Carthage Central School District
Capital Improvements Project – Phase 4
Project No. 2018-090D

Addendum No. 1
April 20, 2023

Carthage High School
SED Control No. 22-22-01-06-0-001-024

This addendum is hereby made part of the Contract Documents as though it were originally included therein and must be acknowledged by the bidder in the proper place on the bid form.

Contract Specifications

1. **Reference Technical Specifications, Volume II of II:**
   A. **ADD** the attached **Bid Addendum No. 1 Section 33 0110.58 Disinfection of Water Utility Piping Systems** and **Bid Addendum No. 1 Section 33 1416 Site Water Utility Distribution Piping.** Added sections relate to drinking fountain plumbing connections by General Contractor.

2. **Reference Technical Specification Section 33 4000, Storm Drainage Utilities:**
   A. **DELETE** the following from Paragraph 2.01A.1: "4" to 10" diameter pipe to conform to AASHTO M 252". **SUBSTITUTE** the following: "2" to 10" diameter pipe to conform to AASHTO M 252".

Contract Drawings

3. **Reference Sheet No. L200, Site Demolition Plan:**
   A. **DELETE** the Demolition Note 6 in its entirety. **SUBSTITUTE** the following: "6. Remove existing scoreboard, steel structure, concrete foundations, and related asphalt paving. Existing adjacent yard hydrant to remain. Existing scoreboard to be turned over to Owner for re-use. Backfill and restore lawn as required."
   B. **DELETE** the Demolition Note 9 in its entirety. **SUBSTITUTE** the following: "9. Remove portion of existing chain link fencing and related concrete foundations."

4. **Reference Sheet No. L300, Site Layout Plan:**
   A. **ADD** the following Drawing Note: "2. See Sheet EL310 for location of underground electric to scoreboard and shot clock. All related excavation, trenching, and fill by General Contractor."
   B. **ADD** the following to the outdoor drinking fountain replacement note on the Site Layout Plan: "General Contractor to provide 1 ½" drain line connection, 4-inch PVC pipe from drinking fountain to 8-inch vertical PVC pipe, deck plate cleanout, and water inlet connection as required by manufacturer. Water inlet canister to be located at 48-inches below grade within 8-inch vertical PVC pipe."

5. **Reference Sheet No. EL100, Field Lighting / Scoreboard Demolition:**
   A. **ADD** the following to Keynote Legend: "D8. Contractor to disconnect and remove existing speakers from light pole (2-speakers per pole) and store for reuse. Remove existing speaker wire in its entirety back to the press box."
   B. **ADD** the Keynote Symbol "D8" next to Keynote D1 at each of the (4) existing light poles.

6. **Reference Sheet No. EL310, Field Lighting / Scoreboard Plan:**
   A. **ADD** the following to Keynote Legend: “P13. Re-install (2) speakers on new light pole and provide new #12 AWG shielded speaker wire from speakers through existing conduit to existing sound system equipment in press box.”
   B. **ADD** the Keynote Symbol “P13” next to Keynote L1 at each light pole to either side of the press box on Electrical Site Plan 1.
   C. **ADD** the following to Keynote Legend: “P14. Re-install (2) speakers on new light pole and provide new #8 AWG shielded speaker wire from speakers through existing conduit to existing sound system equipment in press box.”
   D. **ADD** the Keynote Symbol “P14” next to Keynote L1 at each light pole to either side of visiting bleachers (opposite the press box) on Electrical Site Plan 1.
   E. **ADD** the following to Keynote Legend: “P15. Contractor to provide new 3-#10 in 1-inch schedule 80 PVC conduit from receptacle on 4x4 post to shot clock pole shown on Sheet No. L300. Extend conduit up pole and make connection to clock; and make connection to power in receptacle box on post. Excavation, trenching, & backfill by General Contractor.”
   F. **ADD** the Keynote Symbol “P15” adjacent to the following note on Electrical Site Plan 1: “Existing 4”x4” post with duplex receptacle for power to delay of game clock”.
   G. **DELETE** the Keynotes P10 & P11 in their entirety from Electrical Site Plan 1 and Keynote Legend. No pull box, conduit, or cabling needed from the press box to turf field as new timing system has been eliminated.

