



Engineered Endeavors, Inc. ClearPath™ Panel Design Guidelines



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EETI ClearPath™ Panel Design Guidelines
Revision A December 2002

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1. Design Standards

Design meets all government and industry design standards, such as 2000 IBC, 1997 UBC, TIA/EIA-222F, and all other state and local building codes. For the design wind velocity see table below.

2. Panel Information

Standard dimensions: 2 ½" x 48" x 96"

Weight	88 lbs. approx.
Color	White (may be painted upon request)
Texture	Flat, Stucco, Brick
Thermal expansion	1/8" per 8' (may vary if painted in dark colors)

3. Panel Design Requirements

1). Maximum panel span and design wind velocity should be based on the table below.

Design Panel Span Table

Design wind speed, mph (fastest mile/3-second gust)	Max unsupported panel length, ft _a	Max deflection, in _b
80/100	8	3
100/120	8	5
120/140	6	7

a). Panels are attached to the rigid frame along the two sides. The values in the table show the length of unsupported panel sides. If panels are attached along all four sides, maximum panel span may increase.

b). Maximum panel length is based on panel deflection. Panel deflection is the result of rigorous tests, not by empirical calculations.

2). Panels should be attached to the rigid frame with 1/2" diameter bolts (minimum diameter) on 12" (maximum) between centers. Use 1/2" diameter fiberglass bolts or 1/2" diameter A307 bolts or stronger.

Note: All connections utilizing fiberglass bolts must be epoxy coated after installation per manufacturers specifications.

3). Minimum edge distance for all bolt holes is 2" for 1/2" diameter bolts. Use 3X the bolt diameter + 1/2" (minimum) for all other diameter bolts.

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- 4). Panel-to-panel connection along the unsupported sides is provided by a 1/4" to 3/8" Panel biscuit. A biscuit should be 3 1/4" wide (min) and installed over the entire length of a joint. For reference see typical detail drawings.
- 5). All holes should have plastic or aluminum inserts to prevent a panel from squeezing by a high tightened bolt. An insert should be at least 1/16" longer than the thickness of the panel.
- 6). Panels shall be painted on all faces including the edges for UV protection. Surfaces with stucco or brick texture need not be painted.

4. Support Member Specifications

- 1). All steel members should meet ASTM A36 or higher.
- 2). Fiberglass should meet the following design properties.

Mechanical Properties	ASTM	Units	Thickness		
			1/8"	3/16" – 1/4"	3/8" – 1"
Tensile stress, LW	D-638	psi	24,000	24,000	24,000
Tensile stress, CW	D-638	psi	7,500	10,000	10,000
Tensile modulus, LW	D-638	10 ⁶ psi	1.8	1.8	1.8
Tensile modulus, CW	D-638	10 ⁶ psi	1.0	1.0	1.0
Compres. stress, LW	D-695	psi	24,000	24,000	24,000
Compres. stress, CW	D-695	psi	16,500	16,500	16,500
Compres. modul., LW	D-695	10 ⁶ psi	1.8	1.8	1.8
Compres. modul., CW	D-695	10 ⁶ psi	1.0	1.0	1.0
Flexural. stress, LW	D-790	psi	35,000	35,000	30,000
Flexural. stress, CW	D-790	psi	15,000	15,000	18,000
Flexural modul., LW	D-790	10 ⁶ psi	1.8	2.0	2.0
Flexural modul., CW	D-790	10 ⁶ psi	1.0	1.1	1.4
Bearing stress, LW	D-953	psi	32,000	32,000	32,000
Density	D-792	lbs/in ³		0.060 - 0.068	
Coef. Of Thermal Expansion	D-696	10 ⁻⁶ in/in/°F		8.0	

For more information on the design properties contact the manufacturer of the support members.

For further information or any design questions contact Engineered Endeavors, Inc. toll free at (888) 270-3855.

