

ITEM SPECIAL - WATER MAIN AND SERVICE BRANCHES

- A. DESCRIPTION. THIS WORK CONSISTS OF CONSTRUCTING AND RECONSTRUCTING WATER MAINS AND SERVICE BRANCHES, INCLUDING FIRE HYDRANTS, WATER METERS, SERVICE STOPS, VALVES, FITTINGS AND BOXES. THE WORK ALSO INCLUDES FURNISHING ALL MATERIALS, EXCAVATION, BEDDING, LAYING PIPE, JOINTING, HYDROSTATIC TESTING, STERILIZING, BACKFILLING, RESTORATION OF DISTURBED FACILITIES AND SURFACES, DISPOSAL OF ALL SURPLUS EXCAVATION AND DISCARDED MATERIALS, AND OTHER ITEMS NECESSARY TO COMPLETE THE WORK.
- B. CONSTRUCTION AND MATERIAL SPECIFICATIONS. ALL WATER MAINS AND APPURTENANCES SHALL BE IN ACCORDANCE WITH "COUNTY OF LAKE, OHIO - LAKE COUNTY REGIONAL SEWER DISTRICT NO. 1 - STANDARD WATERLINE CONSTRUCTION AND MATERIAL SPECIFICATIONS," (FEBRUARY 15, 1983 OR THE MOST CURRENT SPECIFICATION REVISION) AND AS MODIFIED HEREIN. A COPY OF THE SPECIFICATIONS IS ON FILE IN THE OFFICE OF CONTRACT SALES, ROOM 118, 25 S. FRONT ST., COLUMBUS, OHIO, THE DESIGN OFFICE OF DISTRICT 12, 5500 TRANSPORTATION BLVD., GARFIELD HTS., OHIO, OR THE OFFICE OF THE LAKE COUNTY SANITARY ENGINEER, LAKE CO. ADMINISTRATION CENTER, 105 MAIN ST., PAINESVILLE, OHIO.

- C. OWNERSHIP. ALL WATER MAINS, SERVICE CONNECTIONS AND APPURTENANCES WITHIN THE DEDICATED RIGHT-OF-WAY ARE OWNED, OPERATED AND MAINTAINED BY THE LAKE COUNTY DEPARTMENT OF UTILITIES.
- D. INSPECTION. ALL WORK ON WATER MAINS AND APPURTENANCES SHALL BE INSPECTED BY, APPROVED BY, AND COORDINATED WITH THE LAKE COUNTY DEPARTMENT OF UTILITIES PRIOR TO BEING PLACED IN SERVICE. THE CONTRACTOR SHALL NOTIFY THE LAKE COUNTY DEPARTMENT OF UTILITIES AT LEAST THREE WORKING DAYS PRIOR TO INITIATING ANY WORK ON THE WATER MAINS AND APPURTENANCES.

- E. BACTERIOLOGICAL TESTING AND STERILIZATION. THE CONTRACTOR SHALL SUPPLY ALL EQUIPMENT, MATERIALS AND LABOR NECESSARY TO STERILIZE THE PROPOSED WATER MAINS AND APPURTENANCES FOR SAMPLE COLLECTION IN ACCORDANCE WITH THE WATER MAIN CONSTRUCTION AND MATERIAL SPECIFICATIONS AND AWWA STANDARD C650 SECTION 7.3. BACTERIOLOGICAL SAMPLES SHALL BE COLLECTED BY THE LAKE COUNTY DEPARTMENT OF UTILITIES IN AN APPROVED CONTAINER.

WATER IN THE MAIN TO BE DISINFECTED SHOULD HAVE A TURBIDITY ACCEPTABLE TO THE LAKE COUNTY DEPARTMENT OF UTILITIES. ALL TESTS TO BE PERFORMED BY THE LAKE COUNTY LABORATORY OR A LAKE COUNTY DEPARTMENT OF UTILITIES-APPROVED LABORATORY.

