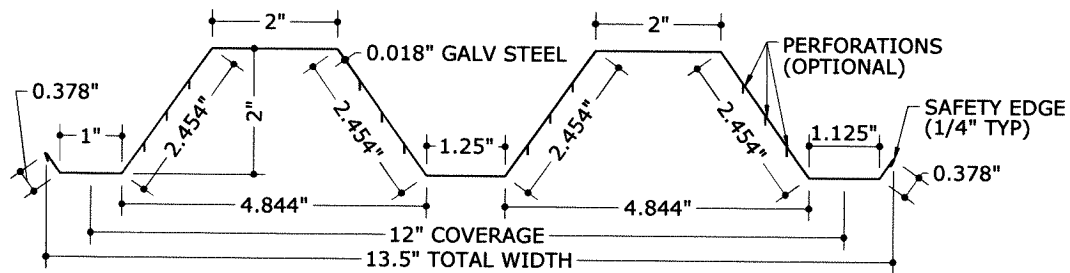


# "SAFETY EDGE" & POLYCARB STORM PANELS

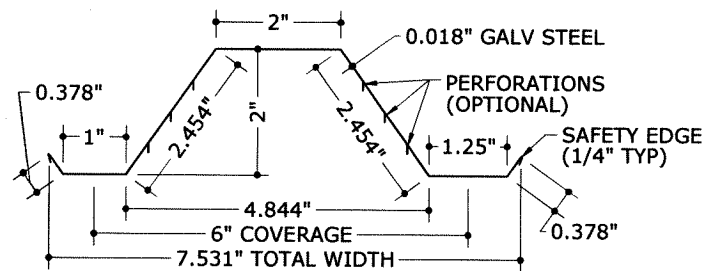
28ga (0.018") STEEL & 0.100" POLYCARB



**1a STEEL STORM PANEL PROFILE**

4" = 1'-0"

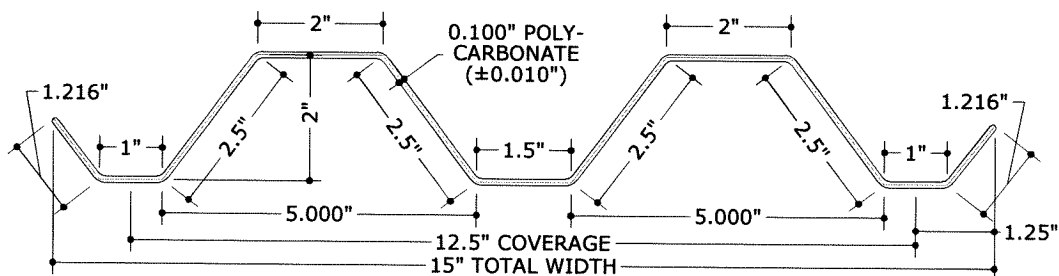
SECTION



**1b STEEL HALF-PANEL PROFILE**

4" = 1'-0"

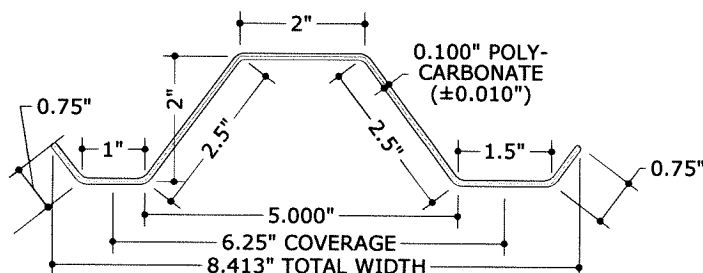
SECTION



**1c POLYCARB STORM PANEL PROFILE**

4" = 1'-0"

