ADDENDUM NUMBER 2

PROJECT: El Centro de Corazon for MHMRA — 2 February 2011
SE Community Service Center, 5901 Long Dr, Houston, TX
OWNER: MHMRA of Harris County

ARCHITECT: JIM GWIN ARCHITECTS, INC.
3100 Edloe, Suite 320
Houston, TX 77027

TO: Bidders

This Addendum modifies the Request for Proposals Documents and will become a part of the Contract Documents.

CHANGES TO PROJECT MANUAL

2.1 Table of Contents has been updated and includes new sections 02510 and 02612. These sections are also included with this Addendum.

CHANGES TO DRAWINGS

2.2 Sheet A2.1 Finish Plan/Specifications: On the Finish Schedule, under Base Finish, change the designation "B2" to "T-3".

Acknowledgement of receipt of this addendum will be required with your proposal

END OF ADDENDUM NUMBER 2

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SECTION 02510

CONCRETE PAVING, WALKS AND CURBS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to work specified in this Section.

1.2 SECTION INCLUDES

A. Construction of curb, flumes, sidewalks, handicap ramps and inlet connections indicated on Drawings and where directed by the Engineer.

B. Work shall match existing in profile and appearance. Comply with City of Houston standards for sidewalk construction, at a minimum.

1.3 RELATED WORK OF OTHER SECTIONS

A. Coordinate Work of this Section with work of other sections as required to properly execute the Work and as necessary to maintain satisfactory progress of the work of other sections.

1.4 SUBMITTALS

A. Product Data: Manufacturer's descriptive literature for concrete materials and admixtures.

B. Shop Drawings: Show locations and installation procedures. Include details of joints, accessories, reinforcement, and clearances. Include concrete placement sequence schedule.

C. Concrete Design Mix Reports:

1. One (1) for each type of concrete to be used.

1.5 QUALITY ASSURANCE

A. This Section outlines only minimum standards and requirements. Refer to Geotechnical Report, Drawings, and other sections of the specifications for additional requirements. If any jurisdictional regulations or the drawings, or other specifications have more stringent standards or requirements, the most stringent standards/requirements shall apply. Bring all conflicts and discrepancies to the attention of the Engineer and do not start work until such conflicts and discrepancies are clarified and corrected. Failure to do so will not relieve the Contractor from performing the Work correctly at no additional expense to the Owner.

1.6 CONTRACTOR'S RESPONSIBILITIES

A. As scope and performance documents, the Drawings and Specifications do not necessarily indicate or describe all the work required for the performance and completion of the Work. Contracts will be let on the basis and with the understanding that the Contractor shall furnish and install the items required for proper completion of the Work without adjustment to price or schedule. Work shall be of sound, quality construction and the Contractor shall be solely responsible for the inclusions of adequate labor and

materials to cover the proper and timely fabrication and installation of the concrete paving, walks, and curbs with all accessories indicated, described, or implied.

B. As a performance specification, the criteria for the solution of structurally sound concrete paving, walks, and curbs indicated on the Drawings or specified herein are for the sole purpose of defining the design intent and performance requirements. The details shown are intended to emphasize the acceptable profiles and performance requirements for this Project. To avoid any misunderstanding or lack of interpretation, the Contractor is hereby advised that the responsibility for the concrete paving, walks, and curbs are totally his and that designs and resolutions proposed in the Contractor's shop drawings, structural calculations, and related documentation shall be demonstrated throughout the Work and warranty period.

C. Design proposal submissions which follow exactly the details indicated on the Drawings, will not relieve the Contractor of his responsibility for the design, fabrication, erection, or performance of the Work of this Section.

D. In the event of a controversy over the design, the decision of the Engineer will take precedence.

1.7 TESTS AND INSPECTIONS

A. Before starting any work under this Section, make all required arrangements with Owner's testing agency. Provide testing laboratory with certified reports on proposed cements, aggregates mixing water and admixtures.

B. Lab shall review design mixes for each type of concrete using previously tested and approved materials.

C. The testing lab will proportion mixes by laboratory trial batch, using materials to be employed in the work for each class of concrete required and reporting to Engineer.

