MAIN OFFICE

401 East Goetz Avenue,
Santa Ana, California 92707
Phone: (714) 540-8950
Fax: (714) 540-5415
Toll Free: (800) 854-8618

Bristolite® Daylighting Systems
harnessing sunlight for energy savings

Email: sales@bristolite.com
Visit us on the web at www.bristolite.com

TYPICAL INSTALLATION INSTRUCTIONS

Gladiator-3 non-canted and Gladiator-2 canted insulated structural Roof Curbs

Model Gladiator-3 is designed to be installed directly to the structural supports of your roof. However, it can also be installed on top of the metal roof deck. It is recommended for either modified bitumen built up or single ply membrane roofs. This makes it the most widely used type of pre-fabricated roof curb for conventional (non-pre engineered metal building) roof applications.

Model Gladiator-2 is designed for installation on wood decks.

Typical installation examples, calculations and roof curb details:

1. Attachment details when roof curb is directly attached to the structure. (fig. 1, 2, 3 & 4)
2. Gladiator-3 Roof Curb is installed directly to angle framing or bar joist (fig. 5 & 5A)
3. Gladiator-3 Roof Curb is installed on top of metal roof decking (fig. 6 & 6A)
4. Gladiator-2 installed on wood decking. (fig. 7)
5. Model Gladiator-3 typical construction details. (fig. 8)
6. Cantilevered roof curb calculations. (fig. 9)
7. Wind force calculations. (fig. 10)

NOTE: When installing roof curbs in between bar joists on top of metal decking weight loads must be considered. Deck may require support framing (option supplied by Bristolite Daylighting Systems). (fig. 11)

NOTE: In the event of local code requirements, seismic applications, and special loading conditions such as horizontal thrust produced by skylights, etc., please call Bristolite Daylighting Systems for additional recommendations.

Sample Installation for GLA-MB-1 Metal Building Roof Curb

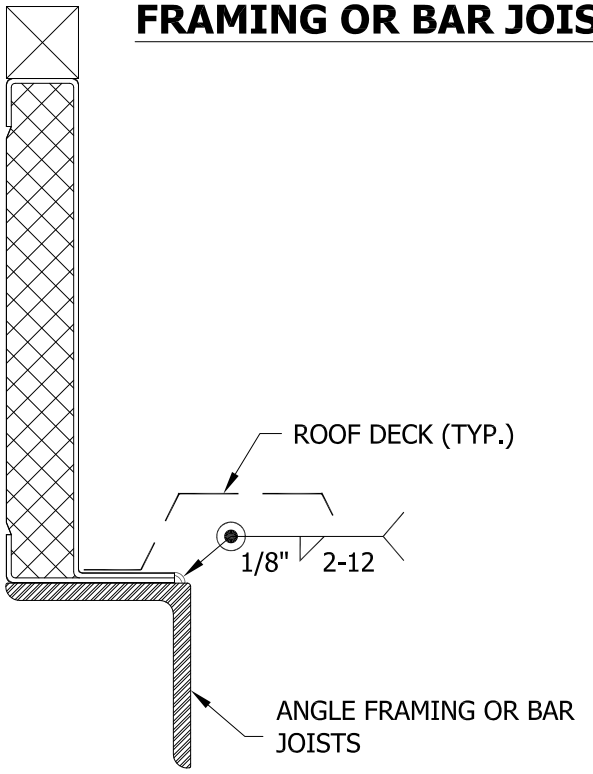
Model GLA-MB-1 is the most versatile metal building roof curb. Model GLA-MB-1 is a one-piece style supplied with loose rib caps. It can be installed over/over, under/over, and under/under the metal building roof panel.

1. Over/Over installation sample. (fig. 12)

Bristolite Daylighting Systems offers several styles of roof curbs for pre-engineered metal buildings. Please call with your requirements for the proper roof curb style and installation instructions.

FIGURE 1

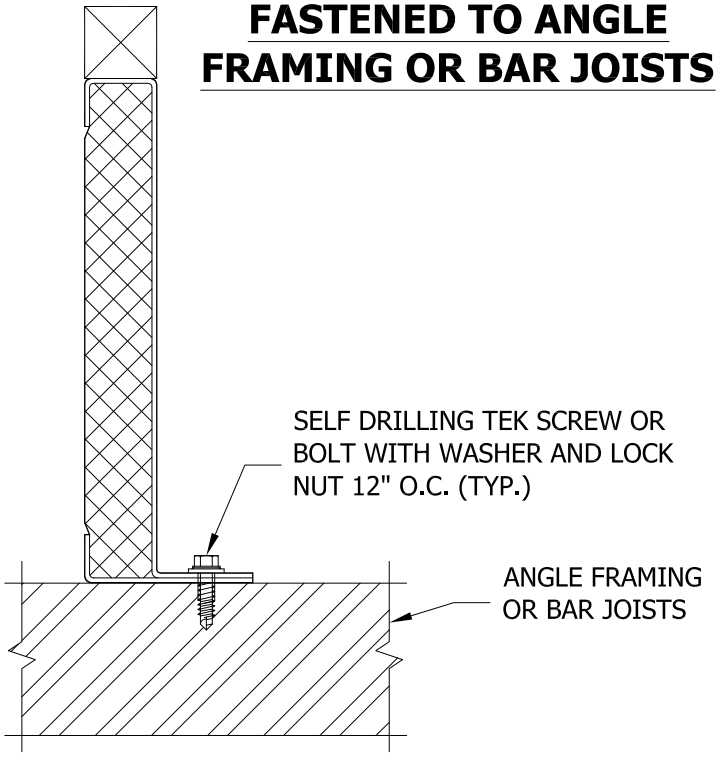
CURB WELDED TO ANGLE FRAMING OR BAR JOISTS



