

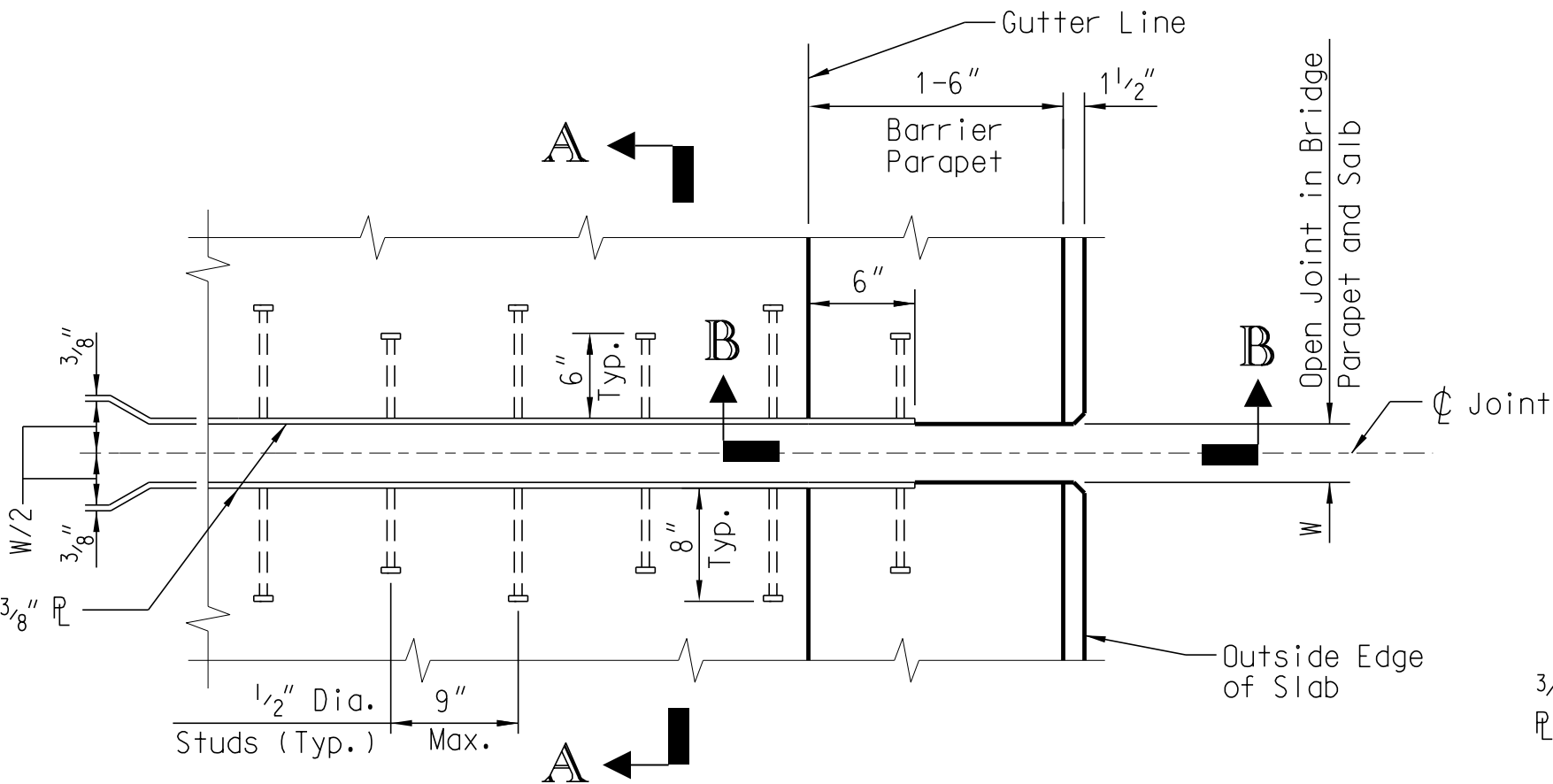
DESIGN DATA

Size the uncompressed seal within the following range:
Min. width = 1.10W Max. width = 1.35W Preferred width = 1.25W.
For skewed joints, limit max. racking to 20% of uncompressed seal width.

