

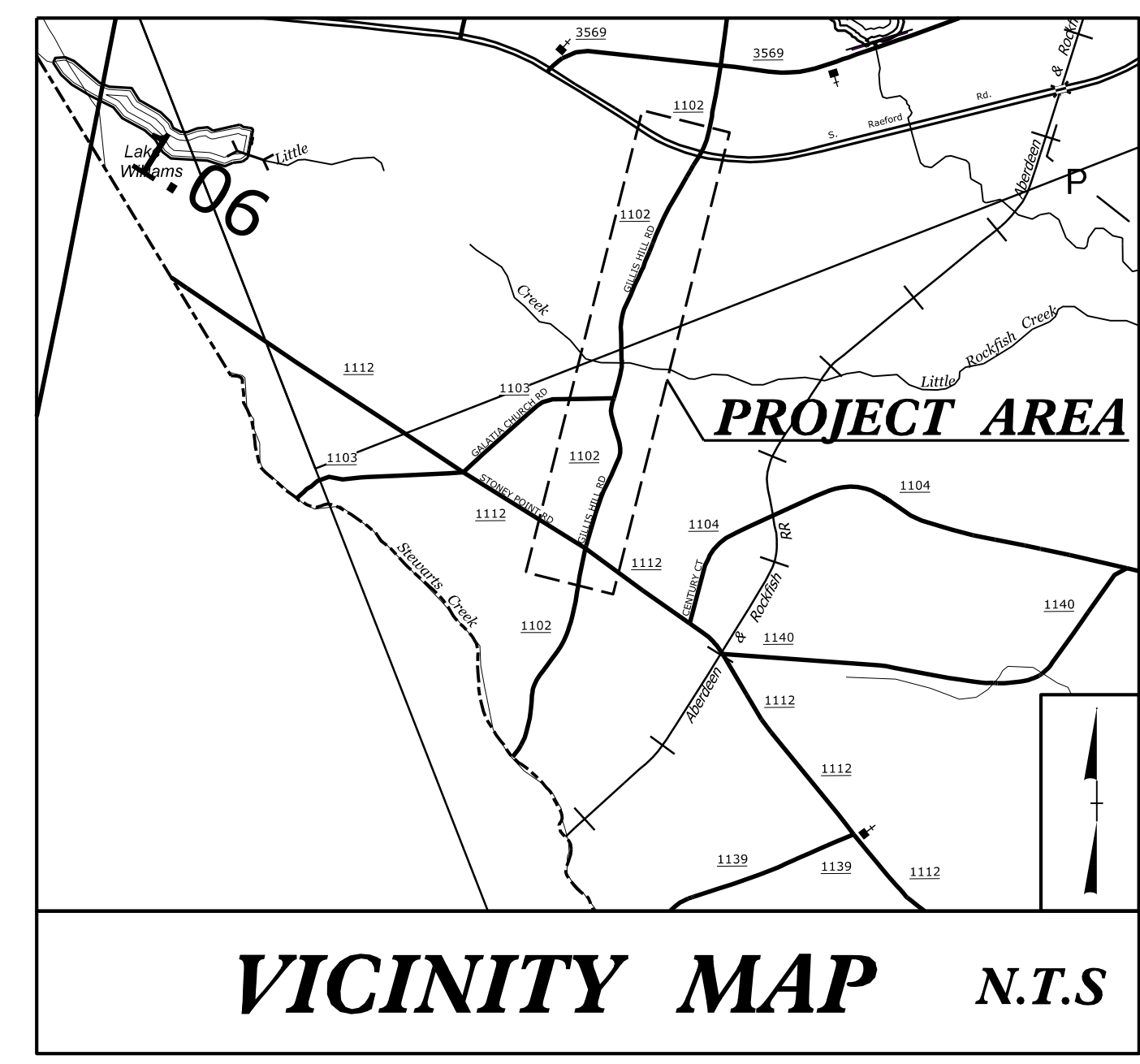
13-DEC-2021 16:55
 L:\Projects\Fayetteville Public Works Commission\2019061600RA - U-5798 Gillis Hill Road Utility Coordination\CADD\Microstation\Utilities\Engineering\UC\Pro\U-5798A_ut_fsh_UC01_psh.dgn
 \$\$\$USERNAME\$\$\$

TIP PROJECT: U-5798A

T.I.P. NO.	SHEET NO.
U-5798A	UC-1

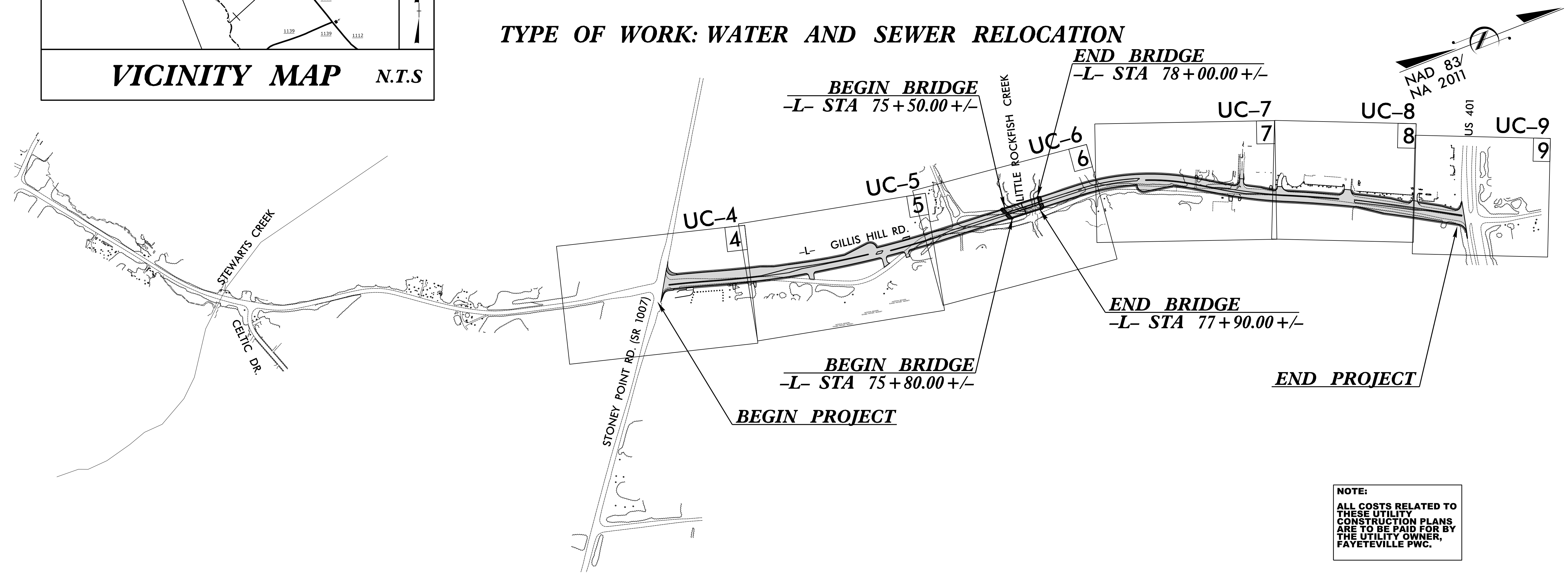
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

**UTILITY CONSTRUCTION PLANS
CUMBERLAND COUNTY**



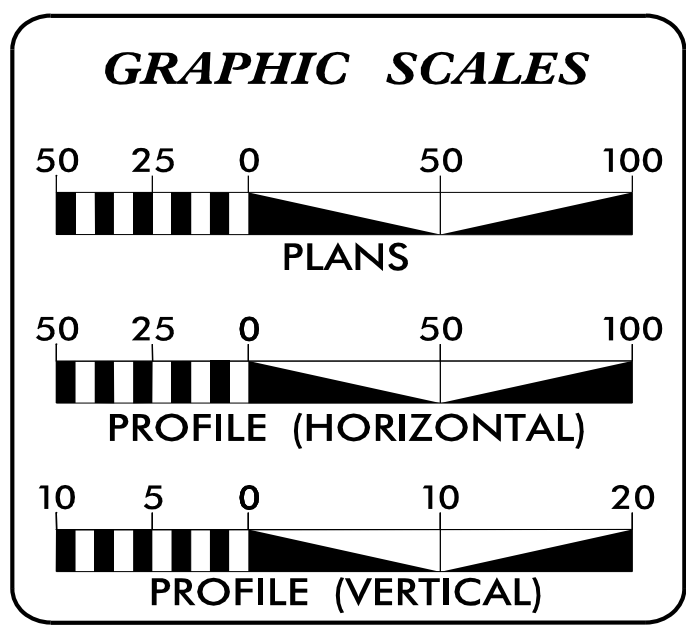
LOCATION: WIDEN SR 1102 (GILLIS HILL ROAD) TO MULTI-LANES FROM US 401 (RAEFORD ROAD) TO SR 1007 (STONEY POINT ROAD)

TYPE OF WORK: WATER AND SEWER RELOCATION



NOTE:
ALL COSTS RELATED TO THESE UTILITY CONSTRUCTION PLANS ARE TO BE PAID FOR BY THE UTILITY OWNER, FAYETTEVILLE PWC.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



INDEX OF SHEETS

SHEET NO.:	DESCRIPTION:
UC-1	TITLE SHEET
UC-2	UTILITY SYMBOLOGY
UC-3 THRU UC-3A	NOTES
UC-3B THRU UC-3G	DETAILS
UC-4 THRU UC-9	UTILITY CONSTRUCTION SHEETS
UC-10 THRU UC-15	PROFILE SHEETS

WATER AND SEWER OWNERS ON PROJECT

(A) WATER: FAYETTEVILLE PWC
(B) SANITARY SEWER: FAYETTEVILLE PWC

PREPARED IN THE OFFICE OF

WK DICKSON
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720 CORPORATE CENTER DRIVE
RALEIGH, NORTH CAROLINA 27607
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SEAL

DIVISION OF HIGHWAYS UTILITIES UNIT
1555 MAIL SERVICES CENTER
RALEIGH, NC 27699-1555
PHONE (919) 707-6690
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NABIL HAMDAN UTILITIES REGIONAL ENGINEER
KELVIN MARTIN, EI UTILITIES ENGINEER
TANGA SAMPSON REGIONAL UTILITIES COORDINATOR
KELVIN MARTIN, EI UTILITIES 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	
Water Meter	
Relocate Water Meter	
Remove Water Meter	
Water Pump Station	
RPZ Backflow Preventer	
DCV Backflow Preventer	
Relocate RPZ Backflow Preventer	
Relocate DCV Backflow Preventer	

PROPOSED SEWER SYMBOLS

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

PROPOSED MISCELLANEOUS UTILITIES SYMBOLS

Power Pole	
Telephone Pole	
Joint Use Pole	
Telephone Pedestal	
Utility Line by Others (Type as Shown)	
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	
Telephone Pole	
Joint Use Pole	
Utility Pole	
Utility Pole with Base	
H-Frame Pole	
Power Transmission Line Tower	
Water Manhole	
Power Manhole	
Telephone Manhole	
Sanitary Sewer Manhole	
Hand Hole for Cable	
Power Transformer	
Telephone Pedestal	
CATV Pedestal	
Gas Valve	
Gas Meter	
Located Miscellaneous Utility Object	
Abandoned According to Utility Records	
End of Information	

*Underground Power Line	
*Underground Telephone Cable	
*Underground Telephone Conduit	
*Underground Fiber Optics Telephone Cable	
*Underground TV Cable	
*Underground Fiber Optics TV Cable	
*Underground Gas Pipeline	
Aboveground Gas Pipeline	
*Underground Water Line	
Aboveground Water Line	
*Underground Gravity Sanitary Sewer Line	
Aboveground Gravity Sanitary Sewer Line	
*Underground SS Forced Main Line	
Underground Unknown Utility Line	
SUE Test Hole	
Water Meter	
Water Valve	
Fire Hydrant	
Sanitary Sewer Cleanout	

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

PROJECT REFERENCE NO.	SHEET NO.
U-5798A	UC-3
DESIGNED BY: AAA	UTILITY CONSTRUCTION PLANS ONLY
DRAWN BY: KNS	
CHECKED BY: BRO	
APPROVED BY: BRO	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

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 SPECIAL PROVISIONS TO NCDOT PROVIDED BY PWC
2. FAYETTEVILLE PWC OWNS AND OPERATES THE EXISTING WATER AND SEWER UTILITIES.
3. ALL WATER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF WATER RESOURCES, PUBLIC WATER SUPPLY SECTION. ALL SEWER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT QUALITY, DIVISION OF WATER RESOURCES, WATER QUALITY SECTION. PERFORM ALL WORK IN ACCORDANCE WITH THE APPLICABLE PLUMBING CODES.
4. FAYETTEVILLE PWC 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. PRIOR TO PLACEMENT OF PROPOSED WATERLINE THE CONTRACTOR SHALL LOCATE ALL EXISTING WATER SERVICE LATERALS (DEPTH AND PIPE DIAMETER) AND NOTIFY THE RESIDENT ENGINEER IF THERE ARE COMPLICATIONS WITH CONNECTING TO THE PROPOSED WATERLINE. THE CONTRACTOR'S COST FOR ALL WORK ASSOCIATED WITH WATER SERVICES, IS INCIDENTAL TO WATER SERVICE PAYMENT ITEM.
11. THE CONTRACTOR SHALL REFER TO THE "UTILITIES BY OTHERS" PLANS FOR PROPOSED GAS, TELECOMMUNICATIONS, AQUA AMERICA WATER, AND POWER UTILITY RELOCATIONS.

PROJECT SPECIFIC NOTES:

1. ALL PROPOSED WATER LINE 2" IN DIAMETER SHALL BE SDR21, PRESSURE CLASS 200 IN ACCORDANCE WITH ASTM D 2241 OR SDR-17 WITH A PRESSURE RATING OF 250 PSI, IN ACCORDANCE WITH ASTM D-224. ALL PROPOSED WATER LINE 6"-12" IN DIAMETER SHALL BE DI (DUCTILE IRON PUSH-ON) PC 350 PIPE.. ALL PROPOSED WATERLINE LINE 16" IN DIAMETER SHALL BE DI (DUCTILE IRON PUSH-ON) PC 250 PIPE.
2. ALL PROPOSED GRAVITY SEWER LINES 12" IN DIAMETER AND SMALLER SHALL BE CERAMIC EPOXY LINED DI (DUCTILE IRON PUSH ON) PC 350 PIPE. ALL PROPOSED GRAVITY SEWER LINES 16" IN DIAMETER AND GREATER SHALL BE CERAMIC EPOXY LINED DI (DUCTILE IRON PUSH ON) PC 250, UNLESS OTHERWISE SPECIFIED.
3. CONTRACTOR'S ATTENTION IS DIRECTED TO SECTIONS 102, 107, AND 1550 OF THE STANDARD SPECIFICATIONS CONCERNING TRENCHLESS INSTALLATION. IT IS CONTRACTOR'S RESPONSIBILITY TO HAVE BORE DESIGNED AND SEALED BY A LICENSED NORTH CAROLINA PROFESSIONAL ENGINEER. NO DAMAGE IS ALLOWED TO RIVER, WETLANDS, OR BUFFER ZONES.
4. IF HDPE PIPE IS INSTALLED BY HORIZONTAL DIRECTIONAL DRILL (HDD), IT SHALL BE FILLED WITH WATER AND NOT BE CONNECTED TO ANY OTHER PIPE OR FITTINGS FOR ONE WEEK FROM THE TIME OF INSTALLATION.
5. ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL FAYETTEVILLE PWC AND/OR NCDOT STANDARDS AND SPECIFICATIONS.
6. UTILITY CONSTRUCTION NOTE SHEETS PROVIDE GENERAL SEQUENCE OPTIONS FOR INSTALLATION OF THE PROPOSED WATER AND SEWER LINES. CONTRACTOR SHALL PROVIDE A CONSTRUCTION SEQUENCE FOR ALL WATER LINE AND SEWER LINE SEGMENTS AND KILLOUTS PRIOR TO INSTALLATION FOR REVIEW AND APPROVAL BY ENGINEER. CONTRACTOR SHALL UPDATE CONSTRUCTION SEQUENCES WHERE ACTUAL CONDITIONS REQUIRE AJDUSTMENTS OR ALTERATIONS TO THE PLANNED WORK. CONSTRUCTION SEQUENCE OPTIONS THAT ARE PROVIDED ARE INTENDED TO MINIMIZE IMPACTS TO WATER AND SEWER OPERATIONS. INSTALLATION SHALL NOT BEGIN UNTIL AN APPROVED SEQUENCE PLAN IS IN PLACE.

UTILITY CONSTRUCTION
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7. ALL EXISTING VALVES, AIR RELEASE VALVES, FIRE HYDRANTS AND MANHOLE RING AND COVERS THAT ARE TO BE REMOVED SHALL BE RETURNED TO PWC.
8. SEE PROFILE SHEETS FOR REFERENCE TO PIPE MATERIALS AND VALVE TYPES.
9. ALL PROPOSED WATER LINES SHALL HAVE A MINIMUM OF 4- FEET OF COVER. THE CONTRACTOR SHALL VERIFY THE EXISTING AND PROPOSED GROUND ELEVATIONS AT WATER AND SEWER LOCATIONS AND REPORT ANY DISCREPANCIES TO THE ENGINEER. IT IS EXPRESSLY UNDERSTOOD THAT THE ELEVATION DATA SHOWN ON THE PROJECT PROFILES IS BEING PROVIDED SOLELY FOR INFORMATIONAL PURPOSES. THE ELEVATIONS ARE GENERATED FROM ELECTRONIC DATA DEVELOPED BY OTHERS AND ARE SUBJECT TO ERRORS. REFER TO THE DOT CROSS SECTIONS FOR. WK DICKSON SHALL BE HELD HARMLESS FROM ANY AND ALL CLAIMS, LIABILITIES, DAMAGES, LOSSES, OR EXPENSES ARISING FROM THE CONTRACTORS USE OF THE ELEVATION DATA SHOWN IN THESE UC PLANS.
10. IF HDD IS USED TO INSTALL THE HDPE, THE CONTRACTOR SHALL PROVIDE FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES AND FOUNDATION CONDITIONING GEOTEXTILE TO PROIVDE A STABLE FOUNDATION TO SUPPORT HDD EQUIPMENT.

UTILITY CONSTRUCTION

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

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CONSTRUCTION SEQUENCING ON INDIVIDUAL SHEETS IS IMPACTED BY SEQUENCING REQUIREMENTS ON OTHER SHEETS. REVIEW THEM ACCORDINGLY.

THE CONTRACTOR SHALL PROVIDE TEMPORARY WATER SERVICE THROUGHOUT CONSTRUCTION.

THE CONTRACTOR SHALL BE PREPARED TO PUMP AND HAUL OR USE BY-PASS PUMPING ON WASTE WATER FROM THE INTERRUPTED SEWER SERVICE LINES.

UC-4 UTILITY NOTES:

1. PURSUANT TO TRAFFIC CONTROL REQUIREMENTS, CONTRACTOR SHALL NOT BE PERFORMING WATER MAIN INSTALLATION OF WL-1 LONGITUDINALLY TO STONEY POINT ROAD ON BOTH SIDES OF THE ROAD AT THE SAME TIME.

2. EXISTING 16-IN MAIN ALONG GILLIS HILL RD TO ABANDONED AFTER WL-1, WL-2 AND WL-3 ARE OPERATIONAL AND IN SERVICE.

3. KILL OUT OF EXISTING 16-MAIN TO BE FACILITATED BY EV-3 AND EV-4. SEE DETAIL PWC DETAIL W.22.

UC-6 UTILITY NOTES:

1. CONNECT WL-1 TO THE EXISTING 8-IN WATERLINE IN GALATIA CHURCH RD WITH A 16"x16"x8" TEE WHILE THE 8-IN WATERLINE IS UNDER A SERVICE INTERRUPTION. THERE ARE NO EXISTING SERVICE CONNECTIONS ON THE 8-IN WATERLINE. ADHERE TO UTILITY OWNER'S PROCEDURES FOR SHUTDOWN.

UC-7 UTILITY NOTES

1. WL-2, WL-3 AND WL-4 TO BE CONSTRUCTED AND OPERATIONAL BEFORE KILLOUT OF EXISTING 16-MAIN TO BE MADE JUST SOUTH OF WL-3 CONNECTION AT STA. 14+47.90.

2. INSTALL 1-IN METER AT PARCEL 18 AND CONNECT TEMPORARY SERVICE TO THE EXISTING 16-INCH WATER MAIN. COORDINATE LOCATION OF THE METER WITH THE UTILITY OWNER.

3. COMPLETE CONNECTION OF WL-3 AT ADAM JACOB RD.

4. SEE NOTES FOR UC-8 AND UC-9 FOR CONTINUITY OF SERVICE AND KILL OUT OF EXISTING 16-INCH MAIN.

5. KILL OUT OF THE EXISTING 16-MAIN SOUTH OF THE CONNECTION OF WL-3 TO BE FACILITATED BY SHUTDOWN. EXISTING VALVES EV-9 AND EXISTING IN-LINE VALVE AT INTERSECTION OF OLD RAEFORD RD AND RIM GILLIS HILL RD WILL BE CRITICAL IN ISOLATING THE EXISTING MAIN FOR CONNECTION OF WL-3 AND KILL OUT AT THAT LOCATION.

6. BEFORE THE EXISTING 16-INCH WATERLINE KILL OUTS ARE PERFORMED, TRANSFER 1-INCH METER SERVICE AT PARCEL 18 TO WL-4.

UC-8 UTILITY NOTES

1. WL-2, WL-3 AND WL-4 TO BE CONSTRUCTED AND OPERATIONAL BEFORE KILLOUT OF EXISTING 16-INCH MAIN TO BE MADE JUST SOUTH OF WL-3 CONNECTION AT STA. 14+47.90.

2. COMPLETE CONNECTION OF WL-3 TO 12-INCH WATER MAIN AT ENTRANCE TO WALMART.

3. ONCE ITEMS ABOVE ARE COMPLETE, KILLOUT OF THE EXISTING 16-INCH MAIN SOUTH OF THE CONNECTION OF WL-3 NEAR STA. 14+47 TO BE FACILITATED BY SHUTDOWN. EXISTING VALVES EV-9 AND EXISTING IN-LINE VALVE AT INTERSECTION OF OLD RAEFORD RD AND RIM GILLIS HILL RD WILL BE CRITICAL IN ISOLATING THE EXISTING MAIN IN THIS SHUTDOWN. CONSTRUCTION TIME FOR THIS WORK WILL BE LIMITED TO WEEKEND AND SHALL NOT BEGIN UNTIL 9:00 PM ON SATURDAY. ALL WORK MUST BE COMPLETED AND WATER MAIN BACK IN OPERATIONS BEFORE 6:00 AM MONDAY.

4. PROTECT WL-4 WITHIN THE AREA OF THE EXCAVATION FOR THE BORE OF SL-2 UNDER GILLIS HILL RD.

UC-9 UTILITY NOTES:

1. WL-2, WL-3 AND WL-4 TO BE CONSTRUCTED AND OPERATIONAL BEFORE KILLOUT OF EXISTING 16-MAIN TO BE MADE JUST SOUTH OF WL-3 CONNECTION AT STA. 14+47.90.

2. INSTALL TEMPORARY 6-INCH WATER MAIN FROM PROP FIRE HYDRANT AT PARCEL 23.

3. INSTALL TWO 1-INCH METERS AT PARCEL 23 AND CONNECT TO THE TEMPORARY 6-IN WATER MAIN. COORDINATE LOCATION OF THE METERS WITH THE UTILITY OWNER.

4. ONCE ITEMS ABOVE AND AS NOTED FOR UC-7 AND UC-8 ARE COMPLETE, KILLOUT OF THE EXISTING 16-MAIN SOUTH OF THE CONNECTION OF WL-3 NEAR STA. 14+47 TO BE FACILITATED BY SHUTDOWN. EXISTING VALVES EV-9 AND EXISTING IN-LINE VALVE AT INTERSECTION OF OLD RAEFORD RD AND RIM RD WILL BE CRITICAL IN ISOLATING THE EXISTING MAIN IN THIS SHUTDOWN. CONSTRUCTION TIME FOR THIS WORK WILL BE LIMITED TO WEEKEND AND SHALL NOT BEGIN UNTIL 9:00 PM ON SATURDAY. ALL WORK MUST BE COMPLETED AND WATER MAIN BACK IN OPERATIONS BEFORE 6:00 AM MONDAY.

