As required by Florida Statute 553.842 and Florida Administrative Code 9B-72, please provide the information and approval numbers on the building components listed below if they will be utilized on the construction project for which you are applying for a building permit. We recommend you contact your local product supplier should you not know the product approval number for any of the applicable listed products. Statewide approved products are listed online @ www.floridabuilding.org

Category/Subcategory	Manufacturer	Product Description	Approval Number(s)
1. EXTERIOR DOORS			
A. SWINGING	Plast Pro	Fiberglass Door	FL 17347.9
B. SLIDING			
C. SECTIONAL/ROLL UP	CH I overhead	roll up Door	FL 12065
D. OTHER			
2. WINDOWS			
A. SINGLE/DOUBLE HUNG	MI Windows	Vinyl Window	FL 17676 R7
B. HORIZONTAL SLIDER			
C. CASEMENT			
D. FIXED			
E. MULLION			
F. SKYLIGHTS			
G. OTHER			
3. PANEL WALL			
A. SIDING	Hardie	Lap hardie siding	FL 10477 R8
B. SOFFITS			
C. STOREFRONTS			
D. GLASS BLOCK			
E. OTHER			
4. ROOFING PRODUCTS			
A. ASPHALT SHINGLES	Tamko	asphalt shingles	FL 18355 R6
B. NON-STRUCT METAL			
C. ROOFING TILES			
D. SINGLE PLY ROOF			
E. OTHER			
5. STRUCT COMPONENTS			
A. WOOD CONNECTORS			
B. WOOD ANCHORS			
C. TRUSS PLATES	Mitek	Truss plates	FL 2197.2
D. INSULATION FORMS			
E. LINTELS			
F. OTHERS			
6. NEW EXTERIOR			
ENVELOPE PRODUCTS			

The products listed below did not demonstrate product approval at plan review. I understand that at the time of inspection of these products, the following information must be available to the inspector on the jobsite; 1) copy of the product approval, 2) performance characteristics which the product was tested and certified to comply with, 3) copy of the applicable manufacturers installation requirements.
Further, I understand these products may have to be removed if approval cannot be demonstrated during inspection.

NOTES: _____

plastpro
5200 W. CENTURY BLVD.
LOS ANGELES, CA 90045

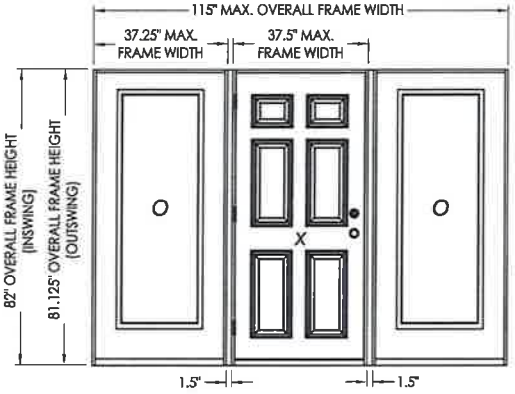
OPAQUE FIBERGLASS DOORS
SINGLES
w/ or w/o SIDELITES
INSWING / OUTSWING
"NON-IMPACT"

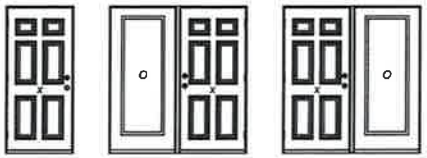
GENERAL NOTES

1. This product has been evaluated and is in compliance with the 7th Edition (2020) Florida Building Code (FBC) structural requirements excluding the "High Velocity Hurricane Zone" (HVHZ).
2. Product anchors shall be as listed and spaced as shown on details. Anchor embedment to base material shall be beyond wall dressing or stucco.
3. When used in areas requiring wind borne debris protection, this product is required to be protected with an impact resistant covering that complies with FBC Sections 1609.1.2 & R301.2.1.2.
4. For 2x stud framing construction, anchoring of these units shall be the same as that shown for 2x buck masonry construction.
5. Site conditions that deviate from the details of this drawing require further engineering analysis by a licensed engineer or registered architect.

TABLE OF CONTENTS

SHEET#	DESCRIPTION
1	Typical elevations, design pressures & general notes
2	Door panel details
3	Sidelite panel details
4	Elevations
5	Horizontal cross sections
6	Horizontal & Vertical Cross Sections (2X Buck)
7	Horizontal & Vertical Cross Sections (1X Buck)
8	Horizontal & Vertical Cross Sections (Direct to Masonry)
9	Vertical Cross Sections (Thresholds)
10	Horizontal & Vertical Cross Sections (Direct to Masonry)
11	Buck anchoring
12	Frame anchoring & hardware details
13	Lite frame glazing details
14	Bill of materials and components





X OX XO

CONFIGURATION	MAX. FRAME DIMENSION	JAMB REINFORCEMENT	DESIGN PRESSURE (PSF) INSWING		DESIGN PRESSURE (PSF) OUTSWING	
			POSITIVE	NEGATIVE	POSITIVE	NEGATIVE
X	37.5" x 82.0"	N/A	+60.0	-65.0	+60.0	-60.0
OX/XO	74.75" x 82.0"	N/A	+47.0	-47.0	+47.0	-47.0
	75.5" x 82.0"	1X	+47.0	-47.0	+47.0	-47.0
	76.25" x 82.0"	2X	+47.0	-47.0	+47.0	-47.0
OXO	112.0" x 82.0"	N/A	+47.0	-47.0	+47.0	-47.0
	113.5" x 82.0"	1X	+47.0	-47.0	+47.0	-47.0
	115.0" x 82.0"	2X	+47.0	-47.0	+47.0	-47.0

STATE OF FLORIDA PROFESSIONAL ENGINEER
L. F. SCHMIDT LICENSE No. 43409
August 06, 2020

Documents Prepared By:
Lyndon F. Schmidt
P.E. No. 43409

BUILDING CONSULTANTS, INC.
P.O. Box 230, Valrico, FL 33595
Phone No.: 813.658.9197
FBPE Registry No. 9813

PRODUCT: PLASTPRO IND. FIBERGLASS DOOR
PART OR ASSEMBLY: TYPICAL ELEVATION, DESIGN PRESSURES & GENERAL NOTES

NO.	DATE	REVISIONS	BY
3	8/05/20	UPDATE TO 7TH ED. (2020) FBC	DMC
2	7/27/17	UPDATE TO 6TH ED. (2017) FBC	JK
1	04/14/15	UPDATE TO 5TH ED. (2014) FBC	JK

DATE: 10/08/14
SCALE: N.T.S.
DWG. BY: JK
CHK. BY: LFS
DRAWING NO.: FL-17347.9
SHEET 1 OF 14

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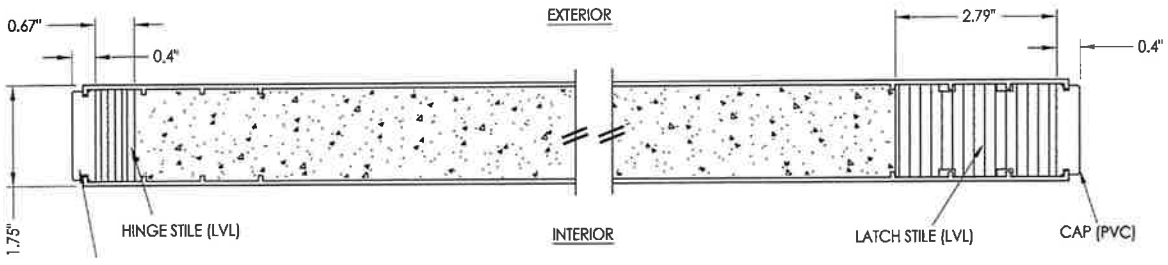
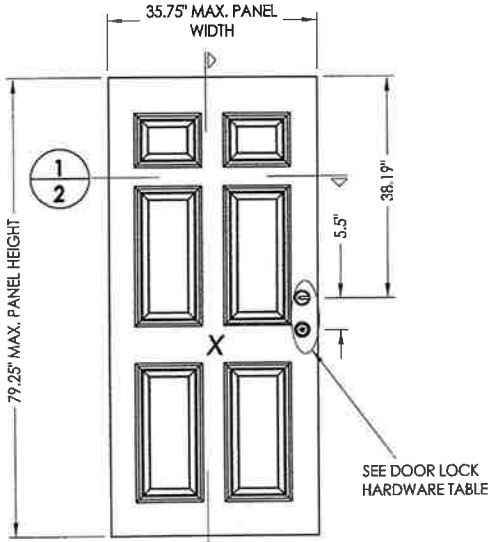
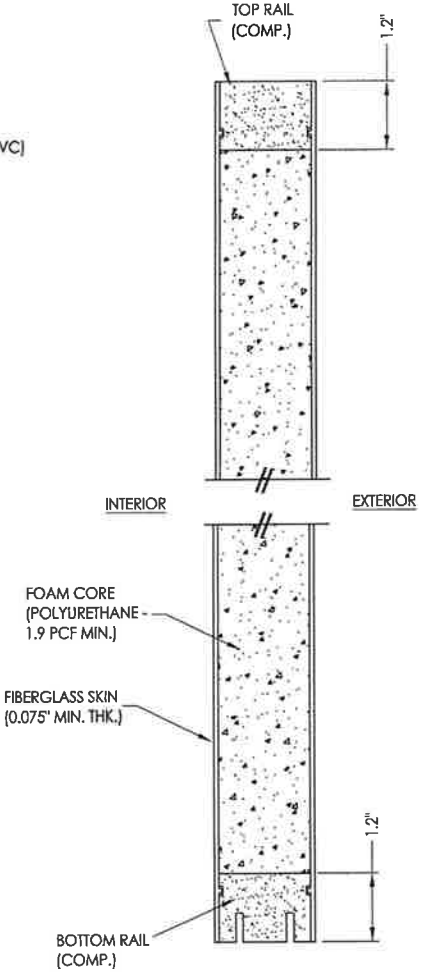


1/2 HORIZONTAL CROSS SECTION



40 PLASTPRO DOOR PANEL

DOOR LOCK HARDWARE TABLE	
MANUFACTURER	MODEL
KWIKSET	KNOB: SERIES (400) DEADBOLT: SERIES (660)
SCHLAGE	HANDLE SET: "F" SERIES (F60) DEADBOLT: "F" SERIES (F60)
SCHLAGE	KNOB: "F" SERIES (F10) DEADBOLT: "B" SERIES (B60/62)
YALE	KNOB: CIRRUS 100 C DEADBOLT: 820 SINGLE CYLINDER
DEXTER BY SCHLAGE	KNOB: J54 DEADBOLT: JD60



2/2 VERTICAL CROSS SECTION

T. F. SCHMIDT LICENSE No. 43409 STATE OF FLORIDA PROFESSIONAL ENGINEER

August 06, 2020

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BUILDING CONSULTANTS, INC.
P.O. Box 230, Valrico, FL 33595
Phone No.: 813.659.9197
FBPE Registry No. 9813

PRODUCT: PLASTPRO IND. FIBERGLASS DOOR

PART OR ASSEMBLY: DOOR PANEL DETAILS

NO	DATE	REVISIONS	BY
3	8/05/20	UPDATE TO 7TH ED. (2020) FBC	DAC
2	7/27/17	UPDATE TO 6TH ED. (2017) FBC	JK
1	04/14/15	UPDATE TO 5TH ED. (2014) FBC	JK

DATE: 10/08/14
SCALE: N.T.S.
DWG. BY: JK
CHK. BY: LFS
DRAWING NO.: FL-17347.9
SHEET 2 OF 14

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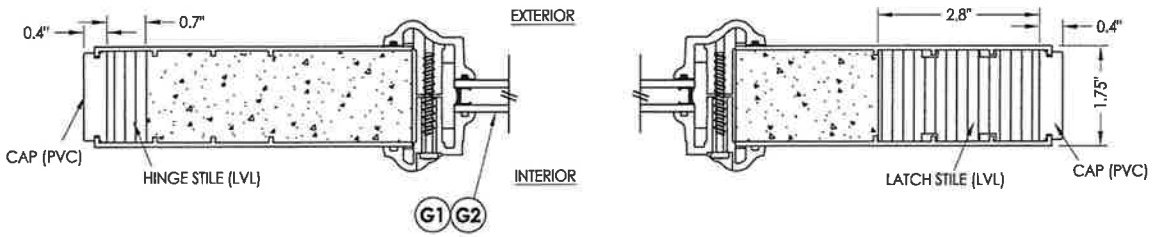
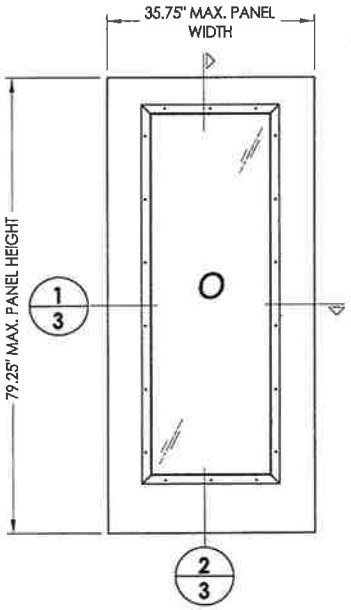
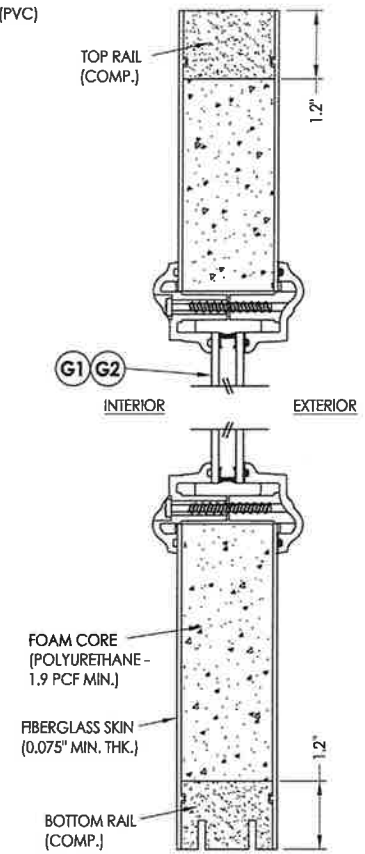
\\dc01\rwbc\Clients\Plastpro, Inc PERMANENTVA - Florida Product Approvals\FL-17347 Fiberglass Door - Impact-noninpact\C - Drawings\FL-17347 (2020)\FL-17347.9-10.dwg



1/3 HORIZONTAL CROSS SECTION



50 PLASTPRO SIDELITE PANEL



2/3 VERTICAL CROSS SECTION

T. F. SCHMIDT LICENSE No. 43409 STATE OF FLORIDA PROFESSIONAL ENGINEER

August 06, 2020
Documents Prepared By:
Lyndon F. Schmidt
P.E. No. 43409

BUILDING CONSULTANTS, INC.
P.O. Box 230, Valrico, FL 33595
Phone No.: 813.659.9197
FBPE Registry No. 9813

PRODUCT: PLASTPRO IND FIBERGLASS DOOR

PART OR ASSEMBLY: SIDELITE PANEL DETAILS

NO.	DATE	REVISIONS	BY
3	8/05/20	UPDATE TO 7TH ED. (2020) FBC	DAC
2	7/27/17	UPDATE TO 6TH ED. (2017) FBC	JK
1	04/14/15	UPDATE TO 5TH ED. (2014) FBC	JK

DATE: 10/08/14
SCALE: N.T.S.
DWG. BY: JK
CHK. BY: LFS
DRAWING NO.: FL-17347.9
SHEET 3 OF 14

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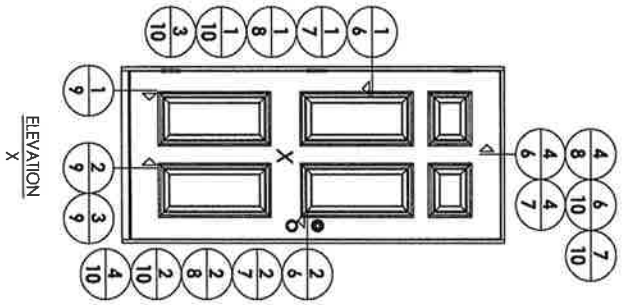

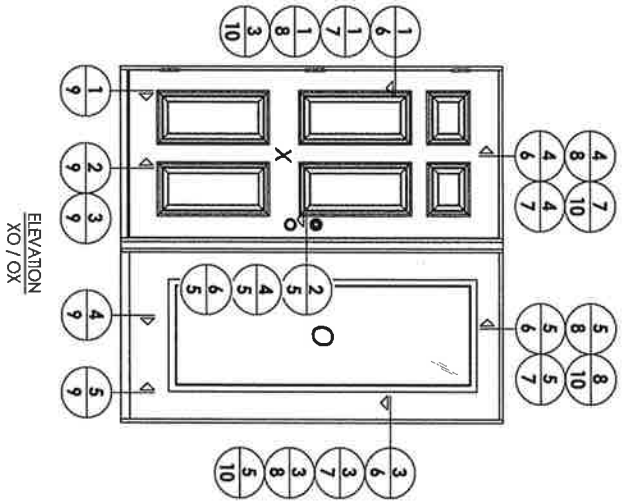

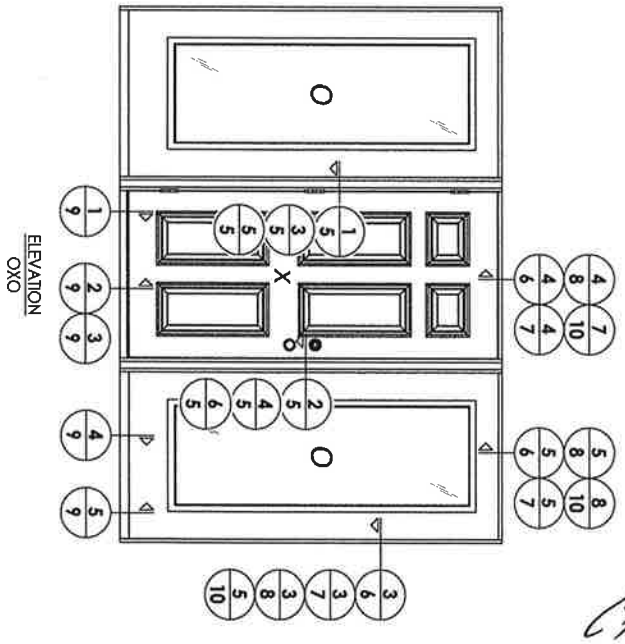

August 06, 2020

L. F. SCHMIDT LICENSE No. 43409 STATE OF FLORIDA PROFESSIONAL ENGINEER

NO.	DATE	REVISIONS	BY
3	8/05/20	UPDATE TO 7TH ED. (2020) FBC	DAC
2	7/27/17	UPDATE TO 6TH ED. (2017) FBC	JK
1	04/14/15	UPDATE TO 5TH ED. (2014) FBC	JK

DATE: 10/08/14
SCALE: N.T.S.
DWG. BY: JK
CHK. BY: LFS
DRAWING NO.: FL-17347.9
SHEET 4 OF 14

PRODUCT: PLASTPRO IND FIBERGLASS DOOR

PART OR ASSEMBLY: ELEVATIONS

Documents Prepared By:
Lyndon F. Schmidt
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P.O. Box 230, Valrico, FL 33595
Phone No.: 813.659.9197
FBPE Registry No. 9813

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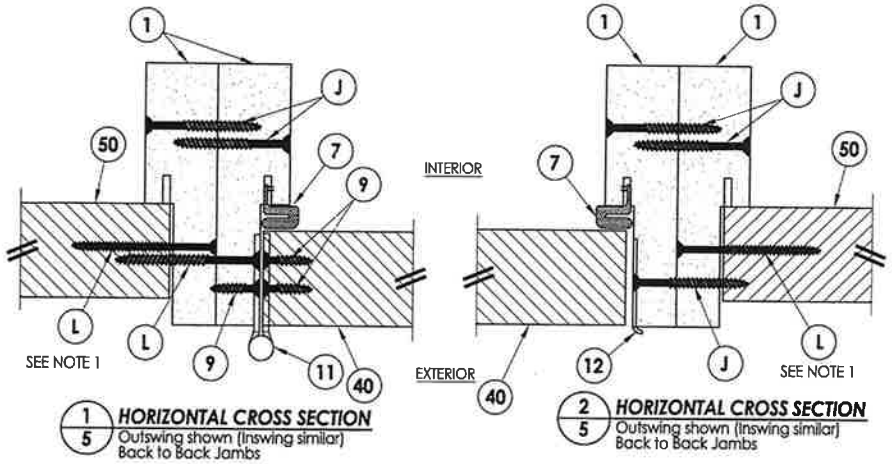
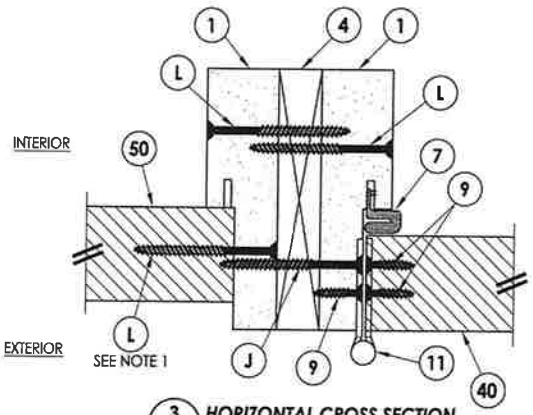


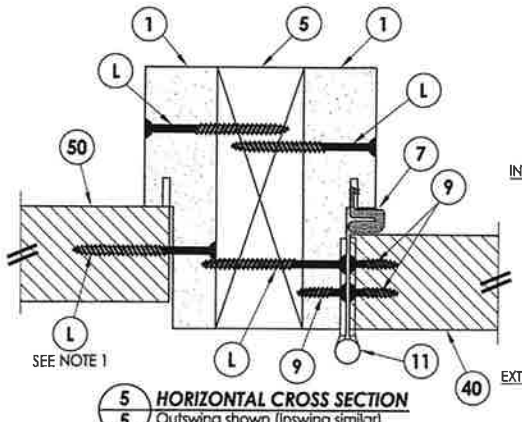
1/5 **HORIZONTAL CROSS SECTION**
Outswing shown (Inswing similar)
Back to Back Jambs

2/5 **HORIZONTAL CROSS SECTION**
Outswing shown (Inswing similar)
Back to Back Jambs

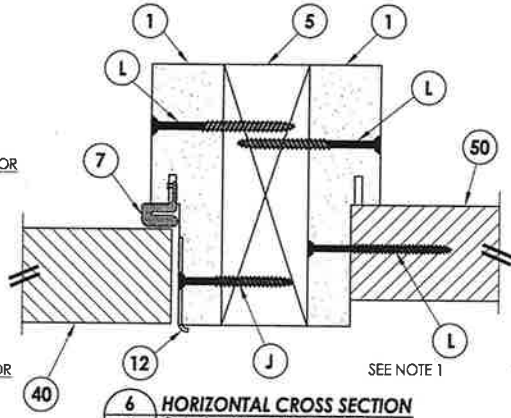


3/5 **HORIZONTAL CROSS SECTION**
Outswing shown (Inswing similar)
1X Jamb Reinforcement

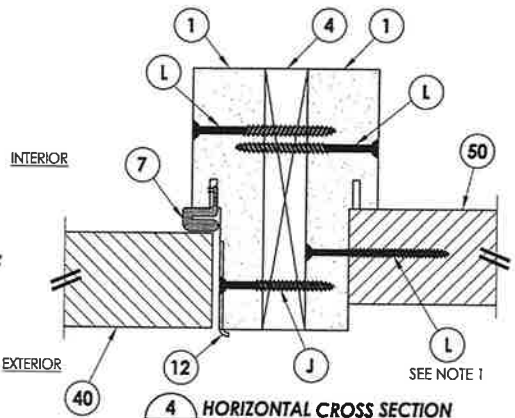
NOTE:
1. Spacing for item L: 6" from each end and 3 more equally spaced along sidelite jamb (5 total).



5/5 **HORIZONTAL CROSS SECTION**
Outswing shown (Inswing similar)
2X Jamb Reinforcement



6/5 **HORIZONTAL CROSS SECTION**
Outswing shown (Inswing similar)
2X Jamb Reinforcement



4/5 **HORIZONTAL CROSS SECTION**
Outswing shown (Inswing similar)
1X Jamb Reinforcement

L.F. SCHMIDT LICENSE No. 43409 STATE OF FLORIDA PROFESSIONAL ENGINEER

August 06, 2020

Documents Prepared By:
Lyndon F. Schmidt
P.E. No. 43409

R|W BUILDING CONSULTANTS, INC.
P.O. Box 230, Valrico, FL 33595
Phone No.: 813.659.9197
FBPE Registry No. 9813

PRODUCT: PLASTPRO IND FIBERGLASS DOOR

PART OR ASSEMBLY: HORIZONTAL CROSS SECTIONS

NO	DATE	REVISIONS	BY
3	8/05/20	UPDATE TO 7TH ED. (2020) FBC	DAC
2	7/27/17	UPDATE TO 6TH ED. (2017) FBC	JK
1	04/14/15	UPDATE TO 5TH ED. (2014) FBC	JK

DATE: 10/08/14
SCALE: N.T.S.
DWG. BY: JK
CHK. BY: LFS
DRAWING NO.: FL-17347.9
SHEET 5 OF 14

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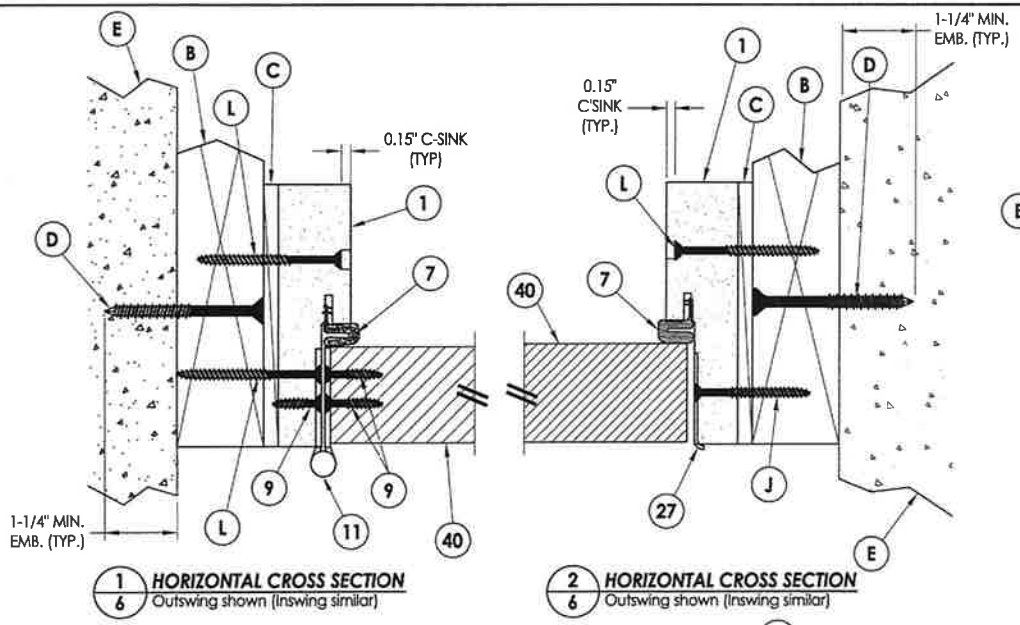
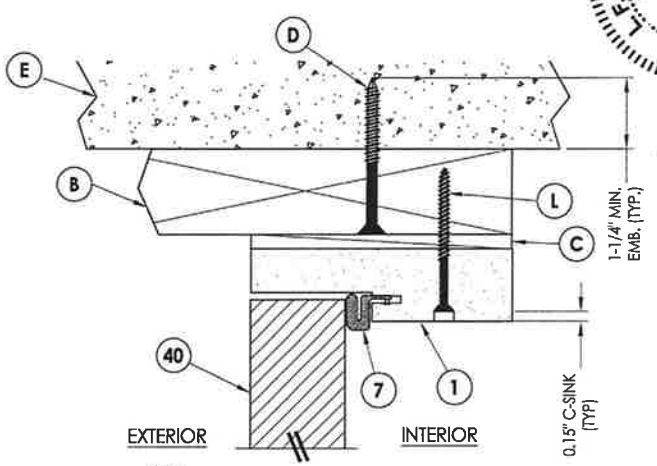
\\dc01\rwbc\Clients\Plastpro, Inc PERMANENT\A - Florida Product Approvals\FL-17347 Fiberglass Door - Impact-nonimpact\C - Drawings\FL-17347 (2020)\FL-17347.9-10.dwg



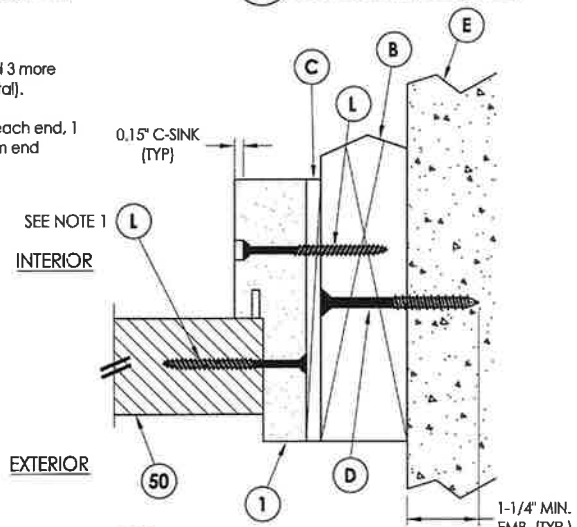
1 / 6 **HORIZONTAL CROSS SECTION**
Outswing shown (Inswing similar)

2 / 6 **HORIZONTAL CROSS SECTION**
Outswing shown (Inswing similar)

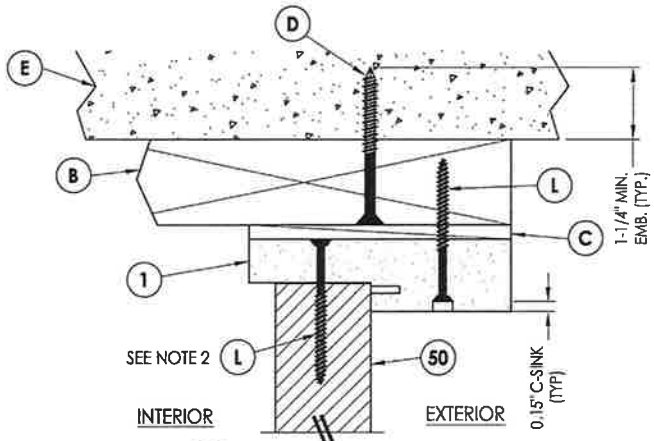


4 / 6 **VERTICAL CROSS SECTION**
Outswing shown (Inswing similar)

NOTE:
1. Spacing for item L: 6" from each end and 3 more equally spaced along sidelite jamb (5 total).
2. Spacing for item L @ head & sill: 6" from each end, 1 @ centerline, 2 additional at 3" & 4.5" from end adjacent to door.



