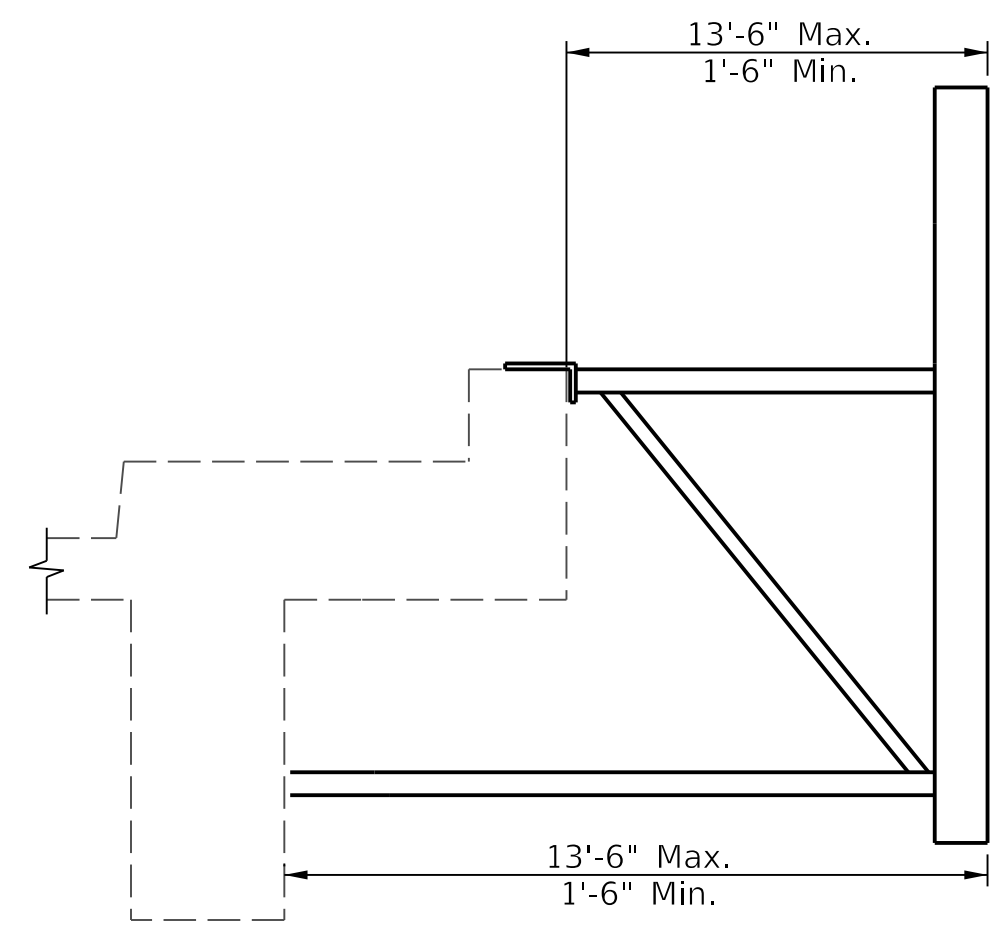
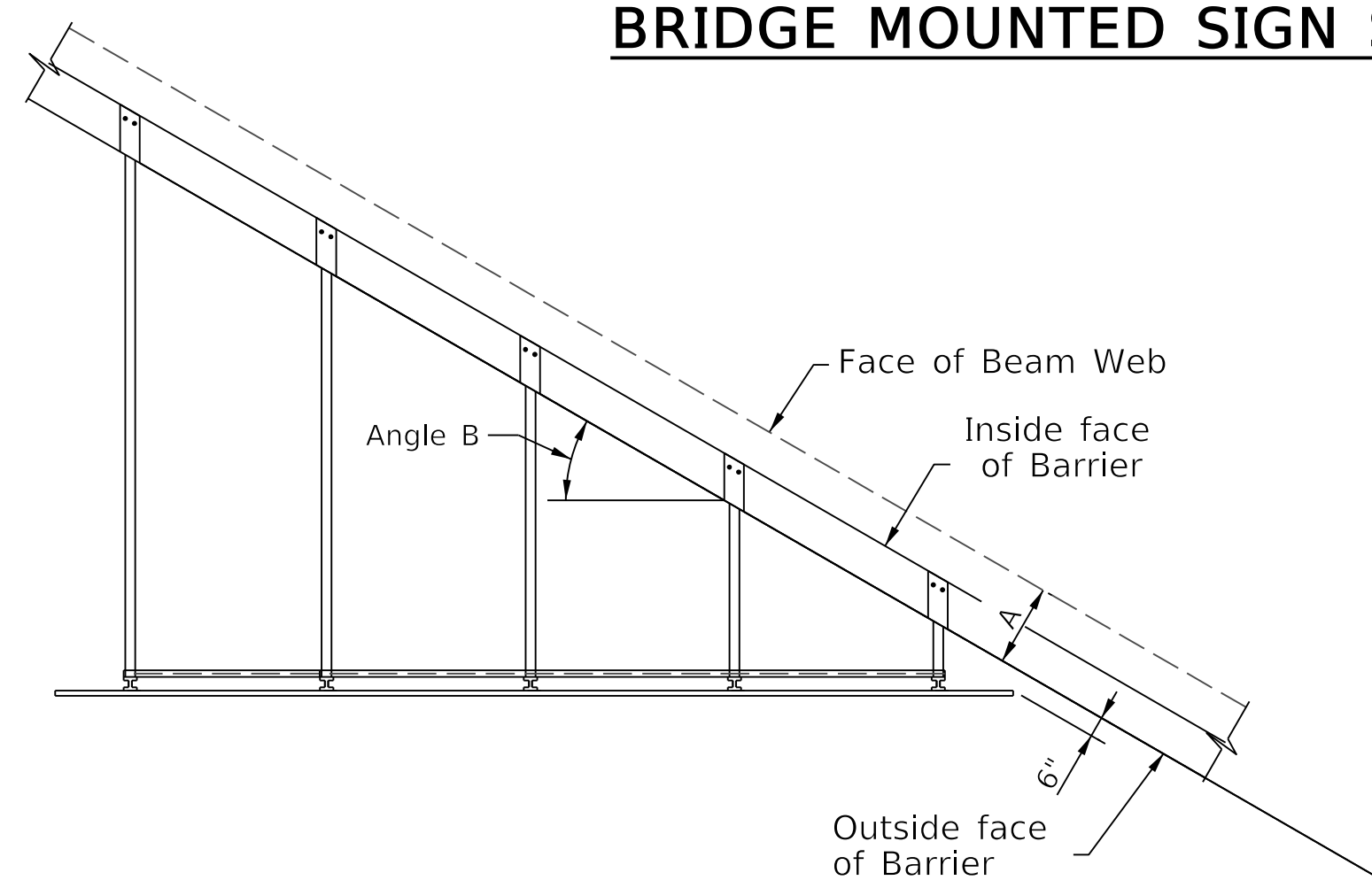