5. CONNECT THE TWO 1-INCH METERS AT PARCEL 23 TO THE EXISTING 16-INCH MAIN.

6. REMOVE THE TEMPORARY 6" WATER MAIN.

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

UTILITY CONSTRUCTION

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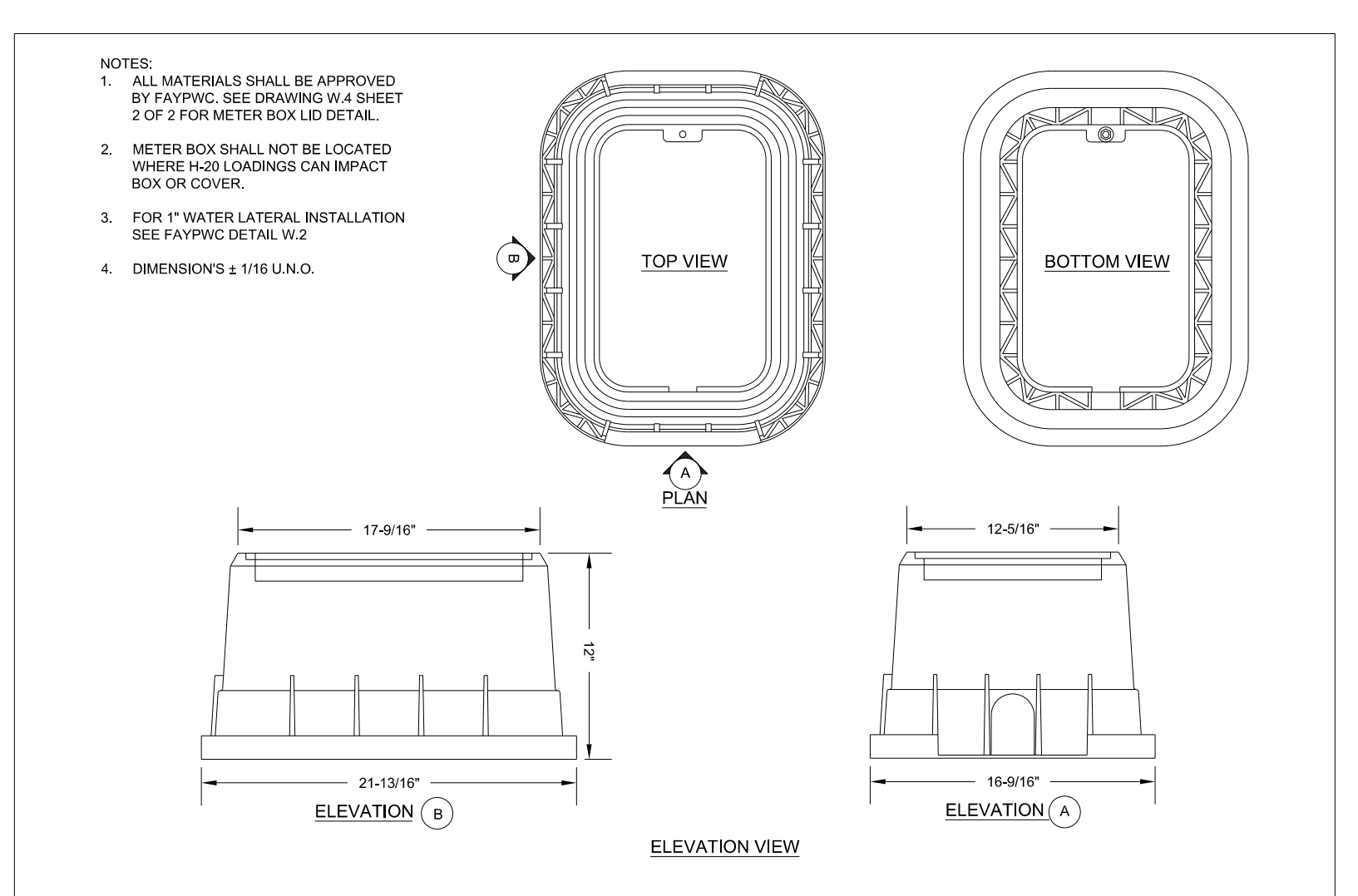
- ALL WATER MAINS, LATERALS AND APPURTENANCES SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH FAYETTEVILLE PVC STANDARDS.
- CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
- CONTRACTOR SHALL PROVIDE A MINIMUM OF 48 HOURS NOTICE FOR ALL WATER OUTAGES.
- CONSTRUCTION STAKING IS REQUIRED FOR ALL PVC WATER AND SEWER UTILITY INSTALLATIONS. CUT SHEETS, SIGNED AND SEALED BY A NC PLS, SHALL BE PROVIDED TO THE PVC WATER RESOURCES ENGINEERING DEPARTMENT AND THE CONTRACTOR IN ADVANCE OF CONSTRUCTION FOR PVC WATER AND SEWER UTILITIES.
- CONTRACTOR SHALL MAINTAIN A COPY OF THE SIGNED AND SEALED CUT SHEET ON THE JOB SITE. CONSTRUCTION ON PVC WATER AND SEWER UTILITIES CANNOT BEGIN UNTIL THE CONTRACTOR POSSESSES, ON SITE, A SIGNED AND SEALED CUT SHEET FROM THE PROFESSIONAL LAND SURVEYOR.
- ALL NEW WATER AND SEWER MAINS, LATERALS, AND APPURTENANCES SHALL BE TESTED AND/OR OBSERVED IN ACCORDANCE WITH FAYETTEVILLE PVC STANDARDS PRIOR TO PLACING INTO SERVICE.
- CONTRACTOR SHALL COORDINATE TESTING AND INSPECTION WITH THE FAYETTEVILLE PVC PROJECT COORDINATOR.
- CONTRACTOR SHALL REPAIR ALL WATER LATERALS AND MAINS DAMAGED DURING CONSTRUCTION. THE CONTRACTOR SHALL REPORT IMMEDIATELY ALL WATER MAIN AND LATERAL BREAKS TO THE PVC PROJECT COORDINATOR. THE CONTRACTOR SHALL INVOKE IMMEDIATE REPAIRS IN ACCORDANCE WITH PVC STANDARDS. CONTRACTOR SHALL NOT OPERATE PVC WATER MAIN VALVES WITHOUT PVC APPROVAL AND SHALL COORDINATE ALL VALVE CLOSINGS WITH PVC.
- THE CONTRACTOR SHALL NOT USE HOUSE HOSE BIBBS OR ANY OTHER METHOD OF BLOW OFF WHICH ALLOWS DOMESTIC WATER CONTAINING SEDIMENTS OR HIGH LEVELS OF CHLORINE TO PASS THRU RESIDENTS METERS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES RESULTING FROM ALLOWING "DIRTY" WATER TO ENTER RESIDENTS PLUMBING SYSTEM, SUCH AS WATER METERS, STAINED CLOTHING, CLOSED SCREENS, ETC.
- TRANSFER OF WATER SERVICES SHALL BE ACCOMPLISHED AS FOLLOWS:
 - INSTALL TEST AND STERILIZE NEW MAIN AND LATERALS. LATERALS SHALL BE INSTALLED BY ROBEK RIGHT-OF-WAY UNLESS OTHERWISE DIRECTED BY PVC.
 - TRANSFER EXISTING METER TO NEW METER BOX AND THE NEW WATER LATERAL TO EXISTING DOMESTIC SERVICE UTILIZING BRASS FITTINGS. SAME METER NUMBER SHALL BE INSTALLED ON SAME ADDRESS AND/OR CUSTOMER. BLOW OFF SERVICE AT HOSE BIBB ON HOUSE ONLY AFTER METER HAS BEEN TRANSFERRED.
 - AFTER ALL SERVICES ARE TRANSFERRED TO THE NEW SYSTEM, SHUT OFF VALVE ON EXISTING SYSTEM AND ABANDON EXISTING MAINS IN ACCORDANCE WITH PVC DETAILS.
 - CONTRACTOR SHALL SUPPLY NEW METER BOXES AND DISPOSE OF EXISTING METER BOXES.
- CONTRACTOR SHALL ABANDON ("WALL-OUT") ANY EXISTING WATER SERVICES THAT WILL NOT BE UTILIZED BY CUTTING THE SERVICE AT THE MAIN, PLUGGING THE CORPORATION, AND TURNING OFF THE CORPORATION AT THE METER BOX. THE ABANDONED SERVICE IS TO BE CUT OR CRIMPED, AND BURIED A MINIMUM OF 3 FEET BELOW GRADE.
- ALL EXISTING UTILITIES IMPACTED BY CONSTRUCTION SHALL BE ADJUSTED TO FINISHED GRADE, IN ACCORDANCE WITH PVC REQUIREMENTS.
- ALL WORK ON PVC WATER UTILITIES (MAINS, LATERALS, ETC) SHALL BE PERFORMED BY A LICENSED UTILITY CONTRACTOR. THE FAYETTEVILLE PUBLIC WORKS COMMISSION SHALL OBSERVE AND APPROVE ALL WORK ON PVC WATER UTILITIES. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH PVC REQUIREMENTS.
- SEPARATION REQUIREMENTS:
 - CROSSING WATER MAIN UNDER A SEWER:** WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS UNDER A SEWER MAIN/LATERAL BOTH THE WATER MAIN AND THE SEWER MAIN/LATERAL SHALL BE DUCTILE IRON IN ACCORDANCE WITH FAYVC REQUIREMENTS. A FULL JOINT OF DUCTILE IRON PIPE SHALL BE INSTALLED ON THE WATER MAIN CENTERED AT THE POINT OF CROSSING.

- CROSSING STORM DRAINAGE LINES:** A MINIMUM OF 18-INCHES OF VERTICAL CLEARANCE SHALL BE MAINTAINED BETWEEN A WATER LINE CROSSING OVER A STORM DRAINAGE LINE UNLESS DUCTILE IRON PIPE IS USED. IN ADDITION, THREE AND A HALF (3.5) FEET OF COVER MUST BE MAINTAINED OVER THE WATER MAIN OR IT SHALL BE DUCTILE IRON. IF DUCTILE IRON PIPE IS USED THEN TWO AN HALF (2.5) FEET OF COVER MUST BE MAINTAINED OVER THE WATER MAIN AND A MINIMUM OF 18-INCHES OF VERTICAL CLEARANCE SHALL BE MAINTAINED BETWEEN THE WATER MAIN AND THE STORM DRAINAGE LINE. WHERE A WATER MAIN CROSSES UNDER A STORM DRAINAGE LINE, THE MINIMUM OF EIGHTEEN (18) INCHES OF VERTICAL SEPARATION SHALL BE MAINTAINED AND THE WATER MAIN SHALL BE DUCTILE IRON FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE CROSSING.
 - WATER OUTAGES:** THE CONTRACTOR SHALL SCHEDULE A COORDINATION MEETING WITH THE PVC PROJECT COORDINATOR AND PROJECT ENGINEER A MINIMUM OF THREE (3) WORKING DAYS PRIOR TO ANY PLANNED WATER OUTAGE. THE COORDINATION MEETING SHALL BE CONDUCTED PRIOR TO ANY NOTICES BEING ISSUED. ADDITIONALLY, THE CONTRACTOR SHALL LOCATE (VERTICALLY AND HORIZONTALLY) ANY UTILITIES WITHIN THE WORK AREA, IN ACCORDANCE WITH THESE CONTRACT DOCUMENTS. THE LOCATIONS OF ALL UTILITIES WITHIN THE WORK AREA SHALL BE DETERMINED PRIOR TO THE COORDINATION MEETING. ANY CONFLICTS WITH THE REQUIRED WORK AND THE EXISTING UTILITIES SHALL BE IDENTIFIED AND A PLAN FOR RESOLVING ANY CONFLICTS SHALL BE PRESENTED. THE PURPOSE OF THIS COORDINATION MEETING IS TO ENSURE THAT THE CONTRACTOR HAS A GOOD UNDERSTANDING OF THE REQUIREMENTS RELATED TO THE PENDING OUTAGE, VERIFY THAT THERE ARE NO UTILITY CONFLICTS THAT WILL PREVENT THE WORK FROM BEING COMPLETED. ALL EQUIPMENT IS IN GOOD WORKING ORDER. ALL EQUIPMENT IS FUNCTIONAL. ALL MATERIALS ARE ON SITE. ALL NECESSARY TOOLS ARE ON SITE. DISCUSS ANY NECESSARY CONTINGENCY PLANS AND ANY OTHER ITEMS NECESSARY TO ENSURE THAT THE FAYETTEVILLE PUBLIC WORKS COMMISSION HAS CONFIDENCE THAT THE WORK CAN BE ACCOMPLISHED WITHIN THE GIVEN TIME PERIOD. SHOULD, FOR ANY REASON, THE FAYETTEVILLE PUBLIC WORKS COMMISSION DEEM THAT THE CONTRACTOR IS NOT PREPARED FOR THE PROPOSED OUTAGE, THE OUTAGE NOTIFICATIONS WILL NOT BE DISTRIBUTED AND THE OUTAGE SHALL BE POSTPONED A MINIMUM OF TWO (2) WEEKS. THE FAYETTEVILLE PUBLIC WORKS COMMISSION WILL PROVIDE WRITTEN NOTIFICATION TO THE CONTRACTOR OF THIS DECISION. NO ADDITIONAL CONTRACT TIME WILL BE GRANTED FOR THIS DELAY.
- ONCE THE WATER OUTAGE NOTIFICATIONS HAVE BEEN ISSUED, A FOLLOW-UP COORDINATION MEETING WITH THE PVC PROJECT COORDINATOR AND PROJECT ENGINEER SHALL BE HELD A MINIMUM OF 24 HOURS PRIOR TO THE SCHEDULED PURPOSE OF THE MEETING IS TO VERIFY THAT THE CONTRACTOR IS PREPARED TO PROCEED WITH THE OUTAGE, AND THAT ALL EQUIPMENT, MATERIALS, TOOLS AND ALL OTHER INCIDENTALS ARE ON THE PROJECT SITE AND FUNCTIONING. IF FOR ANY REASON THE FAYETTEVILLE PUBLIC WORKS COMMISSION DEEMS THAT THE CONTRACTOR IS NOT PREPARED, THE OUTAGE SHALL BE POSTPONED AND ALL CUSTOMERS IMMEDIATELY NOTICED OF THE CANCELLATION. THE OUTAGE SHALL BE POSTPONED A MINIMUM OF TWO (2) WEEKS. NO ADDITIONAL CONTRACT TIME WILL BE GRANTED FOR THIS DELAY.
- THE CONTRACTOR SHALL COMPLETE THE REQUIRED WORK AND RESTORE WATER SERVICE WITHIN THE GIVEN TIME PERIOD FOR THE OUTAGE. IF THE FAYVC PROJECT COORDINATOR DETERMINES THAT THE CONTRACTOR WILL NOT RESTORE WATER SERVICE WITHIN THE APPROVED TIMEFRAME, THE FAYVC PROJECT COORDINATOR WILL DIRECT THE CONTRACTOR ON HOW TO RESTORE WATER SERVICE. THE CONTRACTOR SHALL ADHERE TO ALL INSTRUCTIONS GIVEN BY THE PVC PROJECT COORDINATOR.
- THE PVC PROJECT COORDINATOR AND/OR PROJECT ENGINEER RESERVE THE RIGHT TO CANCEL OR POSTPONE THE OUTAGE AT ANY GIVEN TIME, IF DEEMED NECESSARY.

WATER UTILITY NOTES		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO. DATE REVISION		
SHEET NO. 1 OF 2	DWG. NO. W.1 DATE: JULY 01, 2021	DWG. BY: FAYPWC APPROVED BY: J.E.G.	WATER RESOURCES ENGINEERING DEPARTMENT	1	07/01/18	ADDED NOTE 6
				2	01/01/18	ADDED NOTES 6, 8
				3	06/01/21	ADDED NOTES 1-7 AND RENUMBERED

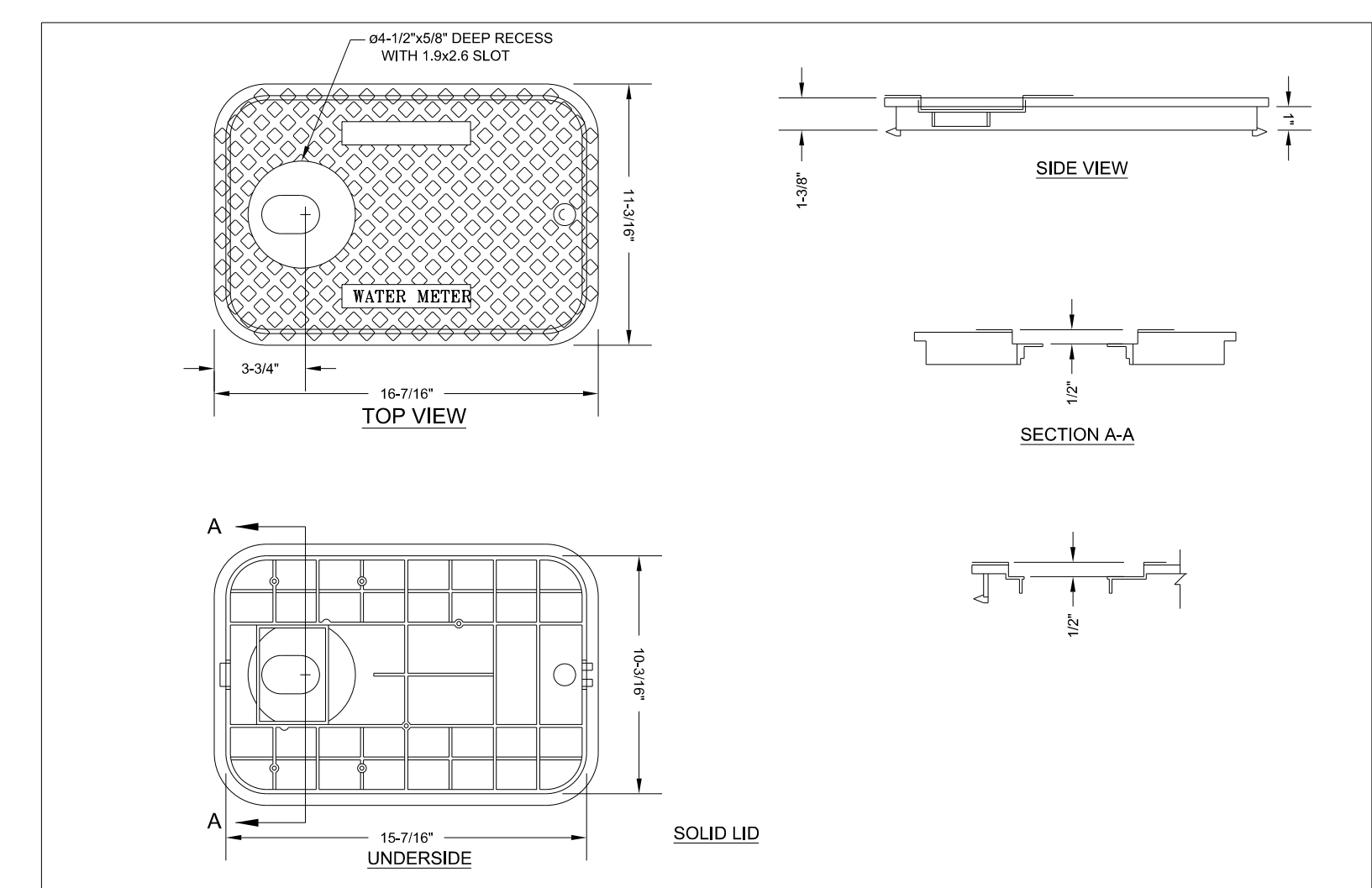
WATER UTILITY NOTES		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO. DATE REVISION		
SHEET NO. 2 OF 2	DWG. NO. W.1 DATE: JULY 01, 2021	DWG. BY: FAYPWC APPROVED BY: J.E.G.	WATER RESOURCES ENGINEERING DEPARTMENT	1	07/01/18	ADDED NOTE 6
				2	01/01/18	ADDED NOTES 6, 8
				3	06/01/21	ADDED NOTES 1-7 AND RENUMBERED

- 1" SPLIT WATER SERVICE LATERAL NOTES**
- ALL MATERIALS SHALL BE APPROVED BY FAYPWC.
 - SERVICE LATERAL SIZE 1" IPS POLYETHYLENE UNLESS OTHERWISE SPECIFIED.
 - SERVICE LATERAL INSTALLATION SHALL BE APPROVED BY FAYPWC.
 - WATER SERVICE LOCK VALVE TO BE LOCATED 18" FROM SANITARY SEWER CLEANOUT STACK WHEN INSTALLED IN SAME DITCH.
 - WHEN INSTALLED IN A PAVED AREA, METER BOX TO BE SET 1/4" ABOVE FINISHED PAVEMENT GRADES AND PAVEMENT FEATHERED TO TOP OF BOX TO PROVIDE DRAINAGE AWAY FROM BOX.
 - COMPOSITE METER BOXES SHALL BE USED IN TRAFFIC AREAS (SEE FAYPWC DETAIL W.4B).
 - INSTALL SOLID CONCRETE BRICK BASE WITH NO GAPS. DO NOT LAY BRICK ON PIPE. SEE INSET "A".
 - WHERE ASPHALT CURB OR STRIP PAVEMENT EXISTS, THE LOCATION OF THE METER BOX SHALL BE AS DIRECTED BY FAYPWC REPRESENTATIVE.
 - THE DISTANCE FROM TOP OF LOCK VALVE OPERATING STEM TO TOP OF BOX SHALL BE 8" MINIMUM TO 10" MAXIMUM.
 - RESIDENTIAL METER BOX SHALL BE SET 18" FROM RIGHT-OF-WAY TO CENTERLINE OF METER BOX PERPENDICULAR TO THE RIGHT-OF-WAY.
 - COMMERCIAL METER BOX LOCATION SHALL BE AS APPROVED. (NO METER TO BE INSTALLED LESS THAN 5' FROM BUILDING TO EDGE OF BOX).
 - LATERAL SHALL BE CENTERED ON LOT UNLESS OTHERWISE APPROVED BY FAYPWC.
 - LATERAL SHALL NOT BE BACK FILLED UNTIL INSPECTED BY FAYPWC PROJECT COORDINATOR.
 - WATER MAIN AND LATERAL SHALL PASS HYDROSTATIC (200PSI) AND STERILIZATION TESTS.
 - SHOULD IT BE NECESSARY TO CRIMP THE WATER SERVICE LATERAL, A FULL CIRCLE REPAIR CLAMP SHALL BE PLACED ON THE CRIMPED AREA.

