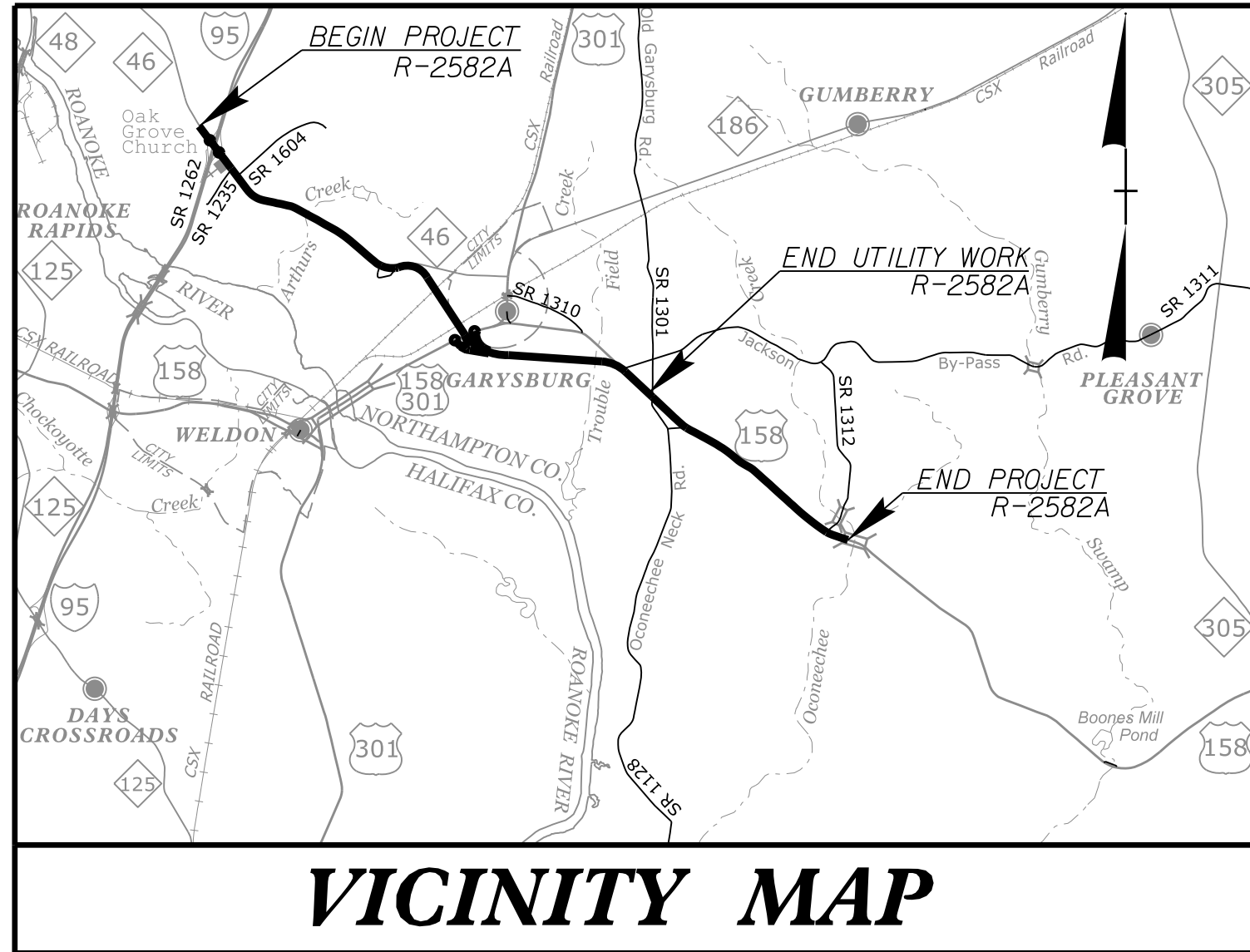


TIP PROJECT: R-2582A

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

T.I.P. NO.	SHEET NO.
R-2582A	UC-1

DOCUMENT NOT CONSIDERED FINAL
UNTIL ALL SIGNATURES ARE COMPLETED

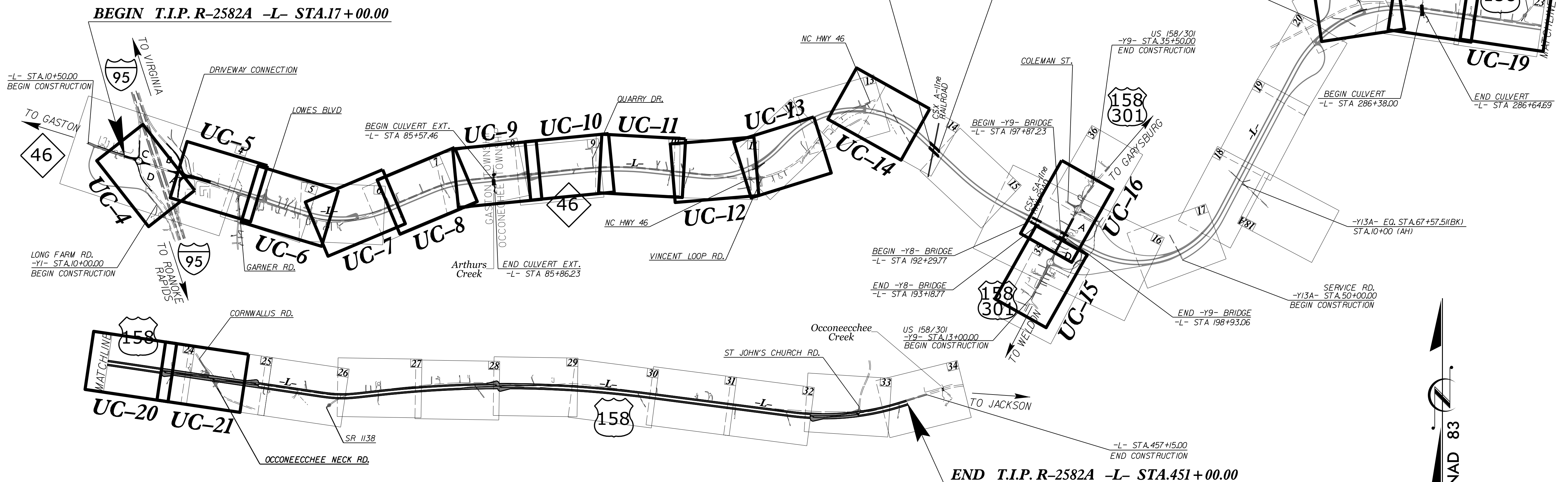


VICINITY MAP

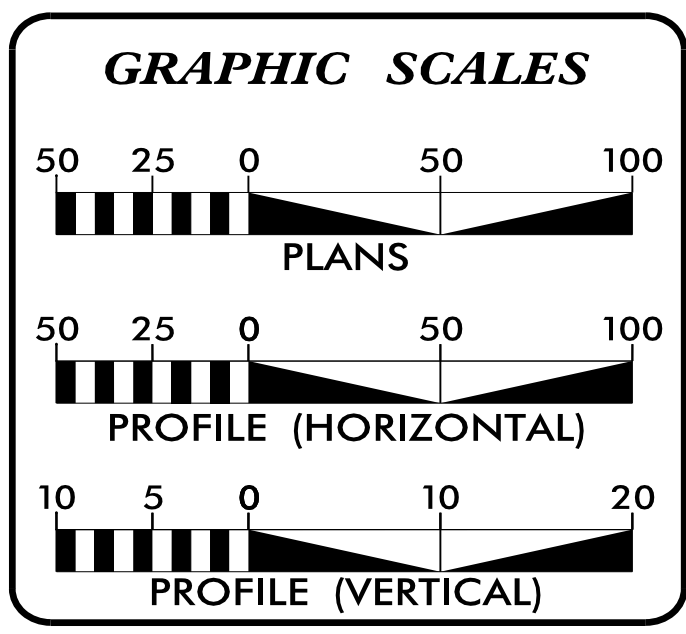
UTILITY CONSTRUCTION PLANS NORTHAMPTON COUNTY

LOCATION: NC46/US 158 FROM I-95/NC46 IN ROANOKE RAPIDS TO SR 1301 (CORNWALLIS RD)

TYPE OF WORK: WATER AND SEWER LINE RELOCATION



PORTIONS OF THIS PROJECT HAVE PARTIAL AND/OR FULL CONTROL OF ACCESS.
A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF GARYSBURG.



SHEET NO.:	DESCRIPTION:
UC-1	TITLE SHEET
UC-2	UTILITY SYMBOLOGY
UC-3	TO UC-3A NOTES
UC-3B	TO UC-3F DETAILS
UC-4	TO UC-21 PLAN SHEETS
UC-22	TO UC-38 PROFILE SHEETS
UC-39	TO UC-47 SANFILIPPO PUMP STATION PLAN SET
UC-48	TO UC-57 PS-1 PUMP STATION PLAN SET

WATER AND SEWER OWNERS ON PROJECT

(A) WATER - NORTHAMPTON COUNTY
 (B) SANITARY SEWER - NORTHAMPTON COUNTY
 (C) WATER - ROANOKE RAPIDS SANITARY DISTRICT

PREPARED IN THE OFFICE OF

M A Engineering Consultants, Inc.
 598 East Chatham Street - Suite 137
 Cary, NC 27511
 Phone: 919.297.0220 Fax: 919.297.0221
 NC License: F-0160

KEVIN C. ZDEB, PE PROJECT ENGINEER
SAM FORSTER PROJECT DESIGNER
WEBB WHITE PROJECT UTILITY COORDINATOR

SEAL

KEVIN C. ZDEB
 PROFESSIONAL ENGINEER
 No. 27611
 5/7/2019

DIVISION OF HIGHWAYS UTILITIES UNIT
 1020 BIRCH RIDGE DRIVE
 RALEIGH, NC 27610
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NABIL HAMDAN REGIONAL UTILITIES ENGINEER
KIFAH KAMIL SENIOR UTILITIES ENGINEER
DAYTON MARTIN REGIONAL UTILITY COORDINATOR

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

UTILITIES PLAN SHEET SYMBOLS

PROPOSED WATER SYMBOLS

Water Line (Sized as Shown)	
11 1/4 Degree Bend	
22 1/2 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 SEWER SYMBOLS

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

PROPOSED MISCELLANEOUS UTILITIES SYMBOLS

Power Pole	
Telephone Pole	
Joint Use Pole	
Telephone Pedestal	
Utility Line by Others (Type as Shown)	
Trenchless Installation	
Encasement by Open Cut	
Encasement	

Thrust Block	
Air Release Valve	
Utility Vault	
Concrete Pier	
Steel Pier	
Plan Note	
Pay Item Note	

NOTE
PAY ITEM

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)

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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 AND THE NORTHAMPTON COUNTY AND THE ROANOKE RAPIDS SANITARY DISTRICT STANDARD SPECIFICATIONS AND DETAILS, LATEST EDITION.

2. THE EXISTING WATER UTILITIES BELONG TO NORTHAMPTON COUNTY AND ROANOKE RAPIDS SEWER DISTRICT

NORTHAMPTON COUNTY
CONTACT: KIRK ROGERS
PHONE: 252-534-6341 X307

ROANOKE RAPIDS SANITARY DISTRICT
CONTACT: DAN BROWN
PHONE: 252-537-9137

THE EXISTING SANITARY SEWER UTILITIES BELONG TO NORTHAMPTON COUNTY

CONTACT: KIRK ROGERS
PHONE: 252-534-6341 X307

3. ALL WATER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL AND NATURAL RESOURCES, DIVISION OF ENVIRONMENTAL HEALTH.

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.

11. CONTRACTOR SHALL CONTACT THE UTILITY OWNER PRIOR TO PERFORMING SYSTEM FLUSHING OR BLOW-OFF OPERATIONS.

PROJECT SPECIFIC NOTES:

1. CONTRACTOR'S ATTENTION IS DIRECTED TO THE UTILITY CONSTRUCTION PROJECT SPECIAL PROVISIONS PROVIDED ALONG WITH THIS PLAN SET.

2. PVC PIPE MANUFACTURED MORE THAN 12 MONTHS BEFORE INSTALLATION DATE WILL NOT BE ACCEPTED.

3. 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.

4. WATER LINE PIPE SHALL BE EITHER PVC OR DUCTILE IRON. PVC PIPE SHALL BE DR-18 AWWA C900 OR AWWA C905 WITH D.I.P. EQUIVALENT OUTSIDE DIAMETERS AND CERTIFIED NSF61 FOR POTABLE WATER USE. DUCTILE IRON PIPE SHALL BE MANUFACTURED IN ACCORDANCE WITH AWWA C150 AND C151 AND SHALL BE A MINIMUM PRESSURE CLASS OF 350 AND THICKNESS CLASS 52.

5. DUCTILE IRON PIPE SHALL BE EITHER PUSH-ON, MECHANICAL JOINT, OR RESTRAINED JOINT CONSTRUCTION.

6. ALL UTILITY CONSTRUCTION SHALL BE SUBJECT TO A FINAL INSPECTION BY THE UTILITY OWNER TO INSURE CONFORMANCE TO THE UTILITY OWNER STANDARDS PRIOR TO FINAL ACCEPTANCE BY THE DEPARTMENT.

7. ALL WATER LINE FITTINGS SHALL BE DUCTILE IRON, MECHANICAL JOINT OR RESTRAINED JOINT COMPACT FITTINGS AND SHALL CONFORM WITH ANSI/AWWA C153/A21.53 UNLESS OTHERWISE DIRECTED. FITTINGS 4-INCH THROUGH 24-INCH DIAMETER SHALL HAVE A MINIMUM PRESSURE RATING OF 350 PSI.

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 RESTRAINS AS DETAILED ON THESE DRAWINGS, OR AS DIRECTED BY THE RESIDENT ENGINEER.

9. TRENCHLESS INSTALLATION OF WATER LINE, 4" THROUGH 24", SHALL UTILIZE PVC C900 OR C905 DR-18 PIPE WITH FUSIBLE JOINTS AND D.I.P. EQUIVALENT OUTSIDE DIAMETERS.

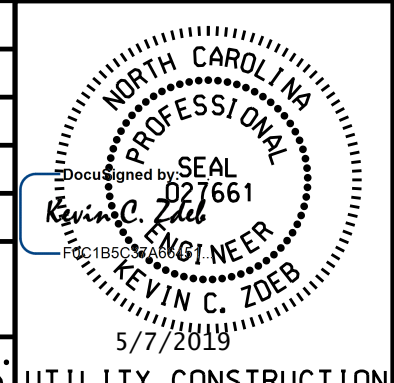

10. CONTRACTOR'S ATTENTION IS DIRECTED TO SECTIONS 102, 107, AND 1550 OF THE STANDARD SPECIFICATIONS CONCERNING TRENCHLESS INSTALLATION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO HAVE BORE DESIGNED AND SEALED BY A LICENSED NORTH CAROLINA PROFESSIONAL ENGINEER. NO DAMAGE IS ALLOWED TO RIVER, WETLANDS, OR BUFFER ZONES.

11. EXISTING WATER METERS TO REMAIN SHALL BE RECONNECTED TO THE EXISTING / PROPOSED WATER MAIN WITH NEW WATER SERVICE LINES.

12. EXISTING WATER METERS TO BE RELOCATED SHALL BE CONNECTED TO THE EXISTING OR PROPOSED WATER LINE WITH NEW WATER SERVICE LINES. ANY EXTENSIONS OR MODIFICATIONS TO THE EXISTING SERVICE LINES ON THE CUSTOMER SIDE OF THE WATER METER SHALL BE INCIDENTAL TO THE RELOCATION OF THE WATER METER. ALL WORK SHALL BE CONDUCTED WITH LIKE PIPE MATERIALS AS THE EXISTING PIPES, UNLESS 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.

13. ALL NEW OR RELOCATED WATER METERS SHALL BE INSTALLED WITH THE BACK (CUSTOMER SIDE) OF THE METER BOX AT THE RIGHT-OF-WAY LINE, UNLESS OTHERWISE DIRECTED BY THE RESIDENT ENGINEER.

14. 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 RESIDENT ENGINEER.

PROJECT REFERENCE NO. R-2582A	SHEET NO. UC-3
DESIGNED BY: KCZ	
DRAWN BY: SHF	
CHECKED BY: KCZ	
APPROVED BY: KCZ	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION	
 598 East Chatham Street - Suite 137 Cary, NC 27511 Phone: 919.297.0220 Fax: 919.297.0221 NC License: F-4160	
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UTILITY CONSTRUCTION

PROJECT SPECIFIC NOTES (CONTINUED):

15. 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.

16. 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.

17. ALL HYDRANTS, PROPOSED OR RELOCATED, SHALL BE INSTALLED 2 FEET BEHIND THE SIDEWALK, OR WITHIN ONE FOOT OF THE R/W LINE, OR AS DIRECTED BY THE RESIDENT ENGINEER.

18. WATER METER BOXES SHALL NOT BE INSTALLED WITHIN PAVED OR SIDEWALK AREA UNLESS APPROVED BY UTILITY OWNER.

19. SANITARY FORCE MAIN PIPE SHALL BE EITHER PVC OR DUCTILE IRON PIPE.

20. ALL SANITARY FORCE MAIN PIPE SHALL BE INSTALLED WITH A MINIMUM COVER OF FOUR (4) FEET. WHERE COVER IS LESS THAN FOUR (4) FEET, CONTRACTOR SHALL USE DUCTILE IRON PIPE, UNLESS OTHERWISE DIRECTED BY THE UTILITY OWNER AND/OR THE RESIDENT ENGINEER.

21. ALL WATER AND SEWER SERVICES SHALL BE INSTALLED PERPENDICULAR TO THE MAIN AND TERMINATE AT THE RIGHT-OF-WAY LINE.

22. ALL STAINLESS STEEL FASTENERS SHALL BE OF GRADE 316.

23. SANITARY SEWER CLEANOUTS SHALL BE LOCATED A MINIMUM OF 12 FEET FROM ALL PROPERTY CORNERS.

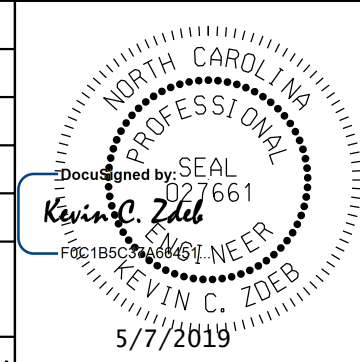

24. WATER METER BOXES SHALL BE LOCATED A MINIMUM OF 5 FEET FROM ALL PROPERTY CORNERS.

25. THE CONTRACTOR SHALL BE RESPONSIBLE FOR BYPASS PUMPING TO MAINTAIN SERVICE IMPACTED BY WORK TO SANITARY SEWERS AND PUMPING STATIONS.

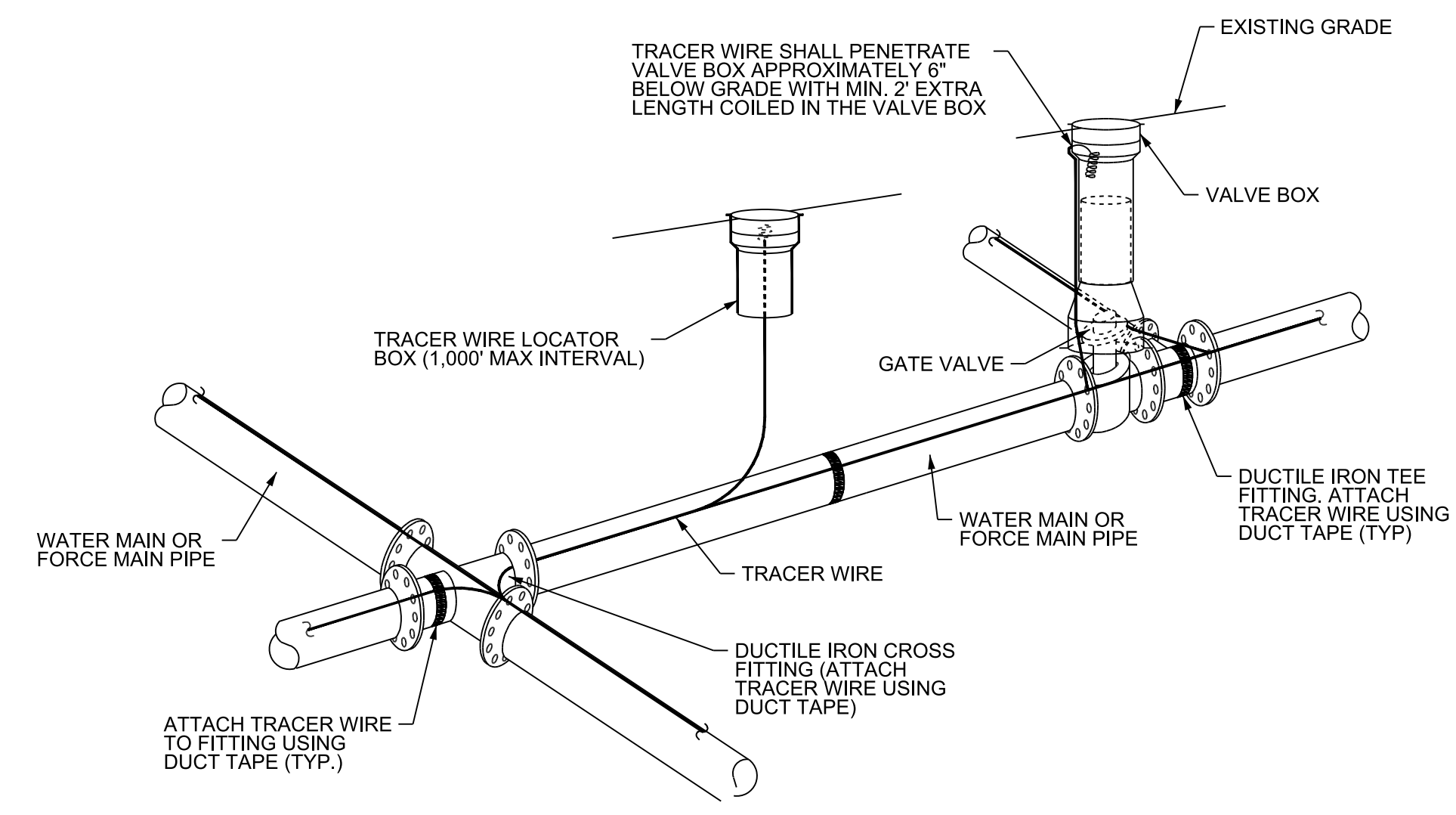
26. EXISTING PUMPING STATIONS SHALL BE MAINTAINED UNTIL PROPOSED PUMPING STATIONS ARE CONSTRUCTED AND APPROVED TO BE PUT INTO SERVICE.

27. EXISTING PVC PIPE SHALL BE EXCAVATED AND FIELD BENT AS NEEDED TO PROVIDE FOR HORIZONTAL TRANSITION AND TIE-IN TO PROPOSED PIPE AT THE APPROVAL OF THE RESIDENT ENGINEER.

28. EXISTING BURIED WATER LINE TO BE ABANDONED SHALL BE FILLED WITH FLOWABLE FILL AND CAPPED AT EACH END.

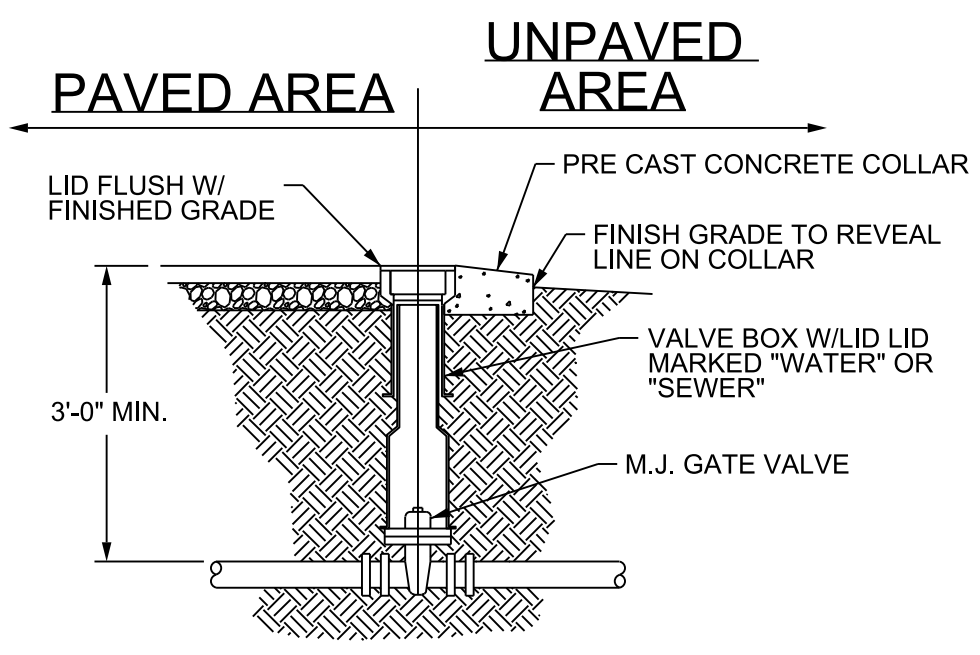
PROJECT REFERENCE NO. R-2582A	SHEET NO. UC-3A
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DRAWN BY: SHF	
CHECKED BY: KCZ	
APPROVED BY: KCZ	
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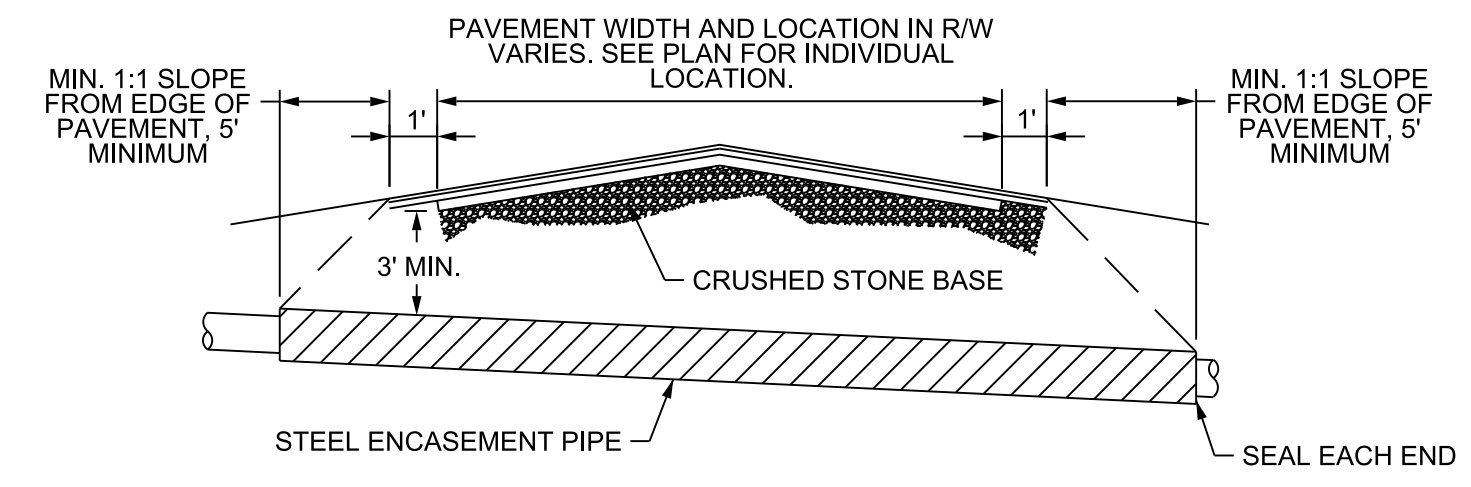


- NOTES:
1. TRACER WIRE SHALL BE #10 COPPER SOLID CORE WIRE WITH GAS AND OIL RESISTANT INSULATION.
 2. WIRE SHALL BE STRAPPED TO ALL PVC WATER AND FORCE MAIN PIPING WITH DUCT TAPE AT 12 FOOT INTERVALS ALONG THE PIPE.
 3. SECURE WIRE TO ALL TEE AND CROSS FITTINGS WITH DUCT TAPE.
 4. ALL SPLICES IN THE WIRE SHALL BE MADE WITH 3M DBR DIRECT BURST SPLICE KIT AN UNDERGROUND RATED, WATERTIGHT AND APPROVED SPLICE CONNECTOR OR APPROVED EQUAL.

TRACER WIRE DETAIL
NOT TO SCALE

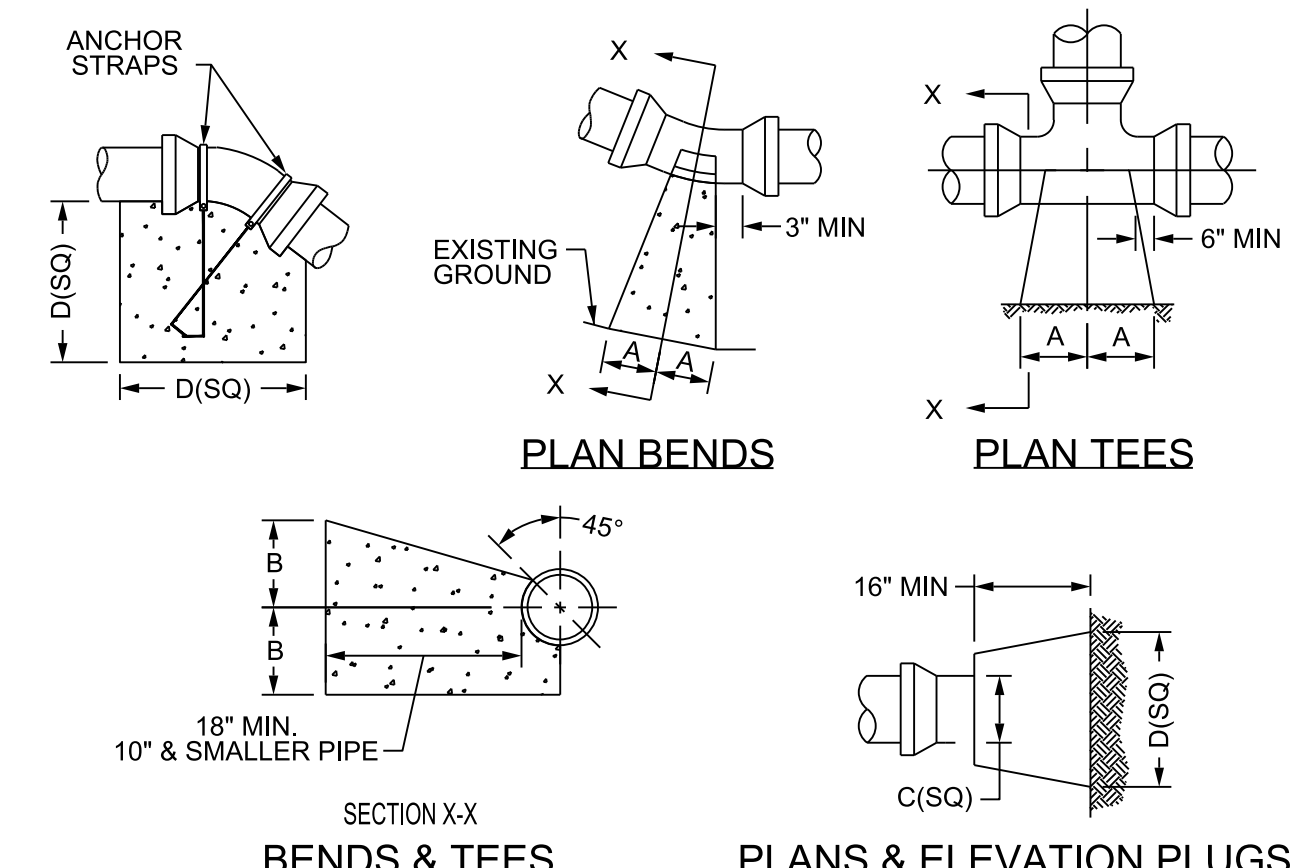


VALVE DETAIL
NOT TO SCALE



- NOTES:
1. CASING WILL BE INSTALLED AT LINE AND GRADE SHOWN ON INDIVIDUAL PROFILE FOR EACH CROSSING. BORING/JACKING TO LINE AND GRADE IS REQUIRED.
 2. TRACER WIRE SHALL BE CONTINUED THROUGH CASING

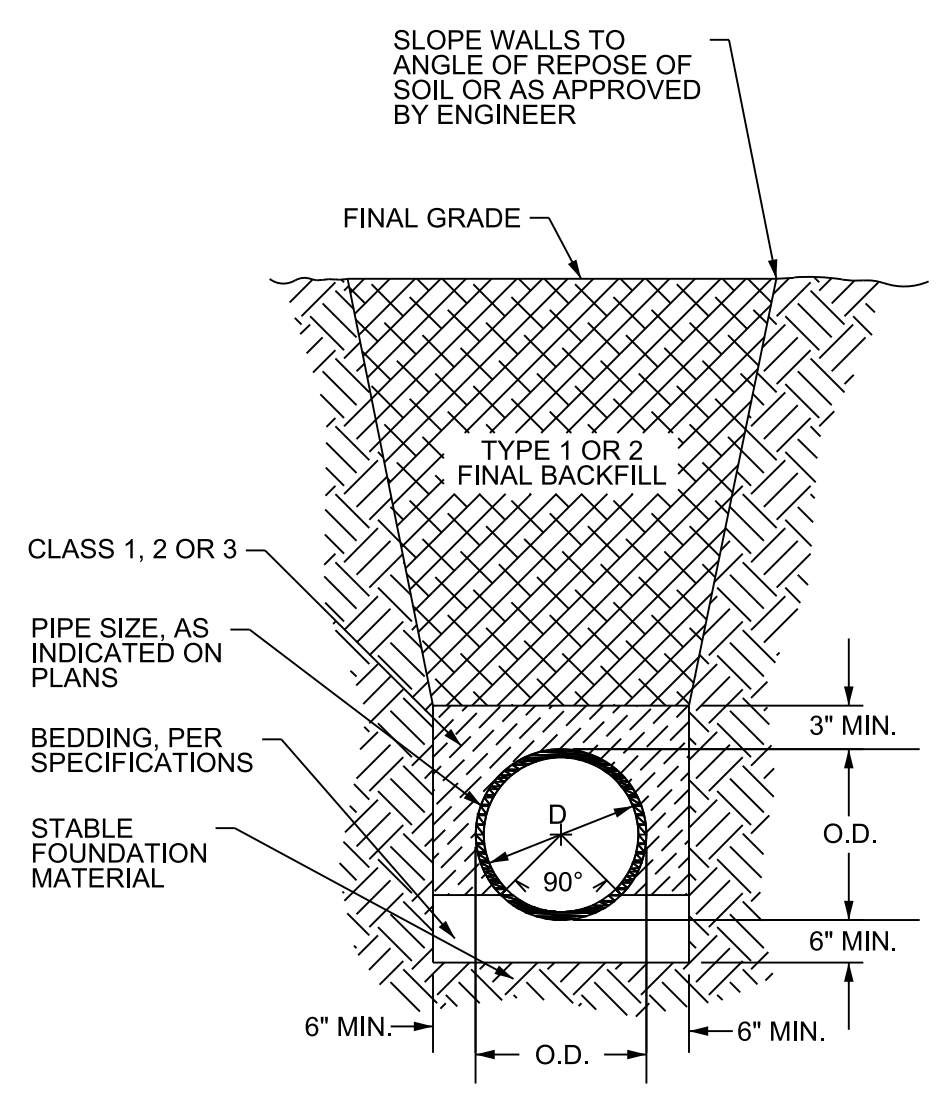
TYPICAL BORING/JACKING DETAIL
NOT TO SCALE



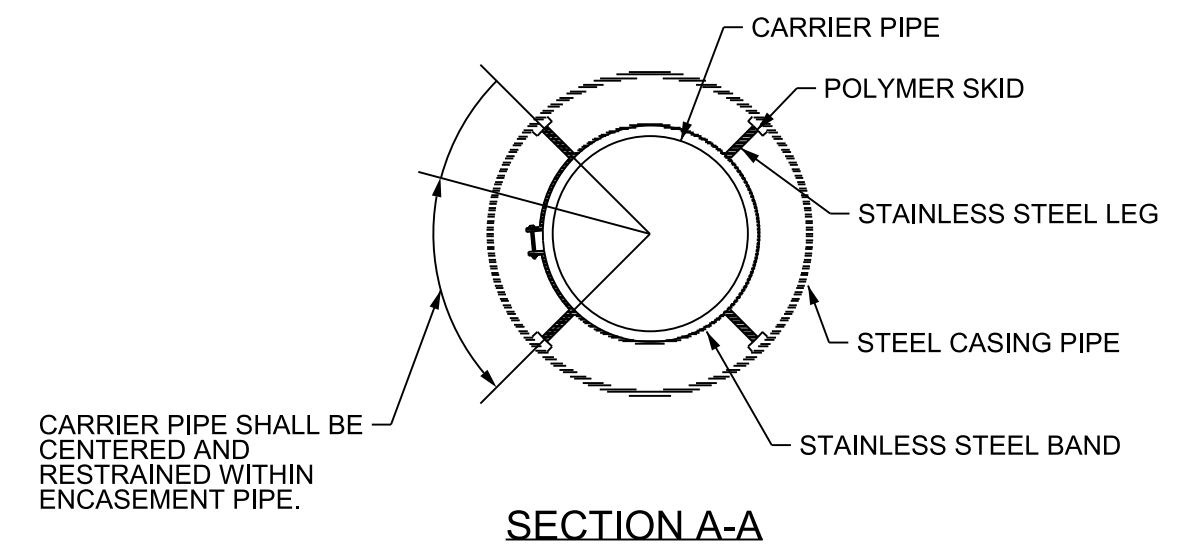
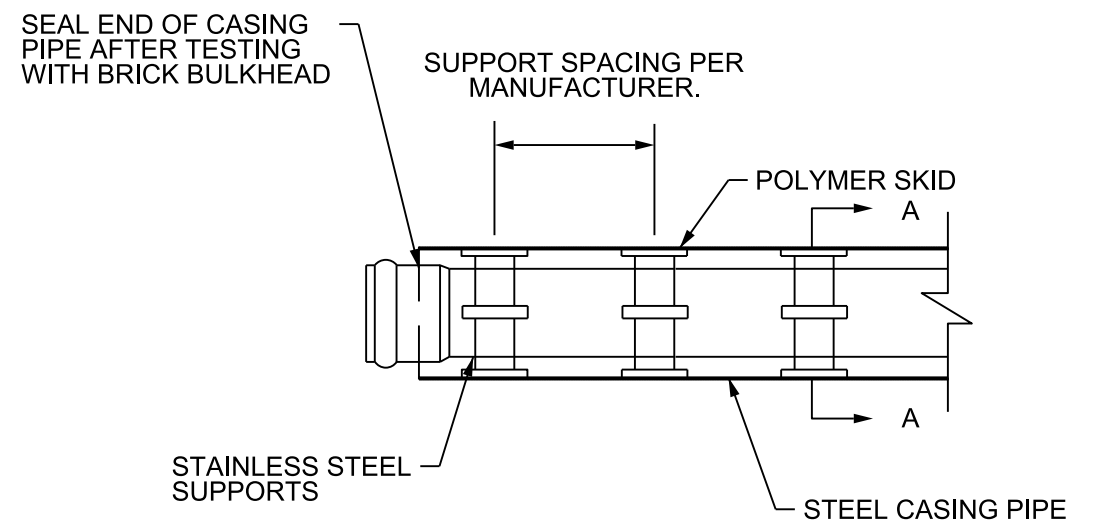
SIZE	90 BENDS		45 BENDS		22-1/2 BENDS		TEES/PLUGS		45 VERT BENDS
	A	B	A	B	A	B	A	B	
3"	8"	6"	5"	6"	3"	7"	6"	8"	27"
4"	8"	9"	5"	8"	3"	11"	6"	9"	28"
6"	14"	11"	9"	9"	8"	8"	12"	9"	36"
8"	16"	16"	12"	12"	10"	13"	14"	13"	42"
10"	18"	22"	15"	14"	14"	16"	18"	15"	50"
12"	20"	28"	18"	17"	16"	16"	22"	18"	62"
14"	26"	29"	21"	19"	18"	18"	26"	20"	72"
16"	33"	29"	25"	21"	20"	21"	32"	21"	83"
18"	40"	30"	28"	24"	22"	23"	36"	24"	88"

- NOTES:
1. BASED ON 160 PSI TEST PRESSURE AND 2000 PSF SOIL BEARING CAPACITY.
 2. ALL BEARING SURFACES TO BE CARRIED TO UNDISTURBED GROUND.
 3. USE MEG-A-LUG (PREFERRED) IN LIEU OF BLOCKING AND RODDING.

THRUST BLOCK DETAIL
NOT TO SCALE



TYPICAL TRENCH DETAIL
NOT TO SCALE



- NOTES:
1. PIPE SUPPORT TO BE PLACED TO PROVIDE PROPER SUPPORT, ALIGNMENT, AND GRADE AS SPECIFIED. CONTINUOUS SUPPORTS MAY BE USED AS ALTERNATIVE. OIL, GREASE OR PETROLEUM PRODUCT MAY NOT BE USED AS LUBRICANT.
 2. ALL STAINLESS STEEL PARTS TO BE 316 SST.

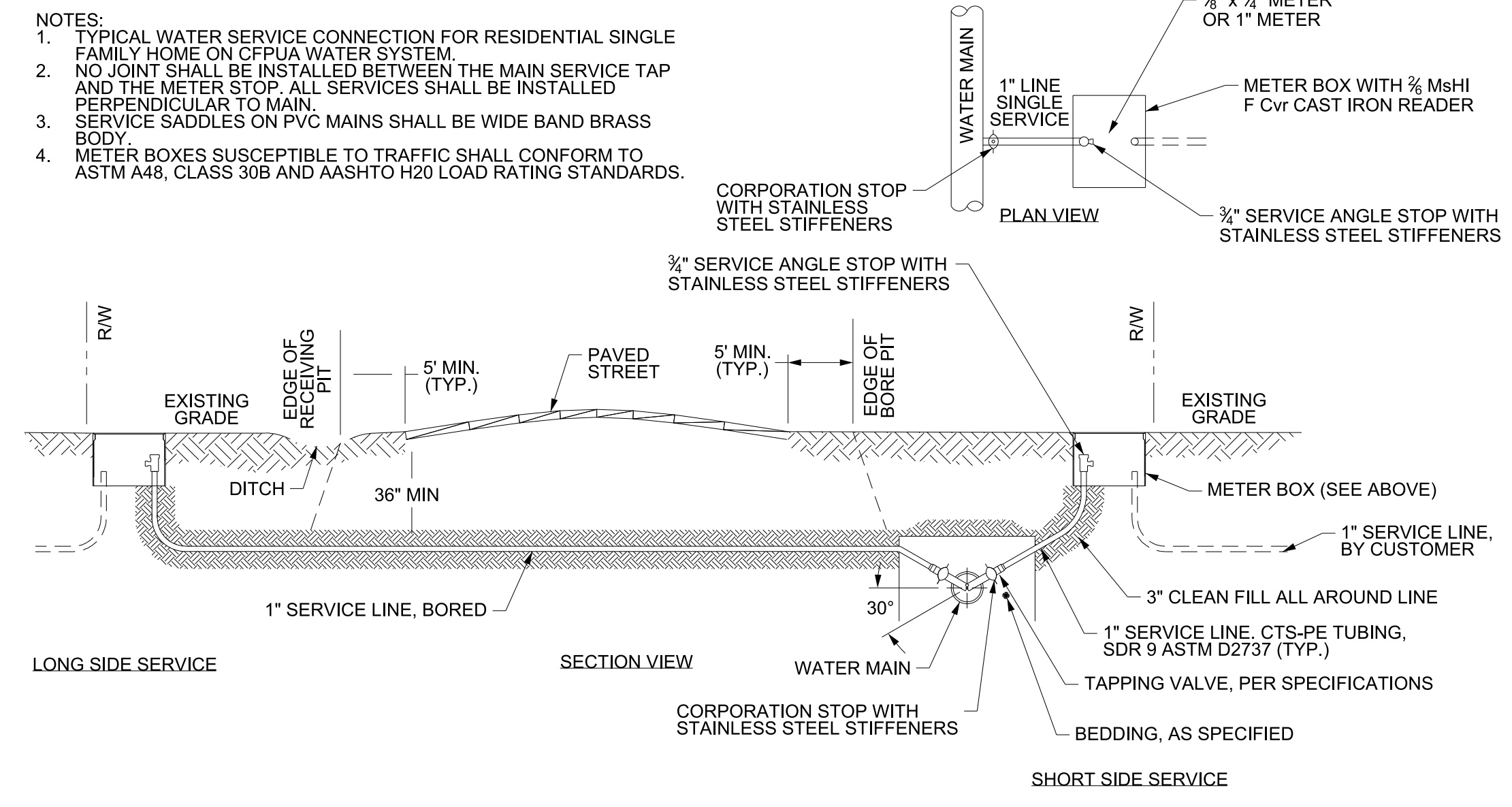
PIPE CASING SUPPORT
NOT TO SCALE

PROJECT REFERENCE NO. R-2582A	SHEET NO. UC-3B
DESIGNED BY: KCZ	
DRAWN BY: SHF	
CHECKED BY: KCZ	
APPROVED BY: KCZ	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	UTILITY CONSTRUCTION PLANS ONLY
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION	
DOCUMENT NOT CONSIDERED FINAL UNTIL ALL SIGNATURES ARE COMPLETED	

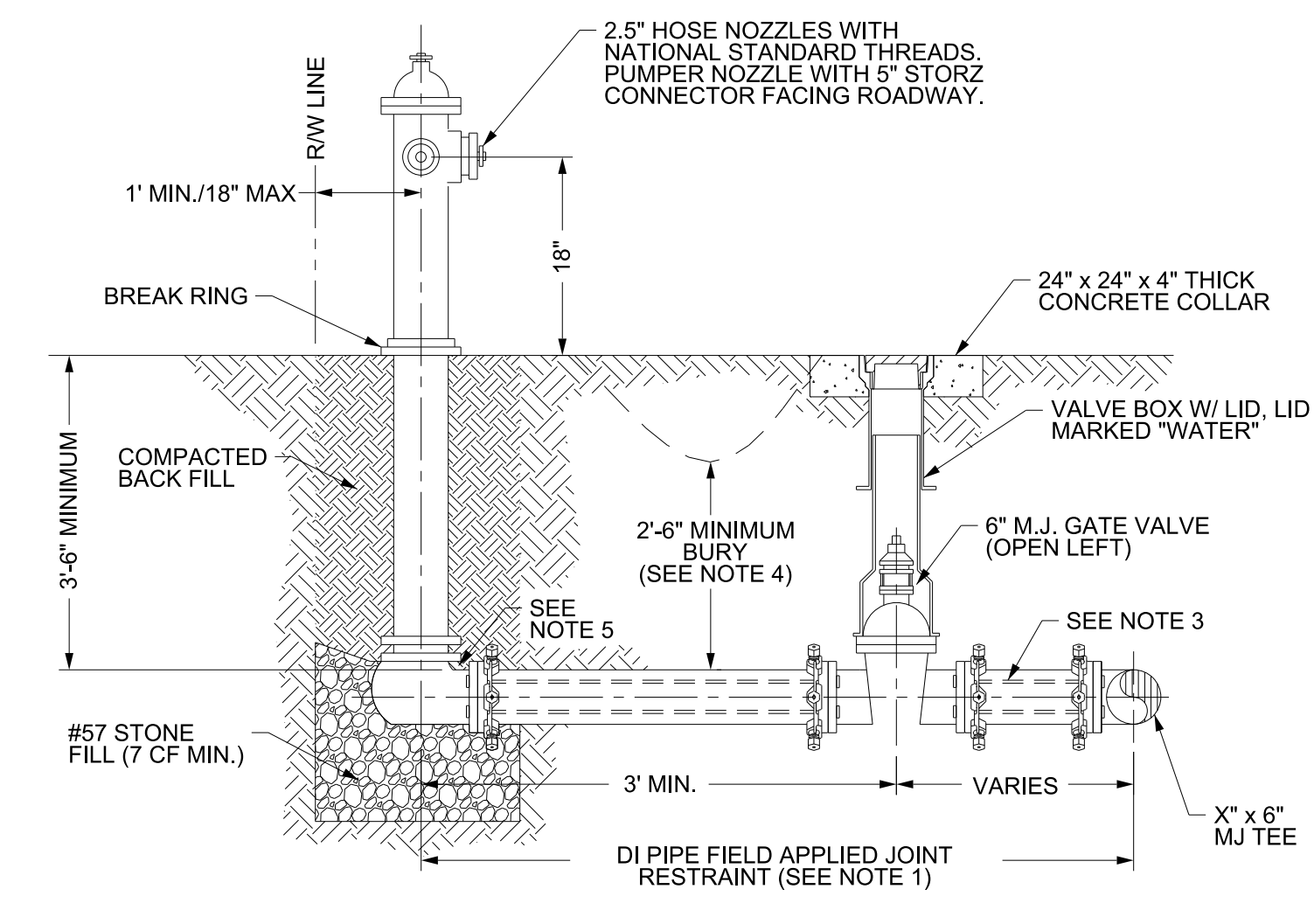
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5/14/19

PROJECT REFERENCE NO.	SHEET NO.
R-2582A	UC-3C
DESIGNED BY: KCZ	
DRAWN BY: SHF	
CHECKED BY: KCZ	
APPROVED BY: KCZ	
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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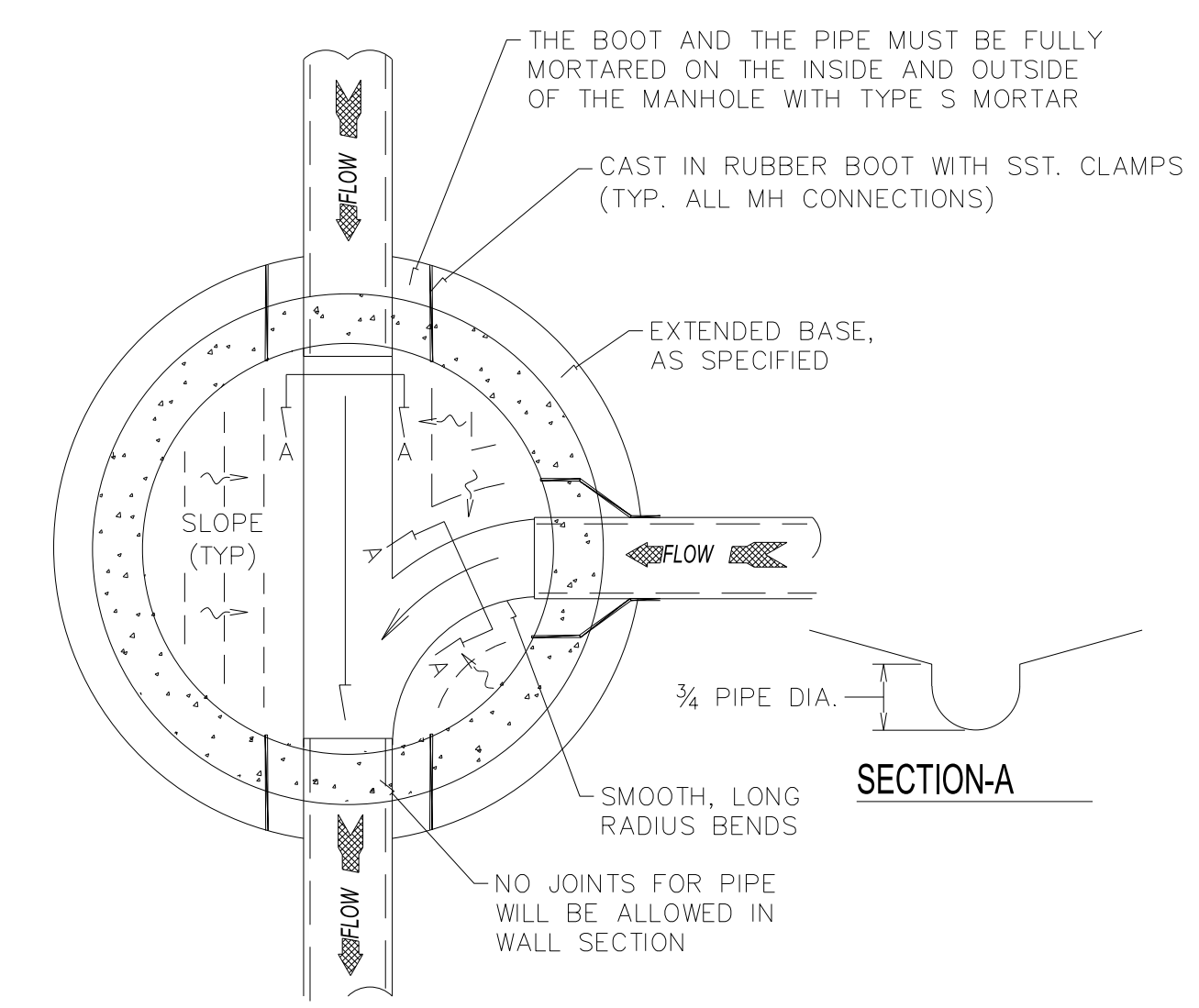


SINGLE SERVICE CONNECTION
NOT TO SCALE

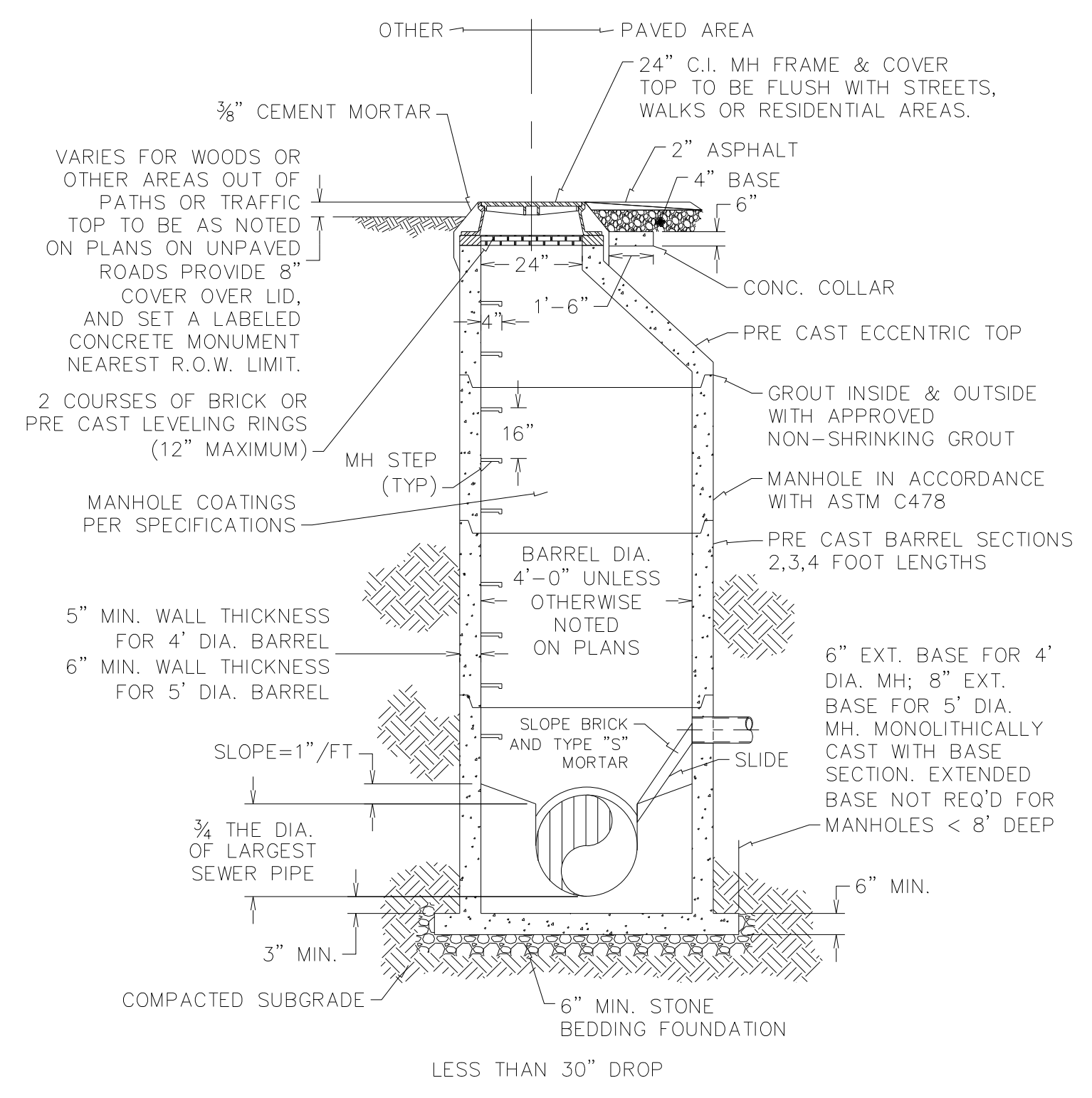


- NOTES:**
- JOINT RESTRAINT SYSTEMS SHALL BE WEDGE ACTION STYLE FOR DI PIPE AS MANUFACTURED BY EBBA IRON, SIGMA, STAR PIPE PRODUCTS OR APPROVED EQUAL.
 - WHEN HYDRANT LEGS REQUIRE FULL LENGTH PIPE SECTIONS, OVER BELL RESTRAINT SYSTEM SHALL HAVE 316 STAINLESS STEEL HARNESS AND FASTENERS.
 - CONTINUOUS 316 STAINLESS STEEL RODS (TEE TO VALVE AND VALVE TO HYDRANT) MAY BE USED WITH COR-BLUE MJ T-BOLT AND GASKETS KITS, AS AN ALTERNATIVE.
 - HYDRANT AND VALVE SHALL BE PLACED OUTSIDE DITCH LIMITS.
 - WEEP HOLES OPEN AND UNBLOCKED TO DRAIN.