1. Concrete Compression Test - 7 day and 28 day
2. Concrete Slump Test
3. Concrete Air Content

D. Furnish certified reports of format shown herein of each proposed mix for each type of concrete at least 30 days prior to start of installation of the Work of this Section.

E. Furnish ready mix delivery tickets to field Engineer upon request.

PART 2 - PRODUCTS

2.1 MATERIALS

A. All materials shall comply with those indicated on the Drawings or specified in other sections of the specifications as applicable to Work of this Section. In the event of a conflict or discrepancy between materials indicated on the Drawings or specified, bring such conflict or discrepancy to the attention of the Engineer and do not start work until conflict or discrepancy is clarified or corrected. The decision of the Engineer will take precedence.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify areas to concrete paving, walks and curbs are completed to final grades and elevations and ready to receive work.

B. Ensure property lines and legal boundaries of work are clearly established.

3.2 CONSTRUCTION METHODS

A. General: Concrete items shall be constructed to the detailed thicknesses and to the lines and grade indicated on the Drawings. Concrete shall be placed over moistened and unfrozen subgrade and when the ambient temperature is 40° F and rising. The subgrade shall be void of excessive moisture. If required by the Drawings, the concrete shall be reinforced with the type of reinforcement indicated and the reinforcement shall be secured and tied in place prior to depositing any concrete.

B. Forms: Shall be set for the full depth of the section with the proper shape and strength to support any equipment and concrete placing operations. Forms shall be set to line and grade with adequate devices to secure them without visible spring or settlement from vibrations during the consolidating and finishing of the concrete. Flexible or curved forms shall be of a design acceptable to the Engineer for use on irregular shaped areas and true circular curves. Forms shall be checked for line and grade immediately before placing the concrete and shall not deviate from true line by more than one-fourth inch at any point.

1. Forms shall be thoroughly cleaned and oiled each time they are used. Builtup, battered, twisted, warped or broken forms shall be removed from the work. Steel forms shall have square ends connected with a rigid lock joint. Curved, flexible or wood forms shall be used on the returns.
2. Combined Curb and Gutter: The Contractor may use a slip-form paver and mechanical finisher in lieu of the forms and metal screed specified for combined curb and gutter. The slip-form paver shall be capable of molding and satisfactorily compacting the concrete to cross section, line and grade. The machine shall be self-propelled and of such weight and traction to maintain straight neat lines.

C. Placing Concrete: Concrete shall be deposited on the subgrade in successive batches for the full width between forms and in a manner which will require as little rehandling as possible. Necessary hand spreading shall be done with shovels, not rakes. Workmen shall not be allowed to walk over the freshly mixed concrete without use of bridges or other approved means. The amount of material deposited shall be sufficiently in excess of that required to form the required cross section after consolidation in order to provide a roll of concrete ahead for the full length of the screed.

1. Concrete shall be thoroughly consolidated against and along the faces of all forms and along the full length and on both sides of all expansion joint assemblies, by means of vibrators inserted in the concrete.
2. Concrete shall be deposited as near to expansion and contraction joints as possible without disturbing them, but shall not be dumped from the discharge bucket or hopper onto a joint assembly unless hopper is well centered on the joint assembly.
3. Should any concrete material fall on or be worked into the surface of a completed slab, it shall be removed immediately by approved methods.

D. Joints: Shall be constructed at the locations and to the types as detailed and shown on the Drawings, unless directed otherwise by the Engineer. Failure to construct the joints called for in the best possible manner will be cause for suspension of work until the cause of the defective work is remedied.

