

MODIFIED HAWAII THRIE-BEAM APPROACH GUARDRAIL TRANSITION

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4/22/2020

INTENDED USE

The Modified Hawaii Thrie Beam Approach Guardrail Transition is a non-proprietary system. It is intended to be used when the 31" [787] tall strong-post, W-beam guardrail such as Midwest Guardrail System (SGR20) is placed adjacent to the Hawaii 34" [864] Aesthetic Concrete Bridge Rail or the Hawaii 42" [1067] Aesthetic Concrete Bridge Rail. A 6-in. [152] tall concrete curb was placed below the AGT with its front face flush with the face of the guardrail. The curb began at the upstream end of the Type D2 End Post and extended 176¼ in. [4477] upstream. The curb was terminated with a vertical taper measuring 4 in. [102] vertically by 36 in. [914] longitudinally prior to extending below the asymmetrical W-to-thrie transition segment. A 4-in. x 12-in. [102 x 305] vertical taper was applied to the downstream end of the curb adjacent to the concrete end post to mitigate wheel snag on the Type D2 End Post.

The Modified Hawaii Thrie Beam Approach Guardrail Transition should be used in locations where a maximum dynamic deflection of 9.0 in. [229] or less is acceptable and where a working width of 23.0 in. [584] is provided. The Hawaii Thrie Beam AGT to Bridge Rail has been crash tested under Test Level 3 (TL-3) conditions and deemed crashworthy according to the Manual for Assessing Safety Hardware, Second Edition (MASH 2016) performance criteria.

COMPONENTS

Unit Length = 35'-5" [10795]

DESIGNATOR	COMPONENT	NUMBER
FBB01	5/8"-11 UNC [M16x2], 1.25" [32] Long Guardrail Bolt	20
FBB02	5/8"-11 UNC [M16x2], 2" [51] Long Guardrail Bolt	24
FBB03	5/8"-11 UNC [M16x2], 10" [254] Long Guardrail Bolt	8
FBB06	5/8"-11 UNC [M16x2], 14" [356] Long Guardrail bolt	13
FBX22b	7/8"-9 UNC [M22x2.5], 16" [406] Long Heavy Hex Bolt	5
FNX16b	5/8"-11 UNC [M16x2] Heavy Hex Nut	64
FNX22b	7/8"-9 UNC [M22x2.5] Heavy Hex Nut	5
FWC16a	5/8" [16] Dia. Plain USS Washer	24
FWR10	3"x3"x1/4" [76x76x6] Square Washer Plate	5
PPB02	Composite Recycled Blockout	2
PWBxx	17.5" [445] Long, 12"x4"x0.25" [305x102x6] Steel Blockout	6
PWBxx	17.5" [445] Long, 8"x6"x0.25" [203x152x6] Steel Blockout	4
PWE06	W6x8.5 or W6x9 [W152x12.6 or 13.4], 72" [1,829] Long Steel Post	8
PWExx	W6x15 [W152x22.5], 78" [1,981] Long Steel Post	4
RET01b	Thrie Beam Terminal Connector	1
RTM08a	12'-6" [3,810] Thrie Beam Section	2
RTM19a	6'-3" [1,905] Thrie Beam Section	1
RWM04a	12'-6" [3,810] W-Beam Section	1
RWT02	6'-3" [1,905] Asymmetrical W- to Thrie Beam Transition	1
---	Concrete, Minimum 4,000 psi f'c	-
---	See Bill of Bars	-

ELIGIBILITY

Eligibility will be pursued.

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REFERENCES

Rosenbaugh, S. K., Hovde, S. E., Faller, R. K., and Urbank, E. L., *Crash Testing and Evaluation of the Hawaii Thrie Beam Approach Guardrail Transition: MASH Test Nos. 3-20 and 3-21*, Report to Hawaii Department of Transportation, Transportation Report No. TRP-03-425-20, Midwest Roadside Safety Facility, University of Nebraska-Lincoln, March 2020.