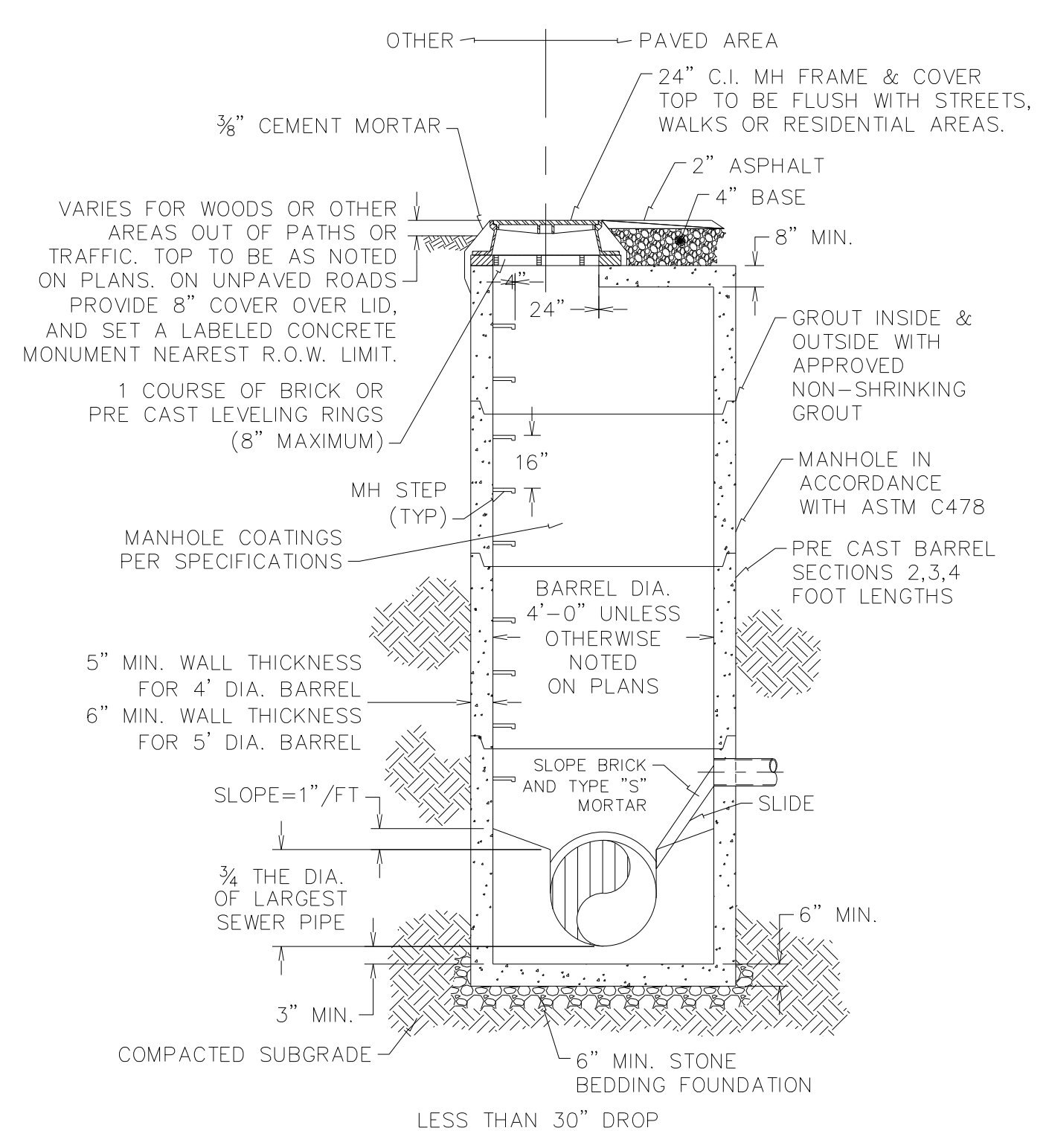
FIRE HYDRANT ASSEMBLY DETAIL
NOT TO SCALE



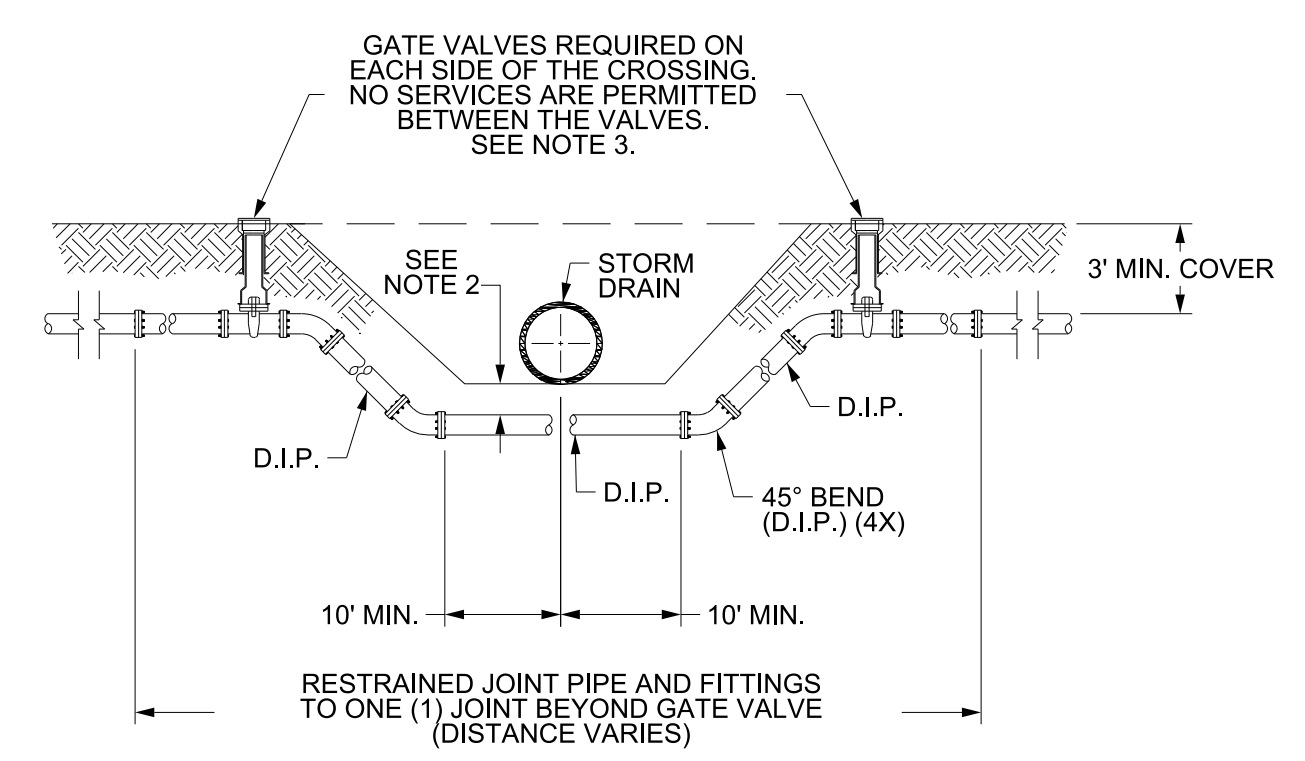
MANHOLE FLOOR PLAN
NOT TO SCALE



PRECAST CONCRETE OFFSET MANHOLE
NOT TO SCALE



PRECAST CONCRETE FLAT TOP MANHOLE
NOT TO SCALE

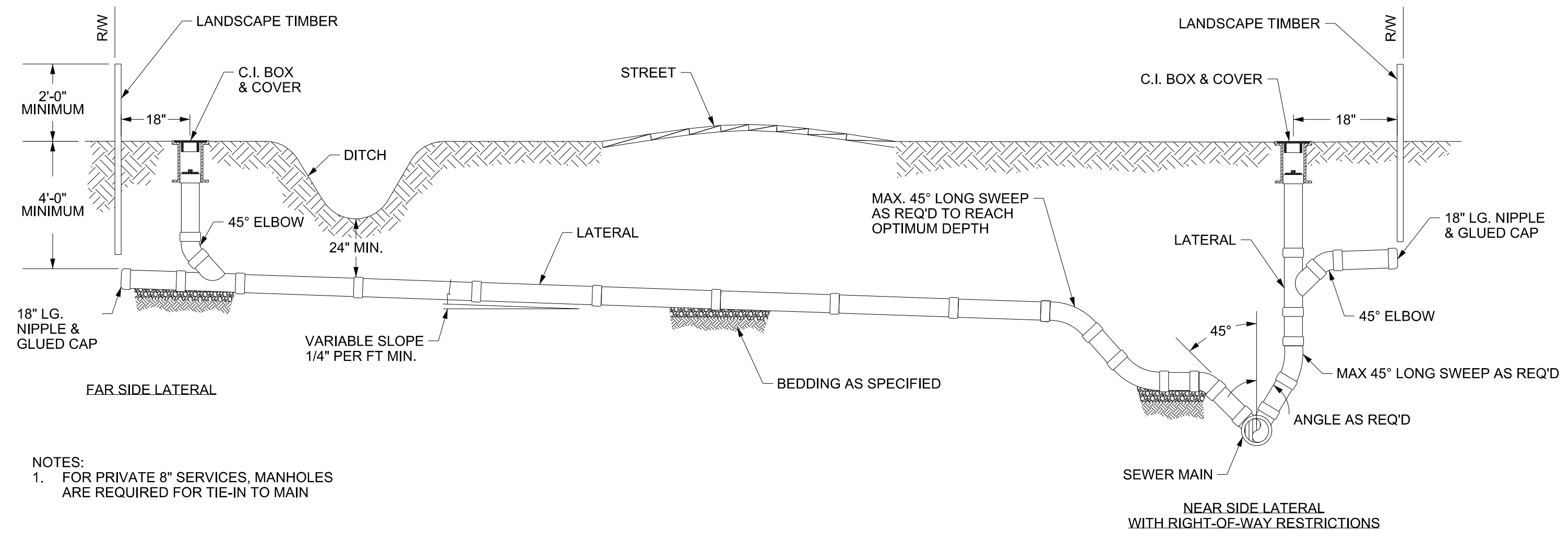


- NOTES:**
- USE PRESSURE CLASS 350 D.I.P., UNLESS SPECIFIED OTHERWISE.
 - MINIMUM DEPTH OF COVER REQUIRED UNLESS SPECIFIED OTHERWISE:
 - A. IN DOT R/W, 36" MIN. TYPICAL, OR 24" MIN. WHEN CROSSING A DITCH LINE.
 - B. ALL OTHER LOCATIONS, 30" MIN.
 - C. WHEN STORM DRAIN INVERT IS BURIED AT OR BELOW ABOVE DEPTHS, 18" MIN. CLEARANCE BETWEEN PIPES IS REQUIRED.
 - VALVE PLACEMENT AS SHOWN ON PLANS, OR AS DIRECTED BY RESIDENT ENGINEER AND APPROVAL OF UTILITY OWNER.

WATER MAIN DITCH AND STORM DRAIN CROSSING
NOT TO SCALE

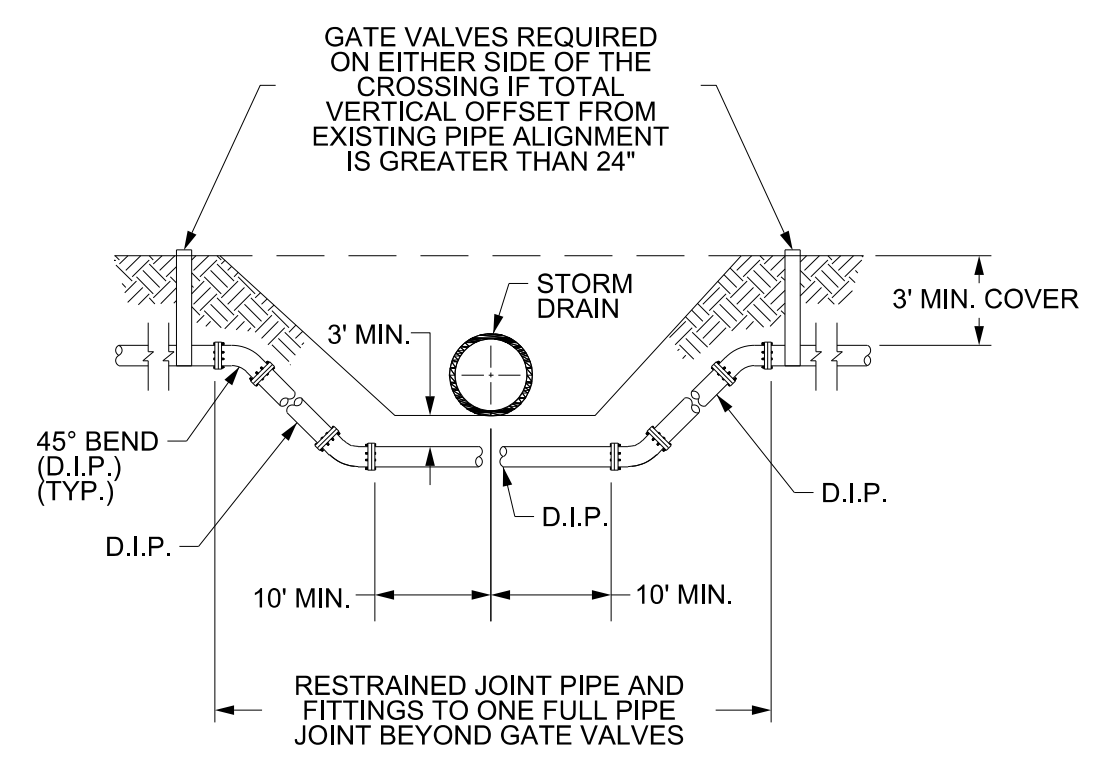
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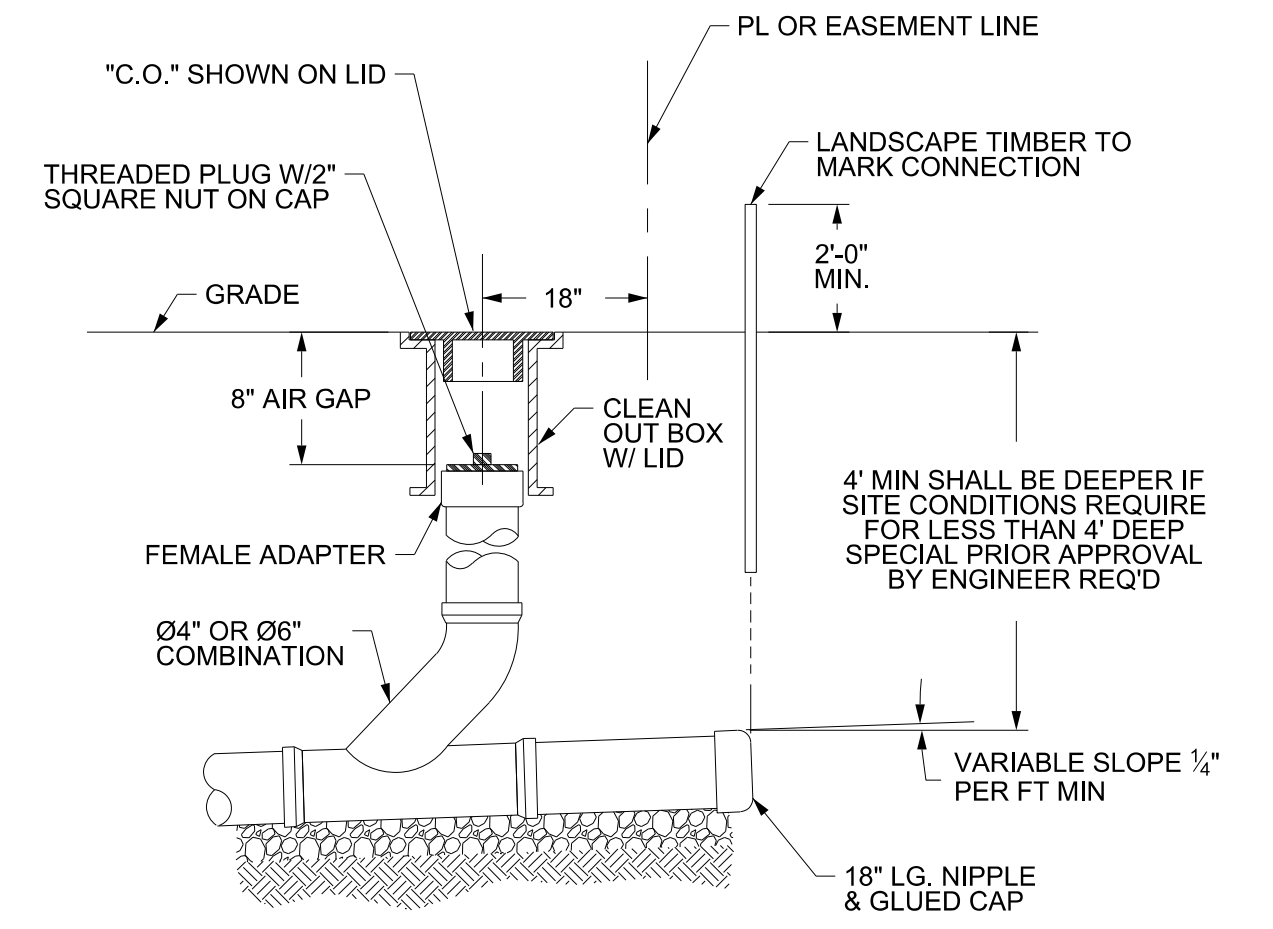
NOTES:
1. FOR PRIVATE 8" SERVICES, MANHOLES ARE REQUIRED FOR TIE-IN TO MAIN

STANDARD SERVICE CONNECTION
NOT TO SCALE



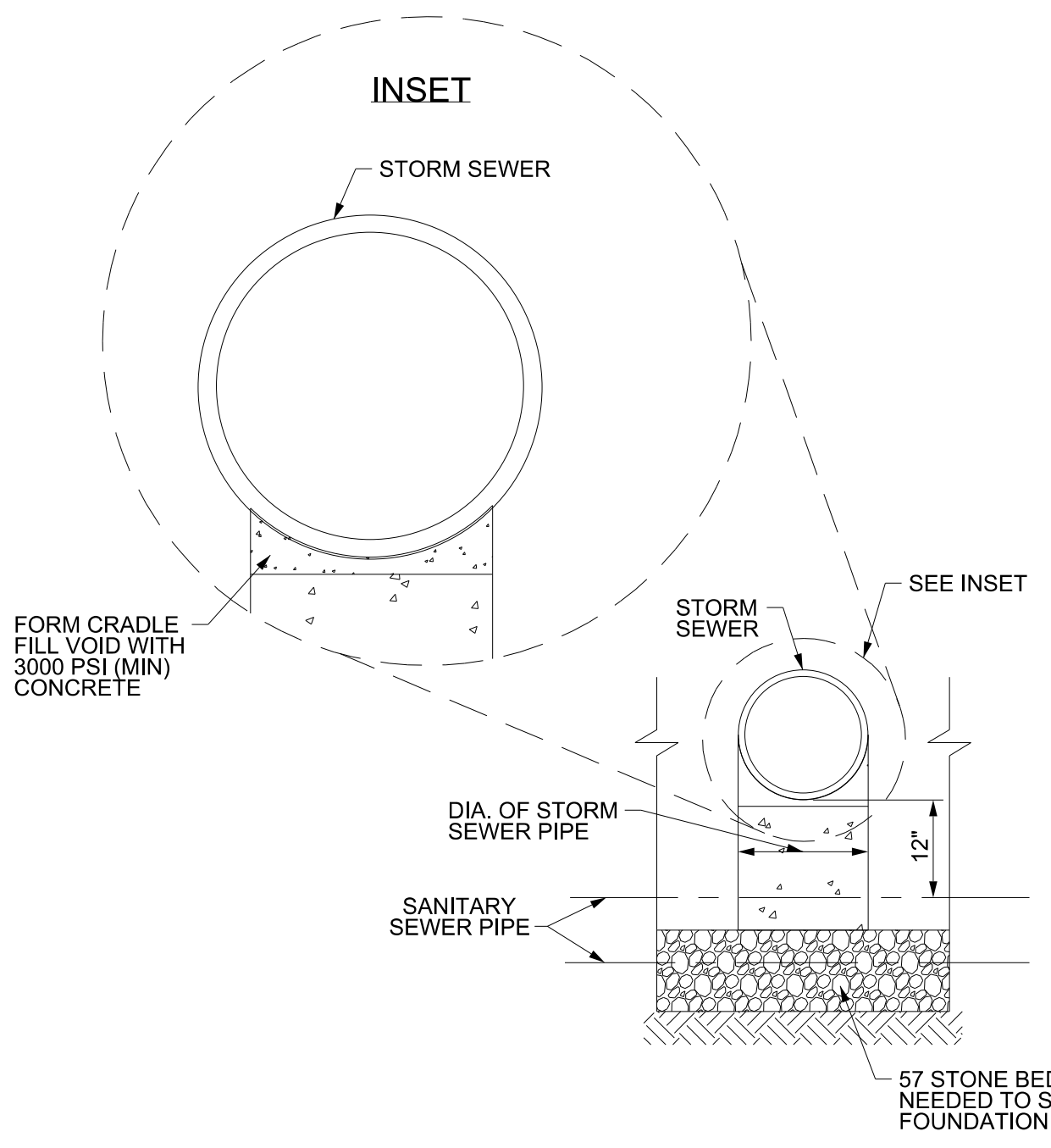
NOTE:
1. USE D.I.P. (CL52, PRESSURE CLASS 350, OR BETTER)
2. DISTANCE BETWEEN UPPER 45° BENDS VARIES DEPENDING ON DEPTH OF OFFSET RELOCATION
3. GATE VALVES, WHEN NEEDED, SHALL BE INSTALLED 5 FEET FROM THE 45° BEND.

FORCE MAIN DITCH AND STORM DRAIN CROSSING
NOT TO SCALE

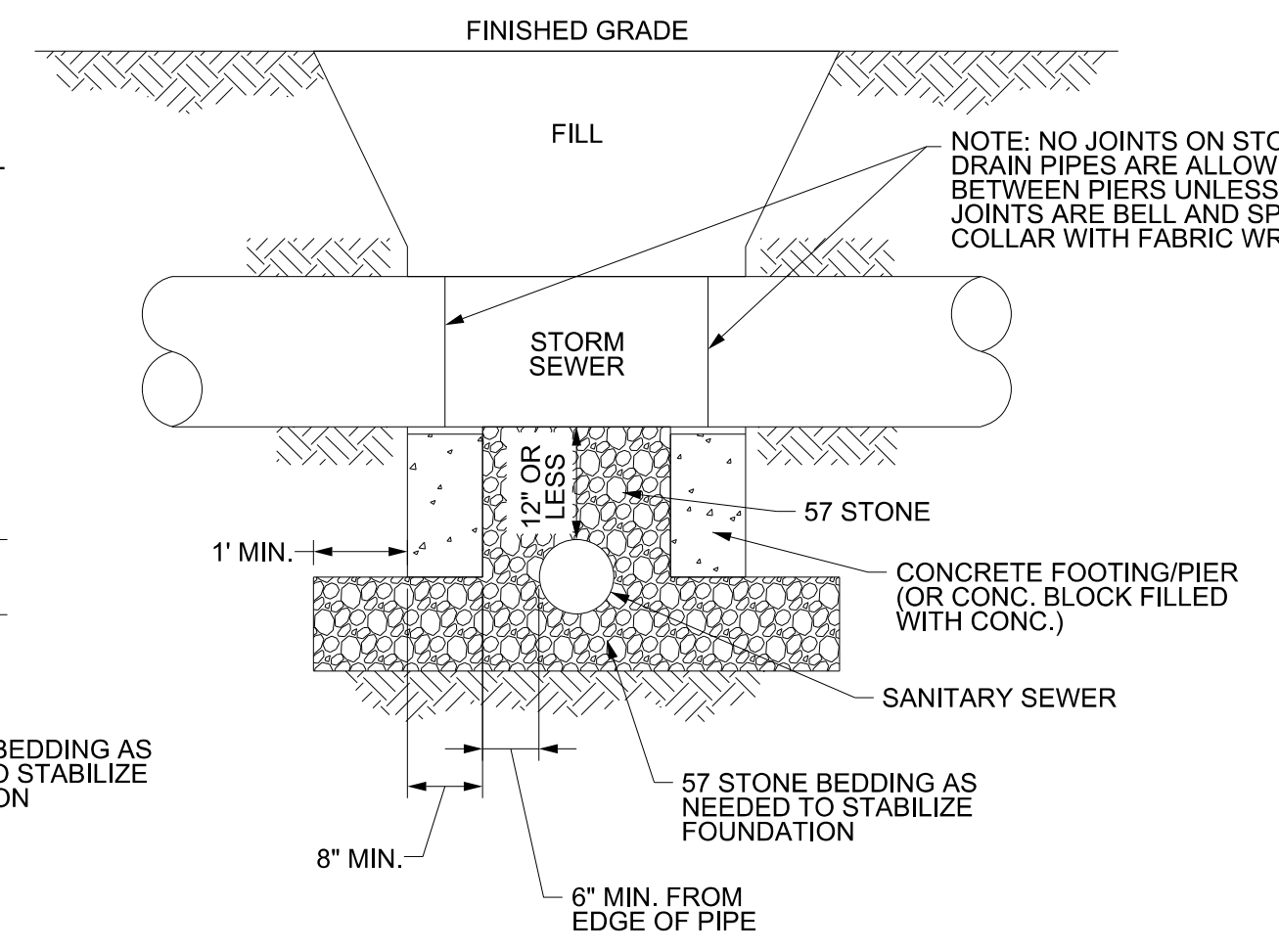


NOTES:
1. PIPE MATERIAL* SCH. 40, SOLVENT WELD PVC 1120 ASTM D-1785
2. FOR PRIVATE 8" SERVICES, MANHOLES ARE REQUIRED FOR CONNECTION TO SYSTEM AND AT THE PROPERTY LINE, WITH REQUIRED EASEMENT.

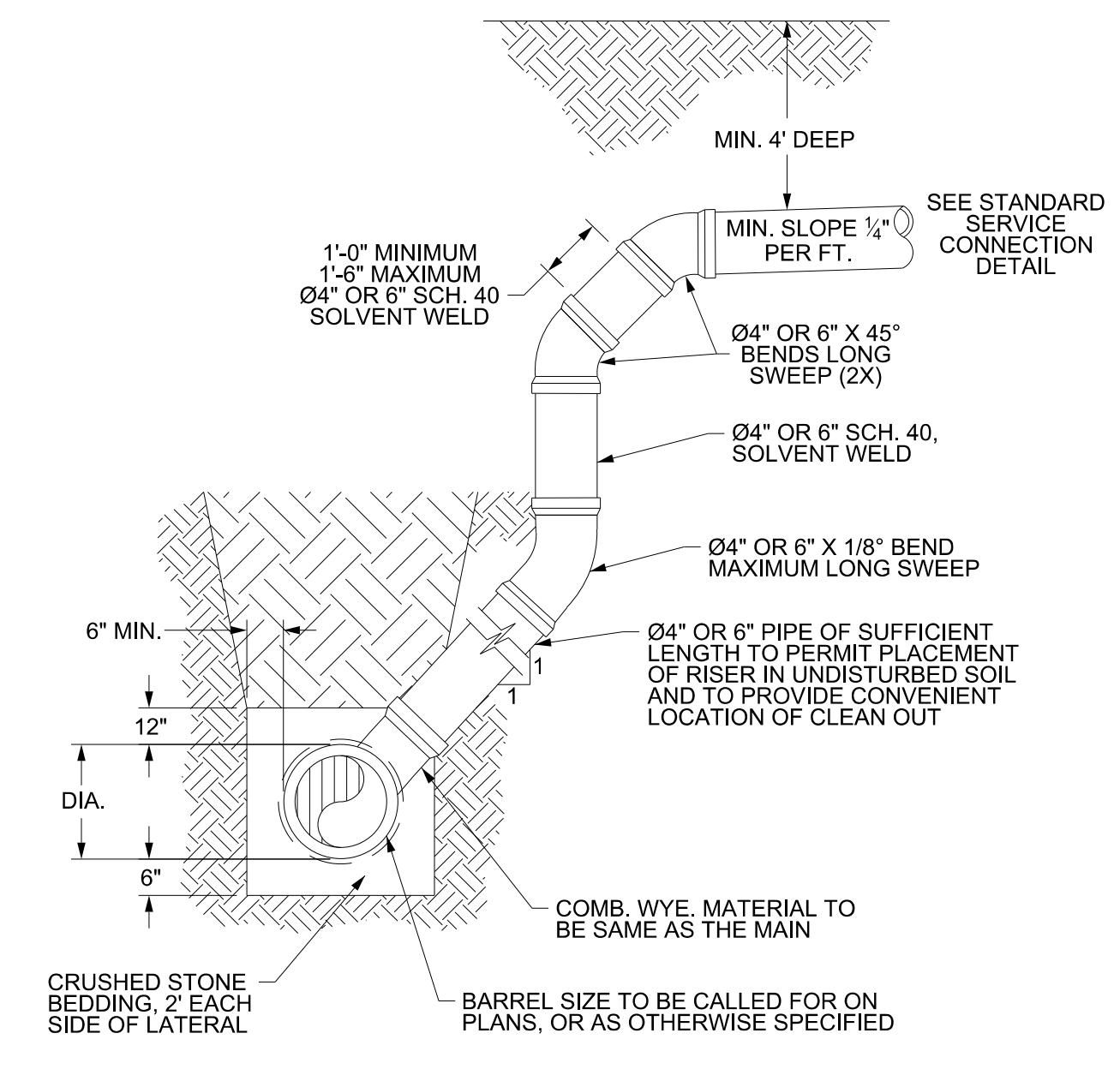
SERVICE CONNECTION AND CLEAN OUT
NOT TO SCALE



THE FOLLOWING MUST BE FOLLOWED IN THE CASES OF GRAVITY SEWER UNDER STORM DRAIN:
1. A SEPARATION OF LESS THAN 12" BETWEEN STORM DRAIN AND GRAVITY SEWER, STORM DRAIN MUST BE BRIDGED.
2. A SEPARATION OF 12" TO LESS THAN 24" BETWEEN STORM DRAIN AND GRAVITY SEWER, GRAVITY SEWER CAN BE DIP OR STORM DRAIN CAN BE BRIDGED. (PER DWR REGULATIONS)
3. A SEPARATION OF 24" OR GREATER BETWEEN STORM DRAIN AND GRAVITY SEWER REQUIRES NO BRIDGING OR DIP.

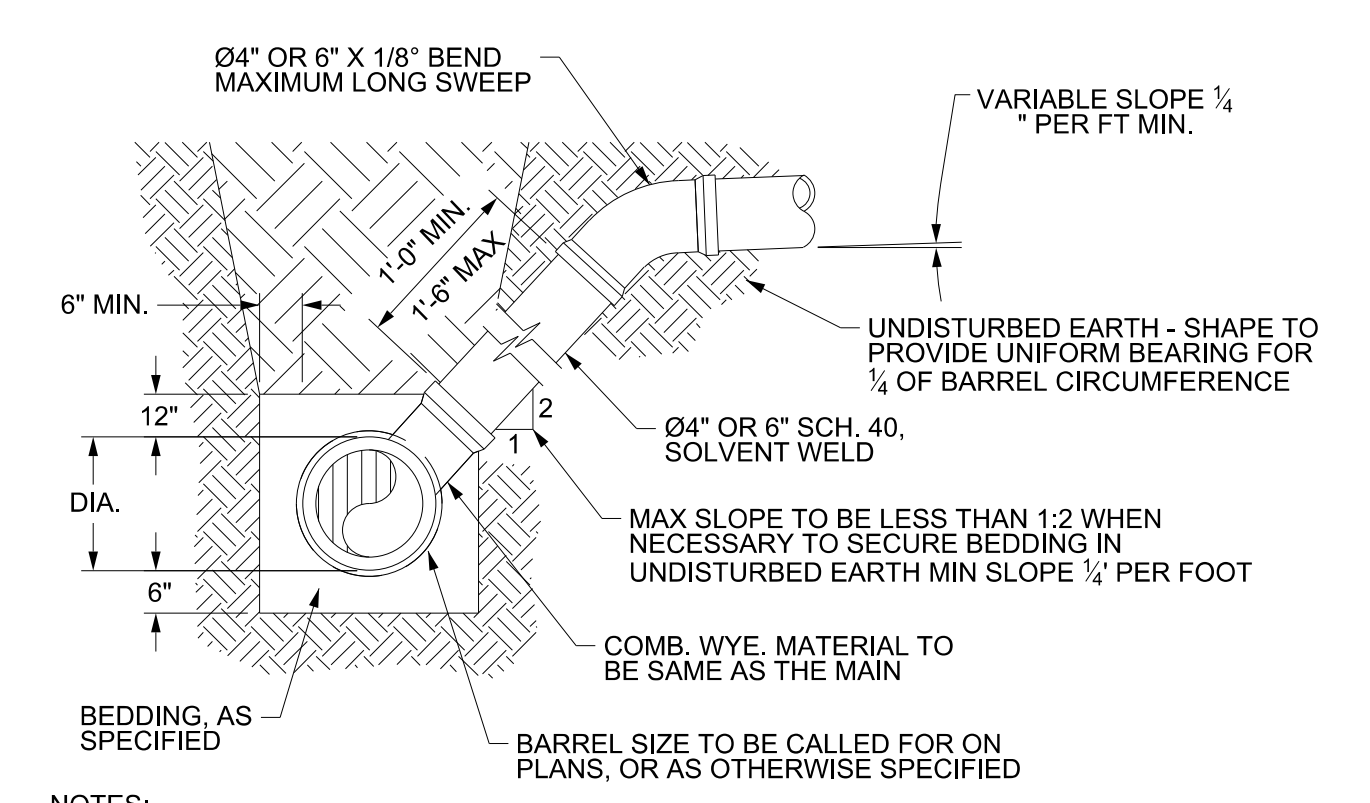


STRUCTURAL BRIDGING DETAIL FOR STORMWATER OVER GRAVITY SEWER INSTALLATIONS WITH LESS THAN 12" SEPARATION
NOT TO SCALE



NOTES:
1. FOR MAINS GREATER THAN 8 FT. SPECIAL CARE SHALL BE TAKEN DURING BACKFILL OPERATIONS. THE RISER SHALL BE PLUMB AND TRUE AT ALL TIMES, AND REST ON FIRM, STABLE FOUNDATION.
2. FOR PRIVATE 8" SERVICES, MANHOLES ARE REQUIRED FOR CONNECTION TO SYSTEM AND AT THE PROPERTY LINE, WITH REQUIRED EASEMENT.

DEEP SERVICE LATERAL
NOT TO SCALE



NOTES:
1. FOR MAINS LESS THAN 8 FT.
2. FOR PRIVATE 8" SERVICES, MANHOLES ARE REQUIRED FOR CONNECTION TO SYSTEM AND AT THE PROPERTY LINE, WITH REQUIRED EASEMENT.

STANDARD SERVICE LATERAL
NOT TO SCALE

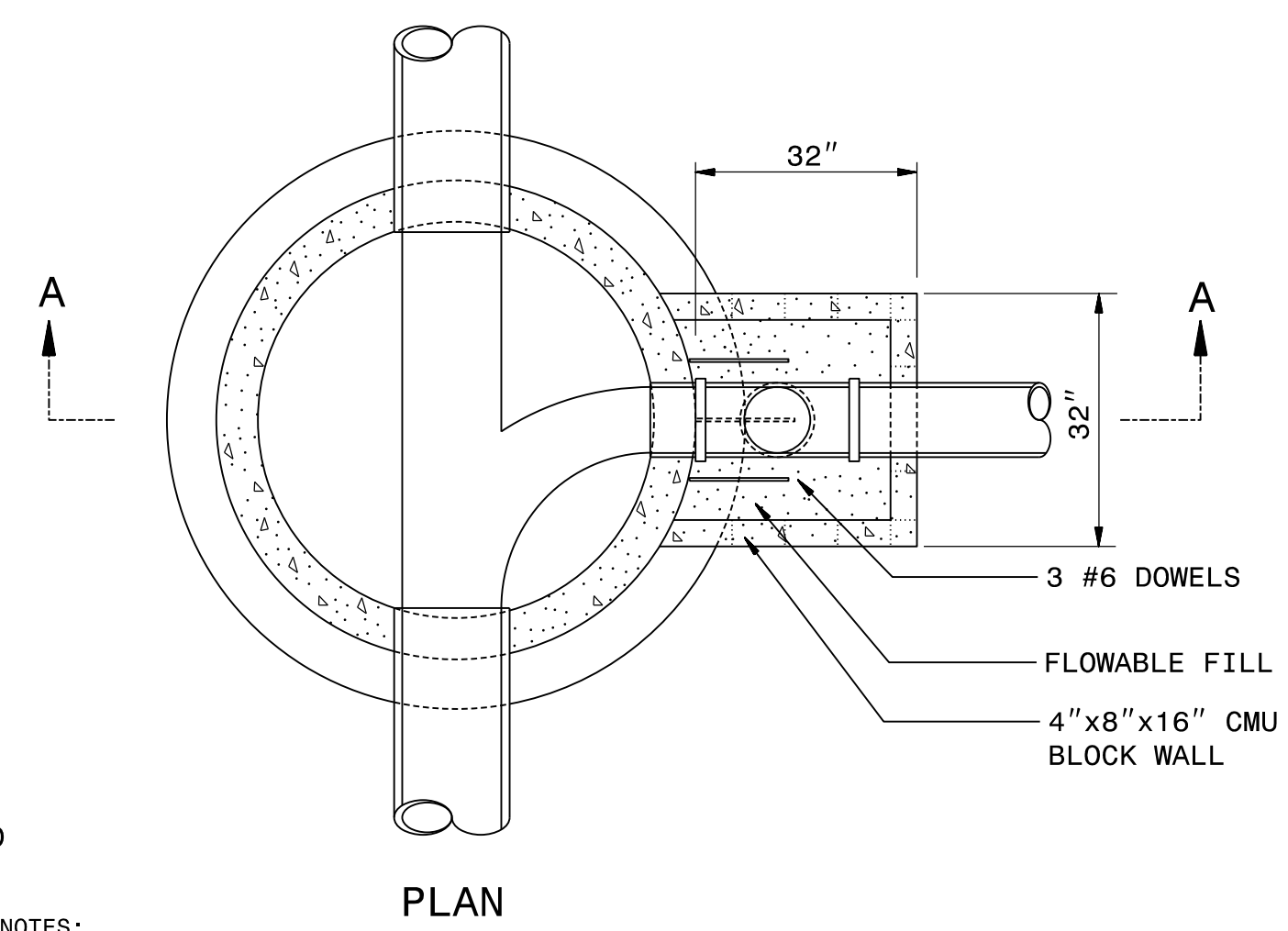
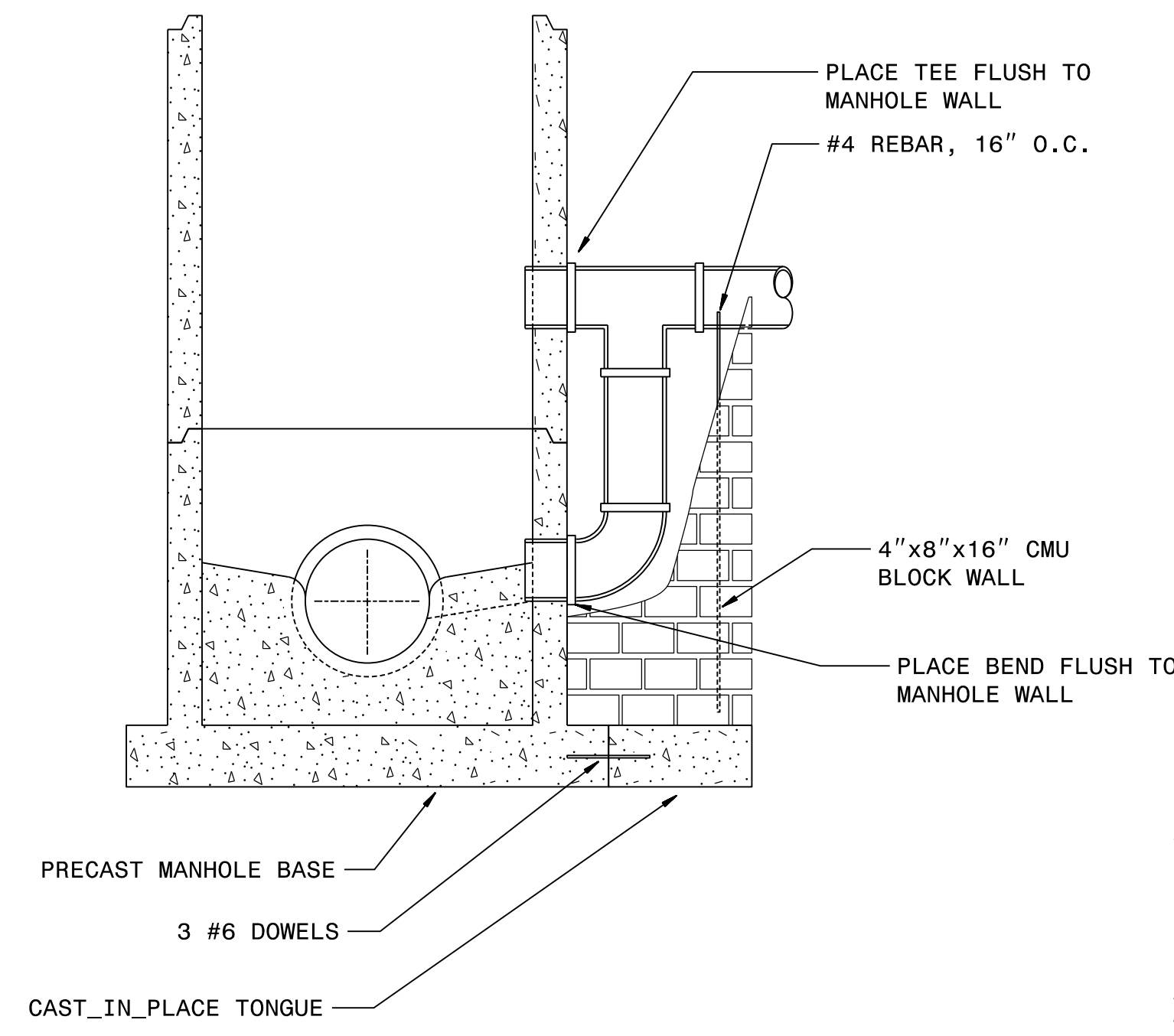
PROJECT REFERENCE NO.	SHEET NO.
R-2582A	UC-3D
DESIGNED BY: KCZ	
DRAWN BY: SHF	
CHECKED BY: KCZ	
APPROVED BY: KCZ	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151 UTILITY CONSTRUCTION PLANS ONLY	
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5/14/99

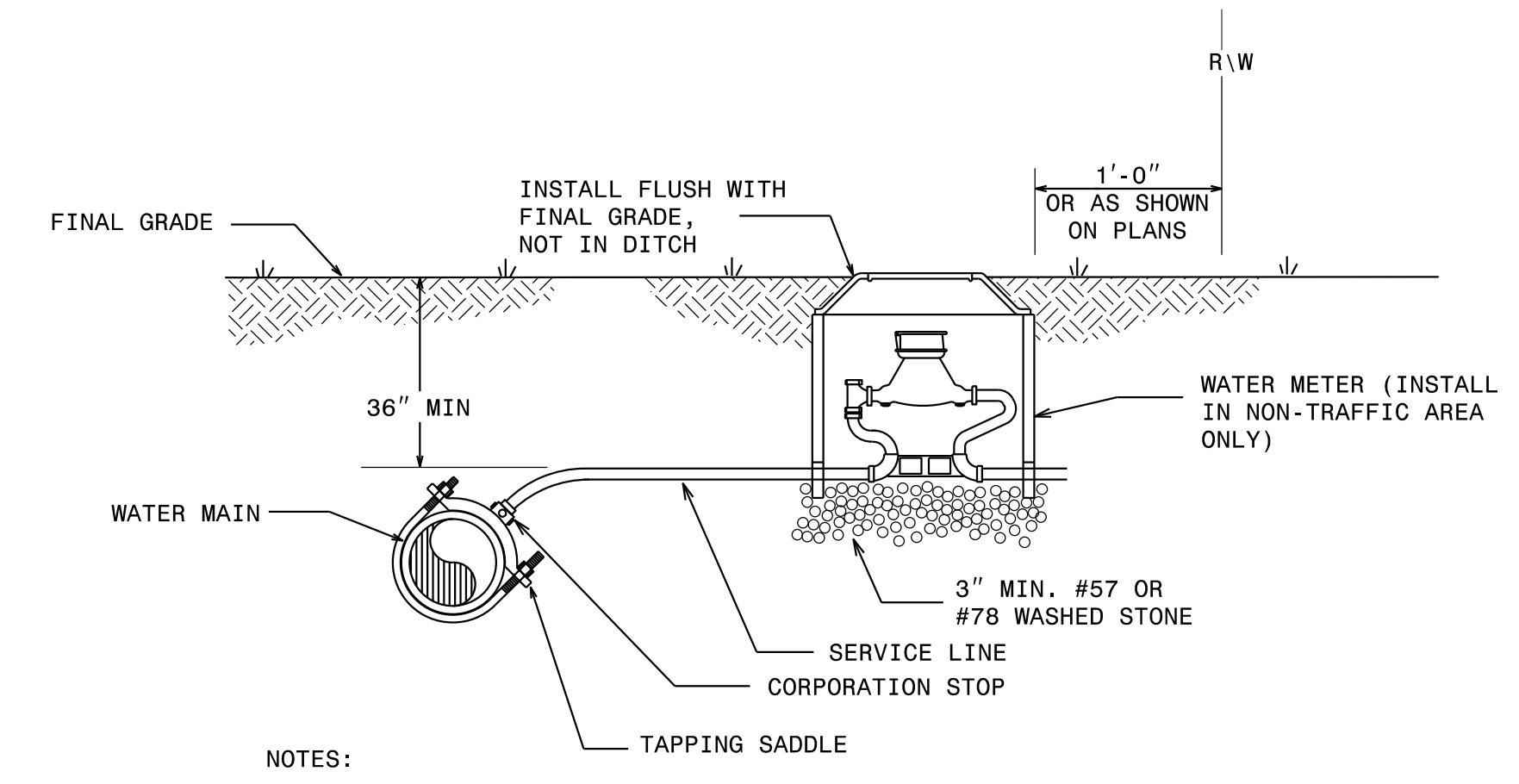
SECTION A-A



- NOTES:
1. THIS DETAIL SHOWS THE CONFIGURATION OF AN OUTSIDE DROP WITH A PRECAST CONCRETE MANHOLE.
 2. INSERT THREE #6 DOWELS INTO THE BASE OF THE PRECAST MANHOLE BEFORE POURING CAST IN PLACE TONGUE. FACTORY DRILL OR CAST THE DOWEL HOLES IN THE BASE. EPOXY THE DOWELS INTO PLACE. EMBED DOWELS A MINIMUM OF 6" INTO THE MANHOLE BASE AND THE TONGUE. CENTER DOWELS VERTICALLY AND HORIZONTALLY. PLACE DOWELS 12" ON CENTER.
 3. BLOCK WALL TO SPRING LINE OF HORIZONTAL PIPE.
 4. USE FOR DROP INLET PIPES UP TO 12".
 5. USE PC 350 DUCTILE IRON PIPE and FITTINGS FOR THE DROP ASSEMBLY. THE DROP ASSEMBLY SHALL BE THE SAME PIPE DIAMETER AS THE INLET PIPE.

