

UTILITY CONSTRUCTION

Prepared In the Office of:

AECOM

AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607
919-854-6200 919-854-6259 (fax)
F - 0342

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

PROJECT REFERENCE NO.	SHEET NO.
R-5021	UC-3
DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
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.
2. THE EXISTING WATER AND SEWER UTILITIES BELONG TO BRUNSWICK COUNTY, CITY OF SOUTHPORT AND SE BRUNSWICK SANITARY DISTRICT.
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 ENVIRONMENTAL QUALITY, DIVISION OF WATER RESOURCES, WATER QUALITY SECTION. PERFORM ALL WORK IN ACCORDANCE WITH THE APPLICABLE PLUMBING CODES.
4. THE UTILITY OWNER OWNS THE EXISTING UTILITY FACILITIES AND WILL OWN THE NEW UTILITY FACILITIES AFTER ACCEPTANCE BY THE DEPARTMENT. THE DEPARTMENT OWNS THE CONSTRUCTION CONTRACT AND HAS ADMINISTRATIVE AUTHORITY. COMMUNICATIONS AND DECISIONS BETWEEN THE CONTRACTOR AND UTILITY OWNER ARE NOT BINDING UPON THE DEPARTMENT OR THIS CONTRACT UNLESS AUTHORIZED BY THE ENGINEER. AGREEMENTS BETWEEN THE UTILITY OWNER AND CONTRACTOR FOR THE WORK THAT IS NOT PART OF THIS CONTRACT OR IS SECONDARY TO THIS CONTRACT ARE ALLOWED, BUT ARE NOT BINDING UPON THE DEPARTMENT.
5. PROVIDE ACCESS FOR THE DEPARTMENT PERSONNEL AND THE OWNER'S REPRESENTATIVES TO ALL PHASES OF CONSTRUCTION. NOTIFY DEPARTMENT PERSONNEL AND THE UTILITY OWNER TWO WEEKS PRIOR TO COMMENCEMENT OF ANY WORK AND ONE WEEK PRIOR TO SERVICE INTERRUPTION. KEEP UTILITY OWNERS' REPRESENTATIVES INFORMED OF WORK PROGRESS AND PROVIDE OPPORTUNITY FOR INSPECTION OF CONSTRUCTION AND TESTING.
6. THE PLANS DEPICT THE BEST AVAILABLE INFORMATION FOR THE LOCATION, SIZE, AND TYPE OF MATERIAL FOR ALL EXISTING UTILITIES. MAKE INVESTIGATIONS FOR DETERMINING THE EXACT LOCATION, SIZE, AND TYPE MATERIAL OF THE EXISTING FACILITIES AS NECESSARY FOR THE CONSTRUCTION OF THE PROPOSED UTILITIES AND FOR AVOIDING DAMAGE TO EXISTING FACILITIES. REPAIR ANY DAMAGE INCURRED TO EXISTING FACILITIES TO THE ORIGINAL OR BETTER CONDITION AT NO ADDITIONAL COST TO THE DEPARTMENT.
7. MAKE FINAL CONNECTIONS OF THE NEW WORK TO THE EXISTING SYSTEM WHERE INDICATED ON THE PLANS, AS REQUIRED TO FIT THE ACTUAL CONDITIONS, OR AS DIRECTED.
8. MAKE CONNECTIONS BETWEEN EXISTING AND PROPOSED UTILITIES AT TIMES MOST CONVENIENT TO THE PUBLIC, WITHOUT ENDANGERING THE UTILITY SERVICE, AND IN ACCORDANCE WITH THE UTILITY OWNER'S REQUIREMENTS. MAKE CONNECTIONS ON WEEKENDS, AT NIGHT, AND ON HOLIDAYS IF NECESSARY.
9. ALL UTILITY MATERIALS SHALL BE APPROVED PRIOR TO DELIVERY TO THE PROJECT. SEE 1500-7, " SUBMITTALS AND RECORDS" IN SECTION 1500 OF THE STANDARD SPECIFICATIONS.