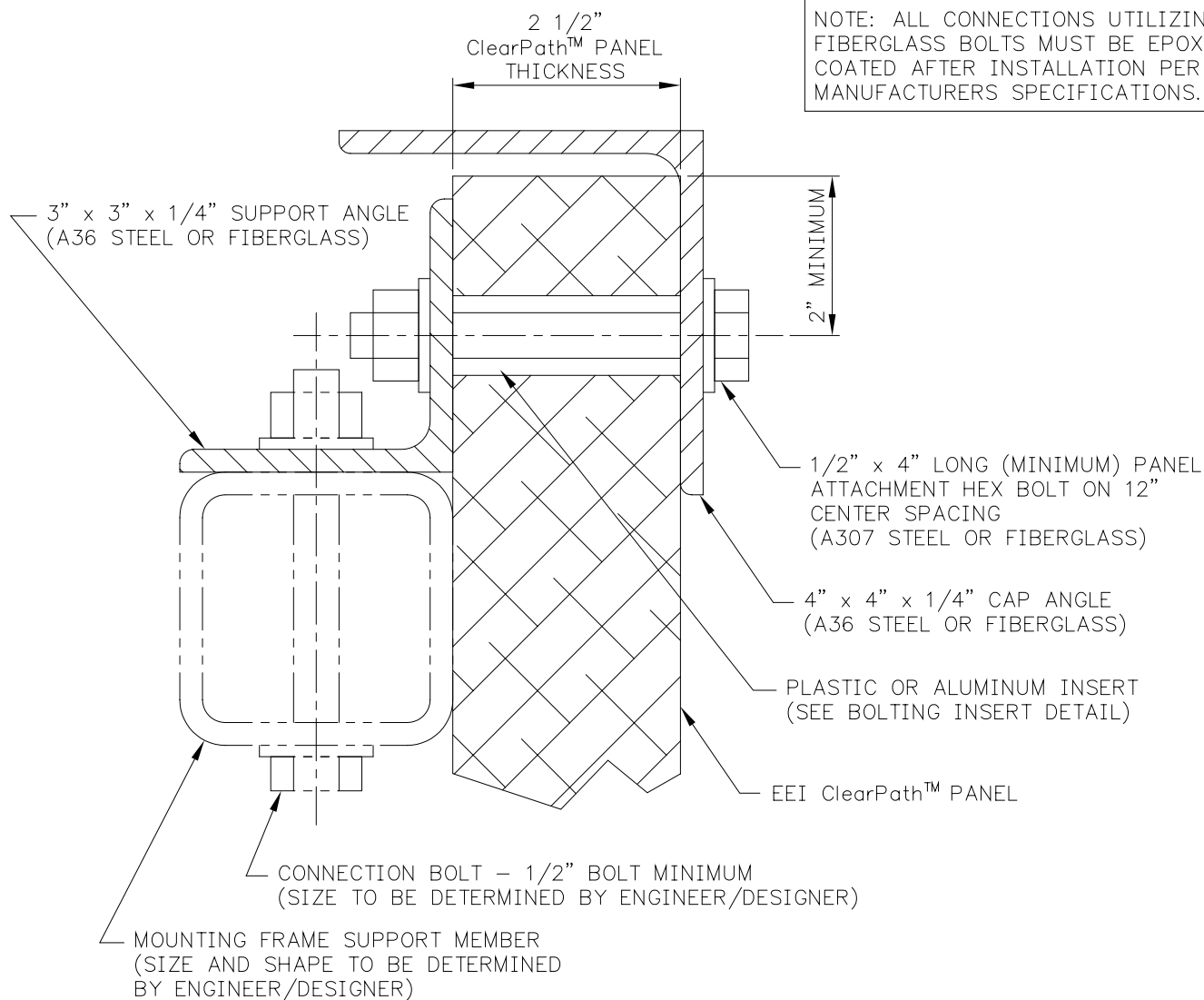
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PANEL TO SUPPORT FRAME DETAIL

NOTES:

- 1) REVIEW ALL EEI ClearPath™ PANEL DESIGN GUIDELINES PRIOR TO DESIGN.
- 2) ALL BOLTS SHOULD BE INSTALLED TO SNUG TIGHT CONDITION.



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The Experienced Point of View

