

TO:

ENGINEERING INSTRUCTION

NEW YORK STATE DEPARTMENT OF TRANSPORTATION

**SUPERSEDED BY EB 01-010
EFFECTIVE 2/6/01**

SUBJECT: BRIDGE DESIGN MANUAL
STANDARD DETAILS FOR HIGHWAY BRIDGES
SPECIAL SPECIFICATIONS FOR BRIDGES
Subject Code: 7.35-5; 7.35-6

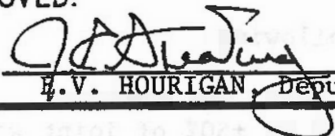
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Supersedes:

APPROVED:



E.V. HOURIGAN, Deputy Chief Engineer (Structures)

When approach slabs are overlaid, it has been found that the longitudinal and transverse joints very often crack and spall. In order to correct these conditions, when approach overlays are required, the longitudinal joints shall be formed in the manner indicated on Plates II or III. Transverse joints shall be formed in the manner indicated on Plate I. The details given in Plates I, II and III shall all be shown on the plans.

Sealing of the joints shall be done in accordance with the Item 18502.4602. This item shall be included on all overlay projects which require the approach slabs to be overlaid. Please note that Item 18502.4602 has attached sketches noted as Figures 1 & 2. These sketches are not to be shown on the plans. They will accompany the item. Item 18502.4602 will be stocked as a Main Office insert. For estimating purposes, until a bidding history is developed, a price of \$3.00/l.f. may be used.

This change becomes effective with the letting of April 3, 1986. Changes are to be made by ammendment if necessary.

ITEM 18502.4602 - SEALING LONGITUDINAL AND TRANSVERSE
JOINTS IN OVERLAYED APPROACH SLABS

DESCRIPTION: This work shall consist of cleaning and sealing transverse and longitudinal joints in overlayed approach slabs and concrete pavement slabs adjacent to structures.

MATERIALS:

Joint Sealant: Sealant shall meet the requirements of the following:

Highway Joint Sealant (Type B): Sealant shall be a one part, low modulus silicone formulation that has dynamic movement capability of $\pm 50\%$ of joint width. Primer shall be used in conjunction with the silicone sealant if required by the manufacturer. Applications for approval of Silicone Joint Sealant shall be submitted to the Materials Bureau by the manufacturer accompanied by all pertinent sealer information. Upon approval by the Materials Bureau, the name of the product will be placed on an "Approved List" of Silicone Joint Sealants. The product may then be accepted on the basis of the brand name labeled on the container and appearing on the current Approved List.

Federal Specification SS-S-195B, Sealing Compound, Elastomeric Polymer Type, Cold Applied, Concrete Paving Joints. The sealant shall be accepted on the basis of the manufacturer's certification that it conforms to the requirements of SS-S-195B. Instructions for mixing, application, required equipment, temperature limitations, and curing, shall be supplied by the manufacturer to the contractor, and to the Engineer at least one week prior to actual installation. Sealants that require primers for increased adhesion shall use the primers recommended by the manufacturer.

Backer Rod Material: Backer rod material for Highway Joint Sealant Type B shall be closed cell polyethylene foam rod. Backer rod diameter shall be such that when the material is placed in the joint reservoir, it shall support the sealant at its proper depth, prevent the sealant from leaking around and underneath it, and allow the sealant to deform freely when the joint expands and contracts.