3 / 6 **HORIZONTAL CROSS SECTION**
Outswing shown (Inswing similar)



5 / 6 **VERTICAL CROSS SECTION**
Outswing shown (Inswing similar)

T. F. SCHMIDT LICENSE No. 43409 STATE OF FLORIDA PROFESSIONAL ENGINEER

August 06, 2020

Documents Prepared By:
Lyndon F. Schmidt
P.E. No. 43409

BUILDING CONSULTANTS, INC.
P.O. Box 230, Valrico, FL 33595
Phone No.: 813.659.9197
FBPE Registry No. 9813

PRODUCT: PLASTPRO IND FIBERGLASS DOOR

PART OR ASSEMBLY: HORIZONTAL & VERTICAL CROSS SECTIONS (2X BUCK)

NO	DATE	REVISIONS	BY
3	8/05/20	UPDATE TO 7TH ED. (2020) FBC	DAC
2	7/27/17	UPDATE TO 6TH ED. (2017) FBC	JK
1	04/14/15	UPDATE TO 5TH ED. (2014) FBC	JK

DATE: 10/08/14
SCALE: N.T.S.
DWG. BY: JK
CHK. BY: LFS
DRAWING NO.: FL-17347.9
SHEET 6 OF 14

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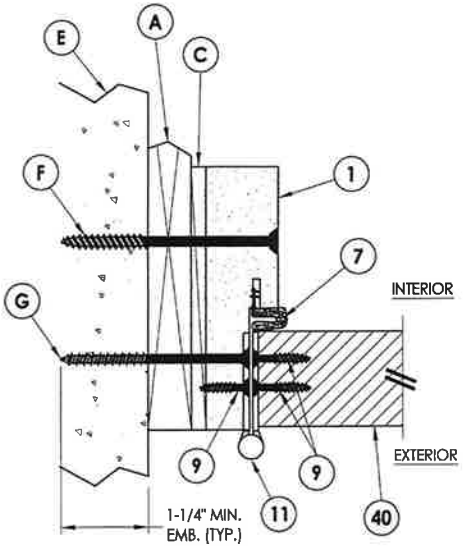
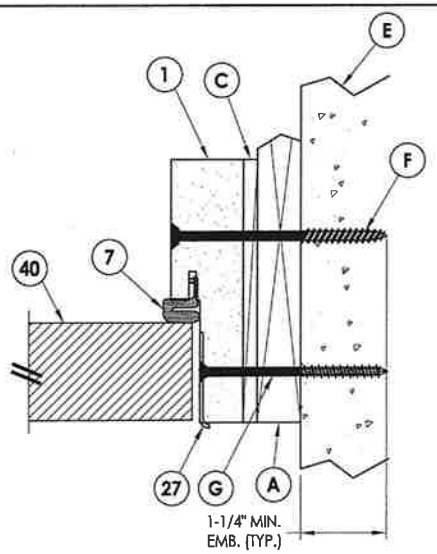
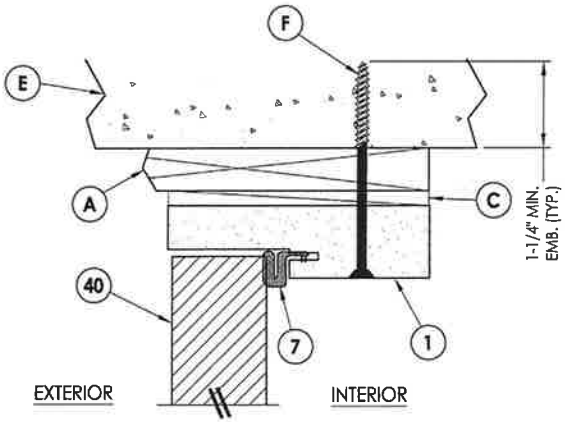
\\dc01\rwbc\Clients\Plastpro, Inc PERMANENT\A - Florida Product Approvals\FL-17347 Fiberglass Door - Impact-noninpact\C - Drawings\FL-17347 (2020)\FL-17347.9-10.dwg



1/7 **HORIZONTAL CROSS SECTION**
Shown w/ 1X sub-buck
Outswing shown (Inswing similar)

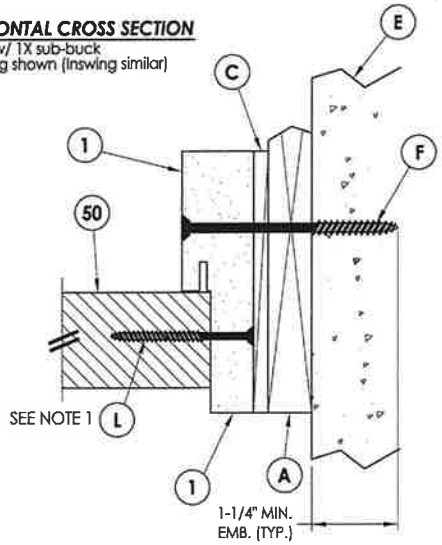


2/7 **HORIZONTAL CROSS SECTION**
Shown w/ 1X sub-buck
Outswing shown (Inswing similar)

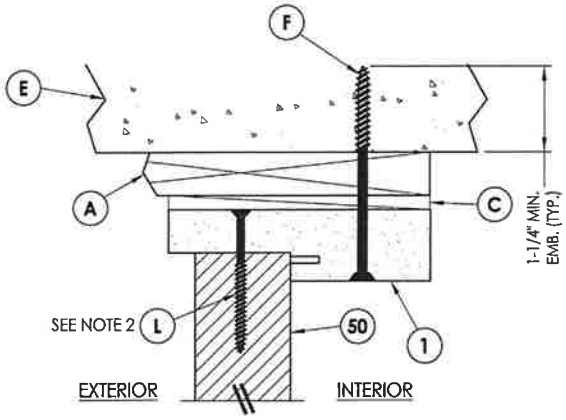


4/7 **VERTICAL CROSS SECTION**
Shown w/ 1X sub-buck
Outswing shown (Inswing similar)

NOTE:
1. Spacing for item L: 6" from each end and 3 more equally spaced along sidelite jamb (5 total).
2. Spacing for item L @ head & sill: 6" from each end, 1 @ centerline, 2 additional at 3" & 4.5" from end adjacent to door.



3/7 **HORIZONTAL CROSS SECTION**
Shown w/ 1X sub-buck
Outswing shown (Inswing similar)



5/7 **VERTICAL CROSS SECTION**
Shown w/ 1X sub-buck
Outswing shown (Inswing similar)

STATE OF FLORIDA
PROFESSIONAL ENGINEER
T. F. SCHMIDT
LICENSE No. 43409

August 06, 2020

Documents Prepared By:
Lyndon F. Schmidt
P.E. No. 43409

BUILDING CONSULTANTS, INC.
P.O. Box 230, Valrico, FL 33595
Phone No.: 813.659.9197
FBPE Registry No. 9813

PRODUCT: PLASTPRO IND FIBERGLASS DOOR

PART OR ASSEMBLY: HORIZONTAL & VERTICAL CROSS SECTIONS (1X BUCK)

NO.	DATE	REVISIONS	BY
3	8/05/20	UPDATE TO 7TH ED. (2020) FBC	DAC
2	7/27/17	UPDATE TO 6TH ED. (2017) FBC	JK
1	04/14/15	UPDATE TO 5TH ED. (2014) FBC	JK

DATE: 10/08/14
SCALE: N.T.S.
DWG. BY: JK
CHK. BY: LFS
DRAWING NO.: FL-17347.9
SHEET 7 OF 14

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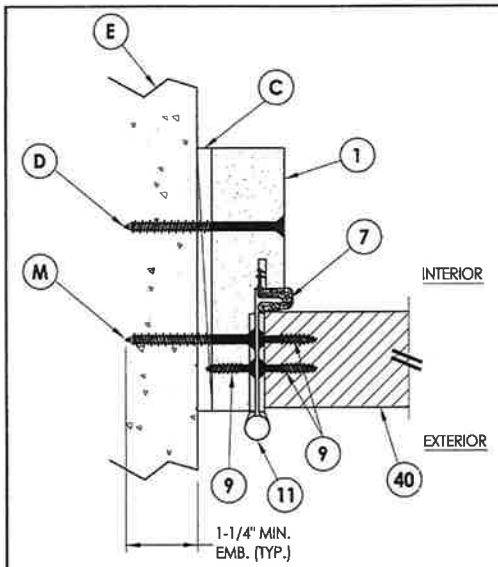
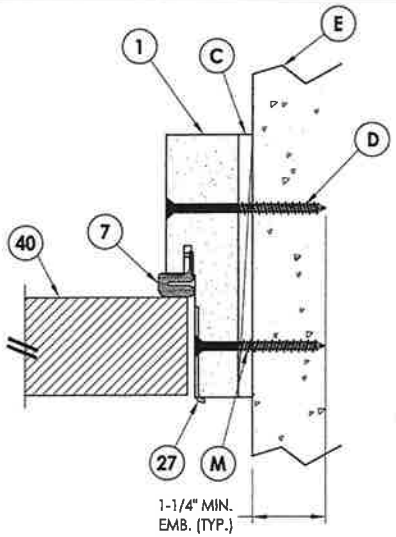
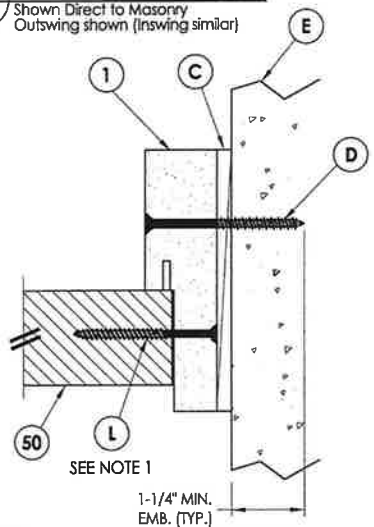


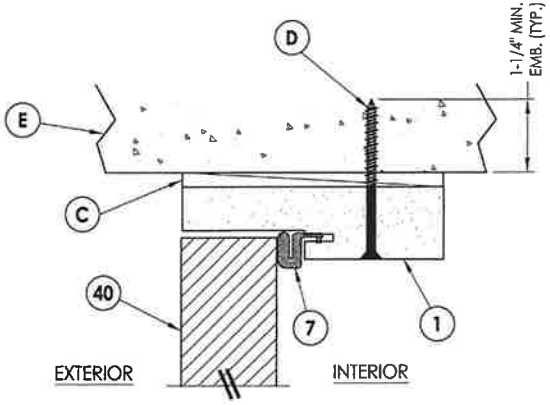
1/8 HORIZONTAL CROSS SECTION
Shown Direct to Masonry
Outswing shown (Inswing similar)



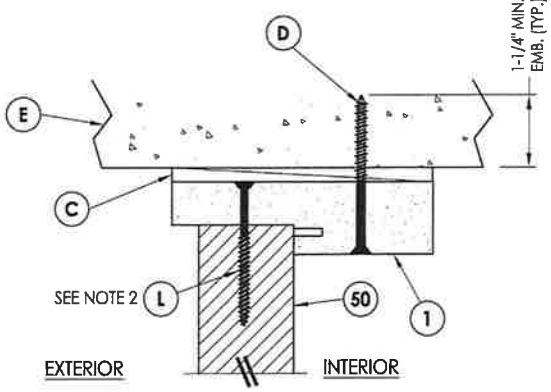
2/8 HORIZONTAL CROSS SECTION
Shown Direct to Masonry
Outswing shown (Inswing similar)



3/8 HORIZONTAL CROSS SECTION
Shown Direct to Masonry
Outswing shown (Inswing similar)



4/8 VERTICAL CROSS SECTION
Shown Direct to Masonry
Outswing shown (Inswing similar)



5/8 VERTICAL CROSS SECTION
Shown Direct to Masonry
Outswing shown (Inswing similar)

NOTE:
1. Spacing for item L: 6" from each end and 3 more equally spaced along sidelite jamb (5 total).
2. Spacing for item L @ head & sill: 6" from each end, 1 @ centerline, 2 additional at 3" & 4.5" from end adjacent to door.

T. F. SCHMIDT
LICENSE
No. 43409
STATE OF FLORIDA
PROFESSIONAL ENGINEER

August 06, 2020

Documents Prepared By:
Lyndon F. Schmidt
P.E. No. 43409

R|W BUILDING CONSULTANTS, INC.
P.O. Box 230, Valrico, FL 33595
Phone No.: 813.659.9197
FBPE Registry No. 9813

PRODUCT: PLASTPRO IND FIBERGLASS DOOR

PART OR ASSEMBLY: HORIZONTAL & VERTICAL CROSS SECTIONS (DIRECT TO MASONRY)

NO.	DATE	REVISIONS	BY
3	8/05/20	UPDATE TO 7TH ED. (2020) FBC	DAC
2	7/27/17	UPDATE TO 6TH ED. (2017) FBC	JK
1	04/14/15	UPDATE TO 5TH ED. (2014) FBC	JK

DATE: 10/08/14
SCALE: N.T.S.
DWG. BY: JK
CHK. BY: LFS
DRAWING NO.: FL-17347.9
SHEET 8 OF 14

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PRODUCT: PLASTPRO IND FIBERGLASS DOOR	PART OR ASSEMBLY: VERTICAL CROSS SECTIONS (THRESHOLDS)	BUILDING CONSULTANTS, INC. P.O. Box 230, Valrico, FL 33595 Phone No.: 813.659.9197 FBPE Registry No. 9813

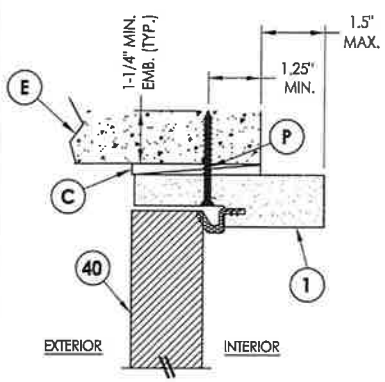
REVISIONS			
NO.	DATE		BY
1	04/14/15	UPDATE TO 5TH ED. (2014) FBC	JK
2	7/27/17	UPDATE TO 6TH ED. (2017) FBC	JK
3	8/05/20	UPDATE TO 7TH ED. (2020) FBC	DAC

DATE: 10/08/14
SCALE: N.T.S.
DWG. BY: JK
CHK. BY: LFS
DRAWING NO.: FL-17347.9
SHEET 9 OF 14

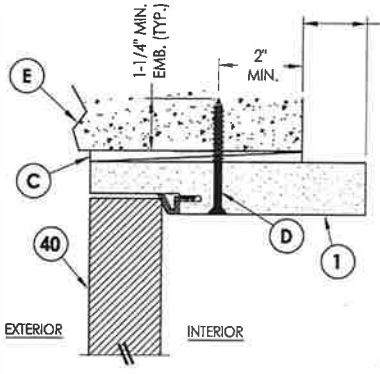
Documents Prepared By:
Lyndon F. Schmidt
P.E. No. 43408
STATE OF FLORIDA
L. F. SCHMIDT LICENSE No. 43408
PROFESSIONAL ENGINEER

August 06, 2020

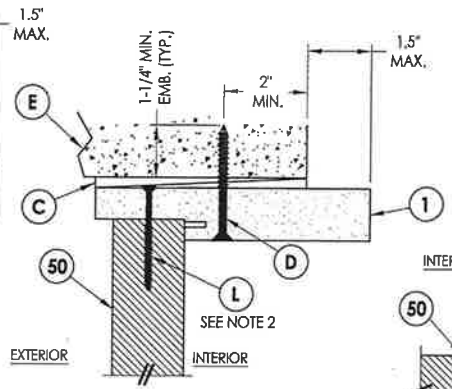
NOTE:
1. Spacing for item L @ head & sill: 6" from each end, 1 @ centerline, 2 additional at 3" & 4.5" from end adjacent to door.



6/10 VERTICAL CROSS SECTION
Shown Direct to Masonry
Outswing only w/ 4-9/16" jamb
Single door only (N/A W/ Sidelites)

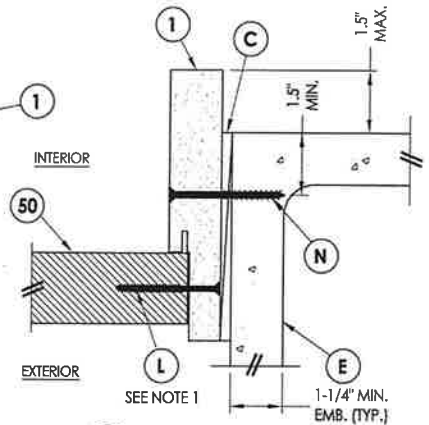


7/10 VERTICAL CROSS SECTION
Shown Direct to Masonry
Outswing only w/ 6-9/16" jamb

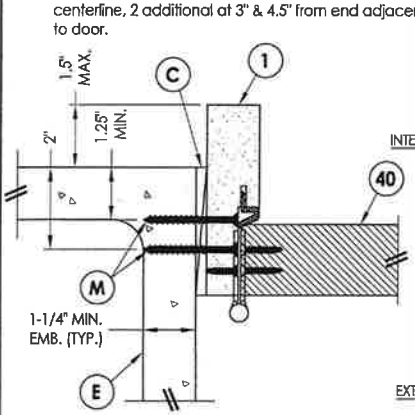


8/10 VERTICAL CROSS SECTION
Shown Direct to Masonry
Outswing only w/ 6-9/16" jamb

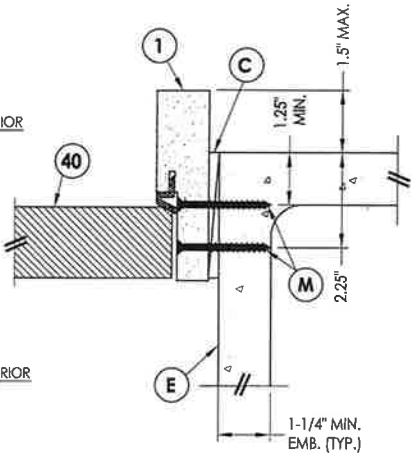
NOTE:
1. Spacing for item L: 6" from each end and 3 more equally spaced along sidelite jamb (5 total).
2. Spacing for item L @ head & sill: 6" from each end, 1 @ centerline, 2 additional at 3" & 4.5" from end adjacent to door.



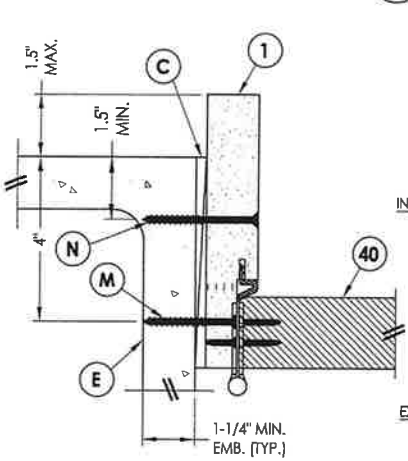
5/10 HORIZONTAL CROSS SECTION
Shown Direct to Masonry
Outswing only w/ 6-9/16" jamb



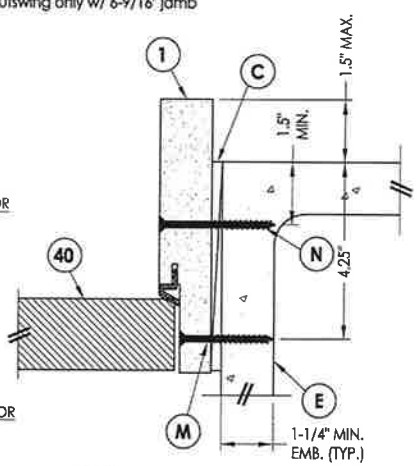
1/10 HORIZONTAL CROSS SECTION
Shown Direct to Masonry
Outswing only w/ 4-9/16" jamb
Single door only (N/A W/ Sidelites)



2/10 HORIZONTAL CROSS SECTION
Shown Direct to Masonry
Outswing only w/ 4-9/16" jamb
Single door only (N/A W/ Sidelites)



3/10 HORIZONTAL CROSS SECTION
Shown Direct to Masonry
Outswing only w/ 6-9/16" jamb



4/10 HORIZONTAL CROSS SECTION
Shown Direct to Masonry
Outswing only w/ 6-9/16" jamb

L. F. SCHMIDT LICENSE No. 43409 STATE OF FLORIDA PROFESSIONAL ENGINEER

Documents Prepared By:
Lyndon F. Schmidt
P.E. No. 43409

August 06, 2020

RW BUILDING CONSULTANTS, INC.
P.O. Box 230, Valrico, FL 33595
Phone No.: 813.659.9197
FBPE Registry No. 9813

PRODUCT: PLASTPRO IND FIBERGLASS DOOR

PART OR ASSEMBLY: HORIZONTAL & VERTICAL SECTIONS (DIRECT TO MASONRY)

NO.	DATE	REVISIONS	BY
3	8/05/20	UPDATE TO 7TH ED. (2020) FBC	DAC
2	7/27/17	UPDATE TO 6TH ED. (2017) FBC	JK
1	04/14/15	UPDATE TO 5TH ED. (2014) FBC	JK

DATE: 10/08/14
SCALE: N.T.S.
DWG. BY: JK
CHK. BY: LFS
DRAWING NO.: FL-17347.9
SHEET 10 OF 14

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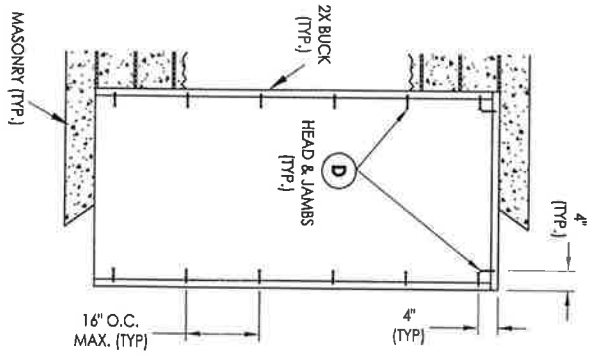
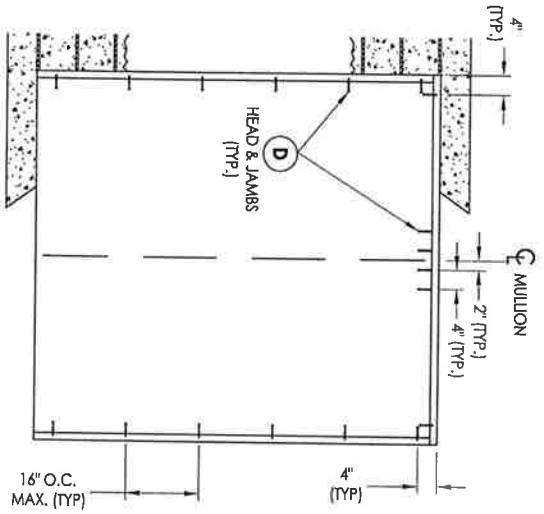
2X BUCK ANCHORING

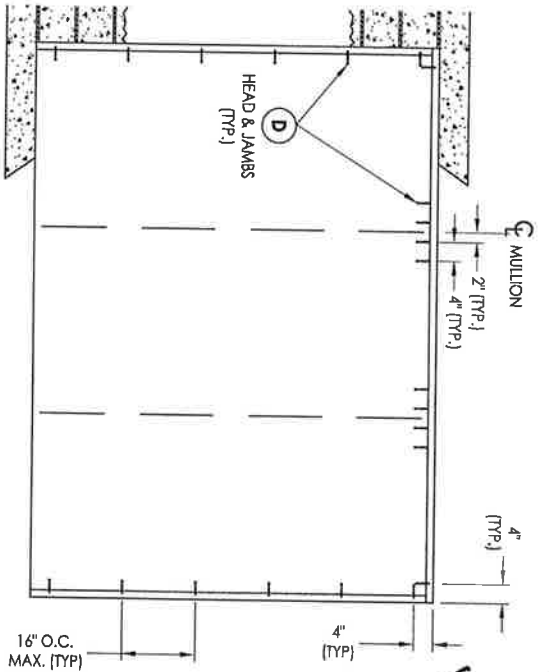
X



XO / OX



OXO



August 06, 2020

L. F. SCHMIDT LICENSE No. 43409 STATE OF FLORIDA PROFESSIONAL ENGINEER

NO.	DATE	REVISIONS	BY
3	8/05/20	UPDATE TO 7TH ED. (2020) FBC	DAC
2	7/27/17	UPDATE TO 6TH ED. (2017) FBC	JK
1	04/14/15	UPDATE TO 5TH ED. (2014) FBC	JK

PRODUCT: PLASTPRO IND FIBERGLASS DOOR

PART OR ASSEMBLY: BUCK ANCHORING

Documents Prepared By: Lyndon F. Schmidt P.E. No. 43409

RW BUILDING CONSULTANTS, INC. P.O. Box 230, Valrico, FL 33595 Phone No.: 813.659.9197 FBPE Registry No. 9813

DATE: 10/08/14 | SCALE: N.T.S. | DWG. BY: JK | CHK. BY: LFS | DRAWING NO.: FL-17347.9 | SHEET 11 OF 14

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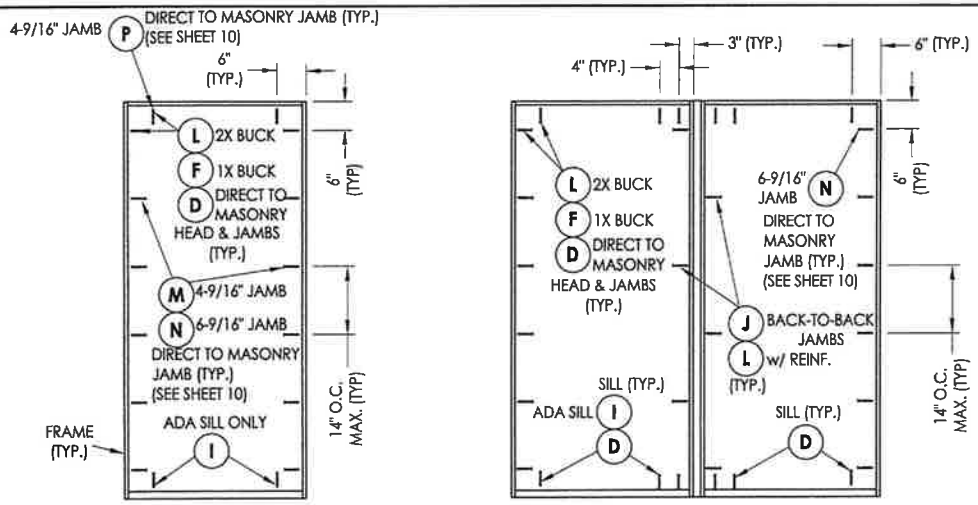
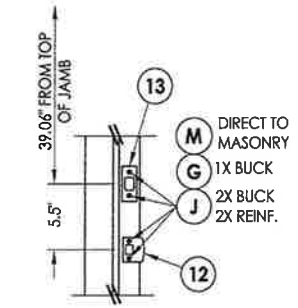
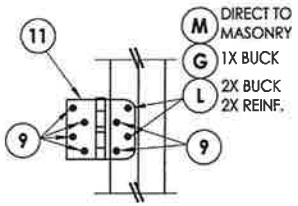


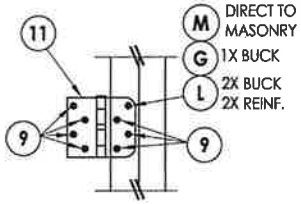
FRAME ANCHORING



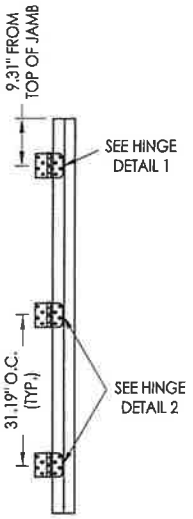
LATCH AND DEADBOLT DETAILS



HINGE DETAIL 1



HINGE DETAIL 2



HINGE JAMB

HARDWARE DETAILS

T. F. SCHMIDT LICENSE No. 43409 STATE OF FLORIDA PROFESSIONAL ENGINEER

August 06, 2020

Documents Prepared By:
Lyndon F. Schmidt
P.E. No. 43409

RW BUILDING CONSULTANTS, INC.
P.O. Box 230, Valrico, FL 33595
Phone No.: 813.659.9197
FBPE Registry No. 9813

PRODUCT: PLASTPRO IND. FIBERGLASS DOOR

PART OR ASSEMBLY: FRAME ANCHORING & HARDWARE DETAILS

NO.	DATE	REVISIONS	BY
3	8/05/20	UPDATE TO 7TH ED. (2020) FBC	DAC
2	7/27/17	UPDATE TO 6TH ED. (2017) FBC	JK
1	04/14/15	UPDATE TO 5TH ED. (2014) FBC	JK

DATE: 10/08/14
SCALE: N.T.S.
DWG. BY: JK
CHK. BY: LFS
DRAWING NO.: FL-17347.9
SHEET 12 OF 14

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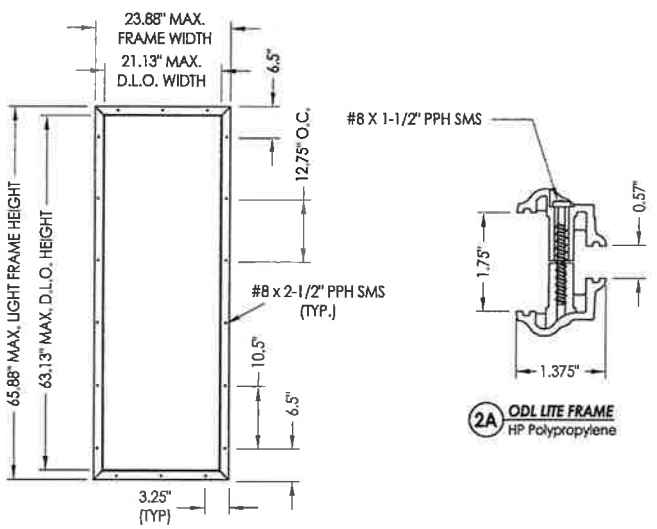
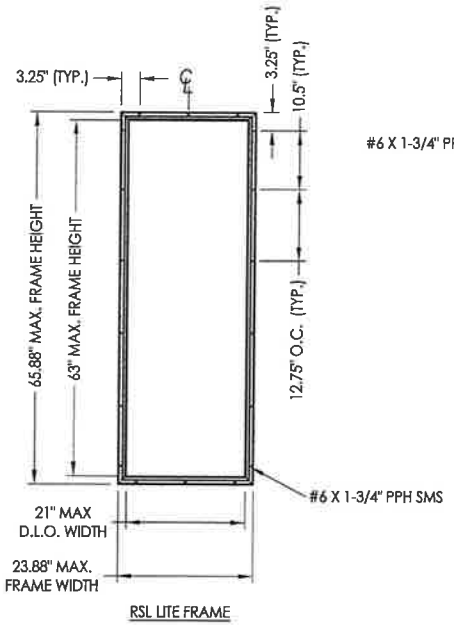
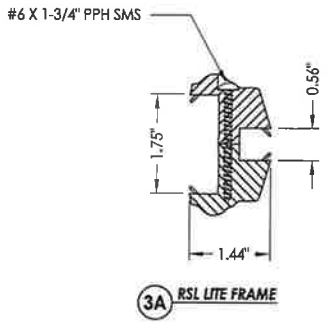