7. **Reference Sheet No. E400, Electrical Details:**
   A. **DELETE** all references to “12-Strand OM3” fiber optic cabling at Label C1 as noted in Scoreboard – One Line Diagram and Power Requirements Detail 2. **SUBSTITUTE** the following: “6-Strand OM3”.
   B. **DELETE** all references to “20A3P” breaker for Panel P2 on Panel Schedule P1. **SUBSTITUTE** the following: “100A3P”.
   C. **DELETE** the disconnect switch and 30 kvA transformer in their entirety from Partial One Line Diagram 5.
   D. **DELETE** the following note in its entirety on Partial One Line Diagram 5: “(4)-#2 w/ (1)-#8G in 1 ½” Schedule 8 PVC”.
   E. **DELETE** all references to “(4) 3/0” on Partial One Line Diagram 5. **SUBSTITUTE** the following: “(4) 4/0”. Ground & conduit sizes from Panel P2 shall remain the same.
   F. **DELETE** all reference to 24’-0” long by 11-0” wide by 5’-0” deep footings as noted in Spread Foundation Detail 1. **SUBSTITUTE** the following: 32’-0” long by 10-0” wide by 4’-0” deep footings.
   G. **DELETE** the “Track Location” box and all cabling related to the track timing communication box from the Scoreboard – One Line Diagram and Power Requirements Detail 2. Track timing system has been eliminated.

Respectfully submitted,

BCA Architects & Engineers,

Shawn M. Travers, R.A.
Principal/Architect

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SECTION 33 0110.58
DISINFECTION OF WATER UTILITY PIPING SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Disinfection of site domestic water lines specified in Section 33 1416.

B. Testing and reporting results.

1.02 RELATED REQUIREMENTS

A. Section 33 1416 - Site Water Utility Distribution Piping.

1.03 REFERENCE STANDARDS

A. AWWA B300 - Hypochlorites 2018.

B. AWWA B301 - Liquid Chlorine 2018.

C. AWWA C651 - Disinfecting Water Mains 2014, with Addendum (2020).

1.04 SUBMITTALS

A. See Section 01 3000 Administrative Requirements for submittal procedures.

B. Test Reports: Indicate results comparative to specified requirements.

C. Disinfection report:
   1. Type and form of disinfectant used.
   2. Date and time of disinfectant injection start and time of completion.
   3. Test locations.
   4. Initial and 24 hour disinfectant residuals (quantity in treated water) in ppm for each outlet tested.
   5. Date and time of flushing start and completion.
   6. Disinfectant residual after flushing in ppm for each outlet tested.

D. Bacteriological report:
   1. Date issued, project name, and testing laboratory name, address, and telephone number.
   2. Time and date of water sample collection.
   3. Name of person collecting samples.
   4. Test locations.
   5. Initial and 24 hour disinfectant residuals in ppm for each outlet tested.
   6. Coliform bacteria test results for each outlet tested.
   7. Certification that water conforms, or fails to conform, to bacterial standards of New York State Department of Health.

1.05 QUALITY ASSURANCE

A. Water Treatment Firm: Company specializing in disinfecting potable water systems specified in this Section with minimum three years documented experience.

B. Testing Firm: Company specializing in testing potable water systems, certified by governing authorities of New York.

C. Submit bacteriologist's signature and authority associated with testing.

PART 2 PRODUCTS

2.01 DISINFECTION CHEMICALS

A. Chemicals: AWWA B300 Hypochlorite and AWWA B300 Hypochlorite.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that piping system and water well has been cleaned, inspected , and pressure tested.

B. Schedule disinfecting activity to coordinate with start-up, testing, adjusting and balancing, demonstration procedures, including related systems.

3.02 DISINFECTION

A. Use method prescribed by the applicable state or local codes, or health authority or water purveyor having jurisdiction, or in the absence of any of these follow AWWA C651.