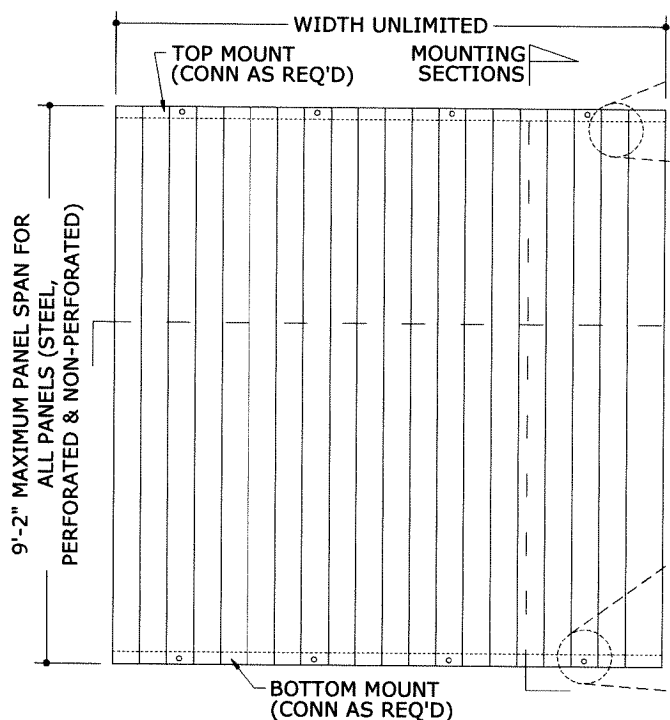
SECTION



**1d POLYCARB HALF-PANEL PROFILE**

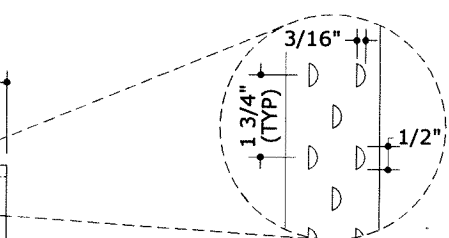
4" = 1'-0"

SECTION



**1 TYPICAL ELEVATION**

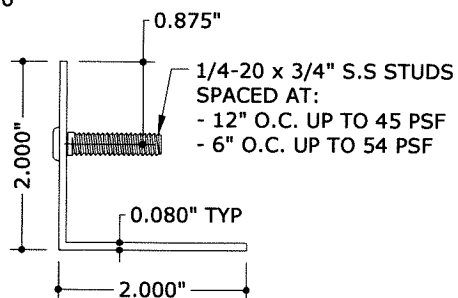
1 N.T.S.



**2 OPTIONAL PERFORATIONS**

3" = 1'-0"

ELEV

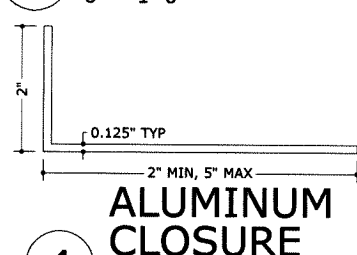


**3 STUDDED ANGLE**

6" = 1'-0"

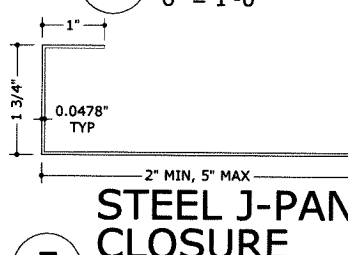
**KEYHOLE WASHER**

6" = 1'-0"



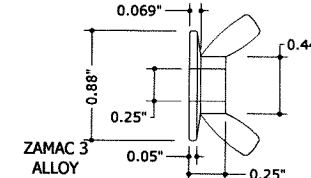
**4 ALUMINUM CLOSURE**

4" = 1'-0"



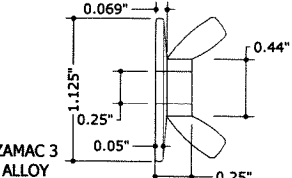
**5 STEEL J-PAN CLOSURE**

4" = 1'-0"



