September 24, 2010

Addendum #1

Bid #14-11

High Hanover Parking Facility Maintenance Project 2010

This addendum forms part of the original document marked: Bid #14-11 High Hanover Parking Facility Maintenance Project 2010.

1. The attached pages 10 and 11 replace the original pages 10 and 11 of the above referenced document. Item number 3 has been added to the proposal page and the "w/Sacrificial Anodes" has been eliminated from Item 2.
2. The attached pages 40 through 43 "TECHNICAL SPECIFICATIONS" replace the original pages 40 through 43 "TECHNICAL SPECIFICATIONS of the above referenced document.
3. The attached 'TYPICAL TOPPING SLAB REPAIR" drawing replaces the original 'TYPICAL TOPPING SLAP REPAIR" drawing of the above referenced document.

All else remains as is in Bid #14-11 High Hanover Parking Facility Maintenance Project 2010.

Please acknowledge receipt of this addendum within your proposal. Failure to do so may subject a bidder to disqualification.

PROPOSAL FORM (continued)

THIS PROJECT SHALL BE BID BY UNIT PRICES:

ITEM #	ESTIMATED QUANTITY	ITEM DESCIPTION & UNIT PRICE IN WORDS	UNIT PRICE IN FIGURES	ITEM TOTAL IN FIGURES
1.	1	Project Mobilization (Not to exceed 15% of Total Project Cost) Per Lump Sum	$_____	$_____
2.	1,700 SF	Topping Slab Concrete Repair Per Square Foot	$_____	$_____
3.	200 LF	#4 Epoxy Rebar Grade 60 Per Linear Foot	$_____	$_____

PROPOSAL FORM (continued)

Award of Bid will be based on the Total Bid of Items 1 through 3 complied by the Bidder using the estimated quantities listed above

In Figures $_____

In Words $_____

To Bidder: It is the intention of this contract that the items listed above describe completely and thoroughly the entirety of the work as shown on the plans and as described in the specifications. All other items required to accomplish the above items are considered to be subsidiary work, unless shown as a pay item.

The undersigned agrees that for extra work, if any, performed in accordance with the terms and provisions of the Contract Documents, the bidder will accept compensation as stipulated therein.

_____
Date

_____
Company

By:_____
Signature

_____
Business Address

Title:_____

_____
City, State, Zip Code

Telephone:_____

The Bidder has received and acknowledged Addenda No._____through _____.
All Bids are to be submitted on this form and in a sealed envelope, plainly marked on the outside with the Bidder's name and address and the Project name as it appears at the top of the Proposal Form.

TECHNICAL SPECIFICATIONS

DIVISION 3 – CONCRETE
Section - 03550 Concrete Toppings
03920 Concrete Resurfacing
03930 Concrete Rehabilitation

Part 1 – General

1.01 Summary

A. This specification describes the patching or overlay of interior and/or exterior horizontal surfaces with a rapid setting, portland cement mortar/concrete.

1.02 Quality Assurance

A. Manufacturing qualifications: The manufacturer of the specified product shall be ISO 9001 certified and have in existence a recognized ongoing quality assurance program independently audited on a regular basis.

B. Contractor qualifications: Contractor shall be qualified in the field of concrete repair and protection with a successful track record of 5 years or more. Contractor shall maintain qualified personnel who have received product training by a manufacturer's representative.

C. Install materials in accordance with all safety and weather conditions required by manufacturer or as modified by applicable rules and regulations of local, state and federal authorities having jurisdiction. Consult Material Safety Data Sheets for complete handling recommendations.

1.03 Delivery, Storage, and Handling

A. All materials must be delivered in original, unopened containers with the manufacturer’s name, labels, product identification, and batch numbers. Damaged material must be removed from the site immediately.

B. Store all materials off the ground and protect from rain, freezing or excessive heat until ready for use.

C. Condition the specified product as recommended by the manufacturer.

1.04 Job Conditions

A. Environmental Conditions: Do not apply material if it is raining or snowing or if such conditions appear to be imminent. Minimum application temperature 45ºF (7ºC) and rising.

