPICTS THAT THE JENKINS PARCEL HAS WATER SERVICE, BUT THE FS FILE DOES NOT DEPICT A WATER METER AT THE PARCEL.
3. CFPWA MAP DEPICTS THAT HOUSE #4709 HAS SEWER SERVICE, BUT THE FS FILE DOES NOT DEPICT A GRAVITY SEWER SYSTEM ALONG THE PROPERTY FRONTAGE ON GORDON ROAD. CFPWA TO CONFIRM HOW THE PARCEL IS SERVICED, AND REPLACE THE CLEAN-OUT AS NEEDED.
4. MANHOLES SHALL BE CUT-IN MANHOLES. MANHOLES CONSTRUCTED OVER EXISTING GRAVITY LINES (DOG HOUSE MANHOLES) ARE NOT ALLOWED PER THE 2019 CFPWA DESIGN GUIDANCE MANUAL.

REFERENCE SHEET NOTES:

1. FOR GS3 PROFILE REFER TO SHEET UC-40.
2. FOR WL4 PROFILE REFER TO SHEETS UC-25 & UC-26.
3. FOR WL5 PROFILE REFER TO SHEETS UC-32 & UC-33.

THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 3,120 LBS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

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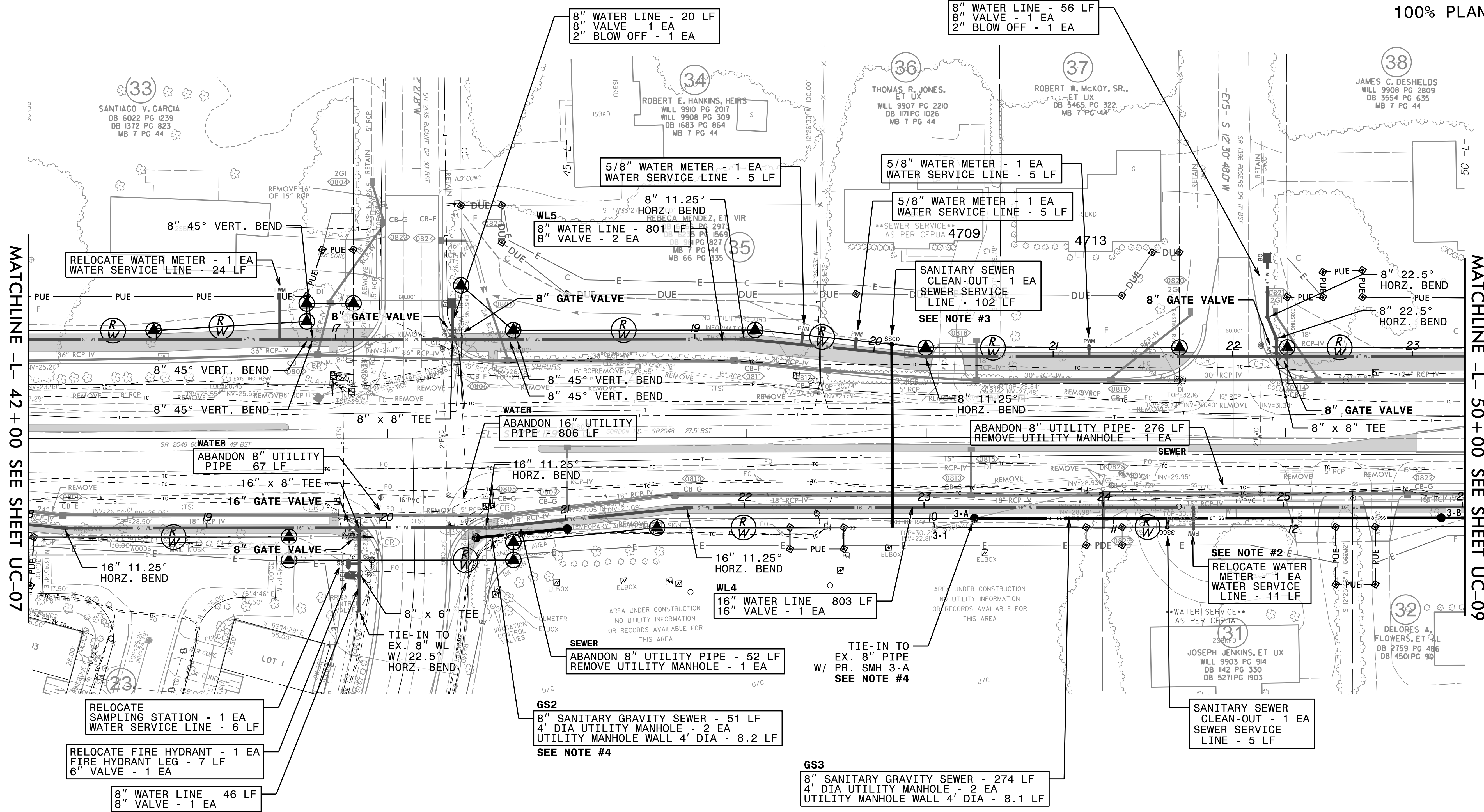
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WATER / SANITARY SEWER
UTILITY OWNERS ON THIS SHEET:
CFPWA
EXISTING UTILITIES:
WATER LINE 1", 2", 8", 10"
GRAVITY SEWER 8"
CONTACT:
DAVID DAILEY (WATER & SEWER)
PHONE: (910) 332-6626

PROJECT REFERENCE NO.	U-6202	SHEET NO.	UC-08
DESIGNED BY:	CAR		
DRAWN BY:	CAR		
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APPROVED BY:	KSH		
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UTILITY CONSTRUCTION			

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MATCHLINE -L- 50 + 00 SEE SHEET UC-09

MATCHLINE -L- 42 + 00 SEE SHEET UC-07

GENERAL NOTES:

1. PARCELS SERVED BY CFPWA SEWER DO NOT HAVE CLEANOUTS TO GRADE AND/OR ARE NOT DEPICTED IN THE FS FILE. CONTRACTOR SHALL VERIFY LOCATION OF SEWER SERVICE LINES AND VERIFY NO CONFLICTS EXIST WITH THE PROPOSED DRAINAGE WORK SHOWN ON THIS SHEET.
2. CFPWA MAP DEPICTS THAT THE FLOWERS PARCEL HAS WATER SERVICE, BUT THE FS FILE DOES NOT DEPICT A WATER METER AT THE PARCEL.
3. SMH 3-E SHALL BE A CUT-IN MANHOLE. MANHOLES CONSTRUCTED OVER EXISTING GRAVITY LINES (DOG HOUSE MANHOLES) ARE NOT ALLOWED PER THE 2019 CFPWA DESIGN GUIDANCE MANUAL.

REFERENCE SHEET NOTES:

1. FOR WL4 PROFILE REFER TO SHEET UC-26.
2. FOR WL5 PROFILE REFER TO SHEET UC-33.
3. FOR GS3 PROFILE REFER TO SHEET UC-40.

CURVATURE ABBREVIATIONS:

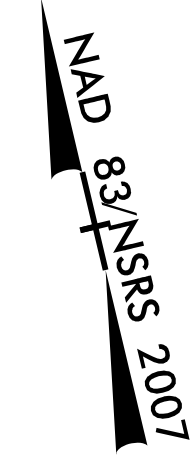
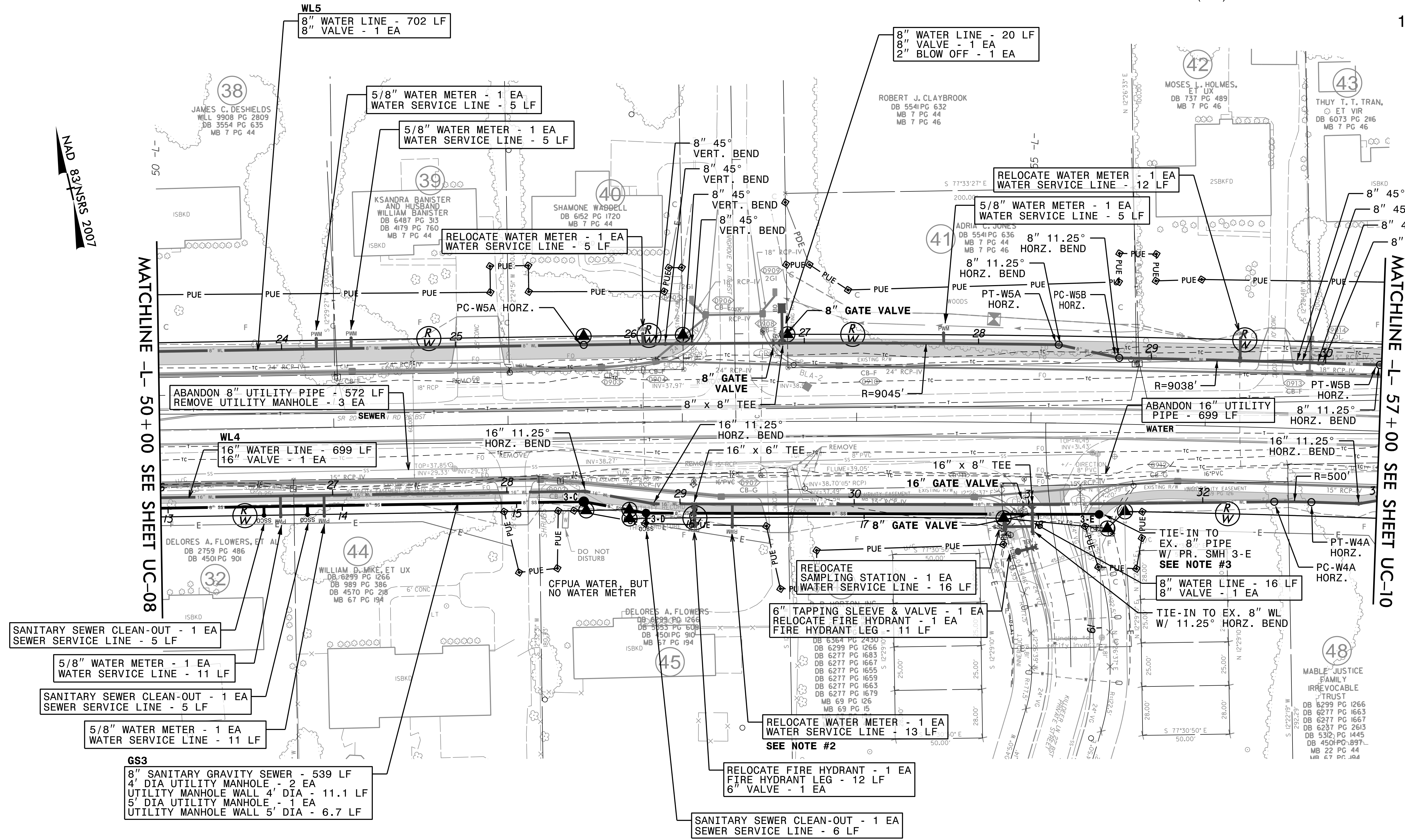
- PC-W5A HORZ. = FIRST HORIZONTAL POINT-OF-CURVATURE ALONG WL5
 PT-W5A HORZ. = FIRST HORIZONTAL POINT-OF-TANGENCY ALONG WL5

THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 3,630 LBS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

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PROJECT REFERENCE NO.	SHEET NO.	
U-6202	UC-09	
DESIGNED BY: CAR		
DRAWN BY: CAR		
CHECKED BY: KSH		
APPROVED BY: KSH	REVISER:	
WATER / SANITARY SEWER UTILITY OWNERS ON THIS SHEET: CFPWA		NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
EXISTING UTILITIES: WATER LINE 8", 16" GRAVITY SEWER 8"		UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151
CONTACT: DAVID DAILEY (WATER & SEWER) PHONE: (910) 332-6626		UTILITY CONSTRUCTION PLANS ONLY

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MATCHLINE -L- 50+00 SEE SHEET UC-08

MATCHLINE -L- 57+00 SEE SHEET UC-10

- SANITARY SEWER CLEAN-OUT - 1 EA
SEWER SERVICE LINE - 5 LF
- 5/8" WATER METER - 1 EA
WATER SERVICE LINE - 11 LF
- SANITARY SEWER CLEAN-OUT - 1 EA
SEWER SERVICE LINE - 5 LF
- 5/8" WATER METER - 1 EA
WATER SERVICE LINE - 11 LF

- GS3**
- 8" SANITARY GRAVITY SEWER - 539 LF
 - 4' DIA UTILITY MANHOLE - 2 EA
 - UTILITY MANHOLE WALL 4' DIA - 11.1 LF
 - 5' DIA UTILITY MANHOLE - 1 EA
 - UTILITY MANHOLE WALL 5' DIA - 6.7 LF

- RELOCATE SAMPLING STATION - 1 EA
- WATER SERVICE LINE - 16 LF

- 6" TAPPING SLEEVE & VALVE - 1 EA
- RELOCATE FIRE HYDRANT - 1 EA
- FIRE HYDRANT LEG - 11 LF

- RELOCATE WATER METER - 1 EA
- WATER SERVICE LINE - 13 LF

- RELOCATE FIRE HYDRANT - 1 EA
- FIRE HYDRANT LEG - 12 LF
- 6" VALVE - 1 EA

- SANITARY SEWER CLEAN-OUT - 1 EA
- SEWER SERVICE LINE - 6 LF

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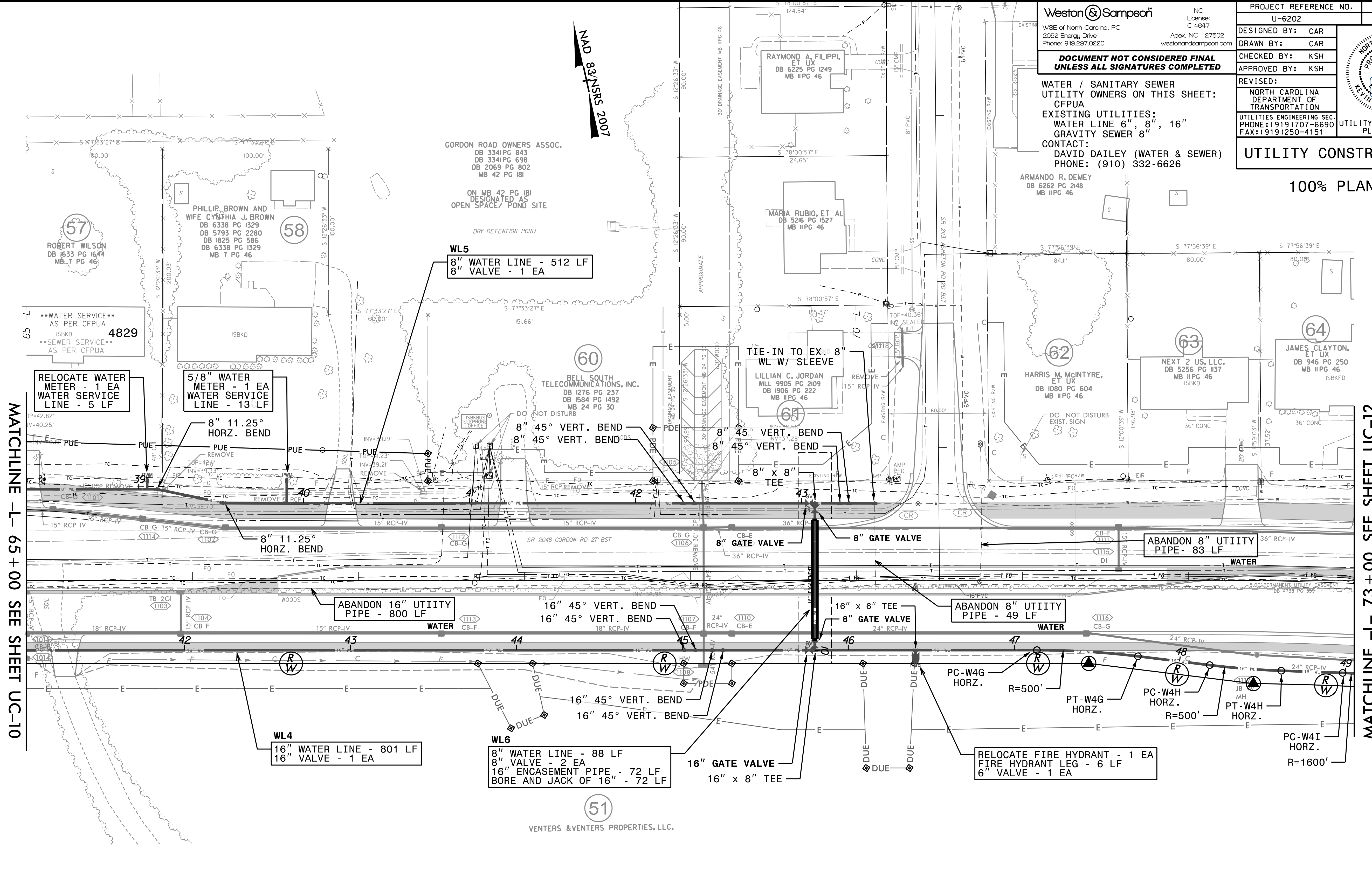
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WATER / SANITARY SEWER
 UTILITY OWNERS ON THIS SHEET:
 CFPUA
 EXISTING UTILITIES:
 WATER LINE 6", 8", 16"
 GRAVITY SEWER 8"
 CONTACT:
 DAVID DAILEY (WATER & SEWER)
 PHONE: (910) 332-6626

PROJECT REFERENCE NO. U-6202	SHEET NO. UC-11
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MATCHLINE -L- 65 + 00 SEE SHEET UC-10

MATCHLINE -L- 73 + 00 SEE SHEET UC-12

THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 3,380 LBS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

- GENERAL NOTES:**
- PARCELS SERVED BY CFPUA SEWER DO NOT HAVE CLEANOUTS TO GRADE AND/OR ARE NOT DEPICTED IN THE FS FILE. CONTRACTOR SHALL VERIFY LOCATION OF SEWER SERVICE LINES AND VERIFY NO CONFLICTS EXIST WITH THE PROPOSED DRAINAGE WORK SHOWN ON THIS SHEET.
 - CFPUA MAP DEPICTS THAT HOUSE #4829 HAS SEWER SERVICE, BUT THE FS FILE DOES NOT DEPICT ANY GRAVITY SEWER ALONG THE FRONTAGE OF PROPERTY ALONG GORDON ROAD. CFPUA TO CONFIRM HOW THIS PARCEL IS SERVED.

- REFERENCE SHEET NOTES:**
- FOR WL4 PROFILE REFER TO SHEETS UC-27 & UC-28.
 - FOR WL5 PROFILE REFER TO SHEET UC-34
 - FOR WL6 PROFILE REFER TO SHEET UC-35.