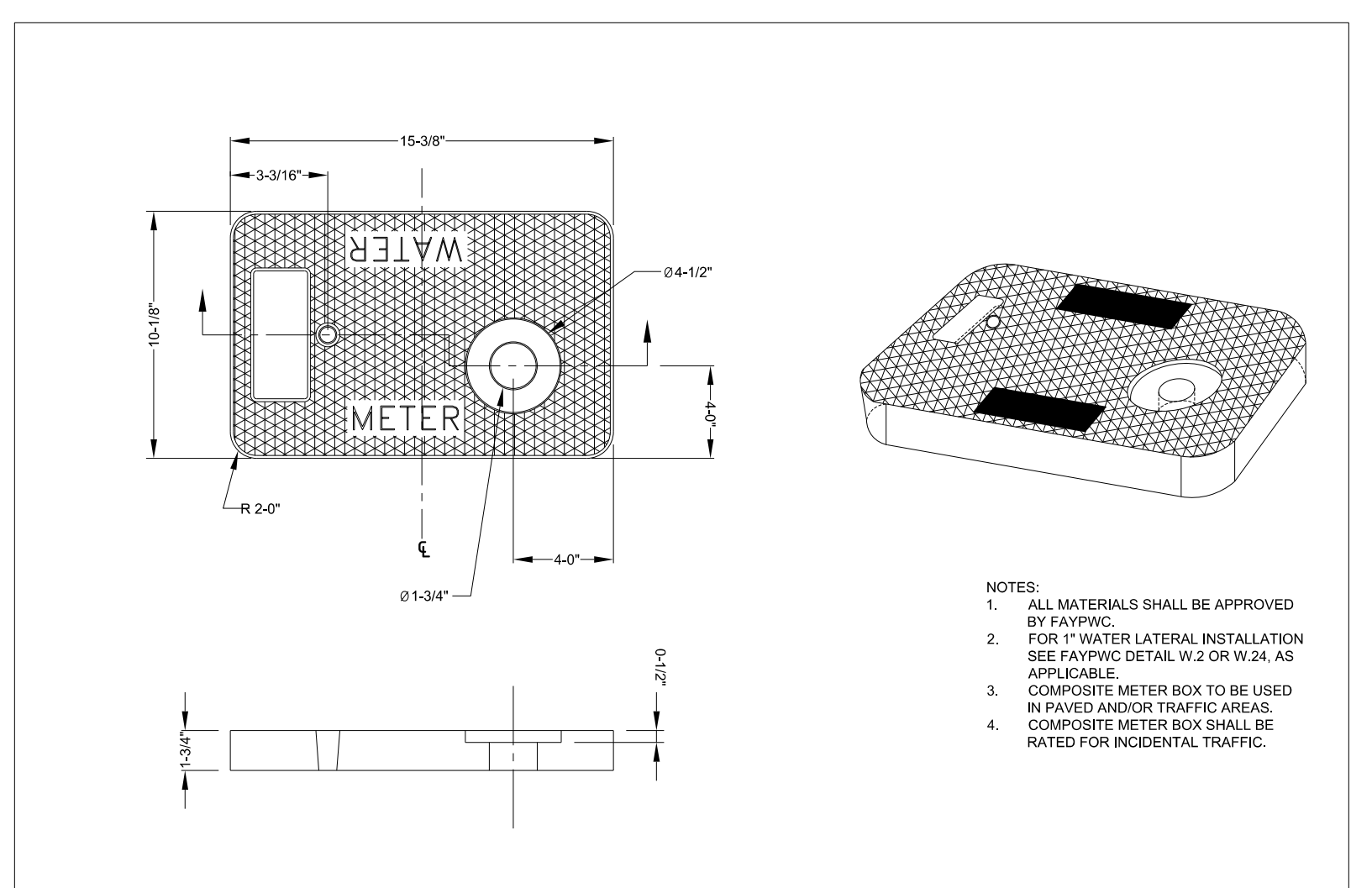


1" SPLIT WATER SERVICE LATERAL NOTES		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO. DATE REVISION		
SHEET NO. 2 OF 2	DWG. NO. W.3B DATE: JULY 01, 2021	DWG. BY: FAYPWC APPROVED BY: J.E.G.	WATER RESOURCES ENGINEERING DEPARTMENT	1	07/08	ADDED FRONT VIEW AND MOVED NOTES TO SHEET 2
				2	02/16	UPDATED NOTES

1-INCH METER BOX DETAILS N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO. DATE REVISION		
SHEET NO. 1 OF 2	DWG. NO. W.4 DATE: JULY 01, 2021	DWG. BY: FAYPWC APPROVED BY: J.E.G.	WATER RESOURCES ENGINEERING DEPARTMENT	1	03/10	CHANGED BOX DIMENSIONS



1-INCH METER BOX LID N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO. DATE REVISION		
SHEET NO. 2 OF 2	DWG. NO. W.4 DATE: JULY 01, 2021	DWG. BY: FAYPWC APPROVED BY: J.E.G.	WATER RESOURCES ENGINEERING DEPARTMENT	1	07/07	REVISED LID
				1	03/10	CHANGED BOX AND LID DIMENSIONS
				2	01/15	REVISED LID

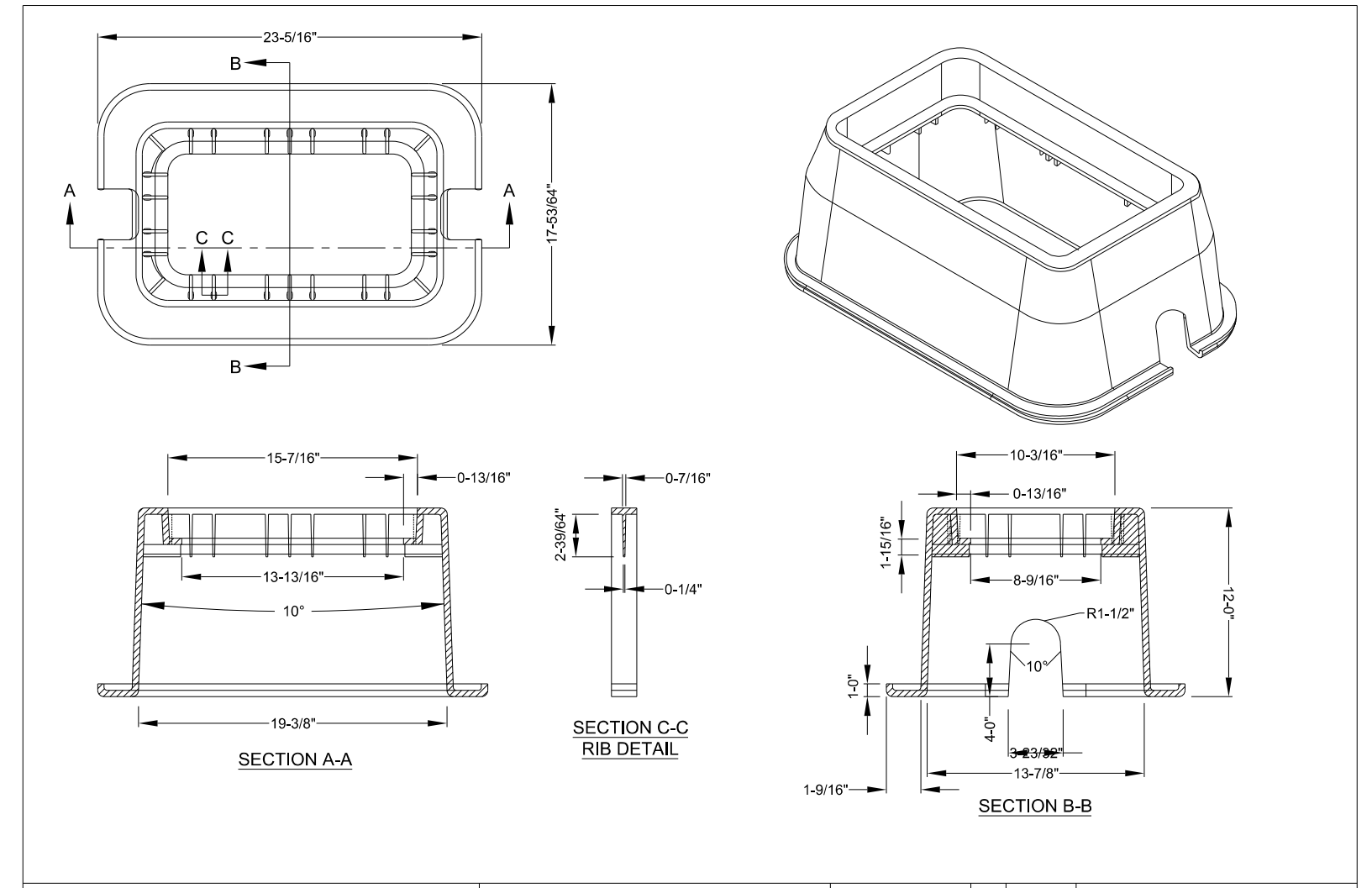


1-INCH COMPOSITE METER BOX & COVER N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO. DATE REVISION		
SHEET NO. 1 OF 2	DWG. NO. W.4B DATE: JULY 01, 2021	DWG. BY: FAYPWC APPROVED BY: J.E.G.	WATER RESOURCES ENGINEERING DEPARTMENT	1	03/10	CHANGED BOX & LID DIMENSIONS
				2	12/15	REPLACED CI BOX w/ COMPOSITE BOX

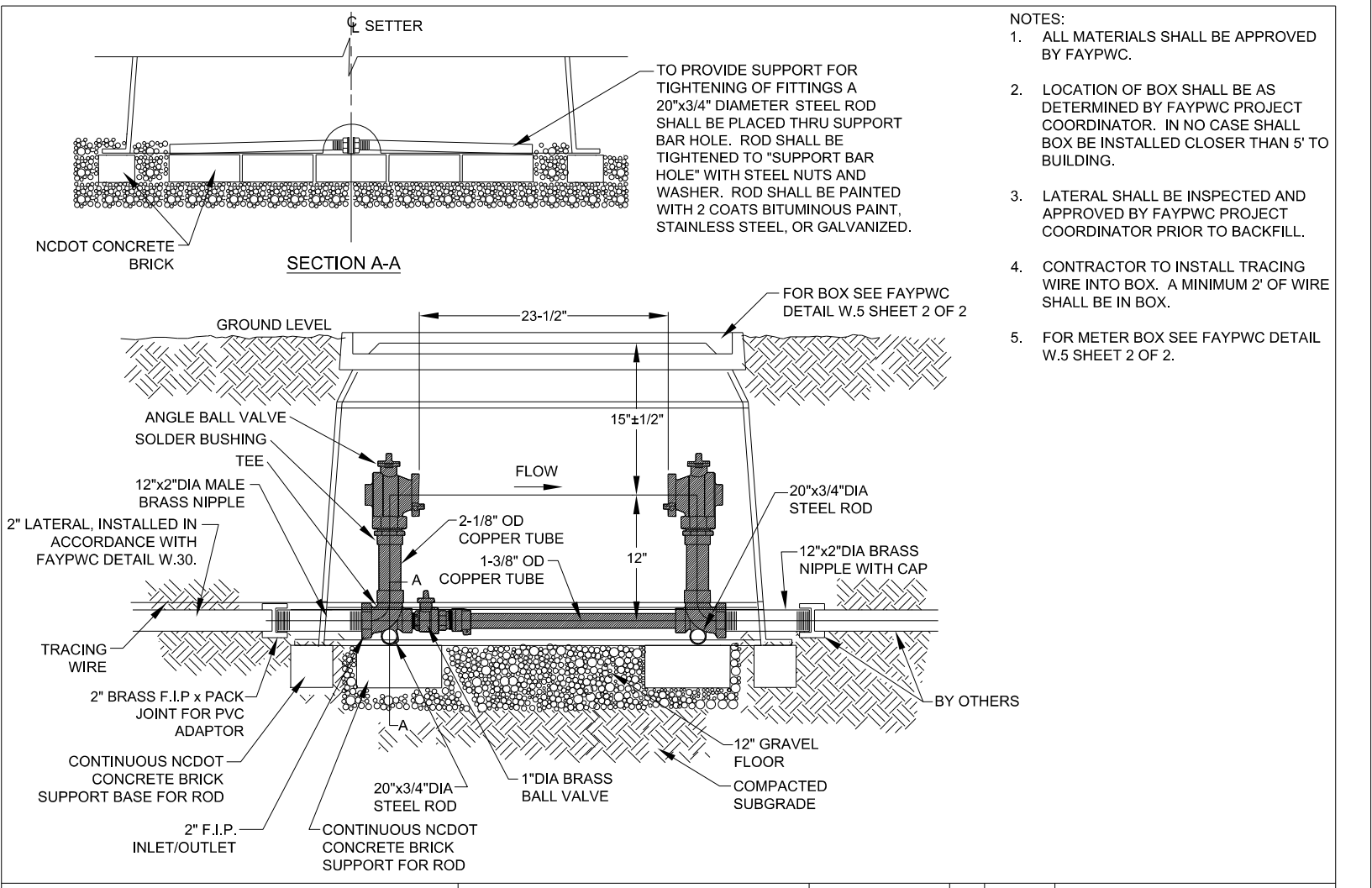
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 5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-5798A	UC-3C
DESIGNED BY: AAA	
DRAWN BY: KNS	
CHECKED BY: BRO	
APPROVED BY: BRO	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

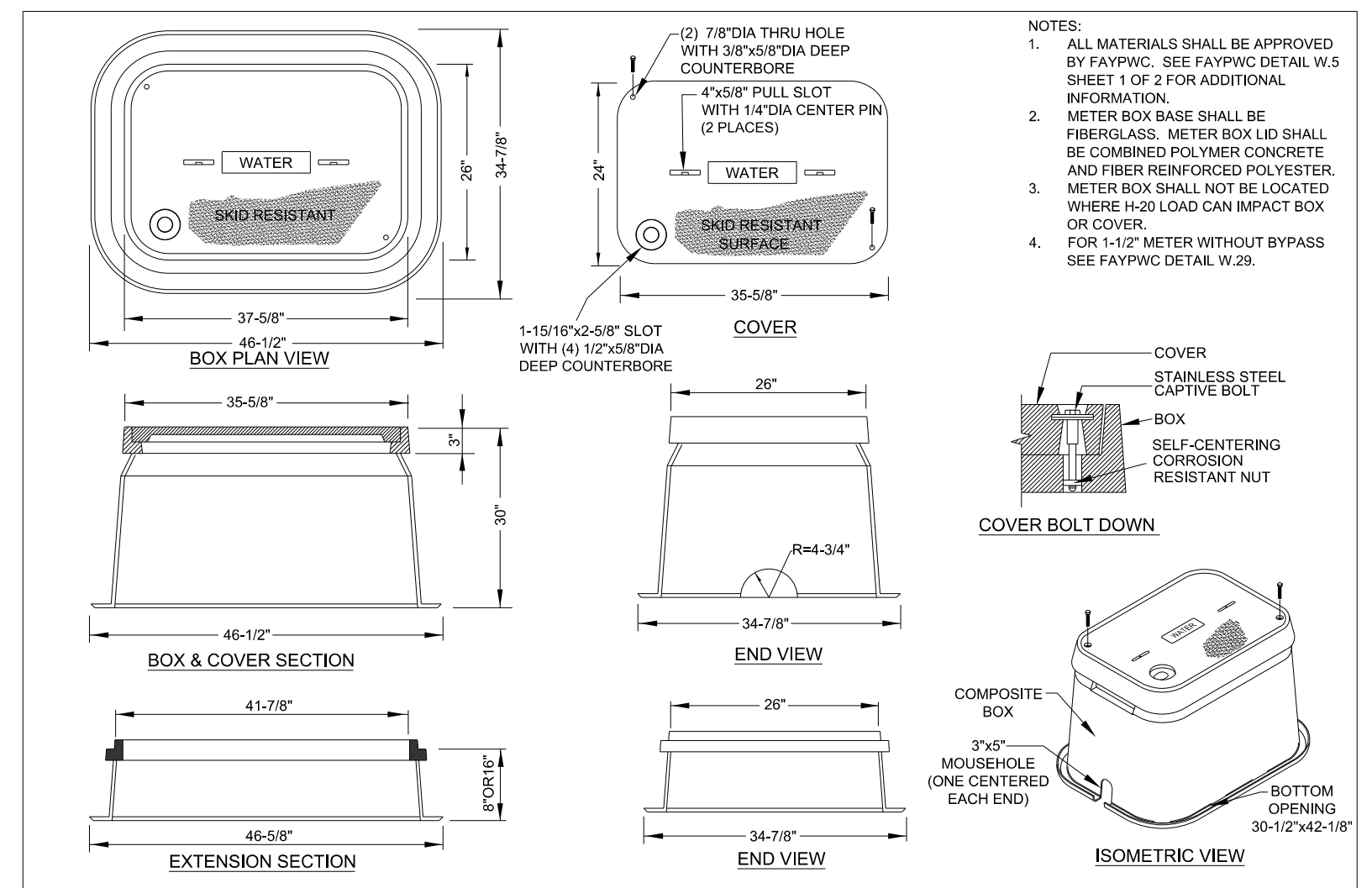
UTILITY CONSTRUCTION
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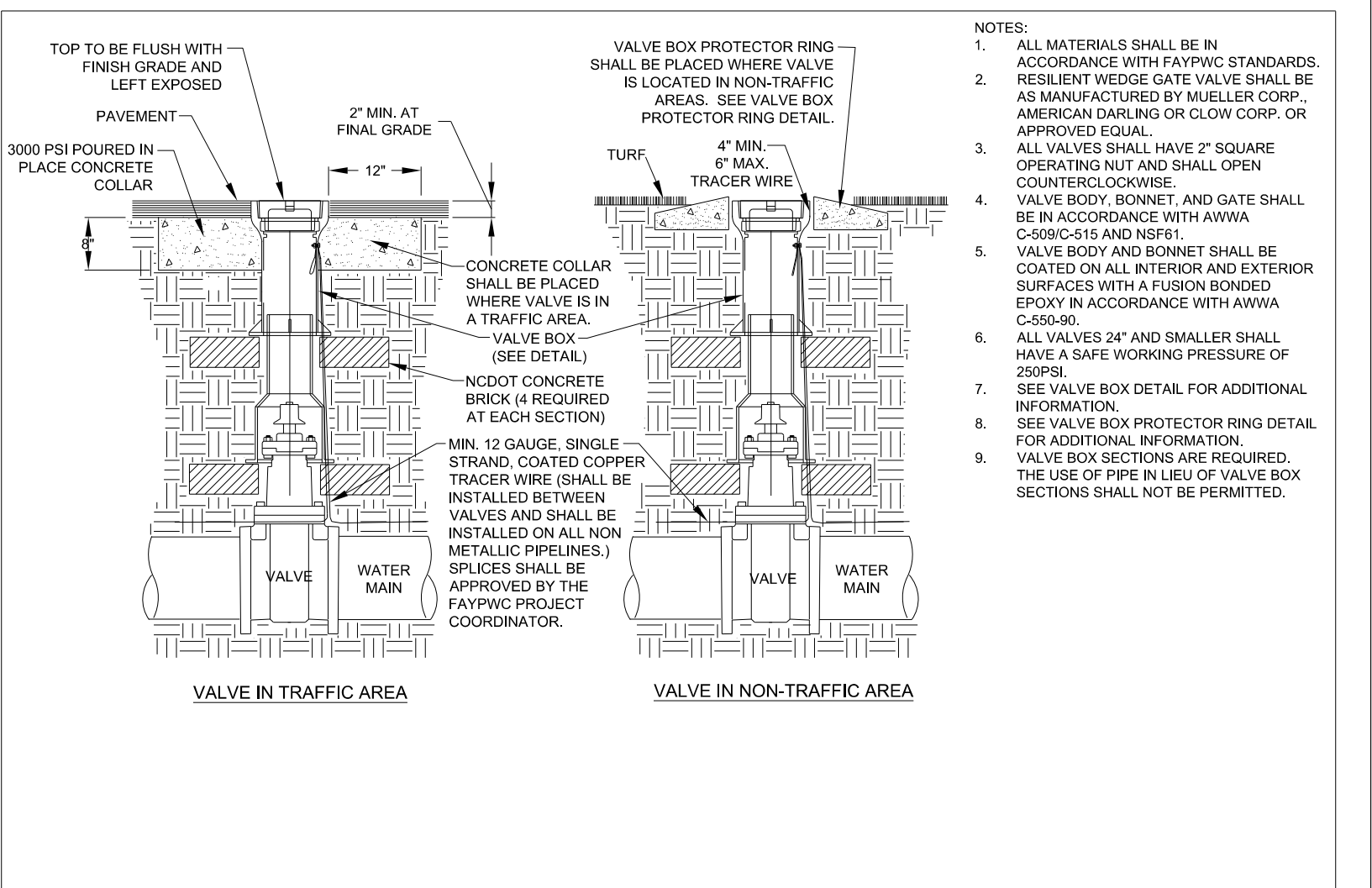
1-INCH COMPOSITE METER BOX & COVER N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.	NO. DATE REVISION
SHEET NO. 2 OF 2			1 12/15 REPLACED CI BOX WITH COMPOSITE BOX
DWG. NO. W.4B	DWG. BY: FAYPWC		
DATE: JULY 01, 2021	APPROVED BY: J.E.G.	WATER RESOURCES ENGINEERING DEPARTMENT	



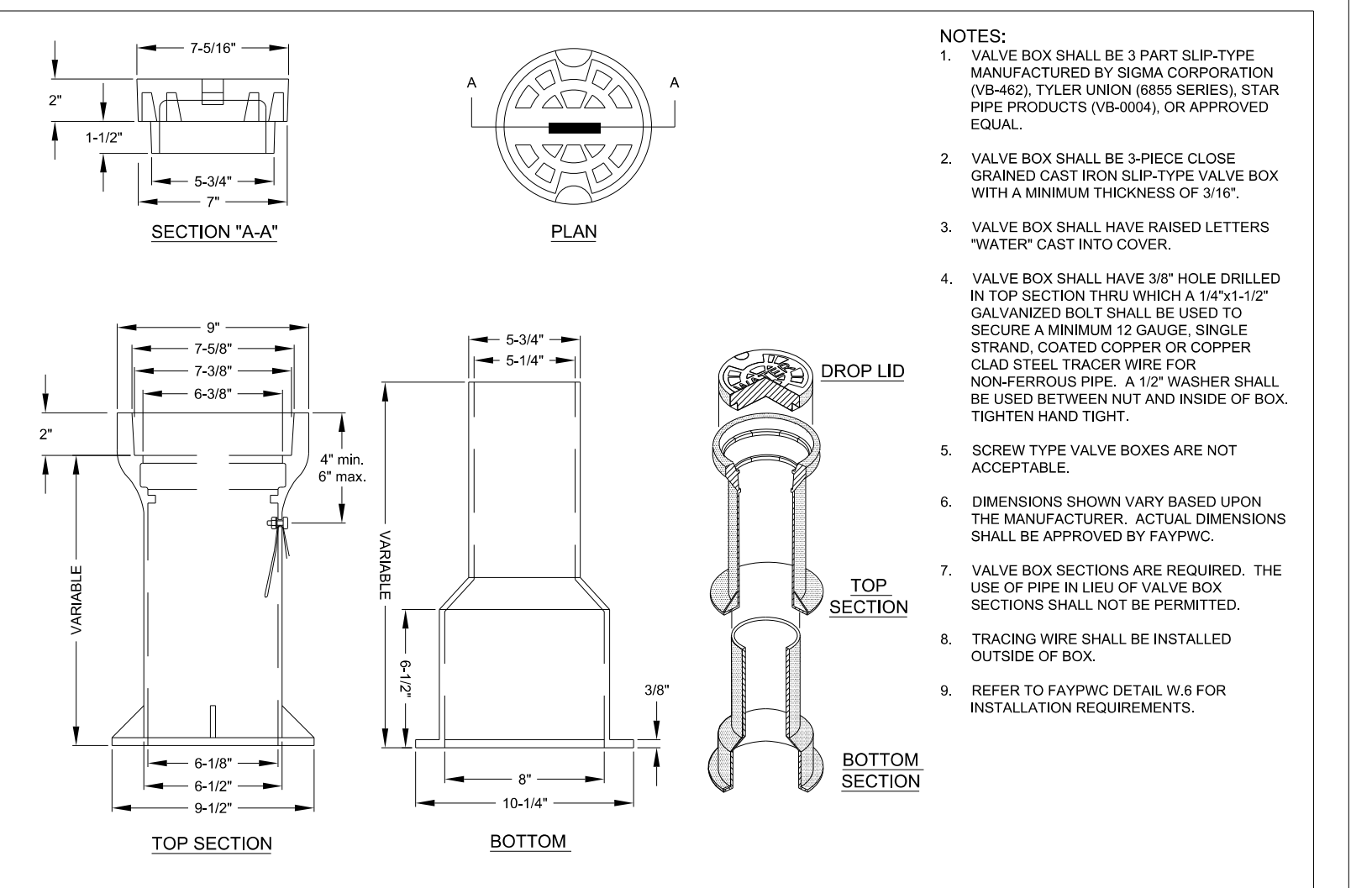
2" COPPER SETTER WITH BY-PASS 23-1/2" METER SPACING N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.	NO. DATE REVISION
SHEET NO. 1 OF 2			1 07/13 REVISED, UPDATED NOTES
DWG. NO. W.5	DWG. BY: FAYPWC		2 07/17 UPDATED NOTES
DATE: JULY 01, 2021	APPROVED BY: J.E.G.	WATER RESOURCES ENGINEERING DEPARTMENT	



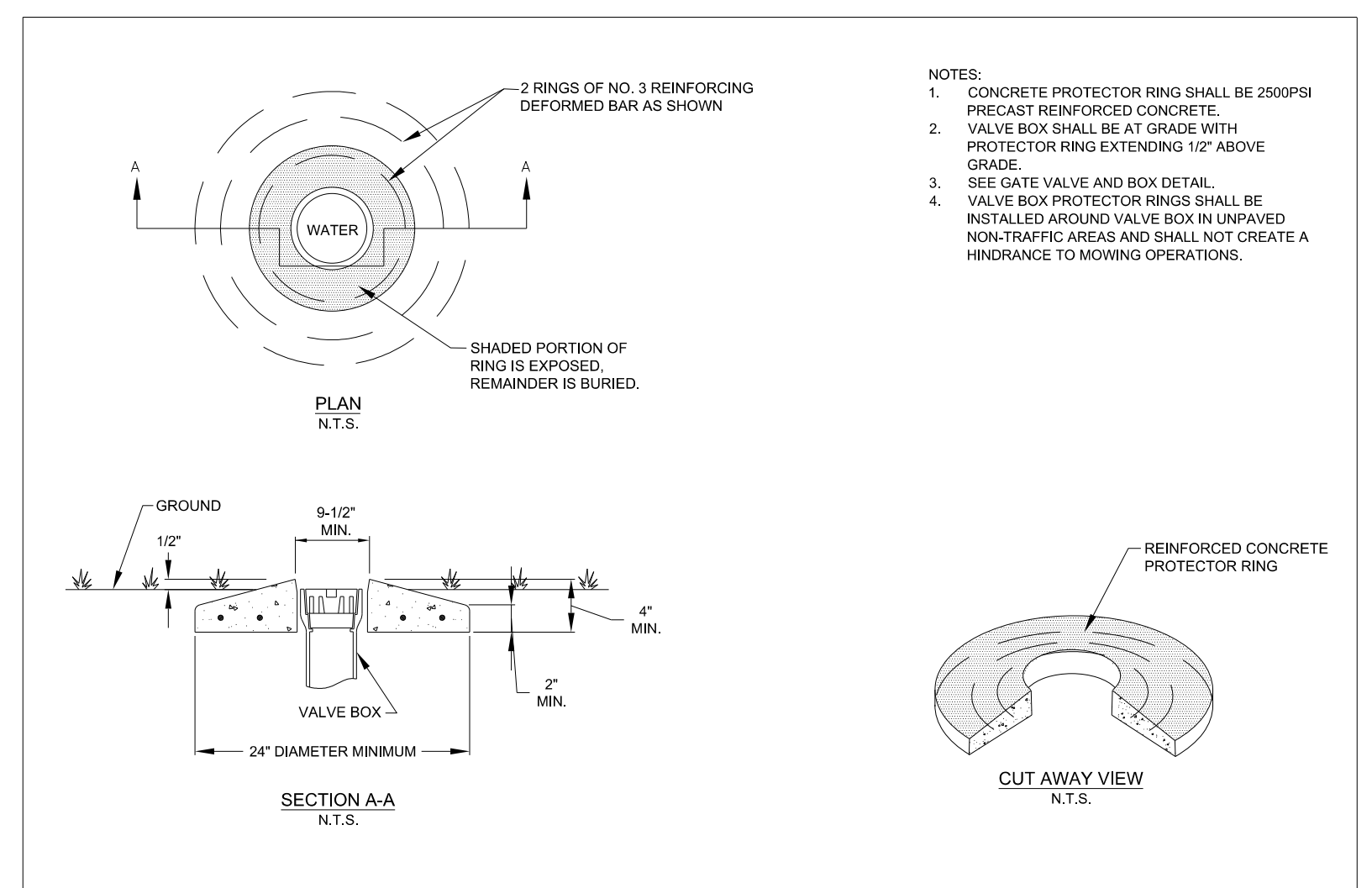
1-1/2" AND 2" BY-PASS METER BOX N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.	NO. DATE REVISION
SHEET NO. 2 OF 2			1 12/15 REVISED LID
DWG. NO. W.5	DWG. BY: FAYPWC		
DATE: JULY 01, 2021	APPROVED BY: J.E.G.	WATER RESOURCES ENGINEERING DEPARTMENT	