ODL LITE FRAME

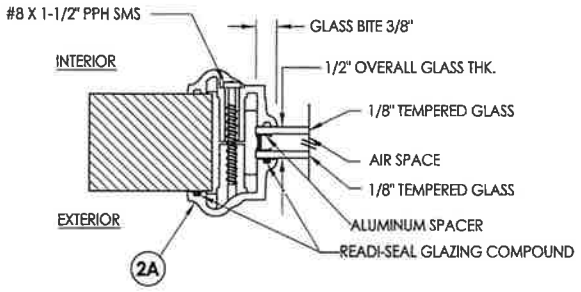
2A **ODL LITE FRAME**
HP Polypropylene



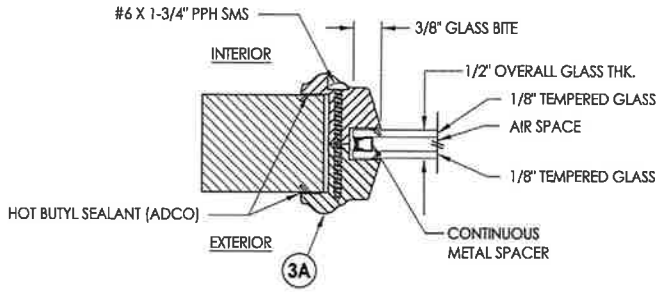
RSL LITE FRAME



3A **RSL LITE FRAME**



G1 **GLAZING DETAIL**



G2 **GLAZING DETAIL**

L. F. SCHMIDT LICENSE No. 43409 STATE OF FLORIDA PROFESSIONAL ENGINEER

August 06, 2020

Documents Prepared By:
Lyndon F. Schmidt
P.E. No. 43409

BUILDING CONSULTANTS, INC.
P.O. Box 230, Valrico, FL 33595
Phone No.: 813.659.9197
FBPE Registry No. 9813

PRODUCT: PLASTPRO IND FIBERGLASS DOOR

PART OR ASSEMBLY: LITE FRAME GLAZING DETAILS

NO	DATE	REVISIONS	BY
3	8/05/20	UPDATE TO 7TH ED. (2020) FBC	DAC
2	7/21/17	UPDATE TO 6TH ED. (2017) FBC	JK
1	04/14/15	UPDATE TO 5TH ED. (2014) FBC	JK

DATE: 10/08/14
SCALE: N.T.S.
DWG. BY: JK
CHK. BY: LFS
DRAWING NO.: FL-17347.9
SHEET 13 OF 14

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BILL OF MATERIALS		
ITEM #	DESCRIPTION	MATERIAL
A	1X BUCK (G >= 0.42)	WOOD
B	2X BUCK (G >= 0.42)	WOOD
C	1/4" MAX. SHIM SPACE	-
D	1/4" X 2-3/4" PFH DeWALT OR ITW CONCRETE SCREW	STEEL
E	MASONRY - 3,000 PSI MIN. CONCRETE CONFORMING TO ACI 301 OR HOLLOW BLOCK CONFORMING TO ASTM C90	CONCRETE
F	1/4" X 3-3/4" PFH DeWALT OR ITW CONCRETE SCREW	STEEL
G	3/16" x 3-1/4" PFH ITW CONCRETE SCREW	STEEL
I	1/4" X 1-3/4" PFH DeWALT OR ITW CONCRETE SCREW	STEEL
J	#10 X 2" PFH WOOD SCREW	STEEL
L	#10 X 2-1/2" PFH WOOD SCREW (1.15" MIN. EMB.)	STEEL
M	3/16" X 2-1/4" ITW CONCRETE SCREW	STEEL
N	3/16" X 2-3/4" ITW CONCRETE SCREW	STEEL
P	1/4" X 2-1/4" PFH DeWALT CONCRETE SCREW	STEEL
1	POLY FIBER JAMB	COMP.
4	1X REINFORCEMENT (G >= 0.55)	WOOD
5	2X REINFORCEMENT (G >= 0.55)	WOOD
6	DOOR SWEEP	PVC
7	WEATHERSTRIP (ENDURA FORCE 5)	FOAM
9	#9 x 3/4" PFH WOOD SCREW	STEEL
11	4" X 4" HINGE	STEEL
12	LATCH STRIKE PLATE	STEEL
13	DEADBOLT STRIKE PLATE	STEEL
20	INSWING THRESHOLD	ALUM/COMP
21	INSWING THRESHOLD w/ SIDELITE ADAPTER	ALUM/COMP
22	OUTSWING THRESHOLD	ALUM/COMP
23	OUTSWING THRESHOLD w/ SIDELITE ADAPTER	ALUM/COMP
24	ADA THRESHOLD	ALUM
25	OUTSWING THRESHOLD	ALUM/COMP
26	INSWING THRESHOLD	ALUM/COMP
40	DOOR PANEL	-
50	SIDELITE PANEL	-

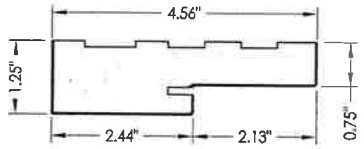
CONCRETE ANCHOR NOTES:

1. *Concrete anchor locations at the corners may be adjusted to maintain the min. edge distance to mortar joints.*
2. *Concrete anchor locations noted as "MAX. ON CENTER" must be adjusted to maintain the min. edge distance to mortar joints, additional concrete anchors may be required to ensure the "MAX. ON CENTER" dimension are not exceeded.*
3. *Concrete anchor table:*

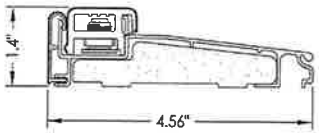
ANCHOR TYPE	ANCHOR SIZE	MIN. EMBEDMENT	MIN. CLEARANCE TO MASONRY EDGE	MIN. CLEARANCE TO ADJACENT ANCHOR
ITW BUILDEX TAPCON®	3/16"	1-1/4"	3"	1-1/2"
	1/4"	1-1/4"	2"	4"
DeWALT ULTRACON®	1/4"	1-1/4"	1"	4"

WOOD SCREW INSTALLATION NOTES:

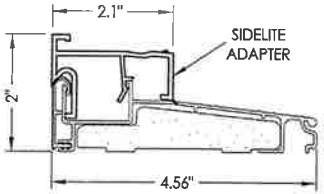
1. *Maintain a minimum 5/8" edge distance, 1" end distance, & 1" o.c. spacing of wood screws to prevent the splitting of wood.*



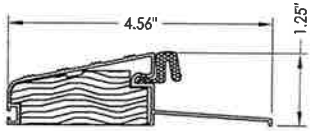
1 POLY FIBER JAMB



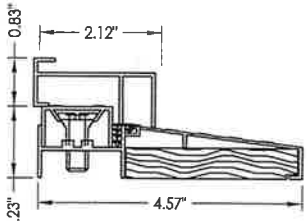
20 INSWING THRESHOLD
Endura (Z-Series)



21 INSWING THRESHOLD w/ SIDELITE ADAPTER
Endura (Z-Series)



25 OUTSWING THRESHOLD
DLP



27 INSWING THRESHOLD w/ SIDELITE ADAPTER
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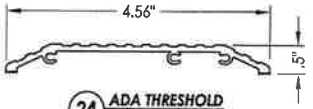

24 ADA THRESHOLD
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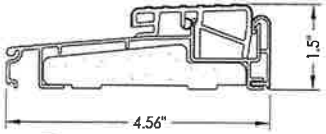
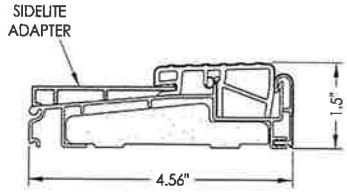


22 OUTSWING THRESHOLD
Endura (Z-Series)



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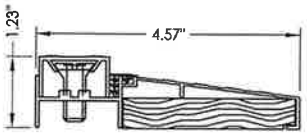
Endura (Z-Series)



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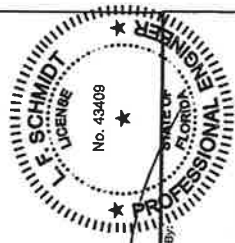
DLP



August 06, 2020
Documents Prepared By:
Lyndon F. Schmidt
P.E. No. 43409

BUILDING CONSULTANTS, INC.
P.O. Box 230, Valrico, FL 33595
Phone No.: 813.659.9197
FBPE Registry No. 9813

PRODUCT: PLASTPRO IND. FIBERGLASS DOOR

PART OR ASSEMBLY: BILL OF MATERIALS & COMPONENTS

NO.	DATE	REVISIONS	BY
3	8/05/20	UPDATE TO 7TH ED. (2020) FBC	DAC
2	7/27/17	UPDATE TO 6TH ED. (2017) FBC	JK
1	04/14/15	UPDATE TO 5TH ED. (2014) FBC	JK

DATE: 10/08/14
SCALE: N.T.S.
DWG. BY: JK
CHK. BY: LFS
DRAWING NO.: FL-17347.9
SHEET 14 OF 14

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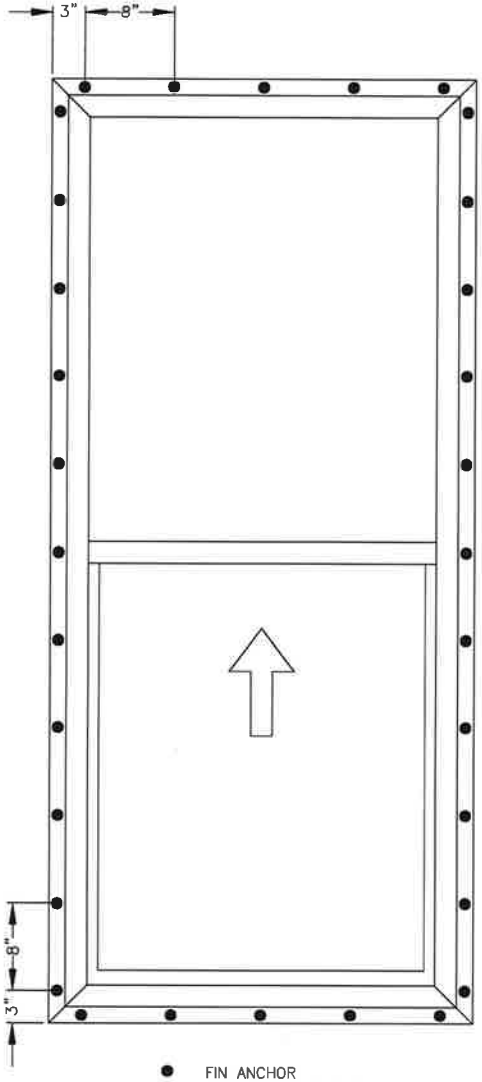
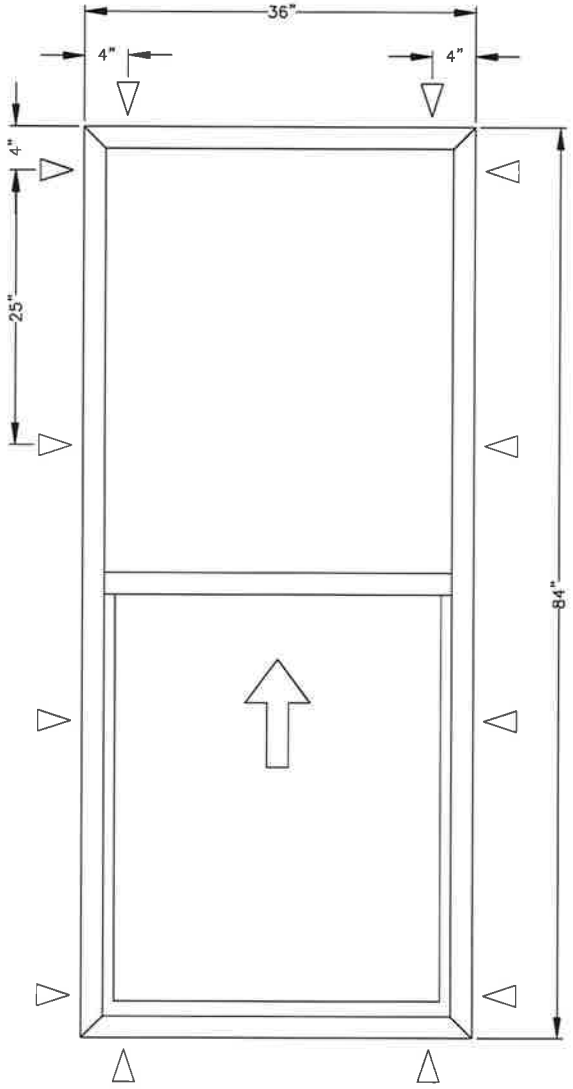
\\dc01\rwbc\Clients\Plastpro, Inc PERMANENT\A - Florida Product Approvals\FL-17347 Fiberglass Door - Impact-nonimpact\C - Drawings\FL-17347 (2020)\FL-17347.9-10.dwg





● FIN ANCHOR
SEE SHEETS 3 TO 4

▽ FRAME ANCHOR
SEE SHEETS 5 TO 8

3540 SINGLE HUNG WINDOW
SIZE 36" X 84"
DESIGN PRESSURE +/- 35 PSF

NOTES:

1. Products and installations depicted satisfy the requirements of the Florida Building Code, Building 7th Edition (2020) for design wind pressures and overall sizes noted.
2. Wood bucks, wood framing, steel stud framing, concrete and concrete masonry are by others and shall be designed by the architect or engineer of record to resist the loads imparted to them.
3. Wood buck strips and wood frames are assumed S-P-F (G=0.42) or denser. Buck width shall be greater than the window frame width. Tapered or partial width buck strips are not allowed.
4. Concrete masonry installations are assumed at least ASTM C90 normal weight hollow masonry units with a 1-1/4" wall thickness or normal weight concrete with a minimum compressive strength of f'c = 3,000 psi.
5. Metal stud frames are assumed to be a minimum 18 gauge 33 KSI steel.
6. Wood screws shall be corrosion resistant and meet the requirements of ANSI/ASME B18.6.1
7. Tapcon masonry anchors shall have a minimum embedment of 1-1/2" or full penetration of concrete masonry unit shell. They shall also have a minimum of 2" edge distance. Install concrete masonry anchors per manufacturer's installation instructions.
8. TEKS screws shall be corrosion resistant and shall be ASTM A510 Grade 1018 or equivalent.
9. Maximum permitted shim thickness is 1/4". Shims shall be non-compressible and load bearing type. Every through-frame fastener shall have a shim.
10. Products are not impact resistant and require approved protection devices if used in wind-borne debris regions.
11. Not for use in High Velocity Hurricane Zone (HVHZ).

CONTENTS:

Sheets 1-2 Elevations and Notes
Sheet 3 Fin Install to Wood
Sheet 4 Fin Install to Steel Stud
Sheet 5 Frame Install to Wood
Sheet 6 Frame Install to Steel Stud
Sheets 7-8 Frame Install to Concrete or CMU

JOSEPH A. REED LICENSE No. 58920 STATE OF FLORIDA PROFESSIONAL ENGINEER

Joseph A. Reed, PE
FL PE 58920
FL REG 33474
5 Leigh Dr.
York, PA 17406
717-846-1200

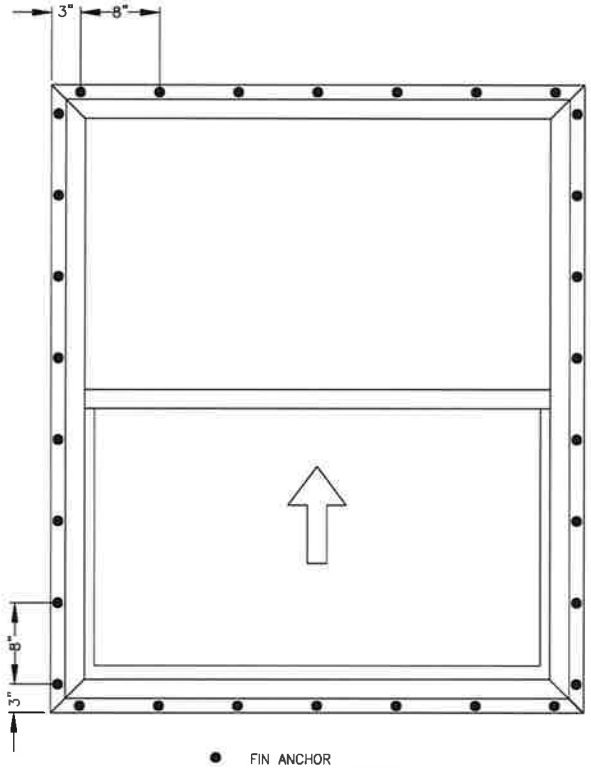
Joseph A. Reed
2020.09.16 09:51:34 -04'00'

3540 Single Hung - non Impact
Elevations and Notes

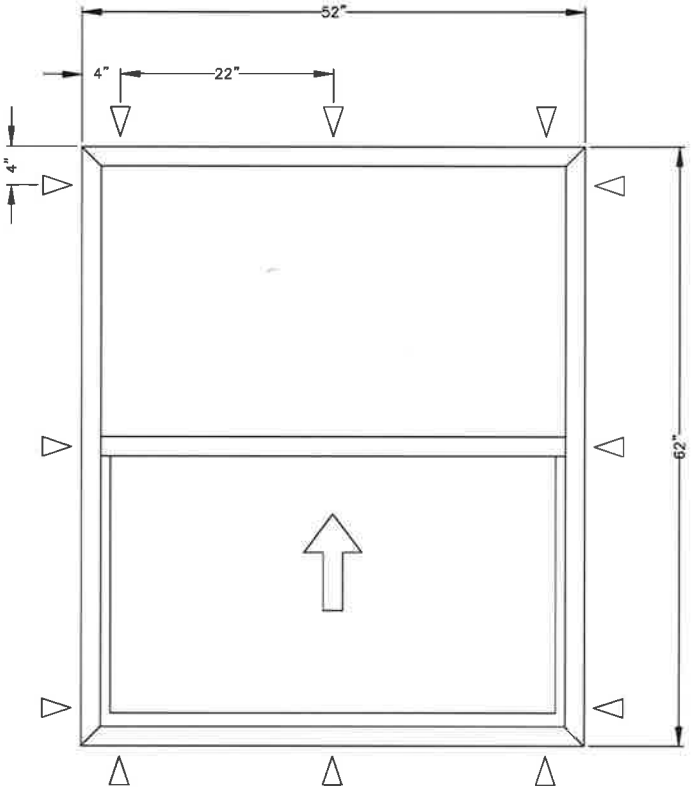
MI Windows and Doors
702 W. Market St.
Gratz, PA 17030

Drawing No.: 22480-1-1001A
Project No.: 22480-1
Drawn By: JAR Rev: - Date:09/16/20

Scale: NTS | Sheet 1 of 8



● FIN ANCHOR
SEE SHEETS 3 TO 4



▽ FRAME ANCHOR
SEE SHEETS 5 TO 8

3540 SINGLE HUNG WINDOW
SIZE 52" X 62"
DESIGN PRESSURE +/- 35 PSF

Joseph A. Reed, PE
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717-846-1200

JOSEPH A. REED LICENSE No. 58920 STATE OF FLORIDA PROFESSIONAL ENGINEER

2020.09.16 09:51:34 -04'00'

3540 Single Hung - non Impact
Elevations and Notes

MI Windows and Doors
702 W. Market St.
Gratz, PA 17030

Drawing No.: 22480-1-1001A
Project No.: 22480-1
Drawn By: JAR Rev: - Date:09/16/20

Scale: NTS

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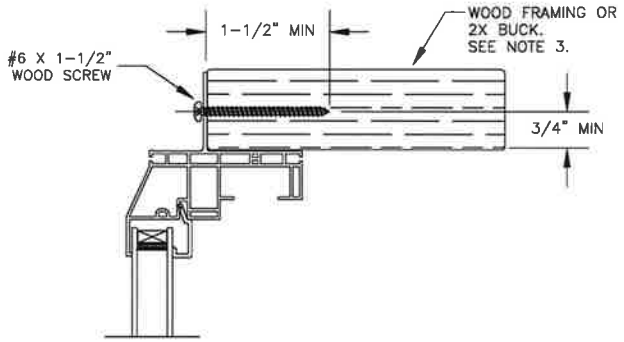

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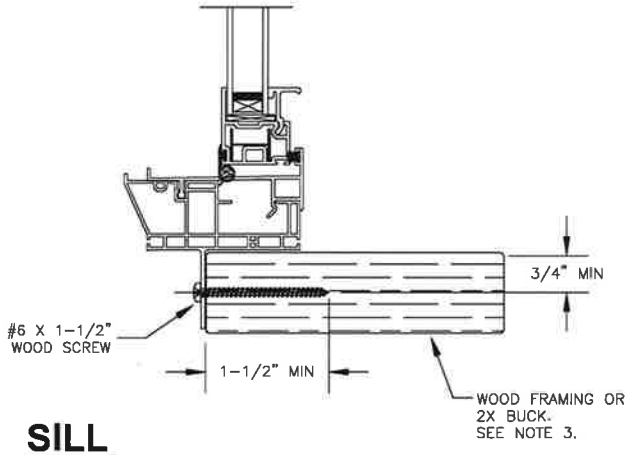

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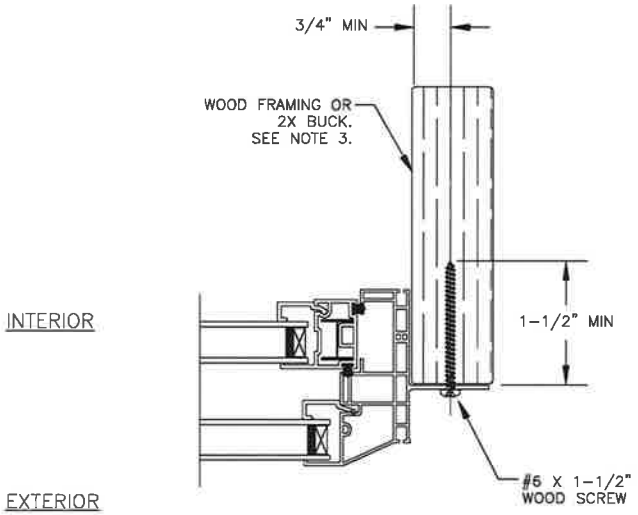

Note:
Waterproofing and interior finishes by others. Not shown for clarity.

Joseph A. Reed, PE
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JOSEPH A. REED LICENSE No. 58920 STATE OF FLORIDA PROFESSIONAL ENGINEER

2020.09.16 09:51:34 -04'00'

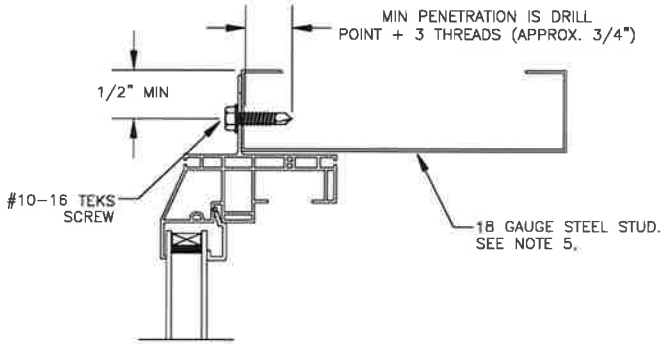
3540 Single Hung - non Impact
Fin Install to Wood

MI Windows and Doors
702 W. Market St.
Gratz, PA 17030

Drawing No.: 22480-1-1001A
Project No.: 22480-1
Drawn By: JAR Rev: - Date:09/16/20

Scale: NTS

HEAD



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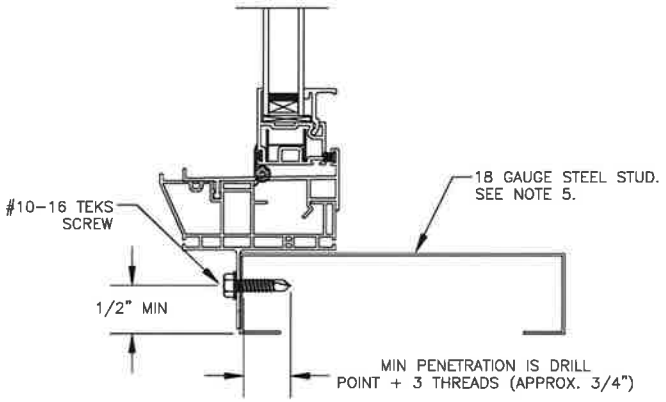
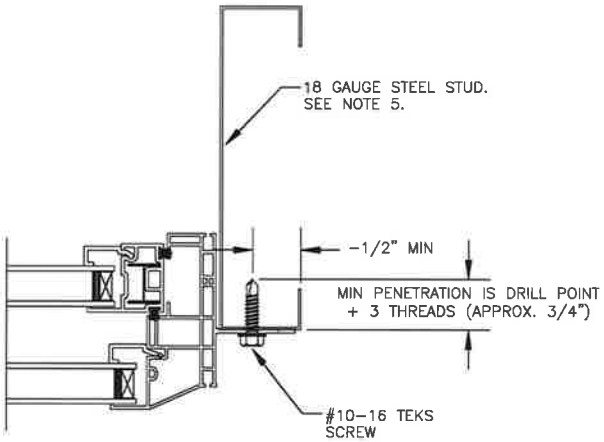


SILL

INTERIOR

EXTERIOR



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Note:
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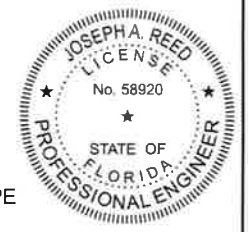

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Joseph A. Reed
2020.09.16 09:51:34 -04'00'

3540 Single Hung - non Impact
Fin Install to Steel Stud

MI Windows and Doors
702 W. Market St.
Gratz, PA 17030

Drawing No.: 22480-1-1001A
Project No.: 22480-1
Drawn By: JAR Rev: - Date:09/16/20

Scale: NTS

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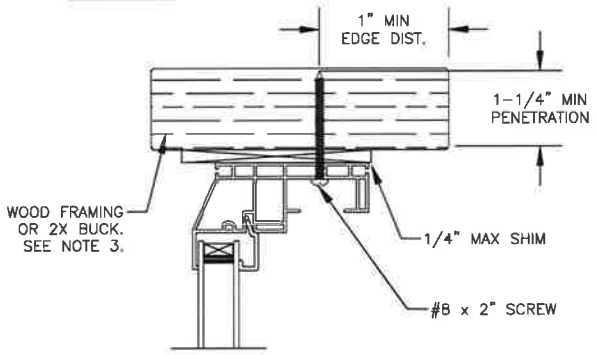

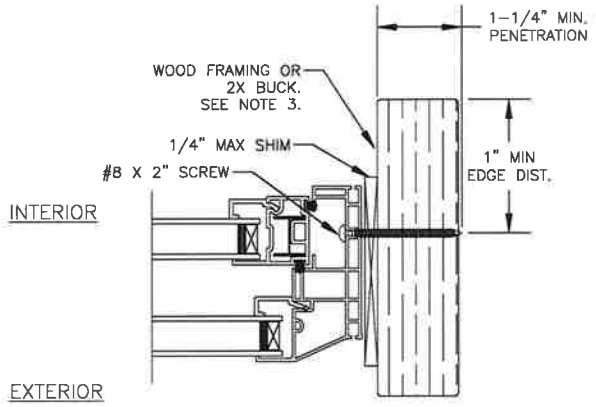

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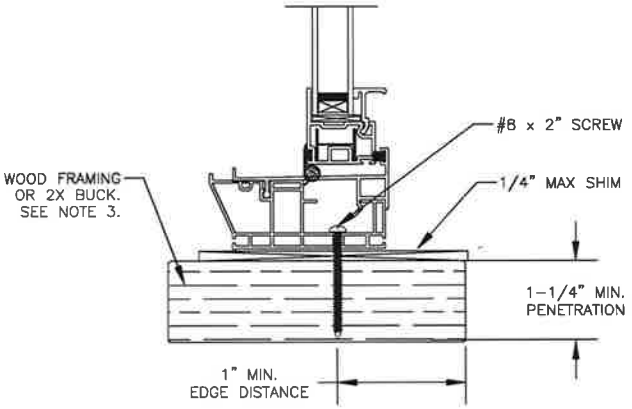

SILL

Note:
Waterproofing and interior finishes by others. Not shown for clarity.

