SECTION 02741

ASPHALT PAVING AND SURFACING

PART 1 - GENERAL

1.1 SUMMARY

A. This section describes general requirements, products, and methods of execution relating to on-site paving and surfacing. Any work within the Public right-of-way shall be done to the standards of the City and County of San Francisco or the State of California Department of Transportation. Paving and surfacing includes but is not limited to.

1. Asphalt Concrete Paving.
2. Liquid Asphalt and Asphalt Emulsion.
3. Aggregate Base.

B. Related work furnished under other sections but conforming to the provisions of this section:

2. Aggregate Base installation.

1.2 REFERENCES

A. American Society for Testing and Materials (ASTM International):

1. A615: Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
3. D1557: Moisture Unit Weight Relations of Soils and Aggregate Mixtures Using a 10 lb (4.5 kg) Rammer and 18 in. (457 mm) Drop.

B. California Code of Regulations (CCR): Title 24, Chapter 2-71, Site development Requirements for Handicapped Accessibility.

C. California Department of Transportation (C.D.T.):

1. Standard Specifications:
   a. Section 26 Aggregate Bases.
   b. Section 37 Bituminous Seals.
   c. Section 39 Asphalt Concrete.
   d. Section 51 Concrete Structures.
e. Section 52 Reinforcement.
f. Section 73 Concrete Curbs and Sidewalks.
g. Section 90 Portland Cement Concrete.
h. Section 92 Asphalts.
i. Section 93 Liquid Asphalts.
j. Section 94 Asphaltic Emulsions.


3. Highway Design.

D. Institute of Transportation Engineers: Transportation and Traffic Engineering Handbook.

1.3 SUBMITTALS

A. Requirements: Refer to Section 01330 – SUBMITTAL PROCEDURES.

B. Asphalt Concrete Paving:

1. Provide two copies of material certificates signed by the material producer and the Contractor, certifying that each material item complies with or exceeds specified requirements.

2. The Contractor shall furnish a certified weight or load slip for each load of material used in the construction of the asphalt concrete pavement.

1.4 PROJECT CONDITIONS

A. Liquid Asphalt and Asphalt Emulsion:

1. Prime coat, seal coat, and paint binder shall be applied only when the ambient temperature is above 50 degrees Fahrenheit and when temperature has not been below 35 degrees Fahrenheit for 12 hours immediately prior to application.

2. Prime coat, fog coat, seal coat, and paint binder shall not be applied when base or surfaces are wet or contain excess moisture.

B. Asphalt Concrete Paving:

1. Asphalt concrete surfaces shall be constructed only when ambient temperature is above 50 degrees Fahrenheit and when base is dry.

1.5 GENERAL DESIGN CRITERIA:

A. Services Areas: Approach ramps, driveways, and paved work areas in excess of 4 percent slope shall be provided with a rough texture for non-skid surface.
B. Walks and Paths: Concrete exterior slabs (walks, terraces, etc.) shall have a pitch of at least 2 percent. (unless otherwise noted on the drawings)


PART 2 - PRODUCTS

2.1 PAVING MATERIALS

A. Aggregate Base:

1. Aggregate base shall conform to Caltrans Class 2 (R value 78 min) aggregate base, 3/4" maximum size, as specified in Section 26 of the C.D.T. Standard Specifications.

B. Asphalt Concrete Paving:

1. Paving asphalt to be mixed with aggregate shall be steam-refined asphalt, AR-4000, conforming to Section 92 of the C.D.T. Standard Specifications.


3. Maximum aggregate size shall be as follows:

   a. Drive Aisle 3/4" Medium
   b. 4. Asphalitic emulsion for paint binder, fog coat, and seal coat shall be emulsified asphalt, Type SS-1h, conforming to Section 94 of the C.D.T. Standard Specifications.

C. Pavement Reinforcement Fabric:

1. Pavement reinforcement fabric shall meet Caltrans Section 88-1.02, BP Petromat or approved equivalent.

D. Crack Sealant:

1. Crack sealant shall be rubberized hot-pour type and shall meet ASTM D 3405, Husky 1611 or approved equivalent.

2. Blotting Agent shall be one of: Screened sand, cement, or fly ash.

E. Tack coat: Tack coat shall meet Caltrans Section 39-4.02.

PART 3 - EXECUTION

3.1 PREPARATION

A. Subgrade and Aggregate Base:
1. Prepare a subgrade and over excavation paragraph reference Article 3.4 of Section 02300 - EARTHWORK.

2. Aggregate base shall be compacted to 95 percent ASTM D1557. Sections 26-1.04B and 26-1.05 of the C.D.T. Standard Specifications shall apply. Apply soil sterilant to prepared subgrade in areas indicated by soils engineer or after installation of rock or aggregate base uniformly at the rate recommended by the manufacturer.

B. Crack Sealing:

1. Before sealing, cracks shall be cleared of dirt, dust, and all other deleterious materials to a depth of 1/4-inch to 1/2-inch.

2. Seal cracks 1/8-inch in width and greater.

3. Application of crack sealer shall be in accordance with the manufacturer's recommendations unless otherwise directed.

3.2 ASPHALT CONCRETE PAVING:

A. General:


2. Before placing asphalt concrete, an asphalt emulsion tack coat shall be applied to all vertical surfaces of existing pavement, curbs, gutters, construction joints, and all existing pavement to be surfaced, in conformance with Section 39 of the C.D.T. Standard Specifications.

3. Spreading and compacting asphalt concrete shall be performed in accordance with Section 39 of the C.D.T. Standard Specifications.

4. Fog seal shall be applied to all finished surfaces of asphalt concrete pavement at a rate of 0.05 gallons per square yard, in accordance with Section 37 of the C.D.T. Standard Specifications.

5. After fog seal has been applied, ample time shall be allowed for drying before traffic is allowed on the pavement or paint striping is applied.

3.3 FIELD QUALITY CONTROL

A. Asphalt Base: The surface of finished aggregate base shall vary no more than 0.05 feet above or below the grade established as shown on the drawings.

B. Asphalt Concrete Paving:

1. The finished pavement, where not controlled by adjacent structures or features, shall not vary more than 0.05 feet above or below the planned grade, providing it is uniform and free of sharp breaks.
2. The cross section of the finished pavement shall be free of redges and valleys and shall not vary more than 0.02 feet above or below the theoretical section at any point on the cross section.

3. The specified thickness of the finished pavement shall be the minimum acceptable. Conforms shall form a smooth, pond free transition between exiting and new pavement. Depressions in paving between high points are not to exceed 1/8 inch when measured below 10 feet long straight edged placed anywhere on the surface in any direction.

3.4 CLEANUP

A. General:

1. Surplus material remaining upon completion of paving operations shall become the property of the Contractor, to be removed from the work site and disposed of in a lawful manner.

2. Surfaces shall be left in a clean, neat, and workmanlike condition, and all construction waste, rubbish, and debris shall be removed from the work site and disposed of in a lawful manner.

END OF SECTION 05/01/13