

- A. Grease shall conform to the requirements of Society of Automotive Engineers AS 8660. A uniform film of grease shall be applied to the upper surface of the pads prior to placing the sheet metal.
- B. Sheet metal shall be commercial quality galvanized sheet steel. The sheet metal shall be smooth and free of kinks, bends, or burrs.
- C. Construction methods and procedures shall prevent grout or concrete seepage into the sliding bearing assembly.

ELASTOMERIC BEARING PADS

Elastomeric bearing pads shall conform to the provisions in Section 51-1.12H, "Elastomeric Bearing Pads," of the Standard Specifications.

PRECAST PRESTRESSED CONCRETE BOX BEAMS

Precast reinforced concrete box beams shall conform to the provisions in Section 51, "Concrete Structures," of the Standard Specifications and these special provisions.

Before curing operations, the top surface of each member shall be given a coarse texture by brooming with a stiff bristled broom or by other suitable devices that will result in uniform transverse scoring. That portion of the top surface of box girders that is to be covered by expanded polystyrene shall be given a wood float finish.

When box beams with a concrete deck are shown on the plans, surfaces noted to be given a coarse broom finish shall be cleaned of surface laitance and curing compound before placing deck concrete. Exposure of clean aggregate will not be required.

The anticipated deflection and method of accommodation of deflection of precast prestressed concrete box beams, prior to the time the deck concrete is placed, shall be shown on the working drawings in conformance with the provisions in Section 5-1.02, "Plans and Working Drawings," of the Standard Specifications. The deflection shall include the following:

- A. Anticipated upward deflection caused by the prestressing forces.
- B. Downward deflection caused by the dead load of the box beam.
- C. Deflection caused by the creep and shrinkage of the concrete for the time interval between the stressing of the box beams and the planned placement of the deck.

The deflection shall be substantiated by calculations that consider the ages of the box beam concrete at the time of stressing and the Contractor's planned placement of the deck. Deflection calculations shall be based on the concrete producer's estimate of the modulus of elasticity at the applicable concrete age.

Adjustments to accommodate box beam deflections that occur prior to the time the deck concrete is placed may include revisions in bearing seat elevations, but the adjustments shall be limited by the following conditions:

- A. The minimum permanent vertical clearance under the structure as shown on the plans shall not be reduced.
- B. The profile grade and cross slope of the deck shall not be changed.
- C. A minimum of one inch of deck slab concrete between the top of the precast box beams and the deck slab reinforcement shall be maintained.

Box beams with unanticipated beam deflection that do not comply with conditions A, B, and C will be rejected in conformance with the provisions in Section 6-1.04, "Defective Materials," of the Standard Specifications.

Adjustments to accommodate beam deflections will not be considered a change in dimensions. Full compensation for increases in the cost of construction, including increases in the quantity of deck or bearing seat concrete, resulting from adjustments to accommodate beam deflections shall be considered as included in the contract prices paid for the various items of work involved, and no additional compensation will be allowed therefor.

The Contractor shall submit a box beam erection plan to the Engineer for approval in conformance with the provisions in Section 5-1.02, "Plans and Working Drawings," of the Standard Specifications. The box beam erection plan shall include procedures, details, and sequences for unloading, lifting, erecting, and installing temporary bracing, and shall be signed by an engineer who is registered as a Civil Engineer in the State of California. The Contractor shall allow 20 days for the review of the girder erection plan.

The Contractor shall place grout in the keyways after precast prestressed concrete bridge members are in final position. The grout shall conform to the requirements in ASTM Designation: C 1107. The Contractor shall not place any equipment or other loads on spans that have been grouted for less than 72 hours. The Contractor shall not posttension or tighten transverse posttensioning tendons until 24 hours have elapsed after grouting of the last keyway. Abrasive blast methods shall be used to clean keyways to the extent that clean aggregate is exposed at the precasting location. Keyways and blockouts shall be kept moist with water for 24 hours and allowed to dry to a surface dry condition immediately prior to placing grout.

Tie rod assemblies consisting of grouted high strength rods, bearing plates, couplers, anchorage devices, and incidentals shall conform to the details shown on the plans and the provisions in these special provisions.

Tie rod assemblies shall conform to the provisions in Section 50, "Prestressing Concrete," of the Standard Specifications and the following:

- A. The high strength rods shall conform to the requirements of ASTM Designation: A 722/A 722M, including all supplementary requirements.
- B. All exposed steel parts, other than high strength rods, shall be galvanized. Galvanizing shall conform to the provisions in Section 75-1.05 "Galvanizing," of the Standard Specifications.
- C. After installation, the exposed portion of threads on the high strength rods shall be cleaned by wire brushing and painted with 2 applications of unthinned commercial quality zinc-rich primer (organic vehicle type). Spray cans shall not be used.
- D. The rod assemblies shall be shipped as a complete unit including anchorage device and coupler.

Bearing plates shall conform to the requirements of ASTM Designation: A 36/A 36M.

PRECAST WINGWALLS

Precast concrete wingwalls shall conform to the details shown on the plans and the provisions in Sections 51, "Concrete Structures," and 52, "Reinforcement," of the Standard Specifications and these special provisions.

The Contractor shall submit a complete working drawing submittal for precast concrete wingwalls to the Engineer in conformance with the provisions in Section 5-1.02, "Plans and Working Drawings," of the Standard Specifications and these special provisions. For initial review, 4 sets of the drawings shall be submitted. After review, between 6 and 12 sets, as requested by the Engineer, shall be submitted to the Engineer for final approval and for use during construction.

Working drawings shall be 11" x 17" in size and each drawing and calculation sheet shall include the jobsite name of the structure as shown on the contract plans, District-County-Route, bridge number and contract number.