CURVATURE ABBREVIATIONS:
 PC-W4H HORZ. = EIGHTH HORIZONTAL POINT-OF-CURVATURE ALONG WL4
 PT-W4H HORZ. = EIGHTH HORIZONTAL POINT-OF-TANGENCY ALONG WL4

WATER / SANITARY SEWER UTILITY OWNERS ON THIS SHEET: CFPWA
EXISTING UTILITY: WATER LINE 8", 16"
CONTACT: DAVID DAILEY (WATER & SEWER) PHONE: (910) 332-6626

THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 4,300 LBS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

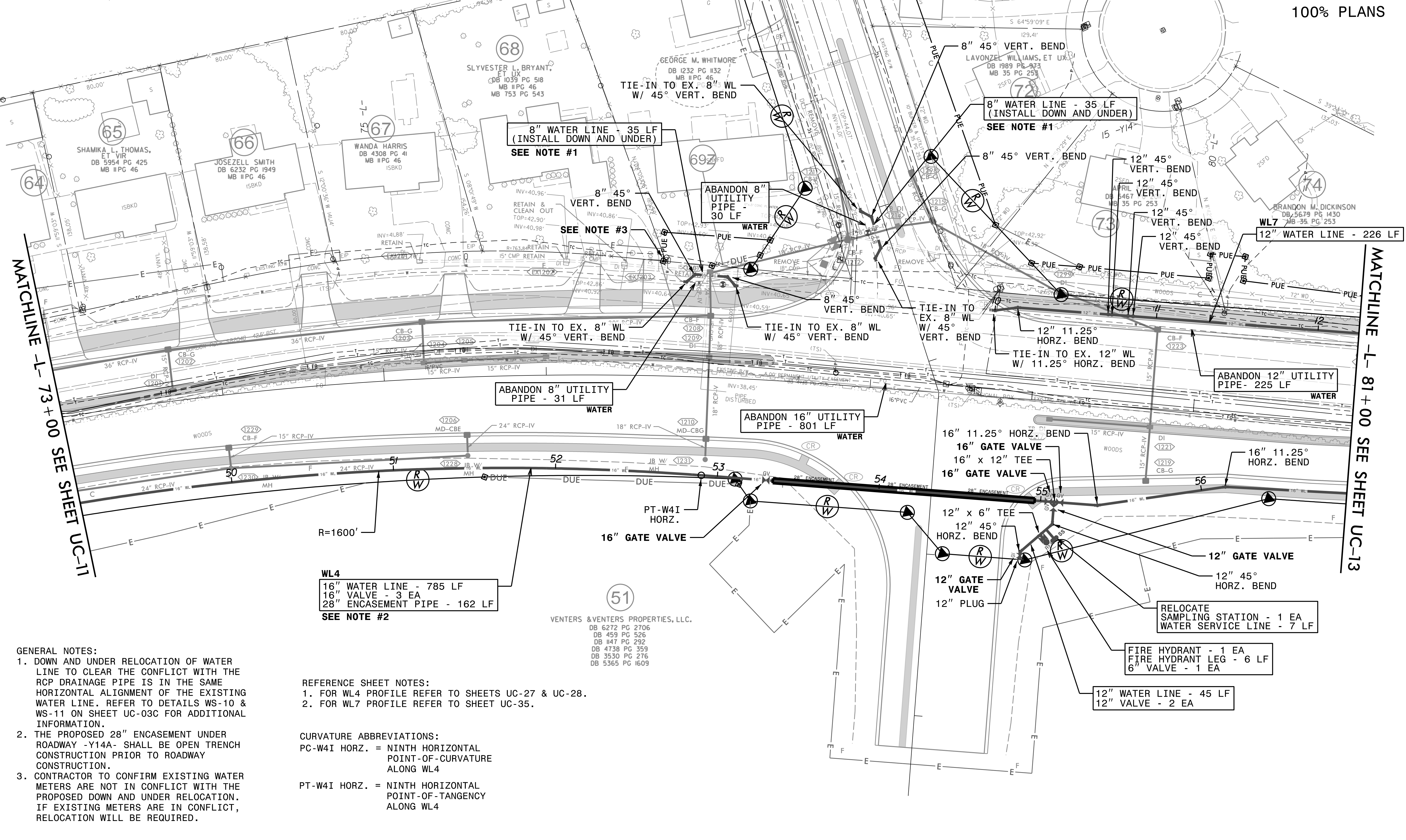
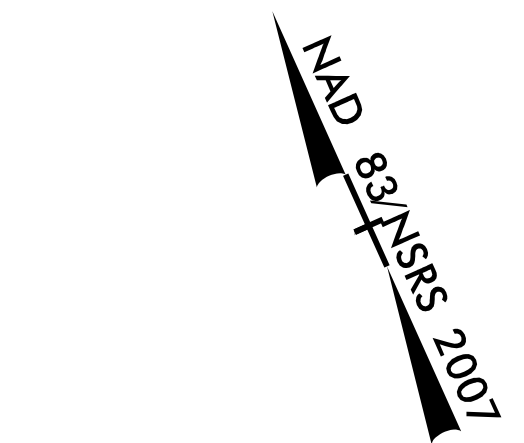
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- GENERAL NOTES:**
- DOWN AND UNDER RELOCATION OF WATER LINE TO CLEAR THE CONFLICT WITH THE RCP DRAINAGE PIPE IS IN THE SAME HORIZONTAL ALIGNMENT OF THE EXISTING WATER LINE. REFER TO DETAILS WS-10 & WS-11 ON SHEET UC-03C FOR ADDITIONAL INFORMATION.
 - THE PROPOSED 28" ENCASUREMENT UNDER ROADWAY -Y14A- SHALL BE OPEN TRENCH CONSTRUCTION PRIOR TO ROADWAY CONSTRUCTION.
 - CONTRACTOR TO CONFIRM EXISTING WATER METERS ARE NOT IN CONFLICT WITH THE PROPOSED DOWN AND UNDER RELOCATION. IF EXISTING METERS ARE IN CONFLICT, RELOCATION WILL BE REQUIRED.

- REFERENCE SHEET NOTES:**
- FOR WL4 PROFILE REFER TO SHEETS UC-27 & UC-28.
 - FOR WL7 PROFILE REFER TO SHEET UC-35.

- CURVATURE ABBREVIATIONS:**
- PC-W41 HORZ. = NINTH HORIZONTAL POINT-OF-CURVATURE ALONG WL4
 - PT-W41 HORZ. = NINTH HORIZONTAL POINT-OF-TANGENCY ALONG WL4

WL4
 16" WATER LINE - 785 LF
 16" VALVE - 3 EA
 28" ENCASEMENT PIPE - 162 LF
SEE NOTE #2

ABANDON 8" UTILITY PIPE - 31 LF
 WATER

ABANDON 16" UTILITY PIPE - 801 LF
 WATER

ABANDON 12" UTILITY PIPE - 225 LF
 WATER

FIRE HYDRANT - 1 EA
FIRE HYDRANT LEG - 6 LF
6" VALVE - 1 EA

12" WATER LINE - 45 LF
12" VALVE - 2 EA

RELOCATE SAMPLING STATION - 1 EA
WATER SERVICE LINE - 7 LF

MATCHLINE -L- 73+00 SEE SHEET UC-11

MATCHLINE -L- 81+00 SEE SHEET UC-13

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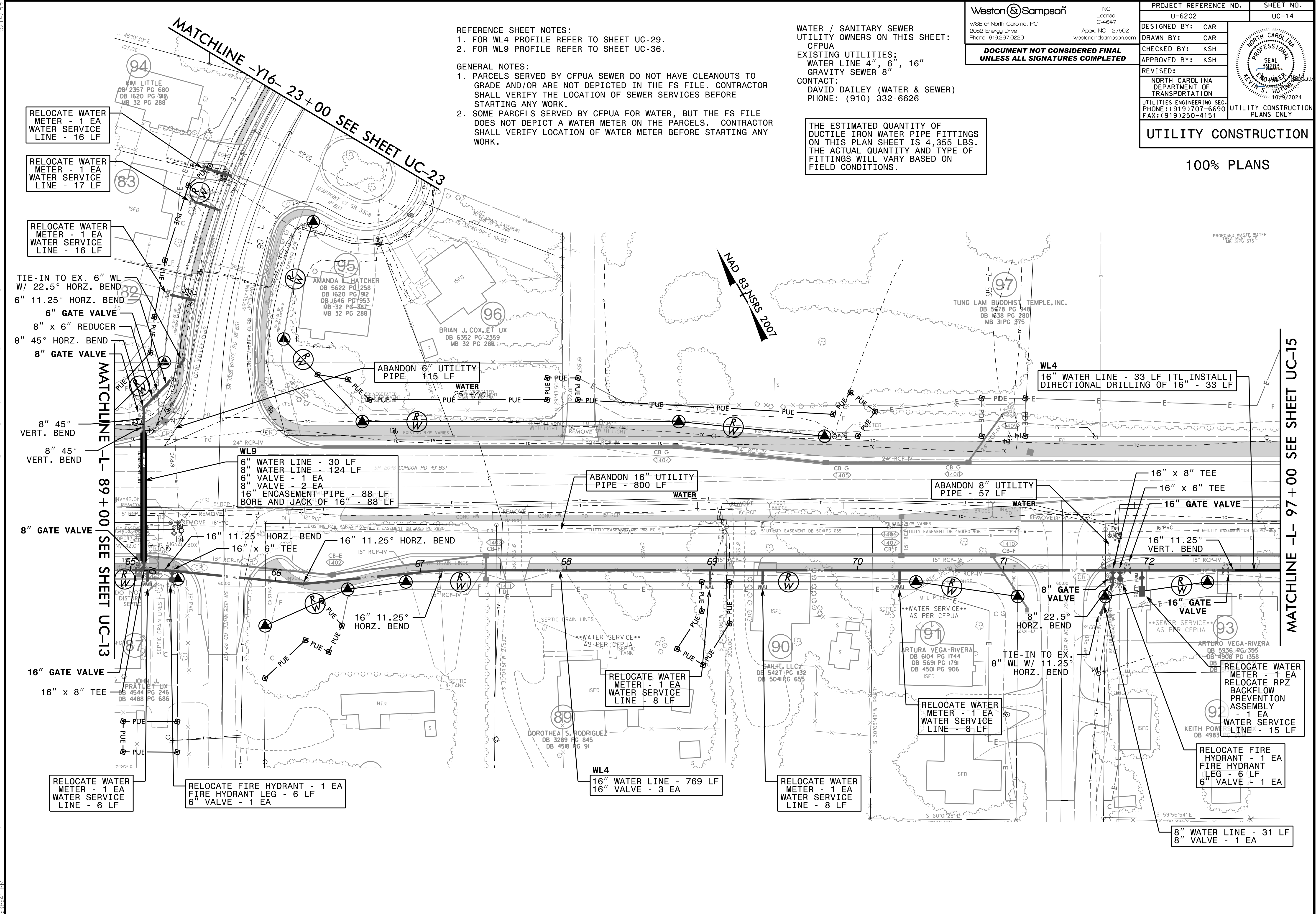
REFERENCE SHEET NOTES:
 1. FOR WL4 PROFILE REFER TO SHEET UC-29.
 2. FOR WL9 PROFILE REFER TO SHEET UC-36.

GENERAL NOTES:
 1. PARCELS SERVED BY CFPWA SEWER DO NOT HAVE CLEANOUTS TO GRADE AND/OR ARE NOT DEPICTED IN THE FS FILE. CONTRACTOR SHALL VERIFY THE LOCATION OF SEWER SERVICES BEFORE STARTING ANY WORK.
 2. SOME PARCELS SERVED BY CFPWA FOR WATER, BUT THE FS FILE DOES NOT DEPICT A WATER METER ON THE PARCELS. CONTRACTOR SHALL VERIFY LOCATION OF WATER METER BEFORE STARTING ANY WORK.

WATER / SANITARY SEWER UTILITY OWNERS ON THIS SHEET: CFPWA
 EXISTING UTILITIES:
 WATER LINE 4", 6", 16"
 GRAVITY SEWER 8"
 CONTACT:
 DAVID DAILEY (WATER & SEWER)
 PHONE: (910) 332-6626

THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 4,355 LBS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

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RELOCATE WATER METER - 1 EA
WATER SERVICE LINE - 16 LF

RELOCATE WATER METER - 1 EA
WATER SERVICE LINE - 17 LF

RELOCATE WATER METER - 1 EA
WATER SERVICE LINE - 16 LF

TIE-IN TO EX. 6" WL W/ 22.5° HORZ. BEND
6" 11.25° HORZ. BEND
6" GATE VALVE
8" x 6" REDUCER
8" 45° HORZ. BEND
8" GATE VALVE

8" 45° VERT. BEND
8" 45° VERT. BEND

8" GATE VALVE

16" GATE VALVE
16" x 8" TEE

RELOCATE WATER METER - 1 EA
WATER SERVICE LINE - 6 LF

RELOCATE FIRE HYDRANT - 1 EA
FIRE HYDRANT LEG - 6 LF
6" VALVE - 1 EA

WL9
6" WATER LINE - 30 LF
8" WATER LINE - 124 LF
6" VALVE - 1 EA
8" VALVE - 2 EA
16" ENCASEMENT PIPE - 88 LF
BORE AND JACK OF 16" - 88 LF

ABANDON 6" UTILITY PIPE - 115 LF

ABANDON 16" UTILITY PIPE - 800 LF

ABANDON 8" UTILITY PIPE - 57 LF

RELOCATE WATER METER - 1 EA
WATER SERVICE LINE - 8 LF

WL4
16" WATER LINE - 769 LF
16" VALVE - 3 EA

RELOCATE WATER METER - 1 EA
WATER SERVICE LINE - 8 LF

RELOCATE WATER METER - 1 EA
WATER SERVICE LINE - 8 LF

TIE-IN TO EX. 8" WL W/ 11.25° HORZ. BEND

8" 22.5° HORZ. BEND

8" WATER LINE - 31 LF
8" VALVE - 1 EA

RELOCATE FIRE HYDRANT - 1 EA
FIRE HYDRANT LEG - 6 LF
6" VALVE - 1 EA

RELOCATE WATER METER - 1 EA
RELOCATE RPZ BACKFLOW PREVENTION ASSEMBLY - 1 EA
WATER SERVICE LINE - 15 LF

WL4
16" WATER LINE - 33 LF [TL INSTALL]
DIRECTIONAL DRILLING OF 16" - 33 LF

MATCHLINE -L- 97+00 SEE SHEET UC-15

MATCHLINE -L- 89+00 SEE SHEET UC-13

MATCHLINE -Y16- 23+00 SEE SHEET UC-23

GENERAL NOTES:

1. PARCELS SERVED BY CFPWA SEWER DO NOT HAVE CLEANOUTS TO GRADE AND/OR ARE NOT DEPICTED IN THE FS FILE. CONTRACTOR SHALL VERIFY THE LOCATION OF SEWER SERVICES BEFORE STARTING ANY WORK.
2. CFPWA MAP NOTES THE EXISTING WATER LINE ALONG GORDON ACRES ROAD AS 16" PVC, BUT THE FS FILE NOTES IT AS 8" PVC. CFPWA CONFIRMED THE SIZE IS 16".

REFERENCE SHEET NOTES:

1. FOR WL4 PROFILE REFER TO SHEET UC-30.
2. FOR WL12 PROFILE REFER TO SHEET UC-37.

THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 7,960 LBS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

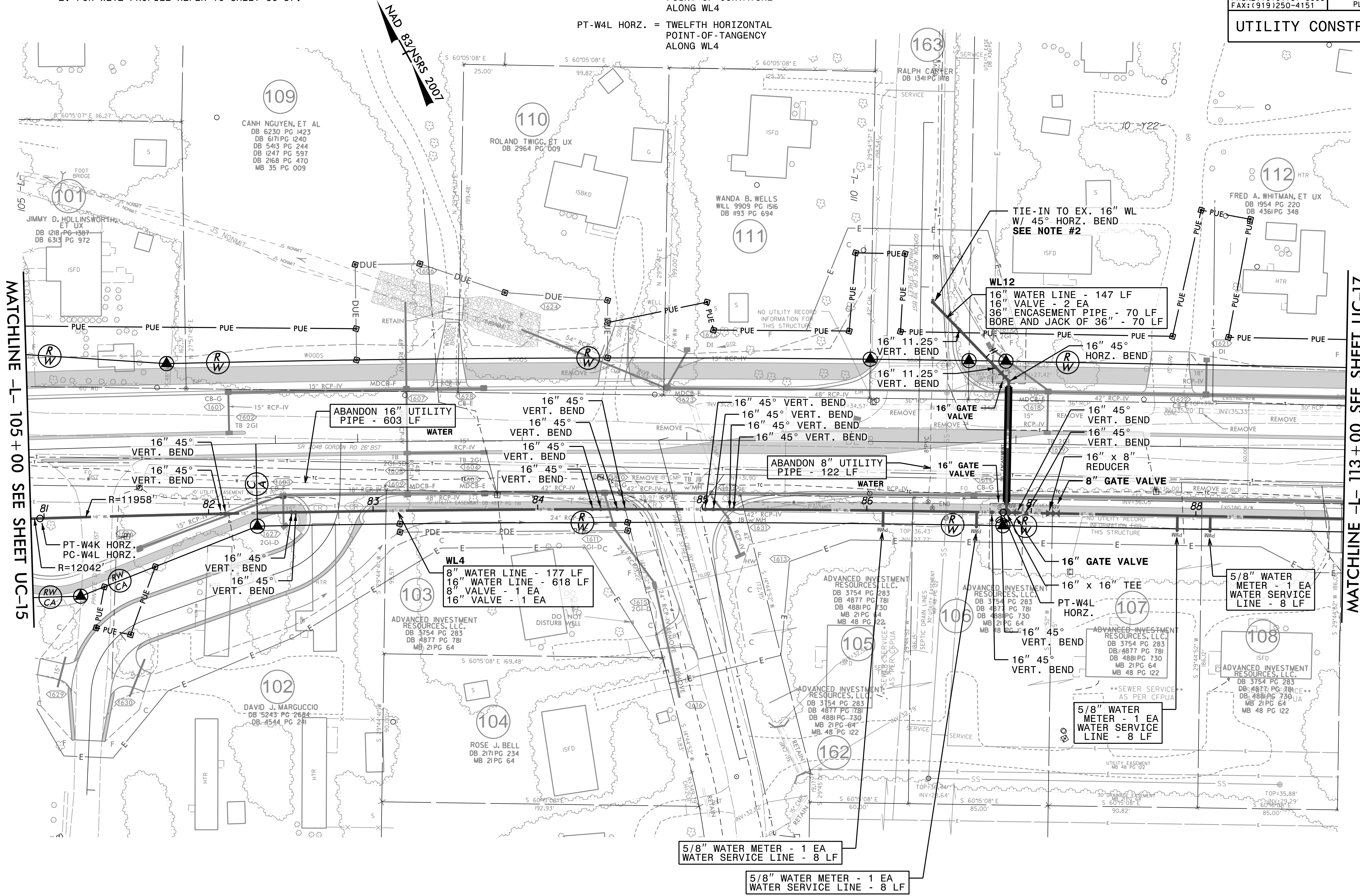
CURVATURE ABBREVIATIONS:
 PC-W4L HORZ. = TWELFTH HORIZONTAL POINT-OF-CURVATURE ALONG WL4
 PT-W4L HORZ. = TWELFTH HORIZONTAL POINT-OF-TANGENCY ALONG WL4

WATER / SANITARY SEWER UTILITY OWNERS ON THIS SHEET:
 CFPWA
EXISTING UTILITIES:
 WATER LINE 16"
 GRAVITY SEWER 8"
CONTACT:
 DAVID DAILEY (WATER & SEWER)
 PHONE: (910) 332-6626

Weston Sampson
 WSE of North Carolina, PC
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 License: C-4647
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 westonandsampson.com

PROJECT REFERENCE NO.	SHEET NO.
U-6202	UC-16
DESIGNED BY: CAR	
DRAWN BY: CAR	
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APPROVED BY: KSH	
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	UTILITY CONSTRUCTION PLANS ONLY
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MATCHLINE -L- 105 + 00 SEE SHEET UC-15

MATCHLINE -L- 113 + 00 SEE SHEET UC-17

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5/14/2024

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THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 885 LBS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

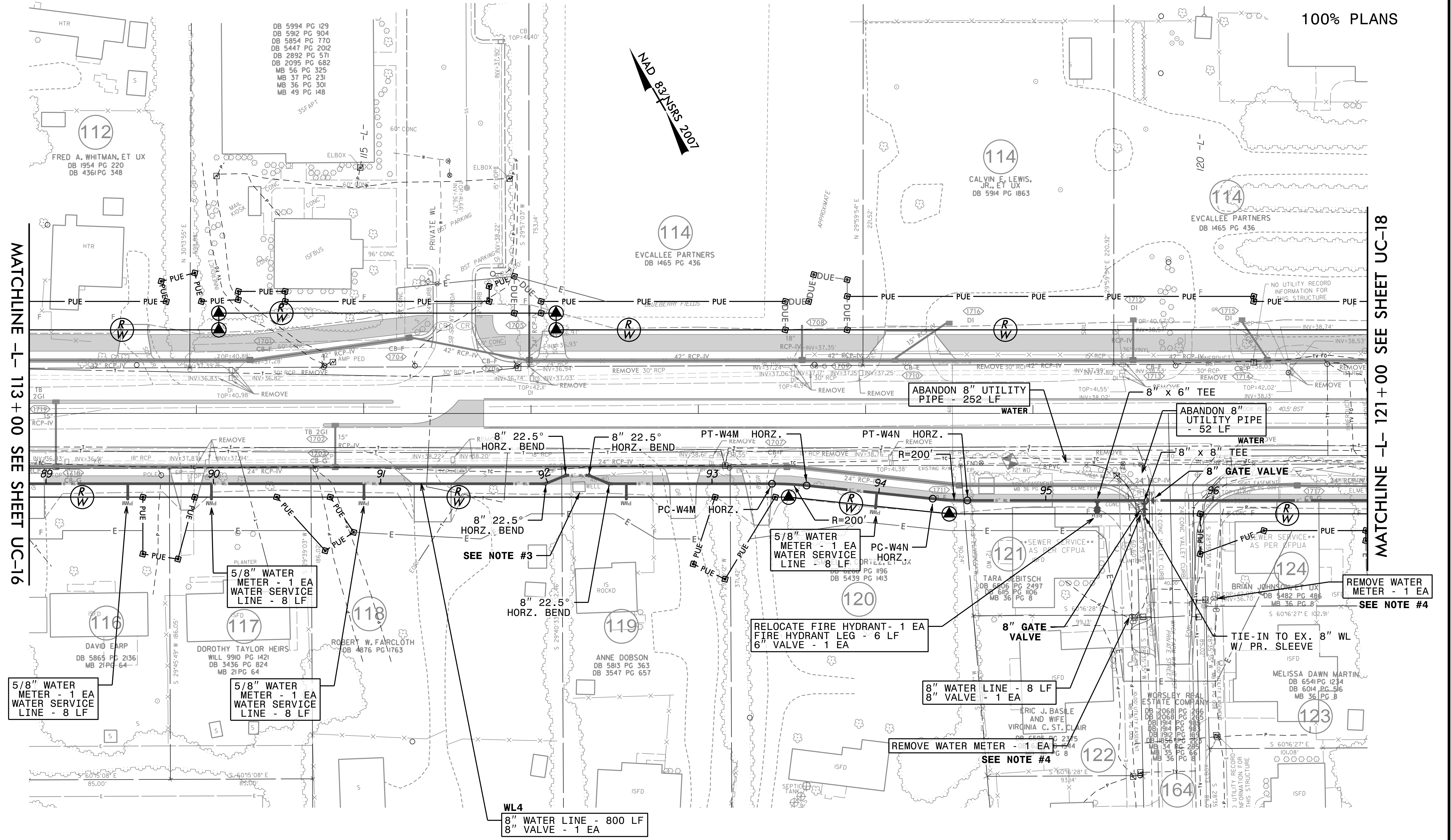
CURVATURE ABBREVIATIONS:
PC-W4M HORZ. = THIRTEENTH HORIZONTAL POINT-OF-CURVATURE ALONG WL4
PT-W4M HORZ. = THIRTEENTH HORIZONTAL POINT-OF-TANGENCY ALONG WL4

GENERAL NOTES:
1. PARCELS SERVED BY CFPWA SEWER DO NOT HAVE CLEANOUTS TO GRADE AND/OR ARE NOT DEPICTED IN THE FS FILE. CONTRACTOR SHALL VERIFY THE LOCATION OF SEWER SERVICES BEFORE STARTING ANY WORK.
2. CFPWA MAP NOTES THE EXISTING WATER LINE ALONG THE WEST SIDE OF WYCK FARM WAY ROAD AS 6" PVC, BUT THE FS FILE NOTES IT AS 8" PVC.
3. CONTRACTOR TO COORDINATE WELL RELOCATION WITH UTILITY OWNER TO POTENTIALLY ELIMINATE HORIZONTAL BENDS.
4. CONTRACTOR TO COORDINATE REMOVAL OF EXISTING METERS WITH UTILITY OWNER.