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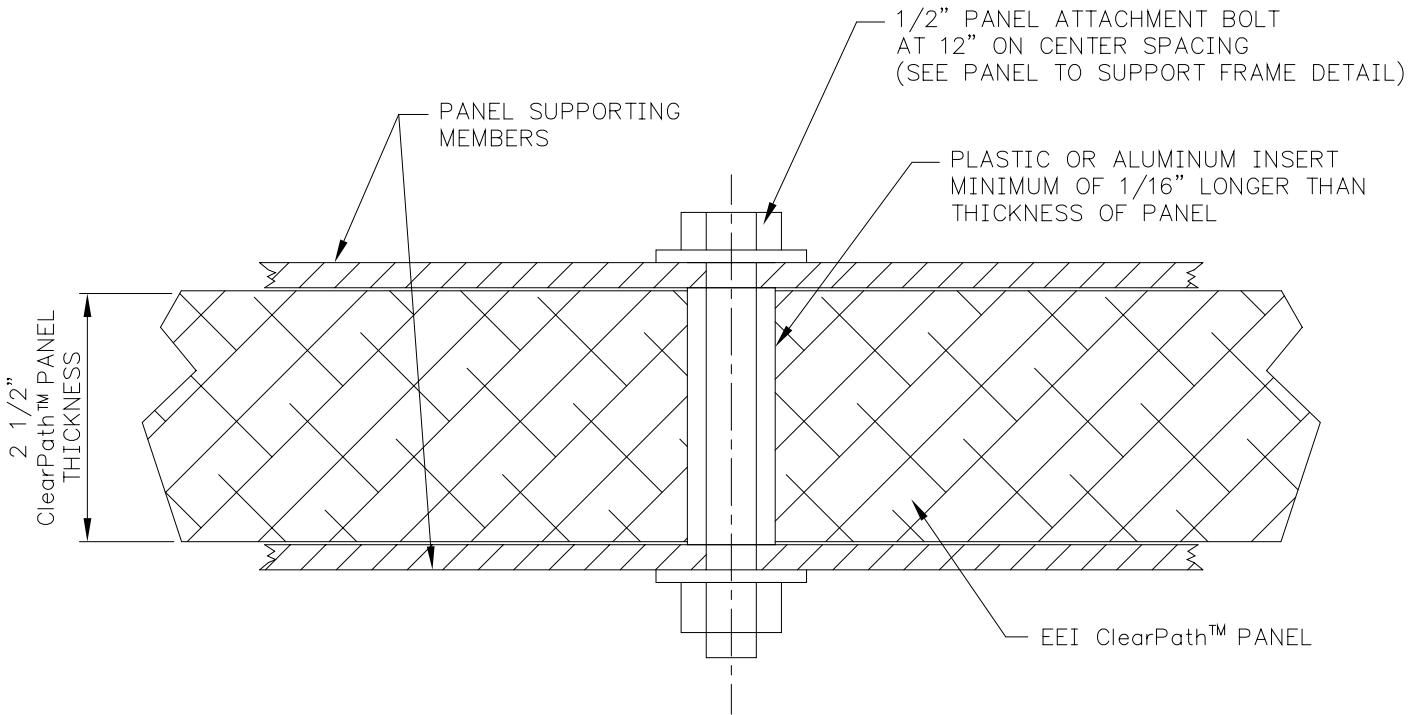
ClearPath™ Panel Connection Details
 Panel to Support Frame Detail

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DWN. K.B.
 DATE 12/11/02
 SCALE N.T.S.

CHK. _____
 DATE _____
 SH. 1 OF 1

SECTION: 5A
 DWG. NUMBER: CP01



BOLTING INSERT DETAIL

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ClearPath™ Panel Connection Details
Bolting Insert Detail