JOSEPH A. REED LICENSE No. 58920 STATE OF FLORIDA PROFESSIONAL ENGINEER

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2020.09.16 09:51:34 -04'00'

3540 Single Hung - non Impact
Frame Install to Wood

MI Windows and Doors
702 W. Market St.
Gratz, PA 17030

Drawing No.: 22480-1-1001A
Project No.: 22480-1
Drawn By: JAR Rev: - Date:09/16/20

Scale: NTS | Sheet 5 of 8

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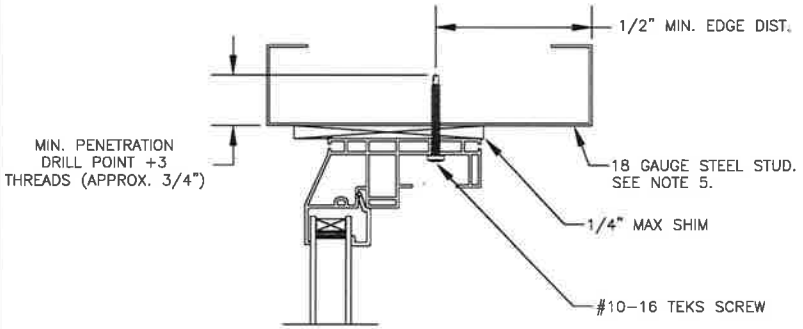

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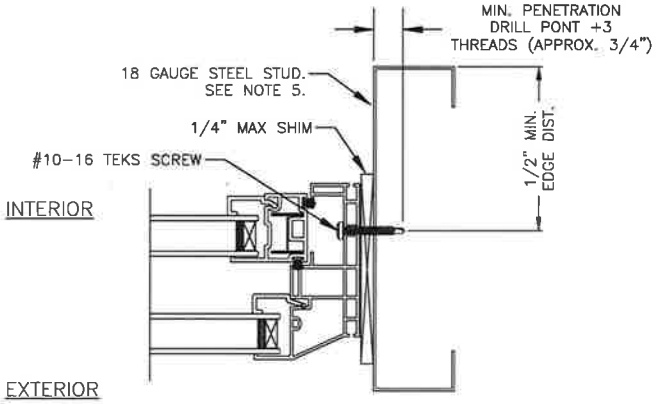

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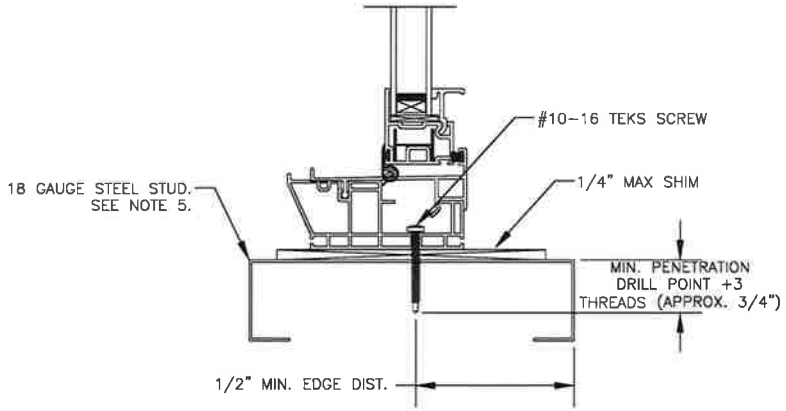

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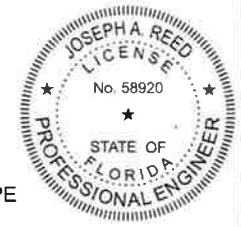

Joseph A. Reed, PE
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717-846-1200

2020.09.16 09:51:34 -04'00'

3540 Single Hung - non Impact
Frame Install to Steel Stud

MI Windows and Doors
702 W. Market St.
Gratz, PA 17030

Drawing No.: 22480-1-1001A
Project No.: 22480-1
Drawn By: JAR Rev: - Date:09/16/20

Scale: NTS

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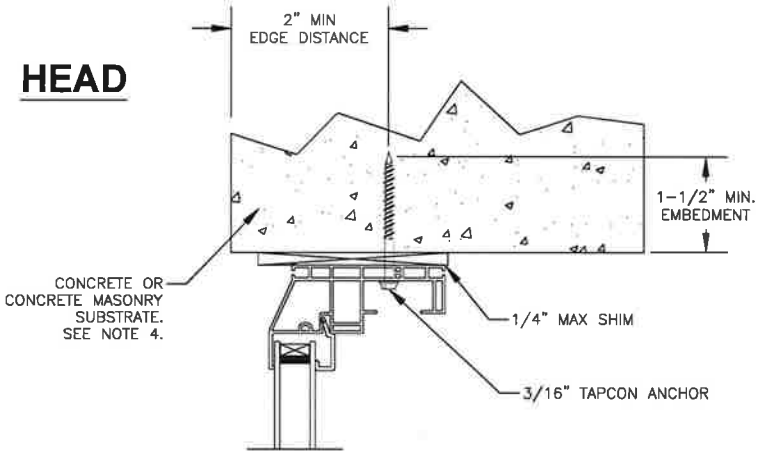

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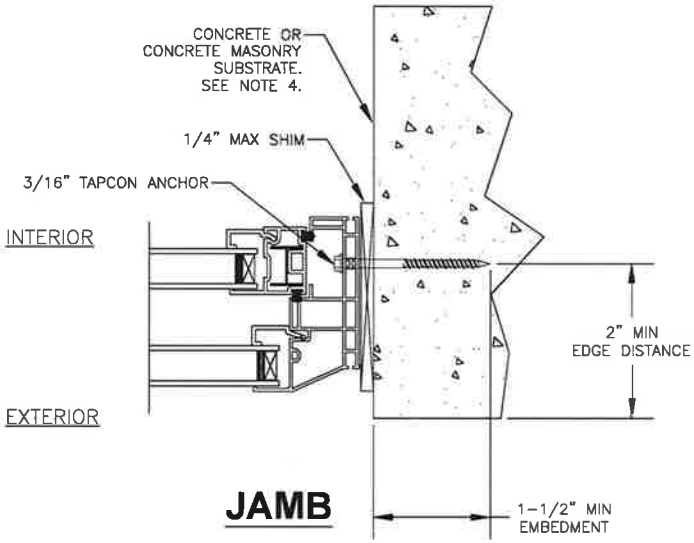

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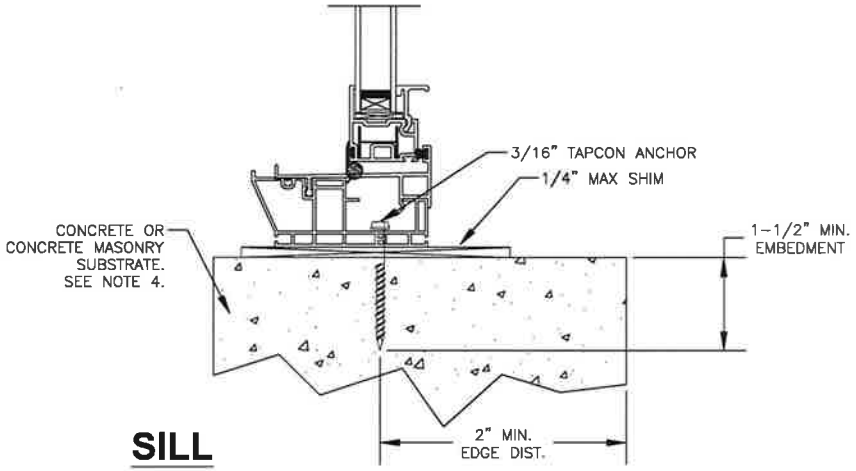

Note:
Waterproofing and interior finishes by others. Not shown for clarity.

JOSEPH A. REED LICENSE No. 58920 STATE OF FLORIDA PROFESSIONAL ENGINEER

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Joseph A. Reed
2020.09.16 09:51:34 -04'00'

3540 Single Hung - non Impact
Frame Install to Concrete/CMU

MI Windows and Doors
702 W. Market St.
Gratz, PA 17030

Drawing No.: 22480-1-1001A
Project No.: 22480-1
Drawn By: JAR Rev: - Date:09/16/20

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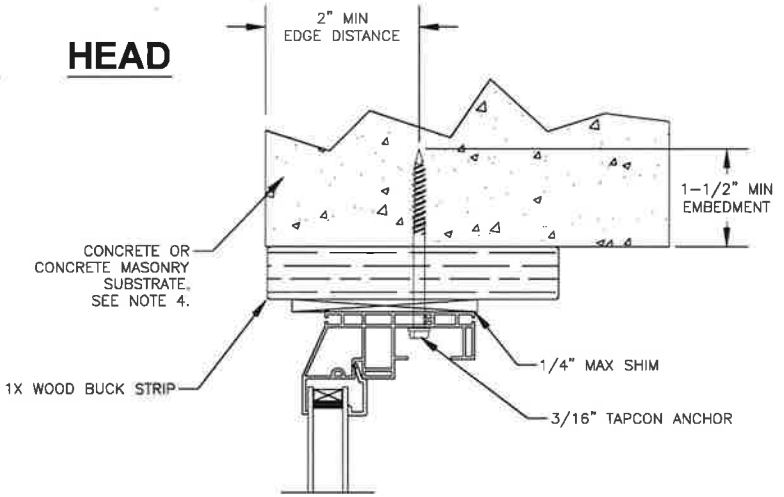

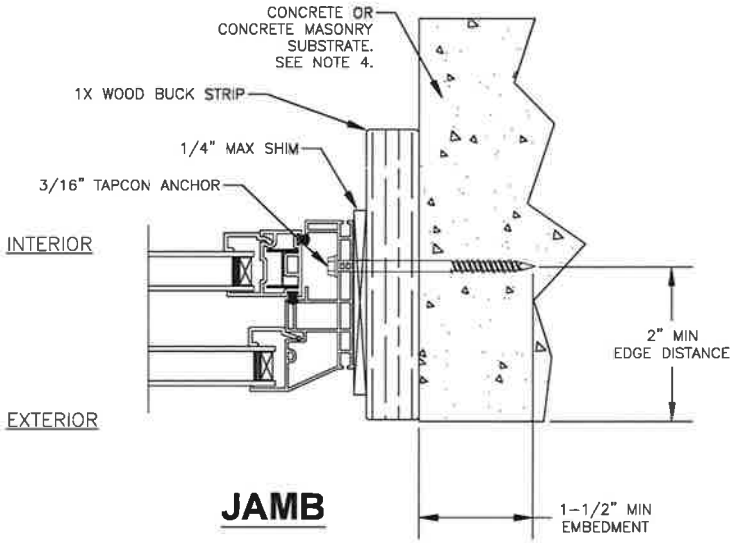

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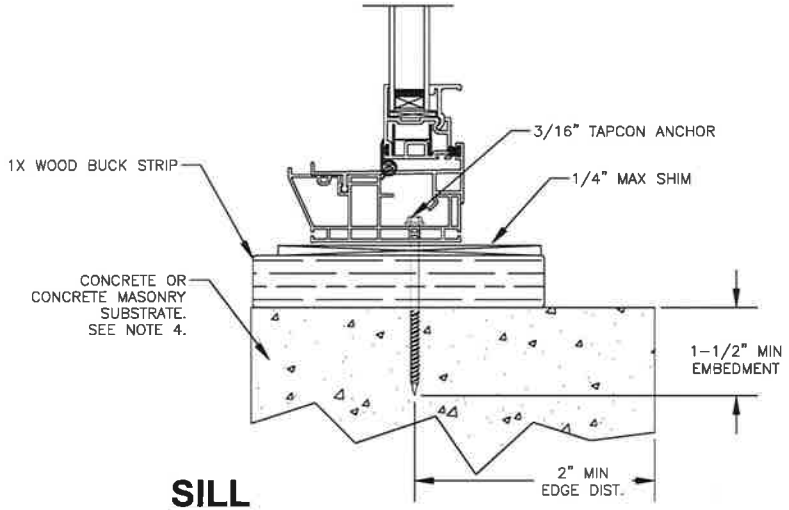

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FL PE 58920
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5 Leigh Dr.
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JOSEPH A. REED LICENSE No. 58920 STATE OF FLORIDA PROFESSIONAL ENGINEER

2020.09.16 09:51:34 -04'00'

3540 Single Hung - non Impact
Frame Install to Concrete/CMU

MI Windows and Doors
702 W. Market St.
Gratz, PA 17030

Drawing No.: 22480-1-1001A
Project No.: 22480-1
Drawn By: JAR Rev: - Date:09/16/20

Scale: NTS

When applying back jambs over dry wall or other non-structrual wall covering, use longer fasteners to insure minimum embedment required.
This chart applies to 2x6 wood species with specific gravity of 0.55 (Southern Pine) or better.
Each anchor requires a 1-1/2" diameter washer that complies with ANSI B18.22.1 type B.

2500 PSI CONCRETE

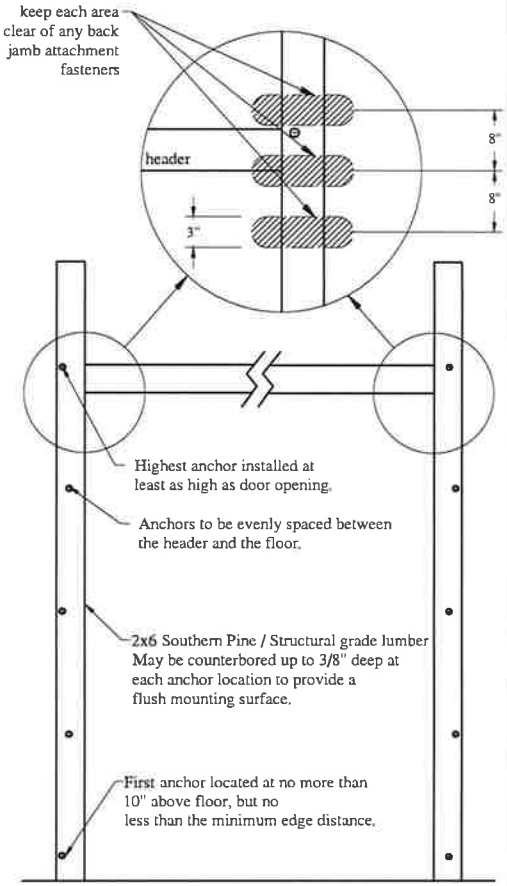
3/8" DeWALT Screw-Bolt+	Embed 3.5", Min Edge Dist 3.5", Min spacing 9"
3/8" POWERS Wedge-Bolt+	Embed 3.5", Min Edge Dist 3.5", Min spacing 9"
3/8" Hilti KwikBolt3	Embed 2.5", Min Edge Dist 3", Min spacing 6"

MAX WIDTH	DESIGN PRESSURE IN POUNDS-PER-SQUARE-FEET (PSF)													
IN FEET	12 PSF	15 PSF	18 PSF	21 PSF	24 PSF	27 PSF	30 PSF	33 PSF	36 PSF	39 PSF	42 PSF	46 PSF	50 PSF	53 PSF
≤ 9'	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"
10'	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"
12'	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"
14'	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"
15'	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"
16'	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"
18'	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"
20'	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"
22'	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"
24'	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	23"	22"
26'	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	23"	21"	20"
30'	24"	24"	24"	24"	24"	24"	24"	24"	24"	23"	22"	20"	18"	17"

CMU FILLED W/ 2000 PSI GROUT

3/8" DeWALT Screw-Bolt+	Embed 3.25", Min Edge Dist 1.5", Min spacing 3"
3/8" Hilti KwikBolt3	Embed 2.5", Min Edge Dist 4", Min spacing 8"

MAX WIDTH	DESIGN PRESSURE IN POUNDS-PER-SQUARE-FEET (PSF)													
IN FEET	12 PSF	15 PSF	18 PSF	21 PSF	24 PSF	27 PSF	30 PSF	33 PSF	36 PSF	39 PSF	42 PSF	46 PSF	50 PSF	53 PSF
≤ 9'	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"
10'	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"
12'	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"
14'	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	23"	21"	20"
15'	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	22"	20"	19"
16'	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	22"	20"	19"	18"
18'	24"	24"	24"	24"	24"	24"	24"	24"	23"	21"	20"	18"	17"	16"
20'	24"	24"	24"	24"	24"	24"	24"	23"	21"	19"	18"	16"	15"	14"
22'	24"	24"	24"	24"	24"	24"	23"	21"	19"	18"	16"	15"	14"	13"
24'	24"	24"	24"	24"	24"	23"	21"	19"	17"	16"	15"	14"	13"	12"
26'	24"	24"	24"	24"	24"	21"	19"	18"	16"	15"	14"	13"	12"	11"
30'	24"	24"	24"	24"	21"	19"	17"	15"	14"	13"	12"	11"	10"	9"



Supporting structural elements shall be designed by a registered professional engineer for wind loads in addition to other loads. This drawing does not address the jamb/wall design, but only door attachment. Jamb/wall construction is shown only for illustration purposes. The building designer is responsible for ensuring that the jamb/wall is sufficient to carry the door live and static loads. This drawing does not address the spring pad connections. Registered professional engineer may approved an alternative design.

Manufacturer's installation instructions must be followed.
Maximum spacing shown in chart.
Lesser spacing may be used to avoid interference with door hardware and or fastening system, but not less than 8".
Load per jamb = 0.5 x door width x max positive pressure x door height.
8" CMU block walls shall comply with ASTM C90.
Use minimum 2000 PSI grout or concrete when filling CMU.
Fastener spacing distance may vary +/-1".

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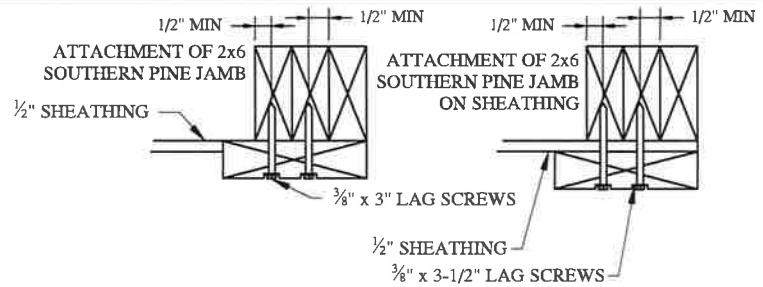
C.H.I. OVERHEAD DOORS

SCALE none
DATE 03-26-2020

Back Jamb Attachment Detail Concrete Anchors

C.H.I. Drawing: BJA-101R8

Use Southern Pine table only if both structure and jamb are Southern Pine.
Use (SPF) table if the structure is Spruce-Pine-Fir or unknown, 2x6 jambs must always be Southern Pine.
Lesser spacing may be used to avoid interference with door hardware and or fastening system.
Maximum spacing shown in chart.
Lag screw: 3/8" diameter x 3" minimum long; must conform to ANSI/ASME B18.2.1
When applying back jambs over dry wall or other non structural wall covering,
use longer lags screws to insure 1-1/2" minimum embedment required.
Washer: 1-1/8" minimum outside diameter, must conform to ANSI B18.22.1 type A.
Pre-drill 1/4" diameter pilot holes for lag screw insertion. 1-1/2" minimum lag screw edge distance required on 2x6.

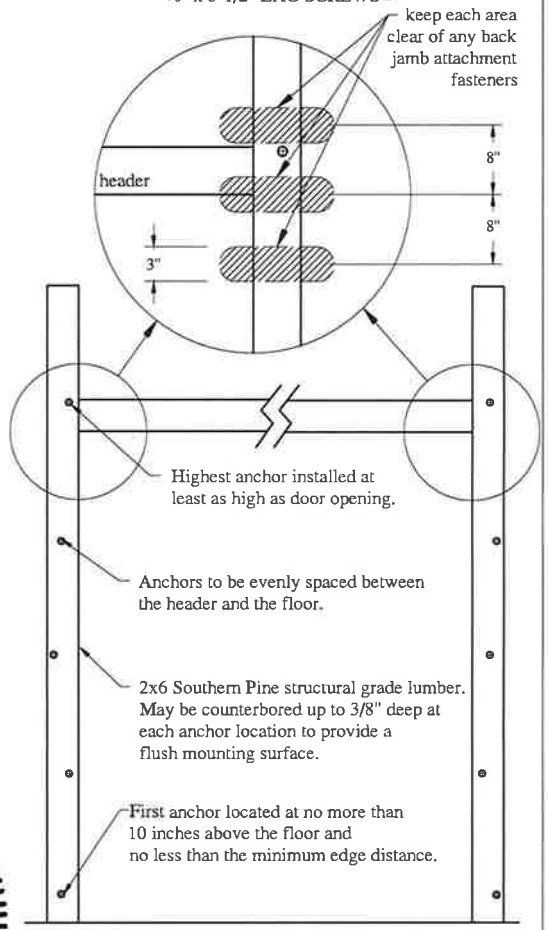


Spruce-Pine-Fir (SPF) STRUCTURE
MAX LAG SCREW SPACING (Inches) FOR DOOR WIDTH (max) vs DESIGN PRESSURE

MAX WIDTH	DESIGN PRESSURE IN POUNDS-PER-SQUARE-FEET (PSF)													
IN FEET	12 PSF	15 PSF	18 PSF	21 PSF	24 PSF	27 PSF	30 PSF	33 PSF	36 PSF	39 PSF	42 PSF	46 PSF	50 PSF	53 PSF
≤ 9'	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"
10'	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	23"	21"
12'	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	22"	20"	19"	18"
14'	24"	24"	24"	24"	24"	24"	24"	24"	22"	21"	19"	17"	16"	15"
15'	24"	24"	24"	24"	24"	24"	24"	23"	21"	19"	18"	16"	15"	14"
16'	24"	24"	24"	24"	24"	24"	24"	21"	20"	18"	17"	15"	14"	13"
18'	24"	24"	24"	24"	24"	23"	21"	19"	17"	16"	15"	13"	12"	12"
20'	24"	24"	24"	24"	24"	21"	19"	17"	16"	14"	13"	12"	11"	10"
22'	24"	24"	24"	24"	21"	19"	17"	15"	14"	13"	12"	11"	10"	9"
24'	24"	24"	24"	22"	20"	17"	16"	14"	13"	12"	11"	10"	9"	9"
26'	24"	24"	24"	21"	18"	16"	14"	13"	12"	11"	10"	9"	8"	8"
30'	24"	24"	21"	18"	16"	14"	12"	11"	10"	9"	9"	8"	7"	7"

Southern Pine (SP) STRUCTURE
MAX LAG SCREW SPACING (Inches) FOR DOOR WIDTH (max) vs DESIGN PRESSURE

MAX WIDTH	DESIGN PRESSURE IN POUNDS-PER-SQUARE-FEET (PSF)													
IN FEET	12 PSF	15 PSF	18 PSF	21 PSF	24 PSF	27 PSF	30 PSF	33 PSF	36 PSF	39 PSF	42 PSF	46 PSF	50 PSF	53 PSF
≤ 10'	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"
12'	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	23"
14'	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	23"	21"	20"
15'	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	23"	21"	19"	18"
16'	24"	24"	24"	24"	24"	24"	24"	24"	24"	23"	22"	20"	18"	17"
18'	24"	24"	24"	24"	24"	24"	24"	24"	22"	21"	19"	17"	16"	15"
20'	24"	24"	24"	24"	24"	24"	24"	22"	20"	19"	17"	16"	14"	14"
22'	24"	24"	24"	24"	24"	24"	22"	20"	18"	17"	16"	14"	13"	12"
24'	24"	24"	24"	24"	24"	22"	20"	18"	17"	15"	14"	13"	12"	11"
26'	24"	24"	24"	24"	23"	21"	19"	17"	15"	14"	13"	12"	11"	10"
30'	24"	24"	24"	23"	20"	18"	16"	15"	13"	12"	11"	10"	9"	9"



Southern Pine (SP) specific gravity = 0.55
Spruce-Pine-Fir (SPF) specific gravity = 0.42
Maximum load per jamb = 0.5 x (door height) x (door width) x (maximum positive pressure)
These charts do not address spring pad connections to the building.
Alternative design may be approved by a registered professional engineer.
Supporting structural elements shall be designed by a registered professional engineer for wind loads in addition to other loads.

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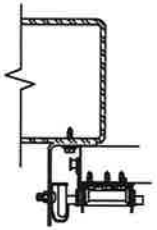
C.H.I. OVERHEAD DOORS

SCALE none
DATE 03-26-2020

Back Jamb Attachment Detail
Lag Screw

C.H.I. Drawing: BJA-102R7

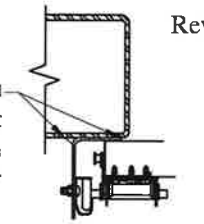
Self tapping screws (with steel) Reverse Angle Only



Screw: 1/4" dia x 3/4" self tapping screw; must conform to ANSI/ASME B18.2.1.
Washer: 9/16" O.D. minimum; must conform to ANSI B18.22.1 type A.
Lowest fastener to be within 10-inches of the floor
For 3/16 jambs, locate screws as shown on door drawing.
For 12ga jambs, use (2) screws at each location shown on door drawing.
Add holes to continuous angle as required to satisfy fastener quantity.
This document does not address spring pad connections to the building.

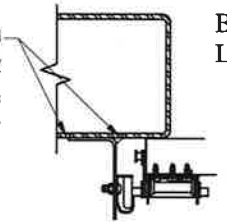
.100" x 1" fillet welds

Reverse Angle



.100" x 1" long fillet weld (E60XX Electrodes Min). Weld to be located vertically on heel of angle and toe of angle at same locations as jamb brackets on door drawing.

Bracket Mount or Leg Out Angle



.100" x 1" long fillet weld (E60XX Electrodes Min). Weld to be located vertically on heel of angle and toe of angle at same locations as jamb brackets on door drawing.

Welds performed by a Certified Welder or inspected by a Certified Welding Inspector to verify integrity of welds.
12 gauge or 3/16" steel Jambs; allowable load per weld= 1,272 lbs.
Use all necessary precautions when welding galvanized steel.
Locate welds in same location as jamb brackets on door drawing.

Minimum of 3 welds per jamb allowed.
Fillet welds to have a straight or convex face surface.
Tack weld toe of angle at same spacing to prevent rotation of track angle.
Cracks and blemishes shall be ground to a smooth contour and checked to ensure soundness.
This document does not address spring pad connections to the building.

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Alternative design may be approved by a registered professional engineer.

Supporting structural elements shall be designed by a registered professional engineer for wind loads in addition to other loads.

This drawing does not address the jamb/wall design, but only door attachment. Jamb/wall construction is shown only for illustration purposes. The building designer is responsible for ensuring that the jamb/wall is sufficient to carry the door live and static loads.

C.H.I. OVERHEAD DOORS

SCALE none

DATE 3-26-2020

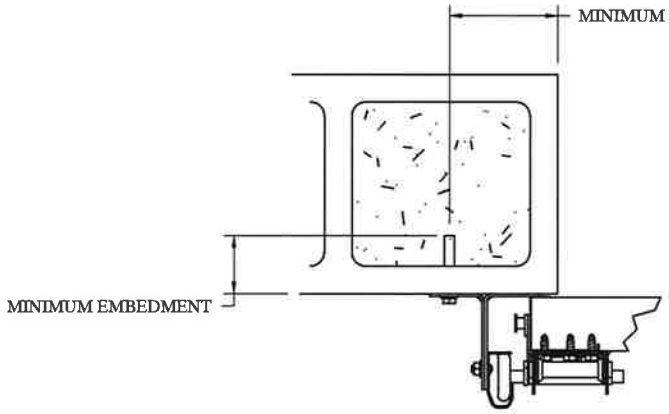
Steel Attachment Detail

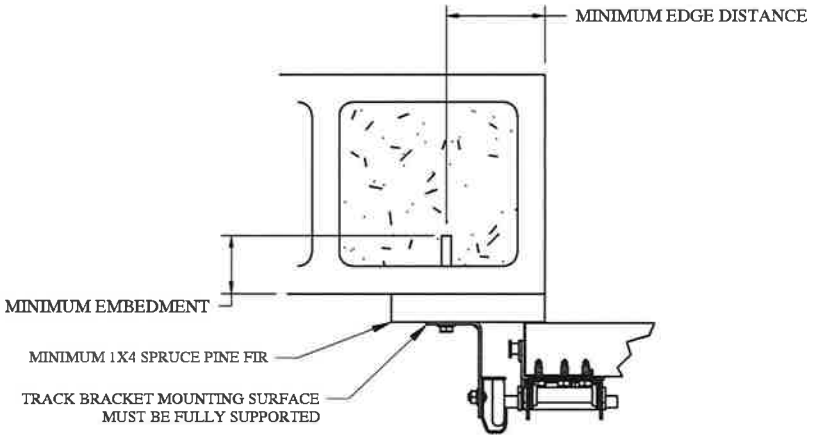
C.H.I. Drawing: BJA-103R8

3/8" DeWALT Screw-Bolt+ Minimum Embedment 3.25", Minimum Edge Distance 1.5", Minimum spacing 3"
3/8" Hilti KwikBolt3 Minimum Embedment 2.5", Minimum Edge Distance 4", Minimum spacing 8",
Hilti KwikBolt3 not applicable when minimum track bracket spacing is less than 8". If expansion anchors are required, see wall buck mounting instruction BJA-101.

Locate anchors as shown on door drawing.
Lowest anchor to be greater than the minimum edge distance up from the floor and less than 10-inches from the floor.
Load per jamb = 0.5 x door width x max positive pressure x door height
This document does not address spring pad connections to the building.

8" CMU block walls shall comply with ASTM C-90 and shall be filled with minimum 2000 psi grout or concrete.
Move track brackets up or down up to 1-1/2" to avoid installing anchors into grout lines





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Alternative design may be approved by a registered professional engineer.

Supporting structural elements shall be designed by a registered professional engineer for wind loads in addition to other loads.

This drawing does not address the jamb/wall design, but only door attachment. Jamb/wall construction is shown only for illustration purposes. The building designer is responsible for ensuring that the jamb/wall is sufficient to carry the door live and static loads.

C.H.I. OVERHEAD DOORS

SCALE none

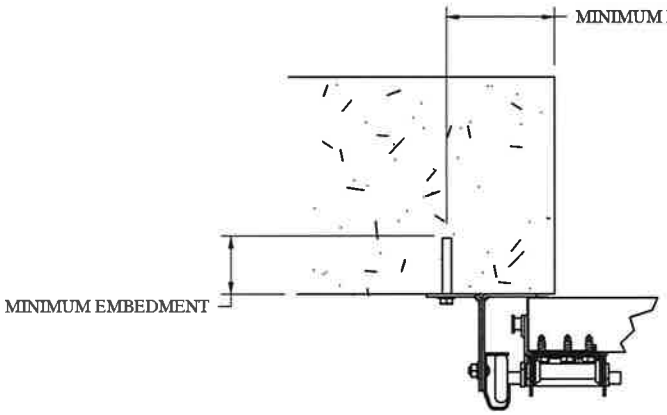
DATE 03-26-2020

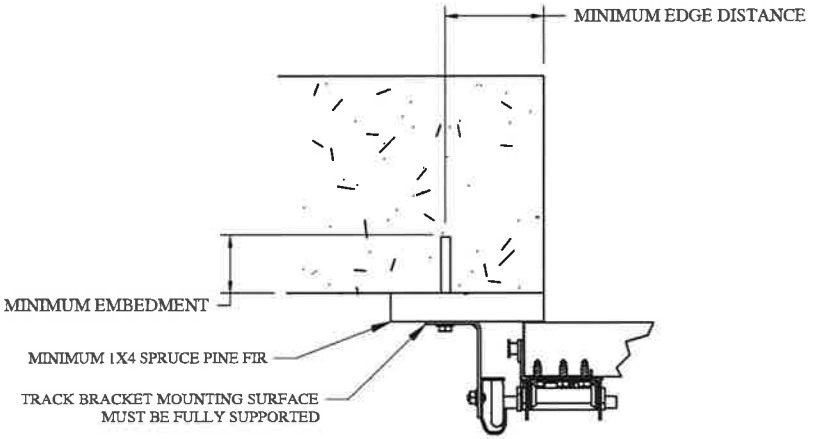
CMU Block Wall Attachment Detail

C.H.I. Drawing: BJA-104R8

1/4" Tapcon+ (PLUS) Minimum Embedment 2.0", Minimum Edge Distance 1.63", Minimum spacing 3"
1/4" Hilti KwikBolt3 Minimum Embedment 2.0", Minimum Edge Distance 2.63", Minimum spacing 6",
Hilti KwikBolt3 not applicable when minimum track bracket spacing is less than 6". If expansion anchors are required, see wall buck mounting instruction BJA-101.
Each anchor requires a minimum 9/16" O.D. washer that conforms to ANSI B18.22.1 type A
Locate anchors as shown on door drawing.
Lowest anchor to be greater than the minimum edge distance up from the floor and less than 10-inches from the floor.
Load per jamb = 0.5 x door width x max positive pressure x door height
This document does not address spring pad connections to the building.

Concrete walls shall be minimum 2500 psi concrete and of sufficient strength to resist loads.





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Alternative design may be approved by a registered professional engineer.

Supporting structural elements shall be designed by a registered professional engineer for wind loads in addition to other loads.

This drawing does not address the jamb/wall design, but only door attachment. Jamb/wall construction is shown only for illustration purposes. The building designer is responsible for ensuring that the jamb/wall is sufficient to carry the door live and static loads.

C.H.I. OVERHEAD DOORS

SCALE none

DATE 03-26-2020

Concrete Wall Attachment Detail

C.H.I. Drawing: BJA-105R7

Refer to door drawing installation instructions for bracket spacing.

To avoid splitting wood, drill pilot holes with 3/16" sized drill bit.