The working drawing submittal shall contain all information required for the construction of the precast wingwalls including the following:

- A. Details of handling, storing, transporting, and erecting precast wingwalls including method of lifting, configuration of lifting devices, including location of lifting devices, method of supporting precast wingwalls during storage and transportation.
- B. All controlling dimensions and elevations of the precast wingwalls.
- C. Details and locations of lifting anchors. Calculations for any localized strengthening necessary for the lifting anchors, and the materials and methods to remove the lifting anchors and fill the holes.
- D. The proposed schedule and sequence of the installation of precast wingwalls, construction of Class 2 aggregate leveling pads, erection of precast prestressed box beams, and placement of decks.

The Contractor shall allow the Engineer two weeks to review the precast wingwall drawings after a complete submittal has been received..

Should the Engineer fail to review the complete working drawing submittal within the time specified, and if, in the opinion of the Engineer, the Contractor's controlling operation is delayed or interfered with by reason of the delay in reviewing the precast abutment drawing submittal, an extension of time commensurate with the delay in completion of the work thus caused will be granted in conformance with the provisions in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

Wingwalls shall be placed to the lines and grades established by the Engineer. The foundation for wingwalls shall be excavated as shown on the plans and in conformance with the provisions in Section 19, "Earthwork," of the Standard Specifications and these special provisions. The foundation shall be approved by the Engineer before any precast panels are placed.

PRECAST ABUTMENTS

Precast abutments shall conform to the details shown on the plans and the provisions in Sections 51, "Concrete Structures," and 52, "Reinforcement," of the Standard Specifications and these special provisions.

The Contractor shall submit a complete working drawing submittal for precast concrete abutments to the Engineer in conformance with the provisions in Section 5-1.02, "Plans and Working Drawings," of the Standard Specifications and these special provisions. For initial review, 4 sets of the drawings shall be submitted. After review, between 6 and 12 sets, as requested by the Engineer, shall be submitted to the Engineer for final approval and for use during construction.

Working drawings shall be 11" x 17" in size and each drawing and calculation sheet shall include the jobsite name of the structure as shown on the contract plans, District-County-Route, bridge number and contract number.

The working drawing submittal shall contain all information required for the construction of the precast abutments including the following:

- A. Details of handling, storing, transporting, and erecting precast abutments including method of lifting, configuration of lifting devices, including location of lifting devices, method of supporting precast abutments during storage and transportation.
- B. All controlling dimensions and elevations of the precast abutments.
- C. Elevations at the concrete surface where girder elastomeric bearing pads are to be placed.
- D. Details and locations of lifting anchors. Calculations for any localized strengthening necessary for the lifting anchors, and the materials and methods to remove the lifting anchors and fill the holes.
- E. The proposed schedule and sequence of the installation of precast abutments, construction of Class 2 aggregate leveling pads, erection of precast prestressed box beams, and placement of decks.

The Contractor shall allow the Engineer two weeks to review the precast abutment drawings after a complete submittal has been received..

Should the Engineer fail to review the complete working drawing submittal within the time specified, and if, in the opinion of the Engineer, the Contractor's controlling operation is delayed or interfered with by reason of the delay in reviewing the precast abutment drawing submittal, an extension of time commensurate with the delay in completion of the work thus caused will be granted in conformance with the provisions in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

Corrugated steel pipe used for abutment stem voids shall conform to details shown on the plans and the provisions in Section 66, "Corrugated Metal Pipe," of the Standard Specifications.

Abutments shall be placed to the lines and grades established by the Engineer. The foundation for abutments shall be excavated as shown on the plans and in conformance with the provisions in Section 19, "Earthwork," of the Standard Specifications and these special provisions. The foundation leveling pad shall be approved by the Engineer before any precast panels are placed.

MEASUREMENT AND PAYMENT

Measurement and payment for concrete in structures shall conform to the provisions in Section 51-1.22, "Measurement," and Section 51-1.23, "Payment," of the Standard Specifications and these special provisions.

Full compensation for furnishing, installing, and prestressing tie rod assemblies is included in the contract price paid for the various items of work involved, , and no separate payment will be made therefor.

Full compensation for corrugated steel pipe used for abutment stem voids is included in the contract unit price paid for furnish precast abutment and no separate payment will be made therefor.

10-1.44 DRILL AND BOND DOWELS

Drilling and bonding dowels shall conform to the details shown on the plans, the provisions in Section 83-2.02D(1), "General," of the Standard Specifications, and these special provisions.

Dowels shall conform to the provisions for bar reinforcement in "Reinforcement" of these special provisions.

If reinforcement is encountered during drilling before the specified depth is attained, the Engineer shall be notified. Unless the Engineer approves coring through the reinforcement, the hole will be rejected and a new hole, in which reinforcement is not encountered, shall be drilled adjacent to the rejected hole to the depth shown on the plans.

Unless otherwise provided, dowels to be bonded into drilled holes will be paid for as bar reinforcing steel (liner).

Unless otherwise provided, drilling and bonding dowels will be measured and paid for by the linear foot determined by the number and the required depth of holes as shown on the plans or as ordered by the Engineer.

The contract price paid per linear foot for drill and bond dowel shall include full compensation for furnishing all labor, materials (except reinforcing steel dowels), tools, equipment, and incidentals, and for doing all the work involved in drilling the holes, including coring through reinforcement when approved by the Engineer, and bonding the dowels, complete in place, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

10-1.45 SEALING JOINTS

Joints in concrete bridge decks and joints between concrete structures and concrete approach slabs must be sealed in conformance with the details shown on the plans, the provisions in Section 51, "Concrete Structures," of the Standard Specifications, and these special provisions.