GLADIATOR-3 ROOF CURB SECTION

FIGURE 2

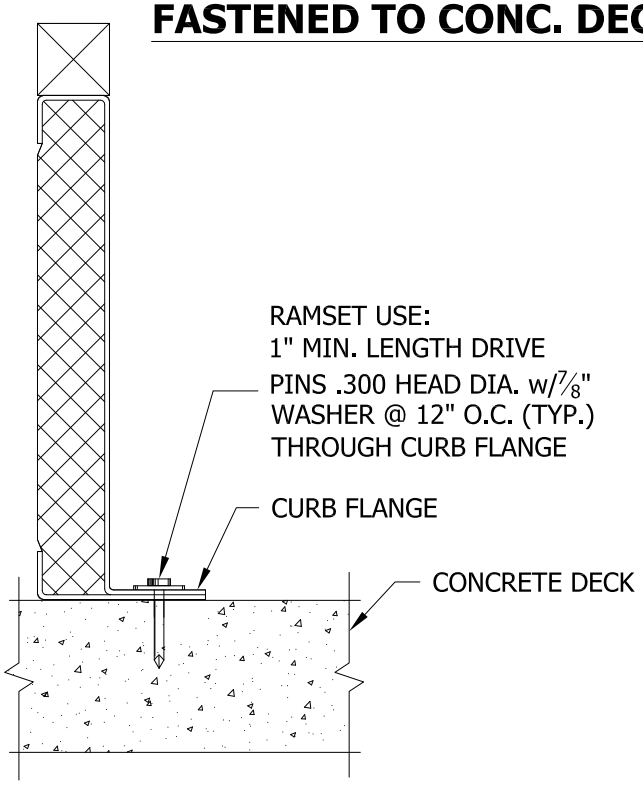
CURB MECHANICALLY FASTENED TO ANGLE FRAMING OR BAR JOISTS



GLADIATOR-3 ROOF CURB SECTION

FIGURE 3

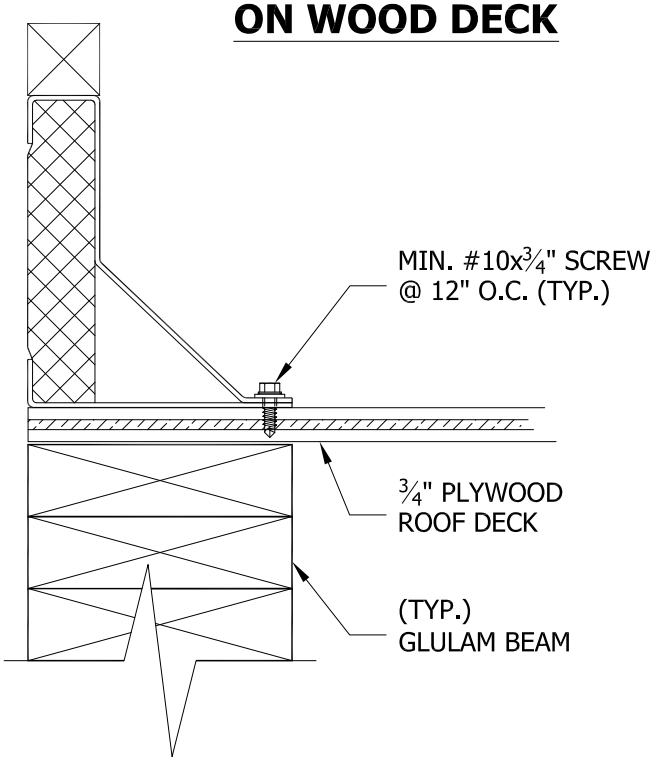
CURB MECHANICALLY FASTENED TO CONC. DECK



GLADIATOR-3 ROOF CURB SECTION

FIGURE 4

CURB INSTALLED ON WOOD DECK



GLADIATOR-2 ROOF CURB SECTION

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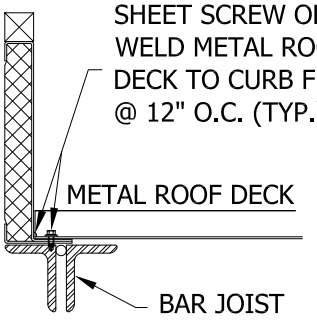
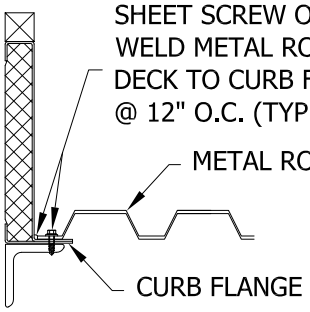
ROOF CURB TYPICAL ATTACHEMENT DETAILS - SECTION VIEWS

FIGURE 5

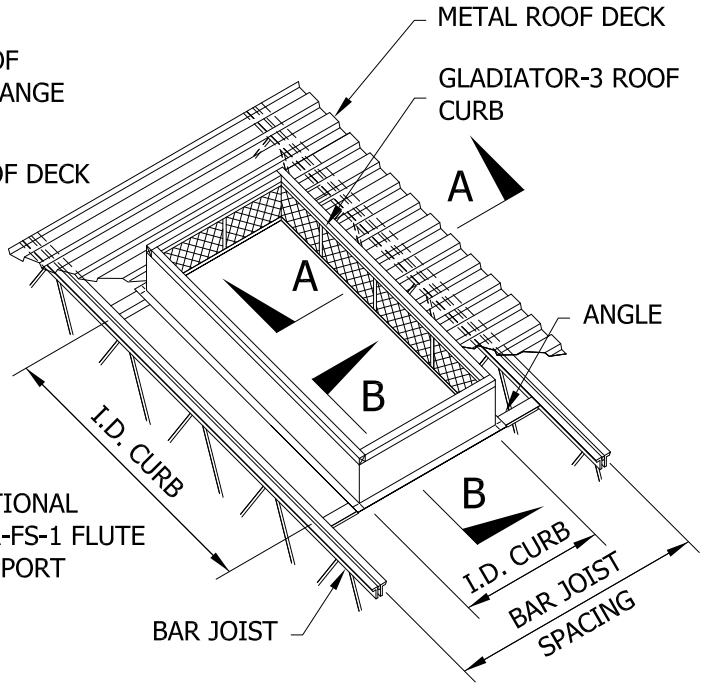
STRUCTURAL ROOF CURB INSTALLATION ON ANGLES BETWEEN BAR JOISTS

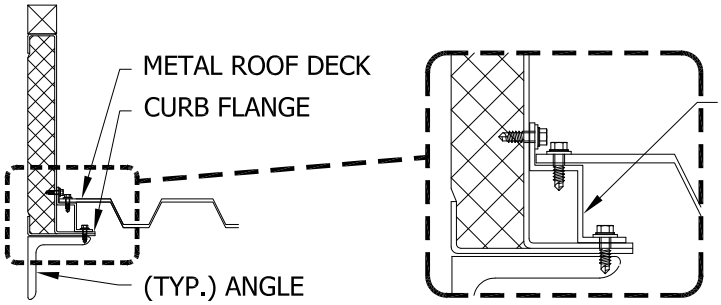


SECTION A-A



SECTION B-B



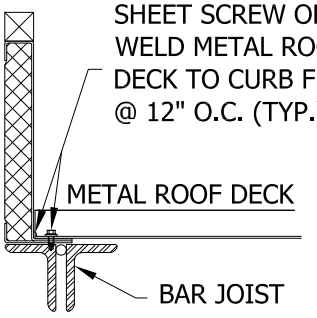


* OPTIONAL SECTION B-B

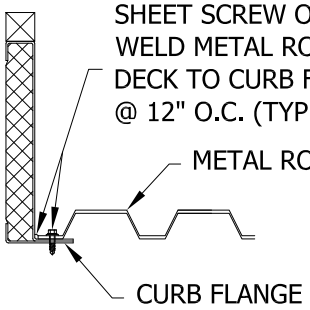
* ONLY 2 REINFORCING ANGLES ARE REQUIRED BETWEEN BAR JOISTS.