**6 WASHED WING NUT**

NTS

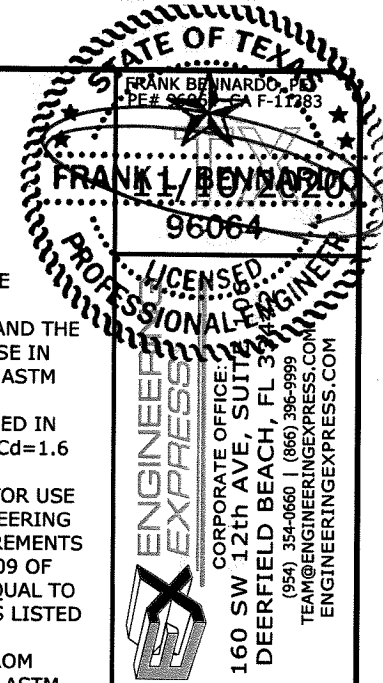


**7 WIDE BASE WASHED WING NUT**

NTS

## GENERAL NOTES:

- THIS SYSTEM HAS BEEN TESTED AND EVALUATED AS A LARGE MISSILE IMPACT PROTECTIVE SYSTEM IN ACCORDANCE WITH THE REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE (2018) AND THE INTERNATIONAL BUILDING CODE (IRC) CURRENT EDITION, FOR USE IN ACCORDANCE WITH THE TEXAS DEPARTMENT OF INSURANCE PER ASTM STANDARDS E330, E1886, & E1996.
- NO 33-1/3% INCREASE IN ALLOWABLE STRESS HAS BEEN USED IN THE DESIGN OF THIS PRODUCT. WIND LOAD DURATION FACTOR  $C_d=1.6$  HAS BEEN USED FOR WOOD ANCHOR DESIGN.
- POSITIVE AND NEGATIVE DESIGN PRESSURES CALCULATED FOR USE WITH THIS SYSTEM SHALL BE DETERMINED PER SEPARATE ENGINEERING IN ACCORDANCE WITH THE GOVERNING CODE. PRESSURE REQUIREMENTS AS DETERMINED IN ACCORDANCE WITH ASCE 7 AND CHAPTER 1609 OF THE INTERNATIONAL BUILDING CODE SHALL BE LESS THAN OR EQUAL TO THE POSITIVE OR NEGATIVE DESIGN PRESSURE CAPACITY VALUES LISTED HEREIN FOR ANY ASSEMBLY AS SHOWN.
- THIS SYSTEM HAS BEEN DESIGNED WITH NO SEPARATION FROM GLAZING REQUIRED FOR WIND ZONES 1-3 IN ACCORDANCE WITH ASTM E1996. IT IS ACCEPTABLE BY CODE UNLESS OPTIONAL CRITERIA IS INDEPENDENTLY ADOPTED BY THE AUTHORITY HAVING JURISDICTION.
- DESIGN PRESSURES NOTED HEREIN ARE BASED ON MAXIMUM TESTED PRESSURES DIVIDED BY A 1.5 SAFETY FACTOR.
- THE SYSTEM DETAILED HEREIN IS GENERIC AND DOES NOT PROVIDE INFORMATION FOR A SPECIFIC SITE. IF SITE CONDITIONS DEVIATE FROM THE CONDITIONS DETAILED HEREIN, A LICENSED ENGINEER OR REGISTERED ARCHITECT SHALL PREPARE SITE SPECIFIC DOCUMENTS TO BE USED IN CONJUNCTION WITH THIS DOCUMENT.
- THE ADEQUACY OF THE EXISTING STRUCTURE TO WITHSTAND SUPERIMPOSED LOADS IS OUTSIDE THE SCOPE OF THIS CERTIFICATION AND SHALL BE VERIFIED BY OTHERS.
