


TO: SUPERSEDED BY EI 82-010 EFFECTIVE 6/24/1982	ENGINEERING INSTRUCTION NEW YORK STATE DEPARTMENT OF TRANSPORTATION
Distribution: <input checked="" type="checkbox"/> Main Office <input checked="" type="checkbox"/> Regions <input type="checkbox"/> Special	SUBJECT: STRESS RELIEF JOINTS Subject Code: 7.27-1-502 Code: <u>78-9</u> Date: <u>2/8/78</u> Supersedes: 73-29
APPROVED:  <i>for</i> CHIEF ENGINEER (Design and Construction Division)	

Historically the Department has used transverse expansion joints in the two pavement joints adjacent to the approach slabs at every structure to provide room for pavement growth. In 1972 pressure relief joints were added to the Highway Design Manual for use as a standard feature at the end of each structure approach slab. However, the use of the transverse expansion joints was not discontinued with the advent of the pressure relief joint.

Although the continued use of the expansion joints does not cause any problem with the normal functioning of the pavement, it does represent an additional expense and requires additional inspection which is unnecessary.

Attached, for your information, is a new "Special Note" and the latest specifications for cement concrete pavement stress relief joints. The "Special Note" will be incorporated, by the FPRB, in all projects requiring stress relief joints.

For the general criteria for use of these joints refer to section 5.05.09 of the Highway Design Manual, Volume #1. It is recommended that in new concrete pavement construction an appropriate stress relief joint, indicated in the attached specification, be used.

CEMENT CONCRETE PAVEMENT STRESS RELIEF JOINTS

Make the following change to the Standard Specifications of January 3, 1978:

Page 5-20

Under 2., Transverse Expansion Joints, delete the second sentence in the first paragraph and substitute the following:

The first two consecutive joints on each end of the structure, starting at and including the joint between the structure approach slab and the pavement, shall be transverse expansion joints, unless cement concrete pavement stress relief joints are indicated in the proposal.

3/9/78

- 15502.4505 - CEMENT CONCRETE PAVEMENT STRESS RELIEF JOINT (TYPE E)
- 15502.4506 - CEMENT CONCRETE PAVEMENT STRESS RELIEF JOINT (TYPE F)
- 15502.4507 - CEMENT CONCRETE PAVEMENT STRESS RELIEF JOINT (TYPE G)
- 15502.4508 - CEMENT CONCRETE PAVEMENT STRESS RELIEF JOINT (TYPE H)

DESCRIPTION. The Contractor shall construct cement concrete pavement stress relief joints in accordance with the plans, specifications or in a manner approved by the Engineer.

MATERIALS

Asphalt Concrete. Asphalt concrete used in this item shall meet the requirements of § 403-2, Asphalt Concrete, Types 3, 6, 6F, 7, 7F, 8 or 8F.

Portland Cement Concrete. Concrete placed for this item shall comply in all respects to the requirements given under Section 501, Portland Cement Concrete - General, and Section 502, Portland Cement Concrete Pavement. The Contractor shall use concrete proportioned as Class C concrete.

Asphalt. The asphalt used as the bond breaker shall meet the requirements of Section 702, Bituminous Materials, material designations 702-02, 702-03, 702-12, 702-14, or 702-3101.

Joint Fillers and Sealers. The joint fillers and sealers shall be as specified on the Department's approved list of stress relief joint fillers.

CONSTRUCTION DETAILS. The details for constructing and maintaining the cement concrete pavement stress relief joints shall be in accordance with Section 401, Plant Mix Pavements - General, Section 502, Portland Cement Concrete Pavement, and as shown herein for the various types of joints.

The ends of the cement concrete shall be normal to the pavement centerline, perpendicular to the surface and lie in a straight line across the full width of the pavement. The upper edges shall be beveled in a manner shown unless otherwise approved by the Engineer. The concrete along the joint shall be carefully consolidated and finished to a true surface. The surface of the concrete at the joint shall be tested with a 10 foot straight edge or template immediately after forming. Any variations from the true surface shall be corrected immediately.