B. Protection: Precautions should be taken to avoid damage to any surface near the work zone due to mixing and handling of the specified material.

1.05 Submittals

A. Submit two copies of manufacturer’s literature, to include: Product Data Sheets, and appropriate Material Safety Data Sheets (MSDS).

1.06 Warranty

A. Provide a written warranty from the manufacturer against defects of materials for a period of five (5) years, beginning with date of substantial completion of the project.

1.07 Payment

A. Method of measurement: The repair of concrete spalls shall be measured by the square foot in place and the quantity to be paid for shall be the square feet actually placed.

B. Basis of Payment: The repair of the spalls will be paid for at the contract unit bid price per square foot as stipulated in the schedule of Bid Prices, which payment shall be full compensation for furnishing and installing all materials, labor, tools, equipment, and other incidentals necessary to complete the specified operation. Payment will be made on the percentage of the work completed during each estimate period as determined by the Owner.

Part 2 – Products

2.01 Manufacturer

A. **SikaQuick 1000**, as manufactured by Sika Corporation, is considered to conform to the requirements of this specification.

2.02 Materials

A. General

1. The material shall be a blend of selected portland cements, specially graded aggregates, admixtures for controlling setting time, water reducers for workability, and an organic accelerator.

2. The materials shall be non-combustible, both before and after cure.

3. The materials shall be supplied in a factory-blended bag.

4. The rapid-setting cement mortar must be placeable from 1/4-in. to 1-in. in depth per lift for horizontal applications.

B. To prepare a rapid-setting portland cement concrete: aggregate shall conform to ASTM C-33. The material shall be extended with 30-lb. of a 3/8 in. (No.8 distribution per ASTM C-33, Table II) clean, well-graded, saturated surface dry aggregate, having low absorption, high density and non-reactive (reference ASTM C1260, C227, C289). Aggregate must be approved for use by the Engineer.

2.03 Performance Criteria

A. Typical Properties of the material:

1. Working Time: Approximately 30 minutes
2. Color: concrete gray

B. Typical Properties of the cured material (mortar):

1. Compressive Strength (ASTM C-109 Modified)
    a. 3 hours: 1,000 psi (6.9 MPa)
    b. 1 day: 4,500 psi min. (31.0 MPa)
    d. 7 day: 7,800 psi min. (53.0 MPa)
    e. 28 day: 9,000 psi min. (62.1 MPa)

2. Flexural Strength (ASTM C-78) @ 28 days: 1,100 psi (7.6 MPa)
3. Splitting Tensile Strength (ASTM C-496) @ 28 days 1,100 psi (7.6 MPa)
4. Bond Strength (ASTM C-882 Modified) @ 28 days: 3,100 psi (21.4 MPa)
5. The portland cement mortar shall not produce a vapor barrier.
6. Density (wet mix): approximately 136 lbs. / cu. ft. (2.18 kg/l)
7. Permeability (AASHTO T-277) @ 28 days Approximately 450 Coulombs
8. Drying Shrinkage, (ASTM C596) @ 28 days: 0.06%

9. Freeze/Thaw resistance (ASTM C666) @ 28 days: 98%

Note: Tests above were performed with the material and curing conditions @ 71ºF – 75ºF and 45-55% relative humidity.

Part 3 – Execution

3.01 Surface Preparation

A. Areas to be repaired must be clean, sound, and free of contaminants. All loose and deteriorated concrete shall be removed by mechanical means. Mechanically prepare the concrete substrate to obtain sound concrete to ¾" around all reinforcement

B. Where reinforcing steel with active corrosion is encountered, sandblast the steel to a white metal finish to remove all contaminants and rust. Where corrosion has occurred due to the presence of chlorides, the steel shall be high pressure washed after mechanical cleaning. Prime steel with 2 coats of Sika Armatec 110 EpoCem as directed by manufacturer.