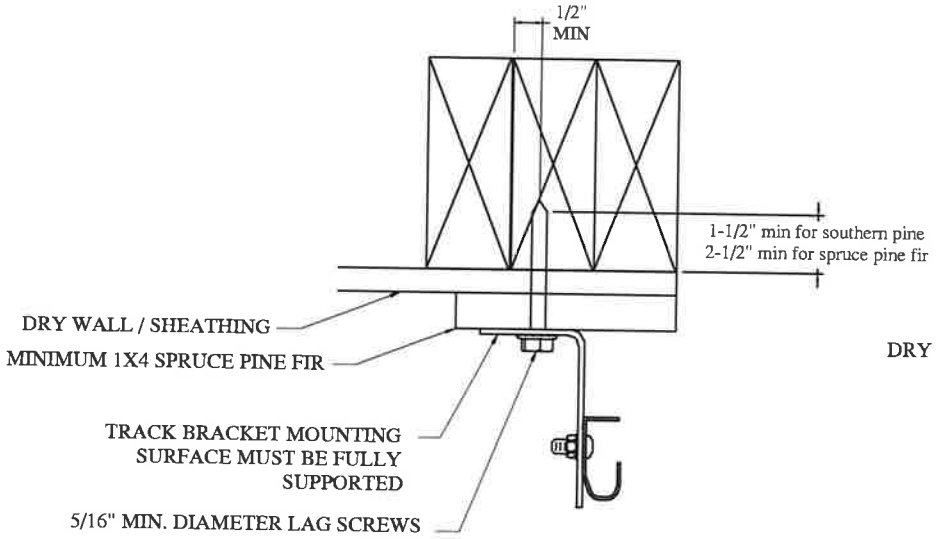
Lag screws must conform to ANSI/ASME B18.2.1:
use 5/16" diameter x 1-5/8" minimum long when mounting directly to 2x4 southern pine jambs,
longer lag screws required when mounting through wood and drywall or directly to spruce-pine-fir;

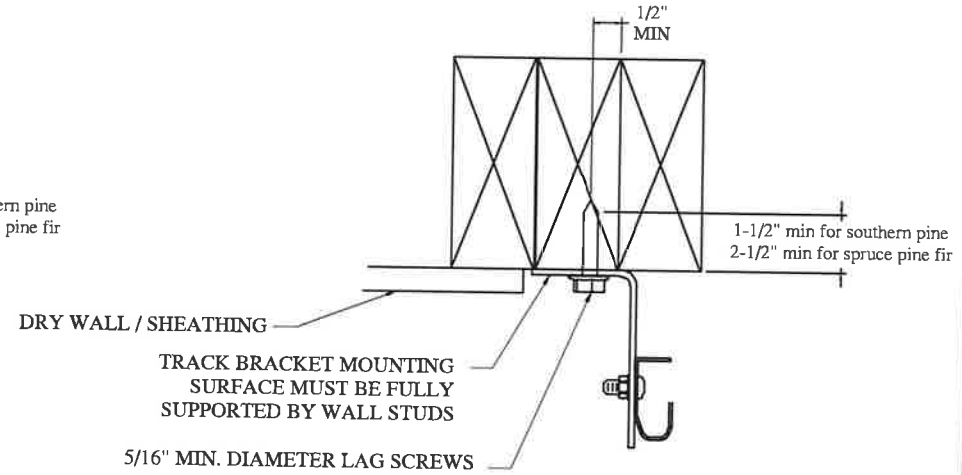
1-1/2" minimum lag screw embedment into southern pine.

2-1/2" minimum lag screw embedment into spruce-pine-fir.

1/2" minimum lag screw edge distance required.

Lag screws must be seated in full height frame members.





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For door jambs structural southern pine (SP), specific gravity = 0.55 or better;
spruce-pine-fir (SPF), specific gravity = 0.42 or better.

Maximum load per jamb = 0.5 x (door height) x (door width) x (maximum positive pressure)

Alternative design may be approved by a licensed professional engineer.

Supporting structural elements shall be designed by a licensed professional engineer for wind loads in addition to other loads.

The suitability of the structural building components must be verified by the engineer of record for the building.

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C.H.I. OVERHEAD DOORS

SCALE none

DATE 03-26-2020

Track Bracket Attachment Detail
Wood Jambs

C.H.I. Drawing: BJA-106R5

C.H.I. OVERHEAD DOORS
WINDBREAKER SERIES

Supplemental Instructions

Full View Aluminum Doors

⚠ CAUTION	**Higher wind pressures and larger doors require additional reinforcement.** **Premature failure of door system may result from improper application.** **See chart in lower left corner of drawing sheet one for the approved wind pressures and door sizes.**

⚠ WARNING	**These supplemental instructions do not contain basic door installation steps and related safety information.** **Failure to follow basic installation steps and related safety information may result in injury or death.** **Door installers must follow a primary instruction manual for basic door installation steps and related safety information.**

The correct selection of door and framing materials in adherence with local building code directives is the responsibility of the building owner/designer. Use of a reinforced garage door does not constitute automatic compliance with any building code. Local building code officials determine compliance criteria.

A locking system must be installed if the door is not electrically operated.

See drawing for stop molding requirements, when door is not more than 1" wider than opening. When using stop molding, secure molding with minimum 8d nails or 2-1/2" long screws.

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For Use With Drawing Number
Z8-16-64303

Strut Placement

Section Number	Door Height								
	6'-0" to 8'-0"	8'-3" to 10'-0"	10'-3" to 12'-0"	12'-3" to 14'-0"	14'-3" to 16'-0"	16'-3" to 18'-0"	18'-3" to 20'-0"	20'-3" to 22'-0"	22'-3" to 24'-0"
12	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1 at Detail A 1 at Detail B
11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1 at Detail A 1 at Detail B	1 at Detail C 1 at Detail B
10	N/A	N/A	N/A	N/A	N/A	N/A	1 at Detail A 1 at Detail B	1 at Detail C 1 at Detail B	1 at Detail C 1 at Detail B
9	N/A	N/A	N/A	N/A	N/A	1 at Detail A 1 at Detail B	1 at Detail C 1 at Detail B	1 at Detail C 1 at Detail B	1 at Detail C 1 at Detail B
8	N/A	N/A	N/A	N/A	1 at Detail A 1 at Detail B	1 at Detail C 1 at Detail B	1 at Detail C 1 at Detail B	1 at Detail C 1 at Detail B	1 at Detail C 1 at Detail B
7	N/A	N/A	N/A	1 at Detail A 1 at Detail B	1 at Detail C 1 at Detail B	1 at Detail C 1 at Detail B	1 at Detail C 1 at Detail B	1 at Detail C 1 at Detail B	1 at Detail C 1 at Detail B
6	N/A	N/A	1 at Detail A 1 at Detail B	1 at Detail C 1 at Detail B	1 at Detail C 1 at Detail B	1 at Detail C 1 at Detail B	1 at Detail C 1 at Detail B	1 at Detail C 1 at Detail B	1 at Detail C 1 at Detail B
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1	1 at Detail C 1 at Detail D	1 at Detail C 1 at Detail D	1 at Detail C 1 at Detail D	1 at Detail C 1 at Detail D	1 at Detail C 1 at Detail D	1 at Detail C 1 at Detail D	1 at Detail C 1 at Detail D	1 at Detail C 1 at Detail D	1 at Detail C 1 at Detail D

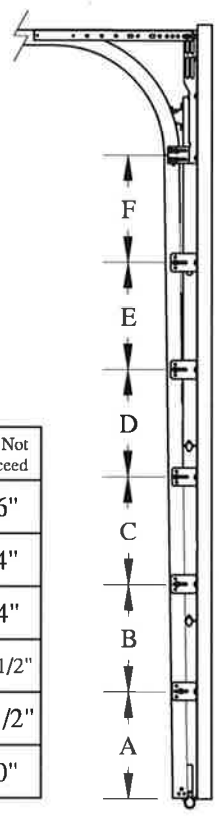
Push Nut Detail (use on all rollers)

use 3/8" I. D. on bottom fixture roller stem
use 7/16" I. D. on end hinge and top fixture roller stems

Push nut: Slide roller into fixture and tap push nut onto roller stem using 1/2" socket and hammer. Leave 1/8" to 1/4" space between push nut and fixture.

Track Bracket Spacing

Track bracket spacing shown for doors up to four sections high. Additional door sections may be added for maximum door height depicted on line drawing. Track brackets must be added (per track) for each section and spaced at a distance not greater than the corresponding section height (see line drawing for required quantities).

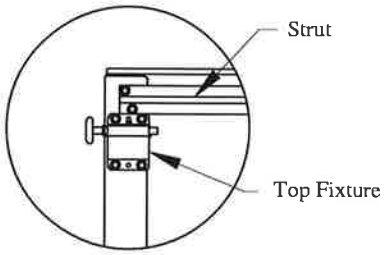


	Do Not Exceed
F	16"
E	14"
D	24"
C	14-1/2"
B	9-1/2"
A	10"

+/- 3" tolerance

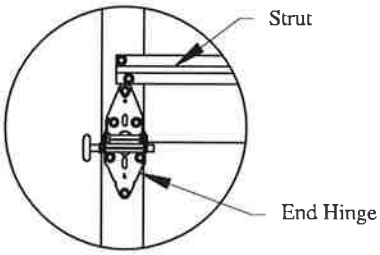
For Use With Drawing Number
Z8-16-64303

Strut Placement Detail



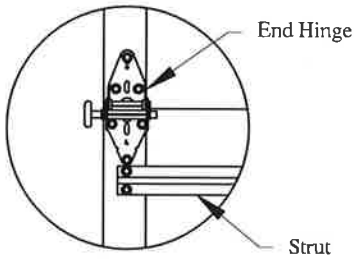
Strut above top fixture

Detail A



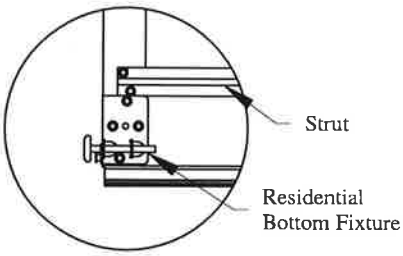
Strut above hinge

Detail B



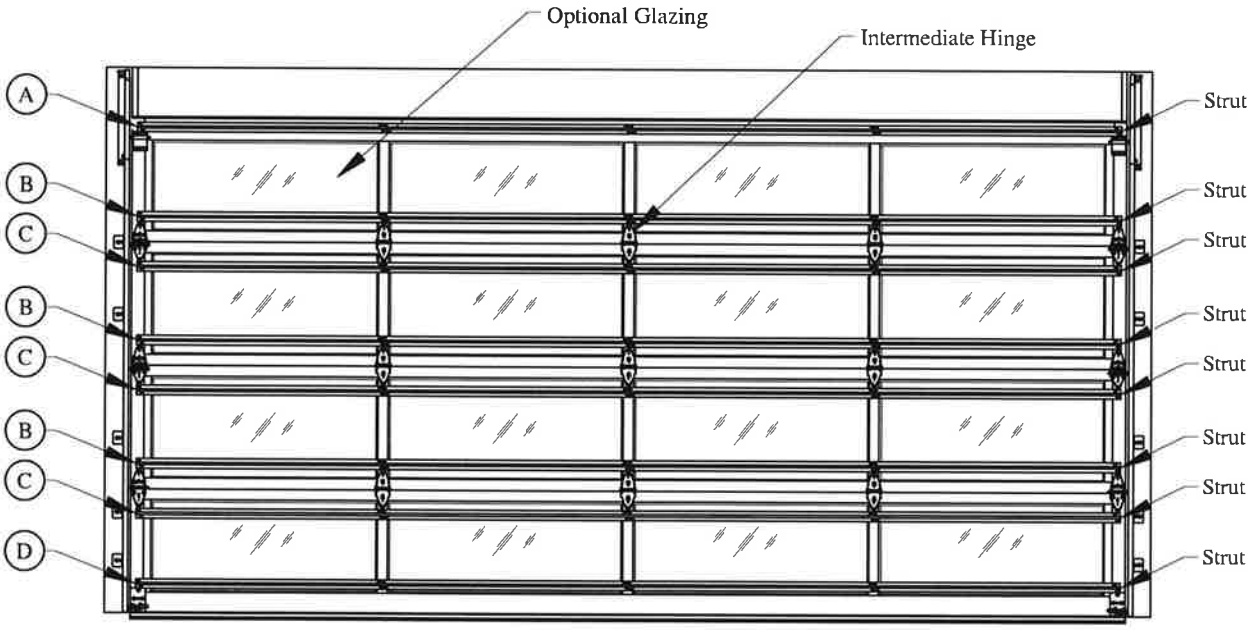
Strut on bottom half of hinge

Detail C



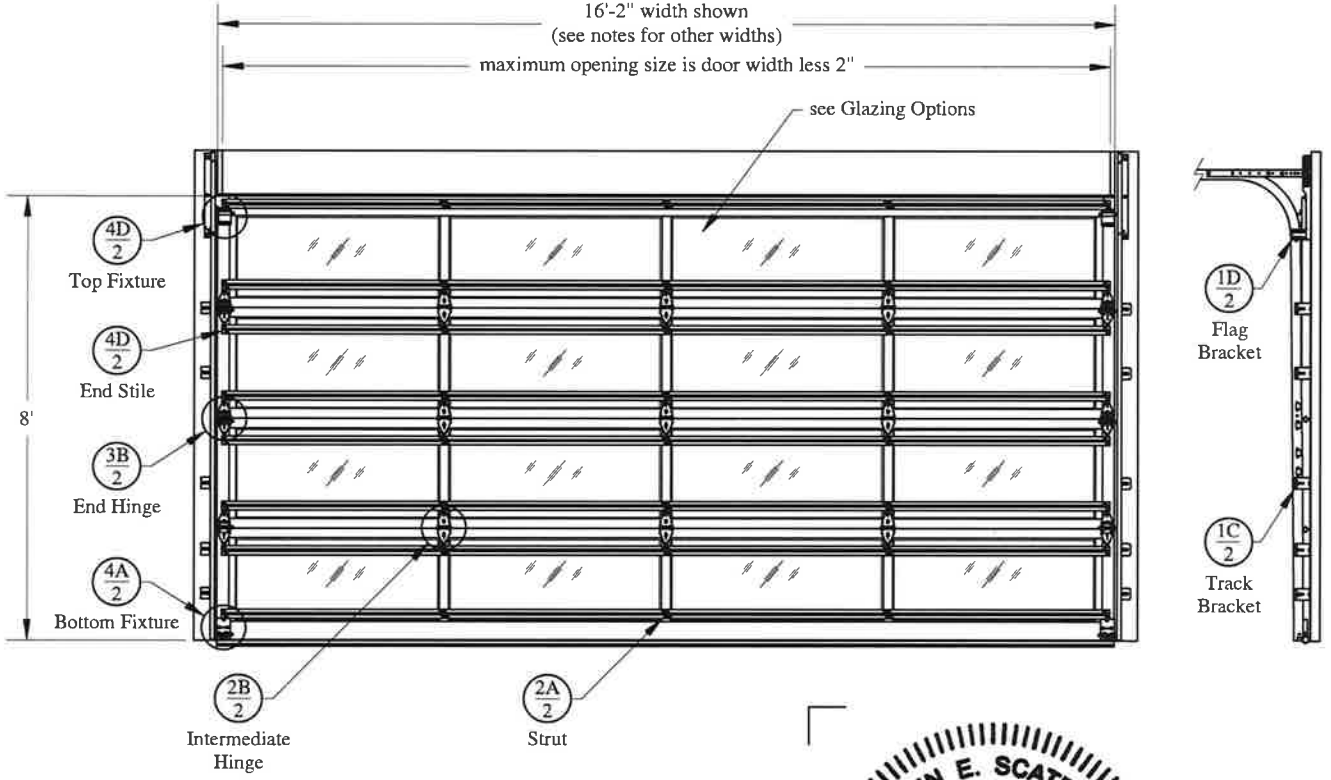
Strut above bottom fixture

Detail D



8 Struts

Glazing Options: max daylight opening 49-1/8" x 19"
Single Pane (max +20.8 PSF)
1/8" DSB
1/8" Polycarbonate
1/4" Tempered Glass
.049" Aluminum Panel
Double Pane (max +45.6 PSF)
7/16" Insulated Glass
7/16" Tempered Insulated Glass
7/16" Insulated Aluminum Panel



Door Height	Section Quantity	Strut Quantity	Trk Brkt Per Side
6'-0" to 8'-0"	4	8	5
8'-3" to 10'-0"	5	10	6
10'-3" to 12'-0"	6	12	7
12'-3" to 14'-0"	7	14	8
14'-3" to 16'-0"	8	16	9
16'-3" to 18'-0"	9	18	10
18'-3" to 20'-0"	10	20	11
20'-3" to 22'-0"	11	22	12
22'-3" to 24'-0"	12	24	13

Track bracket quantities shown are for use with grade 2 or better Southern Yellow Pine. Refer to Jamb Attachment Detail supplemental instructions for usage of alternate jamb materials.

Supporting structural elements shall be designed by a registered professional engineer for wind loads shown on this drawing. If door is not electrically operated, a lock must be installed.

Complies with IBC/IRC 2018. Tested per ANSI/DASMA 108

Maximum door height: 24'-00"

Glazing and door have not been tested for windborne debris.

Width	Single Pane Glass Design Pressure (PSF)	Double Pane Glass Design Pressure (PSF)	Stile Qty.
24'-02"	+17.1 / -19.2	+17.1 / -19.2	5
22'-02"	+20.3 / -22.8	+20.3 / -22.8	5
20'-02"	+20.8 / -27.5	+24.5 / -27.5	4
18'-02"	Use Z4-14-64303	+30.3 / -33.9	4
16'-02"	Use Z4-14-64303	+38.2 / -42.8	3
14'-02"	Use Z4-14-64303	+43.6 / -48.8	3
12'-02"	Use Z4-14-64303	+45.6 / -56.9	2

JOHN E. SCATES LICENSE No. 51737 STATE OF FLORIDA PROFESSIONAL ENGINEER

Professional Engineer's seal provided only for verification of windload construction details

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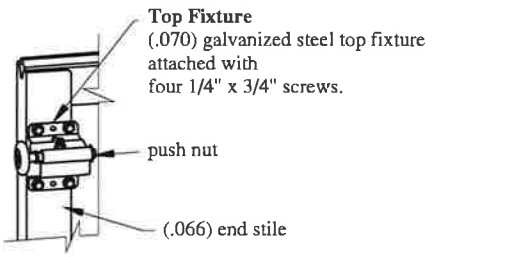
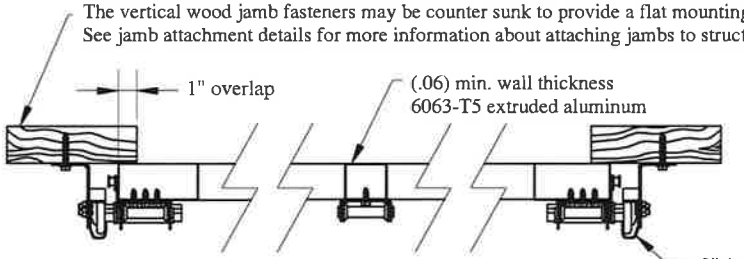
2560 King Arthur, Ste 124-54
Lewisville, Texas 75056
TXPE 56308, F-2203
Florida P.E. # 51737

C.H.I.
SCALE nts
DATE 09-11-2020
Models Series:
Aluminum Full View
C.H.I. Drawing: Z8-16-64303

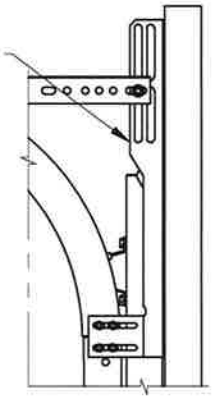
Details on some views may have been omitted for clarity.



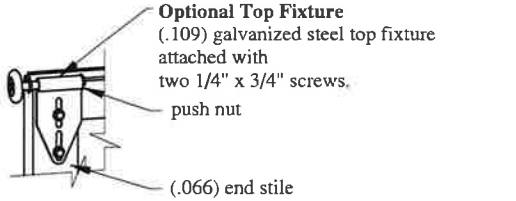
Top Fixture
(.070) galvanized steel top fixture attached with four 1/4" x 3/4" screws.



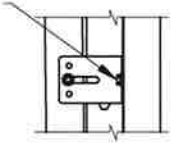
The vertical wood jamb fasteners may be counter sunk to provide a flat mounting surface. See jamb attachment details for more information about attaching jambs to structure.



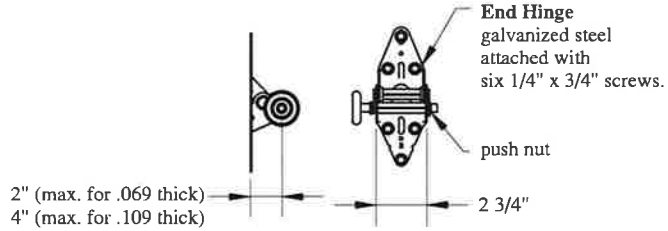
Flag Bracket
(.086) galvanized steel flag bracket attached to wood jamb with three 5/16" x 1-5/8" wood lag screws, to horizontal track with two 1/4" x 5/8" track bolts and nuts and to vertical track with two 1/4" x 5/8" track bolts and nuts.



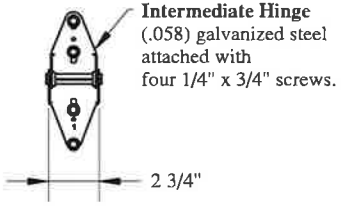
Optional Top Fixture
(.109) galvanized steel top fixture attached with two 1/4" x 3/4" screws.



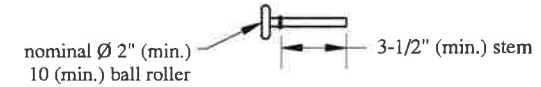
Track Bracket
(.102) galvanized steel track bracket attached to wood jamb with one 5/16" x 1-5/8" wood lag screw per bracket and attached to vertical track with one 1/4" x 5/8" track bolt and nut or two 1/4" x 11/32" rivets.

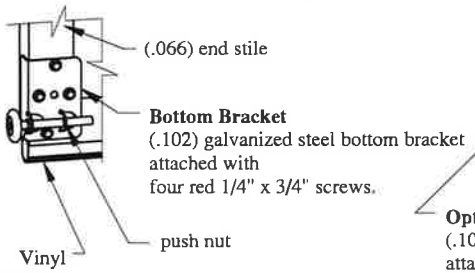


End Hinge
galvanized steel attached with six 1/4" x 3/4" screws.

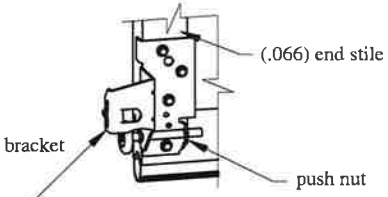


Intermediate Hinge
(.058) galvanized steel attached with four 1/4" x 3/4" screws.

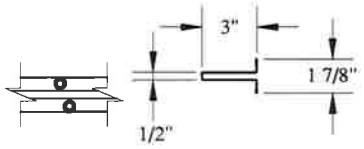




Bottom Bracket
(.102) galvanized steel bottom bracket attached with four red 1/4" x 3/4" screws.



Optional Bottom Bracket
(.109) galvanized steel bottom bracket attached with four red 1/4" x 3/4" screws.



Strut and Strut Attachment
(.051) 50 ksi galvanized steel 3" strut attached with two 1/4" x 3/4" screws per stile.

Professional Engineer's seal provided only for verification of windload construction details

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Lewisville, Texas 75056
TXPE 56308, F-2203
Florida P.E. # 51737

C.H.I.
SCALE nts
DATE 09-11-2020
Models Series:
Aluminum Full View
C.H.I. Drawing: Z8-16-64303

Florida Product Approval

Artisan® Lap Siding

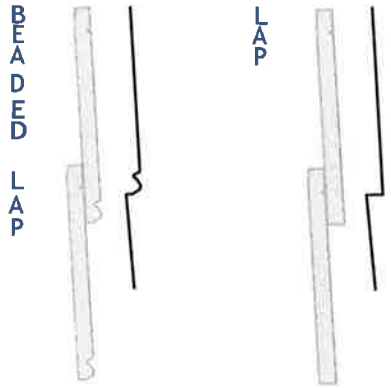
- For use inside HVHZ:
    - Artisan Lap Siding fastener types, fastening schedule, and installation shall be in accordance with the Miami-Dade County Florida NOA 20-0730.07. Consult the Artisan Lap product installation instructions on the follow pages for all other installation requirements.

- For use outside of HVHZ,
    - Artisan Lap Siding fastener types, fastening schedule, and installation shall be in accordance with CAE Engineering Reports No.:2001-10.1.1. Consult the Artisan Lap product installation instructions on the follow pages for all other installation requirements.

Artisan® Lap Siding and Trim

EFFECTIVE JULY 2018

IMPORTANT: FAILURE TO FOLLOW JAMES HARDIE WRITTEN INSTALLATION INSTRUCTIONS AND COMPLY WITH APPLICABLE BUILDING CODES MAY VIOLATE LOCAL LAWS, AFFECT BUILDING ENVELOPE PERFORMANCE AND MAY AFFECT WARRANTY COVERAGE. FAILURE TO COMPLY WITH ALL HEALTH AND SAFETY REGULATIONS WHEN CUTTING AND INSTALLING THIS PRODUCT MAY RESULT IN PERSONAL INJURY. BEFORE INSTALLATION, CONFIRM YOU ARE USING THE CORRECT HARDIEZONE® PRODUCT INSTRUCTIONS BY VISITING HARDIEZONE.COM OR CALL 1-866-942-7343 (866-9-HARDIE)



STORAGE

Store flat and keep dry and covered prior to installation (fig 1). Installing siding wet or saturated may result in shrinkage at joints. Protect edges and corners from breakage. James Hardie is not responsible for damage caused by improper storage and handling of the product

HANDLING

When working with Artisan® siding and trim products, carry the product on edge. If only one person is carrying the product, hold it in the middle and spread arms apart to better support the product (fig 2). If two people are carrying the product, hold it near each end and on edge (fig 3). Do not lift or carry Artisan products flat (fig 4).

Figure 1

Figure 2

Figure 3

Figure 4

CUTTING INSTRUCTIONS

1. Position cutting station so that wind will blow dust away from user and others in working area.
2. Use one of the following methods:
   a. **Best**: Circular saw equipped with a HardieBlade® saw blade and attached vacuum dust collection system
   b. **Better**: Circular saw equipped with a HardieBlade saw blade and a dust collection feature (e.g. Roan® Saw)
   C. **Good**: Circular saw equipped with a HardieBlade saw blade

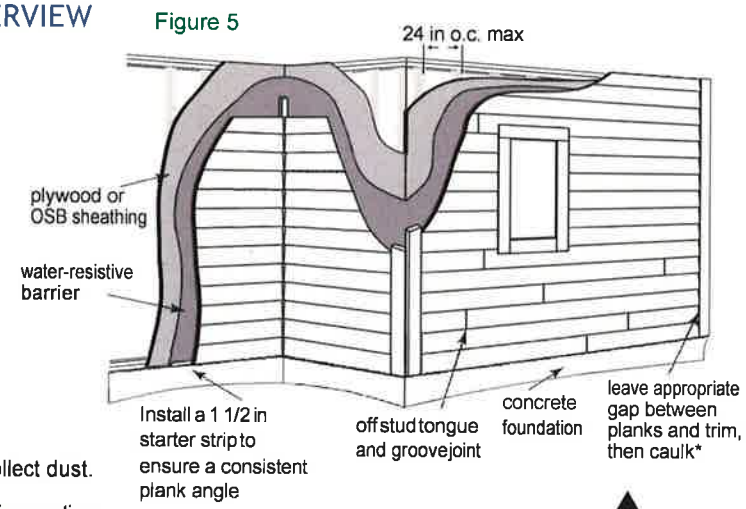
– **NEVER** grind or cut with a power saw indoors.
– **NEVER** dry sweep dust; use wet dust suppression or vacuum to collect dust.

For maximum dust reduction, James Hardie recommends using the "Best" cutting practices. **For best performance** when cutting with a circular saw, James Hardie recommends using HardieBlade saw blades.

NOTE: James Hardie makes no representation or warranty that use of a particular cutting option will assure your compliance with applicable laws and safety requirements. If you are unsure which cutting option is best for your jobsite, consult a qualified industrial hygienist or safety professional, or contact your James Hardie representative for assistance.

OVERVIEW

Figure 5



* Apply caulk in accordance with caulk manufacturers' written application instructions.

ASPYRE COLLECTION by JamesHardie

GENERAL REQUIREMENTS

- Artisan siding can be installed over braced wood or steel studs, 20 gauge (33 mils) minimum to 16 gauge (54 mils) maximum, spaced a maximum of 24 in o.c. or directly to minimum 7/16 in thick OSB sheathing. See General Fastening Requirements. Irregularities in framing and sheathing can mirror through the finished application. Correct irregularities before installing siding.
- Information on installing James Hardie products over non-nailable substrates (ex: gypsum, foam, etc.) can be located in JH Tech Bulletin 19 at www.jameshardiepros.com
- A water-resistive barrier is required in accordance with local building code requirements. The water-resistive barrier must be appropriately installed with penetration and junction flashing in accordance with local building code requirements. James Hardie will assume no responsibility for water infiltration. HardieWrap® Weather Barrier, a non-woven non-perforated housewrap, does comply with building code requirements.
- All flashing and clearance details in figs. 6-18 MUST be followed when installing James Hardie® products.
- Adjacent finished grade must slope away from the building in accordance with local building codes - typically a minimum of 6in. in the first 10ft.
- Do not use Artisan lap siding in fascia or trim applications.
- Do not install James Hardie products such that they may remain in contact with standing water.
- Artisan lap siding may be installed on flat vertical wall applications only.
- DO NOT use stain, oil/alkyd based paint, or powder coating on James Hardie products.
- For larger projects, including commercial and multi-family projects, where the span of the wall is significant in length, the designer and/or architect should take into consideration the coefficient of thermal expansion and moisture movement of the product in their design. These values can be found in the Technical Bulletin #8 "Expansion Characteristics of James Hardie Siding Products" at www.jameshardiepros.com.
- James Hardie Building Products provides installation /wind load information for buildings with a maximum mean roof height of 85 feet. For information on installations above 60 feet, please contact JH technical support.

CLEARANCE AND FLASHING REQUIREMENTS

- Artisan lap butt joints are designed to be installed off stud. Do not nail within 2 in. of tongue and groove at end of planks.
- James Hardie recommends cutting tongue or groove off when butting into trim boards (fig. 18).
- When ending Artisan lap at the bottom of a window or at the top of a wall, a finishing strip similar to a starter strip may be necessary to achieve a proper plank angle. Also when cutting Artisan lap around doors, windows, or other horizontal trim applications, an additional starter strip may be necessary to achieve proper plank angle (fig. 7).