1. Contraction Joints: Sawed joints shall be sawed after the concrete has hardened sufficiently to prevent tearing and ravelling, but before the pavement starts shrinking and cracking. Saw cuts will be straight and uniform with a minimum depth of one-fourth the section thickness and shall be in alignment with adjacent previously sawed joints. After the joint has been sawed, it shall be cleaned with air or water jets and the curing period shall be continued.
2. Construction Joints: All construction joints shall be sawed along the abutting previously poured edge as described above for contraction joints, except that the depth shall be one inch or as detailed on the Drawings.
3. Expansion Joints: Shall be constructed as shown on the Drawings. When not indicated on the Drawings, expansion joints shall be placed between curb and gutter blocks at the tangent point of all curves, each side of inlets, at alleys, and at intervals of not more than 250 feet in straight runs. Expansion joints shall be cut to full size and shape of the cross section of the curb and gutter less one-half inch from the finished surface thereof. The edges of the blocks against the joint shall be finished with an edging tool and the joint raked clean of concrete.
4. Joint Sealer: After the specified curing period, the faces of all joints to be sealed shall be thoroughly cleaned, using compressed air, sweeping, brooming or other methods approved by the Engineer. The faces of the joint shall be dry after being thoroughly cleaned, and filled with joint sealing compound using a nozzle designed to completely fill the joint.
    a. Joints shall be filled to within 1/4 inch of the top surface, but in no case shall they be overfilled. Upon completion of the joint sealing operations, all excess material and foreign material shall be removed from the concrete surface.

E. Finishing: After final screeding is completed, the surface shall be floated in a longitudinal direction and then tested with a ten (10) foot straightedge. All high and low places shall be corrected by wood floating operations until no irregularities exist.

F. Valley Gutter: The concrete surface shall then be textured in a transverse direction by the use of fiber brooms, canvas or rubber belting. Care shall be exercised in preserving the pavement surface by not digging into concrete pavement. Final concrete belting or brooming shall be adjusted until the texture is uniform and meets approval of the Engineer.

G. Combined Curb and Gutter: Where forms are used for placement of combined curb and gutter, there shall be provided on the job a metal screed or mule designed to give proper shape to the curb and gutter. It shall be bent to the exact shape of the finished curb and gutter and the forward edge shall be turned up slightly to prevent disturbing the concrete. It shall be designed to ride on the forms, and when properly manipulated, shall leave the face of the curb and gutter in its proper shape and condition.

1. A gooseneck or "S" trowel shall be used to finish the surface, and minor imperfections shall be corrected with a mason's trowel. A medium broom finish shall be applied to the face of all curbs. Care shall be taken to finish the gutter flow line to a true uniform grade.

H. Integral (Monolithic) Curb: When shown on the Drawings, integral curb will be placed immediately after finishing of the concrete pavement. Integral curb shall have joints at all

locations to match the joints of the adjoining pavement. A medium broom finish shall be applied to the face of curbs as specified above.

I. Inlet Hookup: The entire concrete surface shall receive a trowel finish. A gooseneck or "S" trowel shall be used to finish the curb sections. Minor imperfections shall be corrected with a mason's trowel. A medium broom finish shall be applied to the face of curbs.

J. Curing: Curing shall be as specified in Paragraph 3.7, as approved by the Engineer.

K. Surface Tolerances: Concrete pavement and gutter flowlines after hardening shall be tested with a 10-foot straightedge. All areas showing surface deviations in excess of 1/4 inch shall be ground down with an approved grinding tool until the deviations are 1/4 inch or less. Where departure from the correct cross sections exceeds 1/2 inch, the pavement shall be removed and replaced by the Contractor at his own expense when directed by the Engineer. Any area so removed and replaced shall be for the full width and a minimum of ten feet in length or between joints. If the remaining portion of the slab is less than 10 feet to the nearest joint, it shall also be removed and replaced.

3.3 REINFORCEMENT

A. Prior to positioning, reinforcing steel shall be cleaned of all loose mill scale and rust or coatings which might prevent or reduce bond. Reinforcement shall be positioned accurately and secured against any displacement by using annealed iron wire ties or suitable clips and shall be supported by suitable metal supports, spacers or hangers. All reinforcing shall be in place and securely fastened before placing any concrete. The contractor shall submit shop drawings, bar lists and bending diagrams to the Engineer for approval prior to ordering any reinforcement.

3.4 MIXING

A. Job-Mixed Concrete: The equipment used for mixing concrete on the project site shall be capable of combining the aggregates, cement and water into a thoroughly mixed and uniform mass, and of discharging the mixture without segregation. The concrete shall be mixed in quantities required for immediate use. Concrete shall not be used which has developed its initial set or that has not been placed within one-half (1/2) hour after the water has been added. Retempering concrete by adding water or by any other means will not be permitted.