- CLEAR POLYCARBONATE PANELS SHALL BE ALTERNATED WITH 0.018" (MIN) GALV STEEL PANELS SUCH THAT NO TWO POLYCARBONATE PANELS ARE ADJACENT TO EACH OTHER.
- NO. 3 KEYHOLE WASHER REQUIRED ONLY WHEN  $\frac{7}{8}$ "  $\phi$  WASHERED WING NUT NO. 6 IS USED. WHEN LARGE WASHERED WING NUT NO. 7 IS USED, THE NO. 3 KEYHOLE WASHER IS NOT REQUIRED.
- ALL GALV STEEL STORM PANELS SHALL HAVE MIN GALVANIZED THICKNESS  $t=0.018$ " CONFORMING TO ASTM A653, STRUCTURAL QUALITY GRADE 40, WITH G60 GALVANIZED COATING AND MIN  $F_y=44.58$  KSI.
- CLEAR POLYCARBONATE STORM PANELS WITH 12.5" COVERAGE SHALL BE MFD BY TRANSPARENT PROTECTION SYSTEMS, INC., AND THOSE WITH 6.25" COVERAGE SHALL BE MANUFACTURED BY TOWN & COUNTRY INDUSTRIES, INC. ALL POLYCARB PANELS SHALL BE EXTRUDED WITH THICKNESS  $t=0.100$ " ( $\pm 0.010$ ") AND SHALL BE MANUFACTURED FROM 100% SYNTHETIC THERMOPLASTIC POLYMER RESIN (UV STABILIZED). TYPICAL TENSILE STRENGTH  $F_y=8.908$  KSI, FLEXURAL STRENGTH  $F_{by}=12.90$  KSI, & FLEXURAL MODULUS IS 328.7 KSI.
- ALL EXTRUSIONS SHALL BE 6063-T6 ALUMINUM ALLOY, UNLESS NOTED OTHERWISE.
- PANELS SHALL BE PERMANENTLY LABELED WITH A MINIMUM OF ONE LABEL PER PANEL AS FOLLOWS:  
TOWN & COUNTRY INDUSTRIES  
FT. LAUDERDALE, FL  
ASTM E1886, E1996 & E330 9 LB MISSILE LEVEL D  
PRODUCT APPROVAL NUMBER
- STORM PANELS HAVE BEEN DESIGNED AND TESTED TO THE MAXIMUM SPANS AND LOADS SHOWN ON THESE DRAWINGS. REFERENCE CONSTRUCTION TESTING CORPORATION (CTC OF MIAMI, FL) TEST REPORTS #04-004, #04-005, & #04-006.
- TOP & BOTTOM DETAILS SHOWN MAY BE INTERCHANGED AS FIELD CONDITIONS DICTATE. PANELS MAY BE MOUNTED HORIZONTALLY WHERE APPLICABLE.
- ALL BOLTS & WASHERS SHALL BE ZINC COATED STEEL, GALVANIZED STEEL OR STAINLESS STEEL WITH A MINIMUM TENSILE YIELD STRENGTH OF 33 KSI.