Figure 6
Roof to Wall

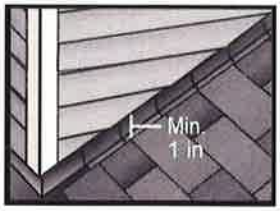


Figure 7
Horizontal Flashing

Figure 8
Kickout Flashing

Figure 9
Slabs, Path, Steps to Siding

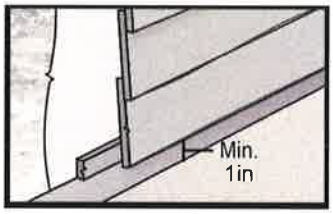


Figure 10
Deck to Wall

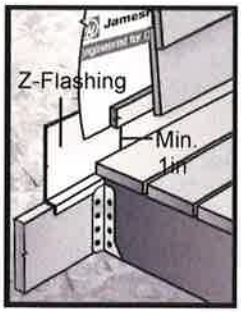


Figure 11
Ground to Siding

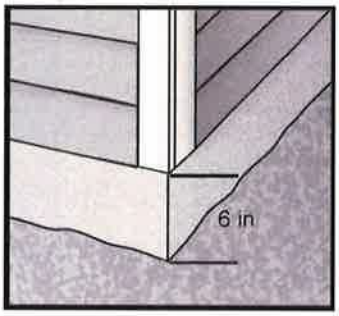


Figure 12
Gutter to Siding

Figure 13
Sheltered Areas

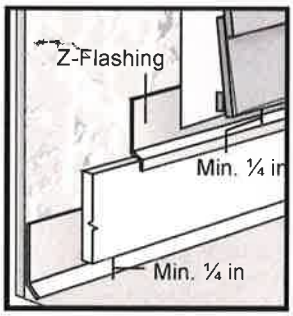


Figure 14
Mortar/Masonry

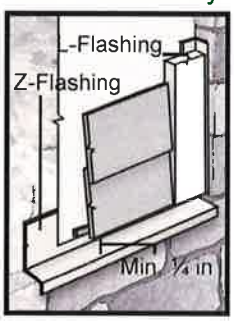


Figure 15
Drip Edge

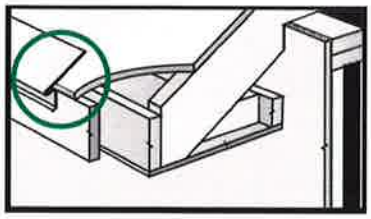


Figure 16
Block Penetration

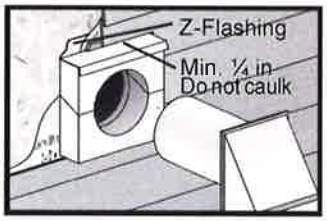


Figure 17
Valley/Shingle Extension

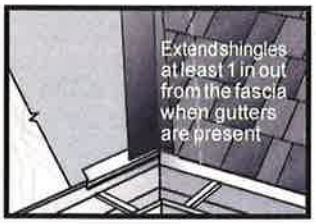
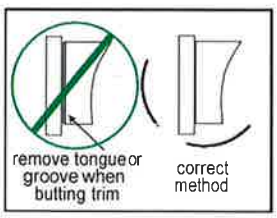


Figure 18
Butting to Trim



ARTISAN® ACCENT TRIM

Artisan Lap and Beaded Lap siding require a trim thickness of 1 1/2 in for proper aesthetics (fig 21).

- When installing Artisan® Accent Trim all clearance & flashing details figs 6 through 18 must be followed.
- 2-1/2 in minimum 16 ga. finish nails may be used to attach Artisan Accent Trim to wood frame construction. ET&F or equivalent fasteners or screws may be used to attach Artisan Accent Trim to steel frame construction.
- Fastening instructions are similar for all applications. When using finish nails, position nails no closer than 1/2 in from the edges of the trim and for all other fasteners no closer than 3/4 in. Fasteners must be no closer than 1 in. from ends of trim and spaced a maximum of 16 in o.c. Ensure trim is adequately fastened. Note: James Hardie recommends installing trim boards so that seams are not visible from the front facing or street curb view (fig.20).
- Flashing is required over all horizontal protruding and exposed trim.

Figure 19

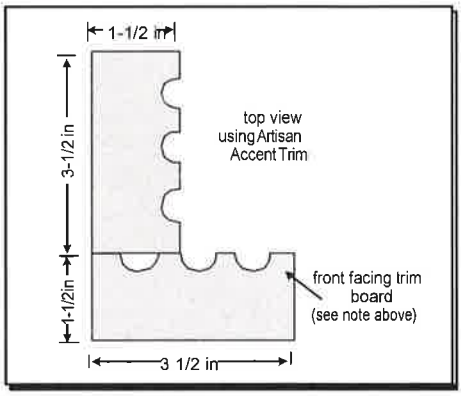


Figure 20

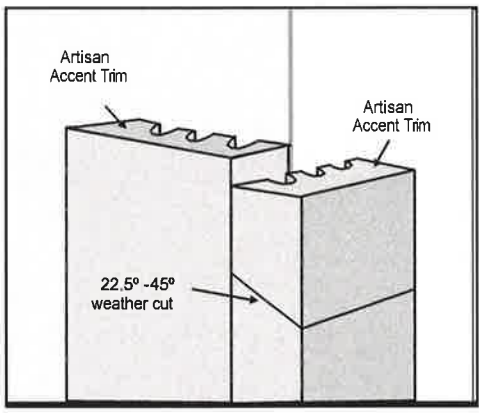
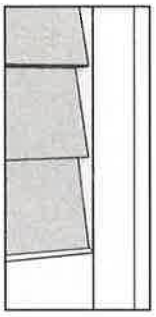


Figure 21



1.5 in thick trim

Board Width	Pre-built corner	Site Built Corners	Other areas (e.g. window trim, band boards and fascia)
4 in	1 nail every 16 in to attach boards together + 2 nails every 16 in each board	2 nails every 16 in	2 nails every 16 in
6 in	1 nail every 16 in to attach boards together + 3 nails every 16 in each board	3 nails every 16 in	3 nails every 16 in

HARDIETRIM™ TABS & CORNER TABS

For Corners, Band Boards, Windows, and Door Applications:
Artisan Accent Trim boards can be installed with Flat Tabs and Corner Tabs, which provide concealed fastening. Only HardieTrim™ Flat and Corner Tabs can be used with Artisan Accent Trim boards to create a concealed fastening. Fastener spacing will vary based on application. Refer to fastener table on page 5. Refer to specific sections in these instructions for required fastener spacing by application (window, band board, etc.)

Step 1: Attach Flat Tabs to the back side of the trim using four (4) 18 ga. 1/2 in L x 1/4 in W narrow crown corrosion resistant staples, equally spaced in one row, positioned no closer than 1/2 in from trim edges using a pneumatic staple gun. (Figure 22)

Step 2: For wood frame construction, attach the trim to the building with minimum 2, 6d siding nails fastened through the HardieTrim Flat Tabs. ET&F or equivalent fasteners may be used to attach the Flat Tabs to steel frame construction.

Figure 22

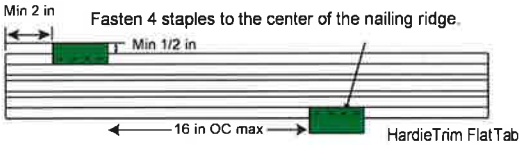
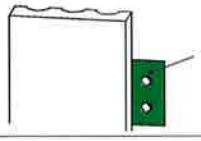


Figure 23



Installation of HardieTrim tabs in Coastal Regions:
James Hardie requires that stainless steel staples & fasteners be used when installing HardieTrim Tabs in coastal regions.

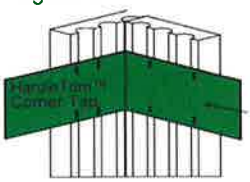
Installation of HardieTrim Tabs over Pressure Treated Lumber:
HardieTrim tabs must not come in direct contact with ACQ or CA preservative-treated wood. Refer to the General Fastening section of this document for further information.

TRIMMING CORNERS

When using HardieTrim tabs prebuild outside corners off the wall:

- Attach HardieTrim Corner Tabs to the back side of the trim using eight (8) - 18 ga. 1/2 in L x 1/4 in W narrow crown corrosion resistant staples using a pneumatic stapler. Ensure the HardieTrim Corner Tabs are fastened tight and straight to the trim boards. (Figure 24)
- For wood frame construction, attach the trim to the building with 6d siding nails fastened through the Corner Tabs. ET&F or equivalent fasteners may be used to attach the Corner Tabs to steel frame construction. (Figure 25)
- Attach a HardieTrim Corner Tab 1 in from each end and every 20 in o.c.
- TIP: Creating a jig for the work station is recommended to ensure the corners are fastened securely and straight. (Figure 27)

Figure 24



Use 4 staples per piece of trim to fasten the L-shaped tab to the pre-built corner. Use the nail line on the tabs as a guide.

Figure 25

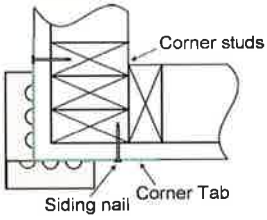


Figure 26

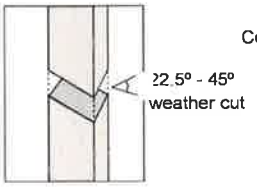


Figure 27

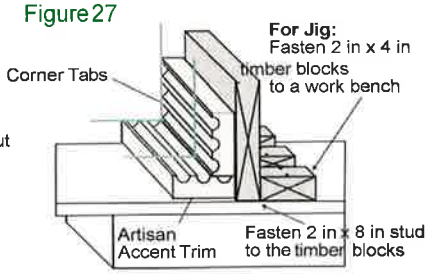
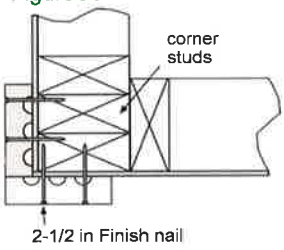


Figure 28



Artisan Accent Trim boards can also be installed directly to the building (fig. 31) around corners using 2-1/2 in long minimum 16 ga. galvanized finishing nails every 16 in o.c.

TRIM APPLICATION FOR WINDOWS, DOORS & OTHER OPENINGS*

Trim the opening prior to the installation of the siding (Figure 29).

Place a Flat Tab at the end of each trim board and one tab every 16 in OC.

Attach the trim boards and Flat Tabs around the opening as shown in Figures 29 and 30.

Figure 29

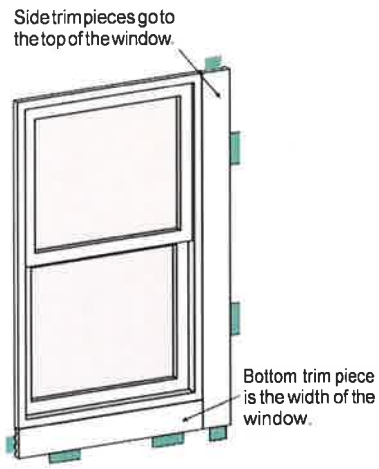


Figure 30

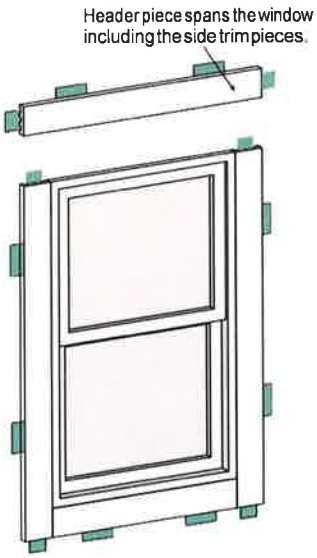
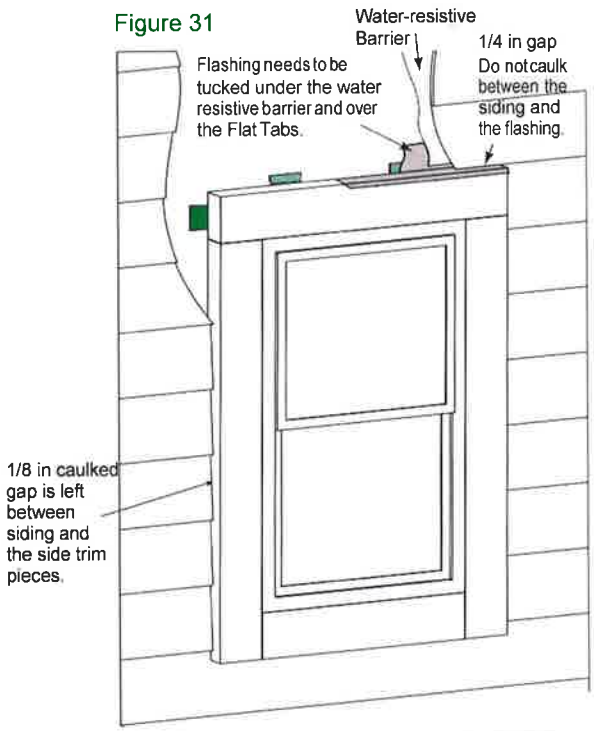


Figure 31



*Follow your window/door manufacturers installation instructions for caulking guidance between window/door trim.

BAND BOARD

A flashing is required over the trim and HardieTrim Flat Tabs. (Figure 34) Terminate ends of the Band Board into Trim or Siding or miter cut the edges of the trim at the corners of the building. Place a HardieTrim Flat Tab at the end of each trim board and one tab every stud at a maximum of 16 in o.c. The HardieTrim Flat Tabs should be attached to the trim in an alternating pattern to the top and bottom of the band board (Figure 32 & 33). Use 16 ga. galvanized 2 in long finish nails to ensure proper fastening if needed.

Figure 32

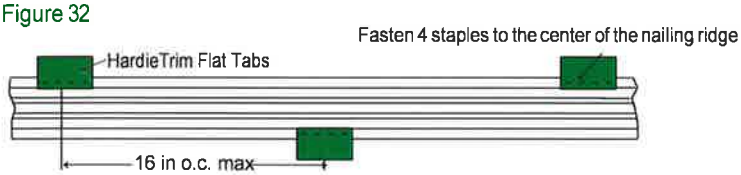


Figure 33

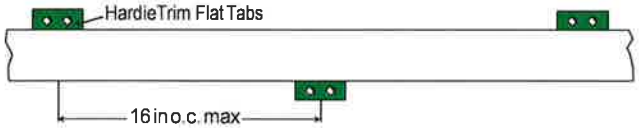


Figure 35

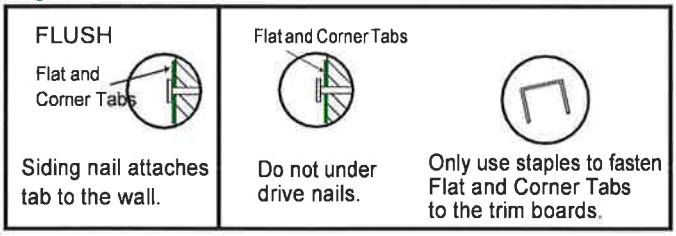
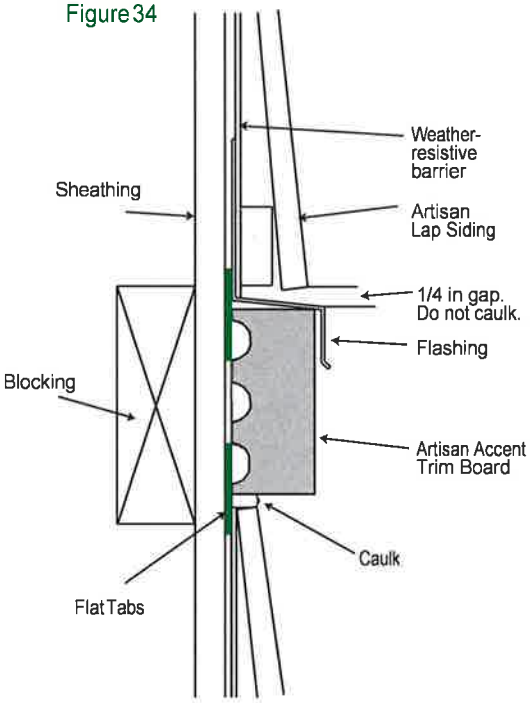


Figure 34



HARDIETRIM TAB FASTENER TABLE

APPLICATION	FRAMING MATERIAL TAB IS NAILED INTO	FASTENER (TAB TO FRAMING)	FASTENER (TAB TO ARTISAN ACCENT TRIM)	MAX TAB SPACING (INCHES ON CENTER)
FLAT TAB	Wood Stud (minimum G=0.42)	One 6d corrosion resistant siding nail installed through center of flange into framing	Four 18 ga. X 1/2 in long X 1/4 in wide corrosion resistant crown staples, equally spaced in one row	16
	Minimum APA rated 7/16 in OSB	Two 4d ring shank corrosion resistant siding nails equally spaced installed through flange into framing		
	Minimum 20 gauge steel	One No. 8 X 1 in long X 0.323 in head diameter screw (corrosion resistant) installed through flange into framing		
CORNER TAB	Wood Stud (minimum G=0.42)	On each flange, Install one 6d corrosion resistant siding nail through flange into framing	For each piece of trim, install Four 18 ga. X 1/2 in long X 1/4 in wide corrosion resistant crown staples, equally space in two rows	20
	Minimum APA rated 7/16 in OSB	On each flange, Install two 4d ring shank corrosion resistant siding nails through flange into framing		
	Minimum 20 gauge steel	On each flange, Install one No. 8 X 1 in long X 0.323 in head diameter screw (corrosion resistant) through flange into framing		

Wind-Borne Debris Region: Additional fasteners may be necessary when installing tabs in a Wind-Borne Debris Region, please call Technical Services 800-942-7343 with any questions.

ARTISAN® LAP & BEADED LAP SIDING

JOINT PLACEMENT

Artisan Lap and Beaded Lap siding butt joints are designed to be installed off stud. Butt joints must not fall within 4 inches of a stud (fig. 38). Do not nail within 2 in. of the end of planks.

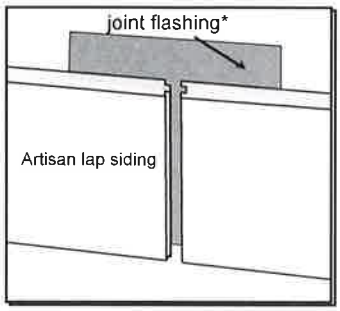
JOINT TREATMENT

Install factory finished tongue and groove edges together at butt joints using Joint Flashing (fig 36).

STARTER STRIP

Install a 1-1/2 in starter strip to ensure a consistent plank angle (fig 5).

Figure 36



* As required by local building code

FASTENER REQUIREMENTS

Figure 37

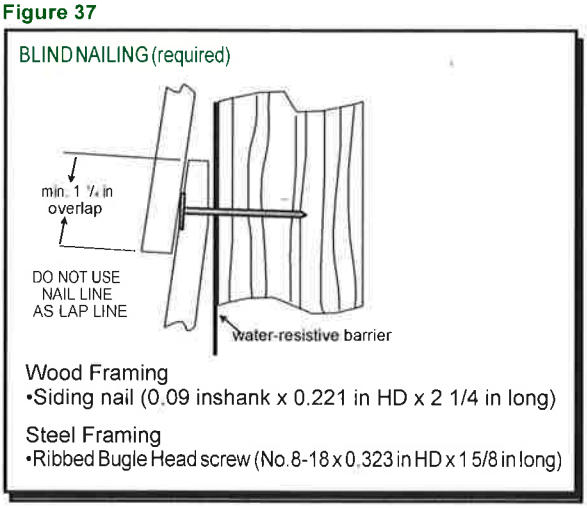
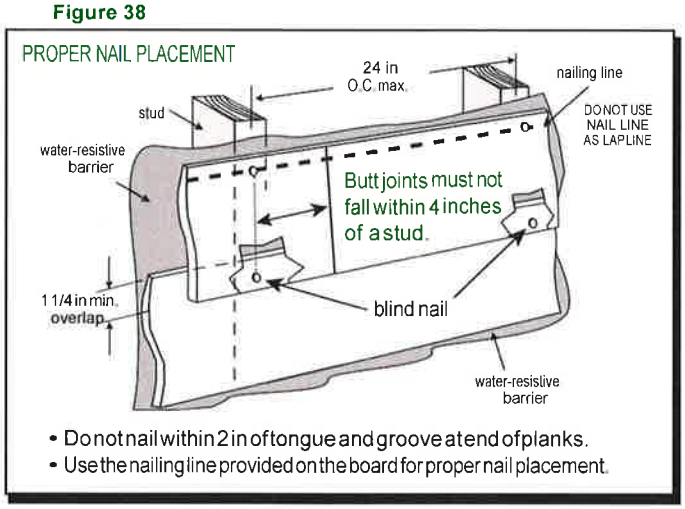


Figure 38



GENERAL FASTENING REQUIREMENTS

Fasteners must be corrosion resistant, galvanized, or stainless steel. Electro-galvanized are acceptable but may exhibit premature corrosion. James Hardie recommends the use of quality, hot-dipped galvanized nails. James Hardie is not responsible for the corrosion resistance of fasteners. Stainless steel fasteners are recommended when installing James Hardie products near the ocean, large bodies of water, or in very humid climates.

Manufacturers of ACQ and CA preservative-treated wood recommend spacer materials or other physical barriers to prevent direct contact of ACQ or CA preservative-treated wood and aluminum products. Fasteners used to attach HardieTrim Tabs to preservative-treated wood shall be of hot dipped zinc-coated galvanized steel or stainless steel and in accordance to 2018 IRC R317.3 or 2018 IBC 2304.10.5.

PNEUMATIC FASTENING

James Hardie products can be hand nailed or fastened with a pneumatic tool. Pneumatic fastening is highly recommended. Set air pressure so that the fastener is driven snug with the surface of the siding. A flush mount attachment on the pneumatic tool is recommended. This will help control the depth the nail is driven. If setting the nail depth proves difficult, choose a setting that under drives the nail. (Drive under driven nails snug with a smooth faced hammer - Does not apply for installation to steel framing).

- Consult applicable product evaluation or listing for correct fasteners type and placement to achieve specified design wind loads.
- NOTE: Published wind loads may not be applicable to all areas where Local Building Codes have specific jurisdiction. Consult James Hardie Technical Services if you are unsure of applicable compliance documentation.
- Drive fasteners perpendicular to siding and framing.
- Fastener heads should fit snug against siding (no air space). (fig. A)
- Do not over-drive nail heads or drive nails at an angle.
- If nail is countersunk, fill nail hole and add a nail. (fig. B)
- For wood framing, under driven nails should be hit flush to the plank with a hammer (For steel framing, remove and replace nail).
- NOTE: Whenever a structural member is present, Artisan lap should be fastened with even spacing to the structural member. The tables allowing direct to OSB or plywood should only be used when traditional framing is not available.
- Do not use aluminum fasteners, staples, or clipped head nails.

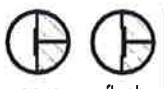


Figure A

Figure B

CAULKING & PAINTING

For best results, use an Elastomeric Joint Sealant complying with ASTM C920 Grade NS, Class 25 or higher or a Latex Joint Sealant complying with ASTM C834. Caulking/Sealant must be applied in accordance with the caulking/sealant manufacturer's written instructions. Note: Some caulking manufacturers do not allow tooling.

DO NOT use stain or oil/alkyd base paints on James Hardie® products. Factory-primed James Hardie Products must be painted within 180 days of installation. 100% acrylic topcoats are recommended. Do not paint when wet. For application rates, refer to paint manufacturer's specifications. Back-rolling is recommended if the paint is sprayed.

CUT EDGE TREATMENT

Caulk, paint or prime all field cut edges. James Hardie touch-up kits are required to touch-up ColorPlus products.

COLORPLUS® TECHNOLOGY CAULKING, TOUCH-UP & LAMINATE

- Care should be taken when handling and cutting James Hardie ColorPlus products. During installation, use a wet soft cloth or soft brush to gently wipe off any residue or construction dust left on the product, then rinse with a garden hose.
- Touch up nicks, scrapes and nail heads using the ColorPlus Technology touch-up applicator. Touch-up should be used sparingly. If large areas require touch-up, replace the damaged area with a new piece of siding with ColorPlus Technology.
- Laminate sheet must be removed immediately after installation of each course.
- Terminate non-factory cut edges into trim where possible, and caulk. Color matched caulks are available from your ColorPlus product dealer.
- Treat all other non-factory cut edges using the ColorPlus Technology edge coaters, available from your ColorPlus product dealer.

Note: James Hardie does not warrant the usage of third party touch-up or paints used as touch-up on James Hardie ColorPlus products.

PAINTING SIDING AND TRIM WITH COLORPLUS® TECHNOLOGY

When repainting ColorPlus products, James Hardie recommends the following regarding surface preparation and topcoat application:

- Ensure the surface is clean, dry, and free of any dust, dirt, or mildew.
- Repriming is normally not necessary.
- 100% acrylic topcoats are recommended.
- DO NOT use stain or oil/alkyd based paints on James Hardie products.
- Apply finish coat in accordance with paint manufacturers' written instructions regarding coverage, application methods, and application temperature.
- DO NOT caulk nail heads when using ColorPlus products, refer to the ColorPlus touch-up section.

CARE & MAINTENANCE

Recommended maintenance includes, but is not limited to:

- Washing down the exterior surfaces every 6 to 12 months with a garden hose or low pressure water spray to remove dirt and debris.*
- Re-applying of exterior finishes.*
- Maintaining the exterior envelope and connections including joints, penetrations, flashings, and sealants (caulking) that may provide a means of moisture entry beyond the exterior cladding.
- Cleaning out gutters, blocked pipes, and overflows as required.
- Pruning back vegetation that is touching the building. Clearance between the siding and shrubs is recommended.
- Ensuring required external ground clearances and drainage slopes are maintained.

* Refer to your paint manufacturer for washing and recoating recommendations.

WARNING

High pressure water blast and sand blasting may damage the surface of the fiber cement product. Low pressure water spray, a soft medium bristle (nonmetal) brush is most suitable for cleaning fiber cement products. Acid washing can damage the fiber cement surface and is not recommended.

Note: If using a pressure washer, care must be taken to ensure that the water stream does not damage the surface of the siding. Damage to siding arising from improper cleaning or maintenance may not be covered by the James Hardie warranty. Using wide fan tips that are kept a minimum of 6 feet from the wall and at pressures under 1500 psi will minimize the chance of damaging the siding.

COVERAGE CHART/ESTIMATING GUIDE

This coverage chart is meant as a guide. Actual usage is subject to variables such as building design. James Hardie does not assume responsibility for over or under ordering of product.

Coverage Area Less Openings 1 SQ = (100sq. ft.)	Lap Width Exposure	5 1/4 4	7 1/4 6	8 1/4 7
1		27	18	15
2		53	35	30
3		79	53	45
4		105	70	60
5		132	88	75
6		158	105	90
7		184	123	105
8		210	140	120
9		237	158	135
10		263	175	150
11		289	193	165
12		315	210	180
13		342	228	195
14		368	245	210
15		394	263	225
16		420	280	240
17		447	298	255
18		473	315	270
19		499	333	285
20		525	350	300

Note: Number of 12 ft planks, Includes 5% waste factor.

DANGER: May cause cancer if dust from product is inhaled. Causes damage to lungs and respiratory system through prolonged or repeated inhalation of dust from product. Refer to the current product Safety Data Sheet before use. The hazard associated with fiber cement arises from crystalline silica present in the dust generated by activities such as cutting, machining, drilling, routing, sawing, crushing, or otherwise abrading fiber cement, and when cleaning up, disposing of or moving the dust. When doing any of these activities in a manner that generates dust you must (1) comply with the OSHA standard for silica dust and/or other applicable law, (2) follow James Hardie cutting instructions to reduce or limit the release of dust; (3) warn others in the area to avoid breathing the dust; (4) when using mechanical saw or high speed cutting tools, work outdoors and use dust collection equipment; and (5) if no other dust controls are available, wear a dust mask or respirator that meets NIOSH requirements (e.g. N-95 dust mask). During clean-up, use a well maintained vacuum and filter appropriate for capturing fine (respirable) dust or use wet clean-up methods - never dry sweep.

⚠ WARNING: This product can expose you to chemicals including respirable crystalline silica, which is known to the State of California to cause cancer. For more information go to P65Warnings.ca.gov

RECOGNITION: In accordance with ICC-ES Evaluation Report ESR-2290, Artisan® lap is recognized as a suitable alternate to that specified in: the 2006, 2009, 2012 & 2015 International Residential Code for One and Two-Family Dwellings, and the 2006, 2009 2012 & 2015 International Building Code, Artisan lap is also recognized for application in the following: State of Florida listing FL#10477, Dade County, Florida NOA No. 15-0122.03.02 and Texas Department of Insurance Product Evaluation EC-55. These documents should also be consulted for additional information concerning the suitability of this product for specific applications. HardieTrim® boards may be installed as an equal alternative to conventional trim permitted for use in; 2006, 2009, 2012 & 2015 International Building Code, Section 1403.1, and the 2006, 2009, 2012 & 2015 International Residence Code for One - and Two - Family - Dwellings, Section R703.1.

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Product warranties, safety information and additional installation information are available at jameshardiepros.com

ASPYRE COLLECTION by JamesHardie

UL Evaluation Report

UL ER2919-01

Issued: May 21, 2013

Revised: November 18, 2020

Visit UL, LLC's Product iQ™ database for the status of this Report.

UL Category Code: ULEZ

CSI MasterFormat®

DIVISION: 07 00 00 – THERMAL AND MOISTURE PROTECTION
Sub-level 2: 07 30 00 – Steep Slope Roofing
Sub-level 3: 07 31 00 – Shingles and Shakes
Sub-level 4: 07 31 13 – Asphalt Shingles

COMPANY:

TAMKO BUILDING PRODUCTS LLC
198 FOUR STATES DRIVE
GALENA, KANSAS 66739
(417) 624-6644
www.tamko.com

1. SUBJECT: Asphalt Shingles

ELITE GLASS-SEAL,

HERITAGE, HERITAGE IR, HERITAGE PREMIUM, HERITAGE WOODGATE, HERITAGE VINTAGE, AND HERITAGE PROLINE TITAN XT

HERITAGE VINTAGE 12 X 12 HIP AND RIDGE, 12-¼ X 12 HIP AND RIDGE, AND 12-¼ X 12 HERITAGE HIP AND RIDGE IR

HERITAGE VINTAGE STARTER

2. SCOPE OF EVALUATION

- 2018, 2015, 2012, and 2009 *International Building Code* ® (IBC)
- 2018, 2015, 2012, and 2009 *International Residential Code* ® (IRC)
- 2020 Florida Building Code – Building
- 2020 Florida Building Code – Residential
- ICC ES Acceptance Criteria for Quality Documentation (AC10)

The products were evaluated for the following properties:

- Exterior Fire Exposure (ANSI/UL790, ASTM E108)
- Wind Resistance (ASTM D3161; ASTM D7158
- Physical Properties (ASTM D3462)
- Impact Resistance (ANSI/UL 2218)

3. REFERENCED DOCUMENTS

- UL790 (ASTM E108), Standard Test Methods for Fire Tests of Roof Coverings
- UL 2218 , Standard Test Methods for Impact Resistance of Prepared Roof Covering Materials
- ASTM D3161, Standard Test Method for Wind-Resistance of Asphalt Shingles (Fan-Induced Method)
- ASTM D7158, Standard Test Method for Wind Resistance of Asphalt Shingles (Uplift Force/Uplift Resistance Method)
- ASTM D3462, Standard Specification for Asphalt Shingles Made from Glass Felt and Surfaced with Mineral Granules
- UL Subject 2375 Issue No. 2, Outline of Investigation for Hip and Ridge Shingles (UL Fire and Wind Tests)
- ICC-ES Acceptance Criteria for Quality Documentation (AC10)

4. USES

TAMKO asphalt shingles are used as roof coverings for new and existing roofs.

5. PRODUCT DESCRIPTION

TAMKO asphalt shingles are roof covering materials complying with the following properties when installed as described in this report. The products are three-tab shingles, laminated shingles and hip & ridge shingles.

Fire Classification: TAMKO asphalt shingles covered under this Report have been tested for fire classification Class A in accordance with UL 790 (ASTM E108). Shingles tested in accordance with UL790 (ASTM E108) qualify for use under Section 1505.1 of the 2020 Florida Building Code - Building, IBC, Section R902.1 of the IRC and 2020 Florida Building Code - Residential.

Wind Resistance: TAMKO asphalt shingles covered under this Report have been tested for wind resistance in accordance with ASTM D3161 or ASTM D7158.

Shingles tested in accordance with ASTM D3161 are classified as Class F and qualify for use under the exception to Section 1504.1.1 of the 2018 and 2015 IBC and Section 1507.2.7.1 of the 2012 and 2009 IBC and 2020 Florida Building Code - Building, the exception to Section R905.2.4.1 of the IRC, and Section R905.2.4 of 2020 Florida Building Code - Residential.

