



October 28, 2019

**Prospective Bidders for  
Lift Station No. 2 Improvements  
South Field  
Oakland International Airport  
Oakland, California**

**ADDENDUM NO. 1**

The following are revisions to the Project Manual for **LIFT STATION NO. 2 IMPROVEMENTS, SOUTH FIELD, OAKLAND INTERNATIONAL AIRPORT, OAKLAND, CALIFORNIA**, dated September 2019. Please transmit this information to your prospective sub-bidders, as applicable. This Addendum No. 1 is part of the Contract Documents and its receipt shall be acknowledged on Document 00400, Bid Form.

**1. DOCUMENT 00100 – INVITATION TO BID, page 00100-1**

REVISE the first paragraph of the Invitation to Bid to read as follows:

“The CITY OF OAKLAND, acting by and through its BOARD OF PORT COMMISSIONERS (the “Port”), will receive sealed Bids at the office of the Secretary of the Board of Port Commissioners, located at Room 629, 530 Water Street, Oakland, California, until 12:00 noon on Friday, November 1, 2019, for the following public work:”

**2. DOCUMENT 00200 – INSTRUCTIONS TO BIDDERS, page 00200-1**

REVISE the first sentence of Paragraph 1, Receipt of Bids, to read as follows:

“The Port will receive sealed bids from Bidders until 12:00 p.m., on Friday, November 1, 2019.”

**3. DOCUMENT 01100 – SUMMARY OF WORK, page 01100-7**

REVISE the body of the bid item description for Bid Item 25 to read as follows:

“The Work of this Bid Item includes cleaning the dry well and draining, drying, cleaning, leak testing, repairing leaks, inspecting, and coating wet well as per Sections 03931, Epoxy Injection System, 03936, Water Leakage Test for Concrete Structures, and 09960, High Performance Coatings, and the manufacturer’s instructions and recommendations.”

**4. SECTION 02820 – CHAIN LINK FENCES, GATES, AND BOLLARDS, page 02820-2**

REVISE the last sentence of Paragraph 2.02.A to read as follows:

“Fabric must be five feet high.”

**5. SECTION 03931 – EPOXY INJECTION SYSTEM**

ADD the attached Addendum No. 1 Section 03931, Epoxy Injection System.

**6. SECTION 03936 – WATER LEAKAGE TEST FOR CONCRETE STRUCTURES**

ADD the attached Addendum No. 1 Section 03936, Water Leakage Test for Concrete Structures.

**7. SECTION 09960 – HIGH-PERFORMANCE COATINGS, page 09960-1**

REVISE subparagraph 1.01.B to read as follows:

“This specification covers all labor, materials, equipment, and services necessary to complete the cleaning of the dry well and wet well, and installation of corrosion protection for concrete structures in the wet well as herein specified.”

**8. SECTION 15830 – FANS, page 15830-6**

Immediately following Paragraph 2.8, ADD the following new Paragraph 2.9:

**“2.9 DUCTING MATERIAL**

- A. Duct sizes indicated are external sizes.
- B. Galvanized Sheet Steel: Lock-forming quality, ASTM A-525 and ASTM A-527, Coating Designation G 90. Provide mill phosphatized finished for exposed surfaces of ducts exposed to view.
- C. Provide sheet metal angle frame at all duct penetrations to wall, floor, roof, or ceiling.
- D. Spiral lock seam prefabricated factory-build round and oval duct and fittings shall be used wherever possible. Provide couplings to join each length of duct.
- E. Construct round ductwork of galvanized sheet steel complying with ASNI/ASTM A527 by the following methods and in minimum gauges listed.
  - a. 3-inch to 14-inch: 26 minimum gauge, spiral lockseam method of manufacture
  - b. 15-inch to 26-inch: 24 minimum gauge, spiral lockseam method of manufacture
- F. Provide locked seams for spiral duct; fusion welded butt seam for longitudinal seam duct.
- G. Fittings and couplings: Construct of minimum gauge 20.”

**9. SECTION 15830 – FANS, page 15830-8**

Immediately following subparagraph 3.3.H, ADD the following new subparagraph.3.3.I:

**"I. DUCTING**

- A. Construct and install all sheet metal ductwork in accordance with California Mechanical Code or California Plumbing Code.
- B. Where not in conflict with the California Mechanical Code or California Plumbing Code, construct and install all sheet metal ductwork in accordance with SMACNA HVAC Duct and Construction Standards (Metal and Flexible).
- C. Provide variations in duct size, and additional duct fittings as required to clear obstructions and maintain clearances as approved by the Owner.
- D. Bracing shall be in accordance with the California Mechanical Code.
- E. Seal airtight all standing seams and all joints of all supply, return, and exhaust ducts.
- F. Seal airtight and watertight all joints of all ductwork exposed to the weather with 6 ounce canvas bonded with MEI Eco-Tack adhesive; cover the canvas with heavy coat of Foster's 56-10, or equal, no dilution."

Sincerely,



Robert Andrews  
Interim Director of Engineering

Attachments:  
Section 03931, Epoxy Injection System  
Section 03936, Water Leakage Test for Concrete Structures



SECTION 03931

**EPOXY INJECTION SYSTEM**

**PART 1 – GENERAL**

1.01 SUMMARY

- A. Section includes epoxy injection system.

1.02 REFERENCES

- A. The following references are incorporated into the requirements of the Work as referenced in this Section. The limits and scope of these references shall be as per Section 01420, References and Definitions.
- B. ASTM International (ASTM):
1. D 638 - Standard Test Method for Tensile Properties of Plastics.
  2. D 695 - Standard Test Method for Compressive Properties of Rigid Plastics.
  3. D 790 - Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.