REFERENCE SHEET NOTES:
1. FOR WL4 PROFILE REFER TO SHEETS UC-30 & UC-31.

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2052 Energy Drive
Phone: 919.297.0220
NC License: C-4847
Apex, NC 27602
westonandsampson.com
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WATER / SANITARY SEWER UTILITY OWNERS ON THIS SHEET: CFPWA
EXISTING UTILITIES: WATER LINE 6", 8" SANITARY SEWER 8"
CONTACT: DAVID DAILEY (WATER & SEWER) PHONE: (910) 332-6626

PROJECT REFERENCE NO.	U-6202	SHEET NO.	UC-17
DESIGNED BY:	CAR		
DRAWN BY:	CAR		
CHECKED BY:	KSH		
APPROVED BY:	KSH	UTILITY CONSTRUCTION PLANS ONLY	
REVISED:	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151		
UTILITY CONSTRUCTION			



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MATCHLINE -L- 121 + 00 SEE SHEET UC-18

5/14/2024

0/4/2024
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REFERENCE SHEET NOTES:
1. FOR WL4 PROFILE REFER TO SHEET UC-31.
2. FOR WL13 PROFILE REFER TO SHEET UC-37.

THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 1,420 LBS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

GENERAL NOTES:
1. PARCELS SERVED BY CFPWA SEWER DO NOT HAVE CLEANOUTS TO GRADE AND/OR ARE NOT DEPICTED IN THE FS FILE. CONTRACTOR SHALL VERIFY THE LOCATION OF SEWER SERVICES BEFORE STARTING ANY WORK.
2. CFPWA MAPS NOTE SOME PARCELS AS RECEIVING WATER SERVICE, BUT NO WATER METERS ARE DEPICTED IN THE FS FILE FOR THESE PARCELS.
3. CFPWA MAP NOTES THE EXISTING WATER LINE ALONG THE EAST SIDE OF WOOD SORRELL ROAD AS 8" PVC, BUT THE FS FILE NOTES IT AS 6" PVC.
4. CFPWA MAP NOTES THE EXISTING WATER LINE ON LOT #129 AS 6" PVC, BUT THE FS FILE NOTES IT AS 8" PVC. EXISTING AS-BUILT INFORMATION SUPPORTS THAT THIS LINE IS 6" PVC.

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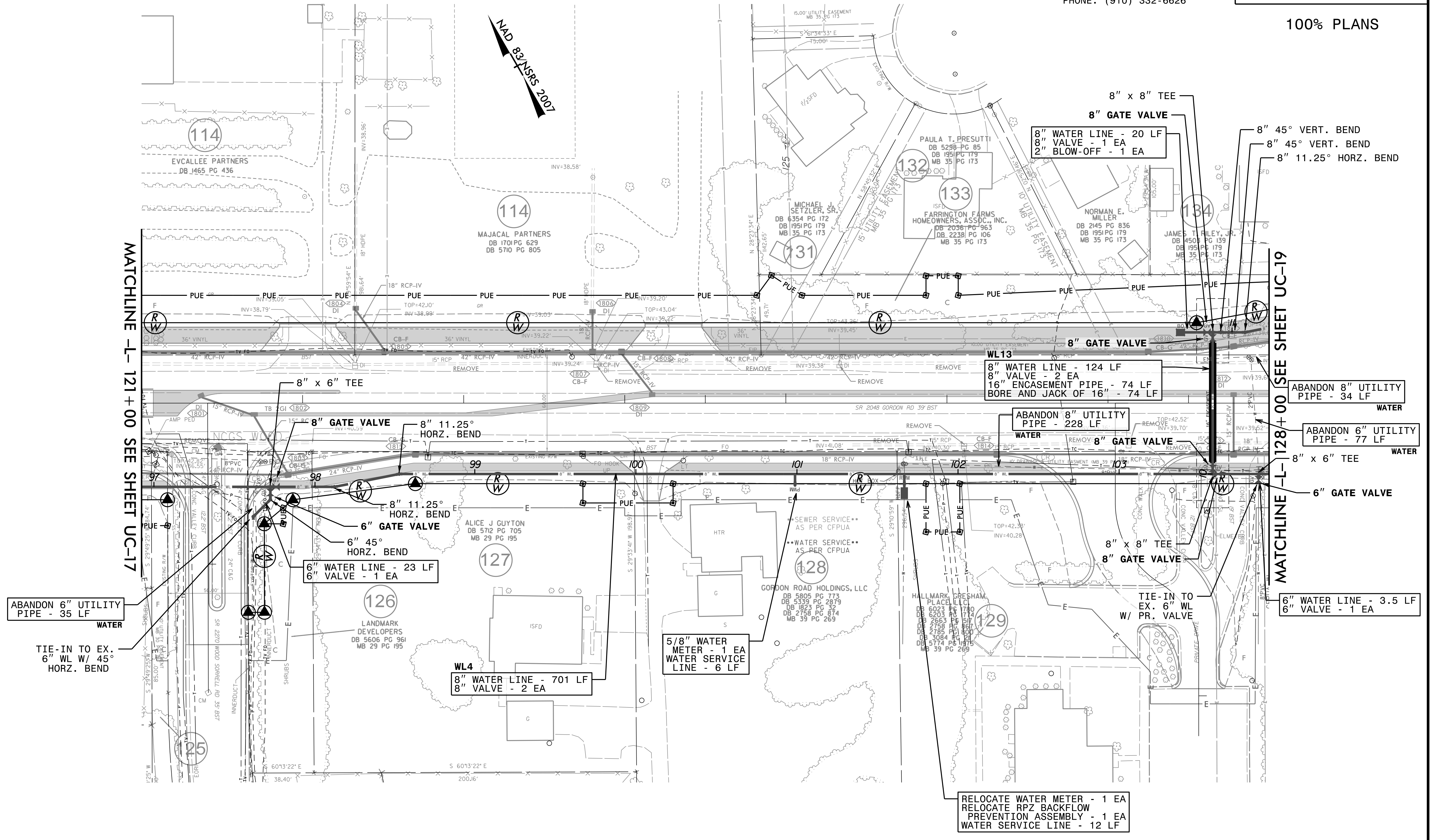
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WATER / SANITARY SEWER UTILITY OWNERS ON THIS SHEET:
CFPWA
EXISTING UTILITIES:
WATER LINE 2", 8"
GRAVITY SEWER 8"
CONTACT:
DAVID DAILEY (WATER & SEWER)
PHONE: (910) 332-6626

PROJECT REFERENCE NO. U-6202	SHEET NO. UC-18
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MATCHLINE -L- 121 + 00 SEE SHEET UC-17

MATCHLINE -L- 128 + 00 (SEE SHEET UC-19)

ABANDON 6" UTILITY PIPE - 35 LF
WATER

TIE-IN TO EX. 6" WL W/ 45° HORZ. BEND

WL4
8" WATER LINE - 701 LF
8" VALVE - 2 EA

5/8" WATER METER - 1 EA
WATER SERVICE LINE - 6 LF

RELOCATE WATER METER - 1 EA
RELOCATE RPZ BACKFLOW PREVENTION ASSEMBLY - 1 EA
WATER SERVICE LINE - 12 LF

WL13
8" WATER LINE - 124 LF
8" VALVE - 2 EA
16" ENCASUREMENT PIPE - 74 LF
BORE AND JACK OF 16" - 74 LF

ABANDON 8" UTILITY PIPE - 228 LF
WATER

ABANDON 8" UTILITY PIPE - 34 LF
WATER

ABANDON 6" UTILITY PIPE - 77 LF
WATER

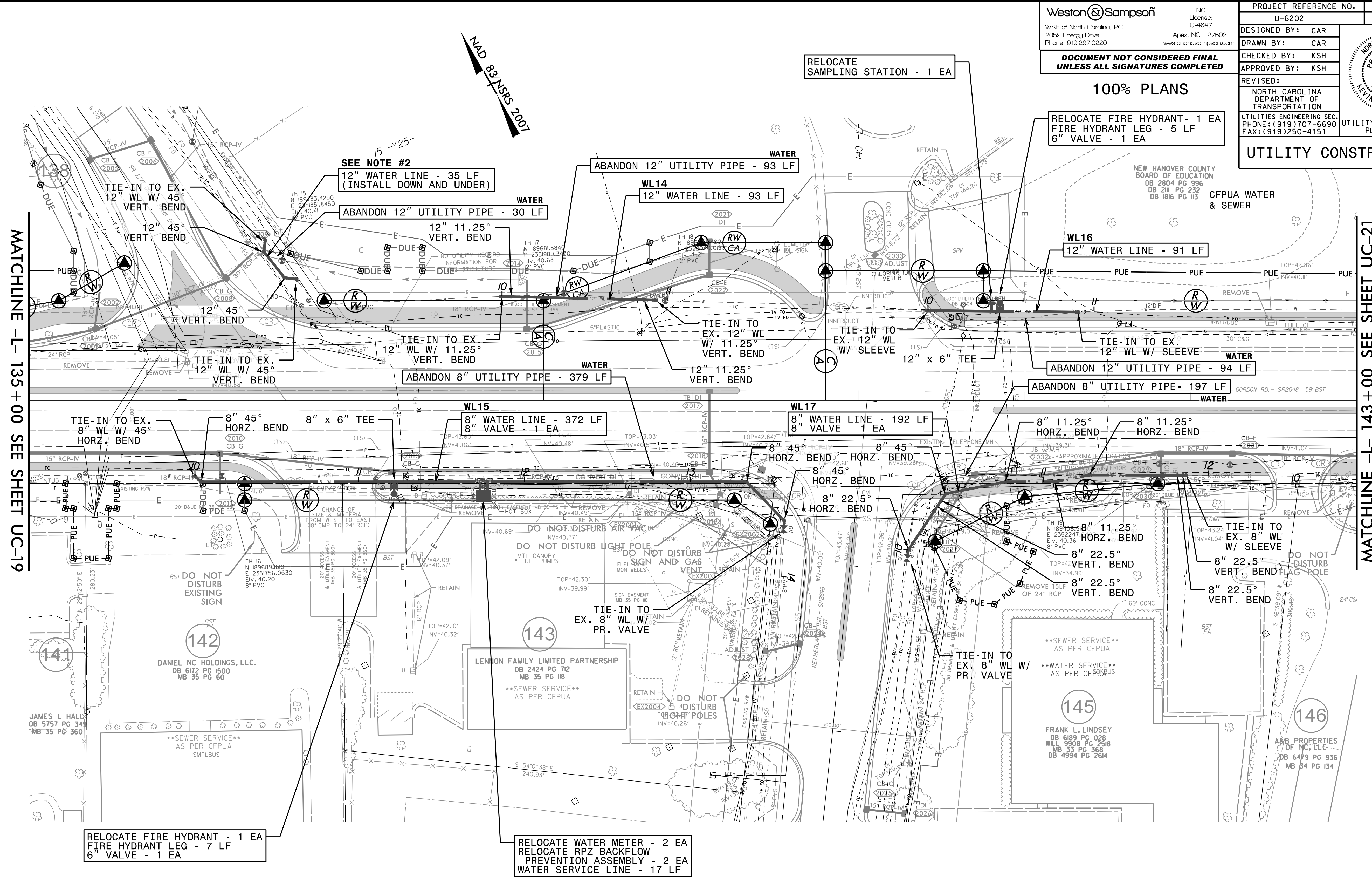
6" WATER LINE - 3.5 LF
6" VALVE - 1 EA

5/14/2021
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 Apex, NC 27602
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PROJECT REFERENCE NO.	SHEET NO.
U-6202	UC-20
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APPROVED BY: KSH	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151
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MATCHLINE -L- 135+00 SEE SHEET UC-19

MATCHLINE -L- 143+00 SEE SHEET UC-21

- REFERENCE SHEET NOTES:**
- FOR WL14 PROFILE REFER TO SHEET UC-37.
 - FOR WL15 PROFILE REFER TO SHEET UC-38.
 - FOR WL16 PROFILE REFER TO SHEET UC-38.
 - FOR WL17 PROFILE REFER TO SHEET UC-38.

- GENERAL NOTES:**
- PARCELS SERVED BY CFPWA SEWER DO NOT HAVE CLEANOUTS TO GRADE AND/OR ARE NOT DEPICTED IN THE FS FILE. CONTRACTOR SHALL VERIFY THE LOCATION OF SEWER SERVICES BEFORE STARTING ANY WORK.
 - DOWN AND UNDER RELOCATION OF 12" WL IN THE SAME HORIZONTAL ALIGNMENT TO ENSURE 3' COVER IN AREA OF CUT. REFER TO DETAILS WS-10 & WS-11 ON SHEET UC-03C FOR ADDITIONAL INFORMATION.
 - CFPWA MAP NOTES THE EXISTING GRAVITY SEWER ALONG NETHERLANDS DRIVE AS 10" PVC, BUT THE FS FILE NOTES IT AS 8" PVC.

THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 4,045 LBS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

WATER / SANITARY SEWER UTILITY OWNERS ON THIS SHEET:
 CFPWA
EXISTING UTILITIES:
 WATER LINE 8", 12"
 GRAVITY SEWER 8", 10"
CONTACT:
 DAVID DAILEY (WATER & SEWER)
 PHONE: (910) 332-6626

THE ESTIMATED QUANTITY OF DUCTILE IRON SEWER PIPE FITTINGS ON THIS PLAN SHEET IS 0 LBS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

- GENERAL NOTES:
1. PARCELS SERVED BY CFPWA SEWER DO NOT HAVE CLEANOUTS TO GRADE AND/OR ARE NOT DEPICTED IN THE FS FILE. CONTRACTOR SHALL VERIFY LOCATION OF SEWER SERVICE LINES AND VERIFY NO CONFLICTS EXIST WITH THE PROPOSED DRAINAGE WORK SHOWN ON THIS SHEET.
 2. EXISTING MANHOLE TO BE COATED AND LINED IN PREPARATION FOR FORCE MAIN DISCHARGE.

REFERENCE SHEET NOTES:
1. FOR FSS-01 PROFILE REFER TO SHEET UC-41A.

WATER / SANITARY SEWER
UTILITY OWNERS ON THIS SHEET:
CFPUA
EXISTING UTILITIES:
WATER LINE 10"
GRAVITY SEWER 8"
PROPOSED UTILITY:
FORCE MAIN SEWER 2"
CONTACT:
DAVID DAILEY (WATER & SEWER)
PHONE: (910) 332-6626

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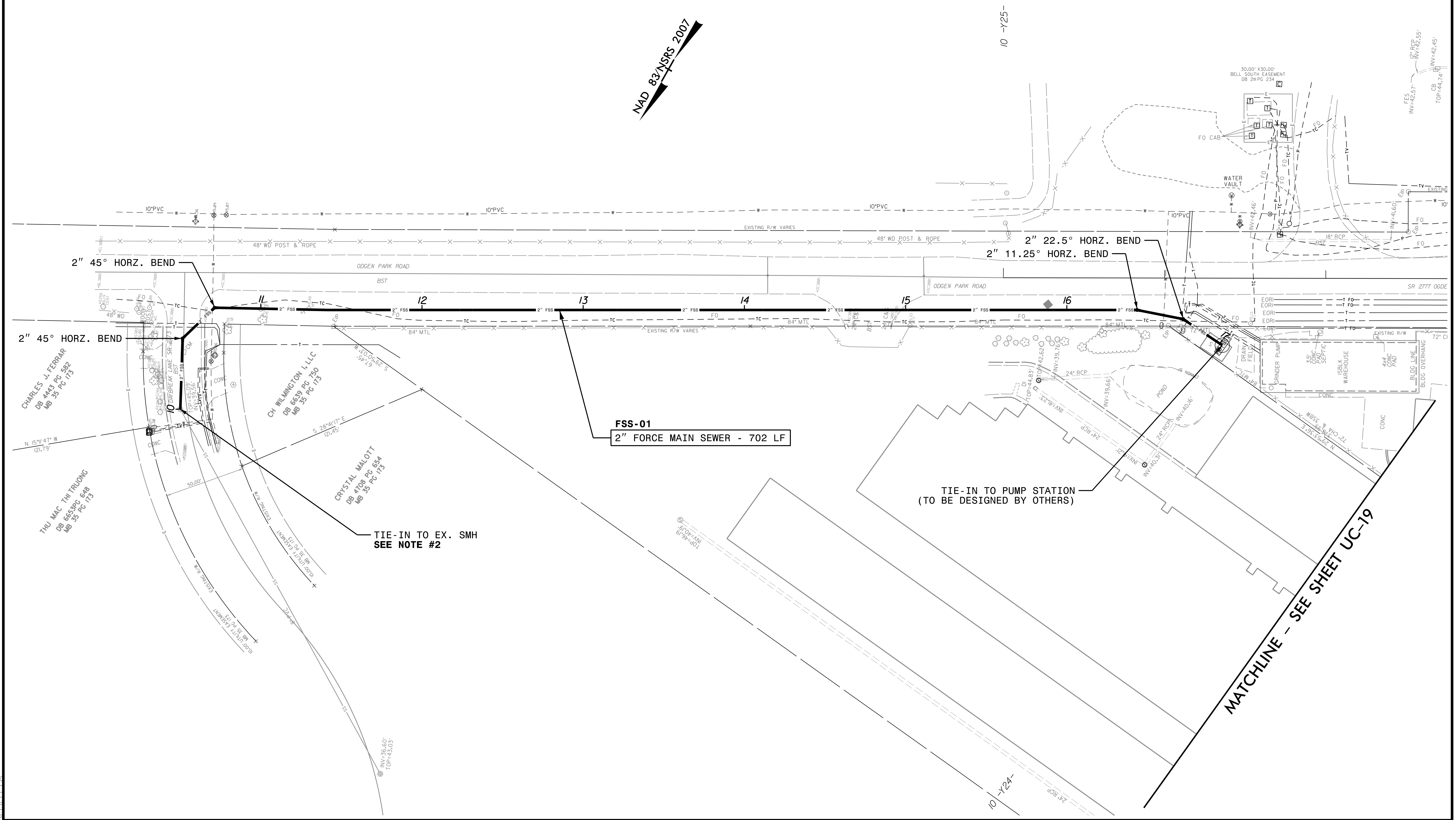
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APPROVED BY: KSH
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UTILITIES ENGINEERING SEC.
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MATCHLINE - SEE SHEET UC-19

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GENERAL NOTES:

1. PARCELS SERVED BY CFPWA SEWER DO NOT HAVE CLEANOUTS TO GRADE AND/OR ARE NOT DEPICTED IN THE FS FILE. CONTRACTOR SHALL VERIFY THE LOCATION OF SEWER SERVICES BEFORE STARTING ANY WORK.
2. DOWN AND UNDER RELOCATION OF 12" WL IN THE SAME HORIZONTAL ALIGNMENT UNDER 36" RCP DRAINAGE PIPE. REFER TO DETAILS WS-10 & WS-11 ON SHEET UC-03C FOR ADDITIONAL INFORMATION.
3. CFPWA MAP DEPICTS 8" WL EXTENDING TO THE EXISTING GRAVITY SEWER MANHOLE ALONG FRONTAGE OF THE CHAUVIN PARCEL, BUT THE FS FILE DOES NOT SHOW THIS. CONTRACTOR TO VERIFY IF THE VALVES IN FRONT OF THE CHAUVIN PARCEL ARE IN SERVICE, AND ENSURE SERVICE IS NOT INTERRUPTED.
4. HYDRANT TO BE RELOCATED AS NEEDED TO AVOID CONFLICT WITH PROPOSED SIDEWALK.

REFERENCE SHEET NOTES:

1. FOR WL18 PROFILE REFER TO SHEET UC-39.
2. FOR WL19 PROFILE REFER TO SHEET UC-39.
3. FOR GS6 PROFILE REFER TO SHEET UC-41.

THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 2,250 LBS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

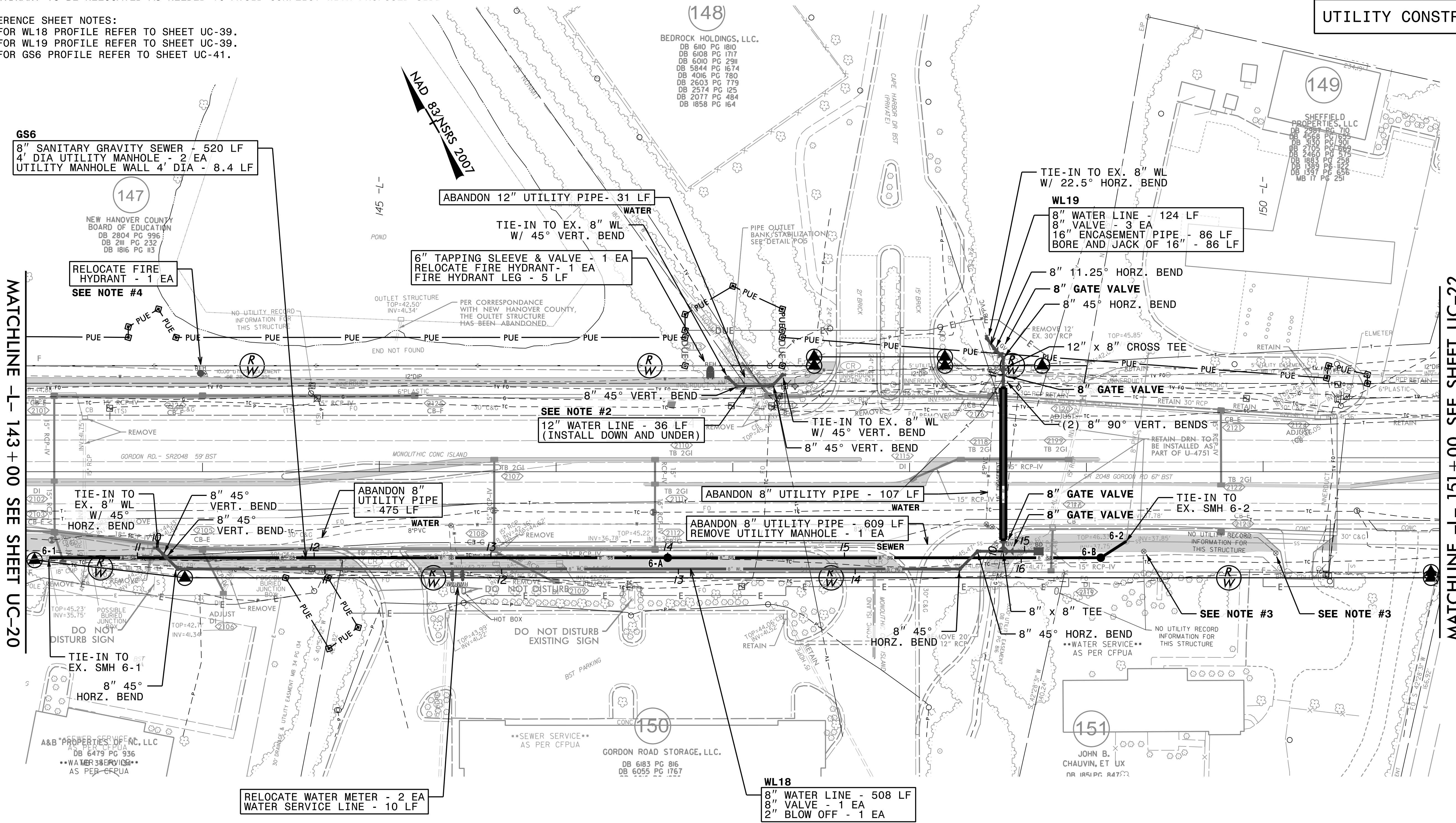
WATER / SANITARY SEWER UTILITY OWNERS ON THIS SHEET:
CFPWA
EXISTING UTILITIES:
WATER LINE 8", 12"
GRAVITY SEWER 8"
CONTACT:
DAVID DAILEY (WATER & SEWER)
PHONE: (910) 332-6626

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MATCHLINE -L- 143 + 00 SEE SHEET UC-20

MATCHLINE -L- 151 + 00 SEE SHEET UC-22

GS6
8" SANITARY GRAVITY SEWER - 520 LF
4' DIA UTILITY MANHOLE - 2 EA
UTILITY MANHOLE WALL 4' DIA - 8.4 LF

ABANDON 12" UTILITY PIPE - 31 LF

6" TAPPING SLEEVE & VALVE - 1 EA
RELOCATE FIRE HYDRANT - 1 EA
FIRE HYDRANT LEG - 5 LF

SEE NOTE #2
12" WATER LINE - 36 LF
(INSTALL DOWN AND UNDER)

ABANDON 8" UTILITY PIPE - 475 LF

ABANDON 8" UTILITY PIPE - 609 LF
REMOVE UTILITY MANHOLE - 1 EA

WL19
8" WATER LINE - 124 LF
8" VALVE - 3 EA
16" ENCASEMENT PIPE - 86 LF
BORE AND JACK OF 16" - 86 LF

WL18
8" WATER LINE - 508 LF
8" VALVE - 1 EA
2" BLOW OFF - 1 EA

RELOCATE WATER METER - 2 EA
WATER SERVICE LINE - 10 LF

5/14/09

CURVATURE ABBREVIATIONS:
 PC-W10A HORZ. = FIRST HORIZONTAL POINT-OF-CURVATURE ALONG WL10
 PT-W10A HORZ. = FIRST HORIZONTAL POINT-OF-TANGENCY ALONG WL10

THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 300 LBS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

GENERAL NOTES:
 1. PARCELS SERVED BY CFPWA SEWER DO NOT HAVE CLEANOUTS TO GRADE AND/OR ARE NOT DEPICTED IN THE FS FILE. CONTRACTOR SHALL VERIFY LOCATION OF SEWER SERVICE LINES AND VERIFY NO CONFLICTS EXIST WITH THE PROPOSED DRAINAGE WORK SHOWN ON THIS SHEET.
 2. THE WATER METER FOR THE PEREIRA PARCEL IS NOT DEPICTED IN THE FS FILE. THE EXISTING LOCATION IS APPROXIMATE AND DRAFTED IN THE UCPUT DESIGN FILE. CONTRACTOR SHALL VERIFY METER LOCATION AND RECONNECT THE WATER METER AS NEEDED.

REFERENCE SHEET NOTES:
 1. FOR WL10 PROFILE REFER TO SHEET UC-36.

WATER / SANITARY SEWER UTILITY OWNERS ON THIS SHEET:
 CFPWA
EXISTING UTILITIES:
 WATER LINE 6"
 GRAVITY SEWER 8"
CONTACT:
 DAVID DAILEY (WATER & SEWER)
 PHONE: (910) 332-6626

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 Phone: 919.297.0220
 Apex, NC 27602
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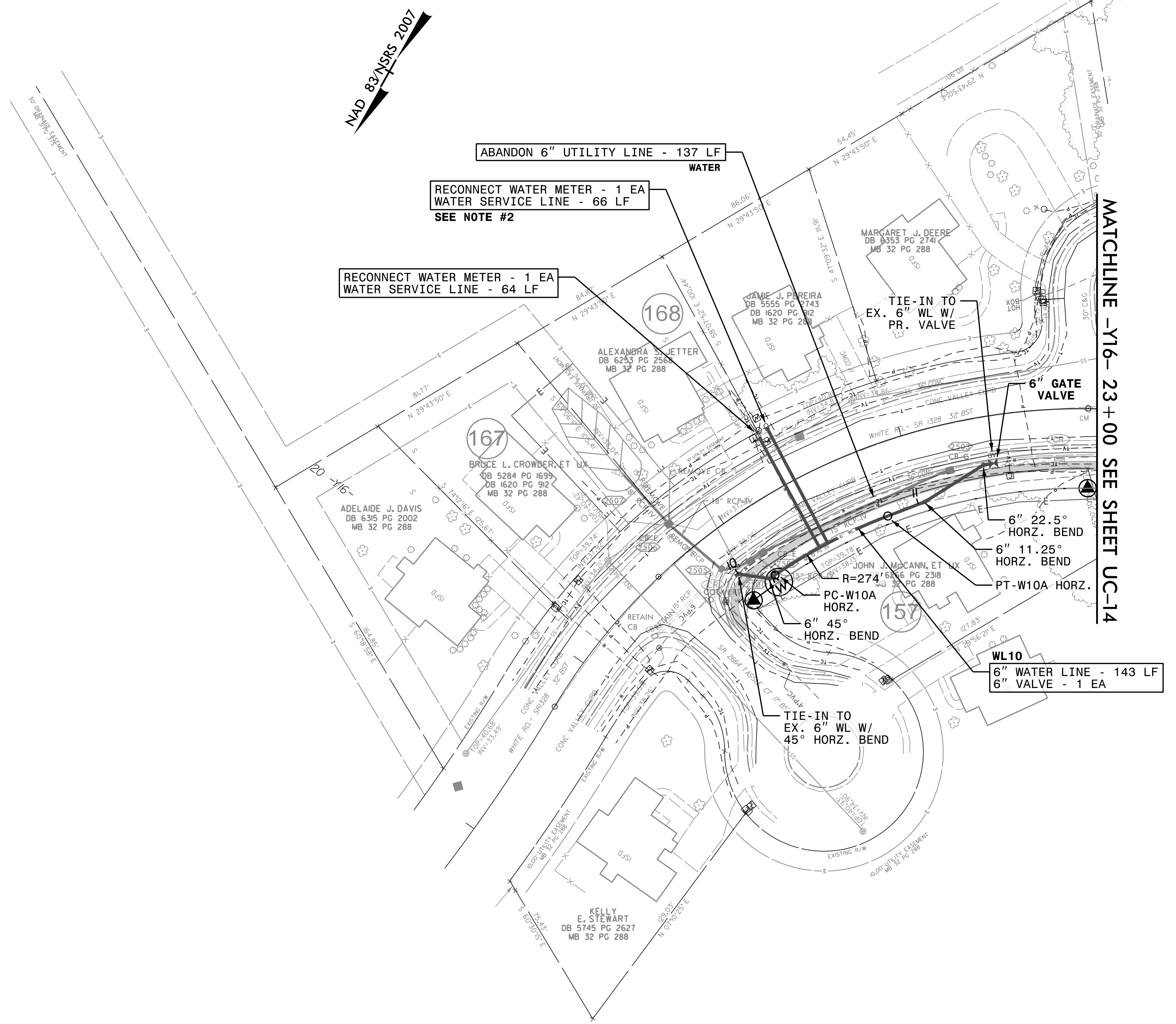
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PROJECT REFERENCE NO.	U-6202
SHEET NO.	UC-23
DESIGNED BY:	CAR
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APPROVED BY:	KSH
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
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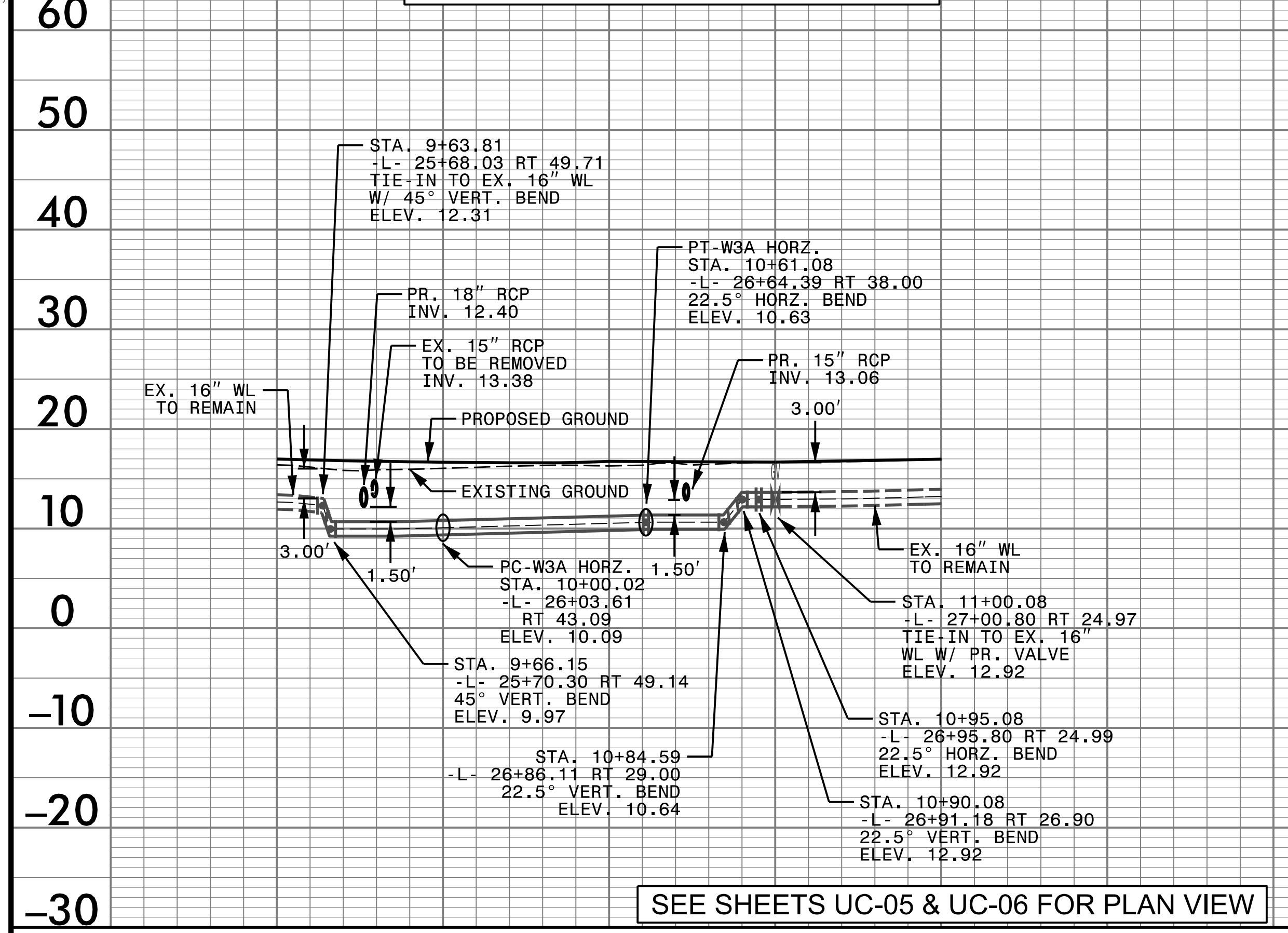


MATCHLINE -Y16- 23+00 SEE SHEET UC-14

5/28/24

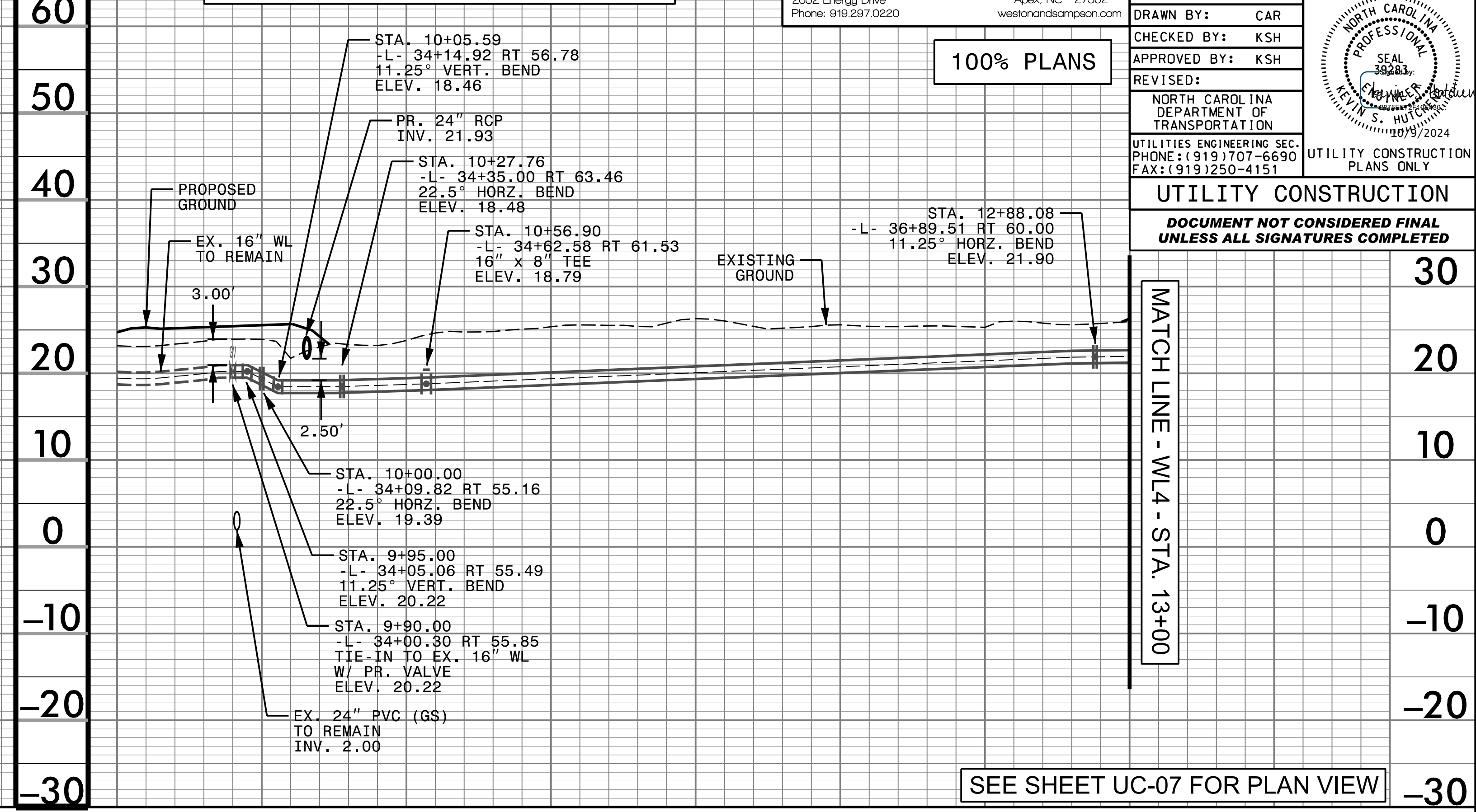
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16" WATER LINE - WL3



SEE SHEETS UC-05 & UC-06 FOR PLAN VIEW

16" WATER LINE - WL4



SEE SHEET UC-07 FOR PLAN VIEW

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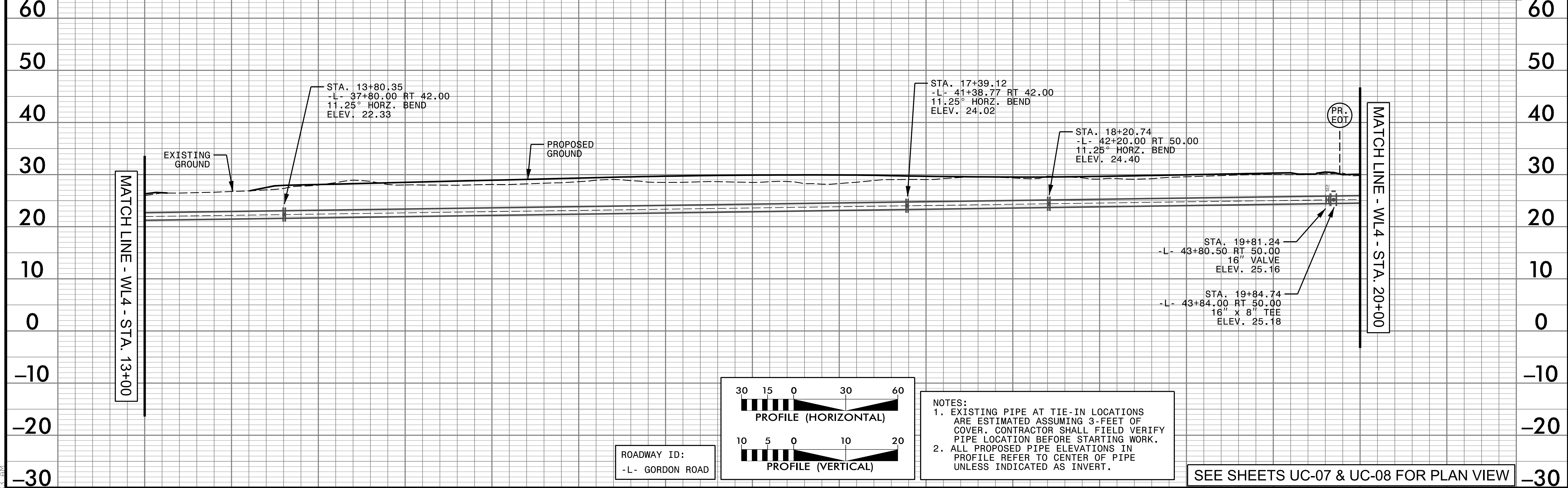
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DESIGNED BY: CAR	
DRAWN BY: CAR	
CHECKED BY: KSH	
APPROVED BY: KSH	
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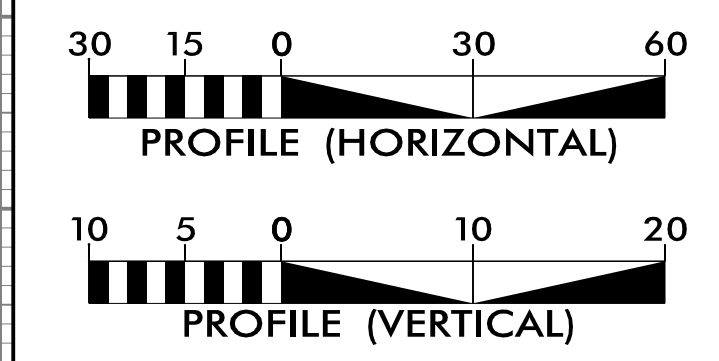
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16" WATER LINE - WL4 (CONT'D)



SEE SHEETS UC-07 & UC-08 FOR PLAN VIEW



NOTES:
 1. EXISTING PIPE AT TIE-IN LOCATIONS ARE ESTIMATED ASSUMING 3- FEET OF COVER. CONTRACTOR SHALL FIELD VERIFY PIPE LOCATION BEFORE STARTING WORK.
 2. ALL PROPOSED PIPE ELEVATIONS IN PROFILE REFER TO CENTER OF PIPE UNLESS INDICATED AS INVERT.