CONTACT INFORMATION

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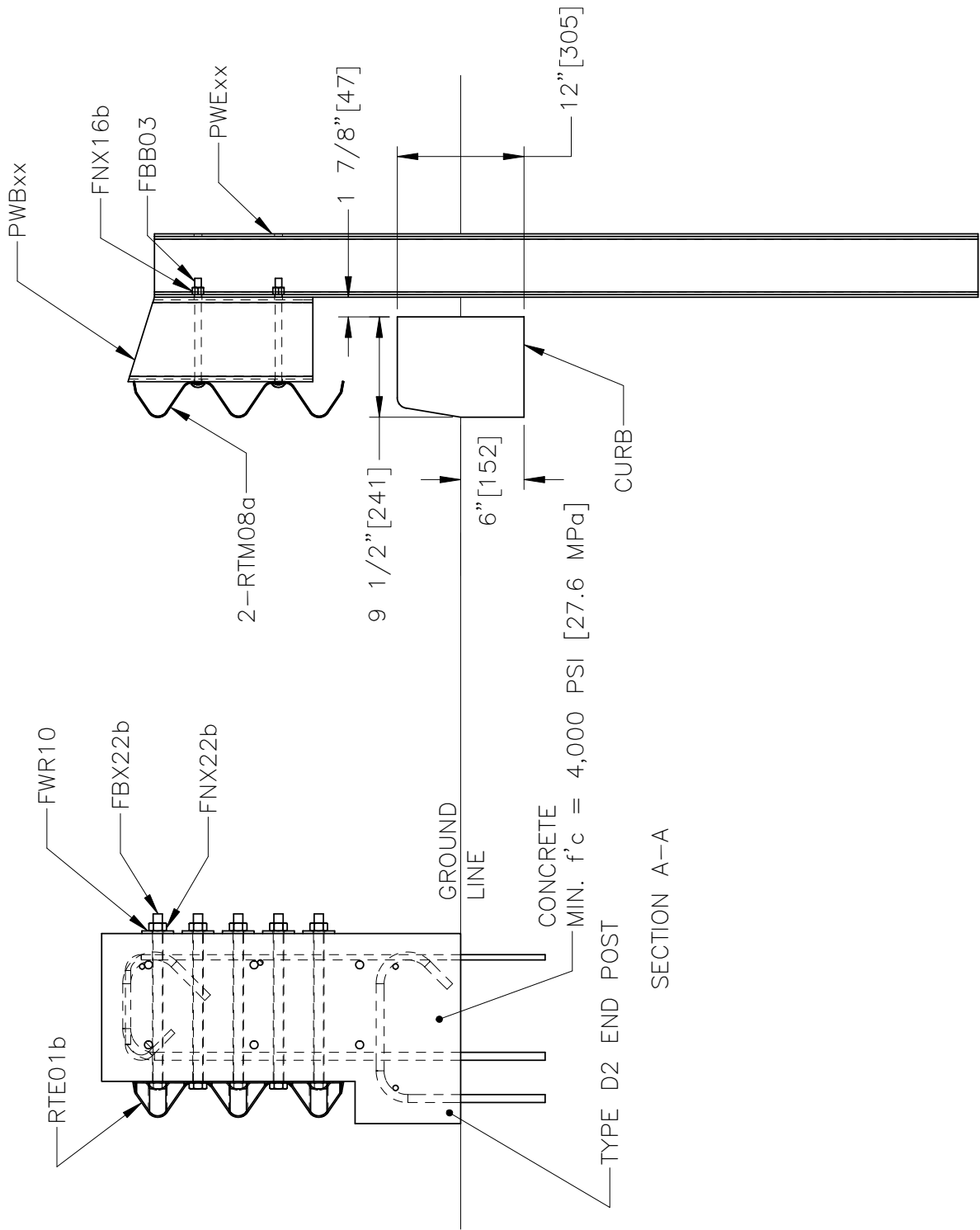
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