Bridge Design Memorandum

To: Bridge Design

From: NJA/ptd

Date: 12/19/2014

Re: Stay-In-Place (SIP) Metal Bridge Deck Forms

As per NJA and JMW,

To expedite bridge deck construction, MDOT is allowing contractors to use Stay-In-Place (SIP) metal bridge deck forms. The design loading for SIP metal bridge deck forms shall be 18 pounds per square foot (lbs./ft.^{2}). For interior beams, this loading shall be applied between the top flanges of two parallel beams and shall be equally distributed to each beam as a non-composite dead load. The loading for the exterior beams shall be one half of the interior beam loading. All interior and exterior beams in a bridge's superstructure shall be loaded with a line load to the criteria mentioned above. The design line loading shall be calculated as shown below. Standard connection details are attached to the end of this document.

$DL_{(SIP\text{-}Int.)} = (BS\text{-}BFW)SIP$

$DL_{(SIP\text{-}Ext..)} = DL_{(SIP\text{-}Int.)} / 2$

$DL_{(SIP\text{-}Int.)}$ = Dead Load of SIP for Interior Beams (Kips./ft.)

$DL_{(SIP\text{-}Ext..)}$ = Dead Load of SIP for Exterior Beams (Kips./ft.)

BS = Beam Spacing (ft.)

BFW = Beam's Top Flange Width (ft.)

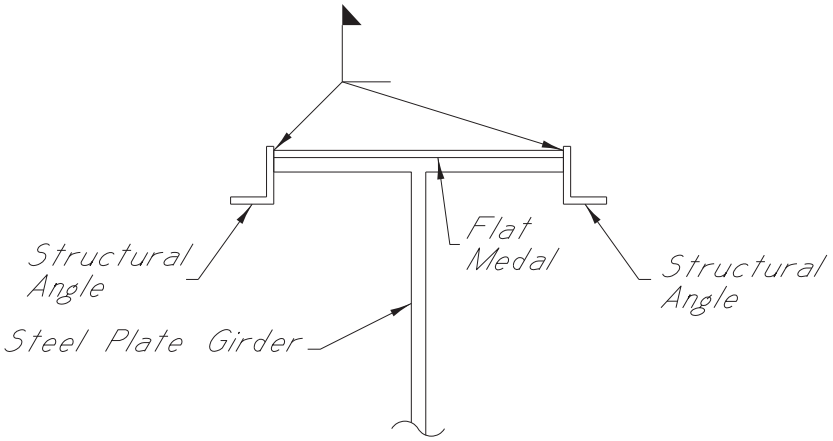
SIP = .018 Kips./ft.^{2}

The design loading shall be indicated on the beam sheet as shown below.

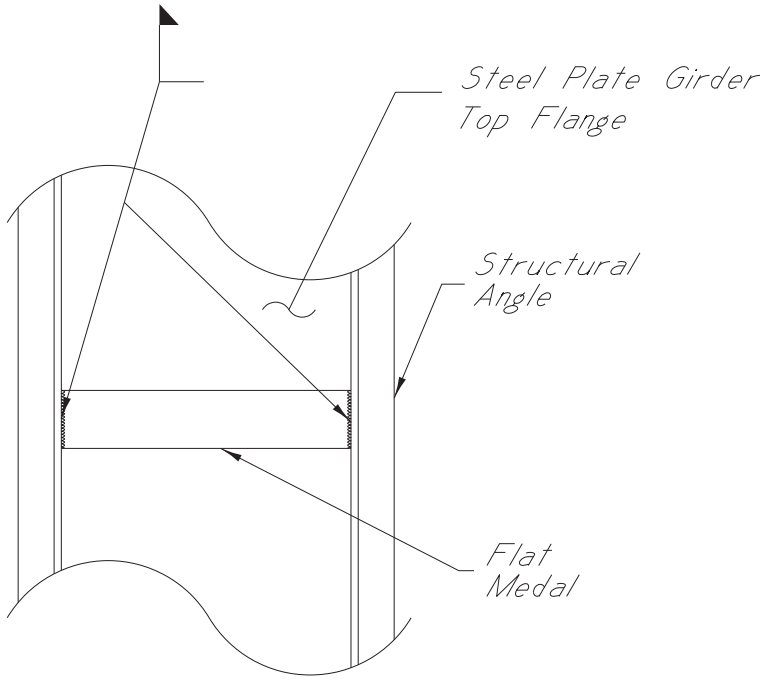
DESIGN DATA

Unit Stresses Are In Accordance With A.A.S.H.T.O., LRFD 2012.

Stay-In-Place Metal Forms . . . . . 18 lbs./ft.^{2} (Between Flanges)