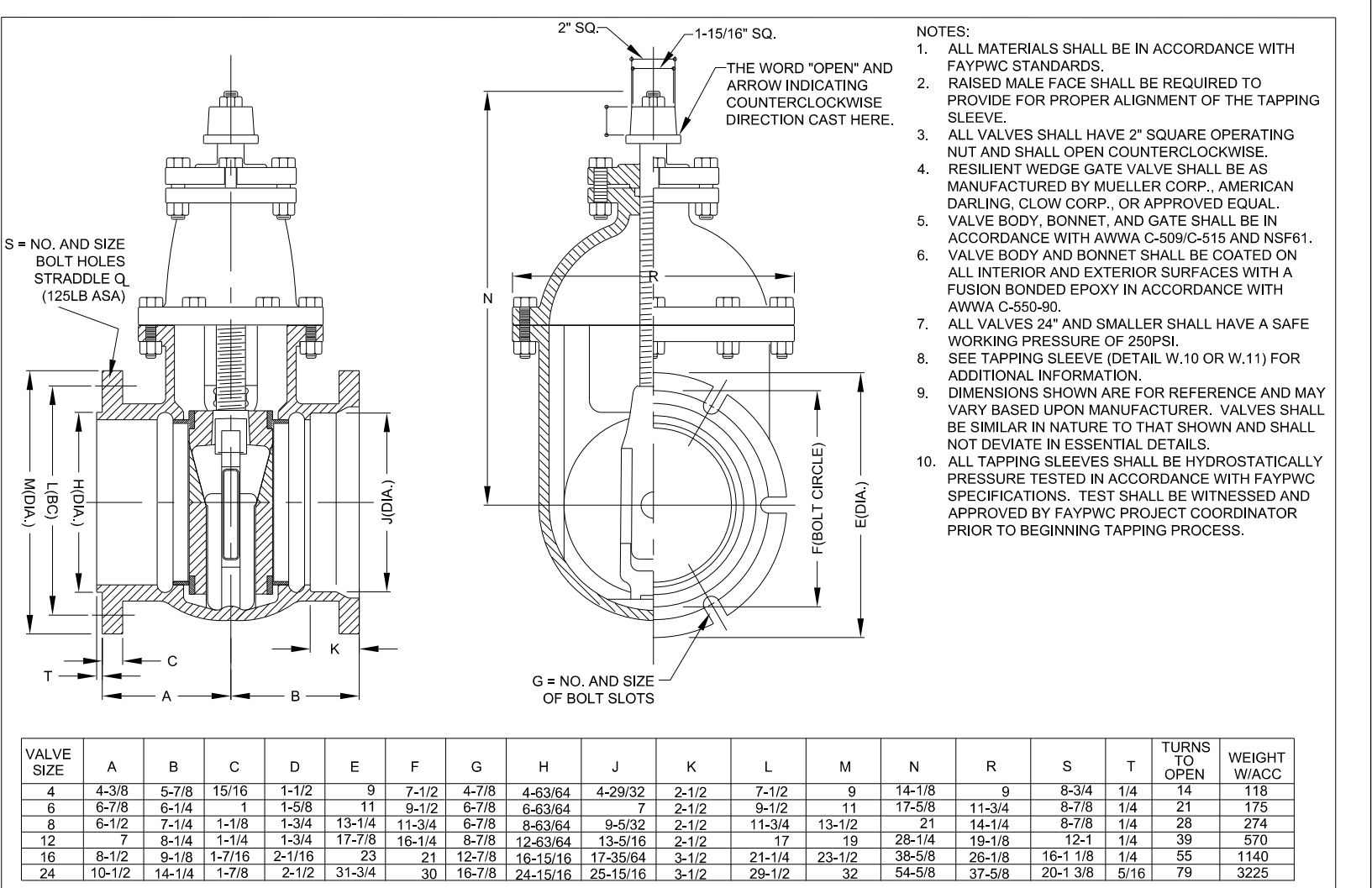
GATE VALVE N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.	NO. DATE REVISION
SHEET NO. 1 OF 1			1 8/06 ADDED NOTE NO. 9
DWG. NO. W.6	DWG. BY: FAYPWC		2 7/09 CLARIFIED NOTES
DATE: JULY 01, 2021	APPROVED BY: J.E.G.	WATER RESOURCES ENGINEERING DEPARTMENT	



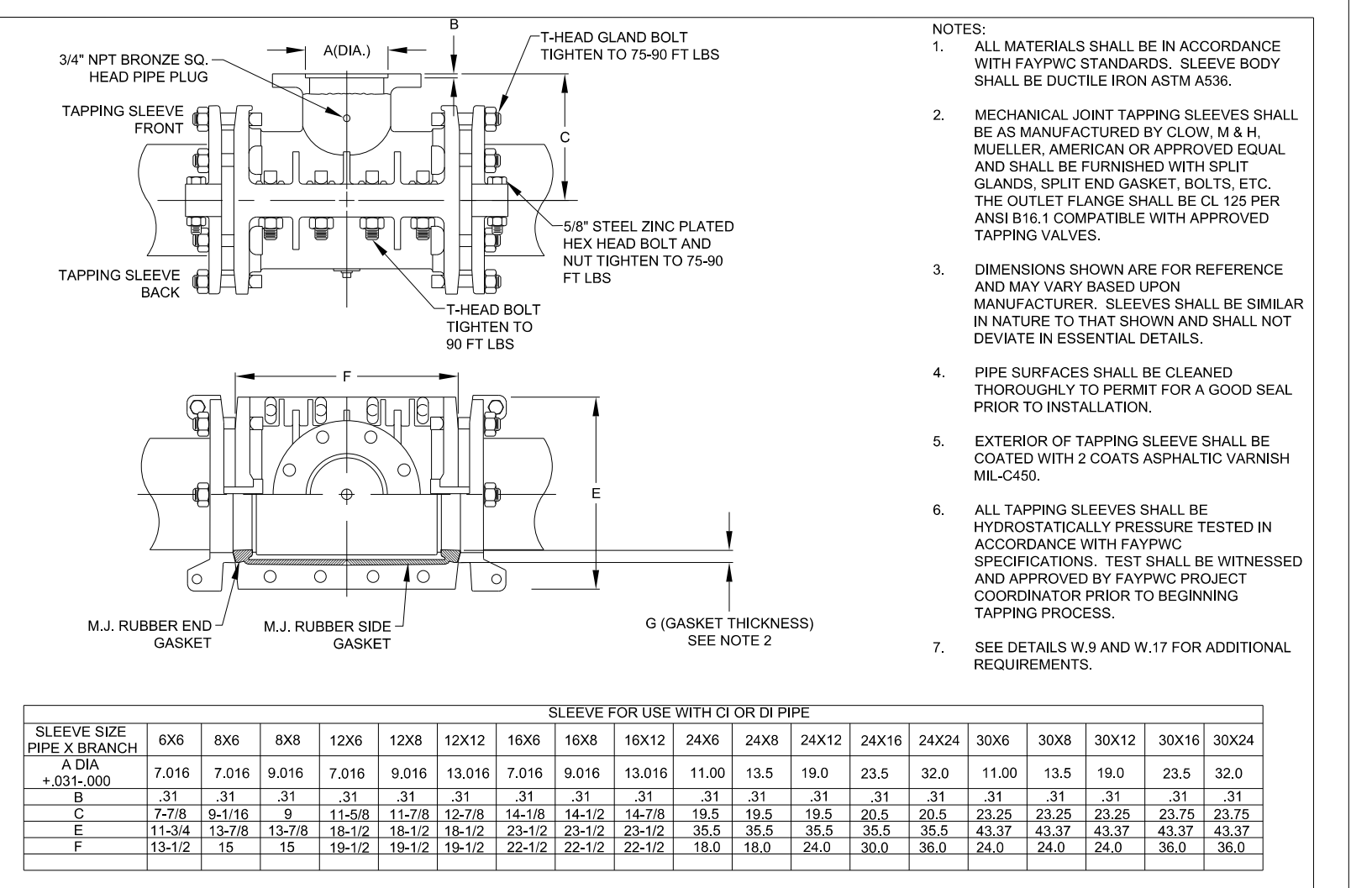
VALVE BOX N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.	NO. DATE REVISION
SHEET NO. 1 OF 1			1 07/09 ADDED NOTES 7, 8, AND CLARIFIED NOTES
DWG. NO. W.7	DWG. BY: FAYPWC		2 01/14 REVISED NOTES 1, 4, 6
DATE: JULY 01, 2021	APPROVED BY: J.E.G.	WATER RESOURCES ENGINEERING DEPARTMENT	



VALVE BOX PROTECTOR RING N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.	NO. DATE REVISION
SHEET NO. 1 OF 1			
DWG. NO. W.8	DWG. BY: FAYPWC		
DATE: JULY 01, 2021	APPROVED BY: J.E.G.	WATER RESOURCES ENGINEERING DEPARTMENT	



TAPPING VALVE N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.	NO. DATE REVISION
SHEET NO. 1 OF 1			1 07/09 ADDED NOTE 10, REVISED 4 AND 5
DWG. NO. W.9	DWG. BY: FAYPWC		2 07/13 REVISED NOTES 4, 8, 10
DATE: JULY 01, 2021	APPROVED BY: J.E.G.	WATER RESOURCES ENGINEERING DEPARTMENT	



DUCTILE IRON TAPPING SLEEVE N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.	NO. DATE REVISION
SHEET NO. 1 OF 1			1 07/09 REVISION NOTE 6 REMOVED NOTE 8
DWG. NO. W.10	DWG. BY: FAYPWC		2 07/13 REVISED NOTES 6, 7
DATE: JULY 01, 2021	APPROVED BY: J.E.G.	WATER RESOURCES ENGINEERING DEPARTMENT	

VALVE SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	R	S	T	URNS OPEN	WEIGHT W/ACC
4	4-38	5-7/8	15/16	1-1/2	9	7-1/2	4-7/8	4-5/8	4-29/32	2-1/2	7-1/2	9	14-1/8	9	8-3/4	14	15	118
6	6-7/8	6-1/4	1	1-5/8	11	9-1/2	6-7/8	6-5/8	6-3/4	2-1/2	9-1/2	11	17-5/8	11-3/4	8-7/8	14	21	175
8	8-1/2	7-1/4	1-1/8	1-3/4	13-1/4	11-3/4	8-7/8	8-5/8	8-5/8	2-1/2	11-3/4	13-1/2	21	14-1/2	9-7/8	14	28	234
12	12	8-1/4	1-1/4	1-3/4	17-7/8	16-1/4	8-7/8	12-6/8	13-5/16	2-1/2	17	19	28-1/4	19-1/4	8-7/8	14	39	570
16	16	8-1/2	1-1/8	1-7/8	2-1/8	23	21	12-7/8	18-1/2	17-3/64	3-1/2	21-1/4	23-1/2	28-5/8	16-1-1/8	14	56	1160
24	15-1/2	14-1/4	1-7/8	2-1/2	31-3/4	30	16-7/8	24-1/8	25-15/16	3-1/2	28-1/2	30	54-5/8	37-5/8	16-1-3/8	16	79	3225

SLEEVE SIZE PIPE X BRANCH	6X6	8X8	8X8	12X8	12X8	12X12	16X8	16X8	15X12	24X8	24X8	24X12	24X16	24X24	30X6	30X8	30X12	30X16	30X24
6X6	7.016	7.016	9.016	7.016	9.016	13.016	7.016	9.016	13.016	11.000	13.5	19.0	23.5	32.0	11.000	13.5	19.0	23.5	32.0
+031.000	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
A	7.7	8.116	9	11-5/8	11-7/8	12-7/8	14-1/8	14-1/2	14-7/8	19.5	19.5	19.5	20.5	20.5	23.25	23.25	23.25	23.75	23.75
B	11-1/4	13-7/8	13-7/8	18-1/2	18-1/2	23-1/2	23-1/2	23-1/2	23-1/2	35.5	35.5	35.5	35.5	35.5	43.37	43.37	43.37	43.37	43.37
C	13-1/2	15	15	19-1/2	19-1/2	25-1/2	25-1/2	25-1/2	25-1/2	39.0	39.0	39.0	39.0	39.0	47.25	47.25	47.25	47.25	47.25

07-DEC-2021 06:27 Paramonental\Fayetteville Public Works Commission\2019061600RA - U-5798 Gills Hill Road Utility Coordination\CADD\Microstation\Utilities\Engineering\UC\Proj\U-5798A_ut.dtl UC03C_psh.dgn 5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-5798A	UC-3F
DESIGNED BY: AAA	
DRAWN BY: KNS	
CHECKED BY: BRO	
APPROVED BY: BRO	
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:

- ALL PIPE AND FITTINGS SHALL BE APPROVED BY FAYPWC. CONTRACTOR TO COORDINATE NECESSARY OUTAGES WITH FAYPWC AND AFFECTED CUSTOMERS. MINIMUM 48 HOUR NOTICE REQUIRED.
- NEW WATER MAIN TO BE SWABBED WITH A CHLORINE SOLUTION AND FLUSHED PRIOR TO PLACING INTO SERVICE.
- ALL NEW FITTINGS AND PIPE TO BE RESTRAINED UTILIZING IRON MJ RESTRAINT RETAINING GLANDS.
- ALL PIPES TO BE DUCTILE IRON.
- FAYPWC PROJECT COORDINATOR TO BE PRESENT DURING WORK.
- BACKFILL AND COMPACT IN ACCORDANCE WITH THE APPLICABLE AGENCY REQUIREMENTS.
- PROVIDE STONE BEDDING (NO. 5 OR NO. 57 STONE) TO SUPPORT REPAIRED WATER MAIN, AS APPROVED BY FAYPWC PROJECT COORDINATOR.
- MJ RESTRAINTS ARE NOT ALLOWED ON PVC PIPE. DIMENSIONS ARE GIVEN AS GENERAL GUIDANCE. EXACT DIMENSIONS ARE SUBJECT TO CHANGE BASED ON FIELD CONDITIONS AND AS DIRECTED BY FAYPWC.
- ALL MATERIALS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF FAYPWC.
- PIPE REPAIR SHALL EXHIBIT STRAIGHT HORIZONTAL AND VERTICAL ALIGNMENT. DEFLECTIONS OF HORIZONTAL AND VERTICAL ALIGNMENT ARE NOT ACCEPTABLE.
- THERE SHALL BE NO MORE THAN 1/4" SPACE BETWEEN THE EXISTING WATER MAIN AND THE REPLACEMENT PIPE AT EACH END. DAMAGED SECTION SHALL BE CUT OUT WITHOUT DAMAGING THE PIPE TO REMAIN.
- PIPE REPAIRS ON MATERIALS OTHER THAN SHOWN, SHALL BE AS DIRECTED BY FAYPWC.
- THE MINIMUM LENGTH OF REPAIR SHALL BE 5 FEET, UNLESS OTHERWISE DIRECTED BY FAYPWC.

LONG PATTERN MJ SLEEVE (12" MIN.) RESTRAINTS WITH IRON MURESTRANT RETAINING GLANDS MURESTRANT COUPLING (12" MIN.) ON ASBESTOS-CEMENT PIPE.

MIN. 5" DI PIPE OR AS DIRECTED BY FAYPWC

LONG PATTERN MJ SLEEVE (12" MIN.) RESTRAINT RETAINING GLANDS MURESTRANT COUPLING (12" MIN.) ON ASBESTOS-CEMENT PIPE.

PIPE REPAIR DETAIL		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION
N.T.S.						
SHEET NO. 1 OF 1	DWG. NO. W.31	DWG. BY: FAYPWC	APPROVED BY: J.E.G.	W31-PIPE-REPAIR-DETAIL.dwg		

SEAL EACH END OF CASING WITH SOLID CONCRETE BRICK AND 1:3 MORTAR 12" MINIMUM LENGTH.

CARBON STEEL CARRIER PIPE BRACE SHALL BE PLACED 3' PRIOR TO AND 3' AFTER EACH JOINT OF DUCTILE IRON CARRIER PIPE. (SEE DETAIL BORE UNDER ROADWAYS/RAILROADS SHEET 2 OF 2 FOR SPECIFIC REQUIREMENTS)

STEEL CASING SIZED AS INDICATED ON THE BORE SIZING CHART.

CARRIER PIPE SHALL BE DUCTILE IRON WITH PROPER EXTERIOR AND INTERIOR COATINGS.

COMPLETELY FILL VOID OUTSIDE OF CASING WITH 1:3 GROUT.

EACH SECTION OF ENCASEMENT PIPE SHALL BE BUTT-WELDED TO THE ADJACENT CASING PIPE.

NOTE:

- SEE DRAWING M.6 SHEET 2 OF 2 FOR ADDITIONAL INFORMATION.
- CARRIER PIPE FOR PRESSURE APPLICATIONS (WATER MAINS AND FORCE MAINS) SHALL HAVE FACTORY RESTRAINED JOINTS. CARRIER PIPE FOR GRAVITY SEWER SHALL HAVE RESTRAINED JOINTS AND MAY USE RESTRAINED GASKETS SUCH AS FIELD LOC. SURE STOP 350, GRIPPING OR APPROVED EQUAL.
- CARRIER PIPE SHALL BE CLASS 350 OR 250 FOR WATER, AND SHALL BE CLASS 50 FOR SEWER.

BORE UNDER ROADWAYS/RAILROADS		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION
N.T.S.						
SHEET NO. 1 OF 2	DWG. NO. M.6	DWG. BY: FAYPWC	APPROVED BY: J.E.G.	M6-BORE-ROAD-RAIL.dwg		

BORE SIZING CHART*

CARRIER PIPE SIZE	MIN. CASING SIZE	ROADWAYS MIN. WALL THICKNESS	RAILROADS MIN. WALL THICKNESS
4"	10"	0.185"	0.185"
6"	12"	0.25"	0.281"
8"	16"	0.25"	0.281"
12"	24"	0.312"	0.312"
16"	30"	0.312"	0.469"
18"	30"	0.312"	0.469"
24"	36"	0.375"	0.532"
30"	42"	0.500"	0.625"
36"	48"	0.500"	0.688"

*CONTRACTOR MAY SUBSTITUTE A LARGER SIZE CASING PIPE HAVING THE MINIMUM WALL THICKNESS SHOWN FOR SEWER MAINS. ALL ADDITIONAL COSTS SHALL BE INCLUDED IN THE NET PRICE BID FOR BORING AND JACKING.

NOTES:

- INSTALLATION SHALL BE DRY BORE AND JACKING OF SMOOTH WALL STEEL PIPE. JETTING OR WET BORING WITH WATER SHALL NOT BE ALLOWED.
- SEE BORE SIZING CHART FOR CARRIER PIPE SIZE AND STEEL CASING SIZE. MINIMUM DIAMETER AND WALL THICKNESS.
- CASING PIPE SHALL BE IN ACCORDANCE WITH ASTM A-53, GRADE B WITH A MINIMUM WELD STRENGTH OF 55,000 PSI. EACH END OF ENCASEMENT TO BE PLUGGED WITH BRICK. ALL VOIDS OUTSIDE THE CASING PIPE SHALL BE COMPLETELY FILLED WITH 1:3 PORTLAND CEMENT GROUT AT SURFICIENT PRESSURE TO INSURE NO SETTLEMENT OF ROADWAY/RAILROAD. METHOD OF GROUTING SHALL BE AS APPROVED BY THE PERMITTING AGENCY. IT IS RECOMMENDED THAT THE BORE BE ACCOMPLISHED BEFORE PIPE CONSTRUCTION BEGINS.
- THE BORING SHALL BE PERFORMED FROM "UPSTREAM" TO "DOWNSTREAM" DIRECTION MAINTAINING THE CRITICAL DOWNSTREAM INVERT ELEVATION. SHOULD THE BORE NOT BE ON GRADE, A REVISED PLAN SHALL BE SUBMITTED TO FAYPWC FOR APPROVAL.
- IF AN OBSTRUCTION IS ENCOUNTERED DURING THE BORING OPERATION, THE AUGER SHALL BE WITHDRAWN, THE EXCESS CASING PIPE CUT-OFF, CAPPED AND THE INTERIOR AND EXTERIOR VOIDS SHALL BE COMPLETELY FILLED WITH 1:3 PORTLAND CEMENT GROUT UNDER PRESSURE. NO SEPARATE PAYMENT FOR UNSUCCESSFUL BORING OPERATIONS SHALL BE MADE.
- CONTRACTOR SHALL FIELD ADJUST AND INSTALL PROPER PIPE BRACES TO ACCOMPLISH GRADE AND INVERTS AS SHOWN ON THE DRAWINGS.
- A MANUAL CONTROL STEERING HEAD OR OTHER GUIDANCE SYSTEM IS RECOMMENDED FOR BORES 30" DIAMETER AND/OR LARGER AND FOR BORES EXCEEDING 100' IN LENGTH OR AS SPECIFIED.
- SUBCONTRACTORS SHALL ADHERE TO ALL PERMIT REQUIREMENTS AND SHALL PROVIDE APPROVED INSURANCE CERTIFICATES AS REQUIRED.
- CONTRACTOR SHALL EXECUTE AND PERFORM ALL REQUIREMENTS AND CONDITIONS STIPULATED BY THE PERMITTING AGENCY.
- SEE DRAWING M.6 SHEET 2 OF 2 FOR ADDITIONAL INFORMATION. CARRIER PIPE FOR PRESSURE APPLICATIONS (WATER MAINS AND FORCE MAINS) SHALL HAVE FACTORY RESTRAINED JOINTS. CARRIER PIPE FOR GRAVITY SEWER SHALL HAVE RESTRAINED JOINTS AND MAY USE RESTRAINED GASKETS SUCH AS FIELD LOC. SURE STOP 350, GRIPPING OR APPROVED EQUAL.

SECTION "A-A" CARBON STEEL CARRIER PIPE BRACE

BORE UNDER ROADWAYS/RAILROADS		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION
N.T.S.						
SHEET NO. 2 OF 2	DWG. NO. M.6	DWG. BY: FAYPWC	APPROVED BY: J.E.G.	M6-BORE-ROAD-RAIL.dwg		

MINIMUM LENGTH OF BURIED PIPE BETWEEN CLOSED VALVE AND EXCAVATION FOR RESTRAINT

BASED ON MINIMUM TYPE 2 BEDDING IN SILT SOIL

Diameter (inches)	Depth of Cover (feet)	Length (feet)
16	3 - 3.99	221
16	4 - 5.99	173
16	6 - 7.99	120
16	8 - 9.99	92
12	≥ 10	75
12	3 - 3.99	174
12	4 - 5.99	135
12	6 - 7.99	93
12	8 - 9.99	71
12	≥ 10	57
10	3 - 3.99	149
10	4 - 5.99	115
10	6 - 7.99	79
10	8 - 9.99	60
10	≥ 10	49
8	3 - 3.99	123
8	4 - 5.99	95
8	6 - 7.99	65
8	8 - 9.99	49
8	≥ 10	40
6	3 - 3.99	99
6	4 - 5.99	73
6	6 - 7.99	50
6	8 - 9.99	38
6	≥ 10	31

ELEVATION - EXISTING

ELEVATION - PROPOSED

BACKFILLED AND COMPACTED EXCAVATION. PAYMENT SECTION LIMITED AS DEFINED IN CONTRACT DOCUMENTS.