CONCRETE MANHOLE WITH OUTSIDE DROP

NOT TO SCALE

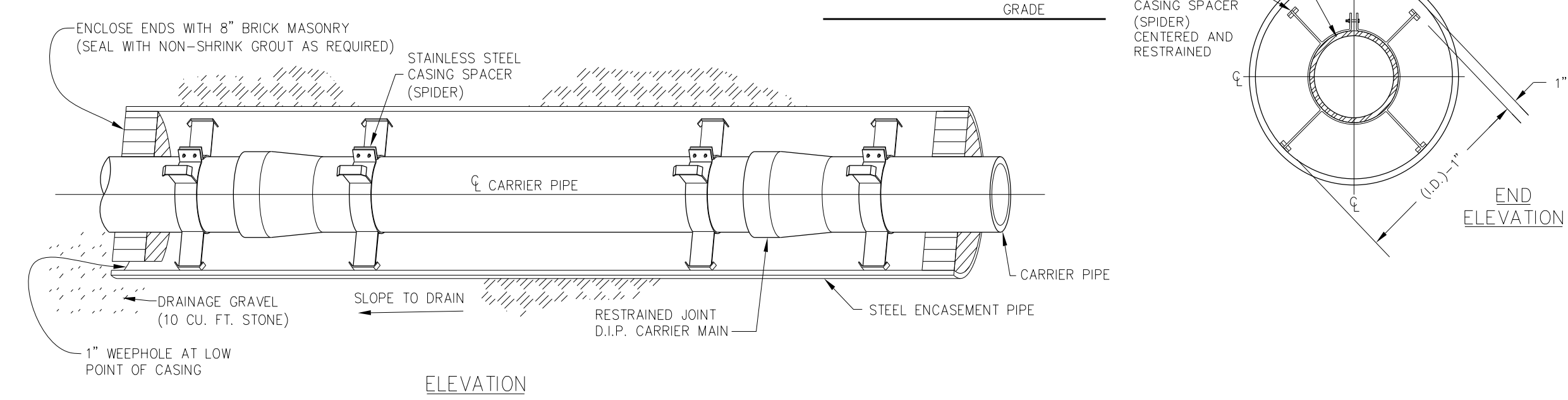


- NOTES:
1. THIS DETAIL SHOWS THE TYPICAL FINAL WATER METER CONFIGURATION AFTER INSTALLATION OF A PROPOSED WATER METER, RECONNECTION OF AN EXISTING WATER METER, OR RELOCATION OF A WATER METER.

WATER METER

NOT TO SCALE

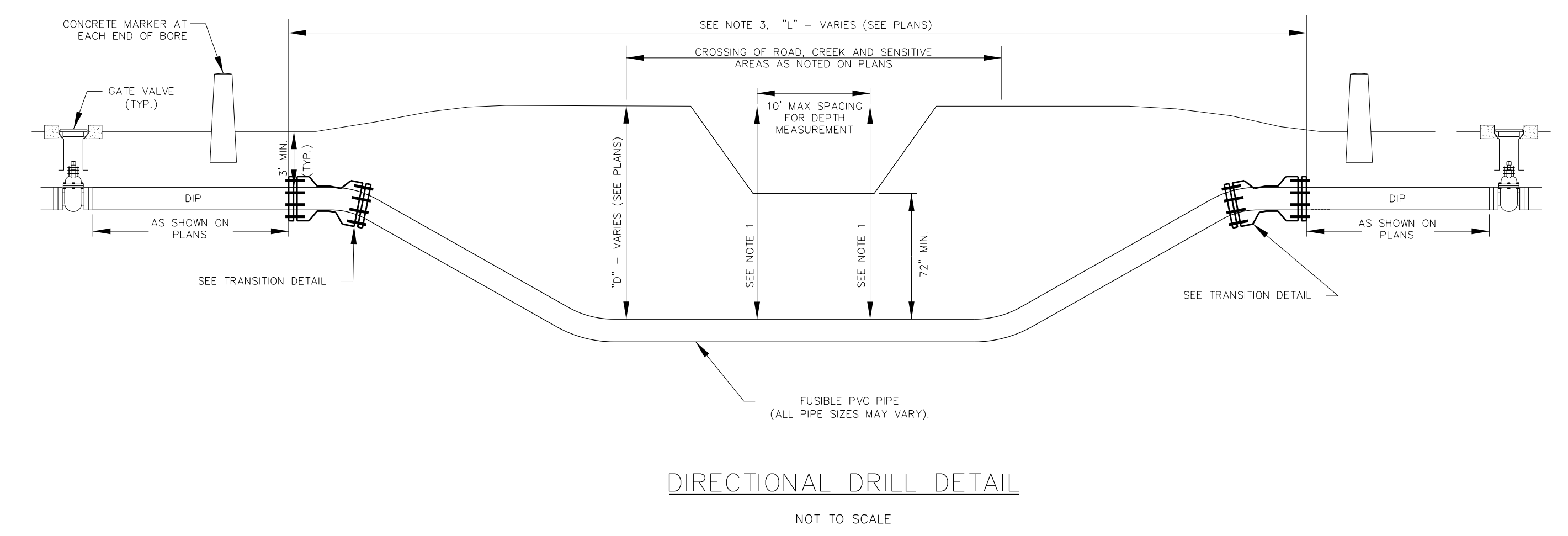
- NOTES:
1. A PROFILE AND PLAN SHALL BE PROVIDED FROM ENTRY TO EXIT FOR EACH DIRECTIONAL BORE SECTION BY THE DIRECTIONAL BORE CONTRACTOR.
 2. ALL BORE SECTIONS SHALL BE TESTED, PER SPECIFICATIONS UPON COMPLETION OF INSTALLATION AND PRIOR TO CONNECTION TO THE MAIN WATER OR SEWER LINE.
 3. LENGTH OF CROSSING, LOCATION OF INSPECTION/OBSERVATION EXCAVATION, NUMBER OF P.E. PIPE JOINTS, LOCATION OF BORE MACHINE, AUGER ENTRANCE LOCATION, AND TIE-IN POINTS ARE TO BE APPROVED BY OWNER PRIOR TO ANY START OF WORK OR ORDERING MATERIALS.
 4. UTILITY MARKERS SHALL BE PLACED AT BOTH THE ENTRY AND EXIT POINT OF ALL DIRECTIONAL BORES, REFERENCING THE TYPE OF UTILITY UNDERGROUND.
 5. THE BORE DEVELOPED FOR THE LEAD IN END OF THE PIPE SHALL BE KEPT AT A MINIMUM DIAMETER FOR THE PIPE INSTALLATION. THE LEAD IN END SHALL BE PULLED THROUGH WITHOUT THE M.J. FLANGE ATTACHED FOR LARGER THAN 6" PIPE INSTALLATION. THE M.J. FLANGE FOR SAID LEAD IN END SHALL BE INSTALLED AFTER THE PIPE INSTALLATION WITH THE USE OF A SPLIT M.J. FLANGE.
 6. IF BURIED OBSTRUCTIONS ARE LOCATED IN THE LENGTH OF THE DIRECTIONAL BORE, DIRECTIONAL BORE CONTRACTOR SHALL AVOID CONFLICT WITH THESE OBSTRUCTIONS BY GOING UNDER A MINIMUM OF 12" WITH PROPOSED PIPE UNLESS OTHERWISE SPECIFIED OR IDENTIFIED IN GENERAL NOTES ON SHEET, OR IN SPECIFICATIONS.



- NOTES:
1. STAINLESS STEEL CASING SPACERS "SPIDERS" SHALL BE USED FOR SUPPORT OF THE CARRIER PIPE WITHIN THE STEEL ENCASUREMENT PIPE. CARRIER PIPE SHALL BE CENTERED AND RESTRAINED WITHIN THE ENCASUREMENT PIPE. SPIDERS SHALL BE MANUFACTURED BY CASCADE WATERWORKS MFG. COMPANY, OR APPROVED EQUAL.
 2. SPIDERS SHALL BE PLACED AT 10 FT INTERVALS OR LESS ALONG DUCTILE IRON CARRIER PIPE. SPIDERS SHALL BE PLACED AT 6 FT INTERVALS OR LESS ALONG PVC CARRIER PIPE.
 3. THE SPIDERS SHALL BE SPACED EVENLY ALONG THE CARRIER PIPE SUCH THAT EACH SPIDER SUPPORTS THE SAME UNIT WEIGHT OF THE CARRIER PIPE, IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.
 4. REFER TO PLAN SHEETS AND PROFILE SHEETS FOR LENGTH AND DIAMETER OF PROPOSED STEEL ENCASUREMENT PIPES FOR EACH CROSSING.
 5. STEEL ENCASUREMENT PIPES SHALL EXTEND BEYOND THE ROADWAY PAVEMENT AS SHOWN ON THE PLANS IN ACCORDANCE WITH NCDOT REQUIREMENTS.
 6. THE INSIDE DIAMETER OF THE ENCASUREMENT PIPE SHALL BE AT LEAST 2 INCHES GREATER THAN THE LARGEST OUTSIDE DIAMETER OF THE CARRIER PIPE JOINTS OR COUPLINGS FOR CARRIER PIPE LESS THAN 6 INCHES IN DIAMETER; AND AT LEAST 4 INCHES GREATER FOR CARRIER PIPE 6 INCHES AND LARGER IN DIAMETER.
 7. STEEL ENCASUREMENT PIPES SHALL BE MANUFACTURED OF GRADE "B" STEEL WITH A SPECIFIED MINIMUM YIELD STRENGTH OF AT LEAST 35,000 PSI IN ACCORDANCE WITH ASTM A139 AND A283.
 8. STEEL ENCASUREMENT PIPE SHALL HAVE MACHINE CUT BEVEL ENDS THAT ARE PERPENDICULAR TO THE LONGITUDINAL AXIS OF THE PIPE.
 9. UNCOATED AND UNPROTECTED STEEL ENCASUREMENT PIPE SHALL HAVE A MINIMUM WALL THICKNESS AS NOTED BELOW:
 - 0.188 INCHES FOR ENCASUREMENT PIPE 10" DIA. AND SMALLER
 - 0.250 INCHES FOR 12" THROUGH 24" DIA. ENCASUREMENT PIPE
 - 0.312 INCHES FOR 26" THROUGH 30" DIA. ENCASUREMENT PIPE
 - 0.375 INCHES FOR 36" DIA. ENCASUREMENT PIPE
 - 0.500 INCHES FOR 42" THROUGH 60" DIA. ENCASUREMENT PIPE
 - 0.625 INCHES FOR 66" DIA. ENCASUREMENT PIPE

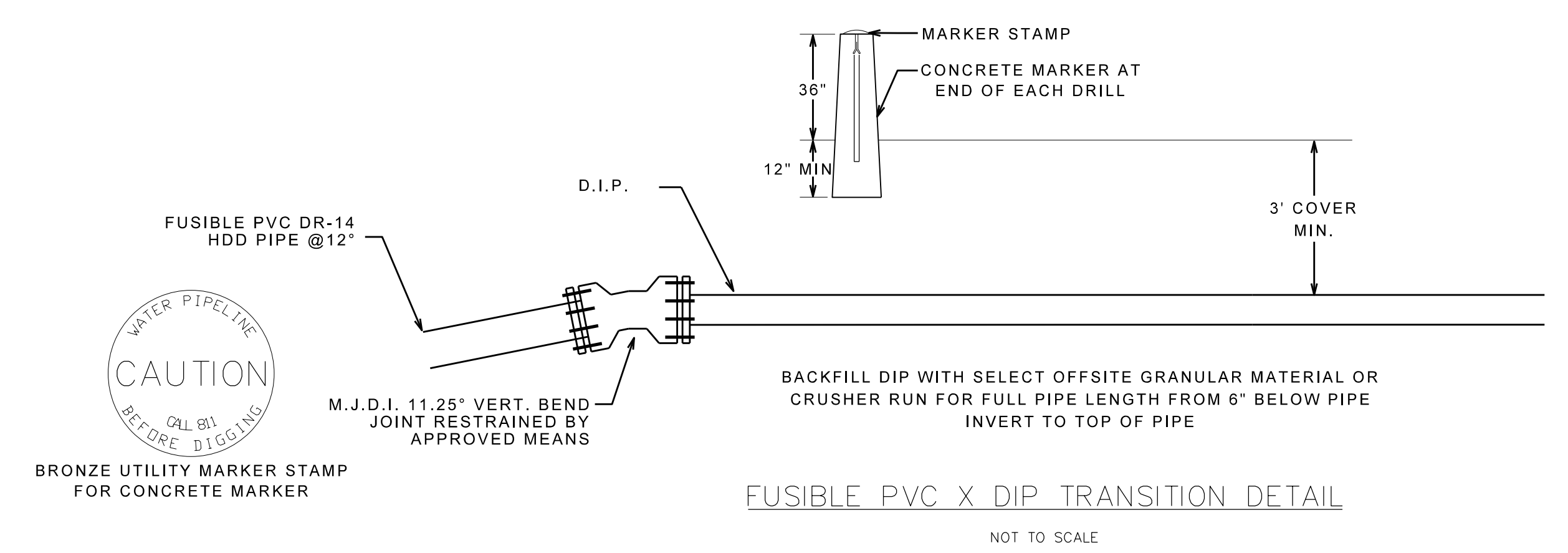
STEEL ENCASUREMENT PIPE UNDER ROADWAY

NOT TO SCALE



DIRECTIONAL DRILL DETAIL

NOT TO SCALE

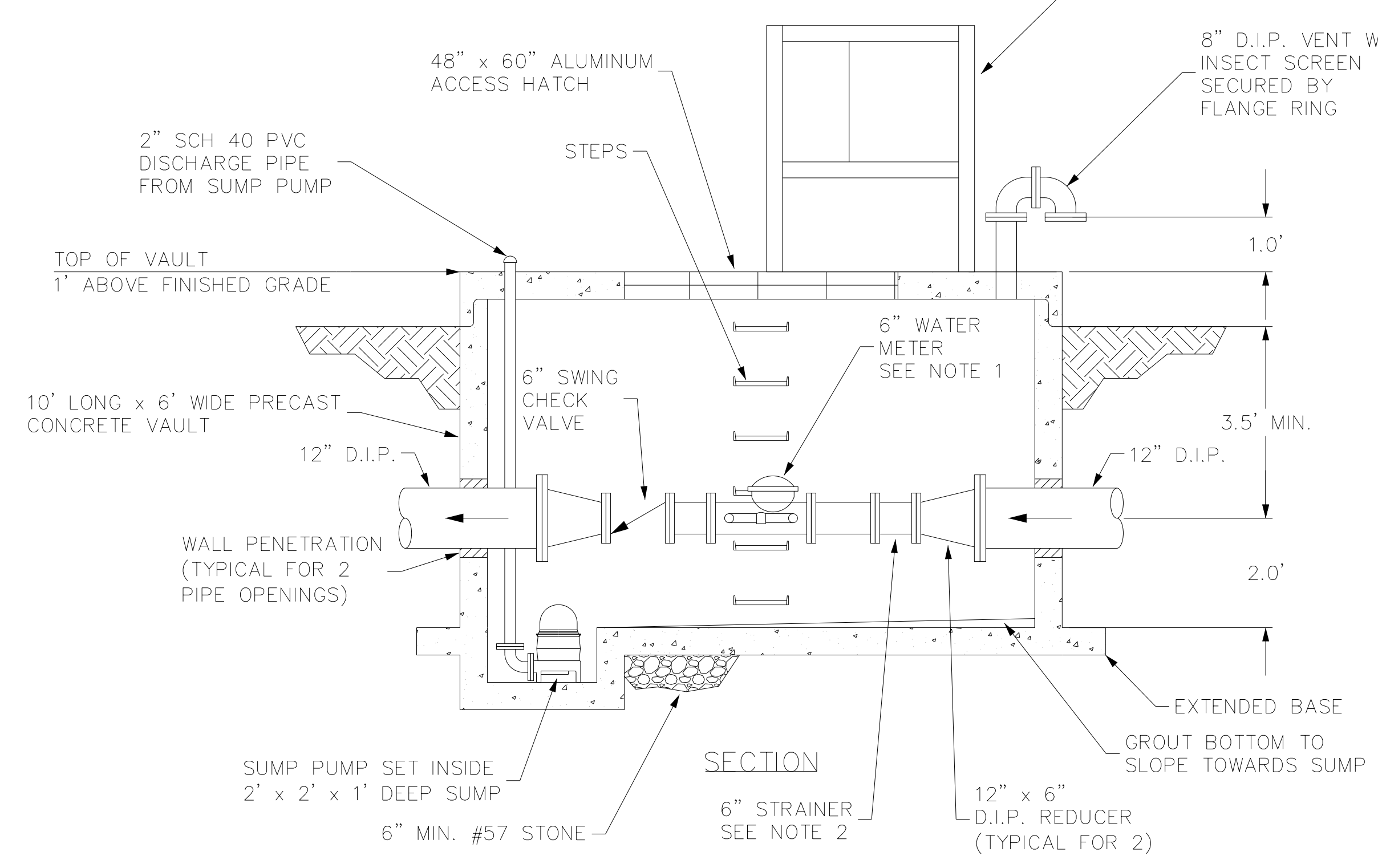
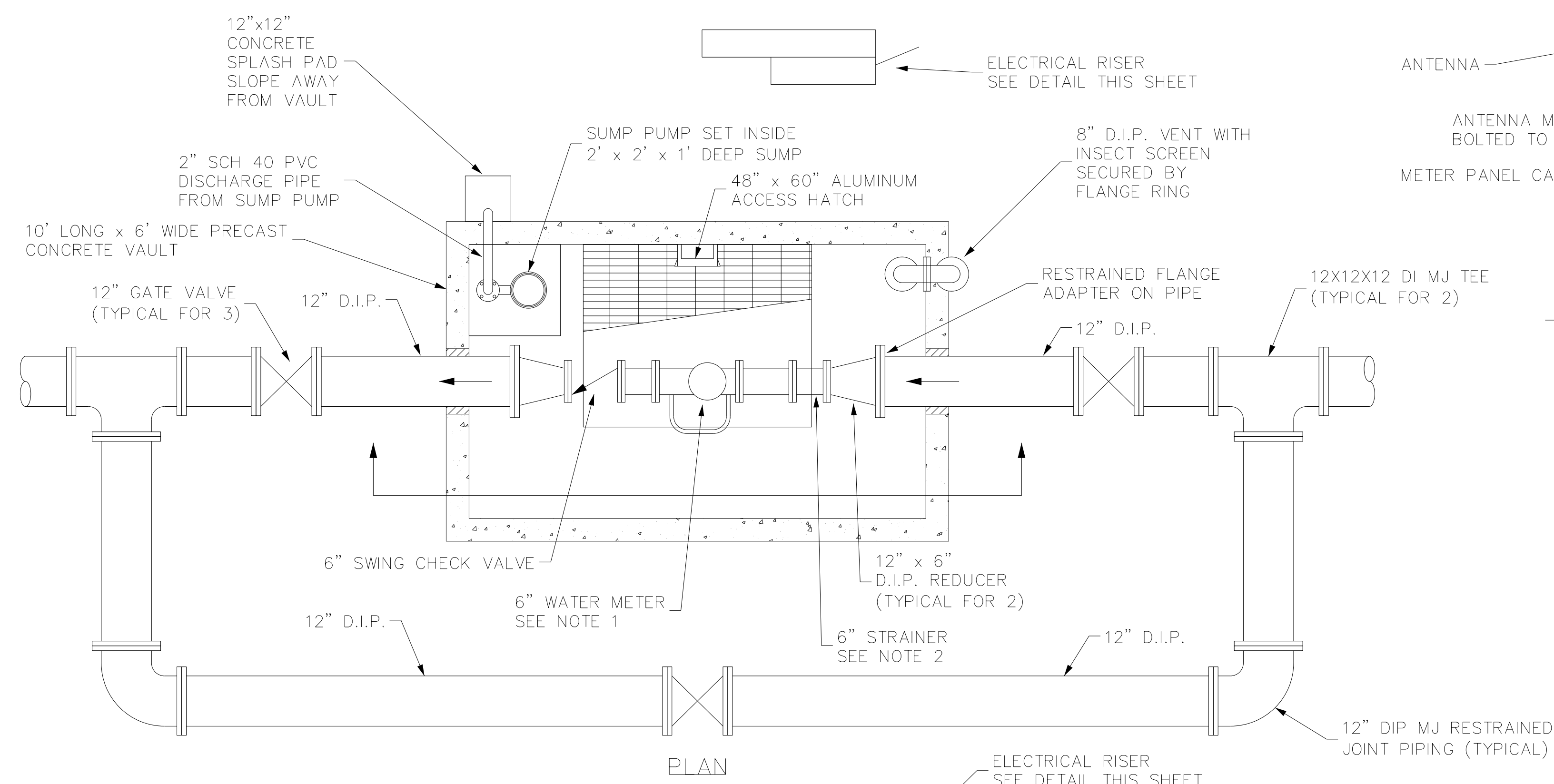


FUSIBLE PVC X DIP TRANSITION DETAIL

NOT TO SCALE

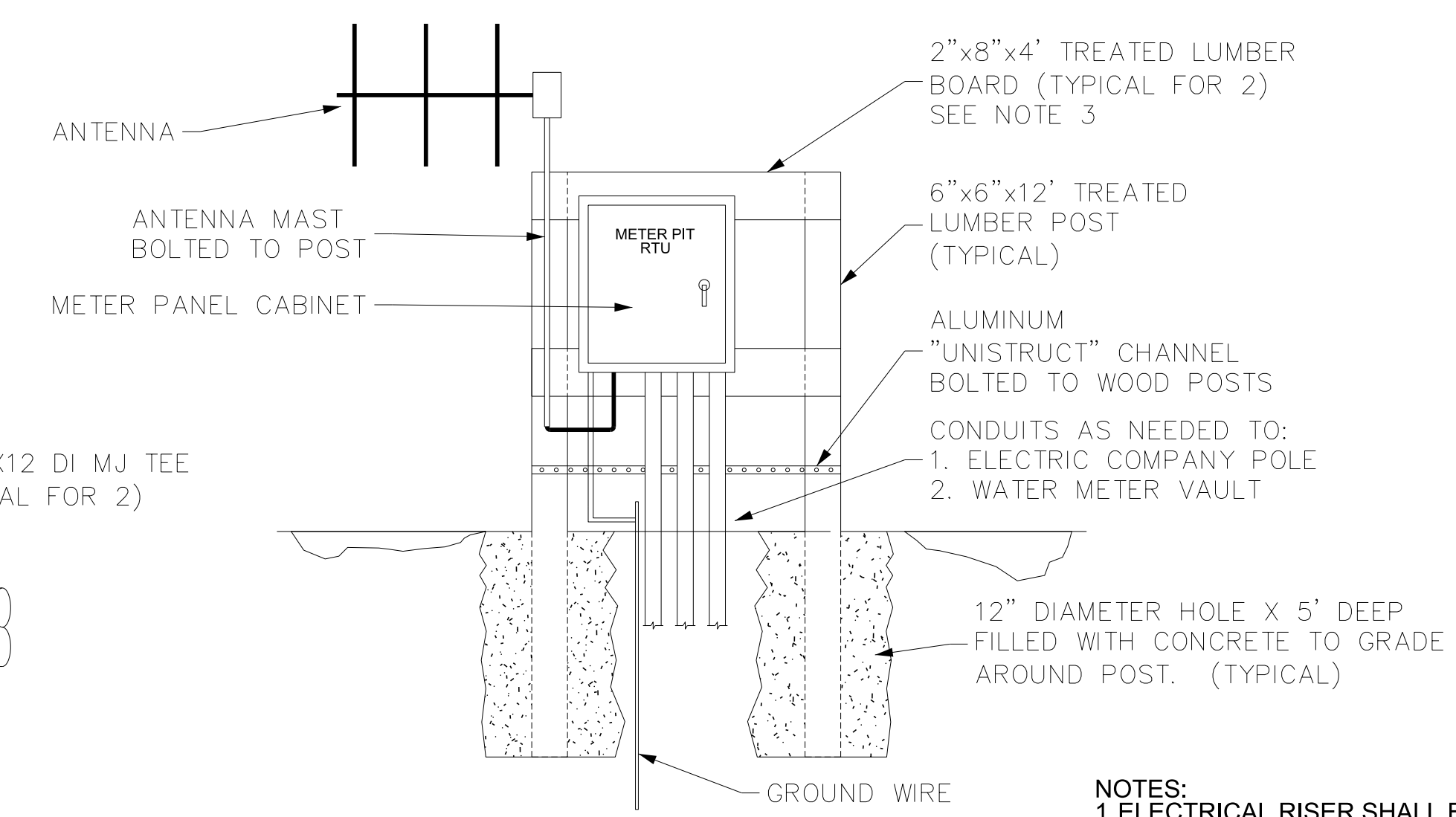
PROJECT REFERENCE NO.	SHEET NO.
R-2582A	UC-3E
DESIGNED BY: KCZ	
DRAWN BY: SHF	
CHECKED BY: KCZ	
APPROVED BY: KCZ	
REVISED:	
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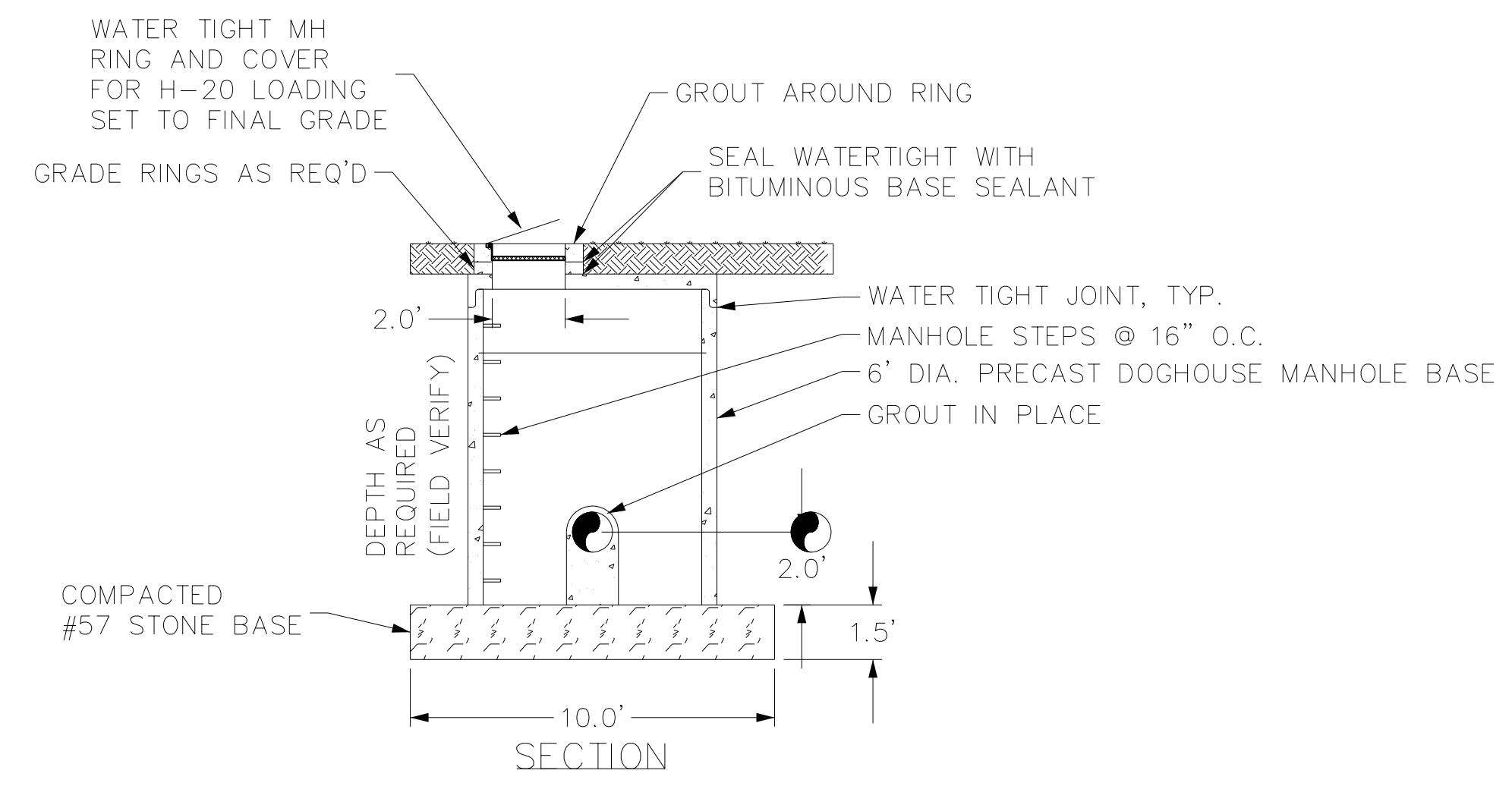
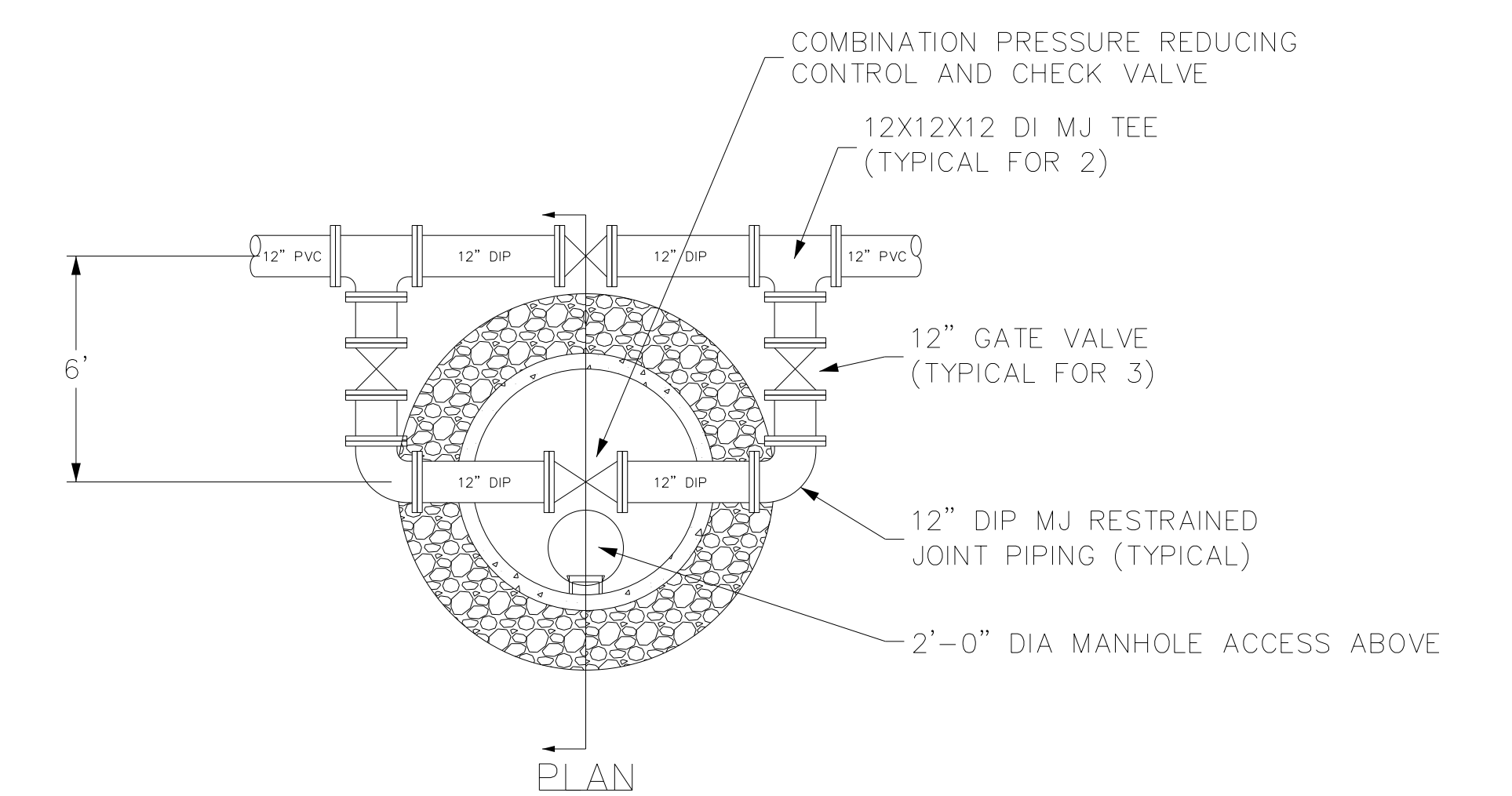
WATER METER VAULT
SCALE: 1"=2'

- NOTES:
1. 6" WATER METER SHALL BE EITHER AN ULTRASONIC FLOW METER OR A DUAL BODY COMPOUND METER.
 2. STRAINER IS ONLY REQUIRED IF METER TYPE IS DUAL BODY COMPOUND METER.
 3. DEPENDING ON MANUFACTURER, THE STRAINER MAY BE INTEGRAL TO THE WATER METER UNIT.
 4. ALL PIPE AND FITTINGS INSIDE OF VAULT SHALL BE FLANGED.
 5. STEPS SHALL BE INSTALLED AT 16" ON CENTER.
 6. RUN APPROPRIATELY SIZED CONDUIT BETWEEN VAULT AND ELECTRICAL RISER FOR SUMP PUMP POWER CORD/CONTROLS AND WATER METER WIRING AS RECOMMENDED BY MANUFACTURERS.



ELECTRICAL RISER FOR WATER METER VAULT
NOT TO SCALE

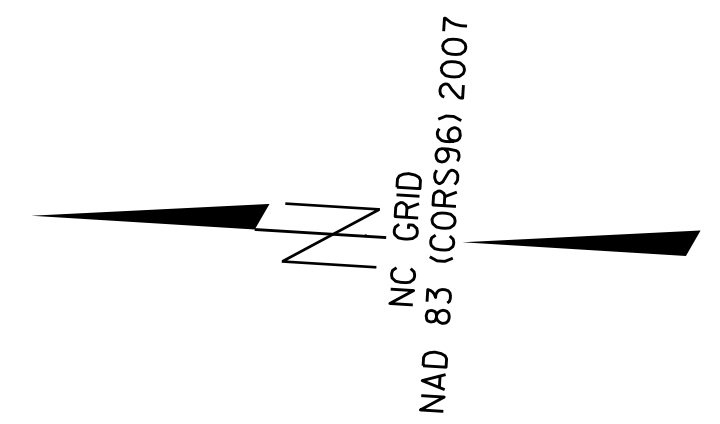
- NOTES:
1. ELECTRICAL RISER SHALL BE CONSTRUCTED OF SAME MATERIALS AS EXISTING RISER.
 2. ELECTRICAL RISER SHALL BE CONSTRUCTED TO DIMENSIONS AS NOTED OR AS NEEDED TO FIT THE EXISTING EQUIPMENT.
 3. SECURE BOARD TO EACH POST WITH TWO (2) LAG BOLTS.
 4. EXISTING METER PANEL CABINET, EXITING ANTENNA, AND EXISTING ANTENNA MAST SHALL BE RELOCATED TO NEW ELECTRICAL RISER WHEN DIRECTED BY ENGINEER. THIS SHALL BE COORDINATED WITH THE UTILITY OWNER.
 5. METER PANEL CABINET SHALL FACE LONG FARM ROAD.



PRESSURE REDUCING VALVE MANHOLE
SCALE: 1"=4'

PROJECT REFERENCE NO.	SHEET NO.
R-2582A	UC-3F
DESIGNED BY: KCZ	
DRAWN BY: SHF	
CHECKED BY: KCZ	
APPROVED BY: KCZ	
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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REFER TO SHEET UC-24 FOR W1 PROFILE.
REFER TO SHEET UC-24 FOR W2 PROFILE.
REFER TO SHEET UC-24 FOR W3 PROFILE.

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 Phone: 919.297.0220 Fax: 919.297.0221

NC License: F-0160

PROJECT REFERENCE NO. R-2582A	SHEET NO. UC-04
DESIGNED BY: KCZ	
DRAWN BY: SHF	
CHECKED BY: KCZ	
APPROVED BY: KCZ	
REVISED:	
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REMOVE EXISTING 90° BEND
CONNECT NEW 12" WATER LINE.
12" WATER LINE - 22 LF
12" VALVE - 1 EA

ABANDON 12" UTILITY PIPE - 154 LF

REMOVE UTILITY VAULT - 1 EA

6" WATER METER, VAULT, AND CONTROLS - 1 LUMP SUM
REFER TO SPECIAL PROVISIONS, SEE NOTE 2

UTILITY CONSTRUCTION

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FIRE HYDRANT - 1 EA
FIRE HYDRANT LEG - 5 LF

REMOVE FIRE HYDRANT - 1 EA

ABANDON 12" UTILITY PIPE - 348 LF

12" WATER LINE - 277 LF
12" VALVE - 3 EACH
WATER LINE 1 - W1

12" WATER LINE - 82 LF
ABANDON 12" UTILITY PIPE - 82 LF
SEE NOTE 1

RELOCATE FIRE HYDRANT - 1 EA
FIRE HYDRANT LEG - 28 LF

12" WATER LINE - 174 LF
12" VALVE - 1 EA
WATER LINE 2 - W2

12" ENCASEMENT PIPE - 30 LF

ABANDON 6" UTILITY PIPE - 385 LF

6" WATER LINE - 302 LF
6" VALVE - 1 EA
WATER LINE 3 - W3

- NOTES:
- PROPOSED DOWN AND UNDER RELOCATION OF WATER LINE. REFER TO DETAIL ON SHEET UC-3C.
 - REFER TO DETAIL ON SHEET UC-3F.

THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 5,005 LBS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

UTILITY OWNERS ON THIS PROJECT:
 NORTHAMPTON COUNTY
 UTILITY: 6", 12" WATER
 4" SANITARY FORCE MAIN
 CONTACT: KIRK ROGERS
 PHONE: 252-534-6341 X307

ROANOKE RAPIDS SANITARY DISTRICT
 UTILITY: 12" WATER
 CONTACT: DAN BROWN
 PHONE: 252-537-9137

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8/17/2019

NOTES:

1. PRIOR TO COMMENCING ANY WORK ON ANY TRENCHLESS INSTALLATION ON THIS PROJECT, THE CONTRACTOR SHALL PROVIDE A DESIGN FOR THE TRENCHLESS INSTALLATION THAT IS CERTIFIED BY A PROFESSIONAL ENGINEER LICENSED BY THE STATE OF NORTH CAROLINA, AS REQUIRED BY SUBARTICLE 1550-3(B) OF THE "NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" DATED JANUARY 2018.

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

THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 2790 LBS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

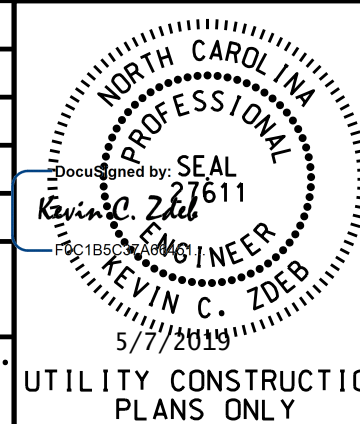
REFER TO SHEET UC-22 FOR FSS1 PROFILE.
REFER TO SHEET UC-25 - UC-30 FOR W5/6 PROFILE.

UTILITY OWNERS ON THIS PROJECT:

NORTHAMPTON COUNTY
UTILITY: 2" 6" 12" WATER
6" SANITARY FORCE MAIN
CONTACT: KIRK ROGERS
PHONE: 252-534-6341 X307

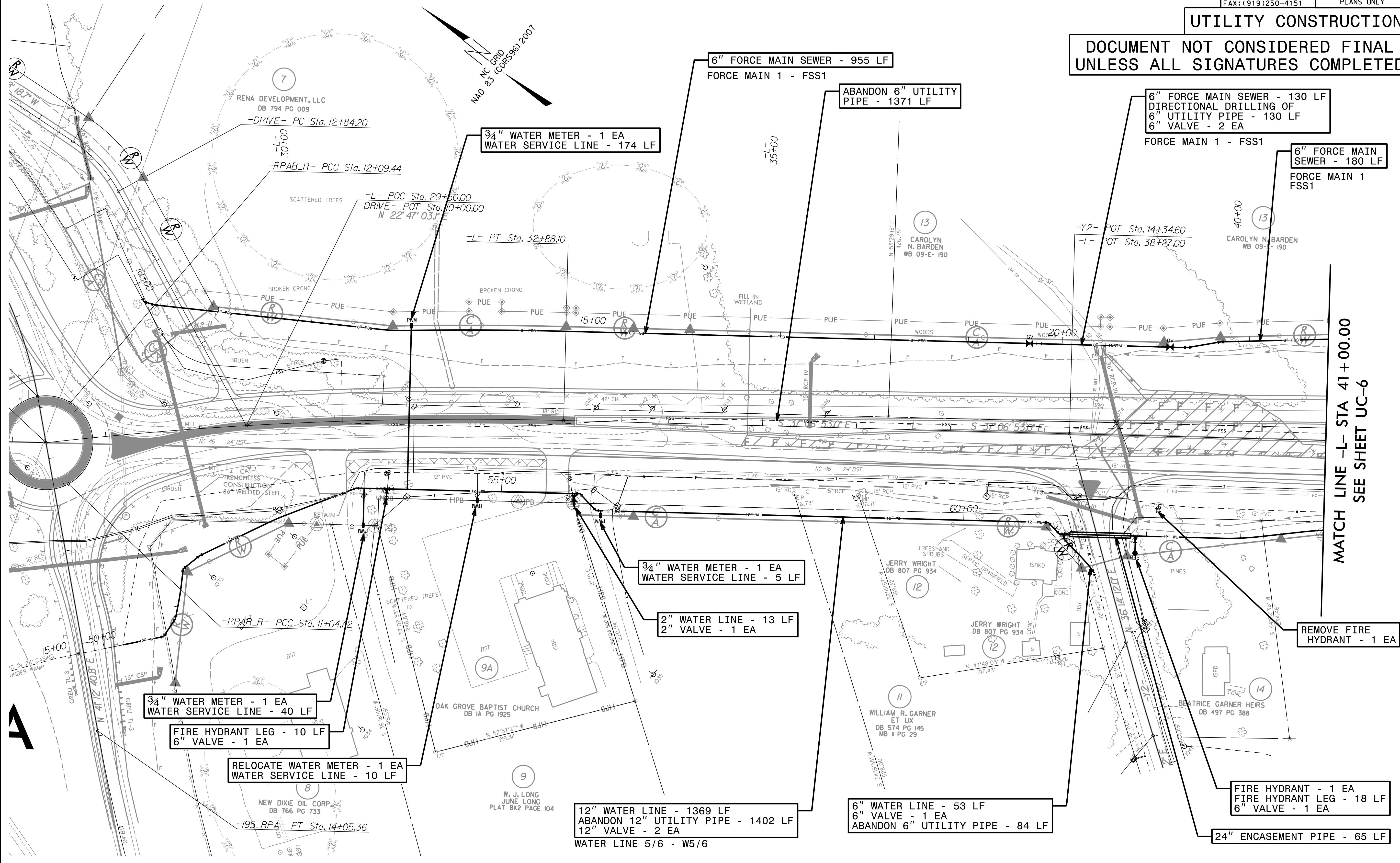
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PROJECT REFERENCE NO.	R-2582A	SHEET NO.	UC-05
DESIGNED BY:	KCZ		
DRAWN BY:	SHF		
CHECKED BY:	KCZ		
APPROVED BY:	KCZ		
REVISED:			
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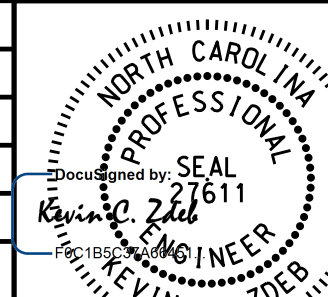
MATCH LINE -L- STA 41+00.00
SEE SHEET UC-6

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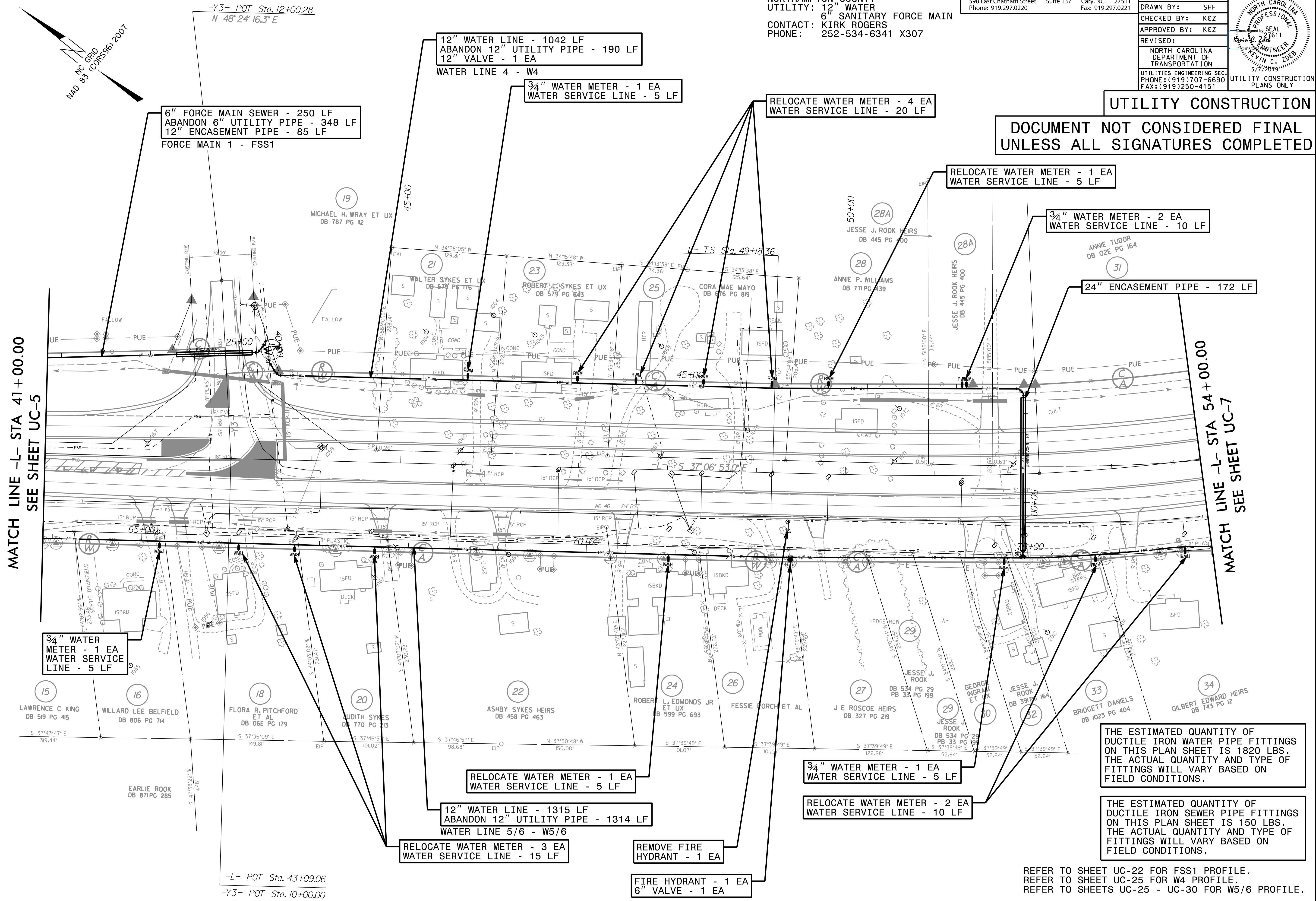
UTILITY OWNERS ON THIS PROJECT:
 NORTHAMPTON COUNTY
 UTILITY: 12" WATER
 6" SANITARY FORCE MAIN
 CONTACT: KIRK ROGERS
 PHONE: 252-534-6341 X307

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 NC License: F-0160
 598 East Chatham Street Suite 137 Cary, NC 27511
 Phone: 919.297.0220 Fax: 919.297.0221

PROJECT REFERENCE NO. R-2582A	SHEET NO. UC-06
DESIGNED BY: KCF	 KEVIN C. ZOLB 5/7/2019 ENGINEER
DRAWN BY: SHF	
CHECKED BY: KCZ	
APPROVED BY: KCZ	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151 UTILITY CONSTRUCTION PLANS ONLY	

MATCH LINE -L- STA 41+00.00
SEE SHEET UC-5

MATCH LINE -L- STA 54+00.00
SEE SHEET UC-7



UTILITY CONSTRUCTION

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3/4" WATER METER - 1 EA
 WATER SERVICE LINE - 5 LF

12" WATER LINE - 1042 LF
 ABANDON 12" UTILITY PIPE - 190 LF
 12" VALVE - 1 EA
 WATER LINE 4 - W4

3/4" WATER METER - 1 EA
 WATER SERVICE LINE - 5 LF

RELOCATE WATER METER - 4 EA
 WATER SERVICE LINE - 20 LF

RELOCATE WATER METER - 1 EA
 WATER SERVICE LINE - 5 LF

3/4" WATER METER - 2 EA
 WATER SERVICE LINE - 10 LF

24" ENCASEMENT PIPE - 172 LF

RELOCATE WATER METER - 1 EA
 WATER SERVICE LINE - 5 LF

12" WATER LINE - 1315 LF
 ABANDON 12" UTILITY PIPE - 1314 LF
 WATER LINE 5/6 - W5/6

RELOCATE WATER METER - 3 EA
 WATER SERVICE LINE - 15 LF

REMOVE FIRE HYDRANT - 1 EA

3/4" WATER METER - 1 EA
 WATER SERVICE LINE - 5 LF

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

FIRE HYDRANT - 1 EA
 6" VALVE - 1 EA

THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 1820 LBS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

THE ESTIMATED QUANTITY OF DUCTILE IRON SEWER PIPE FITTINGS ON THIS PLAN SHEET IS 150 LBS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

REFER TO SHEET UC-22 FOR FSS1 PROFILE.
 REFER TO SHEET UC-25 FOR W4 PROFILE.
 REFER TO SHEETS UC-25 - UC-30 FOR W5/6 PROFILE.

