

NOTES

- Details on this sheet are conceptual and provide Min/Max requirements of the system. Contractor's Engineer shall provide full design per Revision of Section 105, 509, and 621 Temporary Bridge Deck including the lifting concept.
- The Contractor is responsible for the stability of the temporary bridge deck during placement and use. Use shall not affect stability of the structure. Steel plates shall be designed to resist bending and vibrations under traffic loads and anchored securely to resist movement.
- Steel Plates for the Temporary Bridge Deck System shall be designed and fabricated in accordance with Section 509 of the Standard Specifications, and Revision of Section 105, 509, and 621 Temporary Bridge Deck.
- Minimum requirements shown this sheet for grout pads, anchor bolts and nuts, support angle, and plates are for the concept shown on this sheet. Contractor may submit an alternative method to the conceptual method shown on this sheet, to protect the expansion device repair area during replacement.
- The Contractor shall furnish a sufficient length of Temporary Bridge Deck to complete the work. See Revision of Section 105, 509, and 621 Temporary Bridge Deck for additional information. Where multiple structures require Temporary Bridge Deck of the same size, phasing construction is acceptable. The Contractor shall submit a Phasing Plan for approval by the Engineer.
- Prior to fabrication of this item three sets of working drawings, which comply with the requirements of Section 105, and Revision of Section 105, 509, and 621 Temporary Bridge Deck, shall be submitted to the Engineer for information only.
- Temporary bridge deck plates and Concrete (Patching) are required at expansion device replacements. High early strength pre-bagged mixes are required [NOTE TO DESIGNER: Polyester Concrete may be used on a case-by-case basis.]
- Grout shall be placed on sound concrete free of loose material. Grout shall be quick setting with a minimum compressive strength of 3,000 psi. Grout pads shall be removed at the conclusion of the expansion device work and prior to placement of any overlays.
- Support angle shall be continuous across a minimum of 2 panels.
- For anti-slip coating information, see Revision of Section 105, 509, and 621 Temporary Bridge Deck.
- Minimum clearance required over existing and new concrete end dam or top of approach slab at existing expansion device shall be verified by the Contractor prior to installing temporary pavement. The clearance shall be controlled by clearing the existing or new concrete headers and any required device rail supports by 1/4" plus the live load deflection. Changes required as a result of not meeting this clearance requirement will be performed by the Contractor at no additional expense to the project.
- Top of Temporary Bridge Deck shall be flush with the top of temporary pavement as shown, with a tolerance of 1/4". Panels that do not meet this requirement shall be reset prior to opening to traffic.
- Temporary asphalt pavement shall be tapered at a rate of 1:200 for speeds less than or equal to 45 MPH and 1:300 for speeds greater than 45 MPH. A 10-foot tangent section shall be constructed each side of the temporary bridge deck plate before start of taper.
- The Temporary Asphalt Pavement tangent section and taper shall be in place before traffic is allowed on the temporary bridge deck plates at the end of each closure.