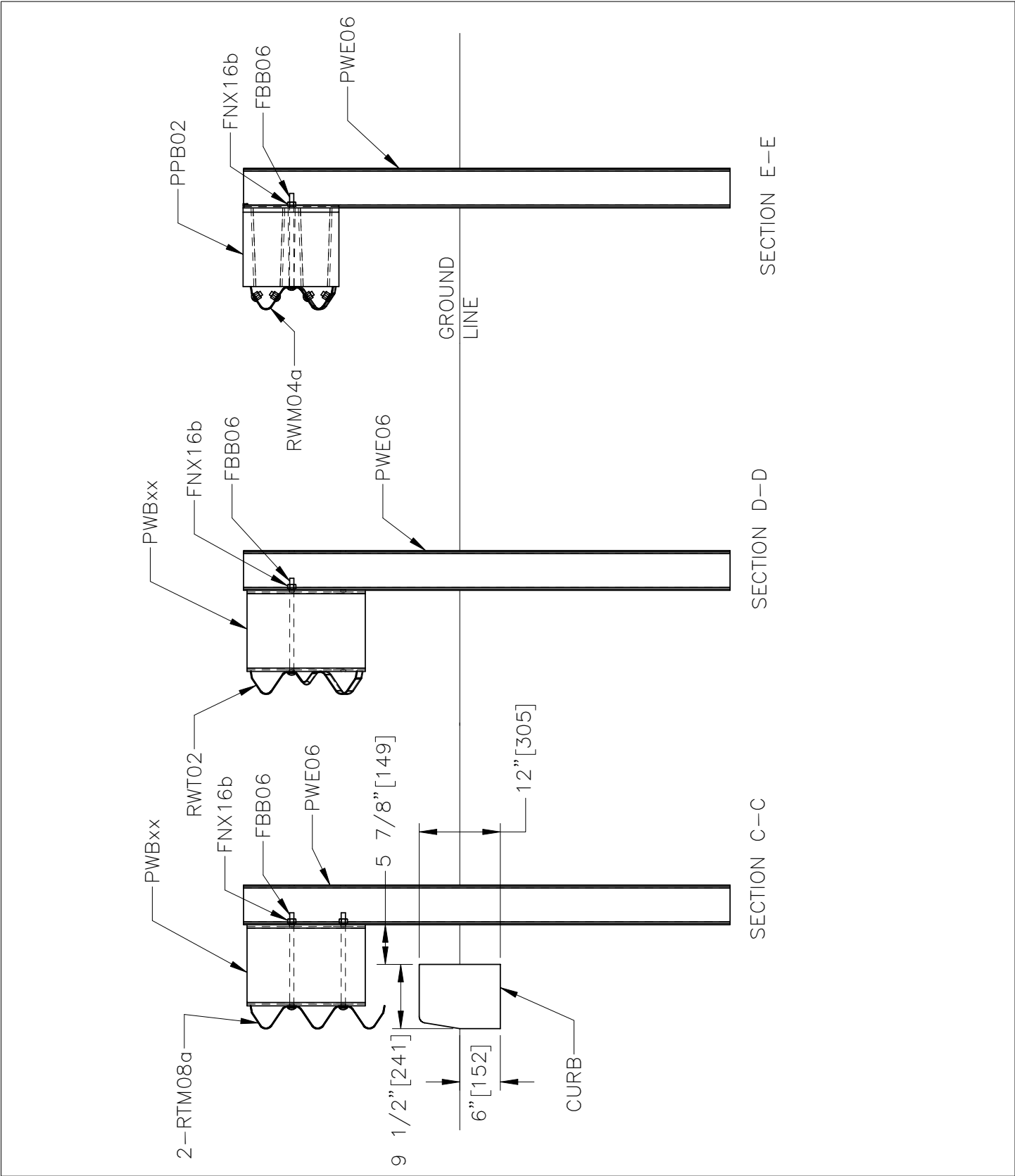
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