**Town & Country**  
INDUSTRIES  
Wholesale Aluminum and Building Products  
A Division of ABC Supply Co., Inc.  
400 WEST MCNAB ROAD  
FT. LAUDERDALE, FL 33309

DRWN	CHKD	DATE
CL	FLB	9/22/05
RKB	CSL	12/30/08
KL	FLB	12/15/11
RWN	CSL	3/20/15
RWN	FLB	8/17/17
CB	RWN	6/17/20

REMARKS:  
2017 FBC  
2010 FBC (05-TCM-001)  
2014 FBC  
2018 IBC UPDATE

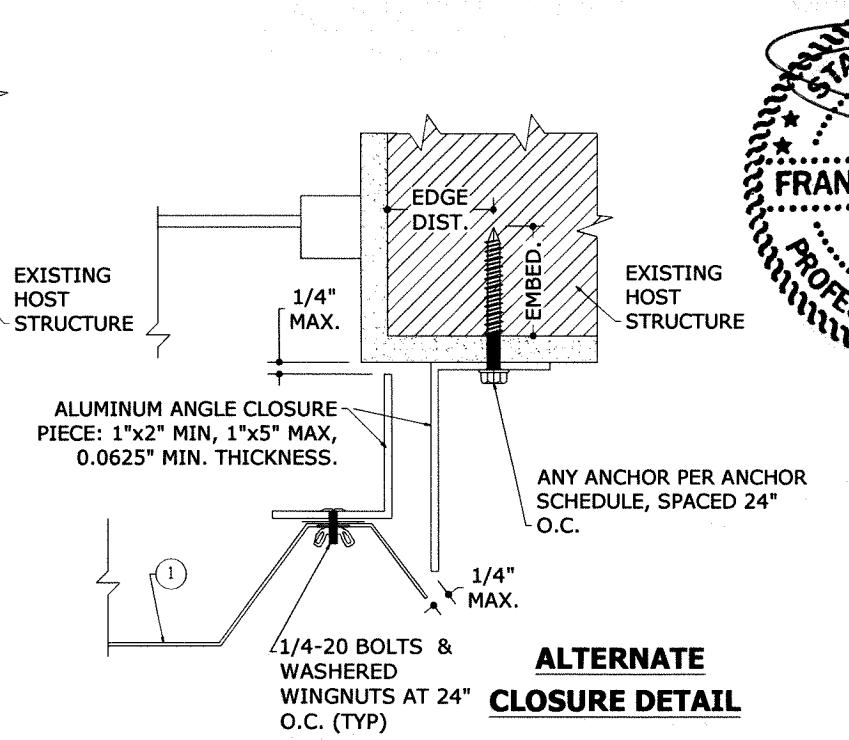
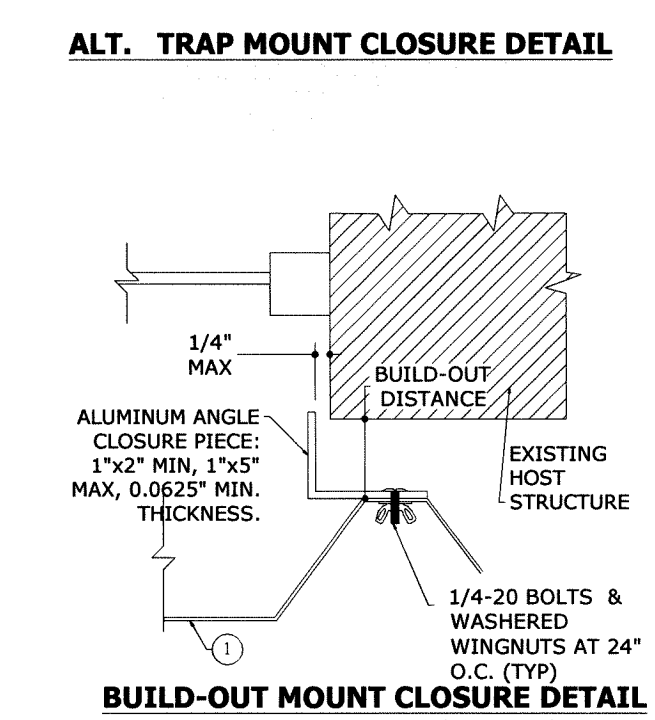
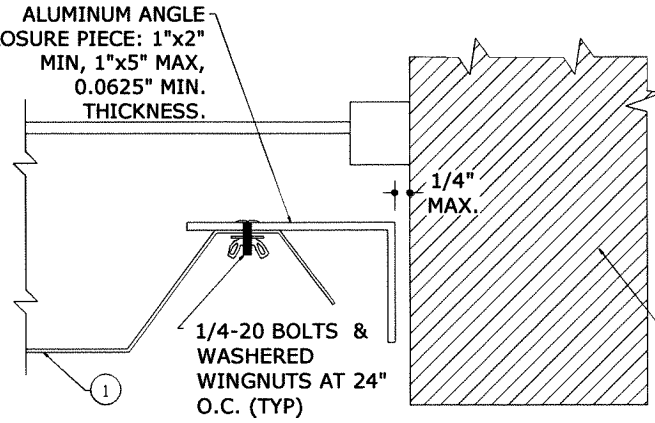
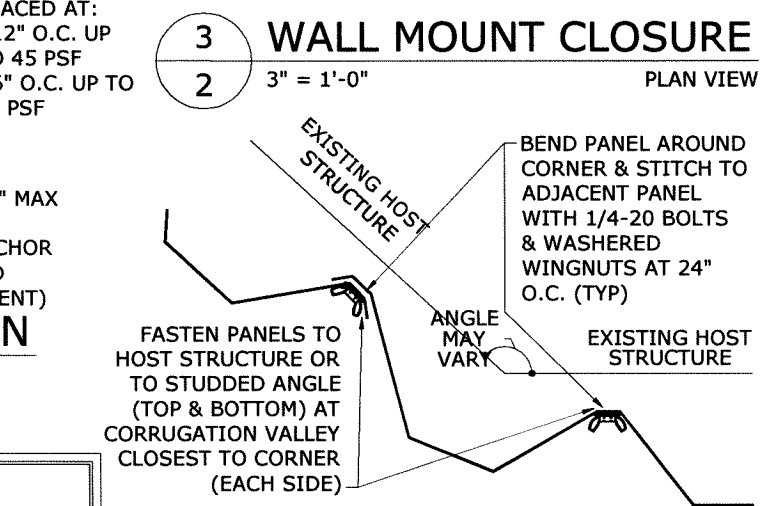
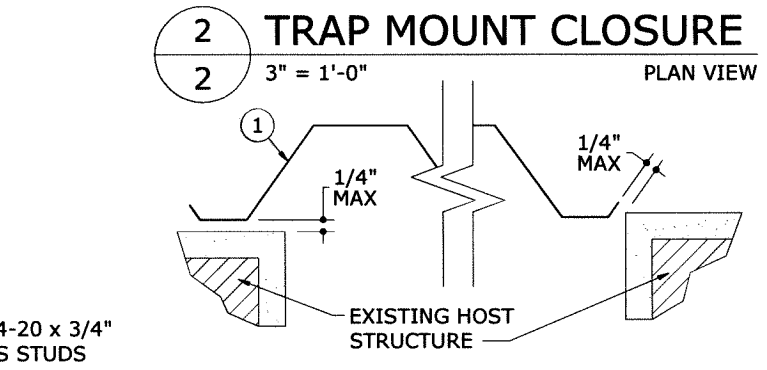
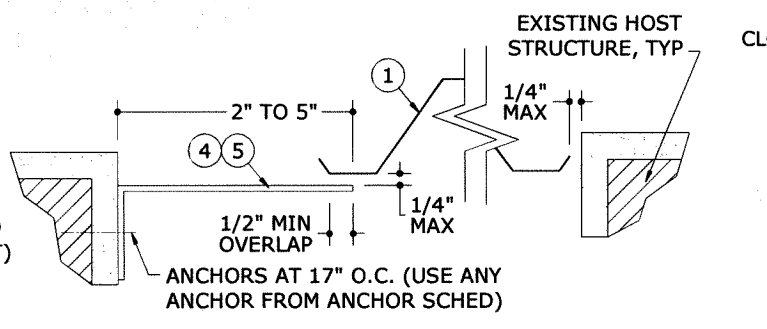
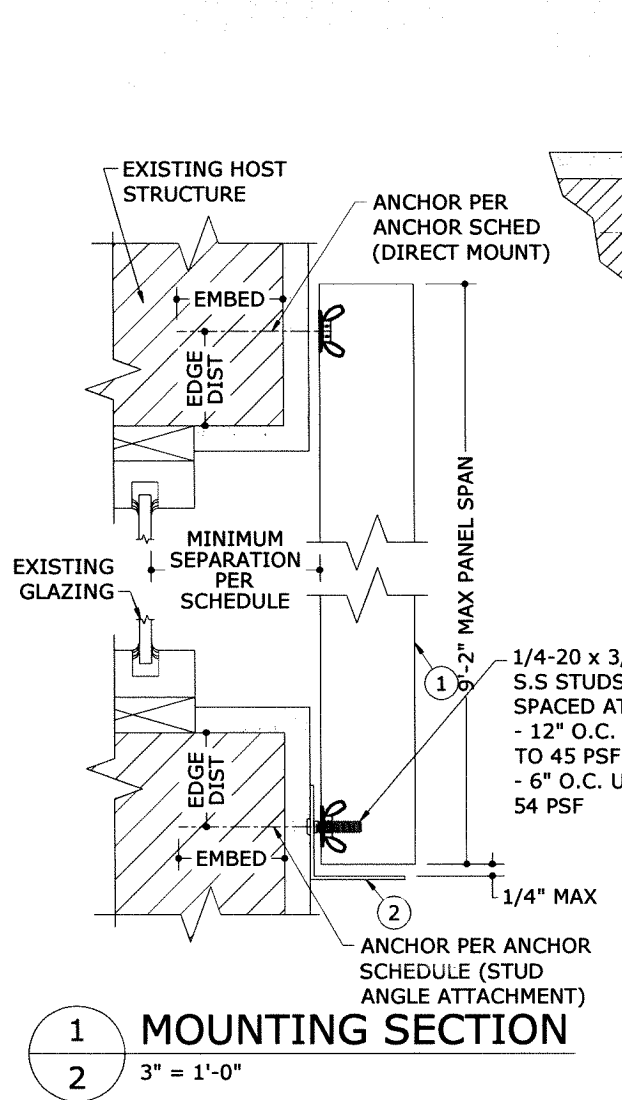
COPYRIGHT FRANK L. BENNARDO P.E.