THE PROCEDURES FOR BACTERIOLOGICAL TESTING ARE AS FOLLOWS:

1. BACTERIOLOGICAL TESTING TO BE PERFORMED BY LAKE COUNTY PERSONNEL ONLY AFTER PRESSURE TEST AND ALL OTHER TEST REQUIREMENTS ARE COMPLETED SATISFACTORILY.
2. DISINFECTION OF WATER MAINS PER LAKE COUNTY "RULES AND REGULATIONS" IS FIFTY PARTS PER MILLION (50 P.P.M.) CHLORINE FOR 24 HOURS.
3. CONTRACTOR SHALL SCHEDULE WITH LAKE COUNTY TO FLUSH MAIN UNTIL THE SYSTEM WATER AND SYSTEM CHLORINE RESIDUAL ARE PRESENT AT THE CHECK POINT TO THE SATISFACTION OF THE DEPARTMENT OF UTILITIES. THE RESIDUAL SHOULD BE 0.2 MG/L CHLORINE OR HIGHER.
4. CONTRACTOR SHALL SCHEDULE WITH LAKE COUNTY LABORATORY AFTER STEP 3 AND THEN LET THE WATER STAND IN THE MAIN UNDISTURBED FOR 24 HOURS WITH NO ACTIVITY ON THE MAIN.
5. AFTER 24 HOURS, LAKE COUNTY PERSONNEL CHECK CHLORINE RESIDUAL.
6. IF CHLORINE RESIDUAL IS STILL SATISFACTORY, THEN LAKE COUNTY PERSONNEL WILL TAKE THE FIRST (OF TWO) BACTERIOLOGICAL SAMPLES AND FORWARD TO LAKE COUNTY LABORATORY FOR ACCEPTABILITY.
7. CHECK WITH LAKE COUNTY LABORATORY AFTER THIS TIME PERIOD (24 HOURS) FOR THE FIRST SAMPLE ACCEPTABILITY, AND IF APPROVED, PROCEED WITH STEP #8. (CONTACT LAKE COUNTY DEPARTMENT OF UTILITIES FOR REMEDIAL PROCEDURE IF DISAPPROVED).
8. LAKE COUNTY PERSONNEL WILL CHECK WATER MAIN AGAIN TO SEE IF CHLORINE RESIDUAL IS STILL PRESENT.
9. IF CHLORINE RESIDUAL IS STILL PRESENT, PROCEED WITH STEP #10.
10. LAKE COUNTY PERSONNEL WILL TAKE SECOND BACTERIOLOGICAL SAMPLE AND FORWARD TO LAKE COUNTY LABORATORY.
11. WAIT ANOTHER 24 HOURS AND CHECK WITH LAKE COUNTY LABORATORY FOR SECOND SAMPLE ACCEPTABILITY. (CONTACT LAKE COUNTY DEPARTMENT OF UTILITIES FOR REMEDIAL PROCEDURE IF DISAPPROVED.)
12. IF SECOND SAMPLE IS APPROVED BY LAKE COUNTY LABORATORY, PROCEED WITH STEP #13.
13. LAKE COUNTY LABORATORY WILL ISSUE A WRITTEN REPORT THAT WATER MAIN IS SAFE AND ACCEPTABLE FOR SERVICE.
14. NEW WATER MAIN WILL BE MADE OPERATIONAL ONLY BY LAKE COUNTY DEPARTMENT OF UTILITIES PERSONNEL.

- F. SEQUENCE OF CONSTRUCTION. THE CONTRACTOR SHALL SCHEDULE THE WORK ON THE WATER MAINS AND APPURTENANCES TO MINIMIZE THE NUMBER AND DURATION OF INTERRUPTIONS TO WATER SERVICE. ALL WATER SERVICE INTERRUPTIONS SHALL BE SCHEDULED WITH THE LAKE COUNTY DEPARTMENT OF UTILITIES DURING OFF PEAK WATER DEMAND PERIODS AND SHALL NOT EXCEED A PERIOD OF EIGHT HOURS. THE CONTRACTOR SHALL SUBMIT A SEQUENCE OF CONSTRUCTION PLAN TO THE LAKE COUNTY DEPARTMENT OF UTILITIES FOR REVIEW AND APPROVAL PRIOR TO ANY WORK ON THE WATER MAINS. THE CONTRACTOR SHALL NOTIFY ALL CUSTOMERS AFFECTED BY THE WATER MAIN SHUT DOWN TWO (2) WORKING DAYS PRIOR TO THE PROPOSED SHUT DOWN.