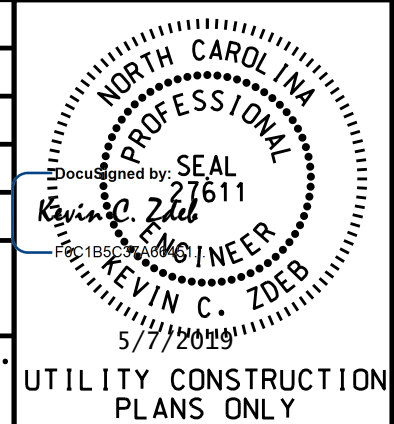
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8/17/09

UTILITY OWNERS ON THIS PROJECT:

NORTHAMPTON COUNTY
UTILITY: 12" WATER
CONTACT: KIRK ROGERS
PHONE: 252-534-6341 X307

M A Engineering
Consultants, Inc.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221

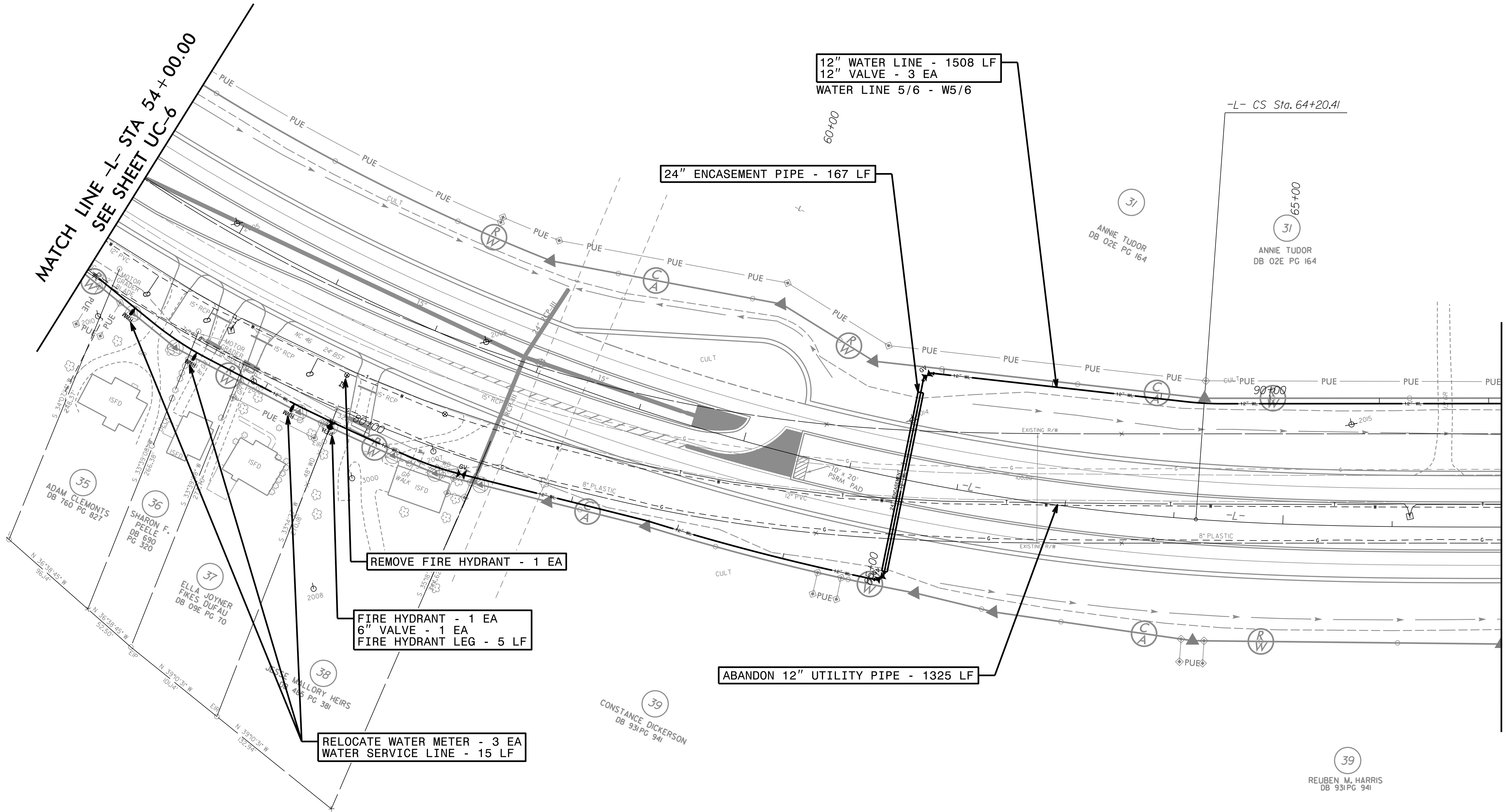
PROJECT REFERENCE NO. R-2582A	SHEET NO. UC-07
DESIGNED BY: KCZ	
DRAWN BY: SHF	
CHECKED BY: KCZ	
APPROVED BY: KCZ	
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UTILITY CONSTRUCTION

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UNLESS ALL SIGNATURES COMPLETED**

**MATCH LINE -L- STA 54+00.00
SEE SHEET UC-6**



**12" WATER LINE - 1508 LF
12" VALVE - 3 EA
WATER LINE 5/6 - W5/6**

24" ENCASEMENT PIPE - 167 LF

REMOVE FIRE HYDRANT - 1 EA

**FIRE HYDRANT - 1 EA
6" VALVE - 1 EA
FIRE HYDRANT LEG - 5 LF**

**RELOCATE WATER METER - 3 EA
WATER SERVICE LINE - 15 LF**

ABANDON 12" UTILITY PIPE - 1325 LF

**MATCH LINE -L- STA 67+00.00
SEE SHEET UC-8**

THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 1185 LBS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

REFER TO SHEETS UC-25 - UC-30 FOR W5/6 PROFILE.

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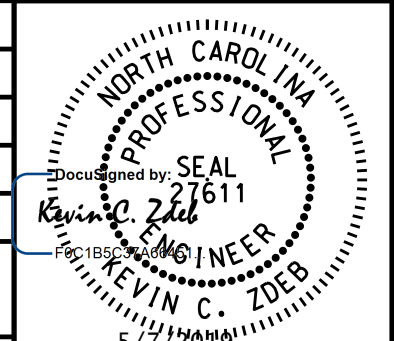
8/17/09

NC GRID
NAD 83 (CORS96) 2007

THE ESTIMATED QUANTITY OF
DUCTILE IRON WATER PIPE FITTINGS
ON THIS PLAN SHEET IS 650 LBS.
THE ACTUAL QUANTITY AND TYPE OF
FITTINGS WILL VARY BASED ON
FIELD CONDITIONS.

UTILITY OWNERS ON THIS PROJECT:
NORTHAMPTON COUNTY
UTILITY: 12" WATER
CONTACT: KIRK ROGERS
PHONE: 252-534-6341 X307

M A Engineering
Consultants, Inc.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221

PROJECT REFERENCE NO. R-2582A	SHEET NO. UC-08
DESIGNED BY: KCZ	
DRAWN BY: SHF	
CHECKED BY: KCZ	
APPROVED BY: KCZ	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

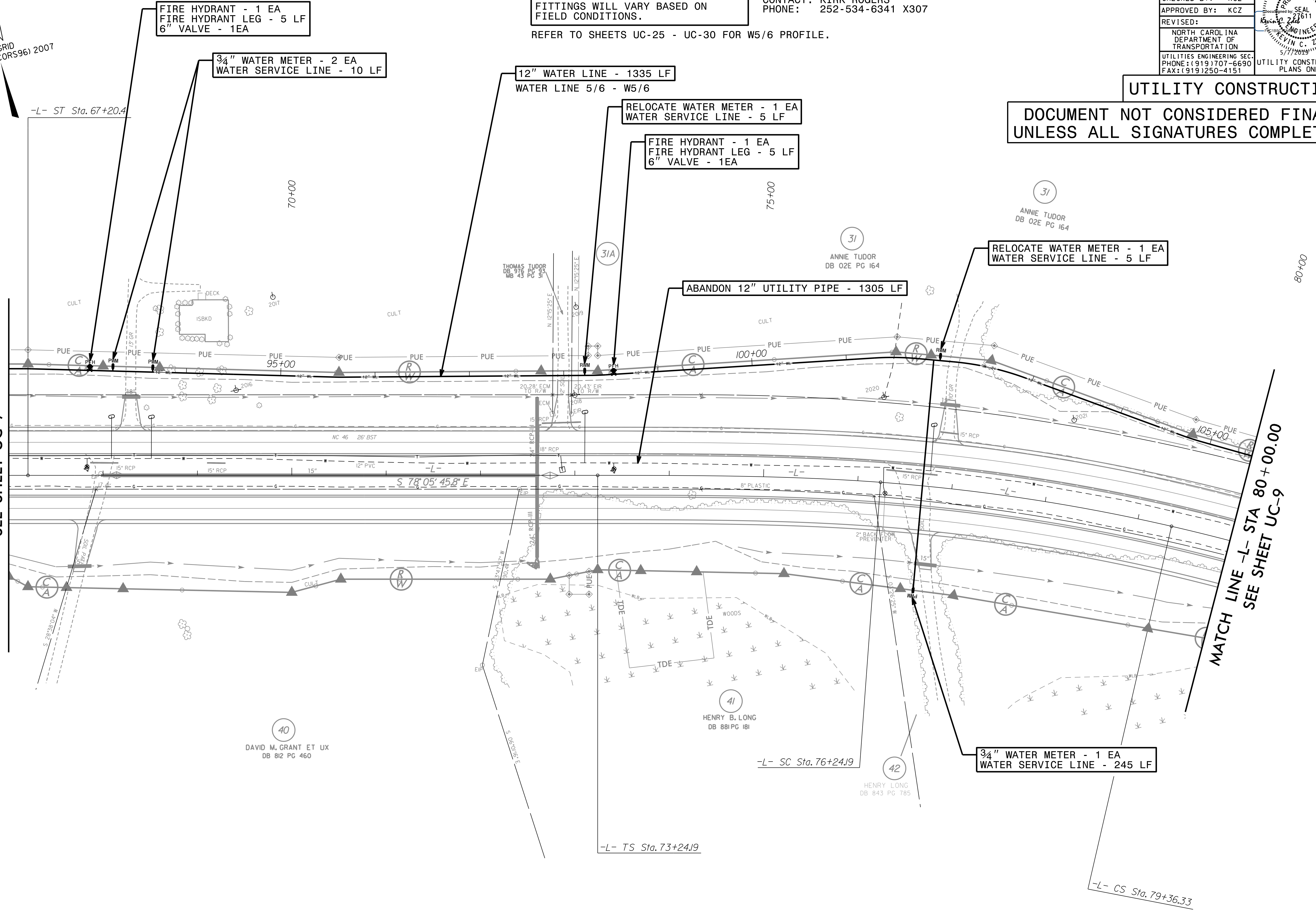
REFER TO SHEETS UC-25 - UC-30 FOR W5/6 PROFILE.

UTILITY CONSTRUCTION

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

MATCH LINE -L- STA 67+00.00
SEE SHEET UC-7

MATCH LINE -L- STA 80+00.00
SEE SHEET UC-9



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6/16/09

8/17/19

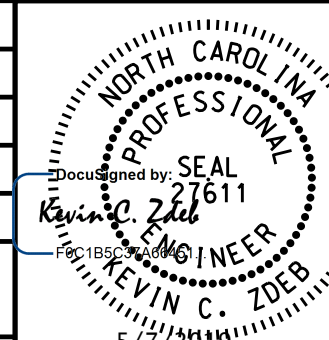
NOTES:
 1. PRIOR TO COMMENCING ANY WORK ON ANY TRENCHLESS INSTALLATION ON THIS PROJECT, THE CONTRACTOR SHALL PROVIDE A DESIGN FOR THE TRENCHLESS INSTALLATION THAT IS CERTIFIED BY A PROFESSIONAL ENGINEER LICENSED BY THE STATE OF NORTH CAROLINA, AS REQUIRED BY SUBARTICLE 1550-3(B) OF THE "NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" DATED JANUARY 2018.

THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 870 LBS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

REFER TO SHEETS UC-25 - UC-30 FOR W5/6 PROFILE.

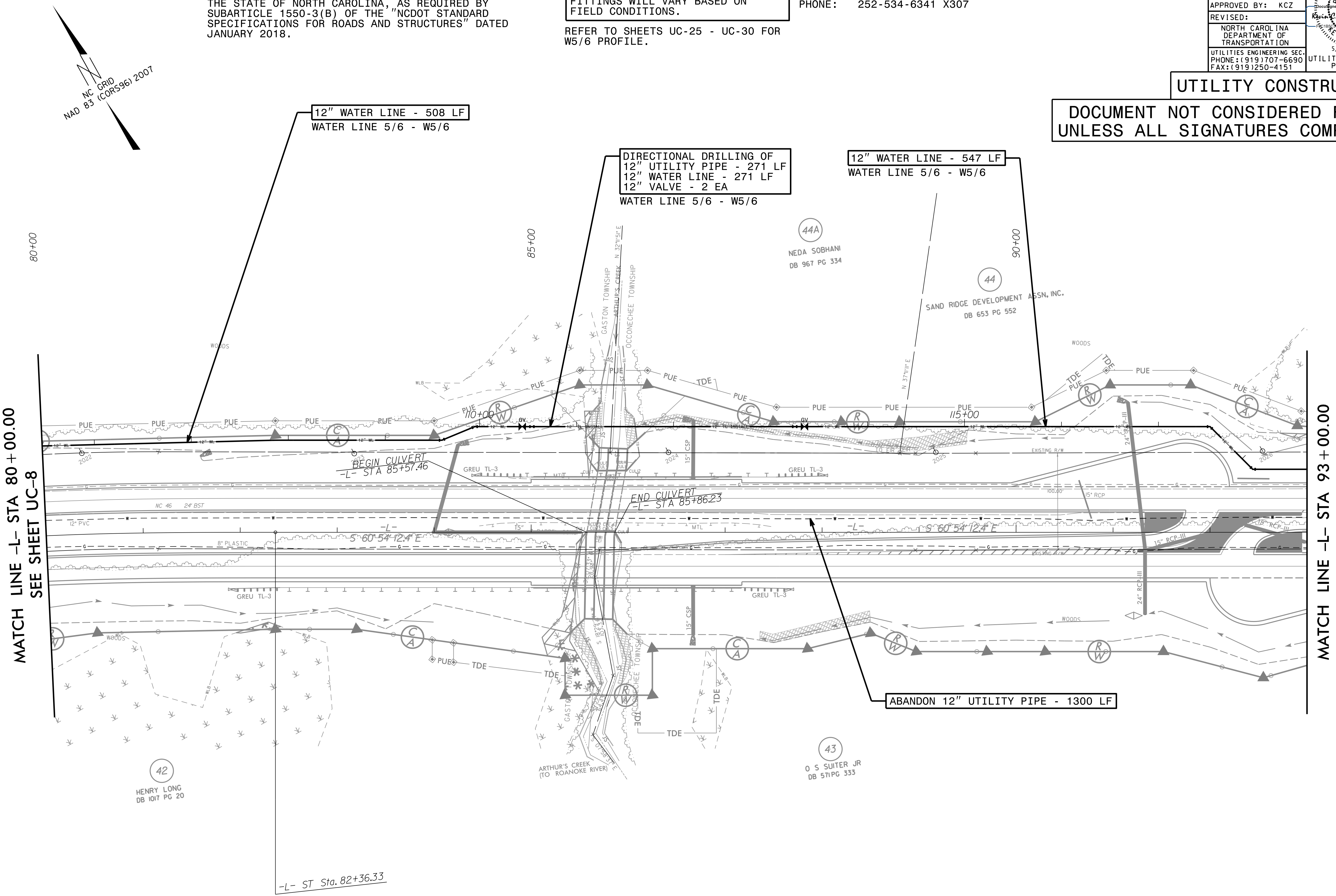
UTILITY OWNERS ON THIS PROJECT:
 NORTHAMPTON COUNTY
 UTILITY: 12" WATER
 CONTACT: KIRK ROGERS
 PHONE: 252-534-6341 X307

M A Engineering Consultants, Inc.
 NC License: F-0160
 598 East Chatham Street Suite 137 Cary, NC 27511
 Phone: 919.297.0220 Fax: 919.297.0221

PROJECT REFERENCE NO. R-2582A	SHEET NO. UC-09
DESIGNED BY: KCZ	
DRAWN BY: SHF	
CHECKED BY: KCZ	
APPROVED BY: KCZ	
REVISED:	
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



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8/17/09

NOTES:
1. REFER TO DETAIL ON SHEET UC-3F.

THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 1575 LBS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

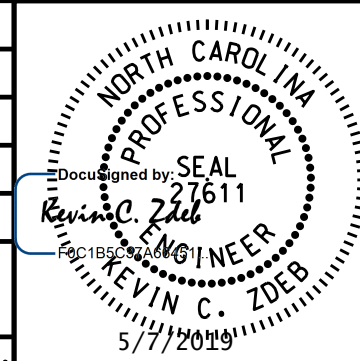
REFER TO SHEETS UC-25 - UC-30 FOR W5/6 PROFILE.

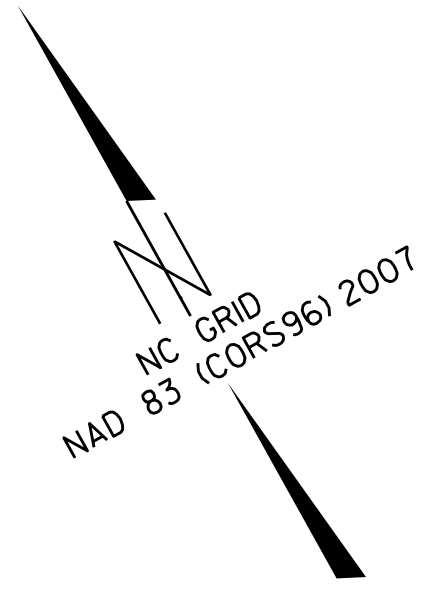
UTILITY OWNERS ON THIS PROJECT:

NORTHAMPTON COUNTY
UTILITY: 12" WATER
CONTACT: KIRK ROGERS
PHONE: 252-534-6341 X307

M A Engineering Consultants, Inc.
 598 East Chatham Street Suite 137 Cary, NC 27511
 Phone: 919.297.0220 Fax: 919.297.0221

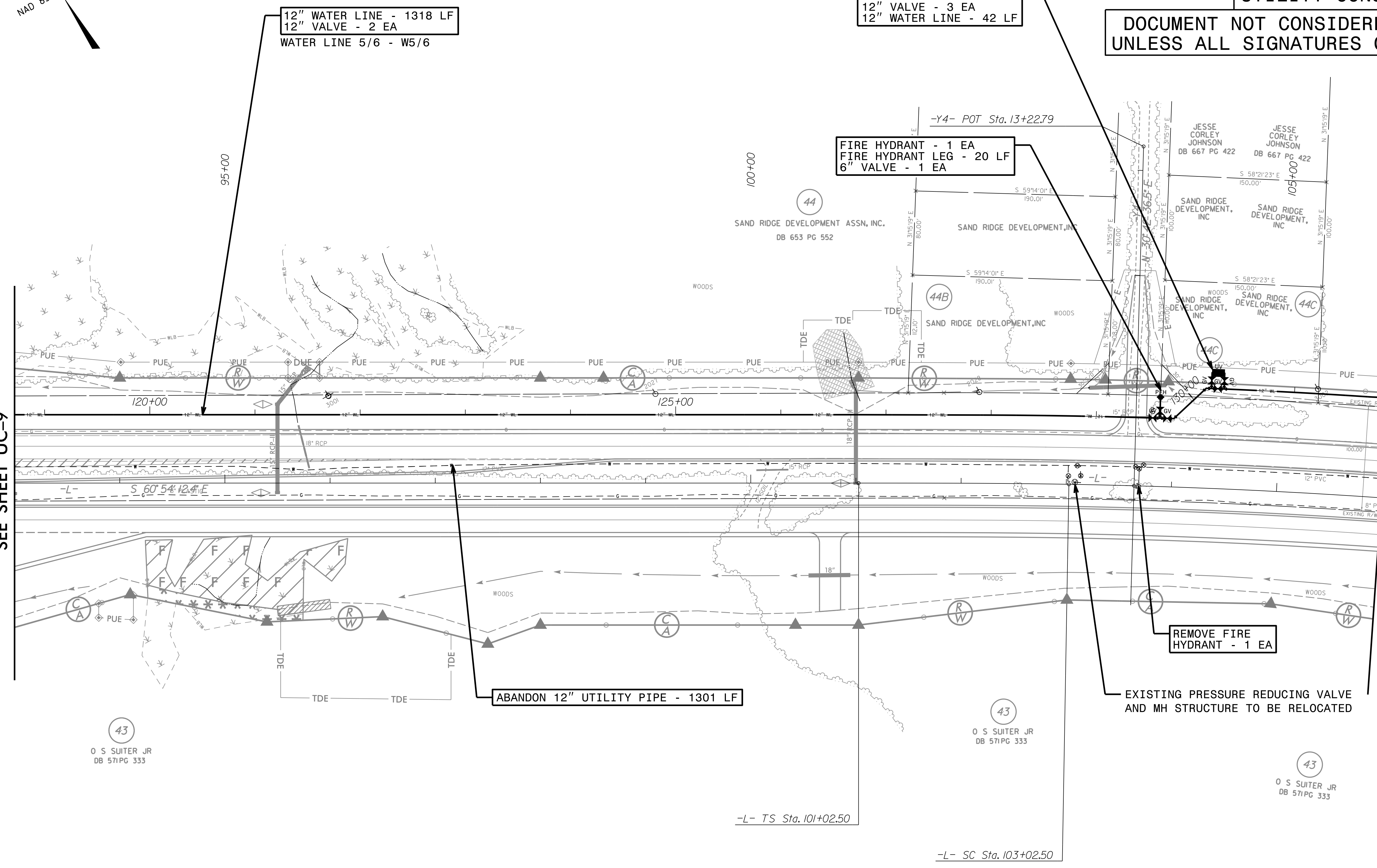
NC License: F-0160

PROJECT REFERENCE NO. R-2582A	SHEET NO. UC-10
DESIGNED BY: KCZ	
DRAWN BY: SHF	
CHECKED BY: KCZ	
APPROVED BY: KCZ	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	



MATCH LINE -L- STA 93+00.00
SEE SHEET UC-9

MATCH LINE -L- STA 106+00.00
SEE SHEET UC-11



12" WATER LINE - 1318 LF
12" VALVE - 2 EA
WATER LINE 5/6 - W5/6

REFER TO SPECIAL PROVISIONS, SEE NOTE 1
RELOCATE 12" PRESSURE REDUCING VALVE - 1 LS
12" VALVE - 3 EA
12" WATER LINE - 42 LF

FIRE HYDRANT - 1 EA
FIRE HYDRANT LEG - 20 LF
6" VALVE - 1 EA

ABANDON 12" UTILITY PIPE - 1301 LF

REMOVE FIRE HYDRANT - 1 EA

EXISTING PRESSURE REDUCING VALVE AND MH STRUCTURE TO BE RELOCATED

UTILITY CONSTRUCTION
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

43
O S SUITER JR
DB 571PG 333

43
O S SUITER JR
DB 571PG 333

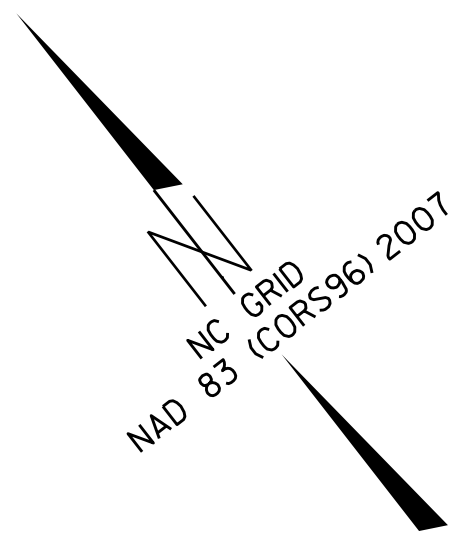
43
O S SUITER JR
DB 571PG 333

-L- TS Sta. 101+02.50

-L- SC Sta. 103+02.50

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6/21/09 10:21 AM

8/17/09



THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 325 LBS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.
REFER TO SHEETS UC-25 - UC-30 FOR W5/6 PROFILE.

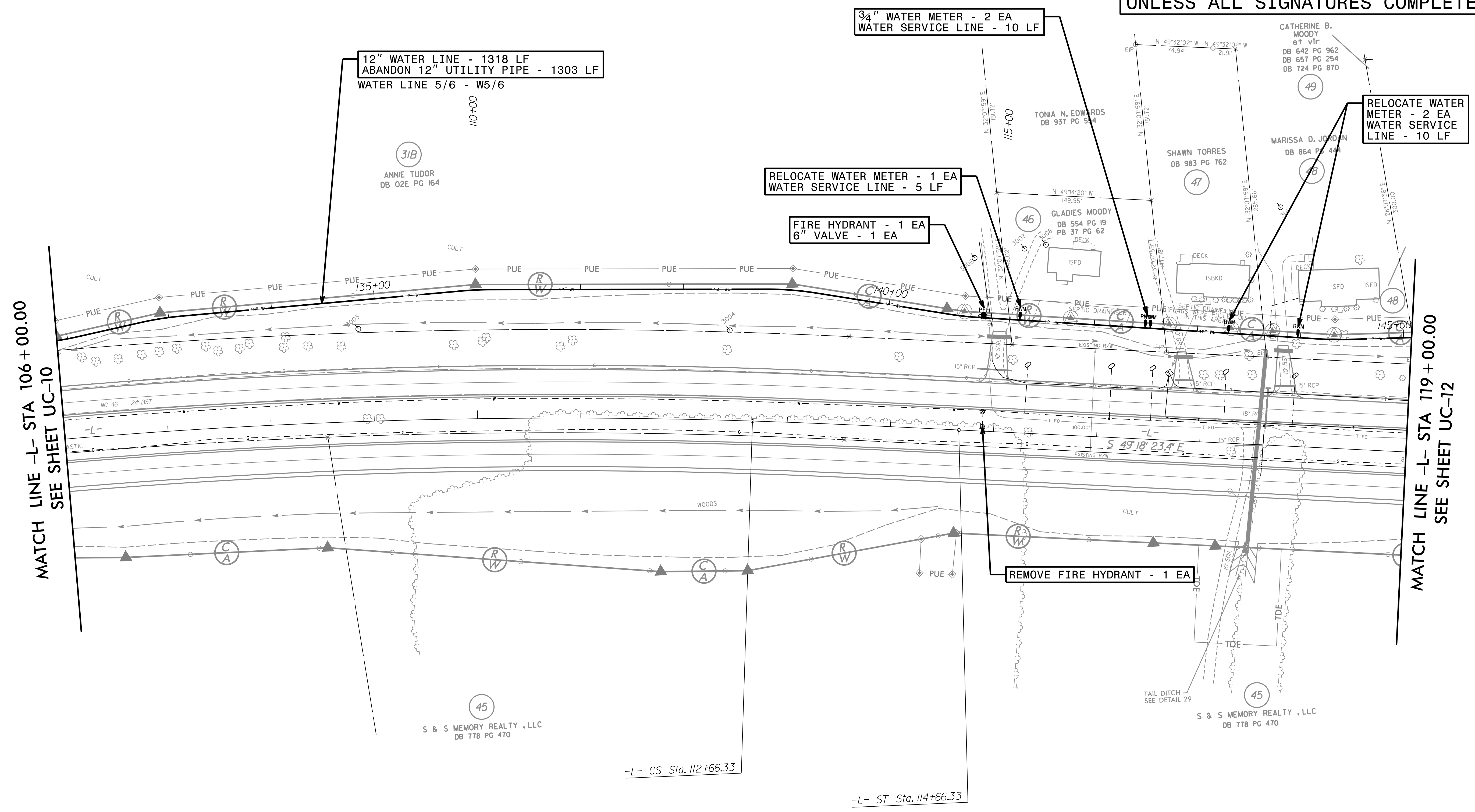
UTILITY OWNERS ON THIS PROJECT:
NORTHAMPTON COUNTY
UTILITY: 12" WATER
CONTACT: KIRK ROGERS
PHONE: 252-534-6341 X307

M A Engineering Consultants, Inc.
NC License: F-0160
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221

PROJECT REFERENCE NO.	R-2582A	SHEET NO.	UC-11
DESIGNED BY:	KCZ		
DRAWN BY:	SHF		
CHECKED BY:	KCZ		
APPROVED BY:	KCZ		
REVISED:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		UTILITY CONSTRUCTION PLANS ONLY	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151			

UTILITY CONSTRUCTION

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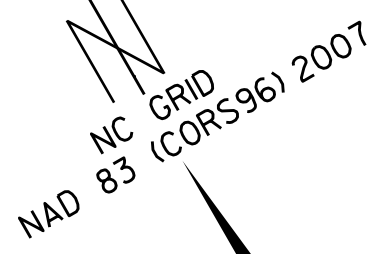


MATCH LINE -L- STA 106 + 00.00
SEE SHEET UC-10

MATCH LINE -L- STA 119 + 00.00
SEE SHEET UC-12

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8/17/09



THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 1630 LBS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.
REFER TO SHEETS UC-25 - UC-30 FOR W5/6 PROFILE.

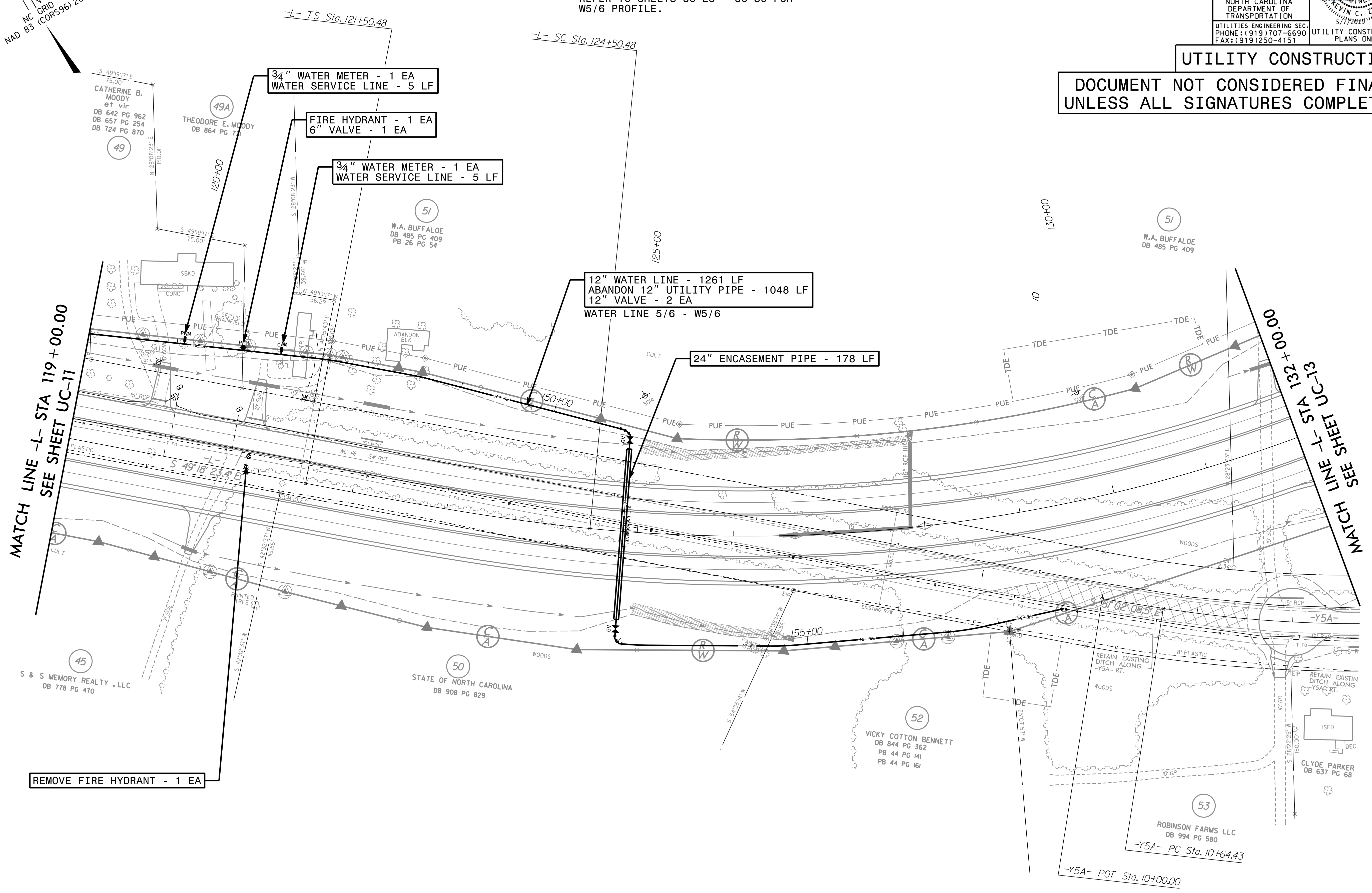
UTILITY OWNERS ON THIS PROJECT:
NORTHAMPTON COUNTY
UTILITY: 12" WATER
CONTACT: KIRK ROGERS
PHONE: 252-534-6341 X307

M A Engineering Consultants, Inc.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221
NC License: F-0160

PROJECT REFERENCE NO.	R-2582A	SHEET NO.	UC-12
DESIGNED BY:	KCZ		
DRAWN BY:	SHF		
CHECKED BY:	KCZ		
APPROVED BY:	KCZ		
REVISED:			
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



MATCH LINE -L- STA 119+00.00
SEE SHEET UC-11

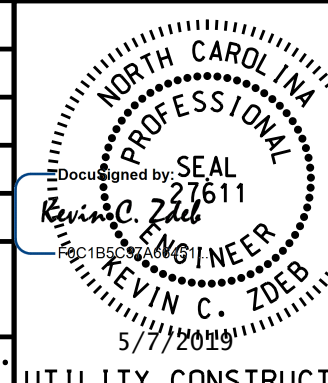
MATCH LINE -R- STA 10+00.00
SEE SHEET UC-13

REMOVE FIRE HYDRANT - 1 EA

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8/17/09

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 NC License: F-0160
 598 East Chatham Street Suite 137 Cary, NC 27511
 Phone: 919.297.0220 Fax: 919.297.0221

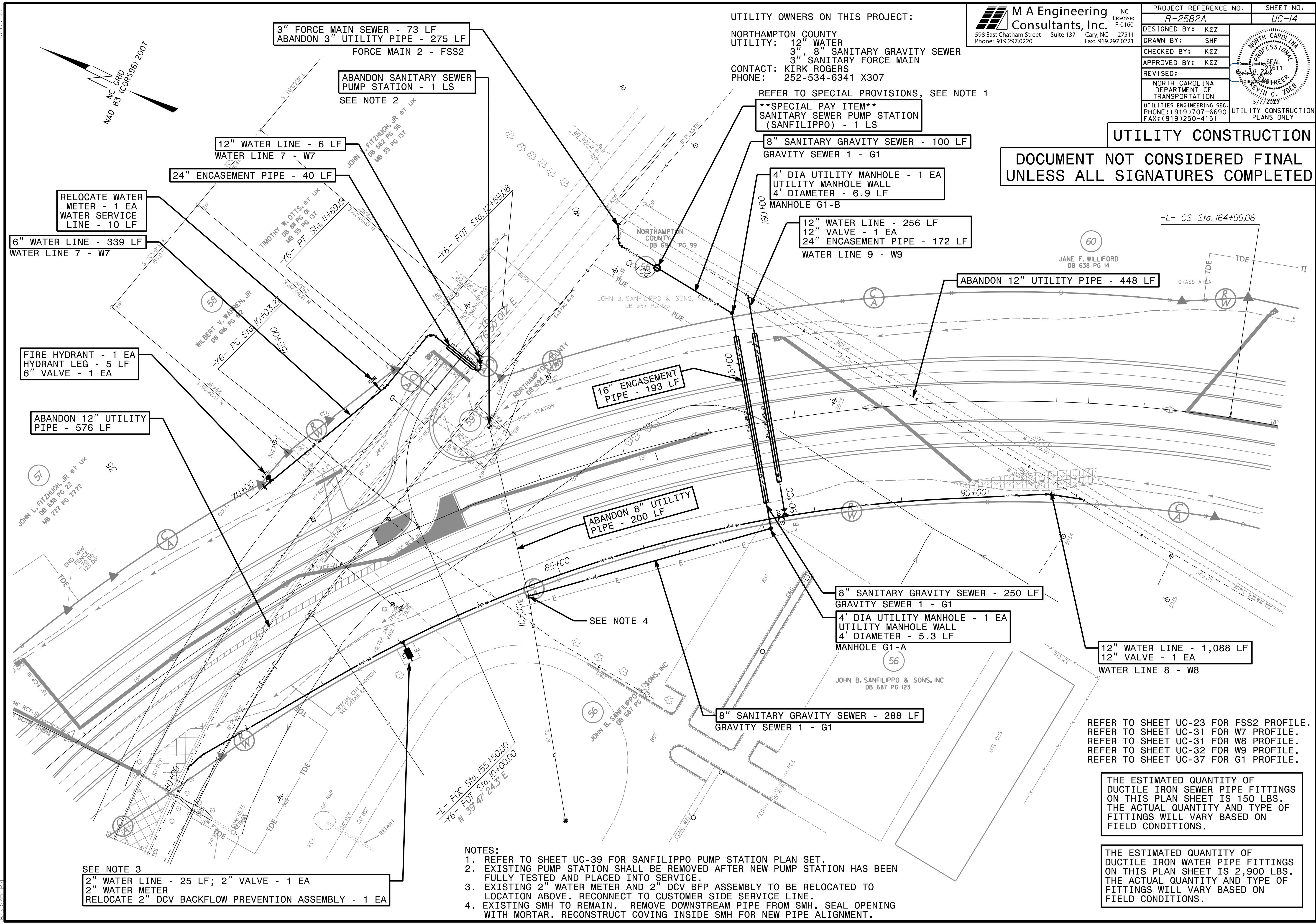
PROJECT REFERENCE NO. R-2582A	SHEET NO. UC-14
DESIGNED BY: KCZ	
DRAWN BY: SHF	
CHECKED BY: KCZ	
APPROVED BY: KCZ	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

UTILITY OWNERS ON THIS PROJECT:
 NORTHAMPTON COUNTY
 UTILITY: 12" WATER
 3" 8" SANITARY GRAVITY SEWER
 3" SANITARY FORCE MAIN
 CONTACT: KIRK ROGERS
 PHONE: 252-534-6341 X307

REFER TO SPECIAL PROVISIONS, SEE NOTE 1

UTILITY CONSTRUCTION

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



RELOCATE WATER METER - 1 EA
 WATER SERVICE LINE - 10 LF

6" WATER LINE - 339 LF
 WATER LINE 7 - W7

FIRE HYDRANT - 1 EA
 HYDRANT LEG - 5 LF
 6" VALVE - 1 EA

ABANDON 12" UTILITY PIPE - 576 LF

3" FORCE MAIN SEWER - 73 LF
 ABANDON 3" UTILITY PIPE - 275 LF
 FORCE MAIN 2 - FSS2

ABANDON SANITARY SEWER PUMP STATION - 1 LS
 SEE NOTE 2

12" WATER LINE - 6 LF
 WATER LINE 7 - W7

24" ENCASEMENT PIPE - 40 LF

16" ENCASEMENT PIPE - 193 LF

ABANDON 8" UTILITY PIPE - 200 LF

SPECIAL PAY ITEM
 SANITARY SEWER PUMP STATION (SANFILIPPO) - 1 LS

8" SANITARY GRAVITY SEWER - 100 LF
 GRAVITY SEWER 1 - G1

4' DIA UTILITY MANHOLE - 1 EA
 UTILITY MANHOLE WALL
 4' DIAMETER - 6.9 LF
 MANHOLE G1-B

12" WATER LINE - 256 LF
 12" VALVE - 1 EA
 24" ENCASEMENT PIPE - 172 LF
 WATER LINE 9 - W9

ABANDON 12" UTILITY PIPE - 448 LF

8" SANITARY GRAVITY SEWER - 250 LF
 GRAVITY SEWER 1 - G1

4' DIA UTILITY MANHOLE - 1 EA
 UTILITY MANHOLE WALL
 4' DIAMETER - 5.3 LF
 MANHOLE G1-A

12" WATER LINE - 1,088 LF
 12" VALVE - 1 EA
 WATER LINE 8 - W8

8" SANITARY GRAVITY SEWER - 288 LF
 GRAVITY SEWER 1 - G1

REFER TO SHEET UC-23 FOR FSS2 PROFILE.
 REFER TO SHEET UC-31 FOR W7 PROFILE.
 REFER TO SHEET UC-31 FOR W8 PROFILE.
 REFER TO SHEET UC-32 FOR W9 PROFILE.
 REFER TO SHEET UC-37 FOR G1 PROFILE.

THE ESTIMATED QUANTITY OF DUCTILE IRON SEWER PIPE FITTINGS ON THIS PLAN SHEET IS 150 LBS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 2,900 LBS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

NOTES:

- REFER TO SHEET UC-39 FOR SANFILIPPO PUMP STATION PLAN SET.
- EXISTING PUMP STATION SHALL BE REMOVED AFTER NEW PUMP STATION HAS BEEN FULLY TESTED AND PLACED INTO SERVICE.
- EXISTING 2" WATER METER AND 2" DCV BFP ASSEMBLY TO BE RELOCATED TO LOCATION ABOVE. RECONNECT TO CUSTOMER SIDE SERVICE LINE.
- EXISTING SMH TO REMAIN. REMOVE DOWNSTREAM PIPE FROM SMH. SEAL OPENING WITH MORTAR. RECONSTRUCT COVING INSIDE SMH FOR NEW PIPE ALIGNMENT.

SEE NOTE 3

2" WATER LINE - 25 LF; 2" VALVE - 1 EA
 2" WATER METER
 RELOCATE 2" DCV BACKFLOW PREVENTION ASSEMBLY - 1 EA

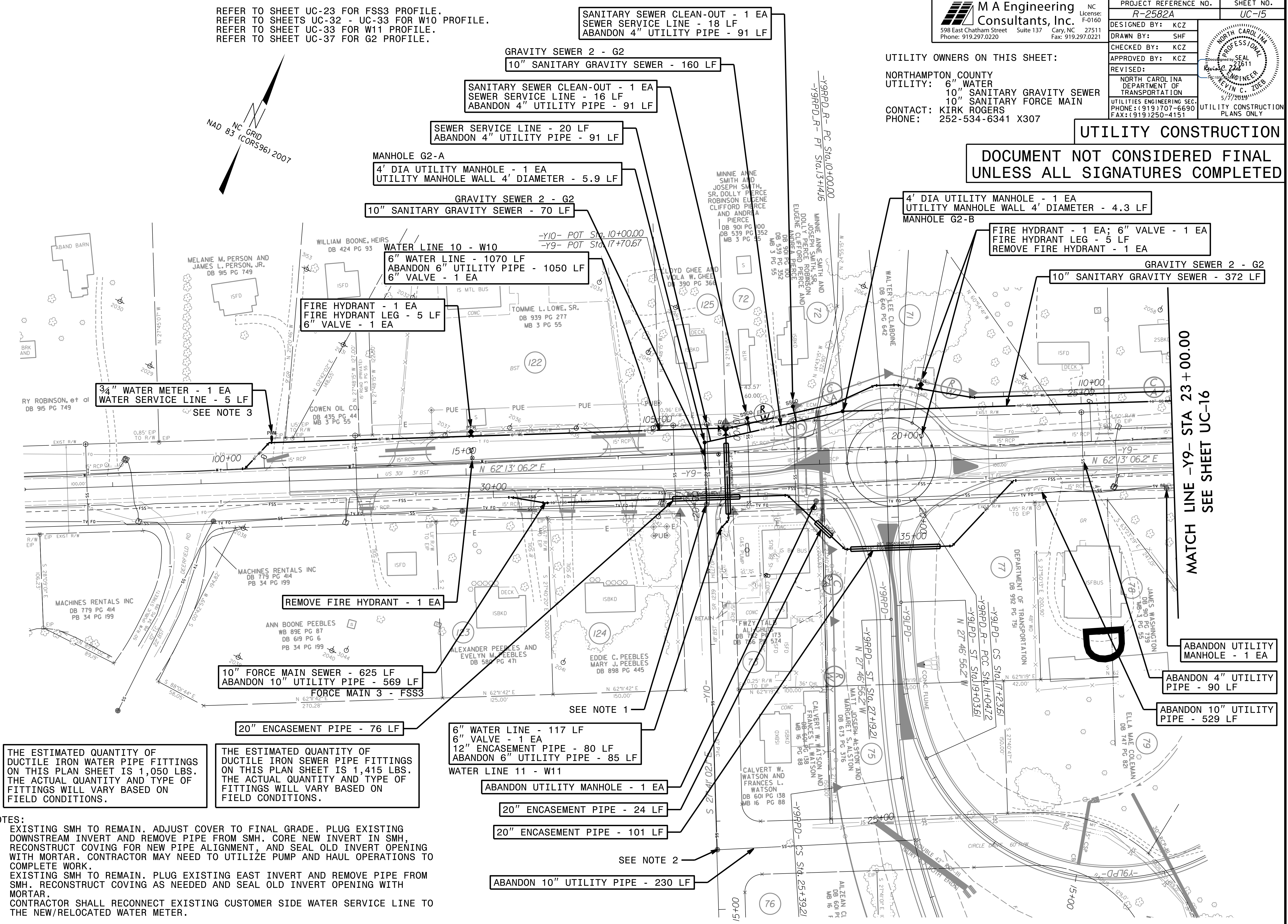
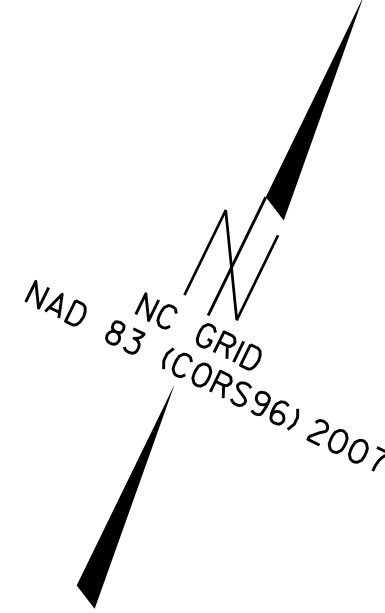
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PROJECT REFERENCE NO. R-2582A	SHEET NO. UC-15
DESIGNED BY: KCZ	
DRAWN BY: SHF	
CHECKED BY: KCZ	
APPROVED BY: KCZ	
REVISED:	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SECTION PHONE: (919) 707-6690 FAX: (919) 250-4151
UTILITY CONSTRUCTION PLANS ONLY	

UTILITY OWNERS ON THIS SHEET:
 NORTHAMPTON COUNTY
 UTILITY: 6" WATER
 10" SANITARY GRAVITY SEWER
 10" SANITARY FORCE MAIN
 CONTACT: KIRK ROGERS
 PHONE: 252-534-6341 X307

UTILITY CONSTRUCTION
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

REFER TO SHEET UC-23 FOR FSS3 PROFILE.
 REFER TO SHEETS UC-32 - UC-33 FOR W10 PROFILE.
 REFER TO SHEET UC-33 FOR W11 PROFILE.
 REFER TO SHEET UC-37 FOR G2 PROFILE.