FIGURE 5A

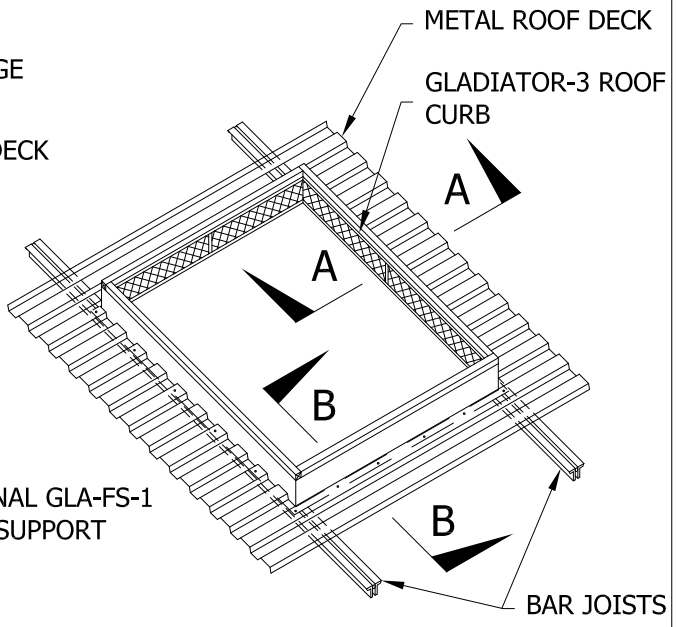
STRUCTURAL ROOF CURB INSTALLATION WHEN SPANNING BAR JOISTS

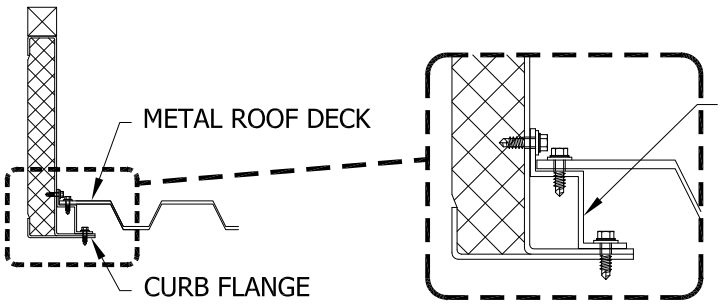


SECTION A-A



SECTION B-B





* OPTIONAL SECTION B-B

* NO REINFORCING ANGLES ARE REQUIRED WHEN ROOF CURB IS SPANNING BAR JOISTS

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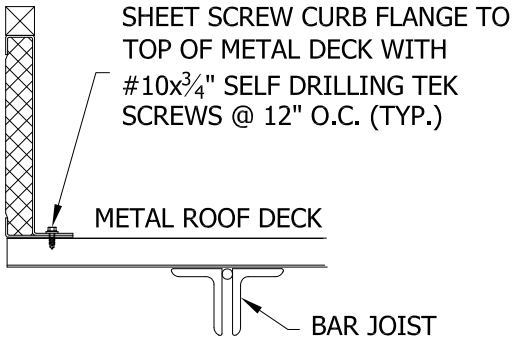
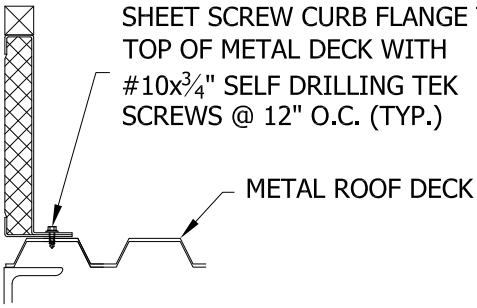
ROOF CURB TYPICAL ATTACHEMENT DETAILS - SECTION & ISOMETRIC VIEWS

FIGURE 6

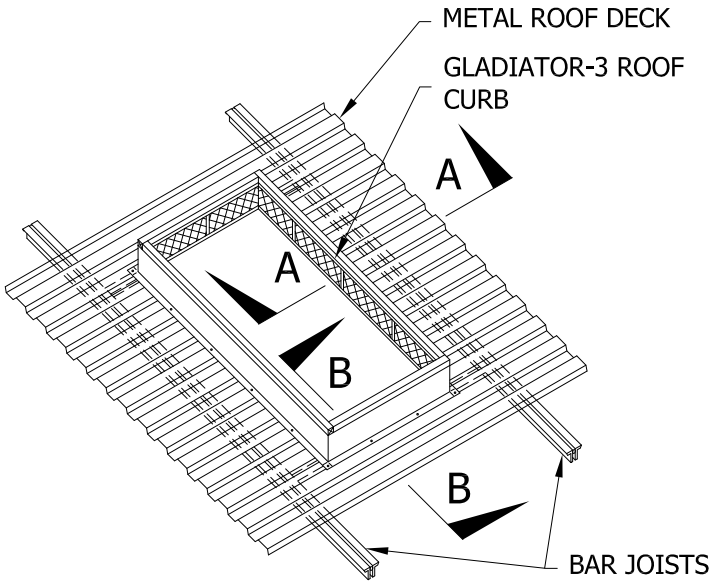
STRUCTURAL ROOF CURB INSTALLATION ON TOP OF METAL DECK WITH ANGLES BETWEEN BAR JOISTS



SECTION A-A



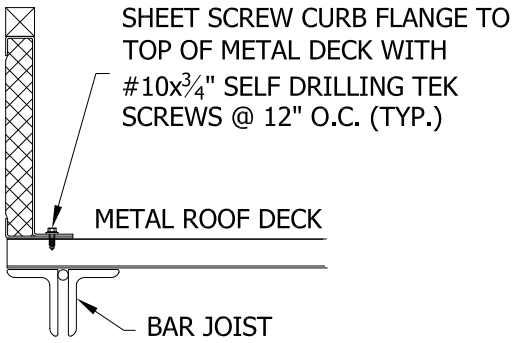
SECTION B-B



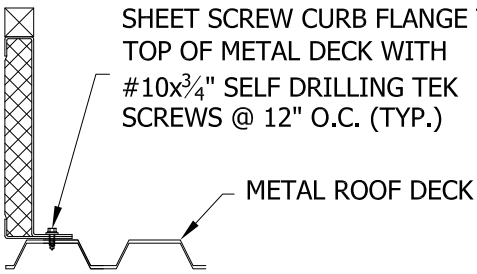
* ONLY 2 REINFORCING ANGLES ARE REQUIRED BETWEEN BAR JOISTS.

