

SECTION 02520 – PORTLAND CEMENT CONCRETE PAVING

1. GENERAL

1.1 SCOPE

- A. Work Included: Perform all work necessary and required for the construction of the project as indicated. Such work includes but is not limited to the following:
 - 1. Concrete curbs
 - 2. Concrete walks
 - 3. Concrete pavement
 - 4. Miscellaneous concrete structures
- B. Related Work in Other Sections: The following items of associated work are included in other sections of these specifications:
 - 1. Asphalt concrete paving
 - 2. Concrete work
 - 3. Earthwork

1.2 QUALITY ASSURANCE

- A. Codes and Standards: Portland Cement Concrete paving shall be constructed in accordance with ACI 301 and ACI 304 Codes and Maryland Department of Transportation.
- B. Concrete testing Service: The Contractor will engage a testing laboratory to perform material evaluation tests and to design concrete mixes as specified in Section 03310.
- C. Materials and installed work may require testing and retesting, as directed by Architect, at anytime during progress of work. Allow free access to material stockpiles and facilities. Retesting of rejected materials and installed work, shall be done at no additional cost to Owner.

1.3 SUBMITTALS

Furnish samples, manufacturer's product data, test reports, and materials, certifications as required in referenced sections for concrete and joint fillers and sealers.

1.4 JOB CONDITIONS

- A. Maintain access for vehicular and pedestrian traffic as required for other construction activities.

2. PRODUCTS

2.1 MATERIALS

- A. Forms:
 - 1. Steel, wood, or other suitable material of size and strength to resist movement during concrete placement and to retain horizontal and vertical alignment until removal. Use straight forms, free of distortion and defects.
 - 2. Use flexible spring steel forms or laminated boards to form radius bends as required.
 - 3. Coat forms with a non-staining form release agent that will not discolor or deface surface of concrete.
- B. Welded Wire Mesh: Deformed type A497 in flat sheets; galvanized finish.

- C. Reinforcing Bars: Deformed billet steel bars, ASTM A 615, grade 40KSI., unfinished finish.
- D. Hook Bolts: ASTM A 307, Grade A bolts, internally and externally threaded. Design hook hold joint assembly to hold coupling against pavement form and in position during concreting operations, and to permit removal without damage to concrete or hook bolt.
- E. Concrete Materials: Comply with requirements of applicable for concrete materials, admixtures, bonding materials, curing materials, and other as required.
- F. Subbase Material: Natural or artificially graded mixture of natural or crushed gravel, crushed stone crushed slag, natural or crushed sand to meet ASTM C 33.
- G. Expansion Joint Materials: Sealant, meet Federal Specifications TT-S-00227E, compatible with filler used, Type I, Class "All for horizontal joints, Type II, Class "All for vertical joints, Type II, Class "All for vertical joints (curbs). Color: gray. Asphalt felt joint filler shall be 1/411 thick.
- H. Anti-Spalling Compound: 50 percent (by volume) boiled linseed oil and 50 percent (by volume) commercial grade kerosene or mineral spirits.
- I. Curing and Sealing Compound: Conform to ASTM C-309 with 30 percent solids content minimum.
- J. Epoxy Resin Grout: FS MMM-G-650.

2.2 CONCRETE MIX, DESIGN AND TESTING

- A. Comply with requirements for concrete mix design, sampling and testing, and quality control, and as herein specified.
- B. Design mix to produce normal-weight concrete consisting of portland cement, aggregate, waterreducing or high-range water-reducing admixture (super-plasticizer) , air-entraining admixture and water to produce the following properties:
 - 1. Compressive Strength: 4000 psi, minimum at 28 days.
 - 2. Slump Range: 3 inches maximum.
 - 3. Admixtures: Air entraining Admixture (3 to 5%)
 - 4. Aggregates: ASTM C33, Size 467.

3. EXECUTION

3.1 INSTALLATION

- A. Verify base conditions under provisions of Section 02 2 00.
- B. Verify compacted granular base in acceptable and ready to support paving and imposed loads.
- C. Verify gradients and elevations of base are correct.
- D. Moisten base to minimize absorption of water from fresh concrete.
- E. Place and secure forms to correct location, dimension, and profile.
- F. Assemble formwork to permit easy stripping and dismantling without damaging concrete.
- G. Place joint filler vertical in position, in straight lines. Secure to formwork during concrete placement.
- H. Place reinforcement as indicated.
- I. Place concrete in accordance with ACI 301, and ACI 3 04 .
- J. Finish concrete paving with light broom.

- K. Finish curbs and gutters to a light broom finish.
- L. Provide scored joints in sidewalk at 4 foot intervals. Finish sidewalk paving with light broom and trowel joint edges.

3.2 CURING

- A. Refer to Section 03300 cast-in-place concrete.

END OF SECTION 02520