3/4" WATER METER - 1 EA
 WATER SERVICE LINE - 5 LF
 SEE NOTE 3

FIRE HYDRANT - 1 EA
 FIRE HYDRANT LEG - 5 LF
 6" VALVE - 1 EA

GRAVITY SEWER 2 - G2
 10" SANITARY GRAVITY SEWER - 70 LF

SEWER SERVICE LINE - 20 LF
 ABANDON 4" UTILITY PIPE - 91 LF

SANITARY SEWER CLEAN-OUT - 1 EA
 SEWER SERVICE LINE - 16 LF
 ABANDON 4" UTILITY PIPE - 91 LF

GRAVITY SEWER 2 - G2
 10" SANITARY GRAVITY SEWER - 160 LF

SANITARY SEWER CLEAN-OUT - 1 EA
 SEWER SERVICE LINE - 18 LF
 ABANDON 4" UTILITY PIPE - 91 LF

4' DIA UTILITY MANHOLE - 1 EA
 UTILITY MANHOLE WALL 4' DIAMETER - 4.3 LF
 MANHOLE G2-B

FIRE HYDRANT - 1 EA; 6" VALVE - 1 EA
 FIRE HYDRANT LEG - 5 LF
 REMOVE FIRE HYDRANT - 1 EA

GRAVITY SEWER 2 - G2
 10" SANITARY GRAVITY SEWER - 372 LF

REMOVE FIRE HYDRANT - 1 EA

10" FORCE MAIN SEWER - 625 LF
 ABANDON 10" UTILITY PIPE - 569 LF
 FORCE MAIN 3 - FSS3

20" ENCASEMENT PIPE - 76 LF

6" WATER LINE - 117 LF
 6" VALVE - 1 EA
 12" ENCASEMENT PIPE - 80 LF
 ABANDON 6" UTILITY PIPE - 85 LF
 WATER LINE 11 - W11

ABANDON UTILITY MANHOLE - 1 EA

20" ENCASEMENT PIPE - 24 LF

20" ENCASEMENT PIPE - 101 LF

ABANDON 10" UTILITY PIPE - 230 LF

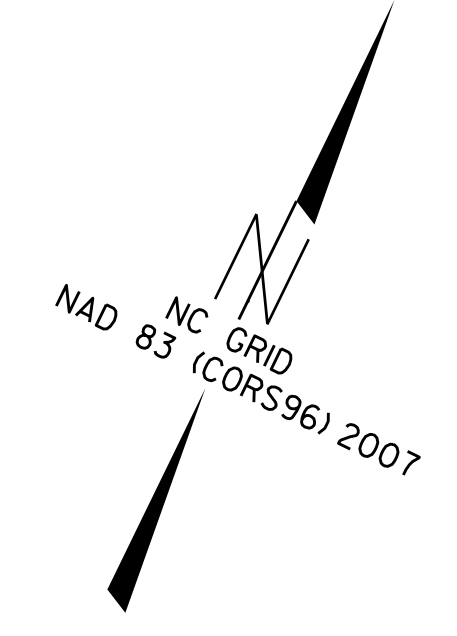
MATCH LINE -Y9- STA 23+00.00
 SEE SHEET UC-16

THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 1,050 LBS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

THE ESTIMATED QUANTITY OF DUCTILE IRON SEWER PIPE FITTINGS ON THIS PLAN SHEET IS 1,415 LBS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

- NOTES:
- EXISTING SMH TO REMAIN. ADJUST COVER TO FINAL GRADE. PLUG EXISTING DOWNSTREAM INVERT AND REMOVE PIPE FROM SMH. CORE NEW INVERT IN SMH, RECONSTRUCT COVING FOR NEW PIPE ALIGNMENT, AND SEAL OLD INVERT OPENING WITH MORTAR. CONTRACTOR MAY NEED TO UTILIZE PUMP AND HAUL OPERATIONS TO COMPLETE WORK.
 - EXISTING SMH TO REMAIN. PLUG EXISTING EAST INVERT AND REMOVE PIPE FROM SMH. RECONSTRUCT COVING AS NEEDED AND SEAL OLD INVERT OPENING WITH MORTAR.
 - CONTRACTOR SHALL RECONNECT EXISTING CUSTOMER SIDE WATER SERVICE LINE TO THE NEW/RELOCATED WATER METER.

8/17/09



M A Engineering Consultants, Inc.
 598 East Chatham Street Suite 137 Cary, NC 27511
 Phone: 919.297.0220 Fax: 919.297.0221

PROJECT REFERENCE NO. R-2582A	SHEET NO. UC-16
DESIGNED BY: KCZ	
DRAWN BY: SHF	
CHECKED BY: KCZ	
APPROVED BY: KCZ	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SECTION PHONE: (919) 707-6690 FAX: (919) 250-4151	

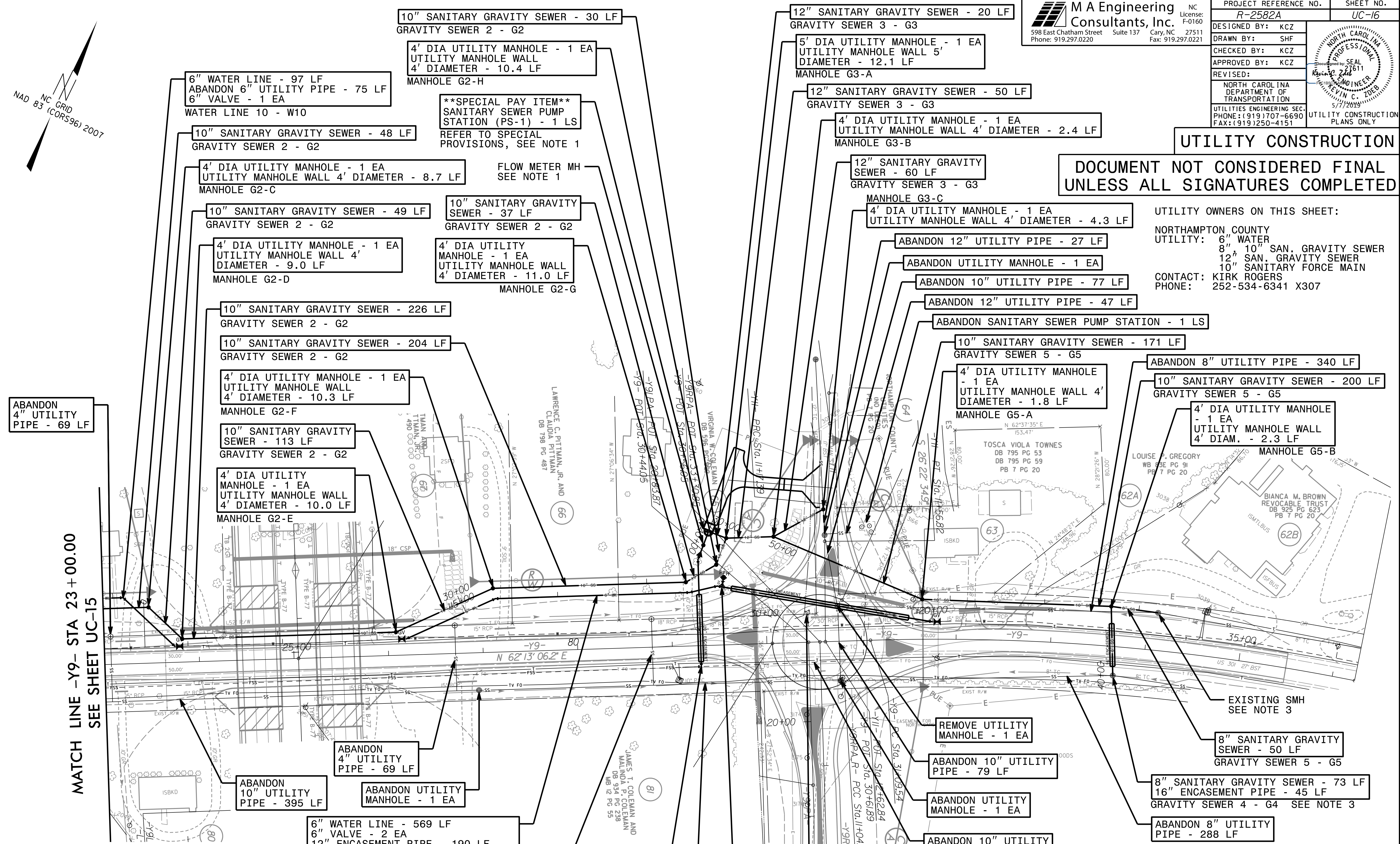
UTILITY CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

UTILITY OWNERS ON THIS SHEET:

NORTHAMPTON COUNTY UTILITY:
 6" WATER
 8" 10" SAN. GRAVITY SEWER
 12" SAN. GRAVITY SEWER
 10" SANITARY FORCE MAIN

CONTACT: KIRK ROGERS
 PHONE: 252-534-6341 X307



REFER TO SHEET UC-23 FOR FSS4 PROFILE.
 REFER TO SHEETS UC-32 - UC-33 FOR W10 PROFILE.
 REFER TO SHEET UC-37 FOR G2 PROFILE.
 REFER TO SHEET UC-38 FOR G3 PROFILE.
 REFER TO SHEET UC-38 FOR G4 PROFILE.
 REFER TO SHEET UC-38 FOR G5 PROFILE.

THE ESTIMATED QUANTITY OF DUCTILE IRON SEWER PIPE FITTINGS ON THIS PLAN SHEET IS 350 LBS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 650 LBS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

10" FORCE MAIN SEWER - 123 LF
 6" FORCE MAIN SEWER - 22 LF
 20" ENCASUREMENT PIPE - 71 LF
 FORCE MAIN 4 - FSS4

FIRE HYDRANT - 1 EA
 6" VALVE - 1 EA
 FIRE HYDRANT LEG - 10 LF

- NOTES:
- REFER TO UC-48 FOR PS-1 PUMP STATION PLAN SET.
 - EXISTING PUMP STATION SHALL BE REMOVE AFTER NEW PUMP STATION HAS BEEN FULLY TESTED AND PLACED INTO SERVICE.
 - EXISTING SMH TO REMAIN. ADJUST RIM TO FINAL GRADE. REMOVE EXISTING DOWNSTREAM INVERT. RECONSTRUCT COVING INSIDE SMH FOR NEW PIPE ALIGNMENT.
 - ALL ENCASUREMENT PIPES ON THIS SHEET SHALL BE INSTALLED BY OPEN CUT.

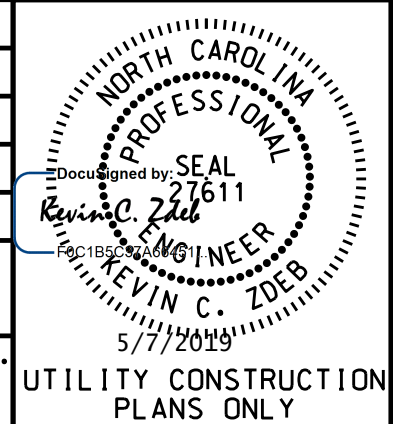
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8/17/19

UTILITY OWNERS ON THIS PROJECT:

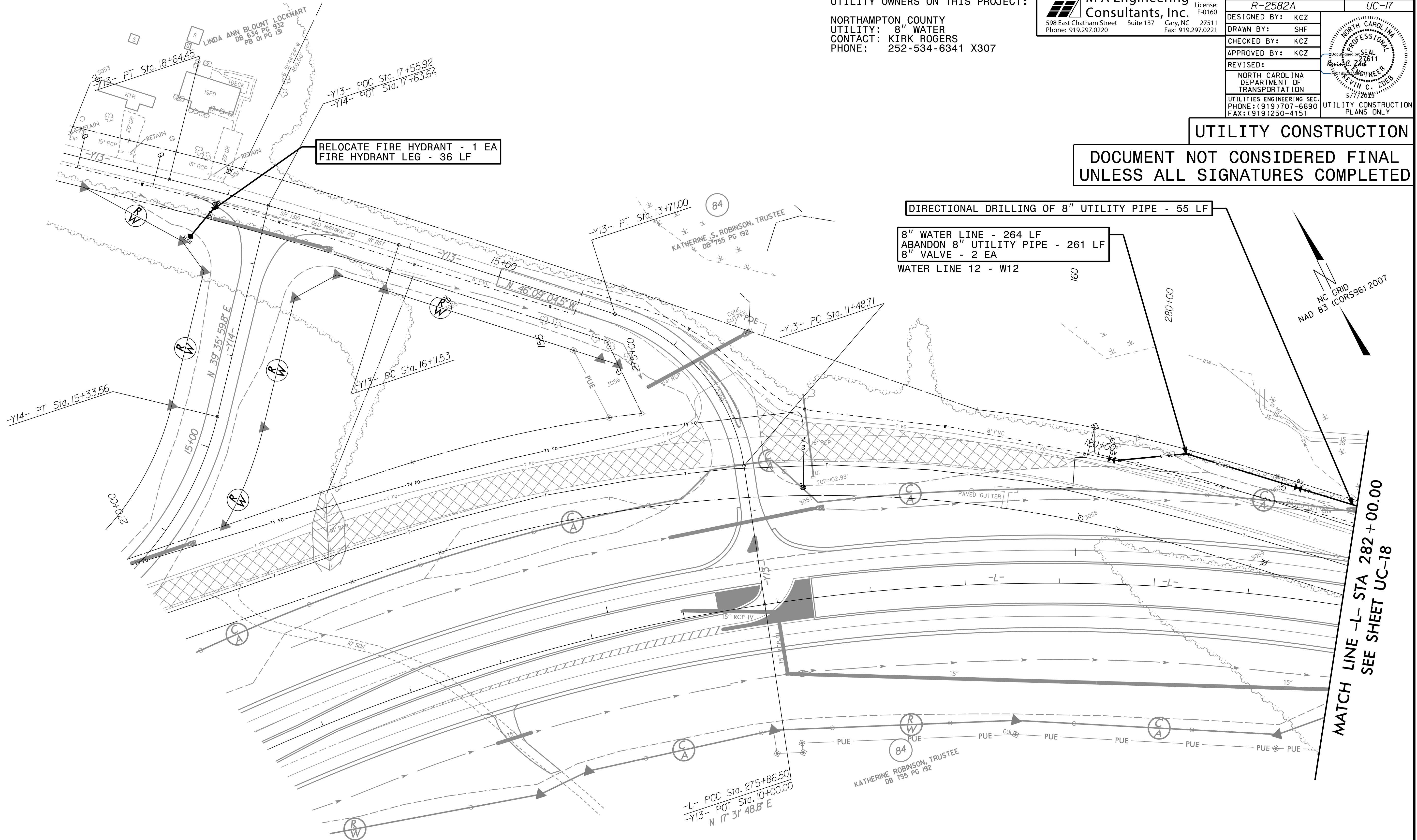
NORTHAMPTON COUNTY
UTILITY: 8" WATER
CONTACT: KIRK ROGERS
PHONE: 252-534-6341 X307

M A Engineering Consultants, Inc.
 NC License: F-0160
 598 East Chatham Street Suite 137 Cary, NC 27511
 Phone: 919.297.0220 Fax: 919.297.0221

PROJECT REFERENCE NO. R-2582A	SHEET NO. UC-17
DESIGNED BY: KCZ	
DRAWN BY: SHF	
CHECKED BY: KCZ	
APPROVED BY: KCZ	
REVISED:	
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**



REFER TO SHEETS UC-34 - UC-36 FOR W12 PROFILE.

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

- NOTES:
- PRIOR TO COMMENCING ANY WORK ON ANY TRENCHLESS INSTALLATION ON THIS PROJECT, THE CONTRACTOR SHALL PROVIDE A DESIGN FOR THE TRENCHLESS INSTALLATION THAT IS CERTIFIED BY A PROFESSIONAL ENGINEER LICENSED BY THE STATE OF NORTH CAROLINA, AS REQUIRED BY SUBARTICLE 1550-3(B) OF THE "NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" DATED JANUARY 2018.

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8/17/09

NOTES:
 1. PRIOR TO COMMENCING ANY WORK ON ANY TRENCHLESS INSTALLATION ON THIS PROJECT, THE CONTRACTOR SHALL PROVIDE A DESIGN FOR THE TRENCHLESS INSTALLATION THAT IS CERTIFIED BY A PROFESSIONAL ENGINEER LICENSED BY THE STATE OF NORTH CAROLINA, AS REQUIRED BY SUBARTICLE 1550-3(B) OF THE "NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" DATED JANUARY 2018.

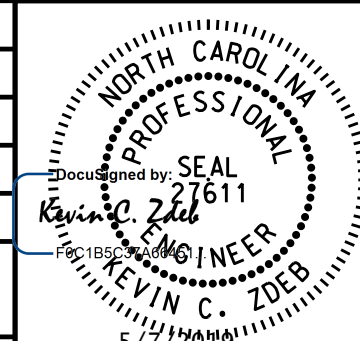
THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 575 LBS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

REFER TO SHEETS UC-34 - UC-36 FOR W12 PROFILE.

UTILITY OWNERS ON THIS PROJECT:

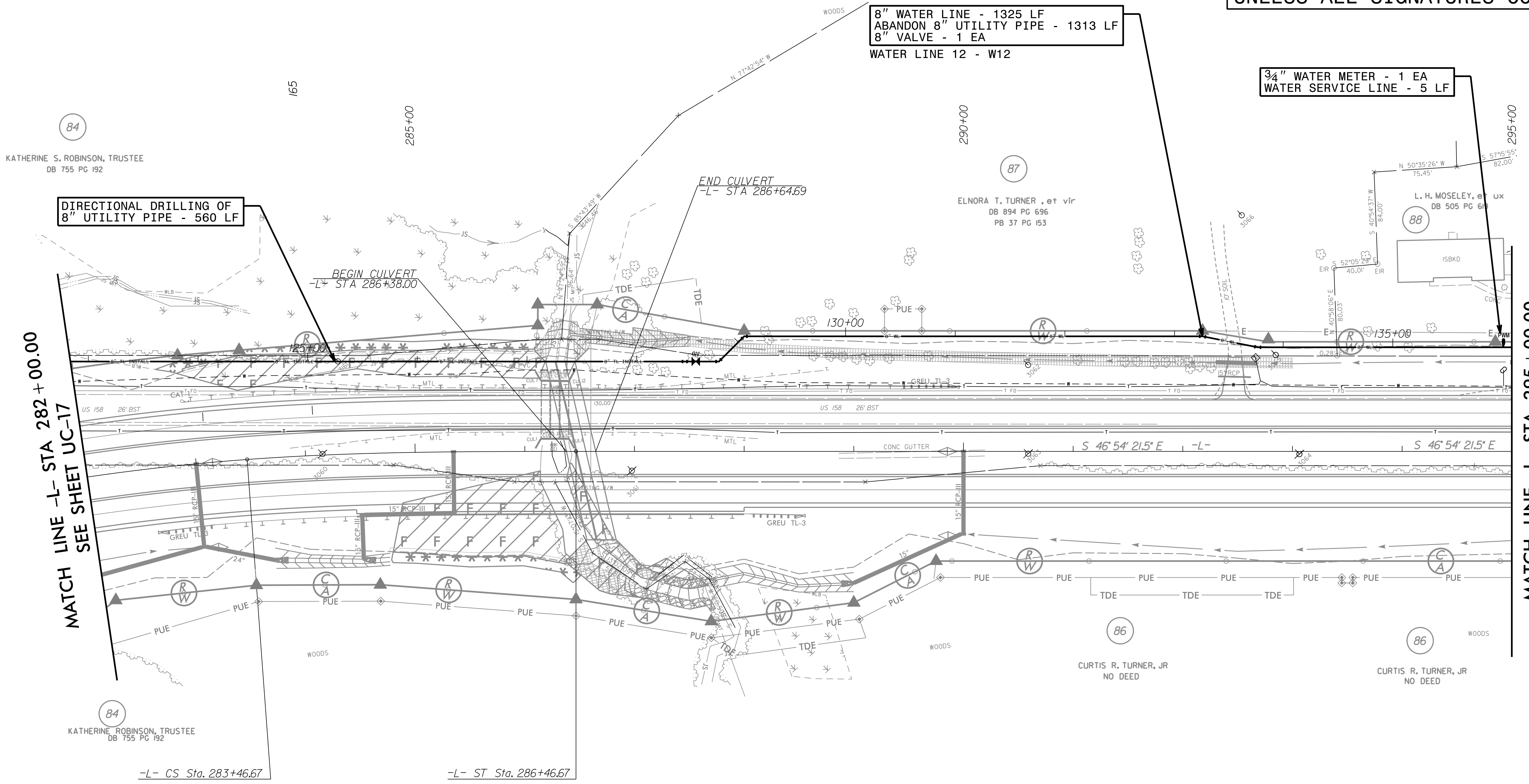
NORTHAMPTON COUNTY
 UTILITY: 8" WATER
 CONTACT: KIRK ROGERS
 PHONE: 252-534-6341 X307

M A Engineering Consultants, Inc.
 NC License: F-0160
 598 East Chatham Street Suite 137 Cary, NC 27511
 Phone: 919.297.0220 Fax: 919.297.0221

PROJECT REFERENCE NO. R-2582A	SHEET NO. UC-18
DESIGNED BY: KCZ	
DRAWN BY: SHF	
CHECKED BY: KCZ	
APPROVED BY: KCZ	
REVISED:	
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



DIRECTIONAL DRILLING OF 8" UTILITY PIPE - 560 LF

8" WATER LINE - 1325 LF
 ABANDON 8" UTILITY PIPE - 1313 LF
 8" VALVE - 1 EA
 WATER LINE 12 - W12

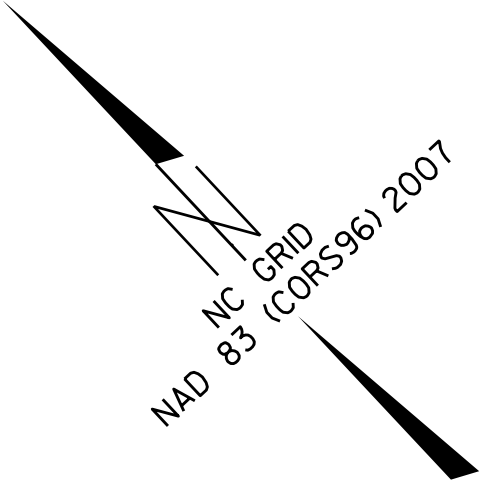
3/4" WATER METER - 1 EA
 WATER SERVICE LINE - 5 LF

MATCH LINE -L- STA 282 + 00.00
 SEE SHEET UC-17

MATCH LINE -L- STA 295 + 00.00
 SEE SHEET UC-19

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8/17/19

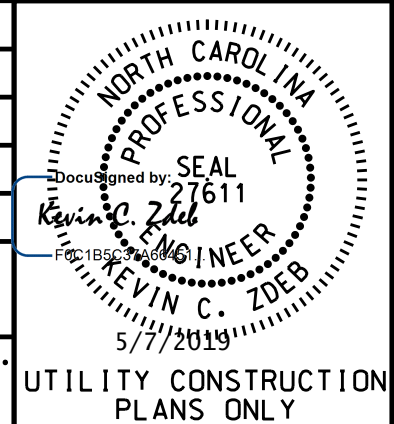


THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 660 LBS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.
REFER TO SHEETS UC-34 - UC-36 FOR W12 PROFILE.

UTILITY OWNERS ON THIS PROJECT:
NORTHAMPTON COUNTY
UTILITY: 8" WATER
CONTACT: KIRK ROGERS
PHONE: 252-534-6341 X307

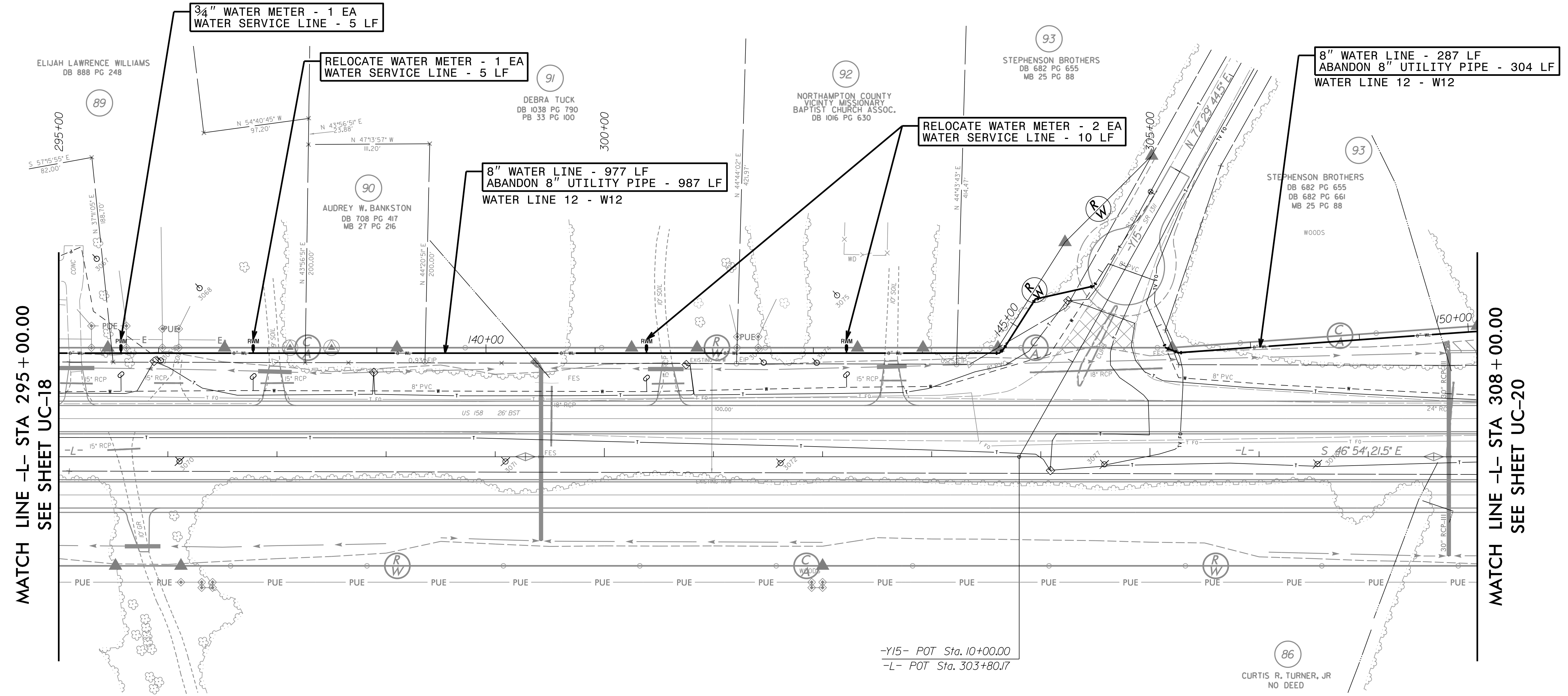
M A Engineering Consultants, Inc.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221
NC License: F-0160

PROJECT REFERENCE NO.	R-2582A
SHEET NO.	UC-19
DESIGNED BY:	KCZ
DRAWN BY:	SHF
CHECKED BY:	KCZ
APPROVED BY:	KCZ
REVISED:	
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



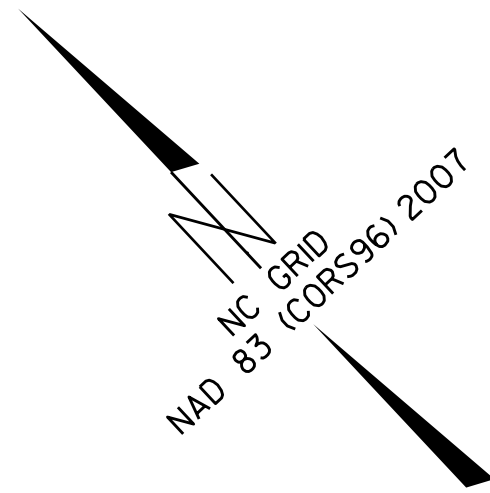
MATCH LINE -L- STA 295 + 00.00
SEE SHEET UC-18

MATCH LINE -L- STA 308 + 00.00
SEE SHEET UC-20

-Y15- POT Sta. 10+00.00
-L- POT Sta. 303+80.17

86
CURTIS R. TURNER, JR
NO DEED

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6/26/19 10:45 AM



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

REFER TO SHEETS UC-34 - UC-36 FOR W12 PROFILE.

UTILITY OWNERS ON THIS PROJECT:

NORTHAMPTON COUNTY
UTILITY: 8" WATER
CONTACT: KIRK ROGERS
PHONE: 252-534-6341 X307

M A Engineering Consultants, Inc.
NC License: F-0160
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221

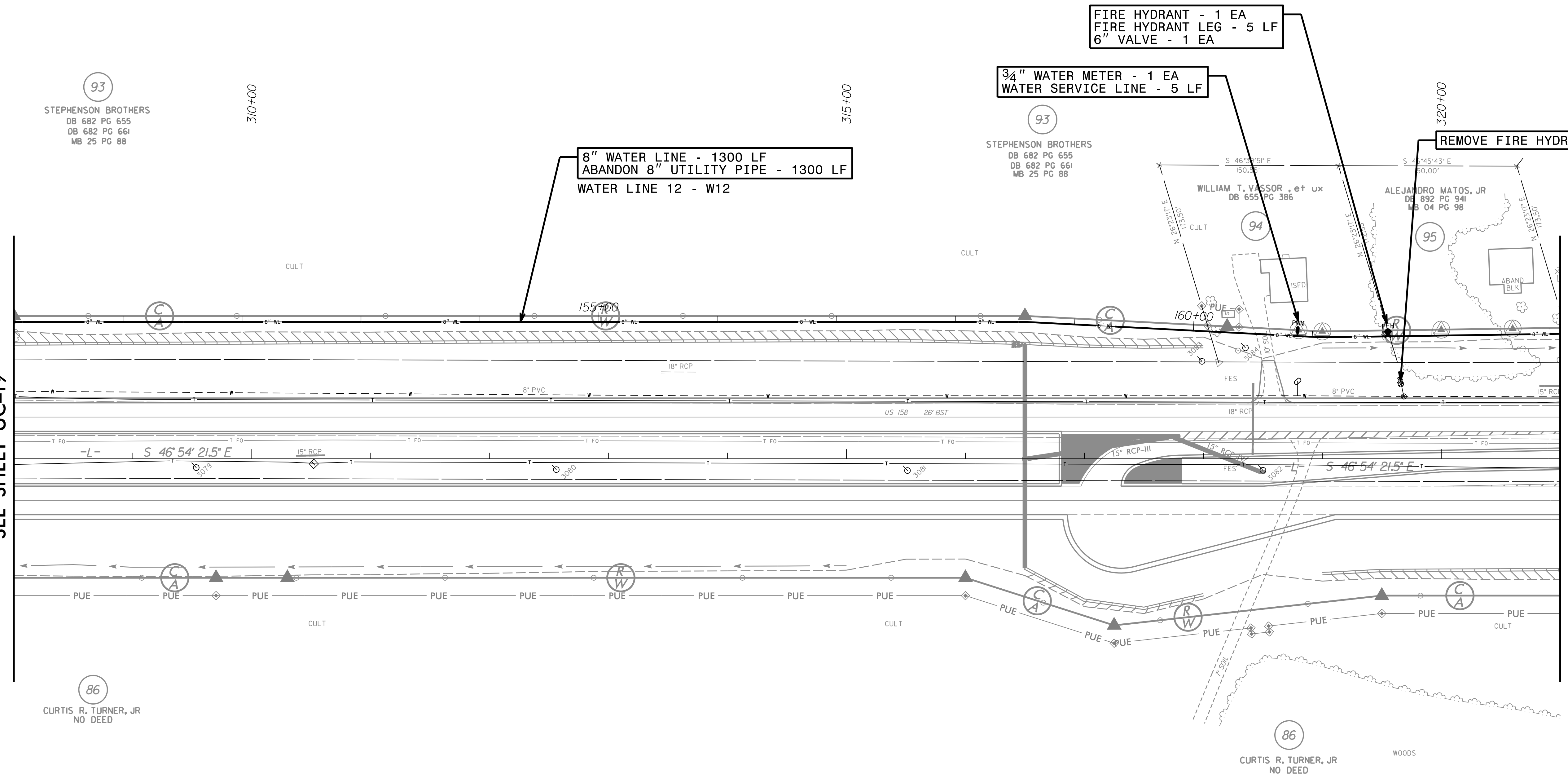
PROJECT REFERENCE NO. R-2582A	SHEET NO. UC-20
DESIGNED BY: KCZ	
DRAWN BY: SHF	
CHECKED BY: KCZ	
APPROVED BY: KCZ	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

UTILITY CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

MATCH LINE -L- STA 308+00.00
SEE SHEET UC-19

MATCH LINE -L- STA 321+00.00
SEE SHEET UC-21



93
STEPHENSON BROTHERS
DB 682 PG 655
DB 682 PG 661
MB 25 PG 88

93
STEPHENSON BROTHERS
DB 682 PG 655
DB 682 PG 661
MB 25 PG 88

8" WATER LINE - 1300 LF
ABANDON 8" UTILITY PIPE - 1300 LF
WATER LINE 12 - W12

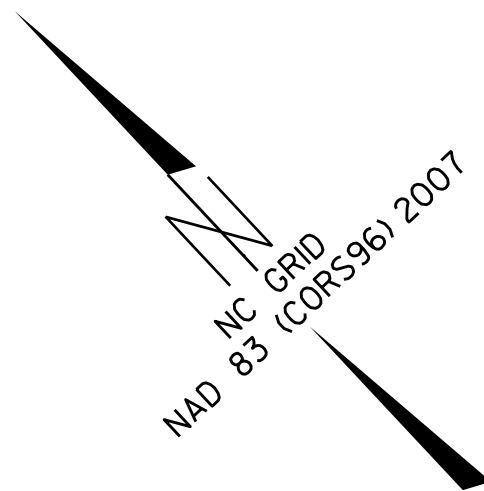
FIRE HYDRANT - 1 EA
FIRE HYDRANT LEG - 5 LF
6" VALVE - 1 EA

3/4" WATER METER - 1 EA
WATER SERVICE LINE - 5 LF

REMOVE FIRE HYDRANT - 1 EA

86
CURTIS R. TURNER, JR
NO DEED

86
CURTIS R. TURNER, JR
NO DEED



NC GRID
MAD 83 (CORS96) 2007

THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 475 LBS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

UTILITY OWNERS ON THIS PROJECT:
NORTHAMPTON COUNTY
UTILITY: 6" 8" WATER
CONTACT: KIRK ROGERS
PHONE: 252-534-6341 X307

M A Engineering Consultants, Inc.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221
NC License: F-0160

PROJECT REFERENCE NO. R-2582A	SHEET NO. UC-21
DESIGNED BY: KCZ	
DRAWN BY: SHF	
CHECKED BY: KCZ	
APPROVED BY: KCZ	
REVISED:	
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

MATCH LINE -L STA 321+00.00
SEE SHEET UC-20

RELOCATE WATER METER - 1 EA
WATER SERVICE LINE - 5 LF

3/4" WATER METER - 1 EA
WATER SERVICE LINE - 5 LF

8" WATER LINE - 200 LF
ABANDON 8" UTILITY PIPE - 159 LF
8" VALVE - 1 EA
WATER LINE 12 - W12

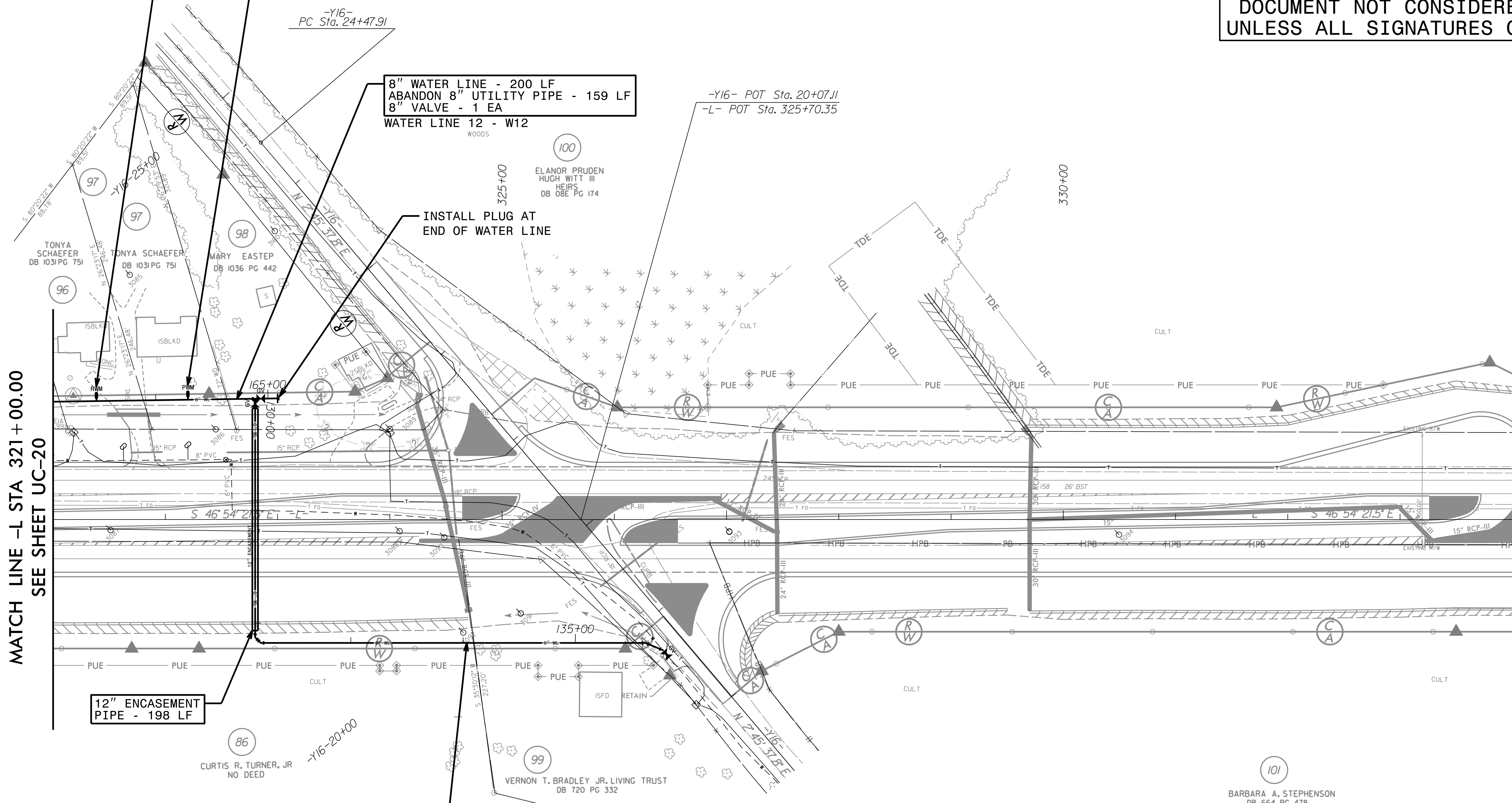
INSTALL PLUG AT
END OF WATER LINE

12" ENCASEMENT
PIPE - 198 LF

6" WATER LINE - 579 LF
ABANDON 6" UTILITY PIPE - 470 LF
6" VALVE - 2 EA
WATER LINE 13 - W13

REFER TO SHEETS UC-34 - UC-36 FOR W12 PROFILE.
REFER TO SHEET UC-36 FOR W13 PROFILE.

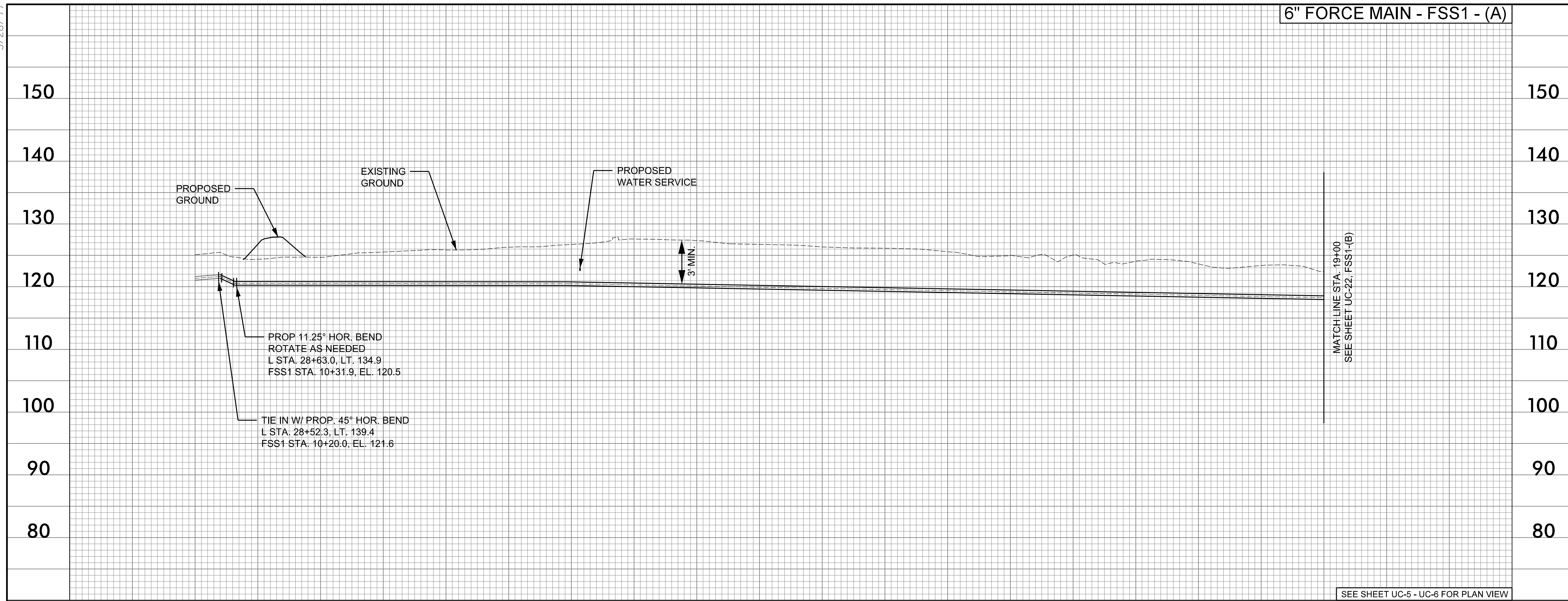
-Y16- POT Sta. 20+07.11
-L- POT Sta. 325+70.35



BARBARA A. STEPHENSON
DB 664 PG 478

5/28/19

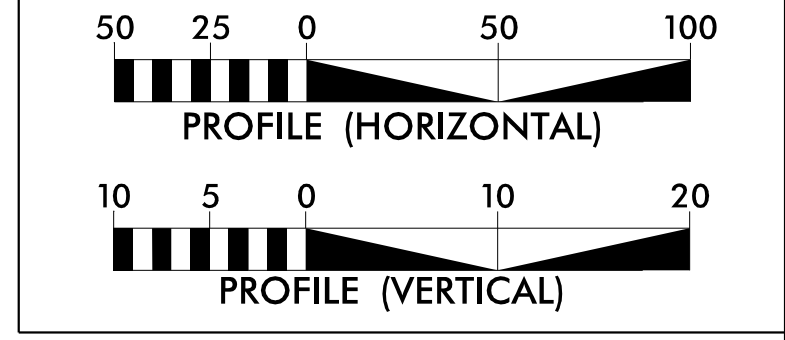
6" FORCE MAIN - FSS1 - (A)



PROJECT REFERENCE NO. R-2582A	SHEET NO. UC-22
DESIGNED BY: SHF	
DRAWN BY: SHF	
CHECKED BY: KCZ	
APPROVED BY: KCZ	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151 UTILITY CONSTRUCTION PLANS ONLY	

M A Engineering Consultants, Inc.
 598 East Chatham Street Suite 137 Cary, NC 27511
 Phone: 919.297.0220 Fax: 919.297.0221
 NC License: F-0160

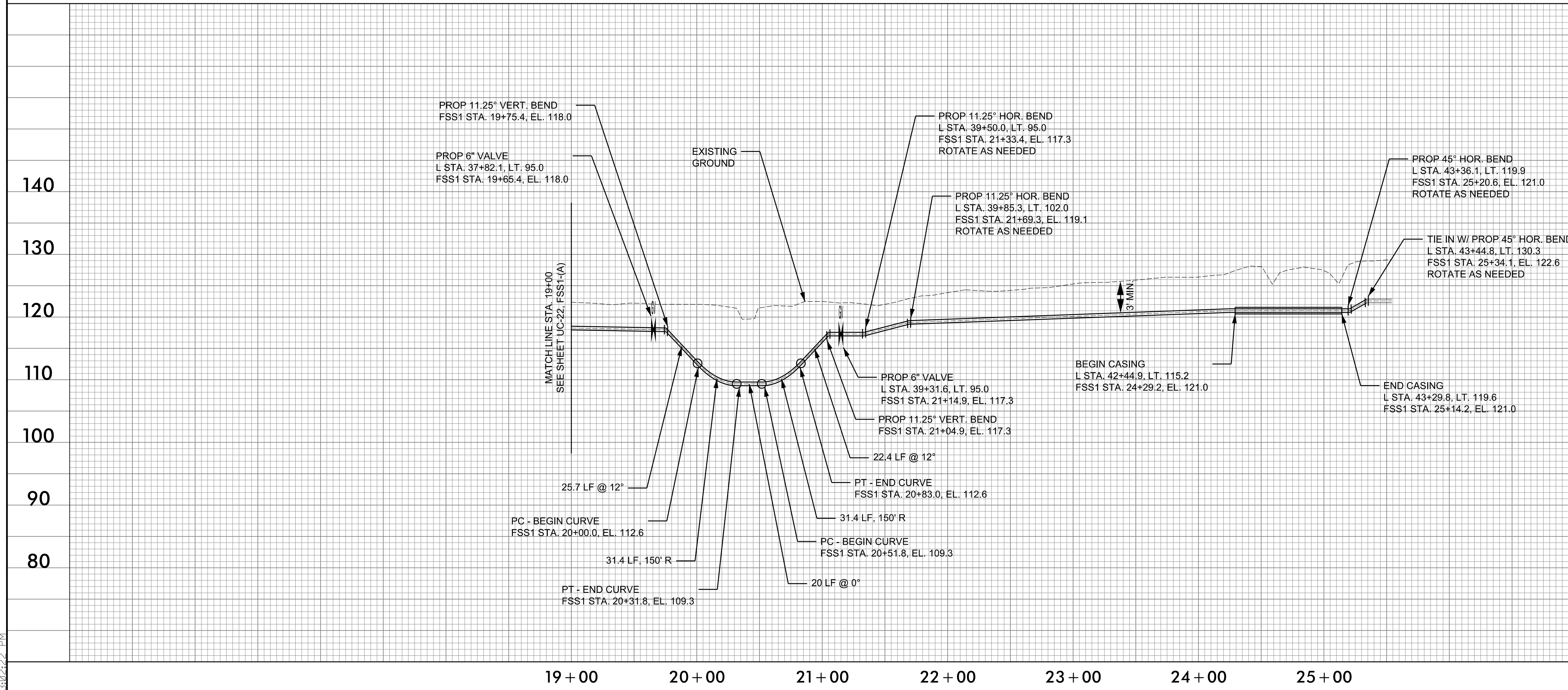
DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED



- NOTES:
- EXISTING PIPE AT TIE-IN LOCATIONS ARE ESTIMATED BASED ON TEST HOLE INFORMATION PROVIDED BY OTHERS OR ASSUMED TO HAVE 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.
 - OPEN TRENCH CONSTRUCTION SHALL PROVIDE 3 FEET MINIMUM COVER TO TOP OF PIPE.
 - DIRECTIONAL DRILL AND BORE AND JACK INSTALLATIONS SHALL BE IN ACCORDANCE WITH DETAILS.