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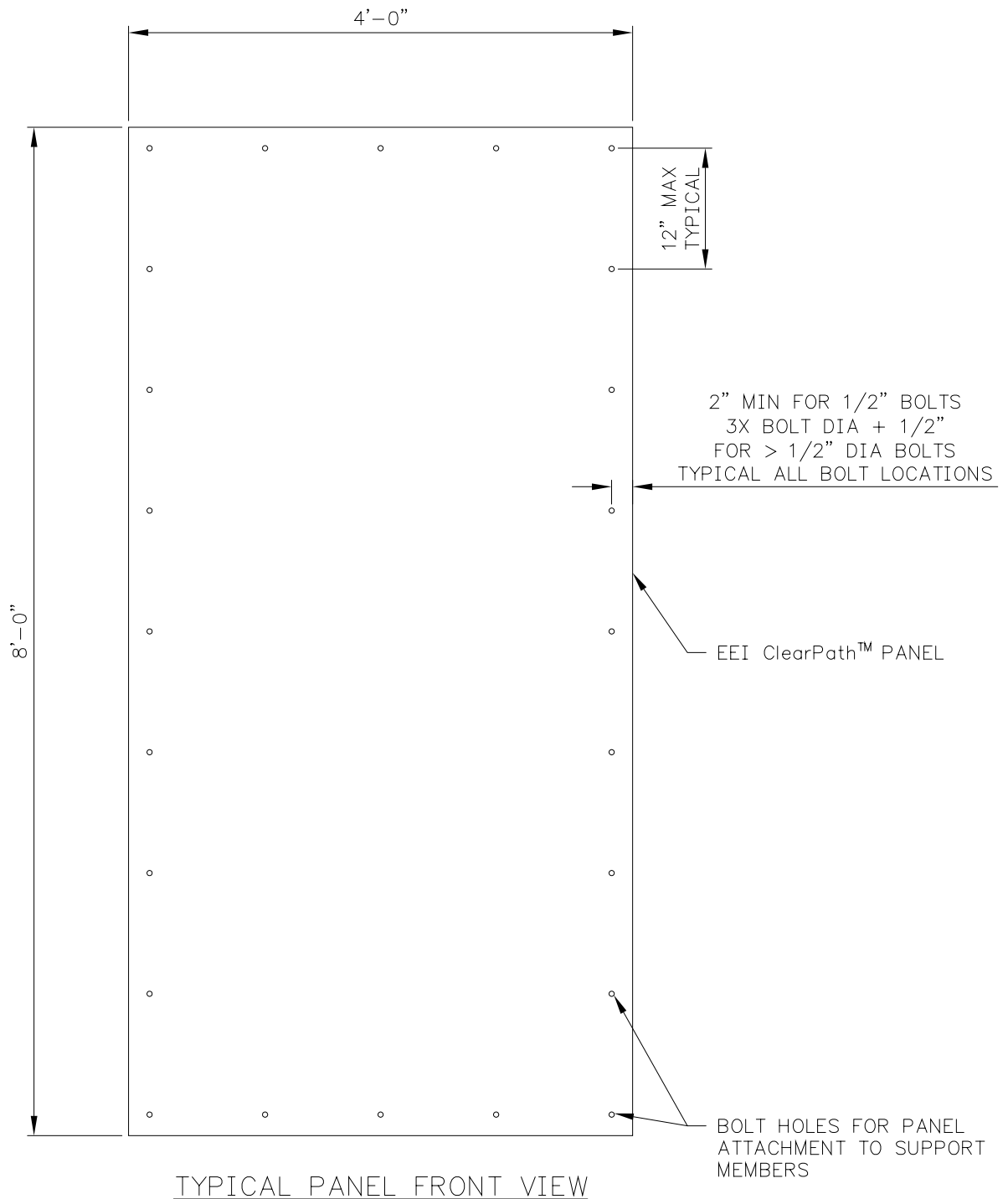
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SH. 1 OF 1

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NOTES:

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ClearPath™ Panel Connection Details
Typical Panel Front View

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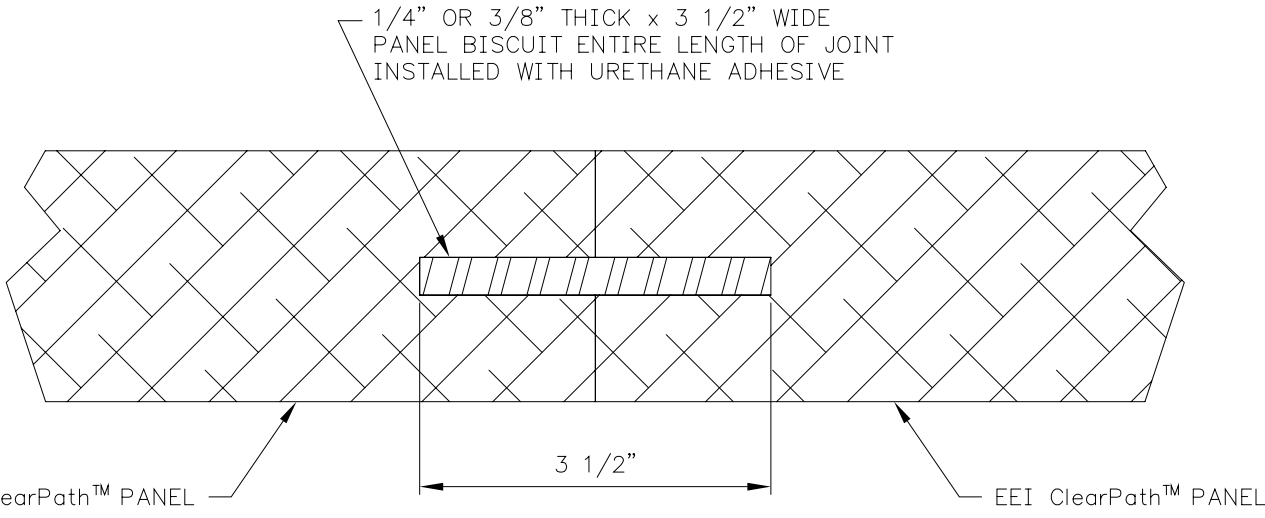
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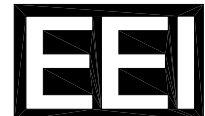
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PANEL TO PANEL SPLICE DETAIL
(NON-STRUCTURAL JOINT)

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ClearPath™ Panel Connection Details
Panel to Panel Splice Detail

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