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ADDENDUM NO. 2

DATE: April 3, 2020

FROM: Baxter & Woodman, Inc., Consulting Engineers

TO: Planholders of record for the Work titled:

VILLAGE OF HOFFMAN ESTATES, ILLINOIS
CHIPPENDALE LIFT STATION REHABILITATION

The Bidding Documents are amended as follows:

1. SPECIFICATIONS

   A. Section 00 01 10 TABLE OF CONTENTS revise accordingly for the following:

   B. Section 01 22 29-2, MEASUREMENT AND PAYMENT:

      Delete paragraph 1.5.A.3., and replace with the following:

      "3. The work includes applying an interior protective coating."

   C. Section 33 39 13.53, CONCRETE STRUCTURE REHABILITATION – INTERIOR SEALING, CEMENT:

      Delete Section 33 39 13.53, CONCRETE STRUCTURE REHABILITATION – INTERIOR SEALING, CEMENT in its entirety.

   D. Section 33 39 43.54, INTERIOR STRUCTURE PROTECTION – EPOXY:

      Insert attached new Section 33 39 43.54, INTERIOR STRUCTURE PROTECTION – EPOXY into the project manual.

Nothing in this Addendum shall be construed as changing other requirements of the Bidding Documents. Each Bidder shall acknowledge receipt of this Addendum where indicated in the Bid Form.

END OF ADDENDUM NO. 2

SECTION 33 39 43.54

INTERIOR STRUCTURE PROTECTION - EPOXY

PART 1 - GENERAL

1.1 SUMMARY

A. Provide protection to interior of new or existing structures and manholes subject to splash of or immersion in sanitary sewage as specified herein, and as needed for complete and proper installation, and in accordance with the latest revision of the “Standard Specifications for Water and Sewer Construction in Illinois”, except as noted herein.

B. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Division 01 - General Requirements of these Specifications.

C. References:
   1. (Reserved).

1.2 SUBMITTALS

A. Shop Drawing Submittals:
   1. Technical data sheet on each product used, including ASTM test results indicating the product conforms to is suitable for its intended use per these specifications.
   2. Material Safety Data Sheets (MSDS) for each product used.
   3. Project specific guidelines and recommendations.
   4. Qualification of Applicator:
      a. Manufacturer certification that applicator has been trained and approved in the handling, mixing, and application of the products to be used.
      b. Certification that the equipment to be used for applying the product has been manufactured or approve by the protective coating manufacturer and the applicator personnel have been trained and certified for the proper use of the equipment.
      c. Five (5) recent references of applicator indicating successful application of a high-build solventless epoxy coating by plural component spray application.
      d. Proof of any necessary federal, state, or local permits or licenses necessary to complete the project.
   5. Design details for any additional ancillary systems and equipment to be used in site and surface preparation, application and testing.

B. Operation and Maintenance Manuals – (Reserved).

C. Certificates and Guarantees – (Reserved).

D. Spare Parts – (Reserved).

1.3 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

B. Initiate and enforce quality control procedures consistent with applicable ASTM, NACE, and SSPC standards and protective coating manufacturer's recommendations.

C. Provide a protective coating manufacturer's representative for at least two days of on-site observation and the site specific recommendations relative to surface preparation, handling, application and curing of its products. In addition, the manufacturer will provide written certification that the applicator has been trained and certified by the manufacturer to handle and apply their products.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Comply with pertinent provisions of Section 01 66 11.

1.5 SITE CONDITIONS – (Reserved).

1.6 MAINTENANCE – (Reserved).

PART 2 - PRODUCTS

2.1 General:

A. Provide equipment and material necessary to install a protective lining on the interior of new or existing sanitary sewer structures, manholes, or vaults.

2.2 EPOXY LINING

A. General:
1. Provide ultra-high build epoxy coating formulated for immersion and atmospheric service that can be applied up to 150 mils in a single coat.

B. Materials:
1. Provide a material that is 100% solids by volume with 0.0 grams per liter of volatile organic compounds
2. Provide a solventless two-component epoxy resin system thixotropic in nature and filled with select fillers.