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

6" FORCE MAIN - FSS1 - (B)

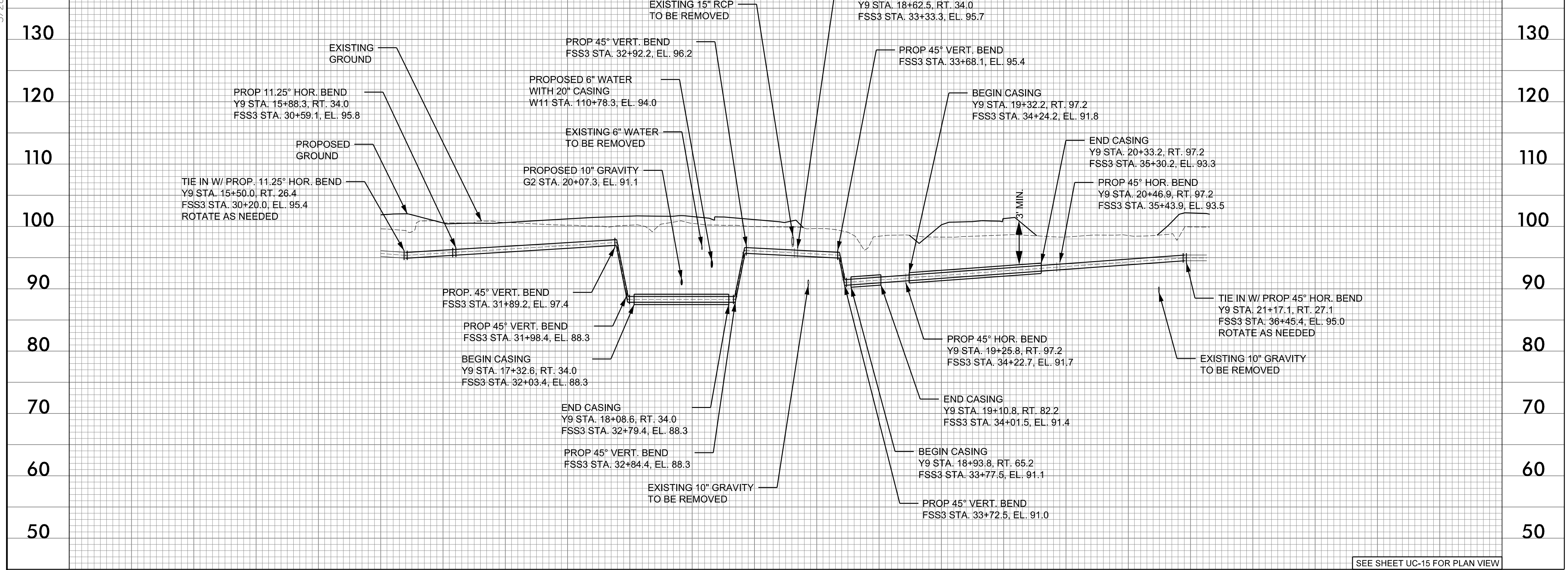


SEE SHEET UC-5 - UC-6 FOR PLAN VIEW

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5/28/19

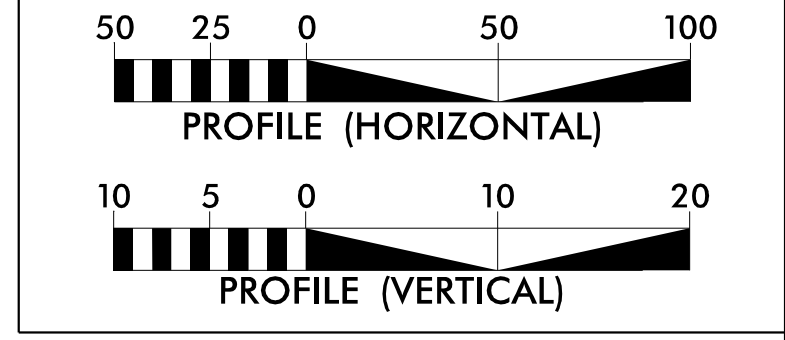
10" FORCE MAIN - FSS3 -



PROJECT REFERENCE NO. R-2582A	SHEET NO. UC-23
DESIGNED BY: SHF	
DRAWN BY: SHF	
CHECKED BY: KCZ	
APPROVED BY: KCZ	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151 UTILITY CONSTRUCTION PLANS ONLY	

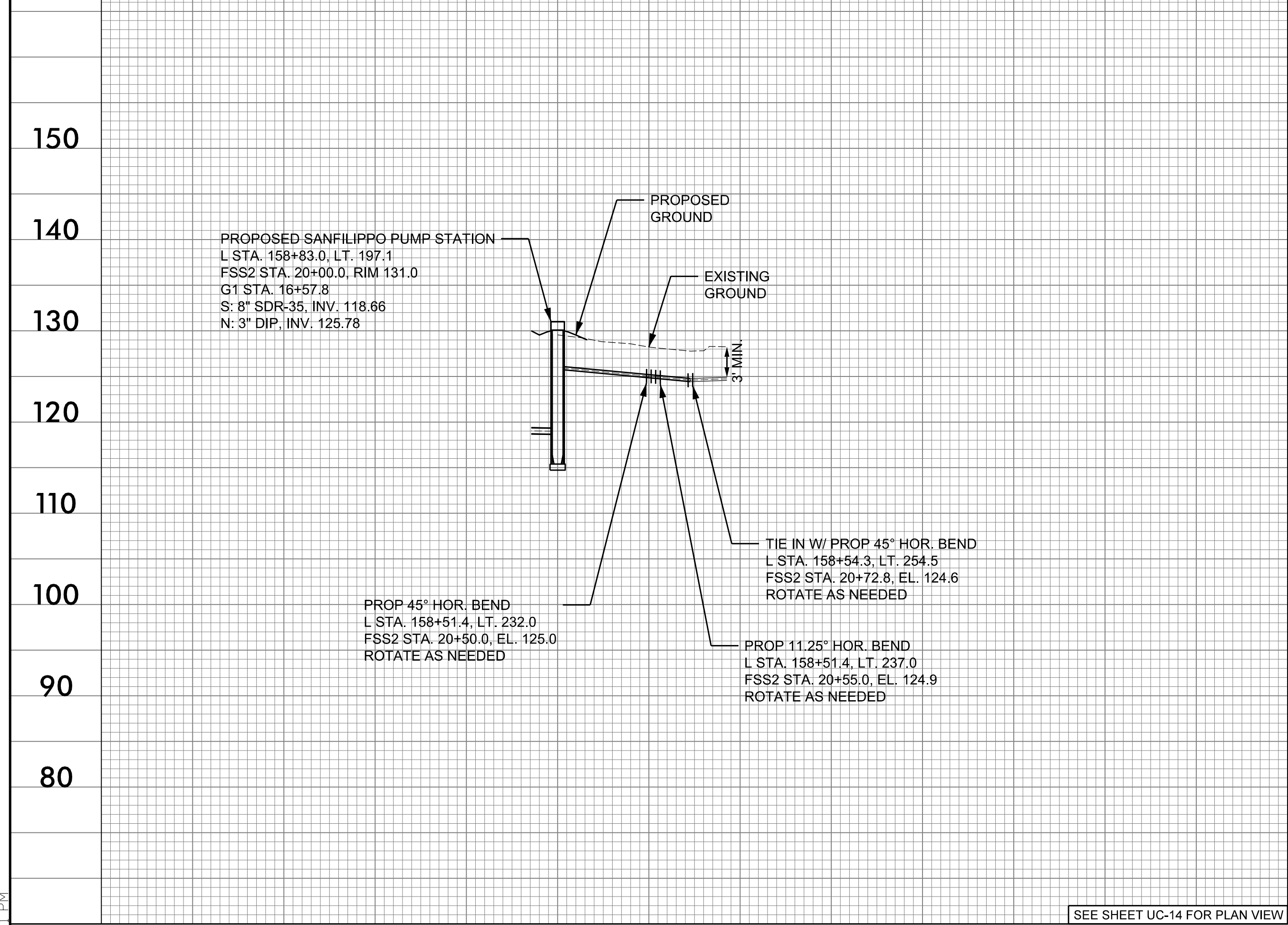
M A Engineering Consultants, Inc. NC License: F-0160
 598 East Chatham Street Suite 137 Cary, NC 27511
 Phone: 919.297.0220 Fax: 919.297.0221

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



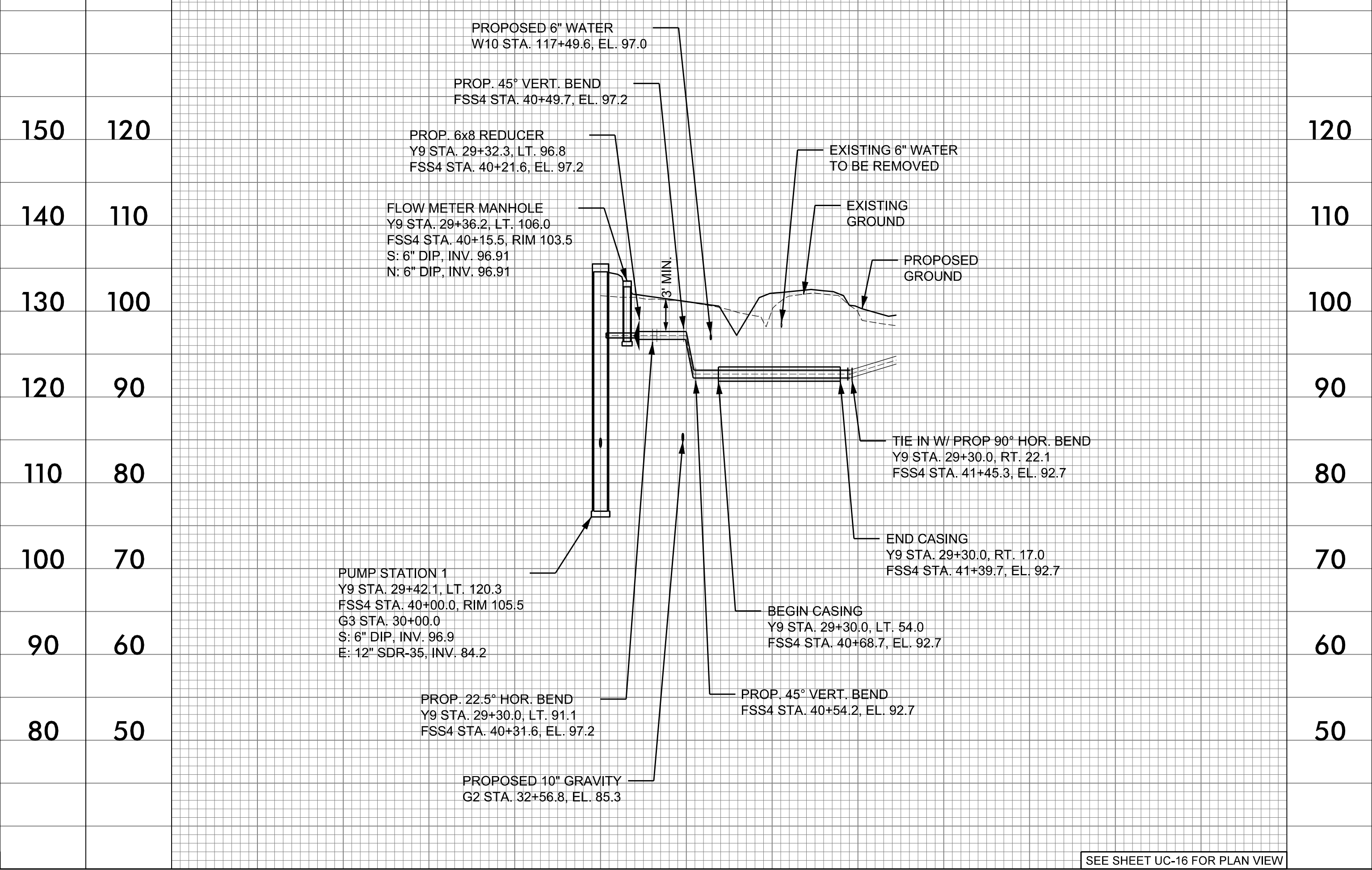
- NOTES:
- EXISTING PIPE AT TIE-IN LOCATIONS ARE ESTIMATED BASED ON TEST HOLE INFORMATION PROVIDED BY OTHERS OR ASSUMED TO HAVE 3 FEET OF COVER. CONTRACTOR SHALL FIELD VERIFY PIPE LOCATION BEFORE STARTING WORK.
 - ALL PROPOSED PIPE ELEVATIONS IN PROFILE REFER TO CENTER OF PIPE UNLESS INDICATED AS INVERT.
 - OPEN TRENCH CONSTRUCTION SHALL PROVIDE 3 FEET MINIMUM COVER TO TOP OF PIPE.
 - DIRECTIONAL DRILL AND BORE AND JACK INSTALLATIONS SHALL BE IN ACCORDANCE WITH DETAILS.

3" FORCE MAIN - FSS2 -



SEE SHEET UC-14 FOR PLAN VIEW

10" FORCE MAIN - FSS4 -

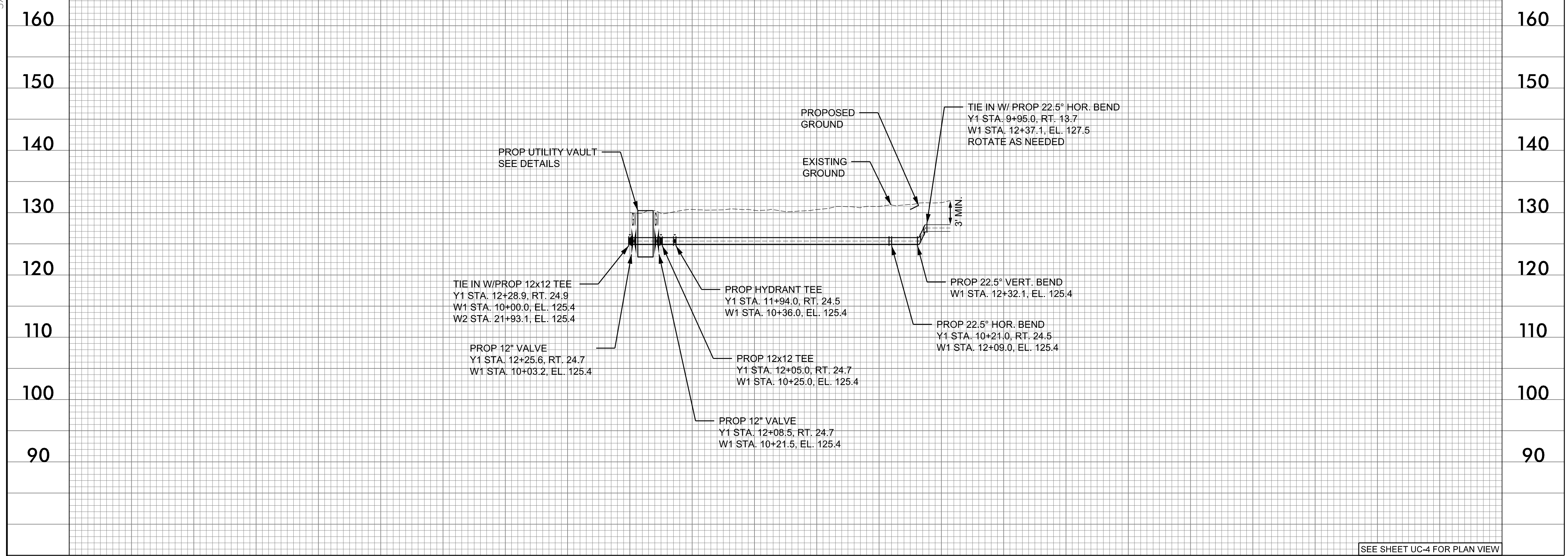


SEE SHEET UC-16 FOR PLAN VIEW

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5/28/99

12" WATER LINE - W1 -



SEE SHEET UC-4 FOR PLAN VIEW

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

PROJECT REFERENCE NO. R-2582A SHEET NO. UC-24

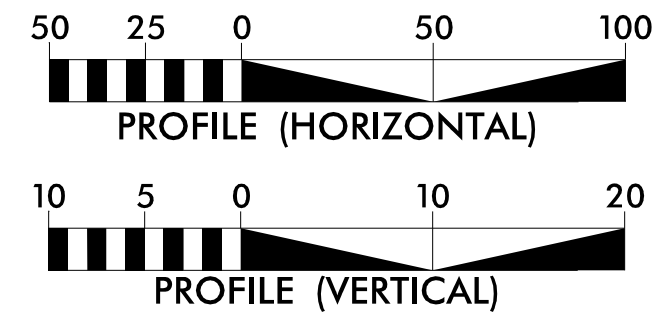
DESIGNED BY: SHF
 DRAWN BY: SHF
 CHECKED BY: KCZ
 APPROVED BY: KCZ

REVISOR: *Kevin A. Zeh*

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151
 UTILITY CONSTRUCTION PLANS ONLY

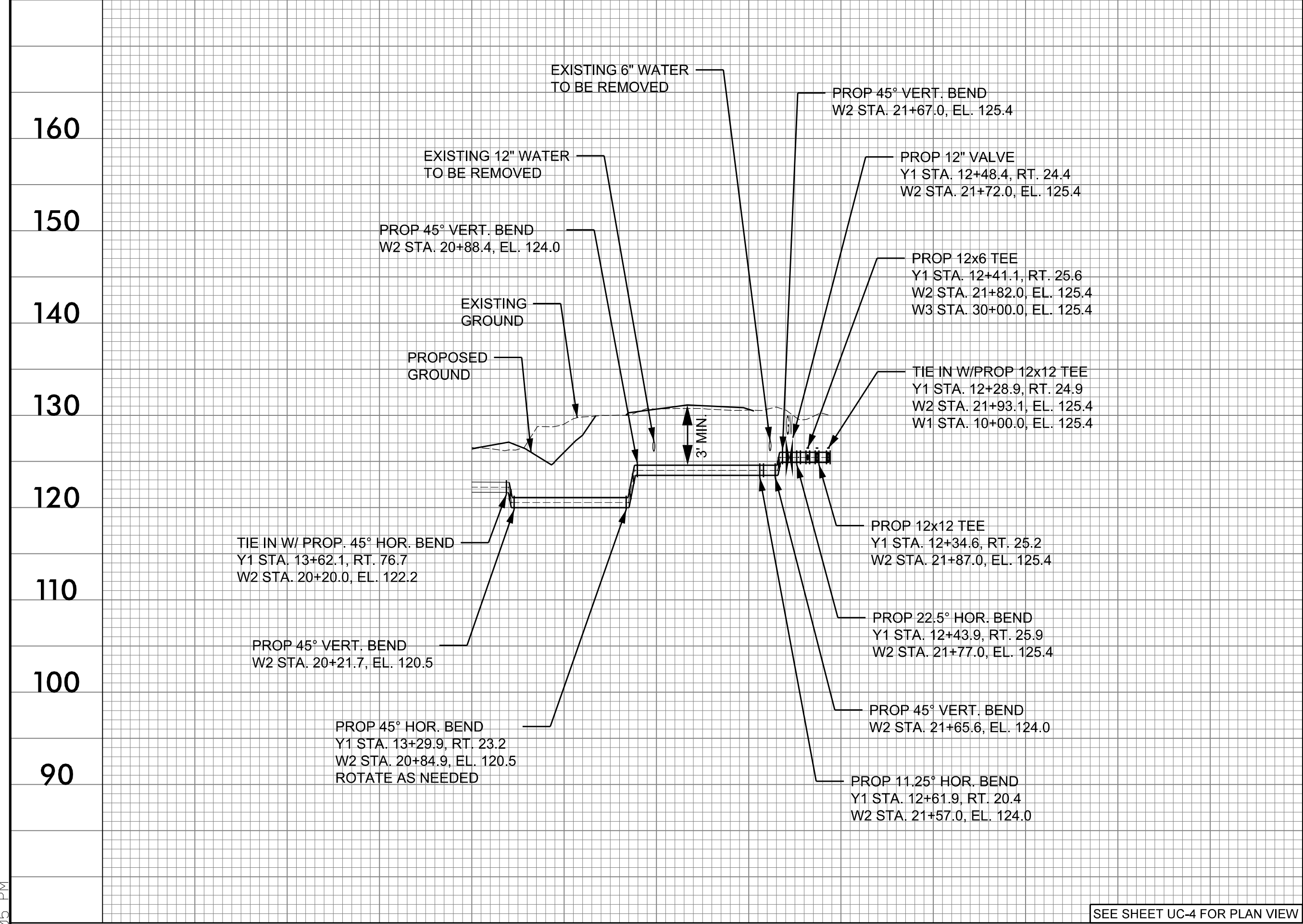
M A Engineering Consultants, Inc. NC License: F-0160
 598 East Chatham Street Suite 137 Cary, NC 27511
 Phone: 919.297.0220 Fax: 919.297.0221

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



- NOTES:
- EXISTING PIPE AT TIE-IN LOCATIONS ARE ESTIMATED BASED ON TEST HOLE INFORMATION PROVIDED BY OTHERS OR ASSUMED TO HAVE 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.
 - OPEN TRENCH CONSTRUCTION SHALL PROVIDE 3 FEET MINIMUM COVER TO TOP OF PIPE.
 - DIRECTIONAL DRILL AND BORE AND JACK INSTALLATIONS SHALL BE IN ACCORDANCE WITH DETAILS.

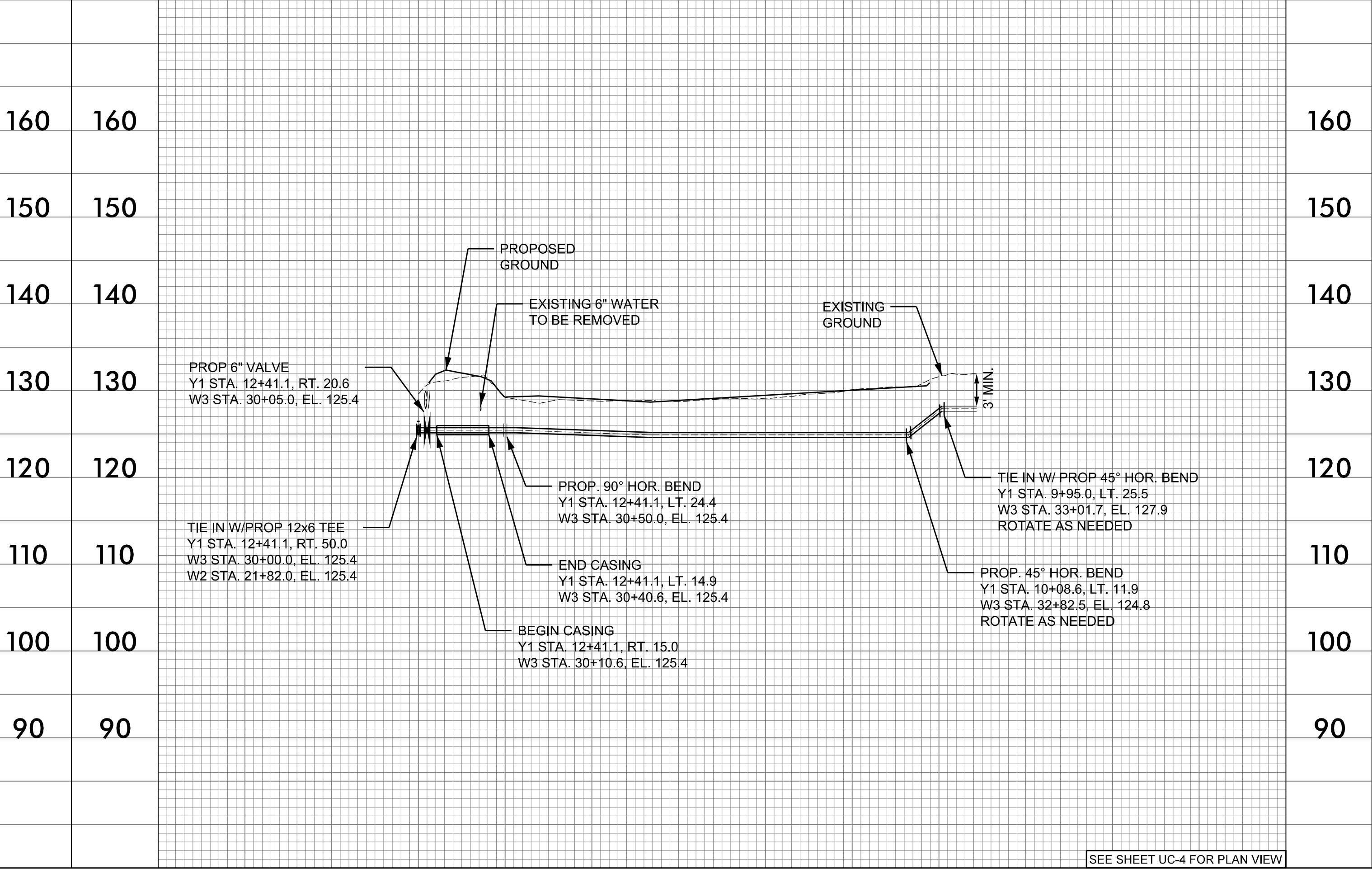
12" WATER LINE - W2 -



SEE SHEET UC-4 FOR PLAN VIEW

20 + 00 21 + 00 22 + 00

6" WATER LINE - W3 -

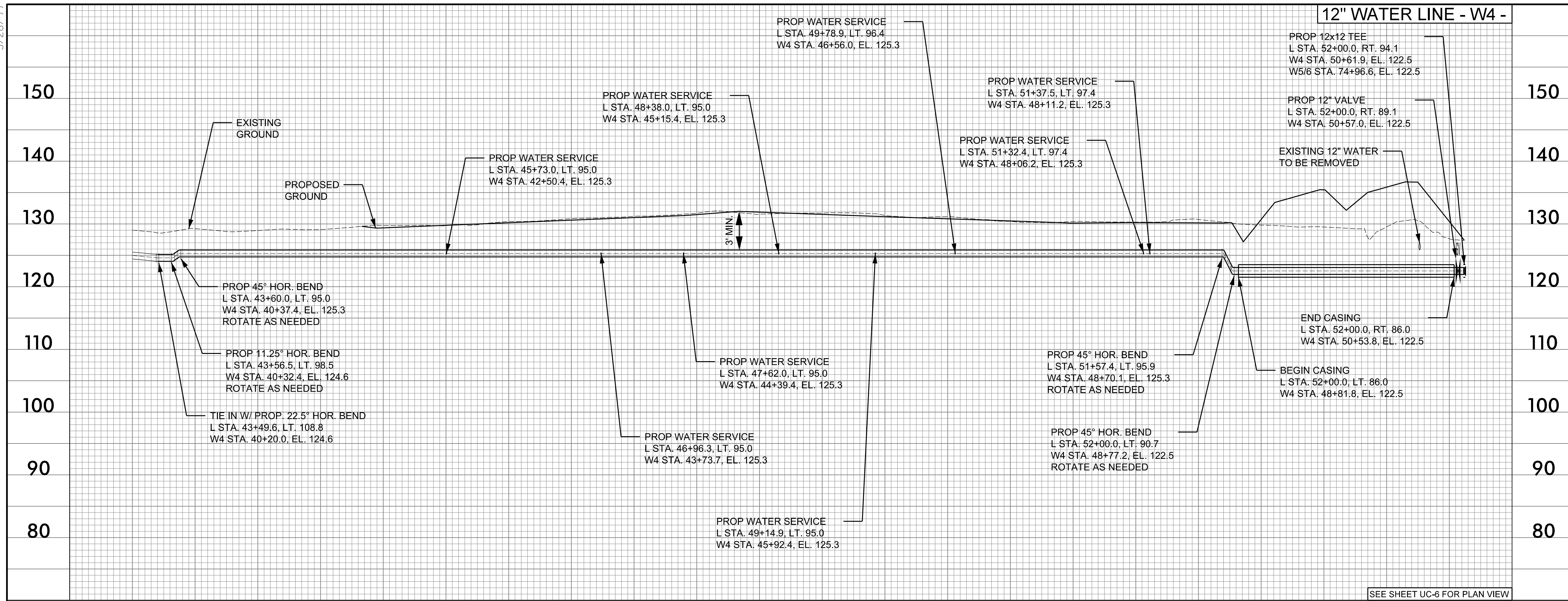


SEE SHEET UC-4 FOR PLAN VIEW

30 + 00 31 + 00 32 + 00 33 + 00

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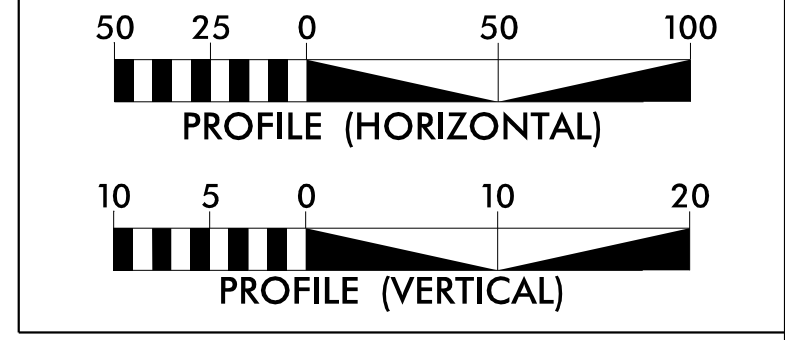
5/28/19



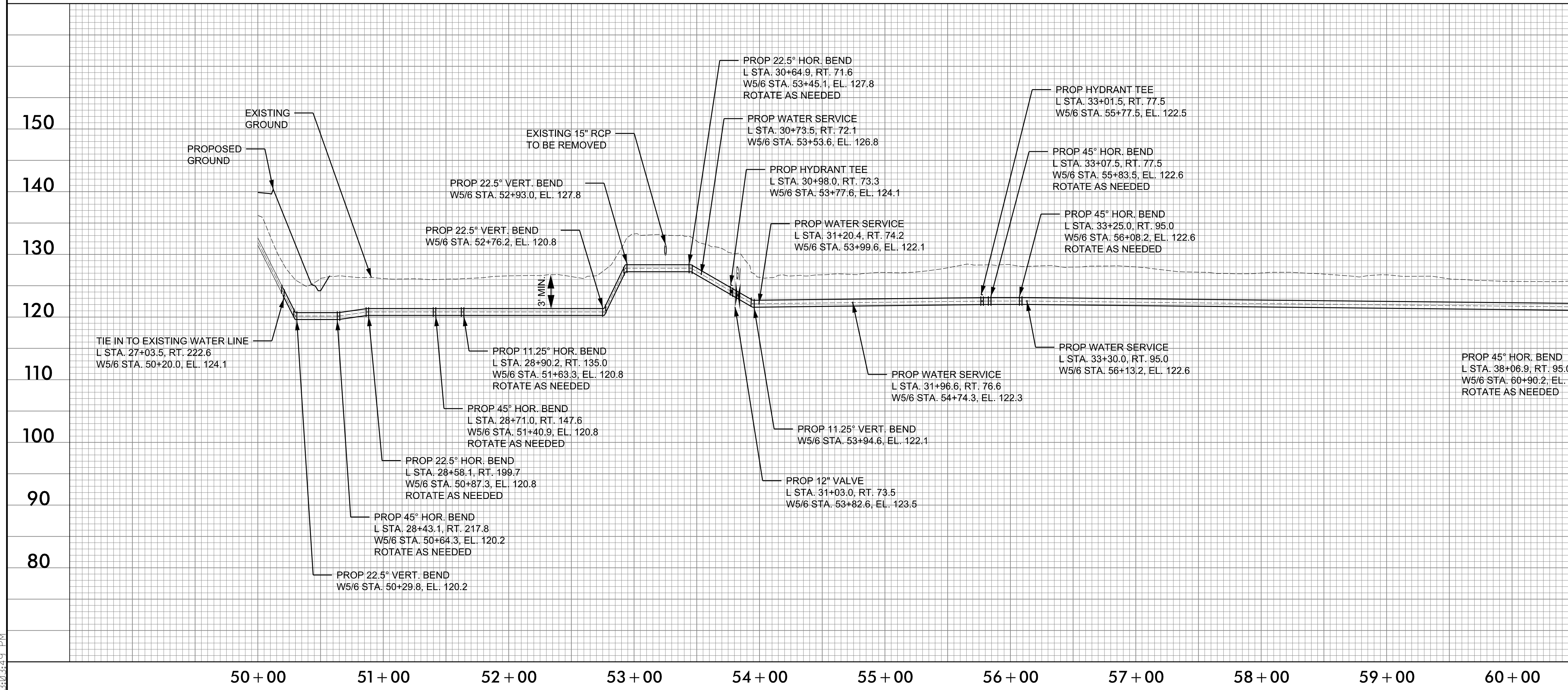
PROJECT REFERENCE NO. R-2582A	SHEET NO. UC-25
DESIGNED BY: SHF	
DRAWN BY: SHF	
CHECKED BY: KCZ	
APPROVED BY: KCZ	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	UTILITY CONSTRUCTION PLANS ONLY
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

M A Engineering Consultants, Inc.
 598 East Chatham Street Suite 137 Cary, NC 27511
 Phone: 919.297.0220 Fax: 919.297.0221
 NC License: F-0160

DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED



- NOTES:
- EXISTING PIPE AT TIE-IN LOCATIONS ARE ESTIMATED BASED ON TEST HOLE INFORMATION PROVIDED BY OTHERS OR ASSUMED TO HAVE 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.
 - OPEN TRENCH CONSTRUCTION SHALL PROVIDE 3 FEET MINIMUM COVER TO TOP OF PIPE.
 - DIRECTIONAL DRILL AND BORE AND JACK INSTALLATIONS SHALL BE IN ACCORDANCE WITH DETAILS.



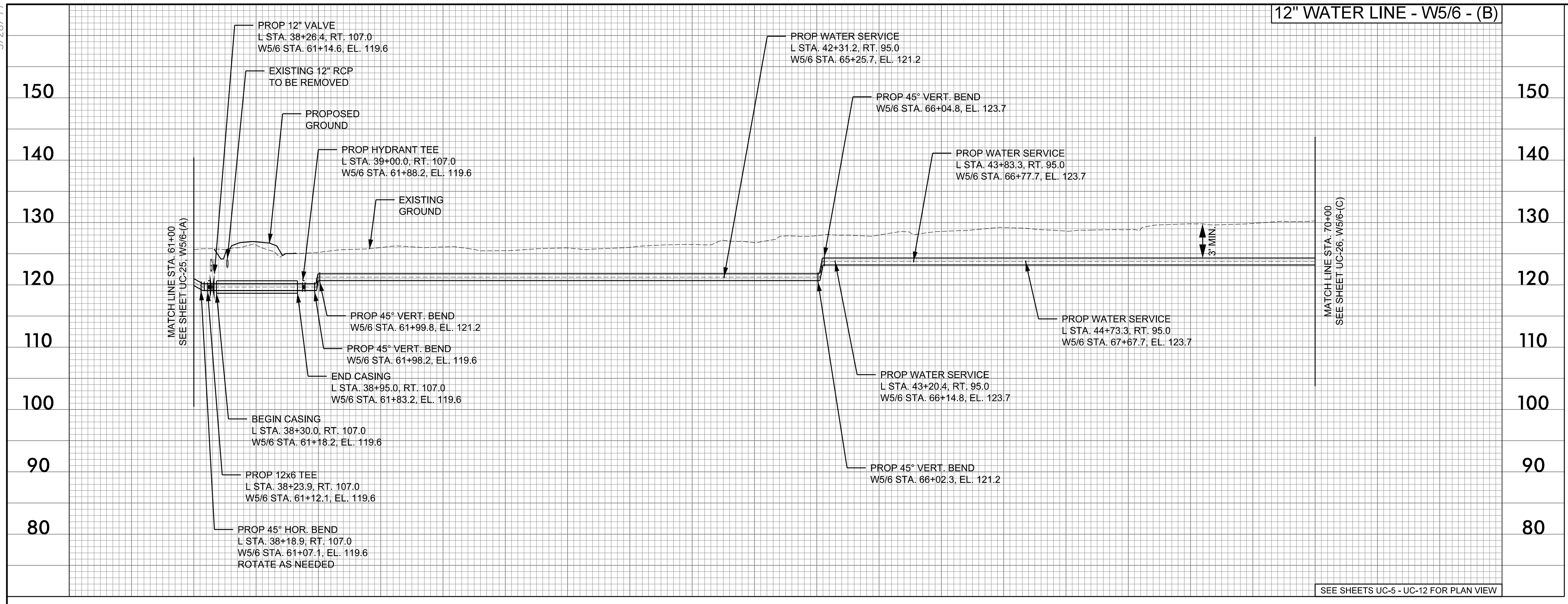
12" WATER LINE - W5/6 - (A)

SEE SHEETS UC-5 - UC-12 FOR PLAN VIEW

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5/28/19

12" WATER LINE - W5/6 - (B)



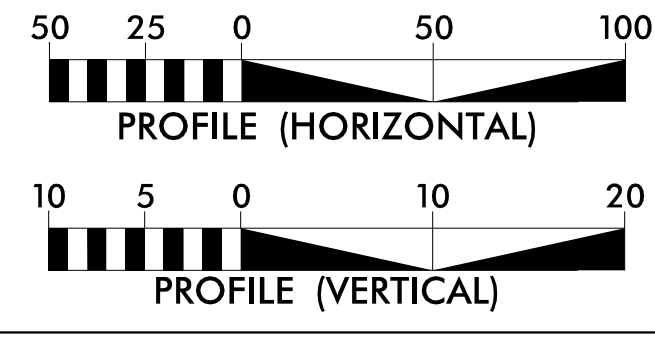
61+00 62+00 63+00 64+00 65+00 66+00 67+00 68+00 69+00 70+00

SEE SHEETS UC-5 - UC-12 FOR PLAN VIEW

PROJECT REFERENCE NO. R-2582A	SHEET NO. UC-26
DESIGNED BY: SHF	
DRAWN BY: SHF	
CHECKED BY: KCZ	
APPROVED BY: KCZ	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151 UTILITY CONSTRUCTION PLANS ONLY	

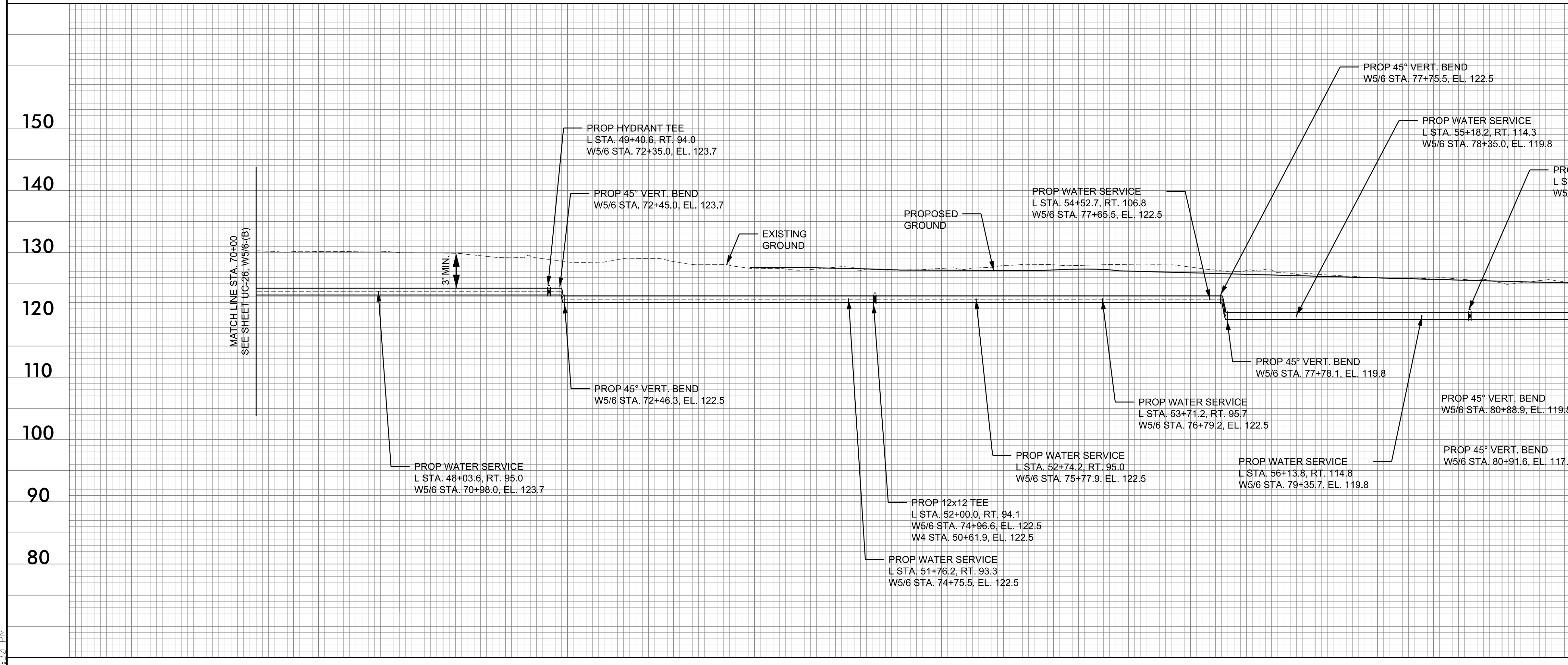
M A Engineering Consultants, Inc. NC License: F-0160
 598 East Chatham Street Suite 137 Cary, NC 27511
 Phone: 919.297.0220 Fax: 919.297.0221

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



- NOTES:
- EXISTING PIPE AT TIE-IN LOCATIONS ARE ESTIMATED BASED ON TEST HOLE INFORMATION PROVIDED BY OTHERS OR ASSUMED TO HAVE 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.
 - OPEN TRENCH CONSTRUCTION SHALL PROVIDE 3 FEET MINIMUM COVER TO TOP OF PIPE.
 - DIRECTIONAL DRILL AND BORE AND JACK INSTALLATIONS SHALL BE IN ACCORDANCE WITH DETAILS.

12" WATER LINE - W5/6 - (C)



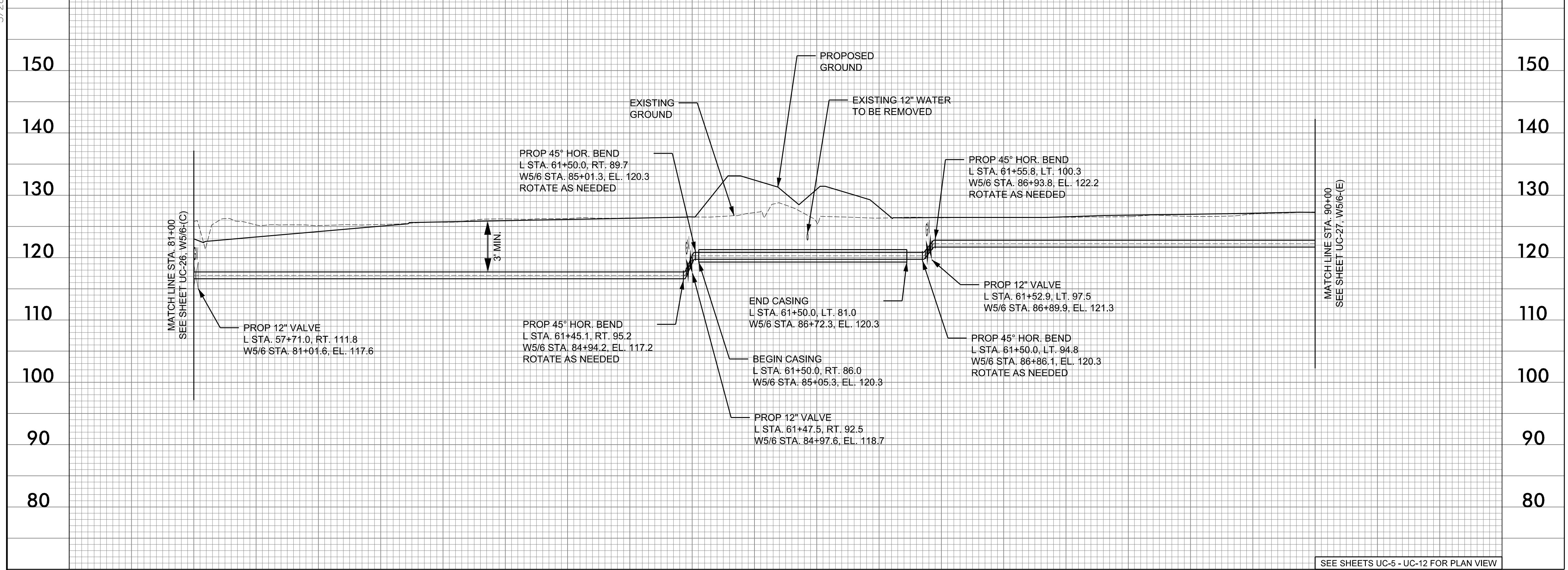
70+00 71+00 72+00 73+00 74+00 75+00 76+00 77+00 78+00 79+00 80+00 81+00

SEE SHEETS UC-5 - UC-12 FOR PLAN VIEW

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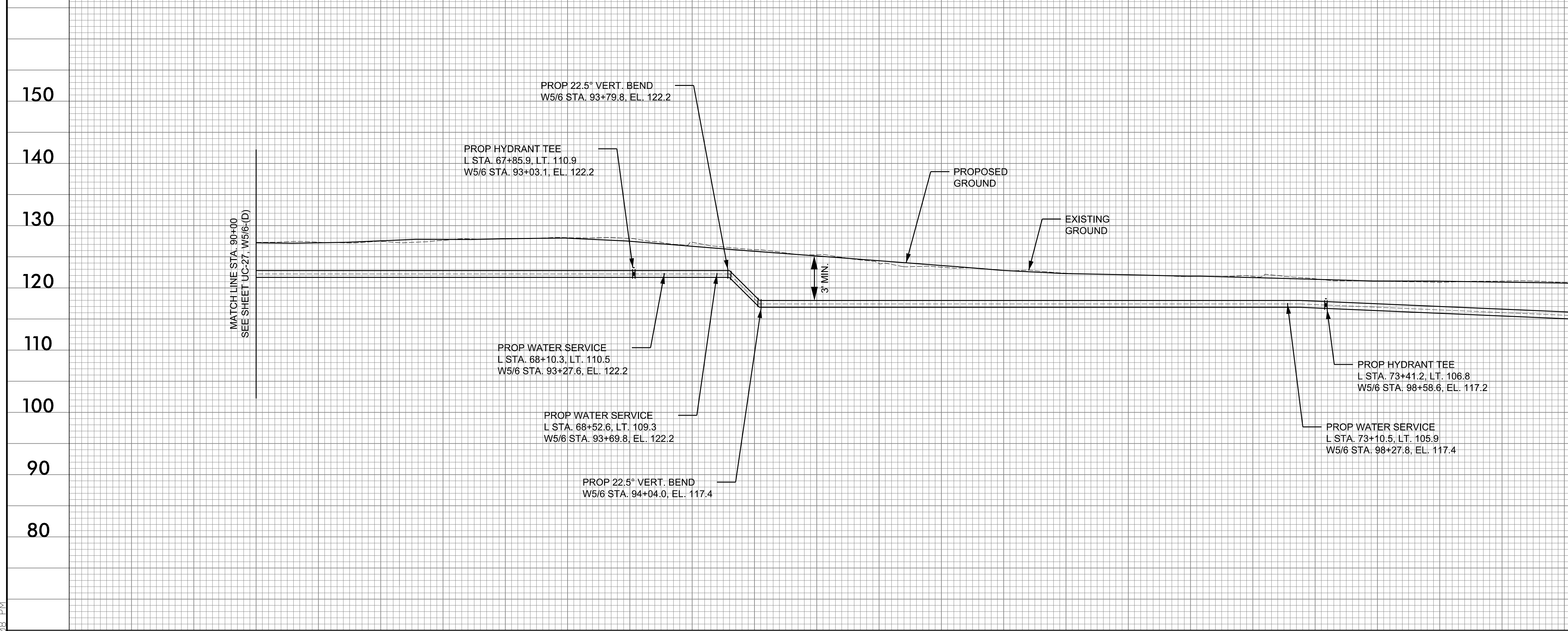
5/28/19

12" WATER LINE - W5/6 - (D)



81+00 82+00 83+00 84+00 85+00 86+00 87+00 88+00 89+00 90+00

12" WATER LINE - W5/6 - (E)

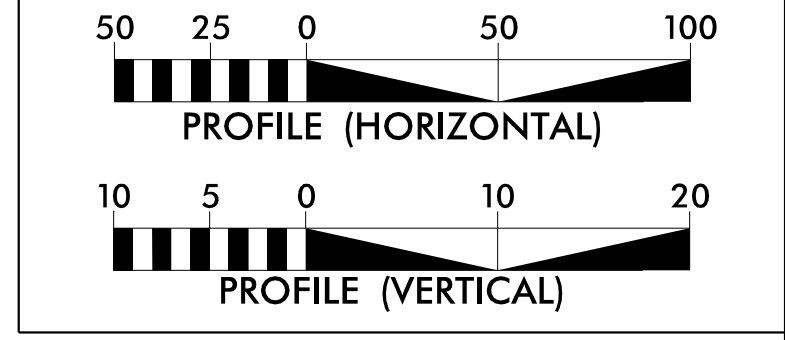


90+00 91+00 92+00 93+00 94+00 95+00 96+00 97+00 98+00 99+00 100+00 101+00

PROJECT REFERENCE NO. R-2582A	SHEET NO. UC-27
DESIGNED BY: SHF	
DRAWN BY: SHF	
CHECKED BY: KCZ	
APPROVED BY: KCZ	
REVISED:	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151
UTILITY CONSTRUCTION PLANS ONLY	

M A Engineering Consultants, Inc. NC License: F-0160
 598 East Chatham Street Suite 137 Cary, NC 27511
 Phone: 919.297.0220 Fax: 919.297.0221

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



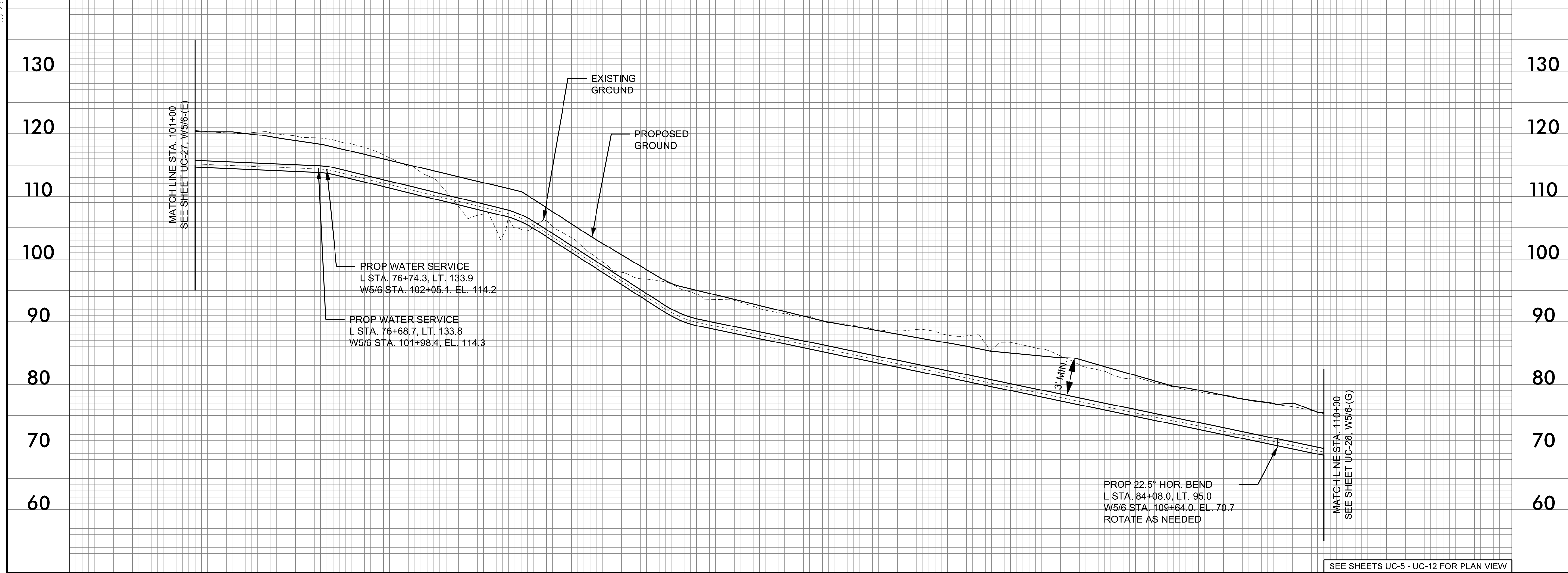
- NOTES:
- EXISTING PIPE AT TIE-IN LOCATIONS ARE ESTIMATED BASED ON TEST HOLE INFORMATION PROVIDED BY OTHERS OR ASSUMED TO HAVE 3 FEET OF COVER. CONTRACTOR SHALL FIELD VERIFY PIPE LOCATION BEFORE STARTING WORK.
 - ALL PROPOSED PIPE ELEVATIONS IN PROFILE REFER TO CENTER OF PIPE UNLESS INDICATED AS INVERT.
 - OPEN TRENCH CONSTRUCTION SHALL PROVIDE 3 FEET MINIMUM COVER TO TOP OF PIPE.
 - DIRECTIONAL DRILL AND BORE AND JACK INSTALLATIONS SHALL BE IN ACCORDANCE WITH DETAILS.