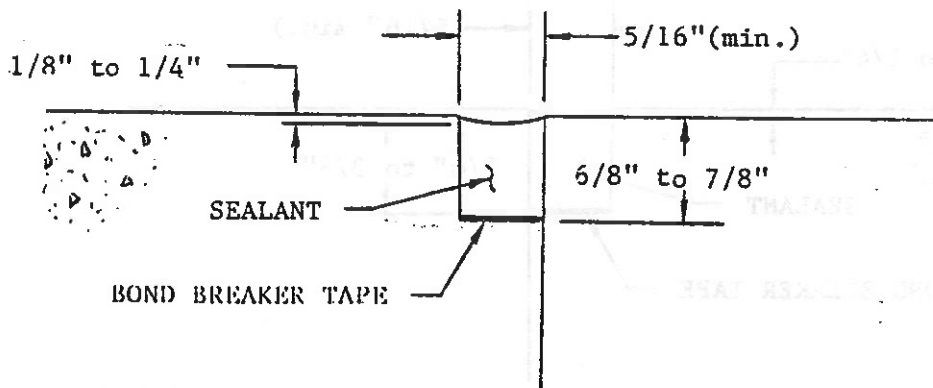
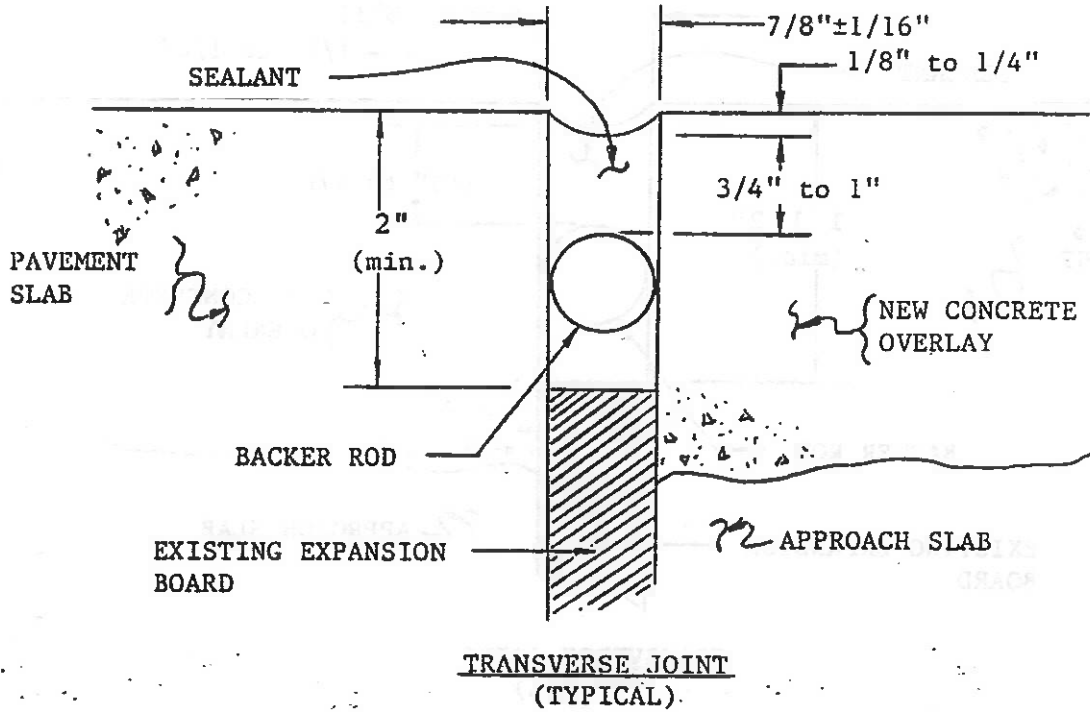
Bond Breaker Tape: Bond breaker tape shall be polyethylene adhesive tape or masking tape.

CONSTRUCTION DETAILS:

General: Longitudinal and transverse joints for overlayed approach slabs will be constructed to the proper dimensions as shown on the plans; payment for such work shall be included in the price bid for the overlay. All joints that are not constructed to the proper dimensions shall be sawed to the dimensions shown in Figure 1 or Figure 2 of this specification; no additional payment will be made for this work.