ROADWAY ID:
-L- GORDON ROAD

13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00

5/28/24

9/5/2024 3:51:31 local\WSE-Projects\NCA\HTB\Division 3\ENG21-0221-UG202-Gordon_Rd_New_Hanover\Utilities\Coordination\Engineering\Proj\UG202-ut_r.dwg(26_UC-26_prof.dgn)

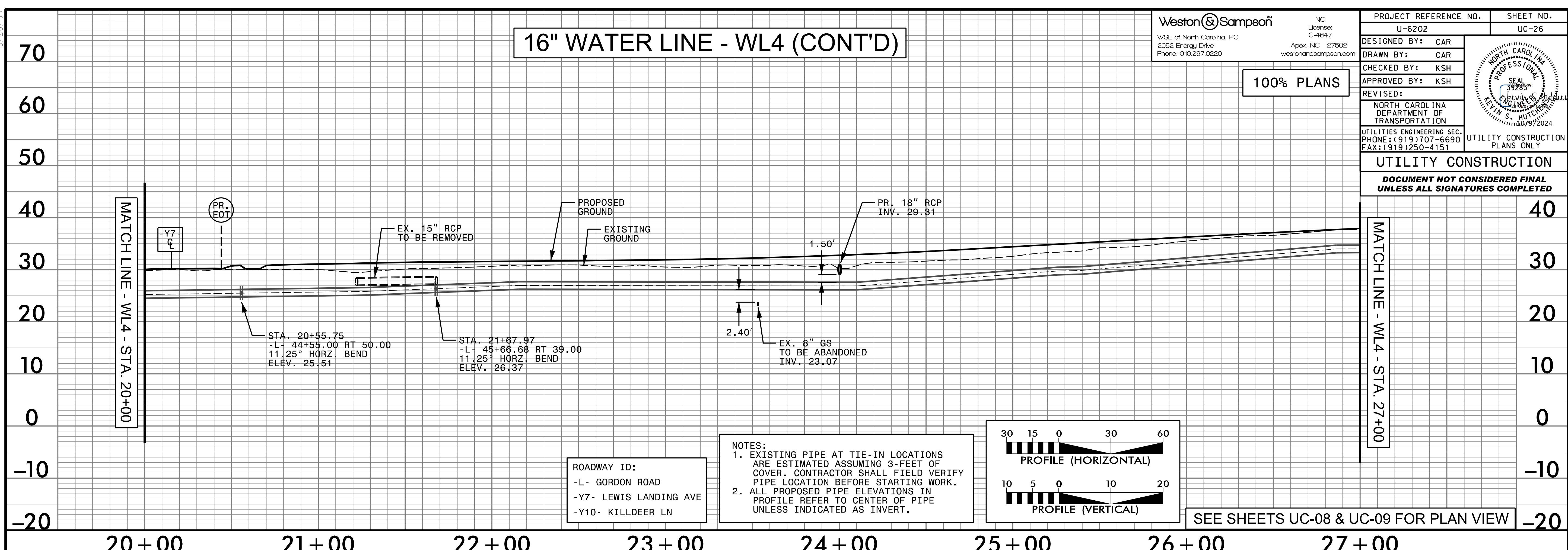
16" WATER LINE - WL4 (CONT'D)

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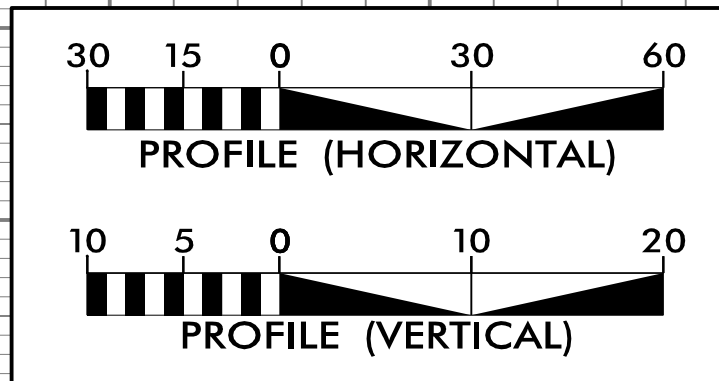
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ROADWAY ID:
 -L- GORDON ROAD
 -Y7- LEWIS LANDING AVE
 -Y10- KILLDEER LN

NOTES:
 1. EXISTING PIPE AT TIE-IN LOCATIONS ARE ESTIMATED ASSUMING 3- FEET OF COVER. CONTRACTOR SHALL FIELD VERIFY PIPE LOCATION BEFORE STARTING WORK.
 2. ALL PROPOSED PIPE ELEVATIONS IN PROFILE REFER TO CENTER OF PIPE UNLESS INDICATED AS INVERT.

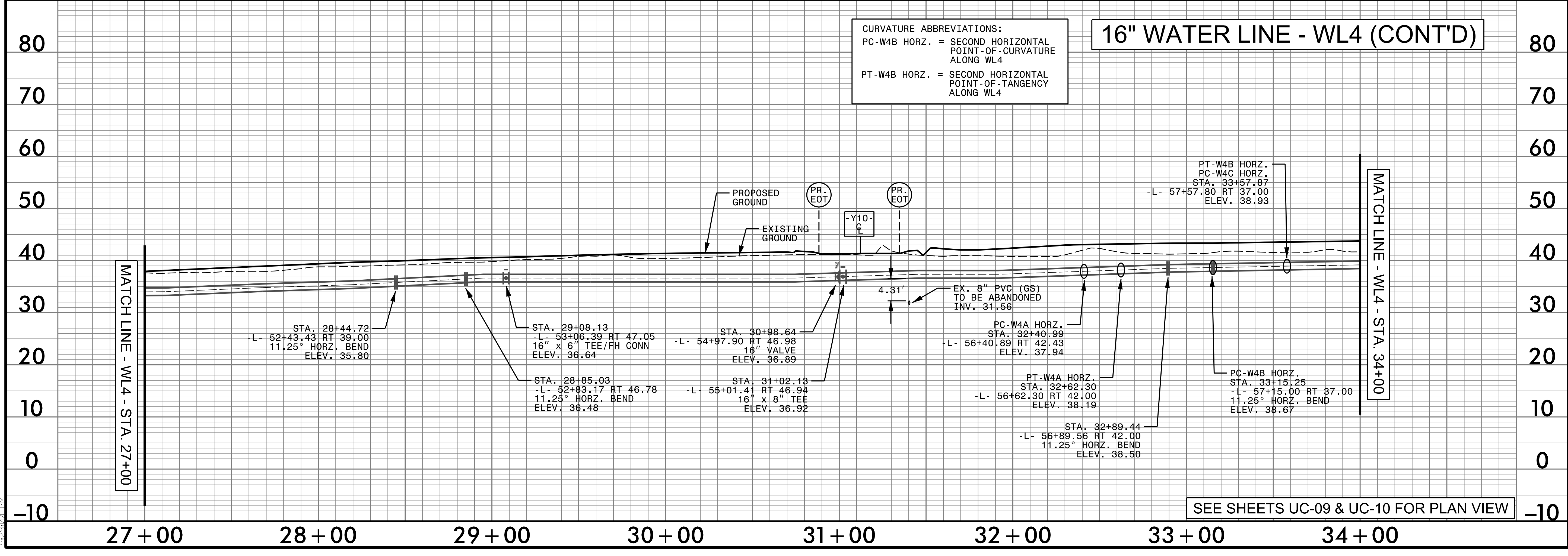


SEE SHEETS UC-08 & UC-09 FOR PLAN VIEW

20+00 21+00 22+00 23+00 24+00 25+00 26+00 27+00

16" WATER LINE - WL4 (CONT'D)

CURVATURE ABBREVIATIONS:
 PC-W4B HORZ. = SECOND HORIZONTAL POINT-OF-CURVATURE ALONG WL4
 PT-W4B HORZ. = SECOND HORIZONTAL POINT-OF-TANGENCY ALONG WL4



SEE SHEETS UC-09 & UC-10 FOR PLAN VIEW

27+00 28+00 29+00 30+00 31+00 32+00 33+00 34+00

5/28/24

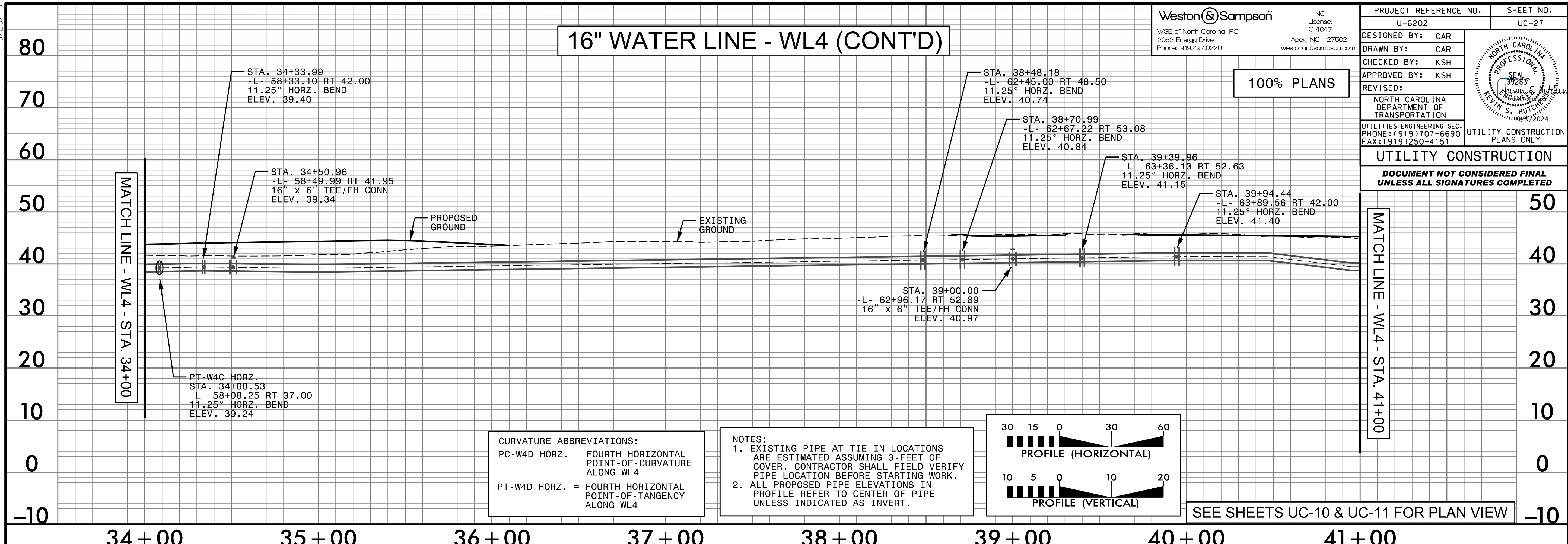
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 Apex, NC 27602
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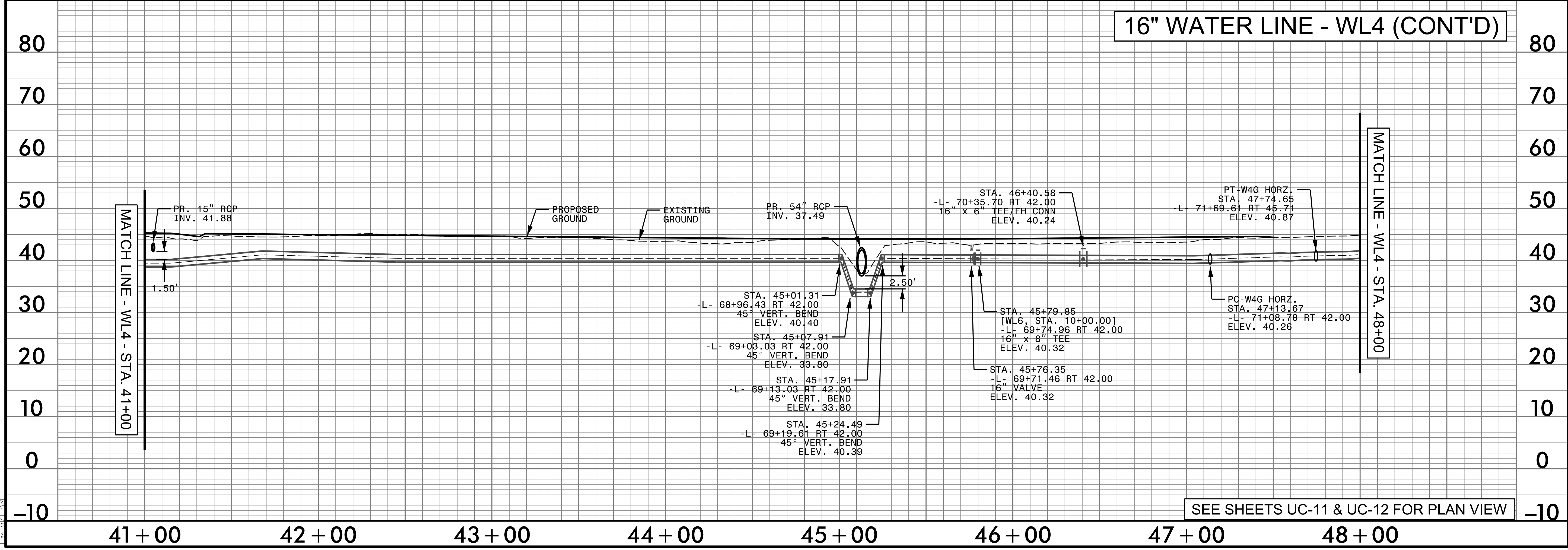
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DRAWN BY: CAR	
CHECKED BY: KSH	
APPROVED BY: KSH	
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16" WATER LINE - WL4 (CONT'D)

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16" WATER LINE - WL4 (CONT'D)



5/28/24

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 Apex, NC 27602
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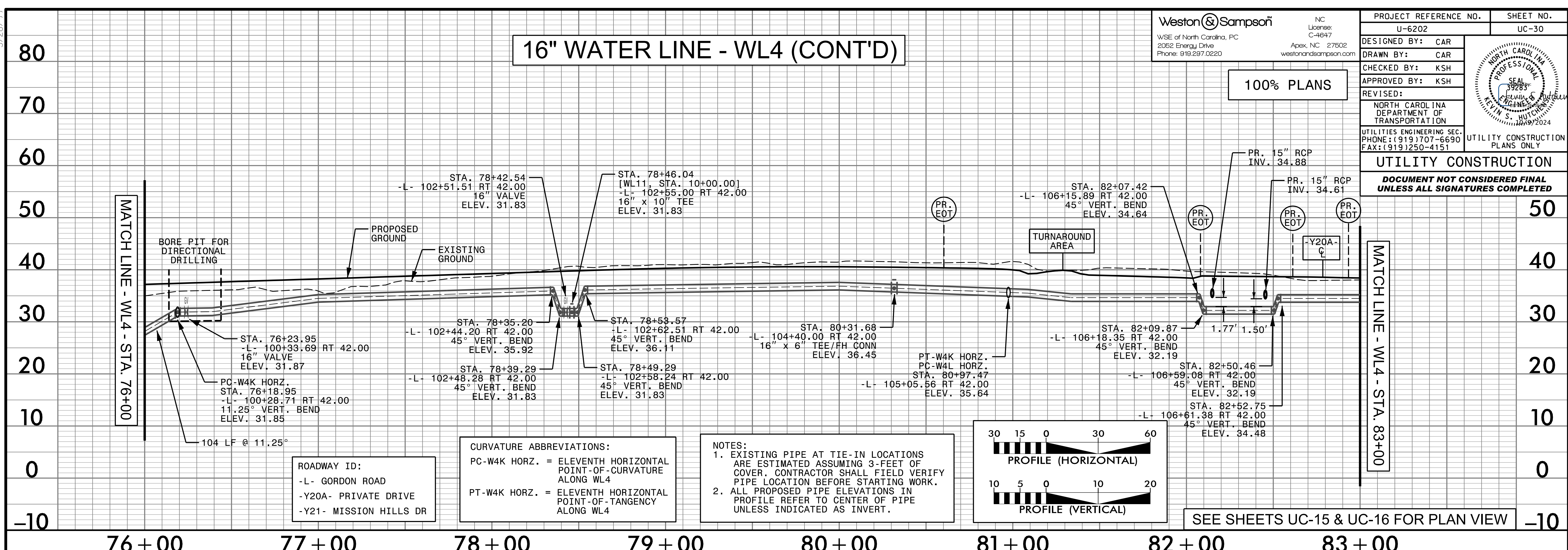
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16" WATER LINE - WL4 (CONT'D)

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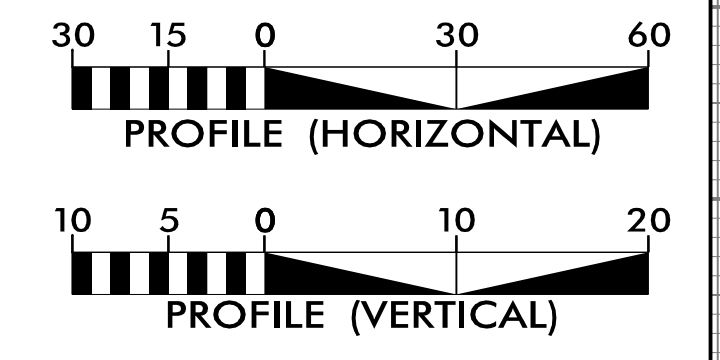
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ROADWAY ID:
 -L- GORDON ROAD
 -Y20A- PRIVATE DRIVE
 -Y21- MISSION HILLS DR

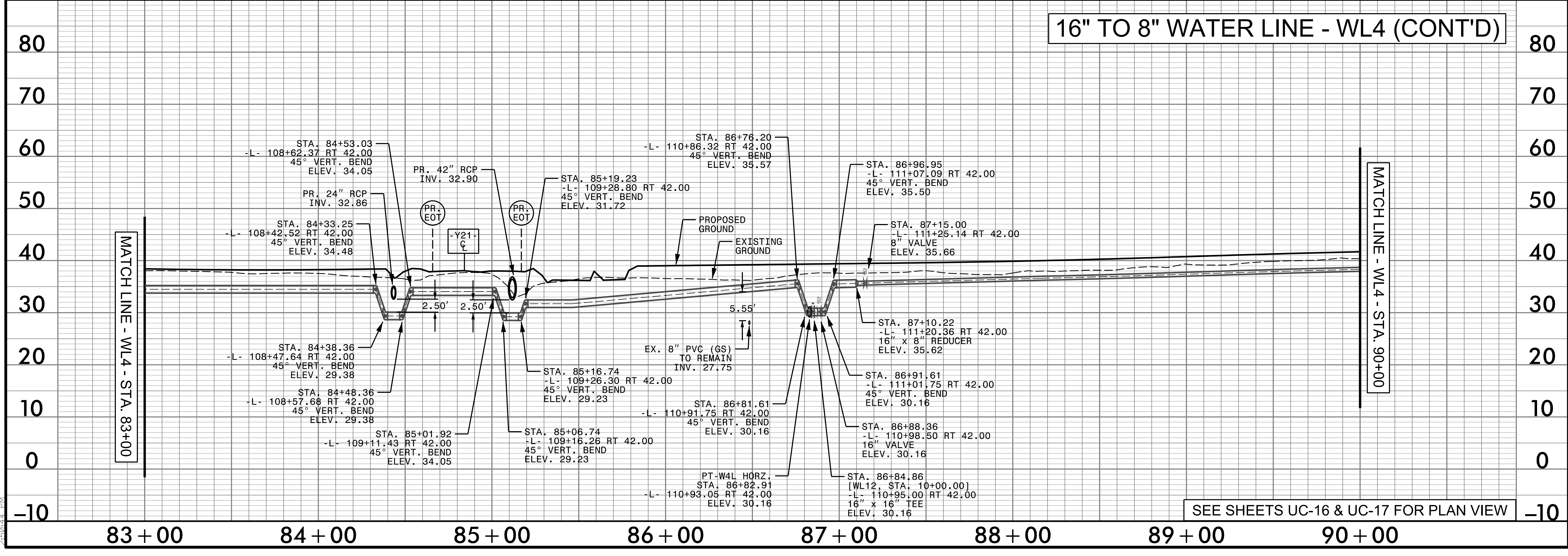
CURVATURE ABBREVIATIONS:
 PC-W4K HORZ. = ELEVENTH HORIZONTAL POINT-OF-CURVATURE ALONG WL4
 PT-W4K HORZ. = ELEVENTH HORIZONTAL POINT-OF-TANGENCY ALONG WL4

NOTES:
 1. EXISTING PIPE AT TIE-IN LOCATIONS ARE ESTIMATED ASSUMING 3- FEET OF COVER. CONTRACTOR SHALL FIELD VERIFY PIPE LOCATION BEFORE STARTING WORK.
 2. ALL PROPOSED PIPE ELEVATIONS IN PROFILE REFER TO CENTER OF PIPE UNLESS INDICATED AS INVERT.



