



STRUCTALL BUILDING SYSTEMS

SNAP-N-LOCK EPS FOAM CORE STRUCTURAL WALL PANELS (26GA STEEL SKIN)
 NOT RATED FOR IMPACT RESISTANCE
 HVHZ / NON-HVHZ

FRANK BENNARDO, P.E.
 PE# 0046549 CA# 9885

AUGUST 15, 2023

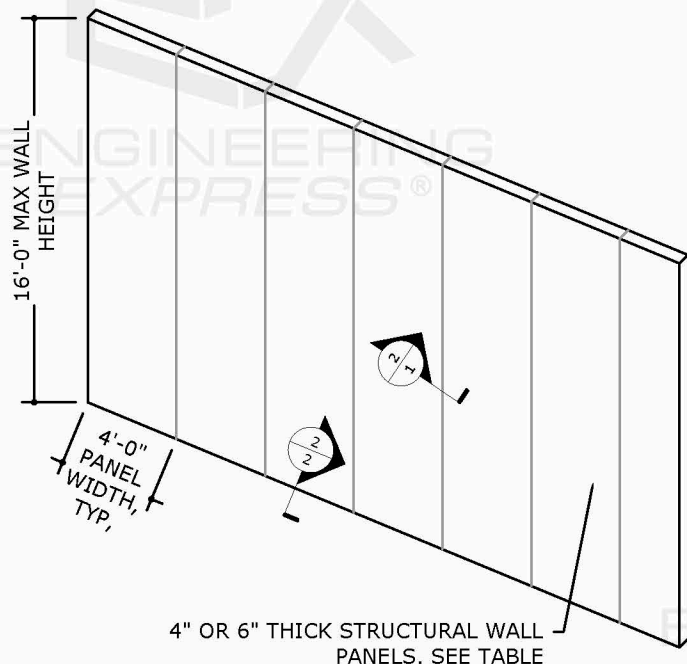


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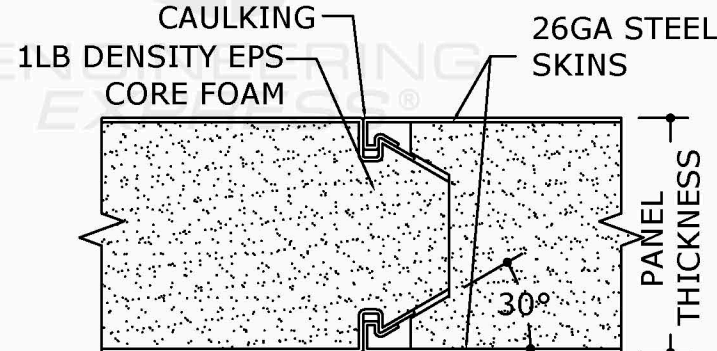
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1 STRUCTURAL PANEL ISOMETRIC
 N.T.S. (NOT INTENDED TO DEPICT A COMPLETE STRUCTURE)