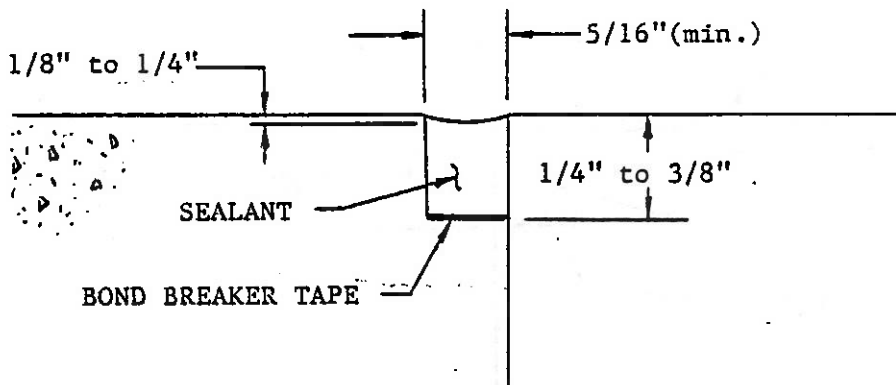
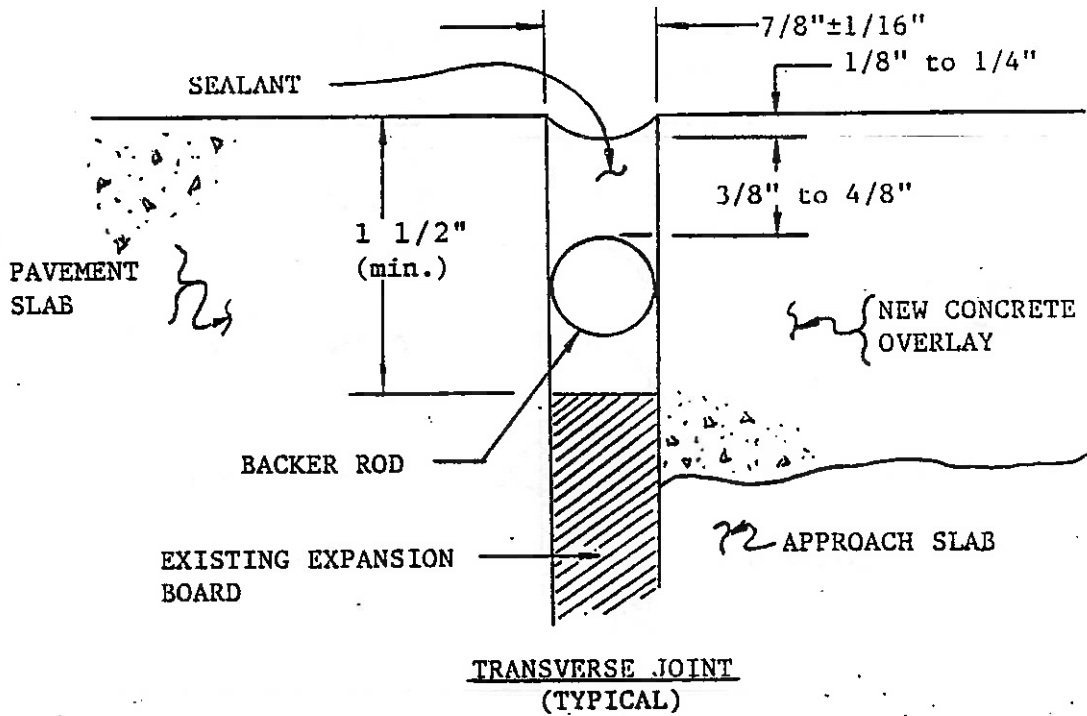
Seasonal and Temperature Limitations: Joint sealants shall not be placed when pavement or ambient temperatures fall below 40°F.

FIGURE 1
 FEDERAL SPECIFICATION SS-S-195B SEALANT
 FOR TRANSVERSE AND LONGITUDINAL JOINTS



NOTE: EXISTING LONGITUDINAL JOINTS TO BE SEALED THAT ARE NOT INCLUDED IN APPROACH SLAB RECONSTRUCTION MAY EXHIBIT DIFFERENT RESERVOIR CONFIGURATION. THE JOINT WIDTH SHALL BE A MINIMUM OF 5/16" AND SEALANT DEPTH SHALL BE A MINIMUM OF 3/4". TAPE IS USED FOR SHALLOW DEPTH RESERVOIRS, BACKER ROD FOR DEEP RESERVOIRS.