Concrete Shrinkage Coefficient = 0.0002

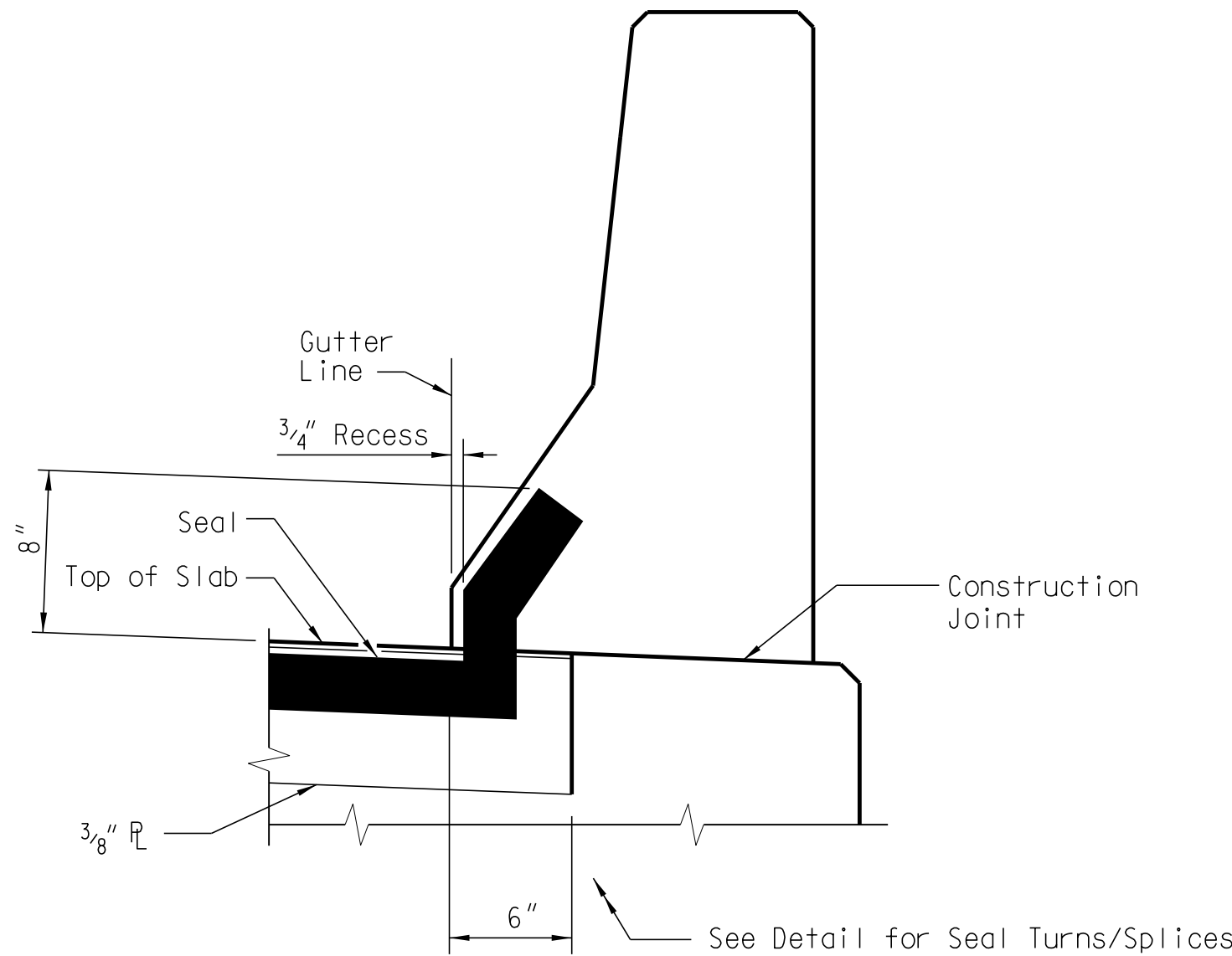
Coefficient of Thermal Expansion and Contraction:
Normal Weight Concrete = 0.000006 in/in per °F
Structural Steel = 0.000065 in/in per °F

CompSealJt.dgn



PART PLAN - EXPANSION JOINT

(Seal Not Shown)



SECTION B-B

Note to Designer:
This drawing furnished for information only. All dimensions shown are sheet specific. Any use of this design and drawing, including dimensions, must be checked by the User's Engineer to ensure design is adequate for the intended use. All drawings must be signed and sealed by a South Carolina Registered Professional Engineer when used.

★ - Designer to input dimension.

For Bridges with Sidewalk and without Sleeper Slab replace Part Plan - Expansion Joint and Section B-B with Alternate Details for Sidewalk and add Part Plan - Cover Plate at Sidewalk and Section C-C. For Bridges with Sidewalk and Sleeper Slab revise Part Plan - Expansion Joint, Section B-B, and Section C-C as required.

For Bridges with Barrier Parapet and Sleeper Slab replace Part Plan - Expansion Joint and Section B-B with Alternate Details for Sleeper Slab.

▲ - Remove or revise this note when this drawing is used with Approach Slab with Sleeper Slab drawings (SCDOT Drawings and Details Drawing No. 702-32).

Provide seal that complies with the requirements in the Table below.