SEAL ALL JOINTS WITH CONTINUOUS CAULKING



CROSS SECTION AT TYPICAL PANEL INTERLOCK

2 PANEL INTERLOCK DETAIL
 N.T.S. DETAIL

Total Load*	Deflection Limit (L/...)	4"	6"
		26ga Steel Skin 1-LB EPS	26ga Steel Skin 1-LB EPS
+/- 10 PSF	80	16'-0"	16'-0"
	120	16'-0"	16'-0"
	180	16'-0"	16'-0"
	240	16'-0"	16'-0"
+/- 15 PSF	80	16'-0"	16'-0"
	120	16'-0"	16'-0"
	180	16'-0"	16'-0"
	240	14'-8"	16'-0"
+/- 20 PSF	80	14'-3"	16'-0"
	120	14'-3"	16'-0"
	180	14'-3"	16'-0"
	240	13'-3"	16'-0"
+/- 25 PSF	80	12'-9"	15'-9"
	120	12'-9"	15'-9"
	180	12'-9"	15'-9"
	240	12'-4"	15'-3"
+/- 30 PSF	80	11'-8"	14'-5"
	120	11'-8"	14'-5"
	180	11'-8"	14'-5"
	240	11'-7"	14'-4"
+/- 35 PSF	80	10'-9"	13'-4"
	120	10'-9"	13'-4"
	180	10'-9"	13'-4"
	240	10'-9"	13'-4"
+/- 40 PSF	80	10'-1"	12'-5"
	120	10'-1"	12'-5"
	180	10'-1"	12'-5"
	240	10'-1"	12'-5"
+/- 45 PSF	80	9'-6"	11'-9"
	120	9'-6"	11'-9"
	180	9'-6"	11'-9"
	240	9'-6"	11'-9"
+/- 50 PSF	80	9'-0"	11'-2"
	120	9'-0"	11'-2"
	180	9'-0"	11'-2"
	240	9'-0"	11'-2"
+/- 55 PSF	80	8'-7"	10'-7"
	120	8'-7"	10'-7"
	180	8'-7"	10'-7"
	240	8'-7"	10'-7"
+/- 60 PSF	80	8'-3"	10'-2"
	120	8'-3"	10'-2"
	180	8'-3"	10'-2"
	240	8'-3"	10'-2"
+/- 65 PSF	80	7'-11"	9'-9"
	120	7'-11"	9'-9"
	180	7'-11"	9'-9"
	240	7'-11"	9'-9"
+/- 70 PSF	80	7'-7"	9'-5"
	120	7'-7"	9'-5"
	180	7'-7"	9'-5"
	240	7'-7"	9'-5"
+/- 75 PSF	80	7'-4"	9'-1"
	120	7'-4"	9'-1"
	180	7'-4"	9'-1"
	240	7'-4"	9'-1"
+/- 80 PSF	80	8'-10"	8'-10"
	120	8'-10"	8'-10"
	180	8'-10"	8'-10"
	240	8'-10"	8'-10"

TABLE 1:

ALLOWABLE CLEAR SPAN TRANSVERSE LOADS FOR 4" AND 6" THICK STRUCTURAL WALL PANELS

INSTRUCTION FOR USE:

- DETERMINE TYPE OF ENCLOSURE TO BE COVERED (OPEN, SCREENED WALLS, OR FULLY ENCLOSED). USE QR CODE/WEB ADDRESS BELOW FOR HELP.
- DETERMINE THE SITE SPECIFIC REQUIRED DESIGN PRESSURE PROVIDED BY SEPARATE ENGINEERING, BY A LICENSED ENGINEER OR REGISTERED ARCHITECT, IN ACCORDANCE WITH THE APPLICABLE BUILDING CODE. (SEE LINK BELOW RIGHT FOR RESOURCES)
- FIND ALLOWABLE COMPOSITE PANEL CLEAR SPAN IN TABLES FOR APPROPRIATE PANEL DEPTH, FACING THICKNESS, AND EPS CORE DENSITY SELECTED.
- INDICATES VALUES NOT VALID FOR USE.

TABLE 1 NOTES:

- ALLOWABLE LOAD VALUES ARE BASED ON SIMPLY SUPPORTED SPANS WITH LOADS UNIFORMLY DISTRIBUTED. WHERE NON-UNIFORM LOADS ARE APPLIED TO THE PANEL, AN EQUIVALENT UNIFORM LOAD MUST BE DETERMINED FOR COMPARISON WITH THE VALUES WITHIN THIS TABLE BY A LICENSED PROFESSIONAL.
- ALLOWABLE LOADS ARE BASED ON PANEL STRENGTH. PANELS MUST BE INSTALLED WITH A CONTINUOUS MIN. WIDTH SUPPORT OF 1 INCH MIN. AT EACH END OF THE PANEL SPAN. CAPACITY OF END CONDITIONS MUST BE EVALUATED ON A SITE SPECIFIC BASIS.

*TOTAL LOAD = SUM OF ALL LOADS (WIND, LIVE, DEAD, ETC.) ACTING IN THE WORST CASE LOAD COMBINATION AS DETERMINED PER SEPARATE ENGINEERING.