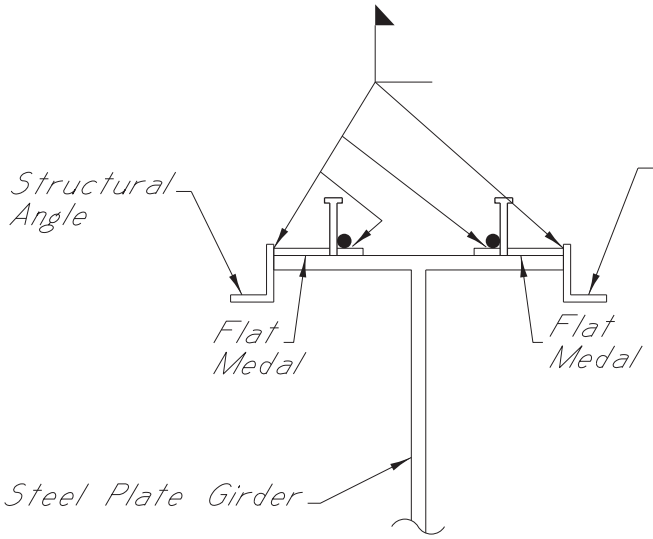
ELEVATION



PLAN

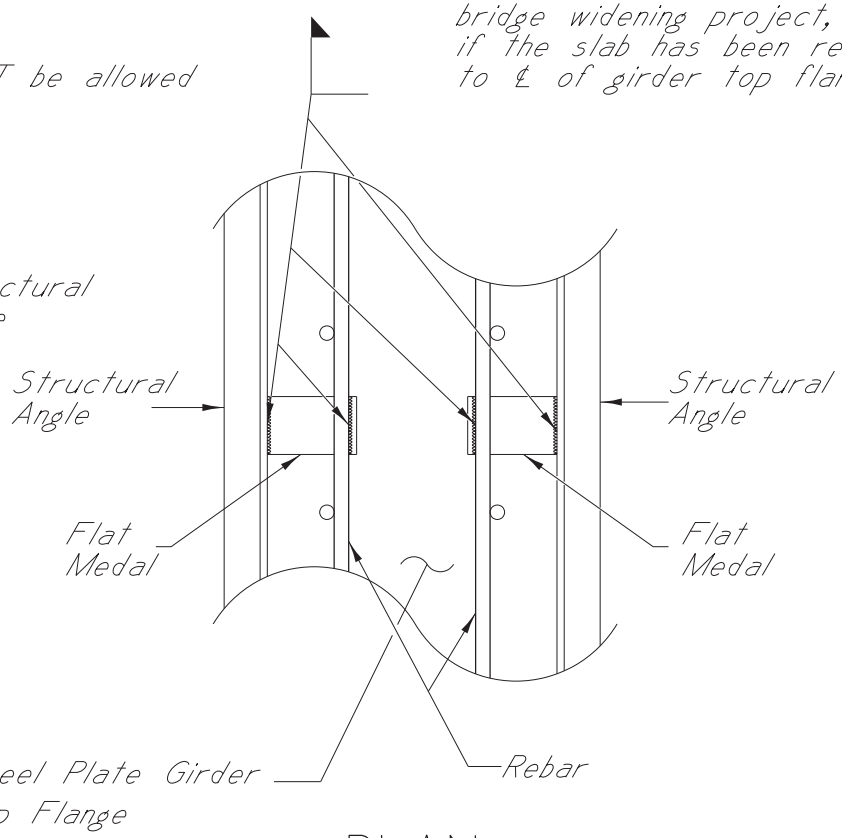
STEEL PLATE GIRDER
S.I.P. BRIDGEFORM DETAILS

NOTE: Field welding to studs WILL NOT be allowed



ELEVATION

NOTE: This method can be used on a bridge widening project, ONLY if the slab has been removed to ℄ of girder top flange



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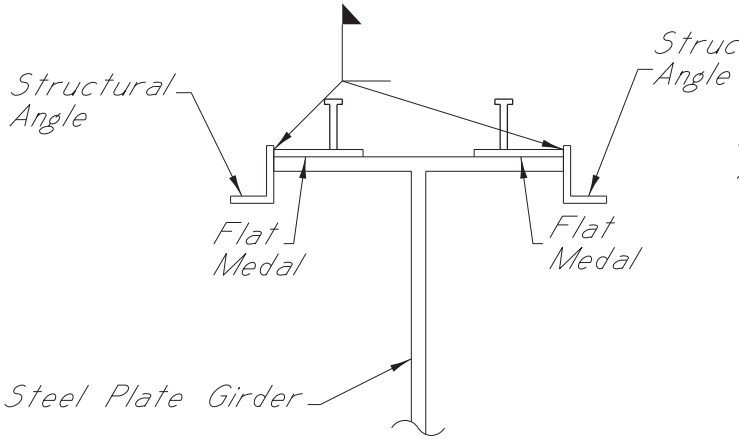

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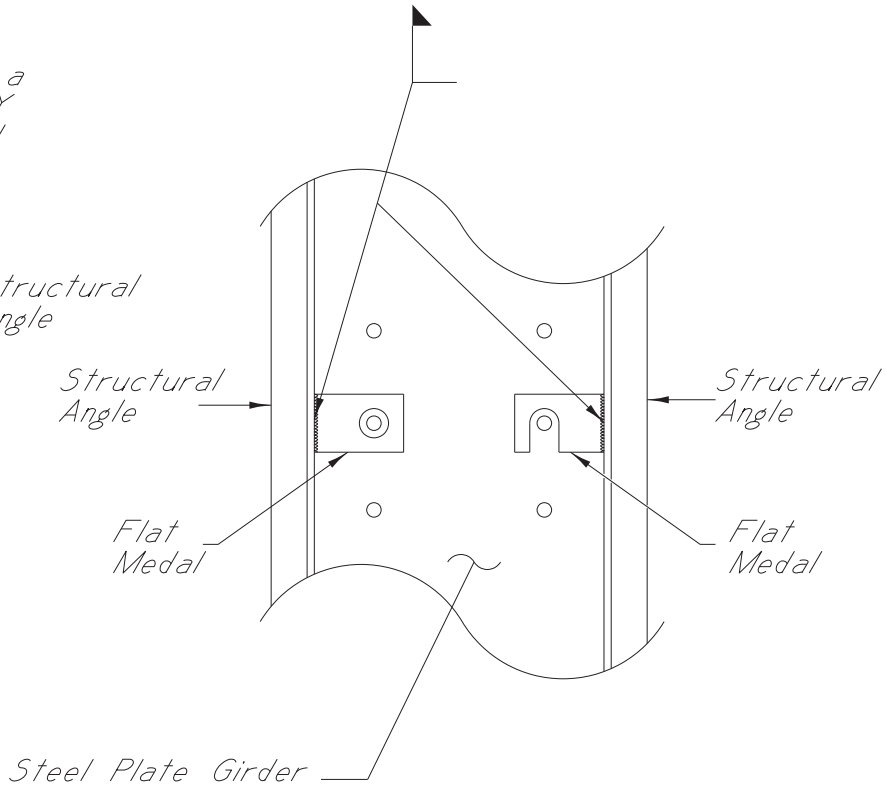