VALVE REMOVAL WITH EXCAVATION		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION
N.T.S.						
SHEET NO. 1 OF 1	DWG. NO. M.15	DWG. BY: FAYPWC	APPROVED BY: J.E.G.	M15-VAL-REMOVAL.dwg		

GENERAL NOTES SANITARY SEWER UTILITY

- ALL SEWER MAINS, LATERALS, AND APPURTENANCES SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH FAYETTEVILLE PWC STANDARDS.
- CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
- CONSTRUCTION STAKING IS REQUIRED FOR ALL PVC WATER AND SEWER UTILITY INSTALLATIONS. CUT SHEETS, BORED AND SEALED BY A NC PLS. SHALL BE PROVIDED TO THE PWC WATER RESOURCES ENGINEERING DEPARTMENT AND THE CONTRACTOR IN ADVANCE OF CONSTRUCTION FOR PVC WATER AND SEWER UTILITIES.
- CONTRACTOR SHALL MAINTAIN A COPY OF THE BORED AND SEALED CUT SHEET ON THE JOB SITE. CONSTRUCTION ON PVC WATER AND SEWER UTILITIES CANNOT BEGIN UNTIL THE CONTRACTOR POSSESSES, ON SITE, A BORED AND SEALED CUT SHEET FROM THE PROFESSIONAL LAND SURVEYOR.
- ALL NEW WATER AND SEWER MAINS, LATERALS, AND APPURTENANCES SHALL BE TESTED AND/OR DISINFECTED IN ACCORDANCE WITH FAYETTEVILLE PWC STANDARDS PRIOR TO PLACING INTO SERVICE.
- CONTRACTOR SHALL COORDINATE TESTING AND INSPECTION WITH THE FAYETTEVILLE PWC PROJECT COORDINATOR.
- ALL DUCTILE IRON PIPE IN SANITARY SEWER SERVICE SHALL HAVE AN INTERIOR CERAMIC EPOXY LINING.
- ALL NEW MANHOLES ARE TO BE VACUUM-TESTED IN ACCORDANCE WITH FAYETTEVILLE PWC STANDARDS.
- CONTRACTOR SHALL REPAIR ALL SEWER LATERALS AND MAINS DAMAGED DURING CONSTRUCTION. THE CONTRACTOR SHALL IMMEDIATELY REPORT ALL SEWER MAIN AND LATERAL BREAKS TO THE PWC PROJECT COORDINATOR. THE CONTRACTOR SHALL INSTITUTE IMMEDIATE REPAIRS IN ACCORDANCE WITH PWC STANDARDS.
- TRANSFER OF SEWER SERVICES SHALL BE ACCOMPLISHED AS FOLLOWS:
 - INSTALL AND TEST NEW MAINS, MANHOLES, AND LATERALS. CLEANOUTS SHALL BE INSTALLED 18" IN DI UNLESS OTHERWISE DIRECTED BY PWC.
 - CONNECT EXISTING PLUMBING TO NEW LATERAL UTILIZING THE NECESSARY FITTINGS AS DIRECTED BY PWC.
 - AFTER ALL SERVICES HAVE BEEN TRANSFERRED TO THE NEW MAIN, THE EXISTING SEWER SYSTEM SHALL BE ABANDONED IN ACCORDANCE WITH PWC REQUIREMENTS.
- CONTRACTOR SHALL ABANDON ("KILL-OUT") ANY EXISTING SEWER SERVICES THAT WILL NOT BE UTILIZED BY UNCOVERING THE EXISTING LATERAL AT THE MAIN, CUT AND PLUG AT BOTH ENDS, REMOVE THE EXISTING CLEANOUT AND COMBINATION, AND PLUG THE TAP OR TEE AT THE MAIN. FOR LATERALS THAT CONNECT TO A MANHOLE AND ARE TO BE ABANDONED ("KILLED-OUT"), THE LATERAL SHALL BE REMOVED FROM THE MANHOLE AND THE REMAINING VOID IN THE MANHOLE SHALL BE FILLED WITH BLOCK AND MORTAR.
- SEWER PLUGS SHALL BE INSTALLED TO ELIMINATE ANY DEBRIS OR OTHER MATERIAL FROM ENTERING THE ACTIVE SEWER SYSTEM. UPON ACCEPTANCE OF THE NEW SEWER SYSTEM, THE CONTRACTOR SHALL CLEAN THE NEW MAINS, REMOVE ALL DEBRIS, AND THEN REMOVE THE PLUG.
- ALL EXISTING UTILITIES IMPACTED BY CONSTRUCTION SHALL BE ADJUSTED TO FINISHED GRADE, IN ACCORDANCE WITH PWC REQUIREMENTS.
- ALL WORK ON PVC SEWER UTILITIES (MAINS, LATERALS, ETC) SHALL BE PERFORMED BY A LICENSED UTILITY CONTRACTOR. THE FAYETTEVILLE PUBLIC WORKS COMMISSION SHALL OBSERVE AND APPROVE ALL WORK ON PVC SEWER UTILITIES. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH PWC REQUIREMENTS.
- SEPARATION REQUIREMENTS:
 - CROSSING WATER MAIN UNDER A SEWER: WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS THROUGH A SEWER MAIN LATERAL, BOTH THE WATER MAIN AND THE SEWER MAIN LATERAL SHALL BE CONSTRUCTED OF DUCTILE IRON MATERIAL AND WITH JOINTS EQUIVALENT TO WATER MAIN STANDARDS. FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE POINT OF CROSSING, A SECTION OF WATER MAIN PIPE SHALL BE CENTERED AT THE POINT OF CROSSING.
 - CROSSING STORM DRAINAGE LINES: A MINIMUM OF 24-INCHES OF VERTICAL CLEARANCE SHALL BE MAINTAINED BETWEEN A SEWER MAIN LATERAL CROSSING UNDER A STORM DRAINAGE LINE UNLESS DUCTILE IRON PIPE IS USED. IF DUCTILE IRON PIPE IS USED, A MINIMUM OF 36-INCHES OF SEPARATION SHALL BE MAINTAINED, UNLESS OTHERWISE APPROVED BY PWC.

GENERAL NOTES SANITARY SEWER UTILITY		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION
N.T.S.						
SHEET NO. 1 OF 1	DWG. NO. S.1	DWG. BY: FAYPWC	APPROVED BY: J.E.G.	S1-SEWER-NOTES.dwg		

PIPE SIZES

PIPE SIZES	MANHOLE SIZE	MIN. WALL THICKNESS	MIN. REINF. STEEL	MIN. BASE THICKNESS
21" AND LESS	48" DIAMETER	5"	ASTM A-1064 0.12 SQ. IN.	6"
24" - 36"	60" DIAMETER	6"	ASTM A-1064 0.15 SQ. IN.	8"
42"	72" DIAMETER	7"	ASTM A-1064 0.15 SQ. IN.	8"

MANHOLE DIAMETER SIZES MAY BE ADJUSTED ON THE PLANS TO REFLECT SPECIAL CIRCUMSTANCES. REDUCING SLABS ARE NOT ACCEPTABLE ON MANHOLES LESS THAN 6' DIAMETER.

CAST IRON FRAME AND COVER SEE DETAIL.

MAX. (3) 4", (2) 6", OR (1) 2" GRADE RING 13.

FLEXIBLE BUTYL RESIN SEALANT OR RUBBER GASKET JOINT.

MANUFACTURER INSTALLED POLY PROPYLENE COATED STEP OVER INVERT.

CONC. GRADE RING MAX. (3) 4", (2) 6" OR (1) 2". SEE NOTE 13.

ECCENTRIC REDUCER.

JOINT SEALER.

SEAL LIFT HOLES.

JOINT SEALER.

SEAL AROUND PIPE.

SEE SHELF DETAIL.

REINFORCING. SEE CHART ABOVE.

SEE NOTE 3.

6" MIN. COMPACTED NO. 57 STONE.

SEAL ANNULUS AROUND PIPE AT ENTRANCE WITH NON-SHRINK GROUT.

UNDISTURBED SUBGRADE.

NO. 57 STONE.

TABLE:

STANDARD MANHOLE		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION
N.T.S.						
SHEET NO. 1 OF 2	DWG. NO. S.2	DWG. BY: FAYPWC	APPROVED BY: J.E.G.	S2-STANDARD-MANHOLE.dwg		

NOTES:

- PRECAST REINFORCED CONCRETE MANHOLES SHALL BE IN ACCORDANCE WITH ASTM C-478.
- MINIMUM CONCRETE COMPRESSIVE STRENGTH SHALL BE 4,000PSI.
- MANHOLES GREATER THAN 12" DEPTH SHALL HAVE MINIMUM 6" EXTENDED BASE.
- FLEXIBLE BUTYL RESIN JOINT SEALANT SHALL BE IN ACCORDANCE WITH ASTM C990. RUBBER GASKET JOINTS SHALL BE IN ACCORDANCE WITH ASTM C-443.
- FLEXIBLE EPDM RUBBER BOOT CONNECTORS SHALL BE IN ACCORDANCE WITH ASTM C992. INSTALLED BY MANUFACTURER WITH STAINLESS STEEL COMPRESSION RING AND TAKE-UP CLAMP. CONNECTION TO MAIN SHALL BE BY CONTRACTOR WITH STAINLESS STEEL PIPE CLAMP.
- CONNECTIONS TO EXISTING MANHOLES SHALL BE BY CORING MANHOLE AND FIELD INSTALLING A FLEXIBLE EPDM RUBBER BOOT CONNECTOR. DO NOT ALLOW DEBRIS TO ENTER SYSTEM.
- MORTAR SHALL BE QUICK SETTING, NON-SHRINK GROUT MIXED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- MANHOLE STEPS SHALL BE IN ACCORDANCE WITH ASTM C478 AND OSHA REGULATIONS. AUSEL STEPS WITH INVERT OUT.
- PRECAST INVERTS ARE NOT ALLOWED.
- VERTICAL DROPS BETWEEN THE INFLOW PIPES AND OUTFLOW PIPES SHALL REQUIRE THE FOLLOWING:
 - GREATER THAN 2.5' SEE DROP STRUCTURE DETAIL, (MIN. 5" DIAMETER MH REQUIRED).
 - LESS THAN 2.5' SEE PIPE SLEEVE DETAIL.
- AN ECCENTRIC CONE SHALL BE UTILIZED ON ALL MANHOLES, UNLESS OTHERWISE APPROVED BY FAYPWC.
- INVERT ON PLANS IS TO MANHOLE CENTERLINE.
- CONCRETE GRADE RINGS SHALL NOT BE USED FOR ABOVE GRADE ADJUSTMENTS (IE: OUTFALL AREAS). USE OF GRADE RINGS ARE ALLOWABLE IN YARD AREAS AND PAVEMENT, WHERE THE RING AND COVER ARE AT GROUND LEVEL.
- THE MINIMUM SLOPE ACROSS THE INVERT OF THE MANHOLE SHALL BE 1%, UNLESS OTHERWISE APPROVED BY FAYPWC. STANDING WATER IN INVERT OF MANHOLE IS NOT ACCEPTABLE.
- THE EXTERIOR MANHOLE RISER JOINTS, INCLUDING THE JOINT AT THE CONE, SHALL BE SEALED ON THE OUTSIDE BY AN APPROVED JOINT WEAR. THE WEAR SHALL BE IN ACCORDANCE WITH FAYPWC SPECIFICATIONS.
- MANHOLE BOOT FOR 4-INCH LATERALS. SHOULD IT BE NECESSARY TO INSTALL A 4-INCH LATERAL INTO A MANHOLE, THE RUBBER BOOT THAT THE LATERAL IS INSERTED INTO SHALL BE SECURELY FASTENED TO THE HOLE BY UTILIZING A STAINLESS STEEL BAND THAT IS TIGHTENED USING A JACK OR A TORQUE WRENCH (DIRECT DRIVE), BOTH STANDARD SIZE AND STEP DOWN BOOTS ARE ALLOWED. THE TORQUE WRENCH SHALL BE SUPPLIED BY THE MANUFACTURER. NO OTHER TYPE BANDS OR METHOD OF SECURING THE BOOT TO THE MANHOLE SHALL BE ACCEPTED.
- FOR FOUR (4) INCH SDR 26 LATERALS, THE PIPE OUTSIDE DIAMETER RANGE OF THE BOOT SHALL BE 3.5 INCHES TO 4.25 INCHES.
- IN ALL CASES, THE BOOT SHALL BE TIGHTENED ON THE LATERAL BY MEANS OF A SINGLE STAINLESS STEEL STRAP.
- THE LATERAL INVERT SHALL BE AT THE TOP OF THE SHELF.
- NO MORE THAN 4, FOUR INCH LATERALS OR 3, SIX INCH LATERALS SHALL ENTER A 4" DIAMETER TERMINAL MANHOLE. NO MORE THAN 2 LATERALS (REGARDLESS OF SIZE) SHALL ENTER ALL OTHER 4" DIAMETER MANHOLES. ALL LATERALS SHALL HAVE AN INDIVIDUAL TROUGH. 5" DIAMETER MANHOLES SHALL BE USED IF THE ABOVE CONDITIONS ARE NOT MET.
- NO MORE THAN 5 LATERALS SHALL ENTER A 5" DIAMETER MANHOLE.
- USE OF TEE-WYES ON LATERALS IS NOT ALLOWED.
- ALL MANHOLES SHALL BE VACUUM TESTED IN ACCORDANCE WITH FAYPWC STANDARDS.

CONSTRUCT INVERT IN ACCORDANCE WITH FAYPWC STANDARDS.

FLEXIBLE RUBBER BOOT. SEE STANDARD MANHOLE DETAIL S.2.

NEW SANITARY SEWER.

MANHOLE BASE SECTION SHALL BE SUPPORTED ON 4"x8" 18" SOLID CONCRETE BLOCKS STACKED 2 HIGH 18" APART.

REMOVE EXISTING TOP OF PIPE ABOVE SPRING LINE AFTER ACCEPTANCE OF MANHOLE BASE BY FAYPWC.

CONTRACTOR SHALL SAWCUT AND REMOVE EXISTING PIPE CROWN TO FORM OPEN INVERT TROUGH. NO DEBRIS SHALL BE ALLOWED TO ENTER SANITARY SEWER.

CONCRETE BASE TO BOTTOM OF PIPE. SEE SHELF DETAIL FOR SHELF CONSTRUCTION.

SEAL ANNULUS OVER AND AROUND PIPE AT DOGHOUSE WITH SOLID BRICK AND MORTAR.

6"x6"Wx8"W WMM BASE ONLY.

6" MIN. COMPACTED NO. 57 STONE.

UNDISTURBED SUB GRADE.

4"x8"x16" SOLID CONCRETE BLOCKS 18" APART.

UNDISTURBED SUB GRADE.

SEAL ANNULUS OVER AND AROUND PIPE AT DOGHOUSE WITH SOLID BRICK AND MORTAR.

SEE SHELF DETAIL (SOLID BRICK AND MORTAR).

REINFORCING TO MEET ASTM A-185 0.12 SQ. IN.

8" MIN. IF FORMED, IF UNFORMED EXTEND TO UNDISTURBED SOIL AND UP TO SPRING LINE OF PIPE.

MONOLITHIC POUR OF CONCRETE BASE TO BOTTOM OF PIPE.

6" MIN. COMPACTED NO. 57 STONE.

SEAL ANNULUS OVER AND AROUND PIPE AT DOGHOUSE WITH SOLID BRICK AND MORTAR.

STANDARD MANHOLE		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION
N.T.S.						
SHEET NO. 2 OF 2	DWG. NO. S.2	DWG. BY: FAYPWC	APPROVED BY: J.E.G.	S2-STANDARD-MANHOLE.dwg		

DOGHOUSE MANHOLE (MAINS 15" OR LESS)

NOTES:

- MANHOLE MEETS ALL REQUIREMENTS OF ASTM C478.
- CONCRETE IS MINIMUM 4,000PSI COMPRESSIVE STRENGTH.
- MATERIAL USED TO SEAL AROUND PIPE SHALL BE NON-SHRINK GROUT.
- MANHOLE SHALL BE CONSTRUCTED OF PRECAST CONCRETE. FIBERGLASS MANHOLE IS NOT ACCEPTABLE.
- A DROP STRUCTURE SHALL BE PLACED WHERE PIPE VERTICAL SEPARATION BETWEEN INVERTS EXCEEDS 2.50'. USE 5" DIAMETER MANHOLES WHEN DROP STRUCTURES ARE NEEDED.
- WITH THE EXCEPTION OF THE MANHOLE BASE SECTION, ALL OTHER MATERIALS, INSTALLATION AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE FAYPWC STANDARD MANHOLE DETAILS.
- DOGHOUSE MANHOLE SHALL BE FREE OF LEAKS.
- SEE STANDARD MANHOLE DETAIL S.2 FOR ADDITIONAL REQUIREMENTS.

CONSTRUCT INVERT IN ACCORDANCE WITH FAYPWC STANDARDS.

FLEXIBLE RUBBER BOOT. SEE STANDARD MANHOLE DETAIL S.2.

NEW SANITARY SEWER.

MANHOLE BASE SECTION SHALL BE SUPPORTED ON 4"x8" 18" SOLID CONCRETE BLOCKS STACKED 2 HIGH 18" APART.

REMOVE EXISTING TOP OF PIPE ABOVE SPRING LINE AFTER ACCEPTANCE OF MANHOLE BASE BY FAYPWC.

CONTRACTOR SHALL SAWCUT AND REMOVE EXISTING PIPE CROWN TO FORM OPEN INVERT TROUGH. NO DEBRIS SHALL BE ALLOWED TO ENTER SANITARY SEWER.

CONCRETE BASE TO BOTTOM OF PIPE. SEE SHELF DETAIL FOR SHELF CONSTRUCTION.

SEAL ANNULUS OVER AND AROUND PIPE AT DOGHOUSE WITH SOLID BRICK AND MORTAR.

6"x6"Wx8"W WMM BASE ONLY.

6" MIN. COMPACTED NO. 57 STONE.

UNDISTURBED SUB GRADE.

4"x8"x16" SOLID CONCRETE BLOCKS 18" APART.

UNDISTURBED SUB GRADE.

SEAL ANNULUS OVER AND AROUND PIPE AT DOGHOUSE WITH SOLID BRICK AND MORTAR.

SEE SHELF DETAIL (SOLID BRICK AND MORTAR).

REINFORCING TO MEET ASTM A-185 0.12 SQ. IN.

8" MIN. IF FORMED, IF UNFORMED EXTEND TO UNDISTURBED SOIL AND UP TO SPRING LINE OF PIPE.

MONOLITHIC POUR OF CONCRETE BASE TO BOTTOM OF PIPE.

6" MIN. COMPACTED NO. 57 STONE.

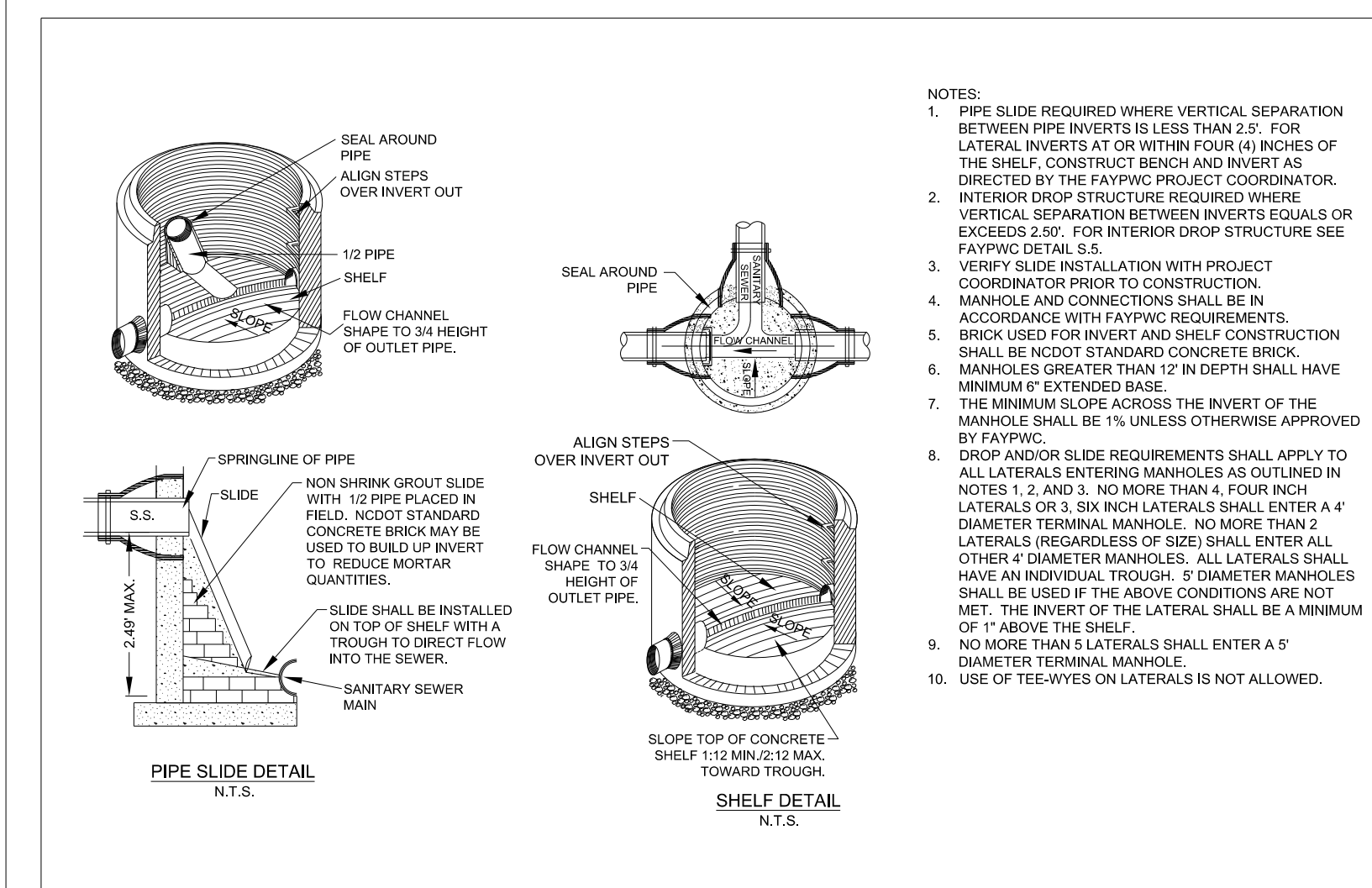
SEAL ANNULUS OVER AND AROUND PIPE AT DOGHOUSE WITH SOLID BRICK AND MORTAR.

DOGHOUSE MANHOLE (MAINS 15" OR LESS)		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION
N.T.S.						
SHEET NO. 1 OF 2	DWG. NO. S.3	DWG. BY: FAYPWC	APPROVED BY: J.E.G.	S3-DOGHOUSE-MH.dwg		

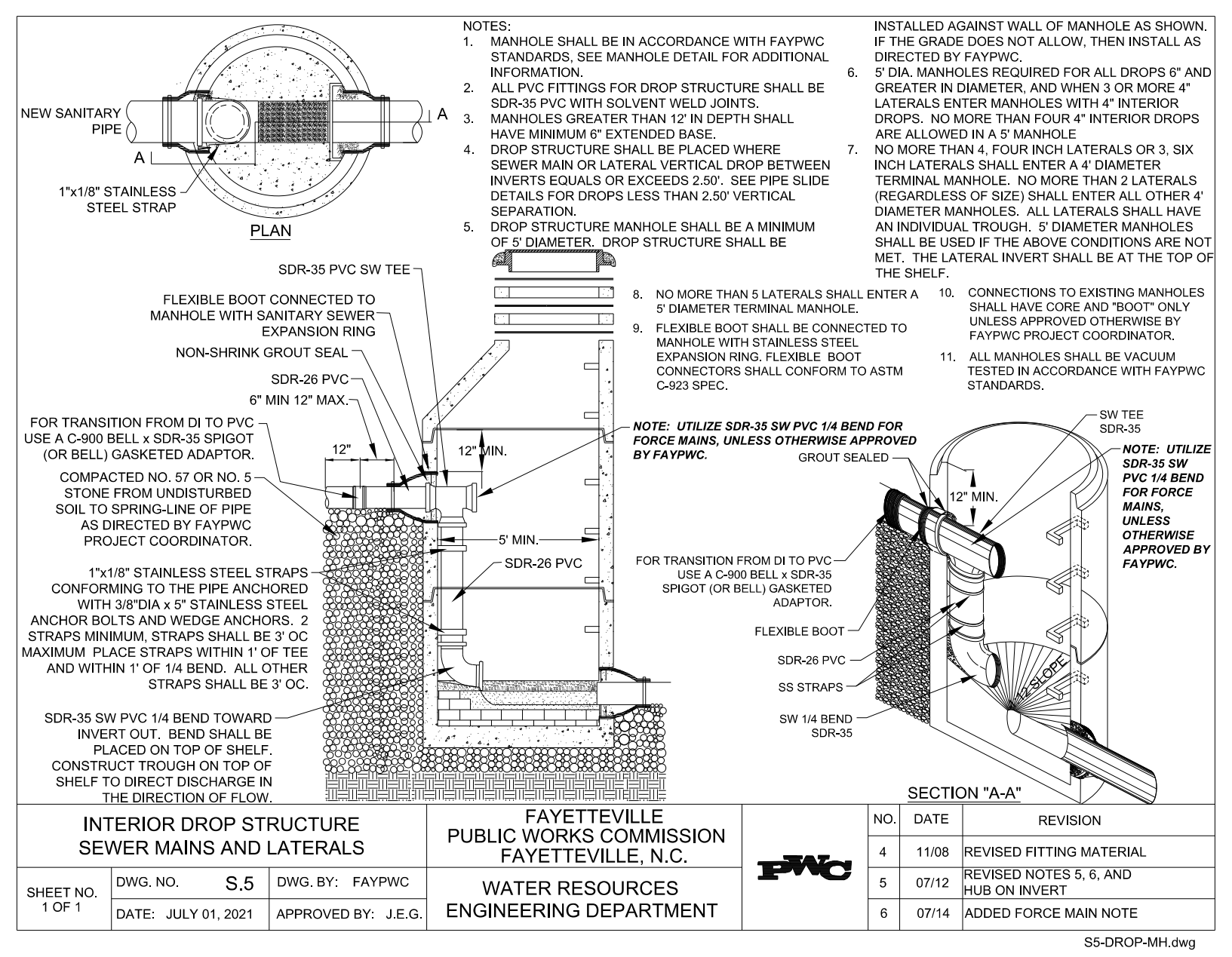
PROJECT REFERENCE NO.	U-5798A	SHEET NO.	UC-3G
DESIGNED BY:	AAA		
DRAWN BY:	KNS		
CHECKED BY:	BRO		
APPROVED BY:	BRO		
REVISED:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION			
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151		UTILITY CONSTRUCTION PLANS ONLY	