FIGURE 6A

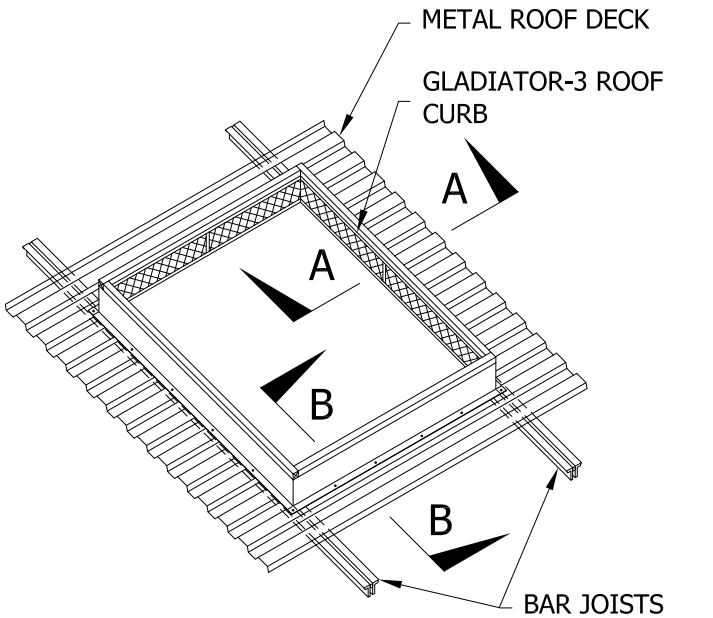
STRUCTURAL ROOF CURB INSTALLATION ON TOP OF METAL DECK WHEN SPANNING BAR JOISTS



SECTION A-A



SECTION B-B



*NO REINFORCING ANGLES ARE REQUIRED WHEN ROOF CURB IS SPANNING BAR JOISTS

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ROOF CURB TYPICAL ATTACHEMENT DETAILS - SECTION & ISOMETRIC VIEWS

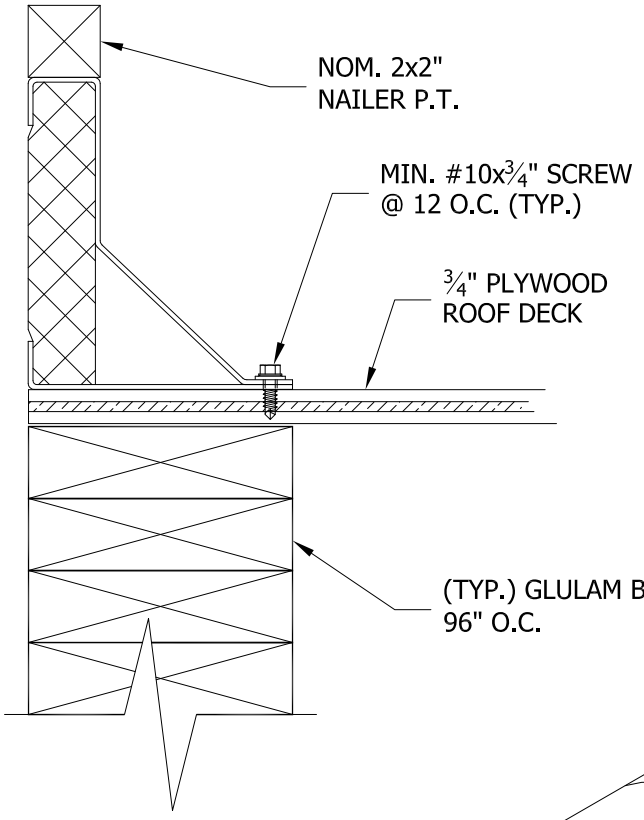
FIGURE 7

INSTALLATION INSTRUCTIONS FOR GLADIATOR-2 STRUCTURAL ROOF CURB

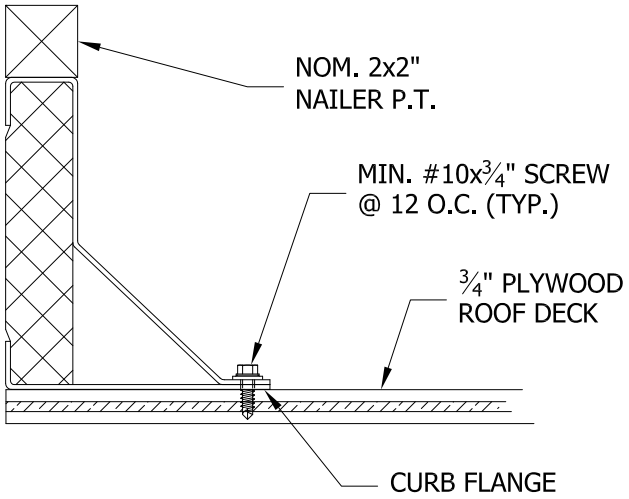
MODEL GLADIATOR-2 IS DESIGNED TO BE INSTALLED DIRECTLY ON TOP OF PLYWOOD ROOF DECK.