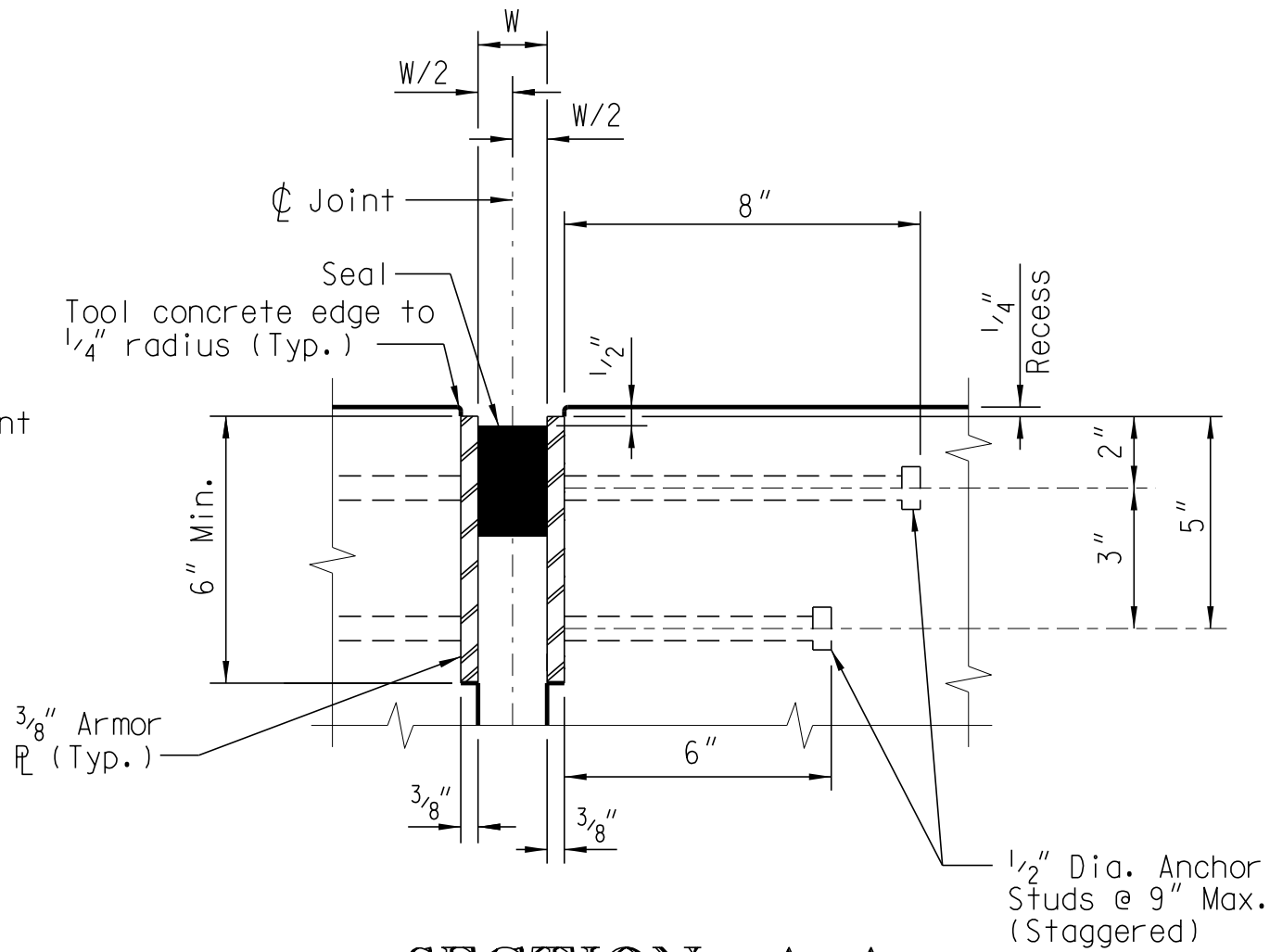
TEST	TEST METHOD	REQUIREMENT
Elongation at Break	ASTM D 3575, Suffix T	180%
Tensile Strength	ASTM D 3575, Suffix T	110 psi
Tear Resistance	ASTM D 3575, Suffix G	14 pli
Density	ASTM D 3575, Suffix W - Method A	2.0 pcf to 3.4 pcf
Water Absorption	ASTM D 3575, Suffix L	< 0.03 psf
Compression Set	ASTM D 3575, Suffix B, 2 hour recovery	< 15%

Seal Installation:

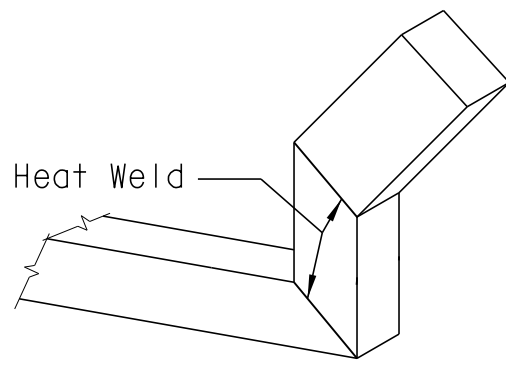
Have the manufacturer's representative present for the first installation to insure proper installation. Follow the manufacturer's installation procedures and the instructions below.

Begin seal installation at the low end of the joint. Apply mixed epoxy to both sides of the seal and joint. Ensure epoxy completely fills the grooves in the sides of the seal. With gloved hands, compress the seal and install seal into the joint recessing the seal 1/4" below the top of the steel plate. If assistance is needed in installing the seal, use a blunt probe to push down on the seal. Do not push the seal at any angle that will stretch the seal material. Once seal installation has begun on a joint, do not stop until the installation is completed. Clean the excess epoxy from the surface of the seal material quickly and thoroughly in accordance with the seal manufacturer's recommendations. Do not use solvents to clean or remove excess epoxy. Excess epoxy remaining on the joint seal may be cause for rejection of the joint.

Provide a watertight joint and seal. The joint will not be tested, but the RCE will observe the joint condition and performance until final inspection.