FIGURE 2
 TYPE B SEALANT
 FOR TRANSVERSE AND LONGITUDINAL JOINTS



NOTE: EXISTING LONGITUDINAL JOINTS TO BE SEALED THAT ARE NOT INCLUDED IN APPROACH SLAB RECONSTRUCTION MAY EXHIBIT DIFFERENT RESERVOIR CONFIGURATION. THE JOINT WIDTH SHALL BE A MINIMUM OF $5/16''$ AND SEALANT DEPTH SHALL BE A MINIMUM OF $3/8''$. TAPE IS USED FOR SHALLOW DEPTH RESERVOIRS, BACKER ROD FOR DEEP RESERVOIRS.

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Joint Preparation and Cleaning: Existing joint sealing material, asphalt, incompressibles and all other material present in the joint reservoir or adhering to the joint wall shall be removed by plow, router, wire brush, high pressure air or other suitable tools approved by the Engineer.

Joints that do not have adequate depth or width as dimensioned in Figures 1 or 2 shall be sawcut to the required dimensions in order that proper sealant dimension, sealant recess, and backer rod placement (when required), can be achieved. Immediately after sawing the joint, the resulting slurry or dust shall be completely removed from the joint and the pavement by flushing with a stream of water in the case of wet sawing, or blowing with oil-free air in the case of dry sawing.

After the joint has been prepared as specified above, both joint faces shall be thoroughly cleaned by sand blasting. The operator of the sandblaster shall tip the nozzle of his equipment so that the blast material is directed against one wall at a time. The joint walls shall be thoroughly clean and indicate a uniform minor abrasion of the wall surface.

Immediately prior to the placement of the backup material and the sealant, the joints shall be blown with an air stream of sufficient power to remove any remaining blast sand, dirt and loose material. Suitable traps or devices shall be installed on the air equipment to prevent moisture and oil from contaminating the joint surfaces. The Contractor shall maintain these devices and see that they are functioning properly.

The Contractor shall be responsible for protecting traffic and property from hazard or damage during the joint cleaning operation. Materials and methods used for this purpose will be subject to the approval of the Engineer.

Sealing: The proper size and type of backer rod or bond breaker tape shall be installed in a manner that will produce the sealant dimensions specified. The joints must be thoroughly dry and clean at the time of sealing.

Federal Specification SS-S-195B: The components of the sealant material shall be thoroughly mixed and blended together in accordance with the manufacturer's instructions. The sealant shall be installed in strict accordance with the manufacturer's instructions and to the dimensions required by this specification. If a primer is recommended by the compound formulator, the primer shall be applied according the manufacturer's instructions.

Type B Sealant: The primer for Type B sealant, if required by the manufacturer of the material, shall be applied to the joint faces in a thin film by brush or spray equipment. The primer shall completely wet the surfaces to be sealed and shall dry tack free prior to installation of the backer rod.

Immediately after the sealant is applied, it shall be tooled to provide firm contact with the joint faces and to form the required recess below the slab surface.