TO INSTALL AN GLADIATOR-2 DIRECTLY ONTO THE ROOF STRUCTURE, YOU MUST:

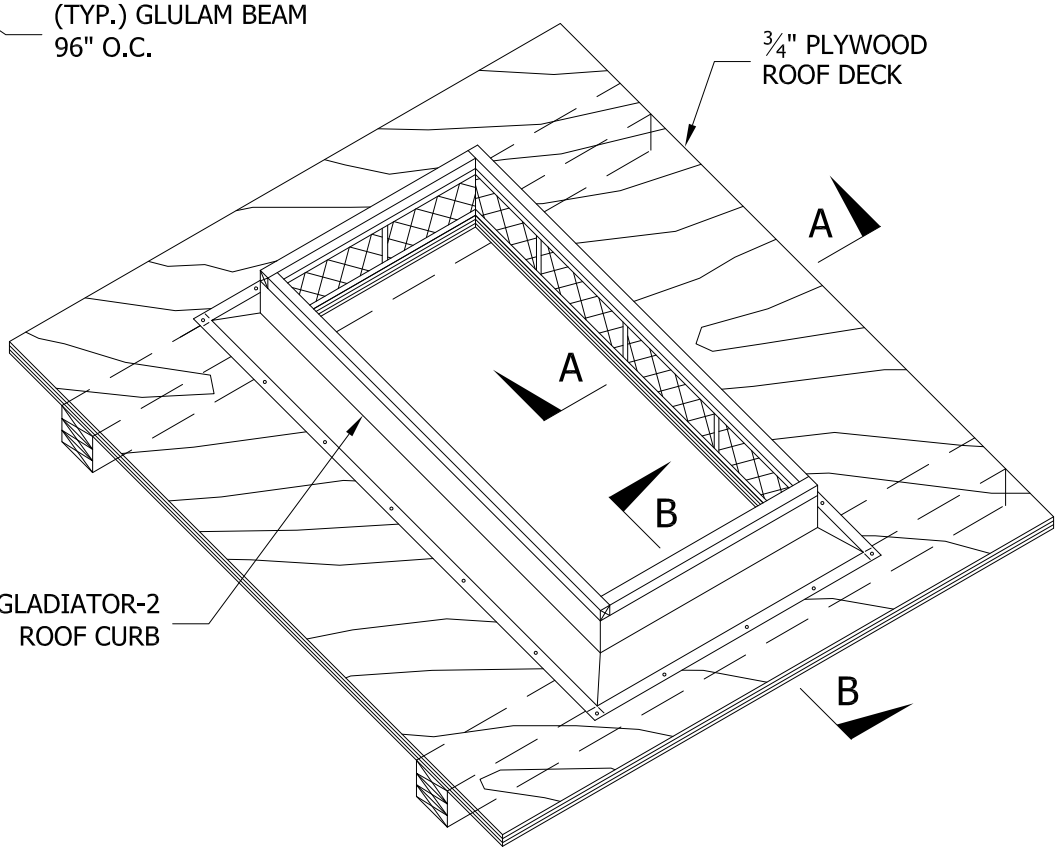
1. LOCATE CURB PER PLANS.
2. CURB MECHANICALLY FASTENED TO PLYWOOD ROOF DECK @ 12" O.C.



SECTION B-B



SECTION A-A



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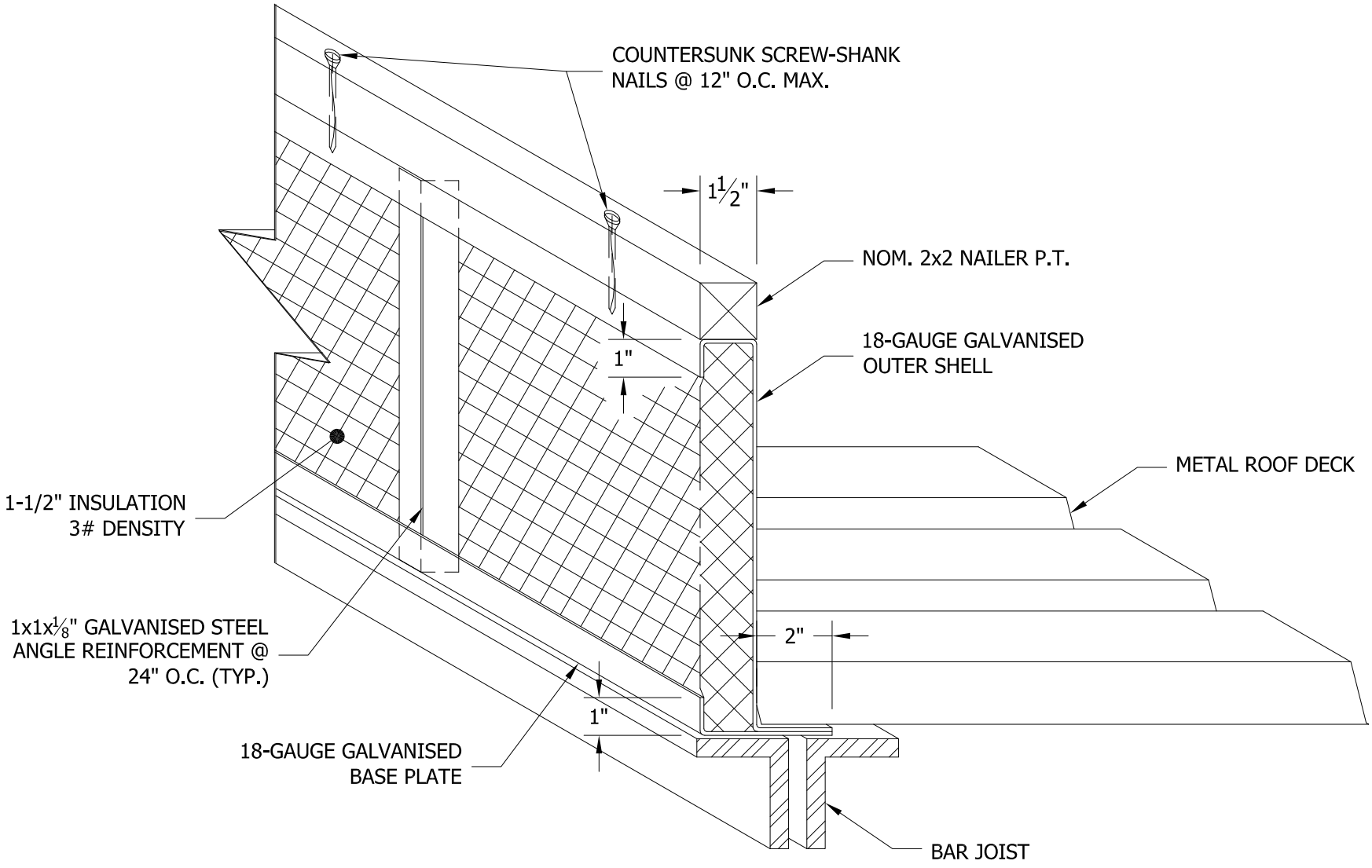
ROOF CURB TYPICAL ATTACHEMENT DETAILS - SECTION & ISOMETRIC VIEWS