SEE SHEETS UC-5 - UC-12 FOR PLAN VIEW

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5/28/19

12" WATER LINE - W5/6 - (F)



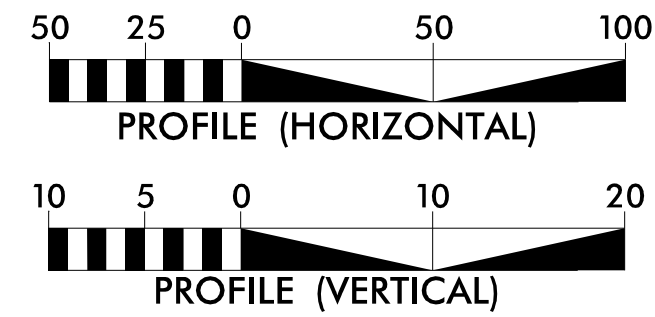
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SEE SHEETS UC-5 - UC-12 FOR PLAN VIEW

PROJECT REFERENCE NO. R-2582A	SHEET NO. UC-28
DESIGNED BY: SHF	
DRAWN BY: SHF	
CHECKED BY: KCZ	
APPROVED BY: KCZ	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151 UTILITY CONSTRUCTION PLANS ONLY	

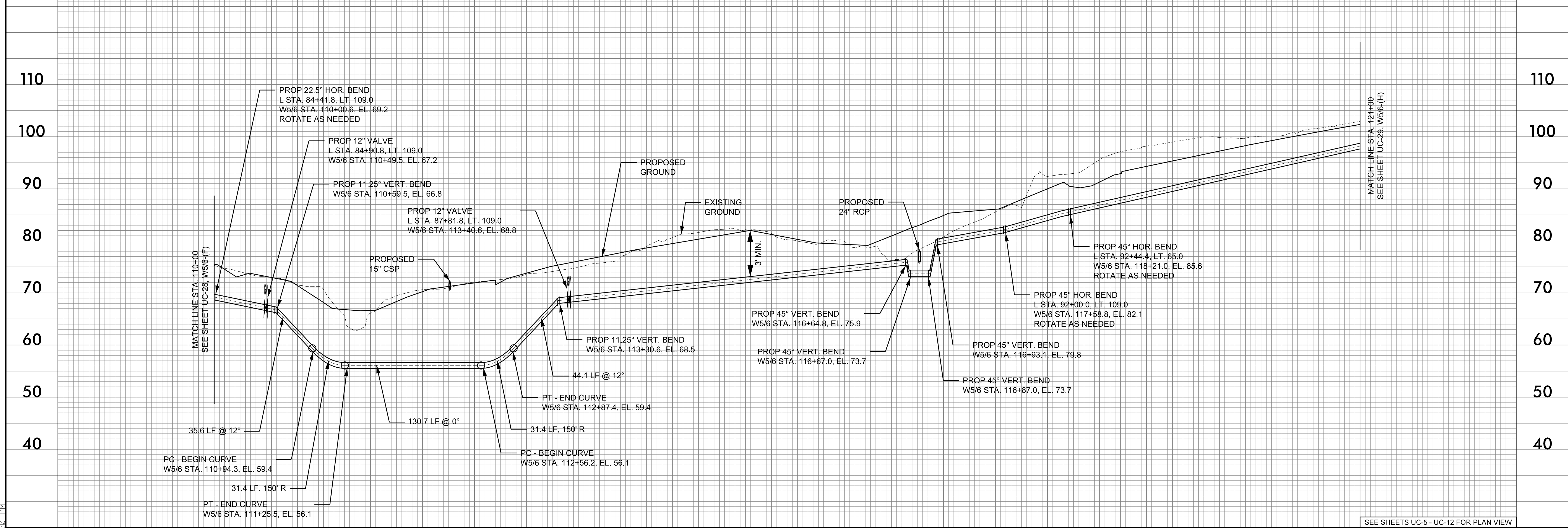
M A Engineering Consultants, Inc.
 598 East Chatham Street Suite 137 Cary, NC 27511
 Phone: 919.297.0220 Fax: 919.297.0221
 NC License: F-0160

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 - OPEN TRENCH CONSTRUCTION SHALL PROVIDE 3 FEET MINIMUM COVER TO TOP OF PIPE.
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12" WATER LINE - W5/6 - (G)



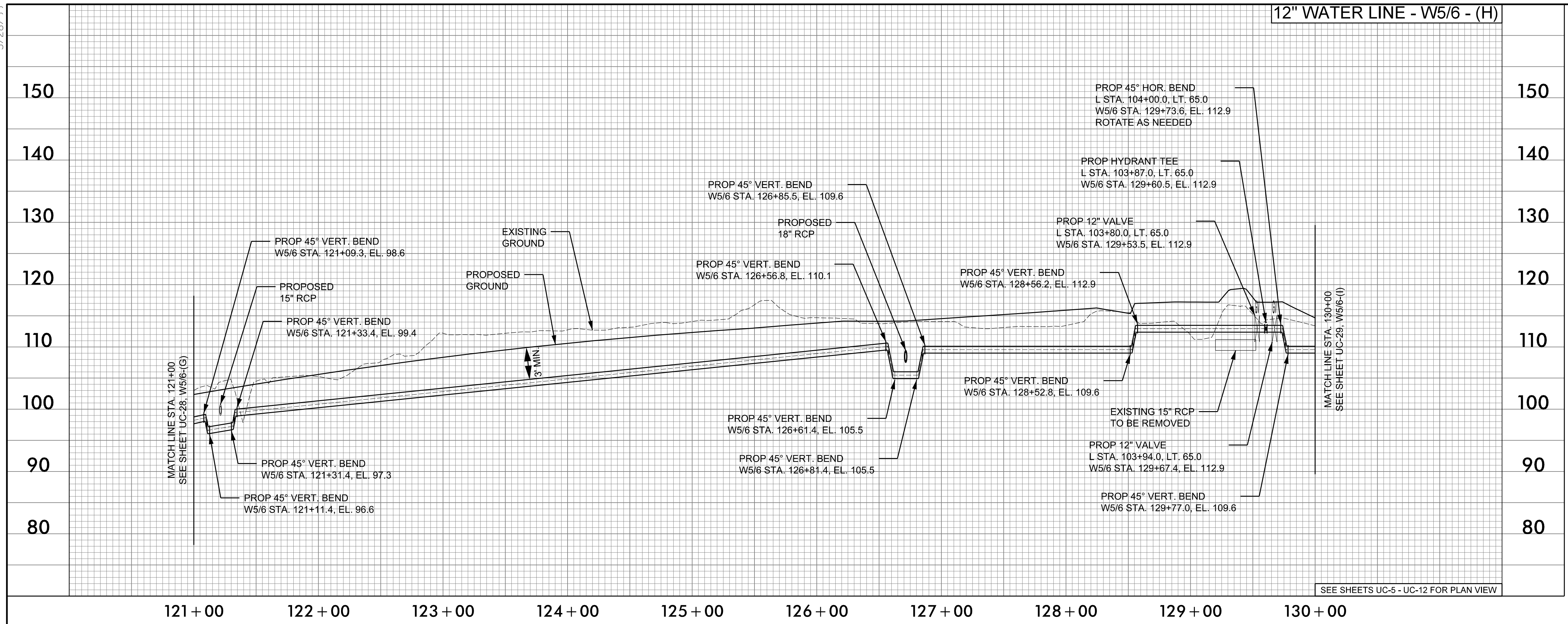
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SEE SHEETS UC-5 - UC-12 FOR PLAN VIEW

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5/28/19

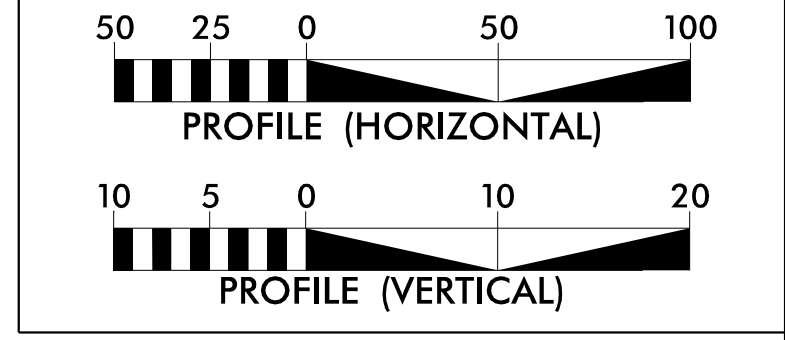
12" WATER LINE - W5/6 - (H)



PROJECT REFERENCE NO. R-2582A	SHEET NO. UC-29
DESIGNED BY: SHF	
DRAWN BY: SHF	
CHECKED BY: KCZ	
APPROVED BY: KCZ	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151 UTILITY CONSTRUCTION PLANS ONLY	

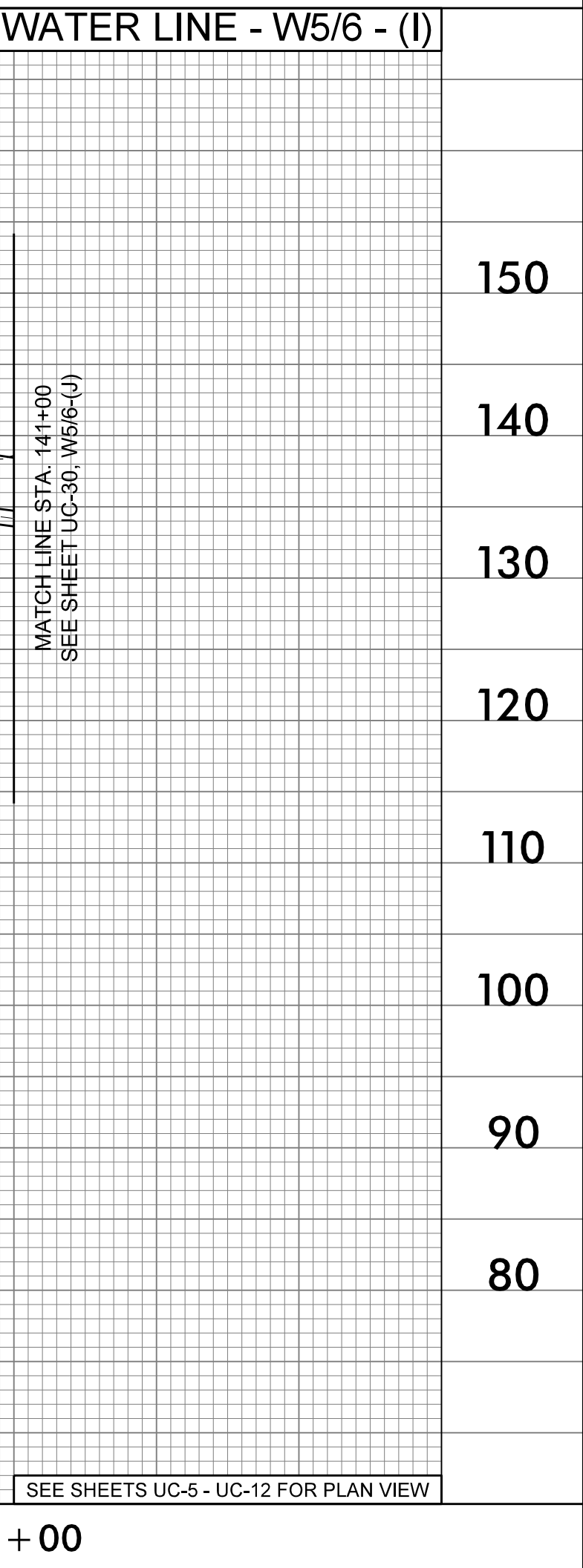
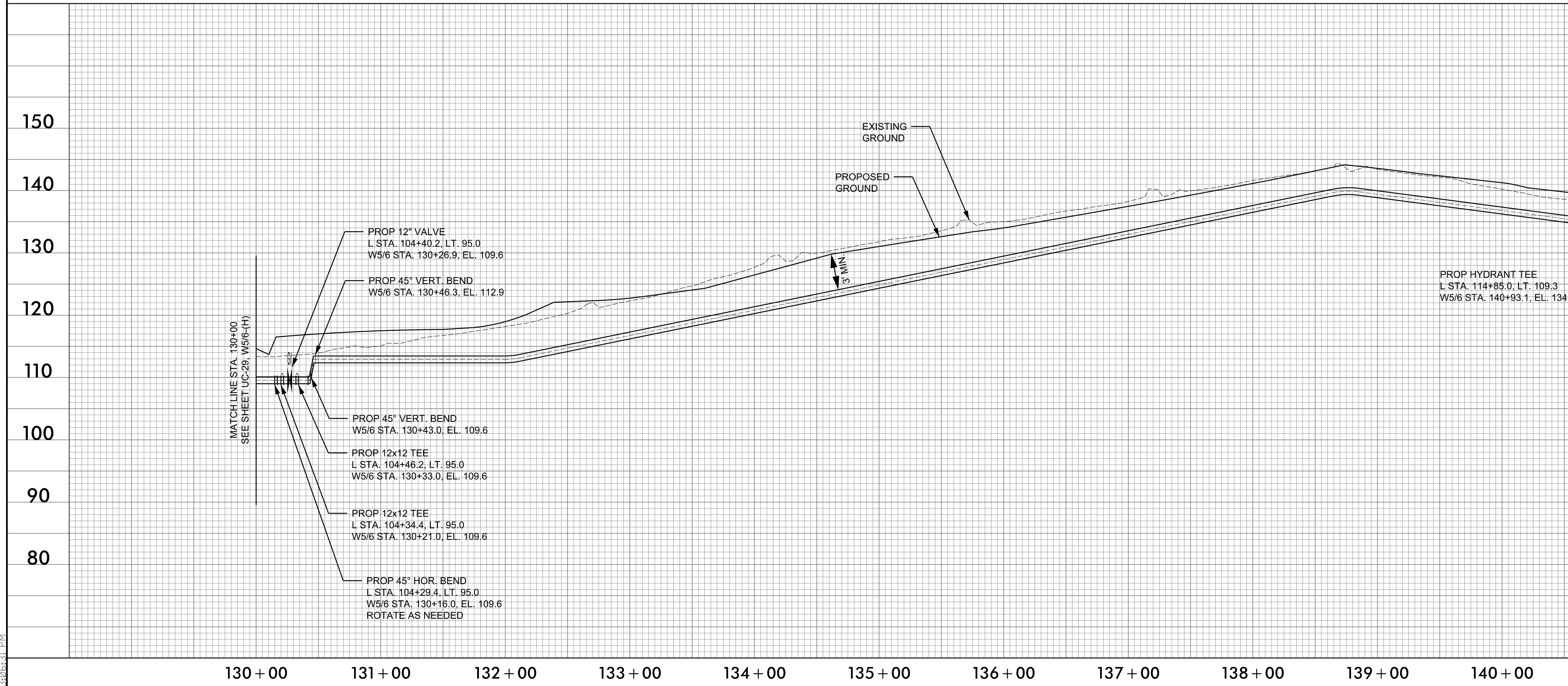
M A Engineering Consultants, Inc.
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12" WATER LINE - W5/6 - (I)

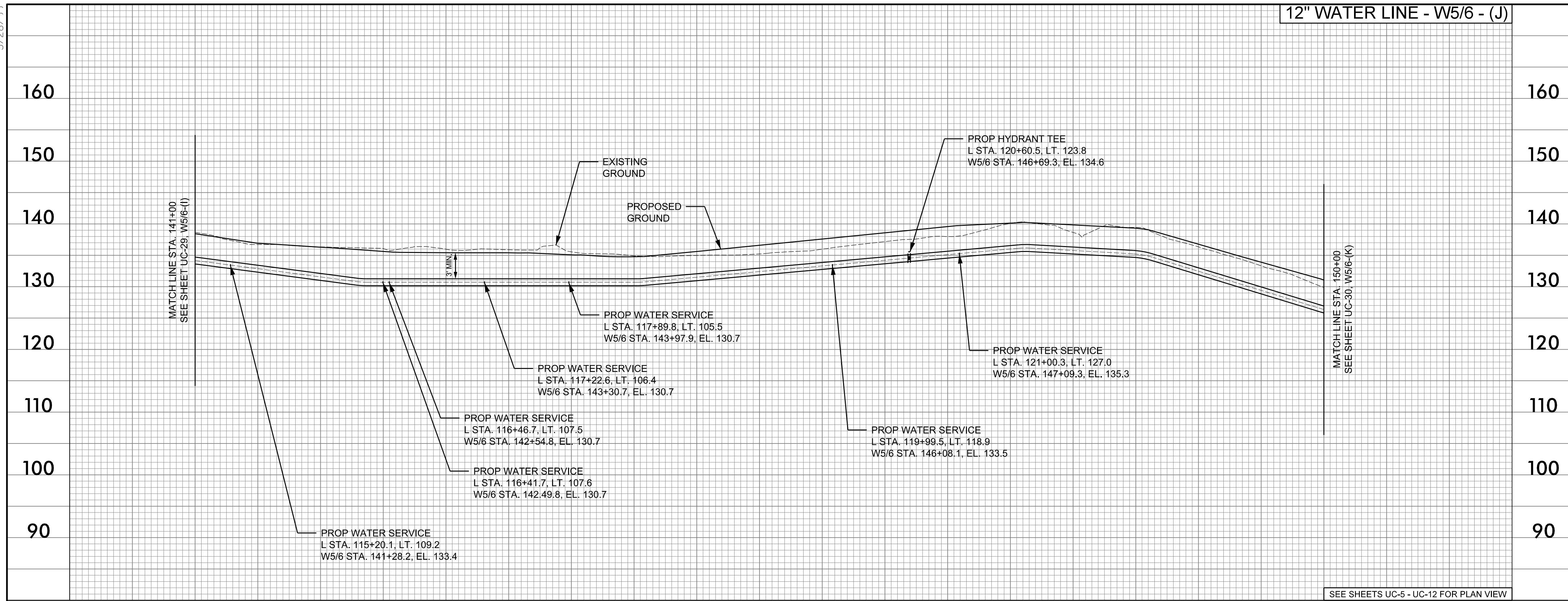


SEE SHEETS UC-5 - UC-12 FOR PLAN VIEW

4/21/2019
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5/28/19

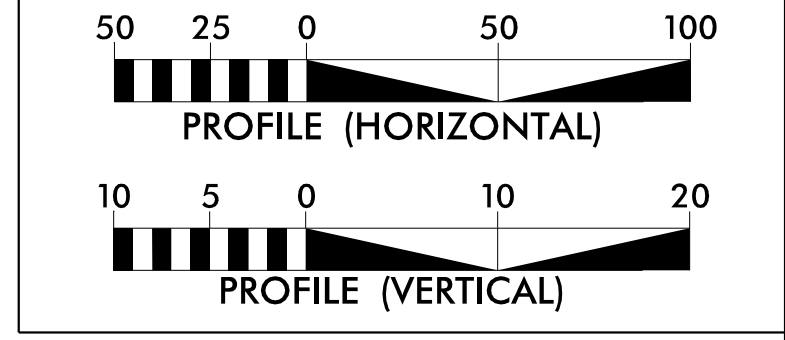
12" WATER LINE - W5/6 - (J)



PROJECT REFERENCE NO. R-2582A	SHEET NO. UC-30
DESIGNED BY: SHF	
DRAWN BY: SHF	
CHECKED BY: KCZ	
APPROVED BY: KCZ	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

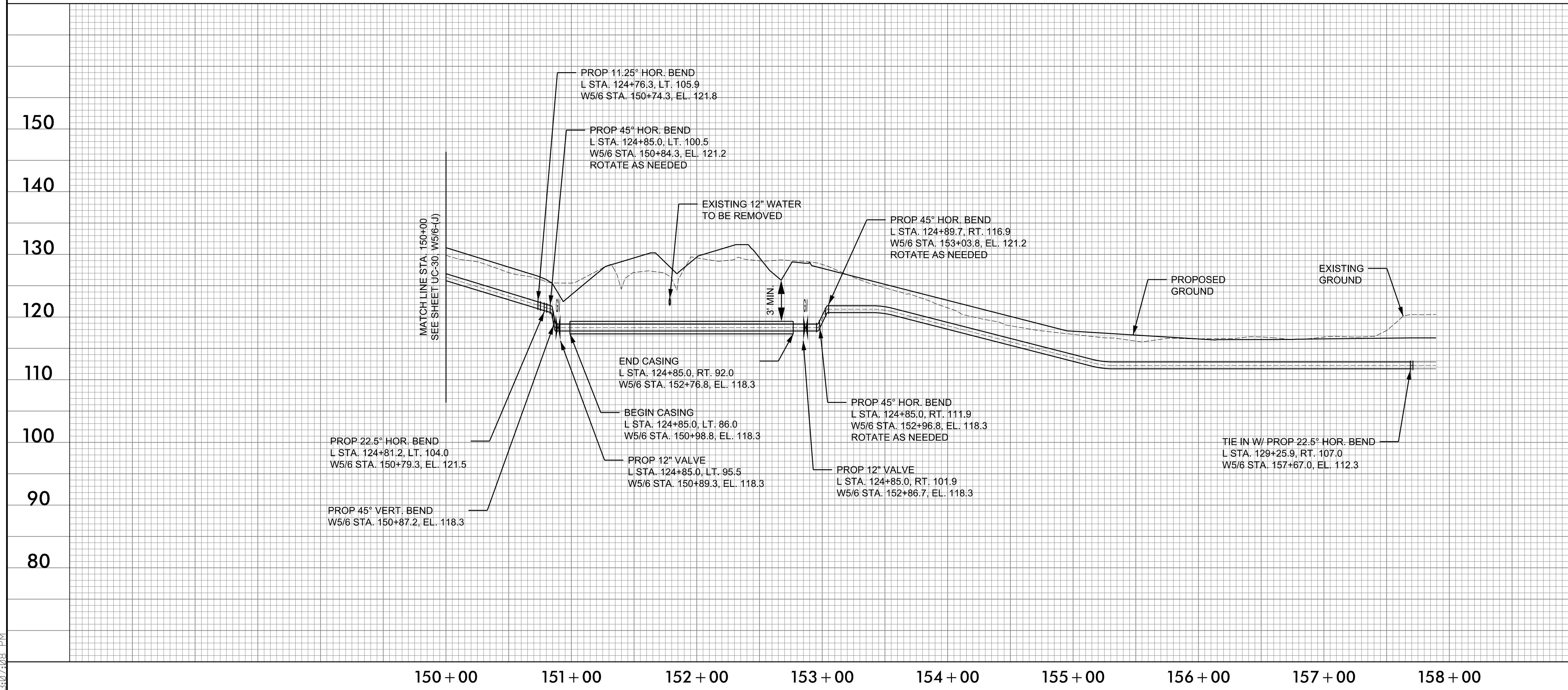
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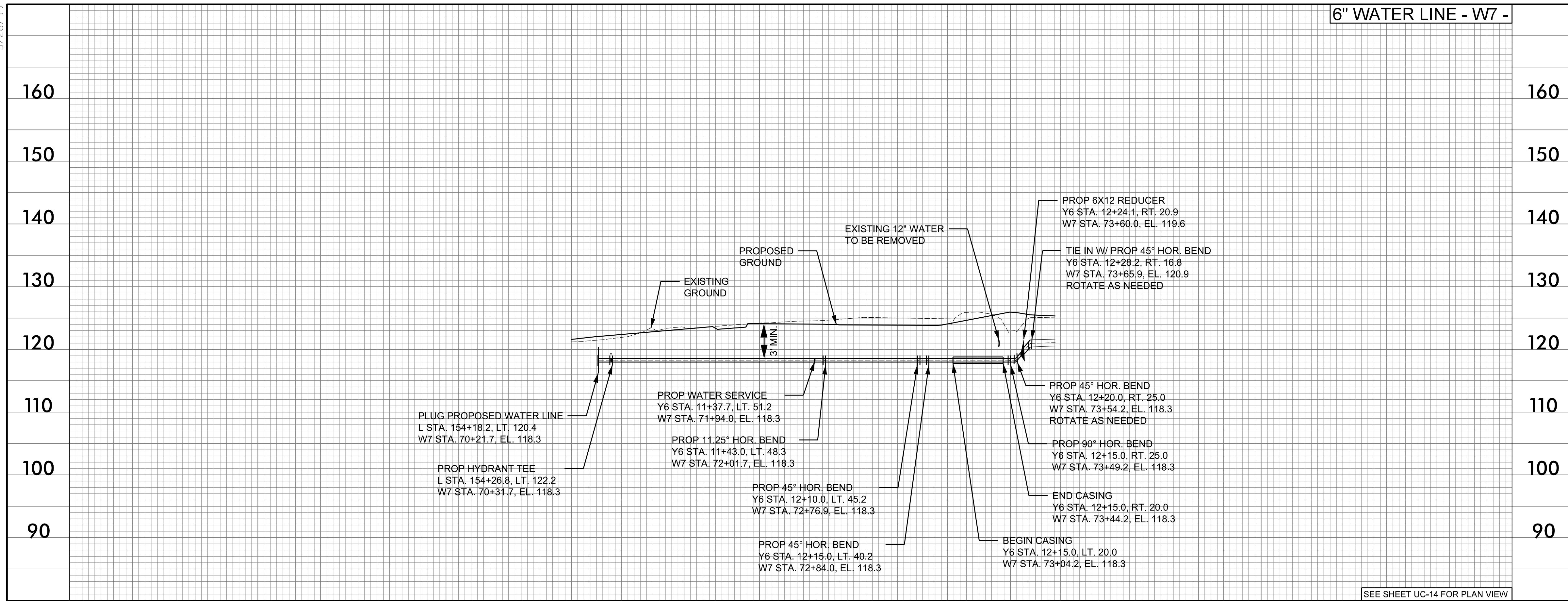
12" WATER LINE - W5/6 - (K)



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5/28/99

6" WATER LINE - W7 -

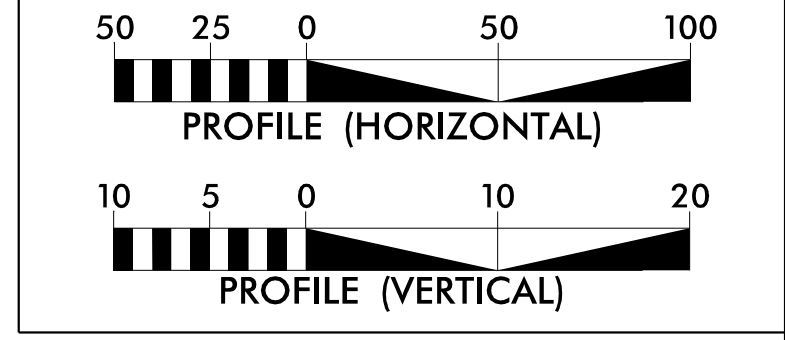


SEE SHEET UC-14 FOR PLAN VIEW

PROJECT REFERENCE NO. R-2582A	SHEET NO. UC-31
DESIGNED BY: SHF	
DRAWN BY: SHF	
CHECKED BY: KCZ	
APPROVED BY: KCZ	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
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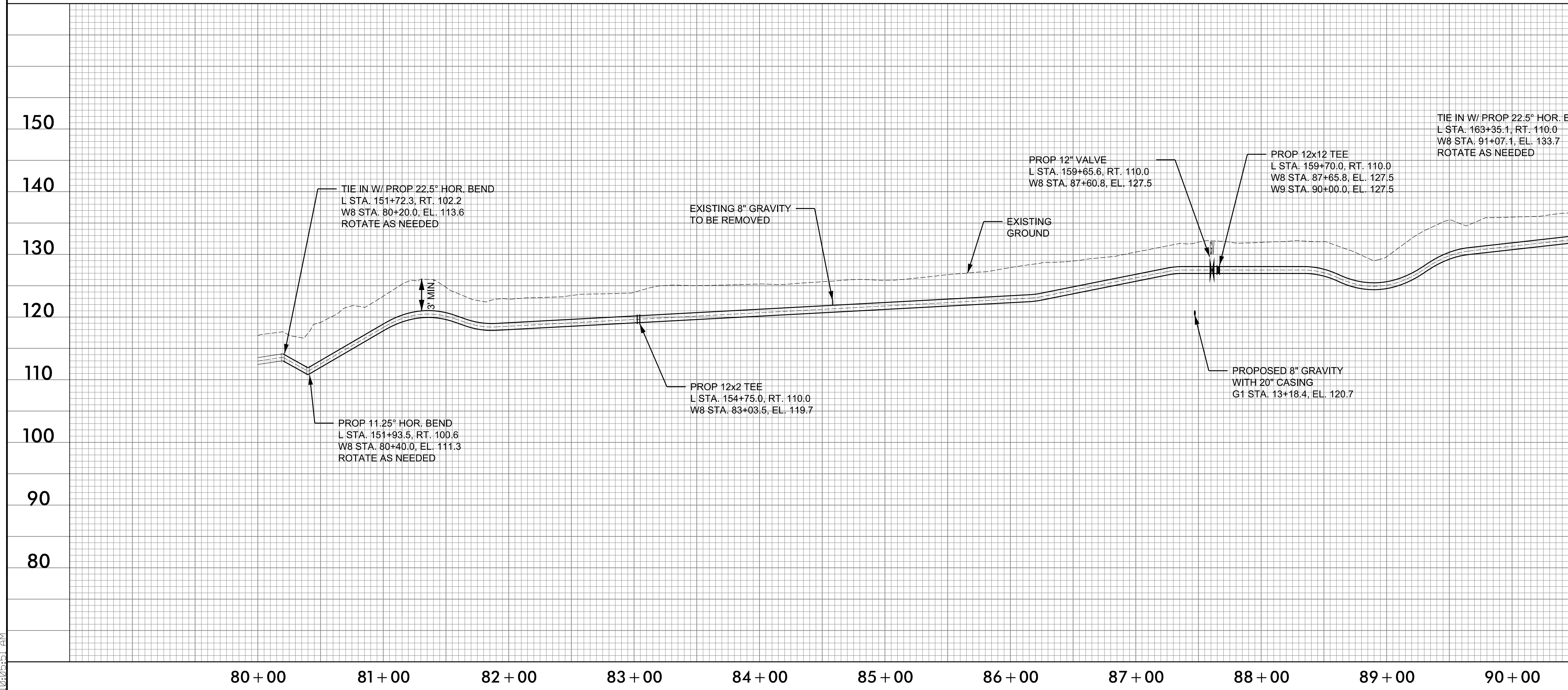
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12" WATER LINE - W8 -

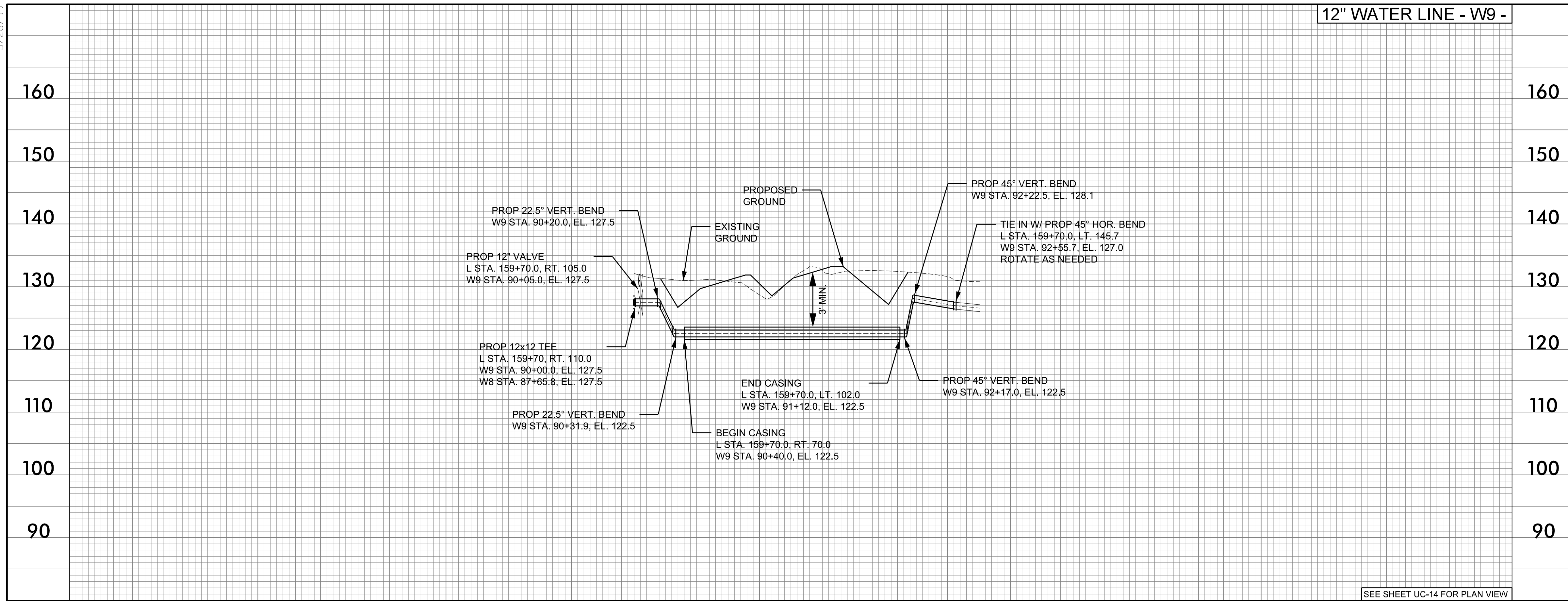


SEE SHEET UC-14 FOR PLAN VIEW

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5/28/19

12" WATER LINE - W9 -

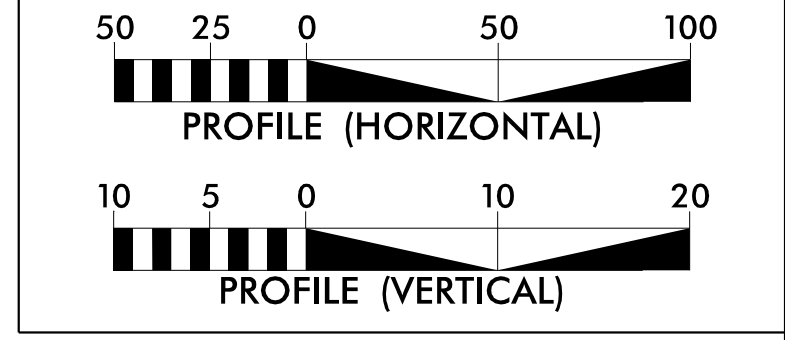


SEE SHEET UC-14 FOR PLAN VIEW

PROJECT REFERENCE NO. R-2582A	SHEET NO. UC-32
DESIGNED BY: SHF	
DRAWN BY: SHF	
CHECKED BY: KCZ	
APPROVED BY: KCZ	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY 5/7/2019 KEVIN C. ZDEB ENGINEER	

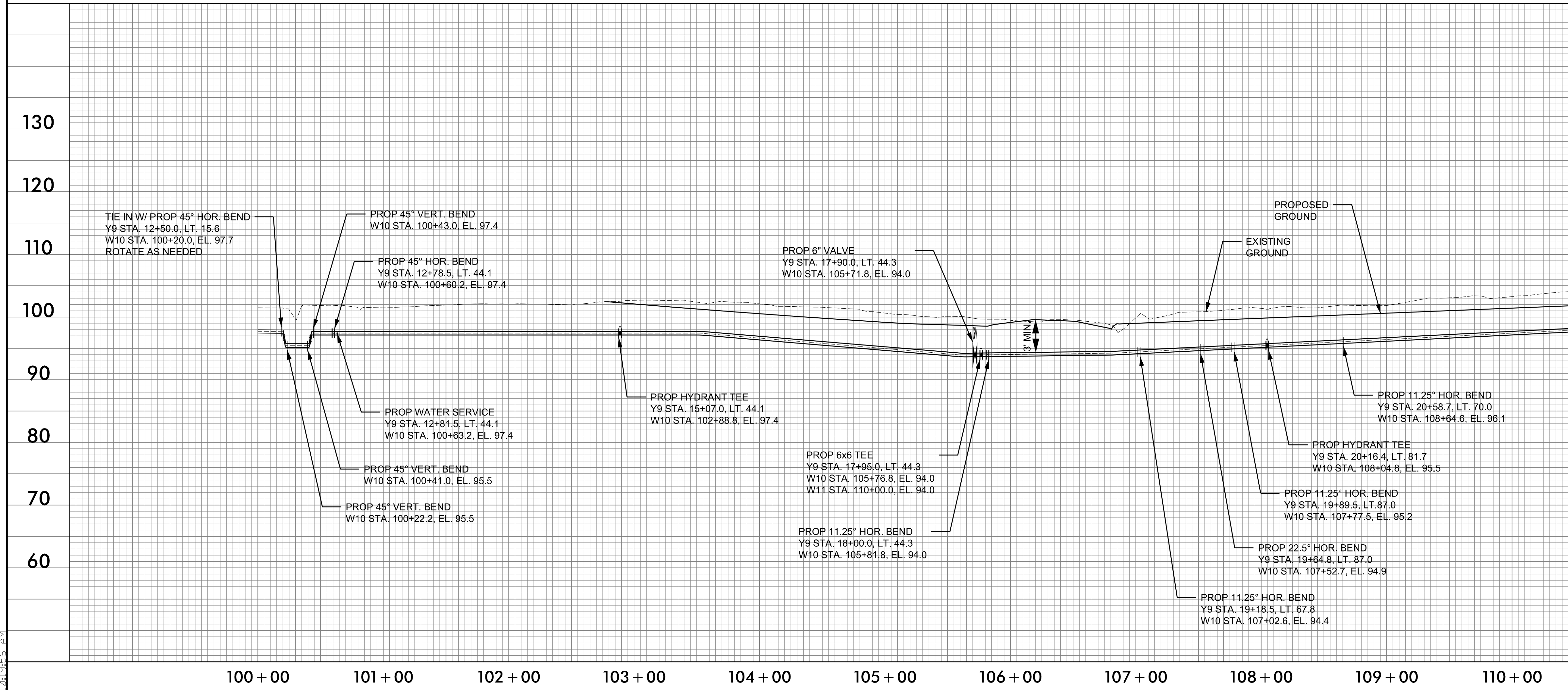
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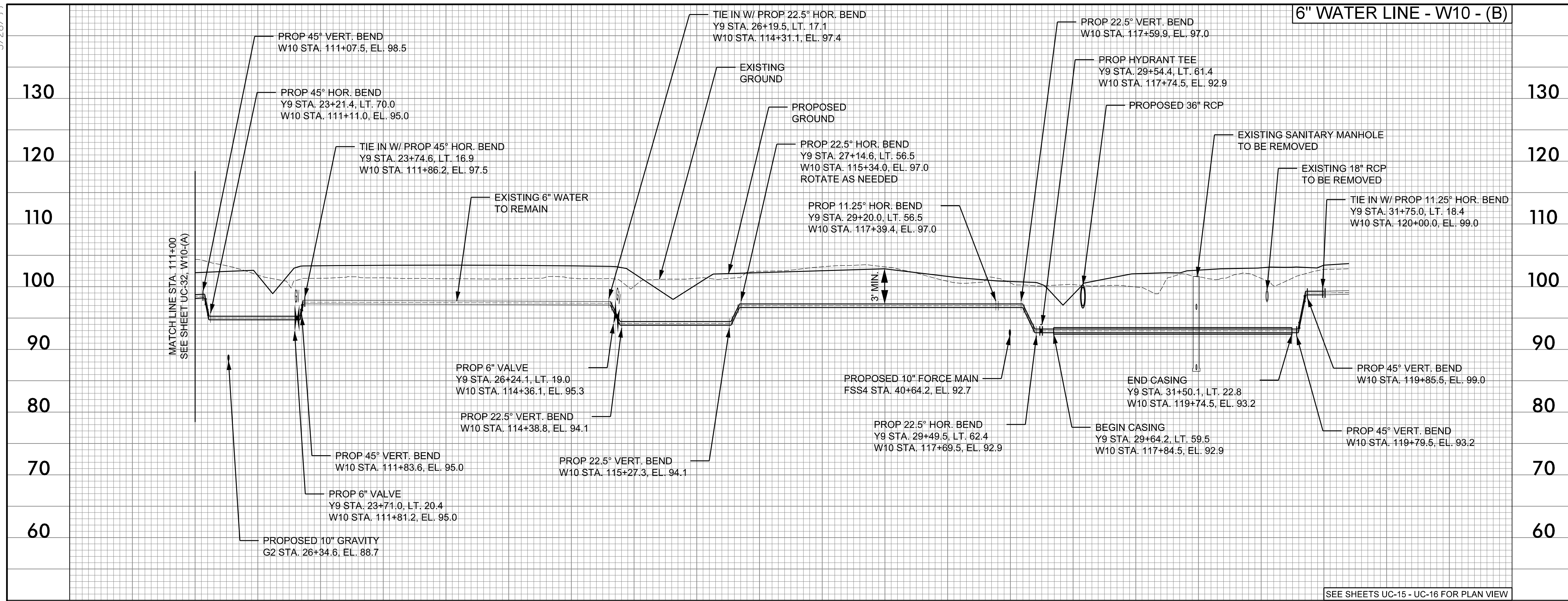
6" WATER LINE - W10 - (A)



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

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5/28/19



6" WATER LINE - W10 - (B)

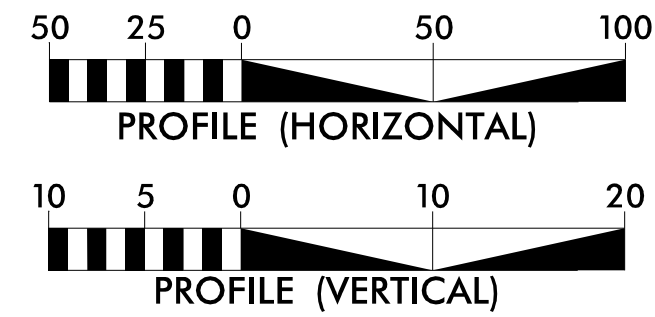
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SEE SHEETS UC-15 - UC-16 FOR PLAN VIEW

PROJECT REFERENCE NO. R-2582A	SHEET NO. UC-33
DESIGNED BY: SHF	
DRAWN BY: SHF	
CHECKED BY: KCZ	
APPROVED BY: KCZ	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	UTILITY CONSTRUCTION PLANS ONLY
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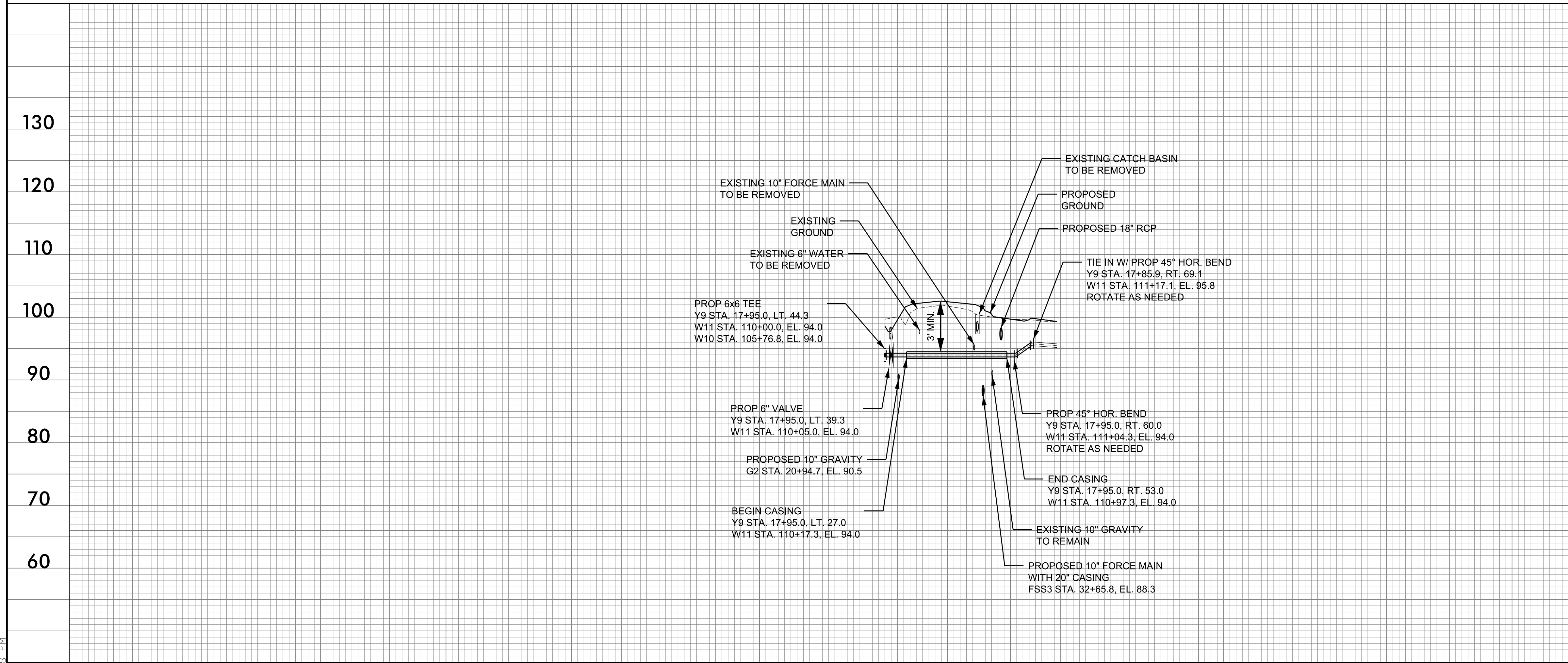
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6" WATER LINE - W11 -



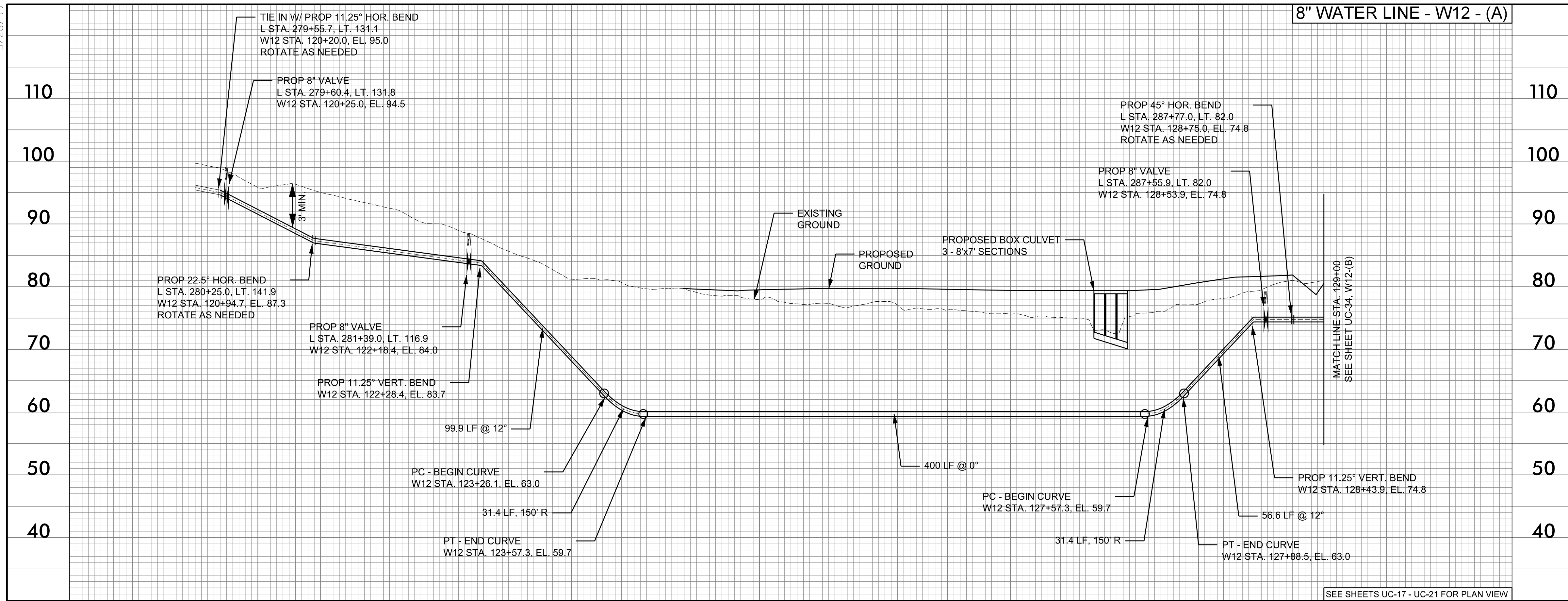
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SEE SHEET UC-15 FOR PLAN VIEW

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5/28/2019

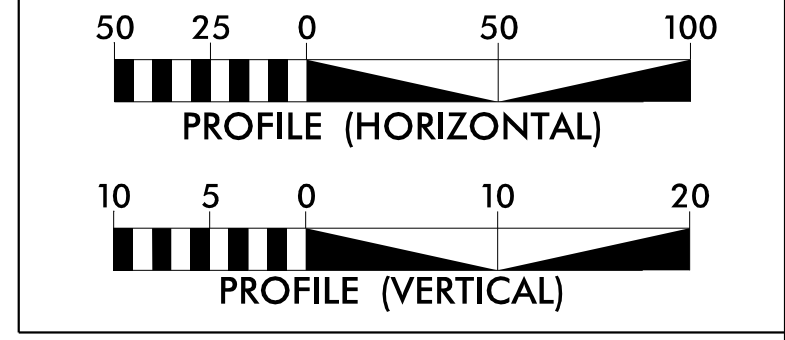
8" WATER LINE - W12 - (A)



PROJECT REFERENCE NO. R-2582A	SHEET NO. UC-34
DESIGNED BY: SHF	
DRAWN BY: SHF	
CHECKED BY: KCZ	
APPROVED BY: KCZ	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151 UTILITY CONSTRUCTION PLANS ONLY	

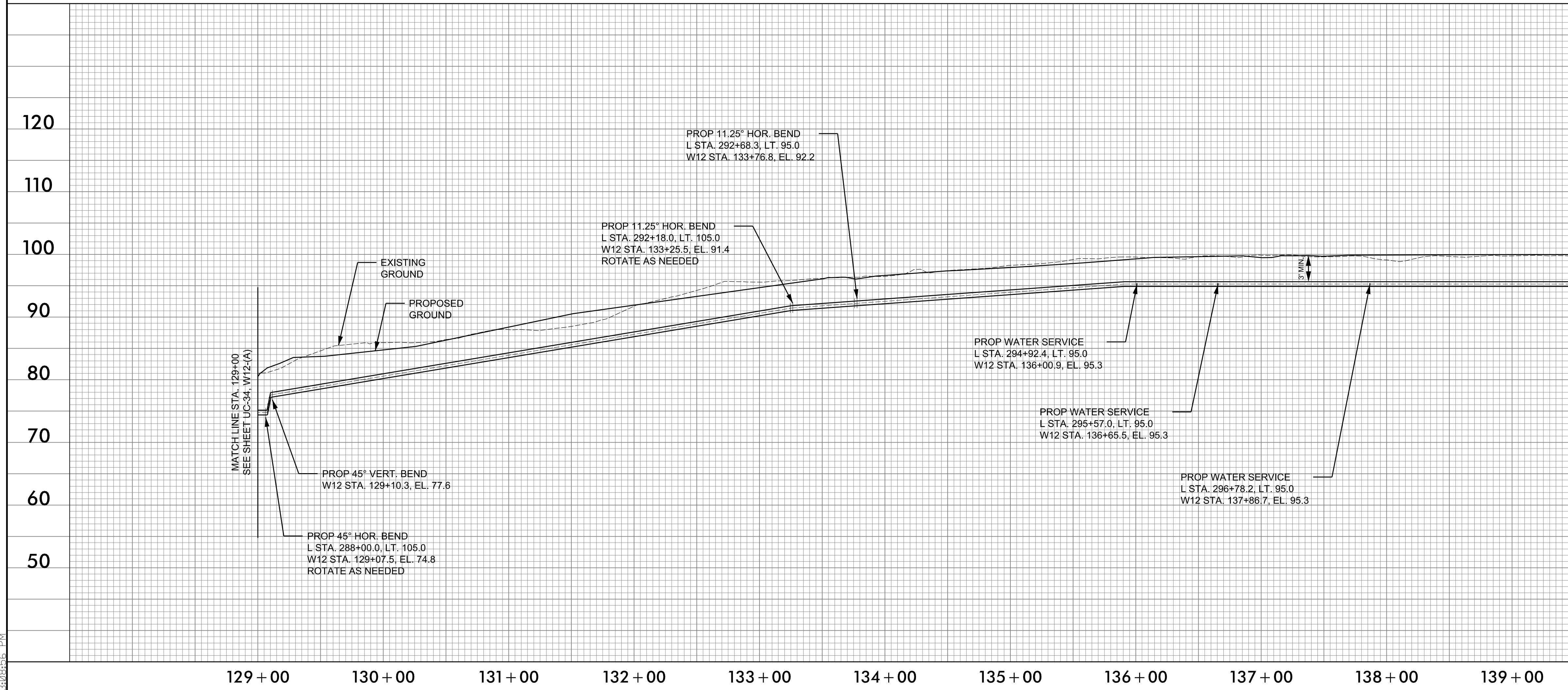
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8" WATER LINE - W12 - (B)