BRIDGE MOUNTED SIGN SUPPORTS

GENERAL NOTES

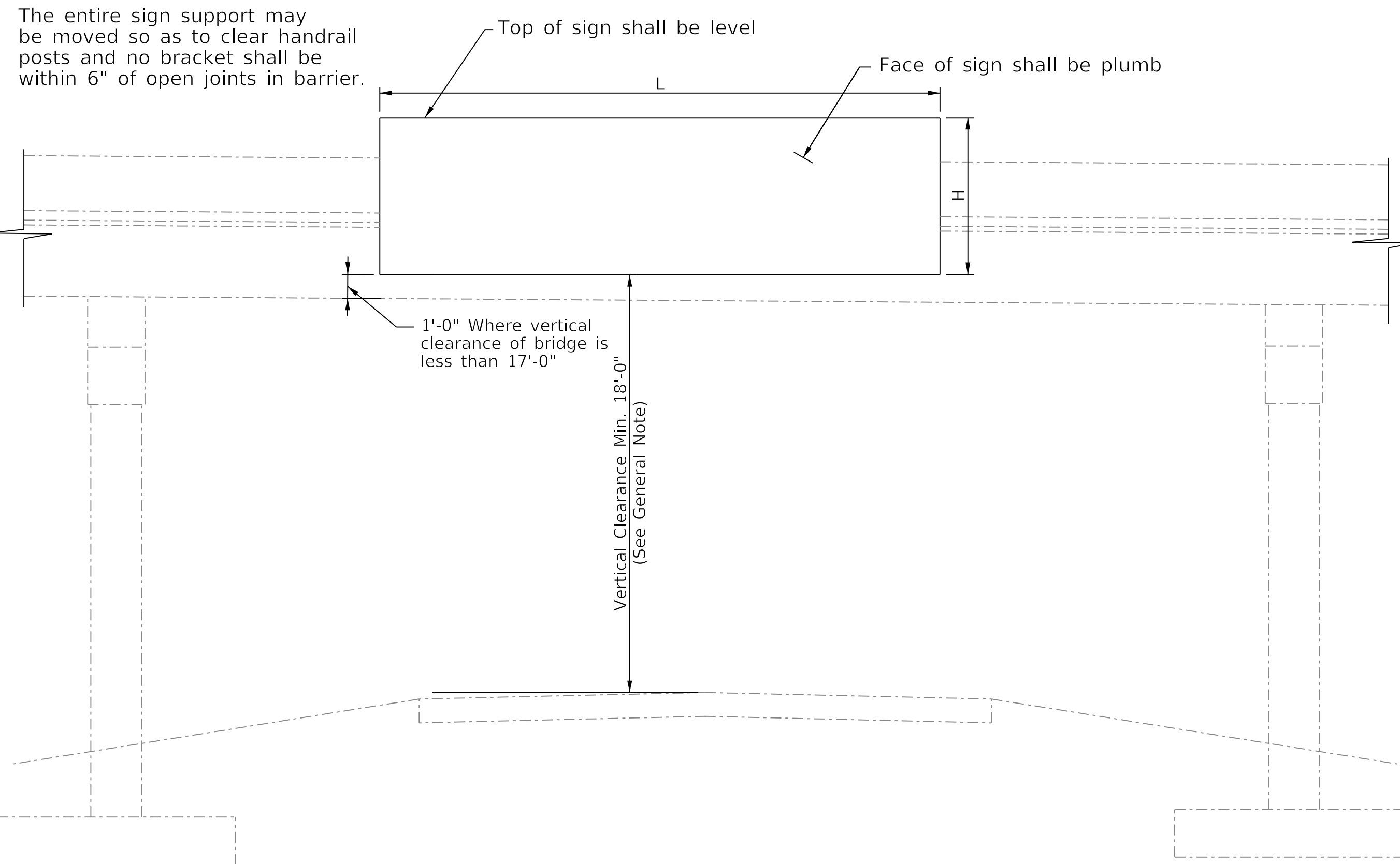


SIDE ELEVATION



PLAN

Left skew as shown
Right skew opposite hand



FRONT ELEVATION OF BRIDGE AND SIGN

Specifications:

All references to the standard specifications are to the 2019 Edition of the Kentucky Transportation Cabinet Standard Specifications for Road and Bridge Construction. All references to the AASHTO Specifications are to the AASHTO LRFD Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals with Interims through 2022, except as noted.

