SECTION 32 16 00

CONCRETE PAVING, CURBS, HEADERS AND RAMPS

PART 1  GENERAL

1.1 RELATED WORK

A. Section 31 10 00: Site Preparation
B. Section 31 00 00: Earthwork
C. Section 32 11 00: Base Courses
D. Section 32 00 01: Site Restoration and Rehabilitation

1.2 REFERENCES

A. American Society for Testing Materials (ASTM):
   1. A61 5: Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
B. Current Caltrans Standard Specifications:
   1. Section 51 – Concrete Structures
   2. Section 52 – Reinforcement
   3. Section 73 – Concrete Curbs and Sidewalks
   4. Section 90 – Portland Cement Concrete

1.3 SUBMITTALS

A. The Contractor shall furnish material certificates, including mill test reports, on the cement, aggregate, admixtures and reinforcing bars signed by the material producer and the Contractor, showing compliance with the respective specifications.

B. The Contractor shall furnish concrete mix designs signed by the material producer and the Contractor.

C. The Contractor shall provide a 2’ x 2’ sample of exposed aggregate concrete to conform to existing exposed aggregate concrete within the project limits.
PART 2 PRODUCTS

2.1 PORTLAND CEMENT CONCRETE (PCC)

A. Concrete shall be Class A concrete conforming to Section 90 of the Caltrans Standard Specifications.

B. Cement shall be Type II cement conforming to Section 90 of the Caltrans Standard Specifications.

C. Aggregate shall be ¾-inch maximum size conforming to Section 90 of the Caltrans Standard Specifications.

D. Water shall be clear and free from injurious amounts of oil, acid, alkali, organic matter or other deleterious substances.

E. Reinforcing bars shall conform to the requirements of ASTM Designation A615 Grade 40 and Section 52 of the Caltrans Standard Specifications.

F. Filled joints, unless noted otherwise on the Plans, shall be ¼-inch thick, the full depth of the concrete section and conforming to Section 51 of the Caltrans Standard Specifications.

G. Joint filler shall conform to Section 51 of the Caltrans Standard Specifications for pre-molded expansion joint filler and expanded polystyrene joint filler. Felt type joint filler is not acceptable.

H. Black liquid tint shall be added to concrete for curbs, gutters, ramps and sidewalks, as required, to conform to existing adjacent concrete. For new concrete which is not required to match adjacent concrete, one pint of “Liquiblack” tint, or approved equal, shall be mixed per cubic yard of concrete.

I. No admixtures will be allowed without prior approval of the Project Manager.

2.2 EXPOSED AGGREGATE PAVING (repairs to existing)

A. Aggregate for exposed aggregate concrete paving shall match existing in size, color, and shape.

B. Expansion joint sealer shall be multi-component polyurethane sealant, FS TTS-00227 Class A as recommended by manufacturer for exterior locations subject to foot traffic. Color to match existing.
2.3 ADA RAMP DETECTABLE WARNING SURFACE

Truncated domes shall be Tek-Way Dome Tiles manufactured by Strong Go Industries, Tucson, AZ. (www.stronggo.com, 866-439-3216). Tiles shall be in-line pattern, color shall be “Stanford Black,” size is 24”x36” standard, 2.35” O.C. Dome spacing. Alternative product only as approved by the Owner.

PART 3 EXECUTION

3.1 CONCRETE CONSTRUCTION

A. All concrete shall be mixed and placed in accordance with Caltrans Standard Specifications, Section 90.

B. Construction of concrete substructures shall conform to applicable provisions of Section 51 of the Caltrans Standard Specifications. Unless noted otherwise herein, all exposed surfaces of structure shall have Class 1 surface finish.

C. Construction of concrete curbs, gutters, sidewalks, wheelchair ramps and driveway aprons shall conform to Caltrans Standard Specifications, Section 73. Concrete driveways may be opened following 48-hour cure.

D. Curing shall conform to Section 90-7 of the Caltrans Standard Specifications. No pigment shall be used in curing compounds unless specified or approved by the Project Manager.

E. All work shall be subject to the inspection of the Project Manager. No concrete shall be placed until the Project Manager has approved the placement of the forms and reinforcement.

F. Expansion joints on curb, gutters and walks shall be placed 20 feet on centers, adjacent to structures and at all returns, and shall be filled with joint filler. Weakened plane joints shall be formed 10 feet on centers; the score shall be 1 inch deep. Flag sizes (i.e., blocks or squares defined by score joints) shall be consistent over the full area of pavement unless otherwise specified.

G. Concrete shall not be dropped freely where reinforcing bars will cause segregation, nor shall it be dropped freely more than six feet. Spouts, tremies, or other approved means shall be used to prevent segregation.

H. At the termination of all curbs, the final 3 feet of curb shall be tapered from the full curb height to the gutter flow line or adjacent top of curb or pavement elevation unless noted otherwise on the Plans.

I. Minimum sidewalk dimensions: 4 inches PCC over 4 inches Class 2 aggregate base.
3.2 EXPOSED AGGREGATE PAVING (repairs to existing)

A. Finish to match the aggregate to matrix ratio that exists in the adjacent existing pavement.

B. After the curing period, Contractor shall carefully clean expansion joints and fill with joint compound to $\frac{1}{4}$-inch below adjacent surface. Do not permit spillage on paved surfaces.

END OF SECTION