3.02 Mixing and Application

A. Mechanically mix in appropriate sized mortar mixer or with a Sika jiffy paddle and low speed (400-600 rpm) drill. Pour approximately 5 pints of water into the mixing container. Add the powder while continuing to mix. Mix to a uniform consistency for a maximum of three minutes. Add up to another ½ pint of water to mix if a greater flow is desired. Should smaller quantities be needed, be sure the proper water/powder ratio is maintained and that the dry material is uniformly blended before mixing the components together. Mix only that amount of material that can be placed in 30 minutes. Do not re-temper material.

B. Mixing of the rapid-setting portland cement concrete: Pour 5 to 5 1/2 pints of water into the mixing container. Add the powder while continuing to mix. Add correct amount of the pre-approved coarse aggregate, and continue mixing to a uniform consistency. Mixing time should be 3 minutes maximum.

C. Placement Procedure: At the time of application, the substrate should be saturated surface dry with no standing water. Mortar and/or concrete must be scrubbed into substrate filling all pores and voids. While the scrub coat is still plastic, force material against edge of repair, working toward center. After filling, consolidate, then screed. Allow mortar or concrete to set to desired stiffness, then finish with a trowel for a smooth surface. Broom or burlap drag for rough surface. Areas where the depth of the repair is less than 1-inch shall be repaired with the neat rapid setting portland cement mortar. In areas where the depth of the repair is greater than 1 inch, the repair shall be made with the rapid-setting portland cement concrete.

D. As per ACI recommendations for portland cement concrete, curing is required. Moist cure with wet burlap and polyethylene, a fine mist of water or a water-based* compatible curing compound. Moist curing should commence immediately after finishing and continue for 48 hours. Protect newly applied material from rain, sun, and wind until compressive strength is 70% of the 28-day compressive strength. To prevent from freezing cover with insulating material. Setting time is dependent on temperature and humidity.
*Pretesting of curing compound is recommended.

E. Adhere to all procedures, limitations and cautions for this product in the manufacturers current printed technical data sheet and literature.

3.05 Cleaning

A. The uncured material can be cleaned from tools with water. The cured cement mortar can only be removed mechanically.

B. Leave finished work and work area in a neat, clean condition without evidence of spillovers onto adjacent areas.

TYPICAL TOPPING SLAB REPAIR

CING

PRIOR TO CUTTING.

3. SAW CUT PERIMETER OF REPAIR AREA TO A DEPTH OF 1/2". AVOID CUTTING REINFORCING BARS.

4. REMOVE ALL DETERIORATED, DELAMINATED, AND UNSOUND CONCRETE TO AN AVERAGE DEPTH OF 2". CONCRETE SHALL BE REMOVED BY A METHOD THAT LIMITS THE DAMAGE TO SURROUNDING SOUND CONCRETE TOPPING, EXISTING STEEL TRUSS REINFORCING AND WITH MINIMAL DAMAGE TO EXISTING PRECAST/PRESTRESSED PLANKS.

5. MATERIAL REMOVAL SHALL CONTINUE UNTIL AGGREGATE PARTICLES ARE BEING BROKEN RATHER THAN BEING REMOVED FROM THE CEMENT MATRIX.

6. USE OF MECHANICAL IMPACT CHIPPING HAMMERS SHALL BE LIMITED TO 30LBS WITH 15 LBS RECOMMENDED. ALL NECESSARY PRECAUTIONS MUST BE TAKEN TO AVOID MICRO CRACKING (BRUISING) OF THE SURFACE OF THE PRECAST/PRESTRESSED PLANKS.

7. ALL EXISTING REINFORCING AND STEEL TRUSS REINFORCING SHALL BE SALVAGED.

PREPARATION:

1. REMAINING EXISTING REINFORCING AND STEEL TRUSS REINFORCING SHALL BE PRIMED.

2. PRIOR TO PROCEEDING WITH REPAIRS, INSPECT ALL CONCRETE SURFACES. INSTALLATION OF REPAIR MATERIAL INDICATES ACCEPTANCE OF ALL SUBSTRATE CONDITIONS.