1. The concrete shall be mixed not less than 60 seconds. When a double compartment mixer is used, the minimum mixing time in the first compartment shall be 30 seconds and the total mixing time, including transfer time, shall not be less than 65 seconds.
2. Concrete may be mixed by a paving mixer into which the materials, including the water, can be precisely and regularly proportioned, and which will produce a concrete of uniform consistency, uniform color, and thoroughly and uniformly mixed. The paving mixer shall be equipped with a batch meter and an automatic locking timing device. The water tank shall be equipped with a scale graduated in gallons and fractions thereof. The water measuring device shall be capable of accurate measurement to within one percent of the required amount. The paving mixer shall be equipped with a boom and bucket, fully power controlled, which shall be so operated that the batches may be uniformly distributed on the subgrade.

B. Ready-Mixed Concrete: Ready-Mixed (Transit-mixed) concrete may be used in lieu of concrete mixed at the project site. When used, transit-mixed concrete shall comply with the requirements of the Colorado Department of Transportation (CDOT).

3.5 PLACING CONCRETE

A. General: Before beginning placement of concrete, hardened concrete and foreign materials shall be removed from the inner surface of the conveying equipment. Before depositing concrete, all debris shall be removed from the space to be occupied by the concrete; forms, if constructed of lumber, shall be thoroughly wetted (except in freezing weather) or oiled. Reinforcement shall be secured thoroughly in position and approval by the Engineer obtained before concrete is placed.

B. Removal of Water: Water shall be removed from the space to be occupied by the concrete before concrete is deposited, unless otherwise directed by the Engineer. Any flow of water into an excavation shall be diverted through proper side drains to a sump, or be removed by other approved methods which will avoid washing the freshly deposited concrete. If directed by the Engineer, water vent pipes and drains shall be filled by grouting, or other approved means, after the concrete has thoroughly hardened.

C. Handling: Concrete shall be handled from the mixer, or in the case of ready-mixed concrete from the transporting vehicle, to the place of final deposit as rapidly as practicable by methods which shall prevent the separation or loss of the ingredients. Under no circumstances shall partially hardened concrete be deposited in the work. Concrete shall be deposited in the forms as nearly as practicable in its final position to avoid rehandling. It shall be deposited as to maintain, until the completion of the unit, an approximately horizontal plastic surface. Forms for walls or thin sections of considerable height shall be provided with openings or other devices that will permit the concrete to be placed in a manner that will prevent segregation and accumulations of hardened concrete on forms or metal reinforcement above the level of concrete. Regardless of the type of transporting vehicle, concrete shall have the quality required when deposited in the forms.

D. Chuting: When concrete is conveyed by chutes, the equipment shall be of such size and design as to insure a continuous flow in the chute. Chutes shall be of metal or metal lined and the different portions shall have approximately the same slope. The slope shall not be less than one vertical to two horizontal and shall be such as to prevent segregation of the ingredients. The discharge end of the chute shall be provided with a baffle plate to prevent segregation. If the distance of the discharge end of chute above surface of the concrete is more than 3 times the thickness of the layer being deposited, but not more than 5 feet above surface of concrete, a spout shall be used and the lower end maintained as near the surface of deposit as practicable. When the operation is intermittent, the chute shall discharge into a hopper. The chute shall be thoroughly cleaned before and after each run and all debris and cleaning water shall be discharged outside the forms.

E. Compacting: During and immediately after depositing, concrete shall be compacted thoroughly by means of suitable tools. In general, concrete shall be compacted by mechanical vibration. Number and type of vibrators shall be subject to the approval of the Engineer.

1. For thin walls or inaccessible portions of forms where spading, rodding, or forking is impracticable, concrete shall be worked into place by vibrating or tapping forms lightly opposite the freshly deposited concrete. Concrete shall be worked thoroughly around reinforcement, and around embedded fixtures, and into corners of forms.
2. Accumulations of water on surface of concrete, during placement and compacting, due to water gain, segregation or other causes shall be prevented as far as

possible by adjustments in the mixture. Provisions shall be made for removal of such water as may accumulate so that, under no circumstances, will fresh concrete be placed in such accumulations.