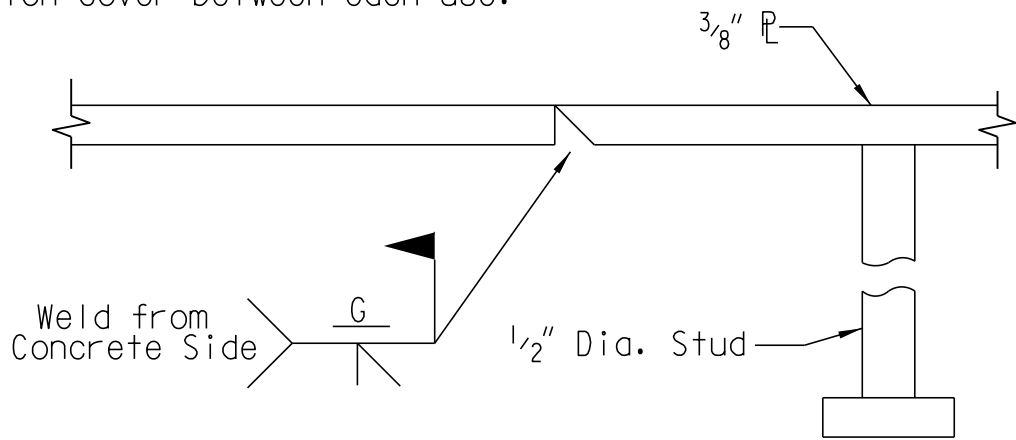


SECTION A-A



DETAIL FOR SEAL TURNS/SPLICES

- 1) Preheat the Teflon heating iron to 350° for approximately 30 minutes before welding the seal.
- 2) Using a sharp instrument such as a hacksaw, cut the seal to form the shape shown in Section B-B. This shape not necessary for welding seal at other approved splice locations.
- 3) Place the ends of seal to be welded against the Teflon heating iron at 350°F. Hold for a minimum of 10 seconds but no more than 20 seconds, depending on the ambient temperature. Then, quickly place these ends together tightly and hold for 20 seconds. Do not check the welded seal until the material has completely cooled.
- 4) If the edges do not seal completely, use a thin blade, such as a hacksaw blade to transfer heat into the edge to be sealed. Hold the heated blade between the edges of the material approximately 5 seconds, then remove and press the edge together quickly and hold for 10 to 20 seconds. Keep the blade on the heating iron under the Teflon cover between each use.



FIELD WELD DETAIL

Provide adhesive that complies with the requirements in the Table below.

TEST	TEST METHOD	REQUIREMENT
Tensile Strength	ASTM D 638	3500 psi Min.
Compressive Strength	ASTM D 695	7000 psi Min.
Shore D Hardness	ASTM D 2240	75 Min.
Water Absorption	ASTM D 570	0.25% by Weight
Bond Strength	ASTM C 882	430 psi Min.

Notes:

Provide seal having a normal uncompressed width of ★ inches. Set the nominal joint width, "W" to ★" at 70°F. Use the actual air temperature, measured in the shade and averaged over the preceding 24 hour period, as the setting temperature. At the time of construction, decrease the joint opening by ★" for each 10°F that the setting temperature is above 70°F or increase the joint opening by ★" for each 10°F that the setting temperature is below 70°F.

Ensure three copies of certifications are signed by an authorized agent of the manufacturer or supplier and submitted to the RCE prior to the installation of the seal. The required certifications are a copy of the manufacturer's test reports, or a statement by the supplier accompanied by the test results, certifying that the materials have been sampled, tested and inspected. Failure to provide the required certifications for seals and lubricant/adhesive is grounds for rejection of the materials.

Mark all seals with die markings that indicate the lot number and manufacturer. Mark each container of lubricant/adhesive with the manufacturer, lot number, and shelf life expiration date.

Provide preformed seals that are compatible with steel and concrete and resistant to abrasion, oxidation, oils, gasoline, salt, and other materials that may be spilled on or applied to the surface. Provide seal material that is resistant to weathering and ultra-violet rays. Provide a seal having a working range of 30% tension and 60% compression. Manufacture the seal from a low-density closed cell, cross-linked ethylene vinyl acetate polyethylene copolymer nitrogen blown material.

Manufacture seals with grooves along the bond surface running the length of the joint. The grooves shall be 1/8" wide by 1/8" deep and spaced between 1/4" and 1/2" apart. Provide seals with a minimum depth at least 70% of the uncompressed width and meeting the manufacturer's recommendations. Design the seal so that, when compressed, the center portion of the top does not extend upward above the original height of the seal by more than 1/4".

Shop mark the seal to indicate the top side of the seal in such a way as to be clearly visible upon installation.

Install seals in accordance with the manufacturer's instructions unless stipulated otherwise in these plans or the Special Provisions.

Provide a watertight seal along the entire length including the ends of the seal.

Adhesives:

Provide a two component, 100% solid, modified epoxy adhesive meeting the requirements of ASTM C 881, Type I, Grade 2, Class B & C and in accordance with testing requirements shown on this sheet.

Provide adhesive that is workable to 40°F. For installation temperatures below 40°F or for application on moist, hard to dry concrete surfaces, provide adhesive as specified by the manufacturer of the joint material.

Joint Preparation:

Clean the armored joint opening in accordance with the manufacturer's recommendations. Bond the seal to the cleaned surface on the same day the cleaning is done.

Provide steel armor plates that conform to the requirements of the latest AASHTO M 270, Grade 50W (ASTM A 709, Gr. 50W) and are of weldable quality.

Provide 3/8" plates that conform to the crown of the finished roadway and have smooth edges. Fabricate the 3/8" plates in reasonable lengths and connect them at the job site using partial penetration groove welds. Grind welds at the exposed surfaces of plates flush. Perform welding of splices prior to bonding seals. If necessary to bolt the 3/8" plates to the forms, provide 3/16" Dia. holes at approximately 2' on center in the lower portion of the plates.