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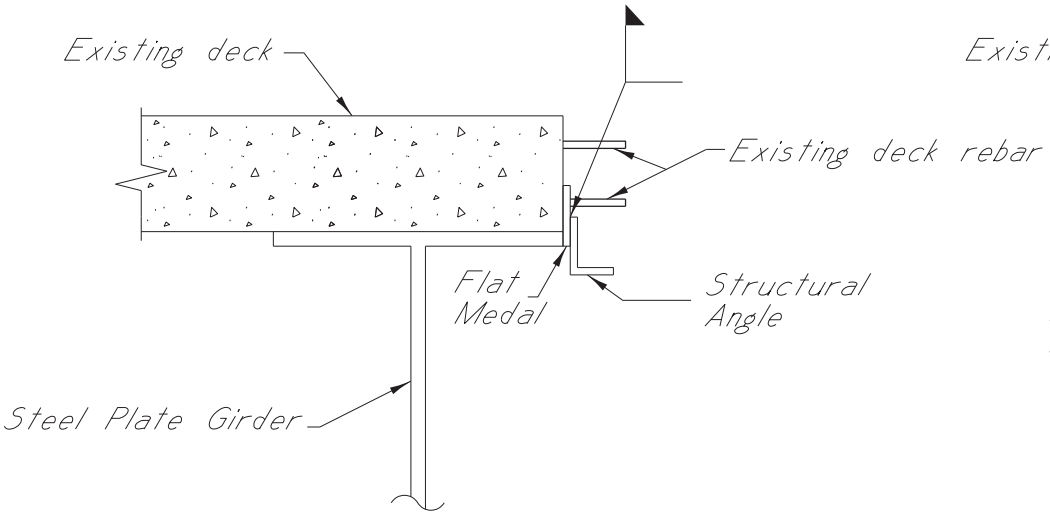
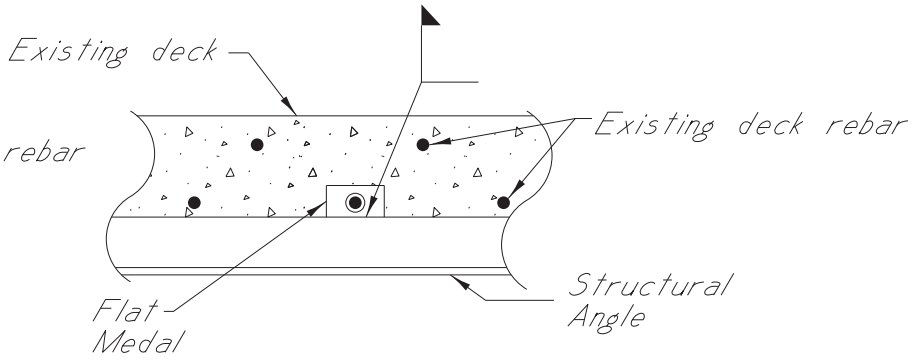
STEEL PLATE GIRDER
S.I.P. BRIDGEFORM DETAILS

NOTE: Field welding to existing deck rebar WILL NOT be allowed





ACCEPTABLE DECK WIDENING DETAILS

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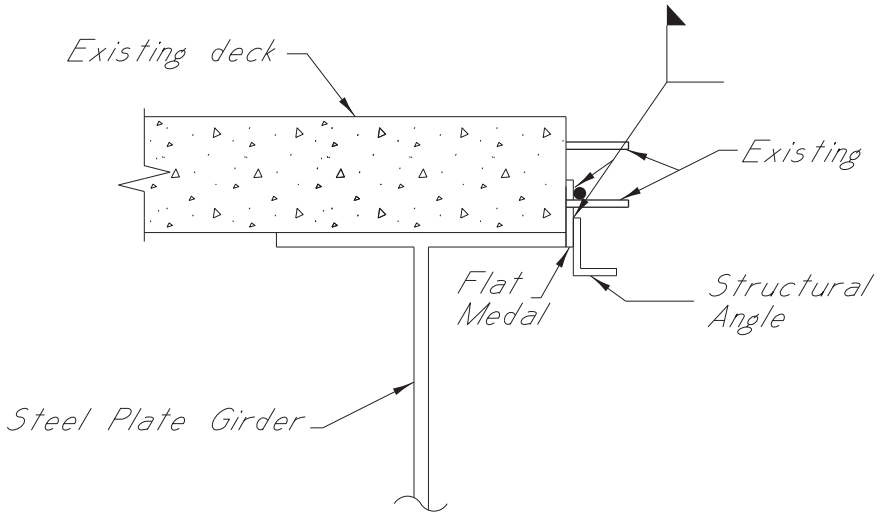