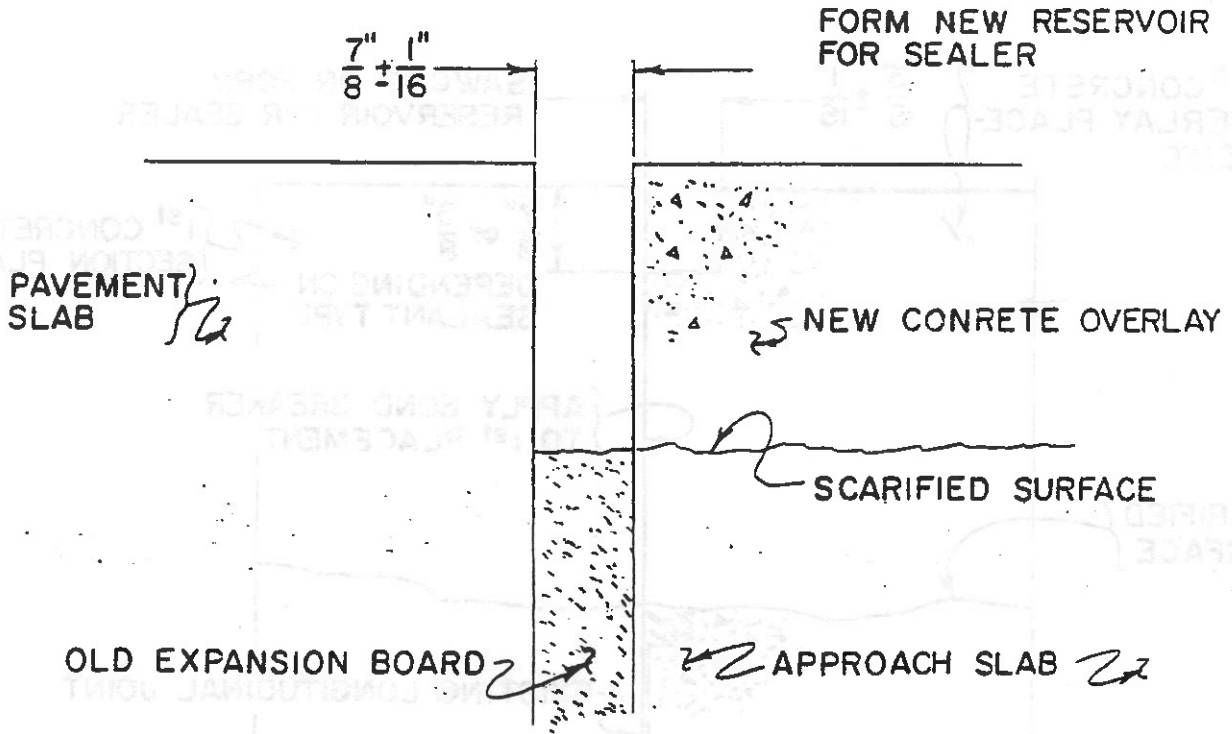
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Sealant that becomes damaged or that is installed improperly shall be repaired. Damaged or deficient areas shall have the sealant removed, the surfaces properly cleaned, and new sealant installed to the satisfaction of the Engineer at the Contractor's expense.

METHOD OF MEASUREMENT: This work shall be measured by the number of linear feet of joint sealed. No deduction will be made where joints cross.

BASIS OF PAYMENT: The unit price bid per linear foot shall include the cost of furnishing all labor, equipment, and materials necessary to complete the work as specified.