F. Depositing Continuously: Concrete shall be deposited continuously or in layers of such thickness that no fresh concrete will be deposited on concrete which has hardened sufficiently to cause formation of seams and planes of weakness within the section. If a section cannot be placed continuously, construction joints shall be located at points as provided for in the drawings or approved by the Engineer.

G. Depositing in Cold Weather: Concrete, when deposited, shall have a temperature of not less than 50° F nor more than 100° F. The Contractor shall submit for the approval of the Engineer the methods he proposes to use for protecting the concrete from freezing temperatures during the first 72 hours where Type I or II Portland cement is used, or 24 hours where Type III (high early strength) Portland cement is used. Before placing concrete, forms or subgrade shall be free from frost and ice. Methods of heating materials shall be approved by the Engineer. Salts, chemicals or other foreign materials shall not be mixed with the concrete for the purpose of preventing freezing. Calcium Chloride may be used as an accelerator when specifically approved by the Engineer.

H. Bonding: Before depositing fresh concrete on or against concrete which has hardened, forms shall be retightened. The surface of the hardened concrete shall be roughened, in a manner that will not leave loosened particles of aggregate or damaged concrete at the surface, cleaned thoroughly of foreign matter and saturated with water. To provide adequate mortar at the juncture of the hardened and newly deposited concrete, the cleaned and saturated surfaces, including vertical and inclined surfaces, shall be first covered thoroughly with a coating of mortar or neat cement grout, against which new concrete shall be placed before the grout has attained its initial set.

I. Wet Pour Method: When approved by the Engineer, the Contractor may place a wet pour if he cannot prevent the flow of water into the area as defined in 8.2. At the time a wet pour is made, the water level shall be static and below the concrete form surface elevation, unless approved otherwise by the Engineer. A wet pour shall be placed by the tremie method or by pump after the reinforcing and forms are determined to be acceptable by the Engineer. A tremie shall consist of a watertight tube having a diameter of not less than 10 inches with a hopper at the top. When a batch is dumped into the hopper, the flow of concrete shall be induced by slightly raising the discharge end, always keeping it in the deposited concrete.

1. Concrete pump discharge tubes and tremie tubes used to deposit concrete in water shall be equipped with a device that will prevent water from entering the tube while charging the tube with concrete. Such tubes shall be supported so as to permit free movement of the discharge end over the entire top surface of the work and to permit rapid lowering, when necessary to control or stop the flow of concrete. The tubes shall be filled by a method that will prevent washing of the concrete. The discharge end shall be completely submerged in concrete at all times and the tube shall contain sufficient concrete to prevent any water entry. The flow shall be continuous until the work is completed and the resulting concrete seal shall be monolithic and homogeneous. The wet pour shall be placed in one continuous pour until the form is filled to the plan elevation and all water and unsound concrete has been removed.
2. When requested by the Engineer, the method selected by the Contractor to place the concrete shall be submitted for approval along with sufficient details and data to review the procedure. Concrete for a wet pour shall be the same class of concrete as specified on the Drawings with a minimum of 10% additional cement and a slump not to exceed six (6) inches.

J. Forms shall be steel or wood as approved by the Engineer and shall conform to the shape, lines, grade and dimensions of the concrete as detailed on the drawings. Lumber used in forms for exposed surfaces shall be dressed to a uniform thickness and free from knots and blemishes. Joints in the forms shall be all horizontal or vertical where the finished surface is to be exposed. Forms shall have nails withdrawn and surfaces to be in contact with concrete thoroughly cleaned and oiled prior to each use. Form oil shall be non-staining and shall be applied to the forms before reinforcement is placed. Forms shall be sufficiently tight to prevent leakage of mortar and properly braced to maintain the desired shape, line and grade.

1. The removal of forms shall not be started until the concrete has attained the necessary strength to support its own weight and any construction loads. Forms shall not be removed before the expiration of 30 hours from any construction. Forms, supported by false work, shall not be removed until the concrete has attained its design strength. Where forms are removed less than seven days after placement of the concrete, provisions shall be made to insure curing as specified in this Section under "Curing of Concrete".