G. METHOD OF MEASUREMENT:

1. WATER MAIN AND FITTINGS. THE UNIT PRICE PER FOOT OF WATER MAIN AND FITTINGS (DUCTILE IRON PIPE) SHALL INCLUDE THE COST OF CLEARING AND GRUBBING, EXCAVATION, REMOVING ROCK AND WATER, SHEETING AND SHORING, BEDDING, BACKFILLING, DISPOSAL OF WATER MATERIALS, PROTECTION OF STRUCTURES, UTILITIES OR OTHER FACILITIES AND FOR FURNISHING, LAYING, CUTTING, JOINT RESTRAINT, TESTING, CORROSION PROTECTION, STERILIZING, IDENTIFICATION TAPE, GASKETS, CUT IN TEES, JOINTING MATERIALS, NUTS, BOLTS, ZINC PROTECTO CAPS, MECHANICAL JOINT GLANDS OR ANY OTHER SIMILAR ACCESSORIES, LIMESTONE BEDDING FOR PIPE AND BLOCKING SUPPORT FOR FITTINGS, FLUSHING AND PAINTING ALL DUCTILE IRON PIPE AND FITTINGS FURNISHED UNDER THIS CONTRACT IN ACCORDANCE WITH ALL LAKE COUNTY RULES AND REGULATIONS.

EACH WATER MAIN FITTING SHALL BE RESTRAINED USING EBAA IRON MEGALUG JOINT RESTRAINT SYSTEM OR APPROVED EQUAL. THRUST BLOCKING WILL BE USED IN CONJUNCTION WITH RESTRAINT SYSTEM AT ALL HYDRANTS AT THE DIRECTION OF THE LAKE COUNTY DEPARTMENT OF UTILITIES.

HYDRANT FITTINGS INCLUDING HYDRANT TEES AND BENDS SHALL BE PAID FOR IN THE UNIT PRICE BID FOR "HYDRANT EXTENDED AND ADJUSTED TO GRADE" AND NO SEPARATE PAYMENT SHALL BE MADE FOR THESE FITTINGS.

PAYMENT FOR WATER MAINS WILL BE MADE ON A LINEAL FOOT BASIS AS MEASURED HORIZONTALLY ALONG THE CENTERLINE OF THE WATER MAIN, COMPLETE, TESTED AND READY FOR SERVICE.

2. HYDRANT EXTENDED AND ADJUSTED TO GRADE.

THE CONTRACTOR SHALL CAREFULLY REMOVE, EXTEND AND ADJUST TO GRADE THE EXISTING FIRE HYDRANTS AS SHOWN IN THE DETAIL ON SHEET 5B AND AT THE LOCATIONS SHOWN ON THE PLAN AND PROFILE SHEETS. PRIOR TO EXCAVATING AROUND THE EXISTING HYDRANT, THE CONTRACTOR SHALL INSTALL TWO TIE RODS AS SHOWN IN THE DETAIL TO PREVENT THE VALVE FROM BLOWING OFF. THE RODS SHALL BE PAINTED WITH BITUMASTIC AND THE TOTAL LENGTH OF PIPE BEING TIED, INCLUDING THE TIE RODS, SHALL BE WRAPPED WITH A LAYER OF 8 MIL POLYETHYLENE. FOLLOWING THE TIE ROD INSTALLATION THE FIRE HYDRANT CAN BE EXTENDED. THE HYDRANT AND 6" WATER MAIN SHALL BE REMOVED TO THE EXISTING GATE VALVE. THE HYDRANT SHALL BE THOROUGHLY CLEANED OF DIRT ON THE INSIDE. THE HYDRANT STANDPIPE AND BOTTOM SHALL BE WIRE BRUSHED CLEAN ON THE OUTSIDE, AND IF NECESSARY, HYDRANT STANDPIPE EXTENSIONS SHALL BE ADDED TO BRING THE HYDRANT UP TO THE HEIGHT SPECIFIED ON THE DETAIL. THE STANDPIPE EXTENSION SHALL BE COMPATIBLE WITH THE EXISTING HYDRANT.