20-24244.1

SCALE: -  
PAGE DESCRIPTION:

1 OF 3

C:\Users\rickn\Engineering\Express\Production - Documents\Projects\20-24244 Town & Country - TDI Updates\VP1 - SHU-111 28ga Safety Edge & Polycarb Storm Panels.dwg 11/10/2020 - 11:42am rickn



**SPAN SCHEDULE**

**28ga (0.018") GALV STEEL PANELS**  
 MAX LOAD: ±54.0 psf  
 MAX SPAN: 9'-2" (ALL MOUNTING CONDITIONS)  
 MIN SPANS: 26" (DIRECT MOUNT TOP & BOTTOM)  
 16" (ALL OTHER CONDITIONS)

**0.100" CLEAR POLYCARB FULL-/HALF-PANELS**  
 MAX LOAD: ±54.0 psf  
 MAX SPAN: 9'-2" (ALL MOUNTING CONDITIONS)  
 MIN SPANS: 24" (DIRECT MOUNT TOP & BOTTOM)  
 15" (ALL OTHER CONDITIONS)

**GLASS SEPARATION SCHEDULE NOTES:**

1. GLASS SEPARATION SCHEDULE PROVIDES MINIMUM SEPARATION DISTANCE REQUIRED BETWEEN EXTERIOR FACE OF GLAZING (OR OTHER PRODUCT BEING PROTECTED) AND INTERIOR FACE OF INSTALLED STORM PANEL.
2. SEPARATION DISTANCE PER THIS SCHEDULE IS REQUIRED FOR USE WITH POSITIVE LOADS ONLY.
3. SEPARATION FROM GLASS IS NOT REQUIRED FOR INSTALLATIONS IN WIND ZONES 1-3 UNLESS LOCAL MUNICIPALITY HAS ADOPTED ADDITIONAL CRITERIA.

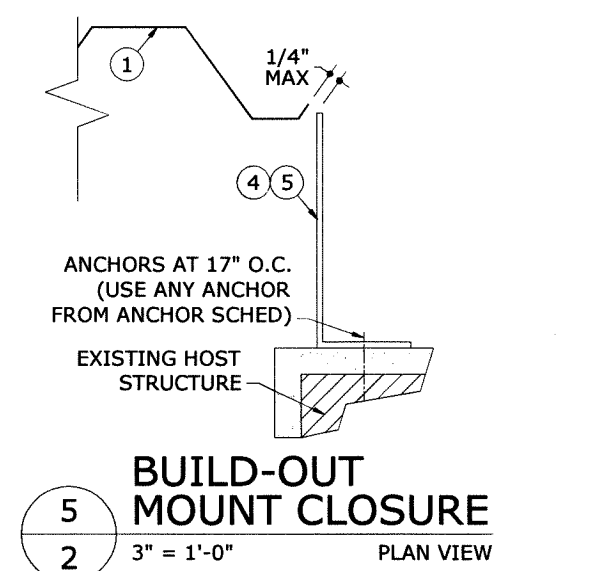
**GLASS SEPARATION SCHEDULE**

**28ga (0.018") GALV STEEL PANELS**

- MIN. GLASS SEPARATION FOR INSTALLATIONS AT OR BELOW 30' ABOVE GRADE: 5.375"
- MIN. GLASS SEPARATION FOR INSTALLATIONS GREATER THAN 30' ABOVE GRADE: 5.375"


**0.100" CLEAR POLYCARB FULL-/HALF-PANELS**

- MIN. GLASS SEPARATION FOR INSTALLATIONS AT OR BELOW 30' ABOVE GRADE: 7.350"
- MIN. GLASS SEPARATION FOR INSTALLATIONS GREATER THAN 30' ABOVE GRADE: 5.375"