3.6 CURING OF CONCRETE

A. All concrete surfaces shall be protected to insure that loss of moisture from the surface is held to a minimum for a period of at least seven (7) days following initial set. Where Type III (high early strength) Portland cement is used, the period shall be not less than three (3) days. Concrete damage by improper curing shall be subject to removal and replacement as directed. The method of curing, regardless of type, will not relieve the Contractor of his responsibility to provide concrete having required strength and surface finish. Unless otherwise specified for a specific item of work, the prevention of the loss of moisture from the concrete surface shall be accomplished by one of the following alternate methods:

1. Surface maintained continuously wet by sprinkling or inundation;
2. Covering with burlap mats kept continuously wet;
3. Covering surfaces with white or translucent polyethelene sheeting not less than 0.004 inch in thickness. Splices shall be made with a minimum lap of 4 inches and sealed with adhesive tape approved by the Engineer;
4. Application of a membrane curing compound approved by the Engineer. Application shall be at a rate of not more than 200 square feet of surface per gallon of compound;
5. Forms left in place during the specified curing period shall be sprinkled and maintained moist as required to prevent rapid drying of the concrete;
6. Other methods of curing as may be approved by the Engineer.

3.7 CONTROL TESTS

A. All concrete surfaces shall be protected to insure that loss of moisture from the surface is held to a minimum for a period of at least seven (7) days following initial set. Where Type III (high early strength) Portland cement is used, the period shall be not less than three (3) days. Concrete damage by improper curing shall be subject to removal and replacement as directed. The method of curing, regardless of type, will not relieve the Contractor of his responsibility to provide concrete having required strength and surface finish. Unless otherwise specified for a specific item of work, the prevention of the loss of moisture from the concrete surface shall be accomplished by one of the following alternate methods:

1. All concrete and concrete materials used in the work shall be tested as directed by the Engineer. The Contractor shall provide material for all samples and test specimens required.

2. So long as the Contractor's work progresses in an orderly and reasonable manner the costs of field sample preparation and testing of all specimens will be borne by the Owner. Should the Contractor use methods or procedures that require unreasonable or excessive field testing to determine whether specification requirements are being met, or if field testing is performed with continued negative results that indicate the Contractor's methods or procedures are not adequate to provide the specified results, the Engineer shall notify the Contractor in writing that the costs of all additional testing beyond specific limits, which shall be set out in the written notice for the particular area or material in question, shall be the responsibility of the Contractor. Such costs will then be deducted from the monies due the Contractor for the work performed.

Control tests which will be conducted on a continuing basis include:

a. Slump Test: (ASTM-C143) as directed during concrete placement.
b. Yield Test: (ASTM-C138) as directed during concrete placement, generally once each day during concrete placement.
c. Compressive Strength: (ASTM-C39) Two (2) test specimens for each 50 cubic yards or less of each class of concrete placed during one day's operation, to be tested at 7 and 28 days. Test specimens to be prepared in accordance with ASTM-C31.
d. Flexural Strength: (ASTM-C78) as directed during concrete placement, generally two (2) test specimens for each days placement of more than 50 CY. Test specimens to be prepared in accordance with ASTM-C31.
e. Air Entrainment: (ASTM-C231) as directed during concrete placement, generally at least once each day during concrete placement.

3.8 DEFECTIVE CONCRETE

A. Deficient Strength: Where the results of strength tests indicate concrete which fails to conform to these specifications, additional test specimens shall be taken from the questioned areas in accordance with ASTM C42, as directed by the Engineer. If the strength indicated by these core samples meets the specification requirements the concrete will be accepted. In the event that the core tests fail to meet the specifications, all concrete represented by the deficient test specimen shall be removed and replaced by the Contractor at no additional cost to the Owner. The cost of all coring and testing, including satisfactory patching of core holes, shall be borne by the Contractor.

B. Defective Area: Areas of concrete which are defective for reasons other than strength (i.e. honeycombs, finish irregularities, misalignment of forms, etc.) shall be repaired by methods approved by the Engineer. When, in the opinion of the Engineer, satisfactory repairs cannot be made the defective concrete shall be removed and replaced by the Contractor at no additional cost to the Owner.