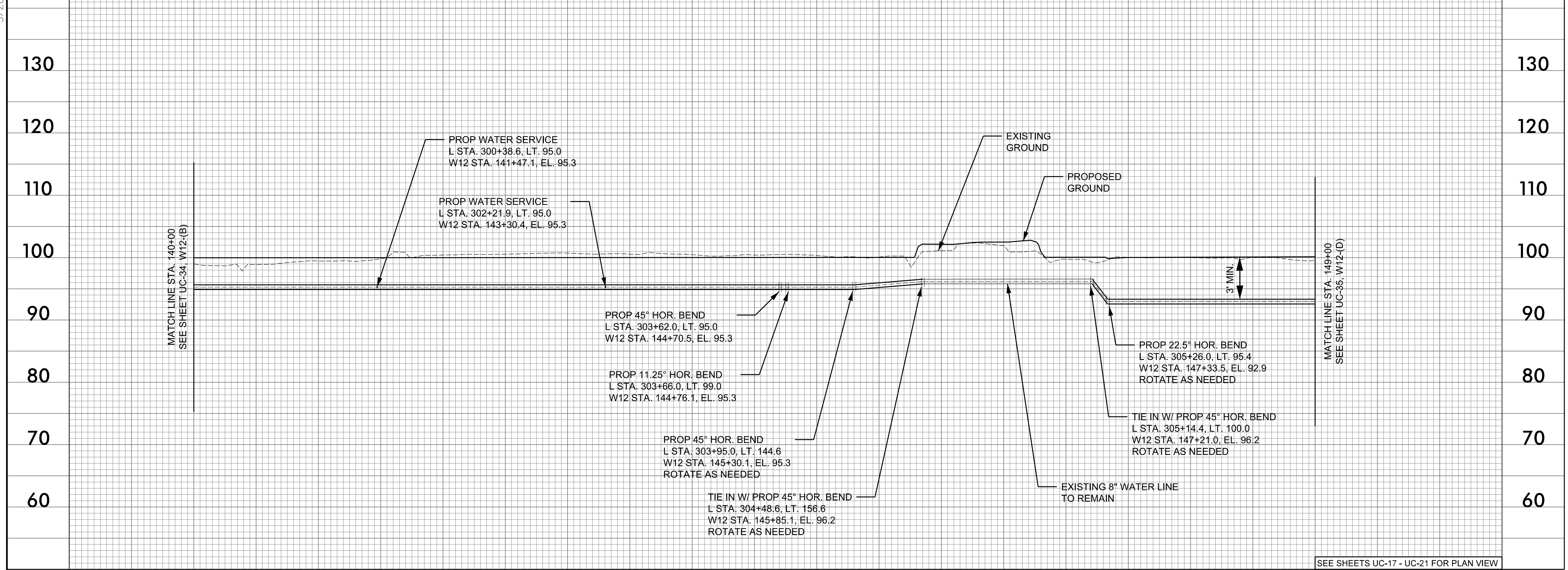


SEE SHEETS UC-17 - UC-21 FOR PLAN VIEW

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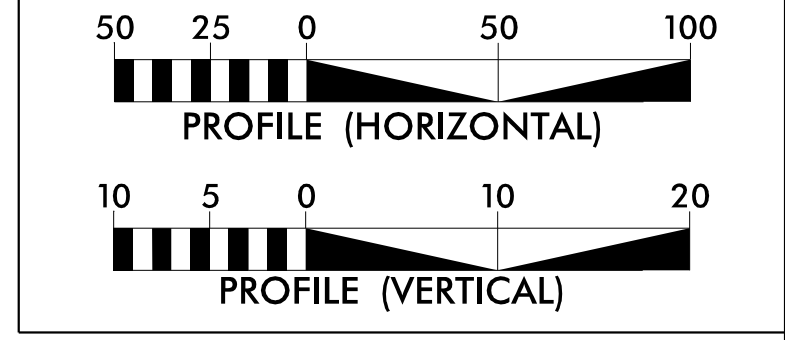
8" WATER LINE - W12 - (C)



PROJECT REFERENCE NO. R-2582A	SHEET NO. UC-35
DESIGNED BY: SHF	
DRAWN BY: SHF	
CHECKED BY: KCZ	
APPROVED BY: KCZ	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
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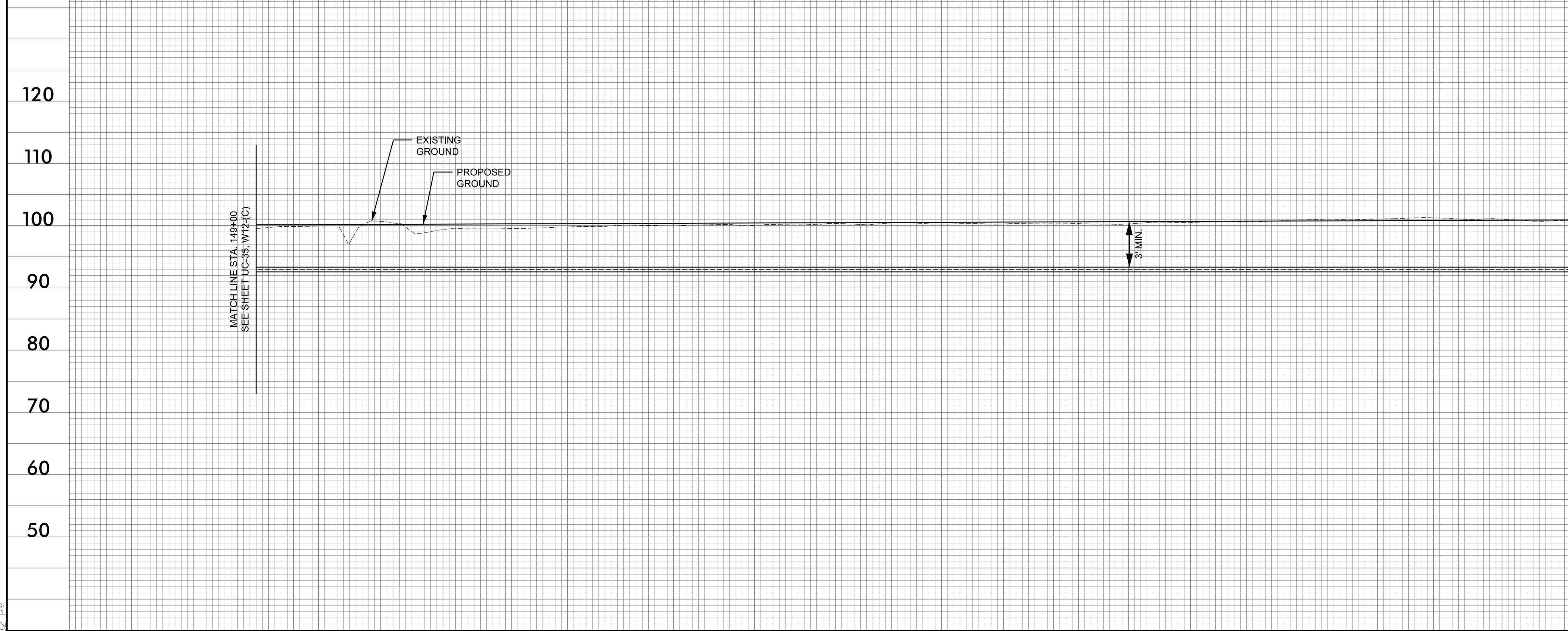


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SEE SHEETS UC-17 - UC-21 FOR PLAN VIEW

140+00 141+00 142+00 143+00 144+00 145+00 146+00 147+00 148+00 149+00

8" WATER LINE - W12 - (D)



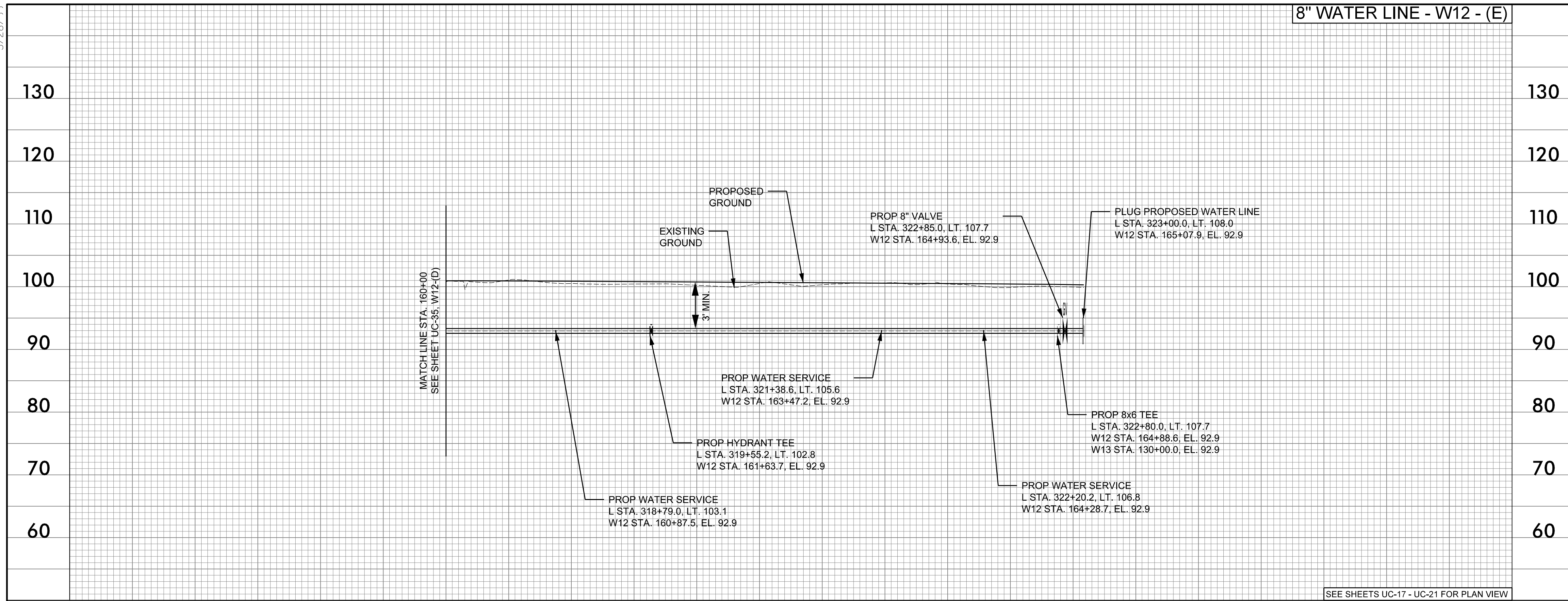
SEE SHEETS UC-17 - UC-21 FOR PLAN VIEW

149+00 150+00 151+00 152+00 153+00 154+00 155+00 156+00 157+00 158+00 159+00 160+00

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5/28/19

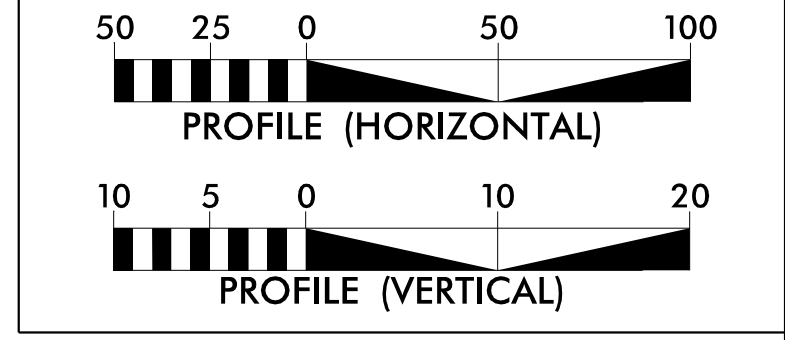
8" WATER LINE - W12 - (E)



PROJECT REFERENCE NO. R-2582A	SHEET NO. UC-36
DESIGNED BY: SHF	
DRAWN BY: SHF	
CHECKED BY: KCZ	
APPROVED BY: KCZ	
REVISED:	
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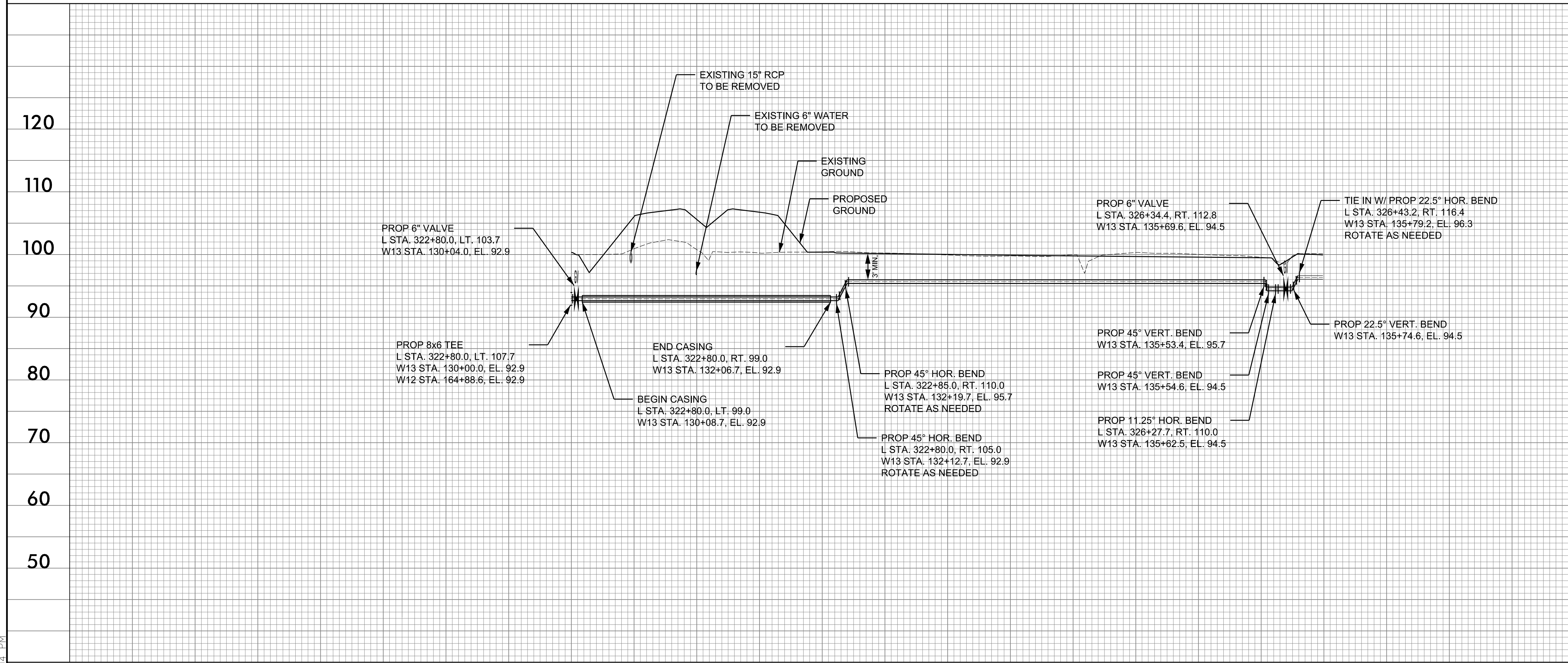


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SEE SHEETS UC-17 - UC-21 FOR PLAN VIEW

160 + 00 161 + 00 162 + 00 163 + 00 164 + 00 165 + 00

6" WATER LINE - W13 -



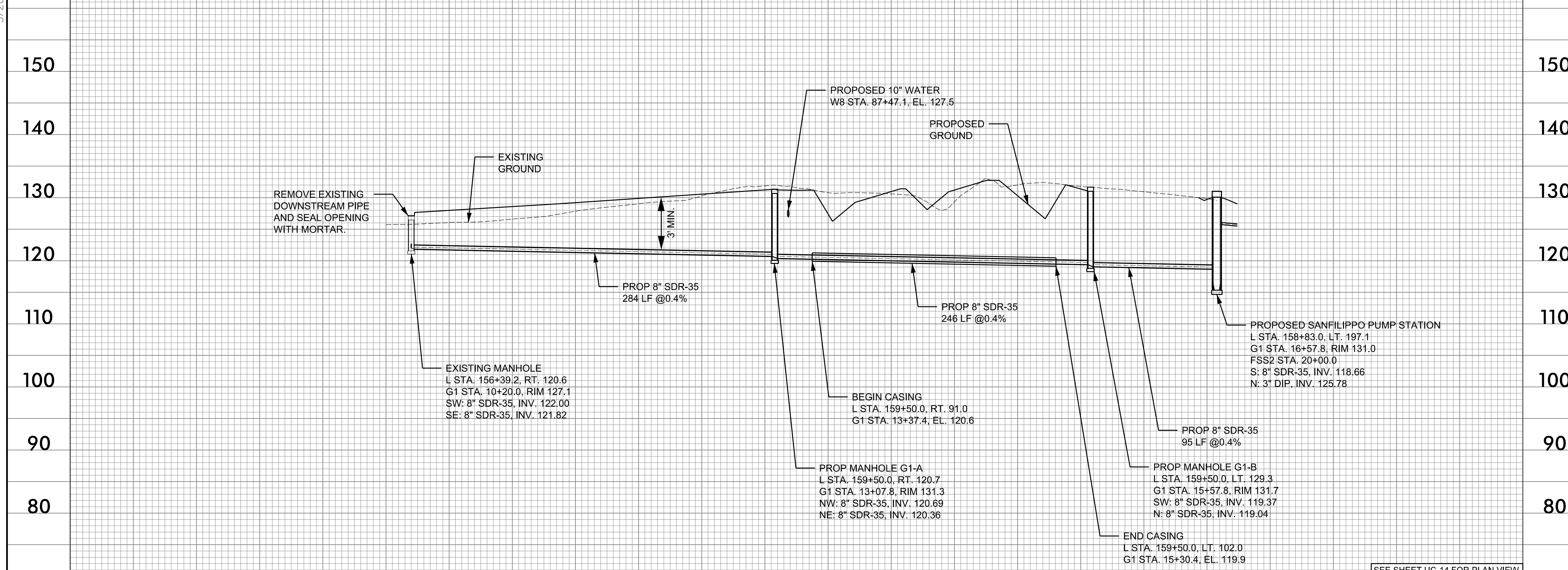
SEE SHEETS UC-21 FOR PLAN VIEW

130 + 00 131 + 00 132 + 00 133 + 00 134 + 00 135 + 00 136 + 00

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5/28/19

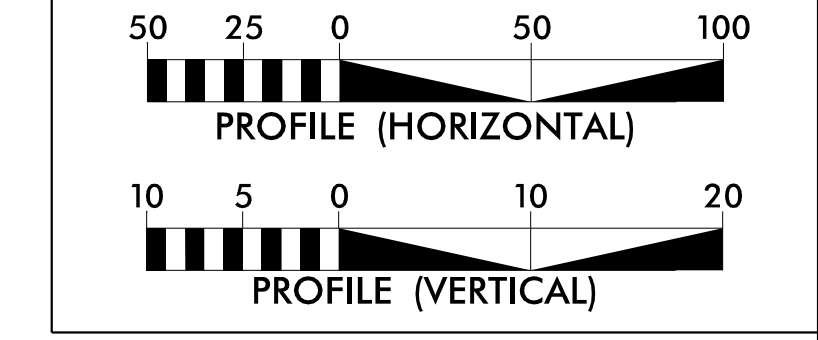
8" GRAVITY - G1 -



PROJECT REFERENCE NO. R-2582A	SHEET NO. UC-37
DESIGNED BY: SHF	
DRAWN BY: SHF	
CHECKED BY: KCZ	
APPROVED BY: KCZ	
REVISED:	
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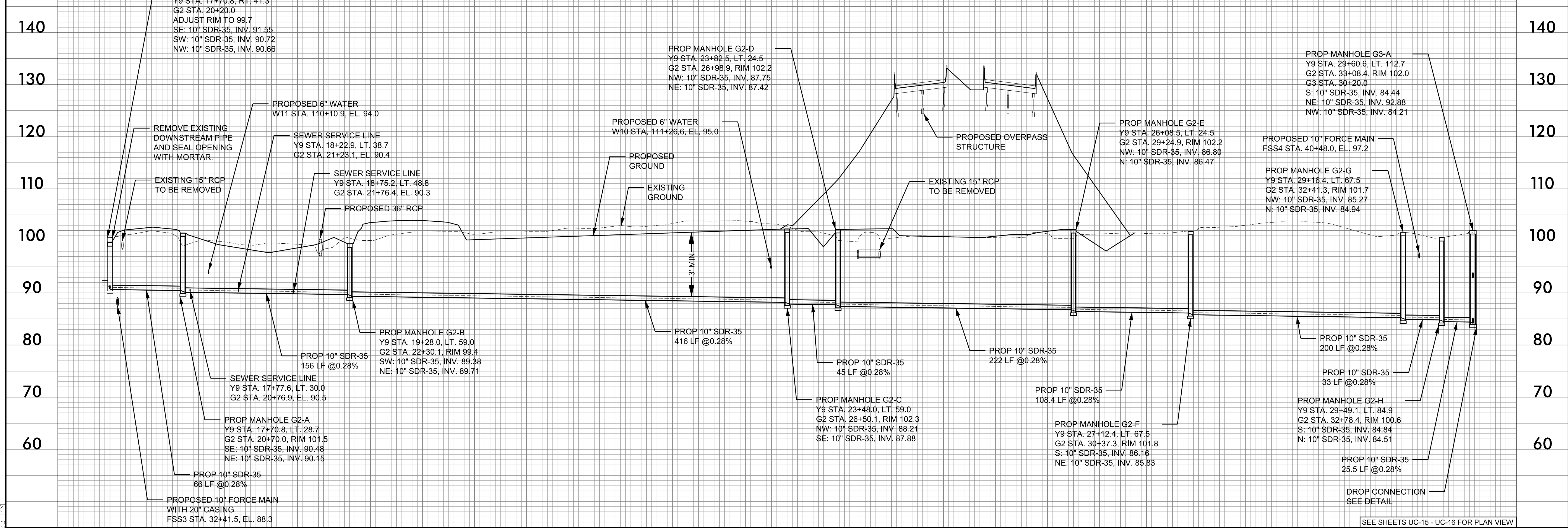


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10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00

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10" GRAVITY - G2 -



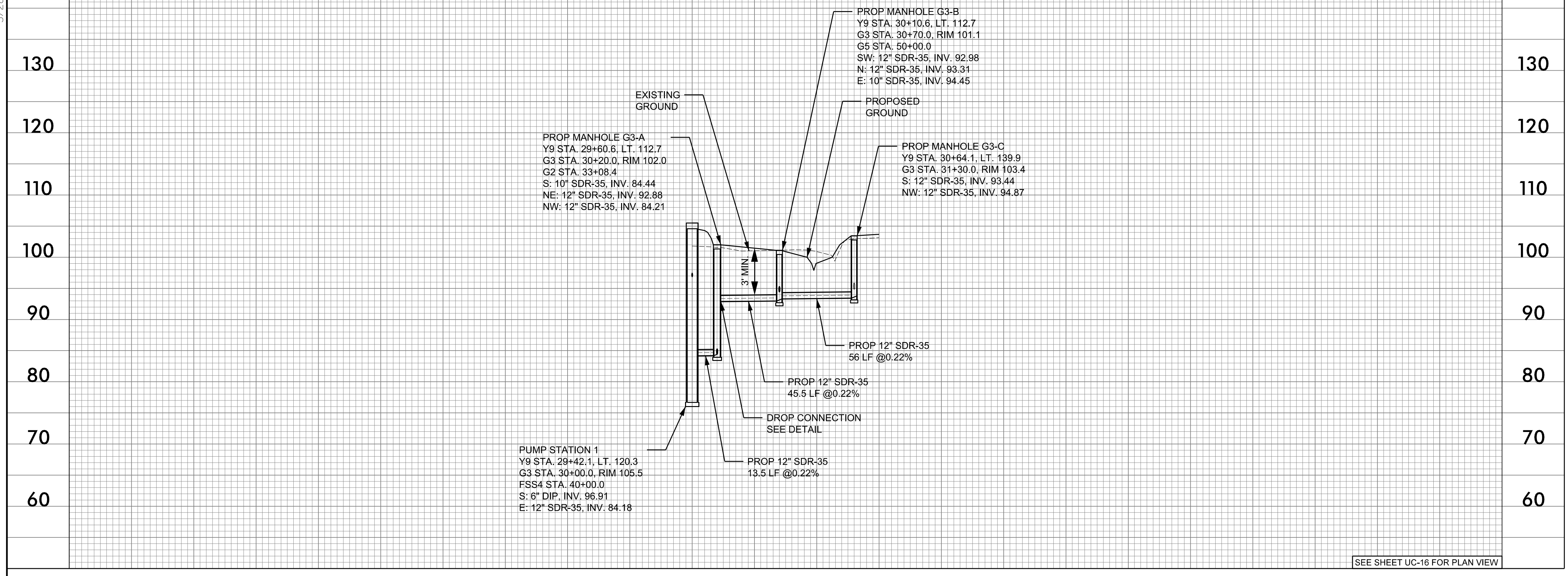
20+00 21+00 22+00 23+00 24+00 25+00 26+00 27+00 28+00 29+00 30+00 31+00 32+00

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

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5/28/19

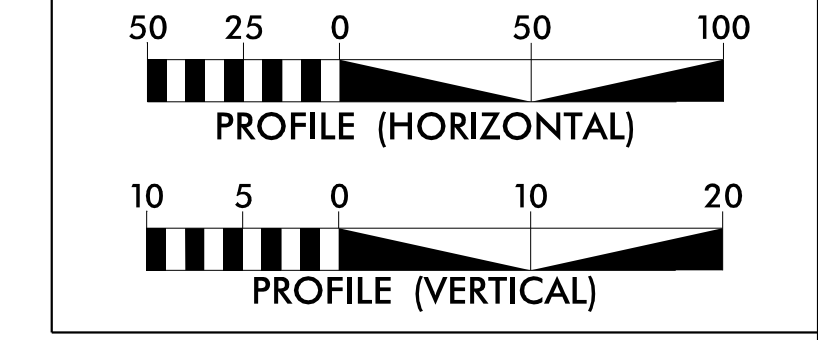
12" GRAVITY - G3 -



PROJECT REFERENCE NO. R-2582A	SHEET NO. UC-38
DESIGNED BY: SHF	
DRAWN BY: SHF	
CHECKED BY: KCZ	
APPROVED BY: KCZ	
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 Phone: 919.297.0220 Fax: 919.297.0221

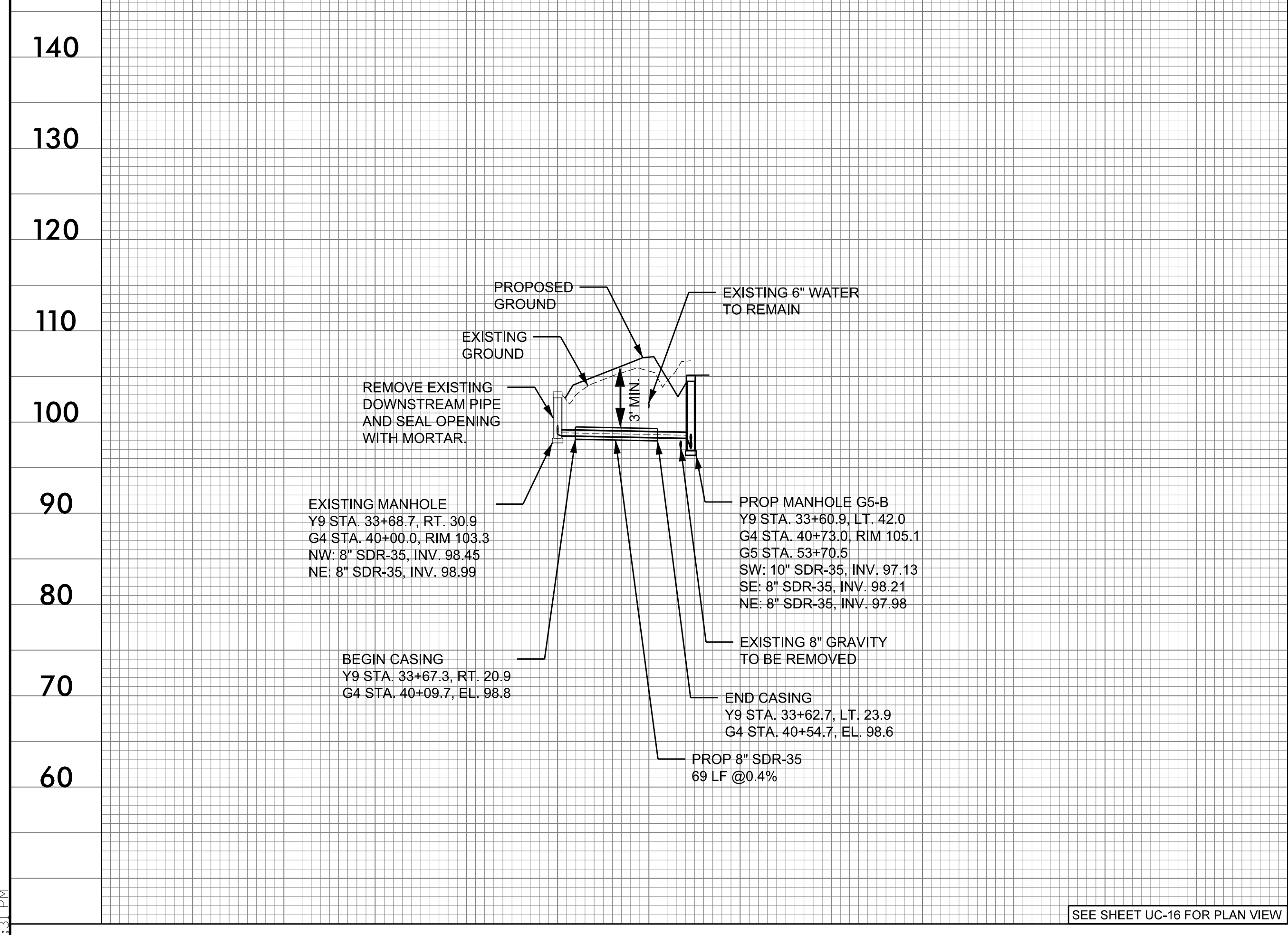
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 - DIRECTIONAL DRILL AND BORE AND JACK INSTALLATIONS SHALL BE IN ACCORDANCE WITH DETAILS.

30 + 00 31 + 00 32 + 00

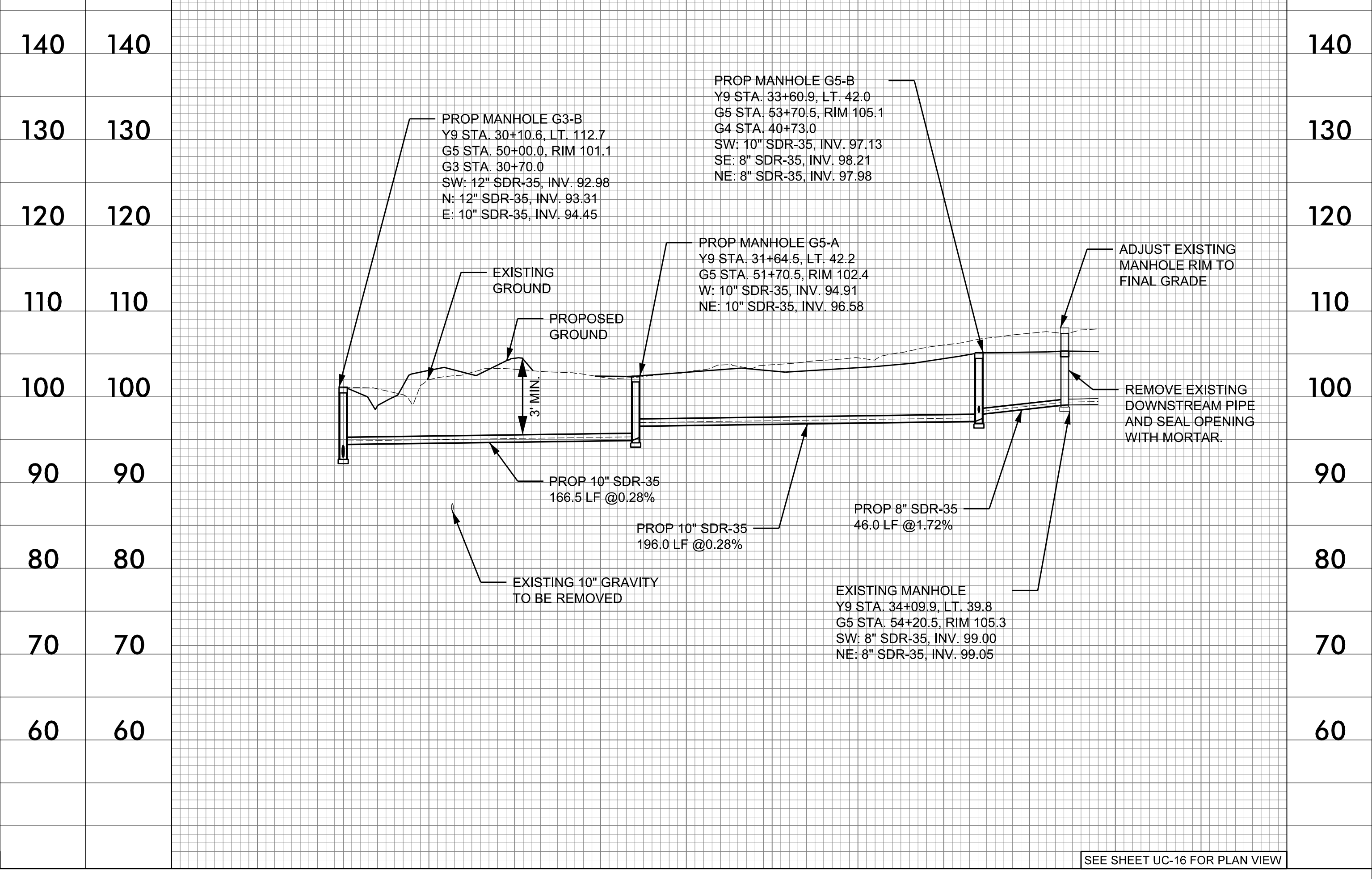
8" GRAVITY - G4 -



40 + 00 41 + 00

SEE SHEET UC-16 FOR PLAN VIEW

10"/8" GRAVITY - G5 -



50 + 00 51 + 00 52 + 00 53 + 00 54 + 00

SEE SHEET UC-16 FOR PLAN VIEW

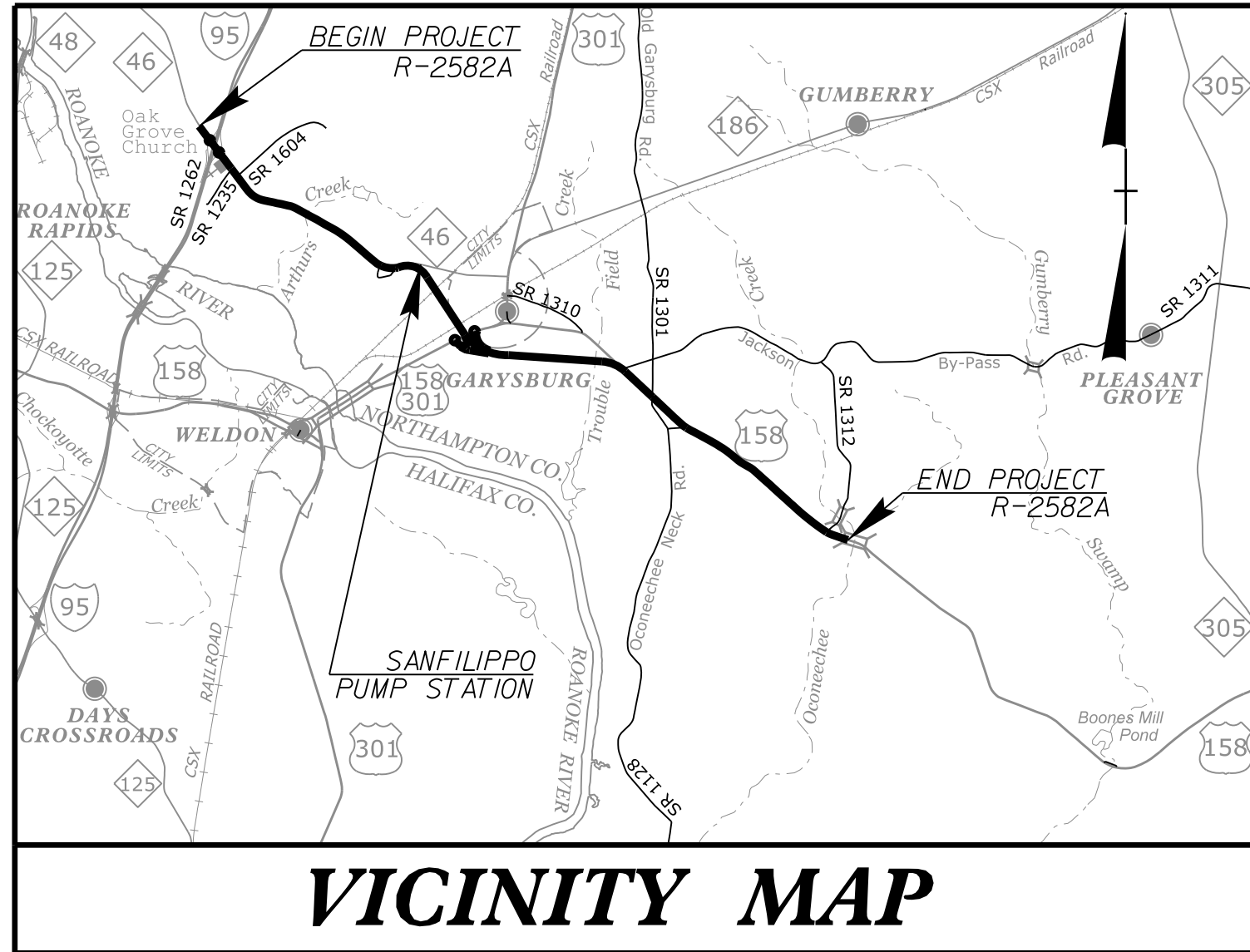
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TIP PROJECT: R-2582A

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

T.I.P. NO.	SHEET NO.
R-2582A	UC-39

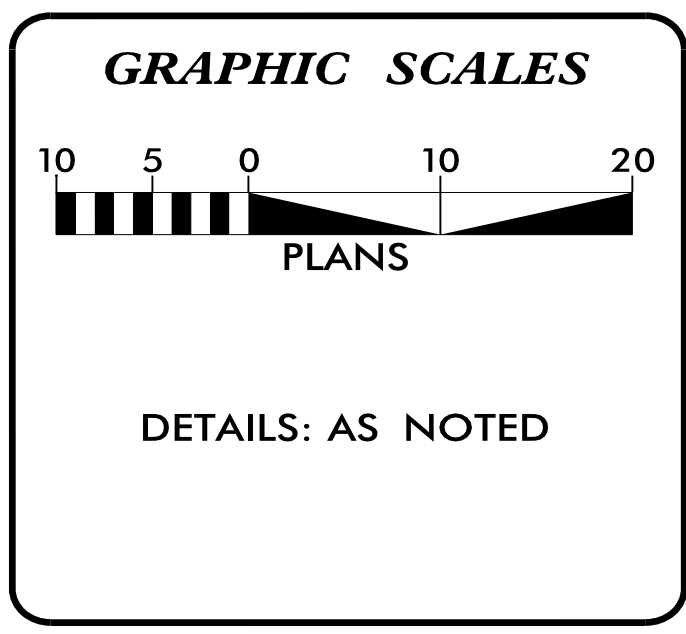
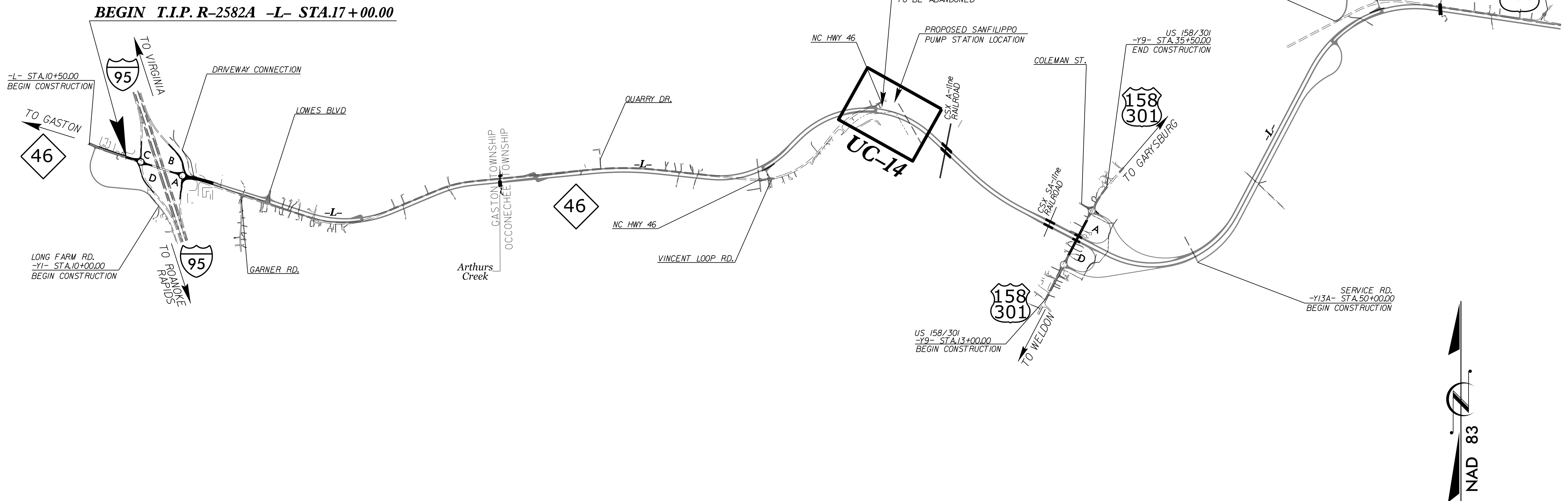
DOCUMENT NOT CONSIDERED FINAL
UNTIL ALL SIGNATURES ARE COMPLETED



UTILITY CONSTRUCTION PLANS SANFILIPPO PUMP STATION

LOCATION: SOUTH SIDE OF NC-46 JUST WEST OF
CSX RAILROAD GRADE CROSSING IN GARYSBURG

TYPE OF WORK: SANITARY PUMP STATION CONSTRUCTION



SHEET NO.:	DESCRIPTION:
UC-39	TITLE SHEET
UC-40	SITE PLAN
UC-41	GRADING PLAN
UC-42	DETAILS
UC-43	DETAILS
UC-44	ELECTRICAL TITLE SHEET
UC-45	ELECTRICAL POWER RISER
UC-46	CONDUIT AND CABLE SCHEDULE
UC-47	SERVICE CANOPY DETAILS

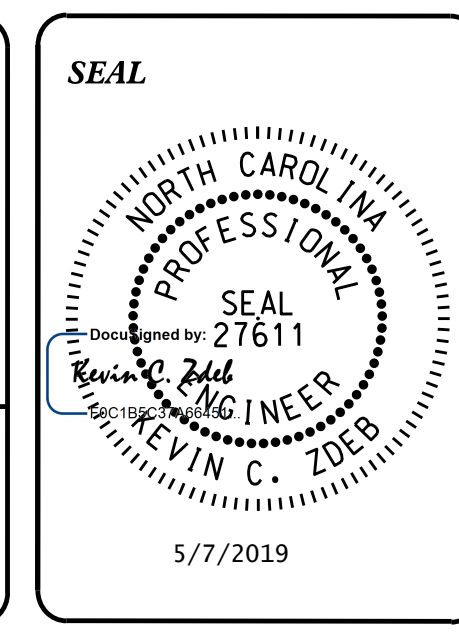
UTILITY OWNERS

(A) SANITARY SEWER - NORTHAMPTON COUNTY
 (B) WATER - NORTHAMPTON COUNTY
 (C) POWER - DOMINION ENERGY

PREPARED IN THE OFFICE OF

M A Engineering Consultants, Inc.
 598 East Chatham Street - Suite 137
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KEVIN C. ZDEB, PE PROJECT ENGINEER
SAM FORSTER PROJECT DESIGNER
WEBB WHITE PROJECT UTILITY COORDINATOR



DIVISION OF HIGHWAYS UTILITIES UNIT
 1020 BIRCH RIDGE DRIVE
 RALEIGH, NC 27610
 PHONE (919) 707-6690
 FAX (919) 250-4151

NABIL HAMDAN REGIONAL UTILITIES ENGINEER
KIFAH KAMIL SENIOR UTILITIES ENGINEER
DAYTON MARTIN REGIONAL UTILITY COORDINATOR

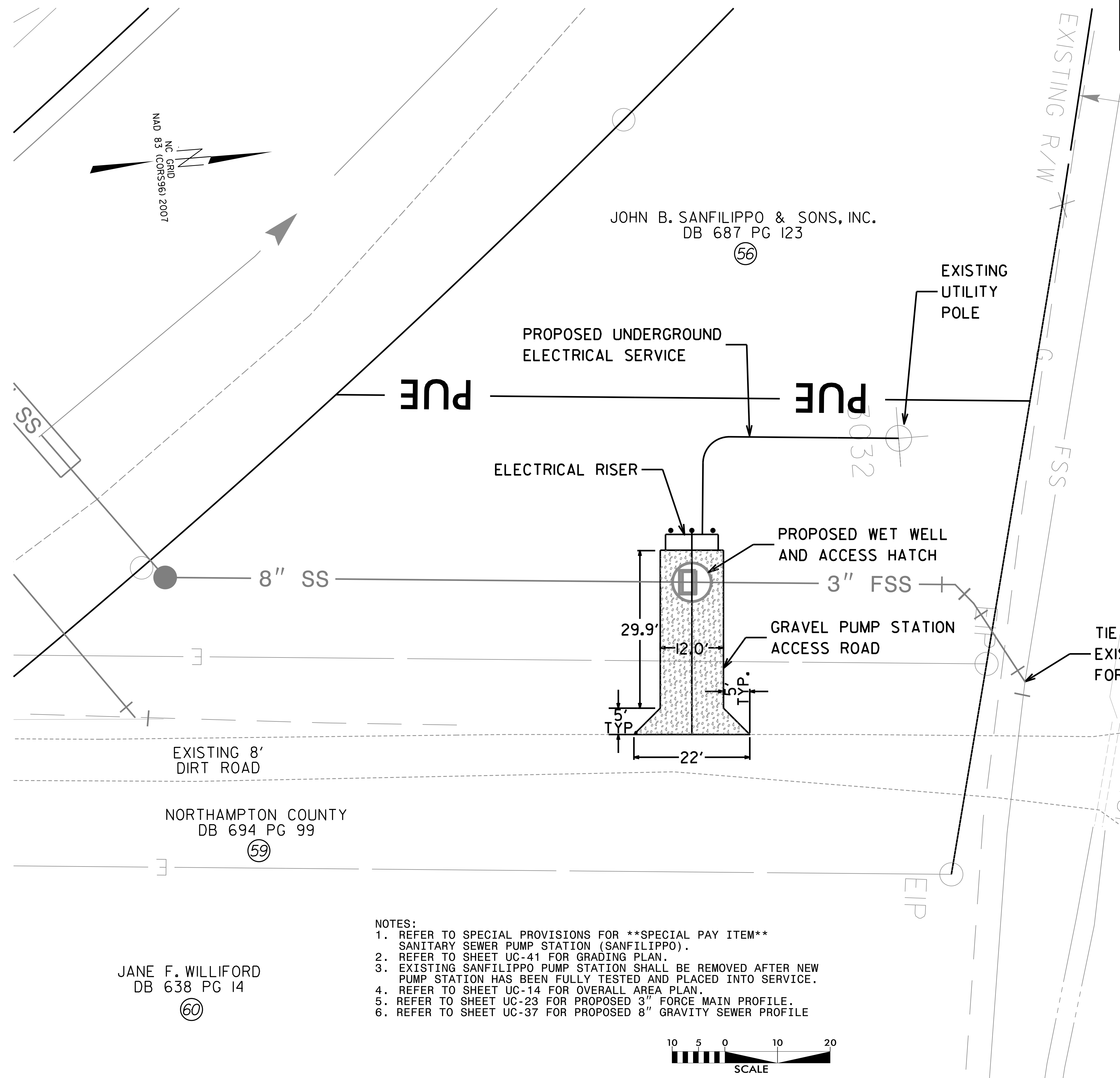
8/17/09

M A Engineering Consultants, Inc.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221

PROJECT REFERENCE NO. R-2582A	SHEET NO. UC-40
DESIGNED BY: KCZ	
DRAWN BY: SHF	
CHECKED BY: KCZ	
APPROVED BY: KCZ	
REVISED:	
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. REFER TO SPECIAL PROVISIONS FOR **SPECIAL PAY ITEM** SANITARY SEWER PUMP STATION (SANFILIPPO).
 2. REFER TO SHEET UC-41 FOR GRADING PLAN.
 3. EXISTING SANFILIPPO PUMP STATION SHALL BE REMOVED AFTER NEW PUMP STATION HAS BEEN FULLY TESTED AND PLACED INTO SERVICE.
 4. REFER TO SHEET UC-14 FOR OVERALL AREA PLAN.
 5. REFER TO SHEET UC-23 FOR PROPOSED 3" FORCE MAIN PROFILE.
 6. REFER TO SHEET UC-37 FOR PROPOSED 8" GRAVITY SEWER PROFILE



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SANFILIPPO PS SITE PLAN