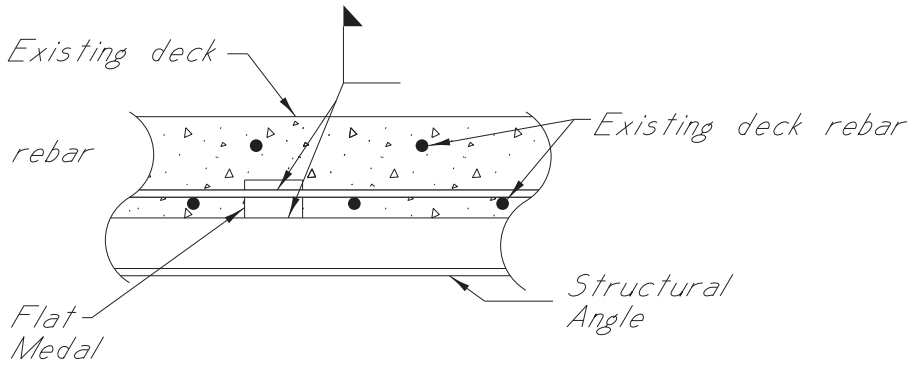

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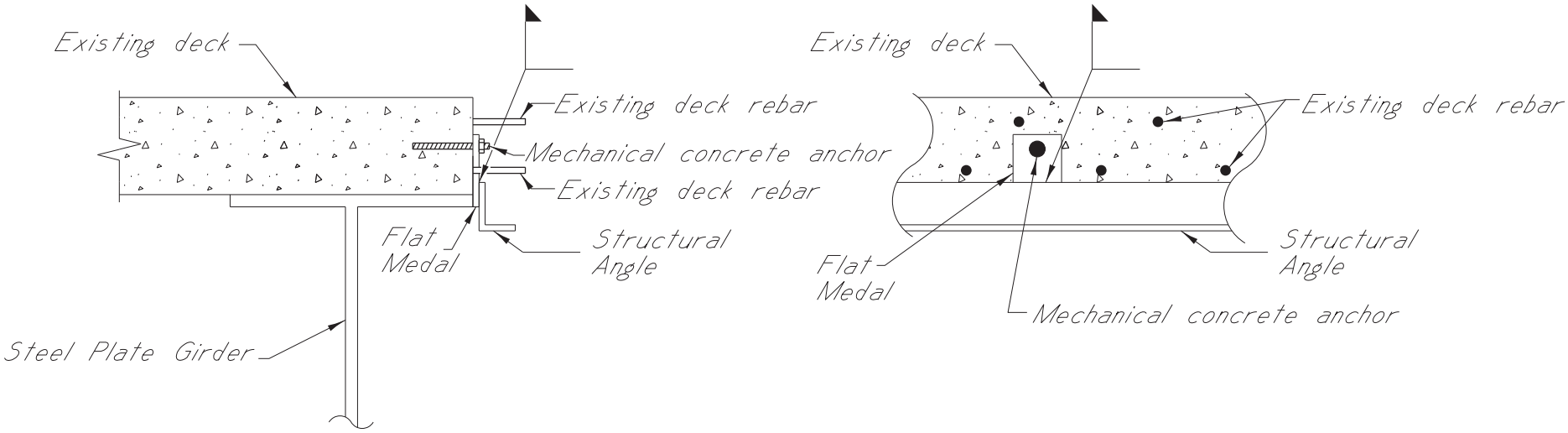

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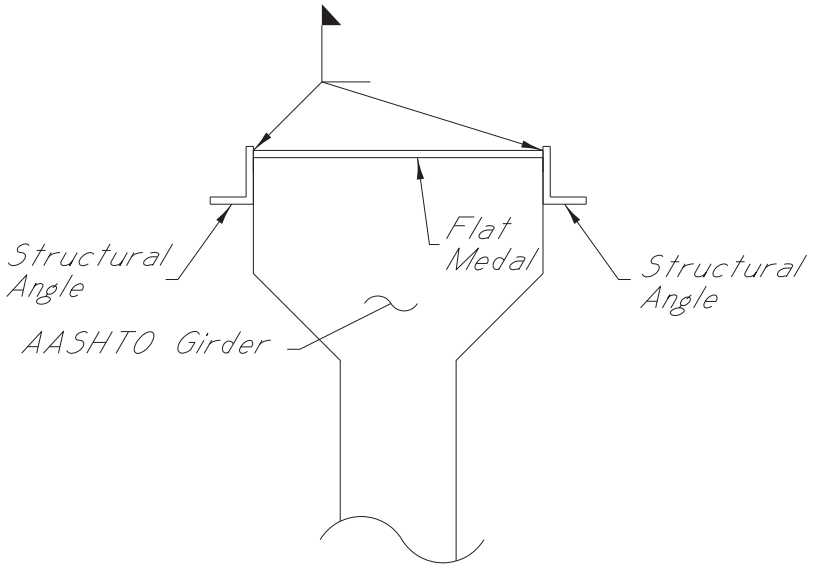

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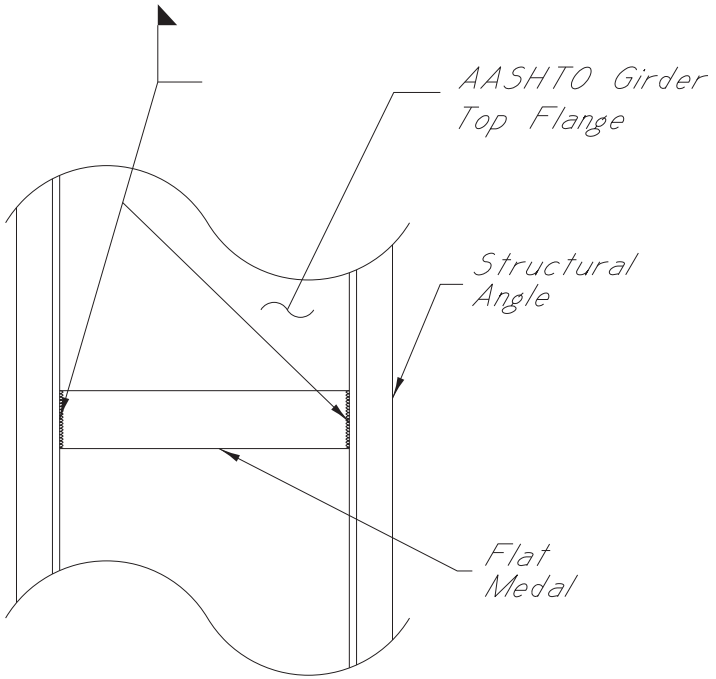
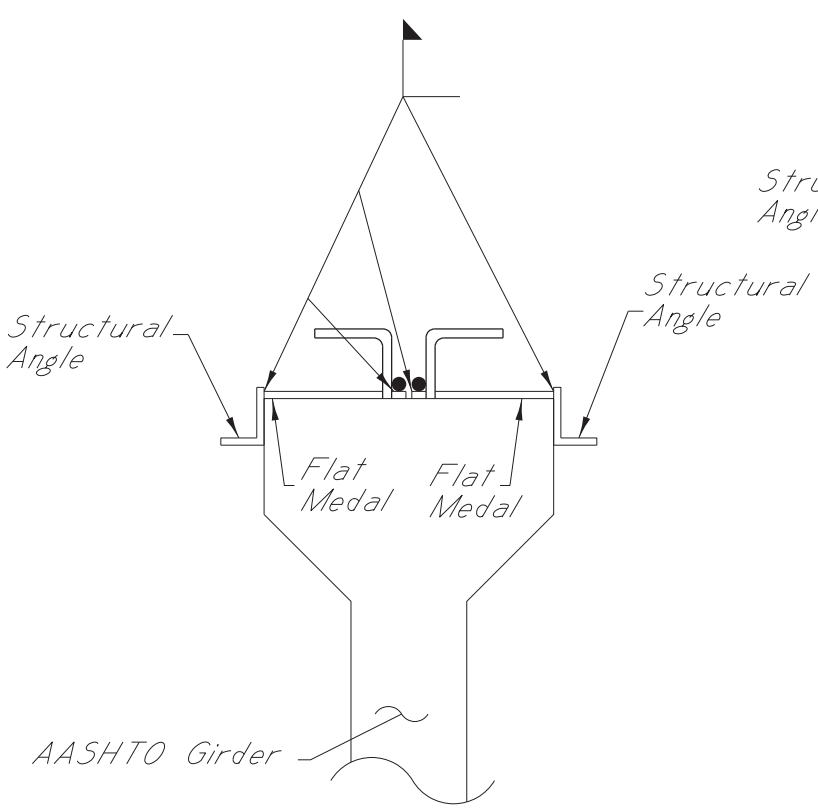