COST FOR THIS WORK INCLUDING EXCAVATION; GRANULAR BACKFILL; FITTINGS; NUTS; BOLTS; ZINC PROTECTO CAPS; HYDRANT INLET PIPE AND EXTENSION; DEWATERING; SHEETING OR SHORING; PIPE BEDDING AND PIPE BACKFILL; DISPOSAL OF WASTE MATERIALS; PROTECTION OF STRUCTURES, UTILITIES, SERVICE CONNECTIONS OR OTHER FACILITIES; THRUST BLOCKING; JOINT RESTRAINTS; TESTING; FLUSHING; STERILIZING; AND PAINTING OF ALL HYDRANTS TOGETHER WITH ALL LABOR, EQUIPMENT, TOOLS, AND MATERIALS NECESSARY TO COMPLETE THE WORK AS SHOWN, SPECIFIED OR AS DIRECTED BY THE ENGINEER SHALL BE INCLUDED IN ITEM SPECIAL HYDRANT EXTENDED AND ADJUSTED TO GRADE.

3. VALVES. THE UNIT PRICE FOR BUTTERFLY VALVES, TAPPING SLEEVE AND VALVE, AND GATE VALVES SHALL INCLUDE THE FURNISHING, PLACING, TESTING AND PAINTING OF VARIOUS VALVES, COMPLETE WITH VALVE BOXES OR VALVE CHAMBERS, BYPASS VALVES, BOLTS, NUTS, ZINC PROTECTO CAPS, GASKETS, JOINTING MATERIALS, CORPORATION STOPS, STERILIZATION AND TESTING CONNECTIONS, AND OTHER ACCESSORIES TOGETHER WITH ALL LABOR, EQUIPMENT, TOOLS AND MATERIALS NECESSARY TO INSTALL ALL THE VARIOUS SIZES AND TYPES OF VALVES SHOWN ON THE PLANS, AS SPECIFIED OR AS DIRECTED BY THE ENGINEER.
4. LONG AND SHORT SERVICE CONNECTIONS. PAYMENT FOR "LONG SERVICE CONNECTION" WILL BE ON A UNIT BASIS INCLUDING FURNISHING ALL LABOR, MATERIAL AND EQUIPMENT TO TAP THE OLD WATER MAIN, INSTALL NEW CORPORATION STOP, INSTALL NEW COPPER WATER SERVICE LINE UNDER ROADWAY, INSTALL NEW CURB STOP AND CURB BOX AND CONNECT THE NEW COPPER SERVICE LINE TO THE EXISTING OR RELOCATED WATER METER, INCLUDING A NEW METER VAULT. THIS ITEM SHALL APPLY TO SERVICE CONNECTIONS WHICH ARE ON THE SOUTH SIDE OF THE ROADWAY.

PAYMENT FOR "SHORT SERVICE CONNECTION" WILL BE ON A UNIT BASIS SIMILAR TO THE PROCEEDING PARAGRAPH ABOVE EXCEPT THIS ITEM SHALL APPLY TO SERVICE CONNECTIONS ON THE NORTH SIDE OF THE ROADWAY.

5. WATER METER AND BOX RELOCATED. THIS ITEM SHALL INCLUDE FURNISHING ALL LABOR, MATERIALS AND EQUIPMENT TO RELOCATE THE EXISTING WATER METER AND PROVIDE NEW WATER METER BOXES IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS, INCLUDING EXCAVATION, DEWATERING, SHEETING, BACKFILL, NEW CAST IRON FRAMES AND COVERS ALL OTHER MATERIALS AND/OR EXPENSE WHETHER SPECIFICALLY MENTIONED OR NOT.

THIS ITEM ALSO INCLUDES LOWERING EXISTING METERS AND PROVIDING NEW METER BOXES WHERE THE PROPOSED CUT DOES NOT LEAVE THE REQUIRED COVER OVER THE EXISTING SERVICE LATERALS.

PAYMENT WILL BE MADE ON A UNIT BASIS FOR EACH METER AND BOX RELOCATED, TESTED AND READY FOR SERVICE.