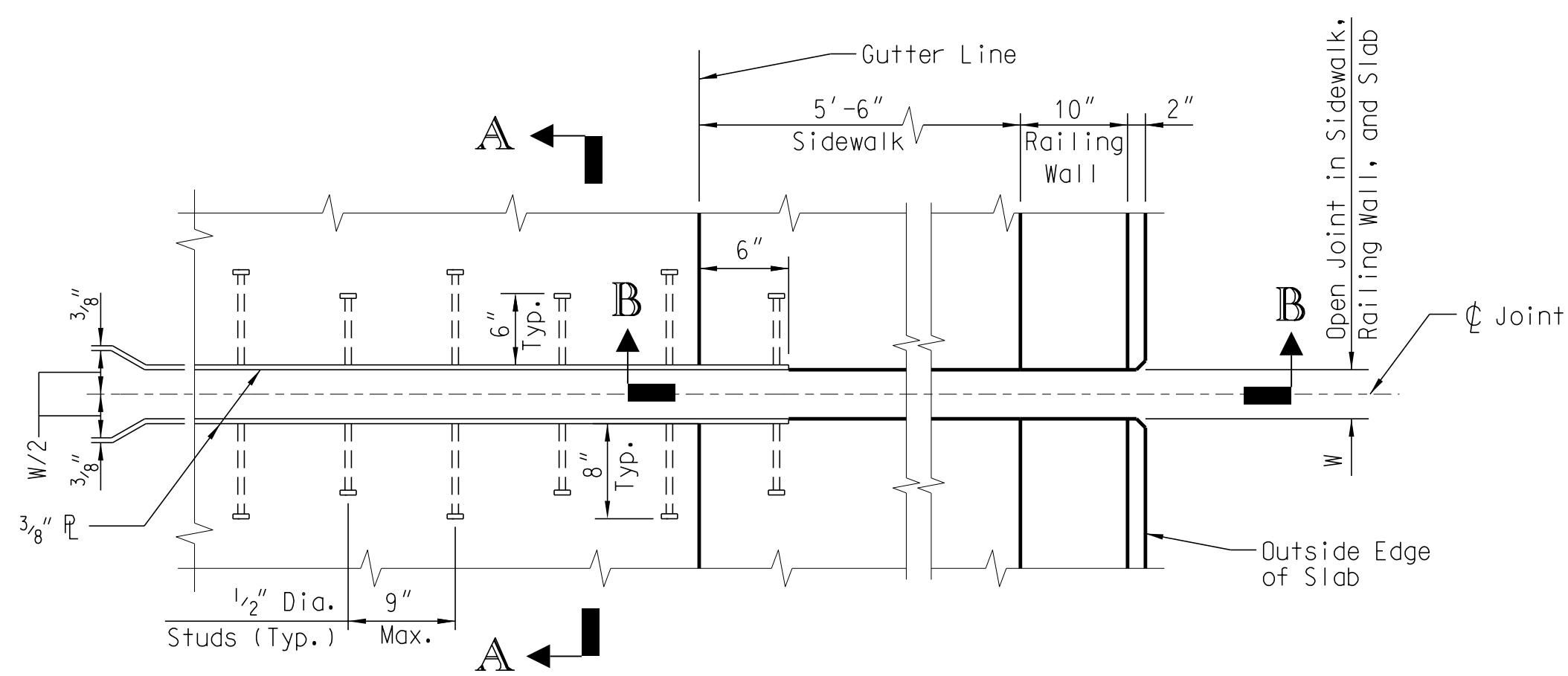
Provide 1/2" Dia. headed studs that meet the requirements of Section 709 of the Standard Specifications. Electrically weld all studs.

Field bend top slab reinforcing as required to clear anchor studs.

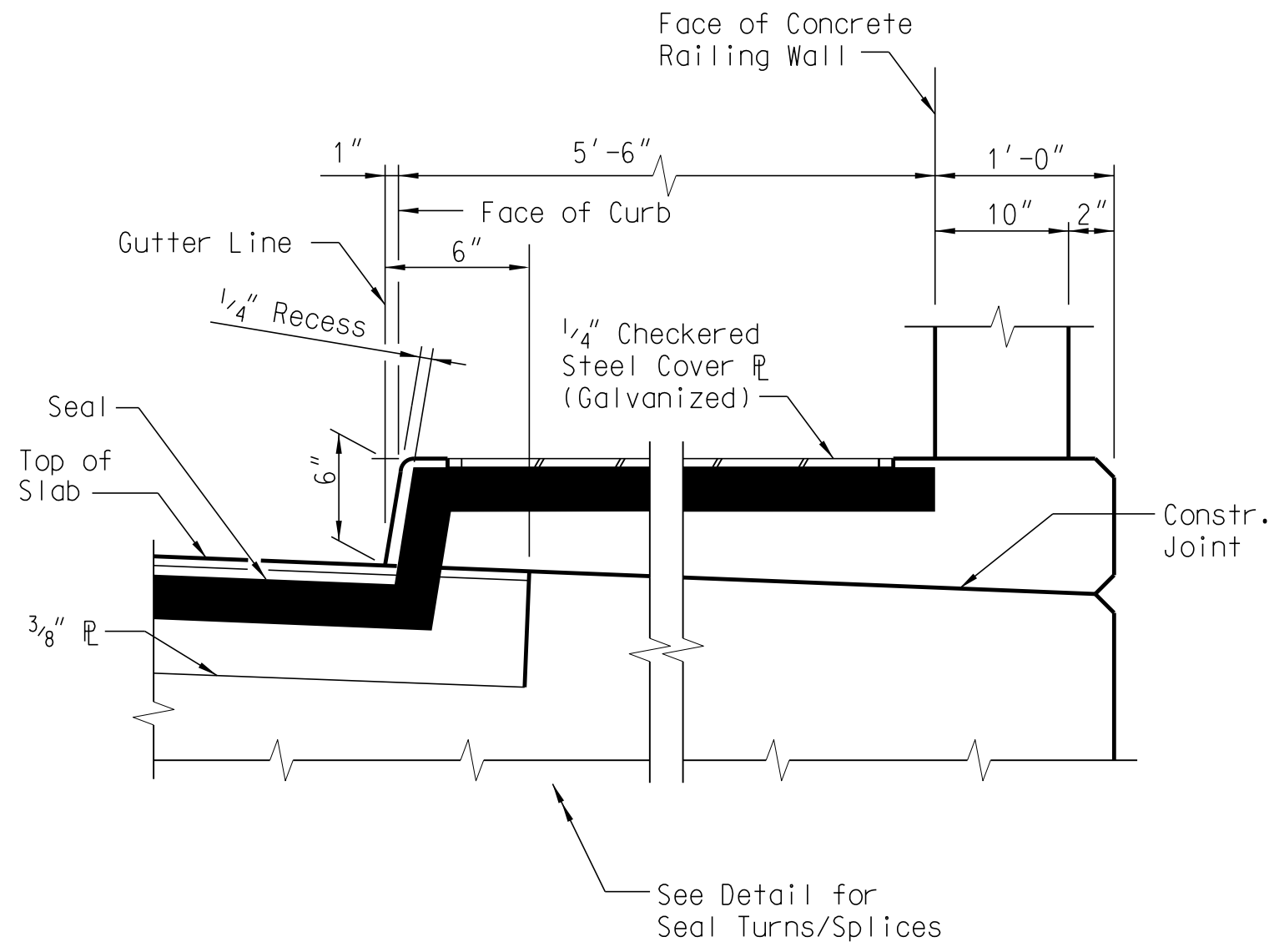
▲ For payment purposes, measure along the centerline of the joint from the edge of slab to the edge of slab. Include all costs associated with furnishing labor, materials, fabrication, and installation of armor plates, cover plates, and elastomeric seals complete and in place in the unit price bid per linear foot of Compression Seal Joint.