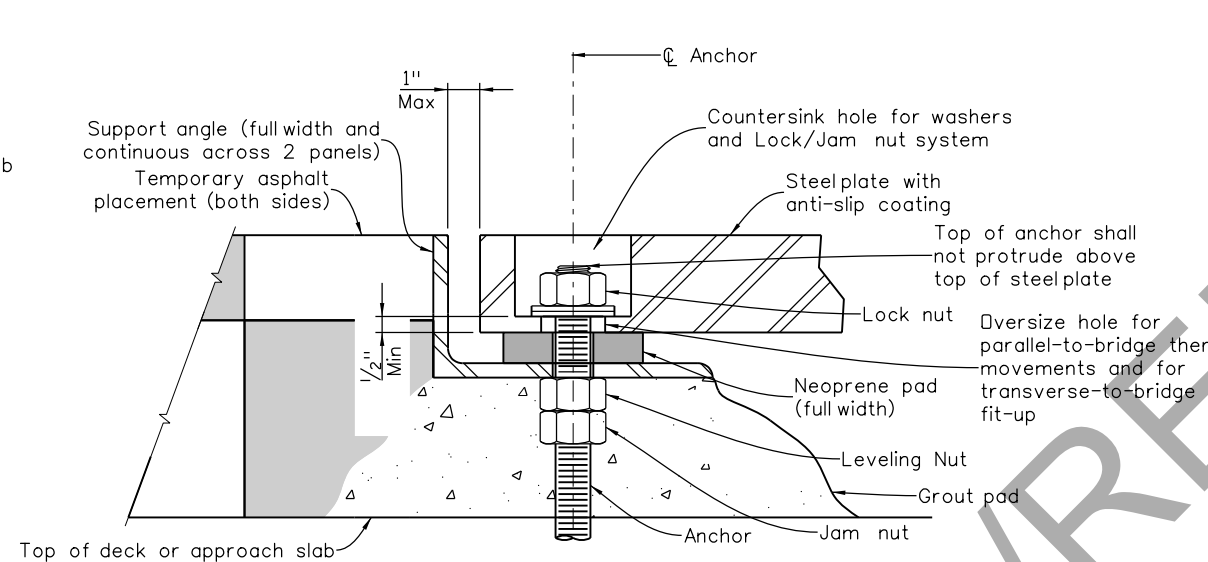
LEGEND

S (Ft) = L + 30"; T = Plate thickness (1 3/4" Min); W = Plate width (6'-0" Min)

H = Minimum distance from deflection and expansion device rail support bracket clearance plus 1/4". (See Note 11)

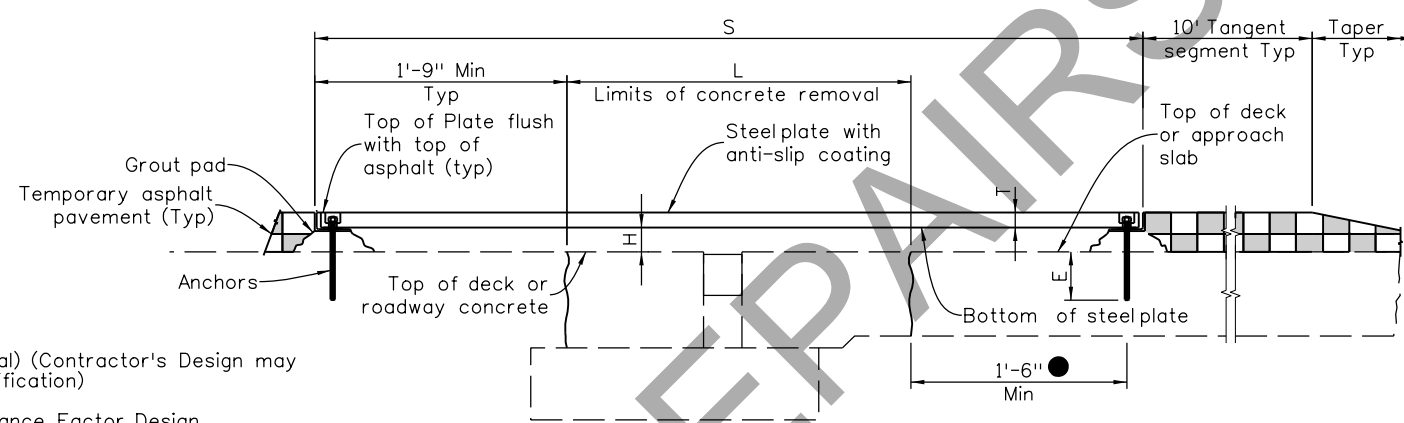
E = Minimum anchor embedment, 4 1/2" absolute minimum. Actual Contractor design may require more. Minimum embedment shall be reached even if reinforcing is encountered.

● Minimum dimension required for adjacent anchors and anchors relative to excavation, based on anchor pullout.