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TERMINOLOGY:

THE FOLLOWING ABBREVIATIONS APPEAR IN THIS APPROVAL: "ALUM" FOR "ALUMINUM", "ASD" FOR "ALLOWABLE STRESS DESIGN", "ASTM" FOR "AMERICAN SOCIETY FOR TESTING AND MATERIALS", "CS" FOR "CARBON STEEL", "EPS" FOR "EXPANDED POLYSTYRENE", "GA" FOR "GAUGE", "HVHZ" FOR "HIGH-VELOCITY HURRICANE ZONE", "L" FOR "LENGTH", "LB" FOR "POUND", "MAX" FOR "MAXIMUM", "N.T.S." FOR "NOT TO SCALE", "PSF" FOR "POUNDS PER SQUARE FOOT (lb/ft²)", "SPECS" FOR "SPECIFICATIONS", "&" FOR "AND". CONTACT ENGINEERING EXPRESS FOR ADDITIONAL ABBREVIATION/TERMINOLOGY CLARIFICATIONS.

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 Structural Wall Panels (26GA Steel Skin)
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2023 FBC UPDATE	MRT		08/04/23

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VISIT ECALC.IO/STRUCTALL

FOR SITE-SPECIFIC DEVIATIONS & MORE INFORMATION ABOUT THIS DOCUMENT OR SCAN THIS QR CODE
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**MAXIMUM (ASD) ALLOWABLE
DESIGN PRESSURES:**

VARIES AS NOTED
IN TABLE 1

DESIGN NOTES:

1. POSITIVE AND NEGATIVE DESIGN PRESSURES CALCULATED FOR USE WITH THIS SYSTEM SHALL BE DETERMINED BY OTHERS ON A JOB-SPECIFIC BASIS IN ACCORDANCE WITH THE STRUCTURAL REQUIREMENTS OF THE 8TH EDITION FLORIDA BUILDING CODE (2023), AS WELL AS CURRENT VERSIONS OF THE FLORIDA RESIDENTIAL CODE, THE INTERNATIONAL BUILDING CODE AND THE INTERNATIONAL RESIDENTIAL CODE.
2. SEISMIC DESIGN HAS NOT BEEN CONSIDERED.
3. DESIGN PRESSURES AS NOTED HEREIN ARE BASED ON A MAXIMUM TESTED PRESSURE DIVIDED BY A 2.0 FACTOR OF SAFETY. THEY SHALL BE ADJUSTED ACCORDINGLY AS NEED FOR SPECIFIC APPLICATIONS.
4. TO DEVIATE FROM LOADS, DEFLECTIONS, OR SPANS CONTAINED HEREIN. LINEAR INTERPOLATION OF THE ALLOWABLE SPAN TABLES LISTED HEREIN SHALL NOT BE PERMITTED. CONTACT A LICENSED ENGINEER OR REGISTERED ARCHITECT FOR ALTERNATE SPAN CALCULATIONS AS MAY BE REQUIRED.
5. EPS CORE COMPOSITE PANELS SHALL BE CONSTRUCTED USING TYPE ASTM A653, CS, TYPE B HOT DIP GALVANIZED G90 COATED STEEL FACINGS. EXPANDED POLYSTYRENE FOAM SHALL HAVE TYPICAL DENSITY OF 1.0 PCF. THE EPS FOAM SHALL BE ADHERED TO THE STEEL FACING WITH MORAD M640 SERIES ADHESIVE (BY ROHM AND HAAS COMPANY). FABRICATION SHALL BE IN ACCORDANCE WITH APPROVED FABRICATION METHODS BY MANUFACTURER FOR ALL PANELS.
6. IF APPLICABLE, COMPOSITE PANELS SHALL COMPLY WITH CHAPTER 7 SECTION 720, CHAPTER 8 SECTION 803, CLASS A INTERIOR FINISH, AND CHAPTER 26 SECTION 2603 OF THE APPLICABLE INTERNATIONAL BUILDING CODE.

*TOTAL LOAD = SUM OF ALL LOADS (WIND, LIVE, DEAD, ETC.) ACTING IN THE WORST CASE LOAD COMBINATION AS DETERMINED PER SEPARATE ENGINEERING.