B. Provide and attach equipment required to perform the work.

C. Inject treatment disinfectant into piping system using the continuous feed method at minimum 50 mg/L free chlorine residual.

D. Maintain disinfectant in system for 24 hours. Free chlorine residual shall be no less than 25 mg/L at the conclusion of the 24 hour disinfection.

E. Operate all valves in the section being tested to ensure disinfection of the appurtenances.

F. Flush, circulate, and clean until required cleanliness is achieved; use municipal domestic water.

G. Collect samples for bacteriological analysis in accordance with AWWA C651.

H. Repeat procedure if minimum free chlorine residual or bacteriological results are not satisfactory.

I. Dispose of chlorinated water in accordance with local, state and federal regulations.

J. Replace permanent system devices removed for disinfection.

3.03 FIELD QUALITY CONTROL

A. Test samples in accordance with AWWA C651.

END OF SECTION

SECTION 33 1416
SITE WATER UTILITY DISTRIBUTION PIPING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Water pipe for site conveyance lines.

B. Pipe valves.

1.02 REFERENCE STANDARDS

A. ASTM D3035 - Standard Specification for Polyethylene (PE) Plastic Pipe (DR-PR) Based on Controlled Outside Diameter 2022.

B. AWWA C901 - Polyethylene (PE) Pressure Pipe and Tubing, 3/4 In. (19 mm) Through 3 In. (76 mm), for Water Service 2020.

1.03 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data on pipe materials, pipe fittings, valves and accessories.

C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

D. Project Record Documents: Record actual locations of piping mains, valves, connections, thrust restraints, and invert elevations. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

E. Hydrostatic test results.

F. Fluorocarbon coated T-bolts.

G. PE wall anchor.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Deliver and store valves in shipping containers with labeling in place.

B. Pipe and accessories shall be handled in such manner as to insure delivery to the trench in sound, undamaged condition. If coating or lining of any type of pipe or fitting is damaged, repairs shall be made as necessary. No other pipe or material shall be placed inside of a pipe or fitting after coating has been applied. Rubber gaskets that are not to be installed immediately, shall be stored in a cool, dark place.

C. Polyethylene piping shall be handled carefully with any gouge larger than 10% of the pipe wall removed from the trench and taken off site.

PART 2 PRODUCTS

2.01 WATER PIPE

A. Polyethylene Pipe: AWWA C901 and 906, PE 4710
   1. Pipe shall be in accordance with ASTM D3350 (minimum 200 psi rating).
   2. The pipe shall be color coded for intended use. A blue stripe shall be used for water pipe and a green stripe for sanitary sewer pipe.
   3. All fittings, butt fusion connections, and electrofusion connections must be of equal or greater pressure rating than pipe.
   4. HDPE services shall be installed using fusion saddle tapping tees. The tapping tees shall have integral brass corporation cutters.
   5. Compression connections of polyethylene pipe shall be constructed using stainless steel inserts for reinforcement.
   6. All fabricated piping and fittings shall be from the same pipe manufacturer.
   7. Fusion Joining:
      a. Pipe shall be joined by the fusion welding process. The welders must use the manufacturers instructions and procedures.

b. Electro-fusion couplings shall be allowed where typical fusion welding is impractical. Mechanical joints can be used at the direction of the Engineer.
c. All fusion welders must be qualified per the Department of Transportation, Code of Federal Regulations Title 49 Part 192.285.
d. The alignment and profile of the main shall be as shown on the Contract Drawings. All tees and valves shall be level and correctly installed not causing undo stress on the fitting. If fitting is oriented incorrectly due to improper installation or contraction and expansion of the polyethylene pipe, fitting shall be removed and correctly installed.

