

ITEM 638 - SPECIAL - 12" WATER MAIN, DUCTILE IRON PIPE, ANSI CLASS 53, MECHANICAL JOINTS AND FITTINGS

A. DESCRIPTION. THIS WORK CONSISTS OF CONSTRUCTING RELOCATION OF WATER MAINS AND APPURTENANCES, IN CONJUNCTION WITH THE REPLACEMENT OF BRIDGE NO. LAK-20-1807 OVER THE NORFOLK SOUTHERN FAIRPORT RAILROAD LINE. THE WORK ALSO INCLUDES FURNISHING ALL MATERIALS, EXCAVATION, BEDDING, LAYING PIPE, SUPPORT BEAM, 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 THE LAKE COUNTY SANITARY ENGINEER, LAKE COUNTY 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 AND THE ENGINEER 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. SEE "WATER GENERAL NOTES" ITEM "E" FOR INSPECTION COSTS.

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 AND THE ENGINEER. ALL TESTS ARE 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 SUBMIT A SEQUENCE OF CONSTRUCTION PLAN TO THE LAKE COUNTY DEPARTMENT OF UTILITIES AND THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO ANY WORK ON THE WATER MAINS. THE CONTRACTOR SHALL MAKE PROVISIONS TO MAINTAIN EXISTING WATER MAINS, HYDRANTS, SERVICE LINES, METERS AND VALVES IN SERVICE DURING THE CONSTRUCTION, TESTING AND DISINFECTION OF THE REPLACEMENT WATER MAINS AND APPURTENANCES. THE TWO CONNECTIONS FOR THE REPLACEMENT WATER MAIN TO THE EXISTING SHALL BE SCHEDULED WITH THE LAKE COUNTY DEPARTMENT OF UTILITIES AND THE ENGINEER DURING OFF-PEAK WATER DEMAND PERIODS AND SHALL NOT EXCEED A PERIOD OF TWO (2) HOURS (SEE NOTE "L"). THE CONTRACTOR SHALL NOTIFY ALL CUSTOMERS AFFECTED BY THE WATER MAIN SHUT DOWN TWO (2) WORKING DAYS PRIOR TO THE PROPOSED SHUT DOWN.

ITEM 638 - WATER WORK, MISC: 12" PVC TEMPORARY WATER MAIN SHALL REMAIN IN SERVICE UNTIL THE REPLACEMENT WATER MAIN IS TESTED AND APPROVED FOR SERVICE BY THE LAKE COUNTY DEPARTMENT OF UTILITIES AND THE ENGINEER.

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, 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 SHALL BE IN ACCORDANCE WITH ALL LAKE COUNTY RULES AND REGULATIONS.

EACH WATER MAIN FITTING BELOW GRADE 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 AND THE ENGINEER.

PAYMENT FOR WATER MAINS INCLUDING FITTINGS 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. VALVE ADJUSTED TO BELOW GRADE. THE UNIT PRICE BID FOR ADJUSTING EXISTING VALVES TO BELOW GRADE FOR WATER MAINS TO BE ABANDONED SHALL INCLUDE ALL EXCAVATION, BACKFILL, COMPACTION AND LABOR DEEMED NECESSARY FOR REMOVING THE VALVE BOX AND ADJUSTING THE VALVE STEM TO THREE FEET BELOW FINISHED GRADE.

3. METER BOX ADJUSTED TO GRADE INCLUDES ALL EQUIPMENT, MATERIAL, LABOR TO ADJUST TO GRADE ALL EXISTING WATER METER BOXES NOT BEING RELOCATED.

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 HERE-IN 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. WATER MAINS 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.

J. 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
(440) 350-2652

K. THE CONTRACTOR SHALL COMPLY WITH THE FOLLOWING OHIO ENVIRONMENTAL PROTECTION AGENCY REQUIREMENTS:

1. A TEN FOOT MINIMUM HORIZONTAL SEPARATION (OUT-TO-OUT, CLEAR) WILL BE MAINTAINED BETWEEN THE WATER LINE AND SANITARY SEWER.
2. AN 18-INCH MINIMUM VERTICAL SEPARATION (OUT-TO-OUT, CLEAR) WILL BE MAINTAINED BETWEEN THE WATER LINE AND SANITARY SEWER AT ALL CROSSINGS.
3. A FOUR FEET MINIMUM HORIZONTAL SEPARATION (OUT-TO-OUT, CLEAR) WILL BE MAINTAINED BETWEEN THE WATER LINE AND STORM SEWER.
4. A TWELVE-INCH MINIMUM VERTICAL SEPARATION (OUT-TO-OUT, CLEAR) WILL BE MAINTAINED BETWEEN THE WATER LINE AND STORM SEWER AT ALL CROSSINGS.
5. BOOSTER PUMPS ARE NOT PERMITTED ON SERVICE CONNECTIONS.
6. THE PROPOSED IMPROVEMENTS WILL PROVIDE A MINIMUM 35 P.S.I. PRESSURE AT THE CURB STOP DURING NORMAL OPERATING CONDITIONS.

L. CONNECTION SEQUENCE OF CONSTRUCTION SHALL BE SUBMITTED BY THE CONTRACTOR TO LAKE COUNTY DEPARTMENT OF UTILITIES AND THE ENGINEER 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 BE TAKEN OFF SERVICE FOR 2 HOURS MAXIMUM, COORDINATED WITH LAKE COUNTY. IF THE EXISTING WATER SERVICE MUST BE TAKEN OFF LINE FOR GREATER THAN 2 HOURS WITHOUT THE PROPOSED WATER MAIN BEING OPERATIONAL, THE CONTRACTOR SHALL PROVIDE TEMPORARY WATER SERVICE USING CERTAIN TEED YELOMINE OR APPROVED EQUAL. SUBMIT PLAN TO LAKE COUNTY DEPARTMENT OF UTILITIES AND THE 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 ITEM 638 - SPECIAL 12" WATER MAIN, DUCTILE IRON PIPE, ANSI CLASS 53, MECHANICAL JOINTS AND FITTINGS 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. ALL EXISTING WATER SERVICE CONNECTIONS SHALL BE REPLACED WITH NEW TYPE K COPPER FROM PROPOSED MAIN TO CURB BOX OR OUTSIDE WATER METER.

SCALE IN FEET

CALCULATED
CHECKED

WATER MAIN GENERAL NOTES

LAK - 20 - 18.07

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