SEE SHEETS UC-15 & UC-16 FOR PLAN VIEW

16" TO 8" WATER LINE - WL4 (CONT'D)



SEE SHEETS UC-16 & UC-17 FOR PLAN VIEW

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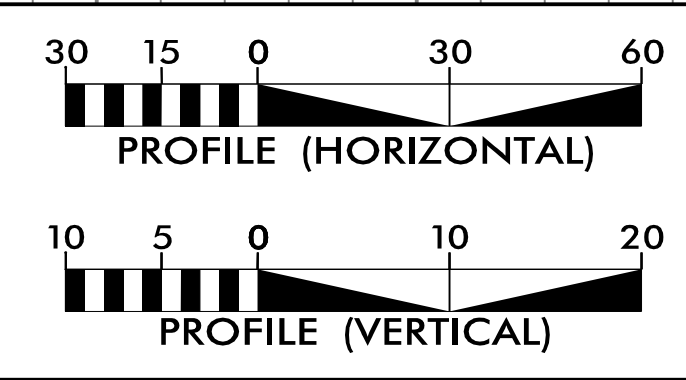
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8" WATER LINE - WL4 (CONT'D)

NOTES:
 1. EXISTING PIPE AT TIE-IN LOCATIONS ARE ESTIMATED ASSUMING 3- FEET OF COVER. CONTRACTOR SHALL FIELD VERIFY PIPE LOCATION BEFORE STARTING WORK.
 2. ALL PROPOSED PIPE ELEVATIONS IN PROFILE REFER TO CENTER OF PIPE UNLESS INDICATED AS INVERT.

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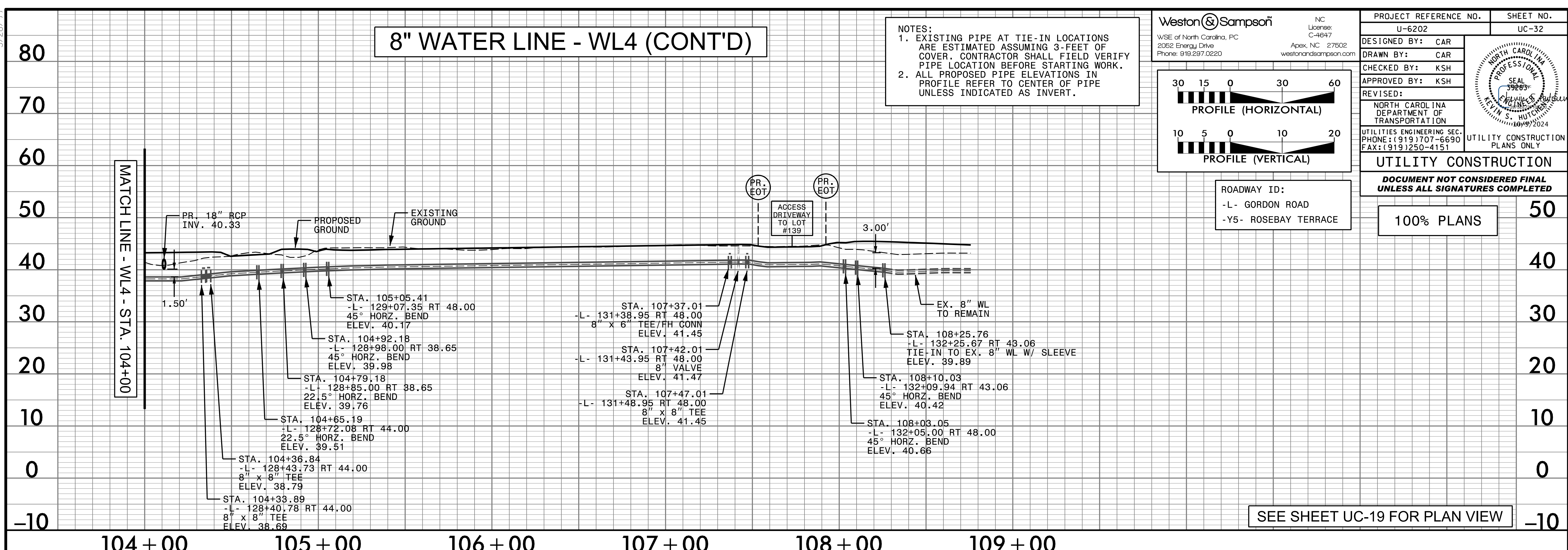


PROJECT REFERENCE NO. U-6202	SHEET NO. UC-32
DESIGNED BY: CAR	
DRAWN BY: CAR	
CHECKED BY: KSH	
APPROVED BY: KSH	
REVISED:	
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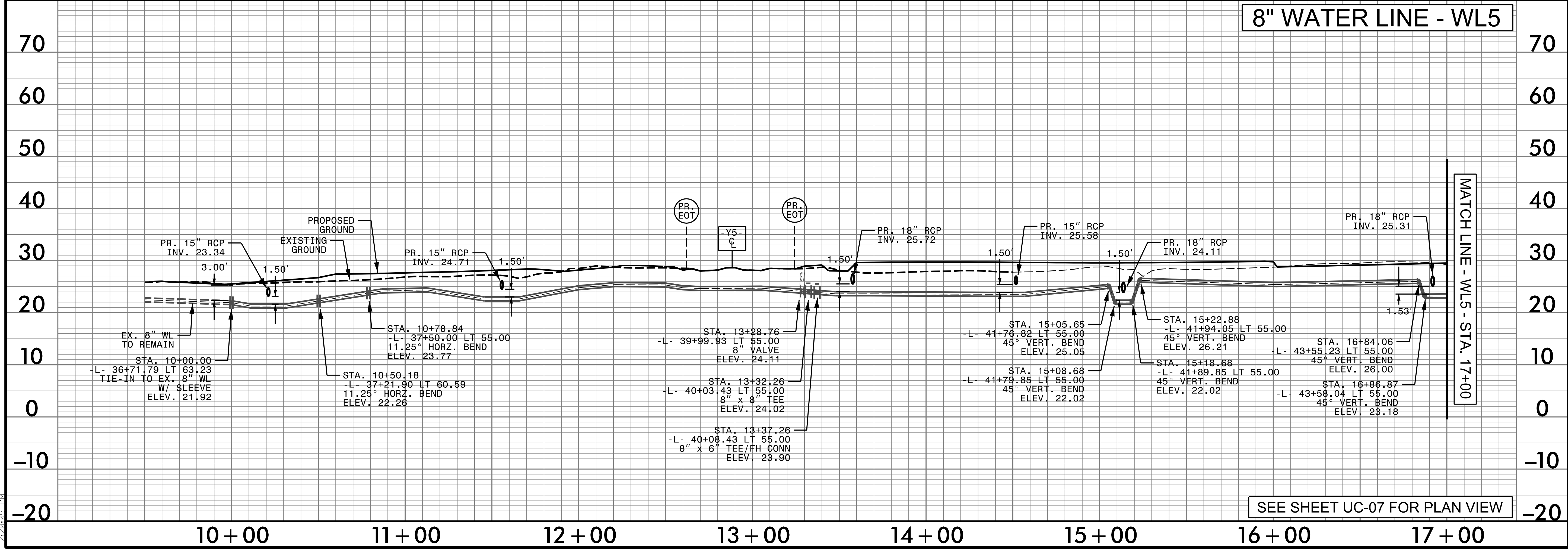
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100% PLANS

ROADWAY ID:
 -L- GORDON ROAD
 -Y5- ROSEBAY TERRACE



8" WATER LINE - WL5



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8" WATER LINE - WL5 (CONT'D)

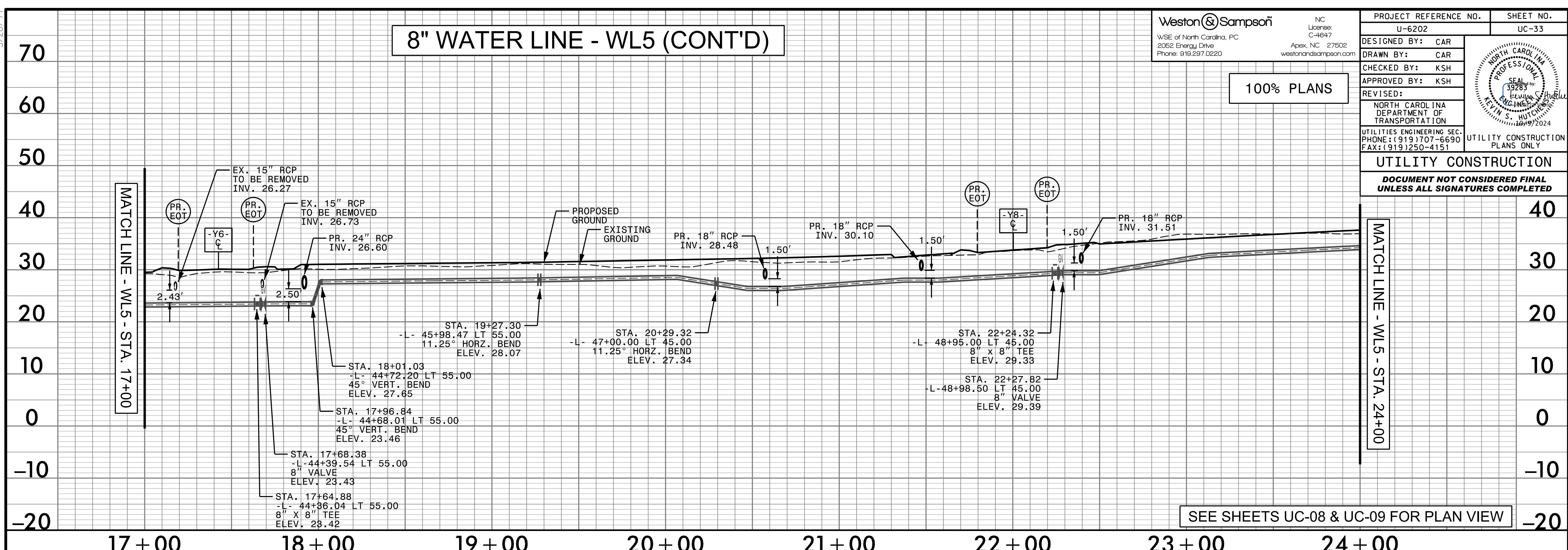
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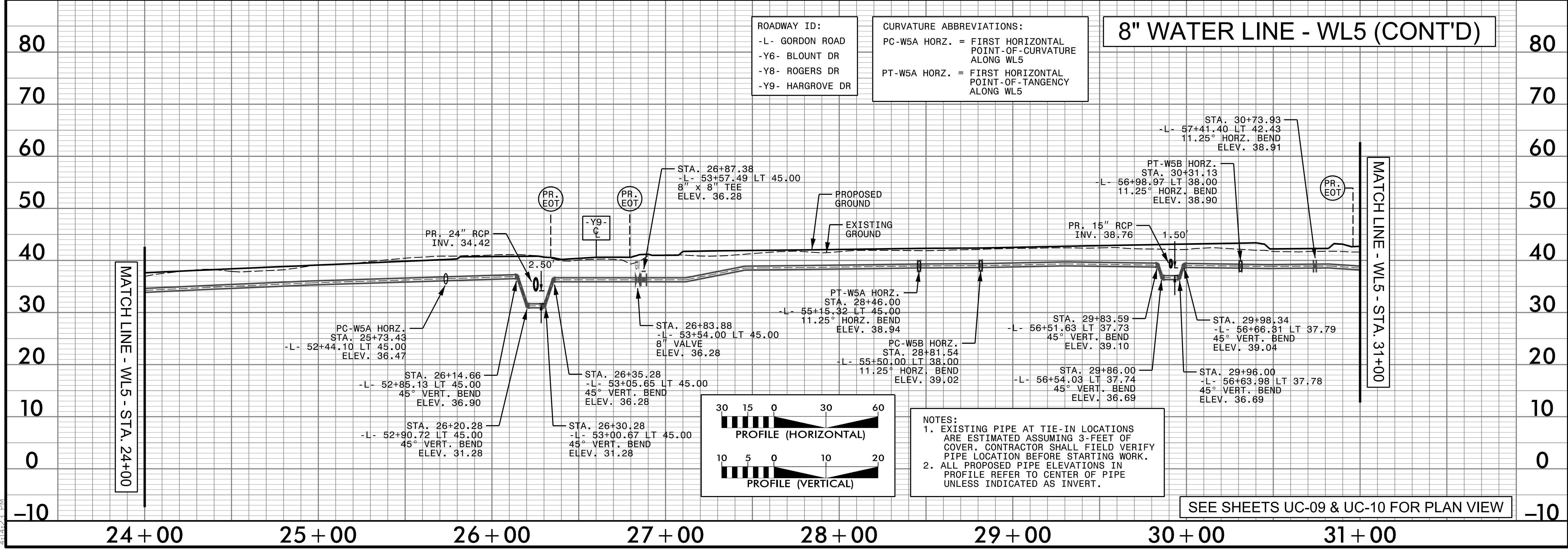
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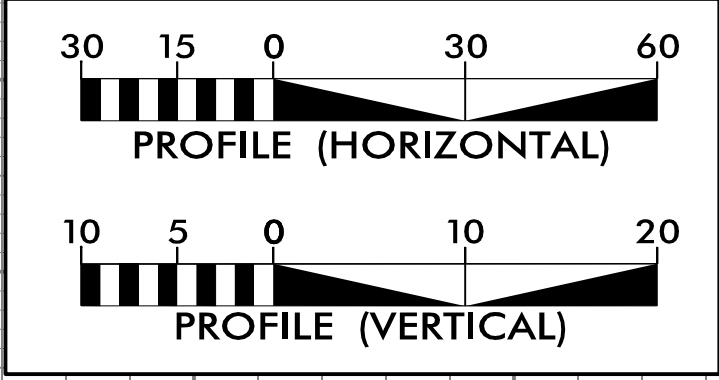
SEE SHEETS UC-08 & UC-09 FOR PLAN VIEW



ROADWAY ID:
 -L- GORDON ROAD
 -Y6- BLOUNT DR
 -Y8- ROGERS DR
 -Y9- HARGROVE DR

CURVATURE ABBREVIATIONS:
 PC-W5A HORZ. = FIRST HORIZONTAL POINT-OF-CURVATURE ALONG WL5
 PT-W5A HORZ. = FIRST HORIZONTAL POINT-OF-TANGENCY ALONG WL5

8" WATER LINE - WL5 (CONT'D)



NOTES:
 1. EXISTING PIPE AT TIE-IN LOCATIONS ARE ESTIMATED ASSUMING 3- FEET OF COVER. CONTRACTOR SHALL FIELD VERIFY PIPE LOCATION BEFORE STARTING WORK.
 2. ALL PROPOSED PIPE ELEVATIONS IN PROFILE REFER TO CENTER OF PIPE UNLESS INDICATED AS INVERT.

SEE SHEETS UC-09 & UC-10 FOR PLAN VIEW

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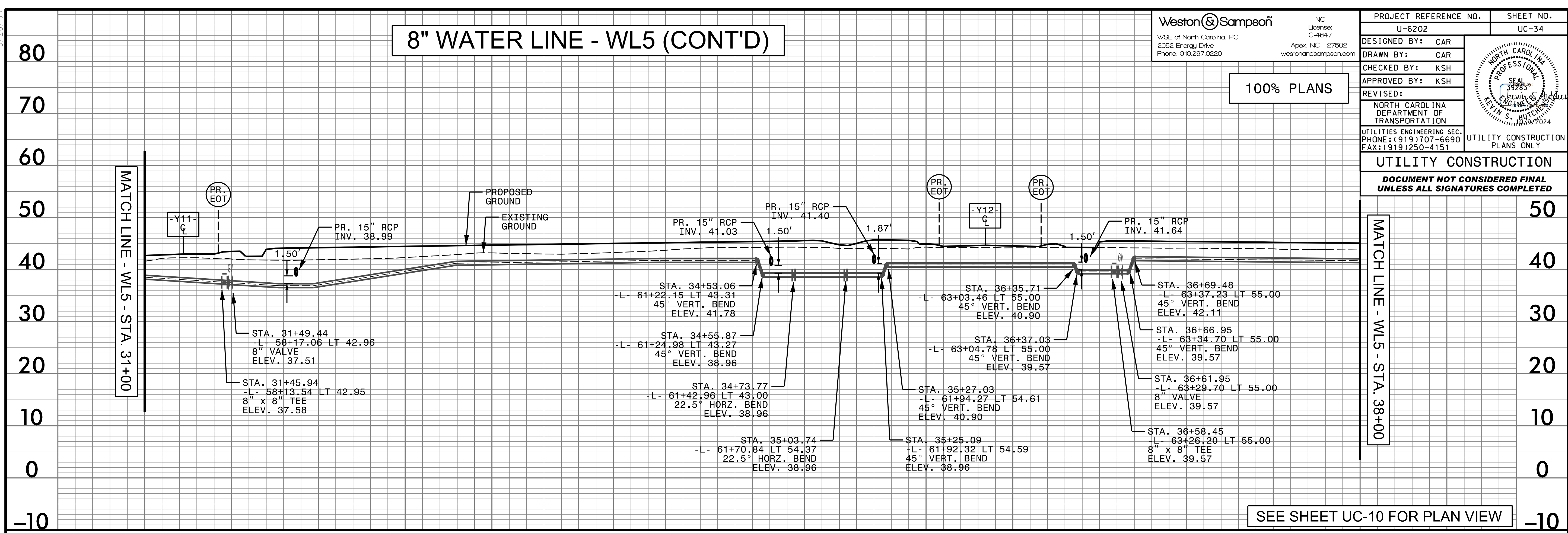
8" WATER LINE - WL5 (CONT'D)

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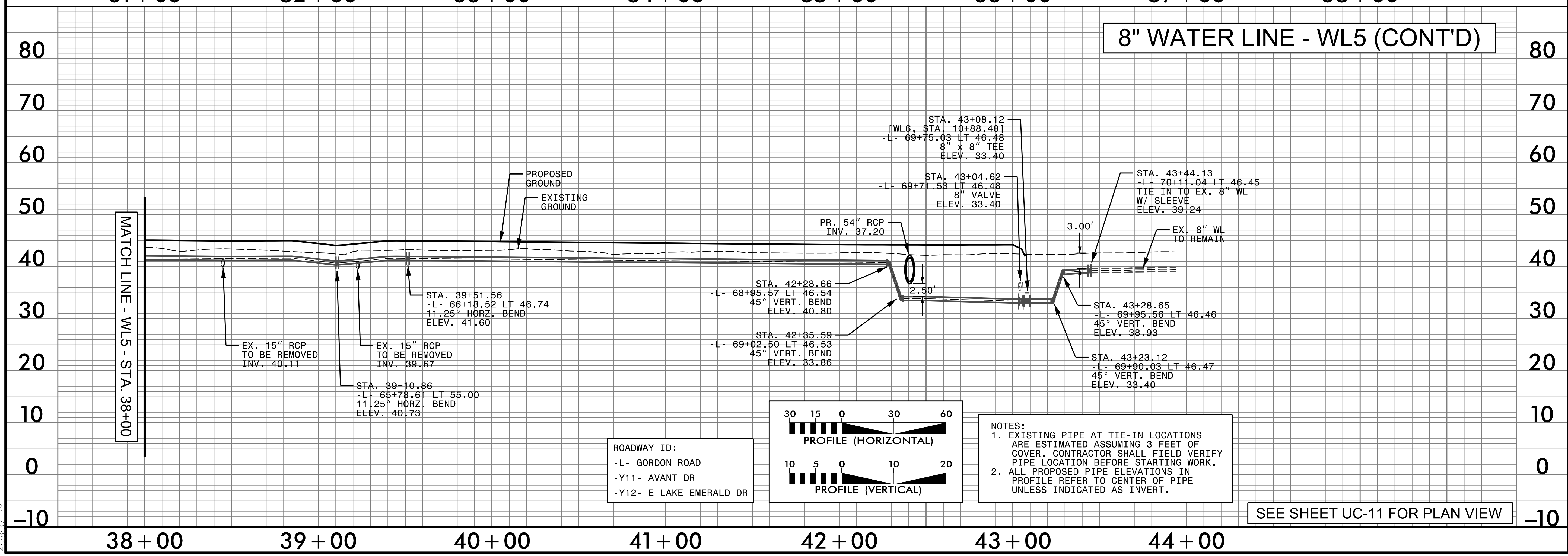
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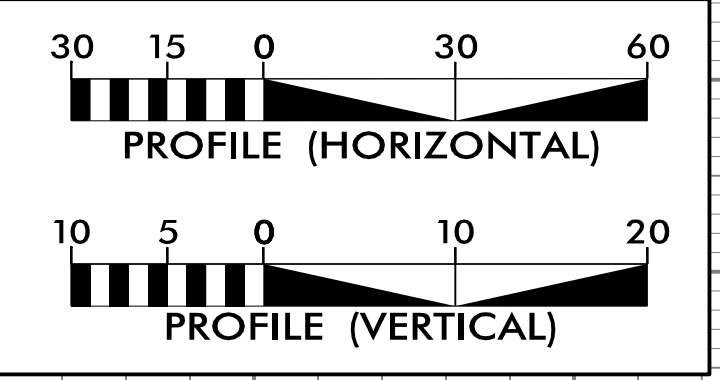


SEE SHEET UC-10 FOR PLAN VIEW

8" WATER LINE - WL5 (CONT'D)



ROADWAY ID:	-L- GORDON ROAD
	-Y11- AVANT DR
	-Y12- E LAKE EMERALD DR



- NOTES:
- EXISTING PIPE AT TIE-IN LOCATIONS ARE ESTIMATED ASSUMING 3- FEET OF COVER. CONTRACTOR SHALL FIELD VERIFY PIPE LOCATION BEFORE STARTING WORK.
 - ALL PROPOSED PIPE ELEVATIONS IN PROFILE REFER TO CENTER OF PIPE UNLESS INDICATED AS INVERT.