Design:

Designed in accordance with AASHTO LRFD Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals with Interims through 2022 using the following parameters:

- 1700 year MRI, with 120 MPH Design Wind Speed
- Infinite Fatigue Life
- 10 year MRI 76 MPH Service Wind Speed
- Fatigue Design Loads: Natural Wind Gust, Truck-Induced Wind Gust

Superelevation of Roadway:

The contractor shall allow for differences in elevations across the sign width as shown in the Roadway Plans in maintaining the required 18 foot minimum vertical clearance to the bottom, of the lowest part of the sign or support. Sign shall be centered over the lane or lanes to which it applies, or as specified in the Signing Plans.

Material Design Specifications:

- For Wide Flange Shapes $f_y = 50,000$ psi
- For Steel Pipe $f_y = 35,000$ psi
- For Other Structural Steel $f_y = 36,000$ psi

Material Specifications:

AASHTO Specifications or ASTM, Current edition, as designated below shall govern the materials furnished:

Steel Shapes galvanized in accordance with ASTM A123:

- Steel Wide Flange Shapes: ASTM A992 Grade 50, ASTM A572 Grade 50
- Steel Pipe: ASTM A53 Grade B, ASTM A500 Grade B or C, ASTM A1085 Grade A
- Other Structural Steel: ASTM A36

Steel Hardware galvanized in accordance with ASTM A153:

- High Strength Bolts ASTM F3125 Grade A325
- Anchor Bolts ASTM F1554 Grade 55
- Heavy Hex Nuts ASTM A194 2H
- Flat Washers ASTM F436

Shop Drawings:

The contractor shall submit detailed shop drawings to the Division of Construction for review prior to fabrication in accordance with the specifications. The roadway cross section developed by the contractor is to accompany the shop drawings. The shop drawings and roadway cross section will also be forwarded to the engineer to review.

Fabrication:

The sign support shall be fabricated in accordance with the AASHTO Specifications. Any damaged galvanization shall be repaired in accordance with ASTM A780. Perform all welding according to requirements specified in ANSI/AASHTO/AWS D1.1 Structural Welding Code Current edition with interims.

Mill Test Reports:

Submit Mill Test Reports in accordance with section 607.03.13 of the Standard Specifications

Design Limits:

This standard drawing is applicable to bridge mounted sign supports that meet the following criteria:

- Minimum Vertical Clearance of Sign Above the Roadway Below: 18 FT
- Maximum Height of Sign Above the Roadway Below: 35 FT
- Minimum Chord Length: 1 FT
- Maximum Chord Length: 13 FT
- Maximum Spacing of Sign Brackets: 4 FT

Design Chart:

A registered professional engineer licensed to practice in the Commonwealth of Kentucky shall fill out the Design Chart based on the design cross section at the location where the sign is to be mounted, the actual signs to be used, and the instructions herein. The Engineer's name shall appear in the "Checked By:" Box of the title block of this sheet. The Engineer is responsible for verifying the information based on the contractor's submitted cross sections and reviewing the fabricators shop drawings in detail.

Roadway Cross Section:

The contractor shall take field measurements at each sign location and develop a cross section showing the Minimum Vertical Clearance to each sign.

Payment:

All engineering, materials, labor, equipment, Contractor's design of anchor bolts by a P.E., and any other incidentals necessary to furnish and install the sign truss as detailed in these standards and the shop drawings shall be paid for at the unit bid price for Bridge Mounted Sign Support. Any damage of the structure occurring as a result of furnishing and installing the Bridge Mounted Sign support shall be repaired to the satisfaction of the Engineer at the contractor's expense.

Vent / Drain Holes for Galvanization:

Vent / drain holes shall be drilled in the chord member at each end of all closed diagonal members prior to welding. Vent / Drain holes shall also be drilled in the hanger flange, beam plate and barrier angle at the end of the chord members. The holes shall be spaced as equally as possible across the surface where the member opening projects. Vent / drain holes shall be shown in the shop drawings for approval. Total area of vent / drain holes at each end shall be equal to or less than the following:

- 30% of the cross sectional surface for members with inside diameters greater than or equal to 3 inches.
- 45% of the cross sectional surface for members with inside diameters less than 3 inches.

Fabricator Certification:

The fabricator shall be AISC Certified for SBR (Certified Bridge Fabricator - Simple).

ROAD UNDER BRIDGE	OVERHEAD ROAD	STATION OF ROAD UNDER	SIGN NO.	SIGN LENGTH L.	SIGN LENGTH H.	DIRECTION OF TRAFFIC FACING SIGN	LANE THAT SIGN WILL BE OVER	DIMENSION A	DRAWING NUMBER OF BRIDGE	BEAM WEB T.	TYPE OF BEAM	SKREW LT/RT	ANGLE B	HEIGHT C	SIGN BRACKET OVERHANG
TO BE DETERMINED IN THE FIELD BY THE CONTRACTOR AND APPROVED BY THE ENGINEER.															



COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS



REVISION	DATE

PREPARED BY: _____

DATE: _____
DESIGNED BY: _____
DETAILED BY: _____

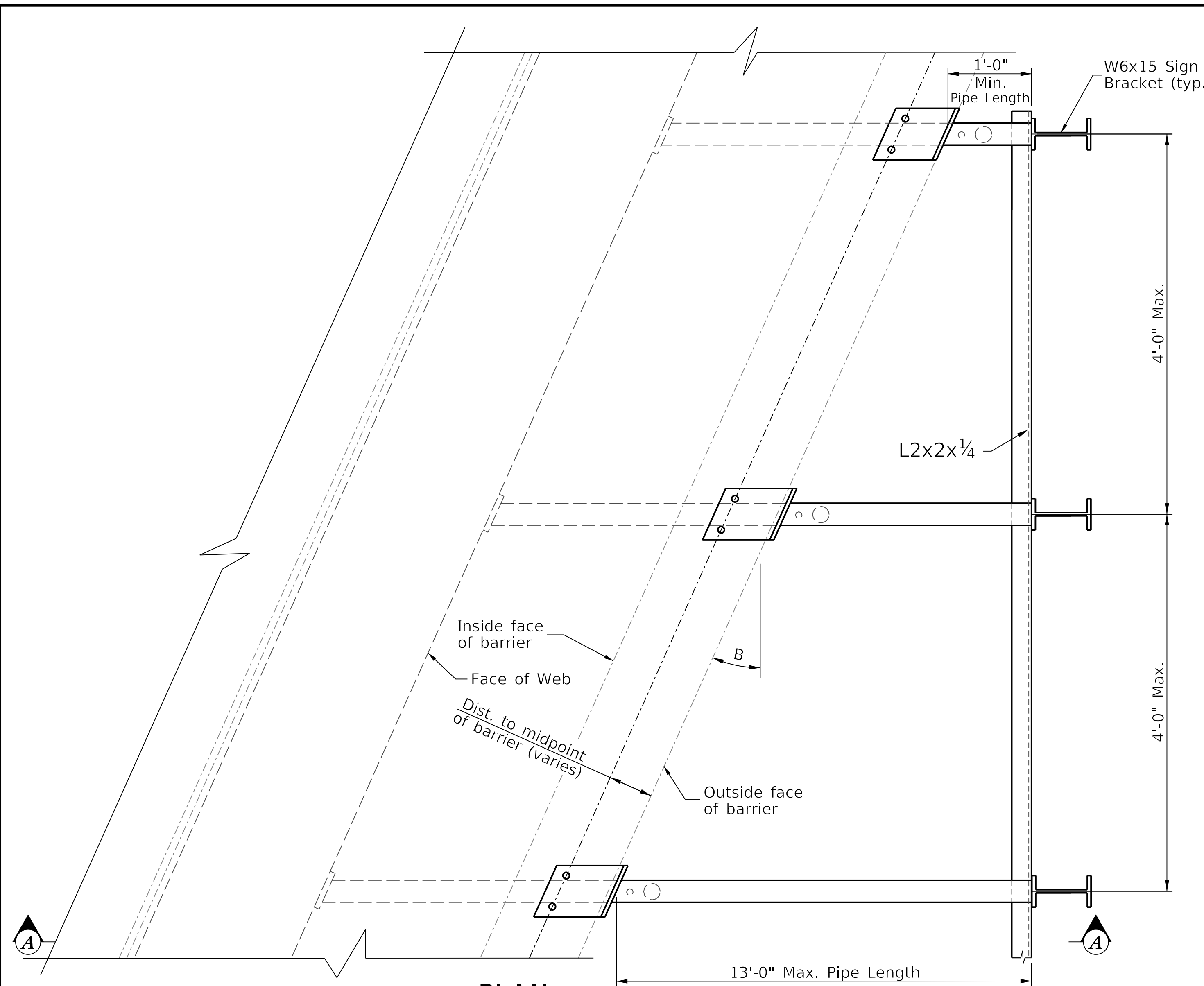
CHECKED BY: _____

GEOMETRY AND GENERAL NOTES

CROSSING

ROUTE	ITEM NO.	COUNTY OF

Sign brackets shall be placed on 4'-0" max. centers with 2'-0" max. sign overhang. The following is the required number for each side.	
Sign Length	Number of Brackets
0'-0" thru 8'-0"	2
8'-1" thru 12'-0"	3
12'-1" thru 16'-0"	4
16'-1" thru 20'-0"	5
20'-1" thru 24'-0"	6
24'-1" thru 28'-0"	7



PLAN
(Left Skew as Shown)
(Right Skew opp. Hand)

See Bridge Mounted Detail Sheet for additional elevations and details

Existing handrail may be removed to drill anchor bolt holes. Contractor shall reinstall the handrail and is responsible for any damage.