PROJECT SPECIFIC NOTES:

1. ALL HDPE PIPE INSTALLED BY HORIZONTAL DIRECTIONAL DRILLING SHALL NOT BE CONNECTED TO ANY OTHER PIPE OR FITTINGS FOR A PERIOD OF AT LEAST SEVEN (7) DAYS FROM THE TIME OF INSTALLATION TO ALLOW THE TENSIONAL STRESSES TO RELAX, IN ACCORDANCE WITH NC DOT REQUIREMENTS. LONGER PERIODS MAY BE REQUIRED DEPENDENT UPON PROJECT CONDITIONS. SEE DETAIL FOR RESTRAINING METHOD.
2. THE WATER MAINS AND FORCE MAINS SHALL BE INSTALLED 10 FEET FROM THE EDGE OF CONCRETE ELECTRICAL POWER TRANSMISSION POLES.
3. FOR ALL HOT BOXES TO BE RELOCATED, THE CONTRACTOR SHALL RELOCATE ALL PIPING, VALVES, ENCLOSURE AND ALL ELSE REQUIRED FOR A FULLY FUNCTIONAL BACKFLOW ASSEMBLY. THE RELOCATED BACKFLOW PREVENTION DEVICES SHALL BE INSPECTED BY A LICENSED BACKFLOW DEVICE TESTER. THE CONTRACTOR SHALL DEMOLISH THE EXISTING CONCRETE SLAB (IF EXISTING) AROUND THE PIPING AND INSTALL A NEW CONCRETE SLAB AROUND THE RELOCATED PIPING. THE NEW SLAB SHALL BE OF EQUAL DIMENSIONS AND THICKNESS AS THE EXISTING SLAB. THE SLAB SHALL BE OF 2,500 PSI CONCRETE.
4. THE NEW FIRE HYDRANTS SHALL BE INSTALLED FULLY WITHIN THE NEW NCDOT RIGHT-OF-WAY OR PUE. THE DRAWINGS MAY SHOW THE HYDRANTS OUTSIDE THE PUE ONLY FOR CLARITY.
5. MAJOR SHUT-DOWNS AND CONNECTIONS FOR THE SEWER FORCE MAIN, RECLAIMED WATER MAIN AND POTABLE WATER MAIN WILL NOT BE ALLOWED DURING THE PEAK USAGE PERIOD FROM MEMORIAL DAY THROUGH LABOR DAY. THE CONTRACTOR SHALL MAKE CONNECTIONS BETWEEN THE PROPOSED FORCE MAIN AND EXISTING FORCE MAIN AT NIGHT ON A WEEKEND. PRIOR TO MAKING THE CONNECTION, THE CONTRACTOR SHALL PROVIDE AND HAVE ON SITE AT THE RIVER MIST LIFT STATION A TANKER TRUCK INTO WHICH RAW SEWAGE SHALL BE PUMPED INTO BY WAY OF THE EXISTING PUMPS AND 6" EMERGENCY PUMP CONNECTION. ONCE THE FORCE MAIN CONNECTION HAS BEEN MADE AND THE FORCE MAIN OPERATIONAL, THE CONTRACTOR SHALL RETURN THE STORED SEWAGE IN THE TANKER TRUCK TO THE PUMP STATION WET WELL. PAYMENT FOR THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE " FORCE MAIN PAY ITEM. NO ADDITIONAL MEASUREMENT OR PAYMENT WILL BE MADE.
6. FOR CUTTING OF EXISTING ASBESTOS CEMENT (AC) PIPE, THE CONTRACTOR SHALL FOLLOW THE PROCEDURES OUTLINED IN THE OCCUPATIONAL HEALTH AND SAFETY REGULATIONS AND SAFE WORK PRACTICES FOR HANDLING ASBESTOS. ANY REMOVED ASBESTOS PIPES SHALL BE PROPERLY DISPOSED AT AN APPROVED LANDFILL.

WATER METER RELOCATION NOTES

1. THE NEW WATER SERVICE TAP, PIPE AND YOKEBOXES SHALL BE INSTALLED, TESTED AND DISINFECTED PRIOR TO SHUTTING OFF THE WATER TO THE EXISTING USER. WHEN THE NEW SERVICE IS READY FOR USE, THE CONTRACTOR SHALL THEN RELOCATE THE EXISTING METER.
2. THE CONTRACTOR IS RESPONSIBLE FOR MAKING THE CONNECTION FROM THE RELOCATED METER TO THE EXISTING SERVICE MAIN ON THE CUSTOMER'S SIDE OF THE METER, INCLUDING THE COST OF A LICENSED PLUMBER, IF REQUIRED.
3. THE NEW OR RELOCATED METER BOXES SHALL BE LOCATED OUTSIDE BUT AT THE RIGHT-OF-WAY LINE IN ACCORDANCE WITH THE METER INSTALLATION DETAILS.