SEE SHEET UC-11 FOR PLAN VIEW

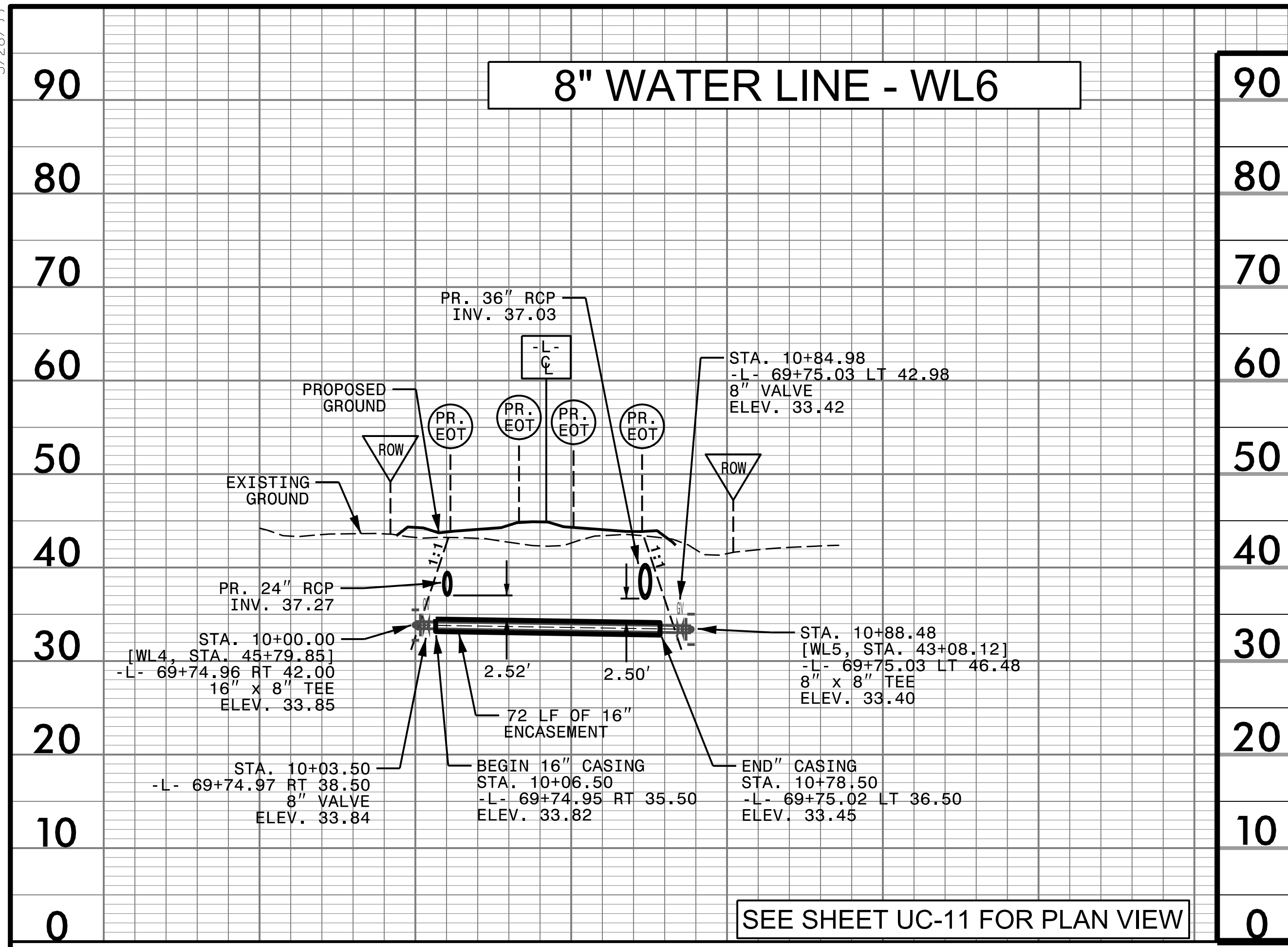
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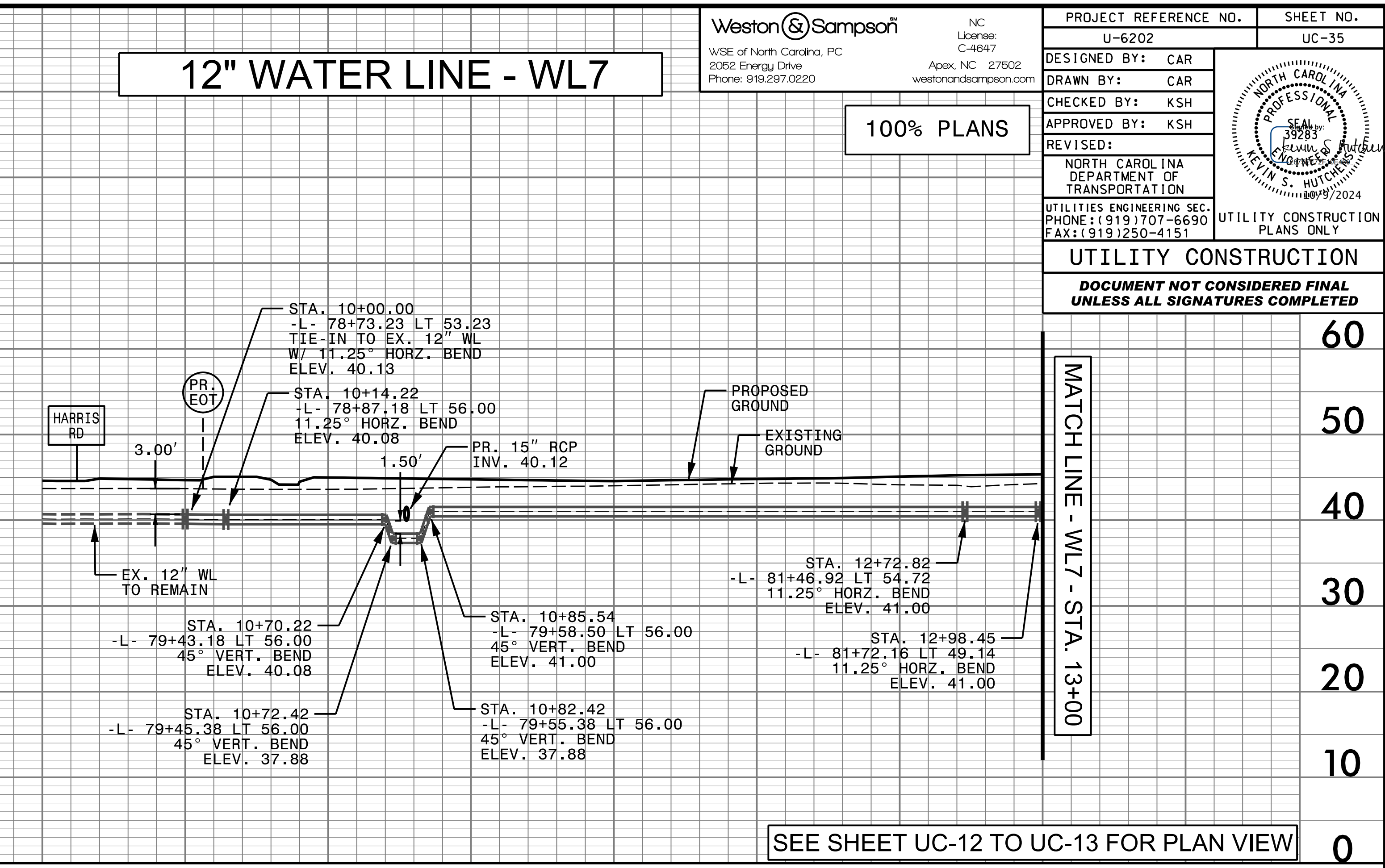
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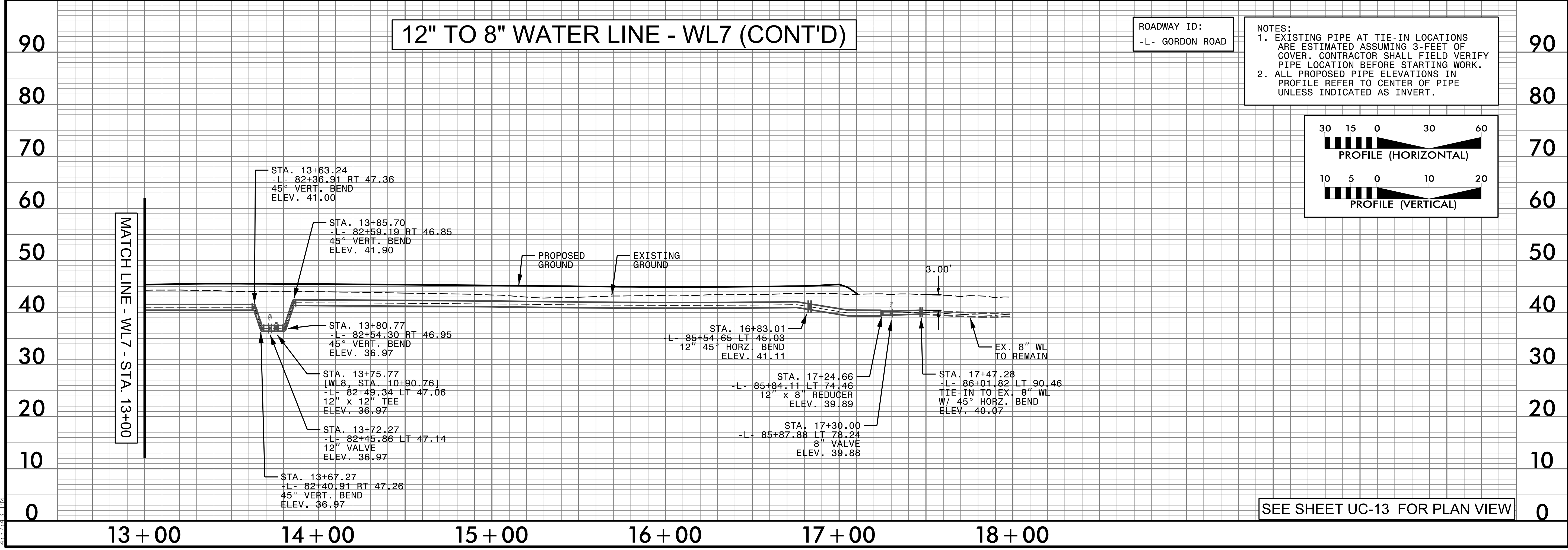


SEE SHEET UC-11 FOR PLAN VIEW



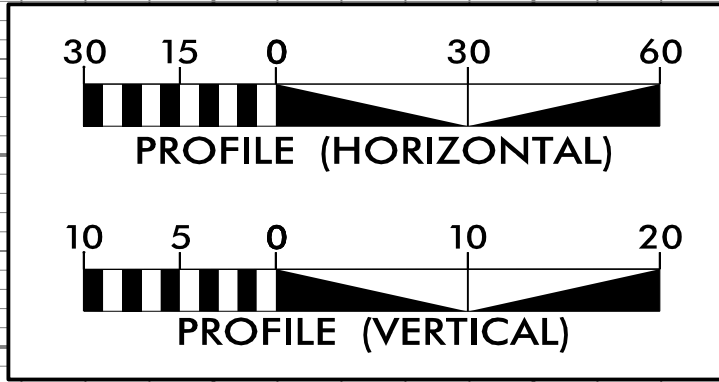
SEE SHEET UC-12 TO UC-13 FOR PLAN VIEW

10 + 00 11 + 00 12 + 00 10 + 00 11 + 00 12 + 00 13 + 00



ROADWAY ID:
-L- GORDON ROAD

- NOTES:
- EXISTING PIPE AT TIE-IN LOCATIONS ARE ESTIMATED ASSUMING 3- FEET OF COVER. CONTRACTOR SHALL FIELD VERIFY PIPE LOCATION BEFORE STARTING WORK.
 - ALL PROPOSED PIPE ELEVATIONS IN PROFILE REFER TO CENTER OF PIPE UNLESS INDICATED AS INVERT.