UTILITY CONSTRUCTION

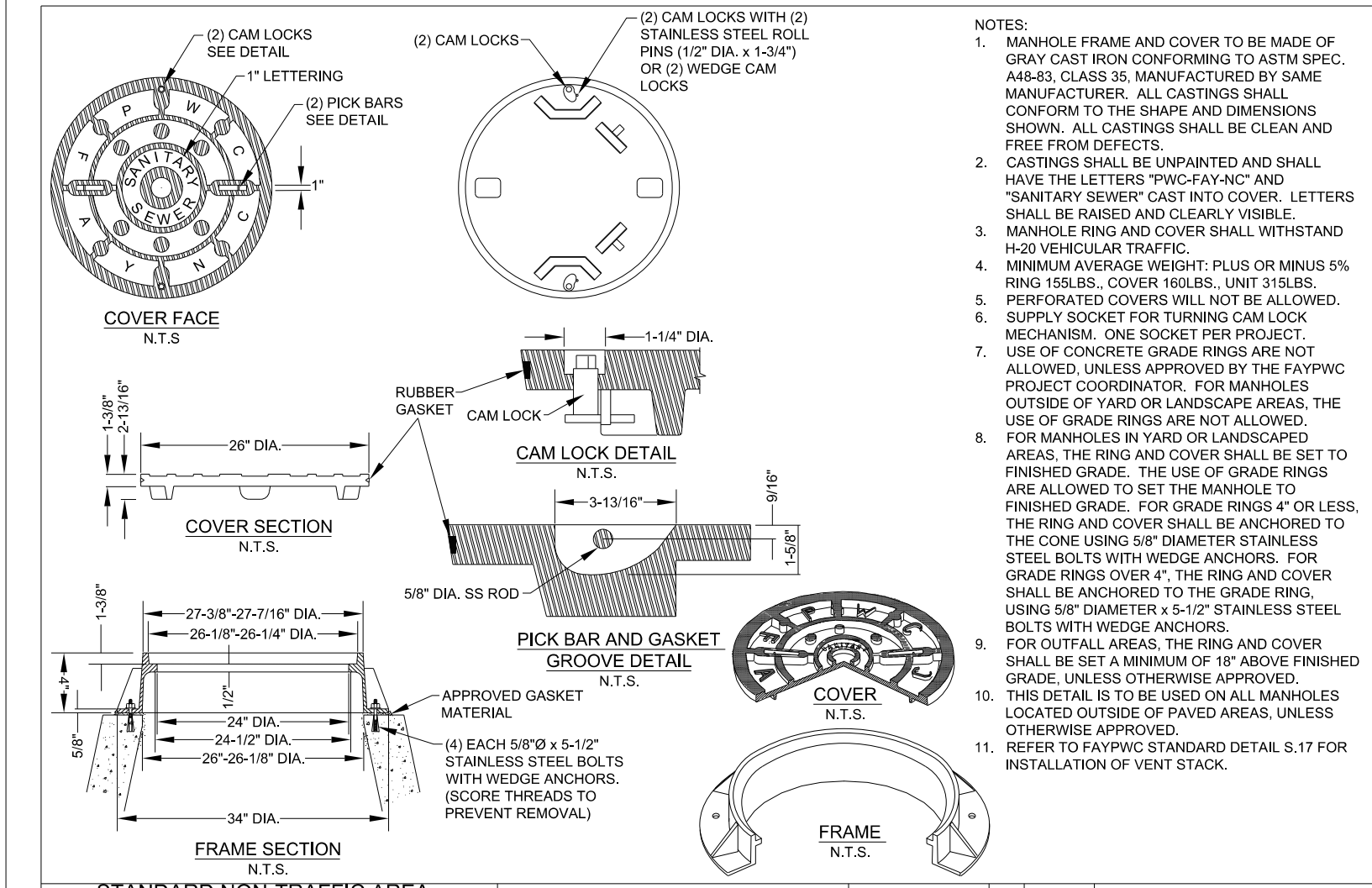
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



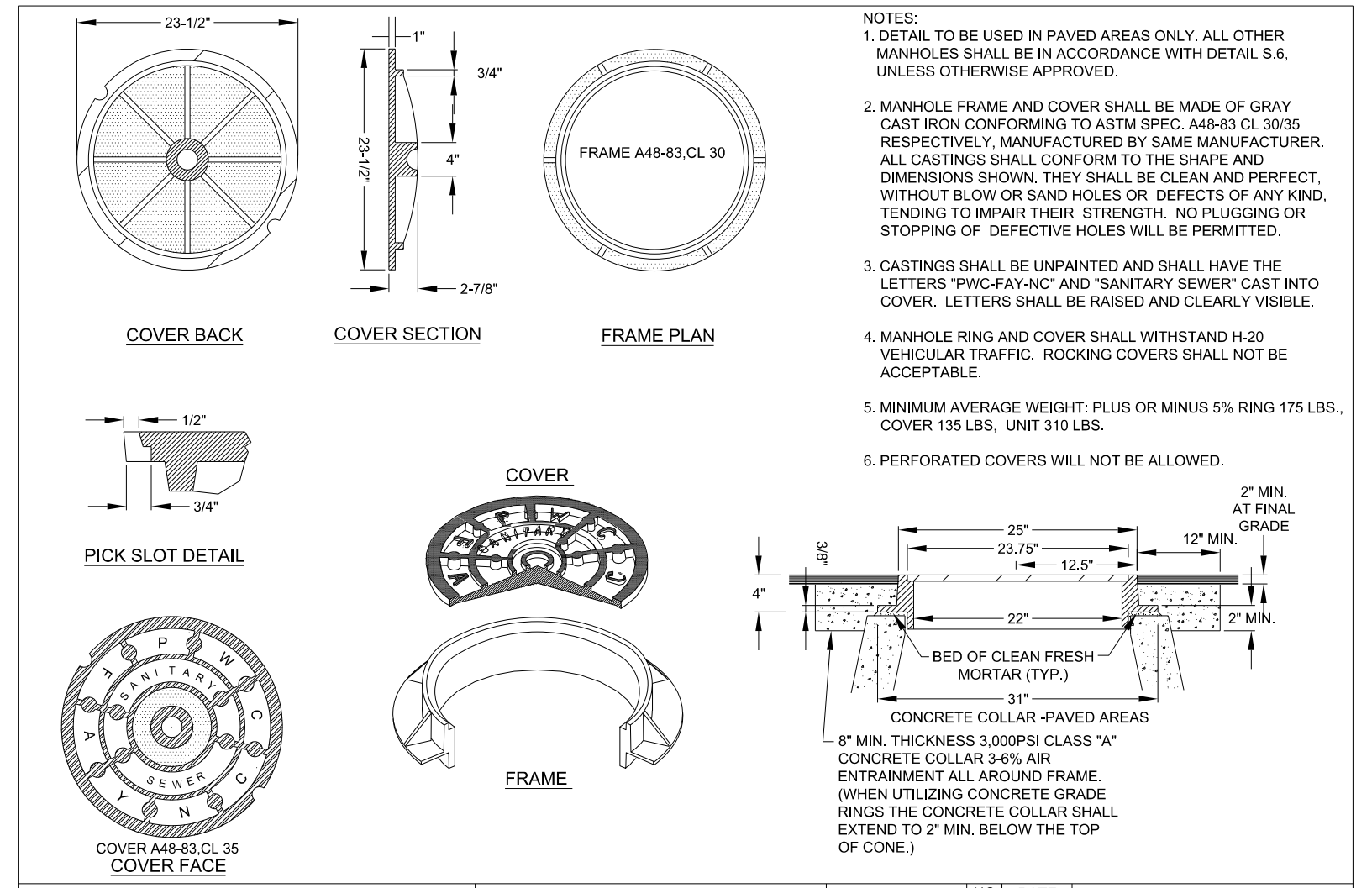
PIPE SLIDE AND SHELF DETAILS N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO. DATE REVISION		
DWG. NO.	S.4	DWG. BY:	FAYPWC	1	01/05	ADDED NOTE 8
DATE:	JULY 01, 2021	APPROVED BY:	J.E.G.	2	02/07	REVISED NOTE 8, SLIDE DETAIL.
SHEET NO. 1 OF 1		WATER RESOURCES ENGINEERING DEPARTMENT		3	01/18	DELETED MORTAR SLIDE, REVISED NOTES



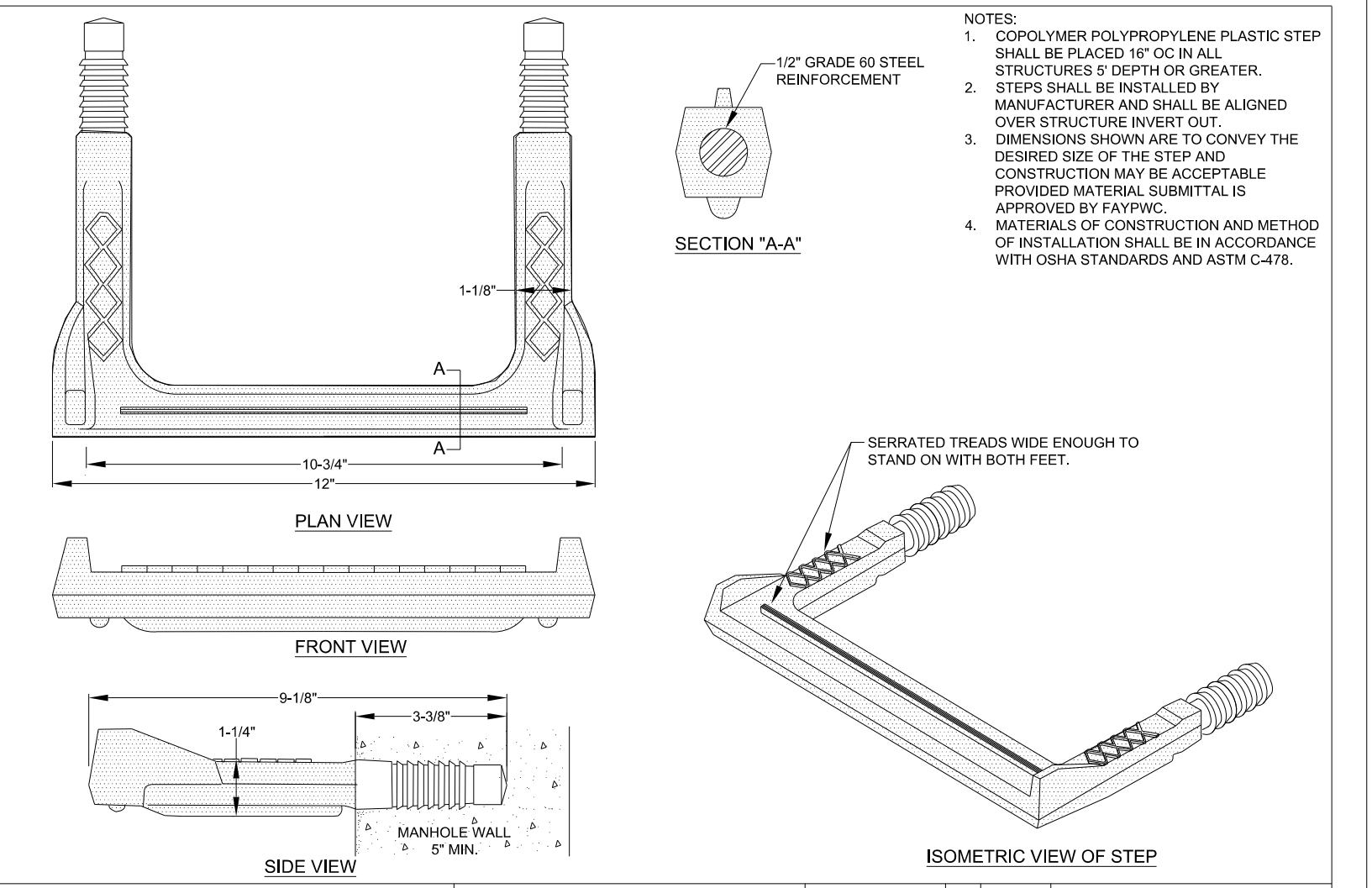
INTERIOR DROP STRUCTURE SEWER MAINS AND LATERALS		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO. DATE REVISION		
DWG. NO.	S.5	DWG. BY:	FAYPWC	4	11/08	REVISED FITTING MATERIAL.
DATE:	JULY 01, 2021	APPROVED BY:	J.E.G.	5	07/12	REVISED NOTES 5, 6, AND HUB ON INVERT
SHEET NO. 1 OF 1		WATER RESOURCES ENGINEERING DEPARTMENT		6	07/14	ADDED FORCE MAIN NOTE



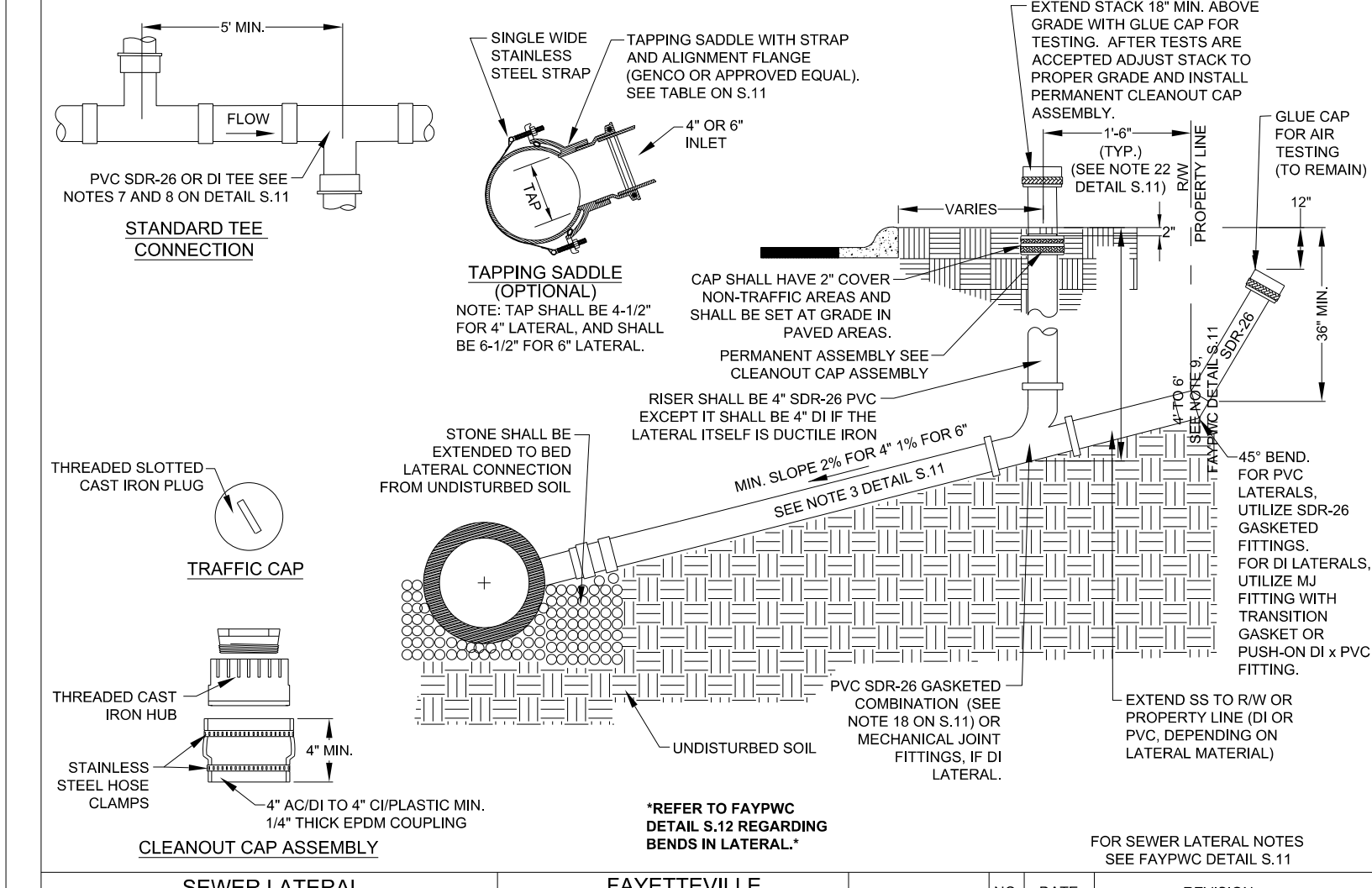
STANDARD NON-TRAFFIC AREA MANHOLE RING AND COVER WITH WIPER GASKET AND CAM LOCK		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO. DATE REVISION		
DWG. NO.	S.6	DWG. BY:	FAYPWC	1	07/09	REVISED NOTES ON FRAME SECTION/REVISED NOTE 3
DATE:	JULY 01, 2021	APPROVED BY:	J.E.G.	2	07/17	ADDED NOTE ON WEDGE CAM LOCKS
SHEET NO. 1 OF 1		WATER RESOURCES ENGINEERING DEPARTMENT		3	01/18	UPDATED NOTES 7 AND 8



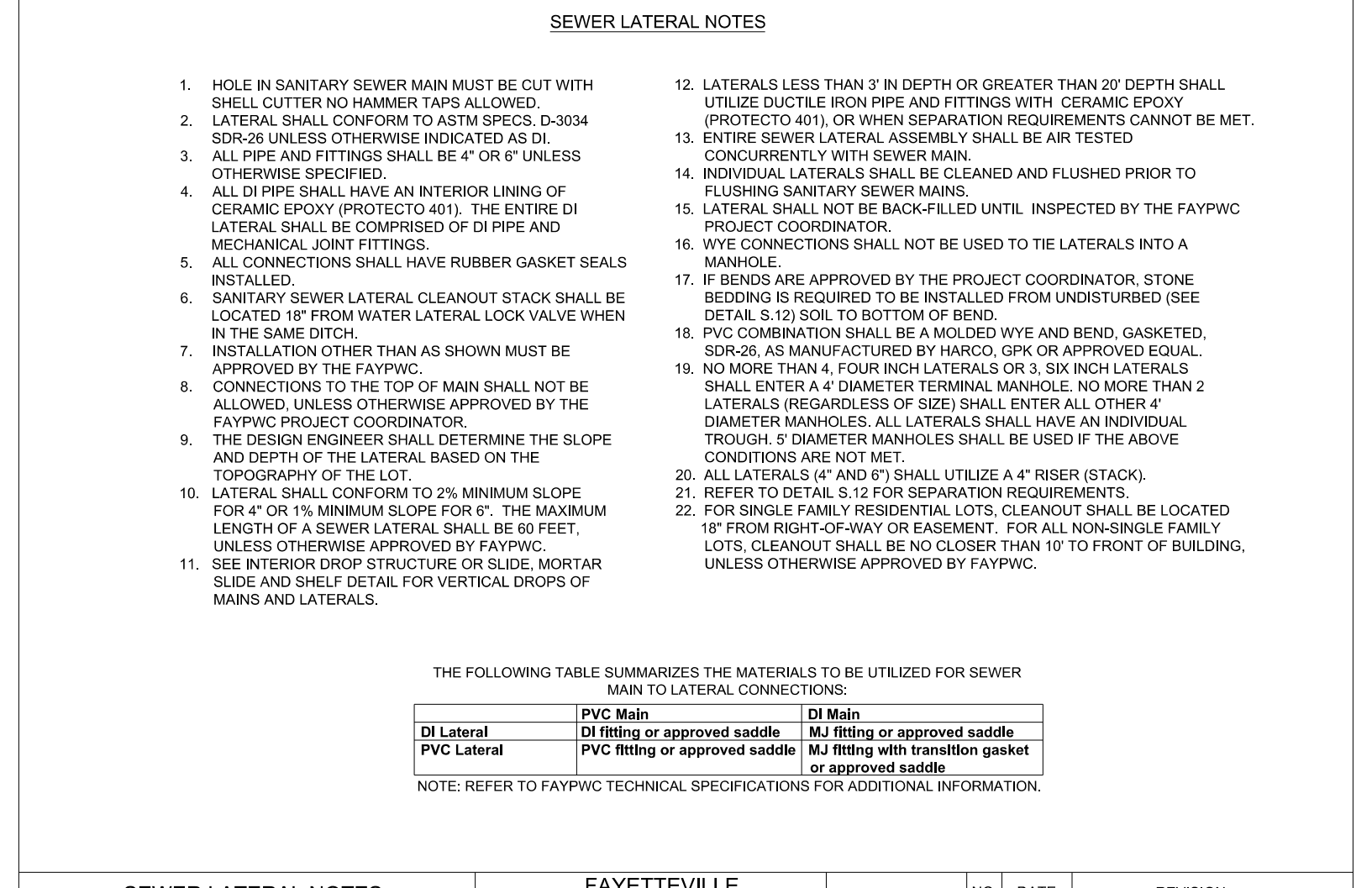
STANDARD TRAFFIC AREA MANHOLE RING AND COVER		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO. DATE REVISION		
DWG. NO.	S.7	DWG. BY:	FAYPWC	1	01/05	CHANGED NON TRAFFIC DETAIL
DATE:	JULY 01, 2021	APPROVED BY:	J.E.G.	2	07/06	ADDED NOTE ON CONCRETE DETAIL
SHEET NO. 1 OF 1		WATER RESOURCES ENGINEERING DEPARTMENT		3	02/07	REMOVED NON TRAFFIC AREA AND REVISED NOTES
				4	07/08	REVISED ASPHALT THICKNESS



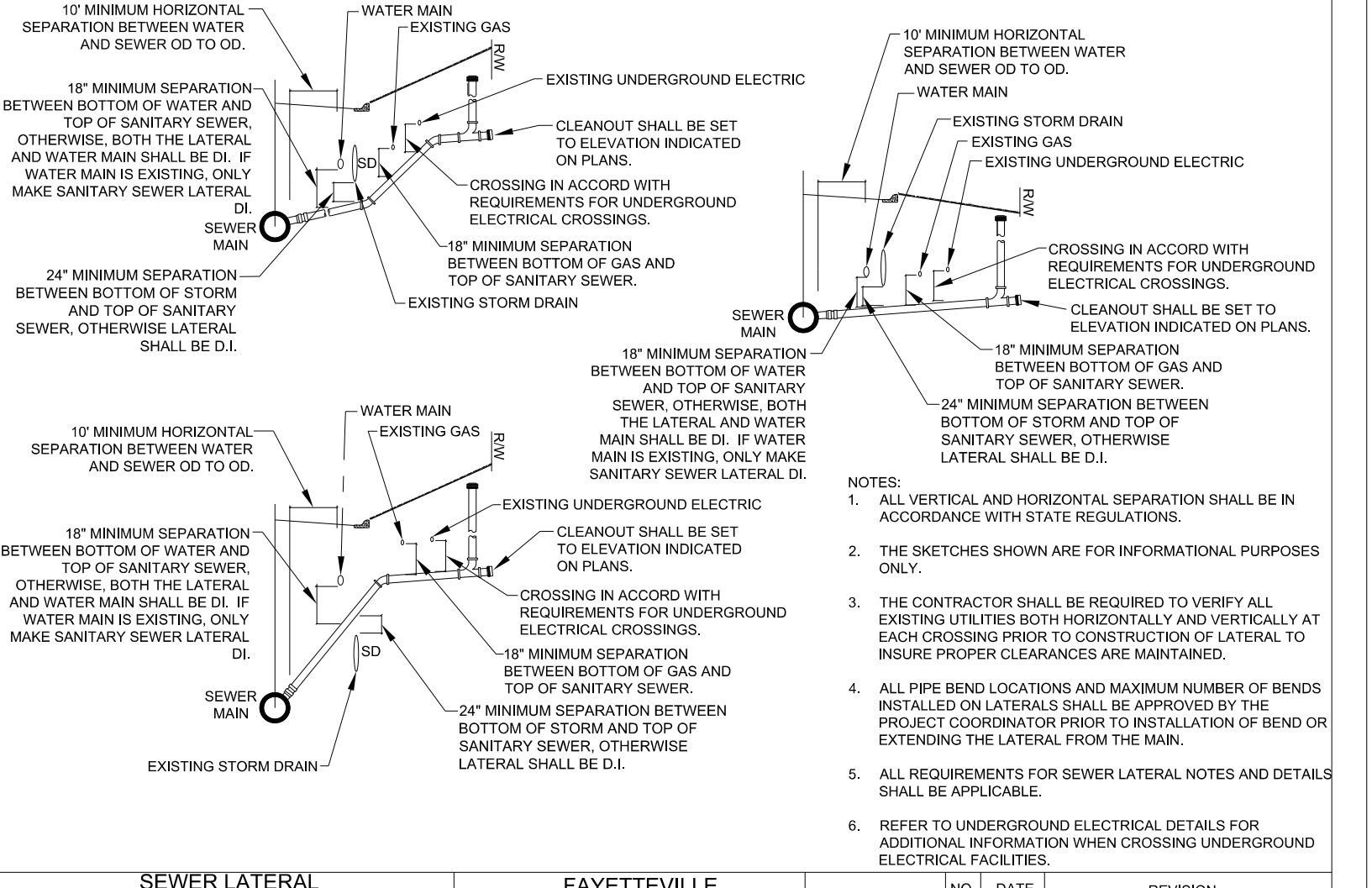
STRUCTURE STEP		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO. DATE REVISION		
DWG. NO.	S.8	DWG. BY:	FAYPWC	1	01/05	CHANGED NON TRAFFIC DETAIL
DATE:	JULY 01, 2021	APPROVED BY:	J.E.G.	2	07/06	ADDED NOTE ON CONCRETE DETAIL
SHEET NO. 1 OF 1		WATER RESOURCES ENGINEERING DEPARTMENT		3	02/07	REMOVED NON TRAFFIC AREA AND REVISED NOTES
				4	07/08	REVISED ASPHALT THICKNESS