GENERAL NOTES:

1. FOR USE WITHIN AND OUTSIDE THE HIGH VELOCITY HURRICANE ZONE (HVHZ).
2. THE SYSTEM DETAILED HEREIN IS GENERIC AND DOES NOT PROVIDE INFORMATION FOR A SPECIFIC SITE. FOR SITE CONDITIONS DIFFERENT FROM THE CONDITIONS DETAILED HEREIN, A LICENSED ENGINEER OR REGISTERED ARCHITECT SHALL PREPARE SITE SPECIFIC DOCUMENTS FOR USE IN CONJUNCTION WITH THIS DOCUMENT.
3. DESIGN CRITERIA BEYOND AS STATED HEREIN MAY REQUIRE ADDITIONAL SITE-SPECIFIC SEALED ENGINEERING.
4. THIS DOCUMENT IS NOT INTENDED TO SERVE AS A COMPLETE PACKAGE FOR PERMIT. IT SHALL BE COMBINED WITH OTHER ENGINEERING TO DEVELOP A SYSTEM FOR DESIGN.
5. THE ARCHITECT/ENGINEER OF RECORD FOR THE PROJECT SUPERSTRUCTURE WITH WHICH THIS DESIGN IS USED SHALL BE RESPONSIBLE FOR THE INTEGRITY OF ALL SUPPORTING SURFACES TO THIS DESIGN WHICH SHALL BE COORDINATED BY THE PERMITTING CONTRACTOR.
6. THE SYSTEM DETAILED HEREIN IS GENERIC AND DOES NOT PROVIDE INFORMATION FOR A SPECIFIC SITE. FOR SITE CONDITIONS DIFFERENT FROM THE CONDITIONS DETAILED HEREIN, A LICENSED ENGINEER OR REGISTERED ARCHITECT SHALL PREPARE SITE SPECIFIC DOCUMENTS FOR USE IN CONJUNCTION WITH THIS PERFORMANCE EVALUATION DOCUMENT.
7. THE CONTRACTOR SHALL CAREFULLY CONSIDER POSSIBLE IMPOSING LOADS, INCLUDING BUT NOT LIMITED TO ANY CONCENTRATED LOADS WHICH MAY JUSTIFY GREATER DESIGN CRITERIA. THIS ADDITIONAL LOAD CRITERIA SHALL BE PROPERLY ANALYZED BY A LICENSED ENGINEER OR REGISTERED ARCHITECT.
8. THE CONTRACTOR IS RESPONSIBLE TO INSULATE ALL MEMBERS FROM DISSIMILAR MATERIALS TO PREVENT ELECTROLYSIS.
9. ENGINEER SEAL AFFIXED HERETO VALIDATE STRUCTURAL DESIGN AS SHOWN ONLY. USE OF THIS SPECIFICATION BY CONTRACTOR, et. al. INDEMNIFIES & SAVES HARMLESS THIS ENGINEER FOR ALL COST & DAMAGES INCLUDING LEGAL FEES & APPELLATE FEES RESULTING FROM MATERIAL FABRICATION, SYSTEM ERECTION, & CONSTRUCTION PRACTICES BEYOND THAT WHICH IS CALLED FOR BY LOCAL, STATE & FEDERAL CODES & FROM DEVIATIONS OF THIS PLAN.
10. EXCEPT AS EXPRESSLY PROVIDED HEREIN, NO ADDITIONAL CERTIFICATIONS OR AFFIRMATIONS ARE INTENDED.
11. ALTERATIONS ADDITIONS OR OTHER MARKINGS TO THIS DOCUMENT ARE NOT PERMITTED AND INVALIDATE THIS CERTIFICATION.

