SECTION 02513

PORTLAND CEMENT CONCRETE PAVING

PART 1 GENERAL

1.01 SUMMARY

A. Related Sections:

1. 02200 - Earthwork.
2. 02221 - Excavating, Backfilling, and Compaction for Utilities.
3. 02511 - Asphalitic Concrete Paving.
4. 02529 - Concrete Sidewalk, Straight Curb, Curbs, Gutters, and Wheel Stops.
5. 03300 - Cast-In-Place Concrete.

1.02 REFERENCES

A. American Concrete Institute (ACI)-318, latest edition.

B. American Association of State Highway and Transportation Officials (AASHTO) Standard.


2. T-181 In-Place Density of Compacted Base Courses Containing Large Sizes of Coarse Aggregates.

C. American Society for Testing and Materials (ASTM):

1. C78-94 Test Method for Flexural Strength of Concrete (Using Simple Beam with Third-Point Loading).

2. C192/C-95 Practice for Making and Curing Concrete Test Specimens in the Laboratory.

3. D1751-83(91) Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).

1.03 SUBMITTALS

A. Submit the following for review before starting work:
1. Concrete design mix and proving flexural strength (modulus of rupture) tests.
2. Expansion joint filler data.
3. Joint sealer data.
4. Proposed finish procedure and technique for placing the concrete.
5. Results of concrete tests as specified.
6. Results of field tests of compaction of base course.

1.04 QUALITY ASSURANCE

A. Comply with ACI 318 – Recommended Practices for Construction of Concrete Pavements and Concrete Bases, and applicable requirements of Section 03300–Cast-In-Place Concrete, except as specified.

PART 2 PRODUCTS

2.01 MATERIALS

A. Base Course: Provide 12 inch stabilized subgrade compacted to a maximum density of 95 percent as determined by AASHTO T-180.

B. Concrete for concrete pavement shall have a 28-day modulus or rupture of 650 psi as determined by the requirements as specified.

1. Minimum compressive strength shall be 3,000 psi at 28 days.

C. Joint sealing: Comply with Fed. Spec. SS-S1401 or SS-S-200d (cold applied).

D. Premolded expansion joint filler: Comply with ASTM D1751.

PART 3 EXECUTION

3.01 INSPECTION

A. Do not proceed with the work of this section until conditions detrimental to the proper and timely completion of the work have been corrected in an acceptable manner.

3.02 PREPARATION
A. Surface Requirements:

1. The finished test standard pavement surface in both transverse and longitudinal directions shall have a maximum deviation from the specified plane of + 1/8".
2. Corrections shall be by grinding with the ground finish to match the specified finish.
3. Exterior paving shall have a maximum deviation from the specified grade of 1/8" in 10 feet.

3.03 APPLICATION

A. The surface finish, a medium broom finish after troweling, requires acceptance by the A/E.

B. Joints:

1. Contraction Joints:
   a. Place as indicated and to be perpendicular to the finish grade of the concrete.
   b. Joints shall be cut to a depth of 1/4 of the slab thickness by cutting with an edging tool having a 1/4" radius or by sawing with a blade producing a cut not less than 1/8" in width.
   c. Saw joints within 24 hours of concrete placement.

2. Expansion Joints:
   a. Place where indicated on the drawings, using 1/2" thick preformed expansion joint material.
   b. Anchor with accepted devices to prevent displacement during pouring and finishing.
   c. Edges shall be rounded with an edging tool.
   d. Joints shall be full depth of concrete except that top edges shall be 1/2" below the finish concrete surface.
   e. Seal expansion joints by filling with joint sealing compound. Joints shall be clean and dry before sealing compound is put in place.

3. Construction joints are to be used at indicated locations to stop concrete pours.

C. Curing: Methods of curing shall be accepted by the A/E.
3.04 TESTING

A. Laboratory and field testing shall be made by the Board contracted testing laboratory.

B. Testing requirements for concrete as specified shall be according to the requirements of Cast-In-Place Concrete – Section 03300 of these specifications, and as specified.

C. Design mixes and testing requirements for the concrete pavement shall be flexural strength tests of concrete as basis for design.

D. Where the flexural strength of the concrete is specified, make 1 strength test and one flexural test following (ASTM C192 and ASTM C78) for each 100 cubic yards or fraction thereof placed per day. Number of cylinders shall be 3 for strength test and 3 for flexural test. Test one at 3 days, one at 7 days and one at 28 days.

E. Base Course: Provide 1 field density test at each location of the concrete paving according to Section 02200- Earthwork.

END OF SECTION