3.9 CONSTRUCTION

A. General: The Contractor shall ensure all pipe, pipe sleeves, reinforcing and other embedments are properly set and placed prior to any concrete pours. Concrete items shall be constructed to the detailed thickness and to the lines and grade as shown on the Drawings. Concrete shall be placed over moistened and unfrozen subgrade and when the ambient temperature is 40° F or greater and rising. The subgrade shall be void of excessive moisture. The concrete shall be reinforced with the type of reinforcement indicated and the reinforcement shall be secured and tied in place prior to depositing any concrete.

B. Expansion Joints: Asphalt Expansion Joints shall be composed of asphalt, vegetable fibers, and mineral fillers, formed under heat and pressure between two asphalt-saturated felt liners. Asphalt Expansion Joints shall conform to AASHTO M33 or ASTM D994, shall be 1/2 inch thick and weigh approximately 3 pounds per square foot, unless shown otherwise on the Drawings.

C. Joint Sealing: After the specified curing period, the faces of all joints to be sealed shall be thoroughly cleaned using compressed air, sweeping, brooming, or other methods approved by the Engineer. The faces of the joint shall be dry after being thoroughly cleaned, and filled with joint sealing compound using a nozzle designed to completely fill the joint.

1. Joints shall be filled to within the top surface, but in no case shall they be overfilled. Upon completion of the joint sealing operations, all excess material and foreign material shall be removed from the concrete surface.
2. Joint Sealant to be polysulfide base which cures to a flexible seal with good bonding characteristics, or as shown otherwise in the Drawings.

D. Finishing of Related Unformed Surface: Surfaces to receive concrete Class III (grout) or equipment foundations shall have a rake finish or broom finish. Equipment or structure foundations, floor slabs and steps not to receive concrete Class III (grout) shall receive a troweled finish.

1. Sidewalks shall receive a light broomed finish.

E. Finishing of Formed Surfaces: All surfaces exposed to view which have been in contact with the forms shall receive a smooth rubbed finish in accordance with Section 10.3.1 of ACI 301-72 after the surfaces have been prepared as specified in Chapter 9 of ACI 301-72. All air bubbles shall be filled with a bonding grout and rubbed down with sacks before final rubbing as specified above. This shall include all exposed edges and surfaces of walls.

END OF SECTION

SECTION 02612

ASPHALT PAVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to work specified in this Section.

1.2 SECTION INCLUDES

A. Flexible base course as indicted on the Drawings for patched paving.

B. Asphalt pavement.

C. Traffic lane and parking space paint striping, including, but not limited to painting of curbs and stenciling of signs stipulating crosswalks, handicapped accessible parking spaces, and other areas shown on Drawings or required by authorities having jurisdiction.

D. Relocation of precast concrete wheel stops and accessories shown on Drawings and patching holes for reinforcing bars used to secure wheelstops.

1.3 RELATED WORK OF OTHER SECTIONS

A. Coordinate Work of this Section with work of other sections as required to properly execute the Work and as necessary to maintain satisfactory progress of the work of other sections.

1.4 SUBMITTALS

A. Product Data: Submit product information and mix design.

B. Submit installer qualifications for Architect's approval.

1.6 QUALITY ASSURANCE

A. This Section outlines only minimum standards and requirements. Refer to Geotechnical Report, Drawings and other sections of the specifications for additional requirements. If any jurisdictional regulations or the drawings, or other specifications have more stringent standards or requirements, the most stringent standards/requirements shall apply. Bring all conflicts and discrepancies to the attention of the Architect and do not start work until such conflicts and discrepancies are clarified and corrected. Failure to do so will not relieve the Contractor from performing the Work correctly at no additional expense to the Owner.

B. Testing and Inspection Laboratory Services: By Owner if required.

C. Obtain materials from same source throughout.

D. Installer Qualifications: Company specializing in installing the Work of this Section with minimum five (5) years experience.

1.7 PROJECT CONDITIONS

A. Do not apply traffic or zone marking paint on wet or damp surfaces or when rain is imminent. Do not commence painting operations until material, air, and/or surface temperature and dew point are within paint manufacturer's recommended application limits.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Stabilization and Fill Materials: Stabilized fill as required.

B. Flexible Base Course: Match existing

C. Surface (Wearing) Course: Match existing

D. Other Materials: Provide other materials, not specifically described, but required for a complete and proper installation.