SEWER LATERAL (4-INCH AND 6-INCH)		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO. DATE REVISION		
DWG. NO.	S.10	DWG. BY:	FAYPWC	2	01/14	ADDED TAILPIECE, NOTES
DATE:	JULY 01, 2021	APPROVED BY:	J.E.G.	3	01/15	REVISED NOTES RE: TAILPIECE
SHEET NO. 1 OF 1		WATER RESOURCES ENGINEERING DEPARTMENT		4	07/18	REVISED NOTE RE: LATERAL DEPTH



SEWER LATERAL NOTES (4-INCH AND 6-INCH)		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO. DATE REVISION		
DWG. NO.	S.11	DWG. BY:	FAYPWC	3	01/15	REVISED NOTES AND ADDED TABLE
DATE:	JULY 01, 2021	APPROVED BY:	J.E.G.	4	01/15	REVISED NOTE 22, TABLE
SHEET NO. 1 OF 1		WATER RESOURCES ENGINEERING DEPARTMENT		5	07/18	REVISED NOTES 6, 9



SEWER LATERAL UTILITY CONFLICT SEPARATION REQUIREMENTS		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO. DATE REVISION		
DWG. NO.	S.12	DWG. BY:	FAYPWC	1	01/05	REVISED NOTES 1 AND 6
DATE:	JULY 01, 2021	APPROVED BY:	J.E.G.	2	11/08	ADDED NOTE ON DI LATERALS
SHEET NO. 1 OF 1		WATER RESOURCES ENGINEERING DEPARTMENT		3	03/10	ADDED LATERAL AND WM SEPARATION

5/14/19 97-DEC-2021 06:27 Paramental\Fayetteville Public Works Commission\2019061602RA - U-5798 Hills Hill Road Utility Coordination\CADD\Microstation\Utilities\Engineering\UC\Proj\U-5798A_ut_dtl_UC03G_psh.dgn

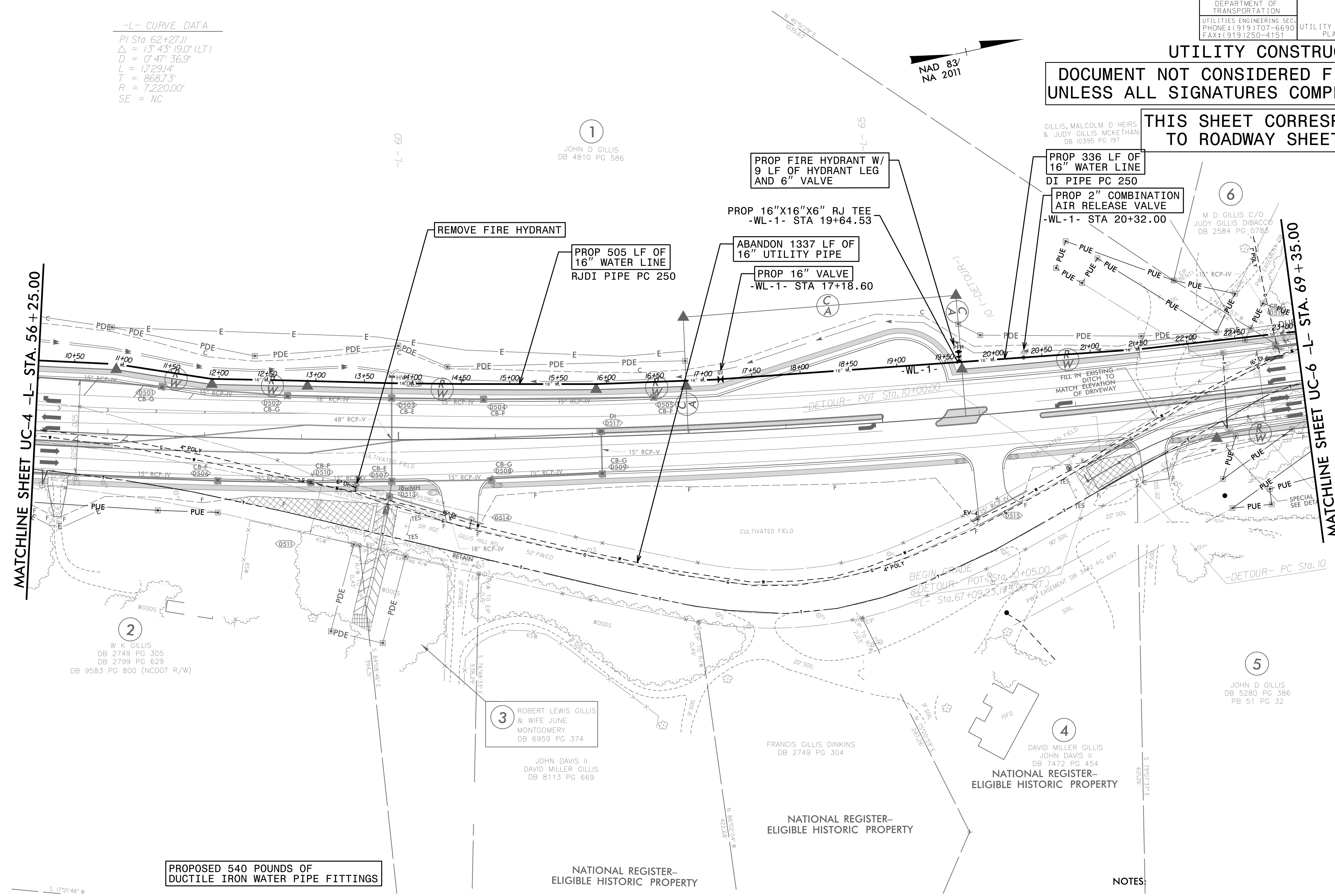
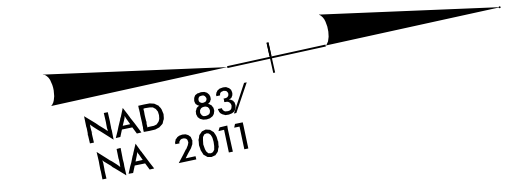
PROJECT REFERENCE NO.	SHEET NO.
U-5798A	UC-5
DESIGNED BY: AAA	
DRAWN BY: KNS	
CHECKED BY: BRO	
APPROVED BY: BRO	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

THIS SHEET CORRESPONDS TO ROADWAY SHEET 5

-L- CURVE DATA
 PI Sta 62+27.11
 $\Delta = 13^{\circ} 43' 19.0''$ (LT)
 $D = 0' 47' 36.9''$
 $L = 1,729.14'$
 $T = 868.73'$
 $R = 7,220.00'$
 SE = NC



1
 JOHN D GILLIS
 DB 4810 PG 586

6
 M D GILLIS C/O
 JUDY GILLIS DIBACCO
 DB 2584 PG.0788

2
 W K GILLIS
 DB 2749 PG 305
 DB 2799 PG 629
 DB 9583 PG 800 (NCDOT R/W)

3
 ROBERT LEWIS GILLIS
 & WIFE JUNE
 MONTGOMERY
 DB 6959 PG 374

JOHN DAVIS II
 DAVID MILLER GILLIS
 DB 8113 PG 669

FRANCIS GILLIS DINKINS
 DB 2749 PG 304

4
 DAVID MILLER GILLIS
 JOHN DAVIS II
 DB 7472 PG 454
**NATIONAL REGISTER-
 ELIGIBLE HISTORIC PROPERTY**

5
 JOHN D GILLIS
 DB 5280 PG 386
 PB 51 PG 32

**PROPOSED 540 POUNDS OF
 DUCTILE IRON WATER PIPE FITTINGS**

**NATIONAL REGISTER-
 ELIGIBLE HISTORIC PROPERTY**

**NATIONAL REGISTER-
 ELIGIBLE HISTORIC PROPERTY**

NOTES:
 SEE SHEET UC-3A FOR REFERENCED NOTES.
 SEE SHEETS UC-10 & UC-11 FOR -WL-1- PROFILE.

09-DEC-2021 11:42
 L:\Projects\11442\Public Works Commission\2019061600RA - U-5798 Gillis Hill Road Utility Coordination\CADD\Microstation\Utilities\Engineering\UC\Proj\U-5798A.ut_Rdy05_UC05_psh.dgn
 aadakeja

PROJECT REFERENCE NO.	SHEET NO.
U-5798A	UC-6
DESIGNED BY: AAA	UTILITY CONSTRUCTION PLANS ONLY
DRAWN BY: KNS	
CHECKED BY: BRO	
APPROVED BY: BRO	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

UTILITY CONSTRUCTION

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

**THIS SHEET CORRESPONDS
TO ROADWAY SHEET 6**

DUKE ENERGY NOTES:

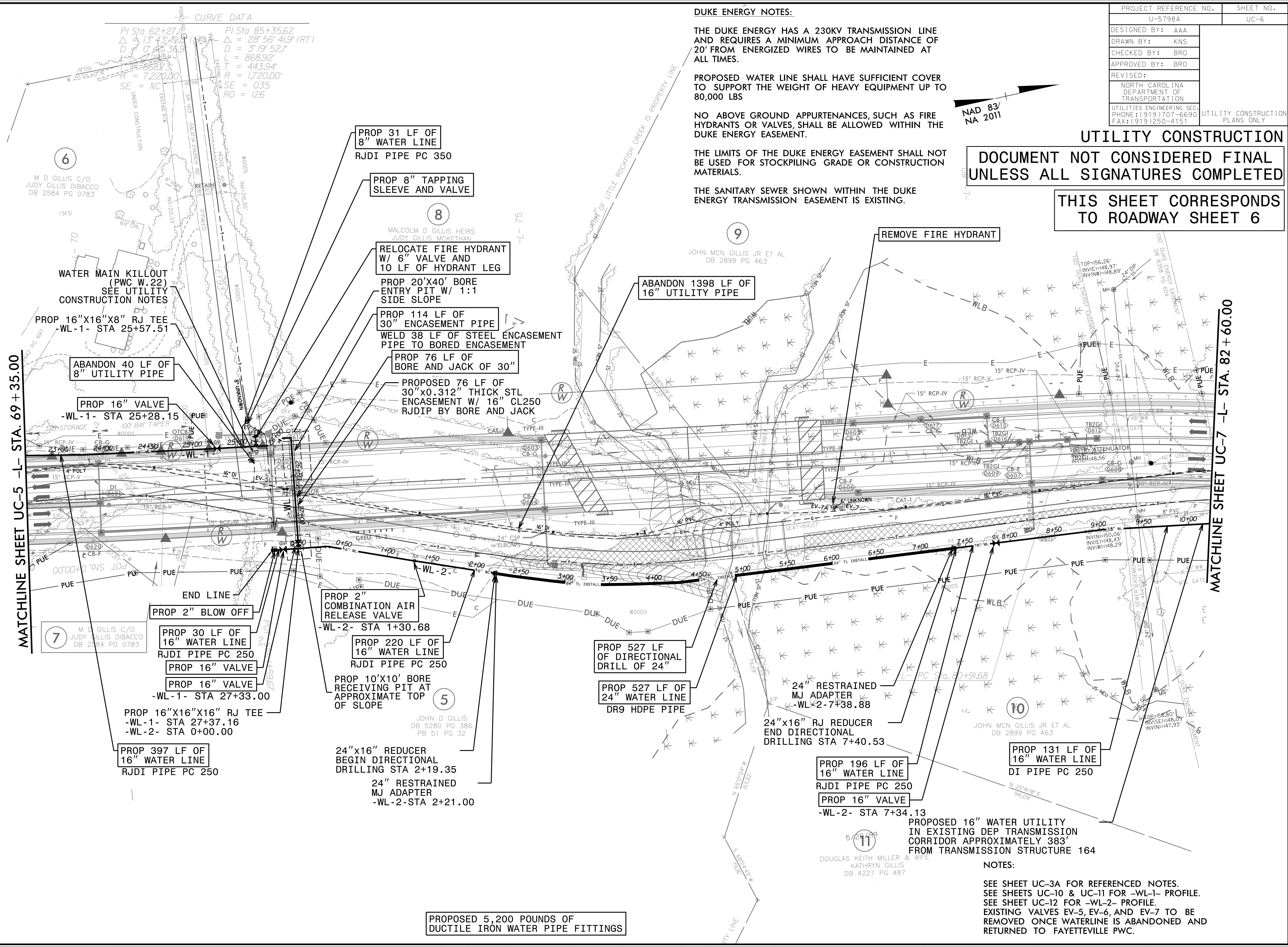
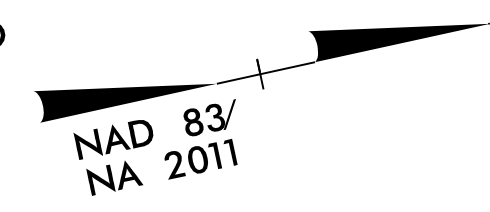
THE DUKE ENERGY HAS A 230KV TRANSMISSION LINE AND REQUIRES A MINIMUM APPROACH DISTANCE OF 20' FROM ENERGIZED WIRES TO BE MAINTAINED AT ALL TIMES.

PROPOSED WATER LINE SHALL HAVE SUFFICIENT COVER TO SUPPORT THE WEIGHT OF HEAVY EQUIPMENT UP TO 80,000 LBS

NO ABOVE GROUND APPURTENANCES, SUCH AS FIRE HYDRANTS OR VALVES, SHALL BE ALLOWED WITHIN THE DUKE ENERGY EASEMENT.

THE LIMITS OF THE DUKE ENERGY EASEMENT SHALL NOT BE USED FOR STOCKPILING GRADE OR CONSTRUCTION MATERIALS.

THE SANITARY SEWER SHOWN WITHIN THE DUKE ENERGY TRANSMISSION EASEMENT IS EXISTING.



MATCHLINE SHEET UC-5 -L- STA. 69 + 35.00

MATCHLINE SHEET UC-7 -L- STA. 82 + 60.00

CURVE DATA

PI Sta 62+27.15	PI Sta 85+35.62
$\Delta = 13^{\circ} 43' 19.9"$	$\Delta = 28^{\circ} 56' 41.9" (RT)$
$D = 0' 4" 38.9"$	$D = 3' 19' 52.1"$
$L = 868.92'$	$L = 868.92'$
$R = 7,220.00'$	$R = 443.94'$
$SE = NC$	$SE = 035$
	$RO = 126$

PROPOSED 5,200 POUNDS OF
DUCTILE IRON WATER PIPE FITTINGS

PROPOSED 16" WATER UTILITY
CORRIDOR APPROXIMATELY 383'
FROM TRANSMISSION STRUCTURE 164

NOTES:

SEE SHEET UC-3A FOR REFERENCED NOTES.
SEE SHEETS UC-10 & UC-11 FOR -WL-1- PROFILE.
SEE SHEET UC-12 FOR -WL-2- PROFILE.
EXISTING VALVES EV-5, EV-6, AND EV-7 TO BE
REMOVED ONCE WATERLINE IS ABANDONED AND
RETURNED TO FAYETTEVILLE PWC.

02-FEB-2022 12:08 100% Utility Coordination\CADD\Microstation\Utilities\Engineering\UC\Proc\U-5798A.ut_Rdy\06_UC06_psh.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-5798A	UC-6A
DESIGNED BY: AAA	UTILITY CONSTRUCTION PLANS ONLY
DRAWN BY: KNS	
CHECKED BY: BRO	
APPROVED BY: BRO	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

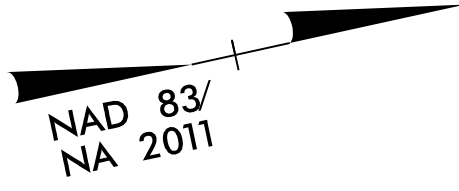
UTILITY CONSTRUCTION

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

**THIS SHEET CORRESPONDS
TO ROADWAY SHEET 6**

9

JOHN MCN GILLIS JR ET AL
DB 2899 PG 463



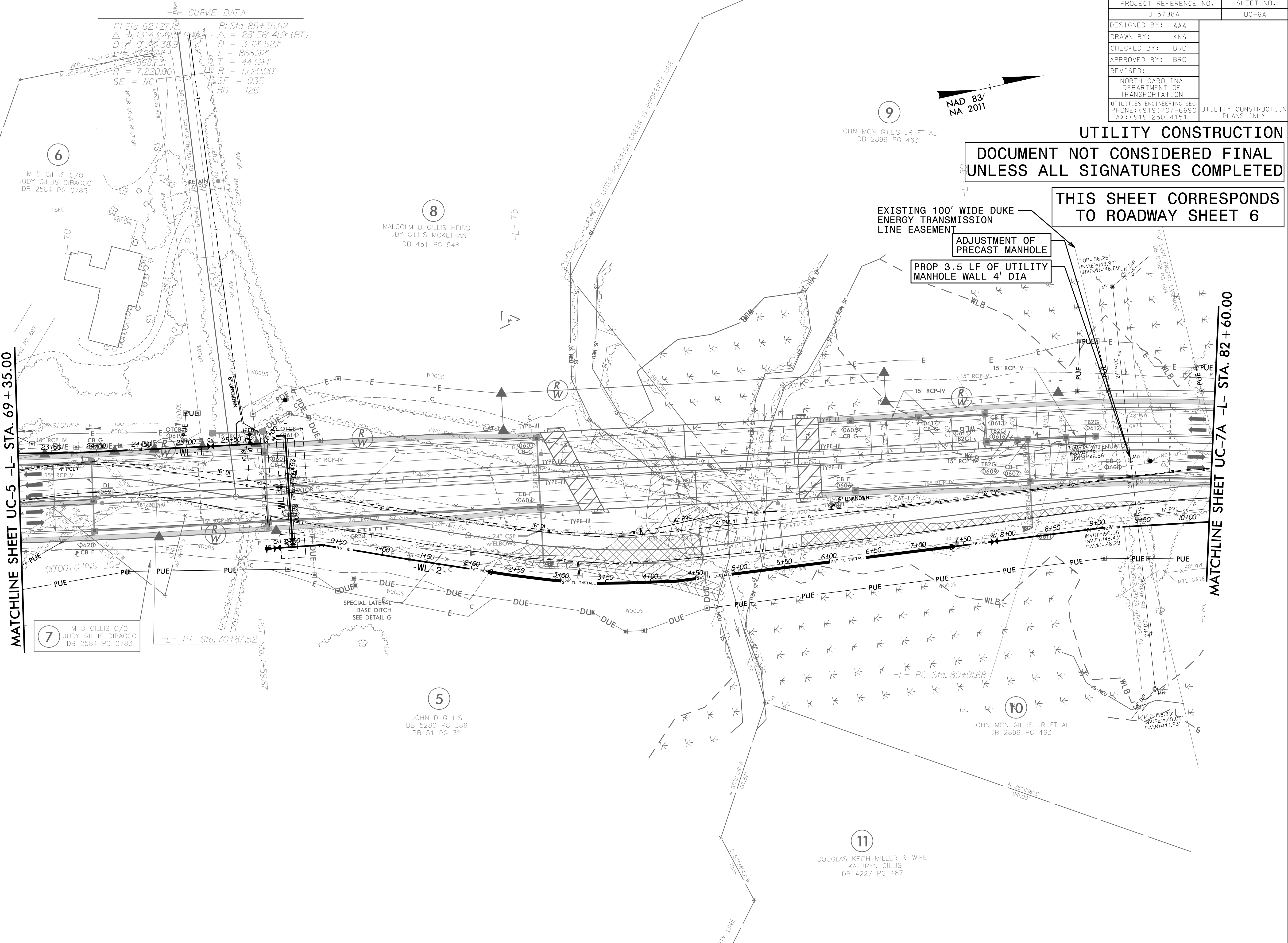
EXISTING 100' WIDE DUKE
ENERGY TRANSMISSION
LINE EASEMENT

ADJUSTMENT OF
PRECAST MANHOLE

PROP 3.5 LF OF UTILITY
MANHOLE WALL 4' DIA

MATCHLINE SHEET UC-5 -L- STA. 69 + 35.00

MATCHLINE SHEET UC-7A -L- STA. 82 + 60.00



CURVE DATA

PI Sta 62+27.19	PI Sta 85+35.62
$\Delta = 13^{\circ} 43' 19.00''$	$\Delta = 28^{\circ} 56' 41.90''$ (RT)
$D = 0' 4' 36.90''$	$D = 3' 19' 52.10''$
$L = 229.24'$	$L = 868.92'$
$R = 7,220.00'$	$R = 443.94'$
$SE = NC$	$SE = 035$
	$RO = 126$

6
M D GILLIS C/O
JUDY GILLIS DIBACCO
DB 2584 PG 0783

8
MALCOLM D GILLIS HEIRS
JUDY GILLIS MCKETHAN
DB 451 PG 548

7
M D GILLIS C/O
JUDY GILLIS DIBACCO
DB 2584 PG 0783

5
JOHN D GILLIS
DB 5280 PG 386
PB 51 PG 32

10
JOHN MCN GILLIS JR ET AL
DB 2899 PG 463

11
DOUGLAS KEITH MILLER & WIFE
KATHRYN GILLIS
DB 4227 PG 487

02-FEB-2022 12:08
 C:\Projects\Environmental\Fayetteville Public Works Commission\2019061600RA - U-5798 Hills Hill Road Utility Coordination\CADD\Microstation\Utilities\Engineering\UC-Proj\U-5798A-ut-Rd\06_UC06A_psh.dgn
 aadek@b.com AT WK02047

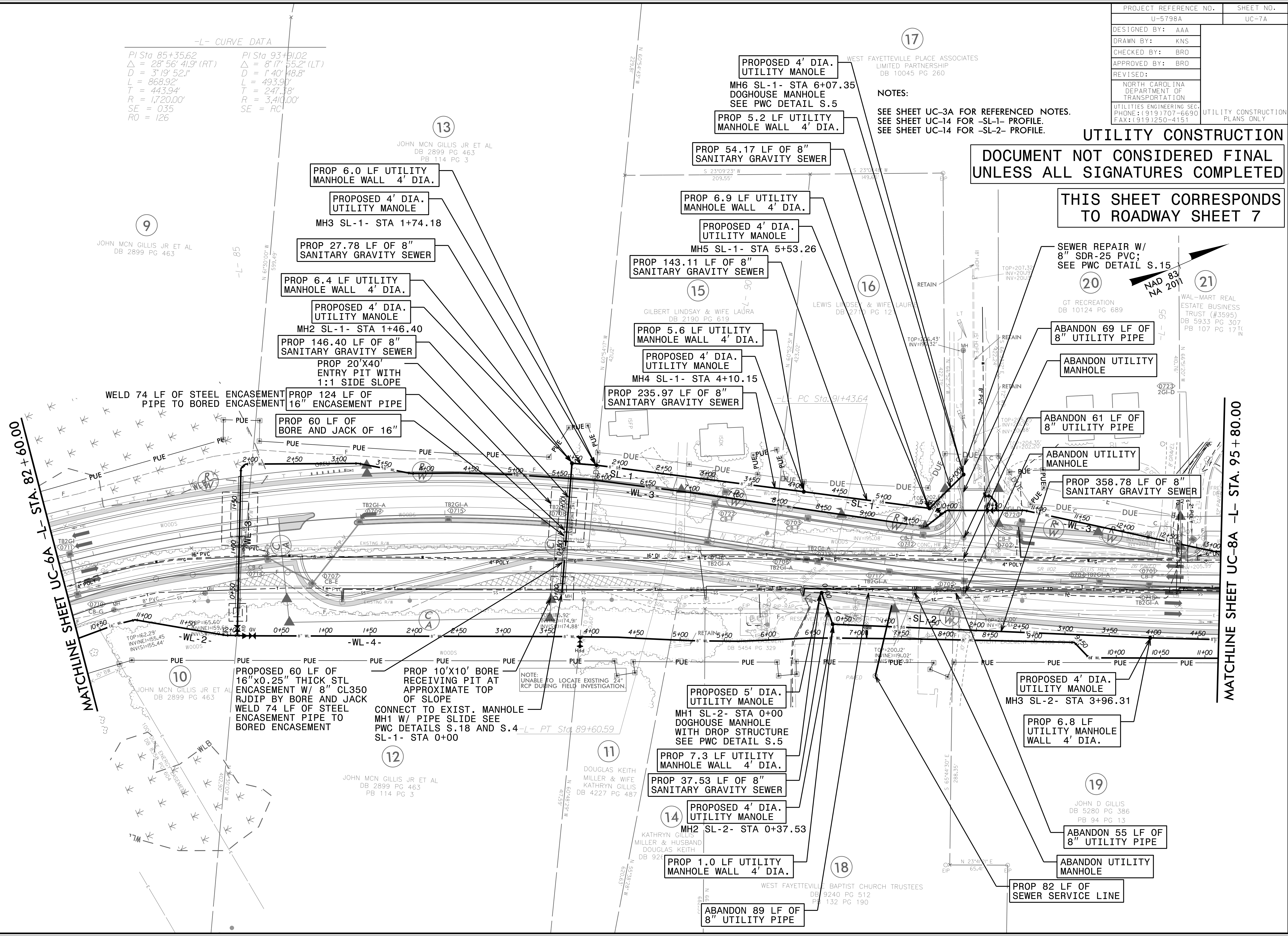
PROJECT REFERENCE NO.	SHEET NO.
U-5798A	UC-7A
DESIGNED BY: AAA	UTILITY CONSTRUCTION PLANS ONLY
DRAWN BY: KNS	
CHECKED BY: BRO	
APPROVED BY: BRO	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

NOTES:
 SEE SHEET UC-3A FOR REFERENCED NOTES.
 SEE SHEET UC-14 FOR -SL-1- PROFILE.
 SEE SHEET UC-14 FOR -SL-2- PROFILE.