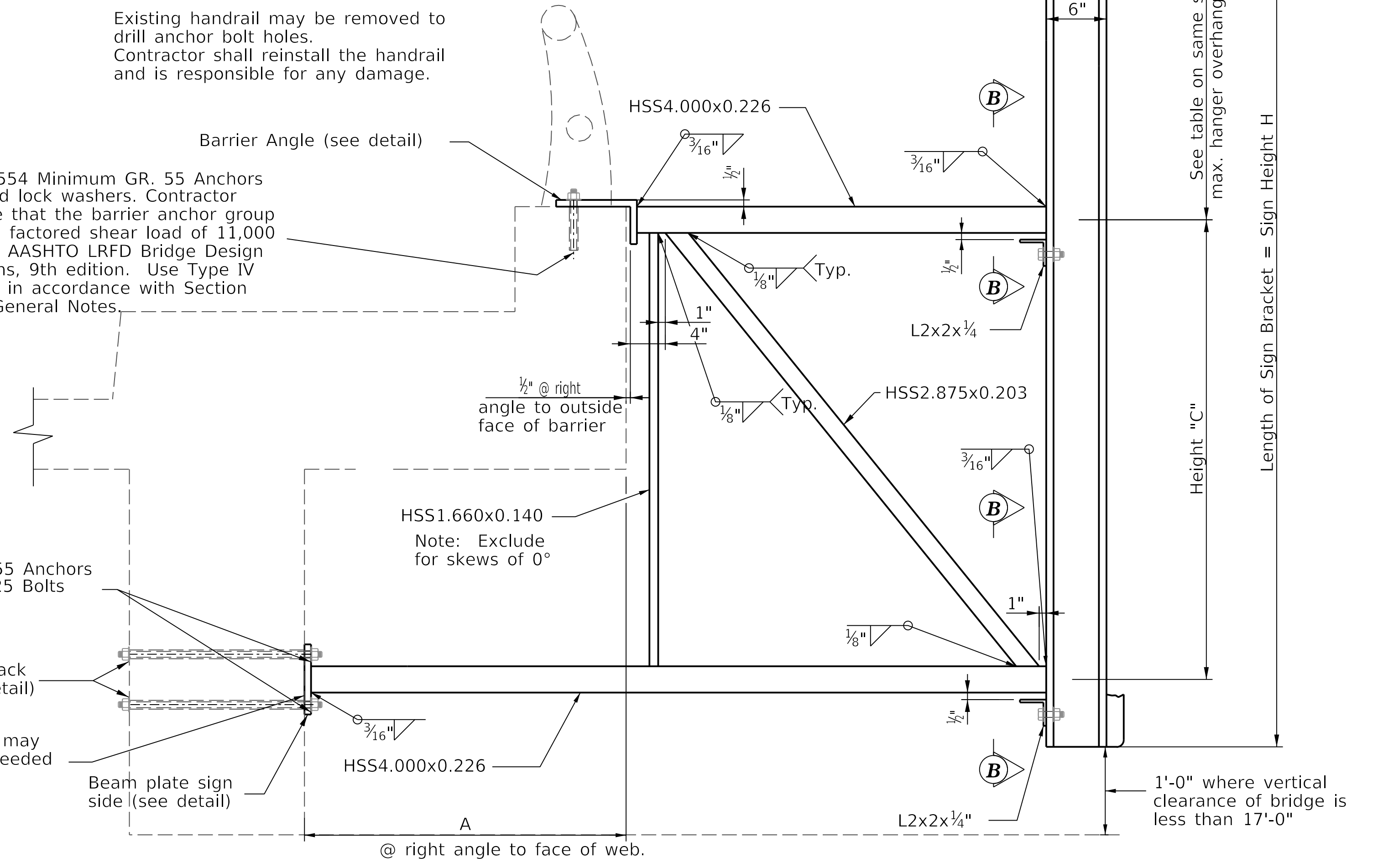
2-3/4" Ø F1554 Minimum GR. 55 Anchors with flat and lock washers. Contractor shall ensure that the barrier anchor group can resist a factored shear load of 11,000 lbs. per the AASHTO LRFD Bridge Design Specifications, 9th edition. Use Type IV Epoxy resin in accordance with Section 826. See General Notes.

2-3/4" Ø F1554 Minimum GR. 55 Anchors with flat and lock washers A325 Bolts may be used for steel beams.

Bolt plate back side (see detail)

A shim plate may be used as needed for fit up.

Beam plate sign side (see detail)