2.2 EQUIPMENT

A. Type of Plant: Mixing plants must have capacity for continuously producing mixtures meeting specifications and must be approved by the Engineer. Either weight-batching type or continuous mixing type are acceptable. Regardless of the type, the plant must have satisfactory conveyors, power units, aggregate handling equipment, hot aggregate screens and bins, and dust collectors. Provide equipment to adequately supply materials in accordance with rated capacity of the plant and produce finished material within standard tolerances.

2.3 TRAFFIC AND ZONE MARKING PAINT

A. Type: Latex, water based paint intended for use in marking parking lots and roads and complying with FS TT-P-1952B. Product shall be Setfast Fast Dry Latex Traffic Marking Paint by The Sherwin-Williams Co., Speedhide Traffic and Zone Marking Flat Latex by Pittsburgh Paints, 1450 Latex Traffic Line and Marking Paint by Kelly-Moore paint Co., or Architect approved equal.

B. Stripe Size: Four (4) inches wide for traffic and parking lanes, unless noted otherwise.

C. Colors:

1. Traffic and Parking Striping: White.
2. Abandoned or replaced striping: Black.
3. Accessibility Handicapped Parking: Symbols and spaces shall be in size and color in accordance with ADA and code authorities having jurisdiction.

2.4 PRECAST CONCRETE WHEEL STOPS

A. Unless indicated otherwise, precast of 3,000 psi air-entrained concrete, approximately 6 inches high x 9 inches wide x 6 feet-0 inches long, with chamfered top corners and drainage slots underneath. Unit shall weigh minimum 190 lbs.

B. Anchor Rods: Two (2) No. 4 x 12 inch long anchor rods located approximately 12 inches from each end of bumper.

PART 3 - EXECUTION

3.1 ASPHALT PAVING INSTALLATION

A. For relatively light passenger car and pickup truck traffic, the flexible pavement structure shall consist of full-depth asphalt concrete including 4 inches of bituminous base overlain by a 2 inch thick asphalt surface course.

3.2 TRAFFIC AND PARKING LANE STRIPING

A. Surface Conditions: Clean and dry, free from dirt, loose paint, oil, grease, wax and other surface contaminants which would affect traffic marking paint bond.

B. Allow asphalt surfaces to cure minimum time recommended by traffic marking paint manufacturer.

C. Locate markings as indicated on Drawings. Do not apply paint until layout is verified with Architect. Protect surfaces which are not to receive paint.

D. Mix paint and apply two (2) unthinned coats to approximately five (5) mils dry film thickness per coat in accordance with manufacturer's instructions, using skilled labor and proper mechanical equipment to produce uniform, straight lines without bleeding edges or runs.

E. Paint traffic, parking lanes, and accessibility handicapped parking lines as shown on Drawings and to comply with requirements of authorities having jurisdiction.

F. Paint curbs and stenciled signs for FIRE LANES, NO PARKING, and BUS LOADING areas, crosswalks, handicapped accessible parking spaces, and other areas shown on drawings or required by authorities having jurisdiction. Use proper type, style and size stencils for all numbers and lettering. Do not apply paint until layout is verified with Architect and authorities having jurisdiction. Protect surfaces which are not to receive paint.

3.3 PRECAST CONCRETE WHEEL STOPS

A. Surface Conditions: Clean and dry, free from dirt, loose paint, oil, grease, wax and other surface contaminants which would affect epoxy bond.

B. Locate wheel stops as indicated on Drawings.

3.4 IN-PLACE TESTING/OWNER'S OPTION

A. The Owner may employ a testing laboratory under Section 01400 to verify that the in-place asphalt pavement conforms to the specifications. Cores of the in-place pavement will be taken for determining thickness of asphalt surface and base and the compaction density of the asphalt surface.

B. Should asphalt pavement thickness is found to be below required thickness, the Owner will require that the entire pavement be overlaid with additional surface material (minimum one (1) inch thickness) to obtain the specified thickness. (The minimum one (1) inch thickness may be in excess of what is required to attain the specified thickness. Contractor is responsible for the additional cost for pavement overlay.)

END OF SECTION