FIGURE 8



STRUCTURAL ROOF CURB TYPICAL CONSTRUCTION DETAILS

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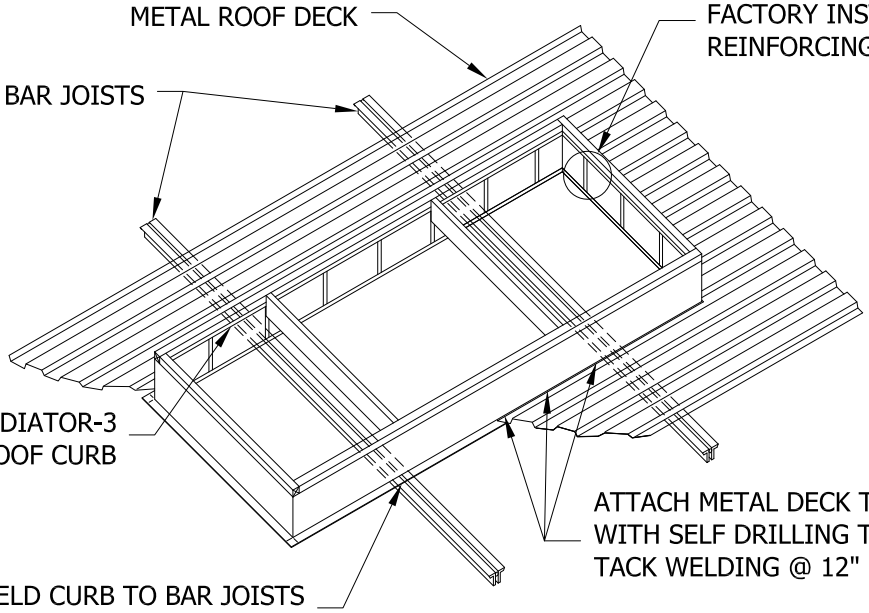
ROOF CURB TYPICAL ATTACHEMENT DETAILS - ISOMETRIC VIEW

FIGURE 9

CANTILEVER ROOF CURB CALCULATIONS
OVER MINIMUM OF TWO BAR JOISTS

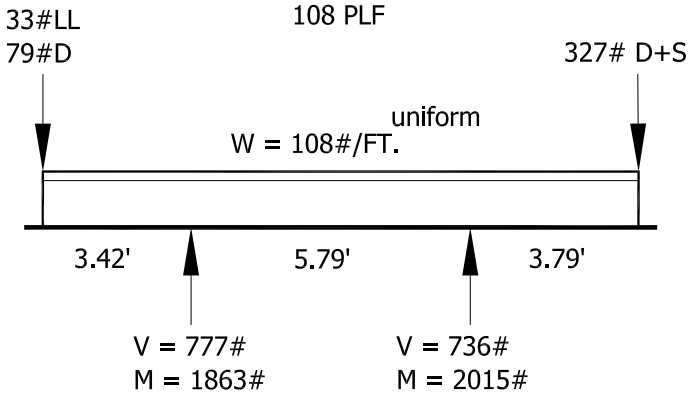
ROOF CURB DIMENSIONS: 80" x 156" WEIGHT: 2650#



$\frac{40.5'}{7}$ = 5' 9-1/2"

CURB LOAD 102 PLF
6 PLF
108 PLF

RTU WT. END CURB 1(10) = 10
CURB WT. 1(28) = 28
38 PLF



$R = \frac{38(6.67)}{2} = 126.7\#$

$P_C = 200\#$

$P_{TOT} = 327\#$

$M_A = 8258\#$

$V_A = 2753\#$

$\left(\frac{2015}{8258}\right)^2 + \left(\frac{736}{2753}\right)^2 = .06 + .07 = .13 < 1.0$ OK

OR $\left(\frac{2015}{9508}\right)^2 + \left(\frac{736}{2753}\right)^2 = .04 + .07 = .11 < 1.0$ OK

STITCH WELD BASE P_L 1/8 1-1/2@12 OR 1/8 1-1/2@12

BENNETT & PLESS, INC.
DATE 2-20-92

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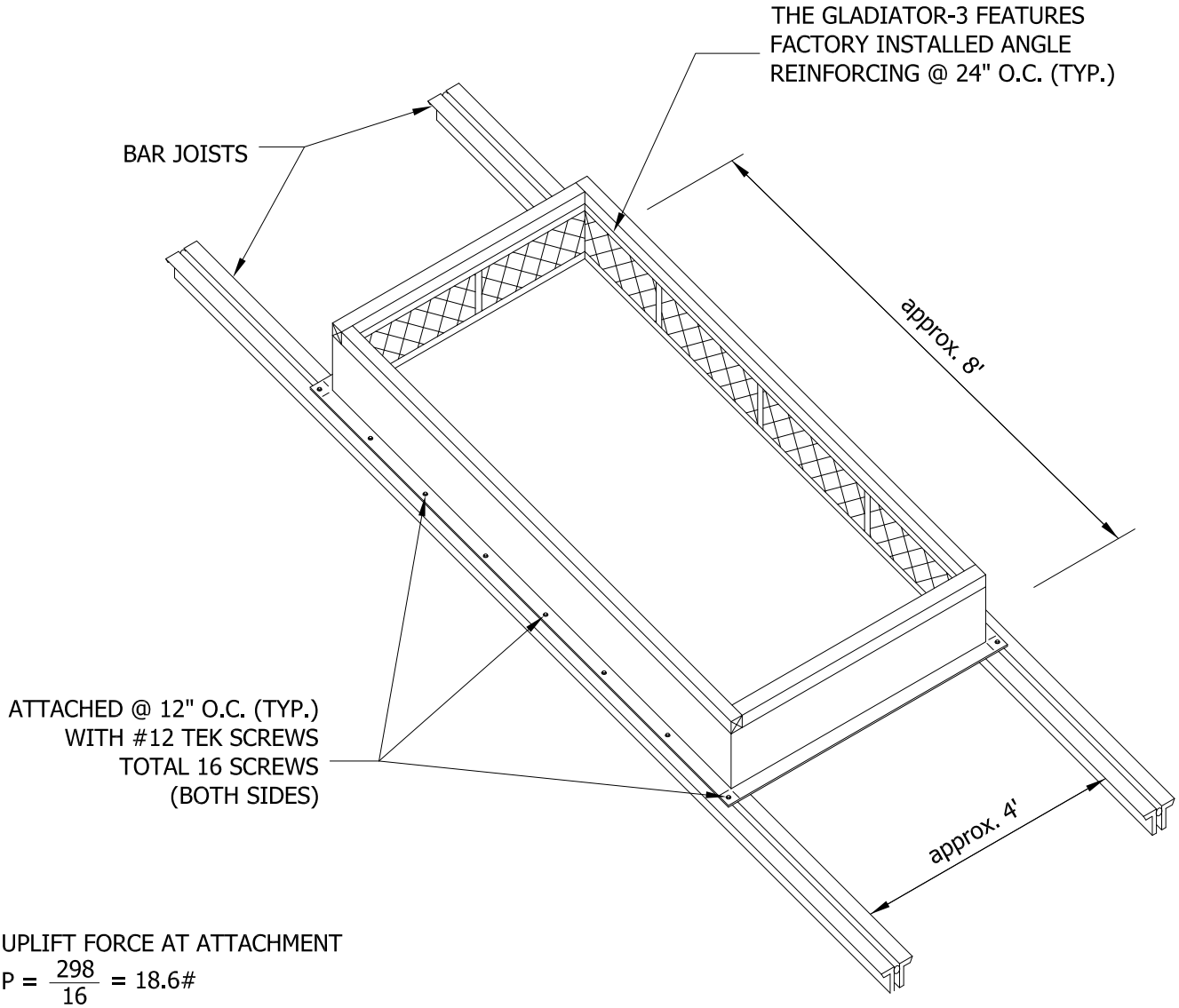
ROOF CURB CALCULATIONS