PROJECT SPECIFIC NOTES (CONT.):

① CONSTRUCTION SEQUENCE FOR NEW 18-INCH RAW WATER MAIN

1. CLEAR THE ROUTE OF THE PROPOSED RAW WATER MAIN.
2. INSTALL THE WATER MAIN FOR THE FULL LENGTH, BUT DO NOT MAKE CONNECTIONS.
3. MAKE CONNECTIONS TO EXISTING 10-INCH MAIN FROM WELL NO.15 AS SHOWN ON PLAN SHEET NO. UC-11. CLOSE EXISTING 10" VALVE NO. EV#2 AND NEW 18" BUTTERFLY VALVE RWV#1. KEEP EXISTING 24" RAW WATER MAIN IN SERVICE.
4. USE WATER FROM WELL NO. 15 TO FILL, TEST AND DISINFECT THE NEW 18" RAW WATER MAIN. OPEN NEW 10" VALVE NO. RWV#2 AS SHOWN ON PLAN SHEET UC-11. DISINFECT THE NEW RAW WATER MAIN IN ACCORDANCE WITH SPECIFICATION SECTION TS 18.01-WATER DISTRIBUTION SYSTEM.
5. MAKE CONNECTION TO EXISTING 18" RAW WATER MAIN AS SHOWN ON PLAN SHEET UC-11. CLOSE EXISTING VALVES NO. EV#1 AND EV#2. OPEN THE NEW 18" BUTTERFLY VALVE RWV#1. DURING THIS PERIOD, THE COUNTY SHALL USE THE WELLS NORTH OF THE TREATMENT PLANT.
6. ON PLAN SHEET UC-17, INSTALL NEW 18" VALVE RWV#3 AND NEW 24" VALVE RWV#4 INCLUDING 24" X 24" TEE AND BLOCKING. CLOSE VALVES RWV#3 AND RWV#4.
7. MAKE CONNECTION OF NEW RAW WATER MAIN AND EXISTING 24" RAW WATER MAIN AS SHOWN ON PLAN SHEET UC-17 AND DETAIL A. DURING THIS PERIOD, THE COUNTY SHALL SHUT DOWN THE WELLS TO THE WEST AND TO THE NORTH. CLOSE EXISTING VALVES EV#5 AND EV#6. INSTALL THE CUT-IN 24" X 90 ELL AND BLOCKING. MAKE CONNECTION TO THE NEW 18" RAW WATER MAIN. OPEN 18" VALVE RWV#3. THE COUNTY CAN THEN RESTART THE WELLS FROM THE WEST AND PLACE THE NEW 18" RAW WATER MAIN IN SERVICE. PLEASE NOTE THAT NEITHER WELL FIELD SHALL BE TAKEN OUT OF SERVICE DURING THE PEAK SUMMER SEASON. THE COUNTY SHALL APPROVE THE SCHEDULE FOR TAKING EITHER WELL FIELD OUT OF SERVICE.
8. MAKE THE CONNECTION FROM THE EXISTING 24" RAW WATER MAIN TO THE NEW 24" VALVE RWV#4 AS SHOWN ON PLAN SHEET UC-17. MAKE THE CONNECTION FROM THE EXISTING 8" RAW WATER MAIN TO THE EXISTING 24" RAW WATER MAIN AS SHOWN ON PLAN SHEET UC-17 AND IN DETAIL D ON PLAN SHEET UC-18. AT THIS POINT, THE COUNTY CAN RESTART USING THE WELLS FROM THE NORTH.
9. THE ABANDONED 24" RAW WATER MAIN SHALL BE COMPLETELY DRAINED. THE CONTRACTOR SHALL CUT THE PIPE AT LOW POINTS SO THAT THE WATER WILL SLOWLY DRAIN FROM THE PIPE. CHECK DAMS AND OTHER EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSTALLED TO PREVENT EROSION AND SEDIMENT FROM ENTERING THE STREAMS AND DITCHES.
10. ALL OPENINGS TO THE EXISTING RAW WATER MAIN SHALL BE GROUTED CLOSED.
11. COORDINATE CONNECTION DATE & TIME WITH BRUNSWICK COUNTY PUBLIC UTILITIES AND THE ENGINEER. IT IS EXPECTED THAT NIGHT WORK WILL BE REQUIRED. CONNECTIONS MAY NOT BE MADE DURING THE MONTHS OF JUNE, JULY, OR AUGUST UNLESS SPECIFICALLY AGREED TO BY THE ENGINEER. CONTRACTOR SHALL NOT BE ENTITLED TO ANY ADDITIONAL COMPENSATION (TIME OR MONIES) FOR DELAY DURING THESE MONTHS.