PLAN

AASHTO GIRDER
S.I.P. BRIDGEFORM DETAILS



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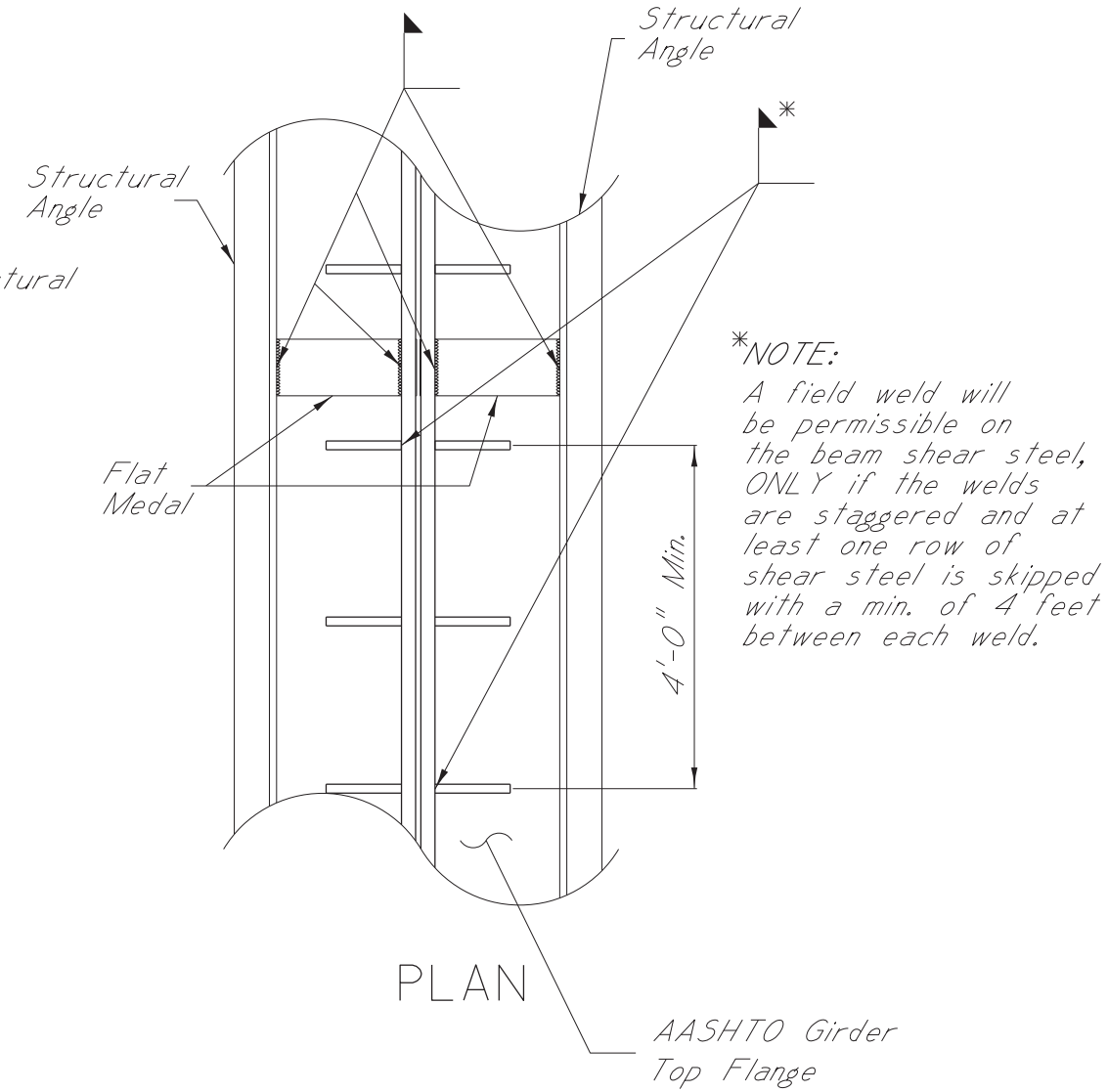

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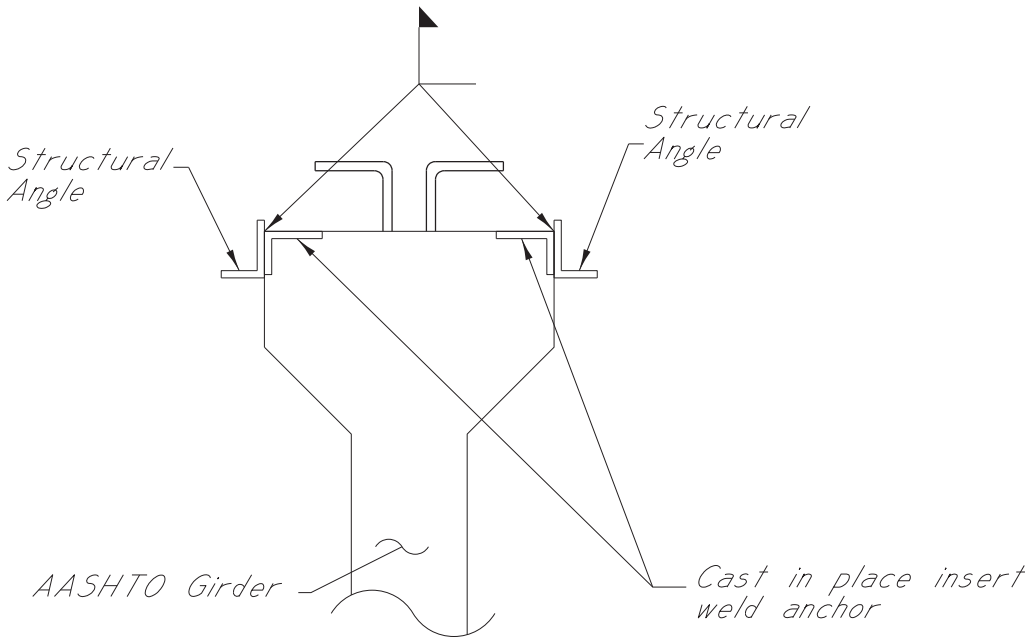