REV.				SOUTH CAROLINA				
	GAR	JXY	2-16	DEPARTMENT OF TRANSPORTATION				
REV.	Sidewalk			COMPRESSION SEAL EXPANSION JOINT DETAILS				
	BMH	SAN	7-14					
REV.	Notes							
REVIEWED								
QUAN.								
DR.	PNP	SAN	11-08					
DES.								
	BY	CHK.	DATE	COUNTY XXXXXXXX			ROUTE XXXXXX	

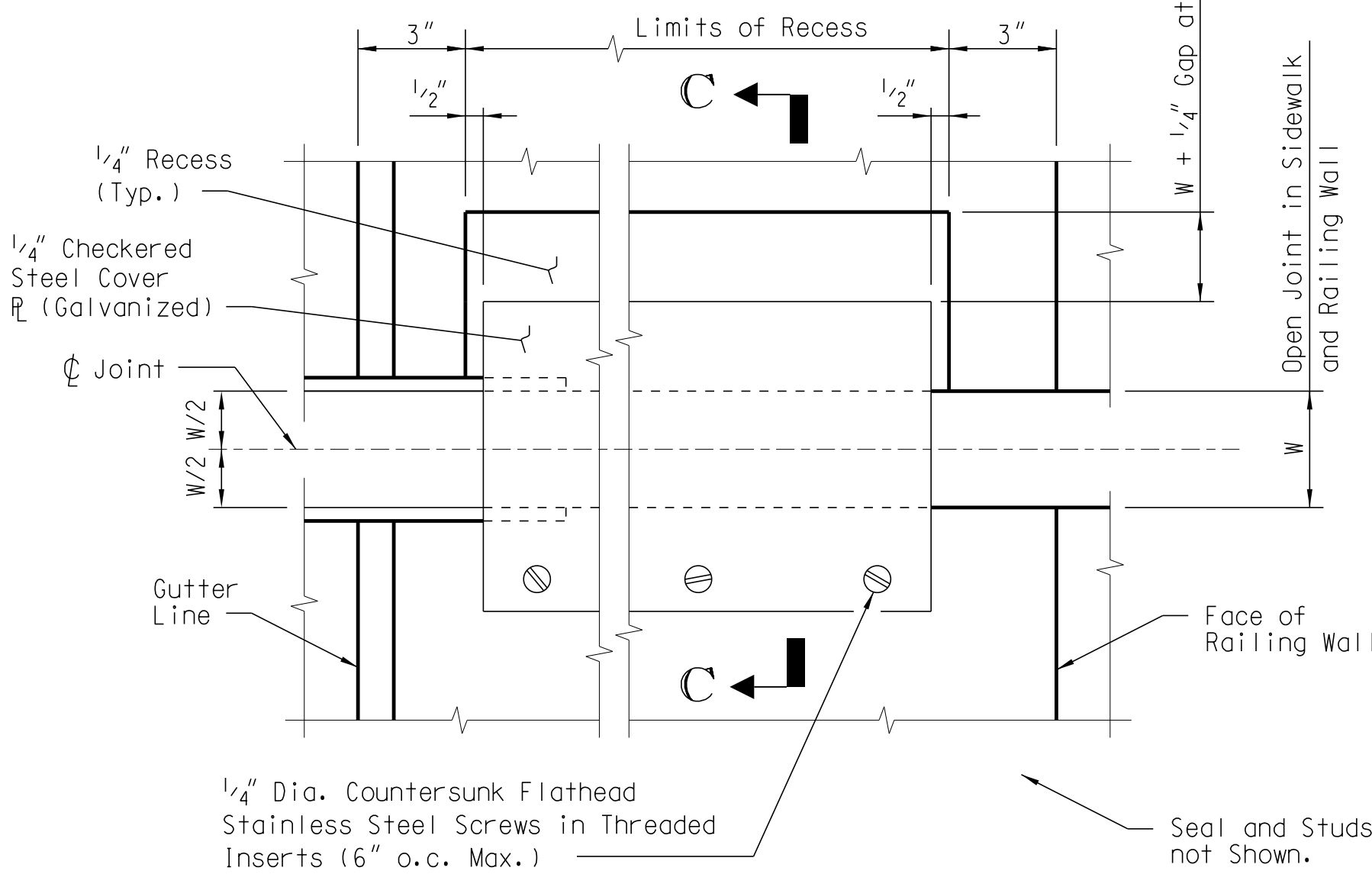
ALTERNATE DETAILS FOR SIDEWALK



PART PLAN - EXPANSION JOINT
(Seal and Cover Plate Not Shown)