B. Trace Wire: Magnetic detectable conductor, brightly colored plastic covering, imprinted with "Water Service" in large letters.
1. Tracer wire shall be required on all non-ferrous water mains and services.
2. Tracer wire shall be 12 AWG wire coated with minimum 30 mil polyethylene jacketed designed specifically for buried use. Tracer wire shall be stainless steel in directonal drill areas and copper in all other areas.
3. Tracer wires shall be interconnected at all pipe tees, pipe crosses, and pipe services. Splices in the tracer wire shall be connected by means of a split bolt or compression type connector to ensure continuity. Wire nuts shall not be used. A waterproof or corrosion proof connector shall be used.
4. Tracer wire shall be placed outside the curb stop riser and be wrapped around the top of the riser.
5. Tracer wire shall be attached to the top of the pipe at 10 feet intervals and at all crosses, tees, and elbows.
6. After backfill and compaction, but prior to paving, continuity testing of the tracer wire will be required. Any detected damages to tracer wire shall be repaired.

2.02 BEDDING AND COVER MATERIALS

A. Bedding: As specified in Section 31 2323.

B. Cover: As specified in Section 31 2323.

2.03 WATER FOR HYDROSTATIC TESTING, FLUSHING AND DISINFECTION:

A. The Contractor shall be responsible for providing potable water for cleaning and testing. The contractor shall coordinate with the Owner prior to the use of on-site water source and be responsible for all costs associated with the use of on-site water should the Owner allow its use.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that building service connection and municipal utility water main size, location, and invert are as indicated.

3.02 PREPARATION

A. Cut pipe ends square, ream pipe and tube ends to full pipe diameter, remove burrs.

B. Cutting of pipe shall be done in a neat and workmanlike manner without damage to the pipe. Unless otherwise recommended by the manufacturer and authorized by the engineer, cutting shall be done with an approved type mechanical cutter. Wheel cutter shall be used when practicable.

C. Remove scale and dirt on inside and outside before assembly.

D. Prepare pipe connections to equipment with flanges or unions.

3.03 TRENCHING

A. See the section on trenching for additional requirements.

3.04 INSTALLATION - PIPE

A. Handling: Pipe and accessories shall be handled so as to insure delivery to the trench in sound, undamaged condition. Particular care shall be taken not to injure the pipe coating or lining. If the coating or lining of any pipe or fitting is damaged, the repair shall be made by the Contractor at his expense in a satisfactory manner. No other pipe or material of any kind shall be placed inside a pipe or fitting after the coating has been applied. Pipe shall be carried into position and not dragged. Use of pinch bars and tongs for aligning or turning pipe will be permitted only on the bare ends of the pipe. The interior of pipe and accessories shall be thoroughly cleaned of foreign matter before being lowered into the trench and shall be kept clean during laying operations by plugging or other approved method. Before installation, the pipe shall be inspected for defects.

B. Material found to be defective before or after laying shall be replaced with sound material without additional expense to the Owner. Rubber gaskets that are not to be installed immediately shall be stored in a cool and dark place.

C. Sewer Lines: Where the location of the water pipe is not clearly defined in dimensions on the drawings, the water pipe shall not be laid closer horizontally than 10 feet from a sewer pipe.

D. Where water lines cross gravity-flow sewer lines, the water pipe shall be laid with a minimum separation distance of 18 inches for 10 feet each side of sewer pipe.

E. Route pipe in straight line.

F. Install pipe to allow for expansion and contraction without stressing pipe or joints.

G. Slope water pipe and position drains at low points.

3.05 SERVICE CONNECTIONS

A. Provide watertight penetration of foundation wall for service main installation.

B. Anchor service main to interior surface of foundation wall.

3.06 FIELD QUALITY CONTROL

A. See Section 01 4000 - Quality Requirements, for additional requirements.

B. Leakage Test: All pipe line shall be tested hydrostatically for 2 hours at a pressure 50 percent in excess of the pressures to which the pipe will normally be subjected, unless different test pressures are outlined in the Special Requirements; but in no case less than 150 pounds per square inch (psi). Any obvious leaks or ruptured piping disclosed by the tests shall be repaired or replaced, and the test repeated to the engineer's satisfaction.