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AXIAL & SHEAR INFORMATION

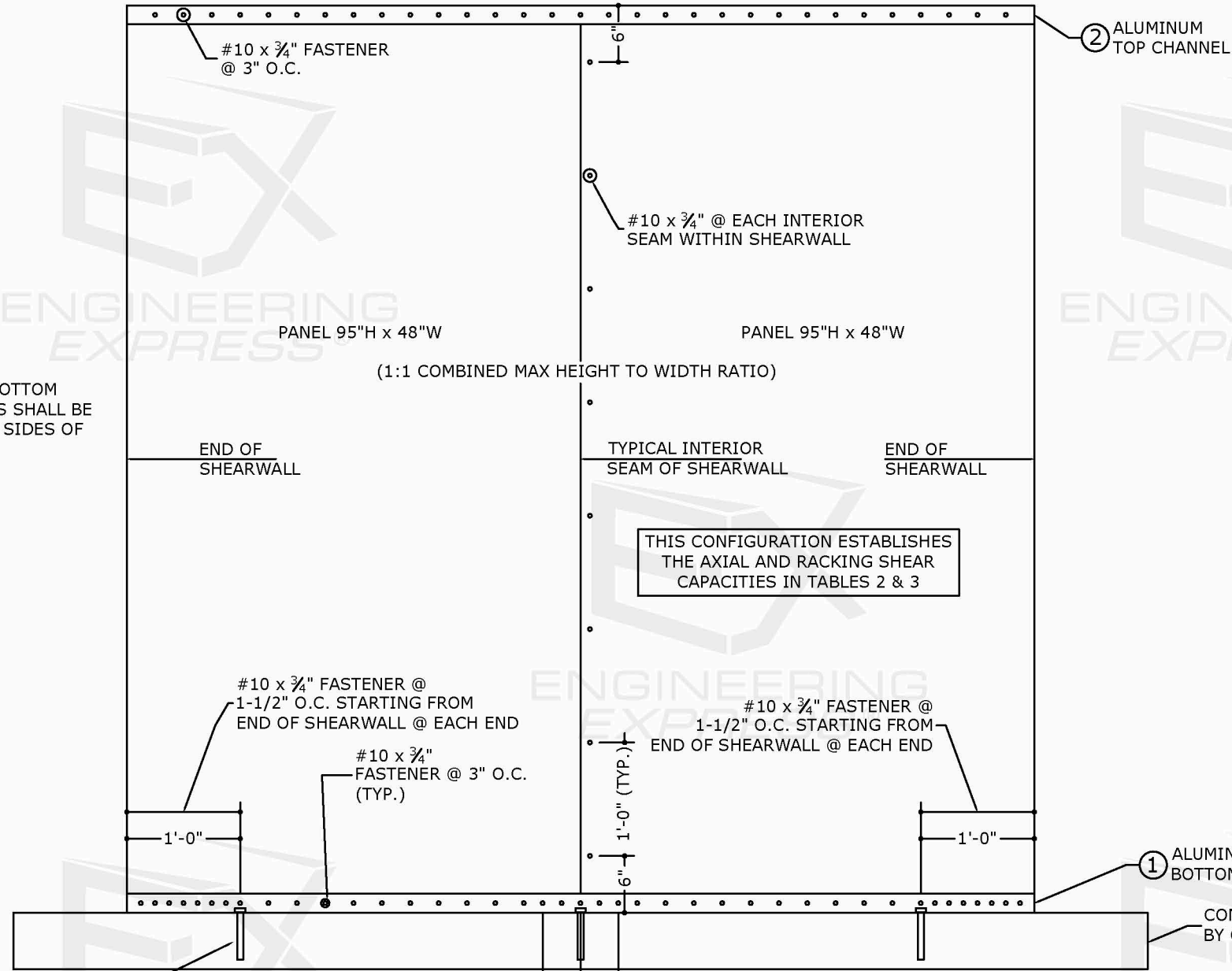
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NOTES:

1. ALL TOP AND BOTTOM CHANNEL SCREWS SHALL BE PLACED ON BOTH SIDES OF THE WALL



THIS CONFIGURATION ESTABLISHES THE AXIAL AND RACKING SHEAR CAPACITIES IN TABLES 2 & 3



TABLE 2: ALLOWABLE UNIFORM AXIAL LOADS FOR 4" OR 6" THICK WALL PANELS

MAXIMUM UNSUPPORTED PANEL HEIGHT (ft)	ALLOWABLE AXIAL LOAD (plf)
16	614

TABLE 2 NOTES:

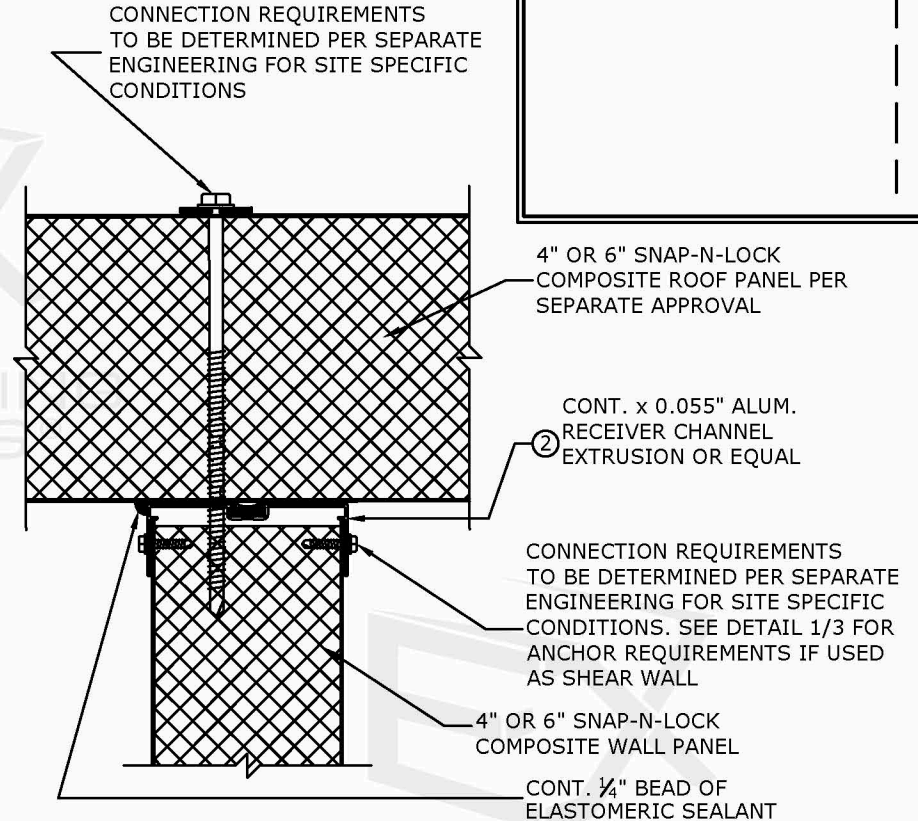
- BASE CHANNEL AS SHOWN IN DETAIL 3/3 SHALL BE INSTALLED FULLY SUPPORTED ON A RIGID FOUNDATION. THE WALL CAP SHOWN IN DETAIL 2/3 SHALL BE USED FOR CONNECTION OF ROOF PANEL TO WALL PANEL.
- THE ALLOWABLE AXIAL LOAD LISTED IN THIS TABLE IS ASSUMED TO BE UNIFORMLY DISTRIBUTED AT THE TOP OF THE WALL PANEL CENTERED ON THE PANEL THICKNESS.
- AXIAL LOAD SHALL BE COMBINED WITH MAX LATERAL LOAD OF 10PSF AT 10' HEIGHT. SITE SPECIFIC ANALYSIS REQUIRED BEYOND THESE LIMITS.

TABLE 3: ALLOWABLE RACKING SHEAR LOADS FOR 4" OR 6" THICK WALL PANELS

PANEL DIMENSIONS (ft)	ALLOWABLE SHEAR LOAD (plf)
8 x 8	173

TABLE 3 NOTES:

- BASE CHANNEL AS SHOWN IN DETAIL 3/3 SHALL BE INSTALLED FULLY SUPPORTED ON A RIGID FOUNDATION.
- THE MAXIMUM SHEARWALL HEIGHT-TO-WIDTH RATIO IS 1:1.