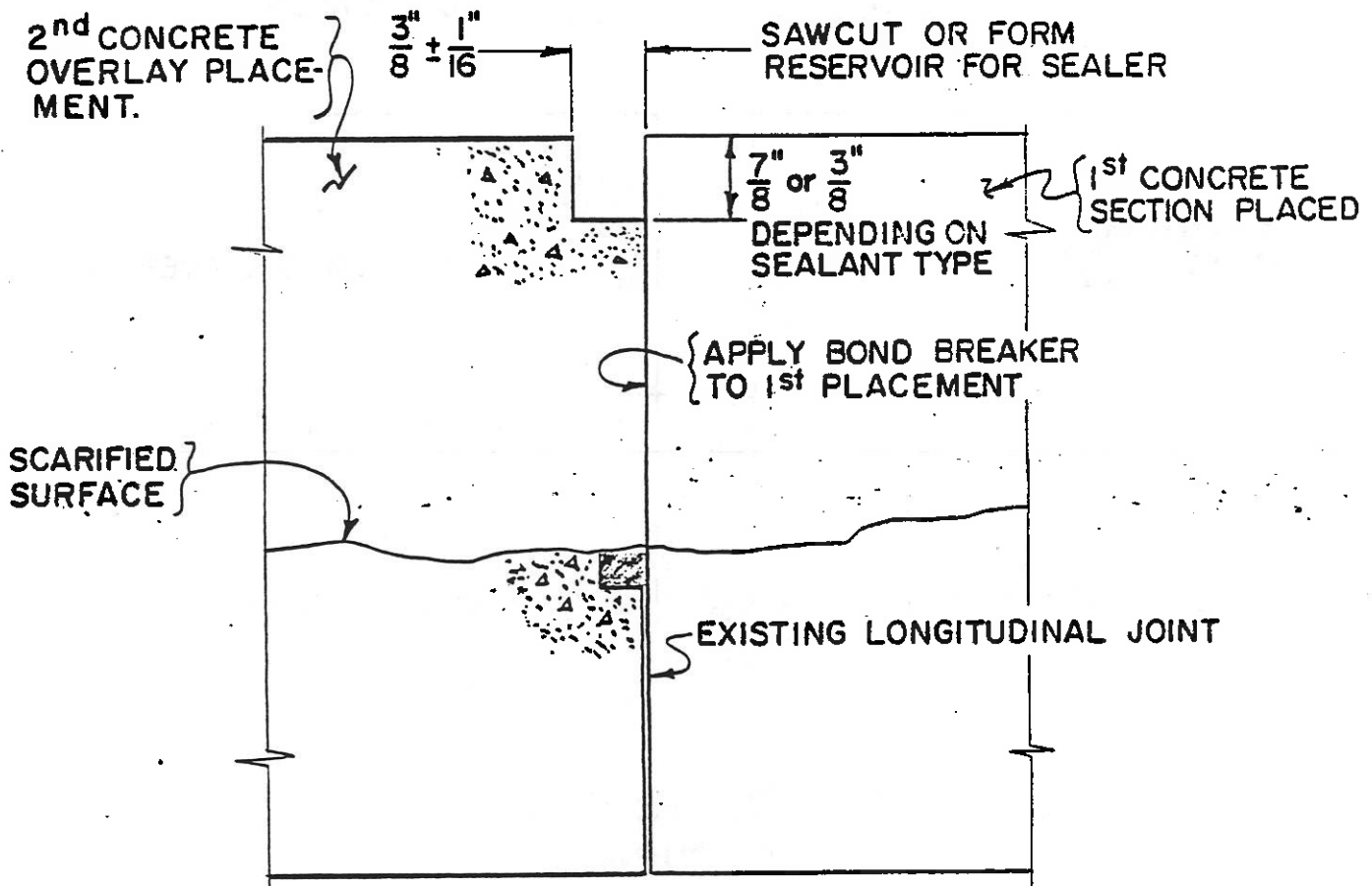
APPROACH SLAB TRANSVERSE JOINT



TRANSVERSE JOINT
(TYPICAL)

NOTE: THE JOINT RESERVOIR SHOWN ABOVE IS TO BE $\frac{7}{8}$ " WIDE. THE SEALANT TYPE USED WILL DETERMINE THE MINIMUM DEPTH OF THE JOINT SEALANT RESERVOIR. SEE FIGURES 1 AND 2 OF ITEM 18502.4601-SEALANT LONGITUDINAL AND TRANSVERSE JOINTS IN OVERLAYED APPROACH SLABS. EXISTING JOINT CONDITIONS AND DEPTH OF THE NEW OVERLAY MAY REQUIRE SAWING IN ADDITION TO FORMING IN ORDER TO ACHIEVE THE REQUIRED JOINT RESERVOIR DIMENSIONS. THE SAME JOINT RESERVOIR DIMENSIONS ARE REQUIRED IF THE TRANSVERSE JOINT IS A CONTRACTION JOINT.