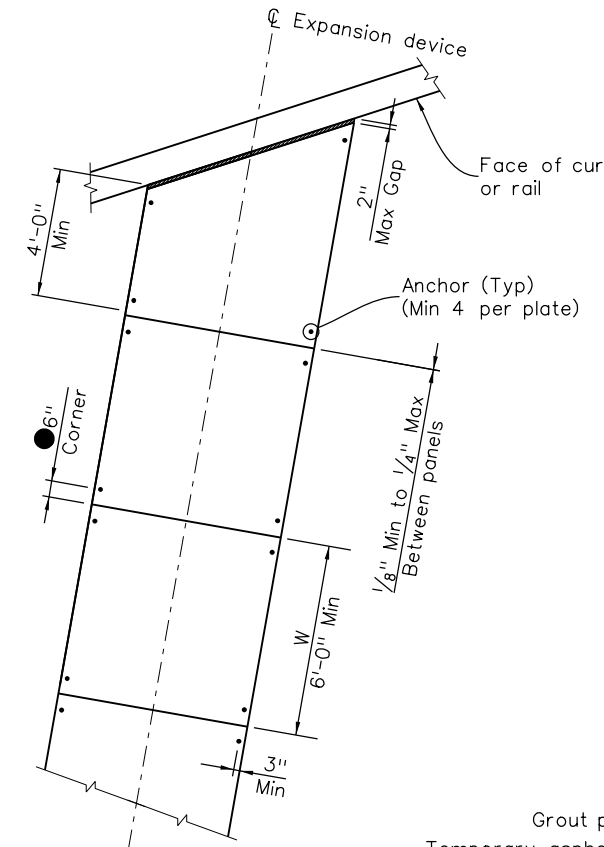
CONCEPTUAL ANCHOR DETAIL

Steelplate with anchor alternative



CONCRETE PAVEMENT CONCEPTUAL TYPICAL SECTION

Steelplate with anchor alternative



CONCEPTUAL PLAN

DESIGN DATA

AASHTO, 7th Edition LRFD (Conceptual) (Contractor's Design may be done per AASHTO Standard Specification)

Design Method: Load and Resistance Factor Design

Live Load: 16,000 Lb Wheel Load
Impact: 33% applied per AASHTO
Uplift: Each anchor shall be designed for a minimum factored uplift force of 8,000 Lb; or greater as required by Contractor's design

Braking: per AASHTO

Span to Deflection Ratio Maximum = 384

Structural Steel: AASHTO M270 (ASTM A709) Grade 36 or Grade 50

Anchor Rods: ASTM F1554

Designer/Detailer:
Designer shall determine whether Temporary Bridge Decks are needed. They shall be avoided, if possible, with the phased removal/replacement of expansion devices, high/early strength bag mixes, and night and weekend closures. For large movements, consider eliminating one row of bolts.

Designer shall determine the depth of temporary asphalt required for the total thicknesses of temporary bridge deck plates, the temporary supports for the expansion device rails, and the nominal clearance needed for deflection of the plate under load. If the total thickness needed is greater than 4" the designer shall determine whether an analysis of the bridge is necessary for the additional temporary load.

It is desirable, if possible, to phase the work so that traffic is kept off of the area long enough for the concrete to reach initial set up so that the rail supports can then be removed before placing the temporary bridge deck plates. This will reduce the thickness needed for the temporary asphalt pavement.

Designer shall use table at right to determine minimum plate thickness. Plate thickness shown is based on anchor system shown. Contractor may use alternate system to secure plates. Alternate system may result in thinner plates.

For short bridges, depending on temporary asphalt thickness required, asphalt may meet in the middle. These bridges shall be evaluated for the additional temporary load.

Span (S) FT	Min Thickness (T)
4	1 3/4"
5	1 3/4"
6	1 3/4"
7	2"
8	2 1/4"

Revision Dates	3/22	3/23
(Preliminary Stage Only)		

INITIALS	DESIGN	DATE	DETAIL	DATE	QUANTITY	DATE
By						
Checked By						

All seals for this set of drawings are applied to the cover page(s)	Print Date: \$DATE\$ File Name: Sheet_B-509-3AR.dgn Horiz. Scale: Not to Scale Vert. Scale: As Noted Unit Information Unit Leader Initials	<table border="1"> <tr> <th colspan="3">Sheet Revisions</th> </tr> <tr> <th>Date:</th> <th>Comments</th> <th>Init.</th> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	Sheet Revisions			Date:	Comments	Init.							Colorado Department of Transportation 2829 West Howard Place, 3rd Floor Denver, CO 80204 Phone: 303-512-4079 FAX: 303-757-9197 Staff Bridge Branch	As Constructed No Revisions: Revised: Void:	<table border="1"> <tr> <th colspan="4">TEMPORARY BRIDGE DECK (RAISED CONCEPT)</th> </tr> <tr> <td>Designer:</td> <td>XXXXXXXX</td> <td>Structure Numbers</td> <td>X-XX-XX</td> </tr> <tr> <td>Detailer:</td> <td>XXXXXXXX</td> <td>Structure Numbers</td> <td>X-XX-XX</td> </tr> <tr> <td>Sheet Subset:</td> <td>BRIDGE</td> <td>Subset Sheets:</td> <td>BXX of XXX</td> </tr> </table>	TEMPORARY BRIDGE DECK (RAISED CONCEPT)				Designer:	XXXXXXXX	Structure Numbers	X-XX-XX	Detailer:	XXXXXXXX	Structure Numbers	X-XX-XX	Sheet Subset:	BRIDGE	Subset Sheets:	BXX of XXX	<table border="1"> <tr> <th colspan="2">Project No./Code</th> </tr> <tr> <td colspan="2">Project Number</td> </tr> <tr> <td colspan="2">Code</td> </tr> <tr> <td colspan="2">Sheet Number</td> </tr> </table>	Project No./Code		Project Number		Code		Sheet Number	
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