Joint Fillers. An adhesive, as recommended by the joint filler manufacturer, shall be used to coat the vertical surfaces of the recess before installing the joint filler. All joint fillers must be installed in the recess under compression. The manufacturer's recommendation for proper size of filler shall be followed. A sealer shall be placed on top of the joint filler if required by the approved list. The joint filler shall be installed such that the final elevation of the sealer, or the top of the joint filler if no sealer is required, shall be $\frac{1}{2}$ inch below the level of the pavement.

METHOD OF MEASUREMENT. Cement concrete pavement stress relief joints shall be measured along the transverse centerline of the joint and shall be the number of linear feet of stress relief joints incorporated in the work in accordance with the plans and specifications.

BASIS OF PAYMENT. The unit price bid per linear foot shall include the cost of furnishing all labor, materials, and equipment necessary for placing cement concrete pavement stress relief joints as described below. There will be no deduction in the select granular material subbase course for materials removed to construct these joints.

Type E. The payment for this item includes the joint filler, adhesive, sealer, asphalt bond breaker, and labor to steel trowel finish the upper surface of the bridge approach slab where it is to receive the asphalt bond breaker.

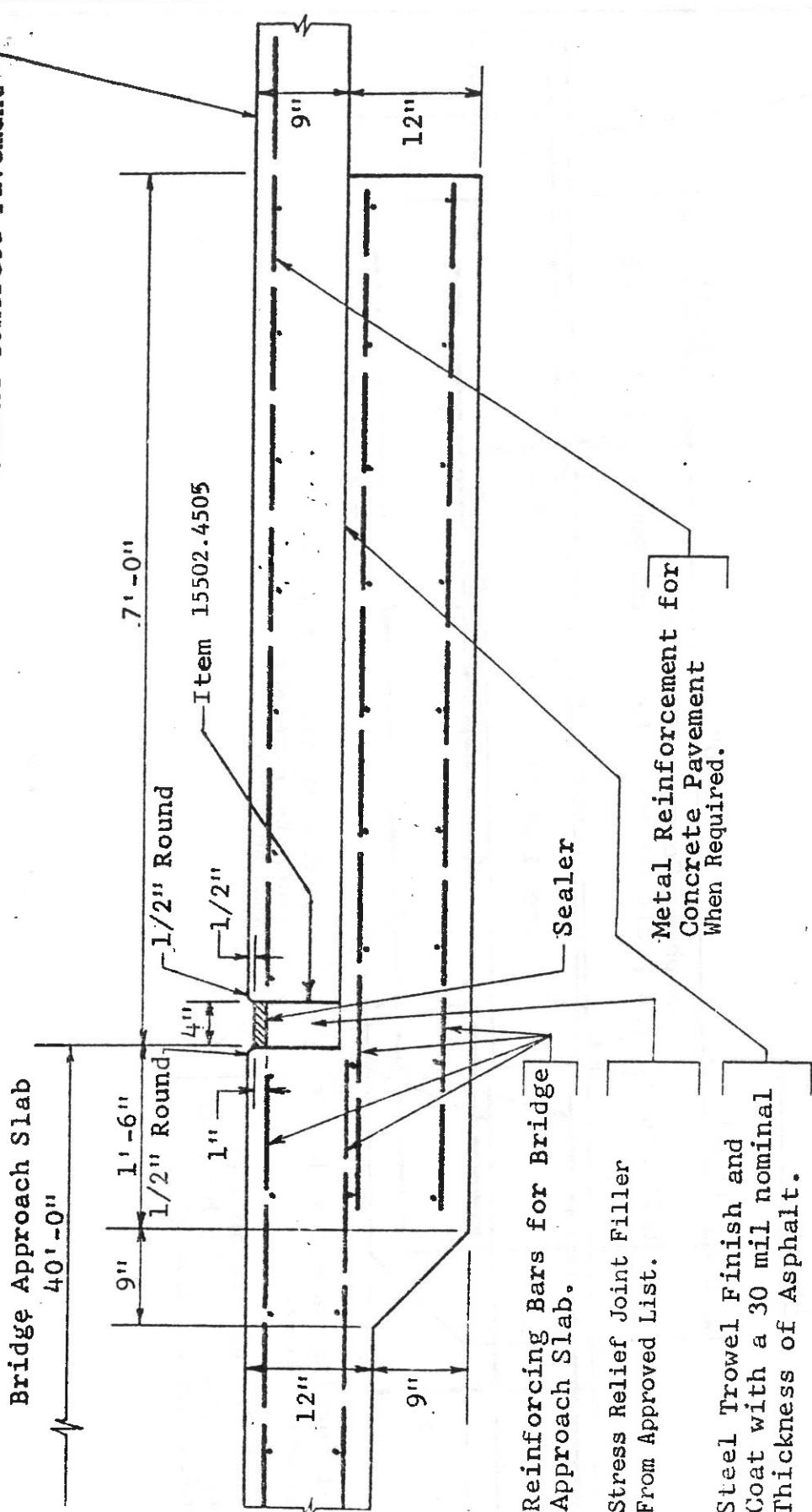
Type F. The payment for this item includes the asphalt concrete top course, the asphalt concrete binder course, the asphalt bond breaker, and labor to steel trowel finish the upper surface of the bridge approach slab where it is to receive the asphalt bond breaker.