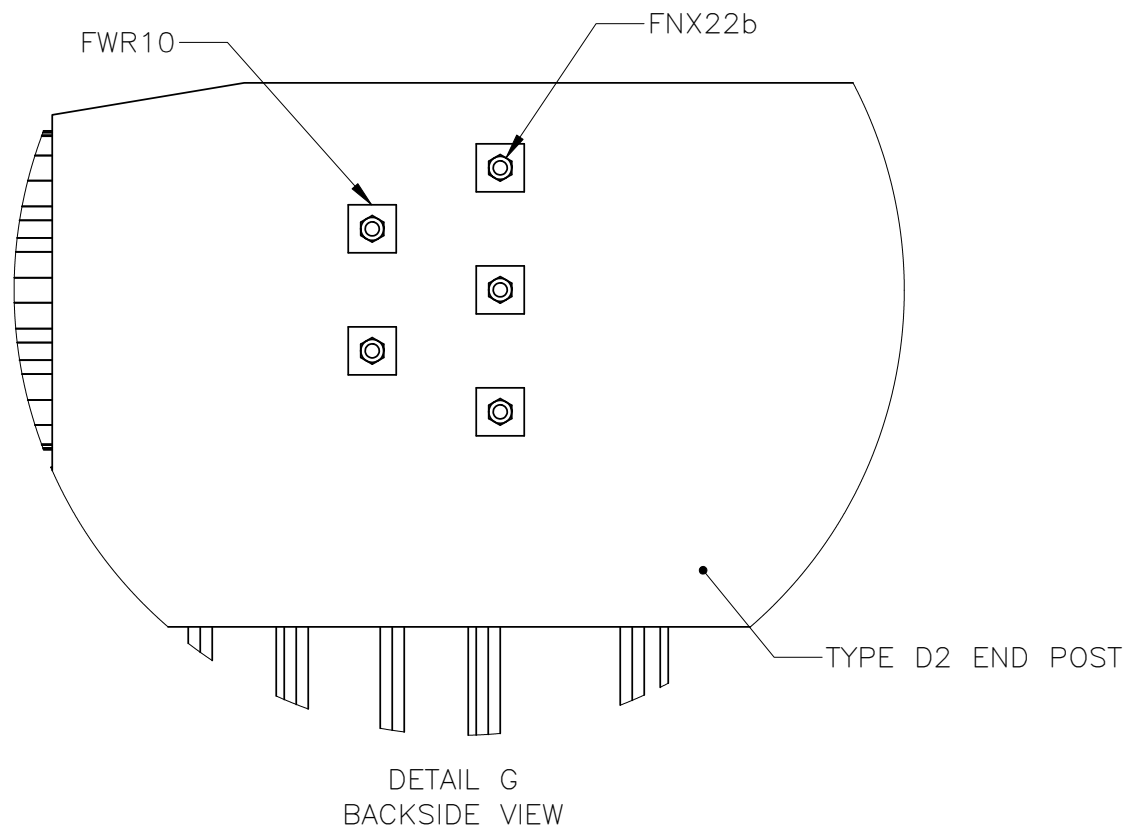
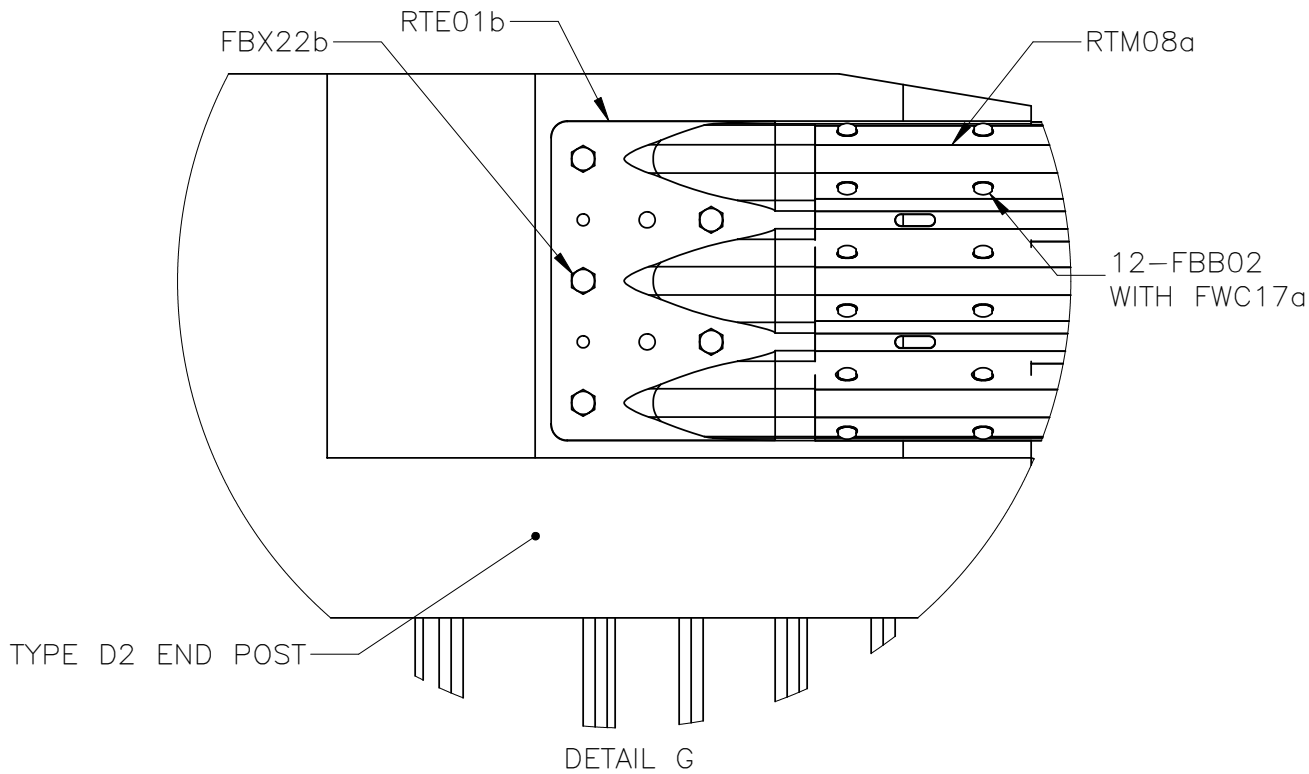