3. Structural properties and performance testing:

Flexural Strength	ASTM D790	12,443 psi
Compressive Strength, Yield	ASTM D695	12,870 psi
Tensile Strength	ASTM D638	6,640 psi
Tensile Ultimate Elongation	ASTM D638	1.53%
Hardness, Shore D	ASTM D2240	80
Impact, IZOD	ASTM D256	0.345 ft.lb/in of notch
Water Vapor Transmission	ASTM D1653/B	11 grams/sq.m./24 hrs
Taber Abrasion, CS17 wheel 1000 gm load/1000 c	ASTM D4060,	<112 mg. loss
Adhesion 40 mils DFT concrete	ASTM D4541 failure	Concrete Substrate
Steel (SSPC-10)	>2,754	
Temperature Resistance	Conc. & Steel	200^{O} F

4. Acceptable products:
   a. Raven 405 system, by RAVEN Lining Systems,
   b. Or Equal.

C. Application equipment:
   1. Provide specifically designed, heated plural component spray equipment that is approved by the protective coating manufacturer.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.2 FIELD MEASUREMENTS AND INSPECTIONS

A. Make necessary inspections and measurements in the field to assure application methods and materials are in accordance with these Specifications and manufacturers recommendations.

B. Comply with all local, state, and federal regulatory agency requirements regarding environment, health, and safety.

3.3 QUALITY ASSURANCE

A. Provide quality control procedures consistent with applicable ASTM, NACE and SSPC standards and the protective coating manufacturer’s recommendations.

3.4 SURFACE PREPARATION

A. Remove all concrete that is not sound, or has been damaged, to a level that results in a sound concrete surface.

B. Remove all oils, greases, incompatible existing coatings, waxes, form-curing compounds, efflorescence, sealers, salts, or other contaminants.

C. Prepare surface based upon requirements of the epoxy protective coating to be applied.

D. Clean and abrade existing concrete surface to produce a sound concrete surface with adequate profile and porosity to provide a strong bond between protective coating and substrate.
   1. Provide high-pressure water cleaning equipment capable of producing a minimum cleansing velocity of 5,000 psi at 4 gpm.
   2. Utilize additional methods such as high-pressure water jetting, sand blasting, shot blasting, grinding, scarifying, or acid etching if necessary to provide the proper preparation.
   3. Provide hot water detergent blasting if necessary to remove oils, greases, or other hydrocarbon residues.
   4. Neutralize the surface with a mild chlorine solution prior to final rinse and coating.
   5. Stop all infiltration with material that is compatible with the repair mortar and specified epoxy protective coating.
   6. Test prepared surface for PH level and moisture content prior to installation of the coating.
   7. Repair areas where structural steel is exposed with methods and materials acceptable to the manufacturer of the coating system.
      a. Provide cleaning of steel as specified by coating manufacturer.

3.5 COATING APPLICATION

A. Spray apply protective coating to a minimum wet film thickness of between 80 to 125 mils.
   1. Utilize spray equipment acceptable to coating manufacturer.
   2. Provide an Applicator that is Certified by the coating manufacturer.
   3. Utilize airless spray application equipment free of compressed air-oil for all coats.
   4. Apply subsequent topcoating or additional coats as soon as the basecoat becomes tack free, ideally within 12 hours, but no later than 24 hours, after the prior coat has been applied.
      a. Provide the total thickness of coating/lining material as noted on the Drawings.
      b. Apply at 75^{O} F unless additional prior coat surface preparation is performed.

3.6 TESTING AND INSPECTION

A. Test thickness during application with a wet thickness gage meeting ASTM D4414 to ensure a uniform thickness during application.

B. Inspect protective coating with a high-voltage holiday detection system.
   1. Provide an induced holiday to calibrate the minimum/maximum voltage to be used.
   2. Set spark tester at 100 volts per 1 mil of film thickness.
   3. Mark all detected holidays and repair the holiday by abrading coating surface with grit disk paper or other hand tooling methods.
   4. Clean holiday area(s) and hand apply coating material to the holiday area until it meets minimum thickness requirements and manufacturers approval.
   5. Measure bond strength at locations to be selected by Engineer in accordance with ASTM D451.
      a. Repair areas that have a less than 300 psi bond to concrete.

C. Put system back into operation as soon as final inspection is complete.

END OF SECTION