Type G. The payment for this item includes the joint filler, adhesive, sealer, portland cement concrete support slab, and the asphalt bond breaker.

Type H. The payment for this item includes the joint filler, adhesive, sealer, and the cost of saw-cutting and removal of pavement on reconstruction projects.

6/1/73
1/17/78

Cement Concrete Pavement



Reinforcing Bars for Bridge Approach Slab.

Stress Relief Joint Filler From Approved List.

Steel Trowel Finish and Coat with a 30 mil nominal Thickness of Asphalt.

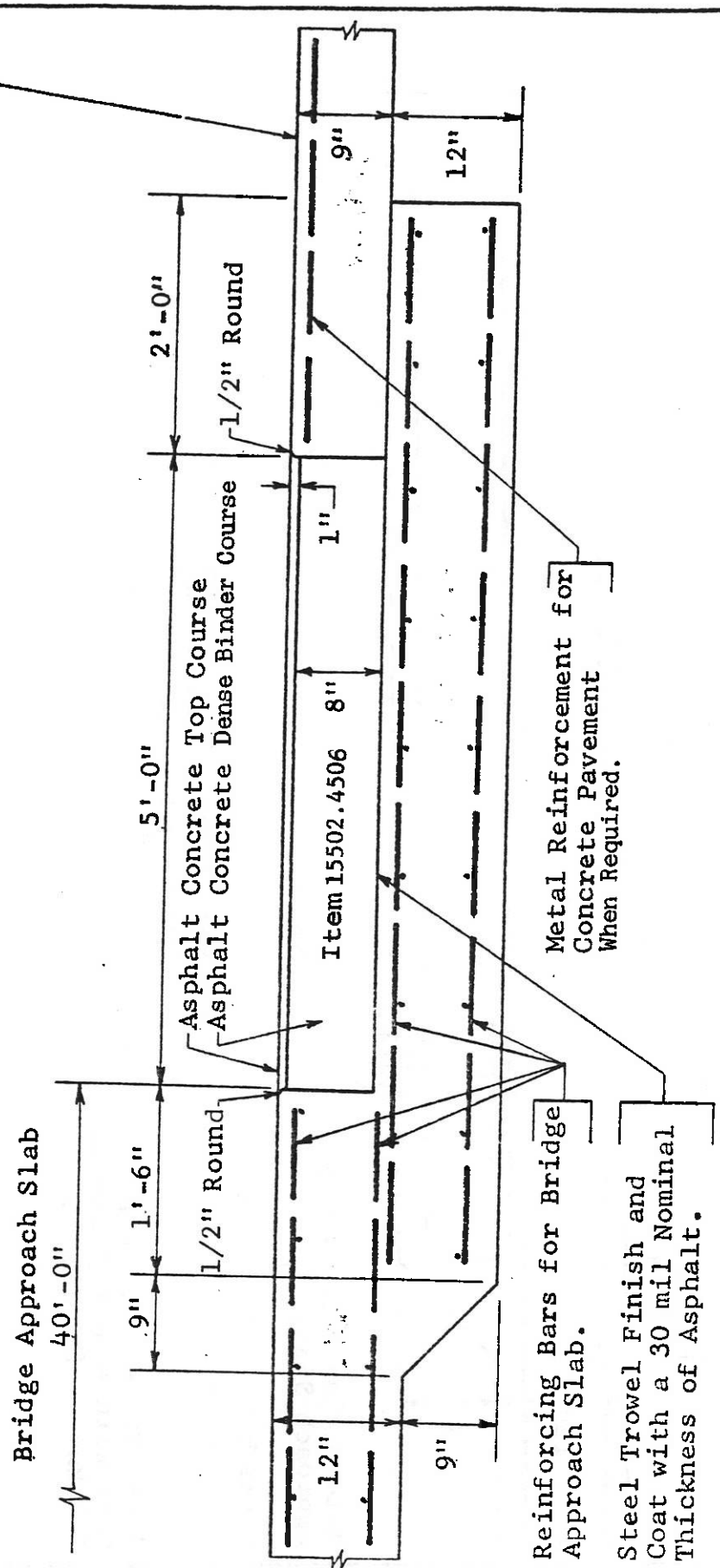
Metal Reinforcement for Concrete Pavement When Required.