FIGURE 10

WIND FORCE CALCULATIONS

WIND FORCE 20 #/ф'
UPLIFT FORCE (.7)(20) = 14#/ф'
AREA = 4' X 8' = 32 SQ. FT.
UPLIFT LOAD TOTAL = (32SQ.FT.)(14#/SQ. FT.) = 448#
① WT OF UNIT 150#

TOTAL
UPLIFT = 298#



UPLIFT FORCE AT ATTACHMENT

$P = \frac{298}{16} = 18.6\#$

ATTACHED w/#12 TEK SCREWS

ALLOWABLE TENSION LOAD / SCREW = 325# > 18.6#

UNIT OK FOR UPLIFT

② SAME LOAD / SCREW FOR 5' X 6' UNIT

UNIT OK FOR UPLIFT

DATE 3-25-94

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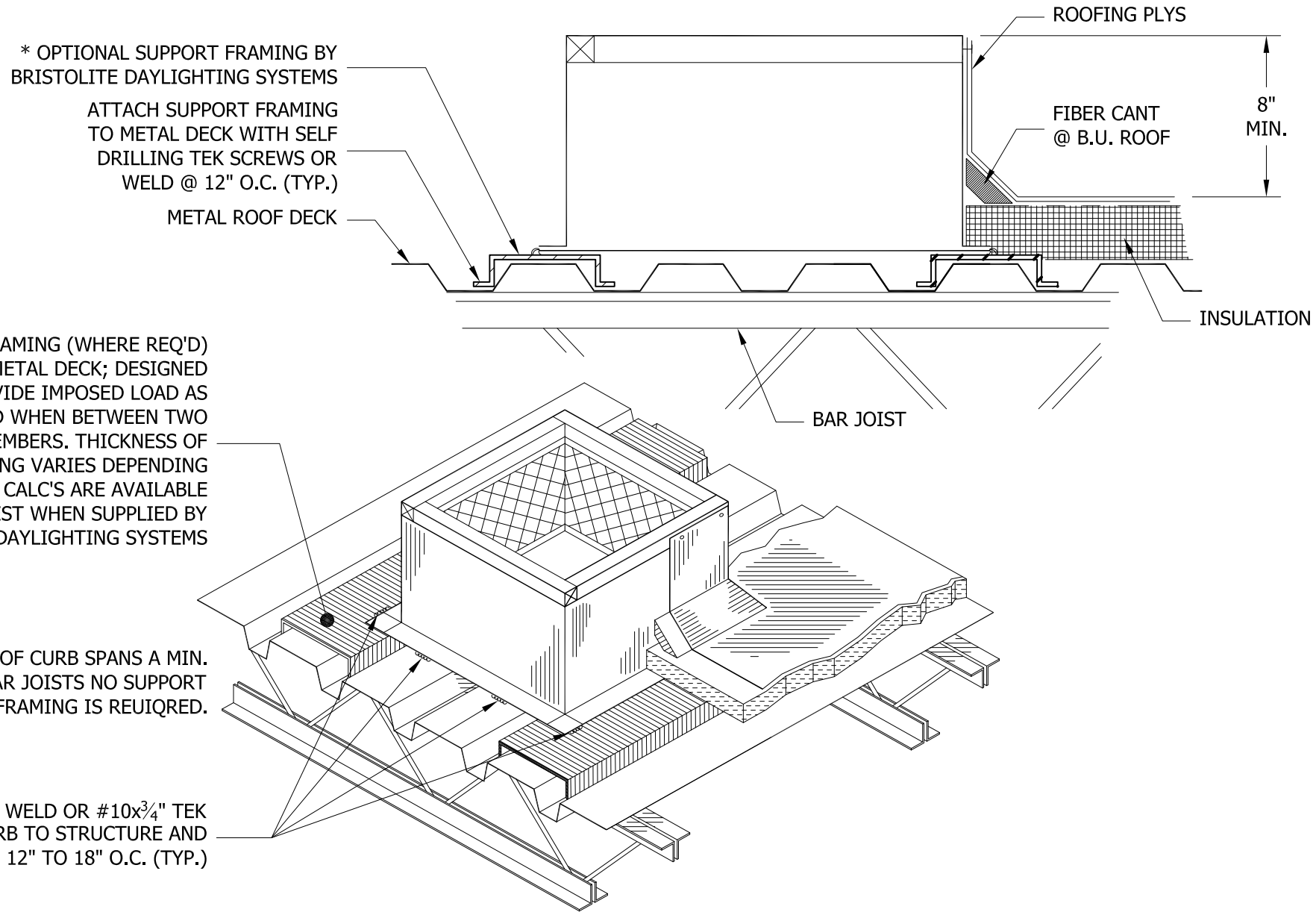
WIND FORCE CALCULATIONS