- H. BASIS OF PAYMENT. THE ACCEPTED QUANTITIES OF WATER MAINS AND APPURTENANCES WILL BE PAID FOR AT THE CONTRACT PRICE DESIGNATED FOR EACH OF THE PAY ITEMS LISTED BELOW AND INCLUDED IN THE PROPOSAL. THE PRICES SHALL BE FULL COMPENSATION FOR ALL MATERIALS INCLUDING EXCAVATION, BACKFILL, DISPOSAL OF SURPLUS MATERIALS, REINFORCING STEEL WHERE SPECIFIED AND FOR OTHER INCIDENTALS NECESSARY FOR THE COMPLETION OF THE ITEMS.

- I. QUANTITIES. THE FOLLOWING ESTIMATED QUANTITIES ARE INCLUDED IN THE GENERAL SUMMARY TO BE USED AS SHOWN ON THE DETAILED DRAWINGS AND AS DIRECTED BY THE ENGINEER.

ITEM	DESCRIPTION	QUANTITY	UNIT
SPECIAL	VALVE BOX RELOCATED	5	EACH

- J. WATER MAIN MUST BE STAKED OUT BY A PROFESSIONAL SURVEYOR AND CUT SHEETS UTILIZED. NEW AND RELOCATED SERVICE LINES MUST HAVE A MINIMUM 5'-0" COVER AND PROVIDE MINIMUM 18" VERTICAL SEPARATION FROM ALL STORM/SANITARY SEWERS, GAS LINES AND OTHER WATERLINES. PROVIDE CONCRETE CRADLES WHERE THE 18" VERTICAL SEPARATION CAN NOT BE PROVIDED TO A POINT 5' EITHER SIDE OF CROSSING.

- K. THE CONTRACTOR SHALL NOTIFY THE LAKE COUNTY DEPARTMENT OF UTILITIES AT THE FOLLOWING LOCATION AT LEAST THREE WORKING DAYS PRIOR TO THE START OF THE WATER MAIN RELOCATION WORK:

LAKE COUNTY DEPARTMENT OF UTILITIES
LAKE COUNTY ADMINISTRATION CENTER
105 MAIN STREET
PAINESVILLE, OHIO 44077
(216) 357-2645

- L. CONNECTION SEQUENCE OF CONSTRUCTION SHALL BE SUBMITTED BY THE CONTRACTOR TO LAKE COUNTY UTILITIES FOR APPROVAL. THE WATER MAIN SHALL BE COMPLETELY LAID, TESTED AND ACCEPTED BEFORE ANY BRANCH CONNECTIONS AND/OR INTERRUPTIONS IN SERVICE OCCUR.

SERVICE INTERRUPTIONS SHALL BE KEPT TO A MINIMUM FOR WATER MAIN CONNECTIONS.

THE EXISTING WATER SERVICE MAY NOT BE TAKEN OFF SERVICE. IF THE EXISTING WATER SERVICE MUST BE TAKEN OFF LINE, THE CONTRACTOR SHALL PROVIDE TEMPORARY WATER SERVICE USING CERTAIN TEED YELOMINE OR APPROVED EQUAL. SUBMIT PLAN TO ENGINEER. THE PERMANENT WATER MAIN SHALL BE MADE OPERATIONAL WITHIN 12 HOURS AFTER EXISTING WATER MAIN IS SHUT DOWN. THE COST SHALL BE INCLUDED IN THE UNIT BID FOR WATER MAIN INSTALLATION.

ALL WATER SERVICE CONNECTIONS WHICH ARE BROKEN BY THE CONTRACTOR SHALL BE REPAIRED BY THE LAKE COUNTY WATER DEPARTMENT OR THE CONTRACTOR, ALL AT THE CONTRACTOR'S EXPENSE. ALL RECONNECTED WATER SERVICE CONNECTIONS SHALL BE TAPPED INTO THE NEW WATER MAIN AND DOCUMENTED AS SUCH. ALL NEW SERVICE CONNECTIONS SHALL BE MINIMUM 3/4" TYPE K COPPER, REGARDLESS OF THE BROKEN SERVICE CONNECTION MATERIAL.

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