Shingles tested in accordance with ASTM D7158 are classified as Class H and qualify for use in locations as shown in Table 1507.2.7.1 of the 2012, 2009 IBC and 2020 Florida Building Code - Building, Table R905.2.4.1 of the 2012 and 2009 IRC, or Table R905.2.6.1 of the 2020 Florida Building Code - Residential, where the maximum basic wind speed is 150 mph (67 m/s) or less with exposure category of B or C (ASCE 7) and a maximum building height of 60 feet (18.3 m). Installation must be in accordance with Section 1507.2.6 of the 2018 IBC, 2020 Florida Building Code - Building, and Section 1507.2.7 of the 2015, 2012, and 2009 IBC, or Section R905.2 of the IRC and 2020 Florida Building Code - Residential, as applicable.

Physical Properties: TAMKO asphalt shingles covered under this Report have been tested for physical properties in accordance with ASTM D3462. Shingles tested in accordance with ASTM D3462 qualify for use under Section 1507.2.4 of the 2018 IBC, Section 1507.2.5 of the 2015, 2012, and 2009 IBC, Section 1507.2.5 of the 2020 Florida Building Code - Building, or Section R905.2.4 of the IRC and 2020 Florida Building Code - Residential. When installed on new construction in accordance with this report and the TAMKO Building Products LLC installation instructions, the shingles are a Class A roof covering. When the shingles are installed over existing roof coverings, the Class A fire classification is maintained.

5.1 Three-Tab Shingles – Elite Glass-Seal:

Elite Glass-Seal shingles are three-tab shingles manufactured with a single fiberglass mat, coated on both sides with asphalt, and surfaced on the weather-exposed side with mineral granules. The shingles are self-sealing and have beads of thermal-tab sealing adhesive above the shingle butt on the weather side. See Table 2 for product dimensions and manufacturing locations.

5.2 Laminated Shingles – Heritage, Heritage IR, Heritage Premium, Heritage Woodgate, Heritage Vintage, and Heritage Proline Titan XT:

Heritage, Heritage IR, Heritage Premium, Heritage Woodgate, Heritage Vintage, and Heritage Proline Titan XT shingles are laminated shingles manufactured with a double layer of fiberglass mats coated with asphalt on all sides, and surfaced on the weather-exposed side with mineral granules. See Table 3, Table 4, Table 5, Table 6, Table 7, Table 10, and Table 13 for product dimensions and manufacturing locations.

5.3 Hip & Ridge Shingles – 12-¼ X 12 Hip and Ridge, Heritage Vintage 12 X 12 Hip and Ridge, 12-¼ X 12 Heritage Hip and Ridge IR:

Hip and Ridge are prefabricated hip and ridge shingles available as 12-¼ X 12 Hip and Ridge and 12-¼ x 12 Heritage Hip and Ridge IR. Heritage Vintage Hip and Ridge are prefabricated hip and ridge shingles available as 12 X 12 Hip and Ridge. As an alternative, Elite Glass-Seal shingles are cut into three 12-¼ inch by 12-inch (305 mm by 305 mm) hip and ridge shingles. See Table 8, Table 9, and Table 11 for product dimensions and manufacturing locations.

6. INSTALLATION

TAMKO asphalt shingles must be installed in accordance with the applicable code, this report and the manufacturer's published installation instructions. The shingles must be installed in accordance with Section 1507.2 of the IBC and 2020 Florida Building Code - Building, or Section R905.2 of the IRC and 2020 Florida Building Code - Residential, as applicable, except as noted in this report.

The manufacturer's published installation instructions must be available at all times on the jobsite during installation.

Minimum roof slopes must be 2:12 (16.67% slope) for the three-tab shingles described under 5.1 of this Report and for the laminated shingles described under 5.2 of this Report.

6.1 Underlayment and Ice Barriers:

For roof slopes 4:12 and greater, the roof deck must be covered with a minimum of one layer of underlayment as described in Sections 7.2 and 7.3 of this Report. Underlayment application must be in accordance with Table 1507.1.1 of the 2018 IBC, 2020 Florida Building Code - Building, and Section 1507.2.8 of the 2015, 2012, and 2009 IBC or Section R905.2.7 of the IRC and Section 905.2.3 of the 2020 Florida Building Code - Residential, as applicable.

For roof slopes 2:12 and up to but less than 4:12, two layers of the underlayment described in Section 7.2 or one layer of the self-adhering polymer modified bitumen sheet in described in Section 7.3 of this Report are required. Underlayment application must be in accordance with Section 1507.1.1 of the 2018 IBC, 2020 Florida Building Code - Building, and Section 1507.2.8 of the 2015, 2012, and 2009 IBC, Section R905.1.1 of the IRC, and 2020 Florida Building Code - Residential, as applicable.

In areas where there has been a history of ice forming along the eaves, causing a backup of water, an ice barrier must be provided in accordance with Section 1507.1.2 of the 2018 IBC and Section 1507.2.8.2 of the 2020 Florida Building Code - Building, 2015, 2012, and 2009 IBC or Section R905.2.7 of the 2018 IRC, 2020 Florida Building Code - Residential, and Section R905.16.4.1 2015 IRC, and Section R905.2.7.1 of the 2012, and 2009 IRC, as applicable.

6.2 Starter Shingle:

A starter course, as described in Section 7.4 of this Report, must be attached to the eave edge using fasteners described in Section 7.5 of this Report, located 1-½ to 3 inches (38.1 to 76.2 mm) from the eave edge and spaced 1 inch (25.4 mm) and 12 inches (305 mm) from each end, for a total of four fasteners per shingle. Starter strips must overhang the eave and rake edges ¼ to ¾ inch (6.4 to 19.1 mm) if no drip edge flashing is present. If drip edge flashing is present, install shingles even with the drip edge or overhang the drip edge up to ¾ inch.

6.3 Asphalt Shingles:

The first course of field shingles must be installed over the starter course described in Section 7.4 of this Report.

Shingles must be installed with vertical joints offset a minimum of 4 inches (102 mm) from adjacent courses.

6.3.1 Three-Tab Shingles – Elite Glass-Seal:

For roof slopes 2:12 up to but less than 21:12 (16.67% to 175% slope), each shingle must be fastened to the roof deck using a minimum of four fasteners, spaced as shown in Table 2.

For roof slopes equal to or greater than 21:12 (175% slope), six fasteners must be used, spaced as shown in Table 2.

Fasteners must be in a nail area between 5-$^{5}/_{8}$ inches and 6-$^{7}/_{8}$ inches from the butt edge of the shingle.

Maximum exposure to the weather must be 5-⅛ inches (130 mm).

In colder climates or wind regions where it is questionable whether the thermal-sealing adhesive will activate to seal the shingles, the shingles can be hand-sealed. A 1-in diameter (25.4 mm) spot of asphalt cement complying with ASTM D4586, Type I, Class I, should be placed under the corner of each tab (two spots per tab).

6.3.2 Laminated Shingles – Heritage, Heritage IR, Heritage Premium, Heritage Woodgate, and Heritage Proline XT:

For roof slopes 2:12 up to but less than 21:12 (16.67% to 175% slope), each shingle must be fastened to the roof deck using a minimum of four fasteners, spaced as shown in Tables 3, 4, 5, 6, 10, and 13.

For roof slopes equal to or greater than 21:12 (175% slope), six fasteners must be used, spaced as shown in Tables 3, 5, 6, 10, and Table 13.

Maximum exposure to the weather must be 5-5/8 inches (143 mm).

In colder climates or wind regions where it is questionable whether the thermal-sealing adhesive will activate to seal the shingles, the shingles can be hand-sealed. Four evenly spaced 1-inch diameter (25.4 mm) spots of cement should be placed under the exposed portion of the shingle, approximately 1 inch (76 mm) above the butt edge.

6.3.3 Laminated Shingles – Heritage Vintage:

For roof slopes 2:12 up to but less than 21:12 (16.67% to 175% slope), each shingle must be fastened to the roof deck using a minimum of five fasteners, spaced as shown in Table 7.

For roof slopes equal to or greater than 21:12 (175% slope), nine fasteners must be used, spaced as shown in Table 7.

Fasteners must be located 6 and 11-1/2 inches (152 and 292 mm) above the butt edge of the shingles.

Maximum exposure to the weather must be 5 inches (127 mm).

In colder climates or wind regions where it is questionable whether the thermal-sealing adhesive will activate to seal the shingles, the shingles must be hand-sealed. Four evenly spaced 1-inch diameter (25.4 mm) spots of cement should be placed under the exposed portion of the shingle, approximately 1 inch (127 mm) above the butt edge.

6.4 Valley Construction and Other Flashing:

Valleys must consist of woven, open valley or closed-cut construction and must be flashed in accordance with Section 1507.2.8.2 of the 2018 IBC, and Section 1507.2.9.2 of the 2020 Florida Building Code - Building, 2015, 2012, and 2009 IBC or Section R905.2.8.2 of the IRC and 2020 Florida Building Code - Residential. Other flashings must be in accordance with Sections 1503.2 and 1507.2.8 of 2020 Florida Building Code - Building, 2018 IBC, Section 1507.2.9 of the 2015, 2012, and 2009 IBC, or Section R903.2 and Section R905.2.8 of the IRC and 2020 Florida Building Code - Residential, as applicable.

6.5 Hip and Ridge Application:

Hip and ridge shingles must be placed evenly over hips and ridges, and must be fastened to the roof deck using two fasteners, one located on either side of the shingle, 5-1/2 inches (140 mm) or 5-5/8 inches (143 mm) from the exposed end, and 1 inch (25.4 mm) in from the edge as shown in Tables 8 and 9. Fasteners must be a minimum ¼ inch (6.4 mm) longer than those used in the field of the roof, as specified in Section 7.5 of this report. The 12-¼ X 12 Hip and Ridge and 12-¼ x 12 Heritage Hip and Ridge IR prefabricated hip and ridge shingles must be applied with a maximum exposure of 5-⅛ inches. (130 mm). Heritage Vintage 12 X 12 Hip and Ridge prefabricated hip and ridge shingles must be installed with a maximum exposure of 5 inches (127 mm). Hip and ridge shingles are installed starting at the bottom of the hip or from the end of the ridge opposite the direction of the prevailing wind.

6.6 Reroofing:

The existing asphalt shingle roof covering must be inspected in accordance with the provisions and limitations of Section 1510 of the IBC, Section 1511 of the 2020 Florida Building Code - Building, Section R908.1 of the IRC, or Section 901.1 of the 2020 Florida Building Code - Residential, as applicable. Prior to the reroofing, hip and ridge coverings must be removed.

Except as noted in this section, the shingles must be installed in accordance with Section 6.3 and 6.5 of this Report. Fasteners must be of sufficient length to penetrate ¾ inch (19.1 mm) into the sheathing, or through the sheathing where the sheathing is less than ¾ inch (19.1 mm) thick. Flashing and edging must comply with Section 6.4 and with Section1511.6 of the 2018 and 2015 IBC and 2020 Florida Building Code - Building, Section 1510.6 of the 2012, and 2009 IBC and Section R908.6 of the 2018 and 2015 IRC, 2020 Florida Building Code - Residential, and R907.6 of the 2012, and 2009 IRC, as applicable.

7. INSTALLATION MATERIALS

7.1 Sheathing:

The roof deck must be code-complying, minimum ⅜-inch thick (9.5 mm), exterior plywood complying with DOC PS-1; rated sheathing complying with DOC PS-2; or solid sheathing using minimum nominally 1 by 6 lumber.

7.2 Underlayment:

Under the IBC or IRC, underlayment must comply with ASTM D226, Type I (minimum), ASTM D4869, Type I (minimum) or ASTM D6757 as specified in Section 1507.1.1 of the 2020 Florida Building Code - Building, Section 1507.2.3 of the IBC or Section R905.1.1 of the IRC, and 2020 Florida Building Code - Residential.

7.3 Self-adhering Polymer Modified Bitumen Sheet:

The self-adhering polymer modified bitumen sheet must comply with ASTM D1970.

7.4 Starter Shingles:

The starter course shingle consists of either TAMKO 10-inch starter, TAMKO Shingle Starter, TAMKO Perforated Starter, or a self-sealing three-tab shingle. If self-sealing three-tab shingles are used, remove the exposed tab portion and install with factory-applied sealant adjacent to the eaves.

Heritage Vintage requires a Heritage Vintage Starter shown in Table 12 is to be installed over the starter course at the eave edge.

7.5 Fasteners:

Fasteners must be minimum No. 12 gage [0.105 inch (2.7 mm)], ⅜-inch diameter head (9.5 mm), galvanized, stainless steel, aluminum or copper corrosion-resistance nails. Fasteners must be of sufficient length to penetrate into the sheathing $^3/_4$-inch (19.1 mm), or through the sheathing, where the sheathing is less than $^3/_4$-inch (19.1 mm) thick. Fasteners must be compliant with ASTM F1667.

7.6 Asphalt Cement:

Asphalt cement must comply with ASTM D4586, Type I, Class I.

8. CONDITIONS OF USE

The TAMKO Asphalt Shingles described in this Report comply with, or are suitable alternatives to, what is specified in those codes listed in Section 2 of this Report, subject to the following conditions:

8.1 Materials and methods of installation shall comply with this Report and the manufacturer's published installation instructions. In the event of a conflict between the installation instructions and this Report, this Report governs.

8.2 The products are manufactured at the locations listed in Table 1 of this Report under the UL LLC Classification and Follow-Up Service Program, which includes regular audits in accordance with quality elements of ICC-ES Acceptance Criteria for Quality Documentation, AC10.

8.3 See UL Product iQ™ database for Prepared Roof-Covering Materials (TFWZ).

9. SUPPORTING EVIDENCE

9.1 Manufacturer's descriptive product literature, including installation instructions.

9.2 See UL Product iQ™ database for the following:

9.2.1 UL test reports and Classification in accordance with ANSI/UL 790, Class A and UL Subject 2375 for Roof-Covering Materials (TFWZ).

9.2.2 UL test reports and Classification in accordance with ASTM D3462 for Prepared Roof-Covering Materials (TFWZ).

9.2.3 UL test reports and Classification in accordance with ASTM D7158, Class H for Prepared Roof-Covering Materials (TGAH).

9.2.4 UL test reports and Classification in accordance with ASTM D3161, Class F Prepared Roof-Covering Materials (TFWZ).

9.3 Quality Documentation in accordance with ICC-ES Acceptance Criteria for Quality Documentation, AC10.

10. IDENTIFICATION

TAMKO asphalt shingles described in this Evaluation Report are identified by a marking on each package bearing the report holder's name (TAMKO Building Products LLC), the plant identification, the product name, the UL Listing/Classification Mark and the evaluation report number UL ER2919-01. The validity of this Evaluation Report is contingent upon this identification appearing on the package.

11. USE OF UL EVALUATION REPORT

11.1 The approval of building products, materials or systems is under the responsibility of the applicable authorities having jurisdiction.

11.2 UL Evaluation Reports shall not be used in any manner that implies an endorsement of the product, material or system by UL.

11.3 The status of this report, as well as a complete directory of UL Evaluation Reports may be found at UL.com via the Product iQ™ database.

Table 1 – Manufacturing Locations

LISTEE	LOCATION	FACTORY ID
TAMKO BUILDING PRODUCTS LLC	7910 S CENTRAL EXPY DALLAS TX 75216	D
TAMKO BUILDING PRODUCTS LLC	4500 TAMKO DR FREDERICK MD 21704	F
TAMKO BUILDING PRODUCTS LLC	601 N HIGH ST JOPLIN MO 64801	J
TAMKO BUILDING PRODUCTS LLC	1598 HWY 183 PHILLIPSBURG KS 67661	P
TAMKO BUILDING PRODUCTS LLC	KAUL INDUSTRIAL PARK 2300 35TH ST TUSCALOOSA AL 35401	T

Table 2 – Elite Glass-Seal

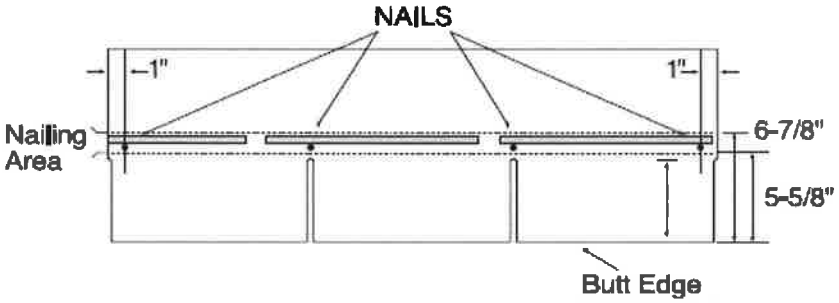
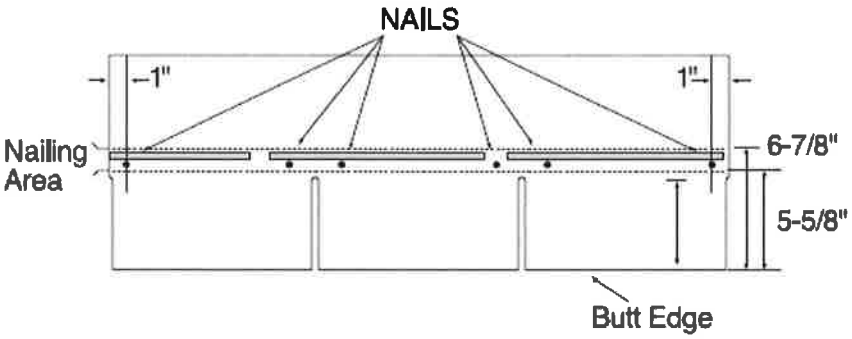
Dimensions:	12-¼" x 36"
Plant Location(s):	Frederick, Joplin
Fastening Pattern:	For slopes 2:12 up to but less than 21:12 
Fastening Pattern:	For slopes equal to or greater than 21:12 

Table 3 – Heritage

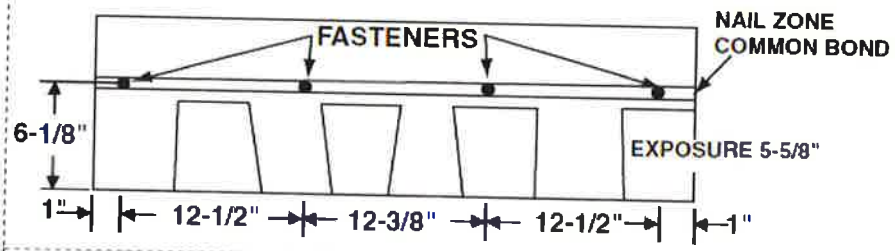
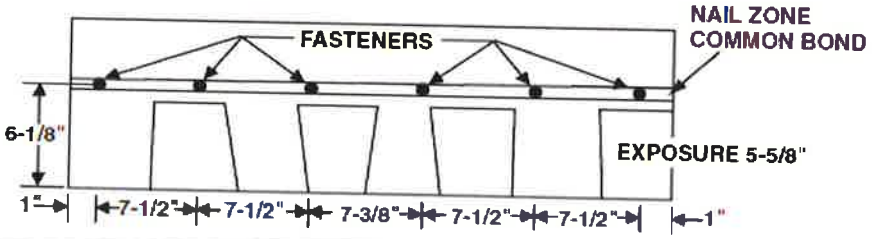
Dimensions:	13-¼" x 39-$^{3}/_{8}$"
Plant Location(s):	Dallas, Frederick, Joplin, Phillipsburg
Fastening Pattern:	For slopes 2:12 up to but less than 21:12 
Fastening Pattern:	For slopes equal to or greater than 21:12 

Table 4 – Heritage

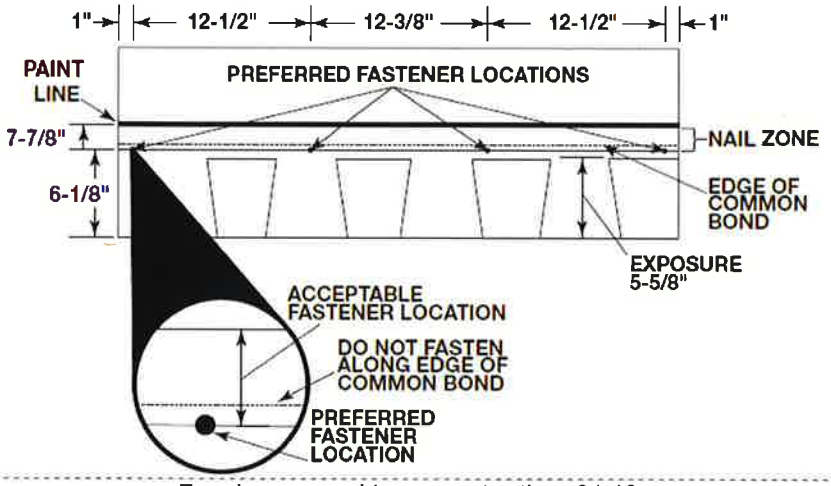
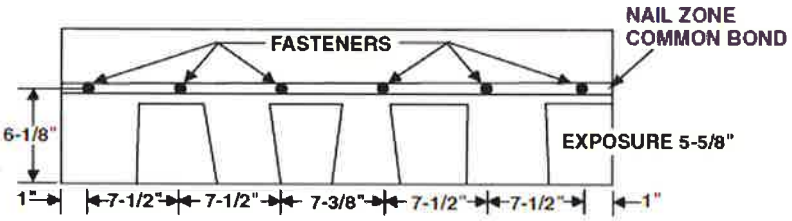
Dimensions:	13-¼" x 39-$^{3}/_{8}$"
Plant Location(s):	Tuscaloosa
Fastening Pattern:	For slopes 2:12 up to but less than 21:12 
Fastening Pattern:	For slopes equal to or greater than 21:12 

Table 5 – Heritage Premium

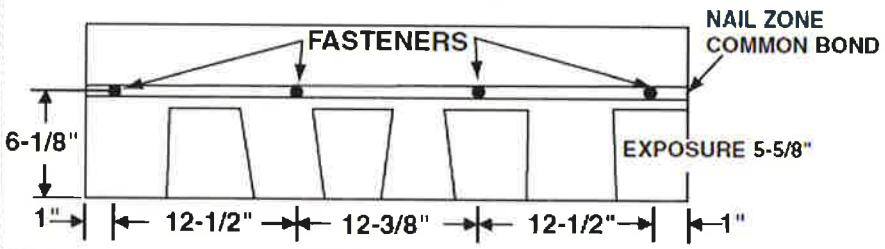
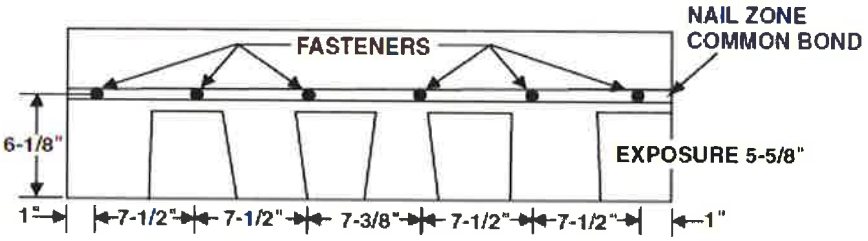
Dimensions:	13-¼" x 39-$^{3}/_{8}$"
Plant Location(s):	Phillipsburg, Frederick
Fastening Pattern:	For slopes 2:12 up to but less than 21:12 
Fastening Pattern:	For slopes equal to or greater than 21:12 

Table 6 – Heritage Woodgate

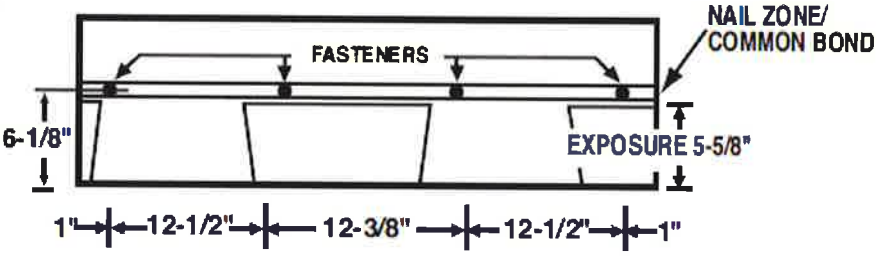
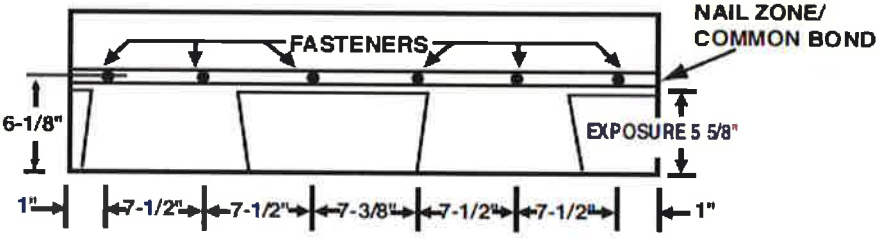
Dimensions:	13-¼" x 39-$^{3}/_{8}$"
Plant Location(s):	Dallas, Frederick
Fastening Pattern:	For slopes 2:12 up to but less than 21:12 
Fastening Pattern:	For slopes equal to or greater than 21:12 

Table 7 – Heritage Vintage

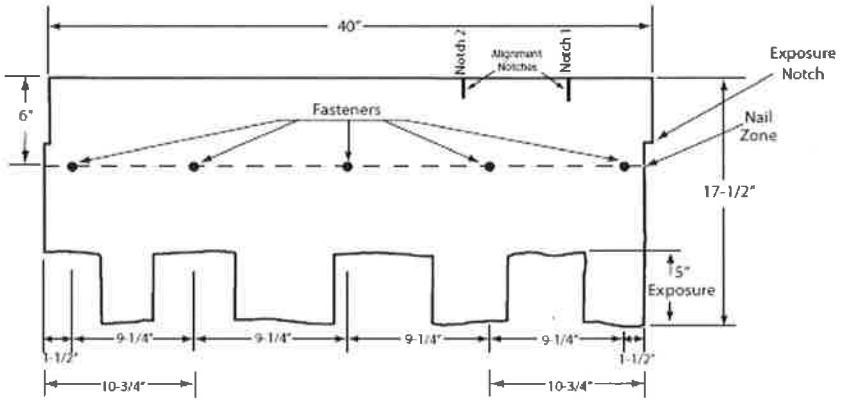
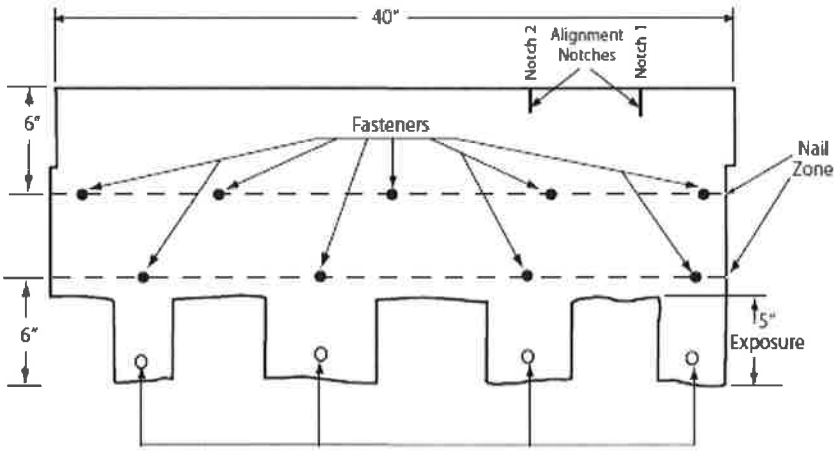
Dimensions:	17-1/2" x 40"
Plant Location(s):	Phillipsburg
Fastening Pattern:	For slopes 2:12 up to but less than 21:12 
Fastening Pattern:	For slopes equal to or greater than 21:12  Apply under each tab 1" diameter asphalt adhesive cement.