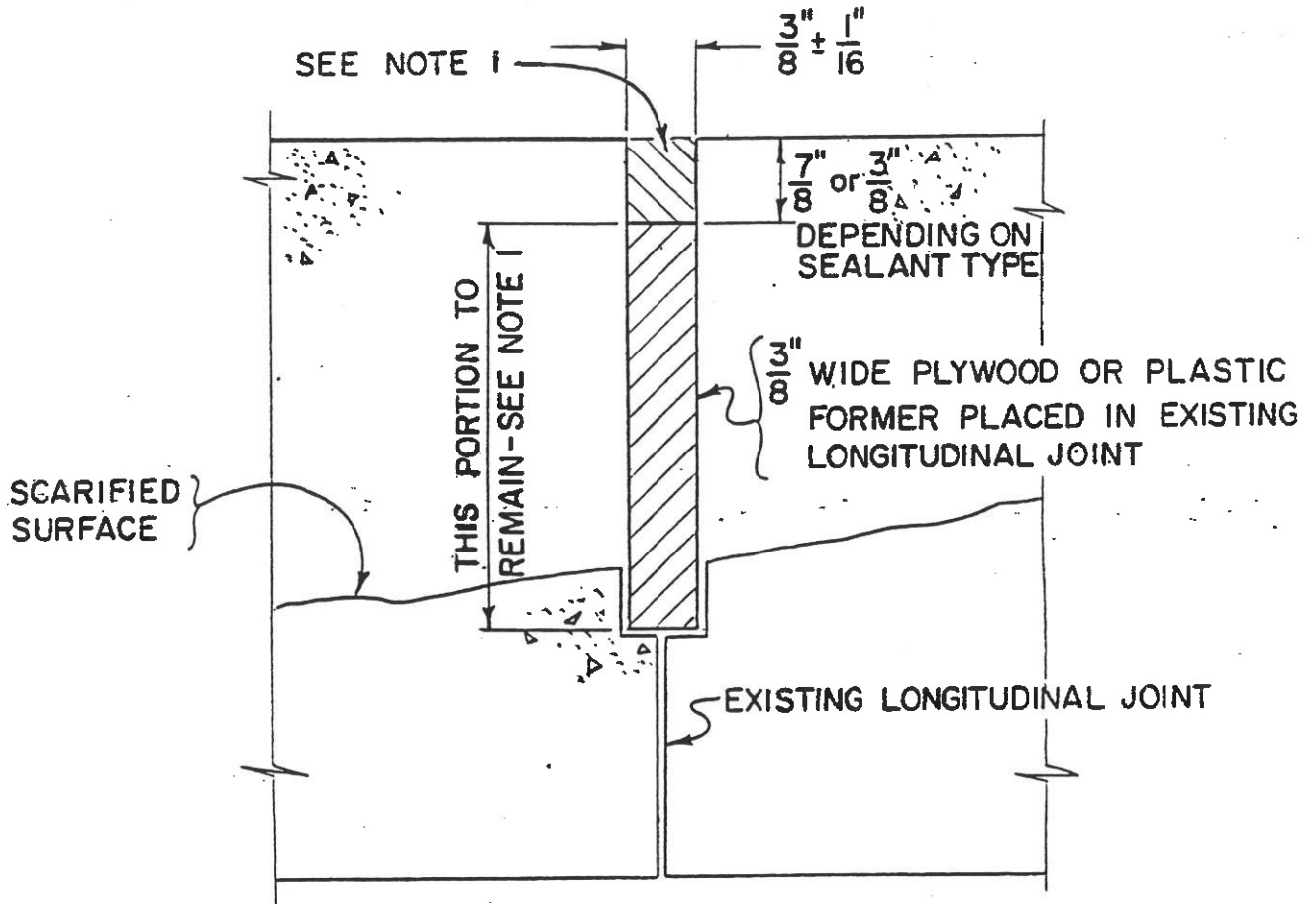
ALTERNATE METHOD I



SECTION AT APPROACH SLAB
LONGITUDINAL JOINT

NOTE: FORM THE 1st CONCRETE OVERLAY PLACEMENT OVER THE EXISTING LONGITUDINAL JOINT.

ALTERNATE METHOD 2



SECTION AT APPROACH SLAB LONGITUDINAL JOINT

- NOTE: 1) THE TOP PORTION OF THE FORMER SHALL BE REMOVED, AFTER THE OVERLAY HAS CURED, TO PROVIDE THE SEALER RESERVOIR. THE LOWER PORTION SHALL REMAIN IN PLACE. THE CONTRACTOR IS ADVISED TO USE A TWO PART FORMER TO FACILITATE REMOVAL OF THE TOP PORTION
- 2) CLEAN EXISTING LONGITUDINAL JOINT TO ALLOW THE FORMER TO BE PLACED INTO IT.