STATE OF NEW YORK
DEPT. OF TRANSPORTATION

PRESSURE RELIEF JOINT AT THE
END OF REINFORCED CONCRETE
BRIDGE APPROACH SLAB

TYPE E

Cement Concrete Pavement



STATE OF NEW YORK
DEPT. OF TRANSPORTATION

PRESSURE RELIEF JOINT AT THE
END OF REINFORCED CONCRETE
BRIDGE APPROACH SLAB

TYPE F

Steel Trowel Finish and Coat with a 30 mil Nominal Thickness of Asphalt

Sealer

Stress Relief Joint Filler From Approved List.

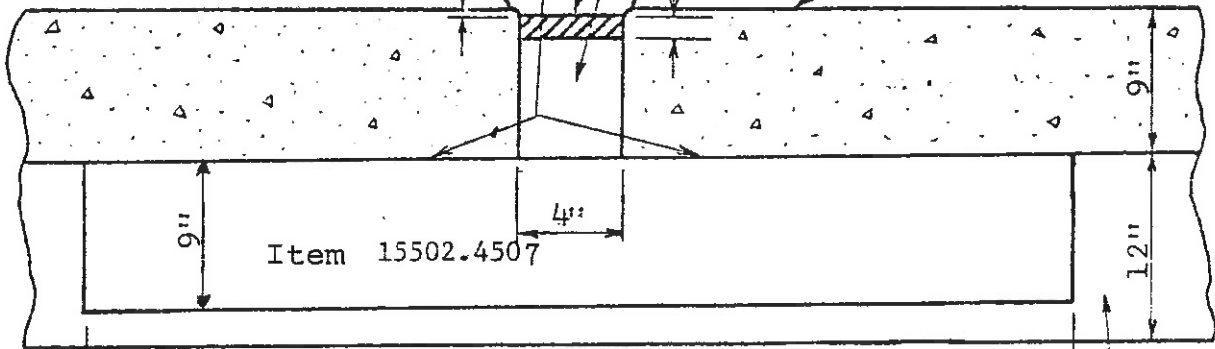
1/2" Round

1/2" Round

Cement Concrete Pavement

1/2"

1"



5'-0"

TYPE G

Granular Subbase

Stress Relief Joint Filler From Approved List.

Sealer

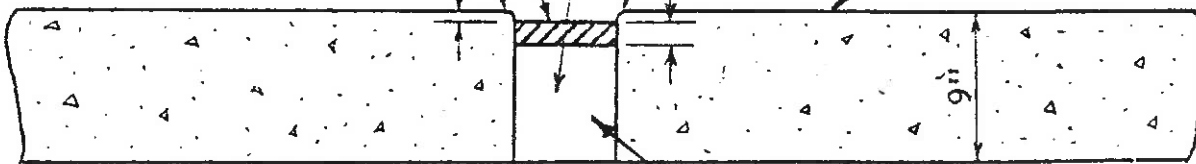
1/2" Bevel

1/2" Bevel

Cement Concrete Pavement

1/2"

1"



4"

Item 15502.4508

TYPE H