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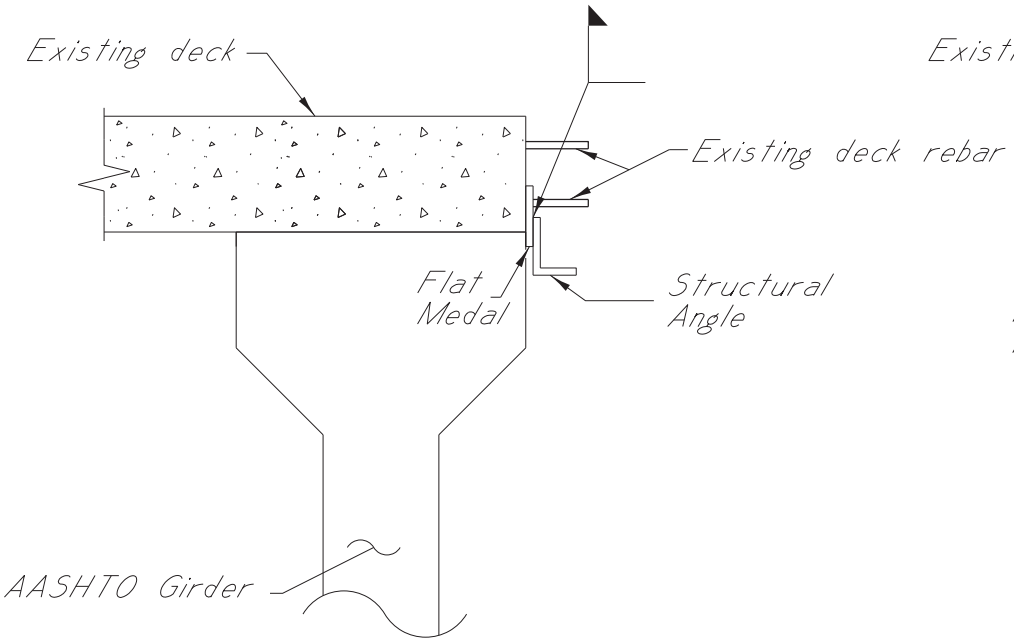

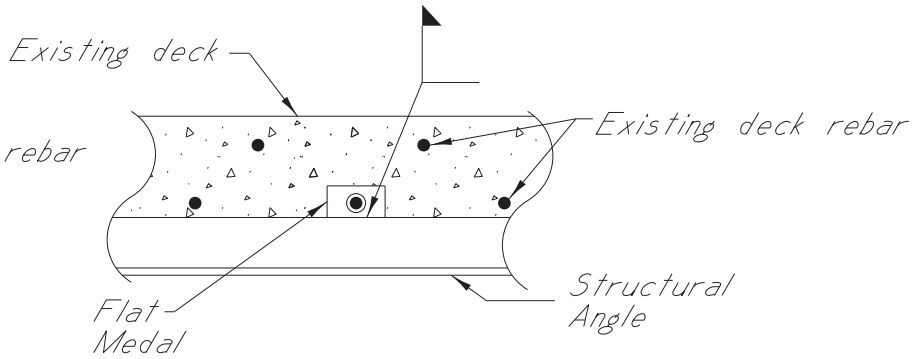

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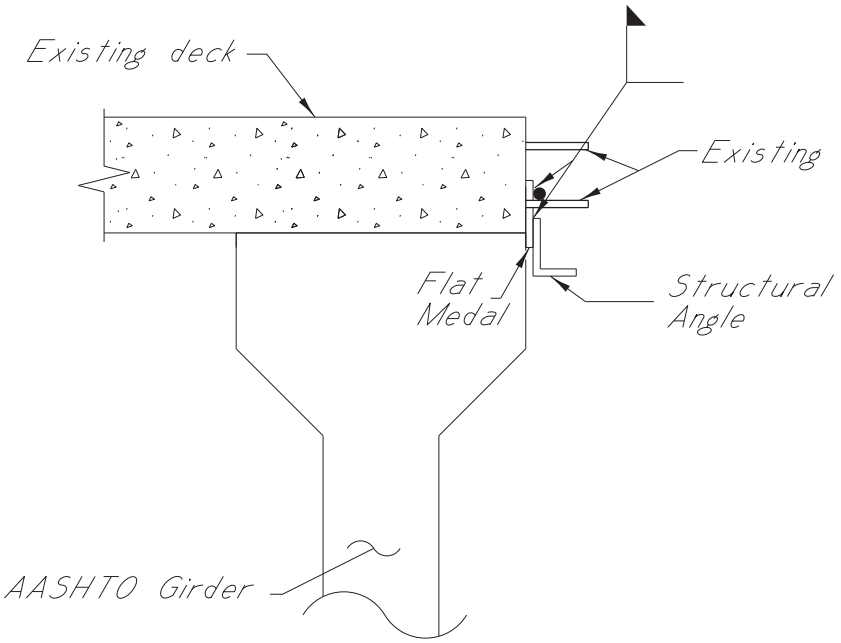