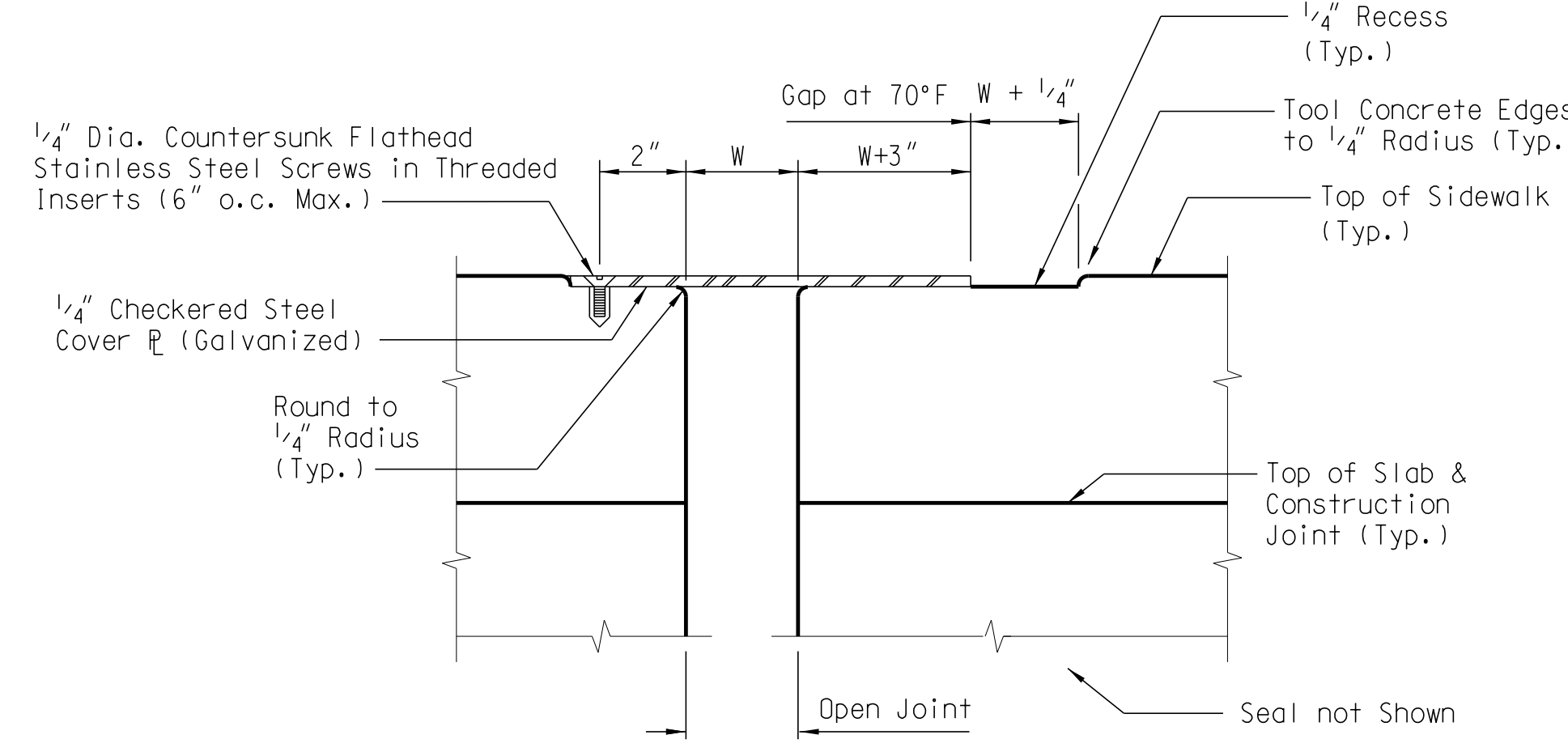


SECTION B-B



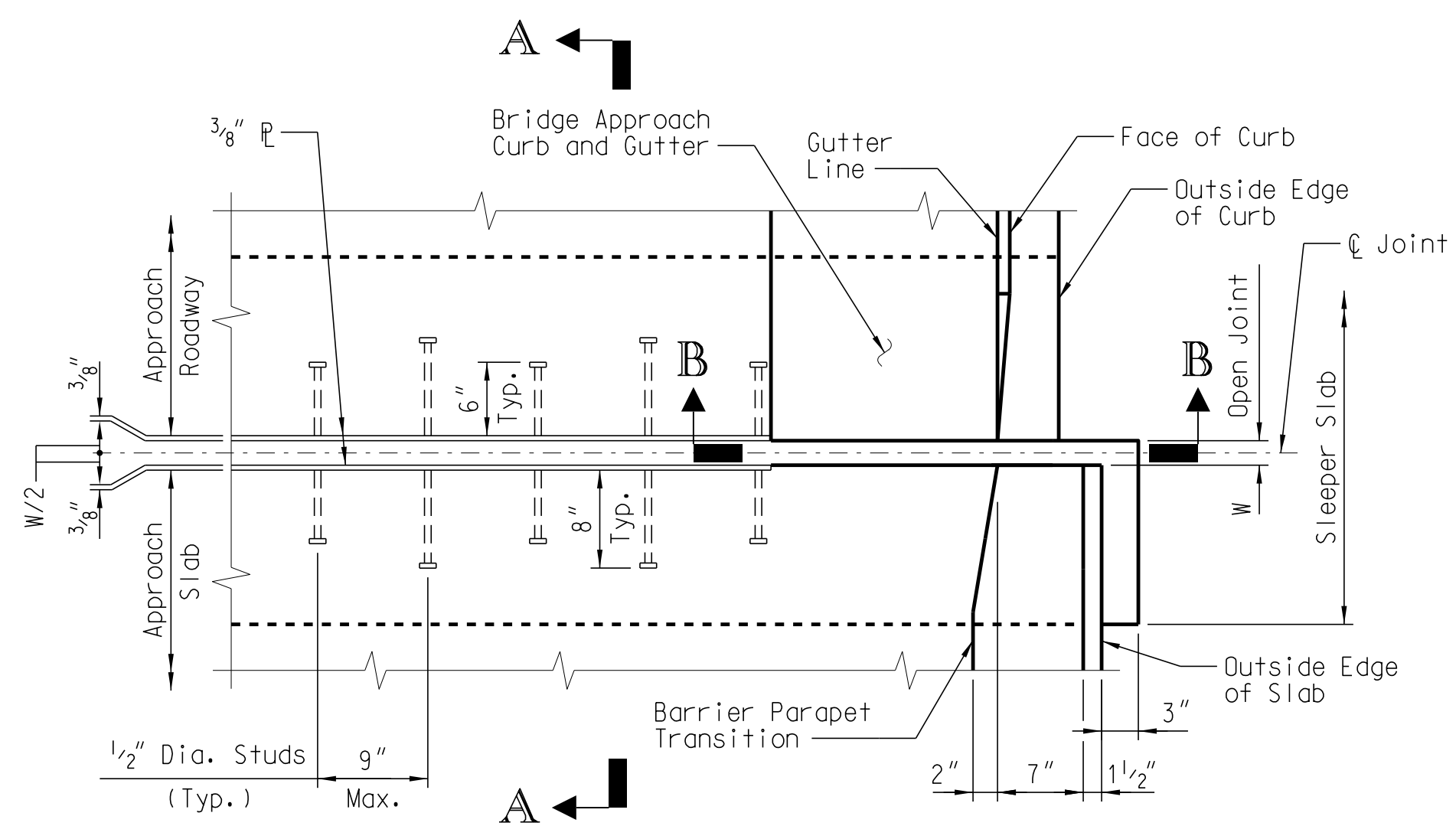
PART PLAN - COVER
PLATE AT SIDEWALK

(Provide checkered steel cover plate conforming to the latest AASHTO M 270, Grade 36 and galvanize in accordance with AASHTO M 111.)

