ITEM 0123001

REINFORCED CONCRETE BUS PAD

DESCRIPTION

Work under this item shall consist of saw cutting, excavating, removing and satisfactory disposal of all existing bituminous and concrete roadway pavements including reinforcement and/or sub-base materials as required. Constructing a new 11" thick reinforced Portland cement concrete bus pad and making all repairs to adjacent pavement surfaces, if required, in the location(s), and to the dimensions as shown on the plans or herein, or as ordered by the Engineer.

REFERENCED ITEMS

None

REQUIRED SUBMITTALS

Material Certificate of Compliance:

Submit 5 copies of material certificate of compliance for concrete in accordance with the contract general requirements.

Certified Test Report:

Submit 5 copies of certified test reports for reinforcement in accordance with the contract general requirements.

MATERIALS

1. **STEEL REINFORCING** (DEFORMED STEEL BARS)

   Materials for this work shall conform to the requirements of Article M.06.01 of The State of Connecticut, Department of Transportation, Standard Specification for Roads, Bridges, and Incidental Construction, Form 816, 2004.

2. **CONCRETE**

   Materials for this work shall be Class "F" concrete and shall conform to the requirements of Article M.03.01 of The State of Connecticut, Department of Transportation, Standard Specifications for Roads, Bridges and Incidental Construction, Form 816, 2004.

3. **EXPANSION JOINT**

Expansion material shall meet ASSHTO M33-99. Materials for this work shall be 1/2" or 3/4" (as shown on standard construction drawings).

4. **GALVANIZED STEEL DOWELS**

Dowels shall be intermediate grade steel conforming to AASHTO M31-03, ASTM A-615A 615M-O1B. Hot Dip Galvanizing shall conform to AASHTO M 111MM 111-04.

5. **NON-SHRINK GROUT**

Grout shall be non-shrink, non-staining and shall consist of a mixture of hydraulic cement, water, fine aggregates, and expansive mixture approved by the Engineer. The grout mix shall conform to the following requirements:

The grout mix shall have an unrestrained volumetric expansion of not less than 3% nor more than 8%.

The grout mix shall have a minimum seven (7) day compressive strength of 3,000p.s.i. when tested by methods conforming to the requirements of ASTM C-109-02. The water content of the grout shall be kept as low as possible for proper grouting. However, it shall not exceed five (5) gallons per sack of cement.

With the approval of the Engineer, the Contractor may substitute a non-shrink-premixed mortar, provided the Contractor submits samples of the grout mix for testing and approval.

CONSTRUCTION METHODS

In areas where existing roadway pavement(s) are present the contractor shall first saw cut the perimeter of the area to be excavated. Saw cutting shall be performed with a self-propelled motorized saw capable of sawing completely through existing roadway pavements. The finished cut shall be straight and true to the dimensions as indicated on the plans.

The Contractor shall then carefully excavate all existing bituminous and concrete pavements including all steel reinforcing and/or sub-base material as required for the installation of the new work. All excavated debris and materials shall be properly and legally disposed of immediately.

Once the area has been excavated to the required depth, the contractor shall grade and compact the natural soils by use of a motorized plate compactor or other means acceptable to the Engineer. A six (6) inch layer of processed traprock shall then be constructed and compacted as the subbase for the concrete bus pad.

Galvanized steel dowels shall then be installed in the perimeter of the existing reinforced concrete road base @ 24" o.c. The Contractor shall be required to drill a 3/4" +/- 1/16" hole into the concrete base and set the dowel 12" into the existing concrete slab. The length of dowel to be embedded in the new slab shall remain uncoated. If the diameter of the drilled hole into the existing concrete exceeds 13/16", the dowel is to be set and grouted 12" into the existing concrete. The length of the dowel to be embedded in the new slab shall be dipped or painted with hot 60-70 penetration asphalt cement, viscosity Grade AC-20, conforming to the requirements of AASHTO M20-70.

Dowels shall be spaced 24" on center and located 12" from the edge of a concrete slab.

Steel reinforcement (deformed steel bars) shall then be installed in accordance with the standard construction details. Laps shall be 6" and shall be kept to a minimum. Reinforcement shall be tied with wire at all intersections and laps.

Steel seats shall be used to insure proper horizontal spacing and cover, and to prevent any displacement of reinforcement during concrete installation.

Forms may be wood or steel adequately braced and secured. When a new reinforced concrete bus pad is to be constructed in an existing concrete base road with granite curb, the forms need only extend 3" +/- above the edge of the existing concrete road base. The existing granite curb and sawn vertical edge of concrete road base may serve as forms in this instance.

Premolded expansion joint material shall be placed in all areas as indicated on the drawings. Expansion joint material shall be adequately secured to prevent displacement during pouring. In areas where more than one panel is to be constructed, a transverse doweled expansion joint shall be constructed between panels. Unless otherwise authorized, only one panel shall be poured at a time.

Just prior to pouring, the area shall be lightly moistened, wood or steel forms shall receive a light coat of form oil. The concrete shall be placed and adequately vibrate into place to insure no voids are present. The concrete shall be struck off and spread to the proposed elevation. It shall be finished with a light broom surface and edged with a 1/4" edging tool.

Stripping of forms may be undertaken 48 hours after pouring operations, however, the pad shall not be opened for vehicular traffic until at least 7 days have elapsed, or the pad has reached at minimum compressive strength of 3,000p.s.i.

The contractor may elect to use a high-early strength concrete for this work to expedite his operations. The use of this material shall be at the cost and option of the contractor.

METHOD OF MEASUREMENT

This work will be measured for payment by the actual number of square feet of reinforced concrete bus pad constructed in place and accepted by the Engineer.

BASIS OF PAYMENT

This work shall be paid for at the contract unit price per square foot for "REINFORCED CONCRETE BUS PAD". Said price shall include all materials, labor, tools, and equipment necessary to complete the work as specified herein or as directed by the Engineer.

PAY ITEM	DESCRIPTION	PAY UNIT
0123001	Reinforced Concrete Bus Pad	SF