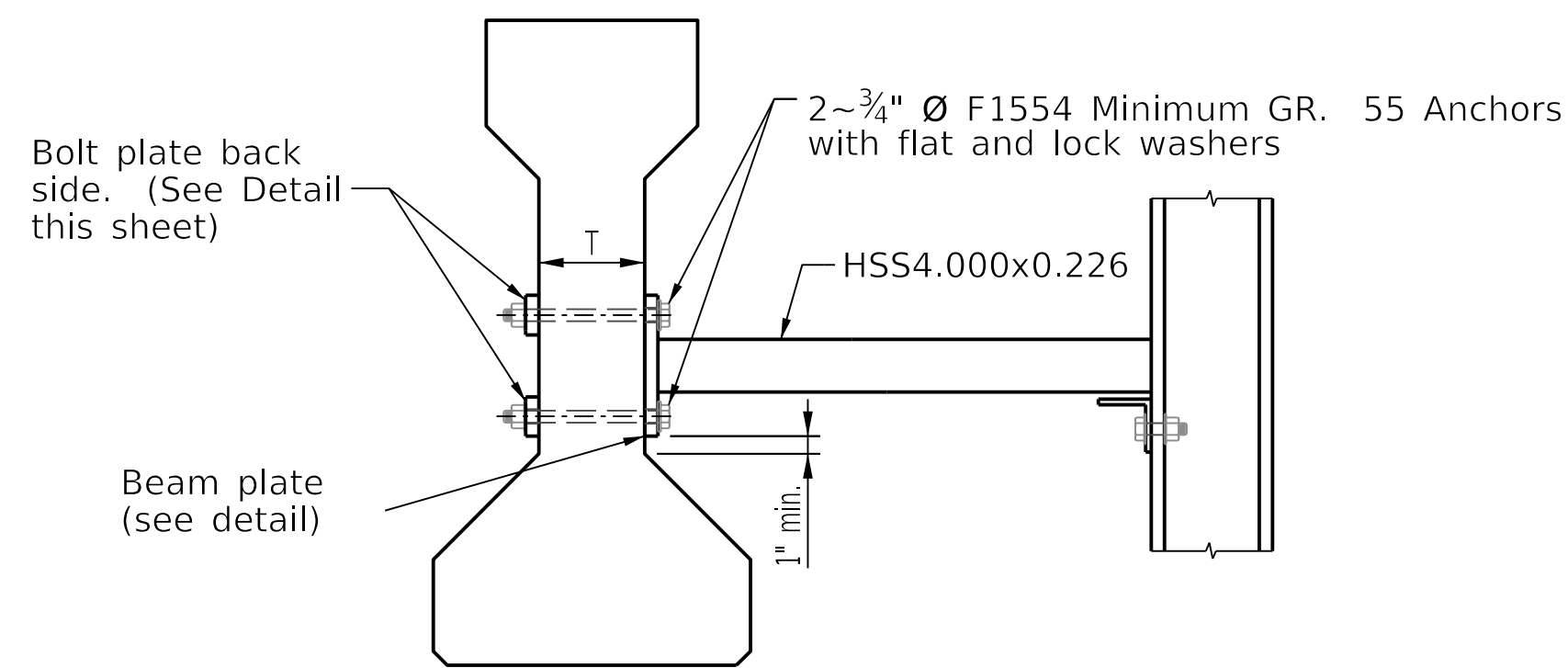


ELEVATION A-A OF BRACKET

Concrete Beam shown for reference, Steel and PCI beam similar.

Note: After tightening bolted connections, exposed thread shall be scored.

Height "C"	HANGER OVERHANG
C ≥ 5'-0"	12' Max.
3'-0" ≤ C < 5'-0"	9' Max.



**ELEVATION OF BRACKET
PRESTRESSED CONCRETE T BEAM**

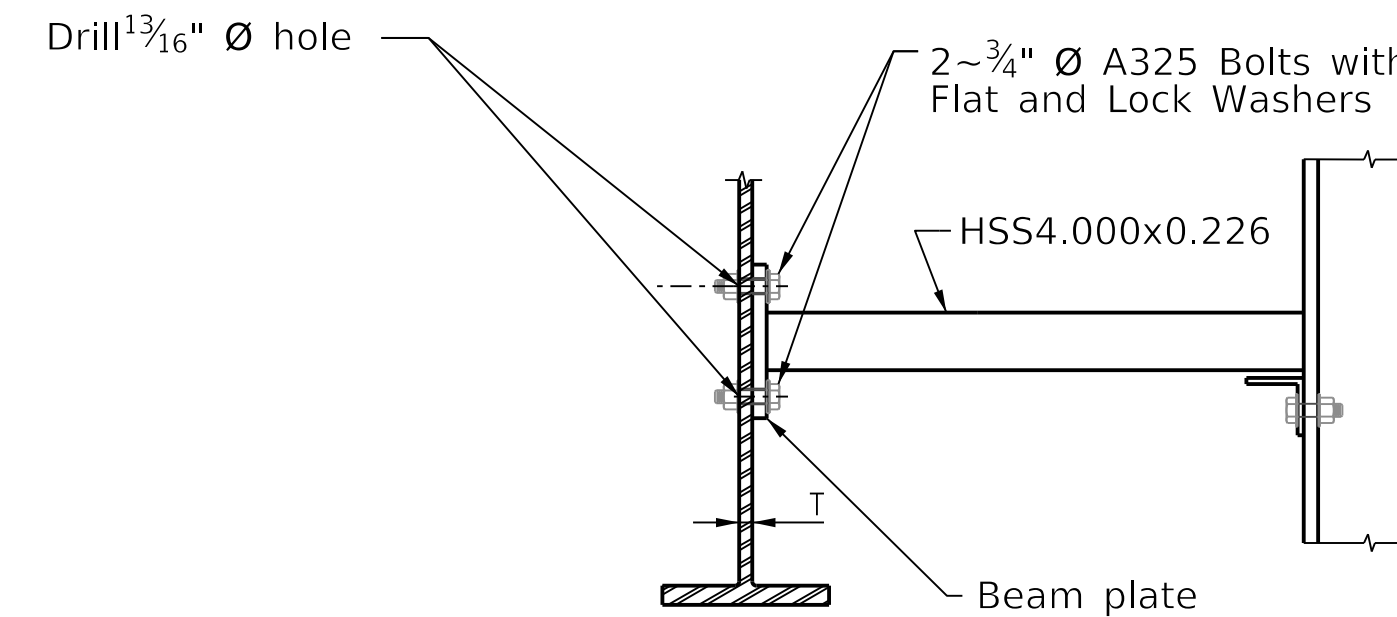
Top, diagonal, and vertical support pipe not shown for clarity.