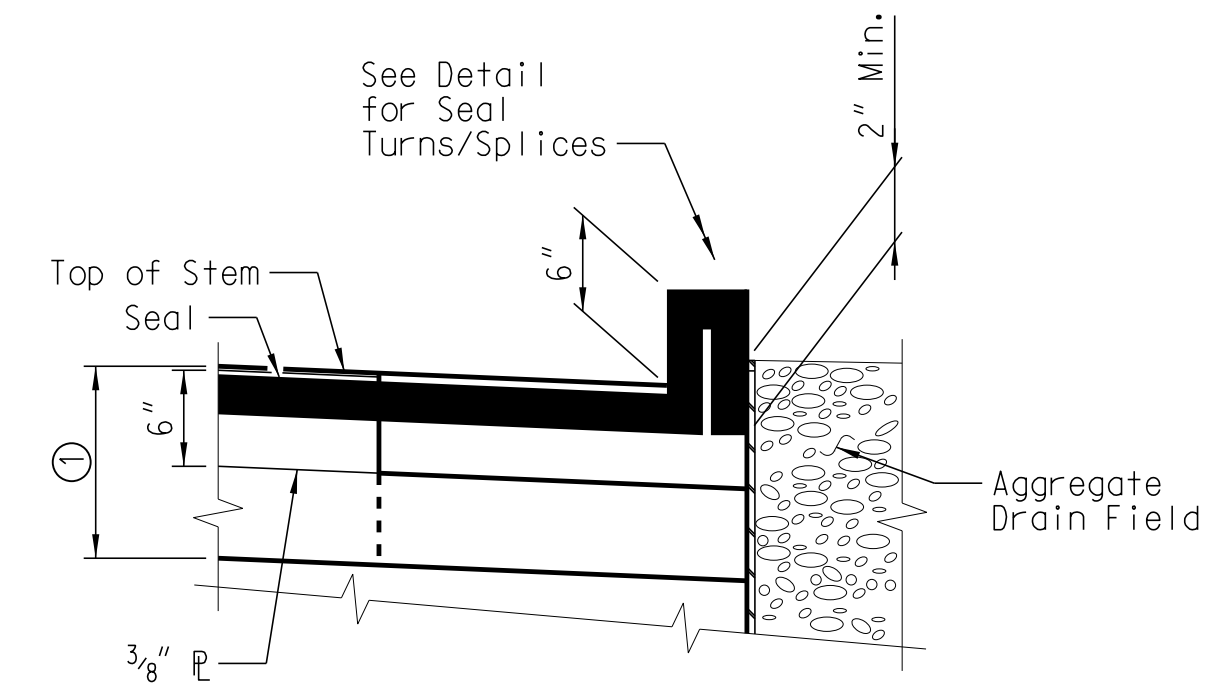


SECTION C-C

ALTERNATE DETAILS FOR SLEEPER SLAB



PART PLAN - EXPANSION JOINT
(Seal Not Shown)



SECTION B-B
① Sleeper Slab Stem

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REV.	GAR	JXY	2-16
			Sidewalk
REV.	BMH	SAN	7-14
			Sleeper Slab
DR.	PNP	SAN	11-08