1. The contractor shall accomplish the required tests on the pipeline by individually testing each component section of main designed by the Engineer. The Maximum length of section permitted to be tested at any one time will be approximately one mile, and normally will be less. All water for tests shall be furnished and disposed of by the Contractor at his expense. Source and/or quality of water which the contractor proposes to use in testing the lines shall be acceptable to the Engineer.
2. Leakage tests shall be conducted concurrently with the pressure tests. The duration of each test shall be at least two hours in length to coincide with the time of the pressure test. Leakage test shall be repeated as often as necessary until the leakage requirement is met.
3. Leakage is defined as the quantity of water that must be supplied into a newly laid pipe or any valved section thereof to maintain the pressure within 5 psi of the test pressure after all the air in the pipeline has been expelled and the pipeline filled with water.
    a. Allowable leakage will be determined by the formula:
        1) L = [SD (P)^1/2] / 148,000.
    b. in which L is the allowable leakage in gallons per hour (gph); S is the length of pipeline tested in feet; D is the nominal pipe diameter in inches; and P is the average test pressure during the leakage test in pounds per square inch gage (psig).
    c. Pressure testing for HDPE mains shall be per manufacturer's recommendations or as follows:

1) Gradually pressurize the test section to test pressure. Initial test pressure shall be allowed to stand without makeup pressure for three (3) hours, to allow for diametric expansion or pipe stretching to stabilize.
2) After this equilibrium period, apply the specified test pressure. The final test pressure shall be held for 2 hours, monitoring the amount of make-up water required to maintain test pressure.
3) Allowable leakage shall be determined from the chart below, Make-up Water Allowance, Technical Note 802, published by Performance Pipe.

Nominal Pipe Size (in.)	Make-Up Water Allowance - 2 Hour Test (US Gal/100 ft of pipe)
4	0.25
6	0.6
8	1.0
10	1.3
12	2.3

4. When testing against closed metal-seated valves, an additional leakage per closed valve of 0.0078 gal/hr/inch of nominal valve size shall be allowed. Also, where hydrants occur within a test section, the hydrant valve shall be closed.
5. Acceptance of individual sections shall be determined upon the basis of allowable leakage. If any tests disclose leakage in excess of the allowable, the contractor shall repair each deficient section and retest them until they fall within the allowable range. The cost of repairs and retesting shall be an expense of the Contractors.
6. All visible leaks are to be repaired regardless of the amount of leakage in the section.
7. Time for Making test: Except for joint material setting or where concrete reaction backing necessitates a 5-day delay, pipe lines jointed with rubber gaskets, mechanical or push-on joints, or couplings may be subjected to hydrostatic pressure, inspected and tested for leakage at any time after partial completion of backfill.
8. Hydrostatic tests and disinfection may be conducted concurrently, using the water treated for disinfection to accomplish the hydrostatic tests. For disinfection requirements, see Disinfection Specification.
9. If water is lost when treated for disinfection and air is admitted to the unit being tested, or if any repair procedure results in contamination of the unit, disinfection shall be re-accomplished.

C. Test shall be performed in accordance with AWWA C600.

3.07 QUALITY CONTROL

A. The Contractor shall establish and maintain quality control for operations under this section to assure compliance with contract requirements and maintain records of his quality control for all materials, equipment and construction operations including but not limited to the following:
   1. Hydrostatic tests
   2. Jointing
   3. Prevention of damage to pipe coating and lining.

B. Temporary Plugging: At all times when pipe laying is not actually in progress, the open ends of the pipes shall be closed temporarily with pipe plugs or by other means. If water is in the trench when work is resumed, the plugs shall not be removed until all danger of water entering the pipe has passed.

C. If tests indicate Work does not meet specified requirements, remove Work, replace and retest at no cost to Owner.

3.08 CLEANING

A. Cleanup: Upon completion of the installation of the water distribution lines and water service lines, and appurtenances, all debris and surplus materials resulting from the work shall be removed.

B. Cleaning Pipeline: At the conclusion of the work and prior to disinfection of the water main, the Contractor shall thoroughly clean all new pipes by flushing with water or other means to remove all dirt, stones, pieces of wood, etc., which may have entered during the construction period. If, after this cleaning, any obstructions remain, they shall be corrected to the satisfaction of the Engineer. Pipes shall be flushed at a rate of 2.5 feet per second for a duration suitable to the Engineer.

END OF SECTION