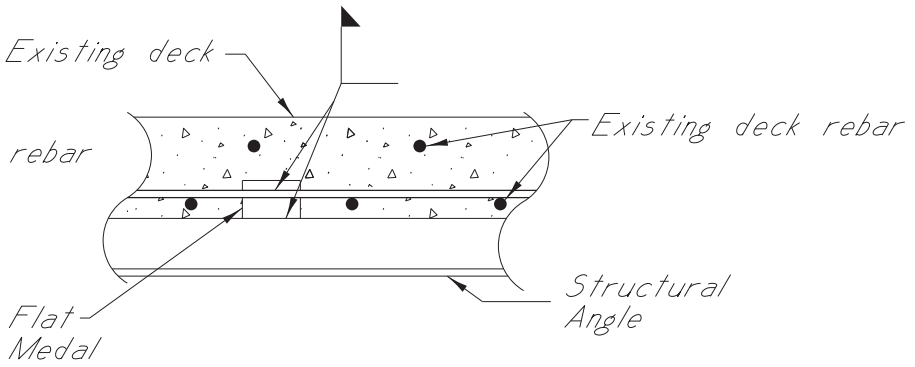

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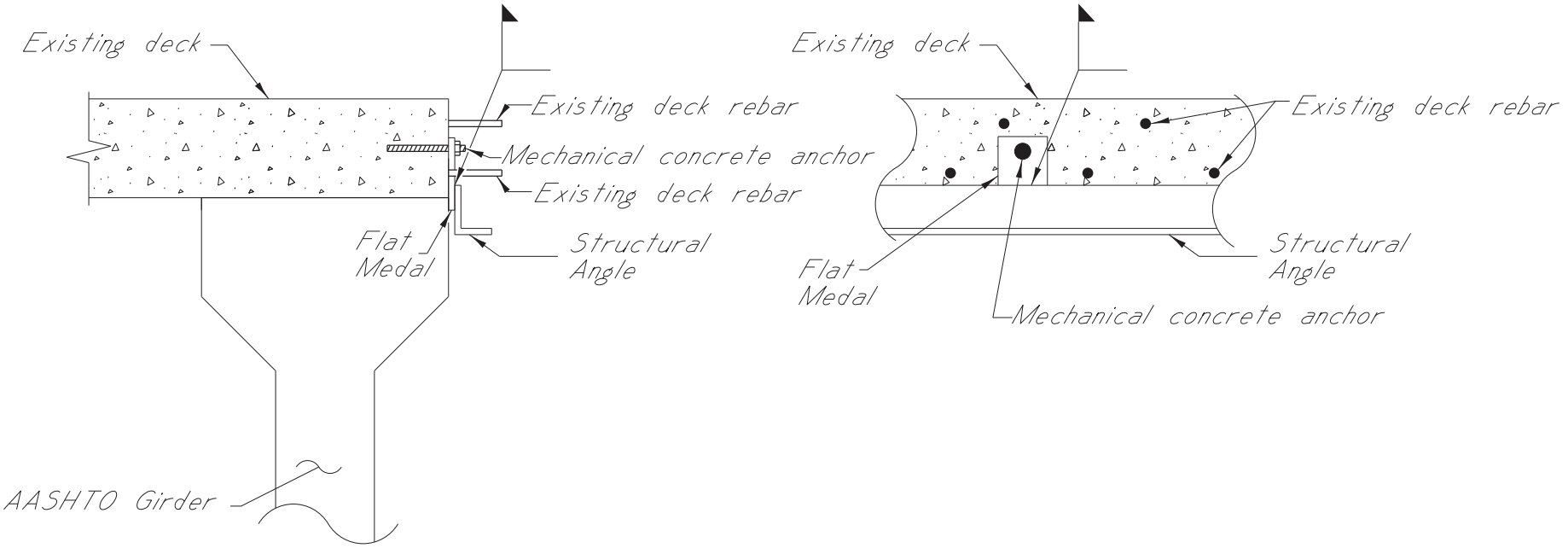