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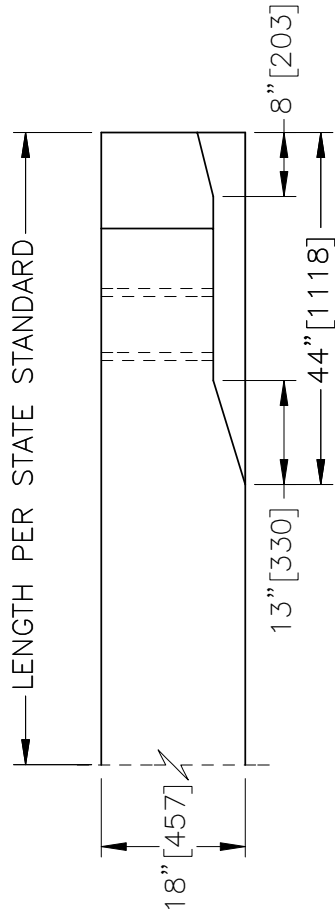
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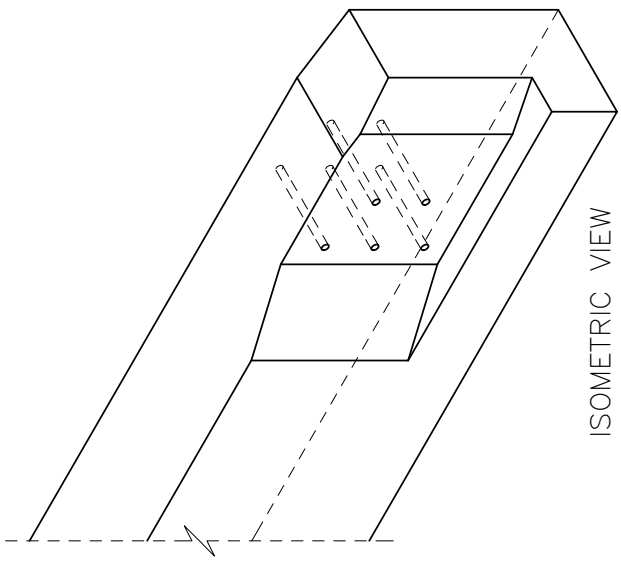
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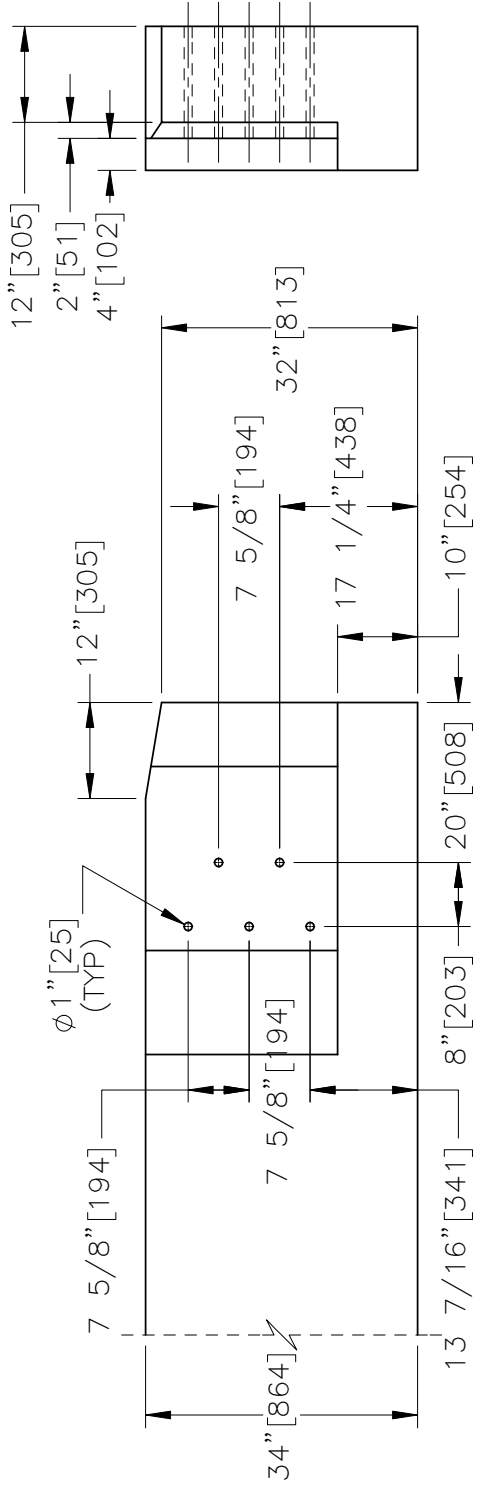
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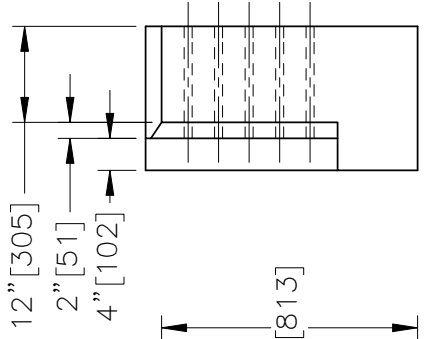
PLAN VIEW



ISOMETRIC VIEW



ELEVATION VIEW



PROFILE VIEW

TYPE D2 END POST

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NOTE: (1) TYPE D2 END POST REQUIRED LENGTH AND REINFORCEMENT AS PER STATE STANDARDS.