FIGURE 11



STRUCTURAL ROOF CURB INSTALLED ON TOP OF EXISTING OR NEW METAL DECK WITH SUPPORT FRAMING

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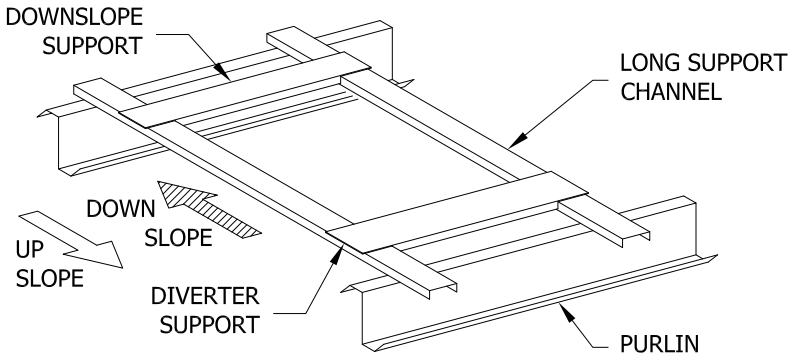
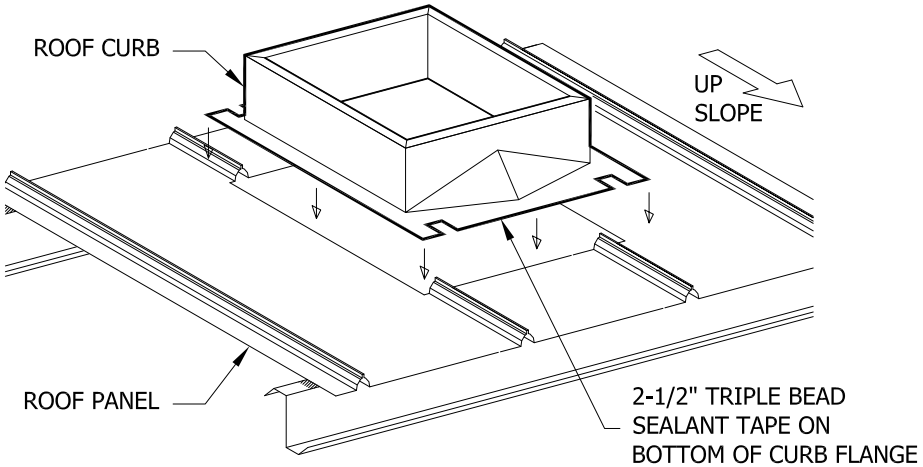
ROOF CURB TYPICAL ATTACHEMENT DETAILS - ELEVATION & ISOMETRIC VIEW

FIGURE 12

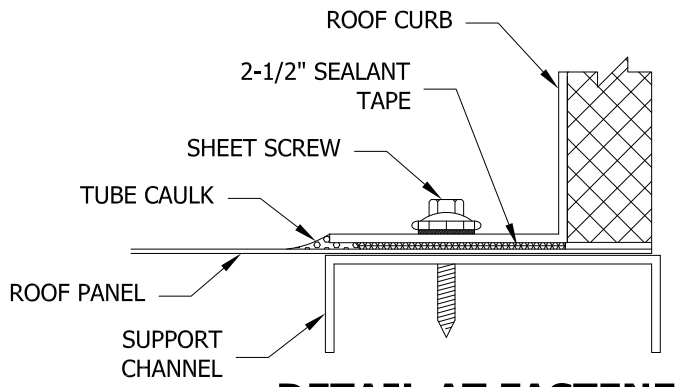
(1) PLACE AND POSITION LONG SUPPORTS 6" BEYOND PURLINS. ATTACH DOWNSLOPE AND DIVERTER SUPPORT TO LONG SUPPORT. MINIMUM OF 2 PARALLEL SUPPORTS REQUIRED. (DO NOT ATTACH LONG SUPPORTS TO STRUCTURE.)
(2) ATTACH ROOF PANELS



(3) MAKE ROOF CUT-OUT TO CURB OUTSIDE DIMENSIONS PLUS 6" ON RIDGE SIDE, & 1-1/2" ON EAVE SIDE.

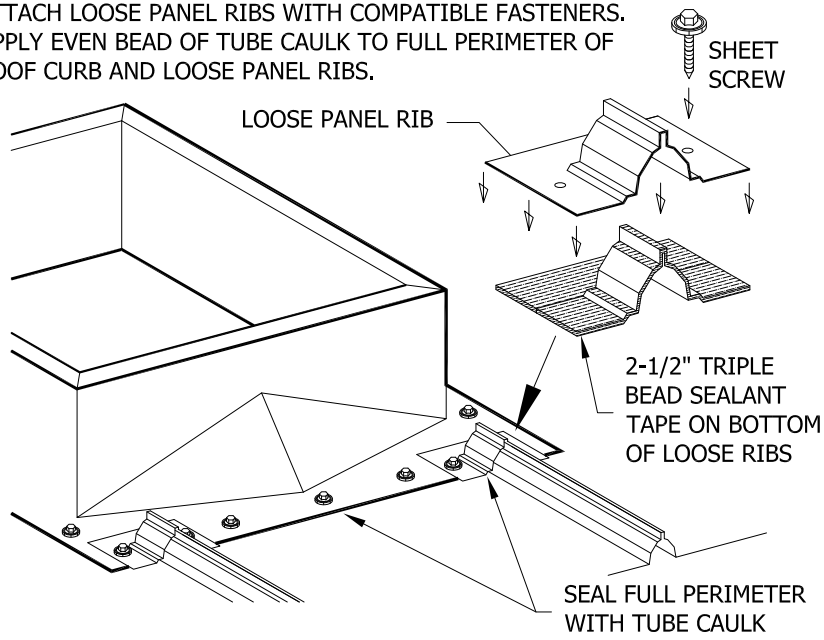


(4) NOTCH ROOF CURB TO ALLOW CURB TO SIT IN THE FLAT OF PANEL.
(5) TURN ROOF CURB UPSIDE DOWN THEN APPLY 2-1/2" TRIPLE BEAD SEALANT TAPE TO FULL PERIMETER OF ROOF CURB FLANGE.
(6) ATTACH CURB TO ROOF PANEL WITH SCREWS SPACED NO MORE THAN 4" O.C.



DETAIL AT FASTENER

(7) ATTACH LOOSE PANEL RIBS WITH COMPATIBLE FASTENERS. APPLY EVEN BEAD OF TUBE CAULK TO FULL PERIMETER OF ROOF CURB AND LOOSE PANEL RIBS.



GLA-MB-1 (ONE PIECE, WITH LOOSE RIBS) METAL BUILDING ROOF CURB INSTALLATION FOR OVER-OVER R & SSR ROOF PANELS ON NEW CONSTRUCTION

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ROOF CURB TYPICAL ATTACHEMENT DETAILS - SECTION & ISOMETRIC VIEWS