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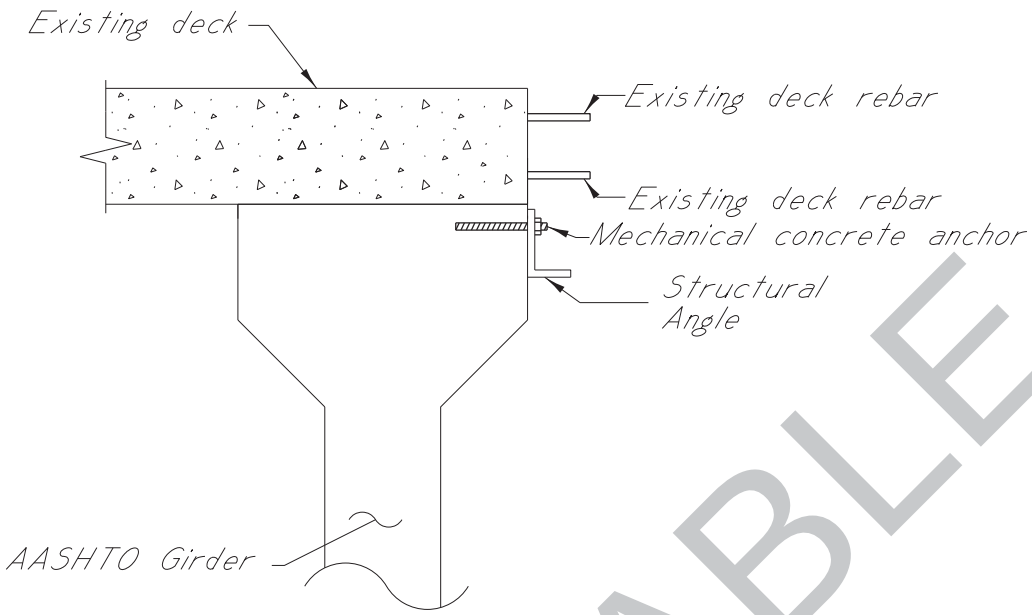
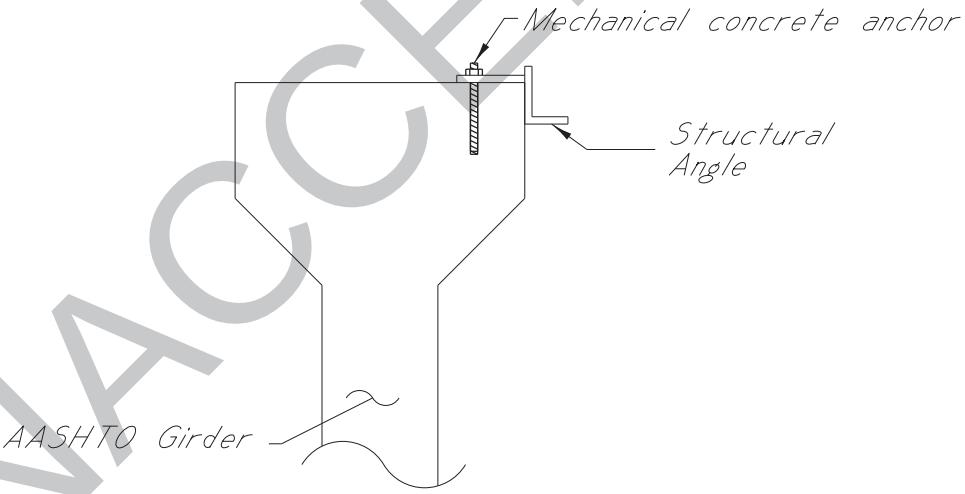
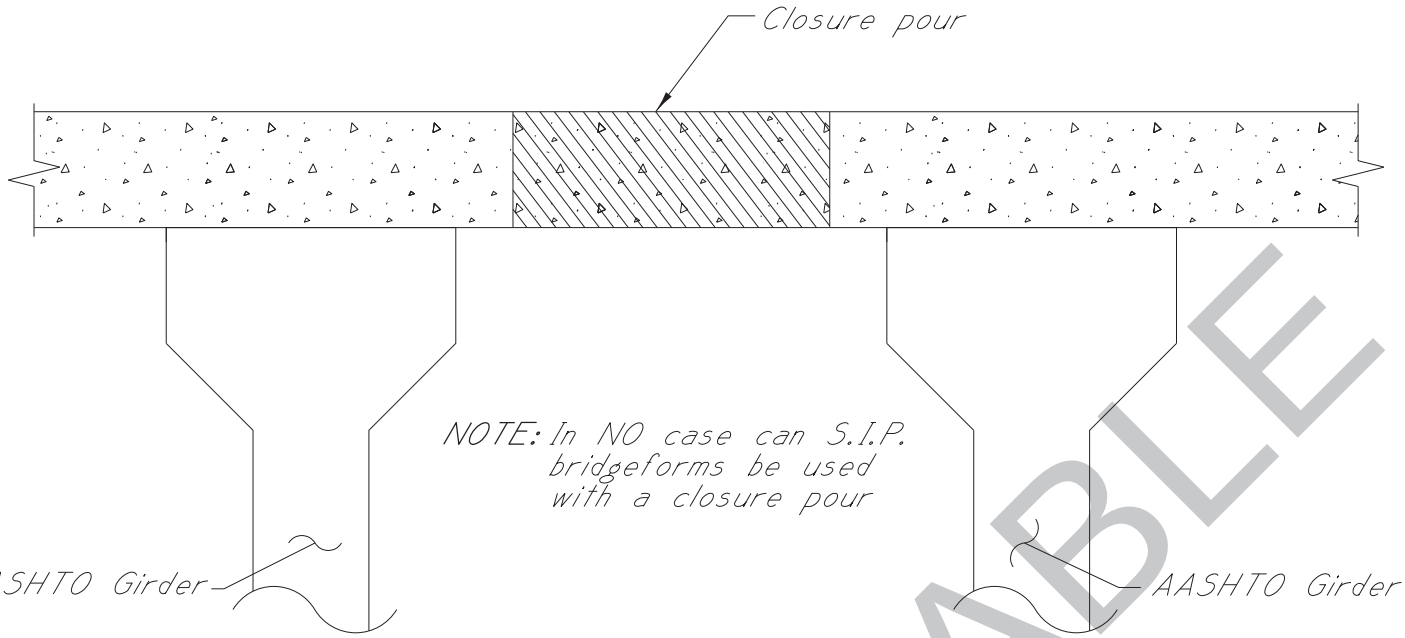
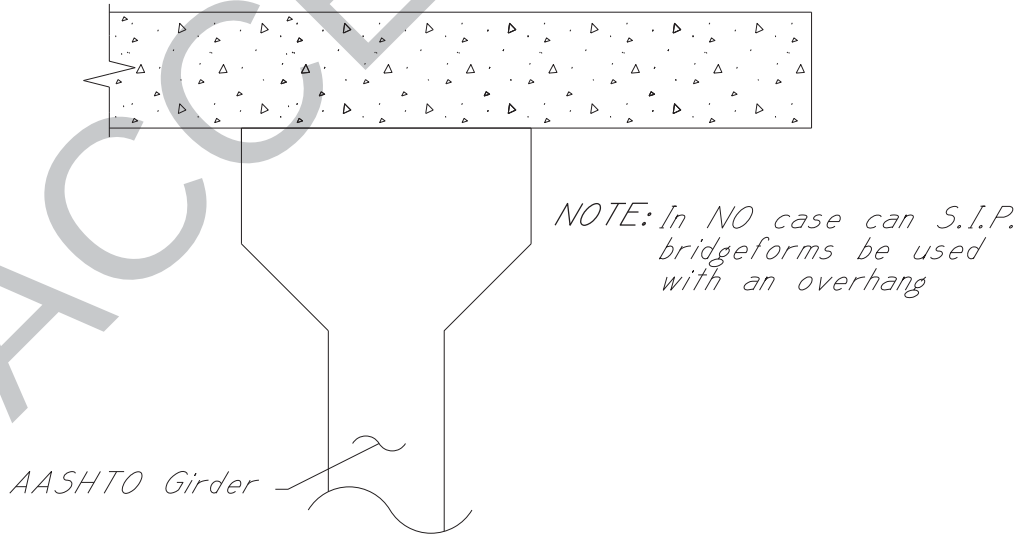




UNACCEPTABLE USES





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