New Construction

Beam fabricator shall provide 1 3/16 inch diameter holes in beams at sign bracket location. Hole locations shall be shown in shop drawings.

Existing Construction

Drill 1 3/16 inch diameter hole with rotary core drill. (Impact type drill not permitted) Contractor shall locate all strands before drilling holes. Brackets shall be spaced so that bolt holes do not interfere with strands, including draped strands.

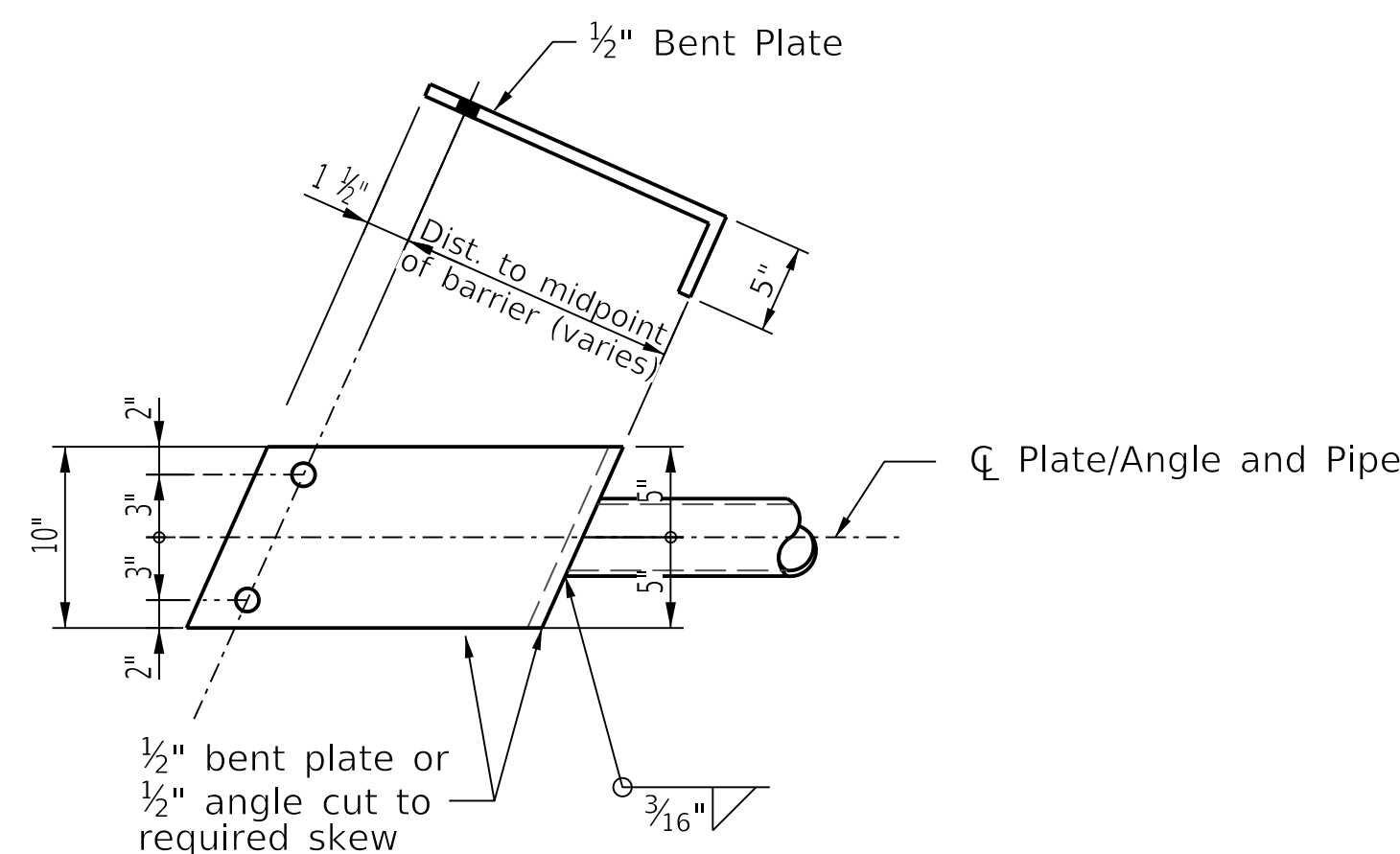


**ELEVATION OF BRACKET
STEEL BEAM**

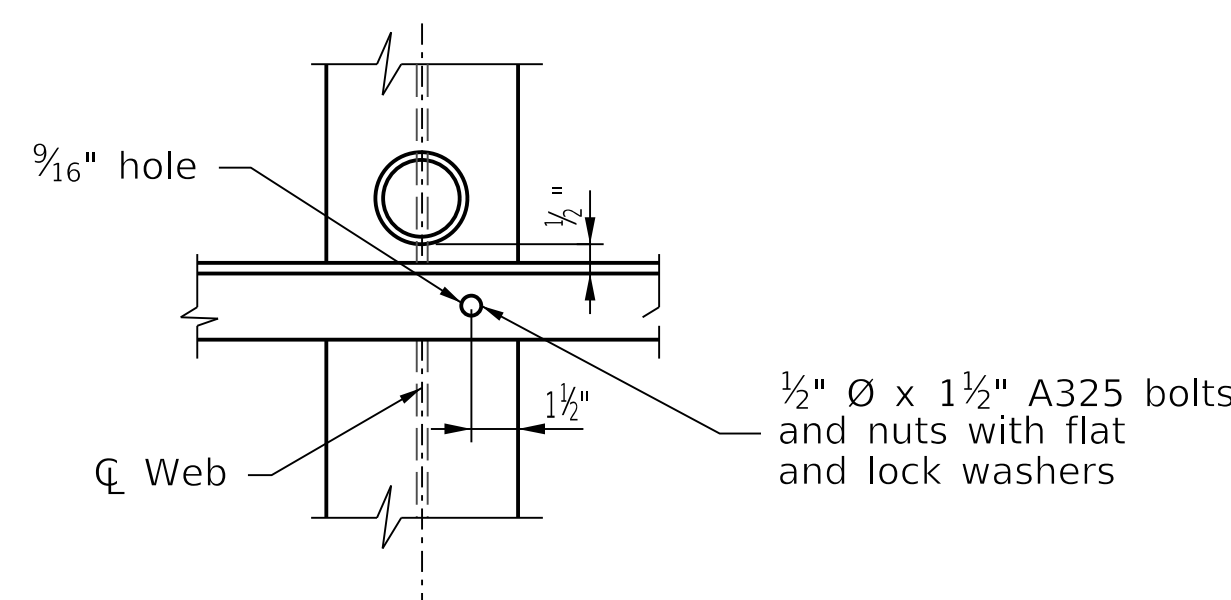
Top, diagonal, and vertical support pipe not shown for clarity.

If the steel web meets the following criteria, no additional analysis for out of plane forces needs to be considered. Otherwise, the Contractor's Engineer is responsible for determining the capacity of the web to adequately resist connecting forces.

