

CONCRETE PAVEMENT SLAB REPLACEMENT.

(REV 2-16-98) (1-01)

PAGE 373. The following new Section is added after Section 352.

SECTION 353 CONCRETE PAVEMENT SLAB REPLACEMENT

353-1 Description.

Construct replacement slabs in existing portland cement concrete pavement.

353-2 Materials.

353-2.1 General: Meet the requirements of Division III. Specific references are as follows:

- (a) Coarse Aggregate..... Section 901
- (b) Fine Aggregate - Silica Sand Section 902
- (c) Portland Cement Section 921
- (d) Water Section 923
- (e) Admixtures Section 924*
- (f) Curing Materials..... Section 925
- (g) Embedded Items Section 931
- (h) Calcium Chloride..... AASHTO M 144, Type 1*

*The requirements of 346-2.5 are applicable to the admixtures.

353-3 Composition of Concrete.

353-3.1 Master Proportion Table:

Grade of Coarse Aggregate	57
Maximum Water/Cement Ratio (lb/lb) [(kg/kg)]	0.45
Minimum Cement Factor	752 lb/yd ³ [446 kg/m ³]
Slump Range.....	0.5 to 3.5 inches [13 to 90 mm]
Amount of Entrained Air	2 to 6%
Amount of Calcium Chloride.....	1%, by weight of Cement

353-3.2 Actual Proportions: Designate the actual proportions to be used to produce a concrete with a minimum 24-hour compressive strength of 3,000 psi [21 MPa].

Before mixing concrete, submit the design mix for approval on a form as shown in the Standard Operating Procedure for Section 346. Use mixes approved by the Department.

The Department will control the concrete by inspecting the consistency, yield and strength of the concrete, and the air content where applicable.

353-3.3 Certification: The requirements of 346-6.3 are applicable to this concrete.

353-4 Batching and Mixing Concrete.

The requirements of 346-7 and 346-8 apply to this Section. The requirements of 346-8.1 and 346-8.3 are amended as follows:

When using ready mixed concrete, add the concrete ingredients, excluding the calcium chloride and 3 gal/yd³ [15 L/m³] of withheld mixing water to the truck mixer at the plant. Mix each batch at the plant at the mixing speed for 35 revolutions of the drum.

Mix the concrete en route to the job site at an agitating speed of no more than three revolutions per minute. Add the calcium chloride and withheld mixing water to the concrete at the job site. Obtain the

Engineer's approval of the method of adding the calcium chloride and withheld mixing water. Mix the concrete for 40 additional revolutions at mixing speed after the calcium chloride and withheld mixing water is added to the mixer. Do not add calcium chloride to any concrete which has attained the age of 45 minutes measured from the beginning of the initial mixing at the plant.

Thoroughly dissolve the calcium chloride in the withheld mixing water before adding it to the mixer.

If approved by the Engineer, a Type C or Type E admixture may be used in lieu of calcium chloride. Include approval with concrete design mix submittal. Provide a certification from the admixture supplier stating compliance with AASHTO M-194.

When a Type C or Type E admixture is approved for use, incorporate the admixture into the concrete design mix at the dosage rate specified by the admixture supplier.

353-5 Test Requirements.

The requirements of 346-9 apply to this Section.

The Engineer will make one set of four test cylinders for each day of placement. The Engineer will test two cylinders at 24 hours and consider the average compressive strength of these two tests to be the 24-hour compressive strength. If the 24-hour compressive strength is less than 3,000 psi [21 MPa], the Engineer will immediately test the remaining two cylinders and make a determination as to corrective action required on the basis of all test results.

353-6 Required Strength of Concrete.

If the compressive strength of any set of test cylinders fails to meet the minimum 24-hour strength requirement of 3,000 psi [21 MPa], take immediate corrective measures to ensure that concrete placed in the future meets the specified strength requirements. The Engineer will evaluate the particular circumstances in each instance where a strength deficiency occurs. If the Engineer determines that there will be a significant effect on the service life of the replacement slab, replace the concrete at no expense to the Department.

353-7 Placing, Striking Off, Consolidating and Finishing Concrete.

Place concrete as specified in 350-8.1.

The requirements of 350-10.3 and 350-12.2 are applicable to this Section.

Produce a uniform, gritty textured final finish by dragging a seamless strip of damp burlap, having at least 3 feet [1 m] in contact with the pavement, longitudinally along the pavement.

353-8 Curing.

Cure the slab with wet burlap as specified in 350-13.3. Apply the burlap as early as possible and to maintain it in a saturated condition at all times.

353-9 Joints.

Construct Joints at the locations and in accordance with the details shown in the plans.

353-10 Protection and Opening to Traffic.

The requirements of 350-6 and 350-18 apply to this Section. Keep the slab closed to traffic for a minimum of 6 hours after placing the concrete.

353-11 Method of Measurement.

The quantity to be paid for will be the volume, in cubic yards [cubic meters], of concrete placed and accepted. The quantity will be calculated on the basis of field measured dimensions. The depth used in this calculation will be determined by averaging an appropriate number of measurements from the plane of

the existing pavement surface to the surface of the subgrade as it exists immediately prior to placing the concrete.

353-12 Basis of Payment.

Price and payment will be full compensation for all work specified in this Section and shall include all joint construction, including tie bars and dowels, furnishing of test specimens, and all necessary incidentals.

Payment will be made under:

Item No. 353- 70-	Concrete Pavement Slab Replacement - per cubic yard.
Item No. 2353- 70-	Concrete Pavement Slab Replacement - per cubic meter.