**ANCHOR SCHEDULE NOTES:**

- 1) "DEWALT PANELMATE" ANCHORS MAY BE DEWALT FEMALE PANELMATE OR ELCO PANELMATE PLUS, AS ILLUSTRATED.
- 2) ENSURE MINIMUM 2" EDGE DISTANCE FOR ANCHORS TO CONCRETE & TO HOLLOW BLOCK, U.N.O. EDGE DISTANCE OF 3/4" IS ACCEPTABLE FOR ANCHORS TO WOOD.
- 3) MINIMUM EMBEDMENT SHALL BE AS NOTED IN ANCHOR SCHEDULE. MINIMUM EMBEDMENT AND EDGE DISTANCE EXCLUDES STUCCO, FOAM, BRICK, AND OTHER WALL FINISHES.
- 4) ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS.
- 5) ALL CONCRETE ANCHORS SPECIFIED HEREIN SHALL BE INSTALLED TO NON-CRACKED CONCRETE ONLY. ALL BLOCK SUBSTRATES SHALL BE ASTM C-90 MINIMUM.
- 6) WHERE EXISTING STRUCTURE IS WOOD FRAMING, EXISTING CONDITIONS MAY VARY. FIELD VERIFY THAT FASTENERS ARE INTO ADEQUATE WOOD FRAMING MEMBERS, NOT PLYWOOD.
- 7) WHERE ANCHORS FASTEN TO NARROW FACE OF STUD FRAMING, ANCHOR SHALL BE LOCATED IN CENTER OF NOMINAL 2x4 (MIN) WOOD STUD (i.e. 3/4" EDGE DISTANCE IS ACCEPTABLE FOR ANCHORS TO WOOD FRAMING). WOOD STUD SHALL BE "SOUTHERN PINE" G=0.42 OR GREATER DENSITY, UNLESS OTHERWISE NOTED.
- 8) ANCHOR SCHEDULE APPLIES FOR ALL PRODUCTS CERTIFIED HEREIN, BUT ONLY PROVIDES MAXIMUM ALLOWABLE ANCHOR SPACING. MAXIMUM ALLOWABLE SPANS AND PRESSURES INDICATED IN SPAN SCHEDULE SHALL APPLY.
- 9) MACHINE SCREWS SHALL HAVE MINIMUM OF 1/2" ENGAGEMENT OF THREADS IN BASE ANCHOR AND MAY HAVE EITHER A PAN HEAD, TRUSS HEAD, OR WAFER HEAD ("SIDEWALK BOLT") U.N.O.
- 10) ALL 1/2" EA MALE BOLTS MAY USE THE OPTIONAL FEMALE CAP SHOWN BELOW AT THE ANCHOR SPACINGS LISTED

 OPTIONAL FEMALE CAP

FRANK L. BENNARDO, PE  
 LICENSE NO. 11383  
 10/2020  
 STATE OF TEXAS  
 PROFESSIONAL ENGINEER  
 FRANK L. BENNARDO  
 9606406  
 LICENSE NO. 1063442  
 ENGINEER  
 CORPORATE OFFICE  
 160 SW 12th AVE., SUITE 3442  
 DEERFIELD BEACH, FL 33442  
 (954) 354-0660 | (866) 354-0660  
 TEAM@ENGINEERINGEXPRESS.COM  
 ENGINEERINGEXPRESS.COM

**Town & Country INDUSTRIES**  
 Wholesale Aluminum and Building Products  
 A Division of ABC Supply Co., Inc.  
 400 WEST MCNAB ROAD  
 FT. LAUDERDALE, FL 33309

REMARKS	DRWN	CHKD	DATE
INT ISSUE	CL	FLB	9/22/05
2007 FBC	RKB	CSL	12/30/08
2010 FBC	KL	FLB	12/15/11
2014 FBC	RWN	CSL	3/20/15
2017 FBC	RWN	FLB	8/1/17
2018 IBC UPDATE	CB	RWN	6/17/20

THIS DOCUMENT IS THE PROPERTY OF FRANK L. BENNARDO, P.E. AND SHALL NOT BE REPRODUCED, COPIED, OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM. ANY UNAUTHORIZED USE OR ALTERATION OF THIS DOCUMENT IS STRICTLY PROHIBITED. © 2020 FRANK L. BENNARDO, P.E.

COPYRIGHT FRANK L. BENNARDO P.E.  
 20-24244.1  
 SCALE: -  
 PAGE DESCRIPTION:  
 2