② CONSTRUCTION SEQUENCE FOR ABANDONING 8-INCH ABESTOS CEMENT (AC) WATER MAIN

1. SEE PLAN SHEETS UC-25 THROUGH UC-28.
2. INSTALL THE PROPOSED 8-INCH PVC WATER MAIN FOR THE FULL LENGTH, AND MAKE CONNECTIONS AS SHOWN ON PLAN SHEETS UC-25 AND UC-26. TEST, CHLORINATE, SAMPLE AND FLUSH NEW 8-INCH WATER MAIN. PLACE INTO SERVICE AFTER SATISFACTORY BACTERIOLOGICAL TEST HAVE BEEN RECEIVED FROM AN APPROVED LABORATORY.
3. TRANSFER EXISTING WATER SERVICES FROM EXISTING 8-INCH AC TO EITHER THE NEW 8-INCH PVC OR EXISTING 24-INCH DUCTILE IRON WATER MAIN, AS SHOWN ON THE CONTRACT DRAWINGS.
4. ABANDON IN PLACE THE EXISTING 8-INCH AC WATER MAIN AND FILL ENTIRE LENGTH WITH FLOWABLE FILL.
5. THE ABANDONED 8-INCH AC POTABLE WATER MAIN SHALL BE COMPLETELY DRAINED. THE CONTRACTOR SHALL CUT THE PIPE AT LOW POINTS SO THAT THE WATER WILL SLOWLY DRAIN FROM THE PIPE. CHECK DAMS AND OTHER SEDIMENTATION AND EROSION CONTROL MEASURES SHALL BE INSTALLED TO PREVENT EROSION AND SEDIMENT FROM ENTERING THE STREAMS AND DITCHES.

④ CONSTRUCTION SEQUENCE FOR NEW 24-INCH POTABLE WATER MAIN

1. CLEAR AND GRUB THE ROUTE OF THE PROPOSED 24-INCH POTABLE WATER MAIN.
2. INSTALL THE PROPOSED WATER MAIN FOR THE FULL LENGTH, BUT DO NOT MAKE CONNECTIONS.
3. POTABLE WATER FROM THE EXISTING 24-INCH POTABLE WATER MAIN SHALL BE USED TO FILL, TEST AND CHLORINATE THE NEW 24-INCH POTABLE WATER MAIN. TEMPORARY TAPS OR FIRE HYDRANT CONNECTIONS EQUIPPED WITH DOUBLE CHECK VALVE ASSEMBLIES SHALL BE USED TO SUPPLY AND FILL THE NEW MAIN. IT WILL NOT BE NECESSARY TO DRAIN THE PIPE ONCE TESTING AND CHLORINATION HAS BEEN COMPLETED.
4. ONCE THE WATER MAIN HAS BEEN TESTED AND THE BACTERIOLOGICAL TEST RESULTS ARE APPROVED BY THE ENGINEER AND OWNER, THE CONTRACTOR SHALL FLUSH THE NEW MAIN UNTIL THE CHLORINE CONCENTRATIONS ARE BELOW 4 PPM. IMMEDIATELY AFTER FLUSHING, THE CONTRACTOR SHALL MAKE THE CONNECTION BETWEEN THE NEW AND EXISTING 24-INCH MAINS AS SHOWN ON PLAN SHEET UC-17. THIS WILL ALLOW FOR BOTH MAINS TO BE IN SERVICE AT THE SAME TIME AND TO ALLOW TIME FOR MAKING CONNECTIONS TO THE BRANCH MAINS AND WATER SERVICES. ONCE ALL OF THE BRANCH MAINS AND WATER SERVICES HAVE BEEN MADE, THEN THE EXISTING 24-INCH DUCTILE IRON MAIN SHALL BE TAKEN OUT OF SERVICE AND THE FINAL CONNECTION BETWEEN THE NEW AND EXISTING 24-INCH MAINS AS SHOWN ON PLAN SHEET UC-23 SHALL BE MADE.
5. THE ABANDONED 24-INCH POTABLE WATER MAIN SHALL BE COMPLETELY DRAINED. THE CONTRACTOR SHALL CUT THE PIPE AT LOW POINTS THAT THE WATER WILL SLOWLY DRAIN FROM THE PIPE. CHECK DAMS AND OTHER SEDIMENTATION AND EROSION CONTROL MEASURES SHALL BE INSTALLED TO PREVENT EROSION AND SEDIMENT FROM ENTERING THE STREAMS AND DITCHES. ONCE DRAINED, THE 24" DI MAIN SHALL BE ABANDONED IN PLACE AND FILLED WITH FLOWABLE FILL.
6. COORDINATE CONNECTION DATE & TIME WITH BRUNSWICK COUNTY PUBLIC UTILITIES AND THE ENGINEER. IT IS EXPECTED THAT CONNECTIONS MAY NOT BE MADE DURING THE MONTHS OF JUNE, JULY, OR AUGUST UNLESS SPECIFICALLY AGREED TO BY BRUNSWICK COUNTY. CONTRACTOR SHALL NOT BE ENTITLED TO ANY ADDITIONAL COMPENSATION (TIME OR MONIES) FOR DELAY DURING THESE MONTHS. NIGHT WORK WILL BE REQUIRED.