3. APPLY POLMER ADHESIVE/BONDING AGENT TO ALL CONCRETE SURFACES.

4. COAT ALL CONCRETE SURFACES WITH A CONCRETE SLURRY PRIOR TO PLACING REPAIRMATERIAL.

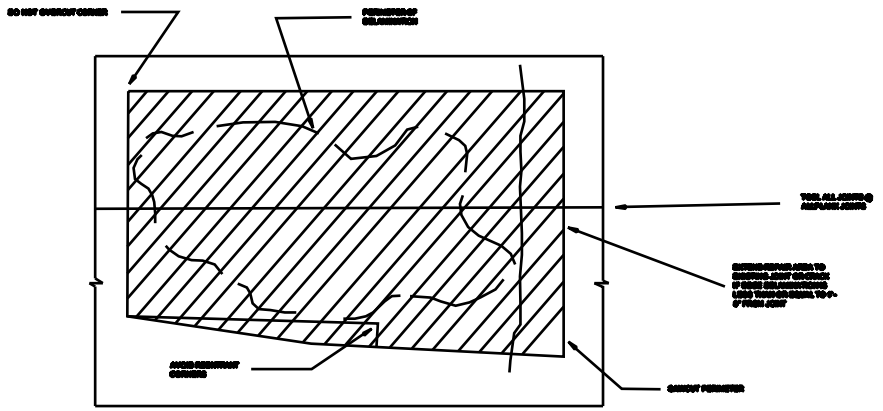
5. INSTALL NEW REINFORCING IF REQUIREDAND TIE TO EXISTING. PROVIDE CHAIRS AS REQUIRED TO MAINTAIN PROPER PLACEMENT. MINIMUM COVER 2".

6. REPAIR MATERIAL FOR LARGE AREAS (TOTAL PLACEMENT OVER 1 YARD)
   - COMPRESSIVE STRENGTH(f'c) = 5000 PSI MINIMUM
   - AIR CONTENT = 6 1/2 (+/- 2%)
   - WATERCEMENT RATIO (W/C) = 0.35 (MAX)
   - AGGREGATE = 3/8" MIN WASHED PEA STONE
   - SHRINKAGE REDUCERS AS PER MANUFACTURER'S RECOMMENDATION

7. REPAIR MATERIAL FOR SMALL PLACEMENT (PLACEMENT OF UNDER 1 YARD) SHALL BE ONE COMPONENT, EARLY STRENGTH GAINING, CEMENTITIOUS REPAIR MATERIALMATCHING THE PROPERTIES NOTED IN 7 ABOVE.

8. PLACEMENT: ALL CIP REPAIR MATERIAL MUST BE TESTED AS PER SPECIFICATIONS.

9. ALL JOINTS MUST BE HAND TOOLED.



PARTIAL SLAB REPAIR

N.T.S.

NOTES:

1. AREA OF CONCRETE REPAIR
2. SALVAGE ALL REINFORCEMENT IN REPAIR AREA. IF SECTION LOSS IS GREATER THAN 25% REPAIR PER TYPICAL REINFORCEMENT REPAIR DETAILS. ENSURE THAT ALL REINFORCEMENT IS TIED TOGETHER.
3. PROVIDE TOOLED JOINTS AROUND PERIMETER OF REPAIR AND AS NOTED ON PLANS.
4. CLEAN ALL MODERATELY CORRODED REBAR BY ABRASIVE BLASTING TO "NEAR WHITE" CONDITION REMOVING 95% OF RUST AND MILL SCALE
5. APPLY SIKA ARMATEC 110 EPOCEM TO THE CLEANED REBAR PRIOR TO PLACEMENT OF SIKAQUICK 1000
6. SIKA ARMATEC SHALL BE APPLIED USING A BRUSH. CONTRACTOR SHALL TAKE CARE TO APPLY ARMATEC TO THE REINFORCING BARS ONLY AVOIDING CONTACT WITH THE EXISTING CONCRETE IN THE REPAIR AREA
7. ANY HEAVILY CORRODED REBAR SHALL BE REPLACED WITH NEW EXPOXY COATED #4 REBAR BY UNDERCUTTING BY 3/4" ALL AFFECTED BARS
8. EXPOSE EXISTING REBAR 12" BEYOND CORRODED SECTION AND TIE NEW BAR TO EXISTING USING APPROVED TIES