UTILITY CONSTRUCTION
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

THIS SHEET CORRESPONDS TO ROADWAY SHEET 7

-L- CURVE DATA
 PI Sta 85+35.62 PI Sta 93+91.02
 $\Delta = 28^\circ 56' 41.9" (RT)$ $\Delta = 8^\circ 17' 55.2" (LT)$
 $D = 3' 19" 52.1"$ $D = 1' 40" 48.8"$
 $L = 868.92'$ $L = 493.90'$
 $T = 443.94'$ $T = 247.38'$
 $R = 1,720.00'$ $R = 3,410.00'$
 $SE = 0.35$ $SE = RC$
 $RO = 126$



MATCHLINE SHEET UC-6A -L- STA. 82+60.00

MATCHLINE SHEET UC-8A -L- STA. 95+80.00

PROPOSED 60 LF OF 16"x0.25" THICK STL ENCASUREMENT W/ 8" CL350 RJDIP BY BORE AND JACK WELD 74 LF OF STEEL ENCASUREMENT PIPE TO BORED ENCASUREMENT

PROP 10'X10' BORE RECEIVING PIT AT APPROXIMATE TOP OF SLOPE CONNECT TO EXIST. MANHOLE MH1 W/ PIPE SLIDE SEE PWC DETAILS S.18 AND S.4 -L- PT Sta 89+60.59 SL-1- STA 0+00

NOTE: UNABLE TO LOCATE EXISTING 24" RCP DURING FIELD INVESTIGATION.

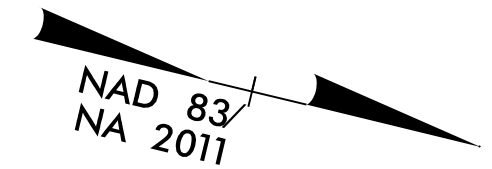
PROP 82 LF OF SEWER SERVICE LINE

PROJECT REFERENCE NO.	SHEET NO.
U-5798A	UC-8
DESIGNED BY: AAA	
DRAWN BY: KNS	
CHECKED BY: BRO	
APPROVED BY: BRO	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

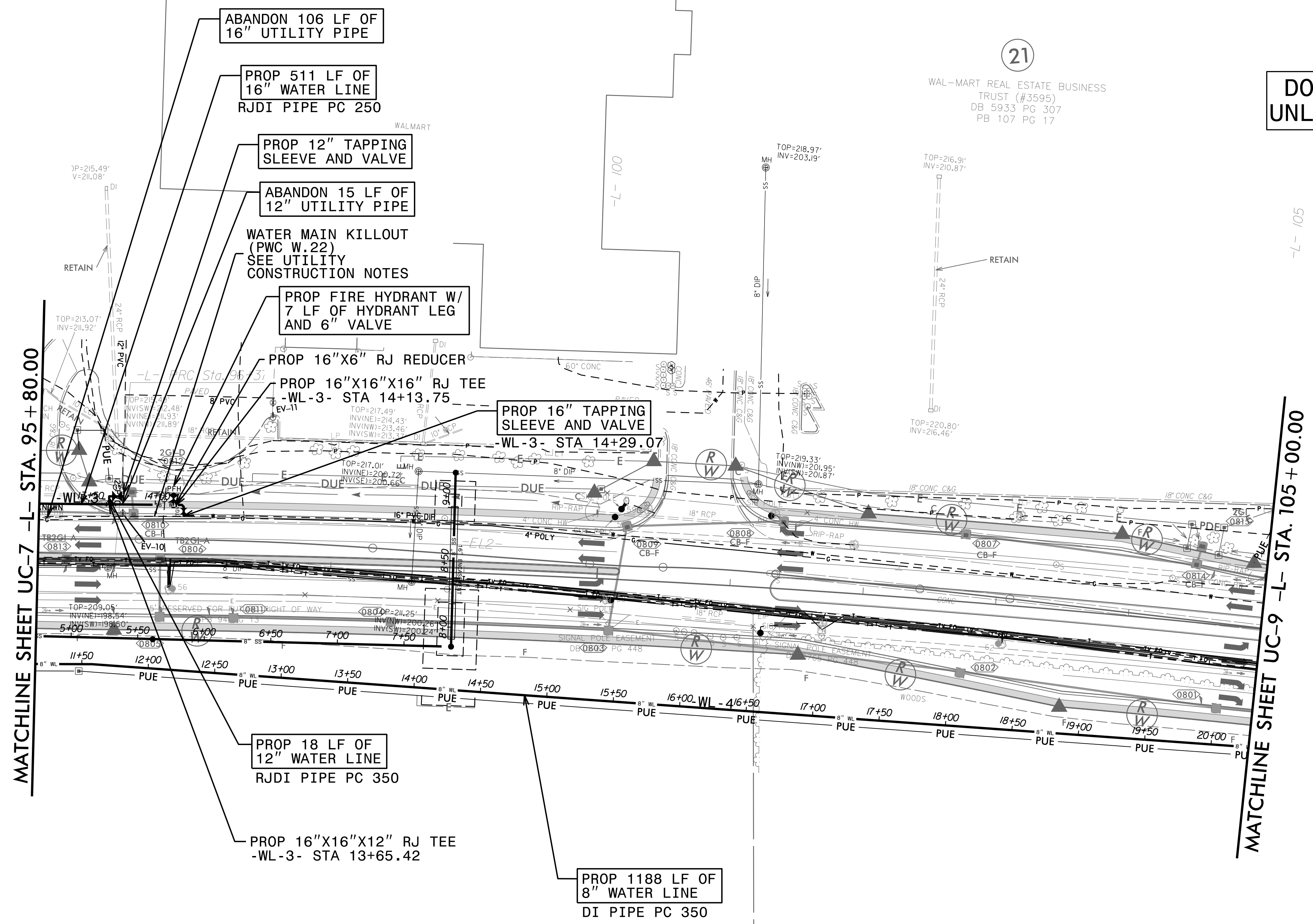
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UNLESS ALL SIGNATURES COMPLETED**

**THIS SHEET CORRESPONDS
TO ROADWAY SHEET 8**



-L- CURVE DATA

PI Sta 93+91.02	PI Sta 101+25.50
$\Delta = 8' 17" 55.2" (LT)$	$\Delta = 6' 12" 24.4" (RT)$
$D = 1' 40" 48.8"$	$D = 0' 38" 11.8"$
$L = 493.90'$	$L = 974.96'$
$T = 247.38'$	$T = 487.96'$
$R = 3,410.00'$	$R = 9,000.00'$
SE = RC	SE = NC



MATCHLINE SHEET UC-7 -L- STA. 95 + 80.00

MATCHLINE SHEET UC-9 -L- STA. 105 + 00.00

19

JOHN D GILLIS
DB 5280 PG 386
PB 94 PG 13

22

BARKER PARTNERS, LLC
DB 8580 PG 263

PROPOSED 2,405 POUNDS OF
DUCTILE IRON WATER PIPE FITTINGS

NOTES:

SEE SHEET UC-3A FOR REFERENCED NOTES.
SEE SHEET UC-11 FOR -WL-3- PROFILE.
SEE SHEET UC-13 FOR -WL-4- PROFILE.

KILLOUT OF THE EXISTING 16" WATER MAIN SOUTH OF THE CONNECTION OF WL-3 NEAR STA. 14+47 TO BE FACILITATED BY SHUTDOWN. EXISTING VALVES EV-9 AND EXISTING IN-LINE VALVE AT INTERSECTION OF OLD RAEFORD RD AND RIM RD/ GILLIS HILL RD WILL BE CRITICAL IN ISOLATING THE EXISTING MAIN IN THIS SHUTDOWN. CONSTRUCTION TIME FOR THIS WORK WILL BE LIMITED TO WEEKEND AND SHALL NOT BEGIN UNTIL 9:00 PM ON SATURDAY. ALL WORK MUST BE COMPLETED AND WATER MAIN BACK IN OPERATIONS BEFORE 6:00 AM MONDAY.

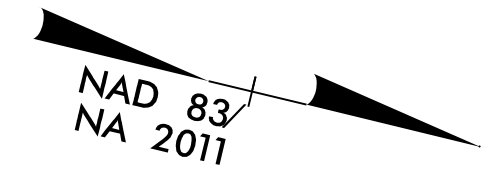
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PROJECT REFERENCE NO.	SHEET NO.
U-5798A	UC-8A
DESIGNED BY: AAA	
DRAWN BY: KNS	
CHECKED BY: BRO	
APPROVED BY: BRO	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

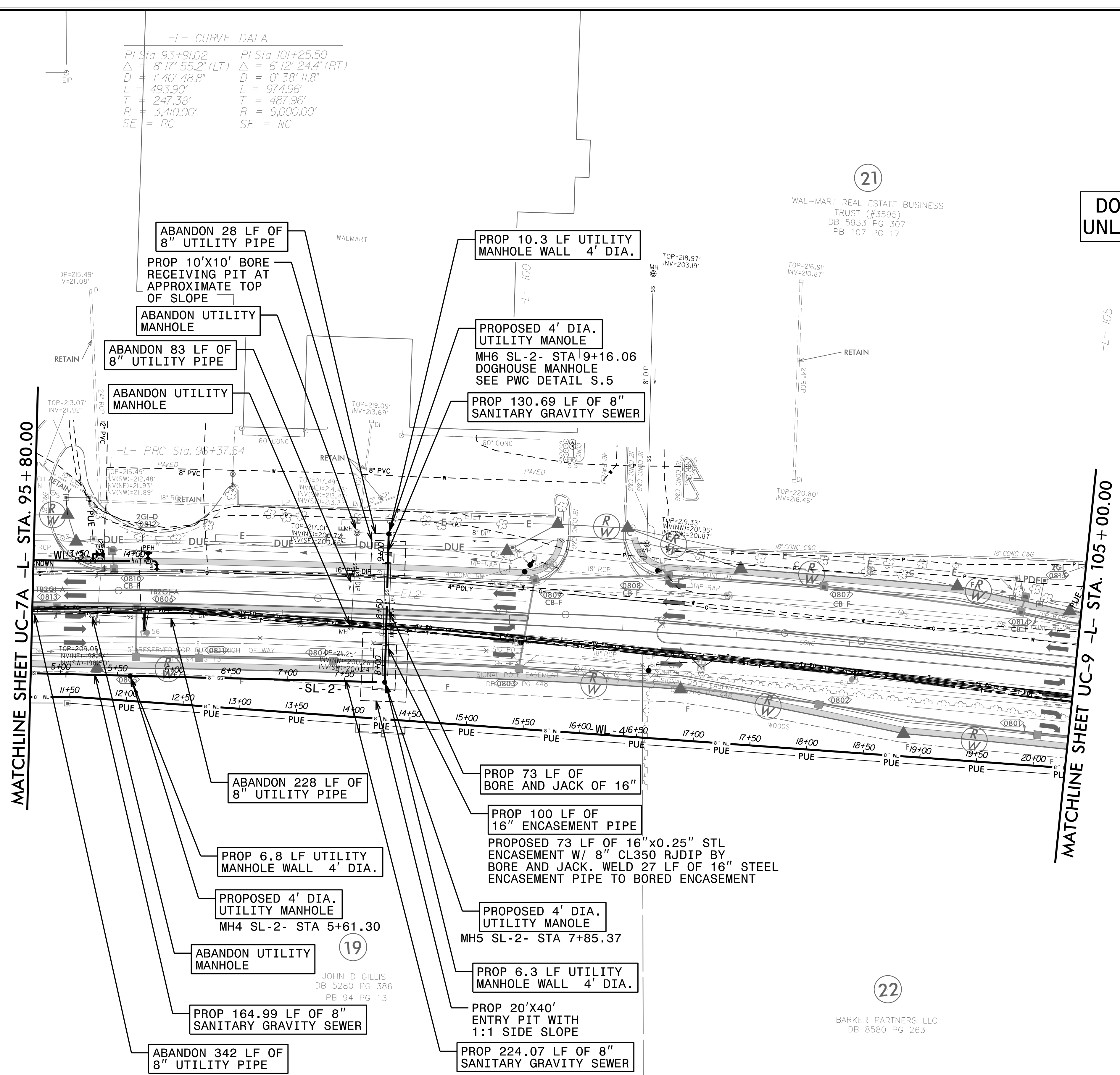
**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

**THIS SHEET CORRESPONDS
TO ROADWAY SHEET 8**



-L- CURVE DATA

PI Sta 93+91.02	PI Sta 101+25.50
Δ = 8°17'55.2" (LT)	Δ = 6°12'24.4" (RT)
D = 1°40'48.8"	D = 0°38'11.8"
L = 493.90'	L = 974.96'
T = 247.38'	T = 487.96'
R = 3,410.00'	R = 9,000.00'
SE = RC	SE = NC



MATCHLINE SHEET UC-7A -L- STA. 95 + 80.00

MATCHLINE SHEET UC-9 -L- STA. 105 + 00.00

21

WAL-MART REAL ESTATE BUSINESS TRUST (#3595)
DB 5933 PG 307
PB 107 PG 17

19

JOHN D GILLIS
DB 5280 PG 386
PB 94 PG 13

22

BARKER PARTNERS LLC
DB 8580 PG 263

NOTES:
SEE SHEET UC-3A FOR REFERENCED NOTES.
SEE SHEET UC-14 FOR -SL-2- PROFILE.

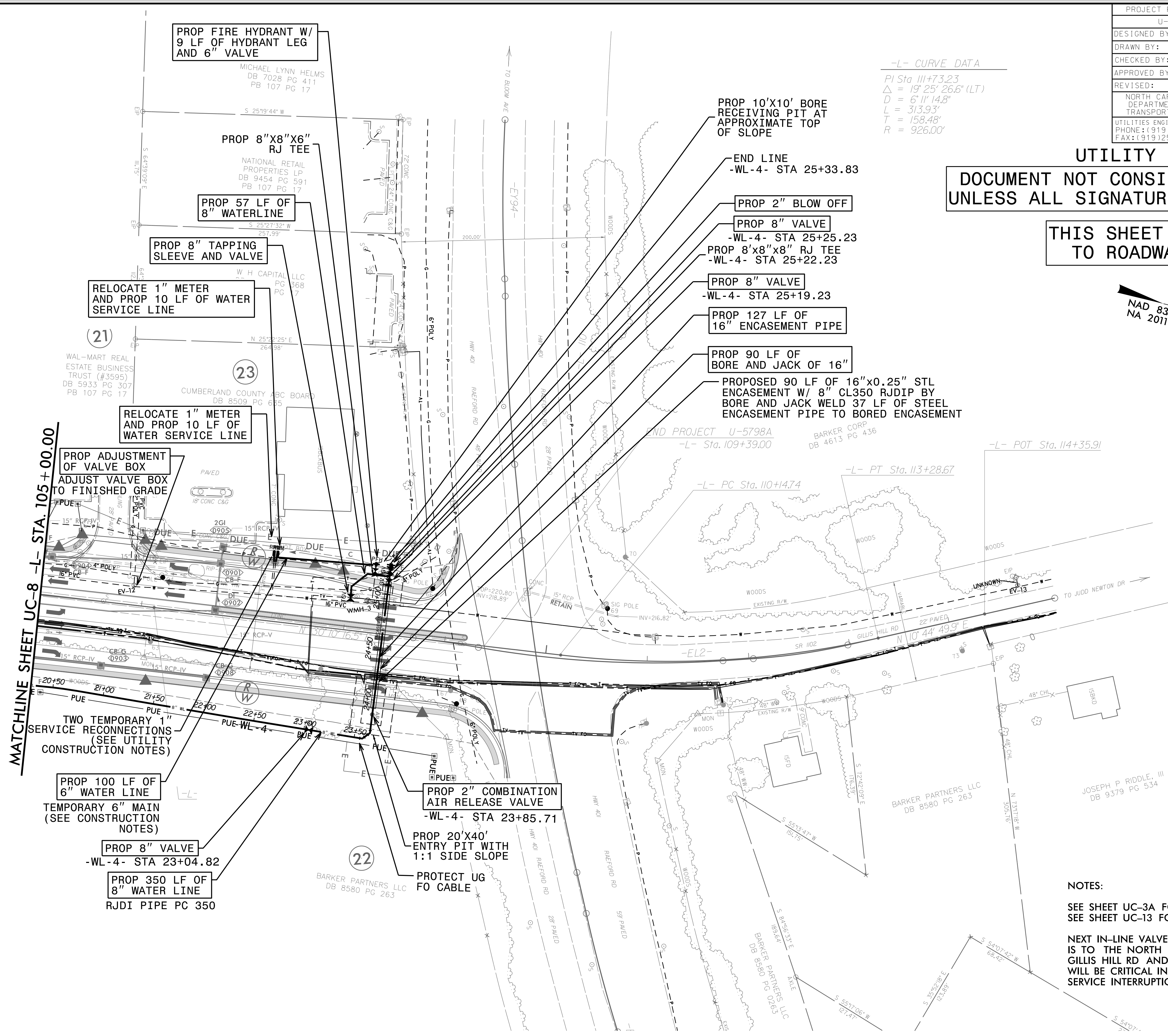
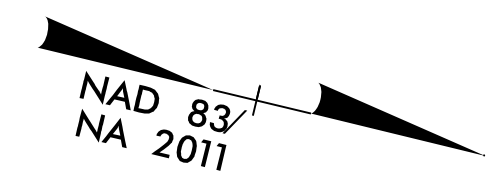
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 C:\Users\jgillis\Documents\Projects\U-5798-Gills Hill Road-Utility\Coordination\Utilities\Engineering\UC-Proj\U-5798A-ut_Rd\08_UC08A_psh.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-5798A	UC-9
DESIGNED BY: AAA	UTILITY CONSTRUCTION PLANS ONLY
DRAWN BY: KNS	
CHECKED BY: BRO	
APPROVED BY: BRO	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

-L- CURVE DATA
 PI Sta 111+73.23
 $\Delta = 19' 25" 26.6" (LT)$
 $D = 6" 11' 14.8"$
 $L = 313.93'$
 $T = 158.48'$
 $R = 926.00'$

UTILITY CONSTRUCTION
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

THIS SHEET CORRESPONDS
TO ROADWAY SHEET 9



MATCHLINE SHEET UC-8 -L- STA. 105+00.00

PROPOSED 845 POUNDS OF
 DUCTILE IRON WATER PIPE FITTINGS

NOTES:
 SEE SHEET UC-3A FOR REFERENCED NOTES.
 SEE SHEET UC-13 FOR -WL-4- PROFILE.
 NEXT IN-LINE VALVE ON 16" WATER MAIN
 IS TO THE NORTH AT THE INTERSECTION OF
 GILLIS HILL RD AND OLD RAEFORD RD. IT
 WILL BE CRITICAL IN PERFORMING THE
 SERVICE INTERRUPTION ON THE 16" MAIN.

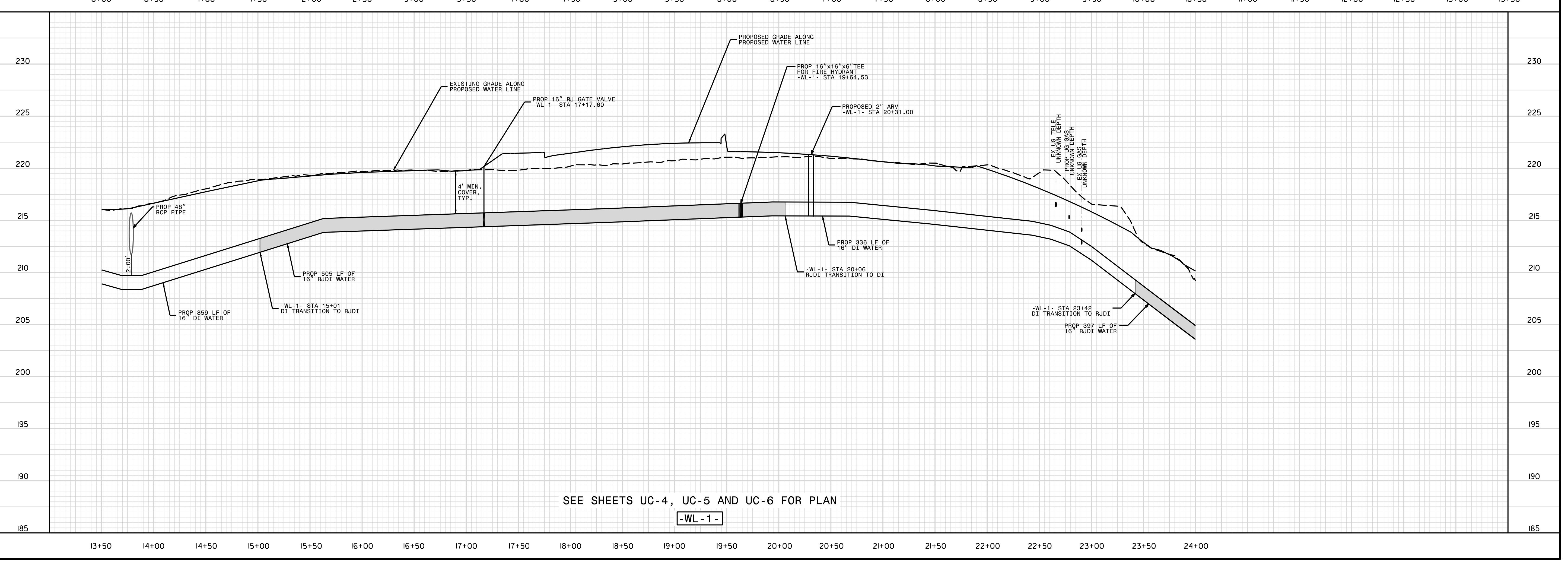
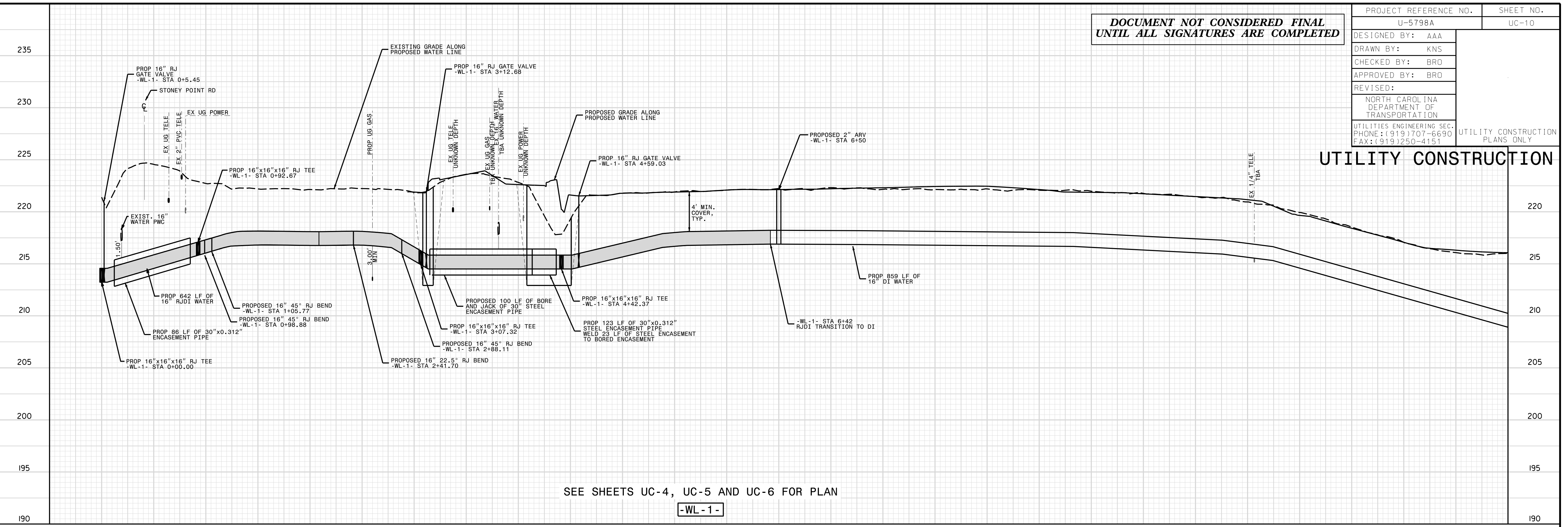
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5/26/99
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 DATE: 06/16/2021 10:42:00 AM

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PROJECT REFERENCE NO.	SHEET NO.
U-5798A	UC-10
DESIGNED BY: AAA	UTILITY CONSTRUCTION PLANS ONLY
DRAWN BY: KNS	
CHECKED BY: BRO	
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UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

UTILITY CONSTRUCTION



PROJECT REFERENCE NO.	SHEET NO.
U-5798A	UC-14
DESIGNED BY: KNS	UTILITY CONSTRUCTION PLANS ONLY
DRAWN BY: KNS	
CHECKED BY: AAA	
APPROVED BY: BRO	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

UTILITY CONSTRUCTION

5/28/99
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