SEE SHEET UC-13 FOR PLAN VIEW

13 + 00 14 + 00 15 + 00 16 + 00 17 + 00 18 + 00

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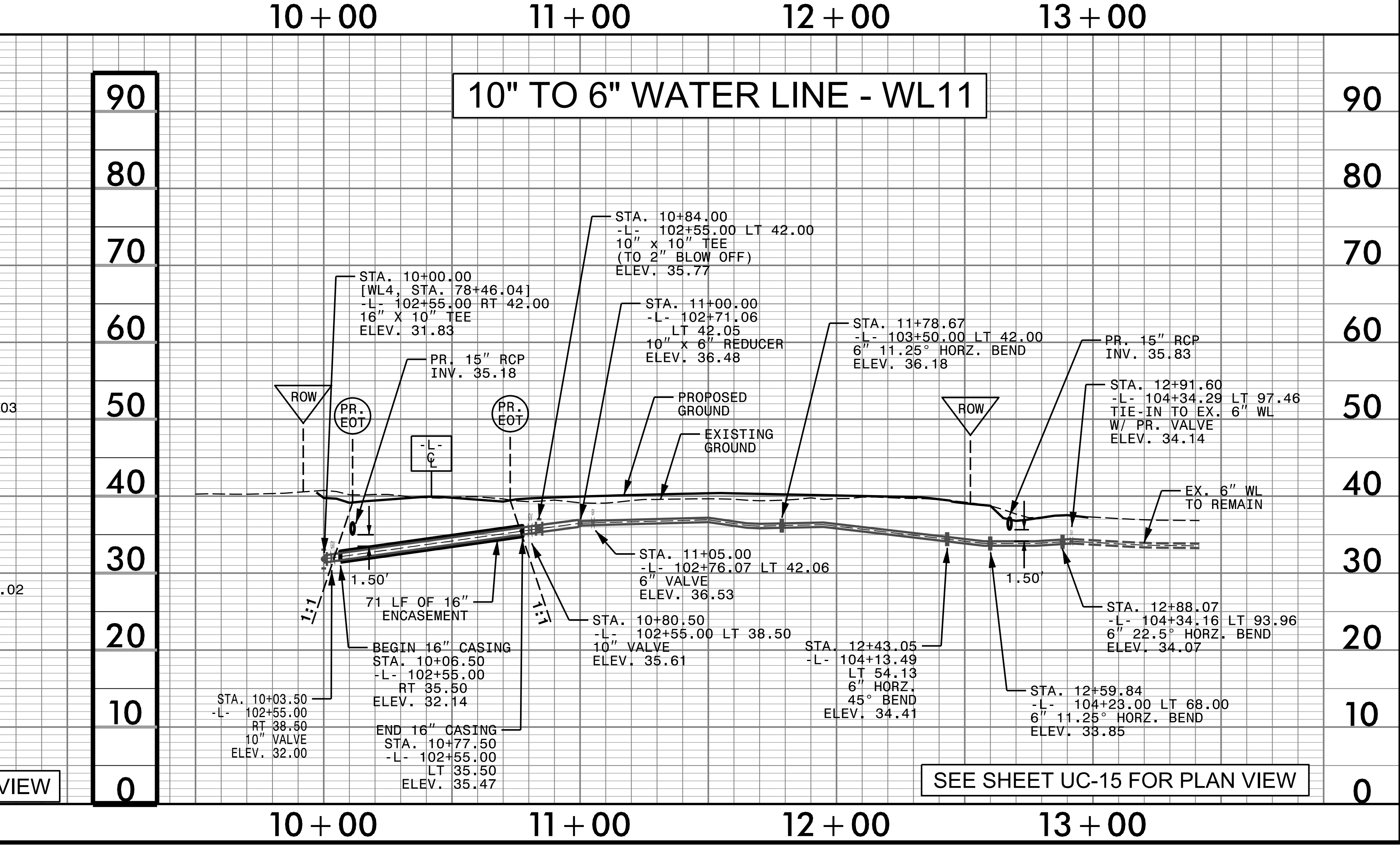
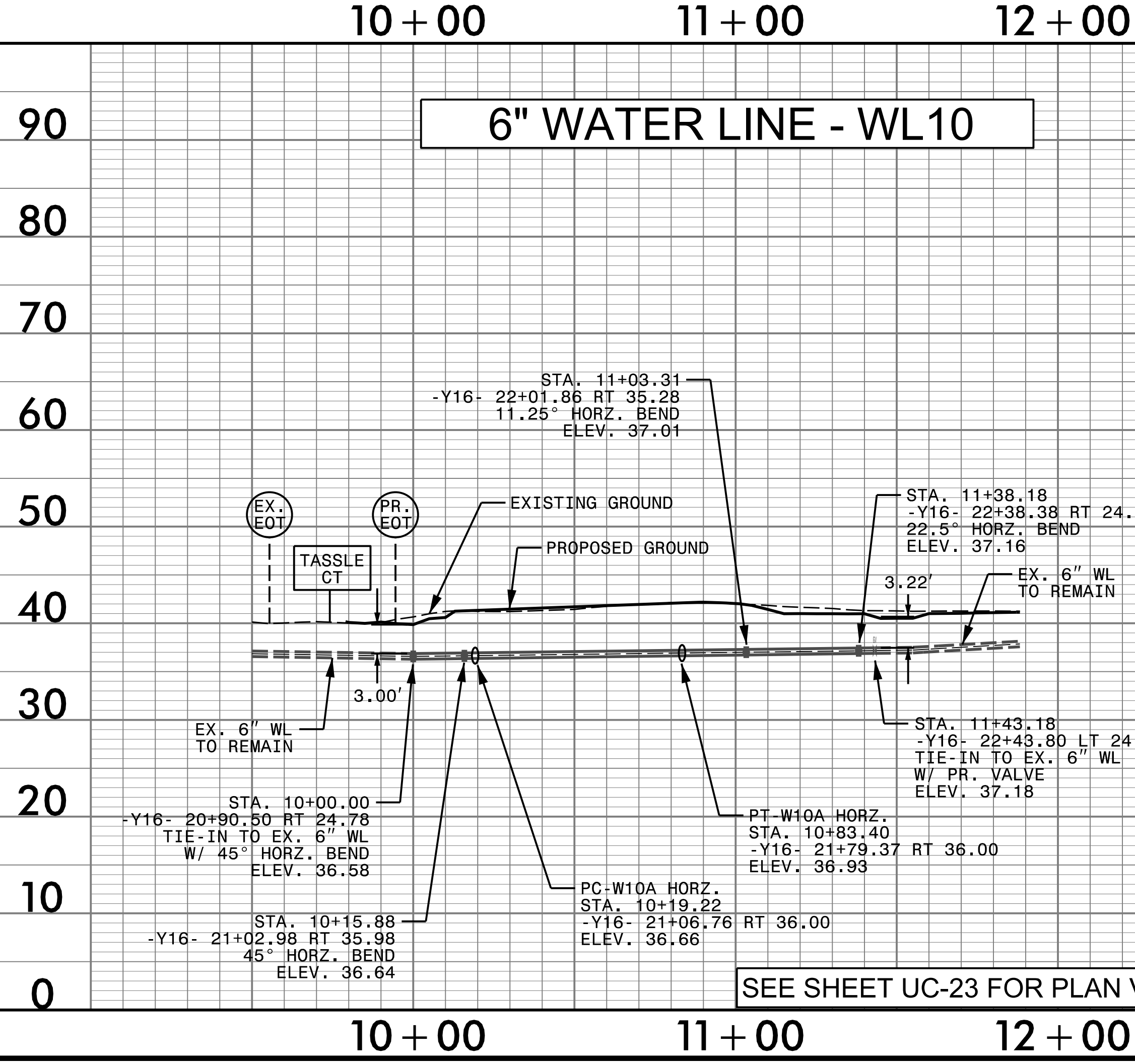
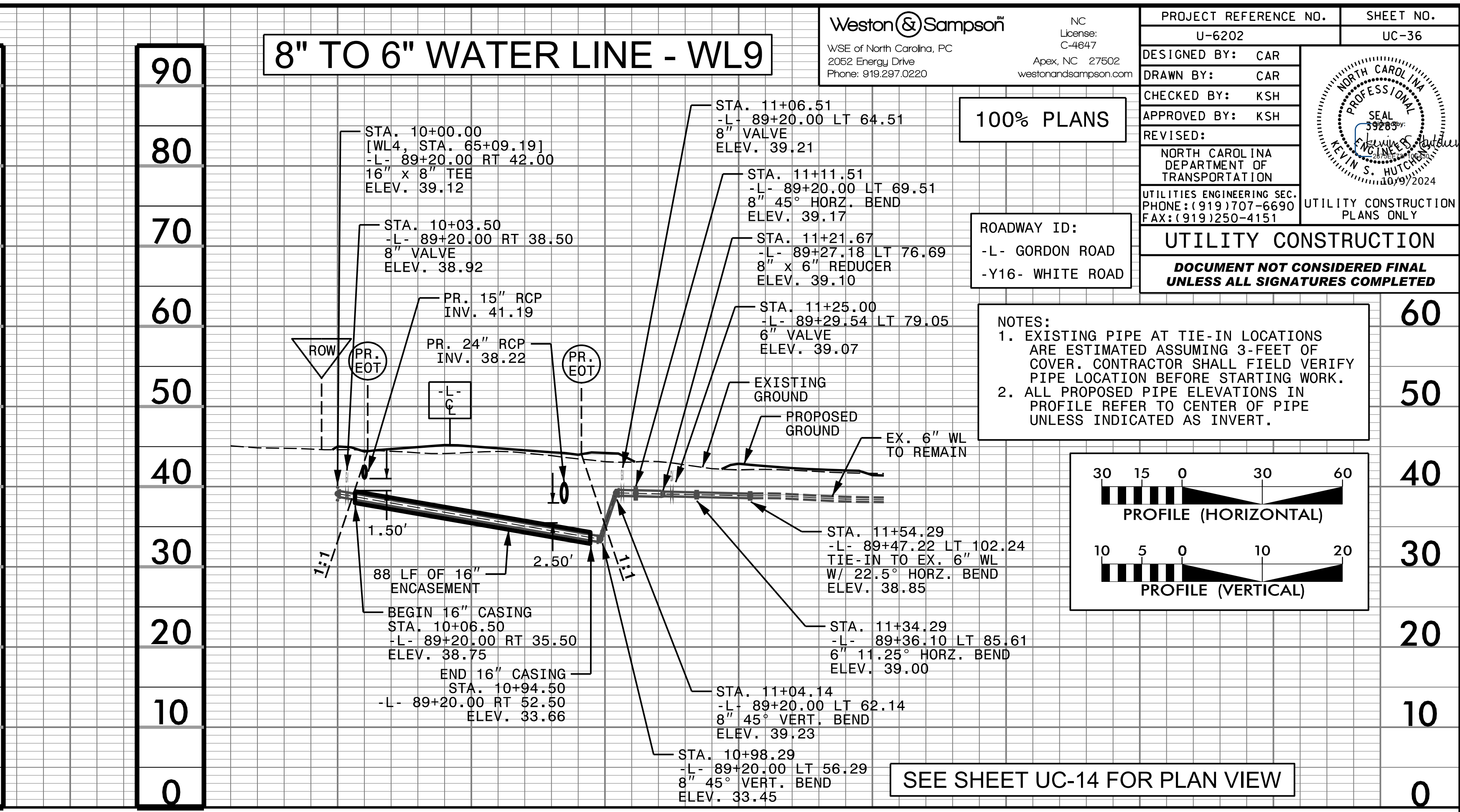
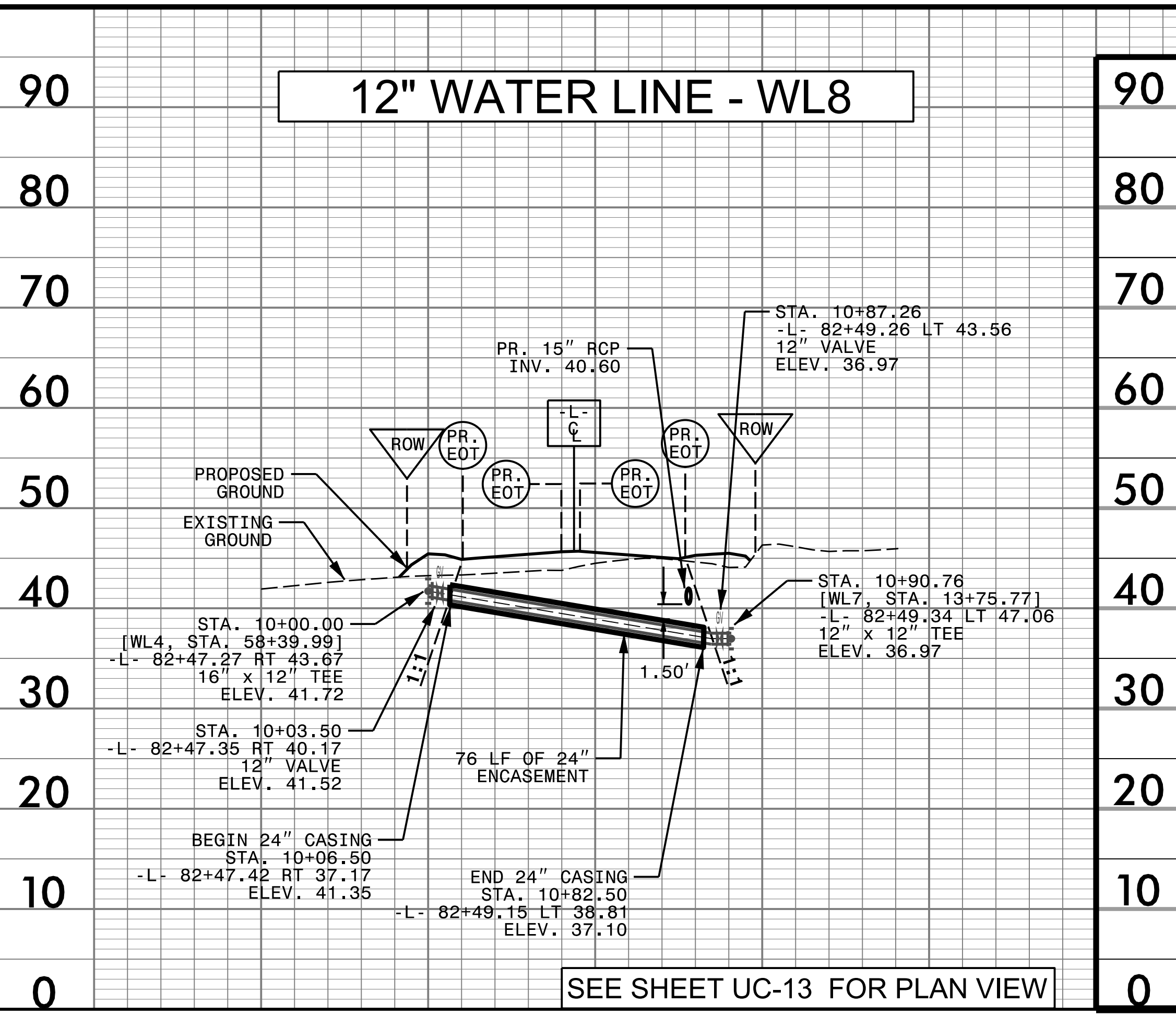
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UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151		UTILITY CONSTRUCTION PLANS ONLY	

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ROADWAY ID:
 -L- GORDON ROAD
 -Y16- WHITE ROAD

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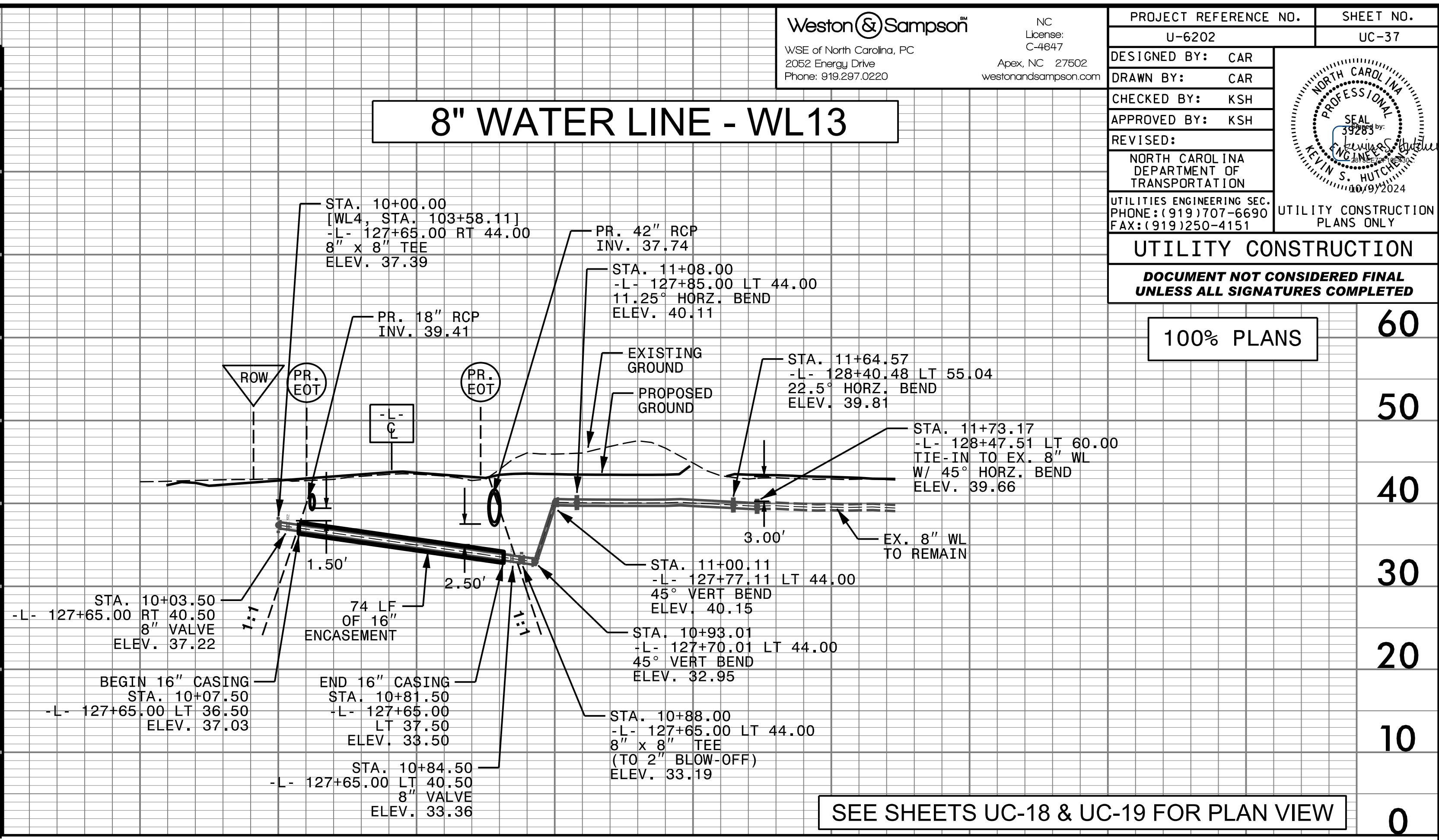
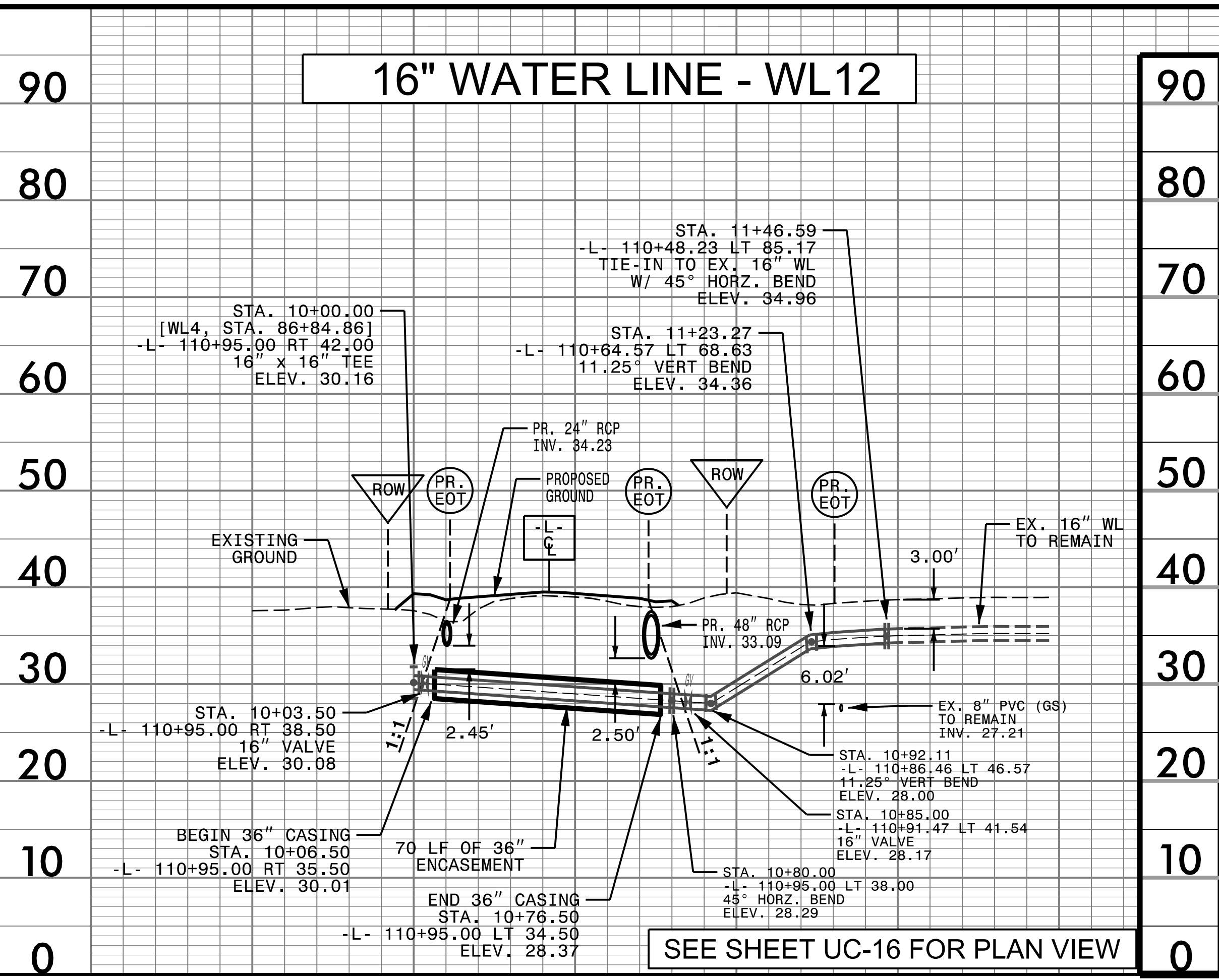


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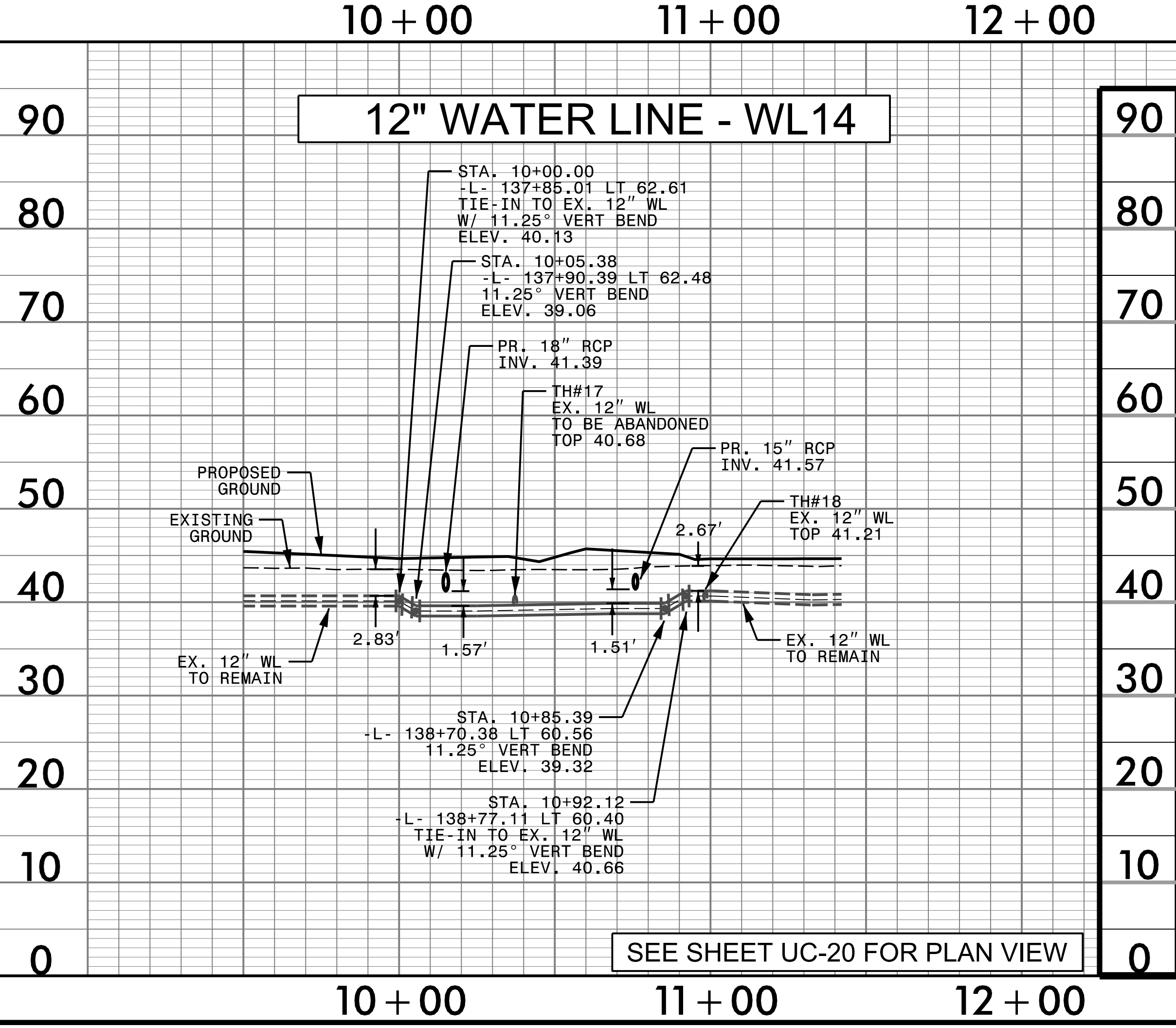
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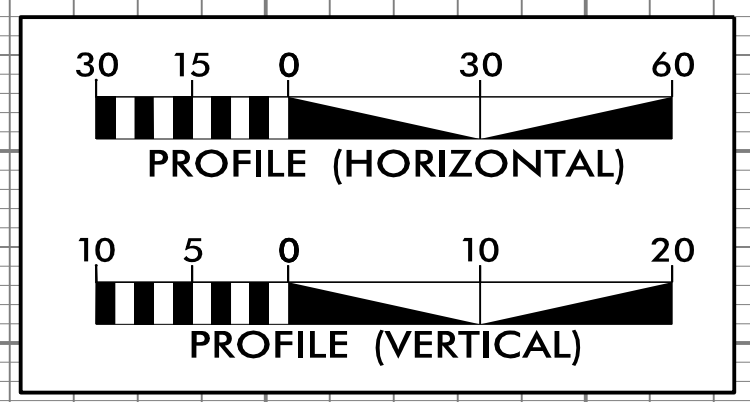
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ROADWAY ID:
-L- GORDON ROAD



NOTES:

- EXISTING PIPE AT TIE-IN LOCATIONS ARE ESTIMATED ASSUMING 3- FEET OF COVER. CONTRACTOR SHALL FIELD VERIFY PIPE LOCATION BEFORE STARTING WORK.
- ALL PROPOSED PIPE ELEVATIONS IN PROFILE REFER TO CENTER OF PIPE UNLESS INDICATED AS INVERT.

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