1.02 SUBMITTALS

- A. Product data shall be provided as required by Section 01330, Submittals:
1. Submit manufacturer's data completely describing epoxy injection system materials.

**PART 2 – PRODUCTS**

2.01 MATERIALS

- A. Manufacturers: One of the following:
1. Master Builders, Inc., Concessive Standard LVI.
  2. Sika Chemical Corp., Sikadur 35 Hi-Mod LV.
- B. Epoxy:
1. Use epoxy materials that are new and use them within shelf-life limitations set forth by manufacturer.
  2. Water-insensitive 2-part type low viscosity epoxy adhesive material containing 100 percent solids and meeting or exceeding following characteristics when tested in accordance with standards specified:

| <b>Physical Characteristic</b> | <b>Test Method</b> | <b>Required Results</b>                      |
|--------------------------------|--------------------|--|
| Tensile Strength               | ASTM D 638         | 8,000 pounds per square inch at 14 days.     |
| Flexure Strength               | ASTM D 790         | 11,000 pounds per square inch at 14 days.    |
| Compressive Strength           | ASTM D 695         | 11,000 pounds per square inch at 24 hours.   |
| Bond Strength                  | -                  | Concrete shall fail before failure of epoxy. |
| Gel Time for 5 Mil Film        | -                  | 4 hours maximum.                             |
| Elongation                     | ASTM D 638         | 1 percent minimum at 14 days                 |

## 2.02 EQUIPMENT

### A. Injection pump:

1. Use positive displacement injection pump with interlock to provide in-line mixing and metering system for 2 component epoxy.
2. Use pressure hoses and injection nozzle designed to properly mix of 2 components of epoxy.
3. Standby injection unit may be required.

## PART 3 – EXECUTION

### 3.01 PREPARATION

- A. Notify Engineer immediately if there are leaks that cannot be repaired by epoxy injection.
- B. Surface preparation:
  1. Sweep or clean area in vicinity of cracks that will be injected with epoxy. Leave area in generally clean condition after epoxy injection is complete.
  2. Clean cracks so they are free from dirt, laitance, and other loose matter.

### 3.01 INSTALLATION

- A. Perform leak test per Section 03936 prior application of epoxy injection system application.
- B. Install and cure epoxy materials in accordance with manufacturer's installation instructions.
- C. Mix epoxy in accordance with manufacturer's installation instructions.
- D. Do not use solvents to thin epoxy.
- E. Crack injection:
  1. Apply adequate surface seal to crack to prevent leakage of epoxy.

2. Establish injection points at distance along crack not less than thickness of cracked member.
3. Crack injection sequence:
  - a. Inject epoxy into crack at first port with sufficient pressure to advance epoxy to adjacent port.
  - b. Seal original port and shift injection to port where epoxy appears.
  - c. Continue port-to-port injection until crack has been injected for its entire length.
  - d. For small amounts of epoxy, or where excessive pressure developed by injection pump might further damage structure, premixed epoxy and use hand caulking gun to inject epoxy if acceptable to the EngineerPort.
  - e. Seal ports, including adjacent locations where epoxy seepage occurs, as necessary to prevent drips or run out.
  - f. After epoxy injection is complete, remove surface seal material and refinish concrete in area where epoxy was injected to match existing concrete.

**END OF SECTION**





SECTION 03936

**WATER LEAKAGE TEST FOR CONCRETE STRUCTURES**

**PART 1 – GENERAL**

1.01 SUMMARY

- A. Section includes leakage test for concrete water holding structures.

1.02 SUBMITTALS

- A. Proposed leak repair methods including any Shop Drawings.

**PART 2 – PRODUCTS**

Not Used.

**PART 3 – EXECUTION**

3.01 WATER LEAKAGE TEST

- A. Before testing water holding structures for leakage:
  - 1. Do not apply coatings that will cover concrete surfaces until after testing water-holding structures for leakage.
- B. Isolate sections of water holding structures that can be isolated in actual operation. Test sections separately for leakage.
- C. Close valves and gates to structures.
- D. Fill water-holding structures with water to maximum liquid level indicated on the Drawings.
- E. Make other equipment such as stop gates, sluice gates, valves, and temporary bulkheads watertight, or measure leakage through other equipment by methods acceptable to Engineer. Do not base leakage upon manufacturer's estimates.
- F. Determine evaporation by floating evaporation pans in structures during testing.
- G. Examine concrete surfaces for leaks and damp spots during first 24 hours after filling structures.
- H. When leaks or damp sports appear on exposed surfaces:

1. Mark visible leaks and damp spots.
  2. Drain structures of water after minimum 24 hours of being full.
  3. Repair defects causing leaks and damp spots by epoxy injection as specified in Section 03931 on both interior and exterior of structures.
  4. Refill water holding structures.
  5. Repeat testing and repair process until no leaks or damp spots appear.
- I. When no leaks or damp spots appear after 24 hours of being full, measure change in water volume during the next 24 hours.
- J. When water volume loss exceeds 0.10 percent of water volume originally held with allowance for equipment leakage, evaporation, and precipitation:
1. Determine cause of volume loss.
  2. Drain structures of water.
  3. Repair defects causing loss of water volume.
  4. Refill water holding structures.
  5. Repeat testing and repair process until volume loss does not exceed 0.10 percent of water volume originally held in 24 hours.

**END OF SECTION**