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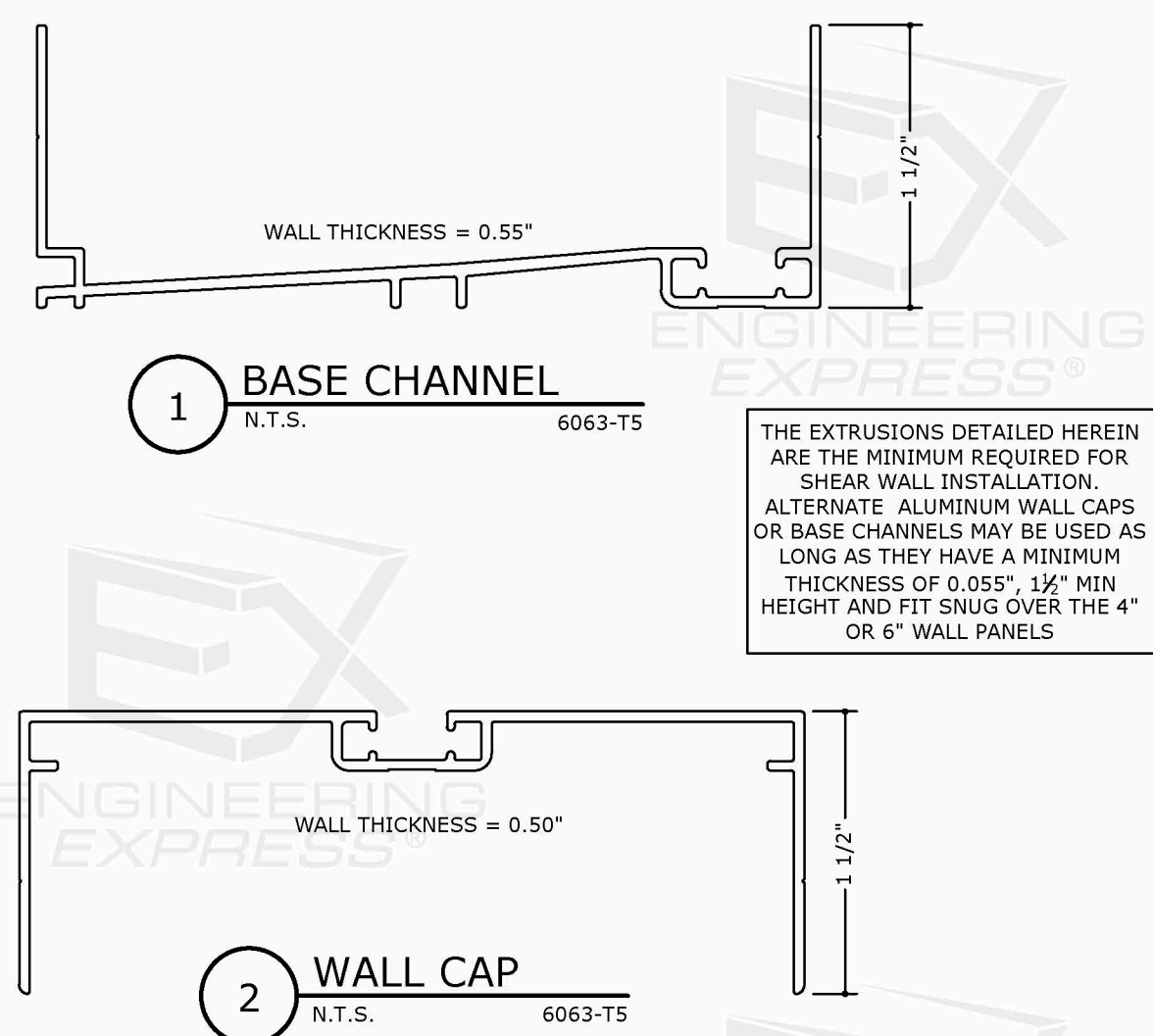
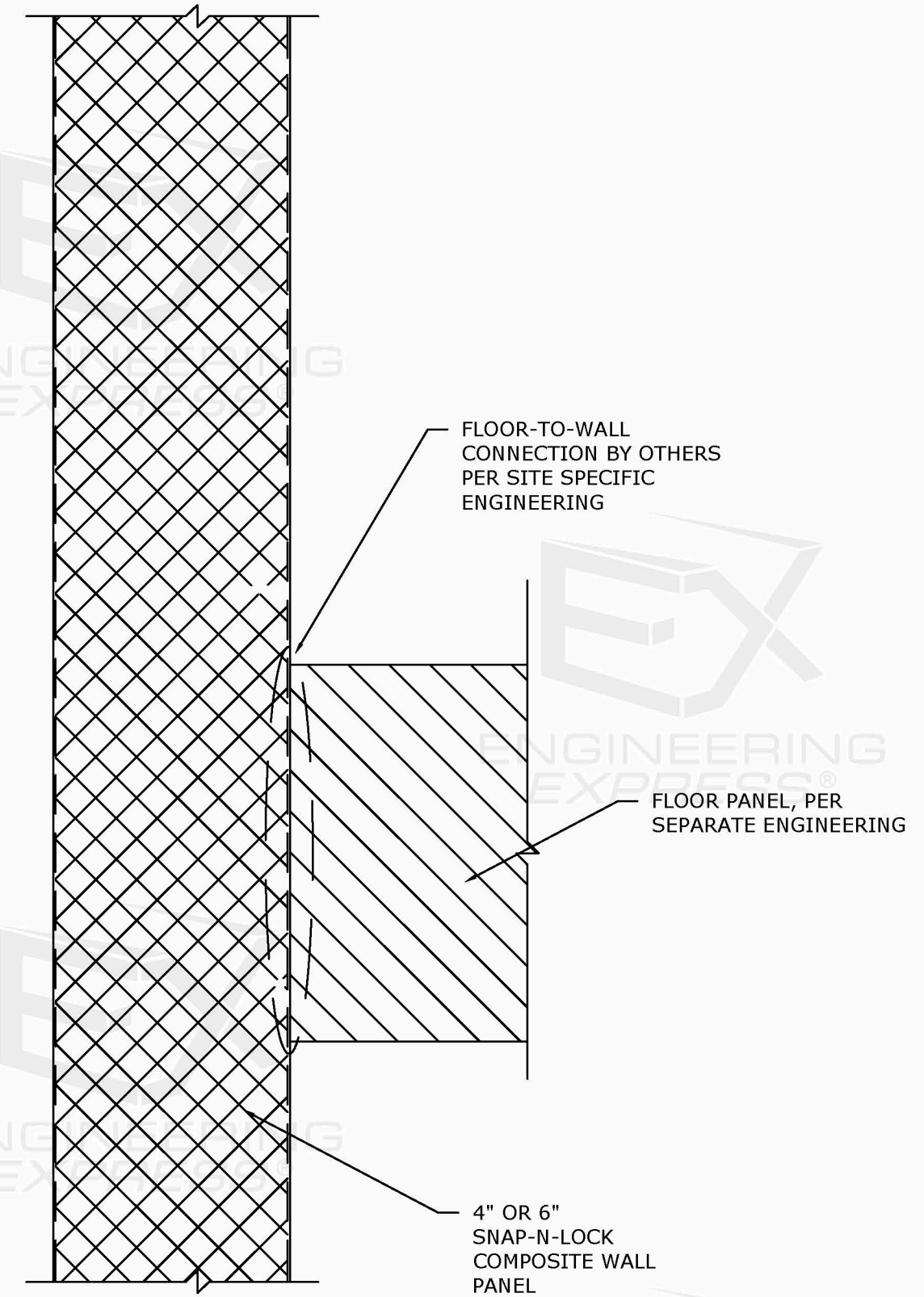
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THE EXTRUSIONS DETAILED HEREIN ARE THE MINIMUM REQUIRED FOR SHEAR WALL INSTALLATION. ALTERNATE ALUMINUM WALL CAPS OR BASE CHANNELS MAY BE USED AS LONG AS THEY HAVE A MINIMUM THICKNESS OF 0.055", 1 1/2" MIN HEIGHT AND FIT SNUG OVER THE 4" OR 6" WALL PANELS

1 PANEL FLOOR TO PANEL WALL EXAMPLE
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