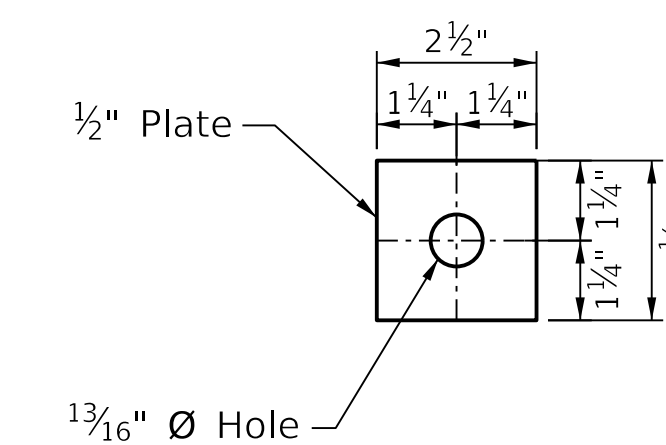
- Depth of web, $D \geq 18"$
- Thickness of web, $T \geq 1/2"$
- Yield Stress of steel web, $F_y \geq 36\text{ksi}$
- Maximum Distance from \bar{C} of Beam Plate to adjacent transverse stiffener $\leq 7'-0"$



DETAILS FOR BARRIER ANGLE

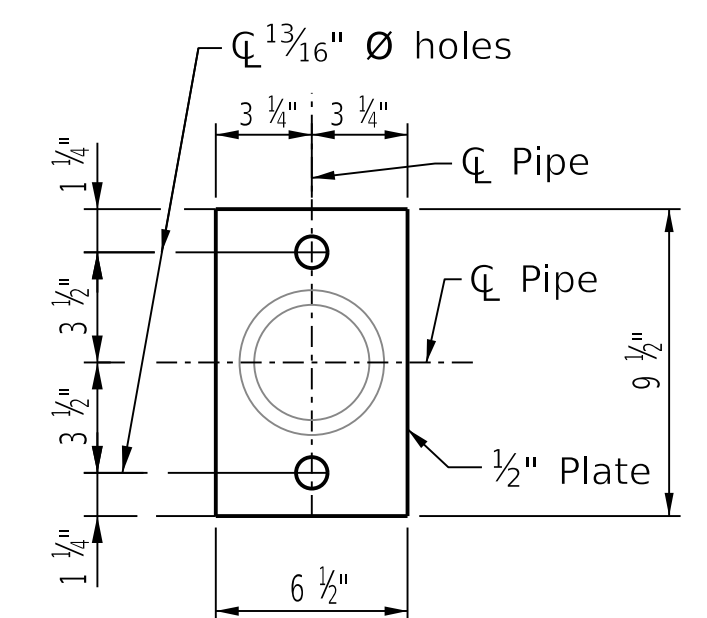


SECTION B-B



BOLT PLATE DETAIL

Use bolt plate on back side of beam.



BEAM PLATE DETAIL

Use beam plate on bracket side of the beam.

Note: After tightening bolted connections, exposed thread shall be scored.



COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS



KENTUCKY
TRANSPORTATION
CABINET

REVISION	DATE

PREPARED BY

DATE:
DESIGNED BY:
DETAILED BY:

CHECKED BY

BRIDGE MOUNTING DETAILS

CROSSING

ROUTE	ITEM NO.	COUNTY OF
	SHEET NO.	