Table 8 – Heritage Vintage 12 X 12 Hip and Ridge

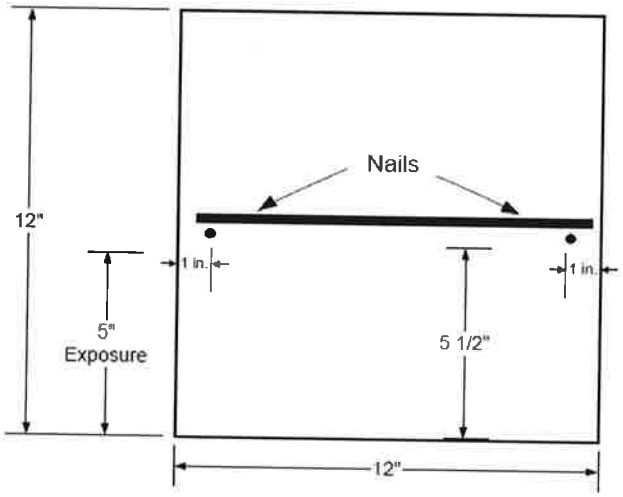
Dimensions:	12" x 12"
Plant Location(s):	Phillipsburg
Fastening Pattern:	

Table 9 – 12-¼ X 12 Hip and Ridge

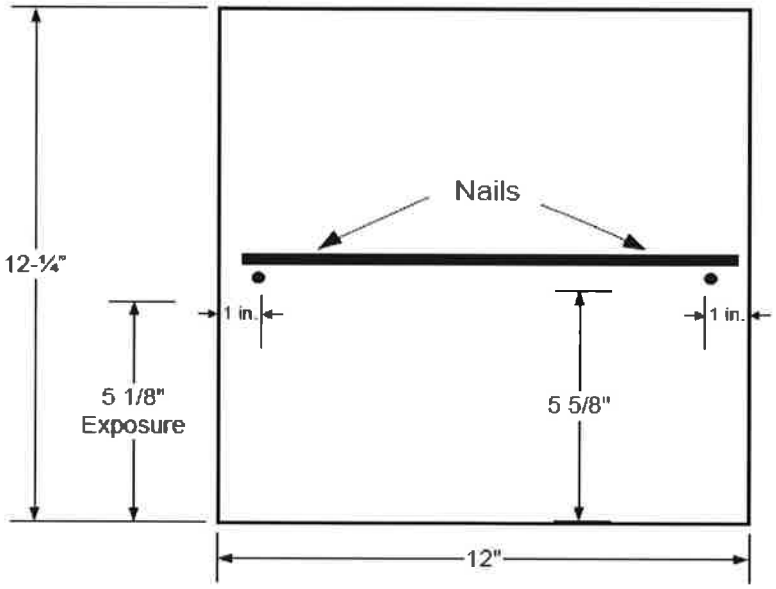
Dimensions:	12-¼" x 12"
Plant Location(s):	Frederick, Joplin
Fastening Pattern:	

Table 10 – Heritage IR

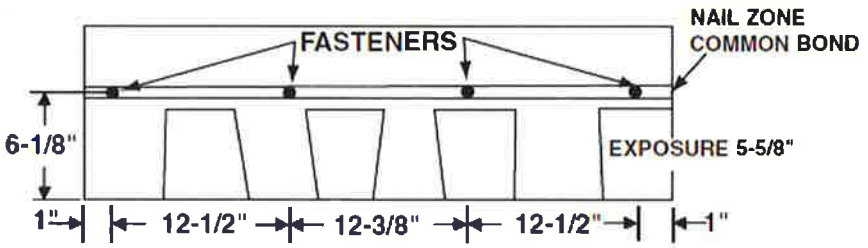
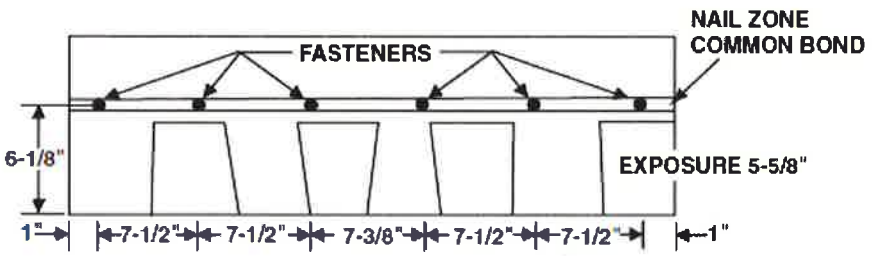
Dimensions:	13-¼" x 39-$^{3}/_{8}$"
Plant Location(s):	Joplin, Philipsburg
Fastening Pattern:	For slopes 2:12 up to but less than 21:12 
Fastening Pattern:	For slopes equal to or greater than21:12 

Table 11 Heritage Hip and Ridge IR

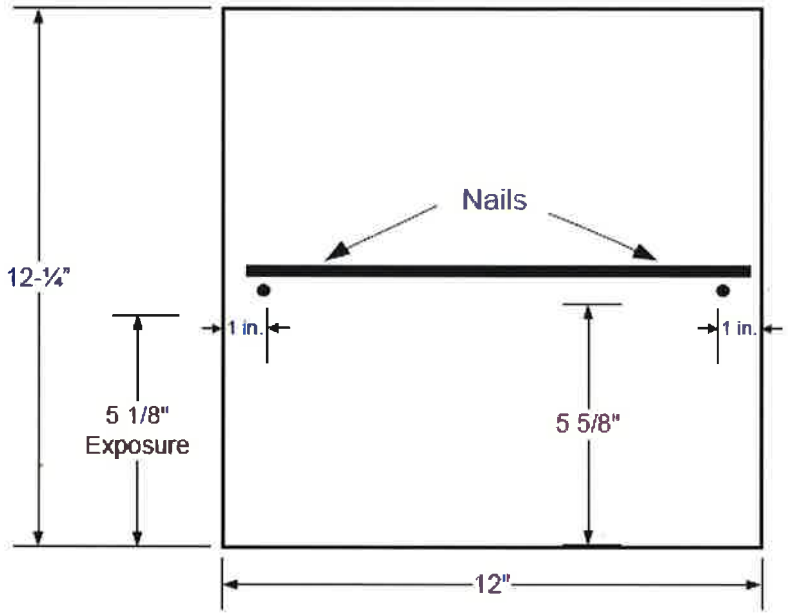
Dimensions:	12-¼" x 12"
Plant Location(s):	Joplin
Fastening Pattern:	

Table 12 Heritage Vintage Starter

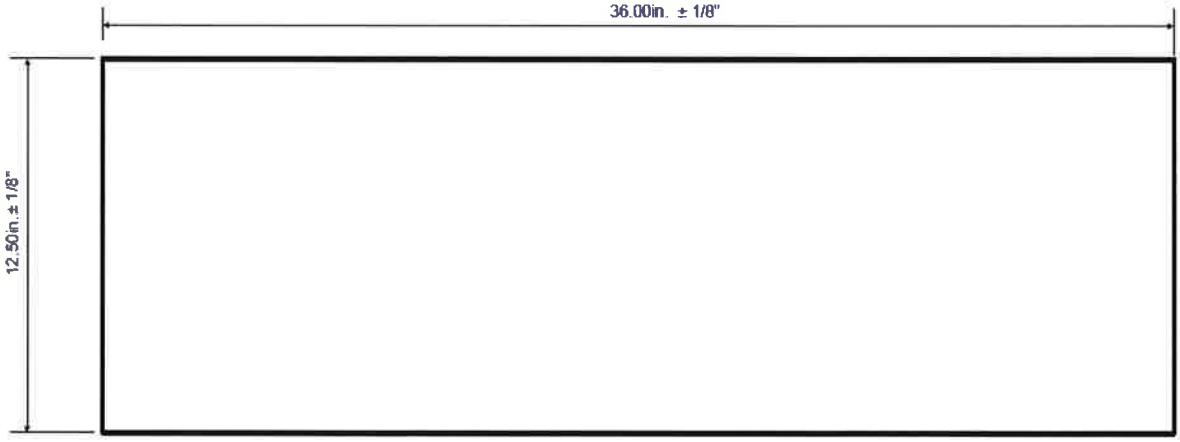
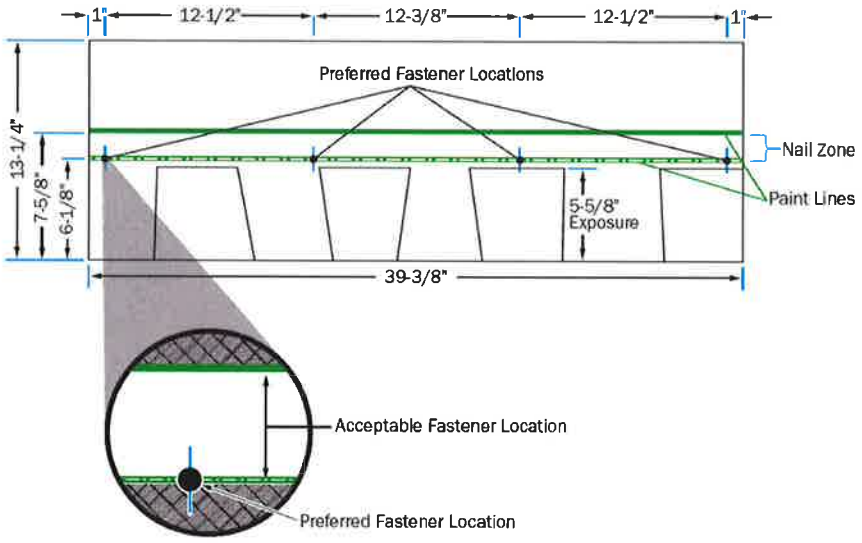
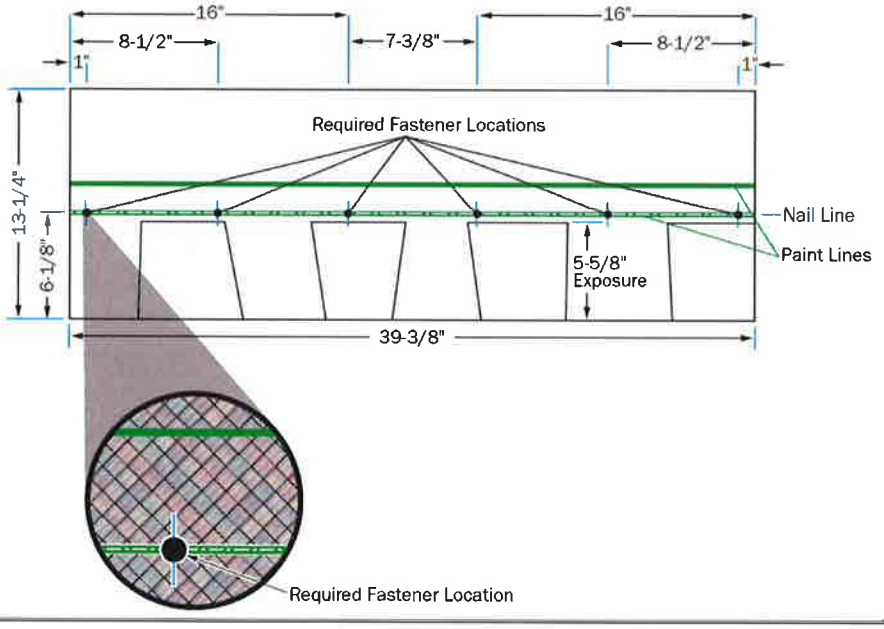


Table 13– Heritage Proline Titan XT

Dimensions:	13-¼" x 39-$^{3}/_{8}$"
Plant Location(s):	Philipsburg and Frederick
Fastening Pattern:	For slopes 2:12 up to but less than 21:12 
Fastening Pattern:	For slopes equal to or greater than 21:12 

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ICC EVALUATION SERVICE

ICC-ES Evaluation Report

ESR-1311

Reissued June 2019
Revised July 2020
This report is subject to renewal June 2021.

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DIVISION: 06 00 00—WOOD, PLASTICS AND COMPOSITES
Section: 06 17 53—Shop-Fabricated Wood Trusses

REPORT HOLDER:

MITEK® INC.
16023 SWINGLEY RIDGE ROAD
CHESTERFIELD, MISSOURI 63017
(314) 434-1200
www.mitek-us.com

EVALUATION SUBJECT:

MITEK METAL TRUSS CONNECTOR PLATES: M-16, MII 16, M-20, MII 20, M-20 HS, MII 20 HS, AND MT20HS™

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2018, 2015, 2012, 2009 and 2006 *International Building Code®* (IBC)
- 2018, 2015, 2012, 2009 and 2006 *International Residential Code®* (IRC)

For evaluation for compliance with codes adopted with Los Angeles Department of Building and Safety (LADBS), see ESR-1311 LABC and LARC Supplement.

Property evaluated:

Structural

2.0 USES

MiTek metal truss connector plates are used as joint connector components of light wood frame trusses.

3.0 DESCRIPTION

3.1 MiTek M-16 and MII 16:

Model M-16 and Model MII 16 metal truss connector plates are manufactured from minimum No. 16 gage [0.0575 inch total thickness (1.46 mm)], ASTM A653 SS, Grade 40 steel, with a G60 galvanization coating [0.0005 inch thickness on each side (0.013 mm)] and having a base-metal thickness of 0.0565 inch (1.44 mm). Slots 0.54 inch (13.7 mm) in length are punched along the perpendicular axis of the plates. The metal displaced by the slot is lanced and formed into two opposing teeth, protruding at right angles from the flat plate. Each tooth is diagonally cut, thereby forming a sharp point. The teeth are additionally shaped into a twisted concave form, facing the slot cutout area. Teeth are 0.16 inch (4.1 mm) wide and 0.37 inch (9.4 mm) long, and there are 4.8 teeth per square inch (0.0074 teeth per square millimeter) of plate area. Plates are available in 1-inch (25.4 mm) width increments, up to 12 inches (305 mm), and lengthwise in $1^1/_4$-inch (31.7 mm) multiples. See Figure 1 of this report for details.

3.2 MiTek M-20 and MII 20:

Model M-20 and Model MII 20 metal truss connector plates are manufactured from minimum No. 20 gage [0.0356 inch total thickness (0.9 mm)], ASTM A653 SS, Grade 40 steel, with a G60 galvanization coating [0.0005 inch thickness on each side (0.013 mm)] and having a base-metal thickness of 0.0346 inch (0.88 mm). The plates have repeating 1-inch-square (25 mm) modules of teeth stamped out and formed at right angles to the face of the parent metal. Each module has four slots, 0.45 inch (11.4 mm) long and 0.125 inch (3.2 mm) wide, fabricated by punching two teeth out of each slot and resulting in each module having eight teeth. The transverse centerlines of adjacent slots are staggered 0.15 inch (3.8 mm) in a longitudinal direction. Longitudinal centerlines of slots are spaced 0.25 inch (6.4 mm). Each slot has a 0.33-inch-long (8.4 mm) tooth at each end. Each tooth is formed with a symmetrical V-shaped cross section at its base, and twists approximately 22 degrees to its point. See Figure 1 of this report for details.

3.3 MiTek M-20 HS, MII 20 HS, and MT20HS™:

Models M-20 HS, MII 20 HS, and MT20HS™ metal truss connector plates are manufactured from minimum No. 20 gage [0.0356 inch total thickness (0.9 mm)], ASTM A653 Grade 60, high-strength, low-alloy steel with improved formability (HSLAS-F), with a G60 galvanization coating [0.0005 inch thickness on each side (0.013 mm)] and having a base-metal thickness of 0.0346 inch (0.88 mm). Repeating $^3/_4$-inch-by-1-inch (19 mm by 25.4 mm) modules of teeth are stamped out and formed at right angles to the face of the parent metal. Each module has three slots, 0.45 inch (11.4 mm) long and 0.125 inch (3.2 mm) wide, fabricated by punching two teeth out of each slot area, and resulting in each module having six teeth. Each module is separated by a 0.25-inch-wide (6.4 mm) strip of unpunched steel. The transverse centerlines of adjacent slots are staggered 0.15 inch (3.8 mm) in the longitudinal direction. Longitudinal centerlines of slots are spaced 0.25 inch (6.4 mm). Each slot has a 0.33-inch-long (8.4 mm) tooth at each end. Each tooth is additionally shaped, twisting an approximate 22 degrees to its point. See Figure 1 of this report for details.

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4.0 DESIGN AND INSTALLATION

4.1 General:

All MiTek metal truss connector plates are pressed into the wood for the full depth of their teeth by hydraulic-platen embedment presses, multiple roller presses that use partial embedment followed by full-embedment rollers, or combinations of partial embedment roller presses and hydraulic-platen presses that feed trusses into a stationary finish roller press. Trusses must be assembled within the tolerances specified in ANSI/TPI 1, Chapter 3, Quality Criteria for the Manufacture of Metal-Plate-Connected Wood Trusses.

4.2 Allowable Design Values:

Allowable design values for MiTek metal truss connector plates to be used in the design of metal plate connected wood roof and floor trusses are shown in Tables 1 and 2 of this report. Allowable design values are applicable when the connection is made with identical plates on opposite sides of the joint. This evaluation report is limited to the evaluation of connection capacity of the MiTek metal truss connector plates listed in this report. The design, manufacture, and installation of trusses employing the truss plates have not been evaluated.

Allowable values shown in Tables 1 and 2 have not been adjusted for metal connector plates embedded in fire-retardant-treated or preservative-treated lumber. Proper adjustments must be made in accordance with the requirements indicated in a current ICC-ES evaluation report issued to the chemical treatment manufacturer. If the evaluation report does not contain information on the adjustments, the chemical manufacturer must be contacted for this information. Compliance with Section 2304.10.5 of the 2018 and 2015 IBC (Section 2304.9.5 of the 2012, 2009 and 2006 IBC) and Section R317.3 of the 2018, 2015, 2012 and 2009 IRC (Section R319.3 of the 2006 IRC) is also required.

5.0 CONDITIONS OF USE

The MiTek metal truss connector plates described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

5.1 This evaluation report and the manufacturer's published installation instructions, when required by the code official, must be submitted at the time of permit application. In the event of a conflict between the manufacturer's published installation instructions and this document, the instructions in this document govern.

5.2 Each application for a building permit, using these metal truss connector plates, must be accompanied by documentation showing that the design, manufacture, and proposed installation conforms with the requirements of the applicable code.

5.3 This report establishes plate design values only. For items not covered by this report, such as truss design, fabrication, quality assurance and special inspection, refer to the applicable version of ANSI/TPI 1, engineering drawings and the applicable code.

5.4 The design values (allowable lateral resistance values and effective tension and shear resistance allowable design values) used in the design of trusses, using MiTek metal truss connector plates, must not exceed those listed in Tables 1 and 2 of this report. Load combination reductions must be in accordance with the applicable code.

5.5 All lumber used in the fabrication of trusses using MiTek metal truss connector plates must be graded in compliance with the applicable building code and must have a moisture content not exceeding 19 percent at the time of assembly. Wet service factors from ANSI/TPI 1 Section 6.4 must be applied to the table values when the lumber moisture content exceeds 19 percent.

5.6 MiTek metal truss connector plates must be installed in pairs, on opposite faces of truss members.

5.7 Galvanized G60 metal truss plate connectors subject to corrosive environments must be protected in accordance with Section 6.5 of ANSI/TPI 1.

5.8 MiTek metal truss connector plates are manufactured in Hazelwood, Missouri; Tolleson, Arizona; Tampa, Florida; Edenton, North Carolina; and Bradford, Ontario, Canada, under a quality-control program with inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED

6.1 Data in accordance with the National Design Standard for Metal Plate Connected Wood Truss Construction, ANSI/TPI 1-2002, 2007 and 2014.

6.2 Manufacturer's descriptive literature.

6.3 A quality control manual.

7.0 IDENTIFICATION

The MiTek metal truss connector plates are identified by an imprint of the plate name embossed into the surface of the plate (for example, the M-16 plate is embossed "M-16"). Additionally, boxes containing the metal truss connector plates must be labeled with the MiTek name, the metal connector plate model, and the evaluation report number (ESR-1311).

TABLE 1—ALLOWABLE LATERAL RESISTANCE VALUES, HYDRAULIC-PLATEN EMBEDMENT[3] (lb/in²/PLATE)

LUMBER SPECIES	SG	AA	EA	AE	EE
M–16 AND MII 16					
Douglas fir–larch	0.50	176	121	137	126
Hem-flr	0.43	119	64	102	98
Spruce-pine-fir	0.42	127	82	75	107
Southern pine	0.55	174	126	147	122
M–20 and MII 20					
Douglas fir–larch	0.50	220	195	180	190
Hem-fir	0.43	185	148	129	145
Spruce-pine-fir	0.42	197	144	143	137
Southern pine	0.55	249	190	184	200
M–20 HS, MII 20 HS and MT20HS					
Douglas fir–larch	0.50	165	146	135	143
Hem-flr	0.43	139	111	97	109
Spruce-pine-fir	0.42	148	108	107	103
Southern pine	0.55	187	143	138	150

For **SI:** 1lb/in² = 6.9 kPa.

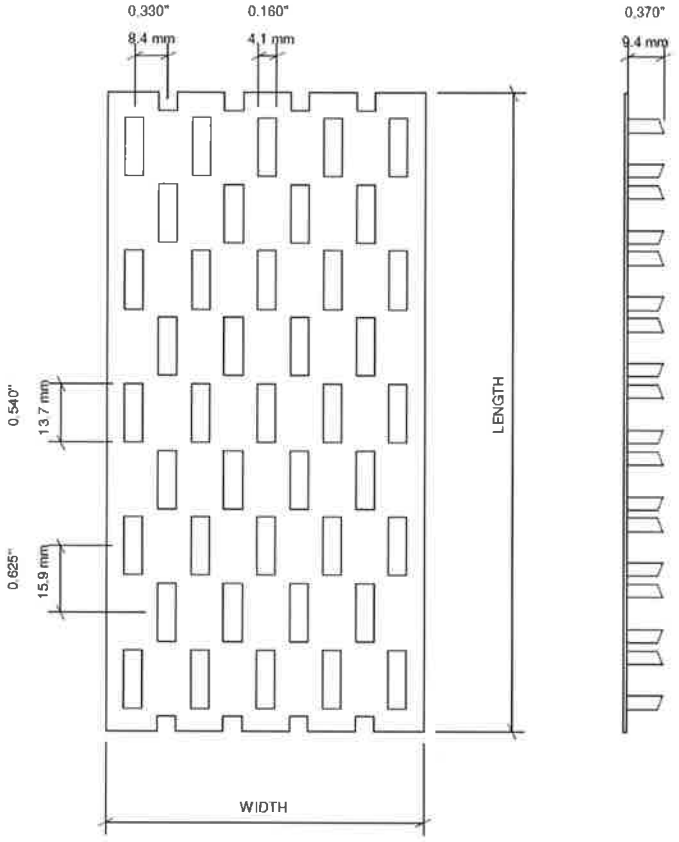
NOTES:
[1]Tooth holding units = psi for a single plate (double for plates on both faces when applying to area on only one face). To achieve values, plates must be installed on opposite sides of joint.
[2]AA = Plate parallel to load, wood grain parallel to load
EA = Plate perpendicular to load, wood grain parallel to load
AE = Plate parallel to load, wood grain perpendicular to load
EE = Plate perpendicular to load, wood grain perpendicular to load
[3]All truss plates are pressed into the wood for the full depth of their teeth by hydraulic-platen embedment presses, multiple roller presses that use partial embedment followed by full-embedment rollers, or combinations of partial embedment roller presses and hydraulic-platen presses that feed trusses into a stationary finish roller press.

TABLE 2—EFFECTIVE TENSION AND SHEAR RESISTANCE ALLOWABLE DESIGN VALUES

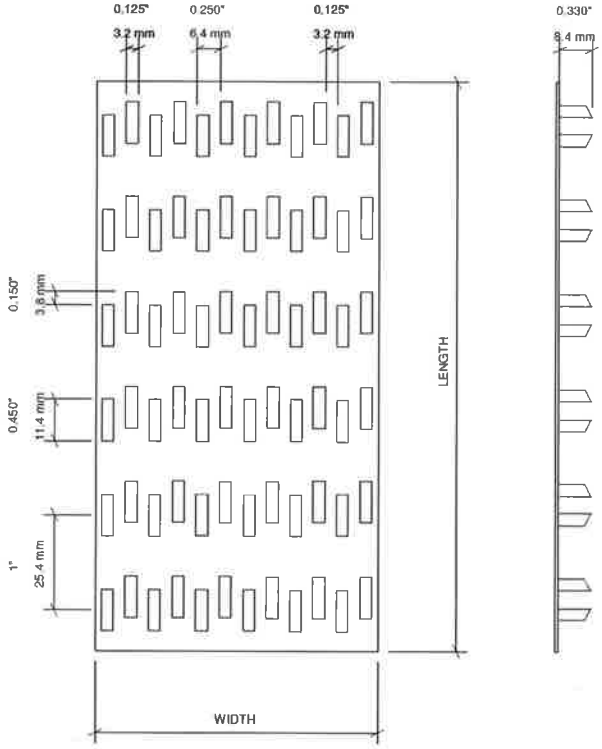
PROPERTY FORCE DIRECTION	M–16 AND MII 16		M–20 AND MII 20		M–20 HS, MII 20HS AND MT20HS	
	Efficiency	Pounds/inch/Pair of Connector Plates	Efficiency	Pounds/inch/Pair of Connector Plates	Efficiency	Pounds/inch/Pair of Connector Plates
Tension Values in Accordance with Section 5.4.4.2 of TPI-1 (Minimum Net Section over the Joint)[1]						
Tension @ 0°	0.694	1982	0.50	880	0.624	1590
Tension @ 90°	0.300	857	0.47	820	0.523	1333
Tension Values in Accordance with Section 5.4.4.2.1 of TPI-1 (Maximum Net Section Over the Joint)[2]						
Tension @ 0° SG=0.42	—	—	—	—	0.671	1712
Tension @ 0° SG=0.50	—	—	—	—	0.697	1778
Shear Values						
Shear @ 0°	0.54	1041	0.49	574	0.43	761
Shear @ 30°	0.61	1173	0.63	738	0.61	1085
Shear @ 60°	0.73	1402	0.79	936	0.67	1184
Shear @ 90°	0.55	1055	0.55	645	0.45	792
Shear @ 120°	0.48	914	0.42	490	0.34	608
Shear @ 150°	0.35	672	0.46	544	0.3	537

For **SI:** 1 lb/inch = 0.175 N/mm, 1 inch = 25.4 mm.

NOTES:
[1]Minimum Net Section – A line through the plate's tooth pattern with the minimum amount of steel for a specified orientation. For these plates, this line passes through a line of holes.
[2]Maximum Net Section – A line through the plate's tooth pattern with the maximum amount of steel for a specified orientation. For these plates, this line passes through a section of the plate with no holes.

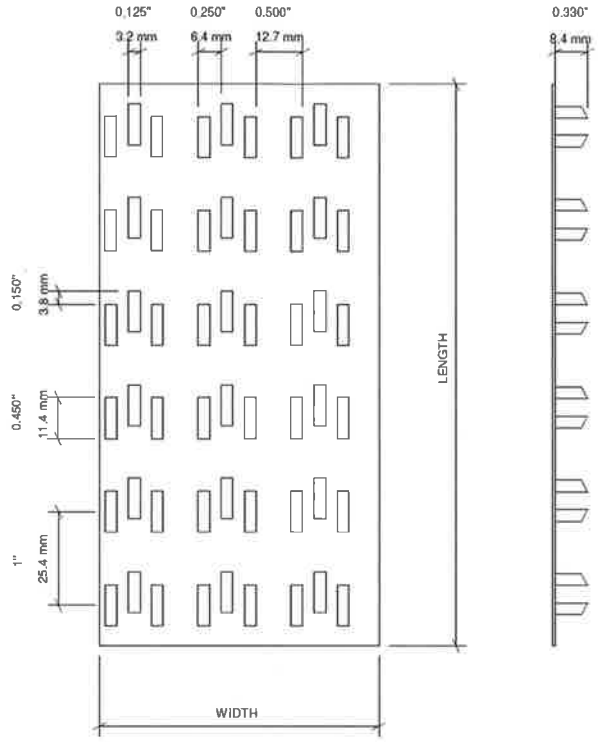


M-16, MII16



M-20, MII 20

FIGURE 1—APPROXIMATE DIMENSIONS OF MITEK CONNECTOR PLATES (in inches)



M-20 HS, MII 20 HS,
MT20HS

FIGURE 1—APPROXIMATE DIMENSIONS OF MITEK CONNECTOR PLATES (in inches) (Continued)

DIVISION: 06 00 00—WOOD, PLASTICS, AND COMPOSITES
Section: 06 17 53—Shop-Fabricated Wood Trusses

REPORT HOLDER:

MITEK®, INC.

EVALUATION SUBJECT:

MITEK® TRUSS CONNECTOR PLATES: M-16, MII 16, M-20, MII 20, M-20 HS, MII 20 HS, AND MT20HS™

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that the Mitek® Truss Connector Plates: M-16, MII 16, M-20, MII 20, M-20 HS, MII 20 HS, and MT20HS™, described in ICC-ES evaluation report ESR-1311, have also been evaluated for compliance with the codes noted below as adopted by the Los Angeles Department of Building and Safety (LADBS).

Applicable code editions:

- 2020 *City of Los Angeles Building Code* (LABC)
- 2020 *City of Los Angeles Residential Code* (LARC)

2.0 CONCLUSIONS

The Mitek® Truss Connector Plates: M-16, MII 16, M-20, MII 20, M-20 HS, MII 20 HS, and MT20HS™, described in Sections 2.0 through 7.0 of the evaluation report ESR-1311, comply with the LABC Chapter 23, and the LARC, and are subjected to the conditions of use described in this supplement.

3.0 CONDITIONS OF USE

The Mitek® Truss Connector Plates: M-16, MII 16, M-20, MII 20, M-20 HS, MII 20 HS, and MT20HS™ described in this evaluation report supplement must comply with all of the following conditions:

- All applicable sections in the evaluation report ESR-1311.
- The design, installation, conditions of use and labeling are in accordance with the 2018 *International Building Code®* (IBC) provisions noted in the evaluation report ESR-1311.
- The design, installation and inspection are in accordance with additional requirements of LABC Chapters 16, 17 and 23, and LARC Section R802, as applicable.
- Metal connector plate teeth with $^1/_2$ inch of the ends of truss wood members must be considered ineffective to carry any load.
- Under the LARC, an engineered design in accordance with LARC Section R301.1.3 must be submitted.

This supplement expires concurrently with the evaluation report, reissued June 2019 and revised July 2020.

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DIVISION: 06 00 00—WOOD, PLASTICS AND COMPOSITES
Section: 06 17 53—Shop-Fabricated Wood Trusses

REPORT HOLDER:

MITEK®, INC.

EVALUATION SUBJECT:

MITEK® METAL TRUSS CONNECTOR PLATES: M-16, MII 16, M-20, MII 20, M-20 HS, MII 20 HS, AND MT20HS™

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that MiTek® Truss connector plates M-16, MII 16, M-20, MII 20, M-20 HS, MII 20 HS, and MT20HS™, recognized in ICC-ES evaluation report ESR-1311, have also been evaluated for compliance with the codes noted below.

Applicable code editions:

- 2016 *California Building Code* (CBC)

For evaluation of applicable chapters adopted by the California Office of Statewide Health Planning and Development (OSHPD) and Division of the State Architect (DSA), see Sections 2.1.1 and 2.1.2 below.

- 2016 *California Residential Code* (CRC)

2.0 CONCLUSIONS

2.1 CBC:

The MiTek® Metal Truss connector plates M-16, MII 16, M-20, MII 20, M-20 HS, MII 20 HS, and MT20HS™, described in Sections 2.0 through 7.0 of the evaluation report ESR-1311, comply with CBC Chapter 23, provided the design and installation are in accordance with the 2015 *International Building Code®* (IBC) provisions noted in the evaluation report and the additional requirements of CBC Chapters 16, 17, and 23, as applicable.

2.1.1 OSHPD:

OSHPD requirements as indicated in the CBC are beyond the scope of this supplement.

2.1.2 DSA:

DSA requirements as indicated in the CBC are beyond the scope of this supplement.

2.2 CRC:

The MiTek® Metal Truss connector plates M-16, MII 16, M-20, MII 20, M-20 HS, MII 20 HS, and MT20HS™, described in Sections 2.0 through 7.0 of the evaluation report ESR-1311, comply with CRC Sections R502.11 and R802.10, provided the design and installation are in accordance with the 2015 *International Residential Code®* (IRC) provisions noted in the evaluation report.

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ICC-ES Evaluation Report

ESR-1311 FBC and FRC Supplement

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DIVISION: 06 00 00—WOOD, PLASTICS AND COMPOSITES
Section: 06 17 53—Shop-Fabricated Wood Trusses

REPORT HOLDER:

MITEK®, INC.

EVALUATION SUBJECT:

MITEK METAL TRUSS CONNECTOR PLATES: M-16, MII 16, M-20, MII 20, M-20 HS, MII 20 HS, AND MT20HS™

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that MiTek Truss Connector Plates M-16, MII 16, M-20, MII 20, M-20 HS, MII 20 HS, and MT20HS™, described in ICC-ES evaluation report ESR-1311, have also been evaluated for compliance with the codes noted below.

Applicable code editions:

- 2020 and 2017 *Florida Building Code—Building*
- 2020 and 2017 *Florida Building Code—Residential*

2.0 CONCLUSIONS

The MiTek Truss Connector Plates M-16, MII 16, M-20, MII 20, M-20 HS, MII 20 HS, and MT20HS™, described in Sections 2.0 through 7.0 of the evaluation report ESR-1311, comply with the *Florida Building Code—Building* and the *Florida Building Code—Residential*, provided the design requirements are determined in accordance with the *Florida Building Code-Building* or the *Florida Building Code-Residential,* as applicable. The installation requirements noted in ICC-ES evaluation report ESR-1311 for the 2018 and 2015 *International Building Code®* meet the requirements of the *Florida Building Code-Building* or the *Florida Building Code-Residential,* as applicable, with the following conditions:

a) Compliance with Section 2304.10.5 of the *Florida Building Code—Building* or Section R317.3 of the *Florida Building Code-Residential*, as applicable, is required as described in Section 4.2 of the evaluation report ESR-1311.

Use of the MiTek Truss Connector Plates M-16, MII 16, M-20, MII 20, M-20 HS, MII 20 HS, and MT20HS™ has also been found to be in compliance with the High-Velocity Hurricane Zone provisions of the *Florida Building Code—Building* and the *Florida Building Code—Residential* with the following condition:

a) For connections subject to uplift, the connection must be designed for no less than 700 pounds (3114 N).

For products falling under Florida Rule 61G20-3, verification that the report holder's quality-assurance program is audited by a quality-assurance entity approved by the Florida Building Commission for the type of inspections being conducted is the responsibility of an approved validation entity (or the code official, when the report holder does not possess an approval by the Commission).

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